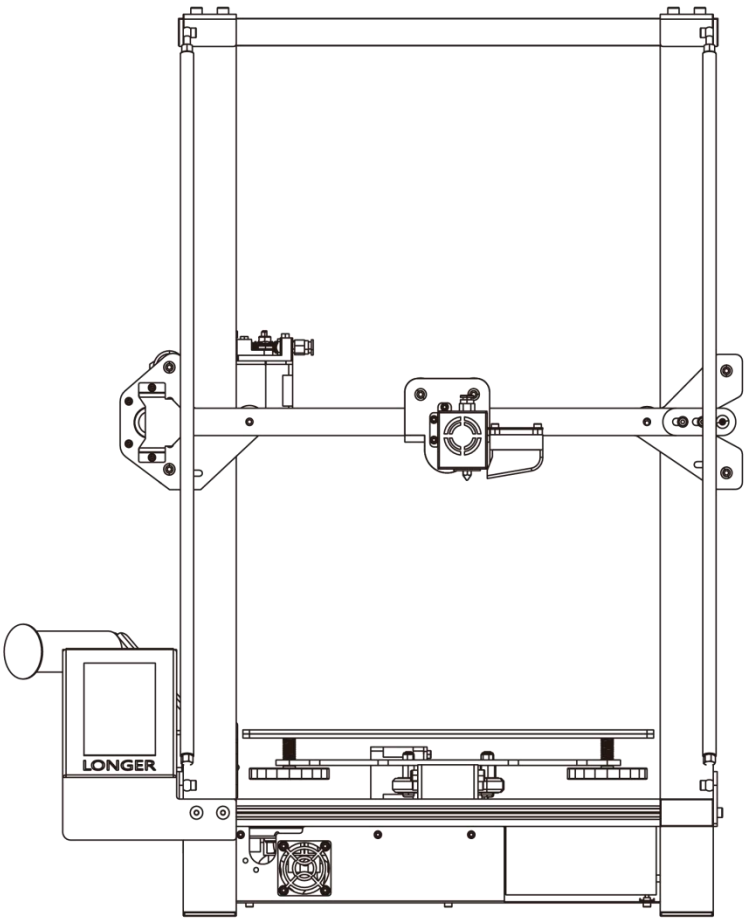


LONGER LK 5 PRO 3D FDM PRINTER

Thank you for choosing our products.
Please read this manual carefully before use.

Please reference more details on digital manual in TF card about the operation of printer and installation of slicing software.

Please join our Facebook Group: Longer 3D Official Group
Email: Support@longer3d.com

If you have any question, please feel free to contact us as above.

table of Contents

Safety Precautions

1) The temperature of the nozzle parts can reach 250 °C during the operation of the machine. To ensure your safety, it is forbidden to touch the model and nozzle directly with your hand while the printer is printing or cooling.

2) During the operation of the machine, it is forbidden to reach into the machine to prevent pinching.

3) The working voltage is 110~220V AC voltage 50HZ AC. The three-pin socket must be grounded. Do not use other power sources to avoid damage to components or fire, electric shock and other accidents.

Note: Before powering on, please check whether the input voltage value of the switching power supply meets the voltage standard of the country or region.

4) When the machine is working continuously for ≥ 96 hours, it should be stopped for 1-3 hours.

Consumables

The consumables are not used after unpacking or for a long period of time after the print model is completed. The consumables should be taken out of the printer and sealed to prevent the consumables from being exposed to the air for a long time, causing moisture and affecting the print quality. At the same time, when the consumables are removed

The front end of the consumable should be fixed on the tray to avoid consumables and affect the next print.

To use this printer, it is recommended to use the supplies provided by the company. At present, the quality of consumables sold in the retail market is uneven, and printing is prone to breakage.

Staggering and clogging the printer nozzle, etc., and irreversible damage to the heating components of the nozzle, the extrusion motor and the extrusion gear. The company will not guarantee the printer due to the use of consumables other than our company.

