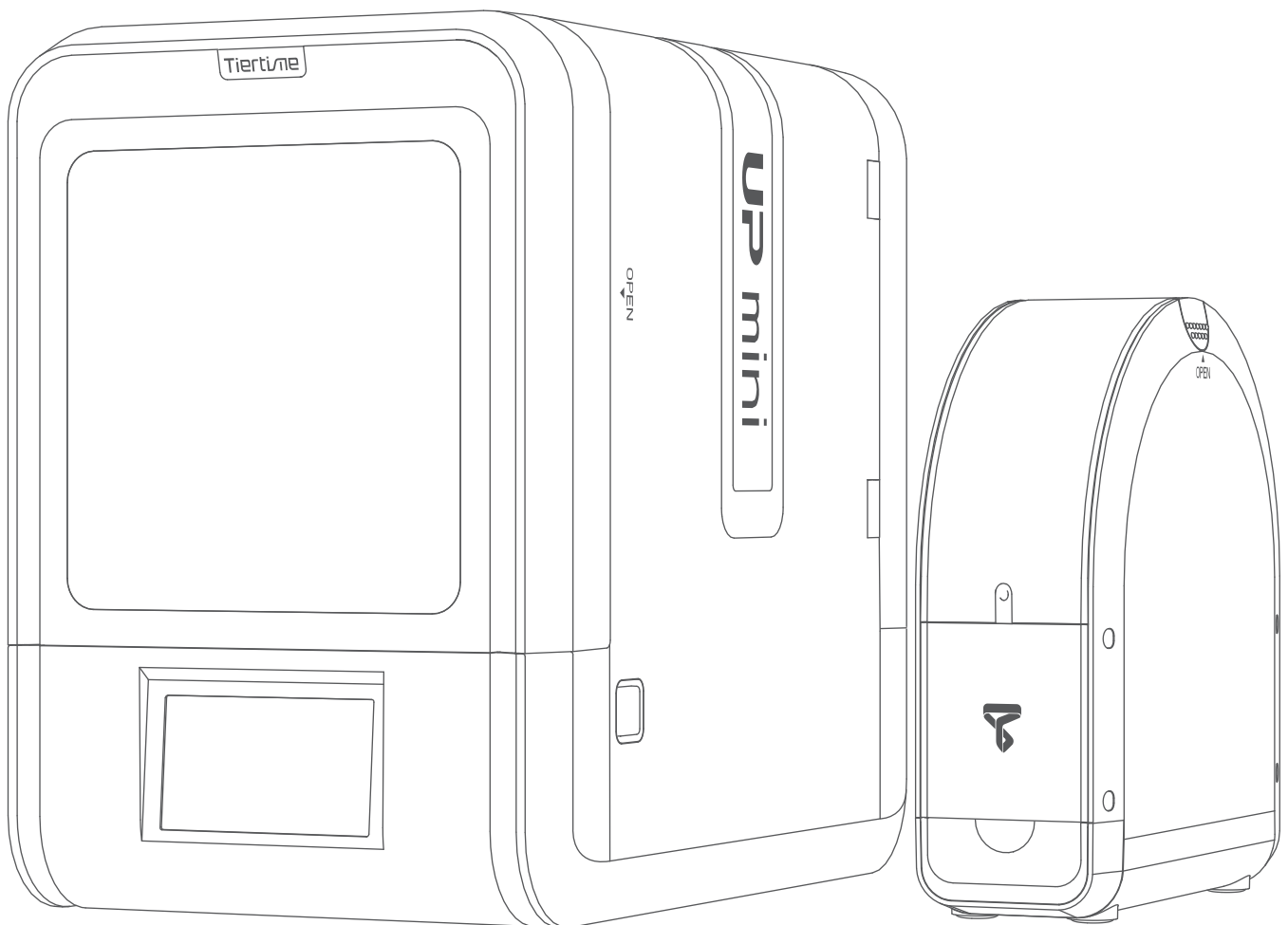


UP mini 2

User Manual

V 0.1



Download the full user manual at www.up3d.com Support Section

Index

Chapter 1 Product Description

Chapter 2 Prepare for Your First 3D Print

Chapter 3 Product Activation

Chapter 4 Machine Settings

Chapter 5 Print Settings

Chapter 6 Calibration and Other Options

Chapter 7 Techniques and Troubleshooting

Safety Precautions

1\ The UP mini 2 3D printer requires the power adapter provided by the original manufacturer, otherwise the machine could be damaged or even cause fire hazard. Please also keep the power adapter away from water and out of high temperature environments.

2\ During printing, the nozzle of the printer will reach 260°C and the print platform could reach over 70°C. Please do not touch these parts with your bare hands while they are hot not even with the heat resistant gloves included, with the machine as the temperature could damage the gloves and injure your hands.



Warning label:
High Temperature,
do not touch!

3\ During printing, the print head and other mechanical parts move at high speeds. Touching these parts while they are moving could cause injuries.



Warning Label:
Moving parts, do not
touch!

4\ Please wear goggles when removing the supporting material from models and detaching models from the perf board.

5\ When printing with ABS and PLA, the plastics will create a light odor. Please run the printer in a well ventilated environment. We also suggest you put the printer in an environment with a stable temperature as unwanted cooling could cause adverse effects to the print quality. When printer is extruding filament, make sure there is enough space between print head nozzle and the platform. Otherwise the nozzle could be blocked.

Printing Environment

As light odor will be produced during printing, please run the printer in a well ventilated environment.

The UP mini 2's ideal working temperature is between 15°C and 30°C with a relative humidity between 20–50%.

Printing at temperatures out of this range could cause adverse effects to the printing process. When using the “Extrude” function, keep at least 50mm between the nozzle and the platform. If too close, the nozzle may get blocked.

One Year Warranty

Beijing Tiertime Technology Limited (Tiertime) and its authorized resellers warrants 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 labor from the date you purchased the product from Tiertime or a reseller. Nozzles and Print Boards are warranted for ninety (90) days.

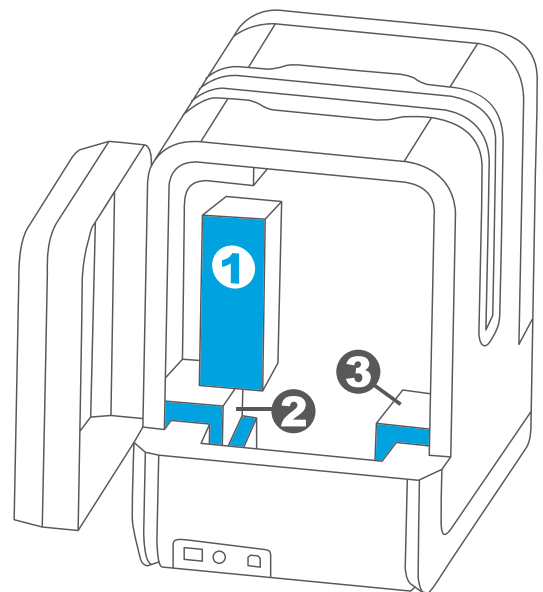
- Tiertime reserves the right to determine the validity of all warranty claims.
- Warranty is voided if the product serial number has been altered or removed.
- Warranty is voided if the product has been misused or damaged or if evidence is present that the product was altered, modified, or serviced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

Compliance

FCC
ROHS
CE

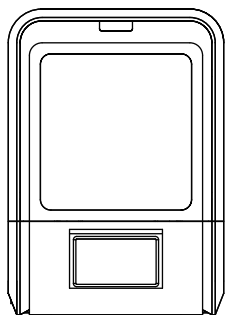
Unpacking

Remove the cushioning foams from the inside of the machine before start using it.

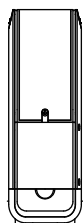


Rear View

Package Content



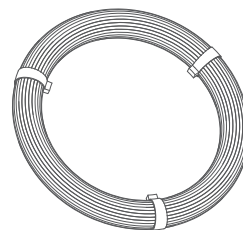
UP mini 2



Spool and Tool Holder



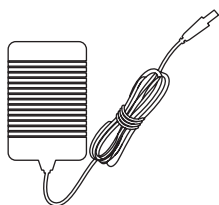
Calibration Card



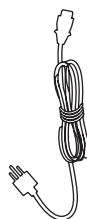
50g Tester PackX3



Protective Gloves



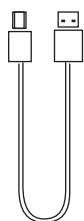
Power Adapter



Power Cable



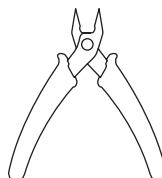
Scraper



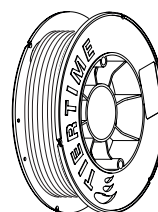
USB Cable



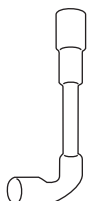
Hex Keys
2.0mm, 2.5mm



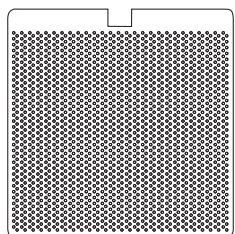
Plier



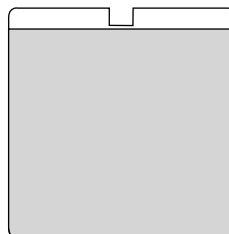
ABS Filament



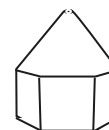
Nozzle Wrench



Perforated Print Board
(Perf Board)



UP Flex Print
Board

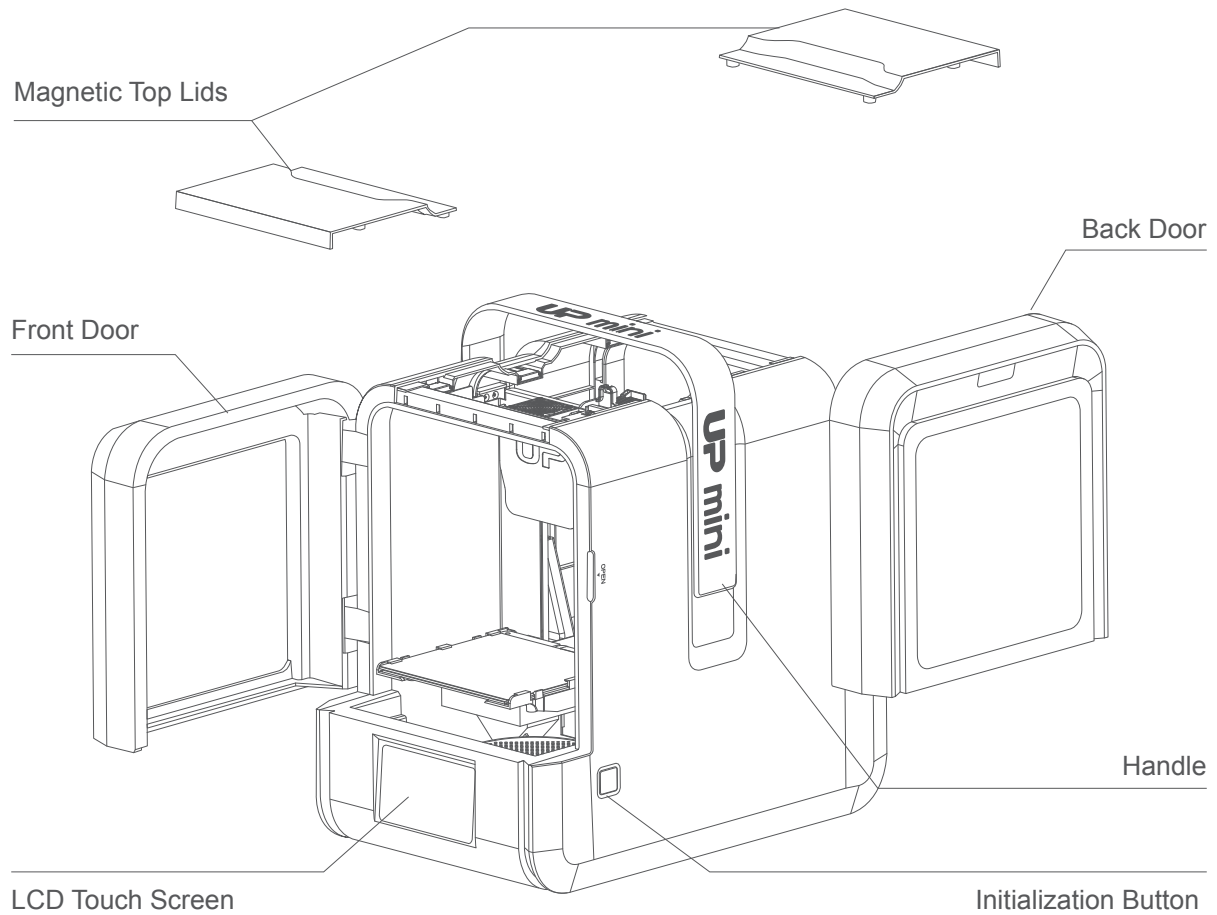


Print Head Nozzle

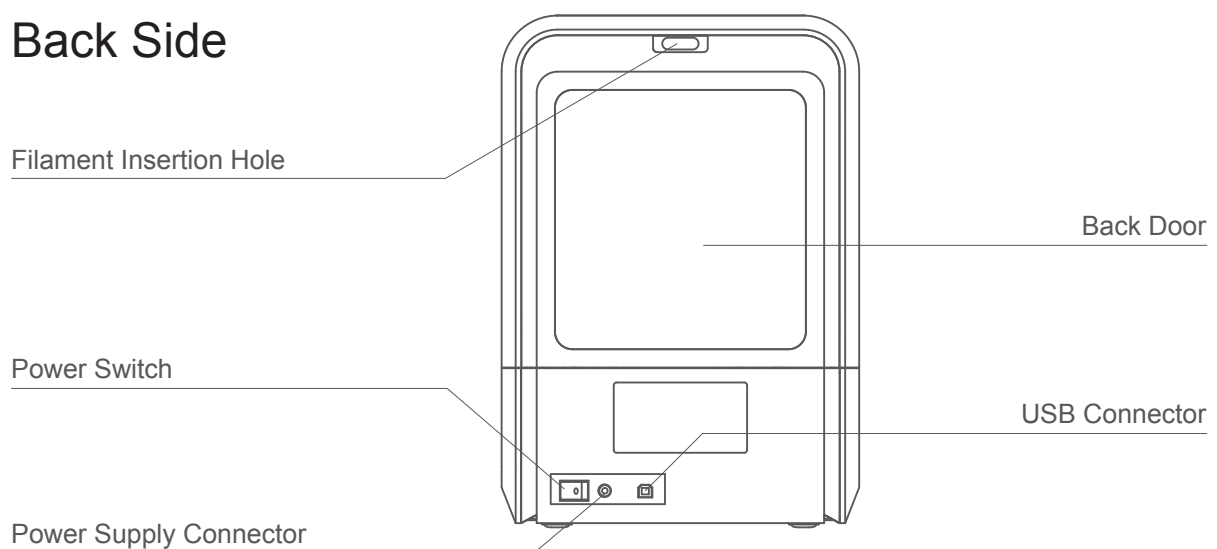
If anything is missing, please contact your local distributor or at support@pp3dp.com

