

LK10 FDM 3D Printer User Manual

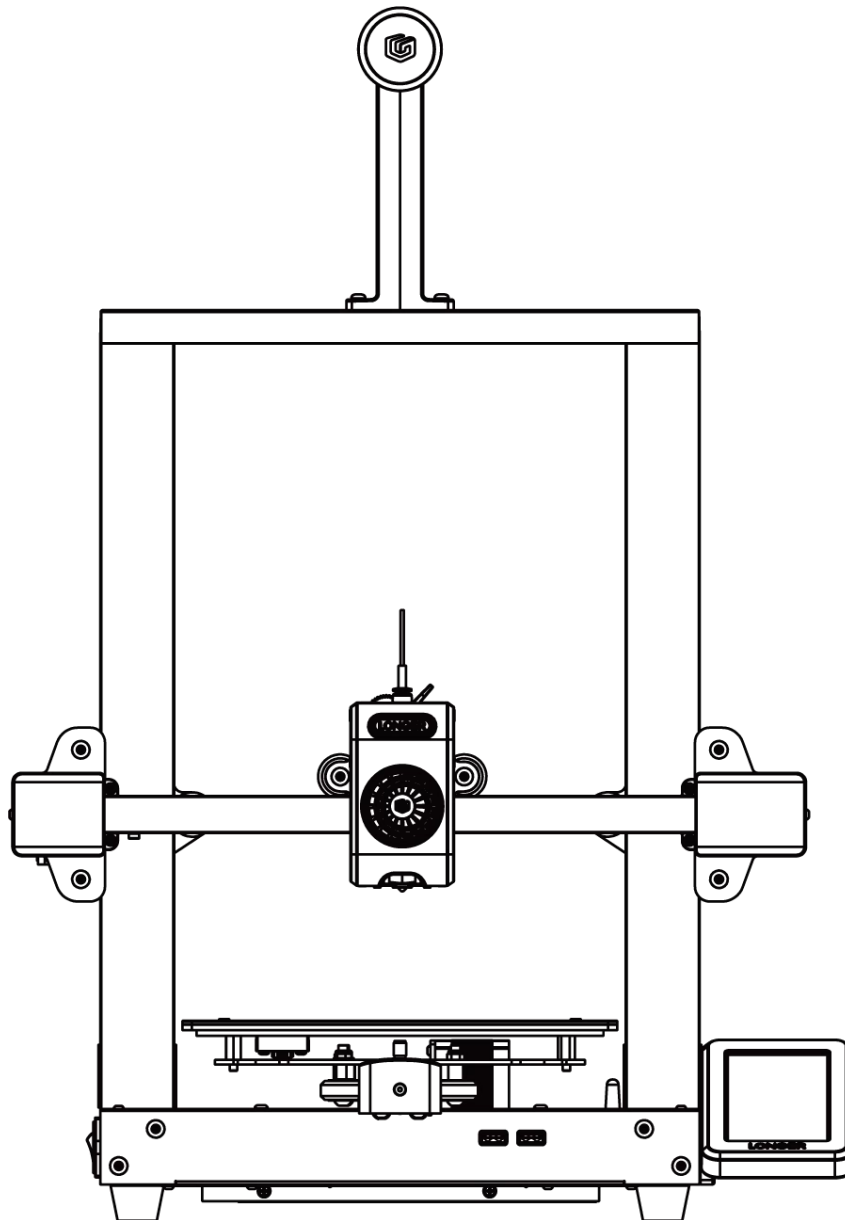


Table of Contents

A. Safety Precautions	1
B. Product Information	3
1. Machine Parameters	3
2. Product Overview	4
3. Packing List	5
C. Machine Installation	6
1. Install Gantry Frame Unit with Base Unit	6
2. Install Screen	6
3. Install Failment Holder	7
4. Cable Connection	8
D. Check Before Use	9
1. Check shaking and Adjust the Eccentric Nut	9
2. Check and Adjust the Belts	10
3. Connecting To Power	10
E. Screen Operation	12
1. Startup Guide	12

2. Main Interface	14
3. Printing Process	15
4. Other Functions	20
F. OrcaSlicer Software Operation	25
1. Software Download and Installation	25
2. Setup	26
3. Connect the LK10 to OrcaSlicer	30
4. The main Window of OrcaSlicer	32
1) Menu	32
2) Home Page	33
3) Preparation Interface	34
4) Preview Interface	38
5) Device Interface	39
5. Create a Project in OrcaSlicer	41

A. Safety Precautions

- 1) The operating voltage is AC 115V or 230V. Please switch the voltage selector switch on the rear bottom of the printer to the correct input voltage setting according to your local voltage. (Default voltage is AC 230V).
- 2) The recommended optimal operating environment temperature is 25°C, and the humidity is 20%~50%.
- 3) Do not place the printer in a vibrating or otherwise unstable environment; machine shaking will affect print quality.
- 4) Do not touch the nozzle and hot bed while the printer is operating to avoid burns and personal injury.
- 5) Before printing, please use a tool to clean any residual filament from the nozzle to avoid affecting the leveling process.
- 6) Please perform regular product maintenance and periodically wipe the printer body with a dry cloth to remove dust and adhering printing materials while the power is off.
- 7) The 3D printer contains high-speed moving parts; please be careful not to get your hands caught in them.
- 8) Children must be supervised by an adult when using the

machine to prevent personal injury.

9) In case of emergency, immediately disconnect the power supply.

10) Before leveling, homing, or printing, please ensure that the golden PEI plate is correctly placed on the platform. Otherwise, it may cause the nozzle to collide with the magnetic plate, damaging both the nozzle and the magnetic plate.

11) The machine must be grounded during operation. Equipment that is not grounded or improperly grounded increases the risk of electric shock.

12) If the machine will not be used for an extended period, please turn off the device and unplug the power cord.

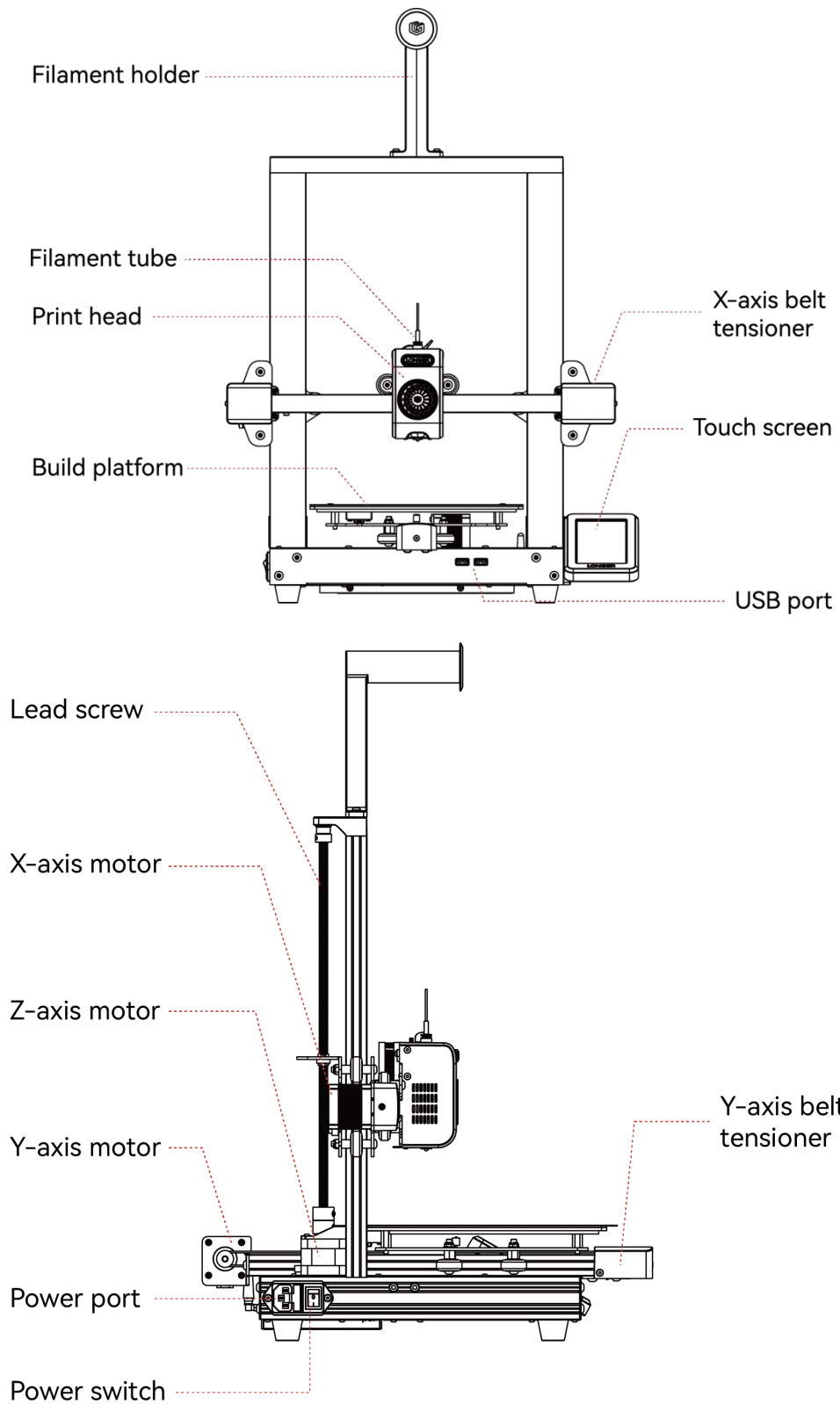
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B. Product Information

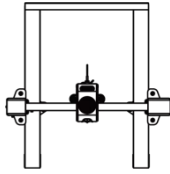
1. Machine Parameters

Model	LK10	Molding	FDM
Printing size	225*225*265 mm	Nozzle diameter	0.4 mm
Printing speed	Up to 500 mm/s	Layer thickness	0.1-0.4 mm
Slicing software	OrcaSlicer	File format	STL、OBJ、step
Connection method	USB Drive, LAN (Network), WIFI	Operating system	Windows, MAC, etc.
Nozzle Temp.	Up to 300 ° C	Hot bed Temp.	Up to 110 ° C
Filament diameter	1.75mm	Power supply	100-120V/220-240V、50/60 Hz
No. of nozzles	1	Filament color	Monochrome printing
Frame	Profiles, sheet metal	Printing accuracy	100±0.1mm
Machine size	423*437*492 mm	Package size	515*495*280 mm
Machine weight	8.3 Kg	Package weight	11.5kg
Operating language	Simplified Chinese, Traditional Chinese, English, German, Italian, Japanese, French, Portuguese, Spanish		
Support filaments	PLA, PETG, ABS, ASA, TPU etc.		
Use environment	Temperature 5°C-40°C		

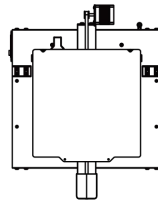
2. Product Overview



3. Packing List



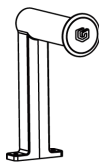
Gantry Frame Unit



Base Unit



Touch screen



Filament holder



Power Cable



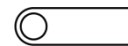
Test Filament



Wrench



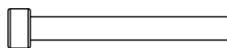
Allen Wrench



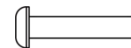
U-Disk



Cable Ties



M5×45(4pcs)



M4×20(4pcs)

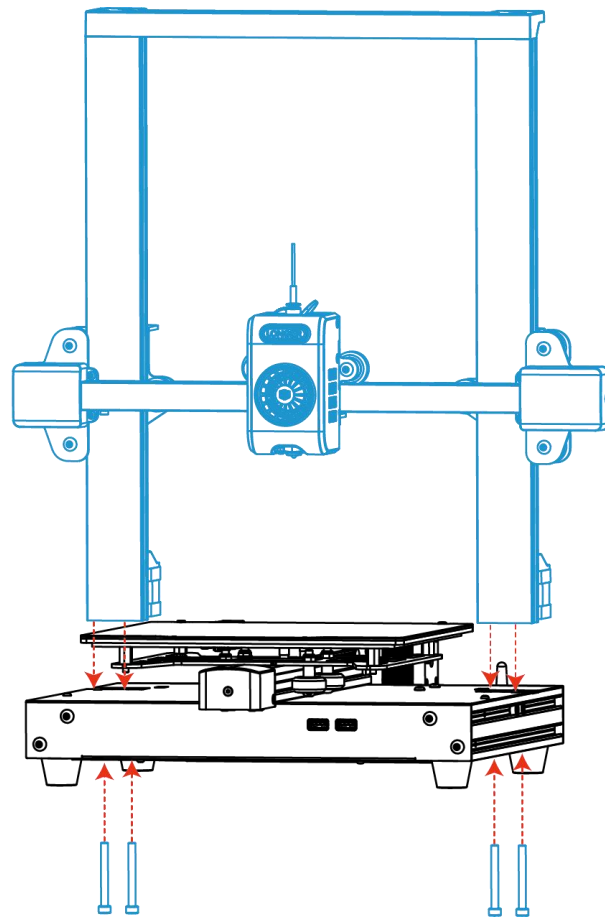
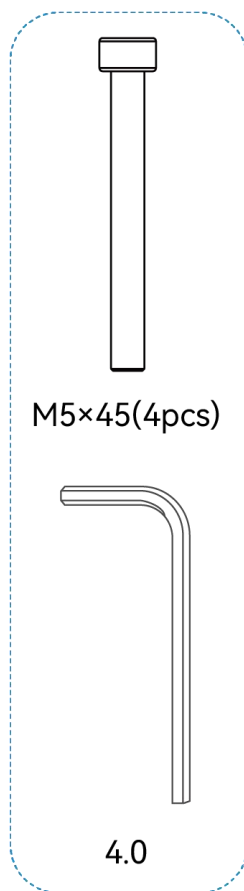


M3×6(2pcs)

C. Machine Installation

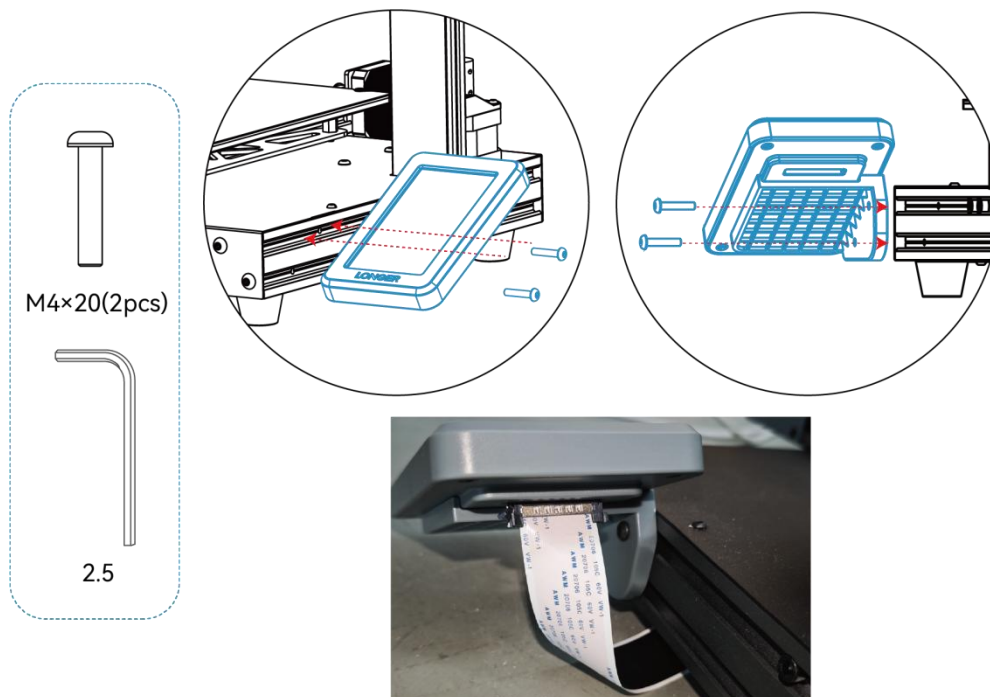
1. Install Gantry Frame Unit with Base Unit

Use M5×45 socket head cap screws and a 4mm allen wrench to install and secure the gantry frame and base.



