# Raise3D Pro3 HS Series

# RaiseTouch

# User Manual

RAISE3D

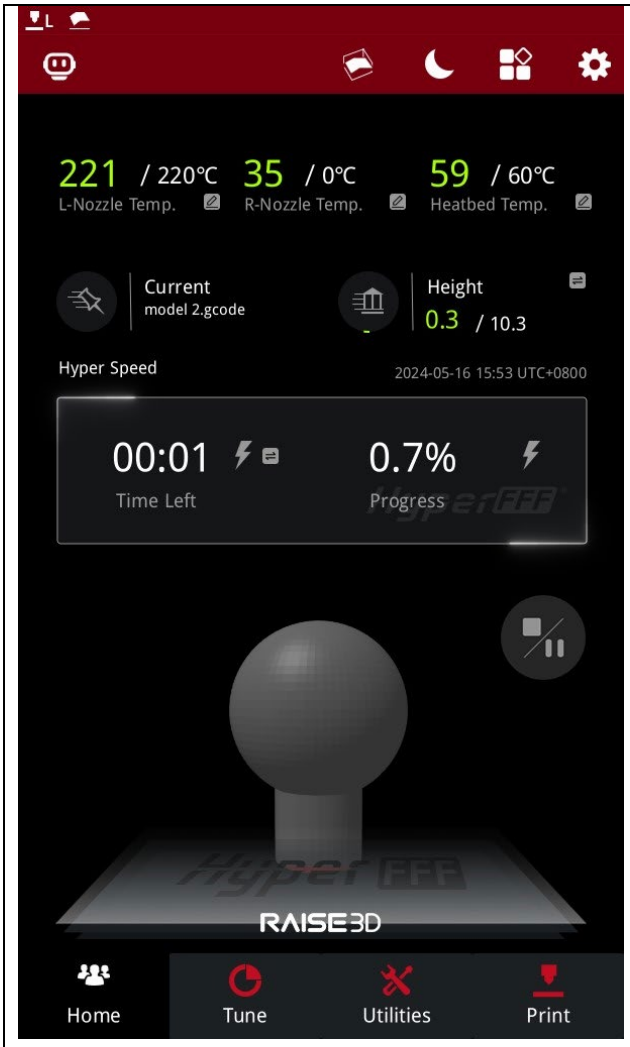
www.raise3d.com

29.027-EN.1.0.20240626

Content

# 1 Home

The ”Home„ tab displays the parameters related to the print job and provides quick access to some functions.



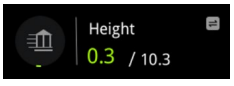

**L/R-Nozzle Temp.**: Displays the left or right nozzle temperature. The left side of the slash shows the current temperature, and the right side shows the target temperature. Tap the input icon to set the target temperature.

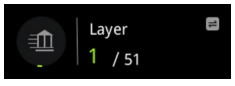
***Note: If the hotend is removed or not installed properly, the nozzle temperature will display a red warning symbol.***


**Heatbed Temp.**: Displays the temperature of the heat bed. The left side of the slash shows the current temperature, and the right side shows the target temperature. Tap the input icon to set the target temperature.

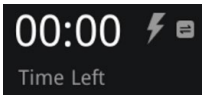
**Current**: Displays the name of the current print file.

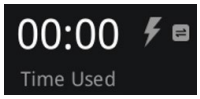
**Height/Layers**: Displays the current printed height and the total height of the model, when **Height** is selected. Displays the current printed layers and the total layers of the model, when **Layer** is selected. Tap the toggle icon next to "Height/Layers" to switch between the two.

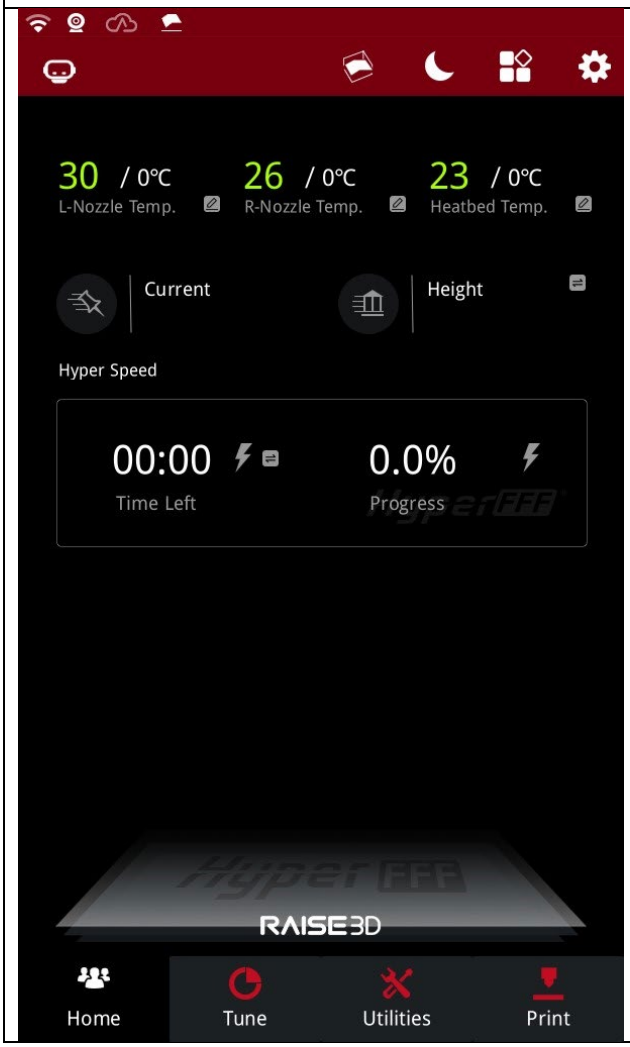



**Time Left/Time Used**: Displays the remaining time for the current print job/ displays the time used for the current print job. Tap the toggle icon next to "Time Left/Time Used" to switch between the two.

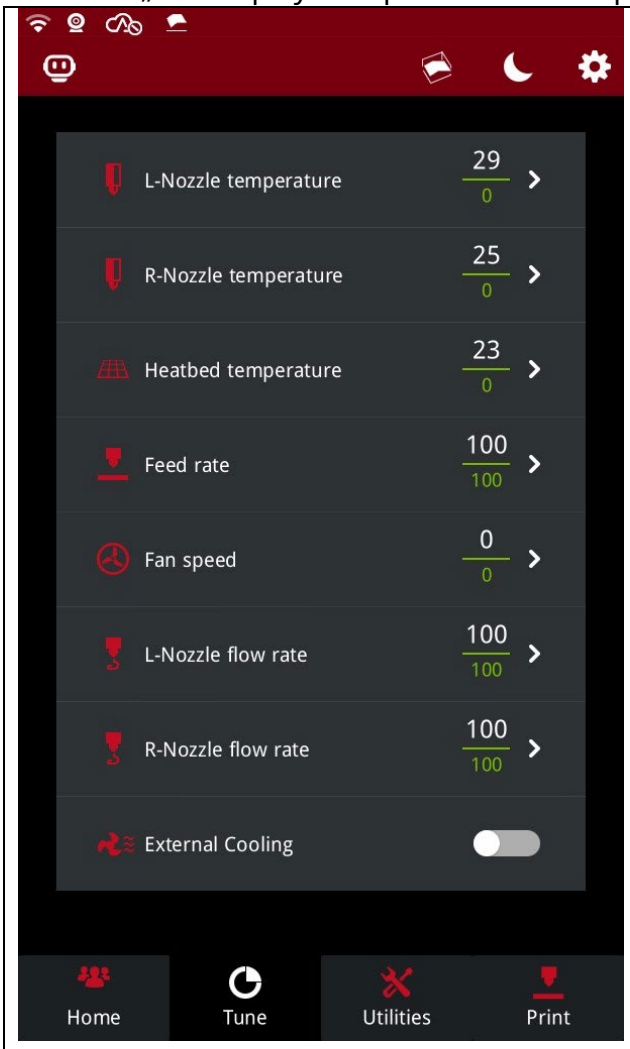


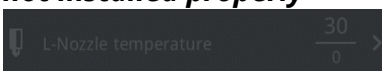
| | |
|---|---|
| | **Progress**: Displays the progress percentage of the current print job.<br><br>**Pause Printing/Stop Printing**: Tap the icon to pause or end the current print job. |
|  | The following quick accesses appear at the top of the touchscreen interface:<br>Tap the icon to enter the EVE. See the "EVE" section for details.<br><br>Tap the icon to enter the Bed Leveling. You can also access this function by tapping "Settings" > "Machine" > "Maintenance" > "Bed Leveling".<br><br>Tap the icon to enter the Power Saving Mode. You can also access this function by tapping “Settings” > “More Settings” > “Advanced Settings” > “Power Saving Mode”.<br><br>Tap the icon to enter the Quick Settings. See the "Quick Settings" section for details.<br><br>Tap the icon to enter the Settings. See the "Settings" section for details. |

# 2 Tune

The ”Tube„ tab displays the printer's motion parameters.




**L-Nozzle temperature**: The current temperature of the left nozzle is displayed above. Tap the right arrow to set the target temperature below.
**R-Nozzle temperature**: The current temperature of the right nozzle is displayed above. Tap the right arrow to set the target temperature below.
***Note: If the nozzle temperature is displayed in gray, it means the hotend is removed or not installed properly***




**Heatbed temperature**: The current temperature of the heat bed is displayed above. Tap the right arrow to set the target temperature below.

**Feed rate**: The current print speed is displayed above. Tap the right arrow to set the target speed below.
***Note: If your model slice file has set a print speed, the printer will automatically read the set value from the file and display it as the target speed.***

**Fan speed**: The current fan speed is displayed above. Tap the right arrow to set the target speed below.

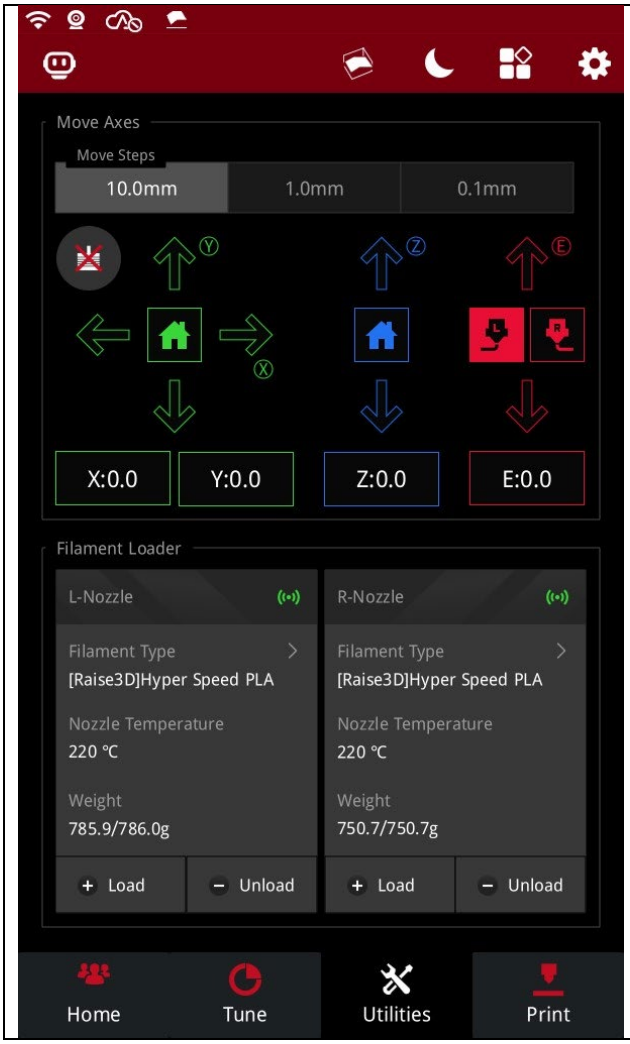
**L-Nozzle flow rate**: The current flow rate of the left nozzle is displayed above. Tap the right arrow to set the target flow rate below.
**R-Nozzle flow rate**: The current flow rate of the right nozzle is displayed above. Tap the right arrow to set the target flow rate below.

**External Cooling**: Turns the cooling fan on or off.

# 3 Utilities

The "Utilities" tab displays two sections "Move Axes" and "Filament Loader". On this tab, you can control the X,Y, and Z axes movement, as well as load and unload filament for the left and right nozzles.

## 3.1 Move Axes




**Move Steps**: Sets the distance (10.0 mm, 1.0 mm, or 0.1 mm) for each step of X/Y/Z-axis movement.

: Tap this green icon to home the X and Y axes.

: Tap this blue icon to home the Z-axis.

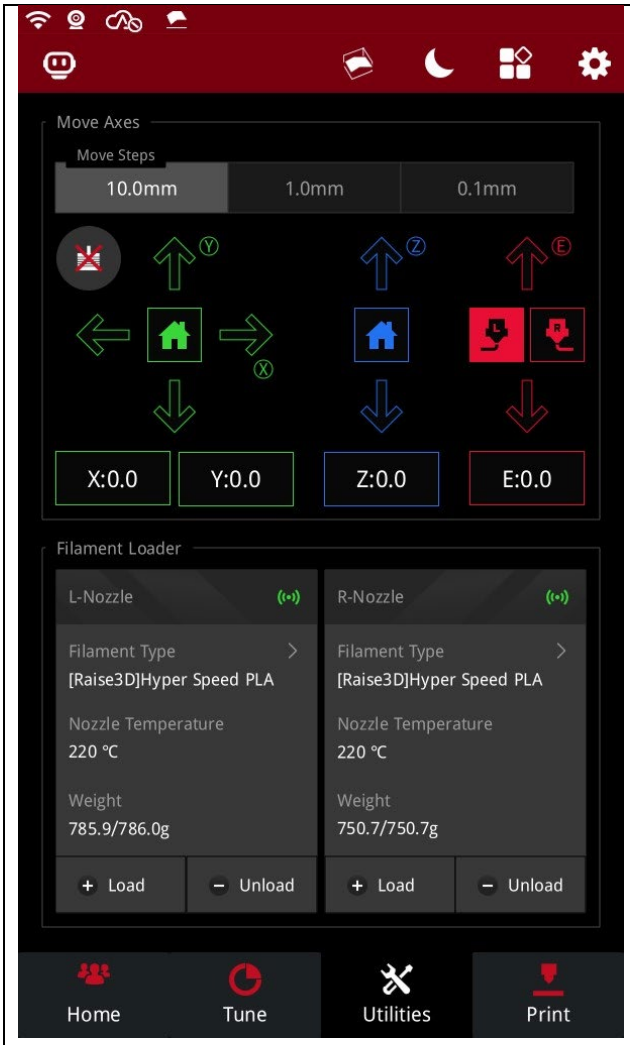
: Tap the left or right red icon to switch between left and right nozzles.

X:0.0 Y:0.0 Z:0.0: Sets the X/Y/Z-axis movement position. You can also tap the up, down, left and right arrow icons to control the X/Y/Z-axis movement.

E:0.0: Sets the filament extrusion length.

: After the X-axis and Y-axis are homed, the extruder cannot be moved manually. Tap this icon to unlock the motor so that the extruder can be moved.

# 3.2 Filament Loader

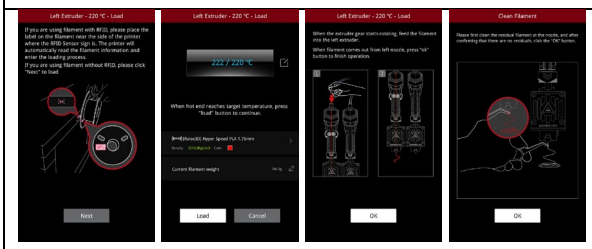



**L/R-Nozzle**: Displays the status of the left/right extruder. The icon on the right in green indicates that the filament run-out sensor has been triggered, and the icon in gray indicates that the sensor has not been triggered.

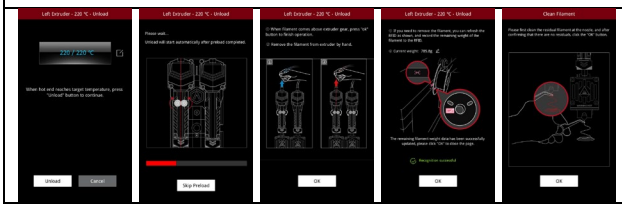
**Filament Type**: Displays the filament's name, brand, and so on.

**Nozzle Temperature**: Displays the nozzle's target temperature.

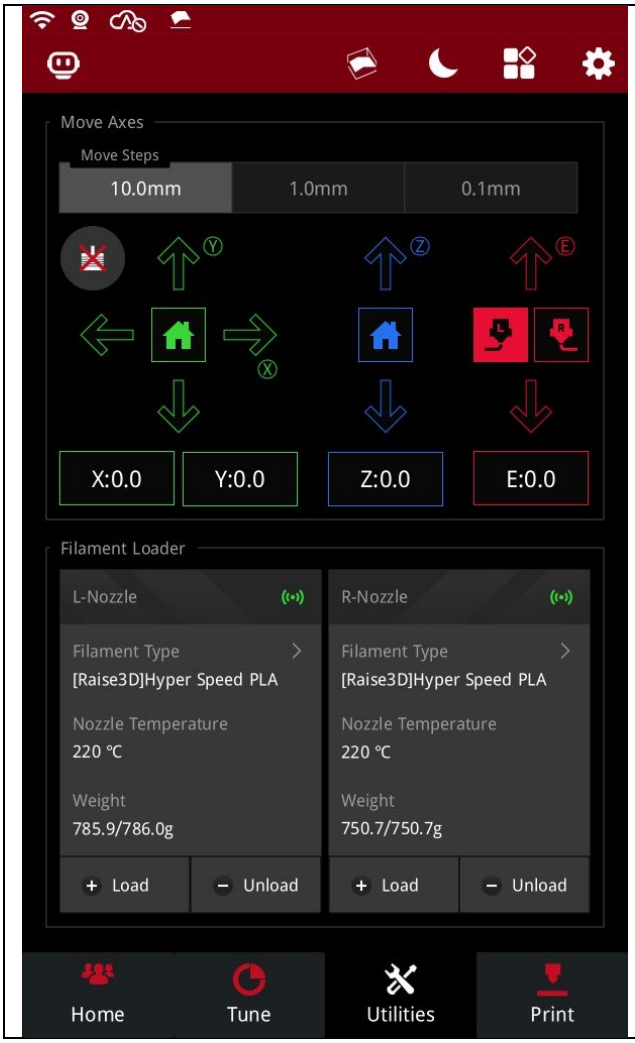
**Weight**: Displays the filament's weight. The left side of the slash shows the remaining weight of the current filament spool, and the right side shows its initial weight (which also means the specification of the filament spool).



**Load**: Tap "Load" and follow the on-screen prompts to feed the filament into the printer.



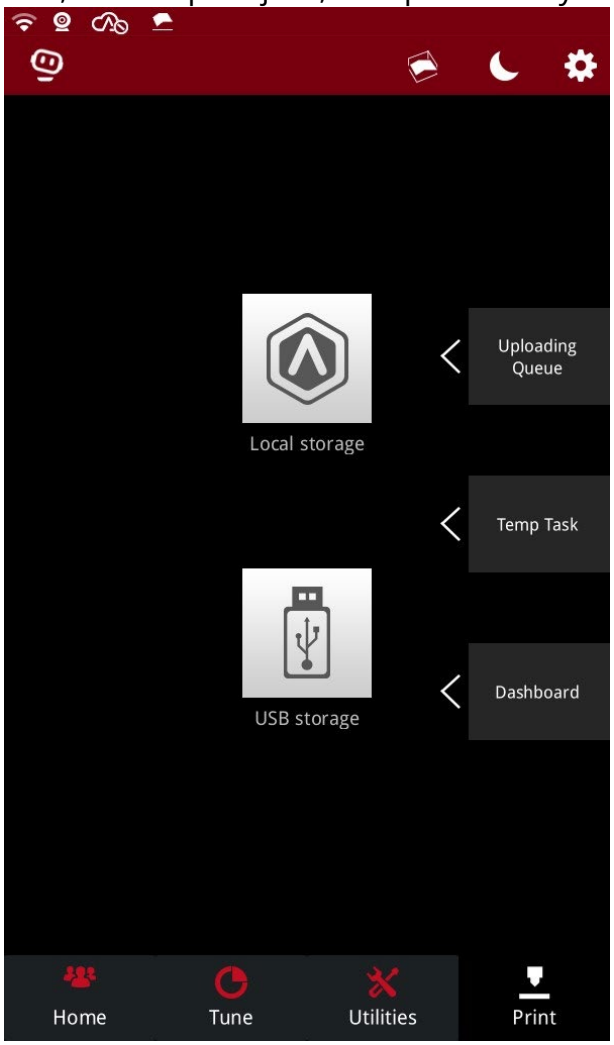
**Unload**: Tap "Unload" and follow the on-screen prompts to unload the filament from the printer.



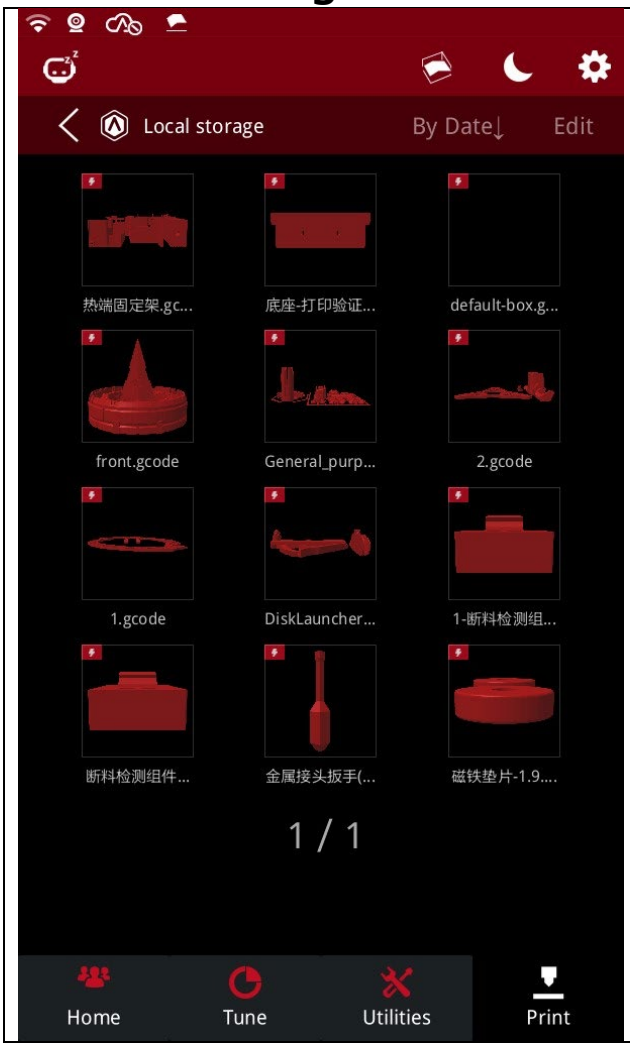

: Tap the up arrow to retract the filament. Tap the down arrow to extrude the filament.

# 4 Print

On the ”Print„ tab, you can view print files (local files or files on the USB drive), upload print files, resume print jobs, view print history statistics, and start printing.



# 4.1 Local Storage




In the "Local storage" interface, you can tap the ↓ icon in the upper right-hand corner to select a way in which to sort files (such as by file modification date in descending order). Tapping "Edit" in the upper right corner, you can manage the local model files saved in the printer.


**Add**: Creates a new folder.

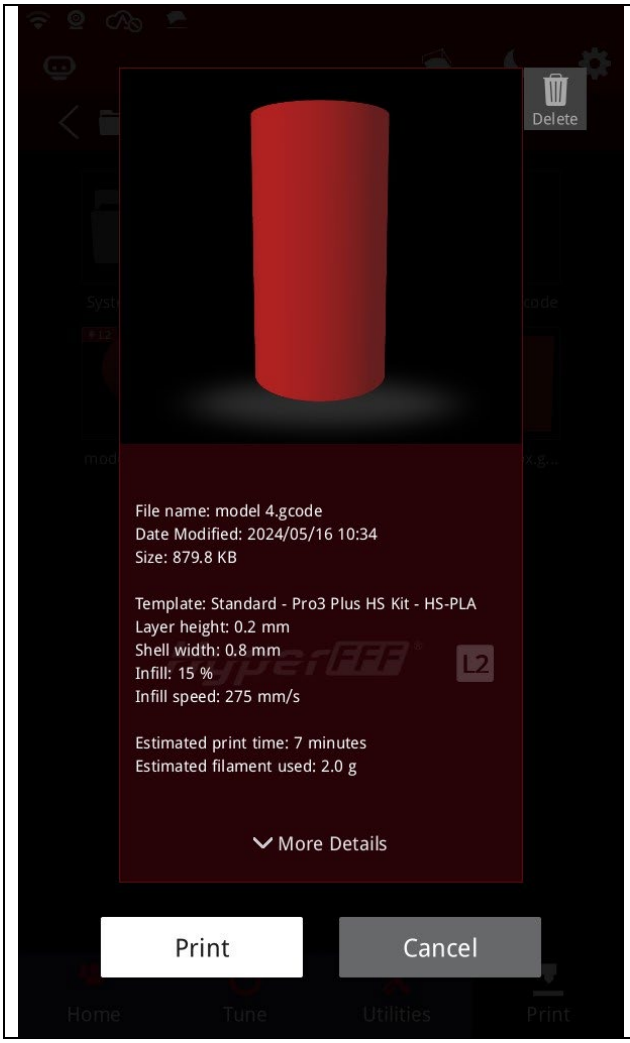
**Copy**: First, select the file you want to copy, and tap "Copy". Then, select a folder and tap "Copy" again to copy the file to the folder.

**Move**: First, select the files you want to move, and tap "Move". Then, select a folder and tap "Move" again to move the file to the folder.

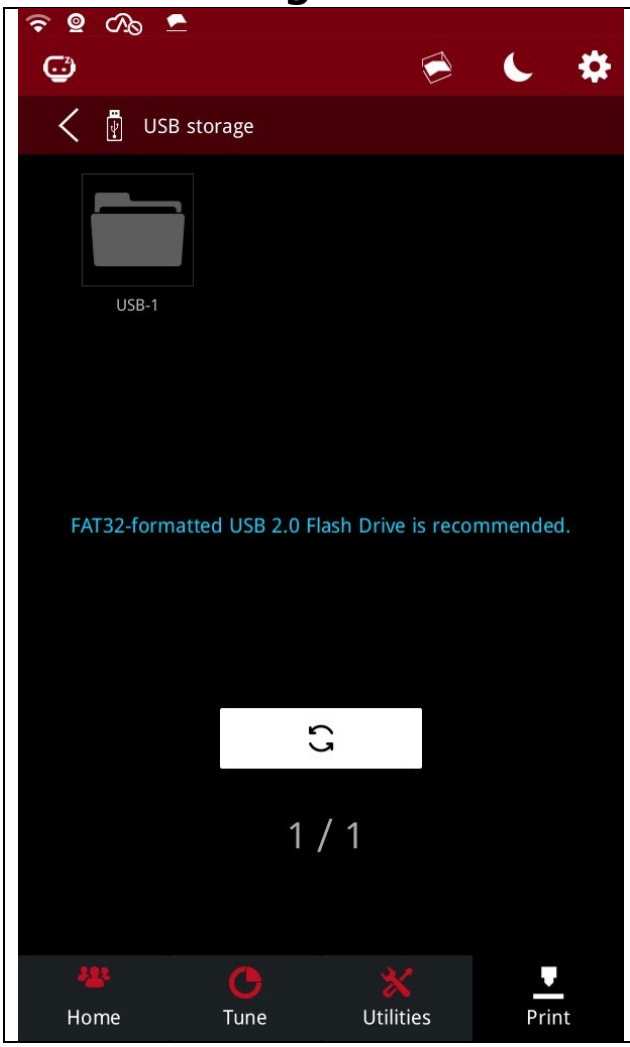
**Rename**: Renames the model file.