Product Description

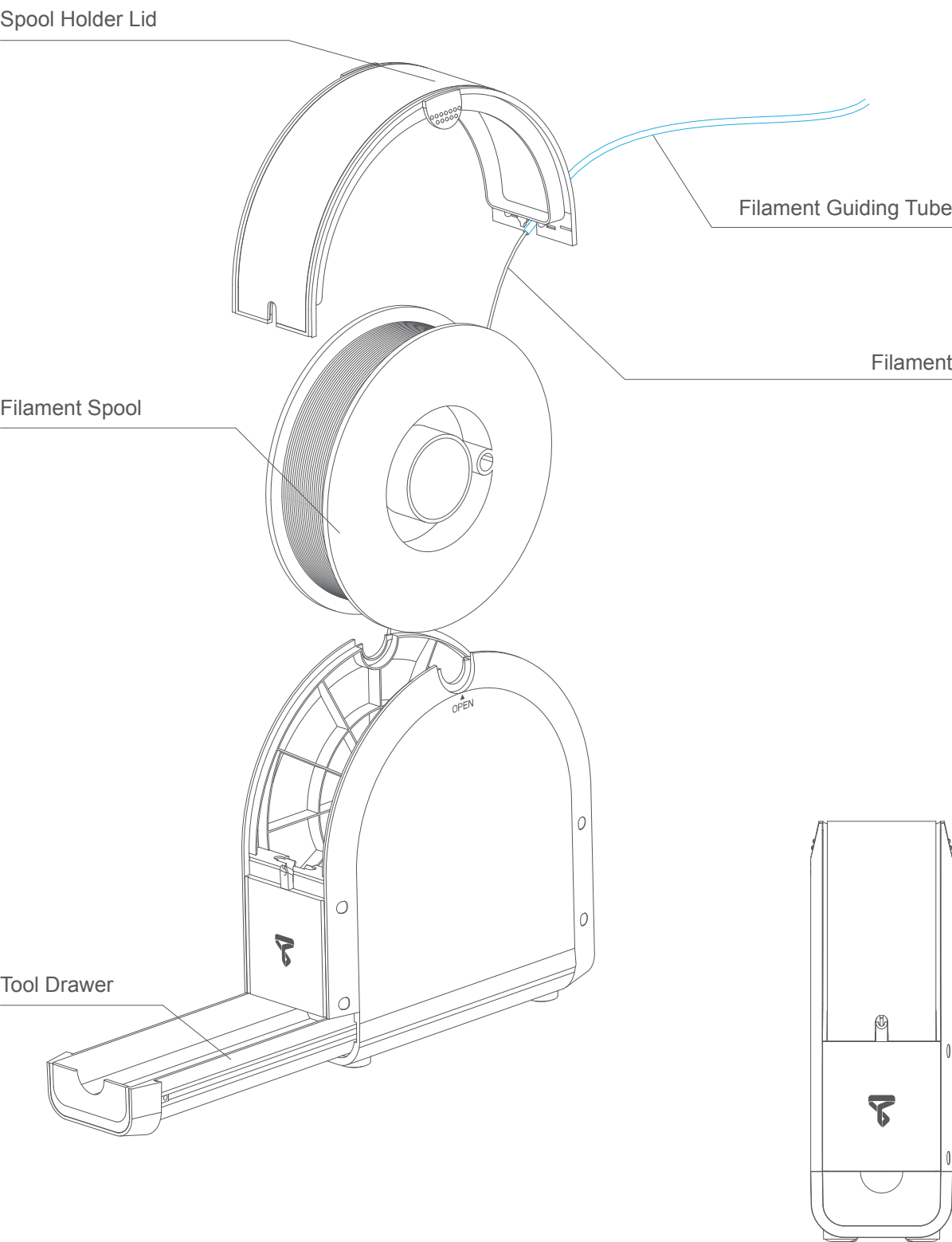
Front Side



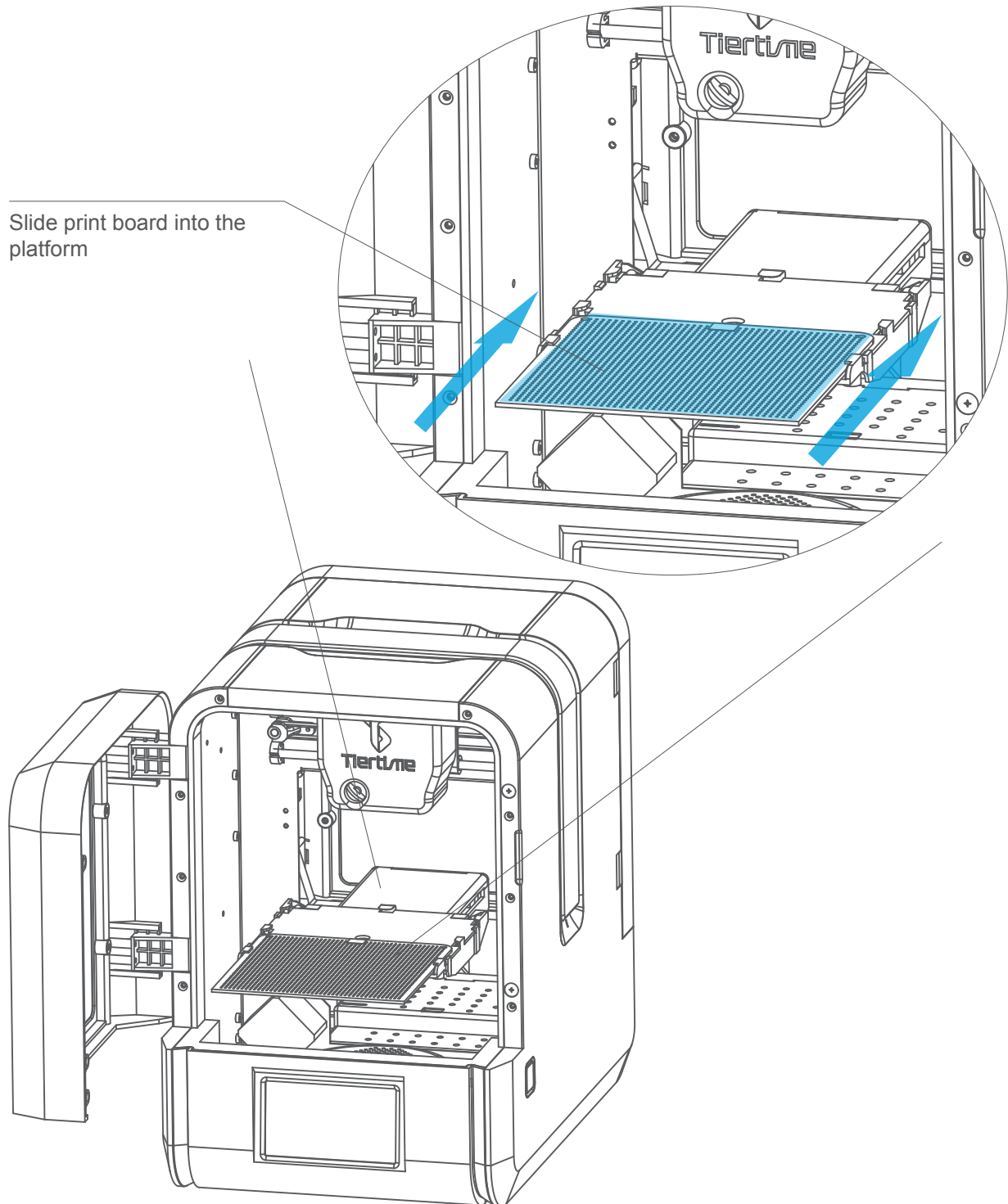
Back Side

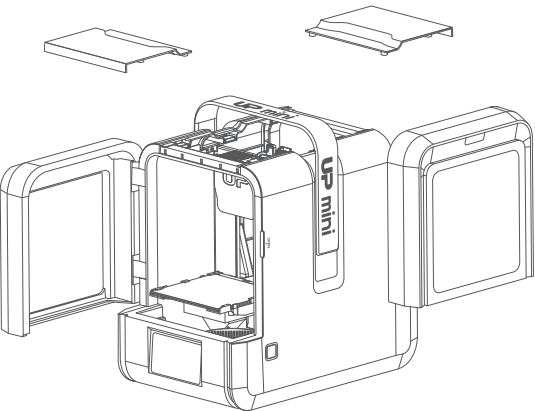


Filament Spool Holder

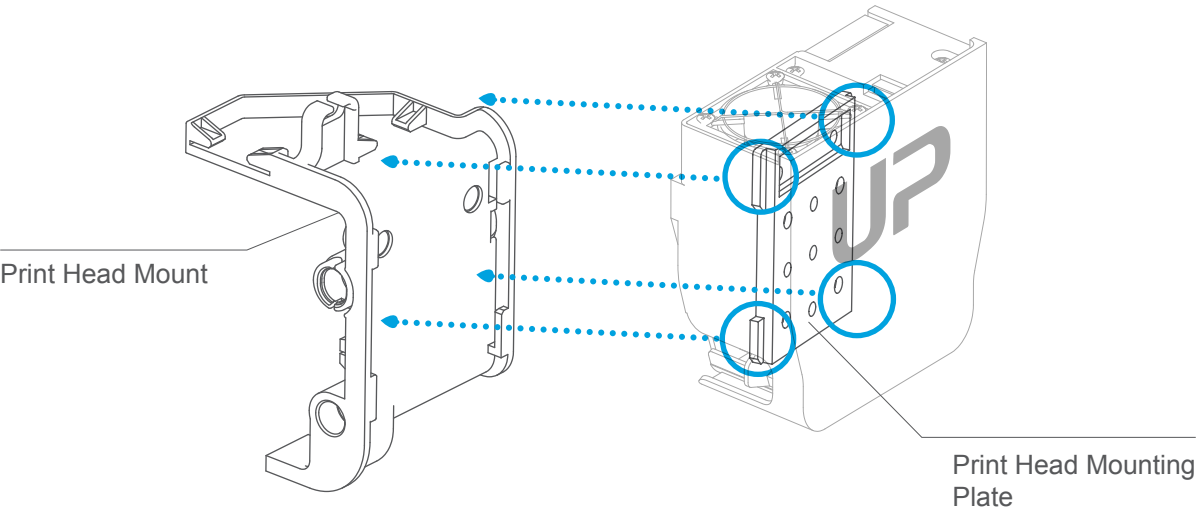
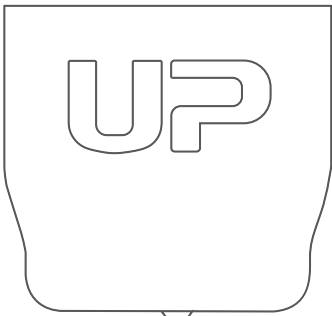
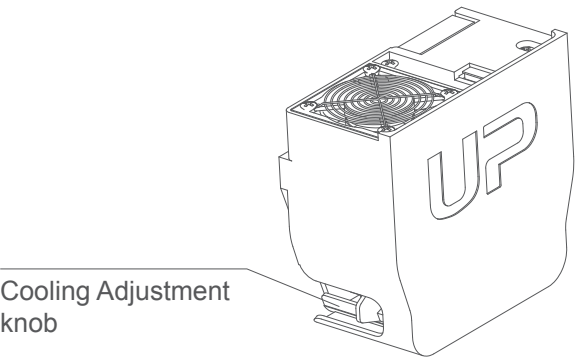


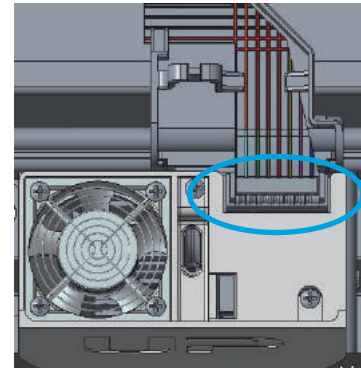
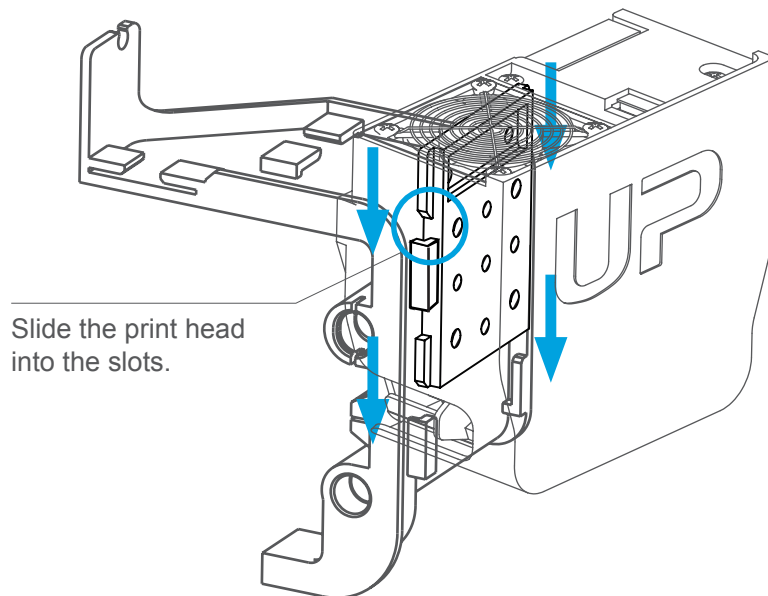
Installation of Print Board



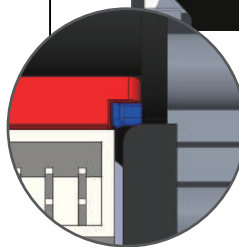
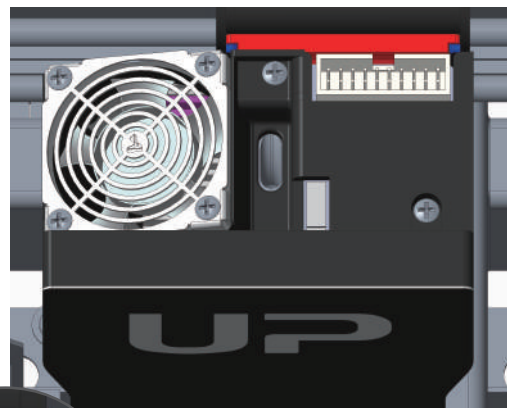
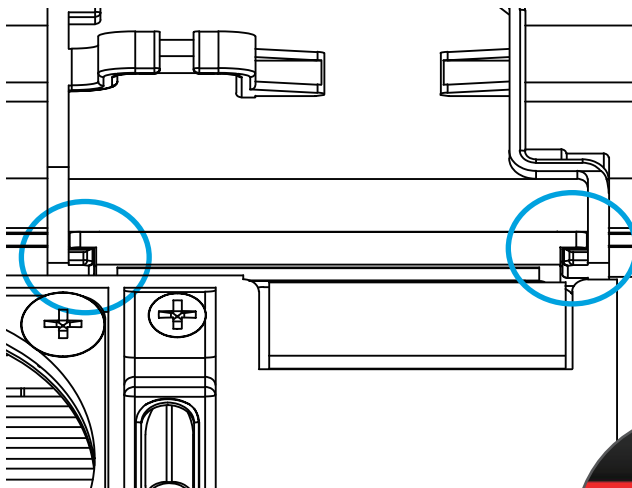


Open front door, back door
and top covers





Plug in the print head cable.

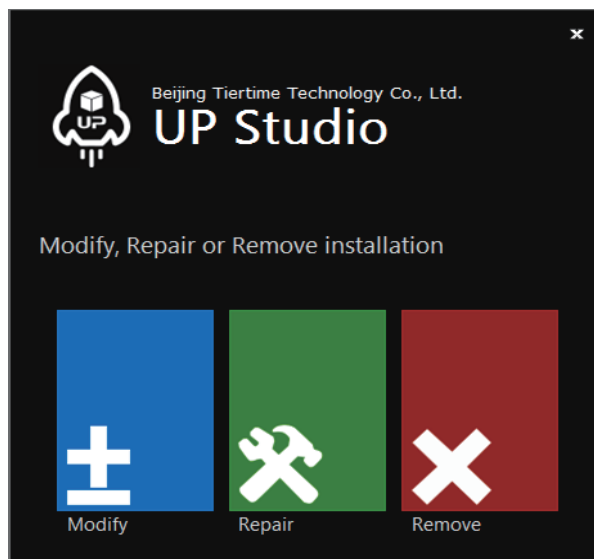


Download and Install UP Studio

Two ways to obtain UP Studio

1. Download the latest version from www.up3d.com.

Double click the installation file, follow the simple instructions, the installation will be finished quickly.



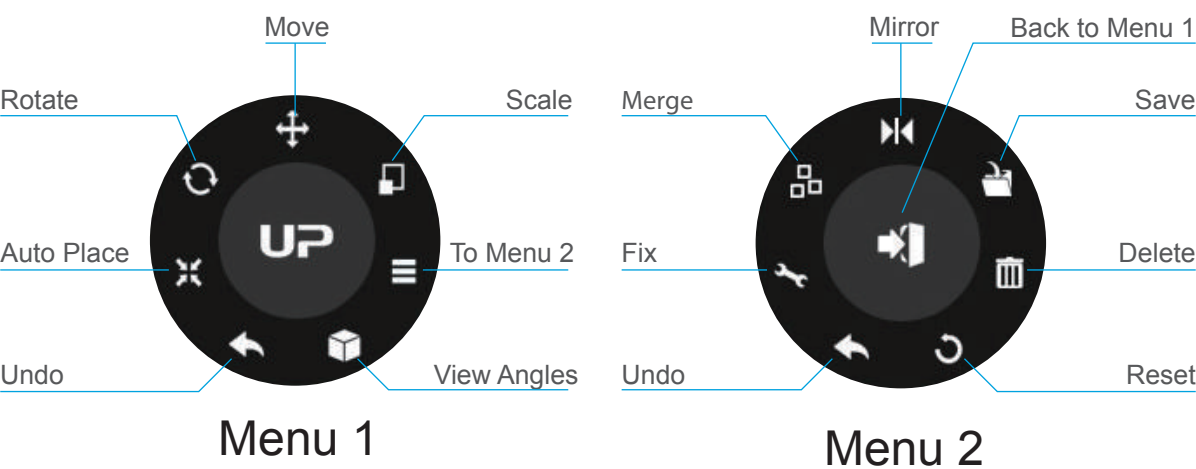
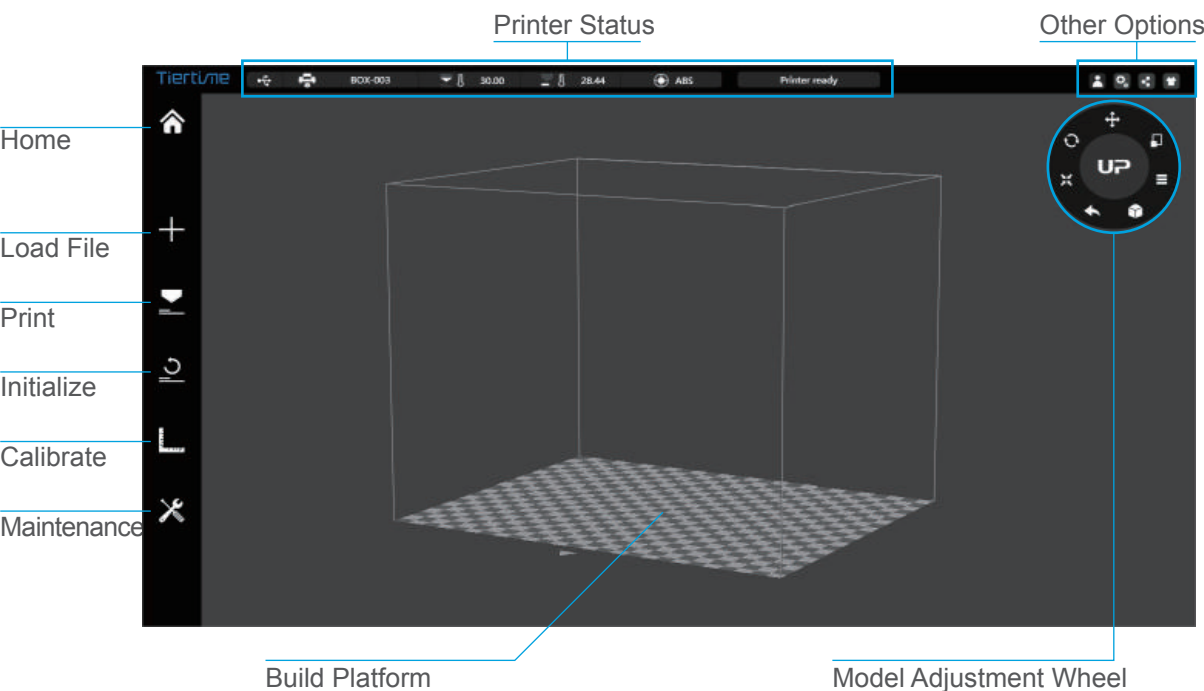
Minimum hardware requirements

Intel Pentium 4 or better CPU 4GB RAM

Display card support OpenGL 2.0



Software Interface



Initialization of Printer

Initialization is required every time the machine is switched on. During initialization, the print head and print platform move slowly and hit the endstops of the XYZ axis. This is essential as the printer needs to find the end-point of each axis. Many software options will light up and become available for use only after initialization.

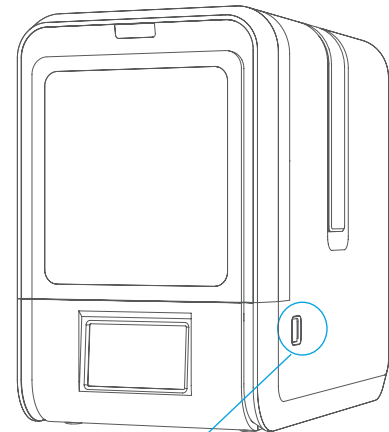
There are three ways to initialize your printer:

1. Hold the initialization button on the printer.
2. Clicking the "Initialize" option in the software menu (shown on right).
3. When the printer is idle, press the initialize button on touch screen.

Other functions of Initialization Button:

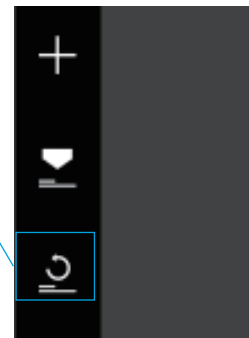
Stop the current print job:

1. During a print, press and hold the button.
2. Reprint the last job: Double click the button.
3. Turn on/off internal lighting: Single click the button.

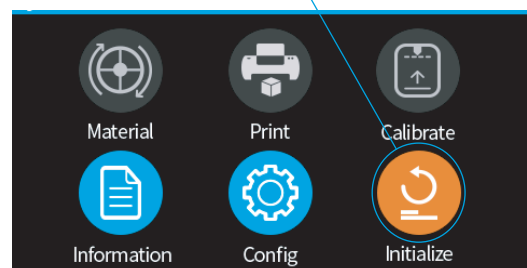


Initialization button

Initialization Button



PC client



Touch Screen

Printer Activation

Activation will lift the restriction of the number of prints, and provide value-added services for the users.

1\ Click the “Account” button at the main menu to Sign Up.



Login

Username or e-mail

Password

Sign In

Sign Up

Remember me

Forgot Password?

2\ If already registered, skip to step 5. Fill in the form.

Sign Up

Username(3-20 characters, and start with a letter)

Email(please enter a email)

Password (6~32 charaters)

Confirm password(Please input password again)

Registration means you agree with [TierTime User Protocol](#)

Sign Up

3\ Go to your registered mail box, and activate your account through the activation email.

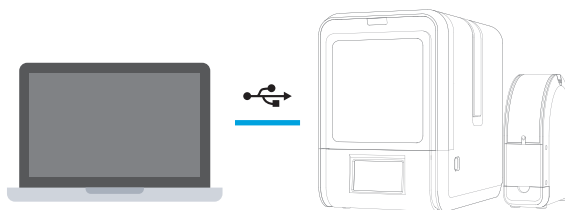
Registration successfully

Congratulationsjasonwutest@tierime.com

Registration successfully, activation code has been send to your email box, please click here to activate

Activate

4\ Connect UP mini 2 to your computer.



5\ Go to Account section and sign in.

Login

Username or e-mail

Password

Sign In

Sign Up

Remember me

Forgot Password?

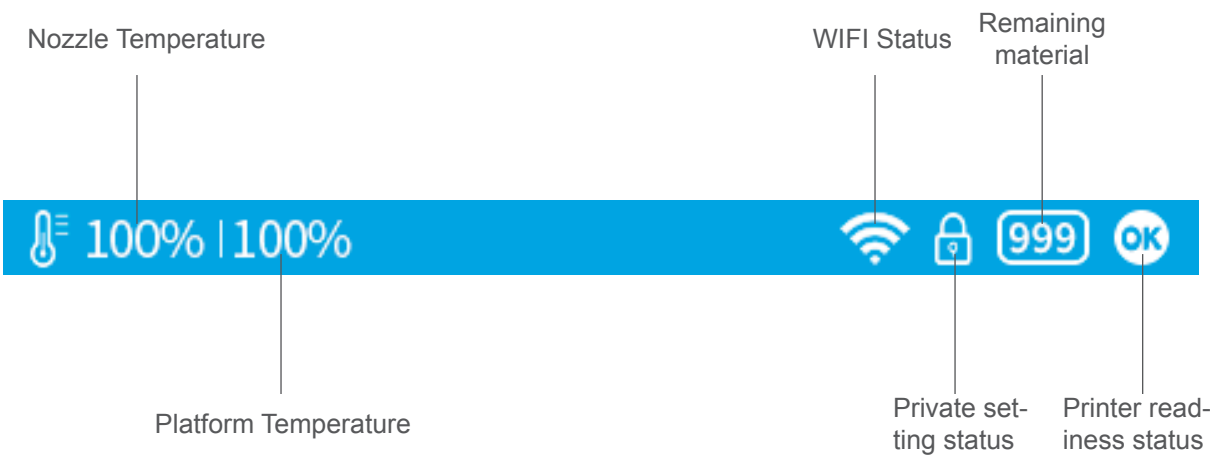
6\ You will see a list of connected printers. Click “Activate” to finish the activation. User could also choose bind or unbind option in the user account under the “Bind Status”.