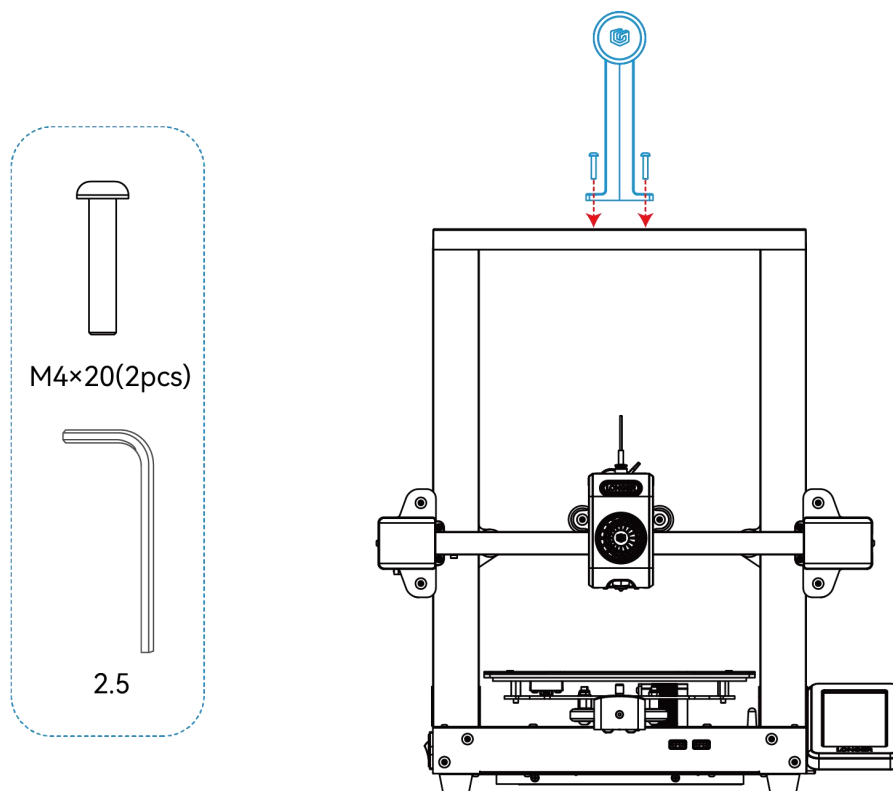
2. Install Screen

First fix the screen with two M4×20 round-head screws, and then insert the FPC into the port on the back of the screen.



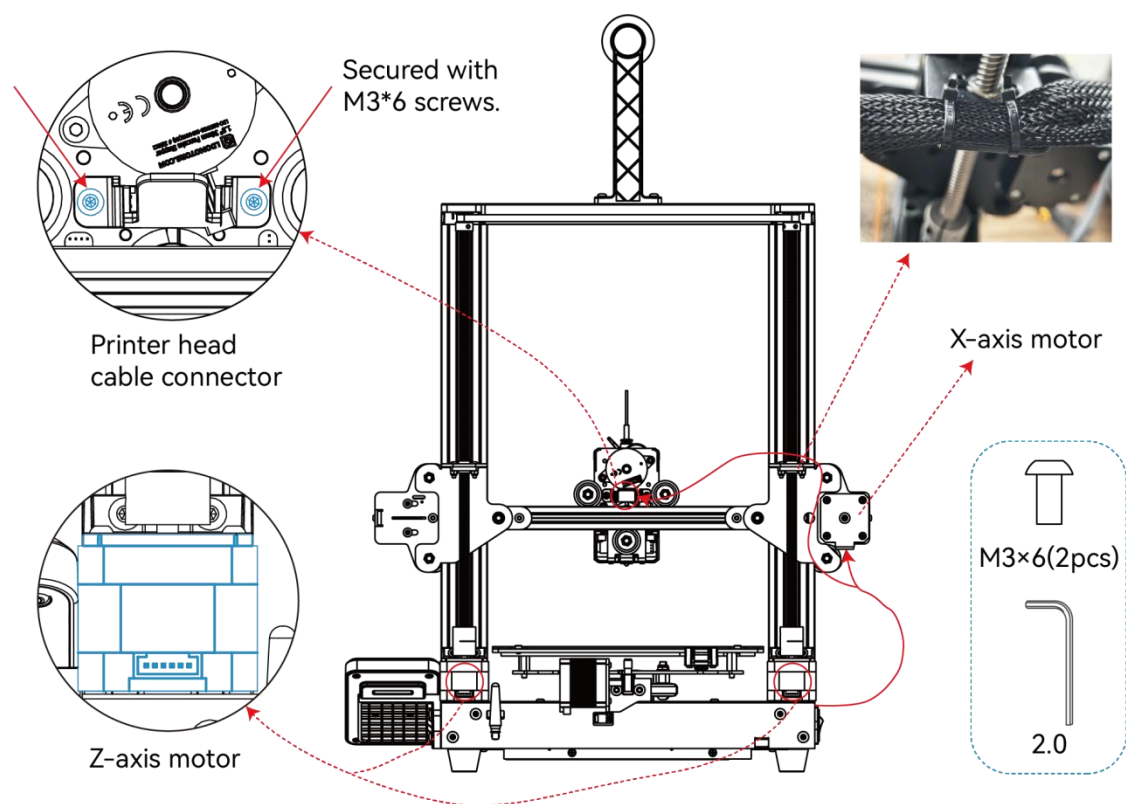
3. Install Filament Holder

Install and secure the filament holder to the gantry frame using M4×20 hex screws and a 2.5mm allen wrench.



4. Cable Connection

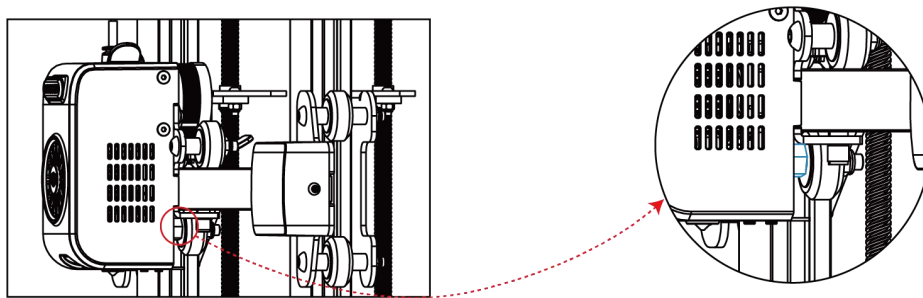
Connect the cables for the X-axis motor and the two Z-axis motors. The print head cable has a ribbon cable connector; after connecting, it needs to be secured with two M3*6 round head screws. Finally, use cable ties to secure the combined cable to the sheet metal next to the X-axis motor.



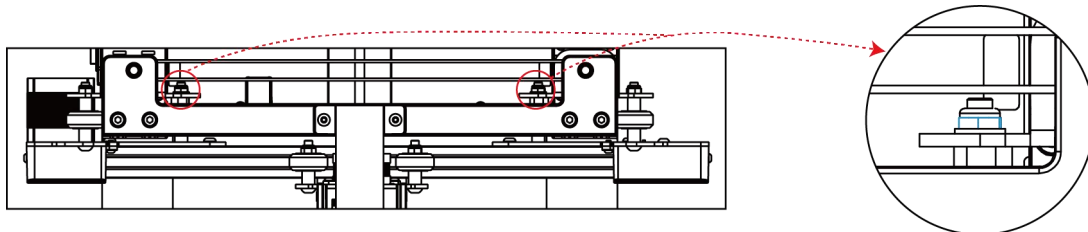
D. Check Before Use

1. Check shaking and Adjust the Eccentric Nut

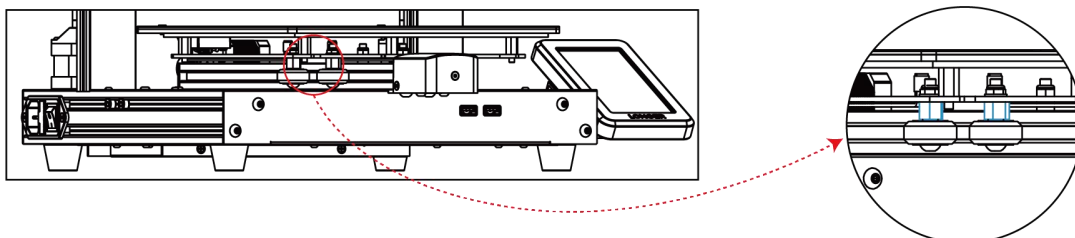
1) Check if the print head is shaking. If it is, use a wrench to adjust the eccentric nut under the print head until it can slide smoothly and without shaking.



2) Check if the Z-axis is shaking. If it is, use a wrench to adjust the two eccentric nut behind the Z-axis until it without shaking.

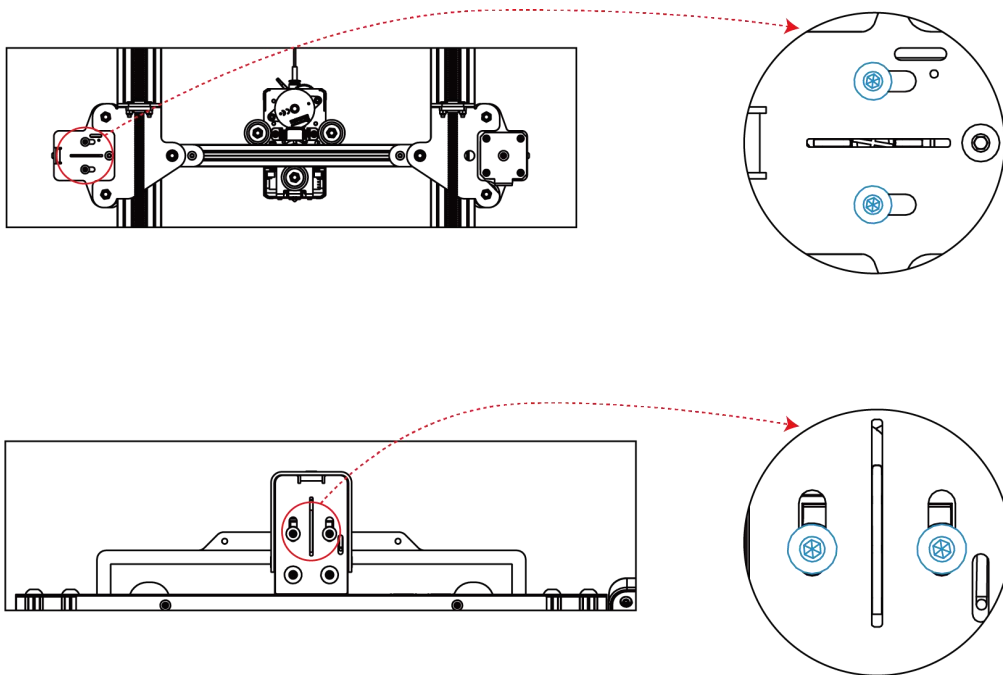


3) Check if the print platform is shaking. If it is, use a wrench to adjust the eccentric nut under the print platform until it can slide smoothly and without shaking.



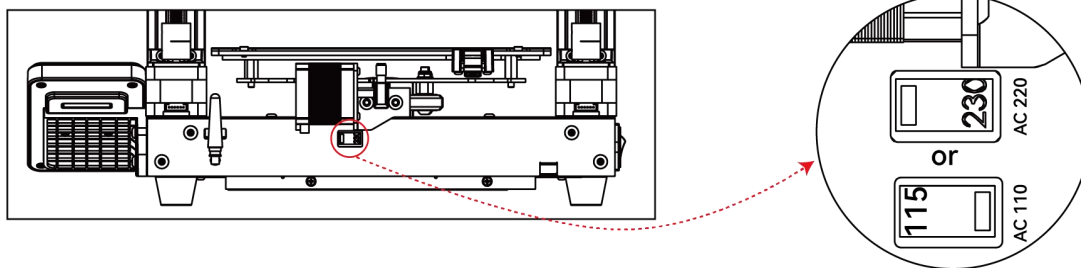
2. Check and Adjust the Belts

Press down on the X-axis and Y-axis belts to check for looseness. If loose, use a 2.5 mm Allen wrench to first loosen the tension adjusters (two screws) behind the X-axis and below the Y-axis. The belts will tighten automatically. Slide the X-axis left and right and the Y-axis back and forth. Once you are sure the sliding is smooth, tighten them again.