**Delete**: Deletes the model file.

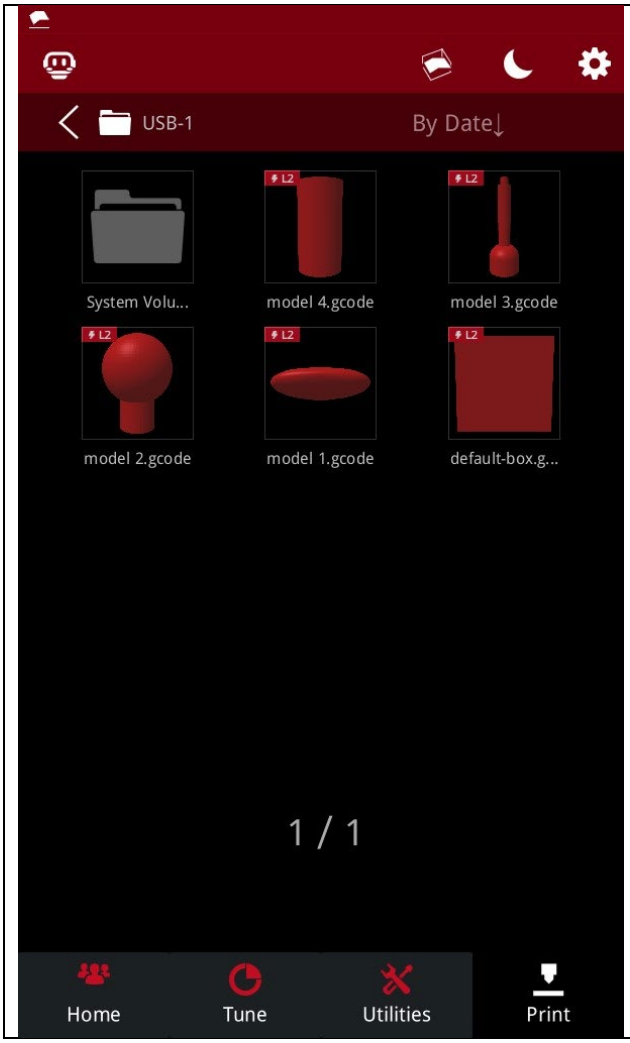
Tap "Done" in the upper right corner to exit file management.

| | |
|---|---|
|  | By tapping a model file, you can view its basic information, print it, or delete it. |

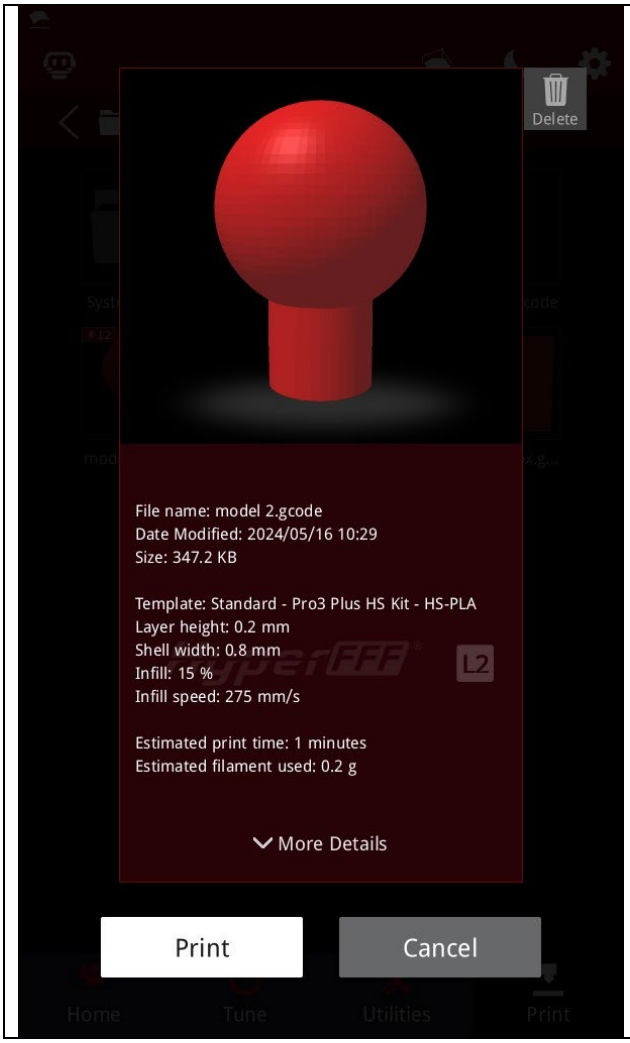
## 4.2 USB Storage



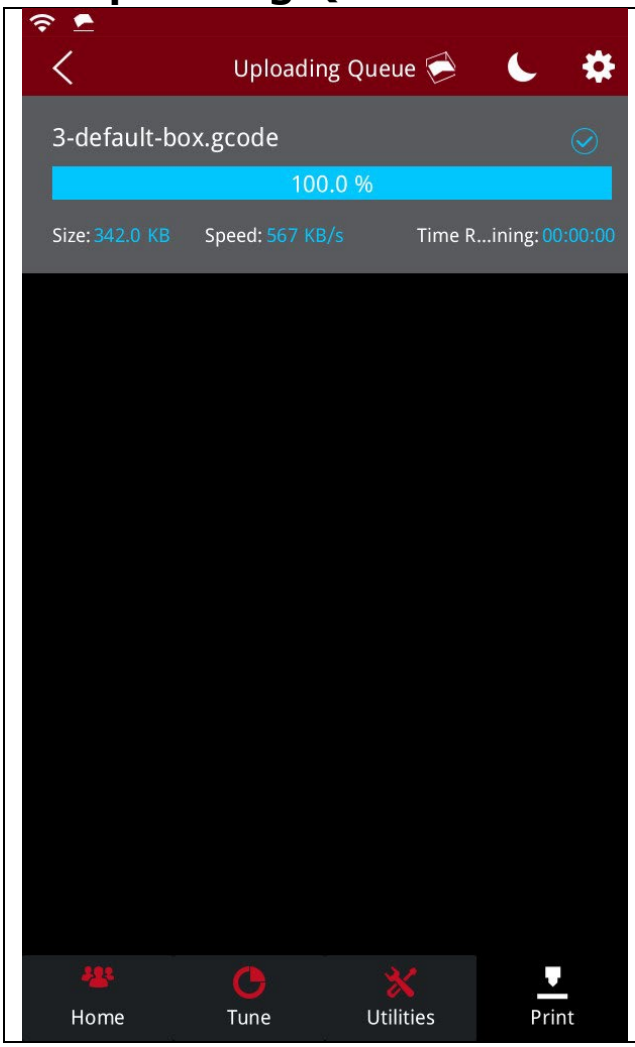

Insert the USB drive into the printer and locate the corresponding folder on the "USB storage" interface. If the folder of the USB drive is not displayed, you can tap the refresh icon .




In the "USB storage" interface, you can tap the ↓ icon in the upper right-hand corner to select a way to sort files (such as by file modification date in descending order).

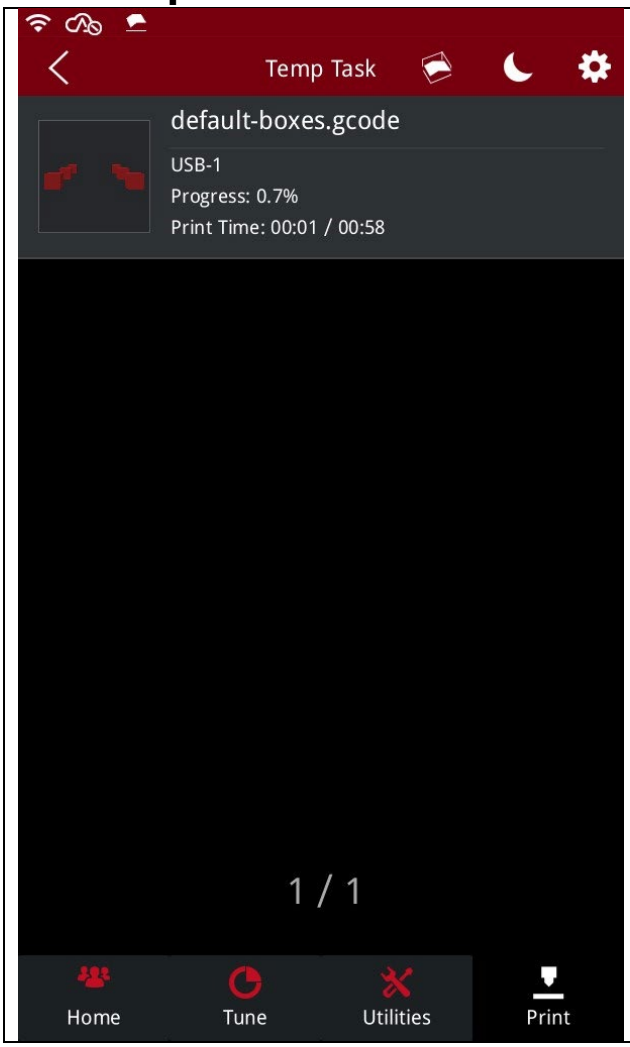
| | |
|---|---|
|  | By tapping a model file, you can view its basic information, print it, or delete it. |

# 4.3 Uploading Queue

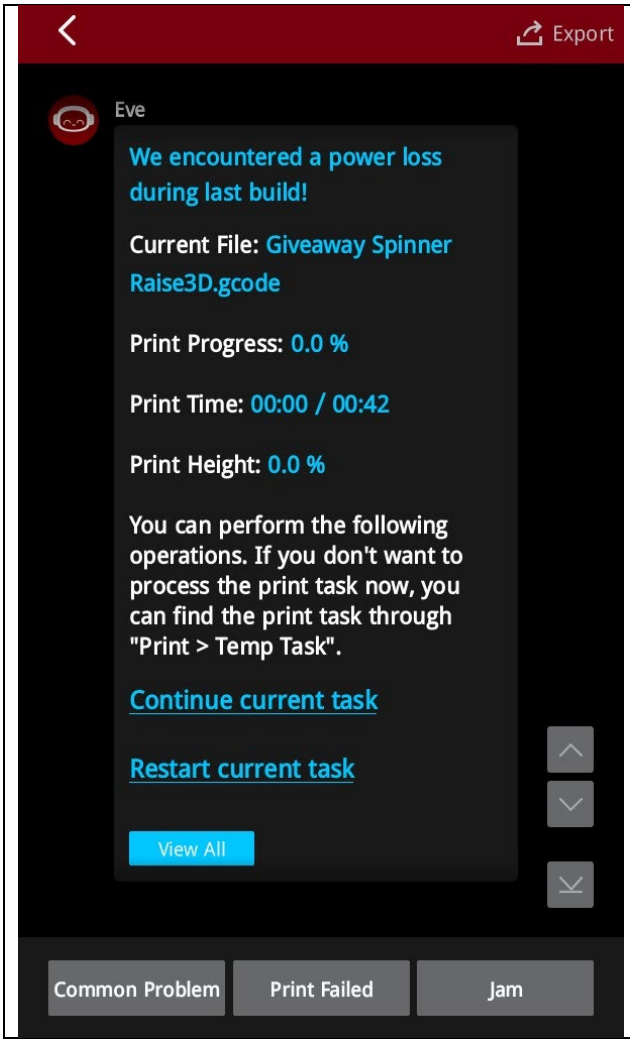



In the “Uploading Queue” interface, you can view and save the model files that you have uploaded through ideaMaker.
By tapping a model file, you can view its basic information, print it, or delete it.

# 4.4 Temp Task




In the ”Temp Task„ interface, you can view and select an unfinished print job to continue printing or reprint.




When the printer is restarted or the serial port is reconnected, if a print interruption is detected, a prompt page to resume printing will pop up on the screen. You can choose "Continue current task", or "Restart current task", or you can cancel the current task, and you can resume printing later from the "Temp Task" interface.

# 4.5 Dashboard

On the “Dashboard” interface, you can view the history of all printed files.


**All**: Displays the total print time, total filament usage, and total number of printed files for all jobs in the job list below.

**Add Tag**: Add tags to the printed jobs. Tap the filter icon in the upper right-hand corner to search for print files by label.

**Print Success/Failure**: The icon in the upper left corner of the print file queue displays the print result. (✓ means success. ✕ means failure.)

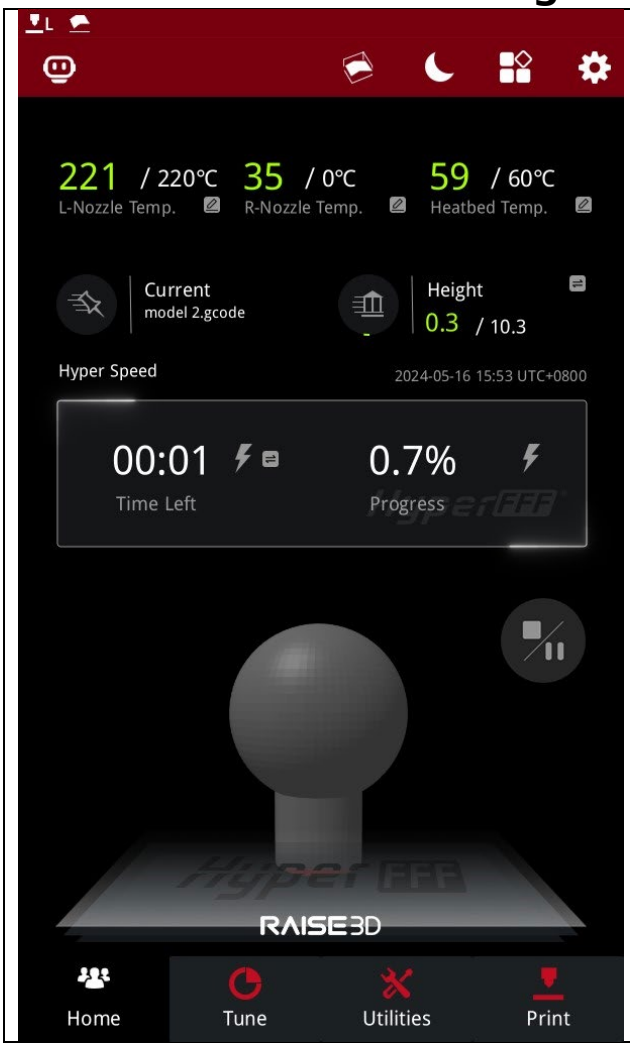
**Timelapse**: If you turn on " Enable Timelapse" in "Settings" > "Camera" > "Advanced Settings", you can play the timelapse file of the print job by tapping the file icon on the right side of the print file.

Select the file on the list. If the file is in a readable format, you can tap "Print" to print the model.

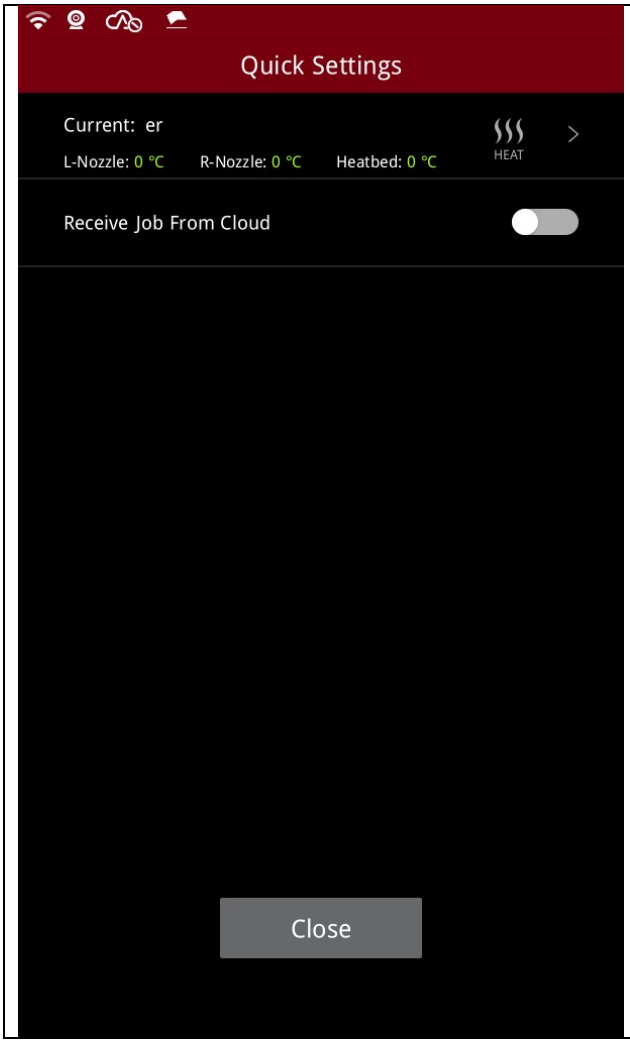
# 5 Quick Settings

On the “Quick Settings” interface, you can make quick settings for some of the functions of nozzles, filaments, and build plate.

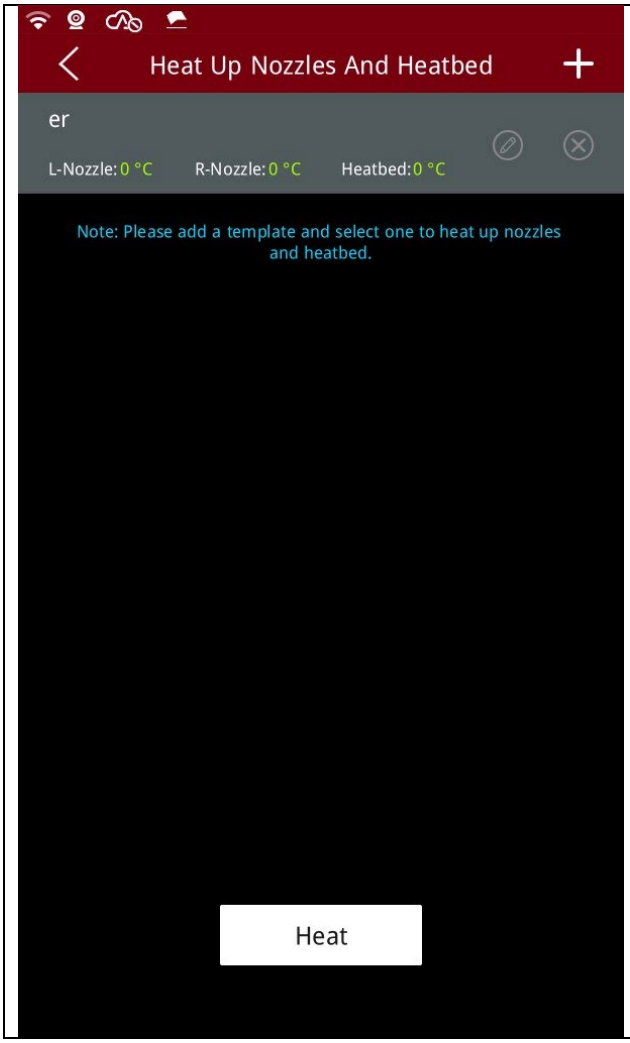
## 5.1 Access from Home Page




On the home page, tap the quick settings icon in the upper right-hand corner to enter the "Quick Settings" interface.

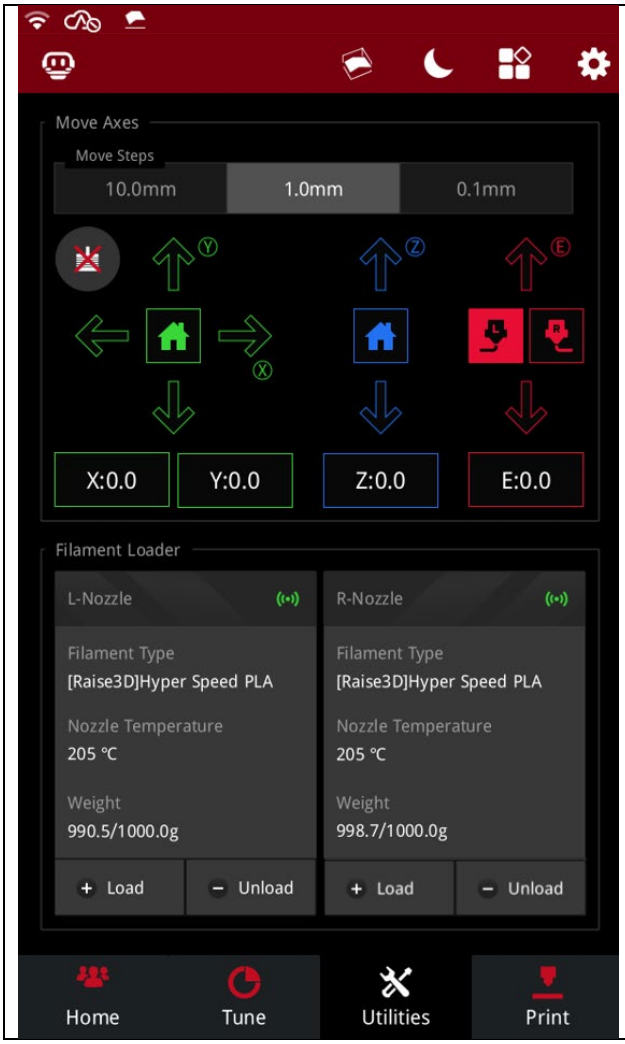



On the “Quick Settings” interface, you can manage heating templates, turn on or off "Receive Job From Cloud".

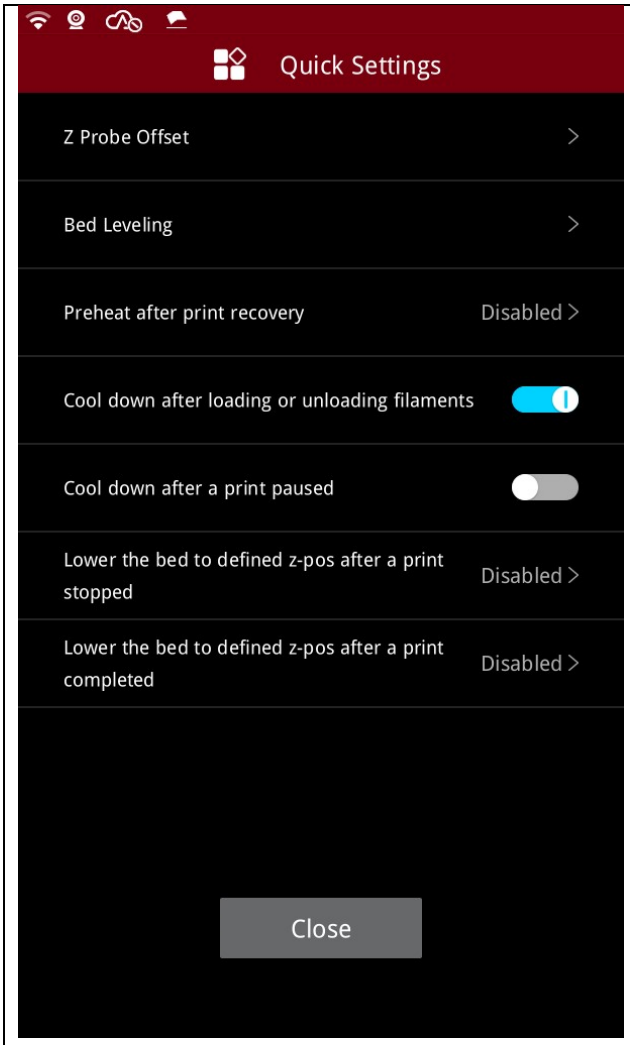



In the “Heat Up Nozzles And Heatbed” interface, you can add a template by tapping the **+** icon in the upper right corner. Select a heating template, and you can modify the template parameters or delete the template. Tap "Heat" to execute the template, and the printer will heat each part according to the temperature set in the template.

# 5.2 Access from "Utilities"




In the ”Utilities„ tab, tap the quick settings icon in the upper right corner to enter the "Quick Settings" interface.




**Z Probe Offset**: Set the Z probe offset value and the Z home gap value of the left and right nozzles.

**Bed Leveling**: Adjusts the flatness of the build plate, which is divided into two leveling modes: ”Full Mode„ and ”Simple Mode„.

**Preheat after print recovery**: If this function is enabled, when you want to resume or restart a print job after the printer is powered off, the printer will first automatically heat the nozzle and move the print head to avoid the nozzle sticking to the model and causing the model to move.

**Cool down after loading or unloading filaments**: If this function is enabled, the nozzles will automatically cool down after loading or unloading.

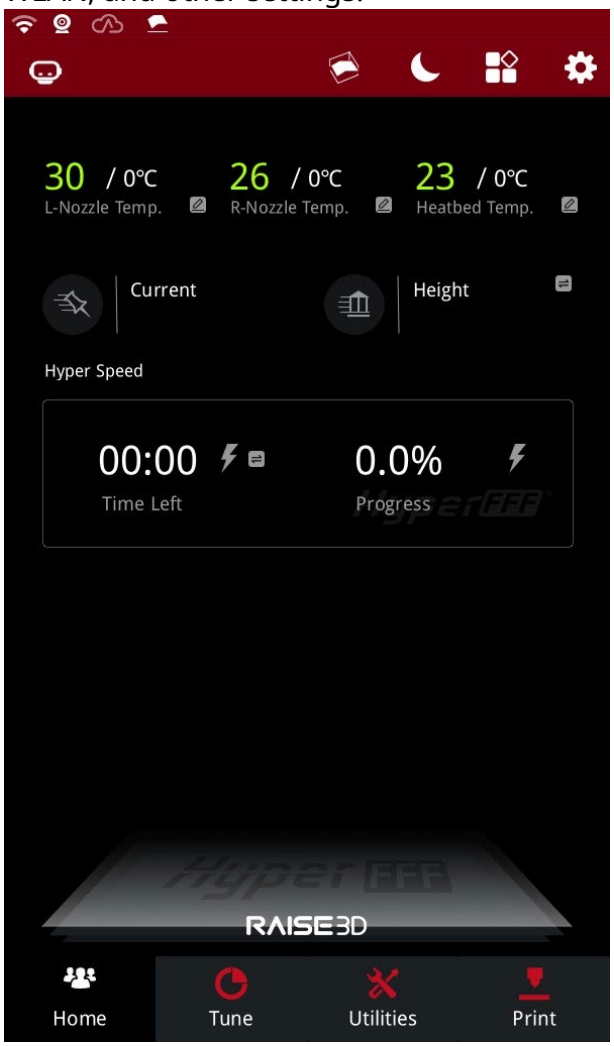
**Cool down after a print pause**: If this function is enabled, the nozzles will automatically cool down when a print job is paused.

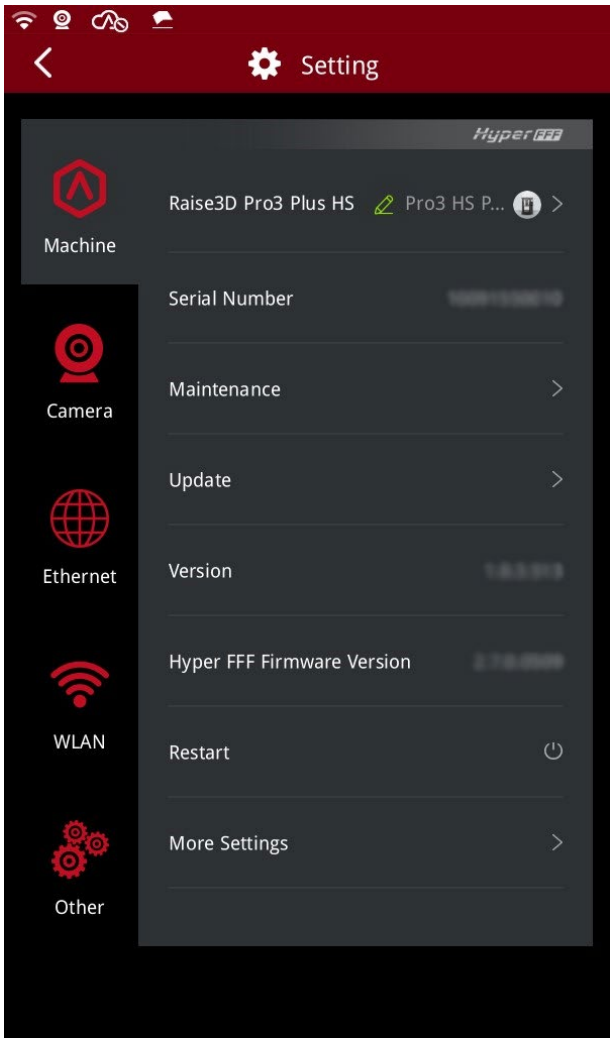
**Lower the bed to defined z-pos after a print stopped**: If this function is enabled, the build plate will lower to the specified position when a print job is stopped.

**Lower the bed to defined z-pos after a print completed**: If this function is enabled, the build plate will lower to the specified position when a print job is completed.