Printer management

My printers			
SN number	Activation status	Bind status	
001123456789	Activate	Unlink	

7\ Restart the printer after the activation.

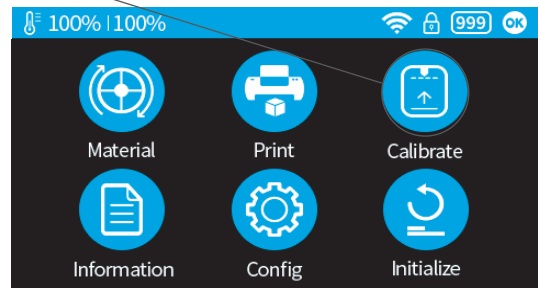
Touch Screen Control



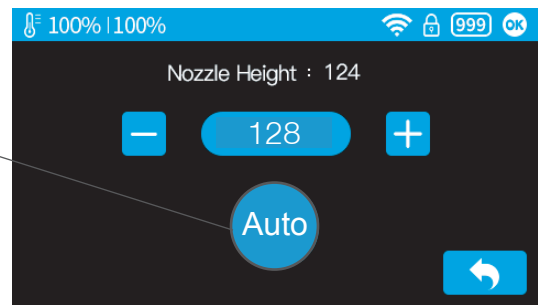
Prepare for Printing - Update Nozzle Height

The printer was calibrated before leaving the factory, but users are recommended to update the nozzle height value using the automatic nozzle height detection function on the touch screen before the first print.

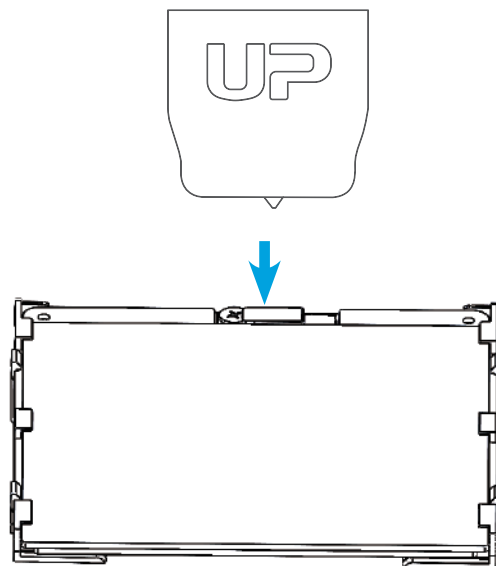
Press “Calibrate” button to enter Nozzle Height setup page.



Press the “Auto” button to start the automatic process.

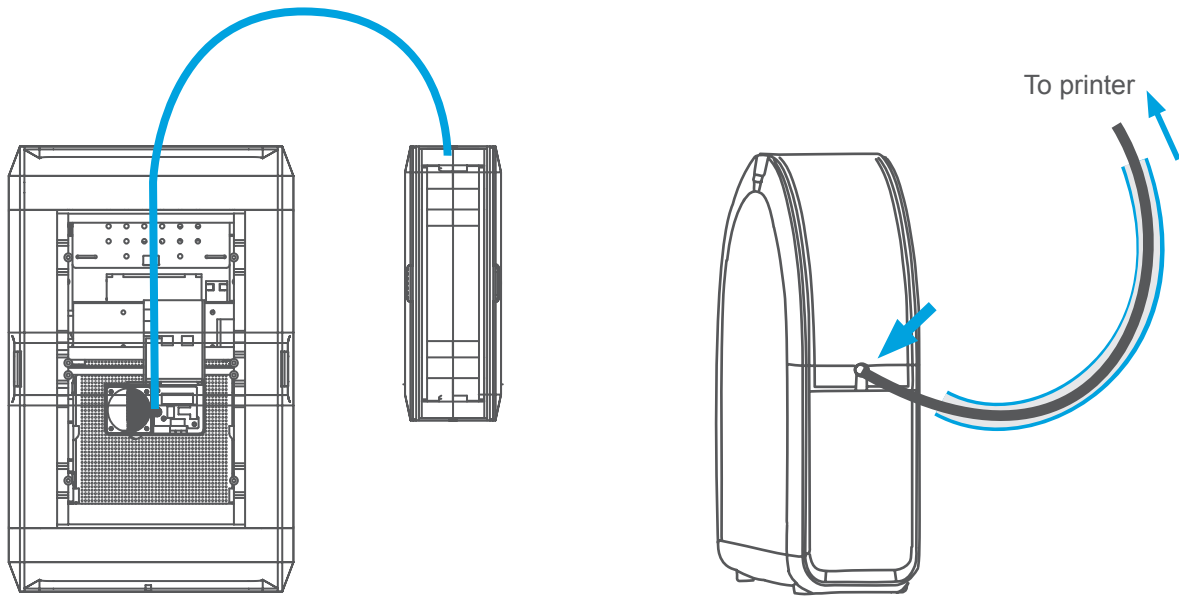


During nozzle height detection, the print head nozzle will touch the nozzle detector to make measurement.



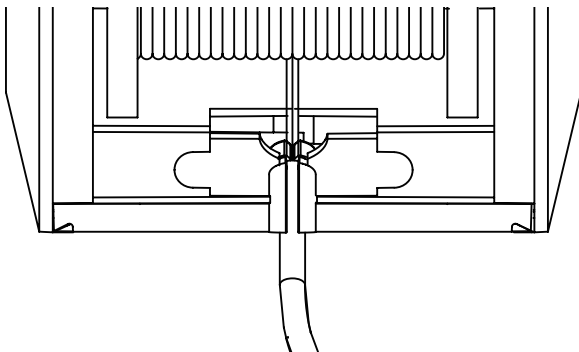
Prepare for Printing - Load Filament 2-1

install the filament and guiding tube shown in blue.

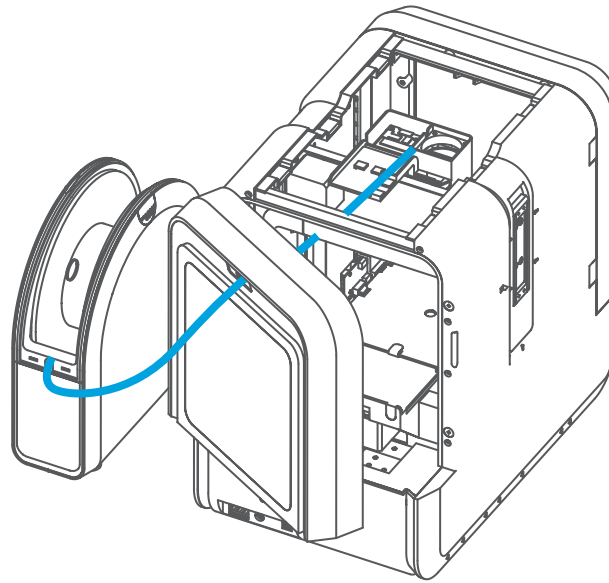


Top View

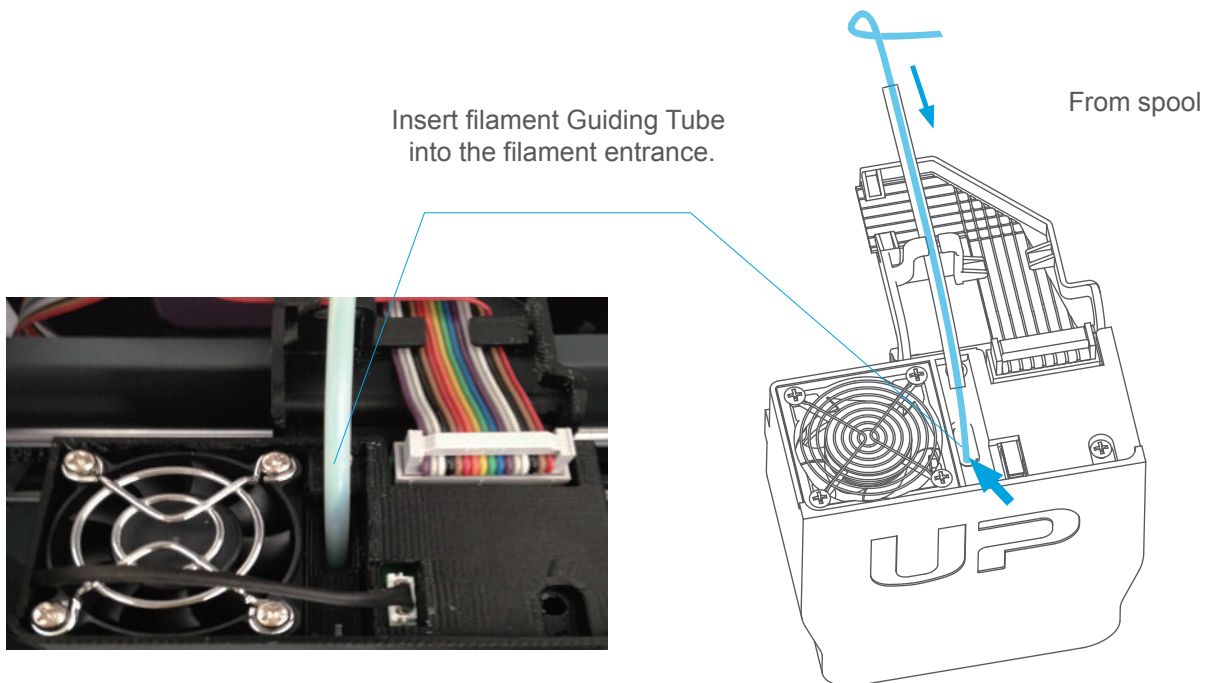
Push the guiding tube into the rubber ring as shown above.



Prepare for Printing - Load Filament 2-2

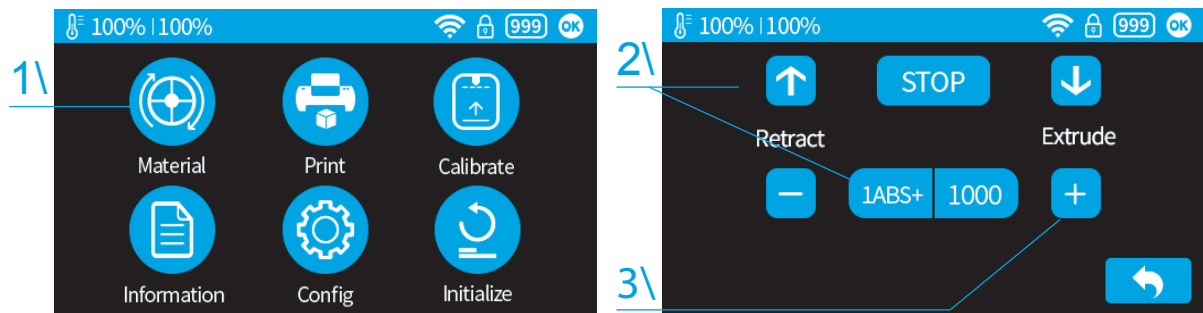


Back Side



Prepare for Printing - Load Filament

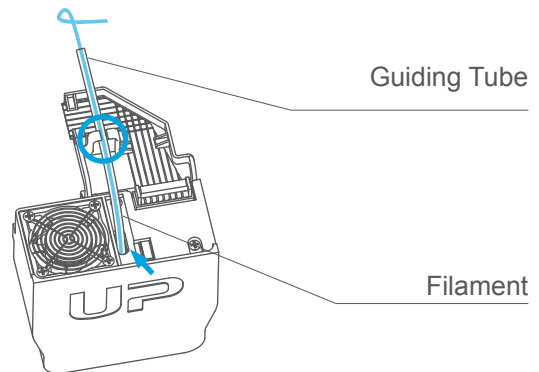
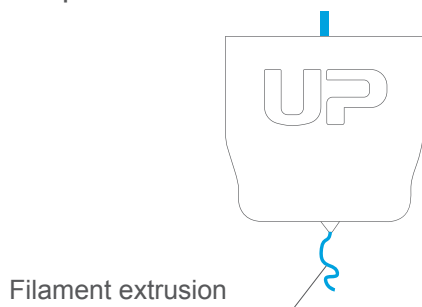
1\ Insert the filament from the spool into guiding tube, arrange the guiding tube as shown in previous page. Press the Material button on the touch screen.



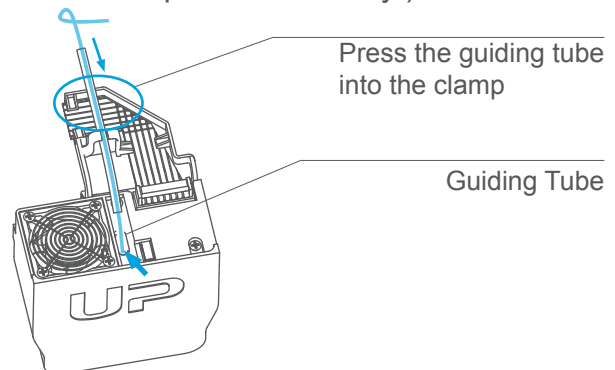
2\ Choose the printing material as ABS by pressing the Wheel button to switch between different materials. Input the filament weight by using the +/- buttons.

3\ Click "Extrude." The print head will start to heat up, within 3 minutes. Its temperature will reach 260°C, then the printer will buzz and the print head will start to extrude.

4\ Gently insert the filament into the small hole on the print head. The filament will be fed into the print head automatically when it reaches the extruder gear inside the print head.

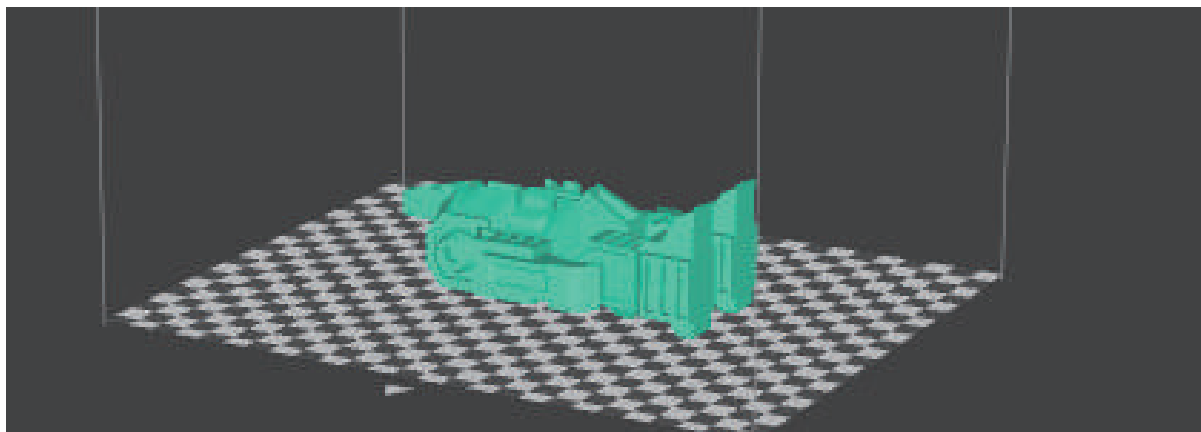
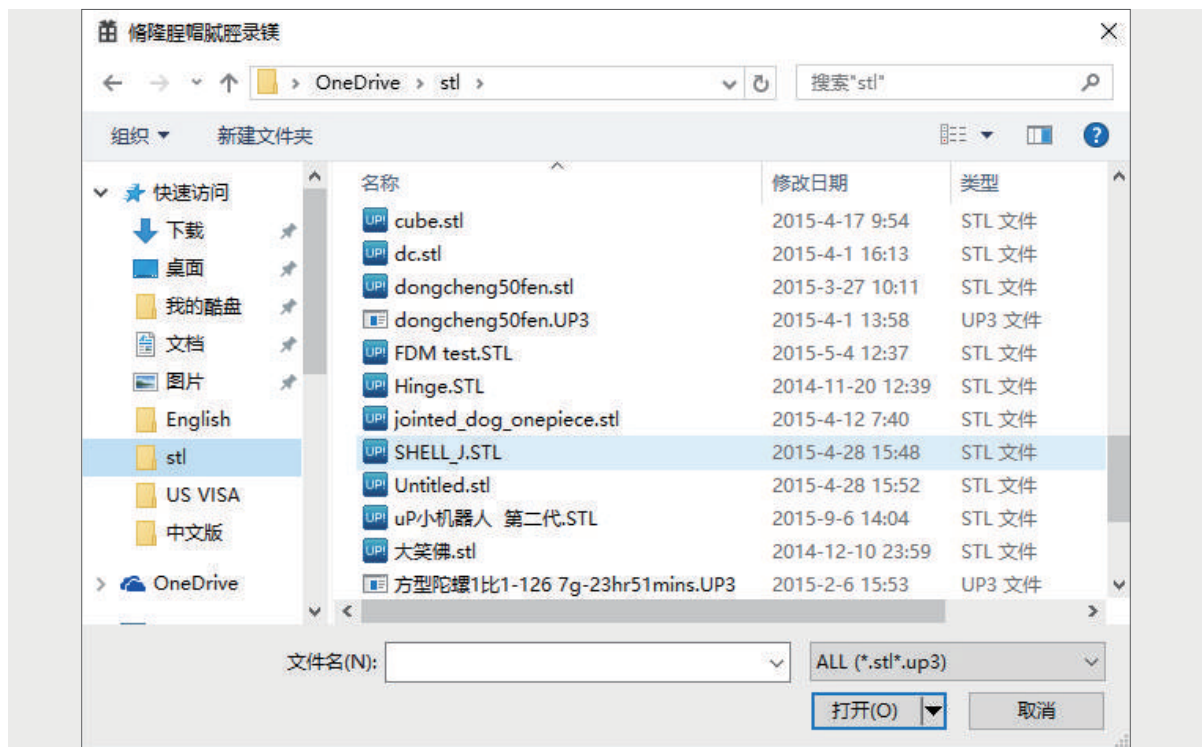


5\ Check the nozzle for plastic extrusion. If plastic is coming out from the nozzle, that means the filament is loading correctly and the printer is ready for printing. (The extrusion will stop automatically.)