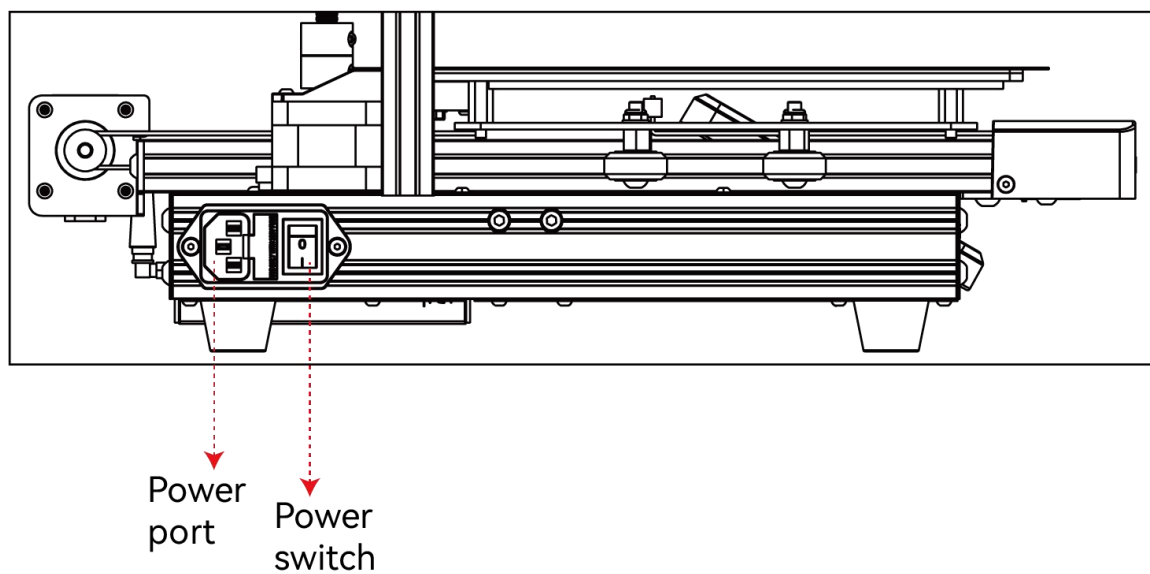


3. Connecting To Power

1) Before powering on the printer, please switch the voltage switch on the back of the printer to local voltage mode to avoid damaging the printer.



2) Connect the printer to a power outlet via the power cable and turn on the power switch.



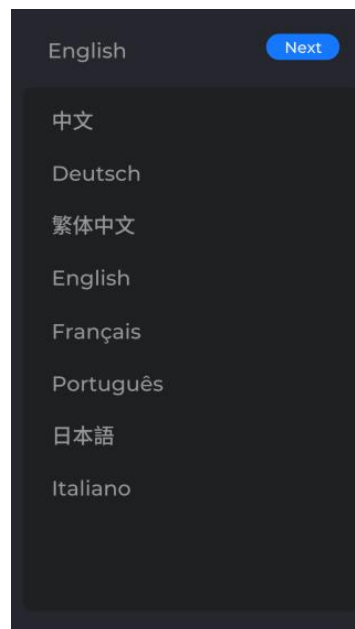
E. Screen Operation

1. Startup Guide

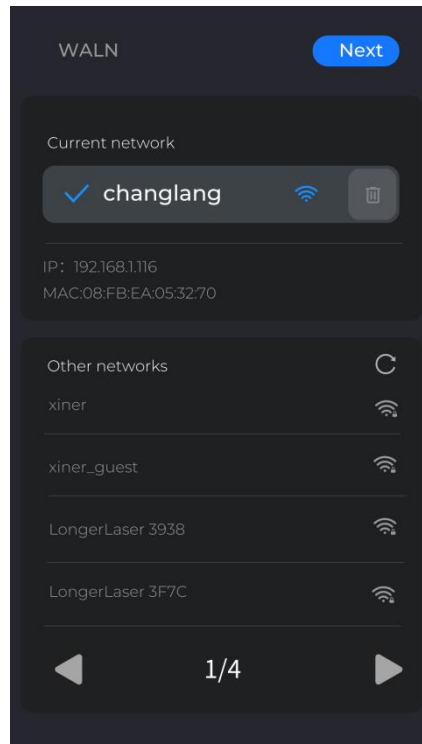
After you receive the device, a simple setup interface will appear.

Once you complete the setup, you can begin your 3D journey.

1) Select your language and click Next.(You can also change it through Settings > Language.)



2) Once connected to the network, you can control the printer, upload, and print documents via your computer. The absence of a network connection will not affect your offline printing. Click Next.(You can also change it through Settings > Network.)

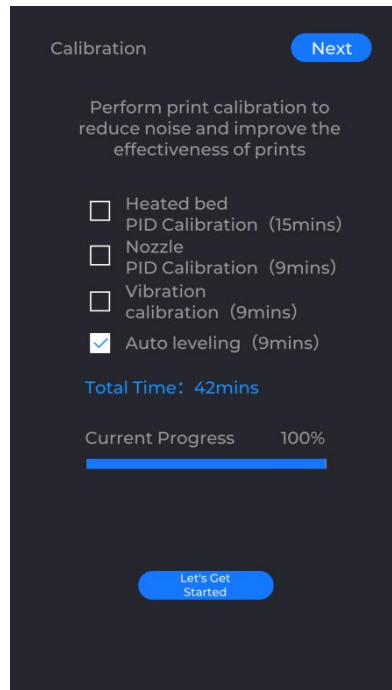


3) Calibration can improve printing accuracy. After selecting the calibration items, click "Start" in the upper right corner and wait for the calibration to complete. Once complete, click "Let's Get Started" to begin your 3D printing journey.

Note:

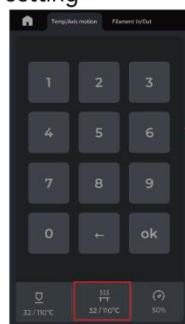
- Please check that the PEI plate is lying flat on the heated bed before leveling.
- The leveling sensor is only suitable for platforms with a metal surface. If you replace the printing platform yourself, please choose a platform with a metal surface to ensure that the automatic leveling function works correctly.

- The calibration process takes a considerable amount of time; please be patient.

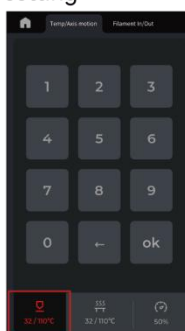


2. Main Interface

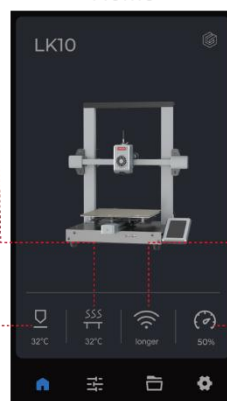
Heated bed temperature setting



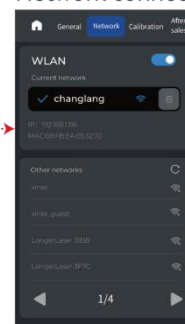
Nozzle temperature setting



Home

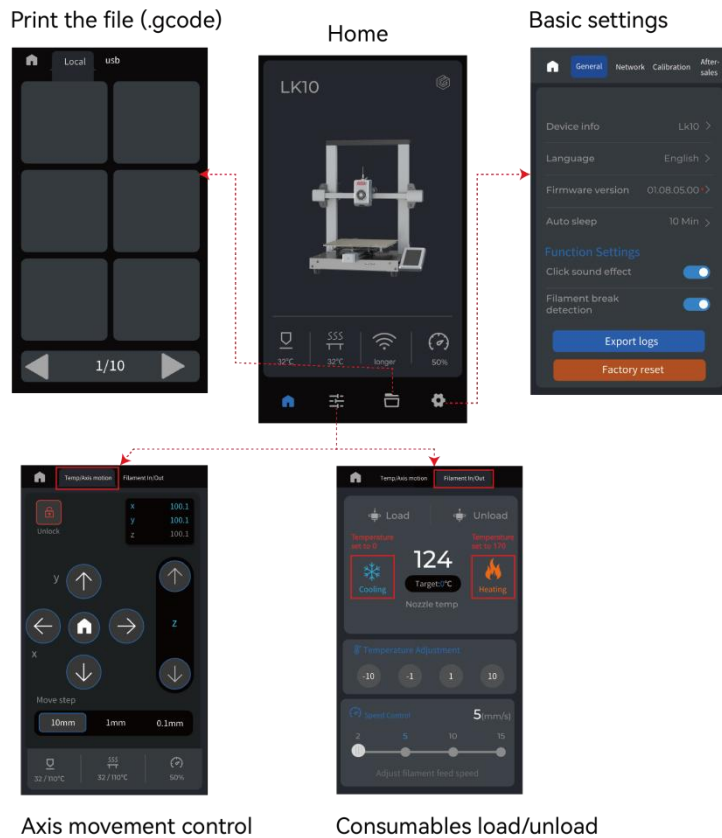


Network connection



Adjust fan and print speed





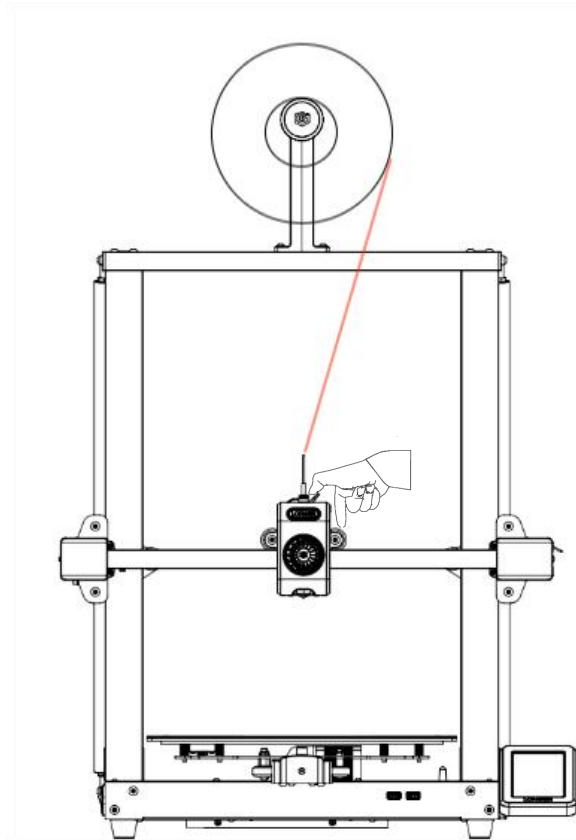
Click to heat up and wait for the nozzle to heat to the preset temperature. Click "Load" or "Unload" and wait for the consumable to be extruded from the nozzle or ejected from the Filament tube.

3. Printing Process

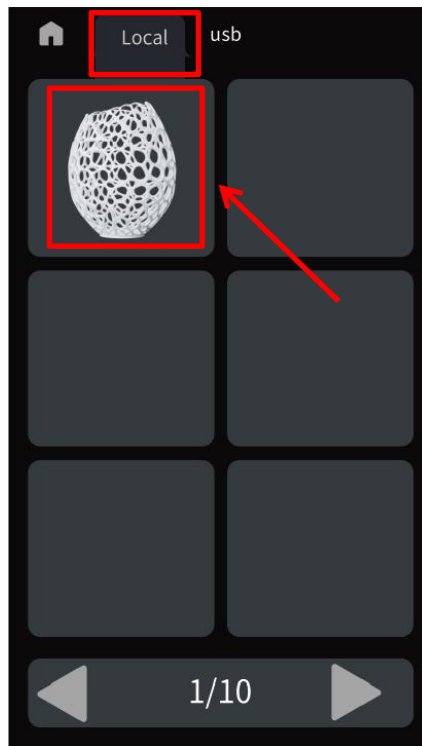
1) Loading consumables.

- a. Install the filament spool onto the holder.
- b. Insert the filament into the extruder until you feel resistance.
While inserting, press and hold the button on top of the extruder.
- c. Click "Tools" - "Filament In/Out". Click "Increase Temperature"

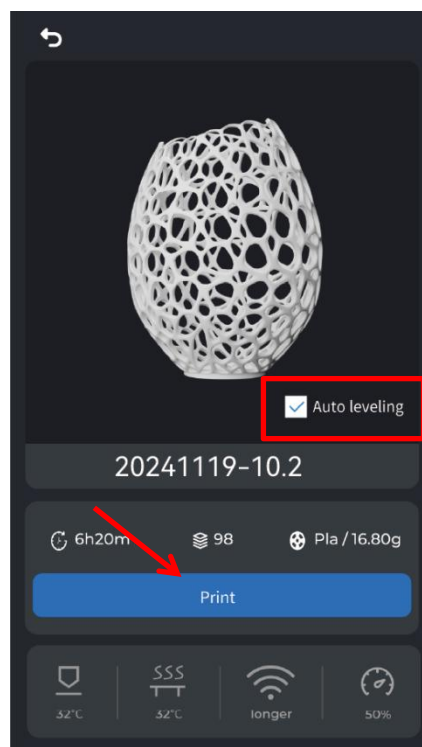
and wait for the nozzle to heat up to the preset temperature. Click "Load" and wait for the filament to be extruded from the nozzle. After the filament extrusion stops, clean the nozzle.



2) Select print file.



3) During the print preparation stage, select whether to automatically level, and then click print.

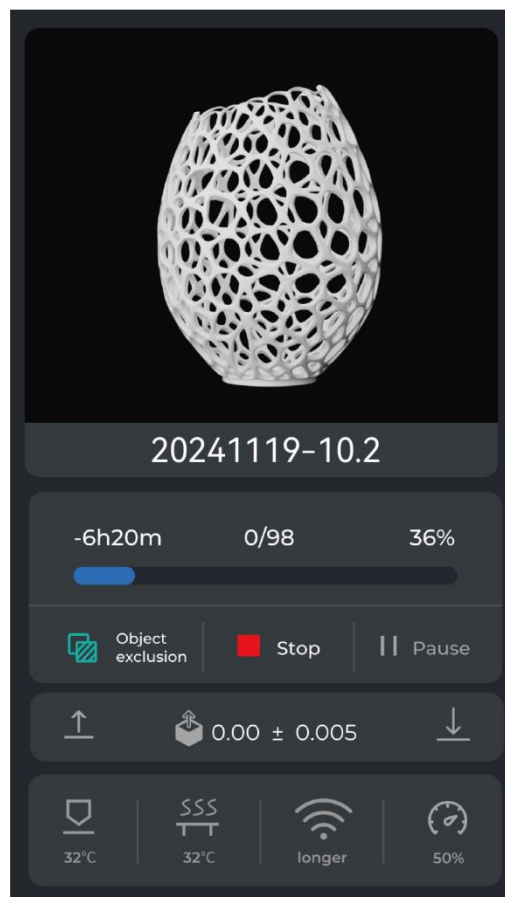


Automatic leveling before printing. Once leveled, the device will

remain accurate for a considerable period of time. To avoid extending printing time, you can disable the automatic leveling function during the print preparation phase.

4) Printing preheating stage.