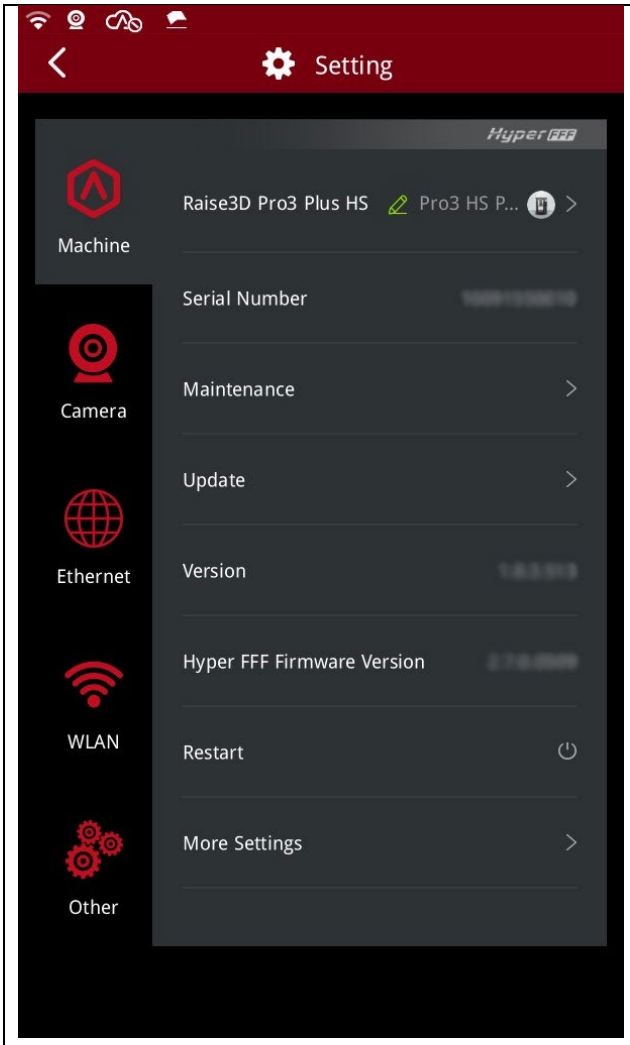
# 6 Setting

On the home page, tap the setting icon at the top right corner of the screen to enter the “Setting„ interface. In the “Setting„ interface, you can set the printer, camera, Ethernet, WLAN, and other settings.



# 6.1 Machine




**Model:** Displays the printer's model.

**Machine Name:** Displays the name and icon of the printer. You can change the name and icon yourself.

**Serial Number:** Displays the printer's serial number.

**Maintenance:** Displays the printer system version and CPU temperature. Performs offset calibration, filament parameter calibration, and bed leveling. See the "Maintenance" section for details.

**Update:** Updates the printer's software and firmware versions. See the "Update" section for details.

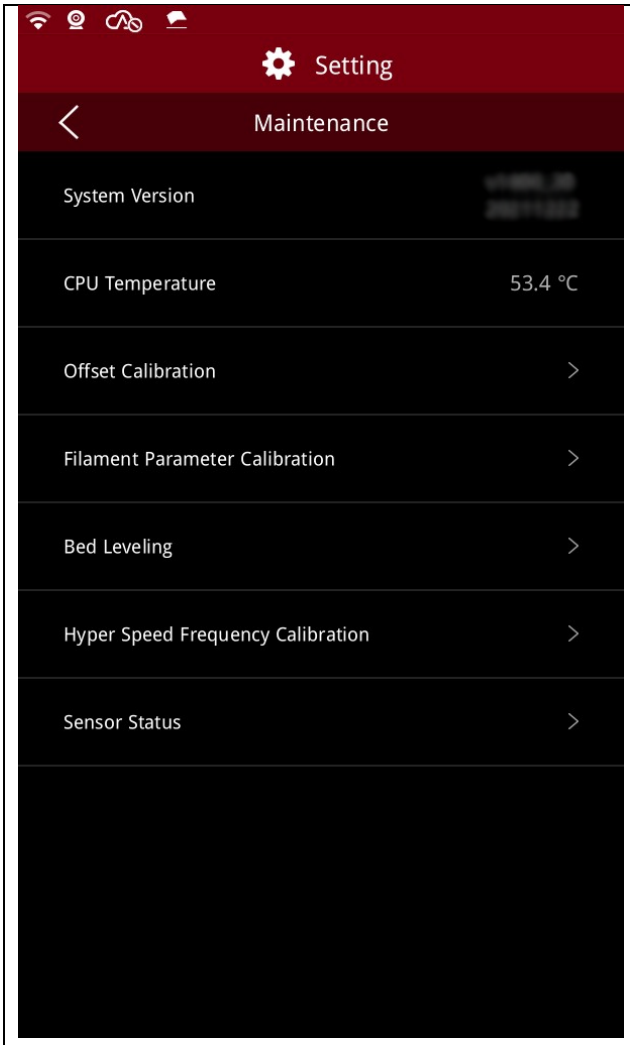
**Version:** Displays the RaiseTouch version.

**Hyper FFF Firmware Version:** Displays the Hyper FFF firmware version.

**Restart:** Restarts the printer.

**More Settings:** Displays more settings for the printer. See the "More Settings" section for details.

## 6.1.1 Maintenance




**System Version**: Displays the printer,s system version.

**CPU Temperature**: Displays the temperature of the CPU.

**Offset Calibration**: Runs the offset calibration. See the ”Offset Calibration„ section for details.

**Filament Parameter Calibration**: Calibrates the filament temperature and filament flowrate. See the ”Filament Parameter Calibration„ section for details.

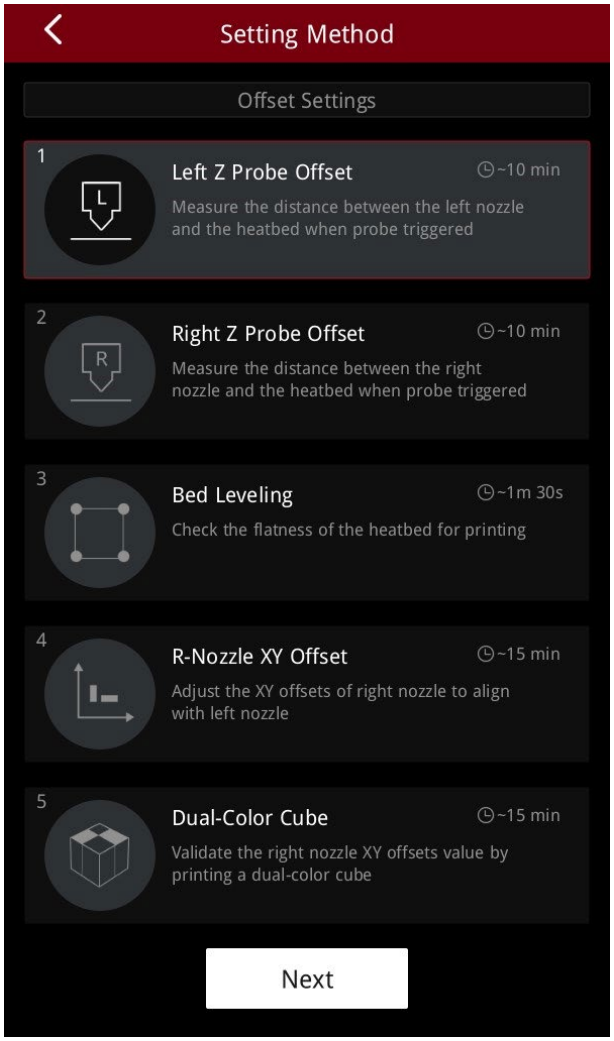
**Bed Leveling**: Adjusts the flatness of the build plate. See the ”Bed Leveling„ section for details.

**Hyper Speed Frequency Calibration**: Calibrates the X-axis frequency value and Y-axis frequency value. See the "Hyper Speed Frequency Calibration" section for details.

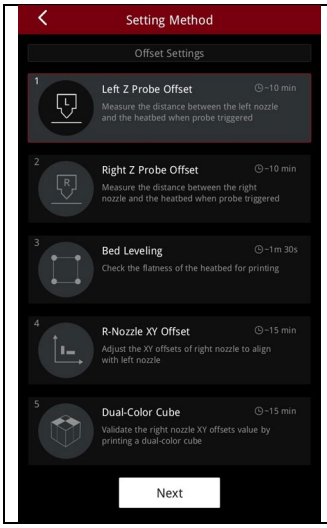
**Sensor Status**: Displays the filament status (whether the filament is loaded) as detected by the left and right filament run-out sensors.

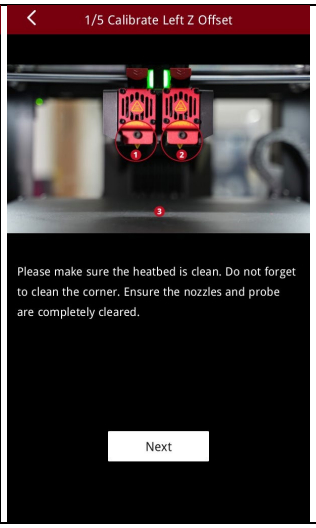
#### 6.1.1.1 Offset Calibration

In the “Offset Calibration” interface, you can calibrate the “Left Z Probe Offset”, “Right Z Probe Offset”, “Bed Leveling", "R-Nozzle XY Offset", and "Dual-Color Cube".
Make sure that two spools of Raise3D Hyper Speed PLA filament are installed in the filament holders before calibration.

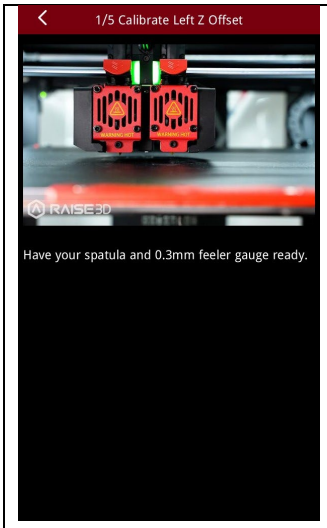


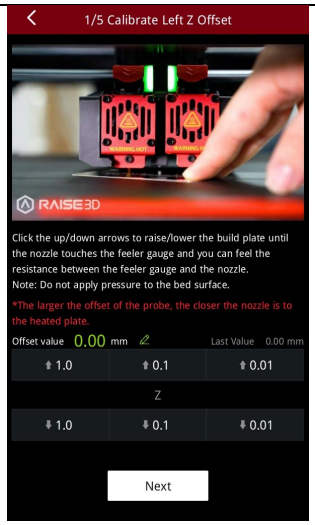
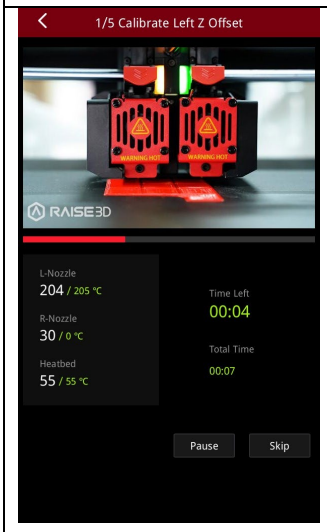

## Left Z Probe Offset

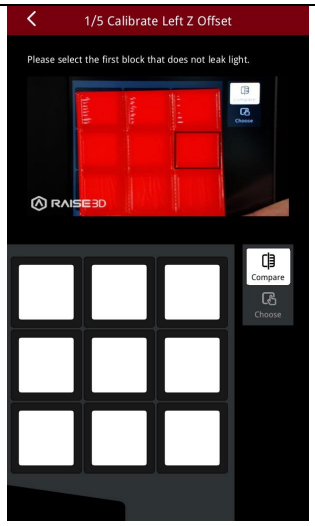


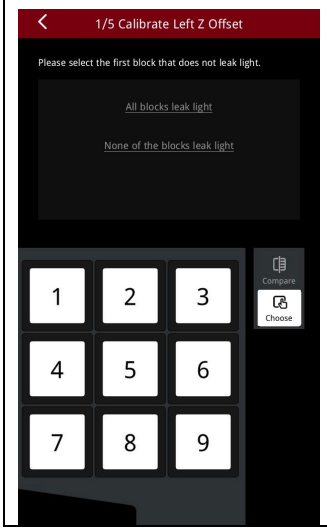



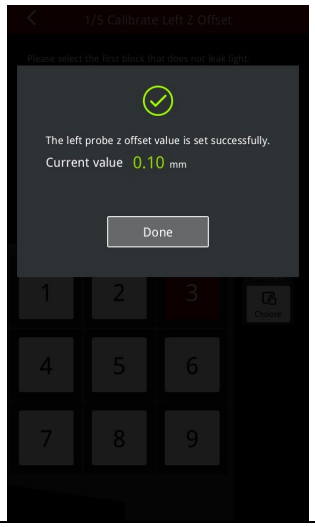

The “Left Z Probe Offset” calibrates the distance between the left nozzle and the build plate when the left probe is triggered. If the distance is too far, the model will not stick to the build plate and will be distorted. If the distance is too close, problems such as insufficient filament extrusion and scratching of the nozzle may occur.
Make sure that the build plate and nozzle are clean before calibration.

<table>
<tr>
<td> 

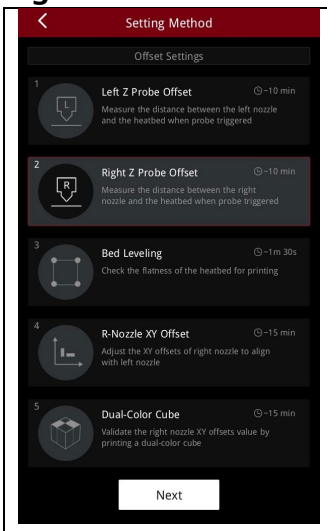

</td>
<td>Prepare a 0.3 mm feeler gauge. Adjust the distance between the nozzle and the build plate according to the prompts on the screen. Make sure you can feel some resistance as the feeler gauge moves between the nozzle and build plate.<br>Note: Do not press hard on the build plate during calibration.</td>
</tr>
<tr>
<td> 

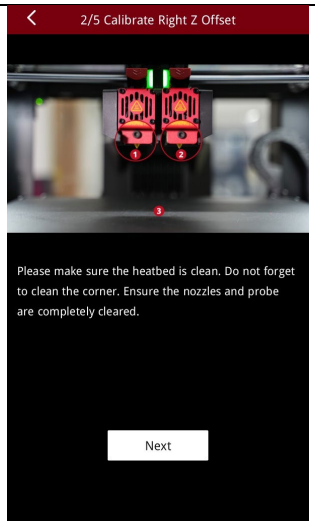
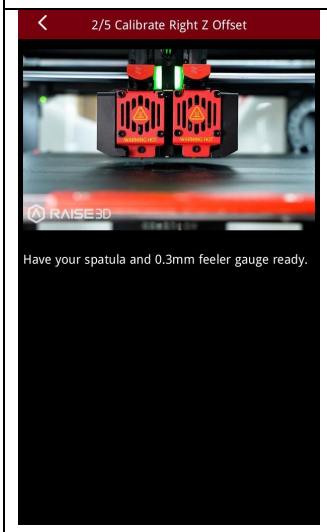


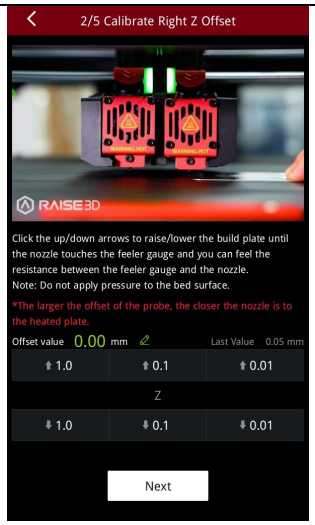


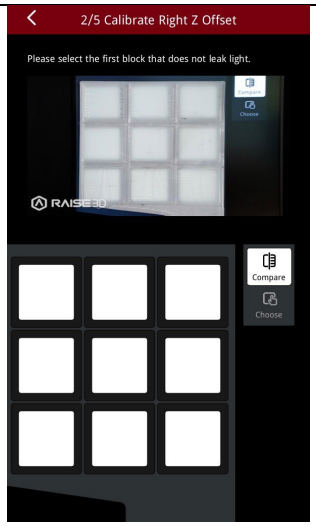

</td>
<td>The printer will print a 9-square calibration model.<br>After the model is printed, compare the model with the on-screen example. Select the first block that doesn,t leak light. The printer will automatically adjust the offset value of the left nozzle.<br>Note: If all the blocks leak light or do not leak light, it means that there may be deviations when measuring the distance between the build plate with a feeler gauge, and it is necessary to recalibrate by selecting the corresponding scenario.<br>●If all the blocks leak light, the clearance between the nozzles and the build plate is too large. Select "All blocks leak light" and the machine will lower the nozzle and recalibrate.<br>●If all the blocks do not leak light, the clearance between the nozzle and the build plate is too small. Select "None of the blocks leak light" and the machine will lift the nozzle and recalibrate.</td>
</tr>
</table>

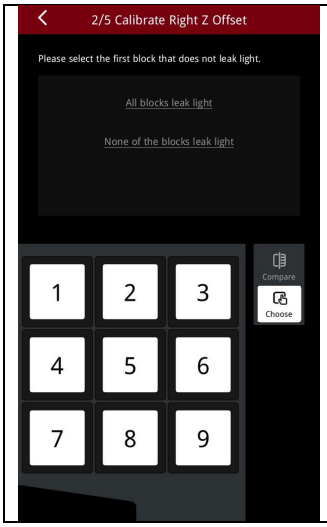
## Right Z Probe Offset

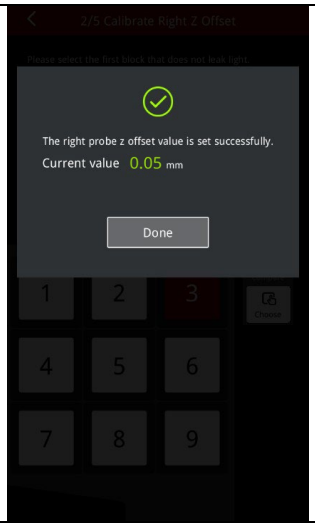
<table>
<tr>
<td> 


</td>
<td>The “Right Z Probe Offset” calibrates the distance between the right nozzle and the build plate when the right probe is triggered.<br>Make sure that the build plate and nozzle are clean before calibration.</td>
</tr>
<tr>
<td> 


</td>
<td>Prepare a 0.3 mm feeler gauge. Adjust the distance between the nozzle and the build plate according to the prompts on the screen. Make sure you can feel some resistance as the feeler gauge moves between the nozzle and build plate.<br>Note: Do not press hard on the build plate during calibration.</td>
</tr>
<tr>
<td> 


</td>
<td>The printer will print a 9-square calibration model.<br>After the model is printed, compare the model with the on-screen example. Select the first block that doesn,t leak light. The printer will automatically adjust the offset value of the left nozzle.<br>Note: If all the blocks leak light or do not leak light, it means that there may be deviations when measuring the distance between the build plate with a feeler gauge, and it is necessary to recalibrate by selecting the corresponding scenario.<br>●If all the blocks leak light, the clearance between the nozzles and the build plate is too large. Select "All blocks leak light" and the machine will lower the nozzle and</td>
</tr>
</table>

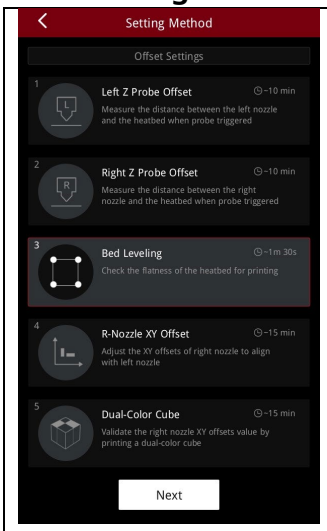


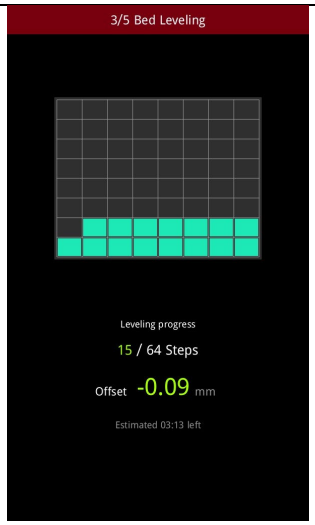




***recalibrate.***

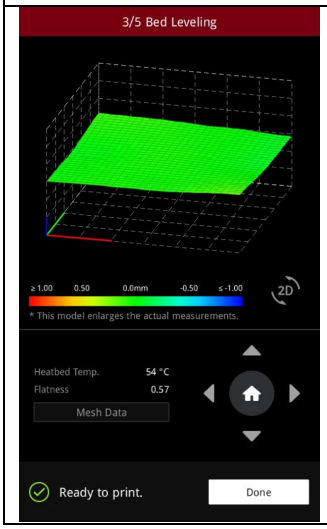
- ***If all the blocks do not leak light, the clearance between the nozzle and the build plate is too small. Select "None of the blocks leak light" and the machine will lift the nozzle and recalibrate.***

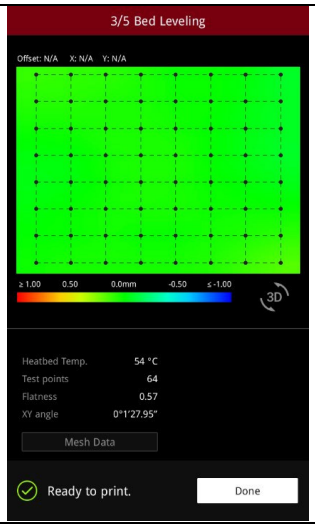
## Bed Leveling



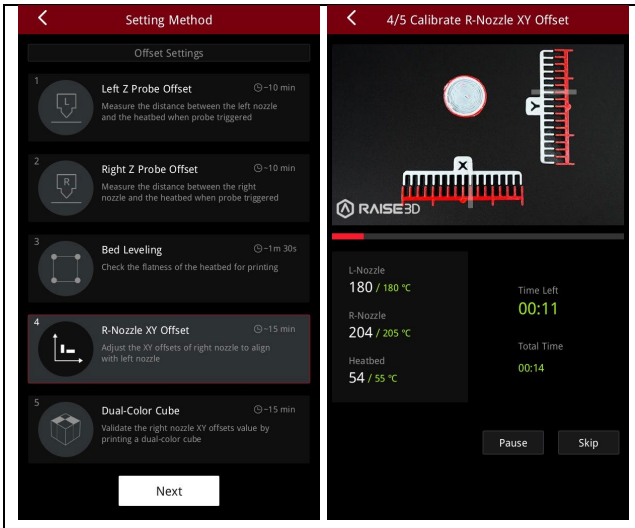
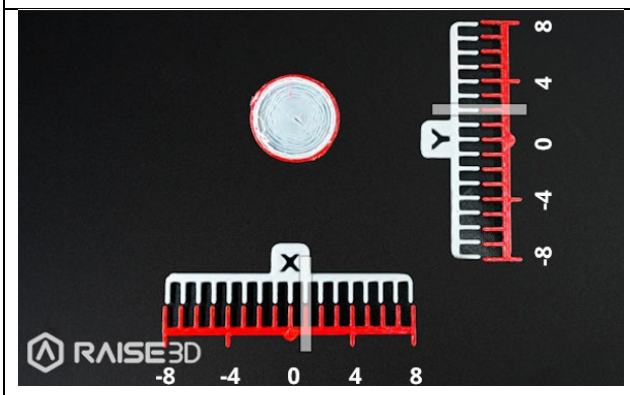
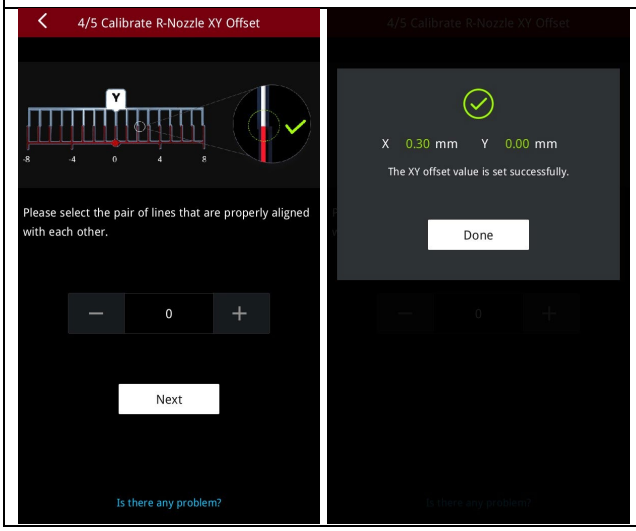

The “Bed Leveling” function is to calibrate the flatness of the build plate. The printer will automatically probe 64 points on the build plate and adjust the flatness of the build plate.
Make sure the build plate is clean before leveling.



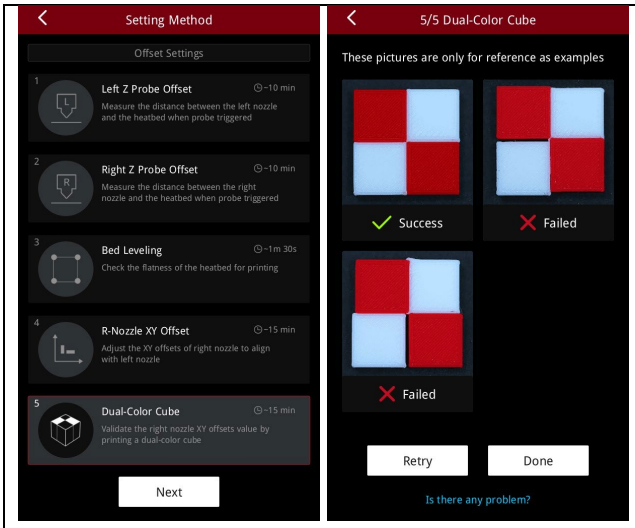
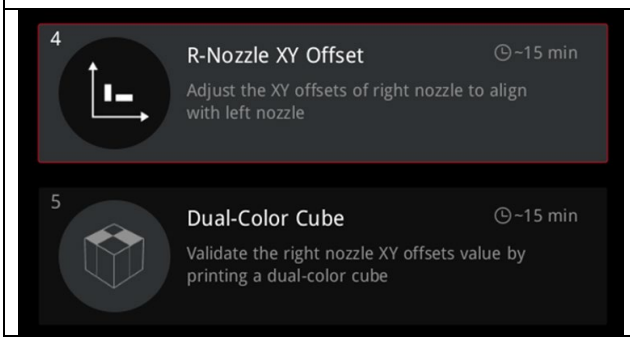




When leveling is complete, the 3D bed leveling result will be displayed on the screen. Tap the 2D switch icon  to toggle between 3D representation of the result to 2D.