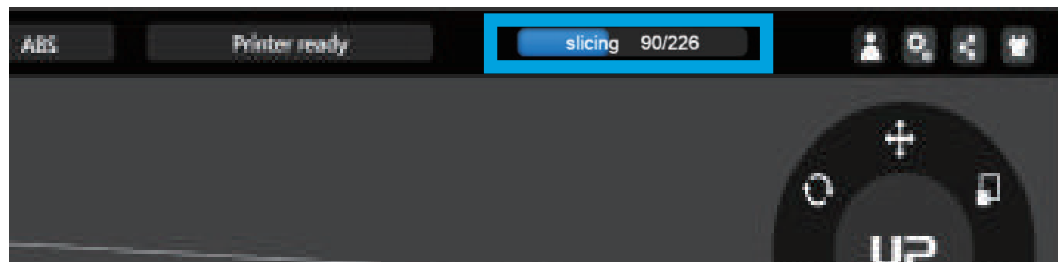
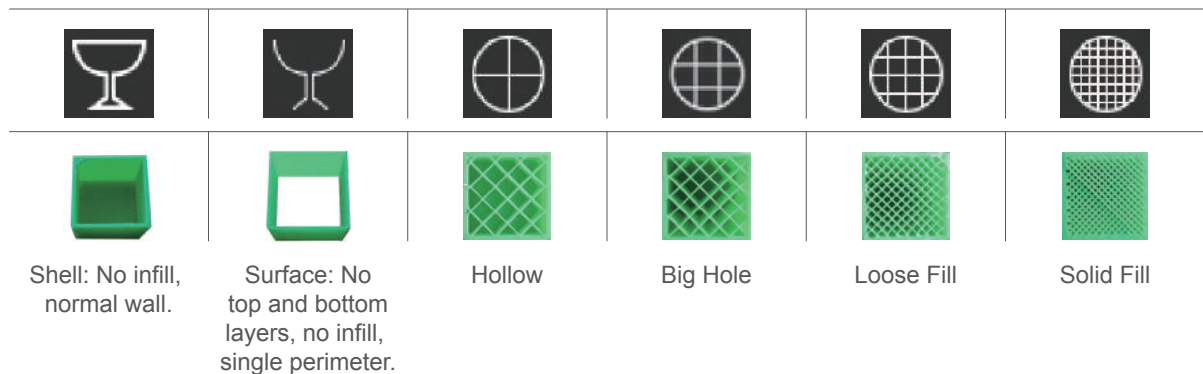
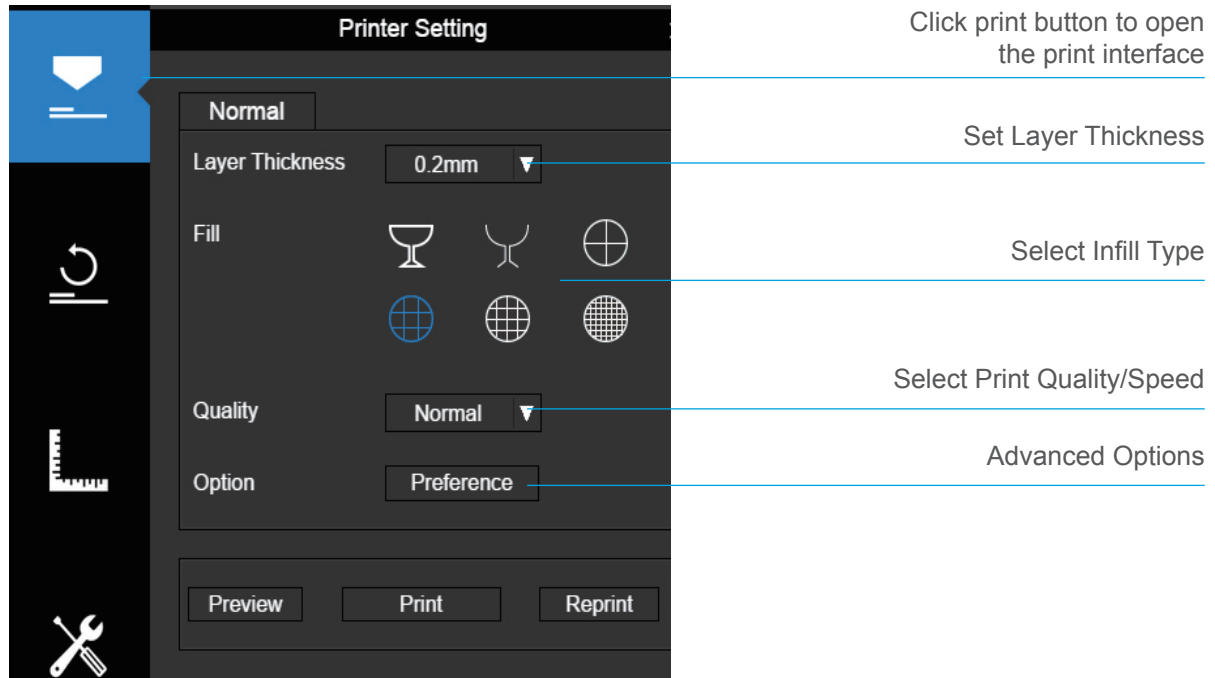
6\ Finally insert the guiding tube into the filament entrance and press the tube into the holding clip on the print head mount.

Loading a 3D Model



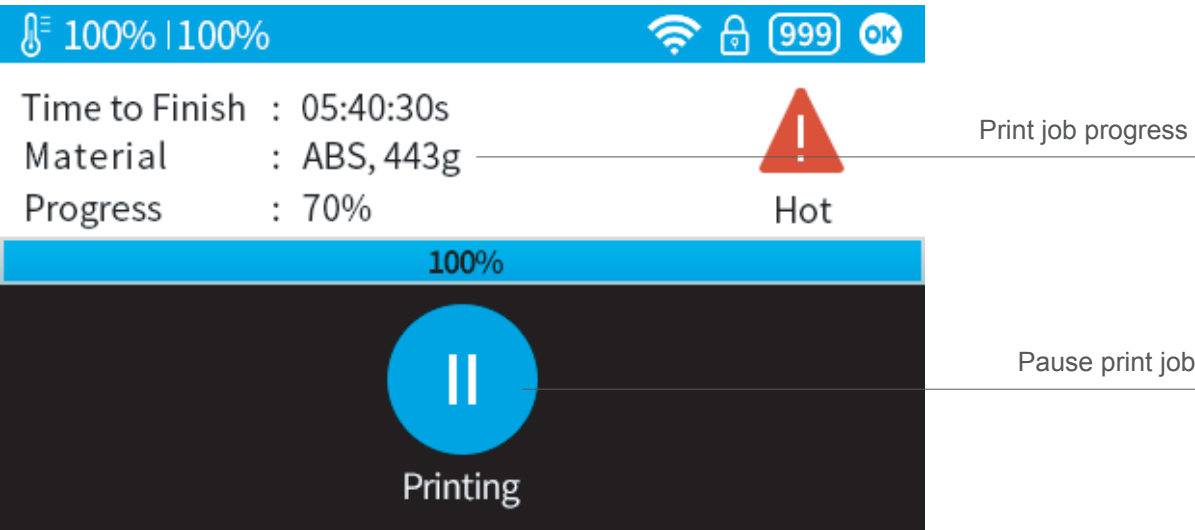
Print a Model

Make sure printer is connected to computer through USB or WIFI (go to page 25 for details about WIFI setting)and loaded a model.

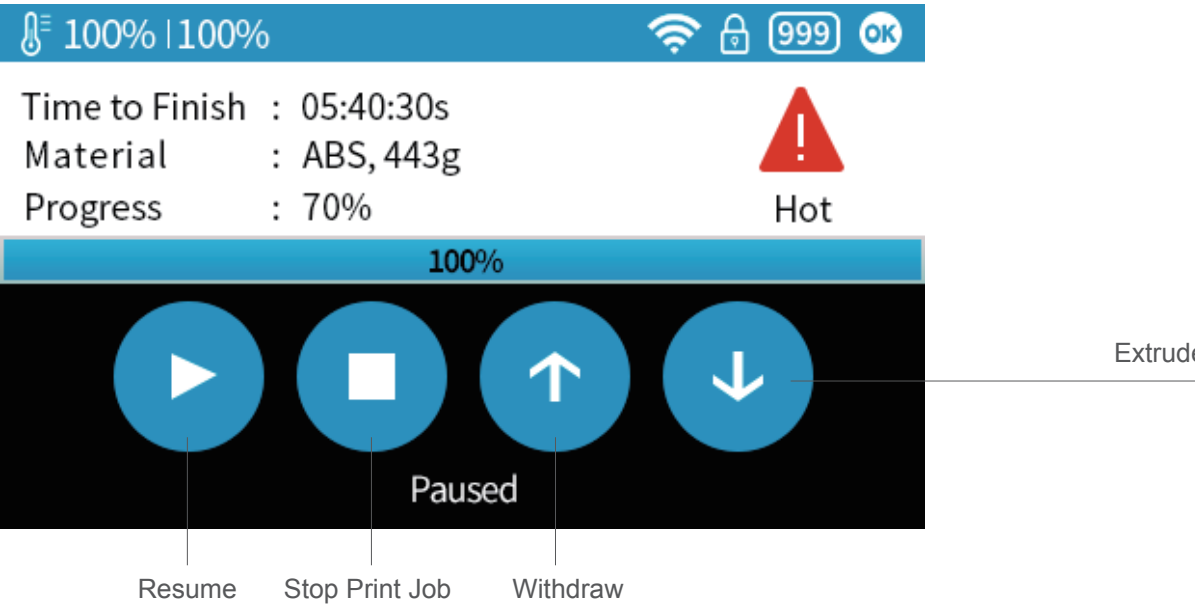


When the UP software is slicing or sending data to the printer, progress displayed on the status bar on top of the software interface. Do not unplug the USB cable as this will disrupt the data transfer and result in a print failure. The USB cable can be unplugged after the data transfer is finished.

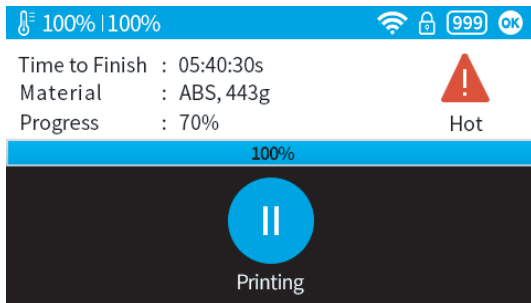
Printing Progress



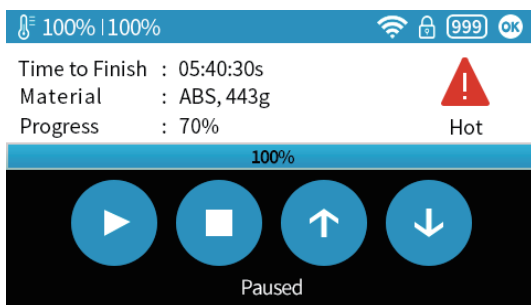
After pressing the pause button, the nozzle will be paused but temperature is maintained at printing temperature. During pausing, the following control buttons will appear to allow users to resume, stop or change filament. Please note the stopping is irreversible, the current print job can only be restarted from beginning.



Change Filament During Printing



1\ During printing process the “Pause” button, the printing job will be paused.



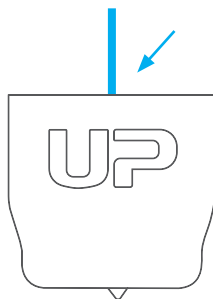
2\ When print head stopped moving and platform lowered. Press the “Withdraw” button to remove filament.



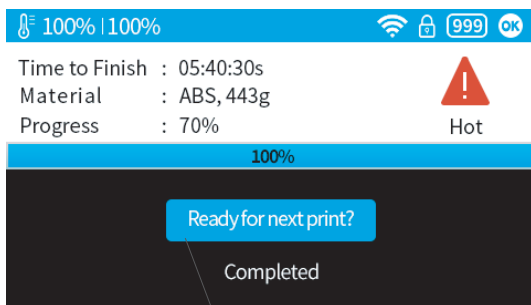
Press the “Extrude button” to load the new filament



Press the “resume” button to resume printing.



After filament has been removed, insert new filament to the print head as described in page 16.



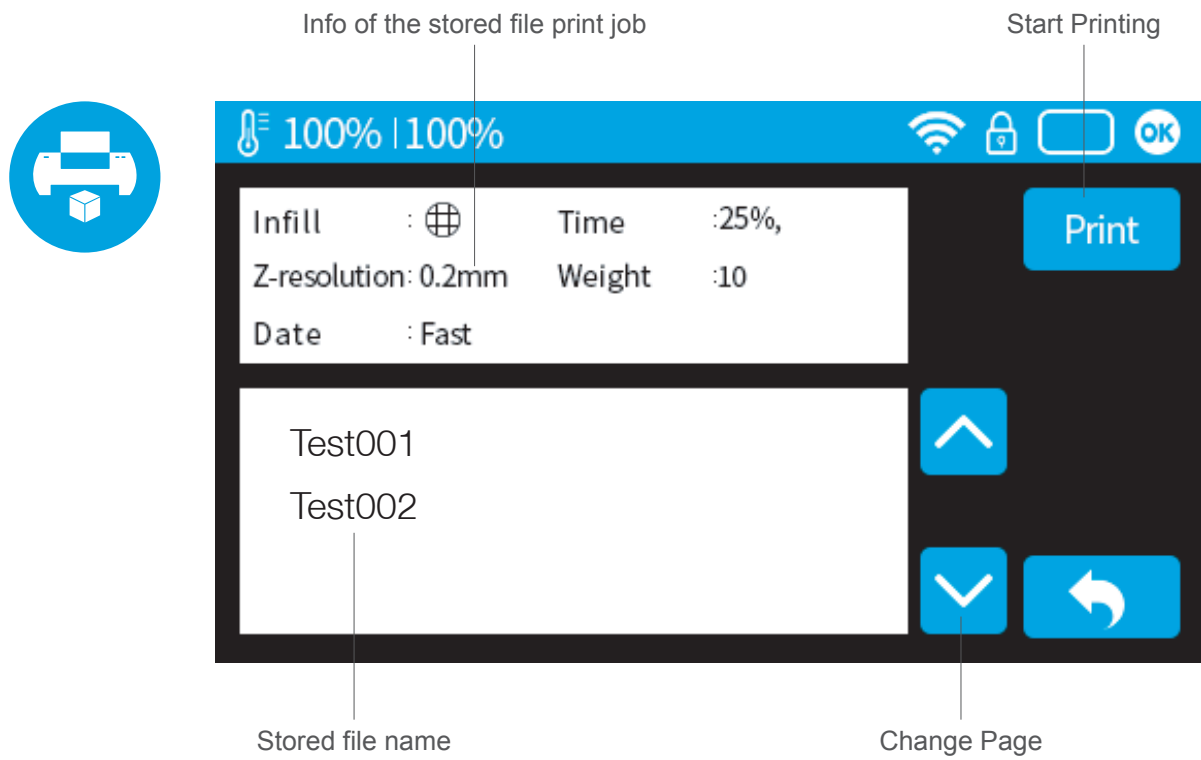
Confirmation button

Print Job Finished

Printer ready confirmation:

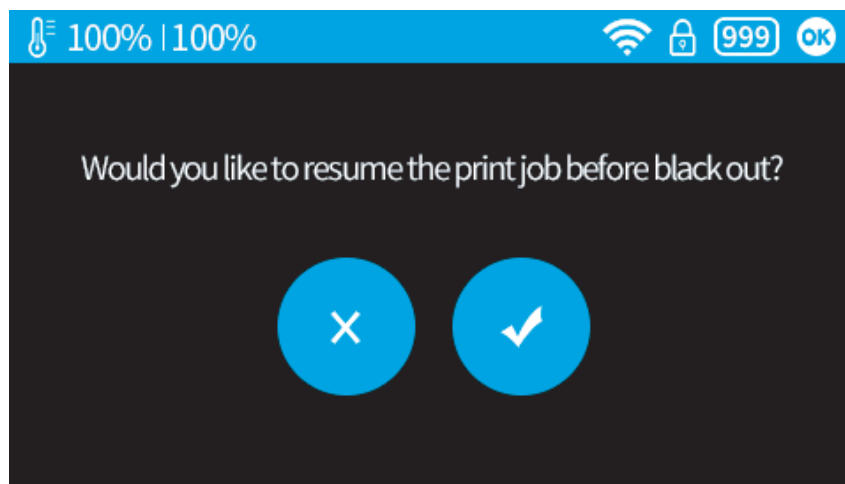
After the print job has finished, the user needs to press the “Ready for next print?” button to confirm the printer is ready. User should make sure the previous print job is removed from the platform before pressing the button. The printer cannot start a new print job if they did not confirm the status.

Reprint or Printing Stored Print Jobs

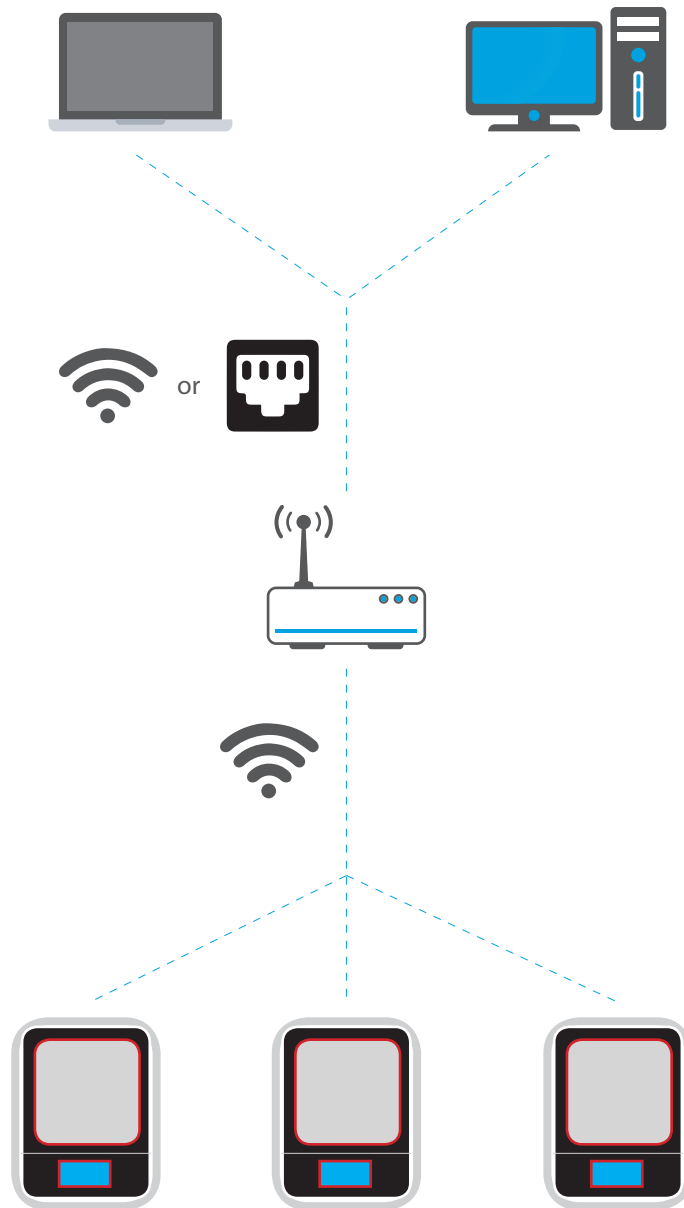


Black Out Recovery

If electricity was cut off during printing, the print job can be continued after resuming power. Do not remove the print job from the platform after the black out. When the machine has been turn on and initilized again. It will ask whether user would like to recover interrupted print job.