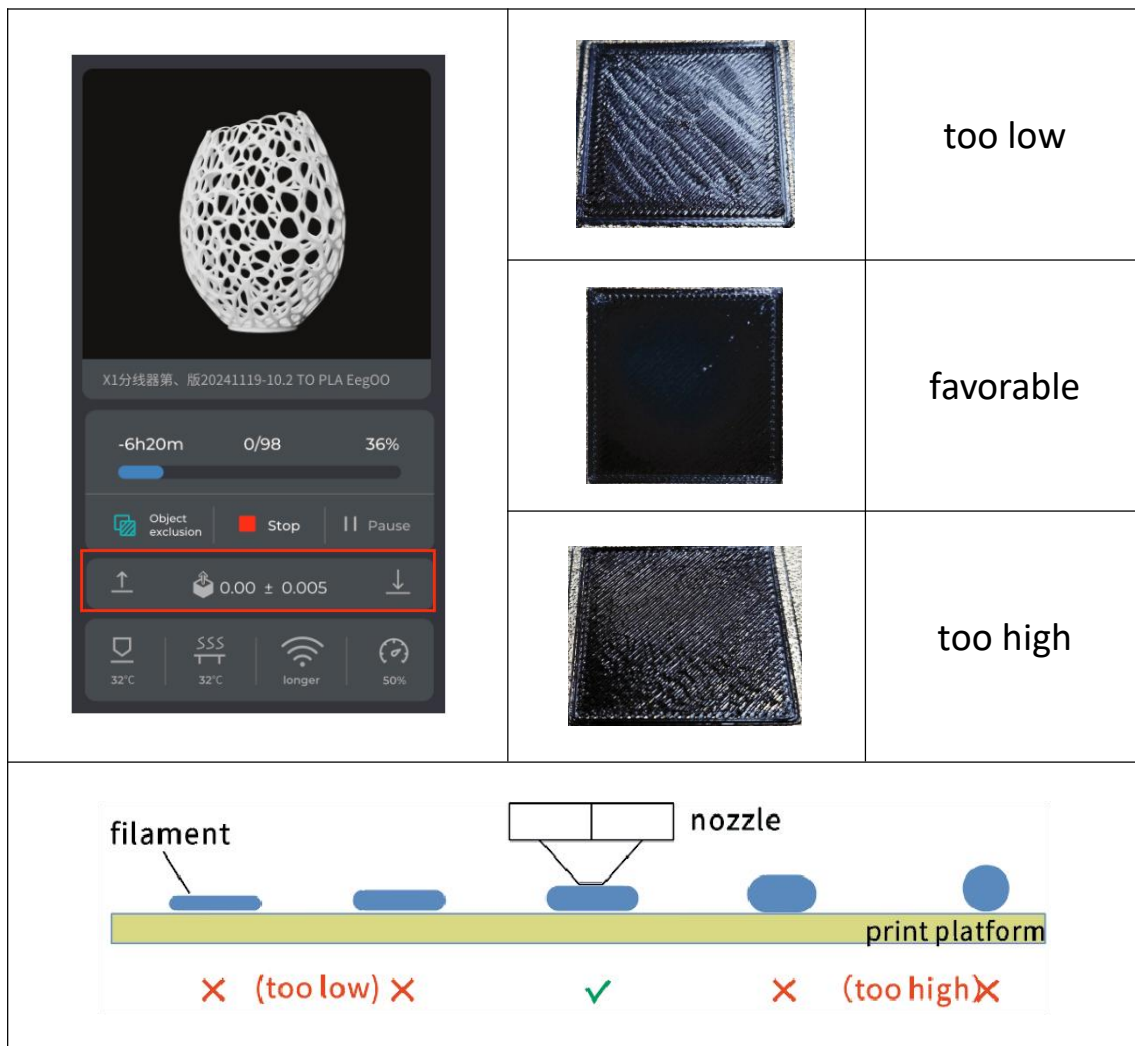
Note: Do not click "Stop" during the warm-up stage, otherwise the machine will require a long loading process.



5) Printing stage.

Note: After printing begins, please observe the first layer. If the first layer appears "too low" or "too high," it indicates that the Z-axis offset value is incorrect. You can adjust the Z-axis offset value during

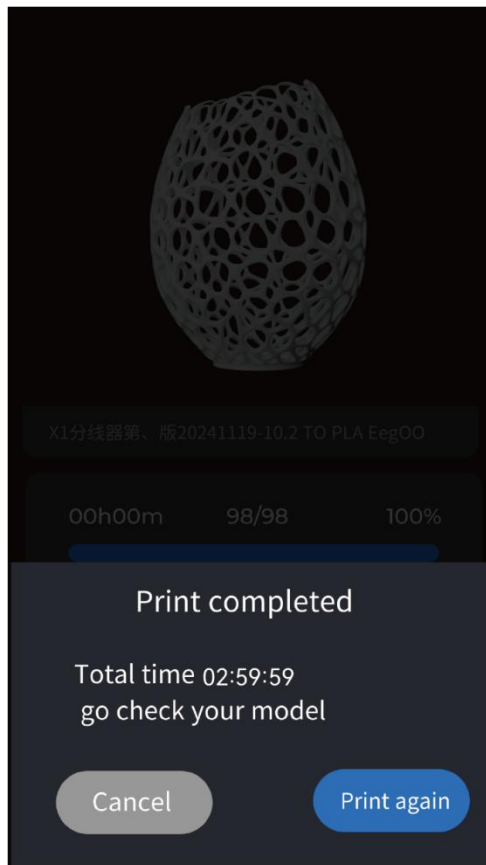
the printing process to adjust the distance between the print head and the print platform.



6) Printing complete

If you choose to print again, the parameters adjusted during the previous printing process will remain in effect.

Note: The current interface is for reference only. Due to continuous firmware upgrades, please refer to the user interface of the latest firmware version for accurate information.

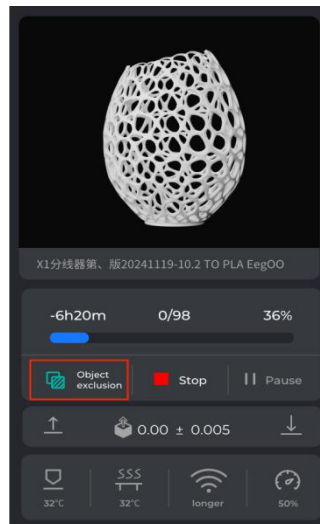


4. Other Functions

1) Object exclusion: When printing multiple parts, you can skip one or more parts that you don't want to print.

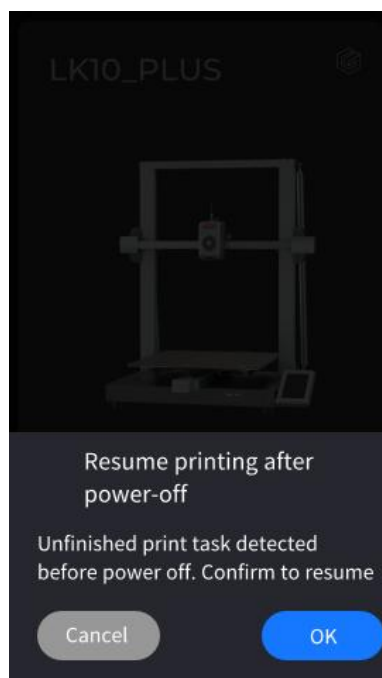
Skipping is not supported in the following situations:

- More than 32 parts on a single build plate
- Only one object is being printed
- The executable file does not support skipping
- The task is not a printing task



2) Continue printing after a power outage.

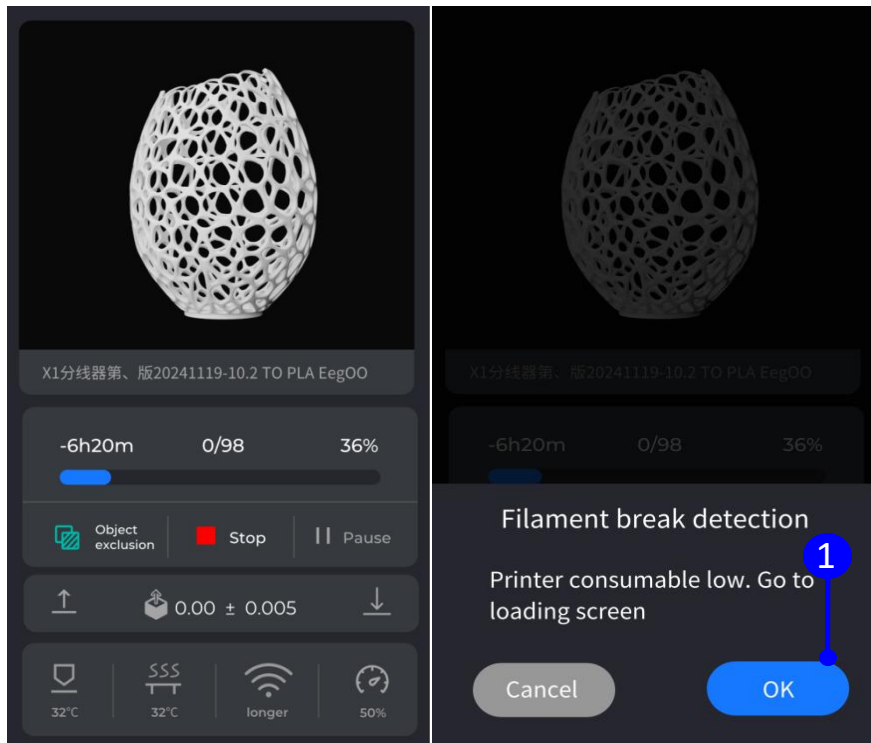
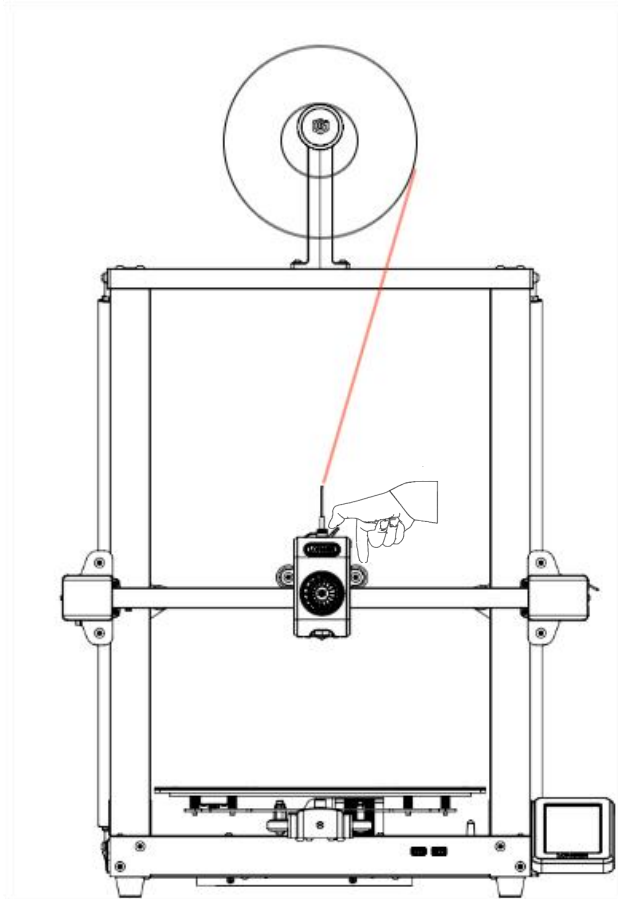
The device features a power-off resume function. After a power outage, when power is restored, it can accurately locate the printing layer height at the time of the power failure and continue printing from that point, effectively avoiding wasted time and materials due to printing interruptions.

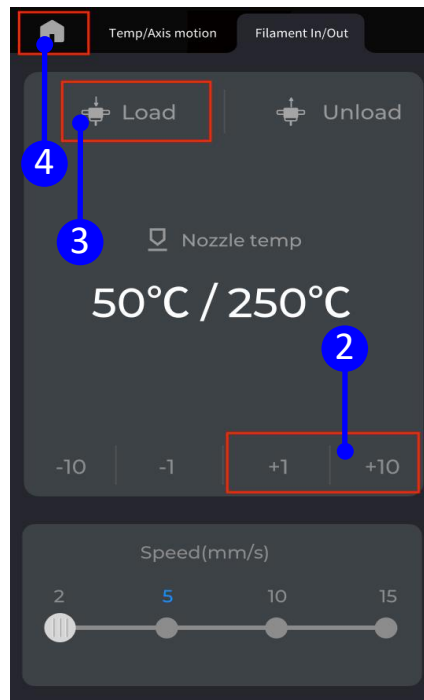


3) Material shortage detection

The filament detection function monitors the flow of consumables in real time using sensors. When the system detects that the filament has run out, it automatically pauses printing and alerts the user to replace the material, effectively preventing printing failures and material waste due to lack of material. After replenishing the filament, you can choose to resume printing precisely from the pause point or start over.

1. Install the new filament spool onto the holder.
2. Insert the filament into the extruder until you feel resistance. Hold down the button on top of the extruder while inserting the filament.
3. Click "Increase Temperature" and wait for the nozzle to heat up to the preset temperature. Click "Load" and wait for the filament to be extruded from the nozzle. After the filament stops extruding, clean the nozzle.
4. Return to the homepage and click "Restore".





Note: Before inserting the filament into the extruder, make sure to straighten the end of the filament.