Environmental requirements

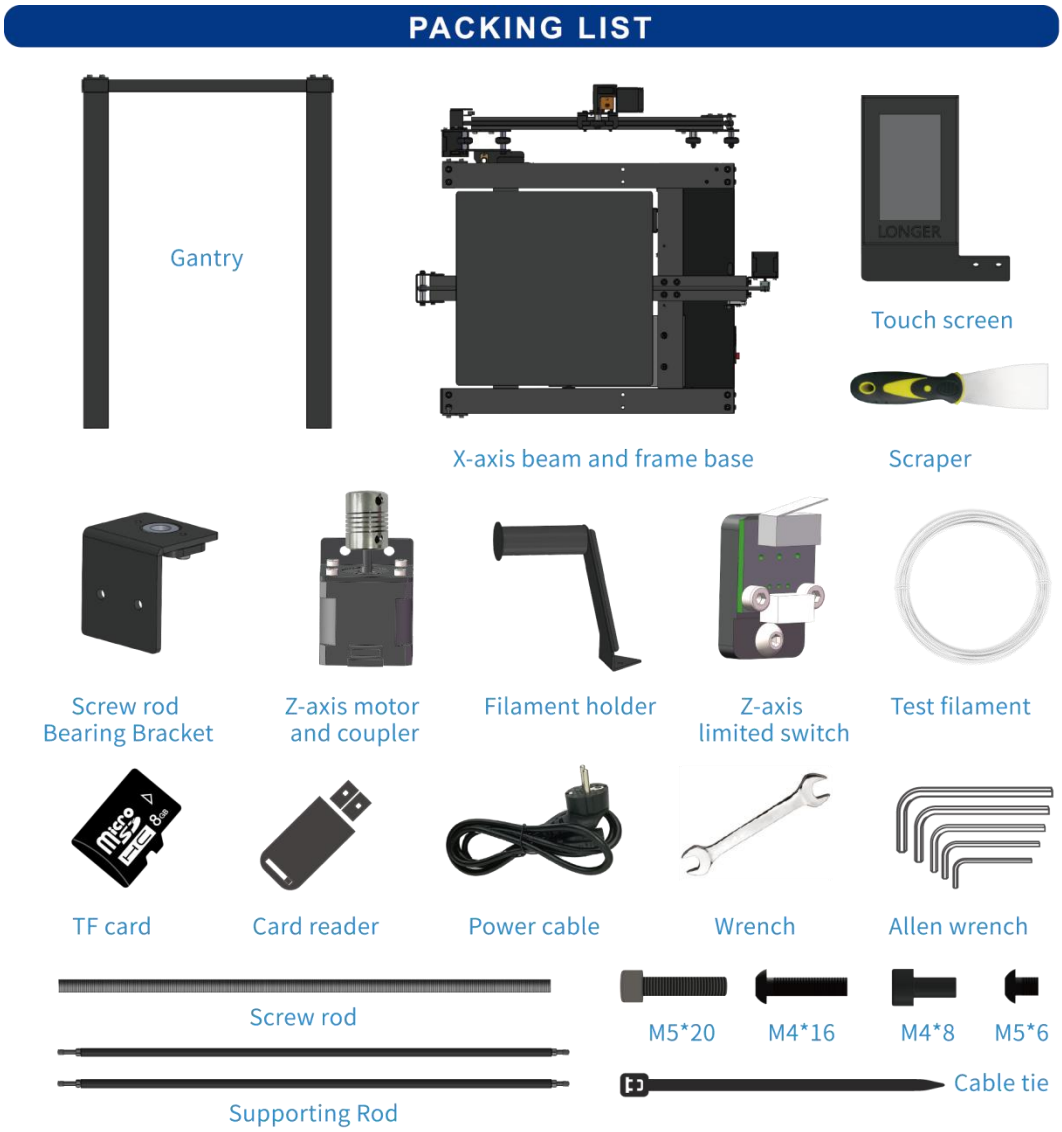
Temperature requirement: 10°C~30°C, humidity requirement: 20%~50%, this 3D printer can work normally within this range; beyond this range, this 3D printer will unable to achieve the best print results.