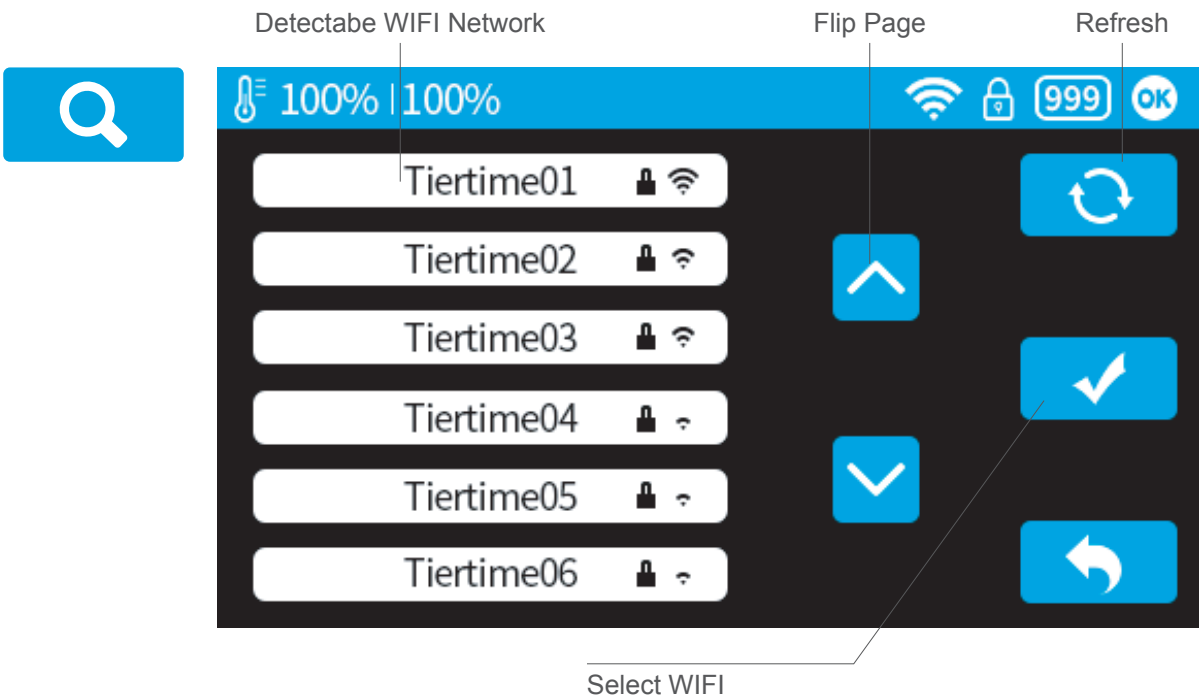
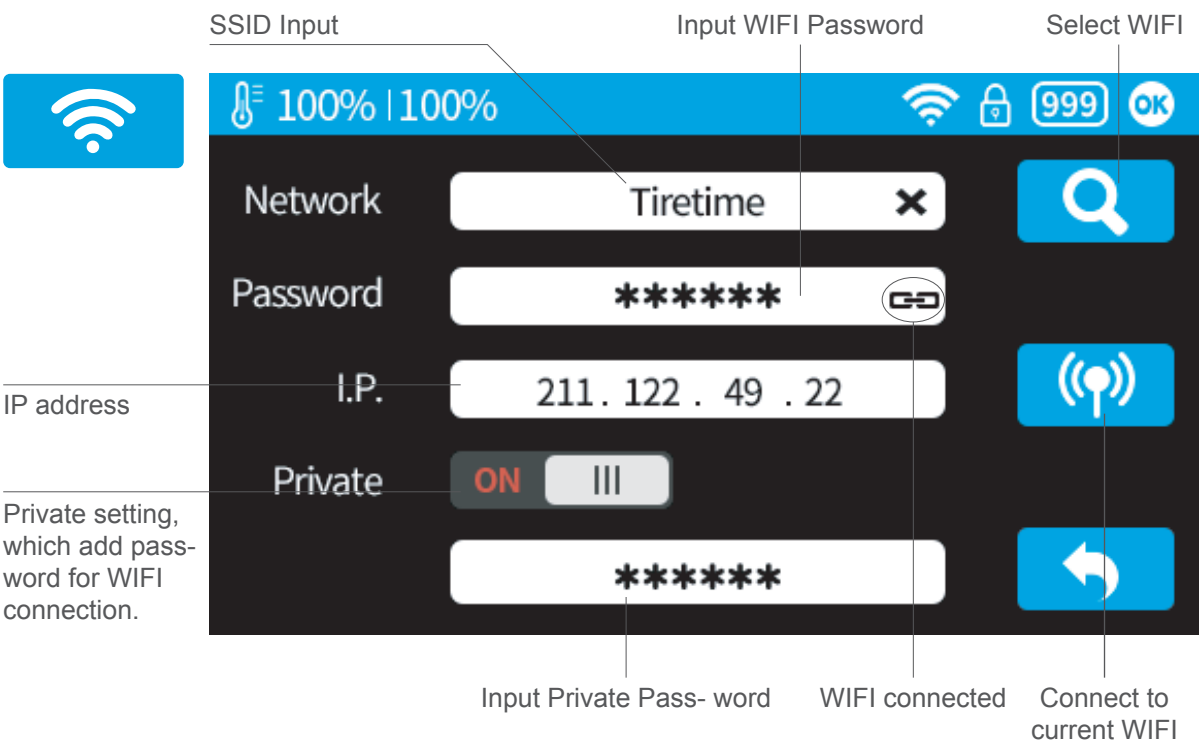
Machine Settings - WIFI Connection



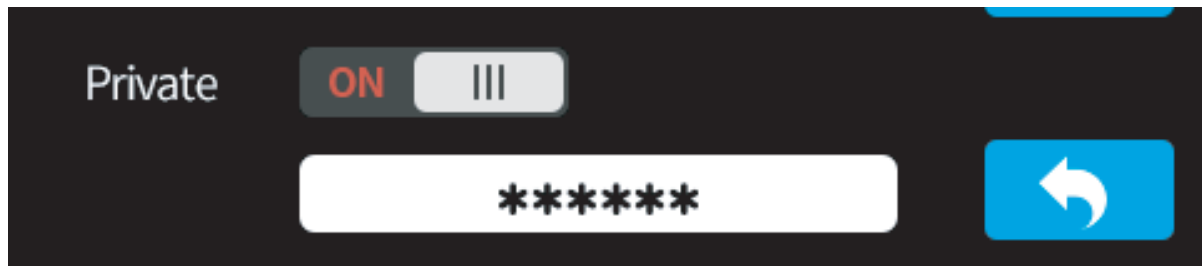
Connecting to the UP mini 2 through WIFI requires a Wireless Local Area Network (WLAN). Computer and printers must connect to the same WIFI network (same SSID) before able to communicate.

In order to achieve stable WIFI connection, users are recommended to connect under a capacious WIFI environment. A crowded network or an area with a large number different networks are known to cause interruption during data transfer.

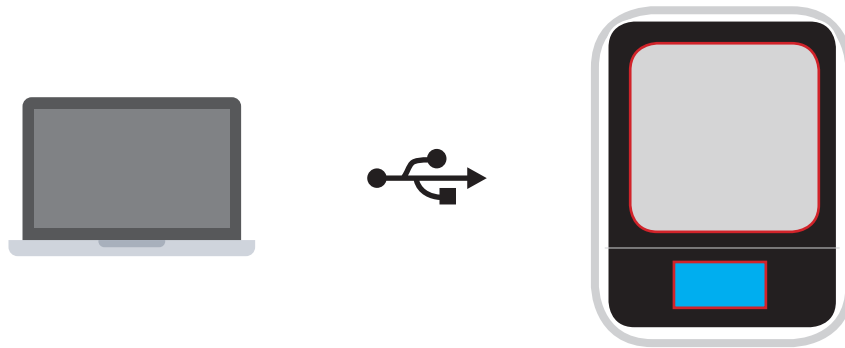
WIFI Setup through Touch Screen.



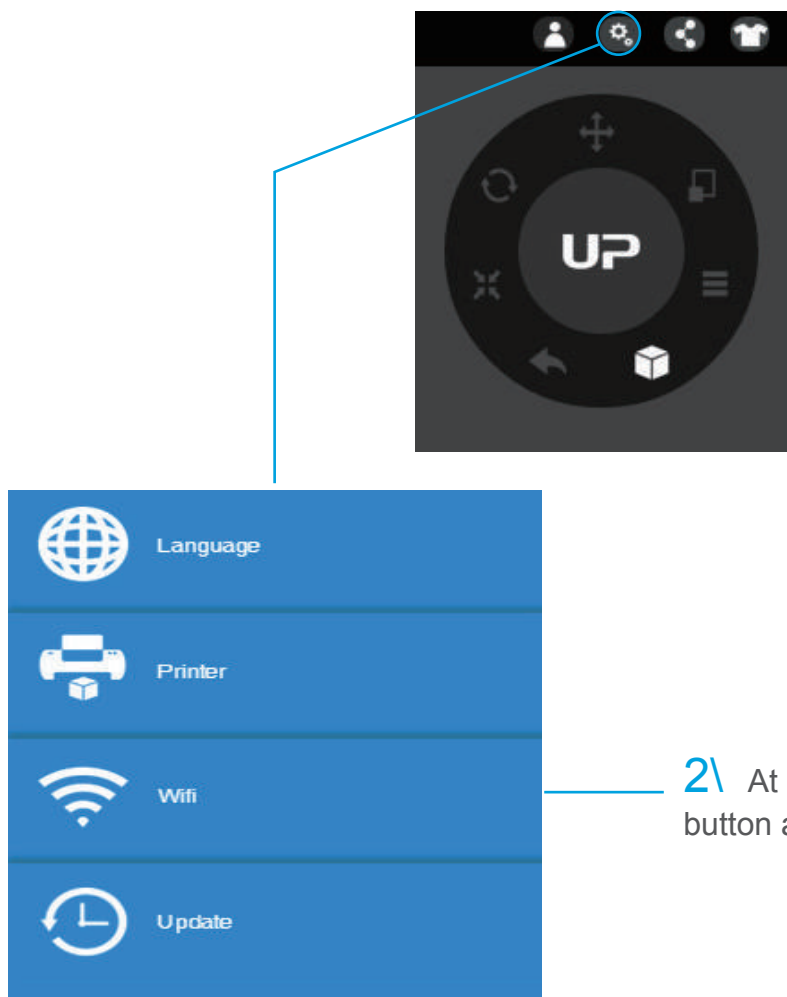
Setup Private WIFI Access



If user switches on the private function in WIFI setting, a password field will appear to allow password setup. This password will be required for WIFI connection to the printer to prevent unauthorized usage through WIFI. Please note this is a weak protection that anyone who can access the printer through USB or touch screen could change the private password.



1\ Connect UP mini to computer through USB.



2\ At top right corner click the setting button and then click WIFI tab.

WIFI Setup (UP Studio)

3-2

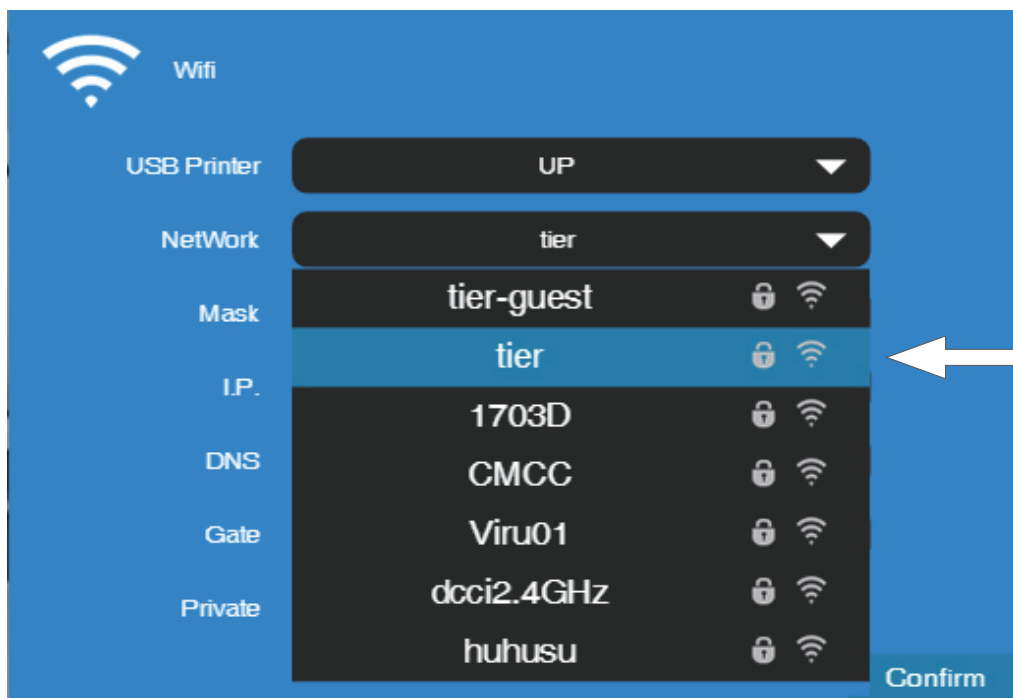
3\ Click network to choose an available network (user can also use touch screen panel to setup WIFI connection).



The screenshot shows the 'Wifi' setup screen with a blue background and a white Wi-Fi icon at the top left. The fields are as follows:

Field	Value
USB Printer	UP Plus 2(A) - 20001043
NetWork	tier
Mask	255.255.255.0
I.P.	192.168.5.155
DNS	0.0.0.0
Gate	192.168.5.1
Private	☐ OFF

A 'Confirm' button is located at the bottom right.



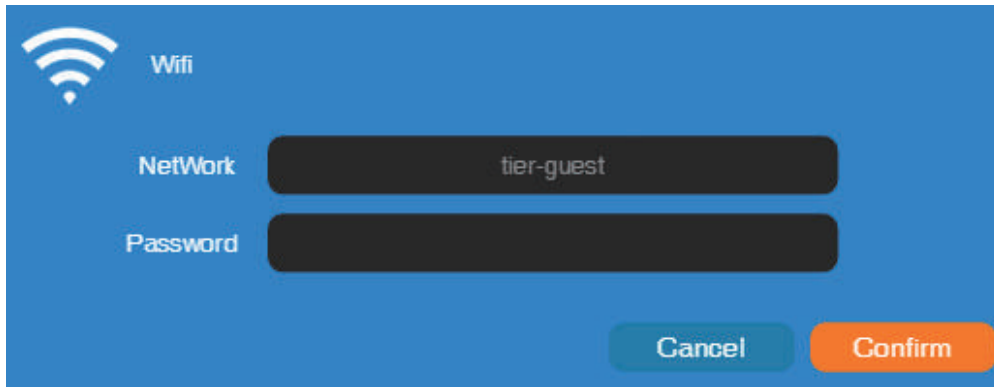
The screenshot shows the 'Wifi' setup screen with the network list expanded. A white arrow points to the 'tier' network in the list.

Field	Value
USB Printer	UP
NetWork	tier
Mask	tier-guest
I.P.	tier
DNS	1703D
Gate	CMCC
Private	Viru01
	dcci2.4GHz
	huhusu

A 'Confirm' button is located at the bottom right.

Choose your network from the drop down list.

4\ Input the password for the WIFI network.



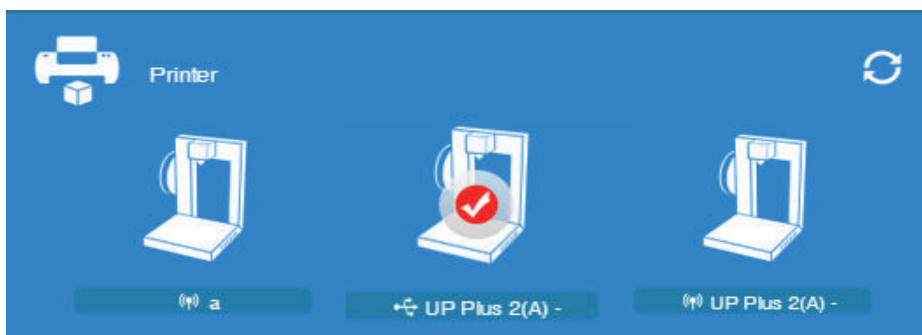
The image shows a blue screen titled "Wifi" with a Wi-Fi icon. It has two input fields: "NetWork" with the text "tier-guest" and "Password" which is empty. At the bottom right are "Cancel" and "Confirm" buttons.

5\ If "Private" is set to ON, a private password could be optionally added to limit printer WIFI access to trusted users. Please note that the password is a weak protection that can be accessed and changed by anyone who can connect the machine through USB.



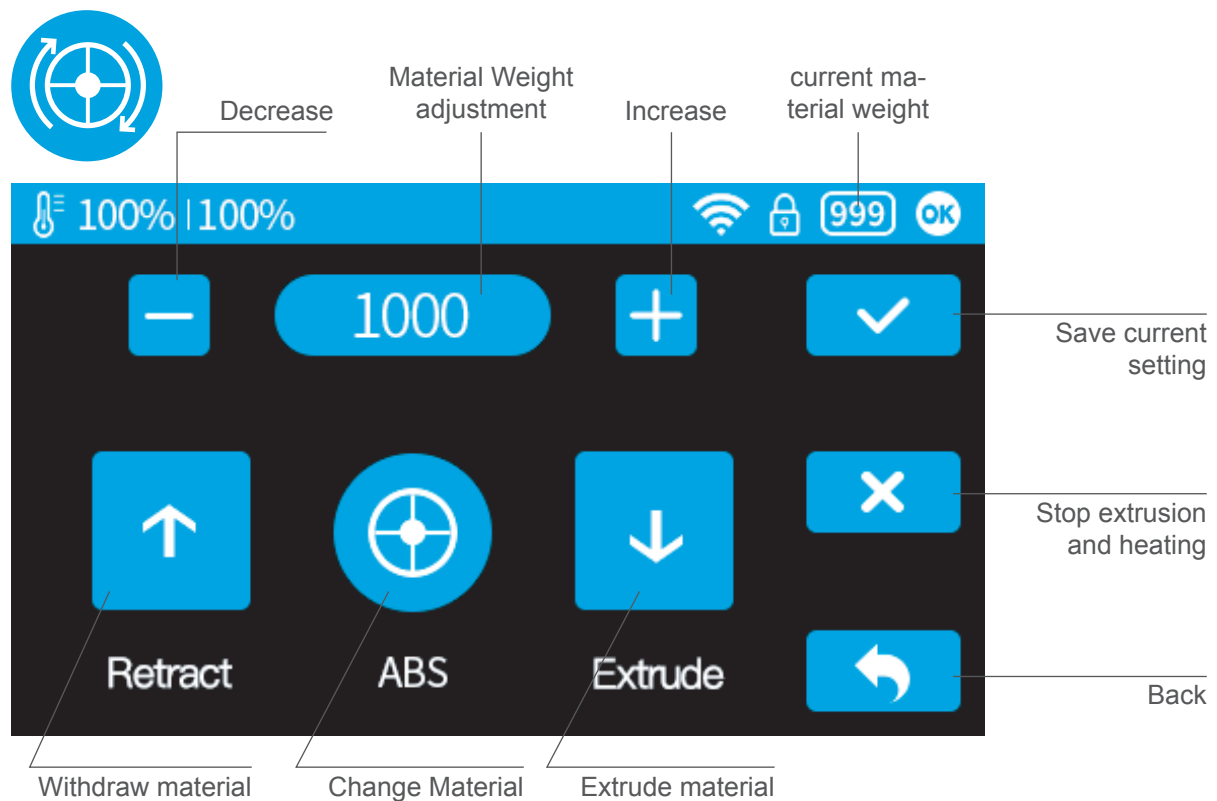
The image shows a blue screen with a "Private" toggle switch set to "ON" and an empty "Password" field.

6\ Printer Tab

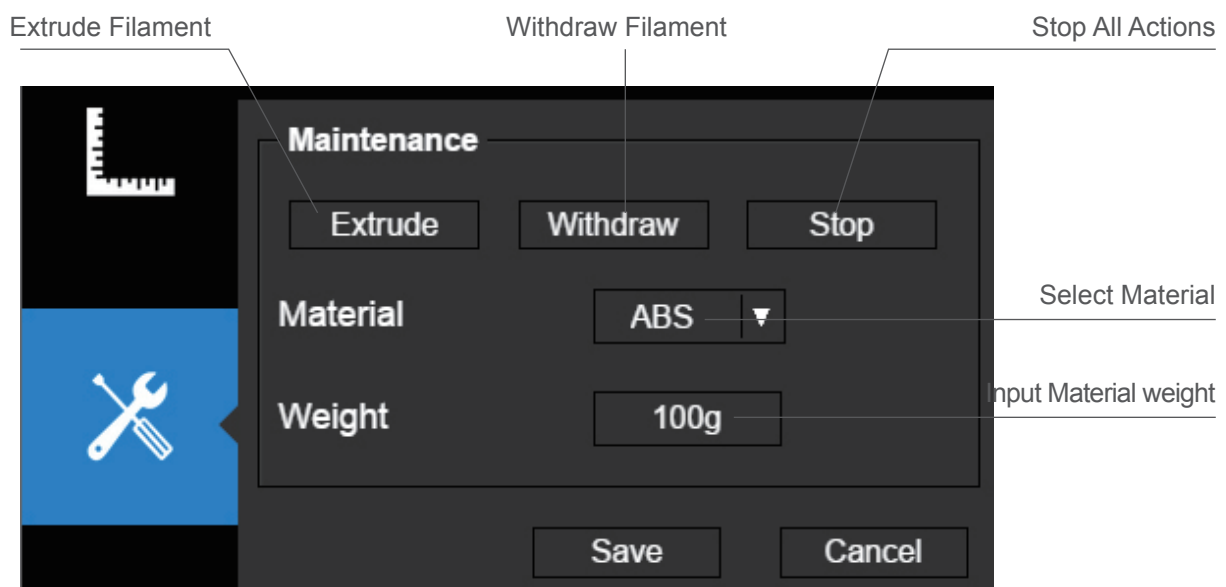


Disconnect USB and choose available printers on the network to operate through WIFI.