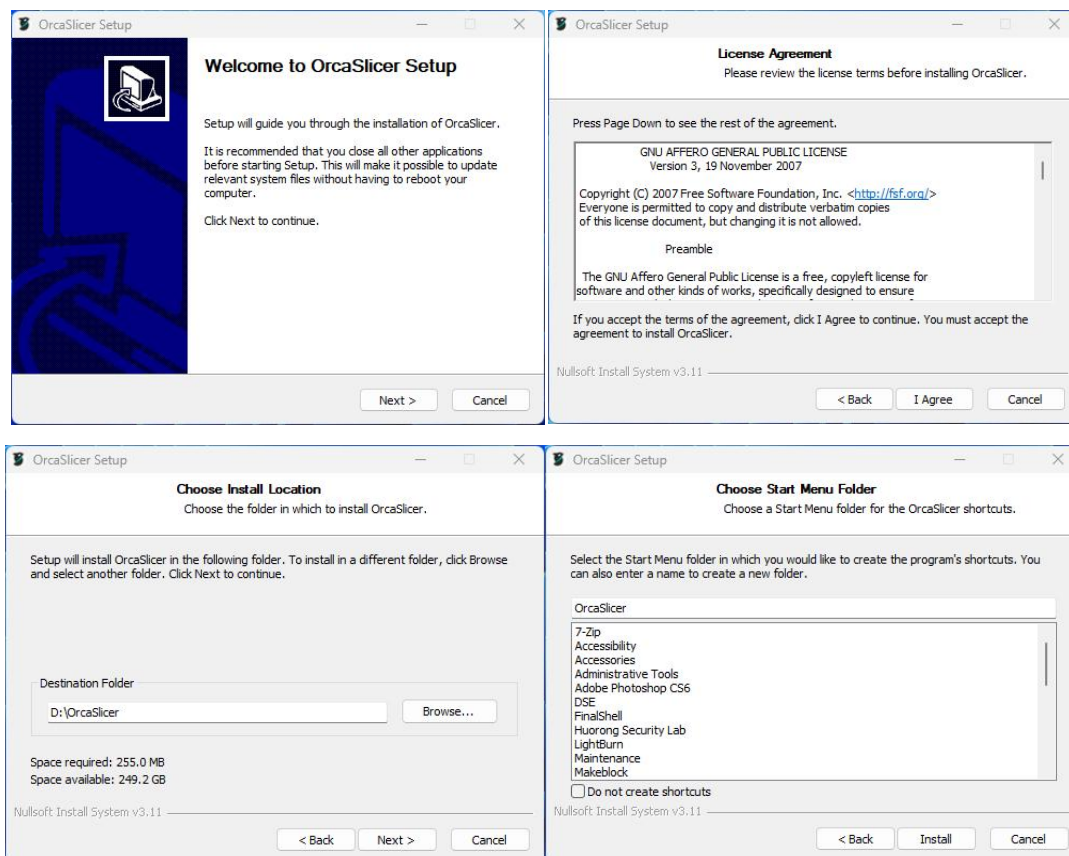
F. OrcaSlicer Software Operation

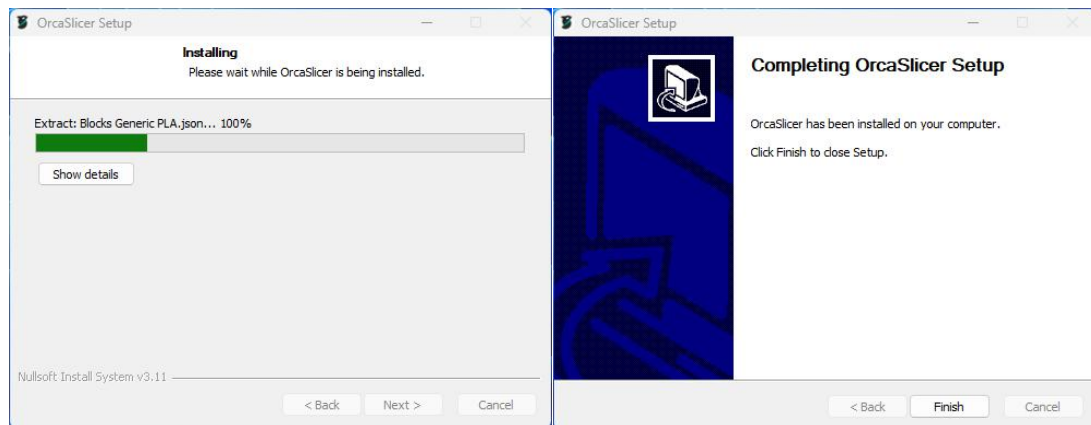
1. Software Download and Installation

Please download the OrcaSlicer software from the following link:

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

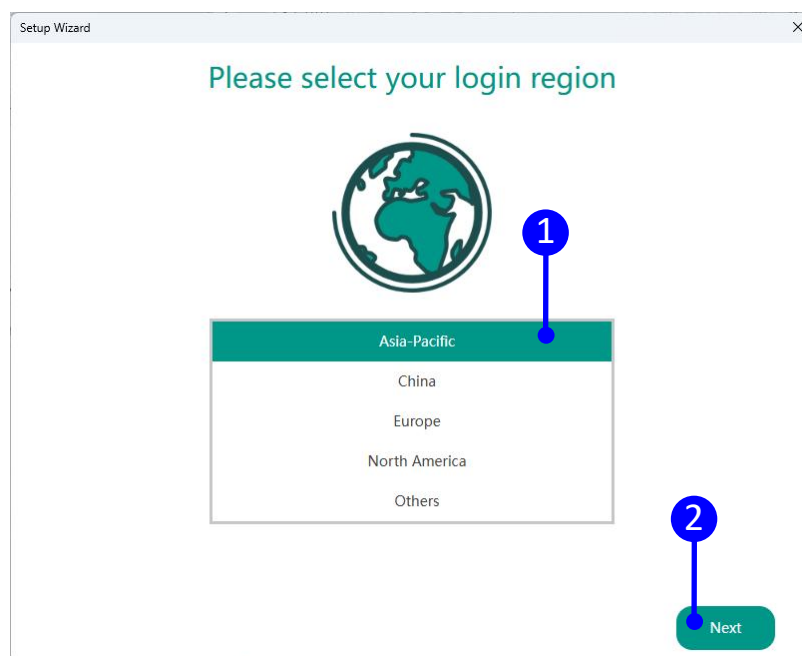
Double-click the software installation package to begin the installation process. Click "Next" until the installation is completed.

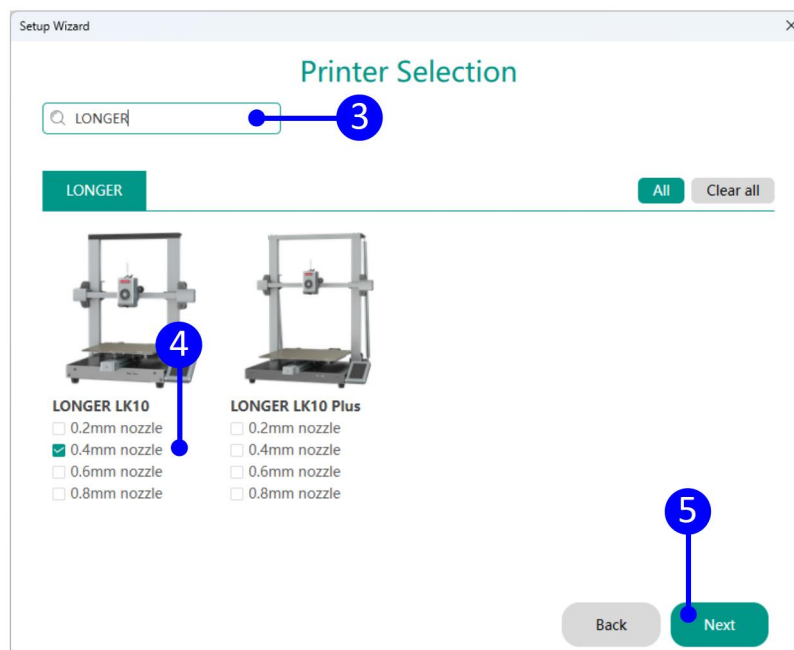




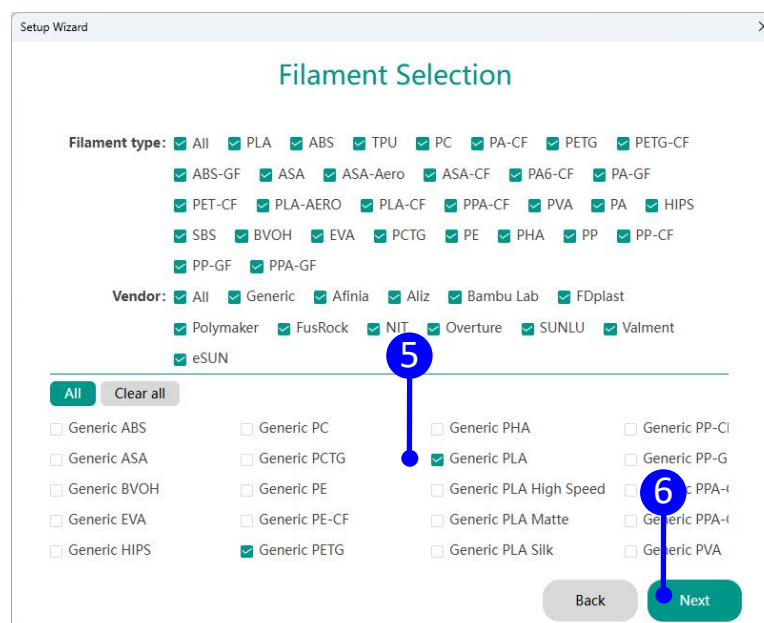
2. Setup

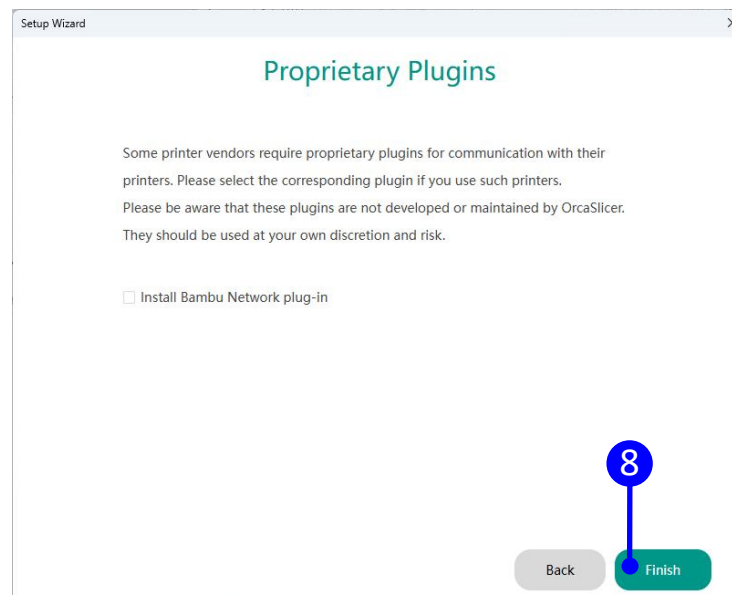
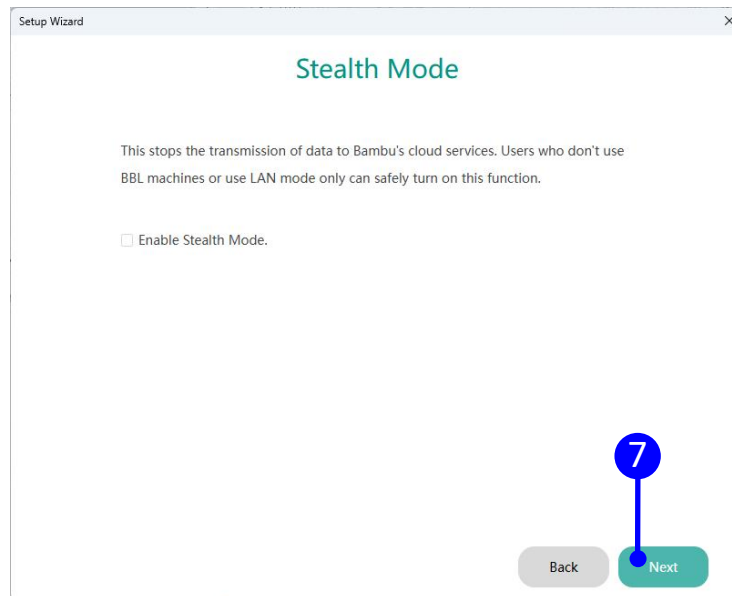
When using the software for the first time, it needs to select the printer and filament according to the setup wizard. In the printer selection pop-up window, search for LONGER, select LONGER LK10 and 0.4mm nozzle.



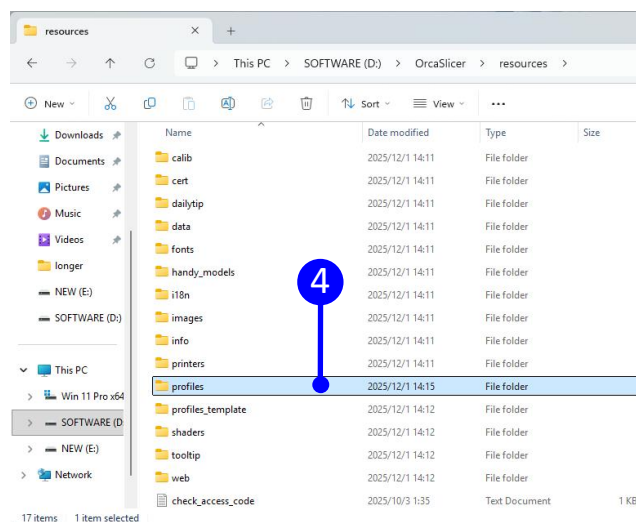
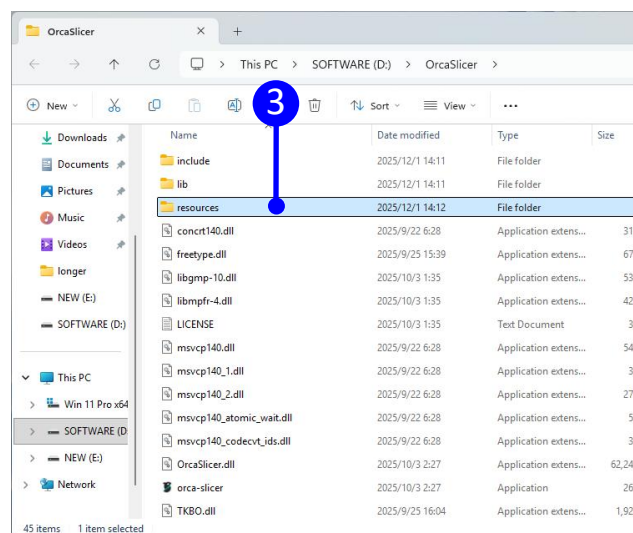
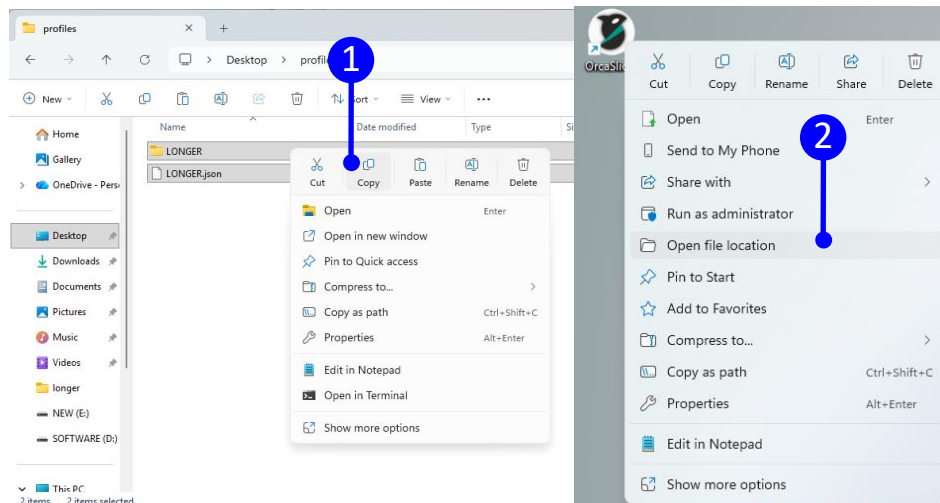


In the filament selection interface, select the type of filament you are using. If you don't have a specific filament, you can choose a general-purpose filament such as PLA or PETG. Then click "Next" until you complete the setup wizard.