## R-Nozzle XY Offset

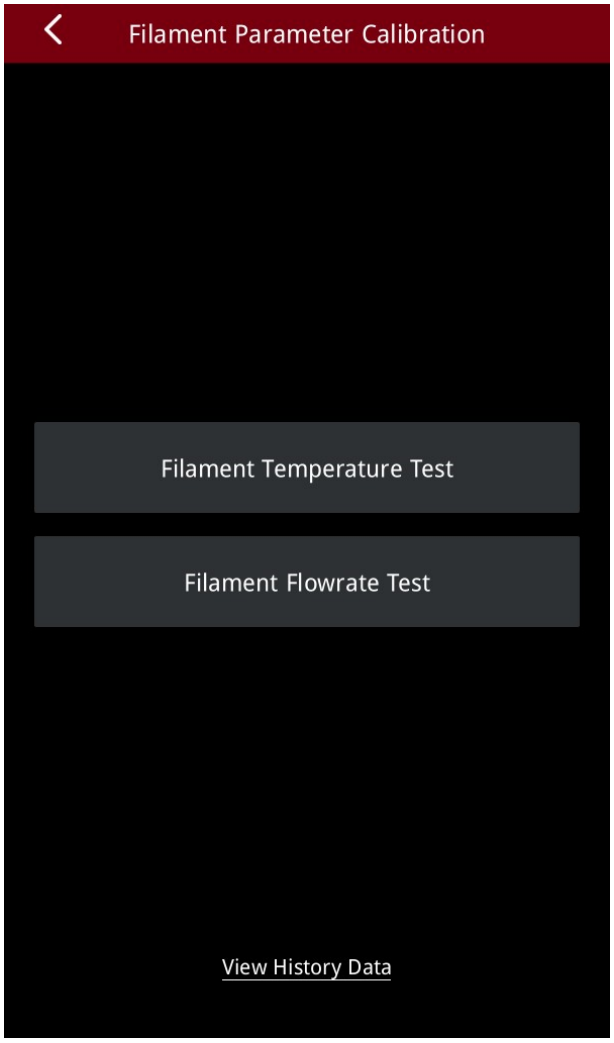
<table>
<tr>
<td> 
</td>
<td>The “R-Nozzle XY Offset” is to calibrate the XY offset of the right nozzle so that it aligns with the left nozzle.<br>The printer will heat up automatically and print two test models.</td>
</tr>
<tr>
<td> 
</td>
<td>After printing, according to the instructions on the screen, select a pair of lines that are completely aligned on the X model and the Y model respectively. As exemplified in the figure, the number that corresponds to the pair of aligned lines on the X model is 1, and the number that corresponds to the pair of aligned lines on the Y model is 2.</td>
</tr>
<tr>
<td> 
</td>
<td>Input the serial number on the screen. The printer will automatically calibrate the XY Offset of the right nozzle and display the current calibrated value.</td>
</tr>
</table>

## Dual-Color Cube

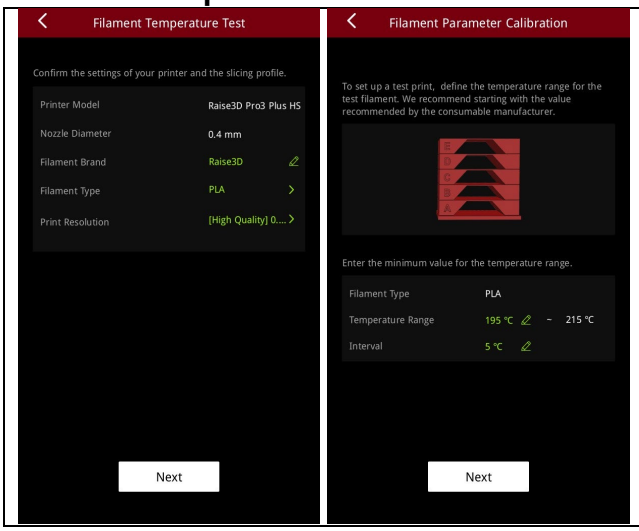
| | |
|---|---|
|  | The ”Dual-Color Cube„ is to validate the XY offset value of the right nozzle by printing a test model comprised of dual-color cubes. The printer will print a dual-color cube model.<br>After printing, please compare the printed dual-color cube with the sample graphic on the screen, and check if there is an obvious gap between the color blocks.<br>If there is no gap between the color blocks, it means that the X/Y/Z direction offset value of the right nozzle is within a reasonable range. |
|  | If there is a gap between the color blocks, please tap "Retry" and re-run the ”R-Nozzle XY Offset„ and ”Dual-Color Cube„ to recalibrate the XY offset value of the right nozzle. |

### 6.1.1.2 Filament Parameter Calibration

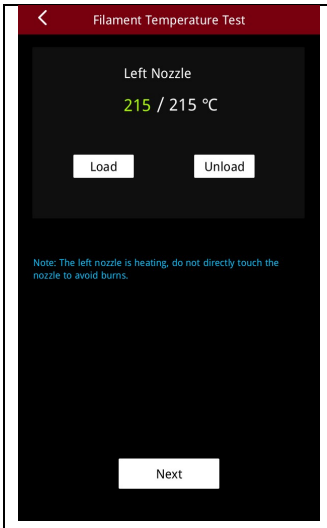
In the ”Filament Parameter Calibration„ interface, you can select the ”Filament Temperature Test„ or ”Filament Flowrate Test„ for calibration.

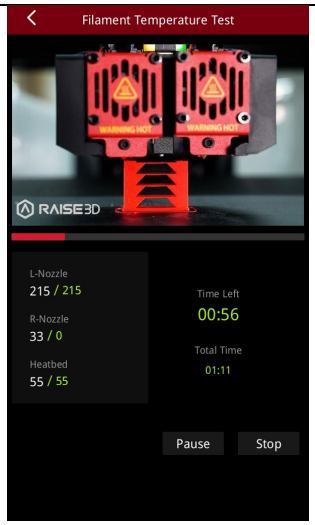
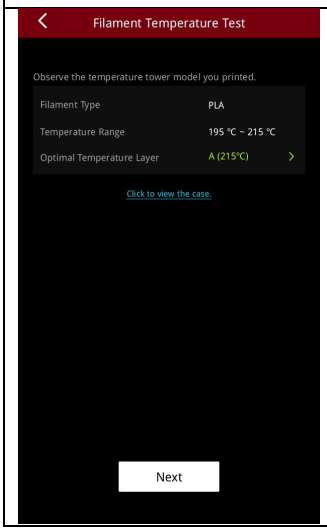


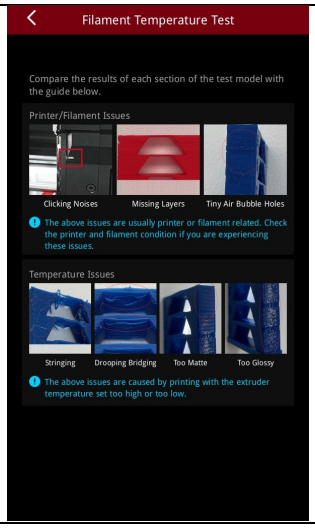

### Filament Temperature Test

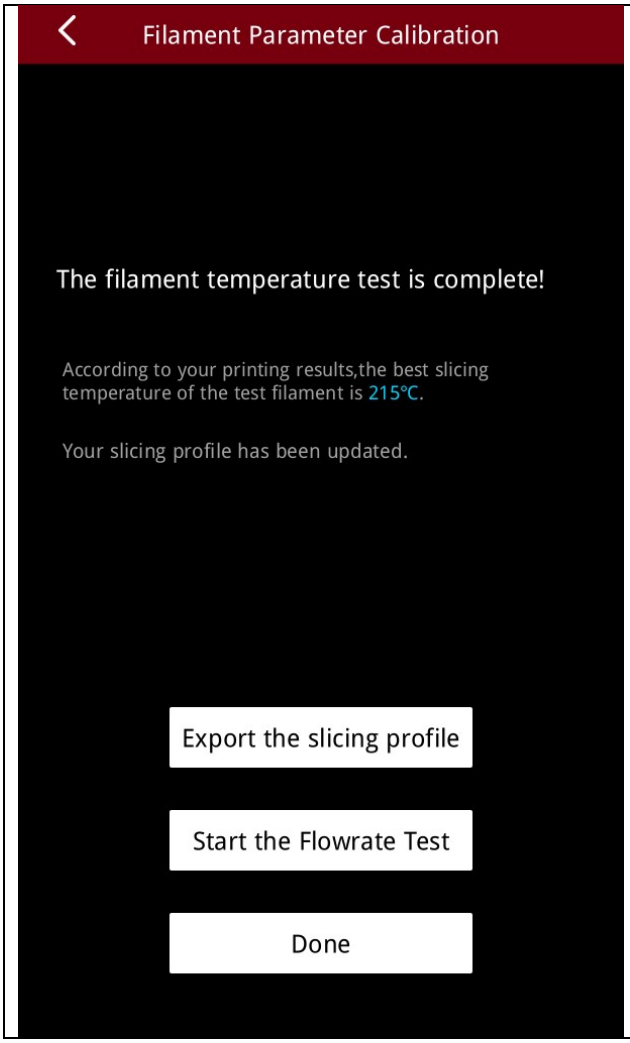



Confirm the settings of the printer and the slicing profile on the screen. Input the temperature range for the filament test.

<table>
<tr>
<td> 

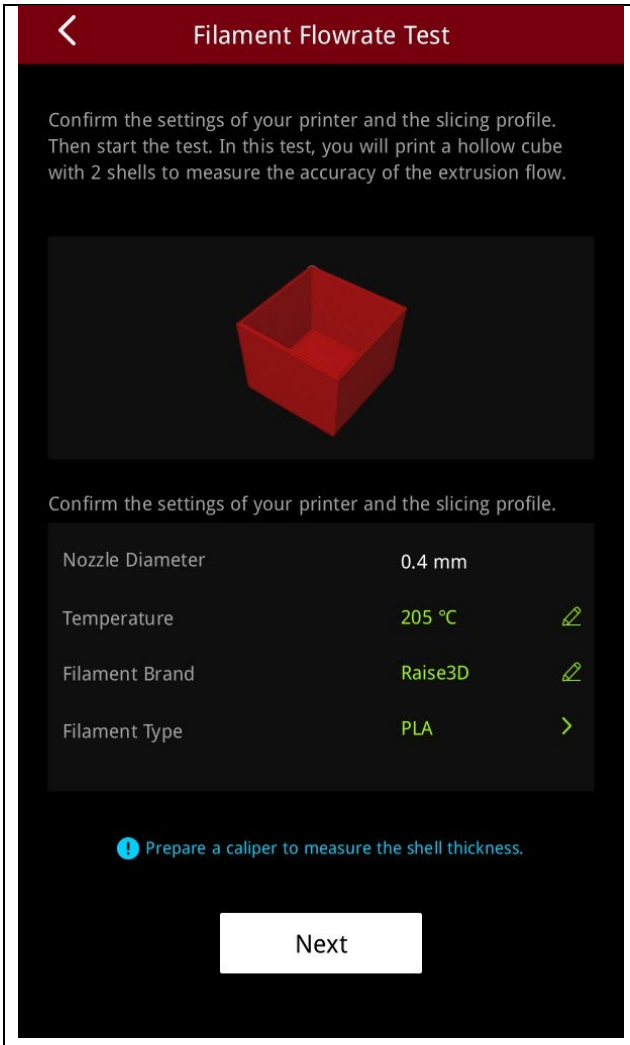
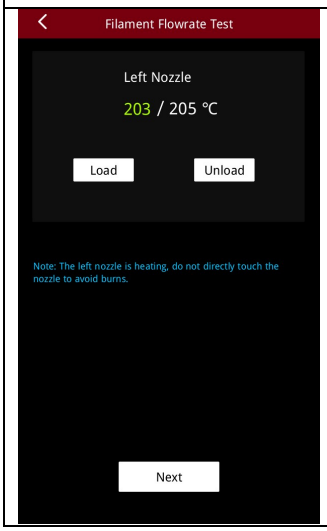
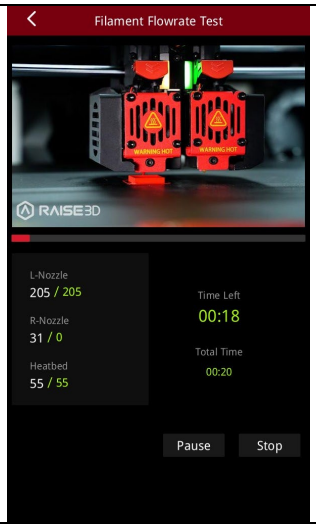

</td>
<td>After loading the filament, the printer will print a temperature tower model.</td>
</tr>
<tr>
<td> 

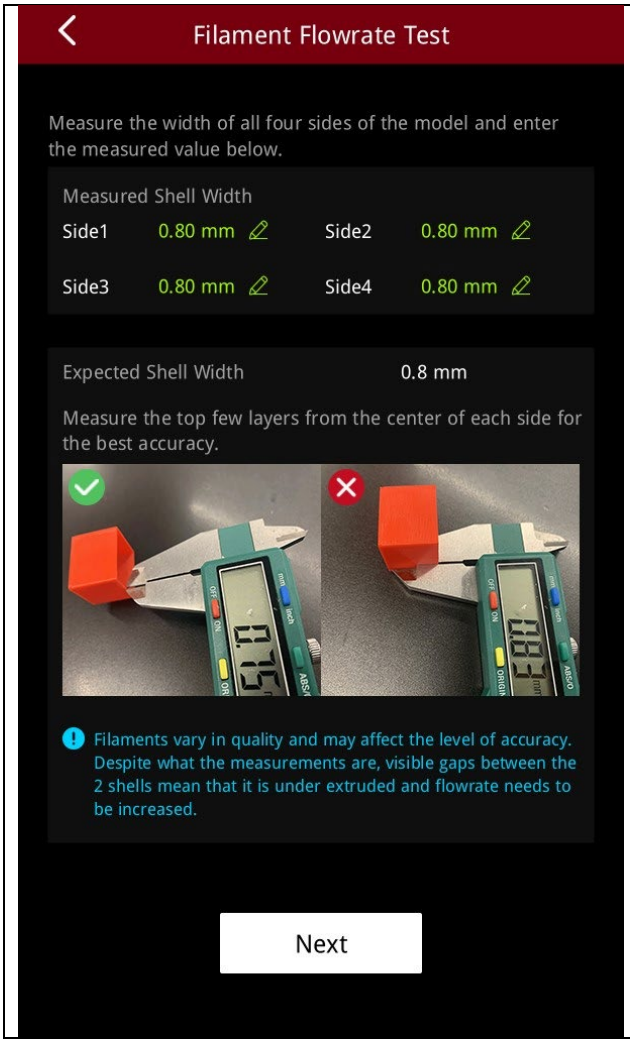

</td>
<td>After printing is complete, you can tap to view the case to compare and observe the temperature tower model that was printed with the case shown on the screen.</td>
</tr>
</table>



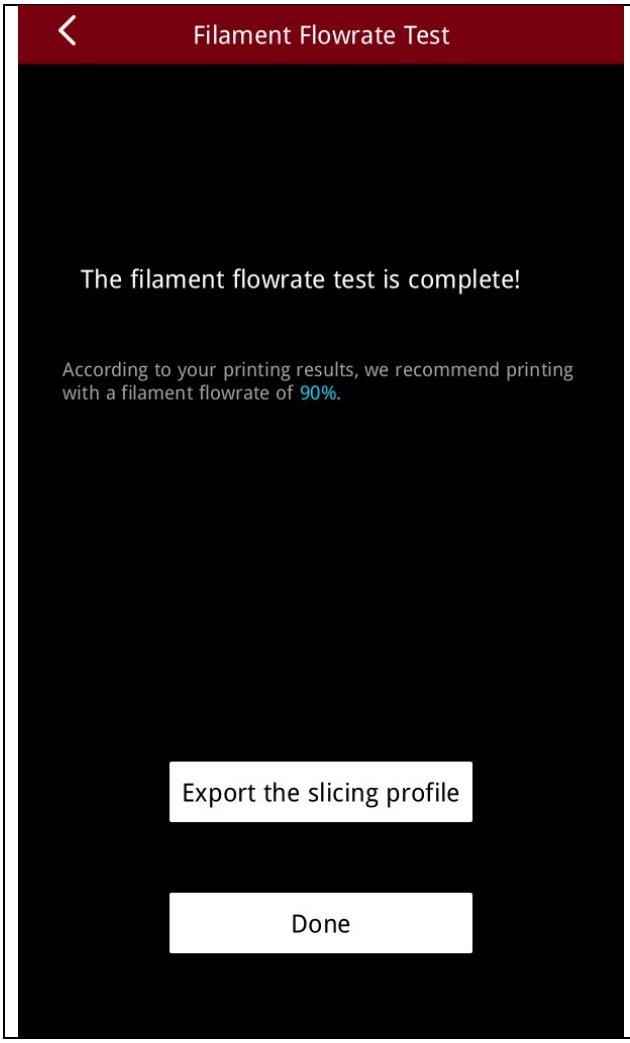

The filament temperature test is complete and now you should have the best slicing temperature value for the test filament. You can export the new slicing profile to the connected external storage.

## Filament Flowrate Test

| | |
|---|---|
|  | Confirm the settings of the printer and the slicing profile on the screen. Input the temperature range for the filament test. |
|   | After loading the filament, the printer will print a hollow cube model. |

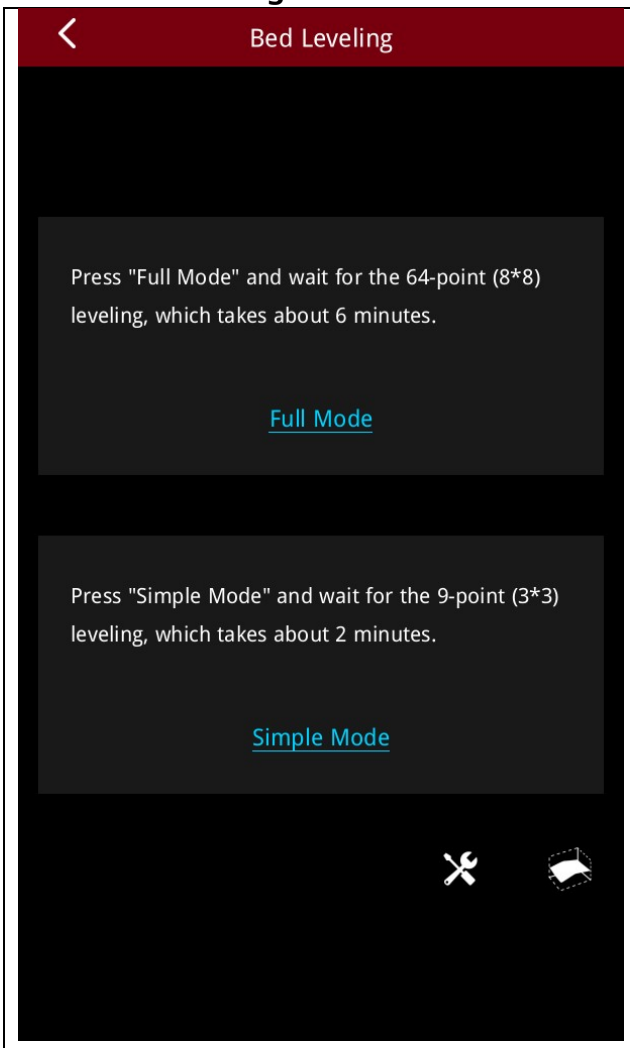



After printing is complete, measure the wall thickness of all four sides of the model and enter the measurements.

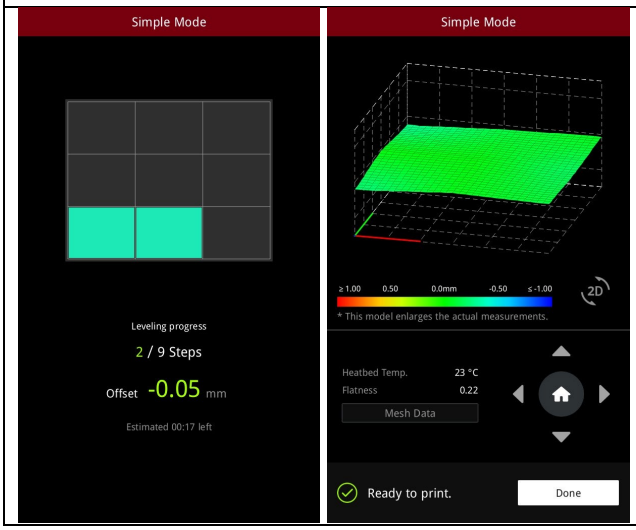



The filament flowrate test is complete and you should have the recommended flowrate for the filament. You can export the new slicing profile to the connected external storage.

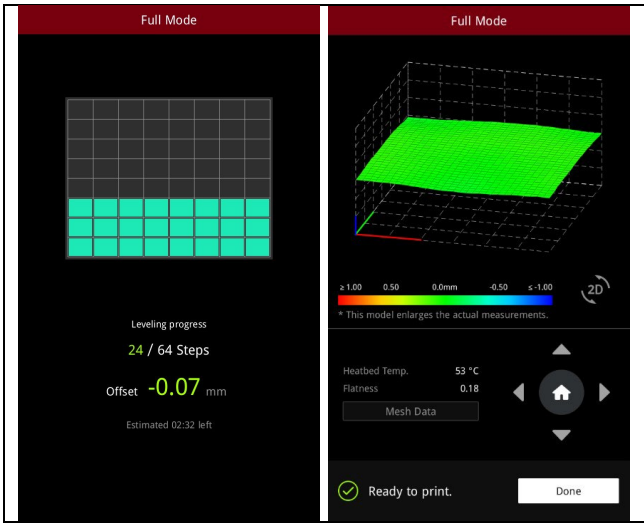
### 6.1.1.3 Bed Leveling




In the ”Bed Leveling„ interface, you can select the ”Full Mode„ or ”Simple Mode„ to adjust the flatness of the build plate.

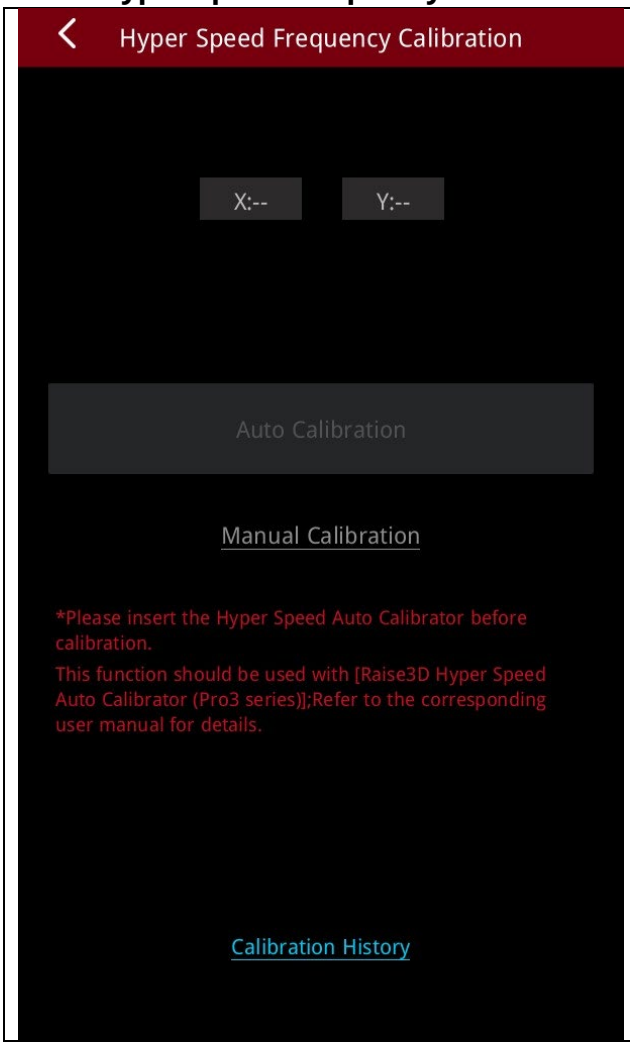



The simple mode leveling uses 9 points on the build plate and takes about 2 minutes.



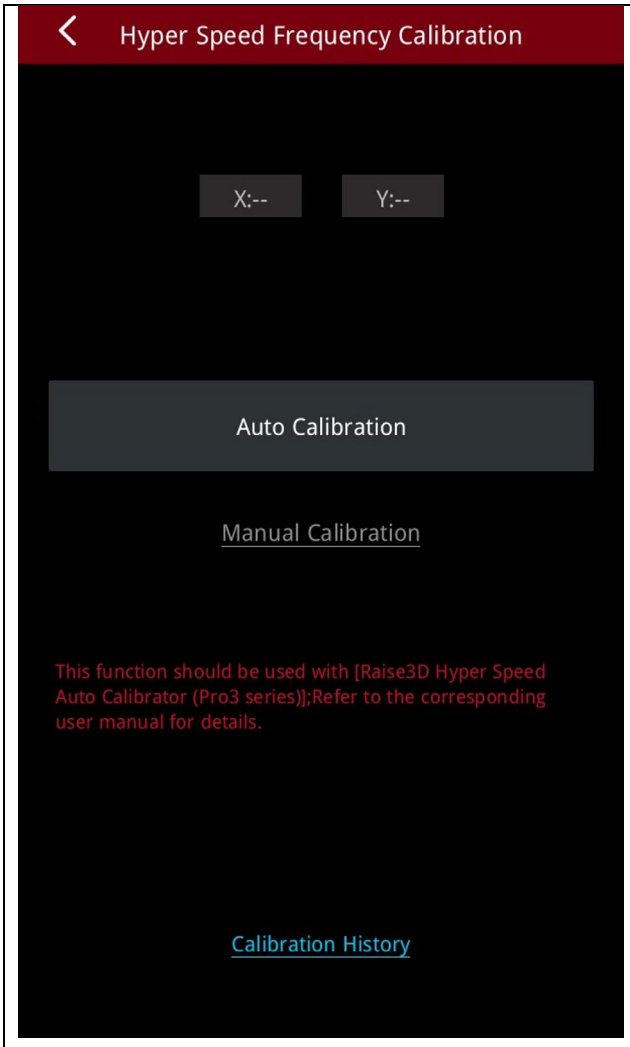
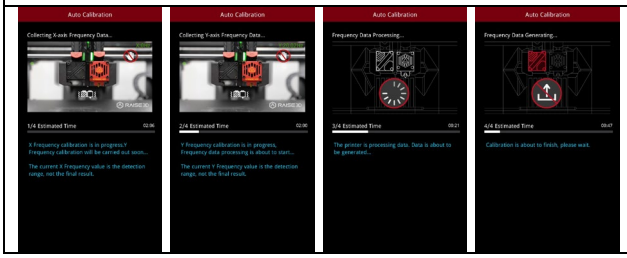

The full mode leveling uses 64 points on the build plate and takes about 6 minutes.

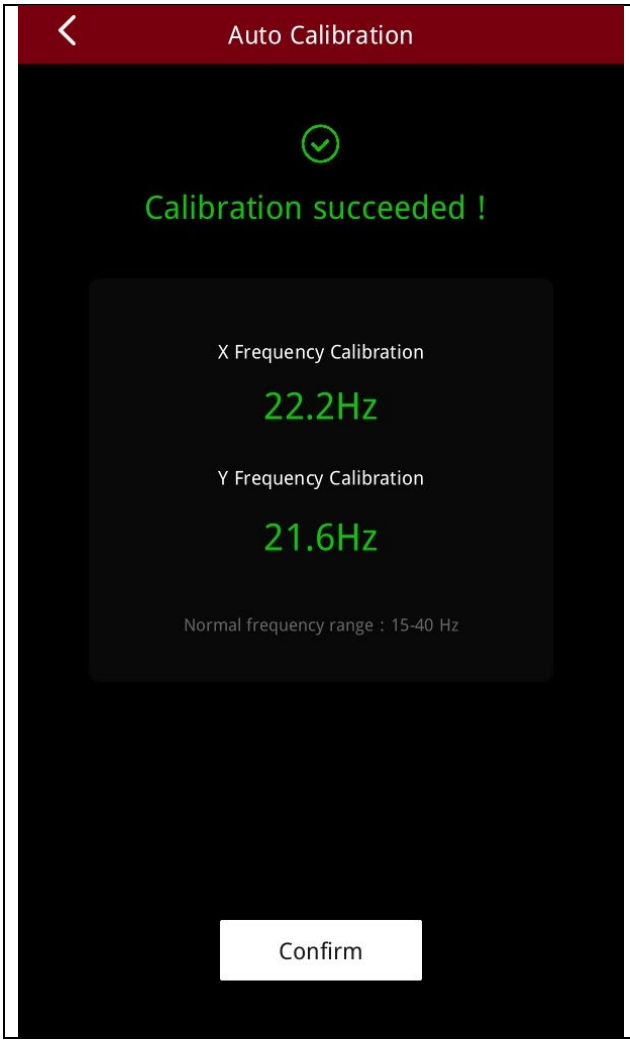
### 6.1.1.4 Hyper Speed Frequency Calibration



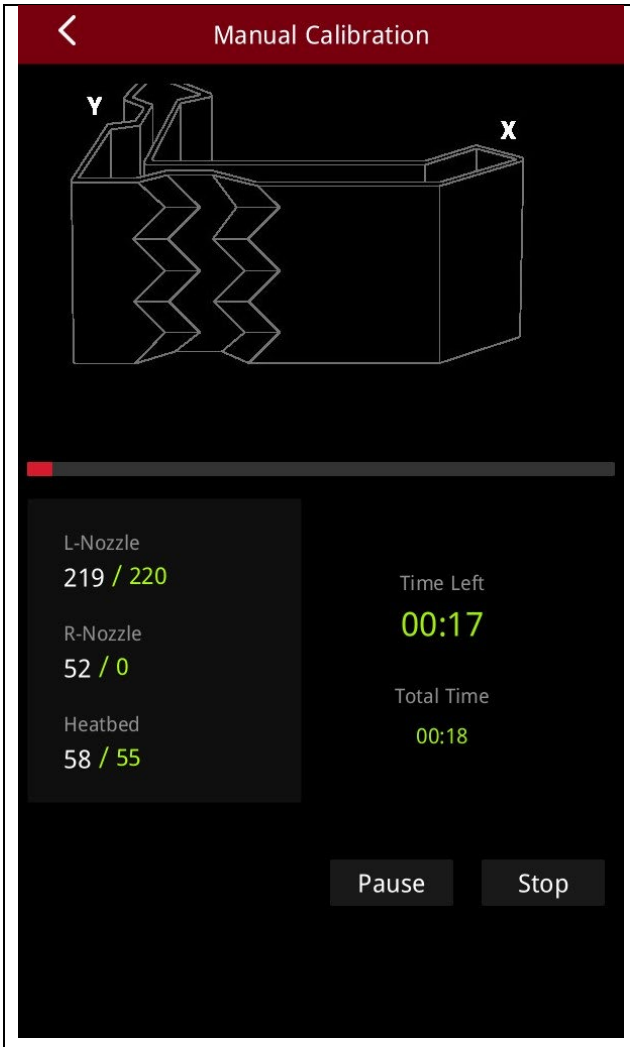

In the ”Hyper Speed Frequency Calibration„ interface, you can choose the ”Auto Calibration„ or ”Manual Calibration„ to calibrate the hyper speed frequency.