Set Materials (Touch Screen)

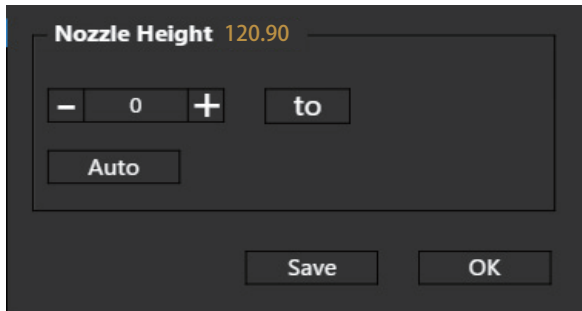


Set Materials (UP Studio)



Set Nozzle Height (UP Studio)

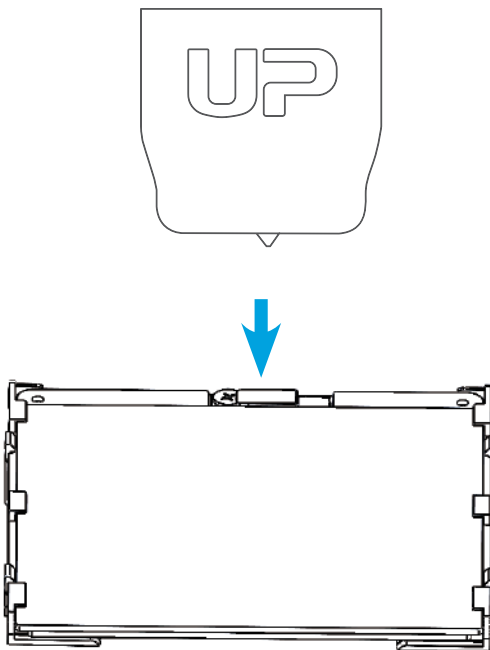
For setting nozzle height with touch screen please refer to page 14.



Open the Calibration panel

At the Nozzle Height section, click “Auto”, which will initiate the automatic nozzle height detection process.

Clicking +/- button will move the platform up and down, or user could input a specific value in the text field and click “To” button. This will move the platform to a specific height. Click save will replace nozzle height value with current platform height.



During nozzle height detection, the print head nozzle will touch the thin metal tab on the detector to make measurement.

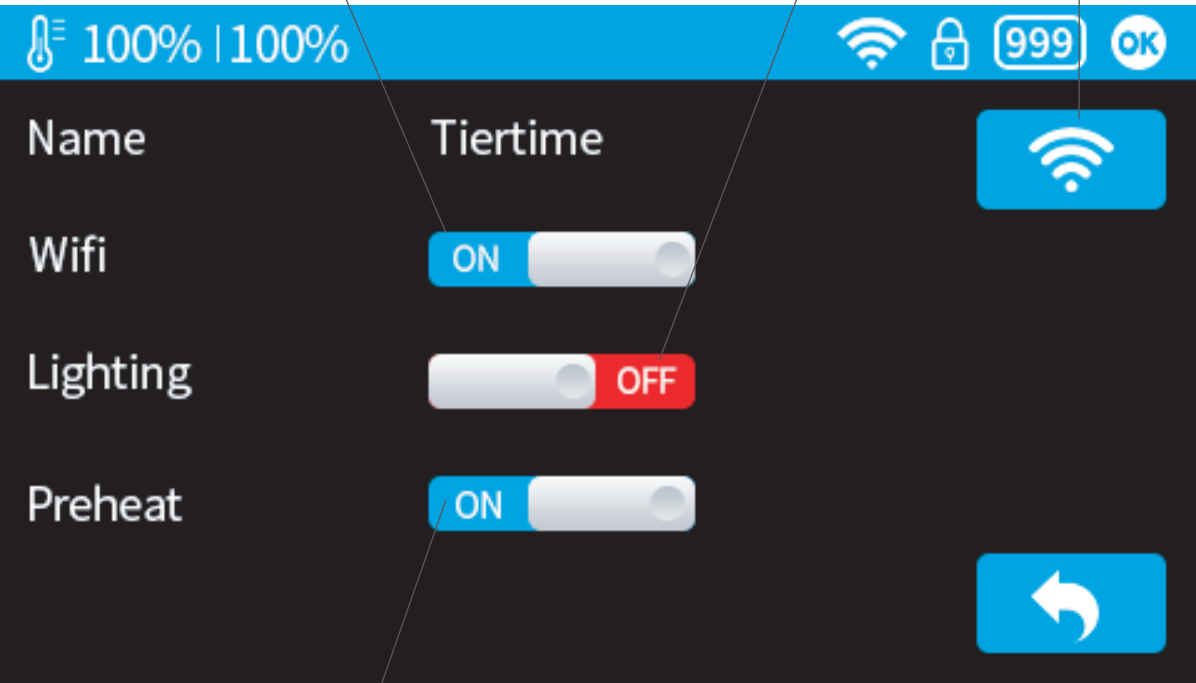
Machine Configuration



WIFI switch, if switched off the WIFI setting button will not appear.

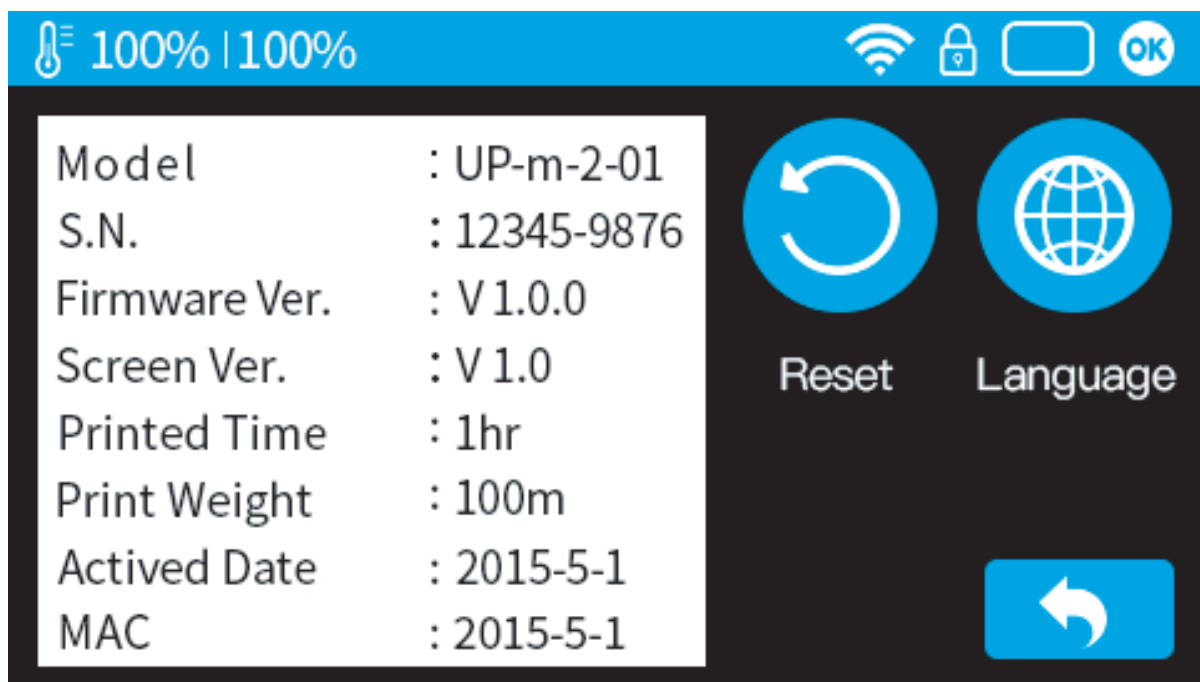
internal lighting switch

WIFI setting button



Preheat switch, when turned on, for every print job, the printer will first preheat 15min before proceed to printing.

Language and Factory Reset



Model: current machine model

S.N.: machine serial number

Firmware Ver: shows current firmware version

Print Time: total print time count

Print Weight: total print weight count

Activated Date: the date of printer activation MAC: mac address of printer

Reset: revert to factory setting. This will change some machine setting to default; remove total printed time and weight data.

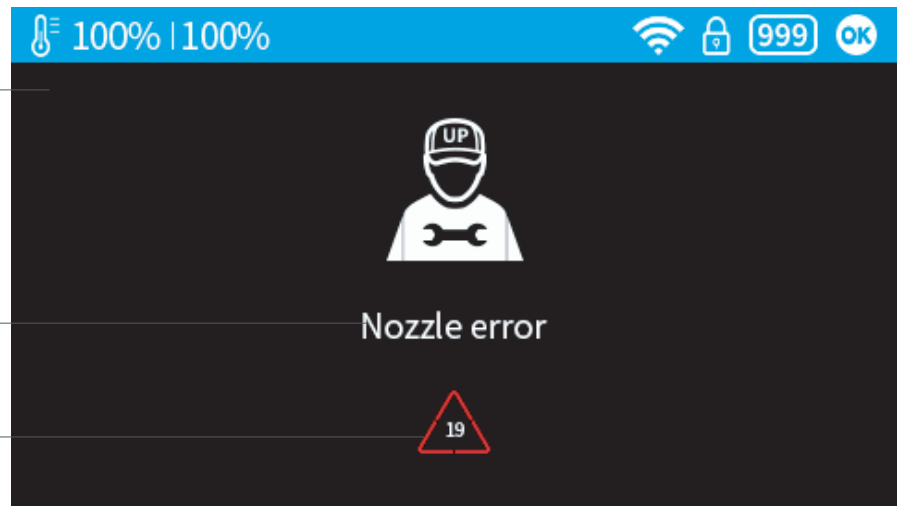
Language: choose language. Current available language: Chinese simplified, Chinese Traditional, Korean, Japanese, French, Germany, English

Error Prompts

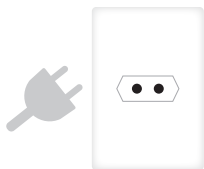
Suggested solution,
in this case:
Contact support

Error Message

Error code



Other possible error prompt:



Unplug printer and restart



reinitialize the printer

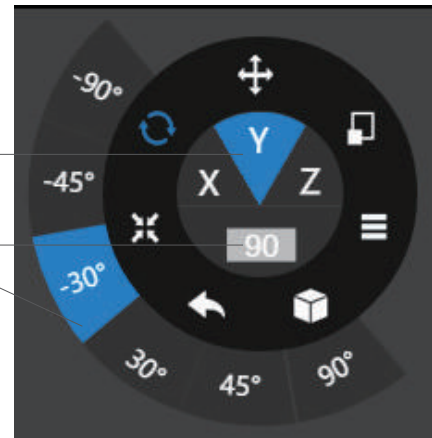
Rotating Models (UP Studio)

Choose the model and Click scale button.

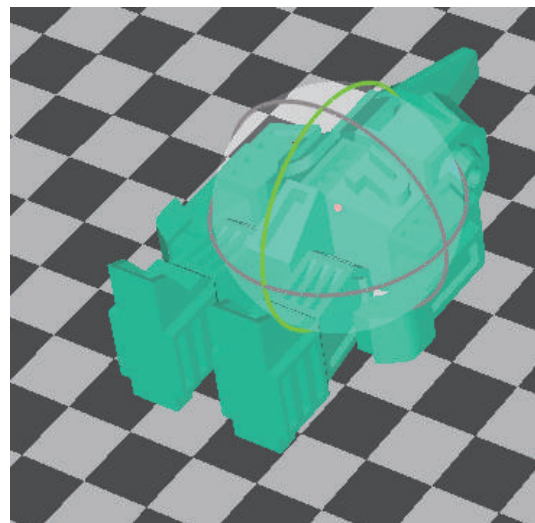


Choose rotation axis

User could input a specific value or choose a preset value for rotation.



Alternatively, user could use the rotation guide to rotate model in real time by holding and dragging with mouse.



Scaling Models (UP Studio)



Choose the model and Click rotate button.

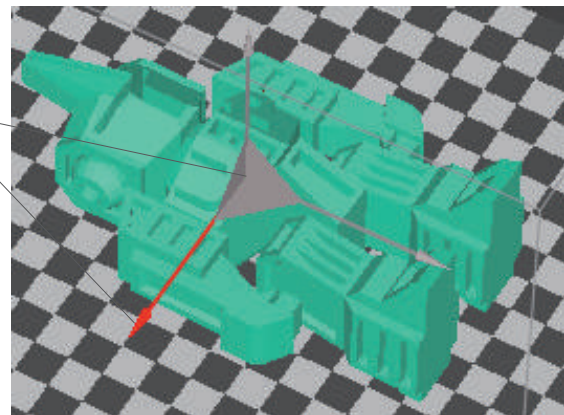
By default the scaling is in all axes.
User could also choose a specific axis for scaling.

User could input a specific scaling
factor or choose a preset value



Click MM or INCH to convert models to
sizes of corresponding units.

Alternatively, user could use the scaling guide
on the model. User could scale
in a specific axis or scale in all directions
by hold and drag with mouse.



Move Model (UP Studio)



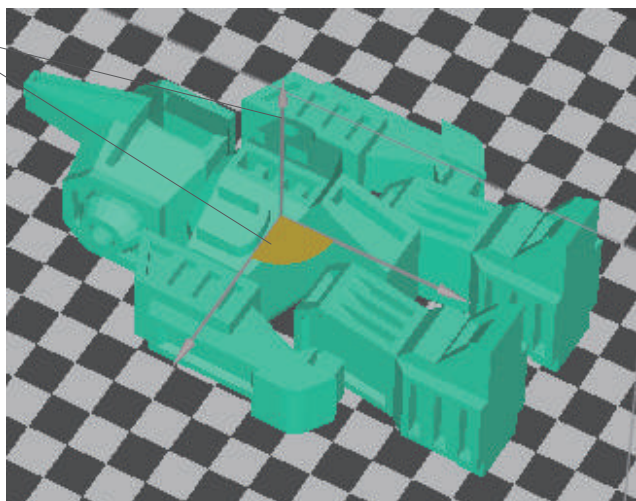
Choose the model and click the Move button.

Choose the the direction of movement

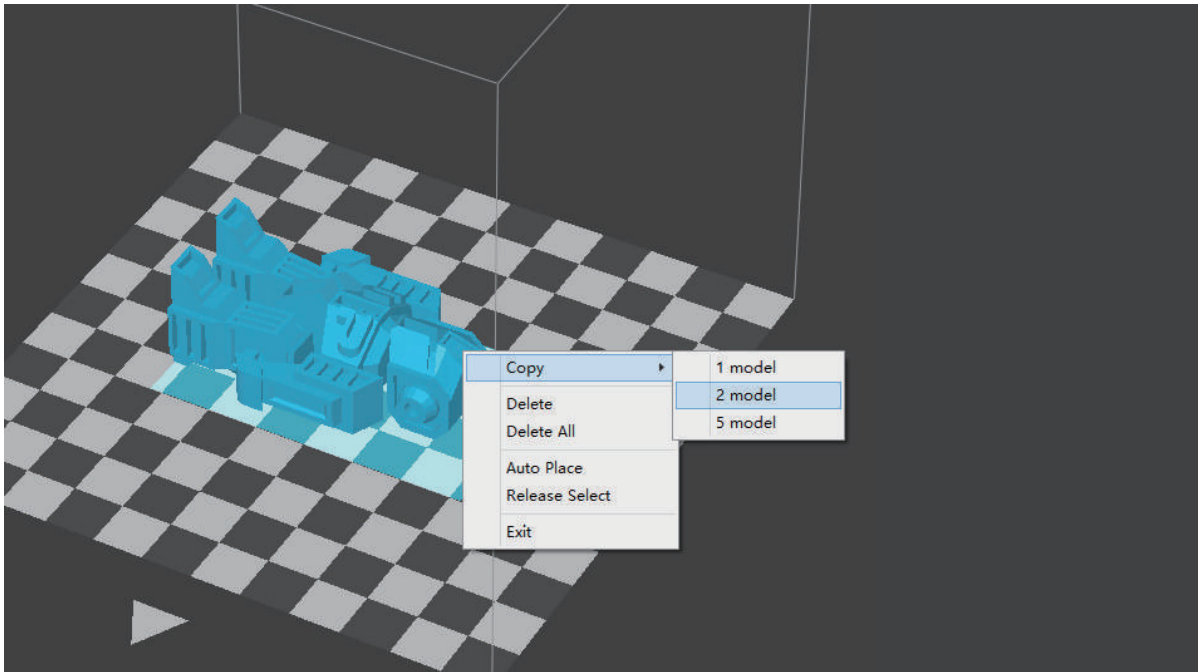
User could input a specific value or choose a preset value for distance of movement.



Alternatively, user could use the translational guide on the model to move on the X-Y plane or a single direction by hold and drag with mouse.



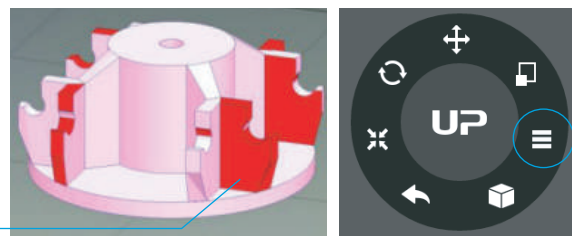
Make Copies



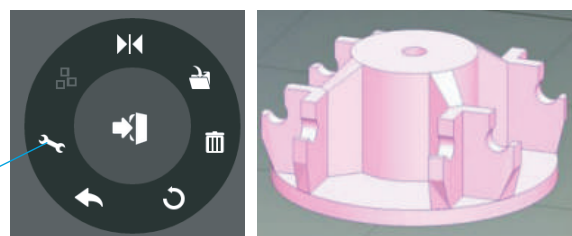
Select the model by clicking it (highlighted), then right-click to bring up the menu and select copy number.

Repair A Model

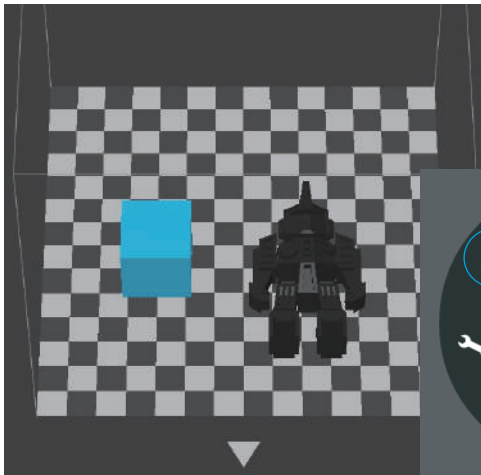
1 If the model contains defective surfaces, the software will highlight the surfaces in red. Click the "more" button to reach second level menu



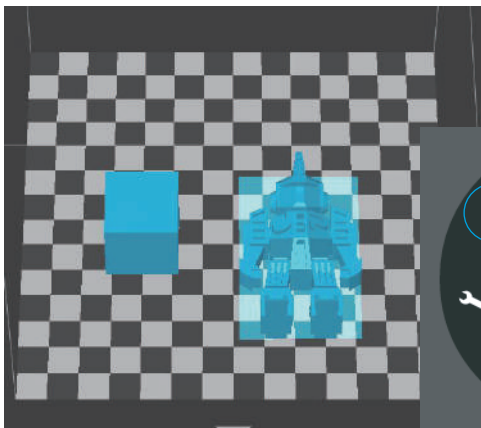
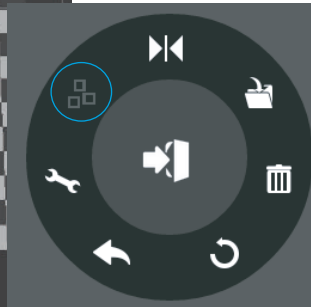
2 Click the fix button to repair the model. The red defective surfaces will resume a normal color when repaired.