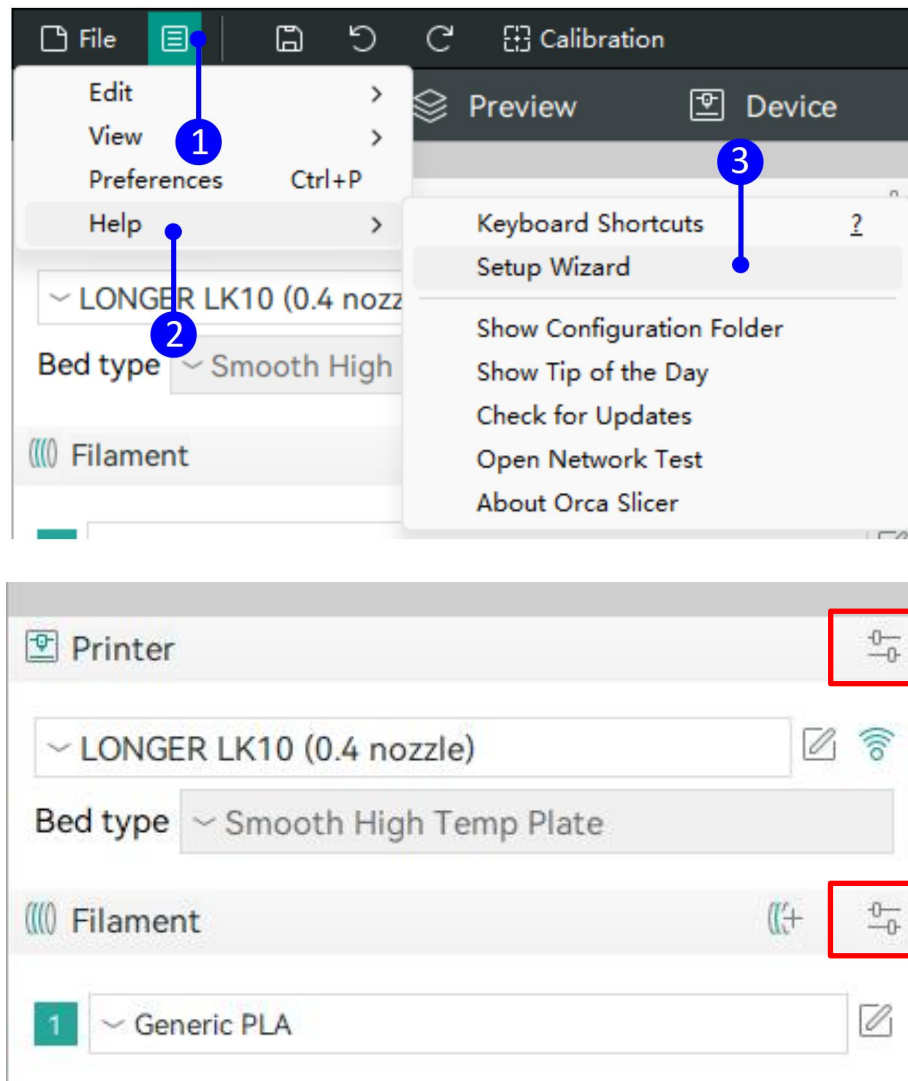


If you cannot find the LONGER LK10 FDM 3D printer in the OrcaSlicer software, please do the following: First, close the OrcaSlicer software. Extract the compressed file named "profiles" from the USB drive, and then copy the folder named "LONGER" and the .json file to the OrcaSlicer profiles folder.



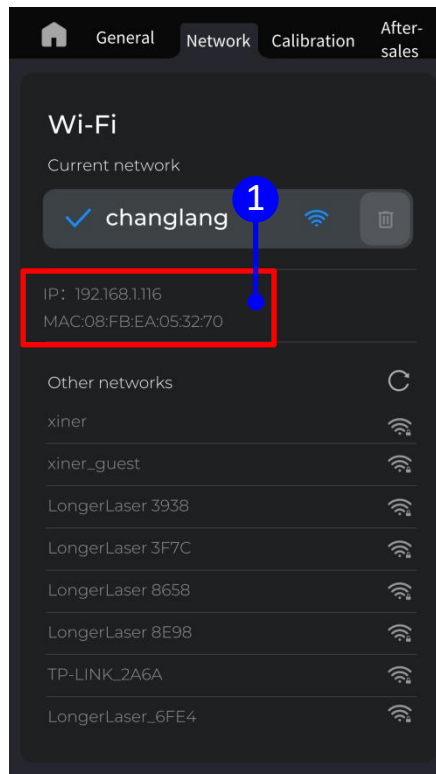
If there is no setup wizard, you can click the icon in the upper left corner, select "Help" and find "Setup Wizard" to configure it. Or

click the icon  on the right side of the printer and filament section in the preparation interface to select LONGER LK10 0.4 mm nozzle and universal filament.



3. Connect the LK10 to OrcaSlicer

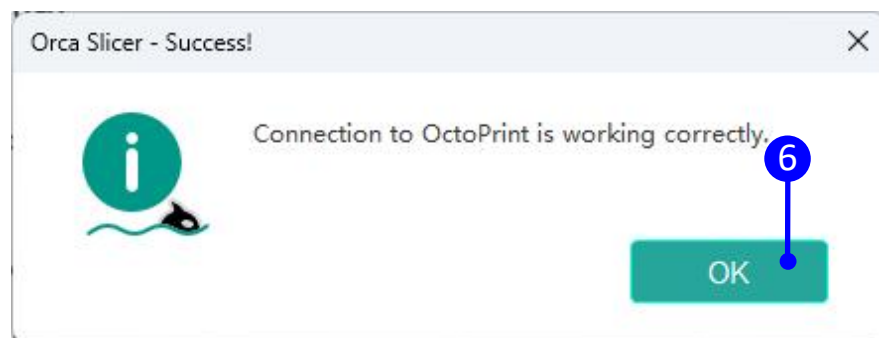
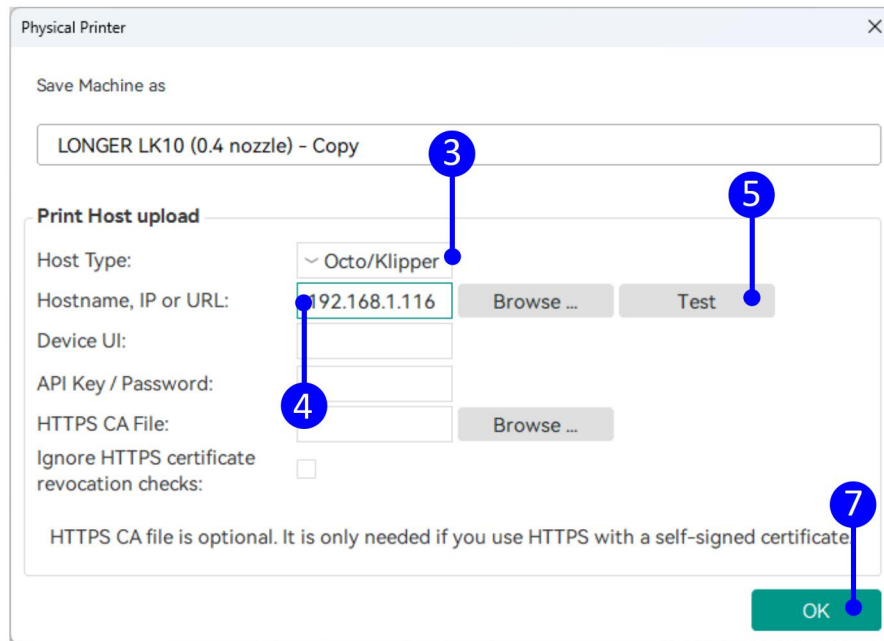
Turn on the printer, click settings >> Network, connect the printer to the network, and view the assigned IP address.



Open the OrcaSlicer software and click the connection icon to the right of the printer. Select "Octo/Klipper" as the host type, enter the IP address, press Enter, and then click "Test" to successfully connect.

Note: The computer and printer must be connected to the same network; otherwise, the connection will fail.





4. The main Window of OrcaSlicer

The default layout of the OrcaSlicer main window includes several key sections: menu, home page, preparation interface, preview interface, device interface, printer settings, filament settings, process settings, and more.

1) Menu



The menu bar is located at the top of the OrcaSlicer window and

includes options such as File, Save, Undo, Redo, and Calibration.

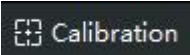
File:  Creating a project, opening a project, opening recent projects, saving, and saving as. These operations only support 3mf format files. Importing and exporting, however, support more file formats such as 3mf, stl, and step.

More options:  Includes editing, viewing, preferences, and help.

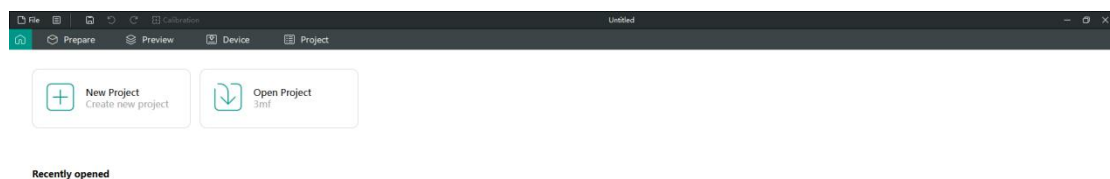
Undo:  Undo the previous action.

Redo:  Redo the last action that was undone.

Save:  Save the project file only in 3mf format.

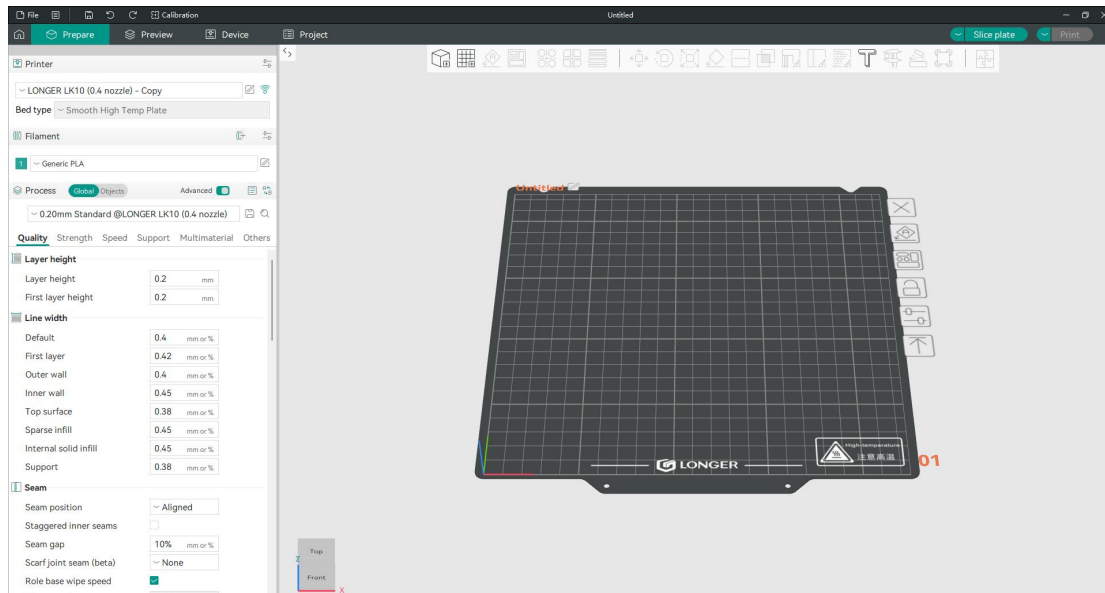
Calibration:  The Calibration Guide outlines Orca's key calibration tests and their suggested order of execution.

2) Home Page

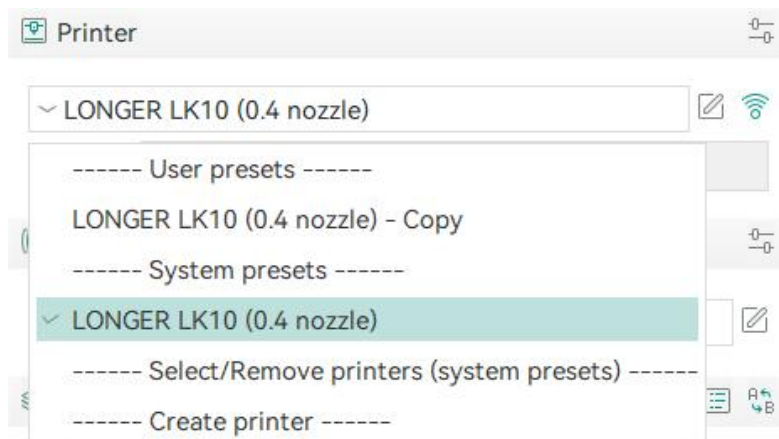


The homepage only has two functions: one is to create a new project, which will redirect you to the preparation interface when clicked; the other is to open a project, which can only open 3mf format files.

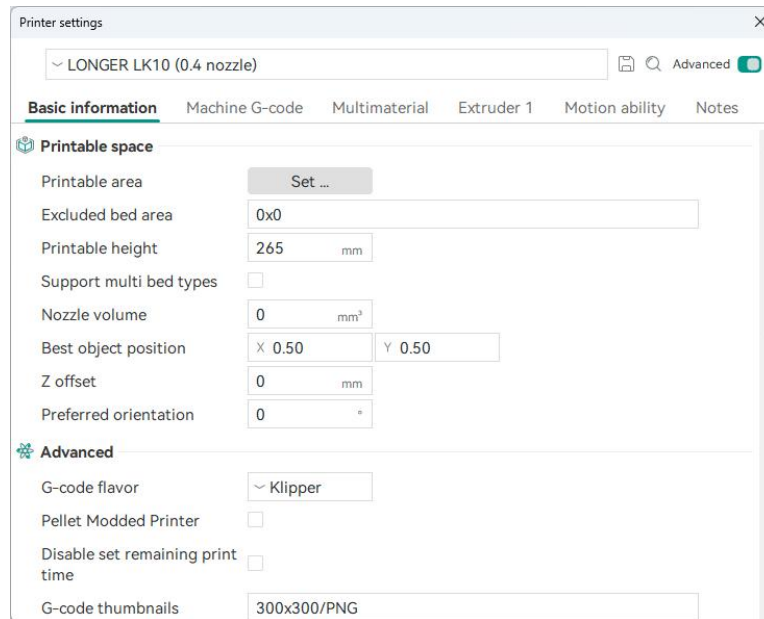
3) Preparation Interface



Printer settings: Settings related to the 3D printer hardware and its configuration. Click the icon  to select a printer. Click the dropdown menu to select a printer that has already been added.