***Note: You must replace the left nozzle with a Hyper Speed Auto Calibrator to perform the "Auto Calibration" function. You can contact after-sales service to obtain a Hyper Speed Auto Calibrator.***

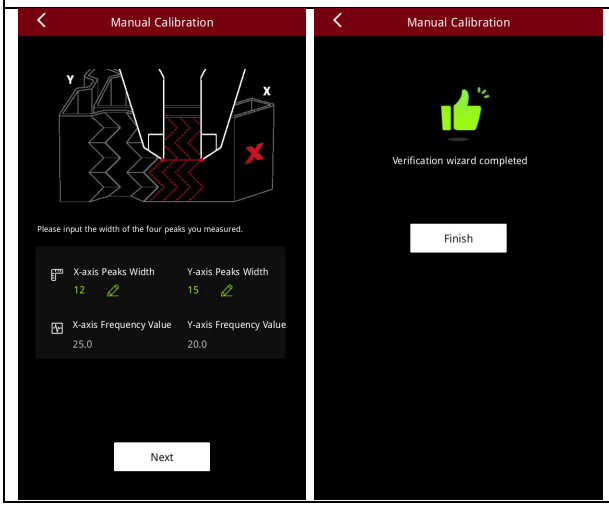
<table>
<tr>
<td> 
</td>
<td>Auto Calibration:<br>Remove the left nozzle and replace it with a Hyper Speed Auto Calibrator. Tap "Auto Calibration" to enter the hyper speed frequency auto calibration program.</td>
</tr>
<tr>
<td>  </td>
<td>The printer will automatically complete the X and Y frequency calibration value acquisition and analysis.</td>
</tr>
</table>




When the calibration is complete, you will get the X and Y calibration frequency values. Tapping "Confirm", you can apply the calibration results.



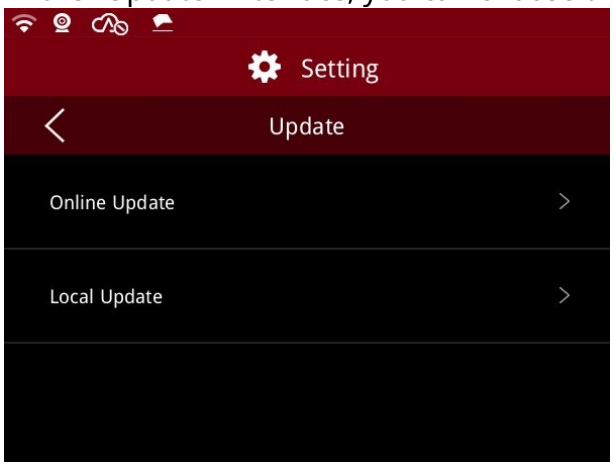

**Manual Calibration:**
In the "Hyper Speed Frequency Calibration" page, tap "Manual Calibration" to enter the hyper speed frequency manual calibration program. The printer will print a built-in model.



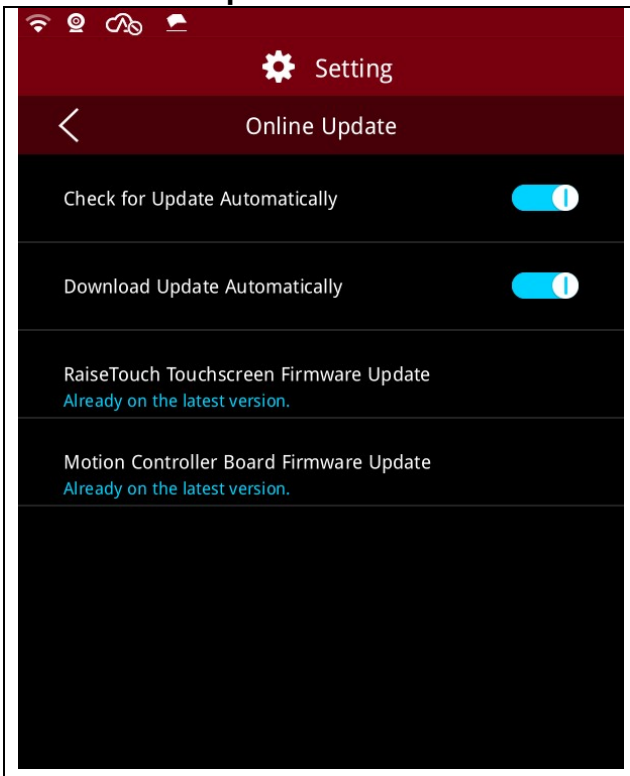

After printing is complete, use a professional measuring tool (such as a vernier caliper) to measure the width of the four peaks of the model and enter the measurement value on the touchscreen. The printer will automatically calculate the X and Y calibration frequency values. Tap "Next" to confirm and apply the calibration results. By tapping "Next", you apply the calibration results.

## 6.1.2 Update

In the "Update" interface, you can choose the "Online Update" or "Local Update".




### 6.1.2.1 Online Update



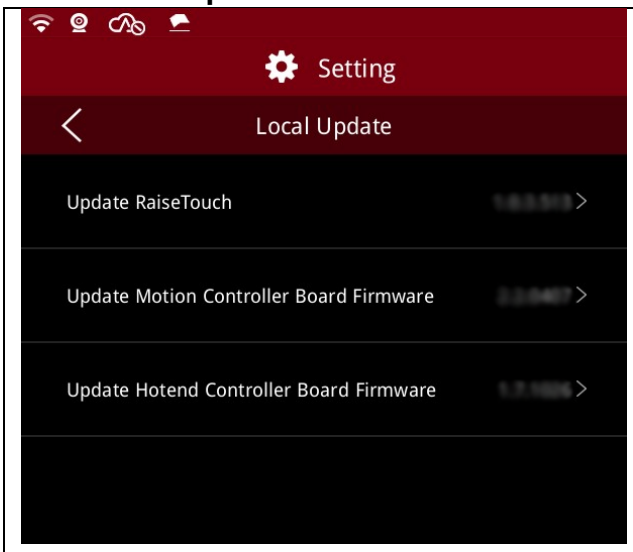
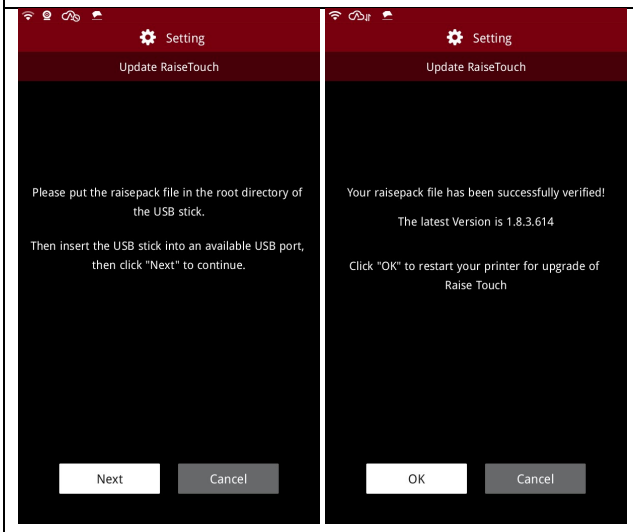
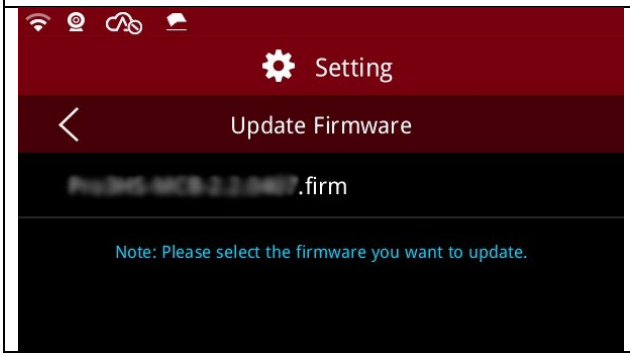

**Check for Update Automatically**: If this function is enabled, the printer will automatically detect if a new firmware version is available. When a new version is detected, an update prompt will appear on the touchscreen.

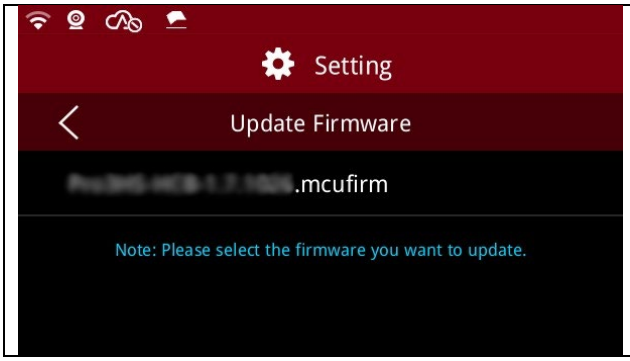
**Download Update Automatically**: If this function is enabled, the printer will automatically download the new firmware version. You can update the firmware by directly tapping ”Install„ in the prompt.

**RaiseTouch Touchscreen Firmware Update**: Displays whether the RaiseTouch touchscreen firmware is the latest version.

**Motion Controller Board Firmware Update**: Displays whether the motion controller board firmware is the latest version.

### 6.1.2.2 Local Update

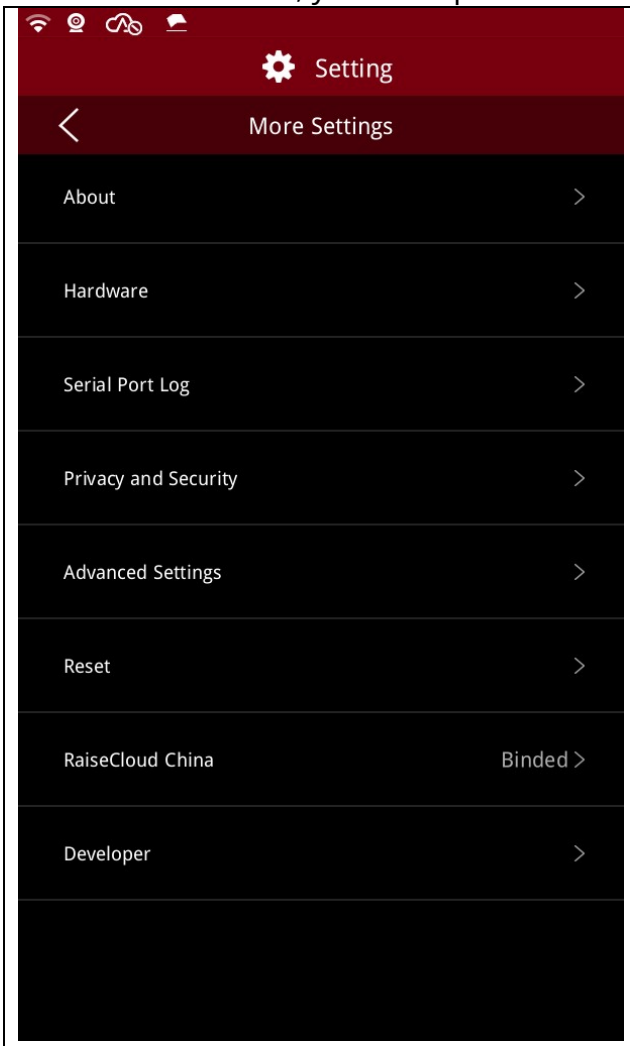
| | |
|---|---|
|  | **Update RaiseTouch**: Updates the RaiseTouch version.<br><br>**Update Motion Controller Board Firmware**: Updates the Motion Control Board firmware version.<br><br>**Update Hotend Controller Board Firmware**: Updates the Motion Control Board firmware version. |
|  | **Update RaiseTouch**:<br>You can download the latest version of the raisepack file from Raise3D's official website (https://www.raise3d.com/download/) and save it in the root directory of your USB drive. Insert the USB drive into the printer and follow the on-screen prompts to update RaiseTouch. |
|  | **Update Motion Controller Board Firmware**:<br>You can update the motion controller board firmware by tapping the firmware version you want to update from the list and following the on-screen prompts. |




**Update Hotend Controller Board Firmware**:
You can update the hotend controller board firmware by tapping the firmware version you want to update from the list and following the on-screen prompts.

## 6.2 More Settings

On the “Machine” tab, you can tap “More Settings” to view more settings for the printer.




**About**: View the End User License Agreement (EULA).

**Hardware**: View or set the hardware information of the printer. See the "Hardware" section for details.

**Serial Port Log**: Export all print logs to a USB drive.

**Privacy and Security**: Displays settings related to data security and privacy, such as passwords. See the "Privacy and Security" section for details.

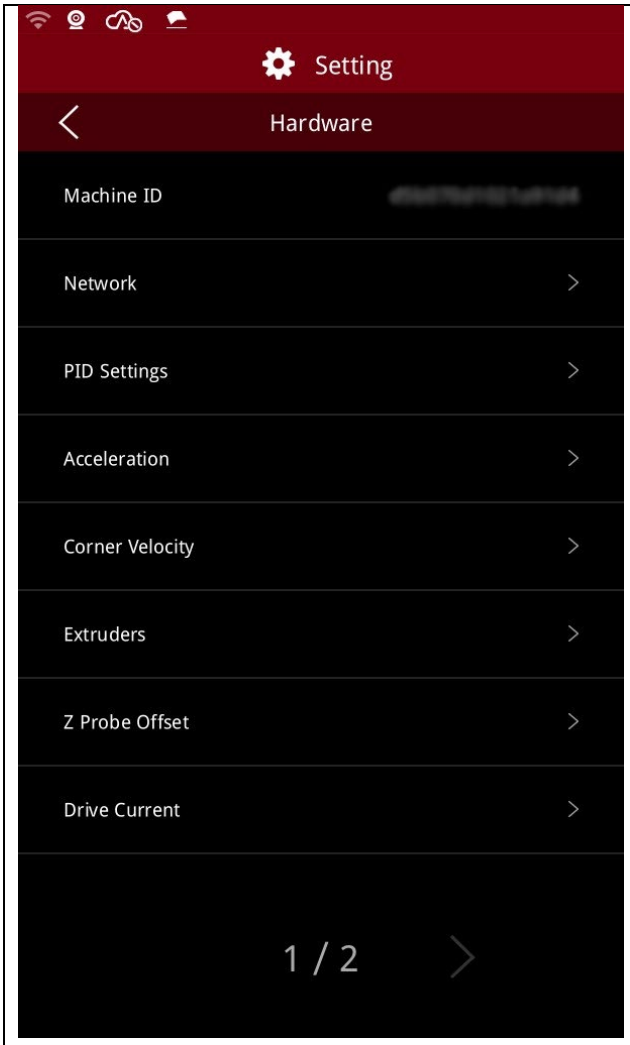
**Advanced Settings**: Displays advanced settings related to printing. See the “Advanced Settings” section for details.

**Reset**: Resets the printer's parameters and settings to factory defaults. See the “Reset” section for details.

**RaiseCloud China**: Link a RaiseCloud account to the printer. See the "RaiseCloud China" section for details.

**Developer**: In developer mode, you can enable the remote access API.

## 6.2.1 Hardware Information




**Machine ID**: Displays the ID of the printer.

**Network**: Displays the MAC address of the printer.

**PID Setting**: Automatically or manually calibrates the nozzles. See the "PID Setting" section for details.

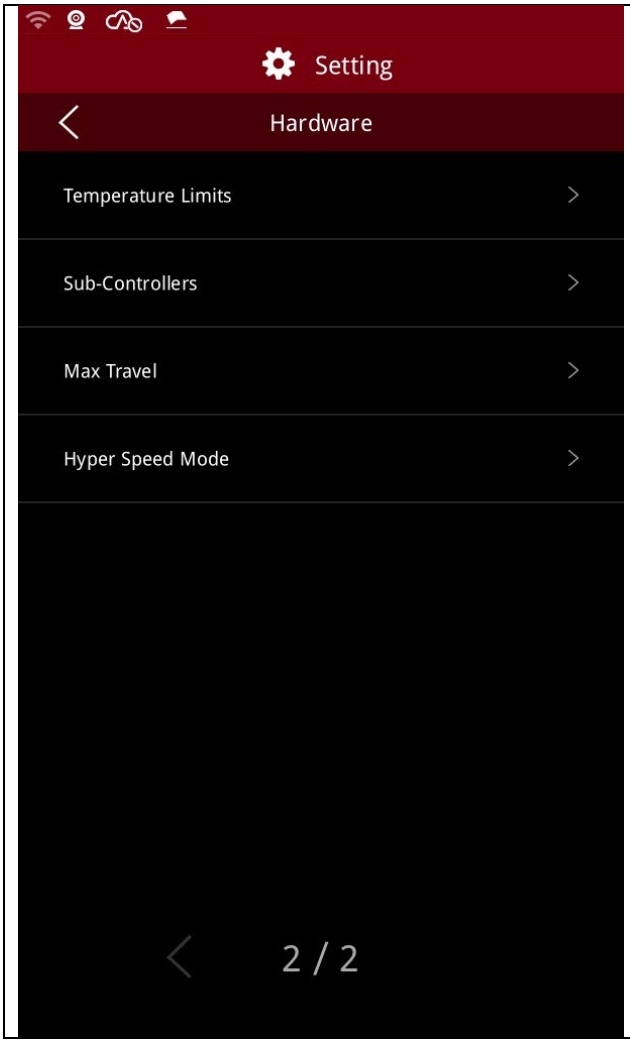
**Acceleration**: Sets the print acceleration and travel acceleration.
***Note: Changes to accelerations affect the print quality, so please adjust the original settings carefully.***

**Corner Velocity**: Sets the square corner velocity and extruder instantaneous corner velocity.
***Note: Changes to corner velocities affect the print quality, so please adjust the original settings carefully.***

**Extruder**: View the hotend information, adjust the right nozzle offset, and choose the nozzle diameter. See the “Extruder” section for details.

**Z Probe Offset**: Sets the Z probe offset value and the Z home gap value for the left and right nozzles.

**Drive Current**: Sets the maximum current value of the motor in X, Y, Z and E directions. See the "Drive Current" section for details.



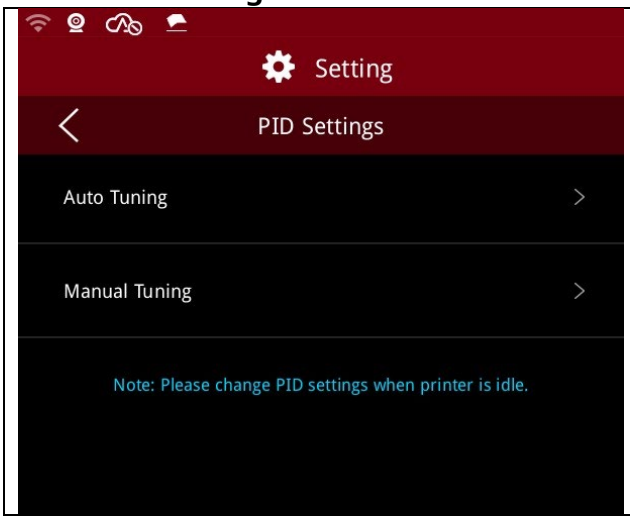

**Temperature Limits**: Sets the maximum, minimum, and default nozzle temperatures. See the “Temperature Limits” section for details.

**Sub-Controllers**: Displays the motion controller board version and the hotend controller board version.

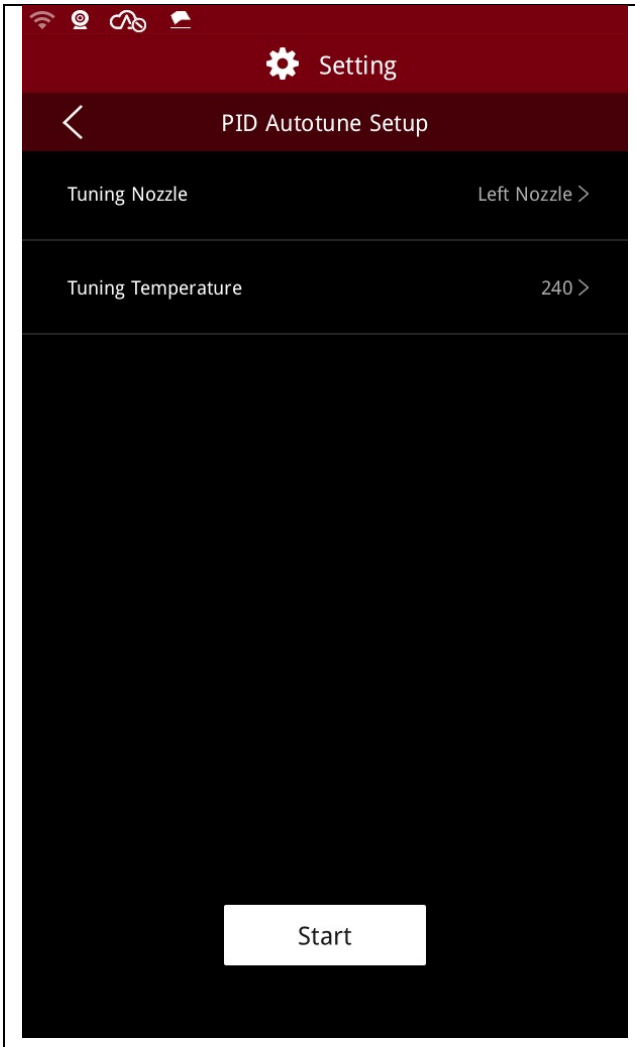
**Max Travel**: Sets the maximum travel of X, Y, and Z axes.

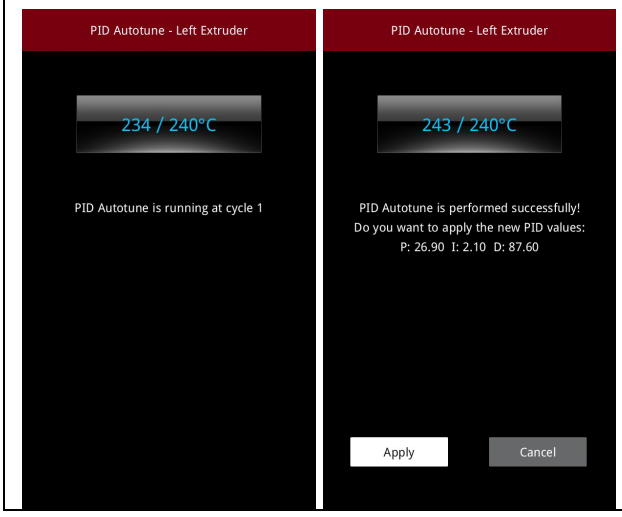
**Hyper Speed Mode**: Set the resonance frequency values in X and Y axes.

#### 6.2.1.1 PID Setting




On the "PID Settings" interface, you can choose the "Auto Tuning" or "Manual Tuning".

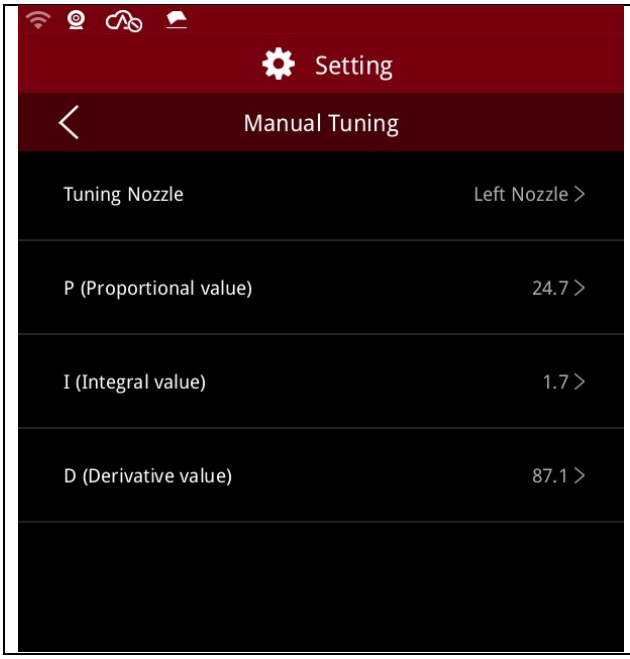



**Auto Tuning**:
On the "PID Settings" interface, tap "Auto Tuning" to enter the "PID Autotune Setup" interface.

**Tuning Nozzle**: Select the nozzle or the hot bed to be calibrated.
**Tuning Temperature**: Set the calibration temperature.

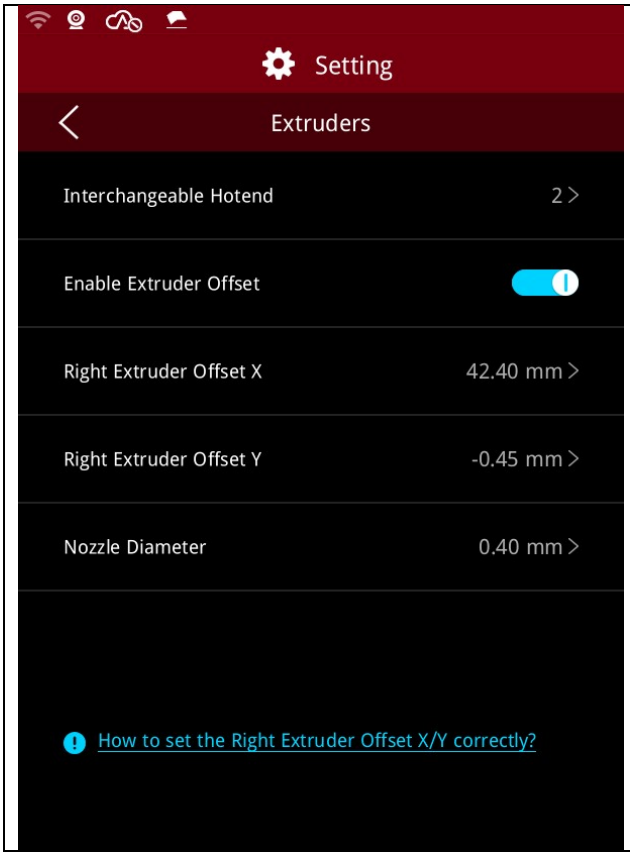
You can select the nozzle or the hot bed to be calibrated, set the calibration temperature, and then tap "Start". After the auto calibration is complete, tap "Apply" and the printer will apply the calibrated PID values.
***Note: Ensure that the nozzle is cool before performing the PID calibration, otherwise it may cause the PID calibration to be inaccurate.***




**Manual Tuning**:
On the "PID Settings" screen, tap "Manual Calibration" to enter the "Manual Calibration" interface.

**Tuning Nozzle**: Select the nozzle or the hot bed to be calibrated.
**P (Proportional value)**: Sets the ratio of the error signal for the controller's output to its input.
**I (Integral value)**: Sets the control system steady-state error value.
**D (Derivative value)**: Sets the reaction speed value of the acceleration system.

### 6.2.1.2 Extruders

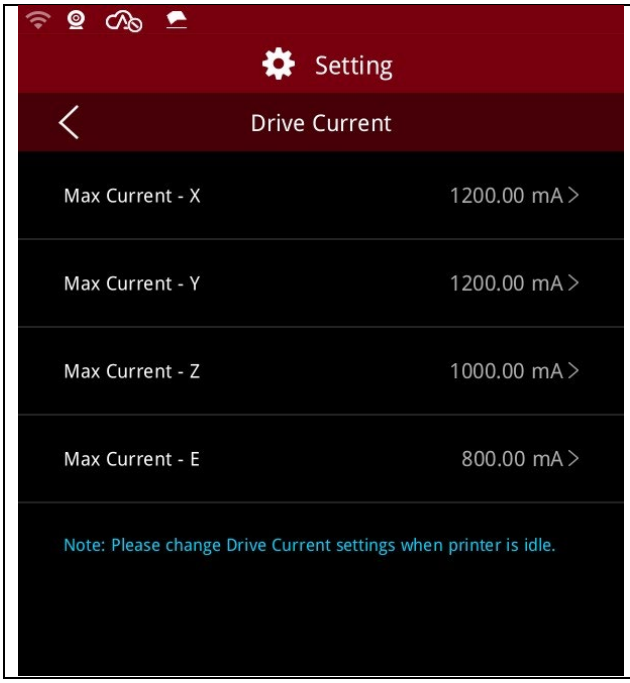



**Interchangeable Hotend**: View information about the interchangeable hotends, such as the maximum support temperature.

**Enable Extruder Offset**: Turn on the switch, set the following two items, and then tap "Apply" to enable the settings.
**Right Extruder Offset X**: Sets the right extruder offset value in the X direction.
**Right Extruder Offset Y**: Sets the right extruder offset value in the Y direction.