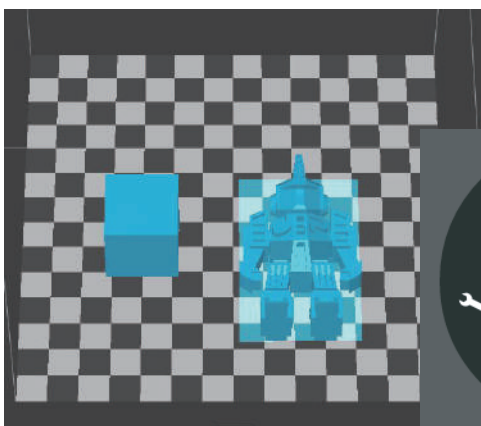
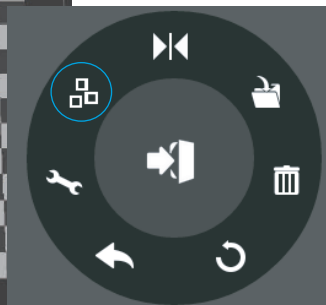
Merge and Save Models



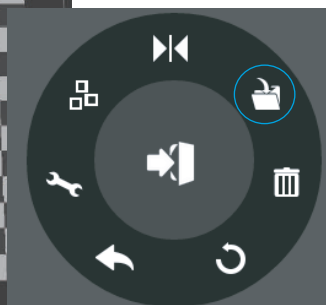
1\ Ctrl/CMD click all the models on the build plate.

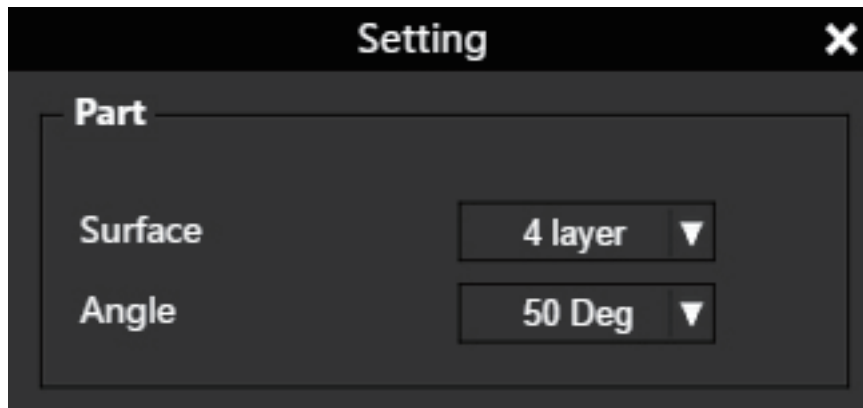


2\ The Merge button on the second level of the adjustment wheel will become available, click to merge the models.



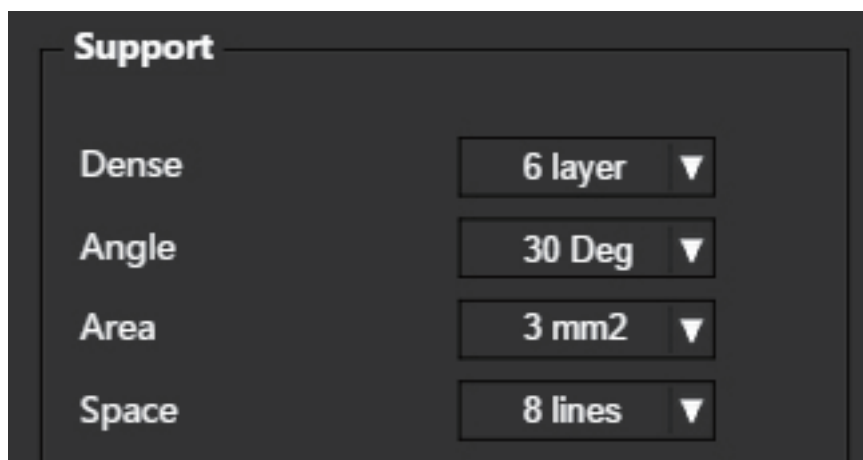
3\ Click the save button to save the merged models to computer.





Surface: the number layers at the sealing the top and the bottom of the printed object.

Angle: This determine at which angle the Surface layers start to be printed.



Dense: Choose the number of dense layers between support and supported surfaces.

Angle: Determine the angle which support and dense layer to generated.

Area: Determine the minimal area of surface that will be supported, area less than this vaule will not be supported.

Space: Determine how desne the support will be, the larger the value the less dense of the support.

No Raft	☐
No Support	☐
Stable Support	☐

No Raft: print without raft.

No Support: print without support

Stable Support: Support structure will be stronger but less easy to be removed.

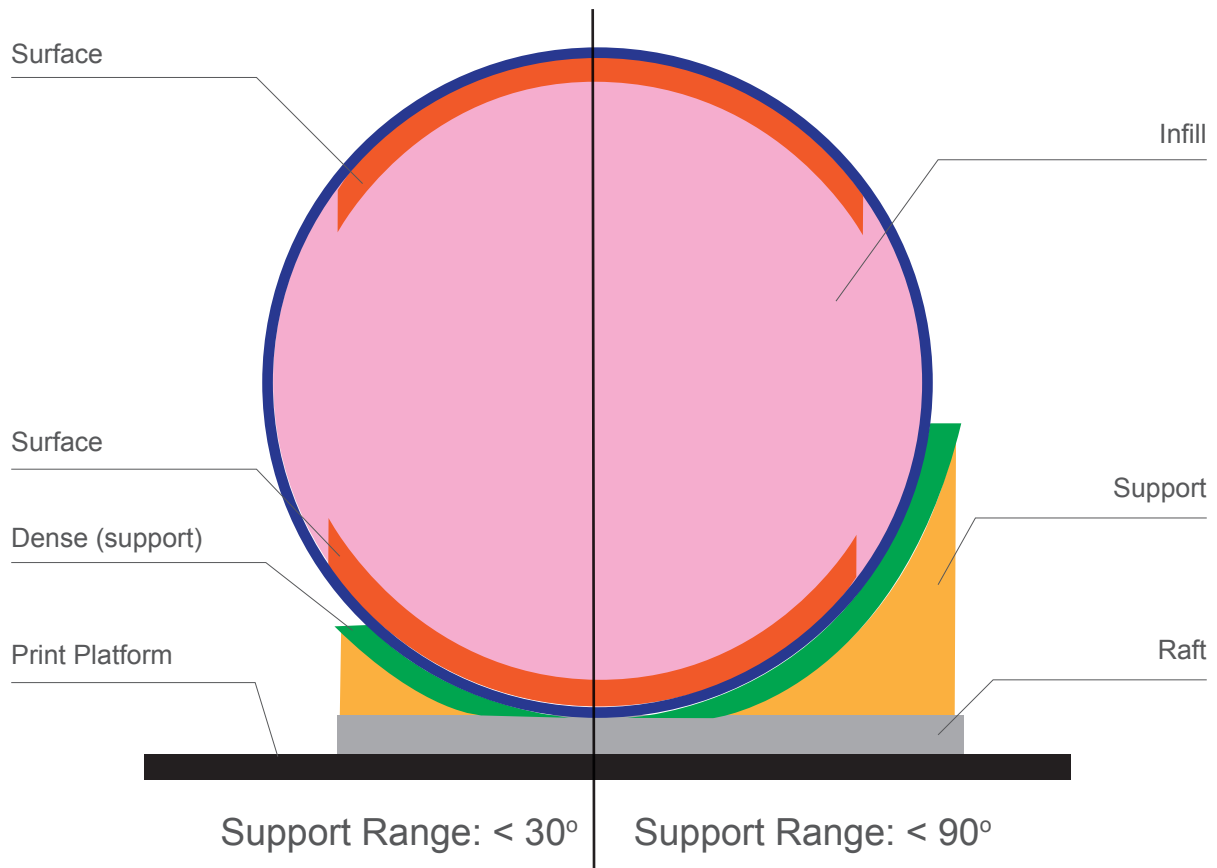
Others	
Unsolid Model	☐
Thin Wall	☐
Preheat	☐

Unsolid Model: The software will autofix nonsolid models

Thin Wall: The Software will detect wall thickness that is too thin to print and expand the feature to a printable size.

Preheat: Preheat to target temp, or for 15 mins maximum.

Printing Parameters



Dense: Solid support structure ensures that the surface being supported retains its shape and surface finish.

Infill: The inner structure of the printed object. The density of the infill can be adjusted.

Raft: The thick structure that assists with the adhesion of the object to the platform.

Surface: The top and bottom layers of the printed object.

Manual Calibration

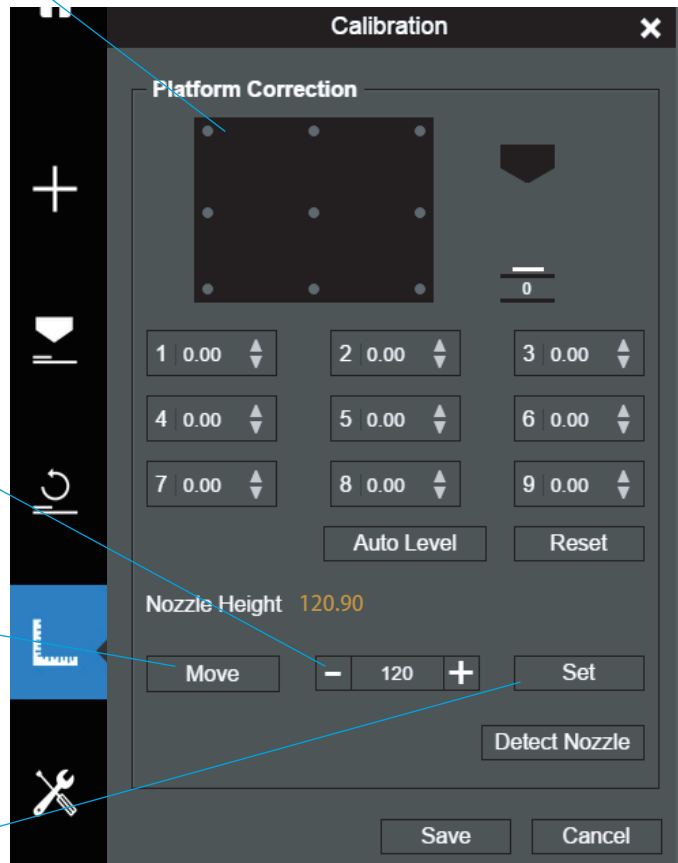
The 9 buttons represent platform calibration point.

The dropdown menu beside the button is for setting the leveling compensation values. After checking the leveling check box and clicking these buttons, the nozzle will move to the corresponding positions and move up based on the compensation value.

Moves the platform up/down: click the +/- buttons to move the platform up and down.

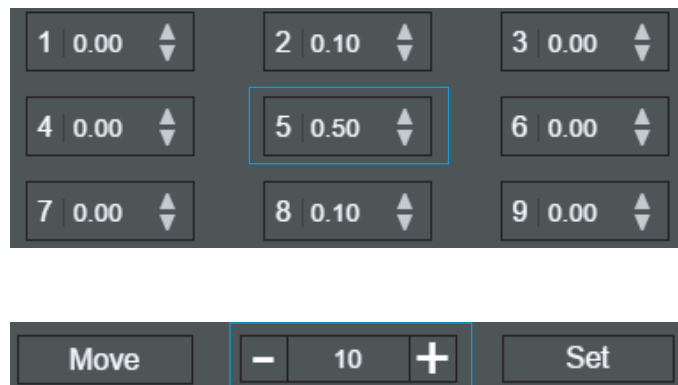
For sending the platform to a specific height, input the value in the text field between + and - and then click "Move" button.

Click "Set" button to save currently platform height as nozzle height.



So if user click the 9 buttons, the printhead will move to corresponding position and platform will move to a height that equal to "value in the text field" PLUS the "compensation value"

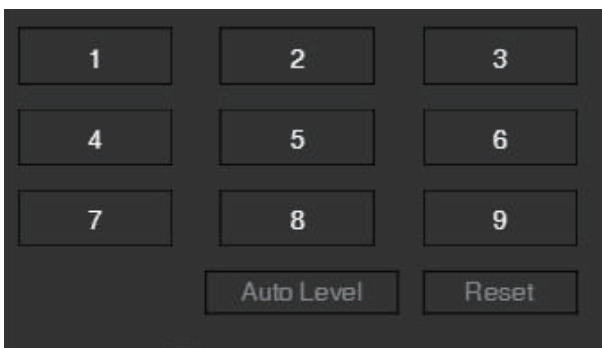
For example, high lighted button 5 has a compensation value of 0.5 and the text field has a number of 10, so when click button 5 the platform will go to 10.5mm.





1\ Initialize the printer

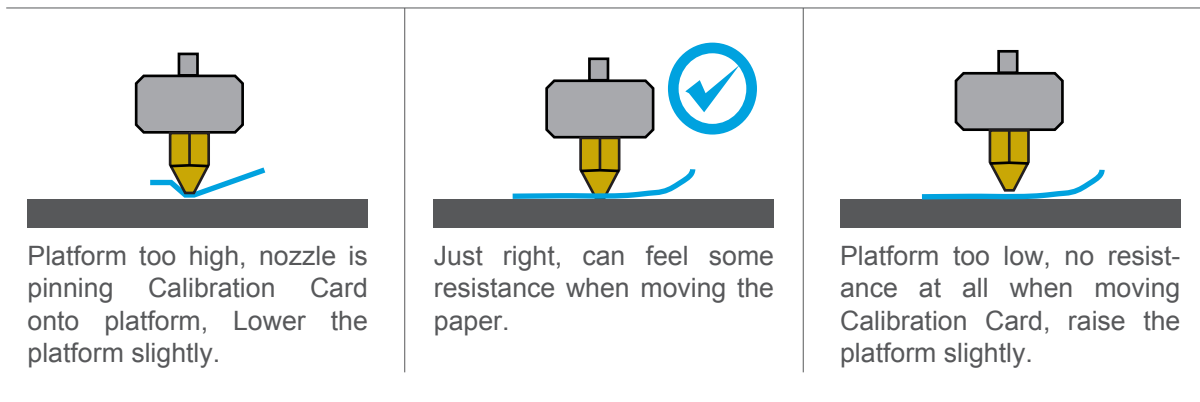
2\ Put a Calibration Card on the platform.



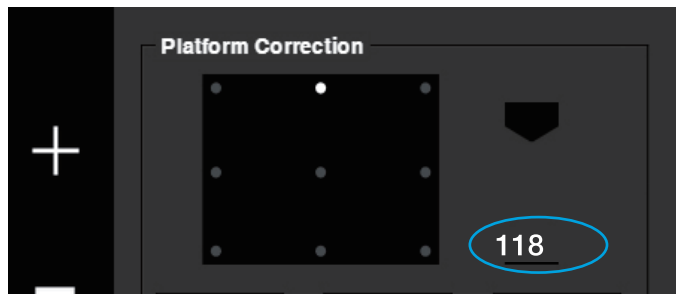
3\ Move print head to the middle of the platform by click 5.



4\ Raise the platform until it is just touching the nozzle. Move the Calibration Card between the nozzle and the platform to see if there is any resistance.



5\ When the ideal platform height is obtained, record the platform height value. Repeat steps 1–5 for all of the other eight positions and note their platform height values.



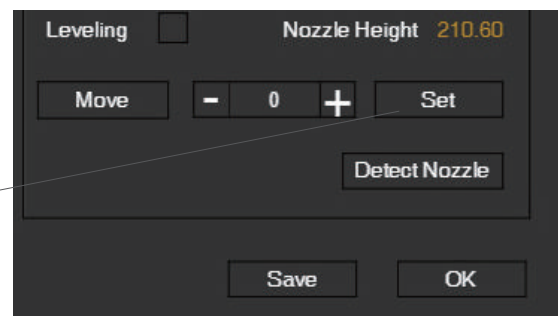
6\ When you have obtained the platform height values for all nine positions, find the **lowest value** among all the values.

In this example, the first calibration point has the lowest value and is thus the highest point on the platform. (The highest point of the platform require minimum amount of travel to reach the nozzle).

Platform Values at 9 calibration points (hypothetical):

1: 118	2: 118.5	3: 118.7
4: 118.6	5: 118.9	6: 119
7: 118.8	8: 118.9	9: 118.8

7\ Move the platform to the position with lowest platform height value as determined in Step 6 and click the "Set" button. This will set this point as the "Nozzle Height".

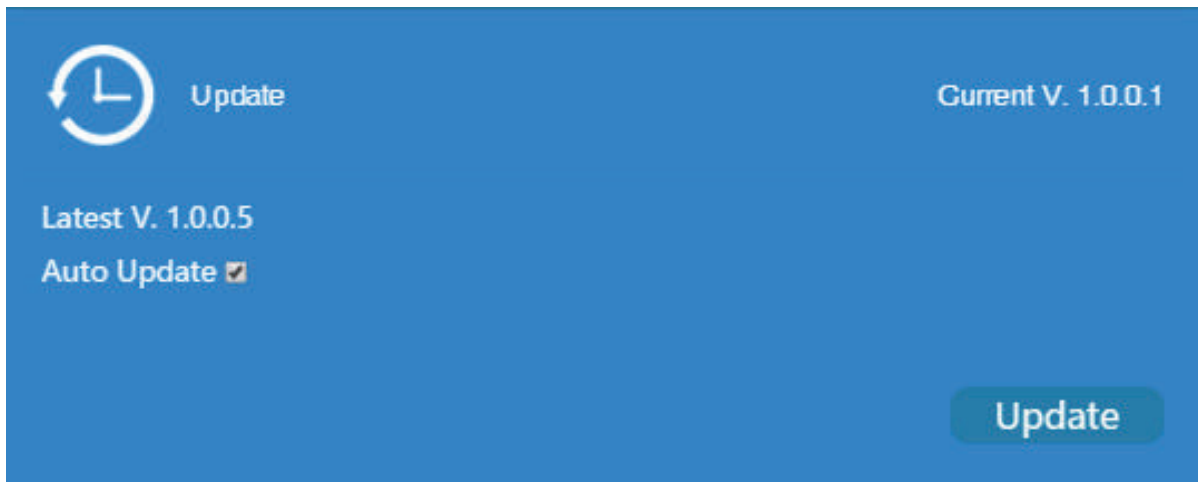


Printer Info



Printer info will be displayed by clicking the small button on the top left hand corner of the connected printer icon. Information including printer type, serial number and firm-ware version will be displayed. User could also set a custom name for the printer in the name field.

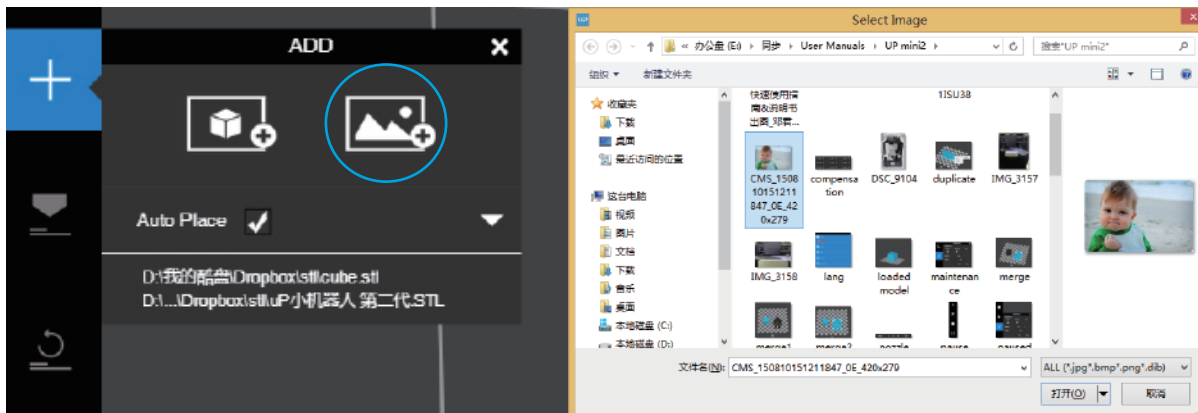
Software Version and Update



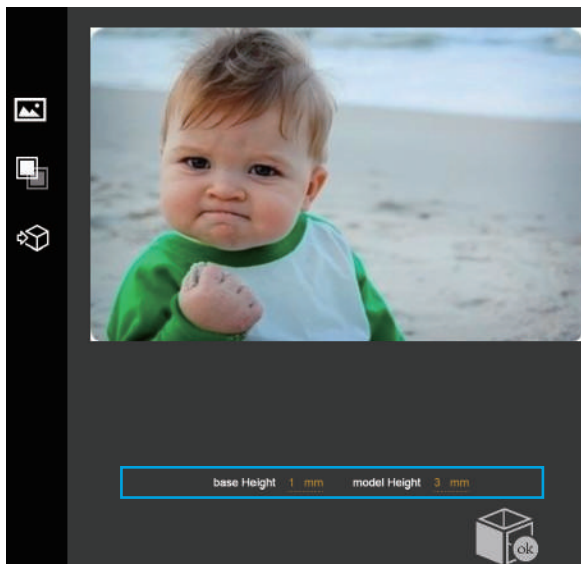
Check Auto Update to allow the software to inform user the latest version.