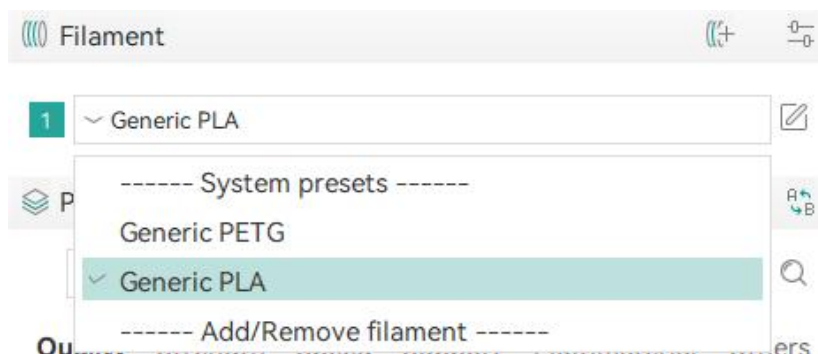


Click "Edit Configuration"  to open the printer settings window, which includes settings for basic information, printer G-code, materials, extruder, and movement capabilities. Typically, no modifications are needed.



Filament settings: Settings related to the 3D printing material.

Clicking the icon  allows you to add a new filament for multi-color printing, but the LK10 does not support multi-color printing and can only perform single-color printing. Click the icon  to select the filament you want to use.



Click "Edit Configuration"  to open the material settings window, which includes options for filament, cooling, parameter overrides, and material type. Generally, no modifications are needed.

Material settings

Generic PLA @LONGER LK10

Filament Cooling Setting Overrides Advanced Multimaterial Dependencies Notes

Basic information

Type: PLA

Vendor: Generic

Soluble material: ☐

Support material: ☐

Default color: Pick ...

Diameter: 1.75 mm

Density: 1.24 g/cm³

Shrinkage (XY): 100 %

Shrinkage (Z): 100 %

Price: 20 money/kg

Softening temperature: 60 °C

Idle temperature: 0 °C

Recommended nozzle temperature: Min 205 °C Max 210 °C

Process settings: Settings related to the 3D printing process. It includes six settings: quality, strength, speed, support, materials, and others.

Quality Strength Speed Support Multimaterial Others

Layer height

Layer height: 0.2 mm

First layer height: 0.2 mm

Line width

Default: 0.4 mm or %

First layer: 0.42 mm or %

Outer wall: 0.4 mm or %

Inner wall: 0.45 mm or %

Top surface: 0.38 mm or %

Sparse infill: 0.45 mm or %

Internal solid infill: 0.45 mm or %

Support: 0.38 mm or %

Seam

Seam position: Aligned

Staggered inner seams: ☐

Seam gap: 10% mm or %

Scarf joint seam (beta): None

Role base wipe speed: ☒

Wipe speed: 80% mm/s or %

Quality settings are related to print quality and aesthetics. Strength

settings are related to print strength and durability. Speed settings are related to print speed and movement. Support settings related to support structures and their properties. Multimaterial settings are related to multimaterial printing. Others settings are related to various other print settings.

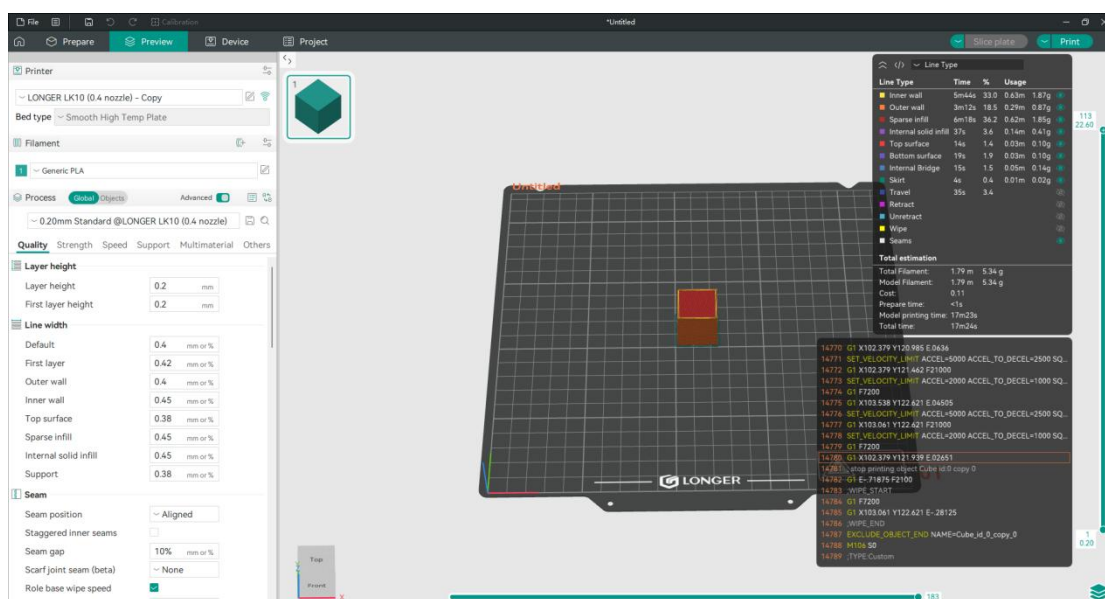
Toolbar: The toolbar contains several commonly used tools for modifying 3D models and build plates, including tools for adding models, adding build plates, moving, rotating, and scaling models, measuring, and manually adding supports.



Print platform preview: On the build plate, you can preview the position and size of the printed models. The build plate can be named in the upper left corner, and a column of commonly used operation tools is located on the right side, including deleting and locking the build plate. Right-clicking on the build plate provides quick and convenient operations, including selecting all models, deleting all models, automatic placement, and automatic orientation. You can also click "Add Primitive" to create standard models such as cubes, cylinders, and cones.



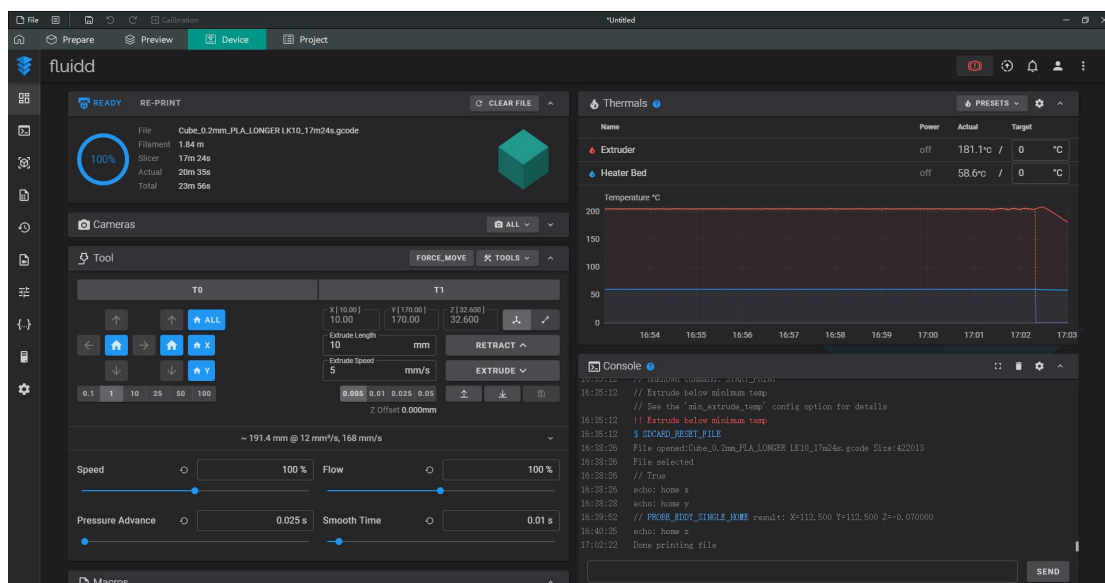
4) Preview Interface



The preview interface allows you to view information such as the layer height, speed, time, temperature, line width, and infill pattern of each layer after the model has been sliced, as well as the required filament length and weight, and fan speed.

Line Type					
Line Type	Filament	Speed	Layer Height	Line Width	Flow
Inner wall	5m44s	33.0	0.63m	1.87g	
Outer wall	3m12s	18.5	0.29m	0.87g	
Sparse infill	1m18s	36.2	0.62m	1.85g	
Internal solid fill	37s	3.6	0.14m	0.41g	
Top surface	14s	1.4	0.03m	0.10g	
Bottom surface	19s	1.9	0.03m	0.10g	
Internal Br	1.5	0.05m	0.14g		
Skirt	0.4	0.01m	0.02g		
Travel	35s	3.4			
Retract					
Unretract					
Wipe					
Seams					
Total estimation					
Total Filament:	1.79 m	5.34 g			
Model Filament:	1.79 m	5.34 g			
Cost:	0.11				
Prepare time:	<1s				
Model printing time:	17m23s				
Total time:	17m24s				

5) Device Interface



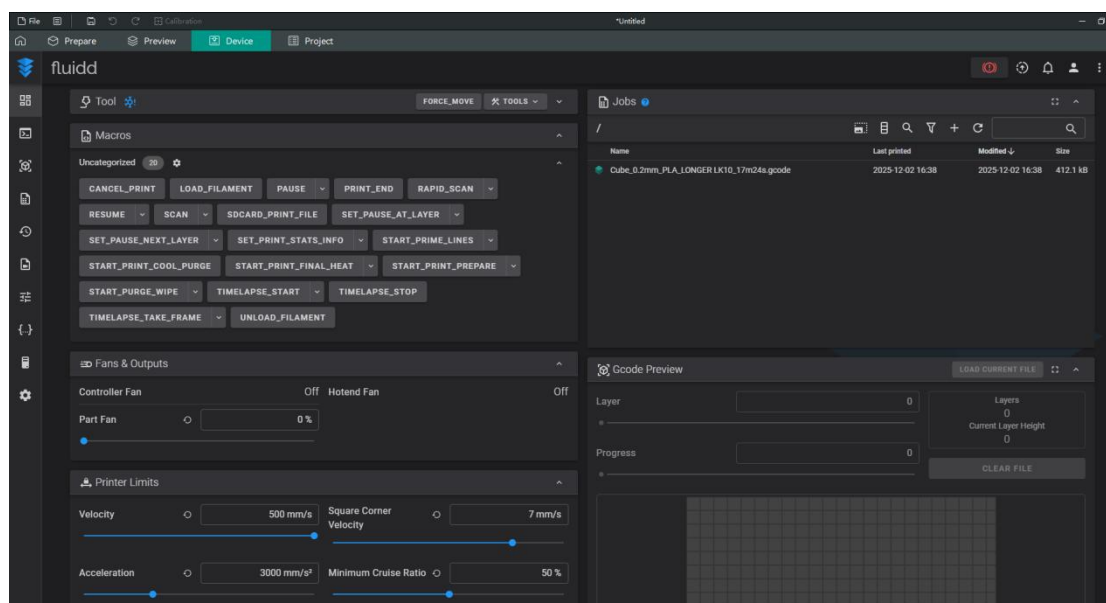
Printing tasks: It displays information such as the name of the file being printed, the required filament length, printing time, and number of layers printed.

Camera: By connecting the camera and the machine via USB, you can remotely monitor the printing status in real time.

Motion control: Provides the ability to control the movement of the printer's printhead along each axis of control, and can set compensation following the leveling process.

Temperature display: Displays the Printer's temperature(s) and heating status. This also provides controls for the preheating of the printhead temperature as well as the heated bed temperature.

Control Panel: Displays the executed G-code commands and allows manually sending G-code to the printer.



Macros: Macro commands allow you to quickly send G-code instructions to the printer.

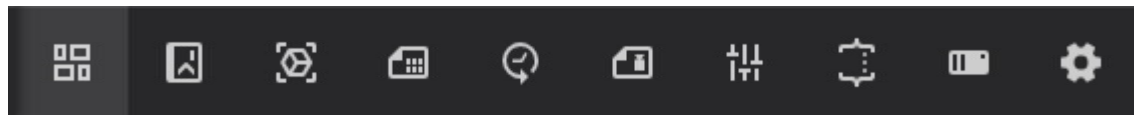
Fan and output ports: Provides the ability to control the print head fan.

Printer limits: Sets the maximum acceleration control of the printer,

normally there's no need to modify.

Task list: You can drag and drop the G-code files generated by OrcaSlicer slicing software into this task list for printing.

G-code preview: By previewing the border diagram of the print model, you can select a specific model on the build plate to cancel its printing without affecting the printing of other models on the plate. Note: The cancellation of printing is irreversible.

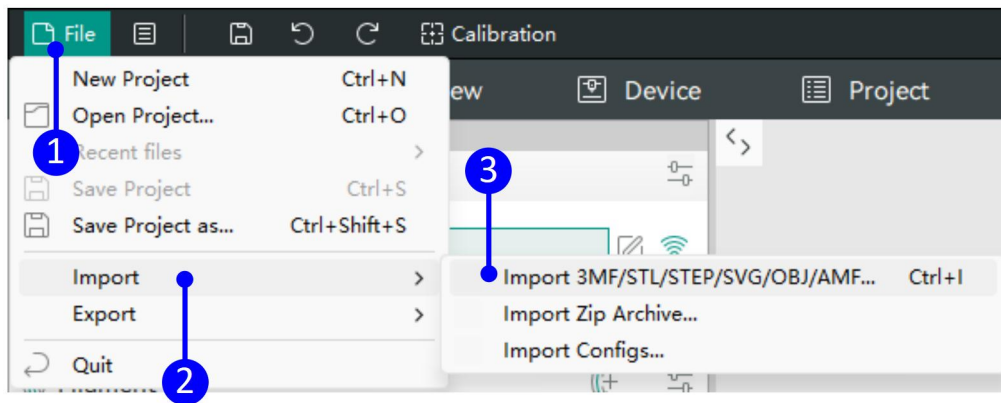


Left sidebar menu: Allows you to open pages such as the console, G-code preview, task list, and task history separately.