**Nozzle Diameter**: Choose the nozzle diameter.

### 6.2.1.3 Drive Current



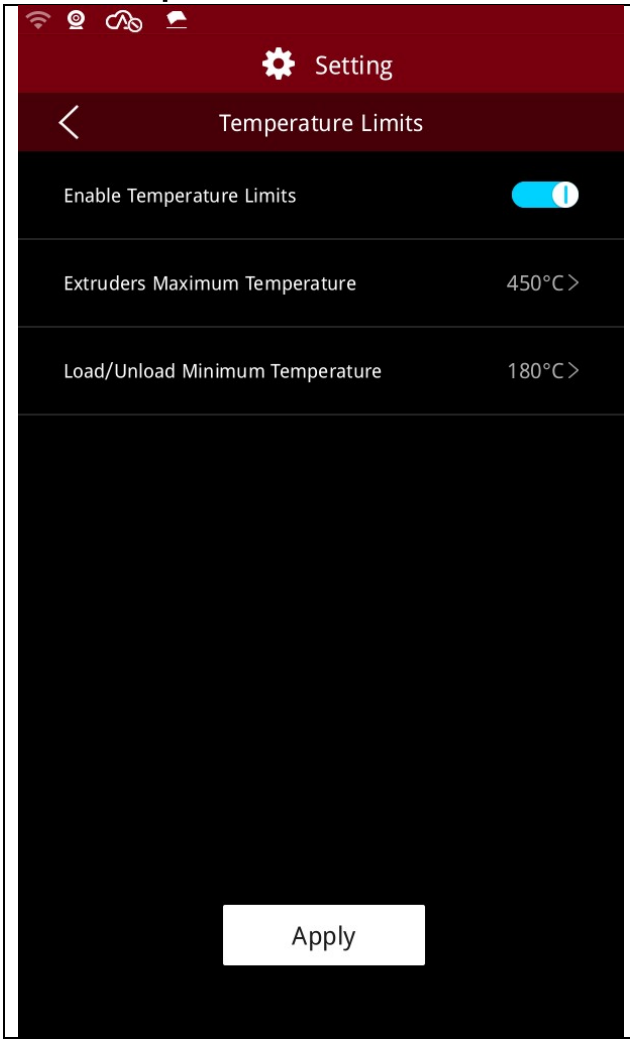

**Max Current - X**: Sets the maximum drive current value in the X direction.

**Max Current-Y**: Sets the maximum drive current value in the Y direction.

**Max Current - Z**: Sets the maximum drive current value in the Z direction.

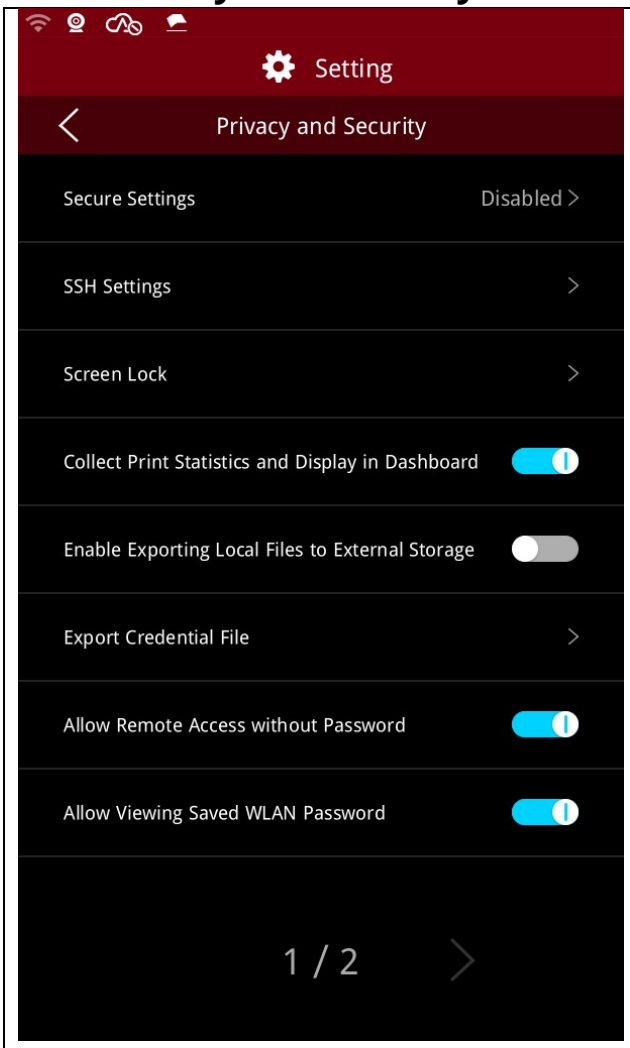
**Max Current - E**: Sets the maximum current drive current value in the direction of extruder movement.

### 6.2.1.4 Temperature Limits




**Enable Temperature Limits**: Turn on the switch, set the following two items, and then tap "Apply" to enable the settings.
**Extruders Maximum Temperature**: Sets the maximum temperature value for the nozzle.
**Load/Unload Minimum Temperature**: Sets the minimum nozzle temperature when loading or unloading filament.

## 6.2.2 Privacy and Security




**Secure Settings**: If this function is enabled, you must enter a security password before modifying temperature limits, privacy and security settings, reset settings, and storage. See the "Secure Settings" section for details.

**SSH Settings**: If this function is enabled, your security password will be changed to SSH password by default. See the "SSH Settings" section for details.

**Screen Lock**: Sets the timeout for the screen lock. See the "Screen Lock" section for details.

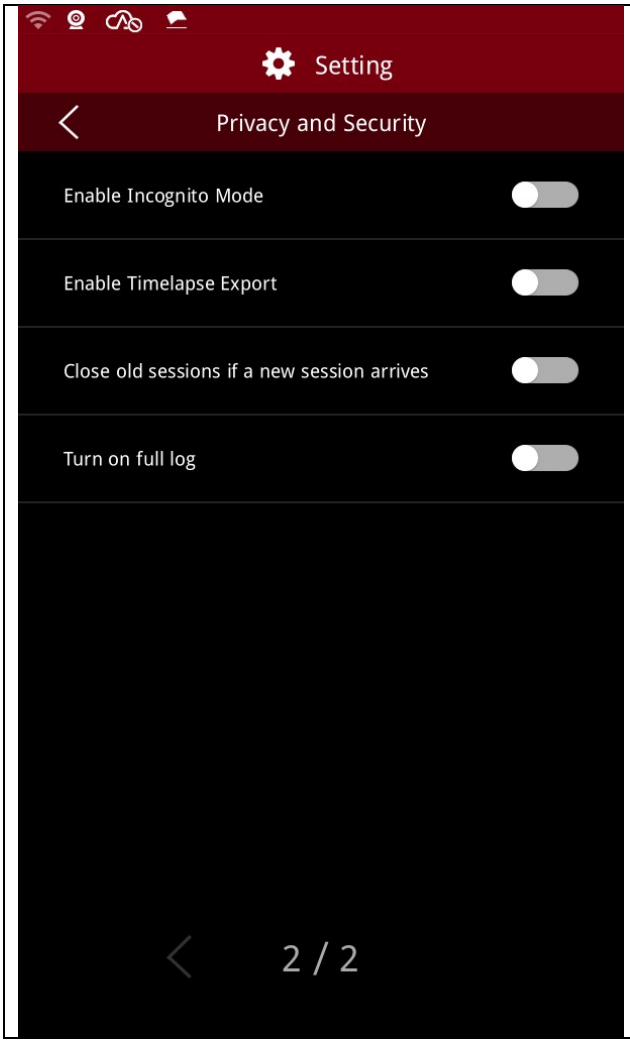
**Collect Print Statistics and Display in Dashboard**: If this function is enabled, print statistics can be viewed in the ”Dashboard„ interface.

**Enable Exporting Local Files to External Storage**: If this function is enabled, local print files can be exported to external storage.

**Export Credential File**: Exports credential files to external storage. See the "Export Credential File" section for details.

**Allow Remote Access without Password**: If this function is enabled, there is no need to enter the security password when connecting to the printer remotely.

**Allow Viewing Saved WLAN Password:** If this function is enabled, you can view the passwords of the WLANs to which the printer has access.



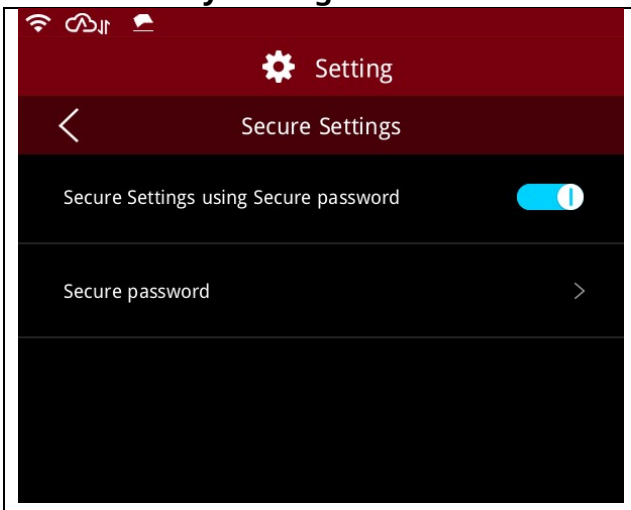

**Enable Incognito Mode**: If this function is enabled, the incognito mode icon will appear in the upper left corner of the interface. After printing is complete, the information related to the print job (such as the print history) will be deleted. If the print job is a local file, the local file will be deleted and will not be recorded in the "Dashboard" interface.

**Enable Timelapse Export**: If this function is enabled, timelapse photos can be exported to external storage.

**Close old sessions if a new session arrives**: If this function is enabled, when ideaMaker is remotely connected, even if a user has already connected to the printer, other users can preemptively log in and connect to the printer, and the previous user will be automatically disconnected.

**Turn on full log**: If this function is enabled, the printer will record more detailed log information.

### 6.2.2.1 Security Settings

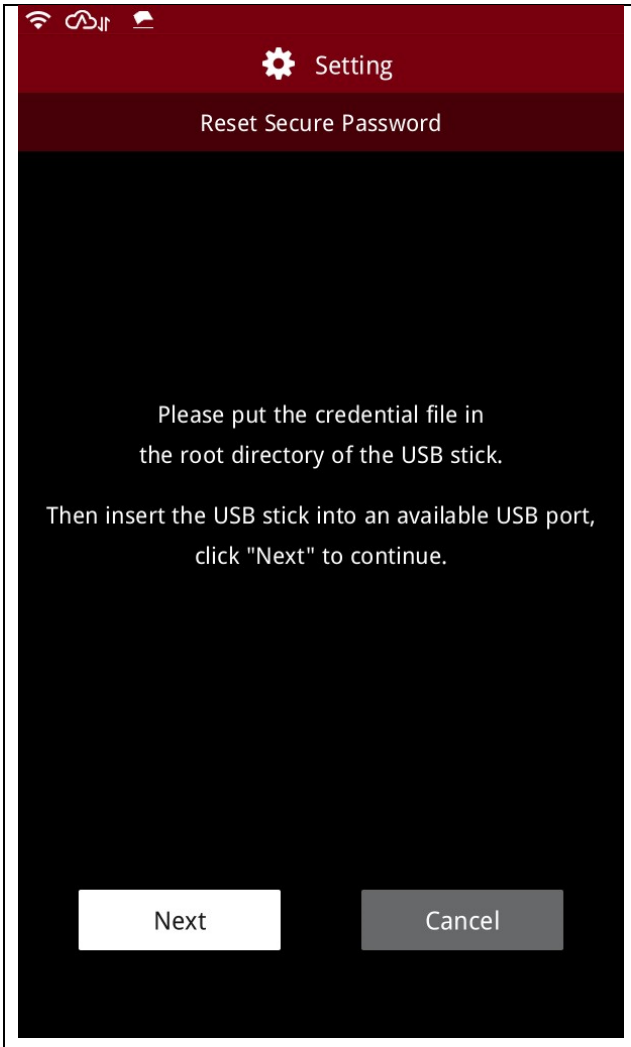



**Secure Settings using Secure password**: If this function is enabled, you must enter a security password before making any security settings.

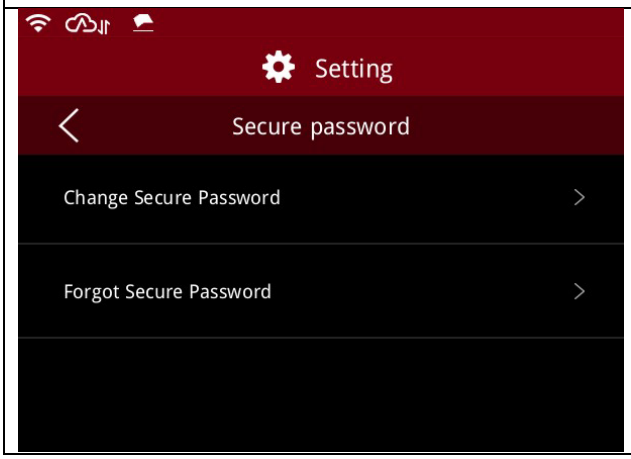
***Note:***

- ***If the SSH service was not enabled before upgrading the RaiseTouch version, the security password is a default number that can be changed directly by tapping it.***
- ***If the SSH service has been enabled before upgrading the RaiseTouch version, the security password is the SSH password by default.***

**Secure password**: Change or reset the security password.

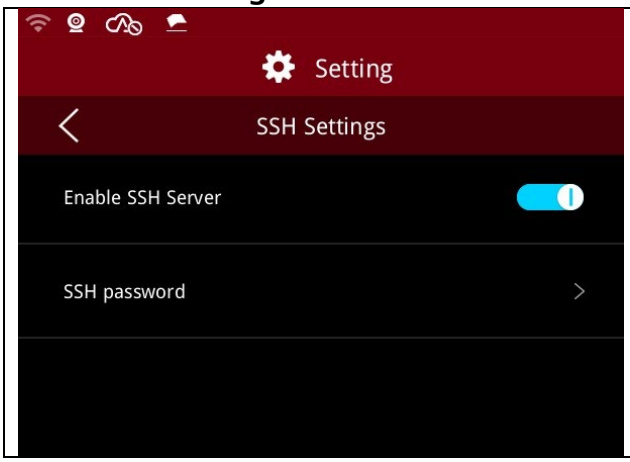



Before enabling the security settings, you must back up the credential file and export it to a USB drive.




If you have enabled security settings and forgotten the security password for the printer, tap "Secure Password" > "Forgot Secure Password", insert a USB drive with a backup credential file into the printer, and reset the security password according to the on-screen prompts.

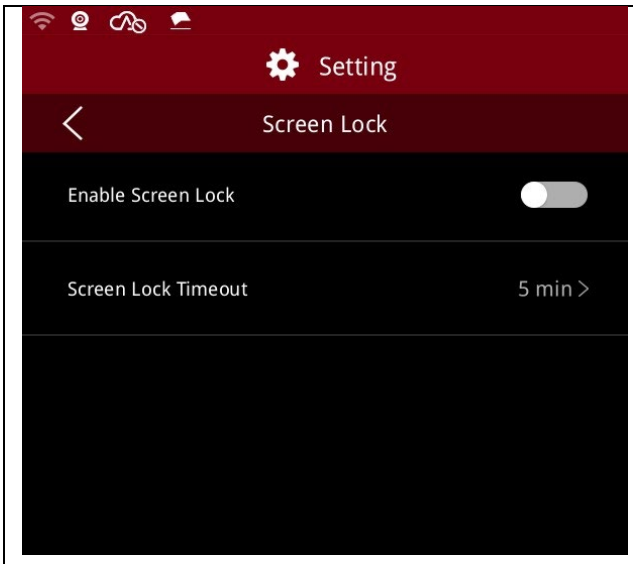
### 6.2.2.2 SSH Setting




**Enable SSH Server**: If this function is enabled, your security password will be changed to the SSH password by default. You can set the SSH password by yourself.
***Note: You must enter the security password before enabling the SSH server.***

**SSH Password**: View or set the SSH password.

### 6.2.2.3 Screen Lock

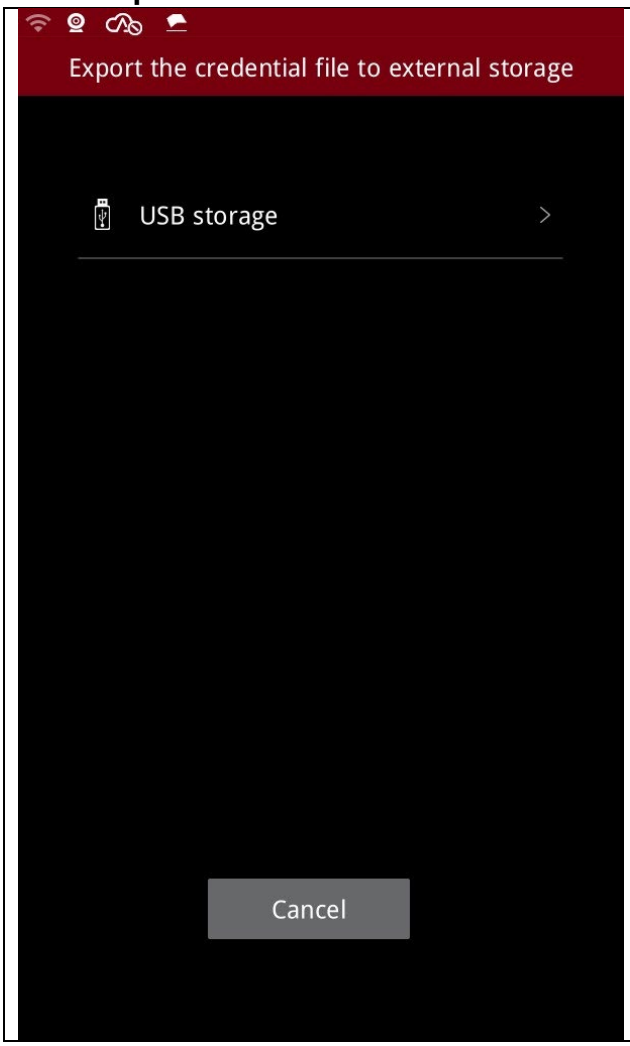



**Enable Screen Lock**: If this function is enabled, the printer will automatically lock the screen when the printer has been in an idle state for longer than the lock screen timeout period. You can set the screen lock password and screen lock timeout.
***Note:***

- ***If the printer has a security code enabled, you must enter the security code before enabling or disabling the screen lock.***
- ***The screen lock password can be empty.***

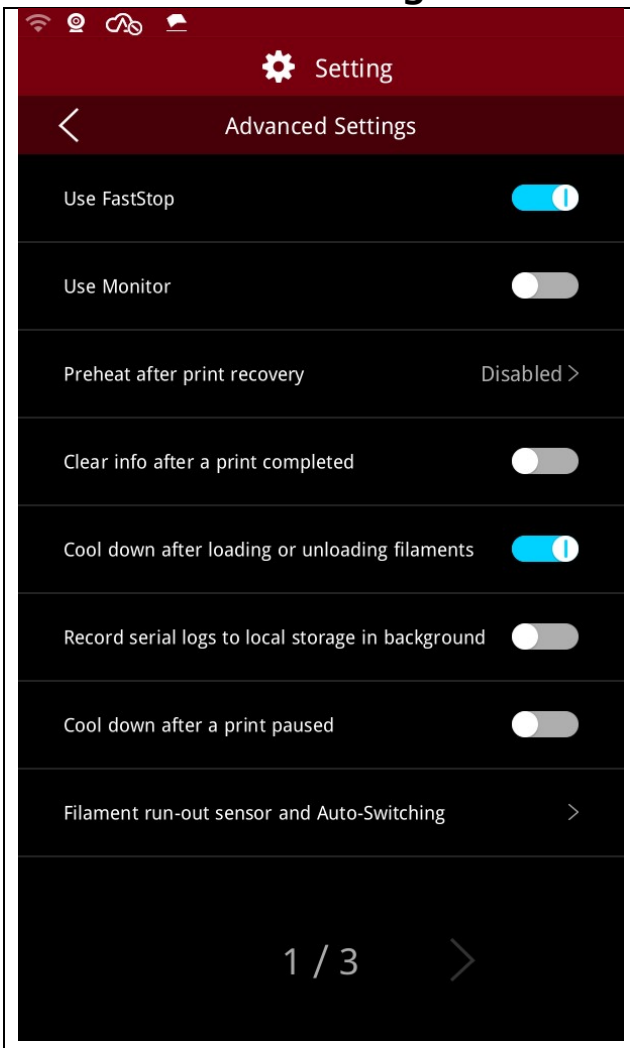
**Screen Lock Timeout**: Sets the screen lock timeout period.

### 6.2.2.4 Export the credential file to external storage




The printer automatically backs up the credential files. If you forget the SSH password, you can export the credential file to a USB drive to view the backup SSH password.

## 6.2.3 Advanced Settings




**Use FastStop**: If this function is enabled, the waiting time to stop a print jobp will be shortened.
***Note: This function requires a printer restart to take effect.***

**Use Monitor**: If this function is enabled, when the printer is powered off due to unexpected circumstances, the printer will record the status of the print job and can continue to print when it is powered back on, realizing the Power Loss Recovery.

**Preheat after print recovery**: If this function is enabled, when the printer is powered off due to unexpected circumstances, the nozzle will automatically heat up before resuming or restarting the print job to prevent the nozzle from sticking to the model and causing the model to move.

**Clear info after a print completed**: If this function is enabled, the model information will be automatically cleared after printing is completed.

**Cool down after loading or unloading filaments**: If this function is enabled, the nozzles will automatically cool down after loading or unloading filaments.

**Record serial logs to local storage in background**: If this function is enabled, serial port logs will be recorded in real time to the local storage.

**Cool down after a print paused**: If this function is enabled, the nozzles will automatically cool down after printing is paused.

**Filament run-out sensor and Auto-Switching**: If this function is enabled, the printer pauses the print job if it detects the

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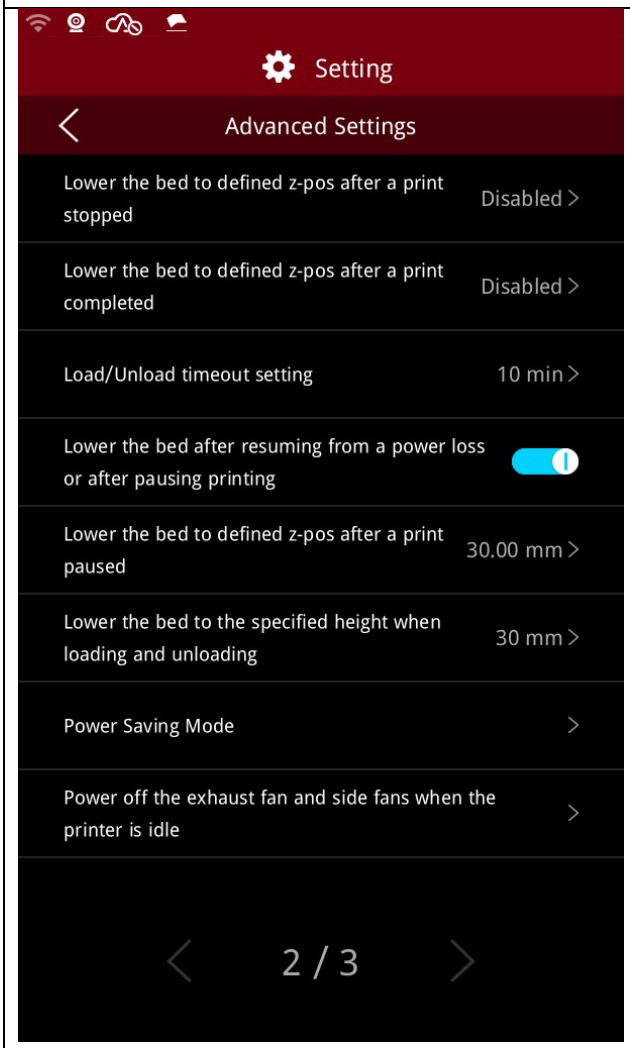
| | filament shortage. Printing can be resumed after adding filament. See the "Filament run-out sensor and Auto-Switching" section for details. |
|  | **Lower the bed to defined z-pos after a print stopped**: If this function is enabled, the build plate lowers to the specified position after printing stops. If the height at which the bed stops is already lower than the specified position, it will not lower.<br><br>**Lower the bed to defined z-pos after a print completed**: If this function is enabled, the build plate lowers to the specified position after printing completed. If the height of the build plate is already lower than the specified position, it will not lower.<br><br>**Load/Unload timeout setting**: If this function is enabled, you can set the timeout for loading or unloading filament. When the loading or unloading time reaches the set time, the printer will automatically stop loading or unloading.<br><br>**Lower the bed after resuming from a power loss or after pausing printing**: If this function is enabled, the heat bed will automatically lower if the printer is suddenly disconnected from power or if printing is paused during printing.<br><br>**Lower the bed to defined z-pos after a print paused**: If this function is enabled, the heat bed will lower to the specified position after printing is paused. If the height of the heat bed is already lower than the specified position, it will not lower.<br><br>**Lower the bed to the specified height when loading and unloading**: If this function is enabled, the build plate will lower to the specified position when loading or unloading filaments. If the height of the build plate is already lower than the |

| | |
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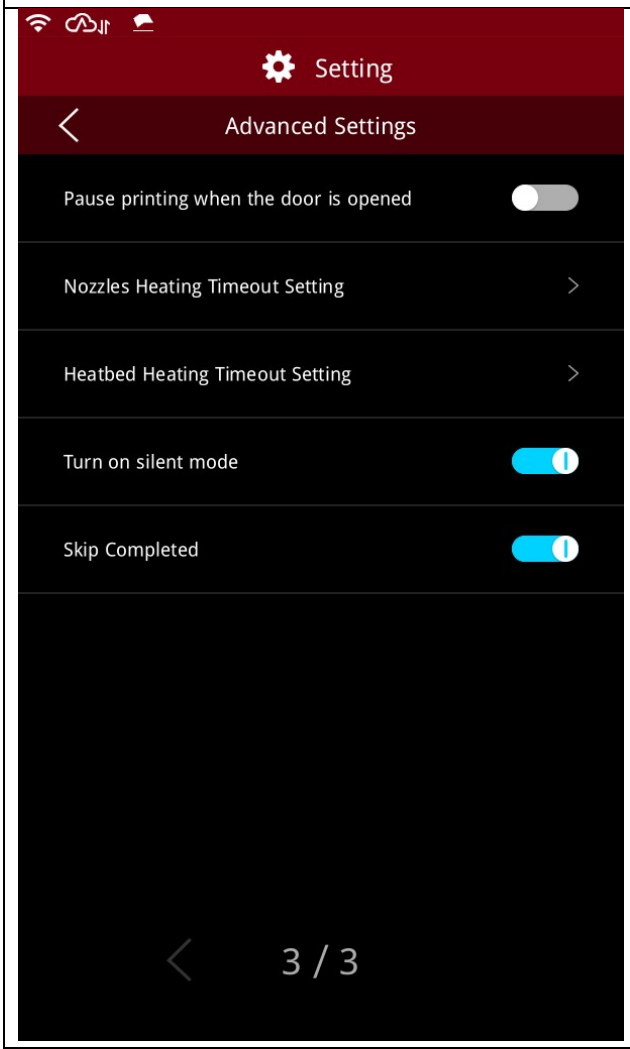
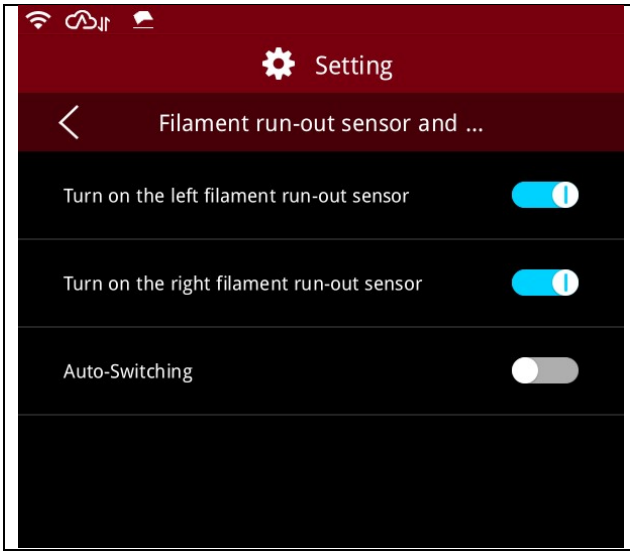
| | specified position, it will not lower.<br>**Power Saving Mode**: If this function is enabled, when the printer is in an idle state for longer than the time defined in Power Saving Mode Timeout, the printer will automatically enter the power saving mode, and both the touchscreen and the light bars inside the printer will go out.<br><br>**Power off the exhaust fan and side fans when the printer is idle**: If this function is enabled, the side fan, filter fan, and external cooling fan will shut down when the printer is in an idle state for longer than the time defined in Disable Fans Timeout. |
|  | **Pause printing when the door is opened**: If this function is enabled, the print job will pause when the front door, side door, or top cover is opened during printing.<br><br>**Nozzle Heating Timeout Setting**: If this function is enabled, the printer will automatically cool the nozzles when they are heated and have not been used for a long time. See the "Nozzle Heating Timeout Setting" section for details.<br><br>**Heatbed Heating Timeout Setting**: If this function is enabled, the printer will automatically cool the heat bed when it is heated and has not been used for a long time. See the "Heatbed Heating Timeout Setting" section for details.<br><br>**Turn on silent mode**: If this function is enabled, the printer will reduce the speed of the cooling fan, and the noise will decrease.<br><br>**Skip Completed**: If this function is enabled, the completion screen will no longer be displayed. |

### 6.2.3.1 Filament run-out sensor and Auto-Switching

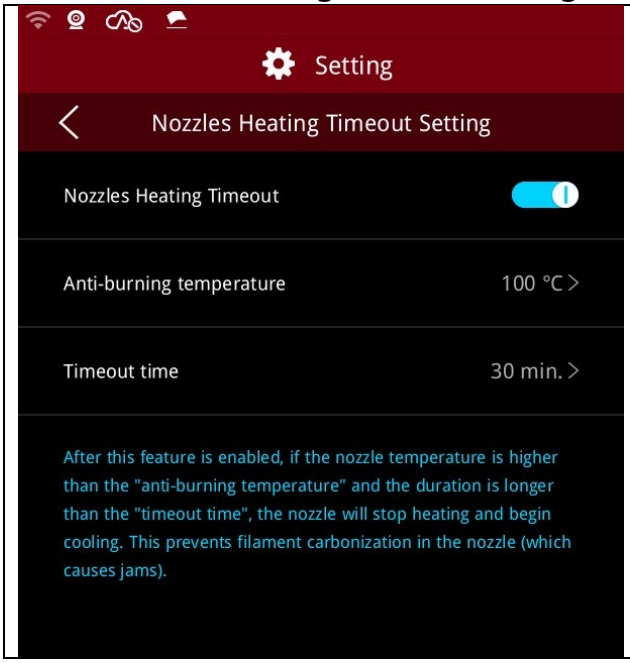



**Turn on the left filament run-out sensor**: If this function is enabled, the print job will be paused when the sensor in the left extruder detects the filament shortage.