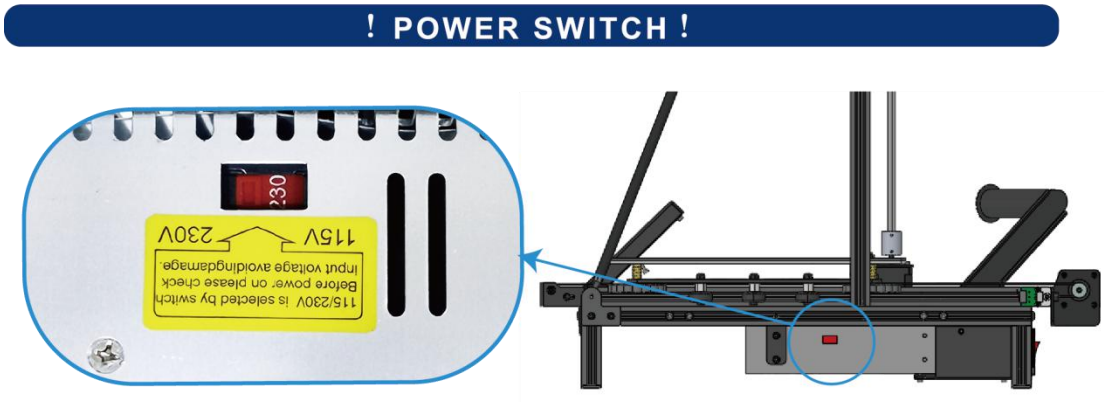
A. Product information

(1) Model parameter

model	LK5 Pro	Machine size	580*540*663 MM
frame	Classic aluminum frame	Machine weight	11KG
Molding	FDM (hot melt production)	Package dimensions	622*588*193mm
Number of nozzles	1	Consumable color	Multi-color optional
Molding size	300*300*400mm	Power requirement	Output 24V
Layer thickness	0.1-0.4mm	operating system	Windows, Linux, MAC
Memory card offline printing	Support TF card	Interface language	English
Serial screen	YES	Environmental requirements	Temperature 10-30 ° C Humidity 20-50%
printing speed	Not more than 120mm/s	Nozzle temperature	Room temperature to 250 ° C
Nozzle diameter	0.4mm	Hot bed	YES
Slicing software	Cura, repetier-host	Support consumables	PLA, ABS, wood, copper consumables
file format	STL, G-Code, OBJ	Consumable diameter	1.75mm
Special feature	Inclined rod lattice glass 4.3 inch large touch screen Blue high temperature Teflon tube		