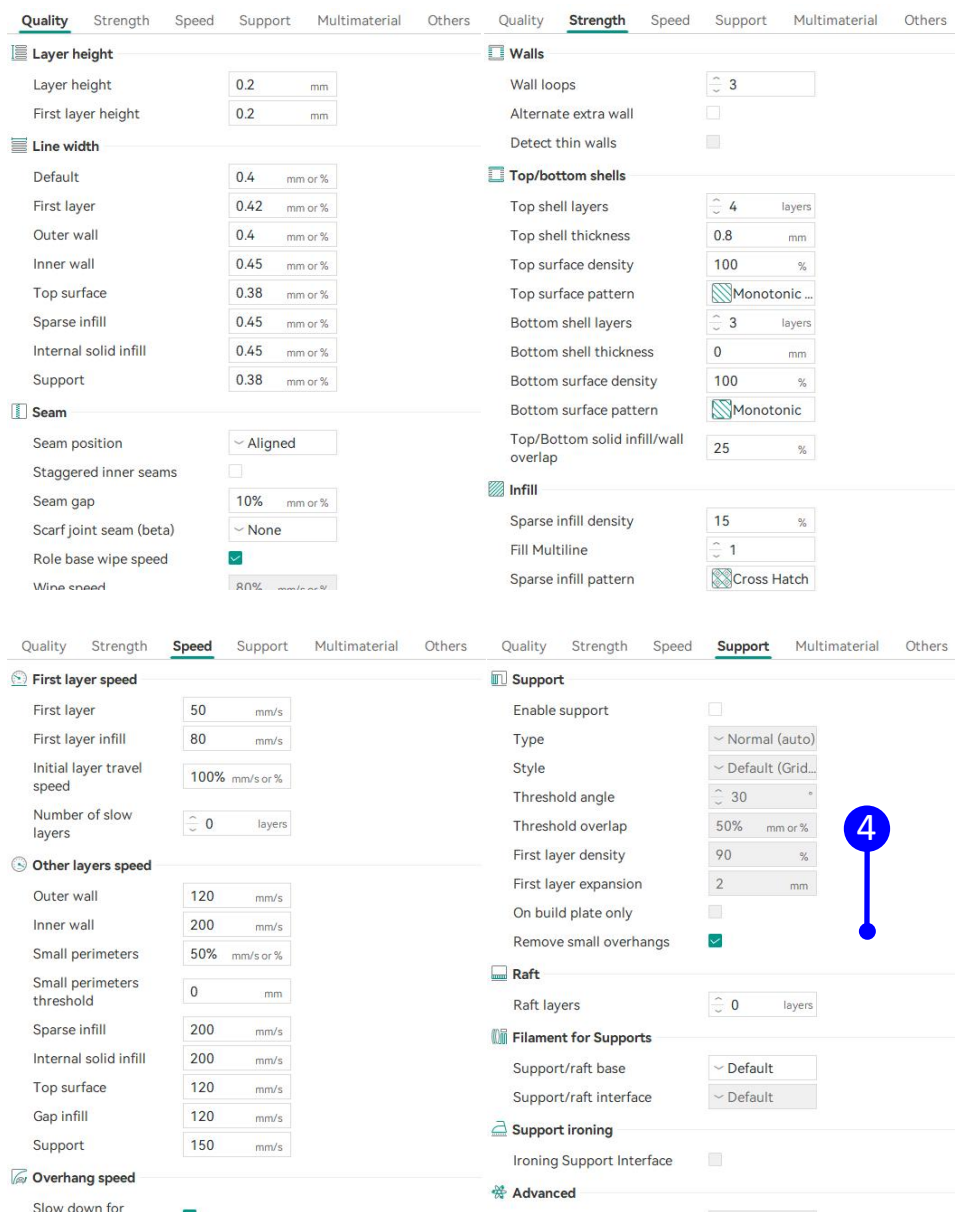
For more help with OrcaSlicer, please refer to the tutorial at:
<https://github.com/OrcaSlicer/OrcaSlicer/wiki>

5. Create a Project in OrcaSlicer

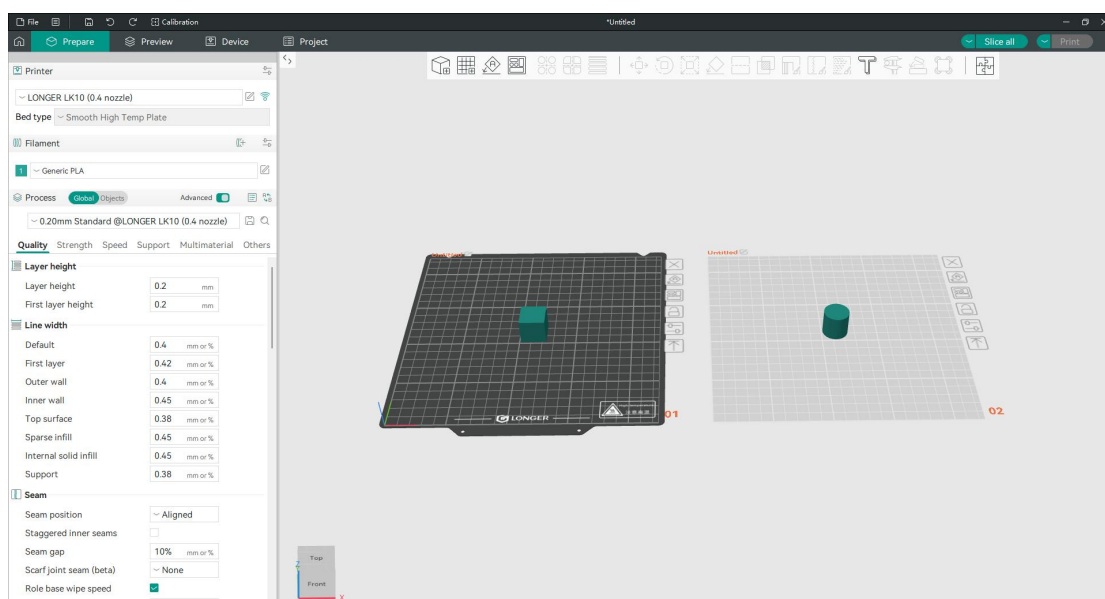
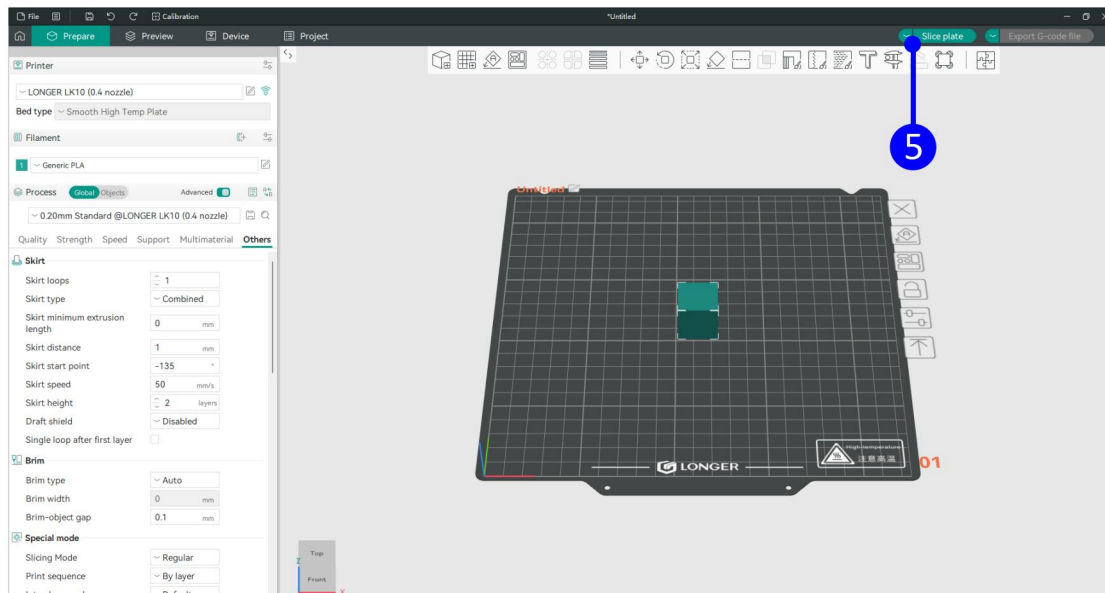
1) Click "File" in the upper left corner, select "Import", then select "Import 3MF/STL/STEP/SVG/OBJ/AMF...", and select the 3D model you want to print from the folder to import it into the software.



2) Set parameters such as layer height, printing speed, and support on the left side of OrcaSlicer.



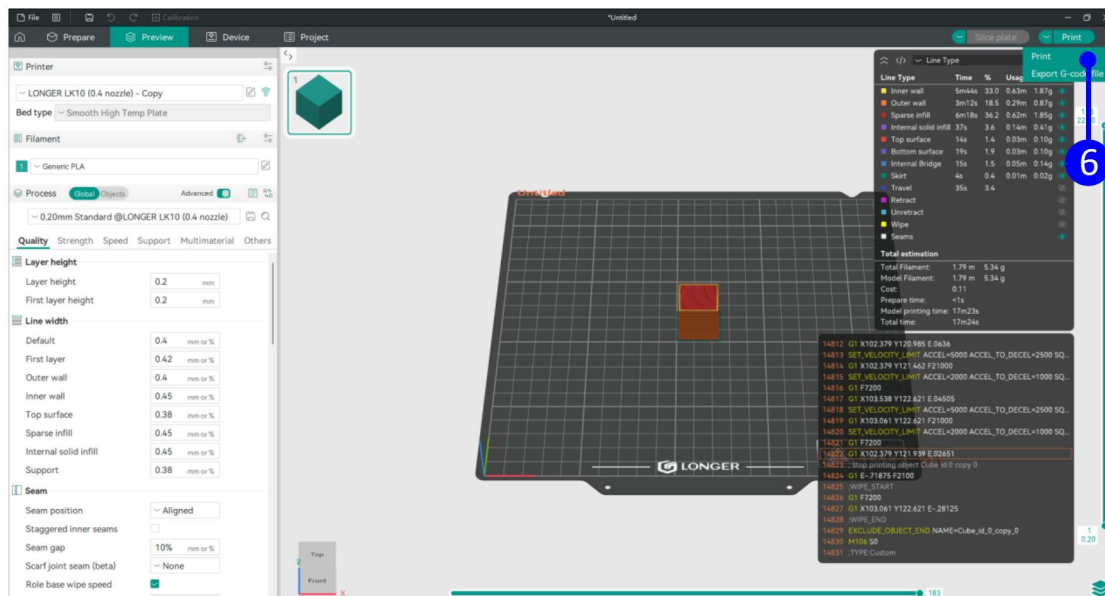
3) Click "Slice plate" in the upper right corner. If you have two or more plates, you can select "Slice all".



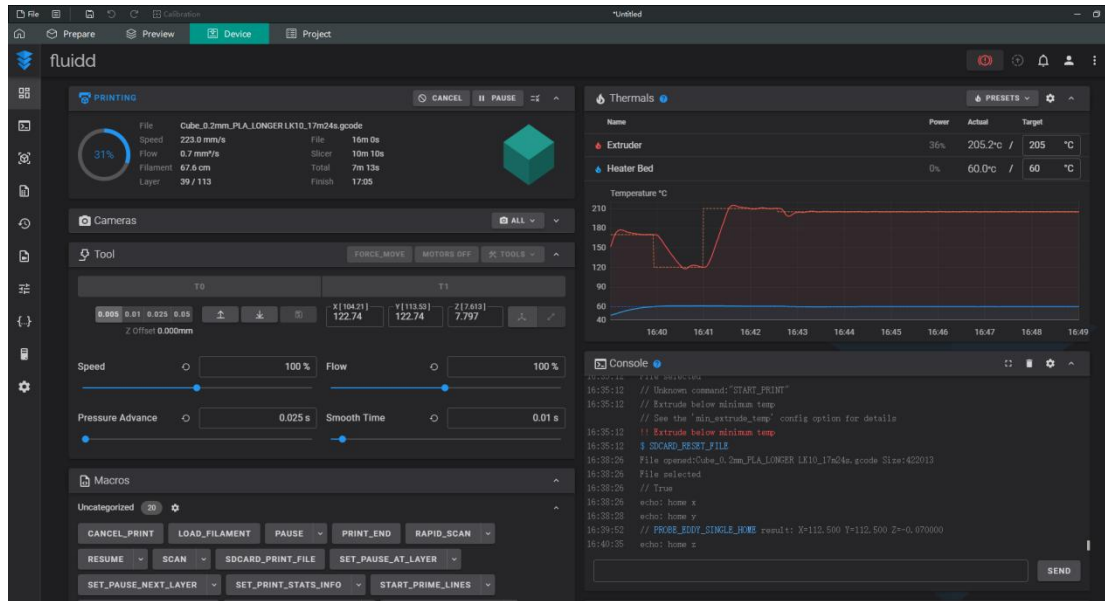
4) Click "Print" in the upper right corner, name the print file, and then click "Upload and Print".

"Export G-Code File" exports the G-Code format file of the printed model, which needs to be saved to a USB flash drive or SD card.

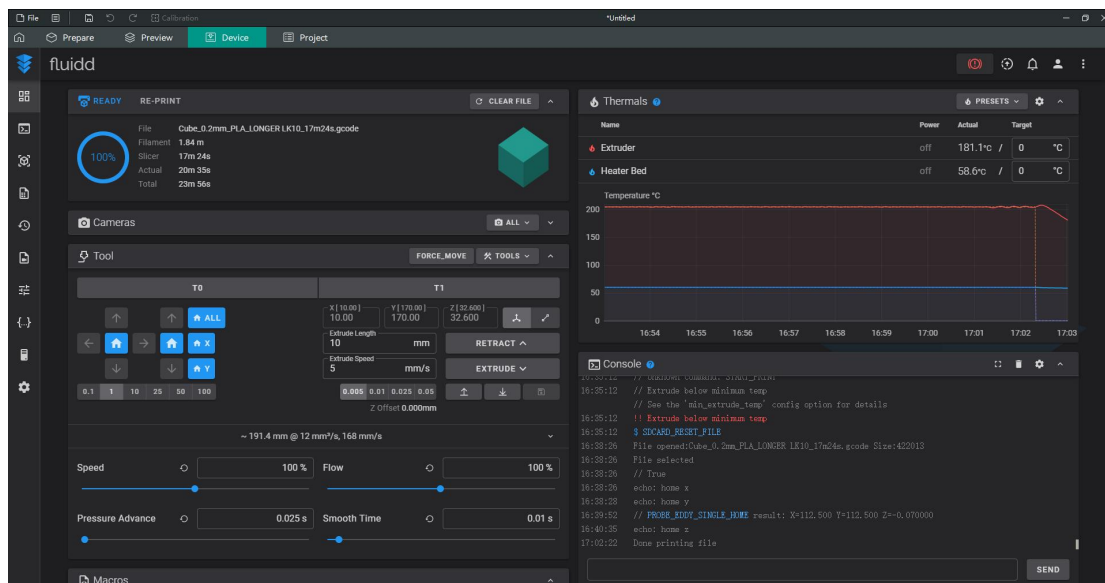
Then, upload the file to the printer via USB and print."Upload" uploads the sliced files of the model to the printer's local storage; it does not initiate printing.



5) After uploading and starting printing, you can see information such as the printing task progress, motion control, temperature display, and control panel on the device interface.



6) The console will display information such as extruder returning to zero, printing starting, success or error. After printing is completed, the console displays the message "Done printing file".



17:02:22 Done printing file