**Turn on the right filament run-out sensor**: If this function is enabled, the print job will be paused when the sensor in the right extruder detects the filament shortage.

**Auto-switching**: If this function is enabled, interrupted print jobs can be continued.

### 6.2.3.2 Nozzles Heating Timeout Setting

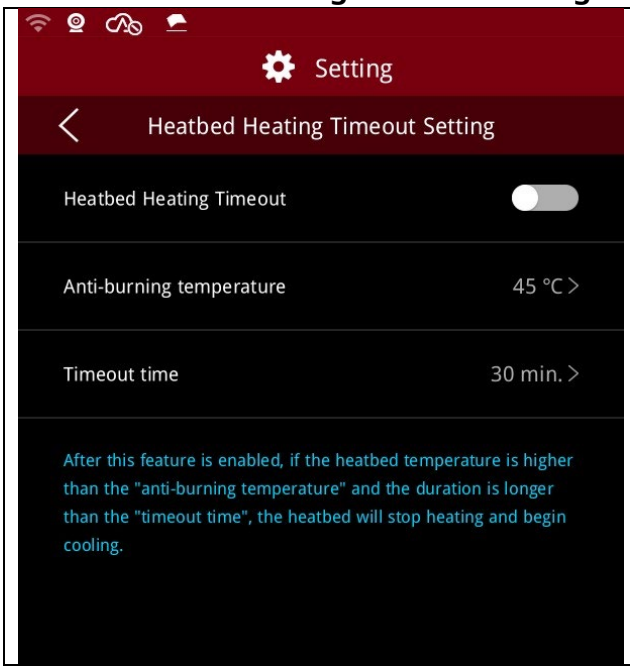



**Nozzles Heating Timeout**: If this function is enabled, the printer will stop heating and cool the nozzles if the nozzle temperature exceeds the "Anti-burning temperature" for longer than the "Timeout Time" while the printer is idle.

**Anti-burning temperature**: Sets the anti-burning temperature for the nozzles.

**Timeout Time**: Sets the timeout time for the nozzles to prevent anti-burning.

### 6.2.3.3 Heatbed Heating Timeout Setting

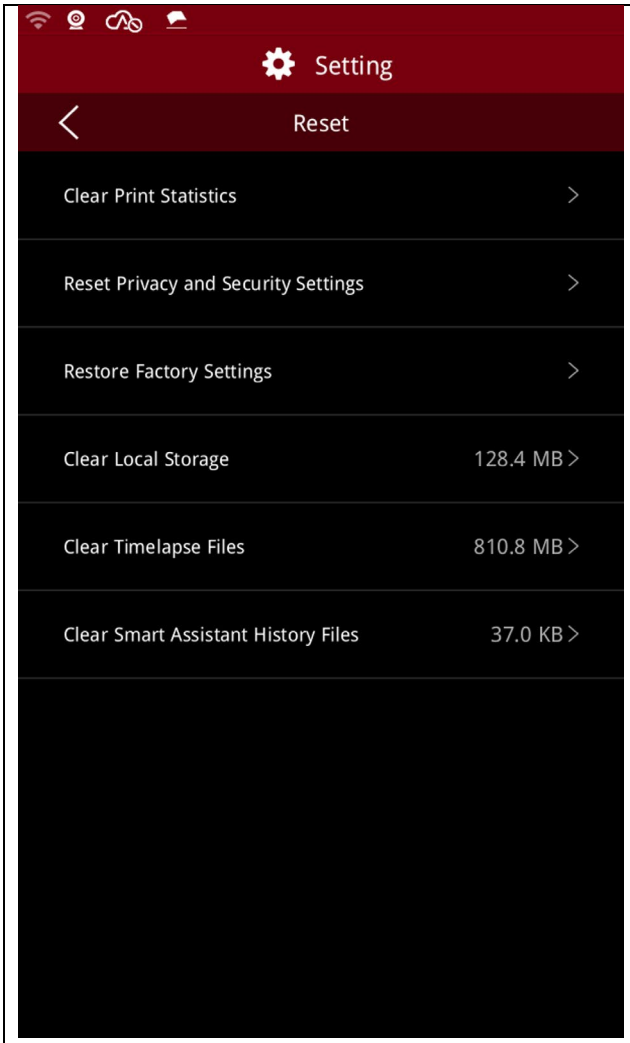



**Heatbed Heating Timeout**: If this function is enabled and the printer is idle, the temperature of the build plate is higher than the "Anti-Dry Burn Temperature" and the duration exceeds the "Timeout Time", the printer will stop heating the build plate and cool it down.

**Anti-Dry Burn Temperature**: Sets the anti-dry burn temperature of the build plate.

**Timeout Time**: Sets the timeout for the build plate to prevent overheating.

## 6.2.4 Reset




**Clear Print Statistics**: Deletes all print history and data statistics.

**Reset Privacy and Security Settings**: Resets the settings in ”Privacy and Security„ to the default settings.

**Restore Factory Settings**: Restores the printer to its factory settings.
The printer will do the following:

- Reset network settings, including Ethernet and WLAN configurations.
- Clear all personal settings, including the machine name, language, number of nozzles, screen brightness, time zone and time, and all settings in ”Hardware„ and ”Advanced Settings„.
- Clear all print records in ”Dashboard„.
- Reset all settings in ”Privacy and Security„.
- Delete all files from the local storage.
- Delete files temporarily stored after a power loss.

**Clear Local Storage**: Deletes all local files stored in the printer.

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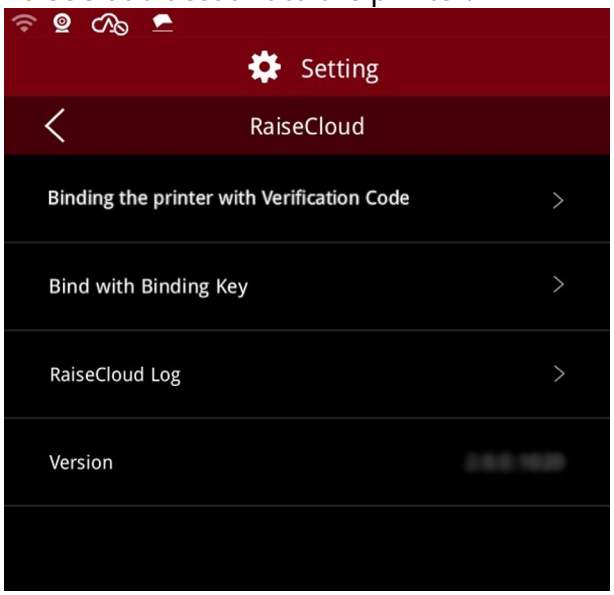
| | **Clear Timelapse Files**: Deletes all timelapse files stored in the printer.<br><br>**Clear Smart Assistant History Files**: Deletes all smart assistant history files stored in the printer. |

## 6.2.5 RaiseCloud

In the "RaiseCloud" interface, you can choose the following two ways to link (or ”bind„) your RaiseCloud account to the printer.

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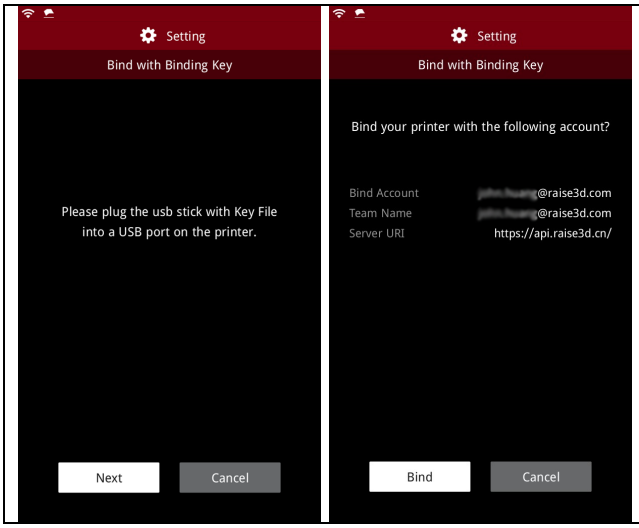
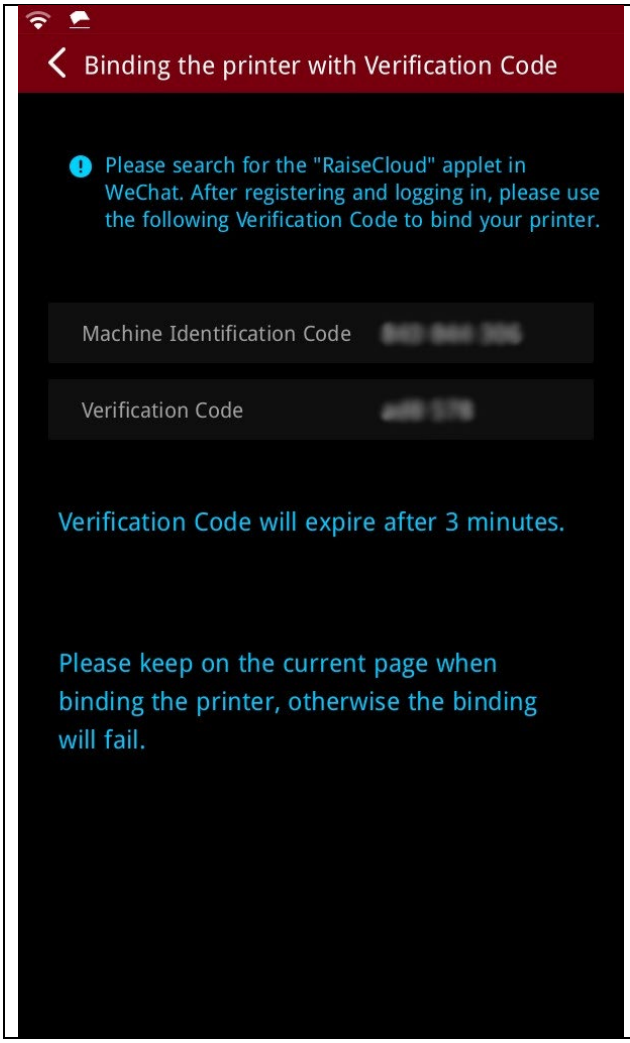
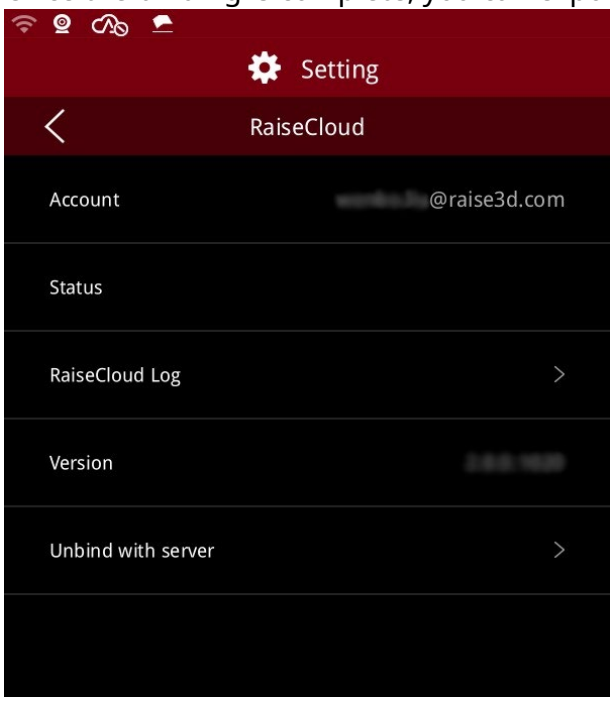
|---|---|
|  | **Bind with Binding Key**:<br>You need to go to the official RaiseCloud website (https://cloud.raise3d.com) to register an account and download the encryption binding file according to the instructions on the website. Then, insert the USB drive with the encryption binding file into the printer and follow the steps on the screen to bind your account. |

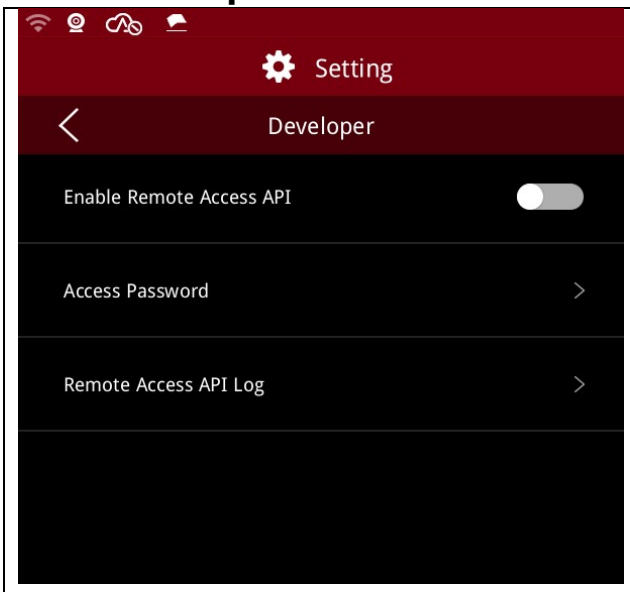



**Binding the printer with Verification Code**:
You need to log into the RaiseCloud app or search for the ”RaiseCloud„ applet in WeChat. After registering and logging in, enter the verification code on the touchscreen to bind your account.

Once the binding is complete, you can export RaiseCloud logs to connected external storage.



## 6.2.6 Developers



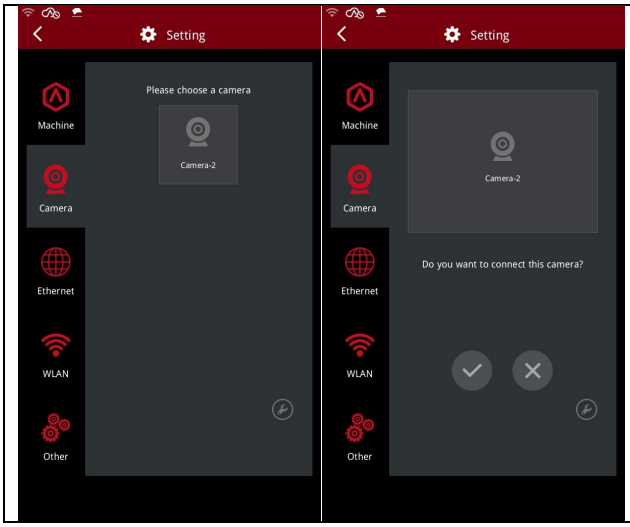

**Enable Remote Access API:** If this function is enabled, you can control the API remotely. You can view how to use the API by visiting http://xxx.xxx.xxx xxx:10800.
***Note:***

- ***You must enter a security password before enabling the remote access API.***
- ***xxx.xxx.xxx xxx is the IP address of your printer. You can view your printer's IP address on the Wired Network page.***

**Access Password:** Sets the password to access the API.
***Note: You must enter the security password before setting the access password.***

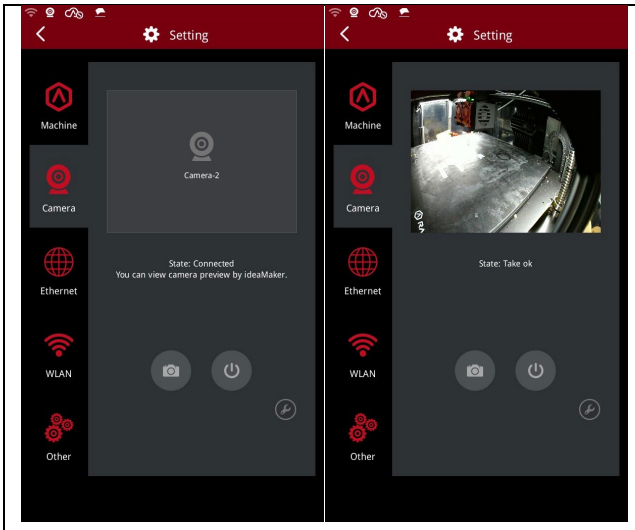
**Remote Access API Logs:** Exports API logs to an external storage.

## 6.3 Camera




In the ”Camera„ tab, you can tap on the camera you want to connect. After the camera is successfully connected, you can see what the camera is recording in both RaiseTouch and ideaMaker simultaneously.
***Note: You can only view what the camera is recording in ideaMaker version 3.1.7 or later.***

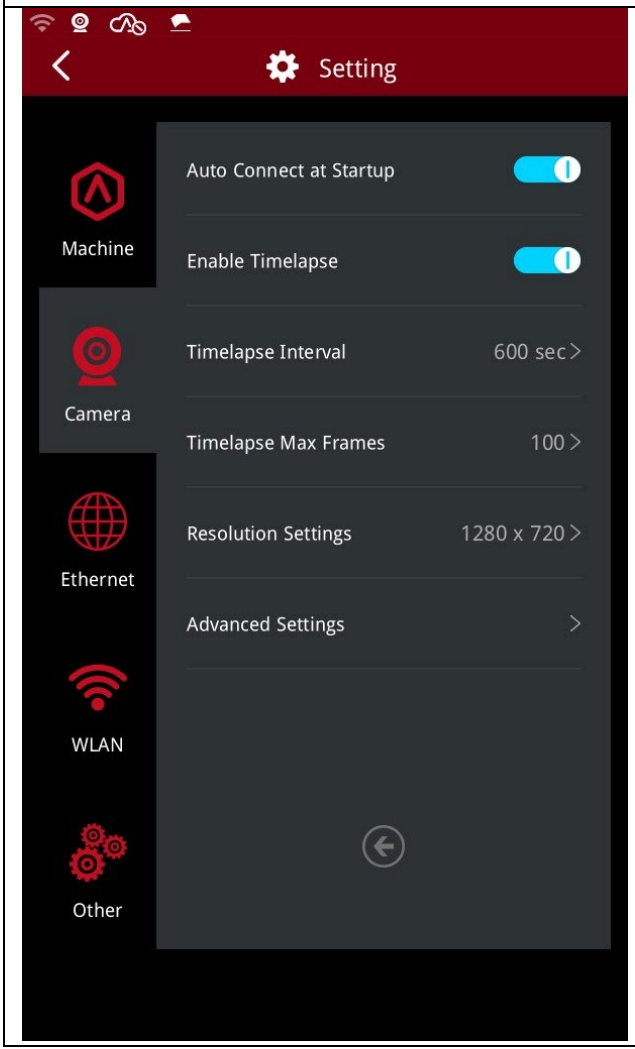
If the printer's built-in camera does not work, you can connect an external camera to the printer's USB port.




Tap the camera icon to take a photo of the inside of the printer.

Tap the power icon to turn off the camera.

Tap on the tool icon to view the advanced settings.




**Auto Connect at Startup:** If this function is enabled, the printer will automatically connect to the built-in camera when the printer is powered on.

**Enable Timelapse:** If this function is enabled, you can set the camera,s timelapse function. See the ”Enable Timelapse„ section for details.

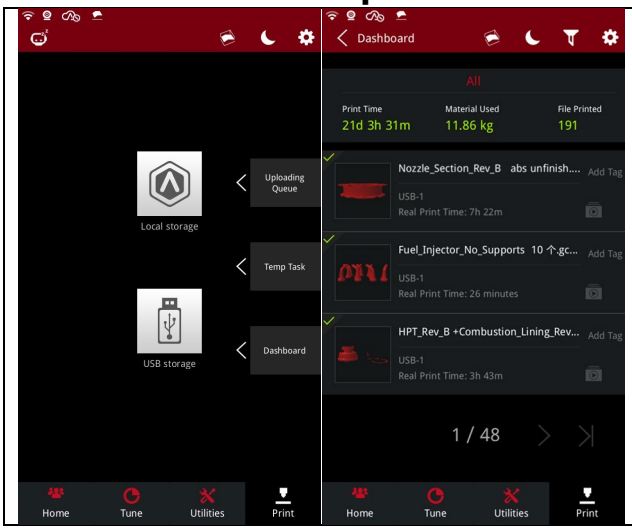
**Timelapse Interval:** Sets the timelapse interval between each photo taken by the camera.

**Timelapse Max Frames:** Sets the maximum number of frames for timelapse recorded by the camera.

**Resolution Settings:** Sets the resolution of the files captured by the camera.

**Advanced Settings:** Shows more advanced settings for your camera, such as brightness, white balance, contrast, and so on.

## 6.3.1 Enable Timelapse

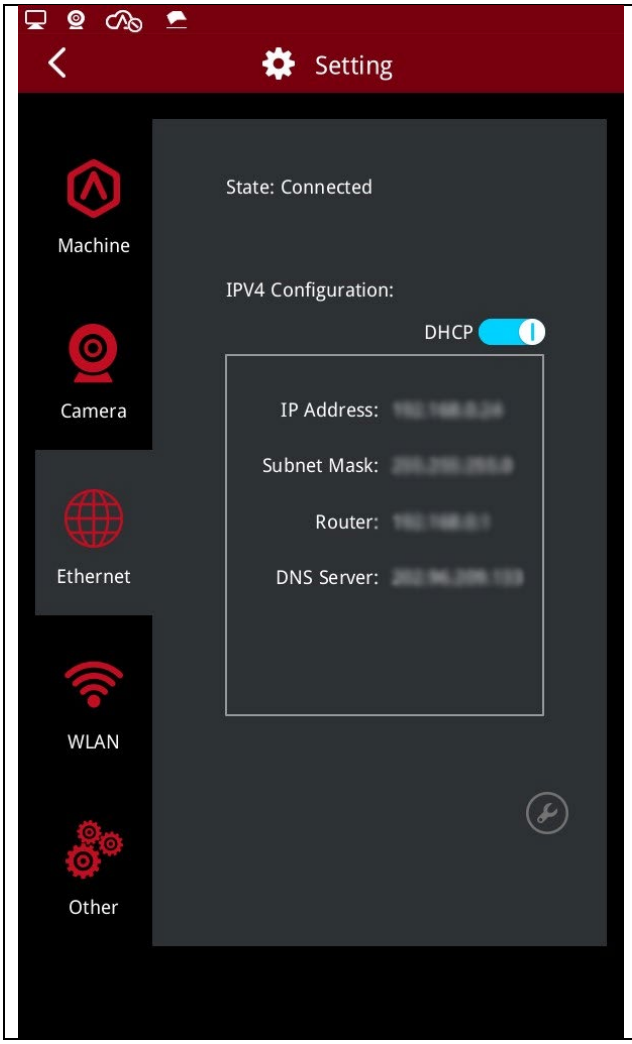



After enabling the „Enable Timelapse„ function, you can select a specific print file on the ”Printing„ > ”Dashboard„ interface and tap the file icon to view the timelapse files.

***Note:***

- ***Timelapse files can only be viewed after printing is complete.***
- ***Both RaiseTouch and ideaMaker must be updated to the latest version to view timelapse files.***

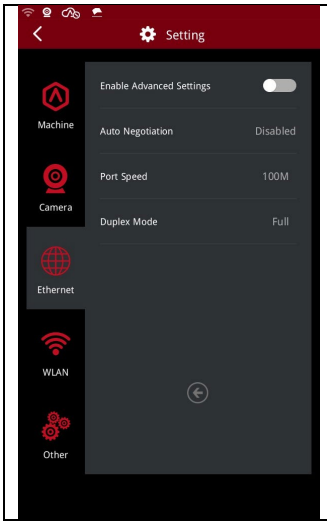
## 6.4 Ethernet

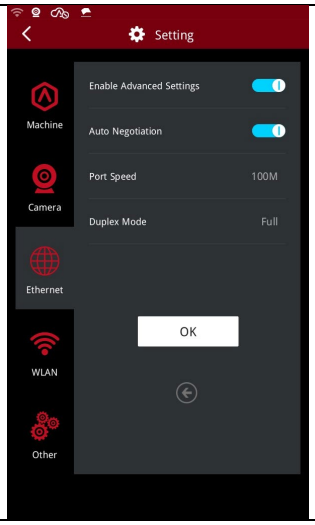



**IPV4 Configuration**: This function is enabled by default and the printer will automatically configure the IP address, subnet mask, router, and DNS server.

You can upload files via an Ethernet connection based on the printer's IP address, making sure the printer and your computer are on the same LAN.
If you want to set up information such as the IP address yourself, first turn off the DHCP protocol (turn off the switch of "DHCP"), enter the IP address and other information, and then tap "Confirm."

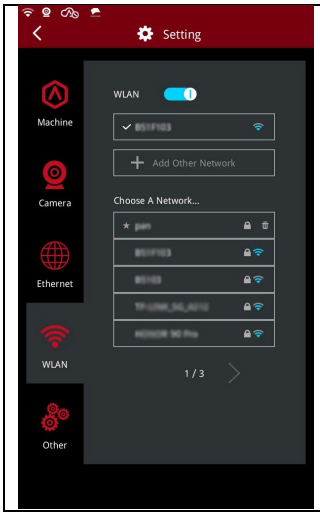
Tap the tool icon to view the advanced settings.

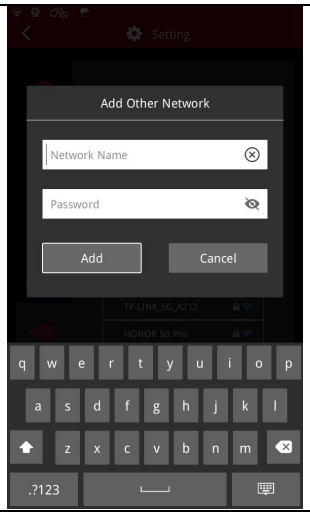



**Enable Advanced Settings**: Turn on the switch to set the following three items. Tap "Confirm" and restart the printer or network connection, and the settings will take effect.
**Auto Negotiation**: If this function is enabled, the printer will automatically configure the ”Port Speed„ and ”Duplex Mode„.
**Port Speed**: Sets the port speed.
**Duplex Mode**: Sets the duplex mode.