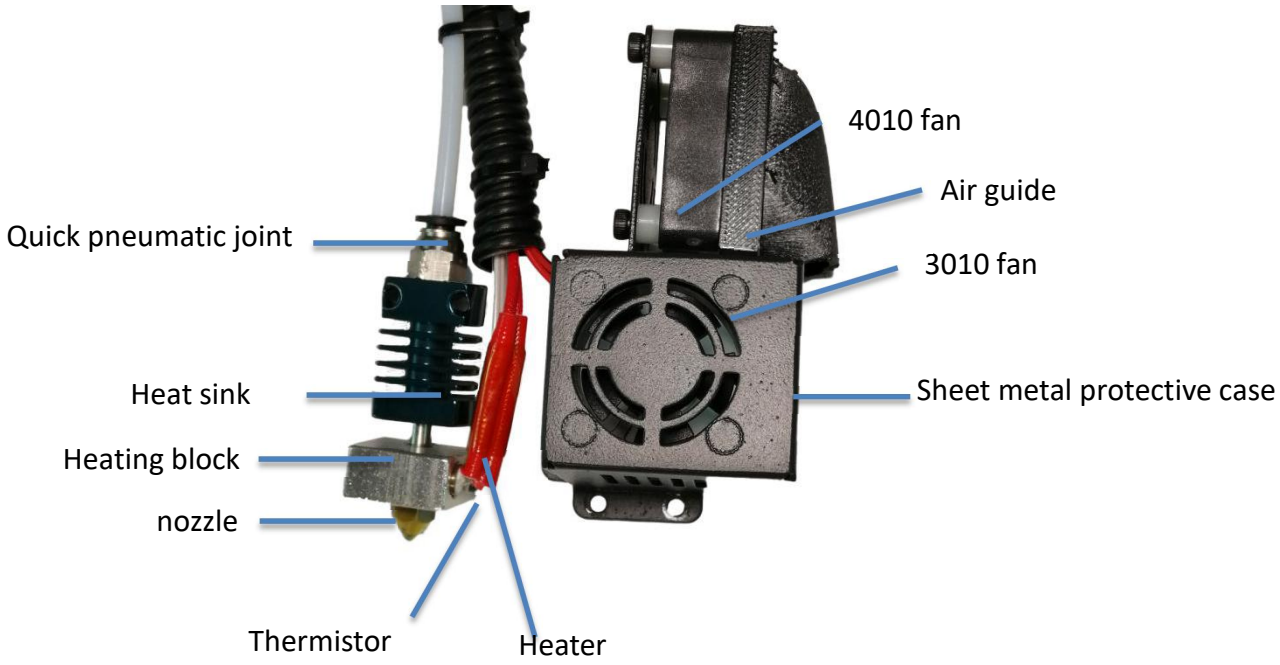
(2) Packing List



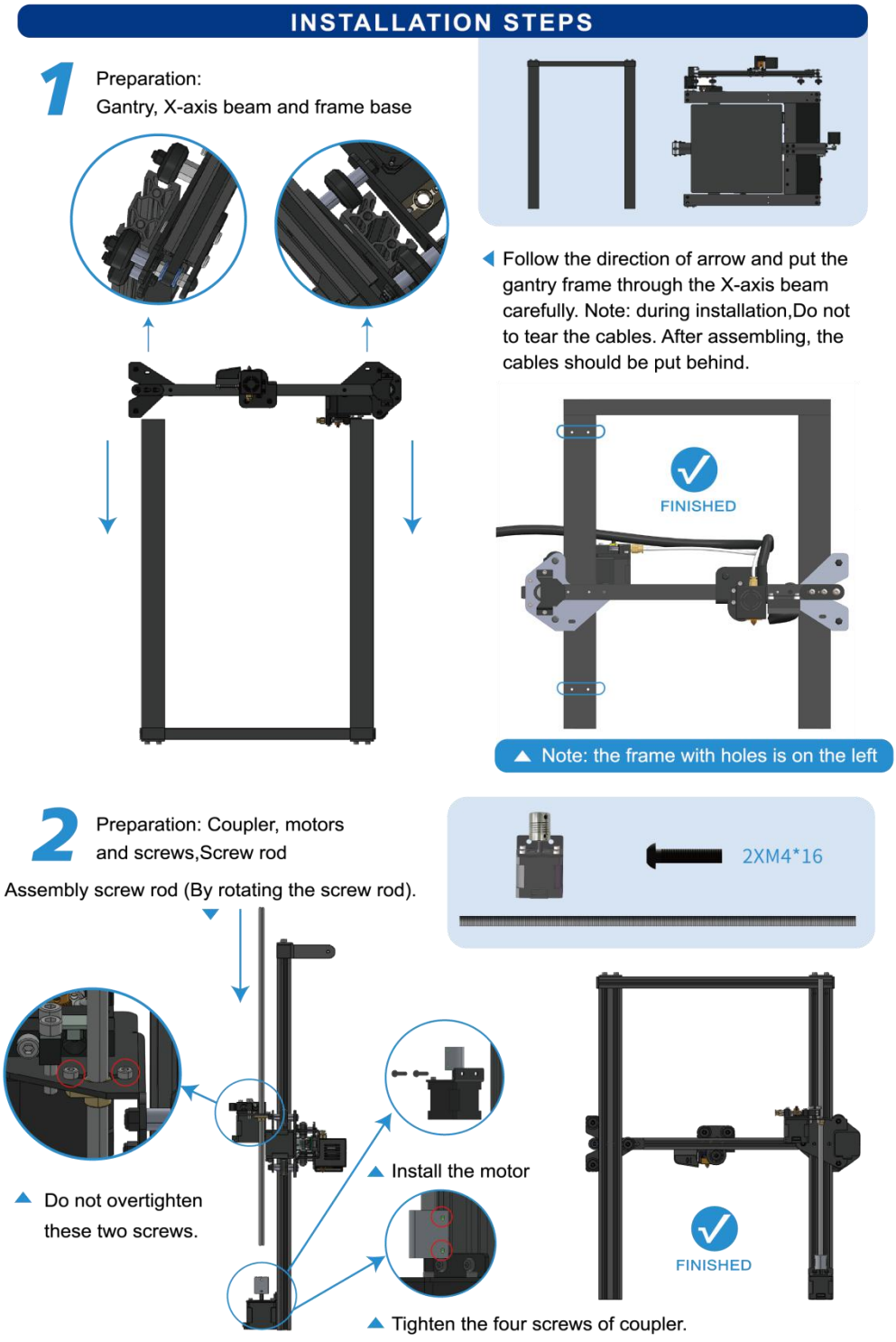


▲ Use the wrench to toggle the switch to the RIGHT local voltage Before powered on. Please check the RIGHT voltage to avoid to burn down printer.