Convert Picture Into 3D Model

2-1

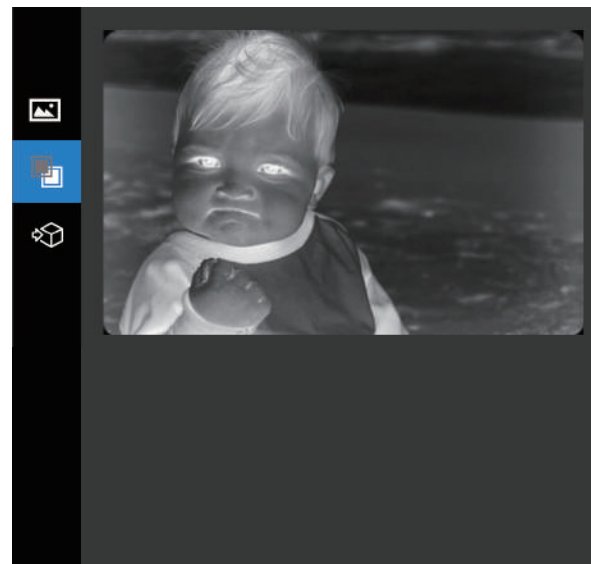


Click add picture button and select a picture.

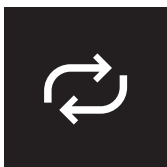
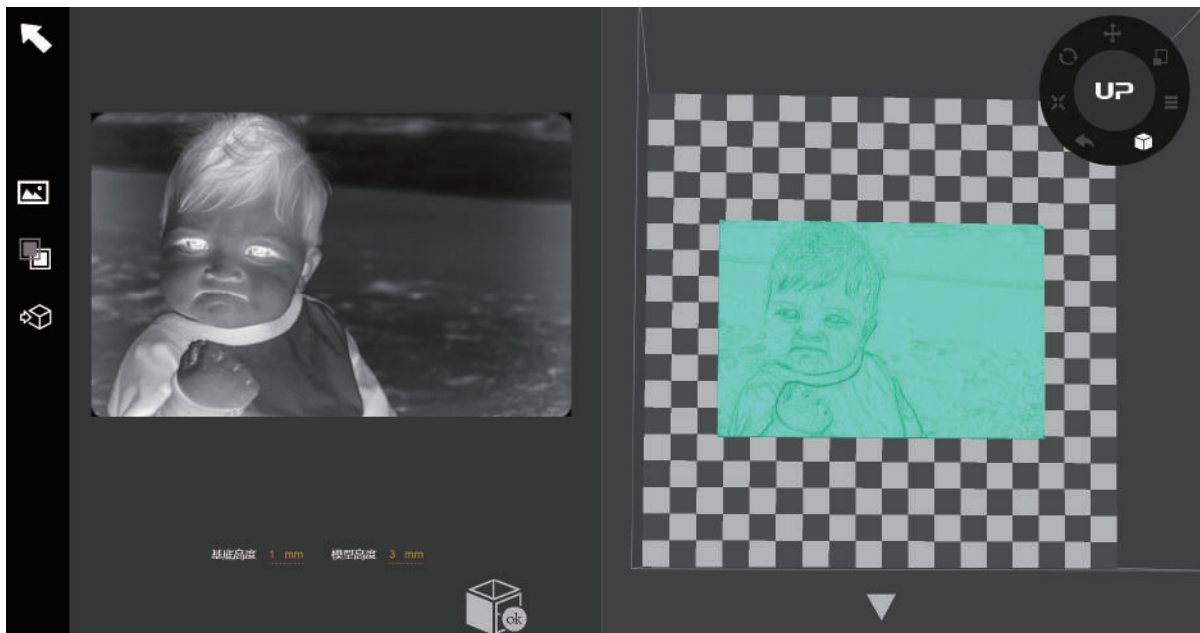


The Base height determine the thickness of a flat layer that will hold the picture.

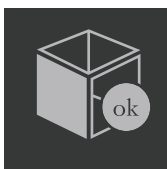
Model Height determine the contrast of the finally print.



The convert negative button will reverse the pixel intensity so that user could choose the picture to be protruding from or sunken into the base.



Update 3D model button. This button will convert the modified picture on the left to a 3D rendering on the right.



Click OK button to place the 3D render onto the 3D printing interface, ready for printing.

Printing Techniques

1. Ensure optimal nozzle height. If the nozzle height value is too low, it will cause warping; if it is too high, it will crash the nozzle into the platform, causing damage and clogging. You can manually fine-tune the nozzle height value in the "Calibration" panels. You can try to adjust the nozzle height value plus or minus 0.1–0.2mm from the base on previous saved nozzles heights.

2. Calibrate the printing platform well. An unlevelled platform usually causes warping.

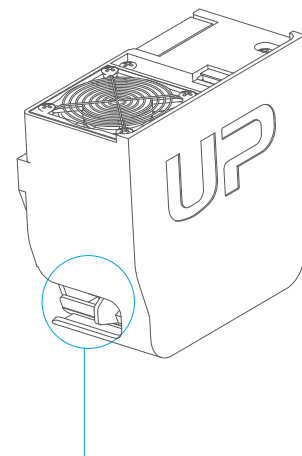
3. Allow enough time for sufficient preheating. A well preheated platform is essential for printing large objects without warping.

4. The airflow on print head is adjustable, slide the air flow adjustment knob to change the amount of cooling directed onto the printed object. Generally the more cooling provided, the better the print quality. Cooling also helps with support and raft removal. However, cooling also encourages warping, especially for ABS.

To generalize, PLA can take strong cooling without problem, while ABS should avoid cooling or give little cooling. For ABS+ medium cooling is recommended.

5. Printing with no raft. It is highly recommended to use raft for normal printing as it improves adhesion and is required for leveling compensation. It is turned on by default, but you can turn it off in the "Print Preference" panel.

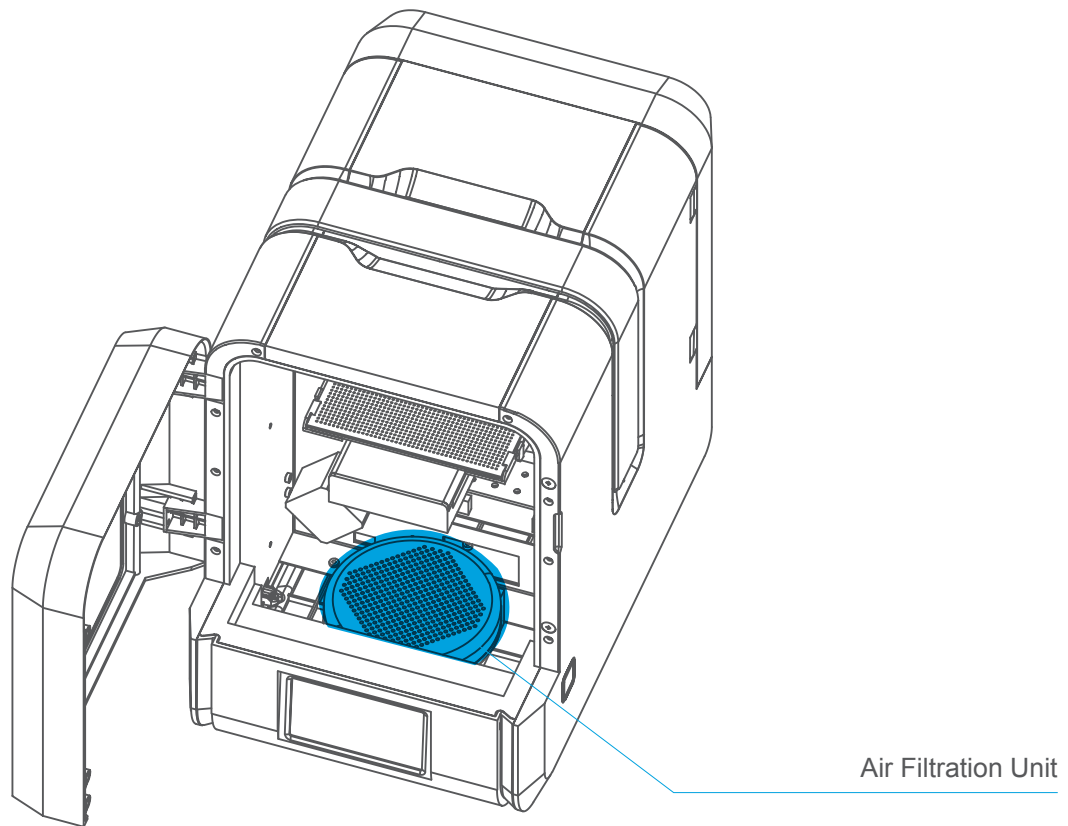
6. Printing with no support. It is possible to print without supporting structures. You can turn off support by choosing "No Support" in the "print" setting panel.



Air Flow Adjustment knob

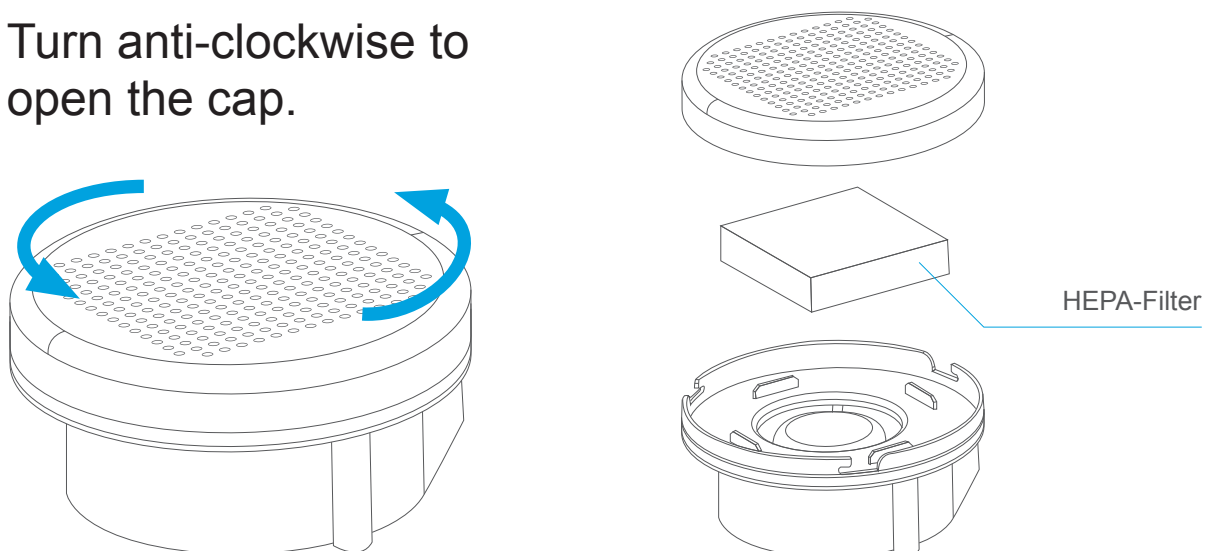
Printer Maintenance - Air Filter Replacement

It is recommended to change the HEPA filter in the filtration unit for every 300 hours of usage or 6 months.

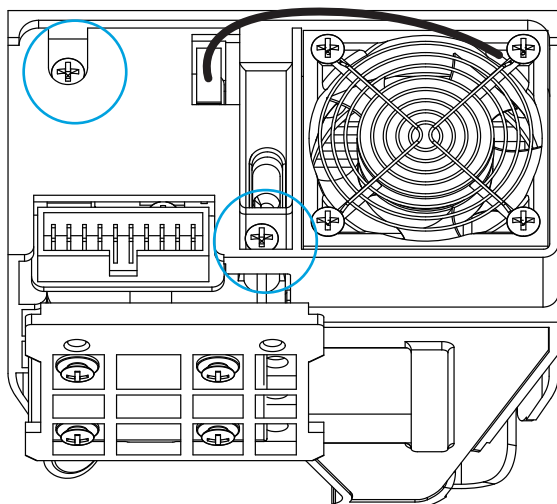


Front View

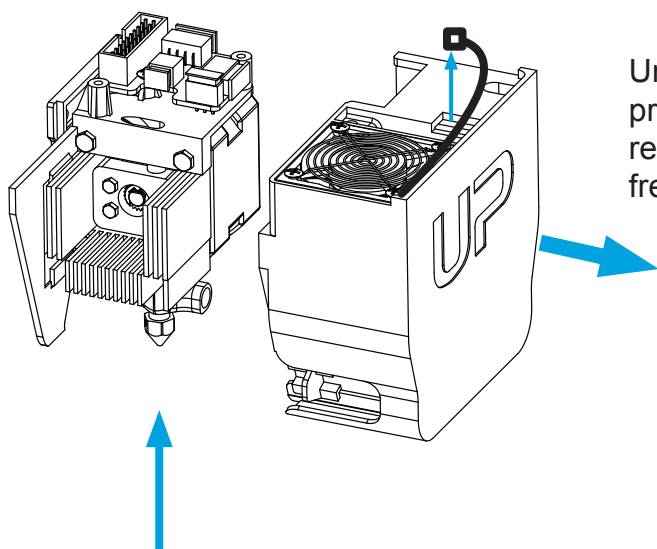
Turn anti-clockwise to open the cap.



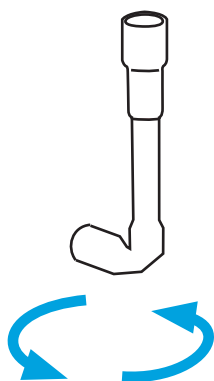
Print Head Maintenance



It is not necessary to remove the print head cover in order to remove the nozzle. However if you want to, you can do so by removing the two Philips screws (circled).



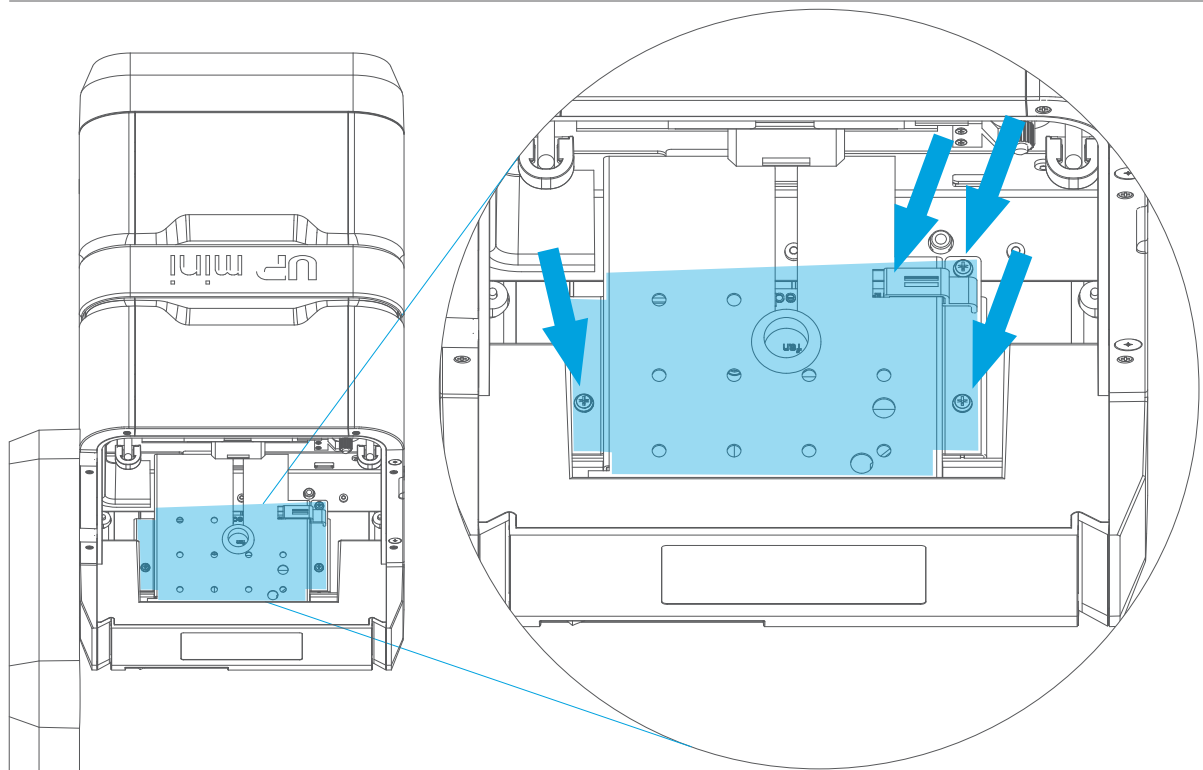
Unplug the fan socket and pull out the print head cover toward you. Unplug the red and black cable to remove the cover freely.



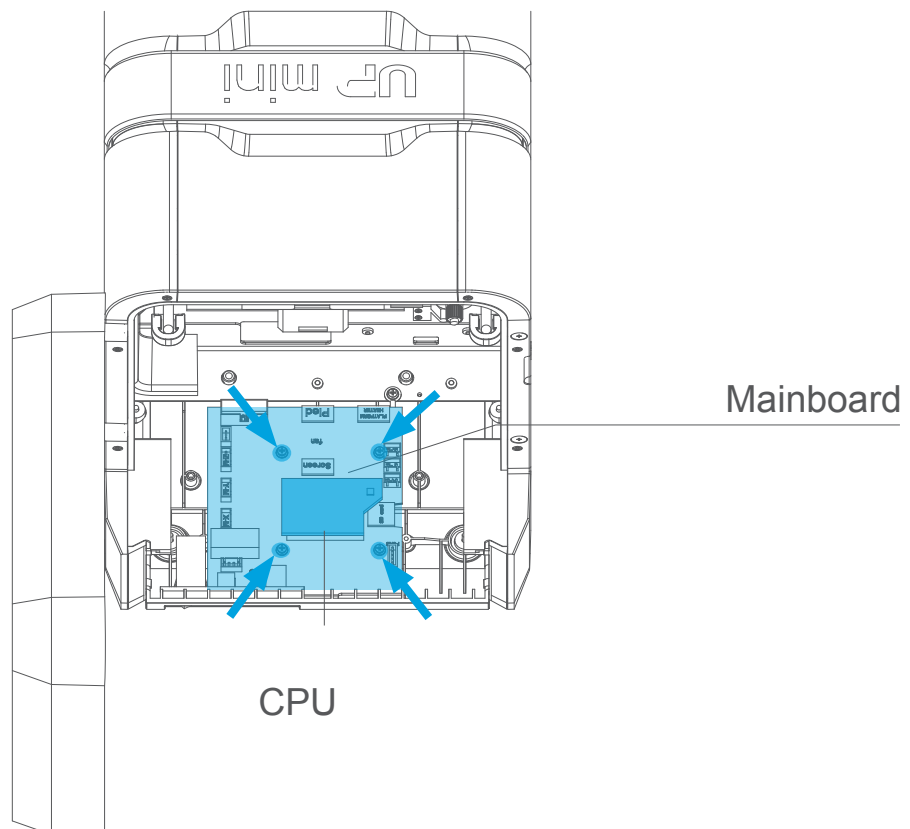
Heat up the nozzle to printing temperature by using the withdraw function in maintenance interface. When temperature is reached, the printer will buzz.

Nozzle can be removed by using the nozzle wrench provided.

Printer Maintenance - remove motherboard cover



Remove the 3 screws and FFC cable clip on the mainboard cover.





Tiertime
太尔时代

Beijing Tiertime Technology Co., Ltd

[youtube.com/c/UP3DPrinters](https://www.youtube.com/c/UP3DPrinters)

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[instagram.com/up3dprinter/](https://www.instagram.com/up3dprinter/)

twitter.com/UP3DP

Support: support@pp3dp.com Web: www.tiertime.com www.up3d.com