## 6.5 WLAN

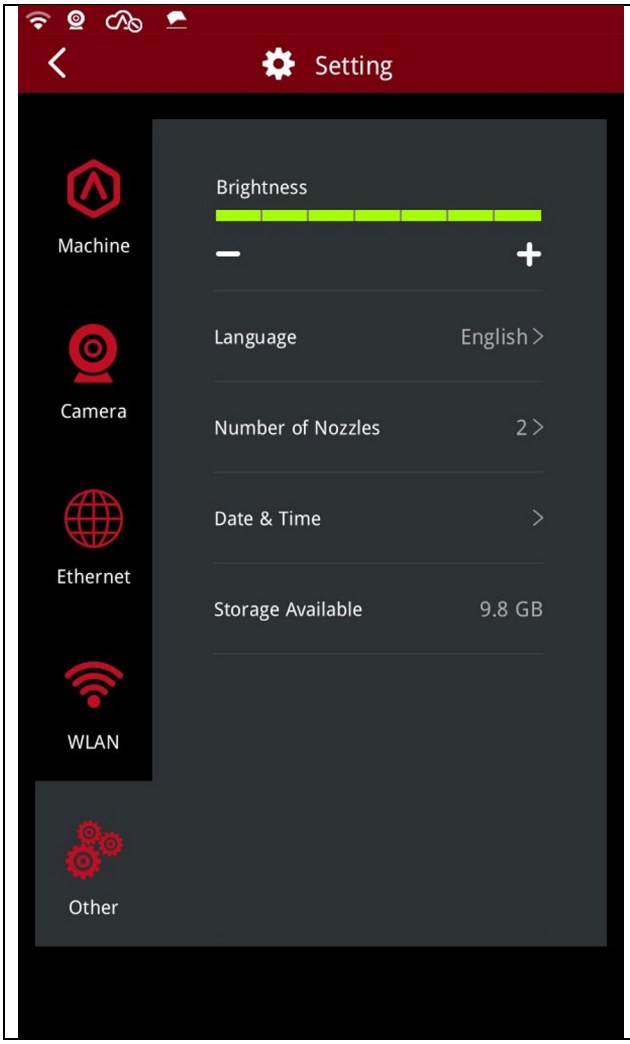



**WLAN**: Activate the switch, and choose the WLAN you want to connect from the "Choose A Network" below. Enter the password and tap "Add" to connect the WLAN. Tap the eye icon next to the password to choose whether the password is visible or not.

**Add Other Network**: Enter the network name and password to add a new WLAN.

# 6.6 Other




**Brightness**: Adjusts the brightness of the touchscreen.

**Language:** Choose the display language of the printer, and the setting will take effect after restarting the printer.

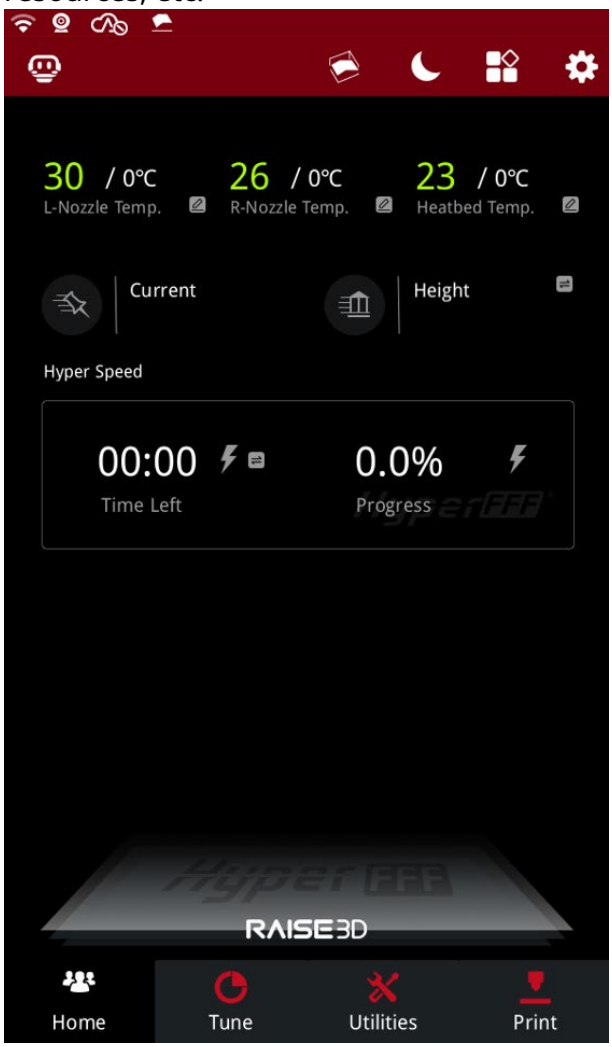
**Number of Nozzles**: Choose the number of nozzles.

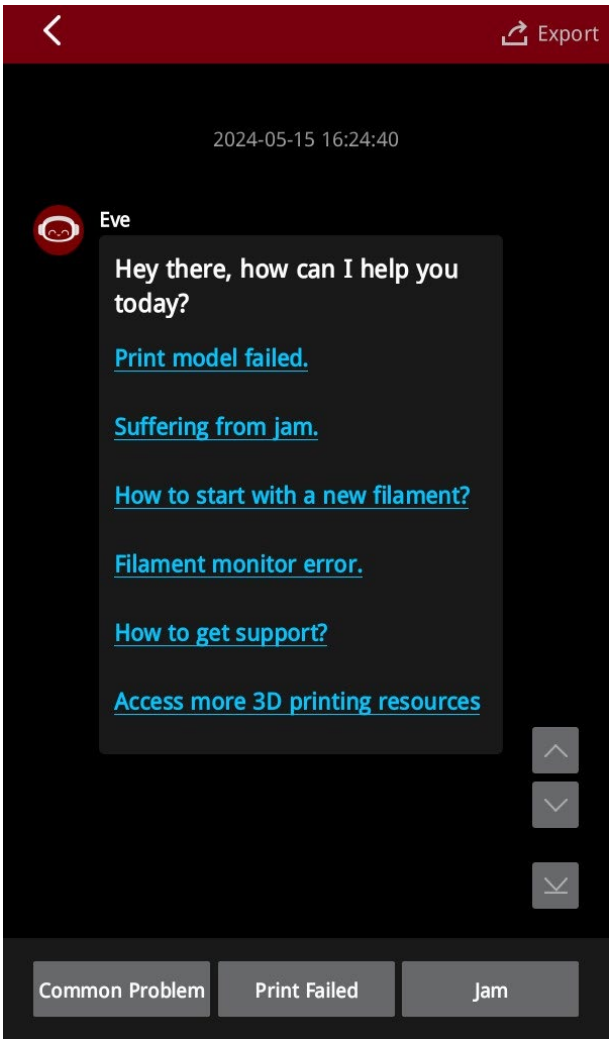
**Date & Time:** Sets the printer's date and time. By entering the local city name in English, the system automatically sets the date and time of the time zone when the printer is connected to the network and restarted.

**Storage Available:** Displays the local storage capacity the printer still has free.

# 7 EVE

You can access the EVE assistant by tapping the robot icon at the top left corner of the interface. If abnormal printing occurs, you can enter the EVE to report the error, check how to deal with common problems, learn how to get after-sales support, get more 3D printing resources, etc.

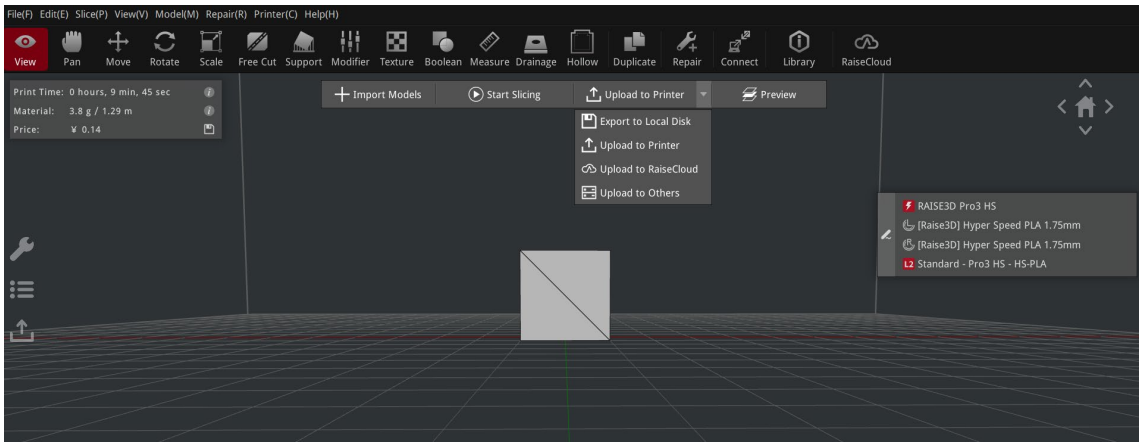


# 8 Printing Procedure

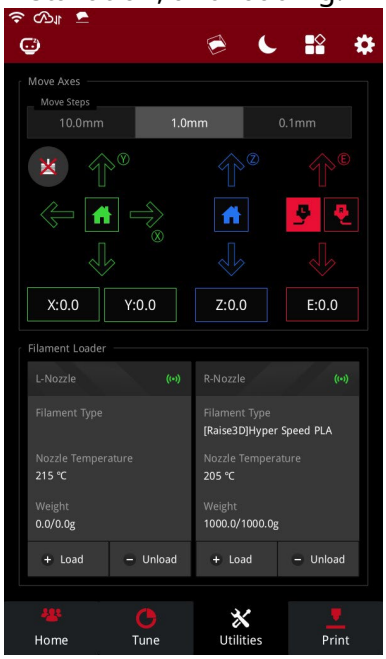
## 8.1 Prepare a Sliced Model File

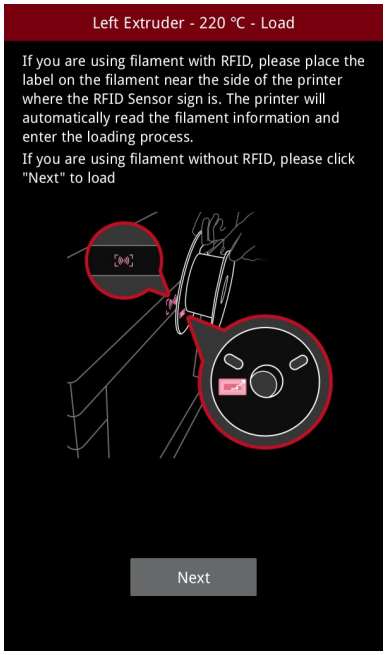
You need to finish slicing a model in ideaMaker first, where you set the model's print speed, temperature, nozzle, and so on. Then, upload the model slicing file to the printer or store it on a USB drive. For details about how to operate ideaMaker, please refer to the *Raise3D ideaMaker User Manual*.

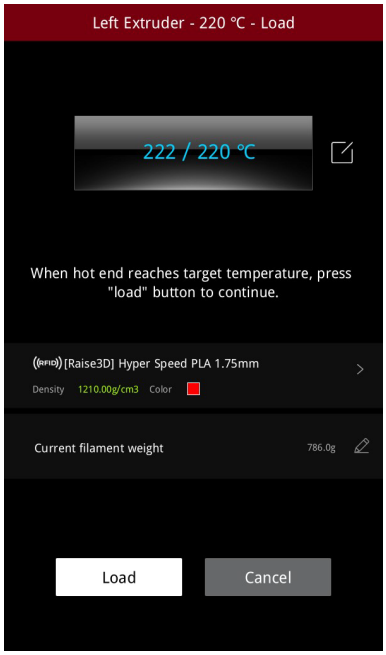


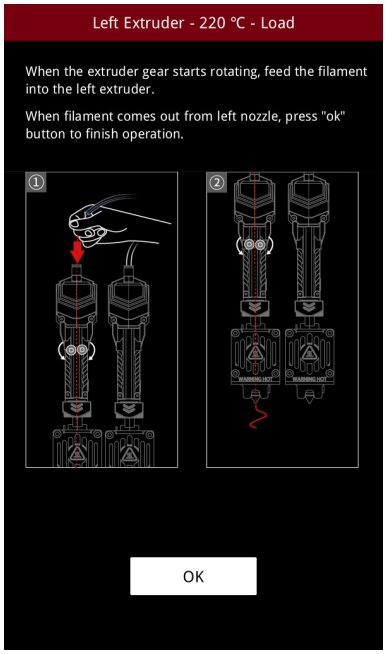

## 8.2 Load Filaments

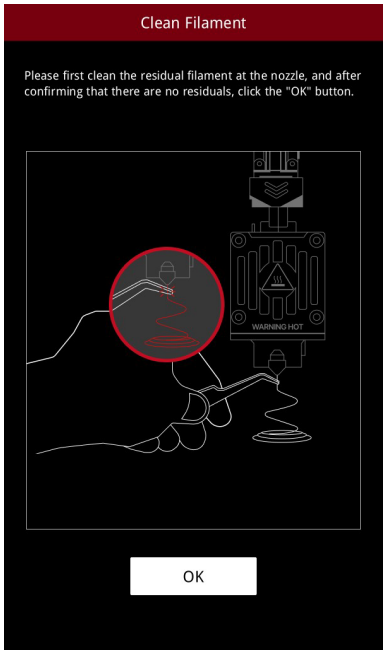
Tap the "Utilities" tab on the touchscreen, and then tap "Load" corresponding to the left or right nozzle. Follow the on-screen prompts to complete the filament identification, filament installation, and loading.



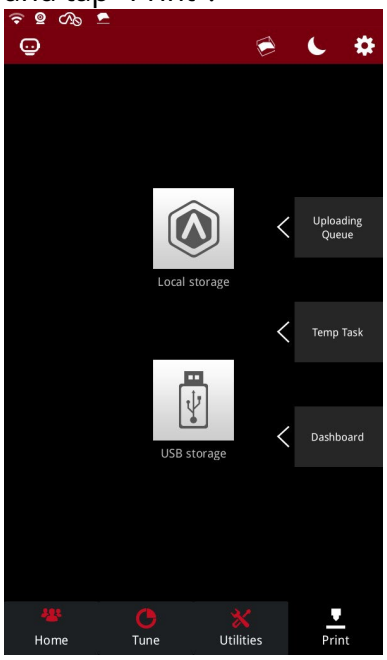



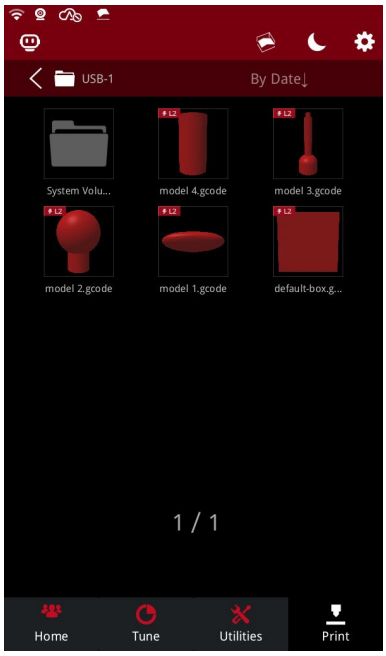


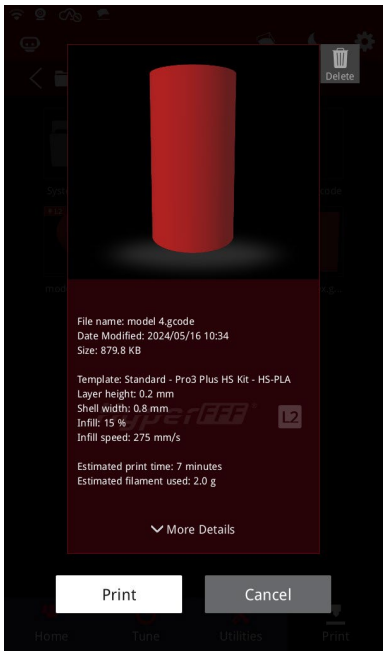




## 8.3 Start Printing

Tap the "Print" tab, select "Local storage" or "USB storage", find the file you want to print, and tap "Print".



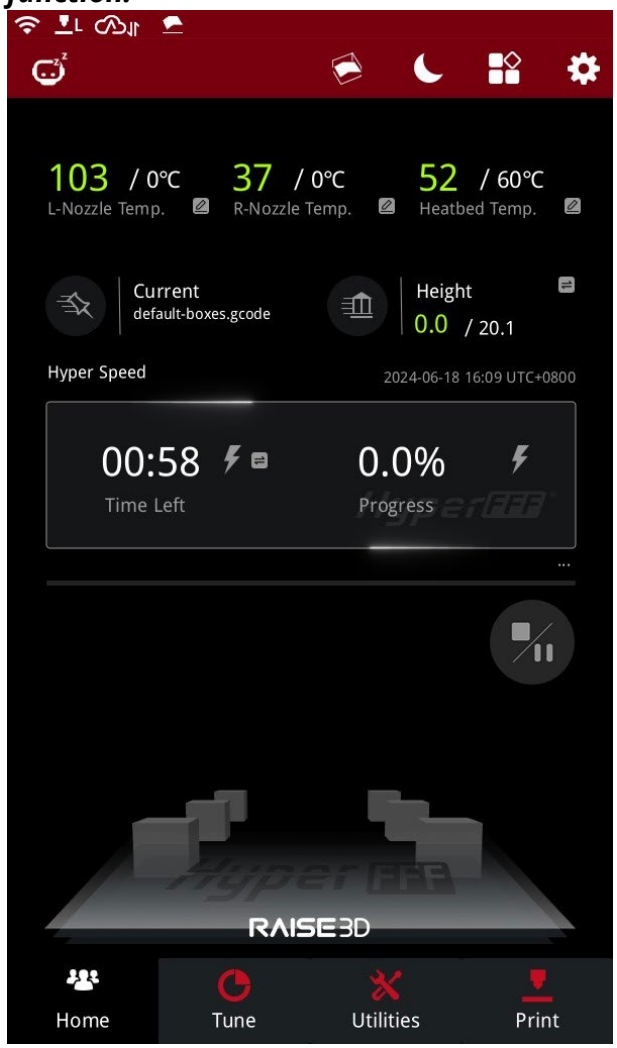

## 8.4 Printing Process

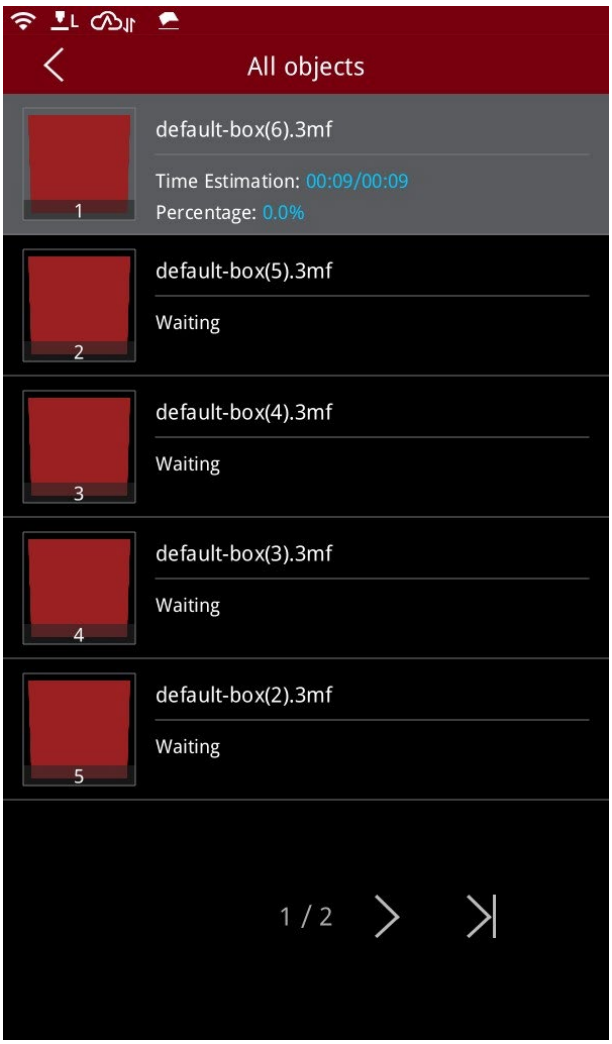
During the printing process, you can view the various parameters of the model on the home page, such as height, layers, time elapsed, progress, and so on. Tap the icon to pause or end the current print job.

If you have enabled the sequential printing for your print slice file, which means two or more print models can be printed in a certain order on the build plate in one print job. The home page displays the print file,s name, the total print time, the total print progress, and the layer

height of the current print model during printing. Tap the "..." icon on the right to access the list of all print models.

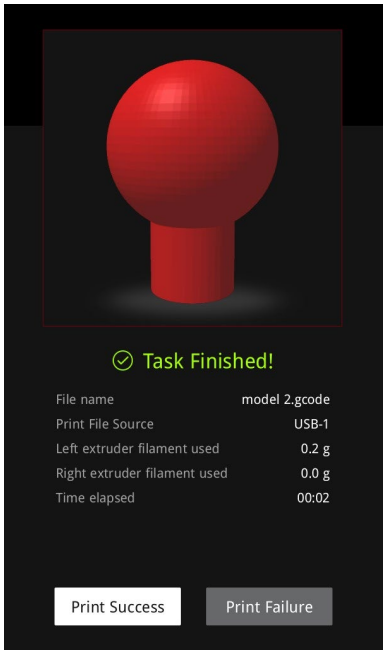
***Note: The ideaMaker version 3.4.0 or later is required to use the sequential printing function.***

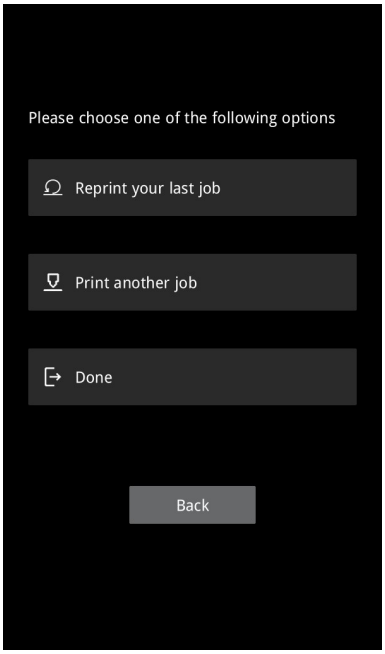



## 8.5 Finish Printing

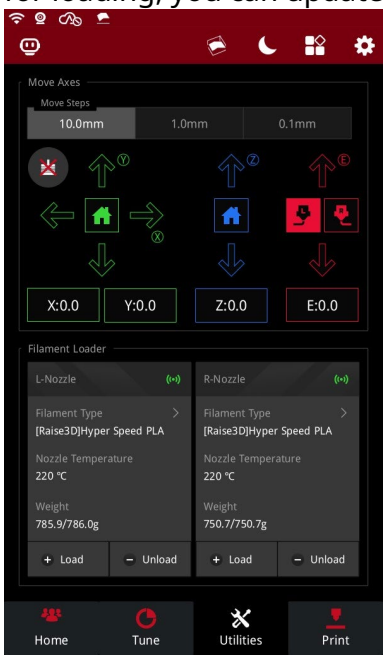
After printing, you need to choose "Print Success" or "Print Failure". Then, you can tap "Print your last job" to reprint; tap "Print another job" to print other models; tap "Done" to end printing.

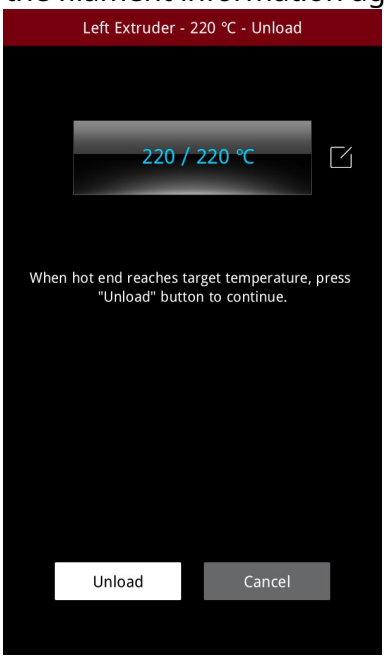


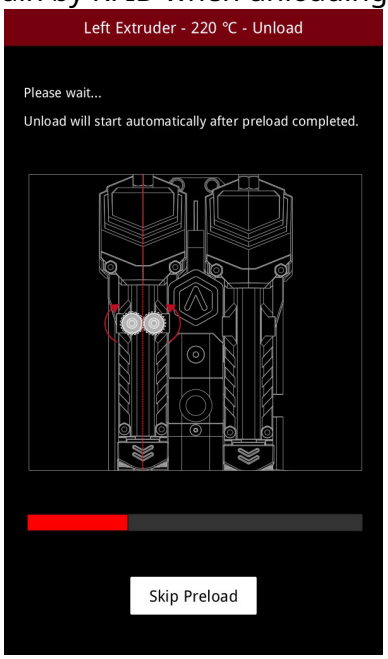



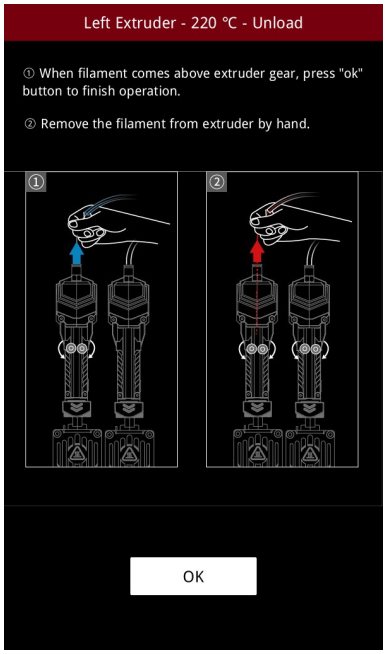

## 8.6 Unload Filaments

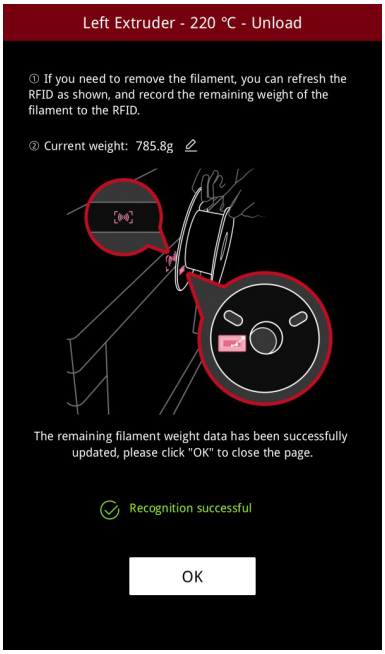
On the "Utilities" tab, tap "Unload" for the left or right nozzle. Follow the on-screen instructions to complete the unloading process. If you are using the RFID-enabled filament for loading, you can update the filament information again by RFID when unloading.

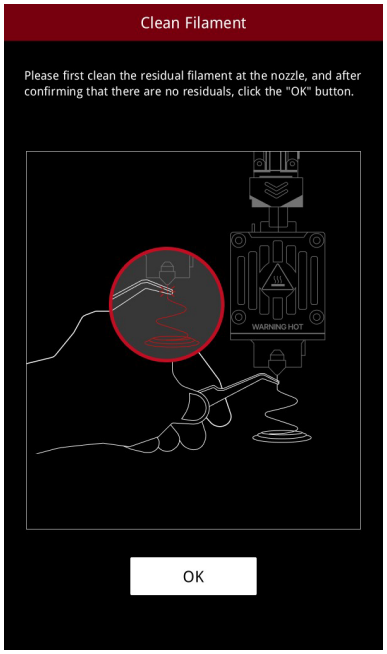



Left Extruder - 220 ℃ - Unload
① When filament comes above extruder gear, press "ok" button to finish operation.
② Remove the filament from extruder by hand.
①
②
OK


Left Extruder - 220 ℃ - Unload
① If you need to remove the filament, you can refresh the RFID as shown, and record the remaining weight of the filament to the RFID.
② Current weight: 785.8g
The remaining filament weight data has been successfully updated, please click "OK" to close the page.
Recognition successful
OK


Clean Filament
Please first clean the residual filament at the nozzle, and after confirming that there are no residuals, click the "OK" button.
WARNING HOT
OK

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13310 Pike Road, Stafford, TX, USA

EU Office: Raise3D B.V.
Tenorweg 6, 3363LN, Sliedrecht, The Netherlands

Manufacturer: Shanghai Fusion Tech Co., Ltd.
Floor 13 A5, 1600 North Guoquan Road, Yangpu District, Shanghai, P.R. China
Tel: +86 400 6367 888 (For the Mainland of China only)
www.raise3d.com