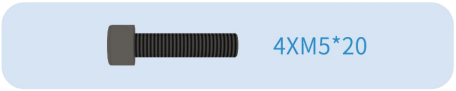
(3) Nozzle module exploded view

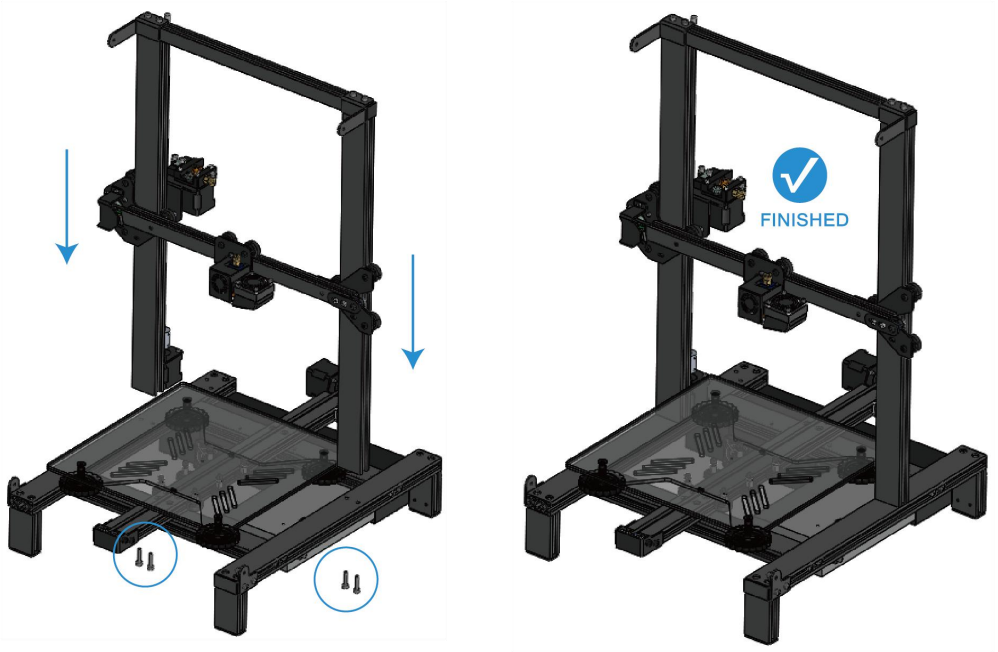


(4) Machine assembly



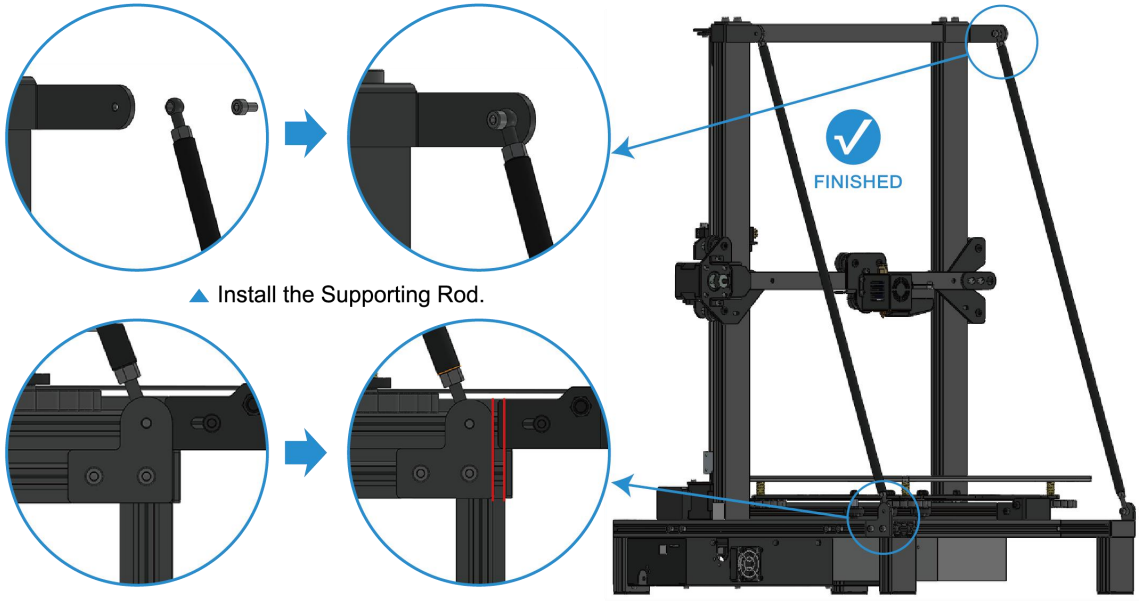
3 Preparation:Gantry, Base,Screws





▲ Install the gantry onto the base.

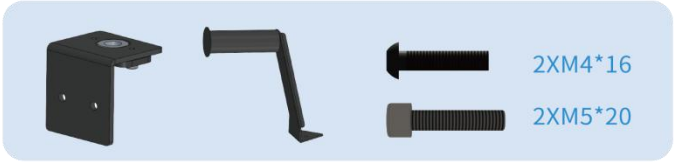
4 Preparation:Supporting Rod, Screws

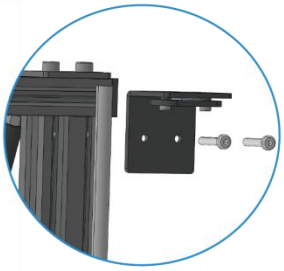


▲ Install the Supporting Rod.

▲ Loosen the screws of the fixing plates of the supporting rods on both sides, and the position of the fixing plates can be adjusted in the front-rear direction until the gantry and the base become stable and vertical.

5 Preparation: Limited switch and filament holder,Screws

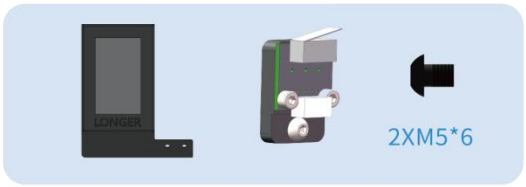


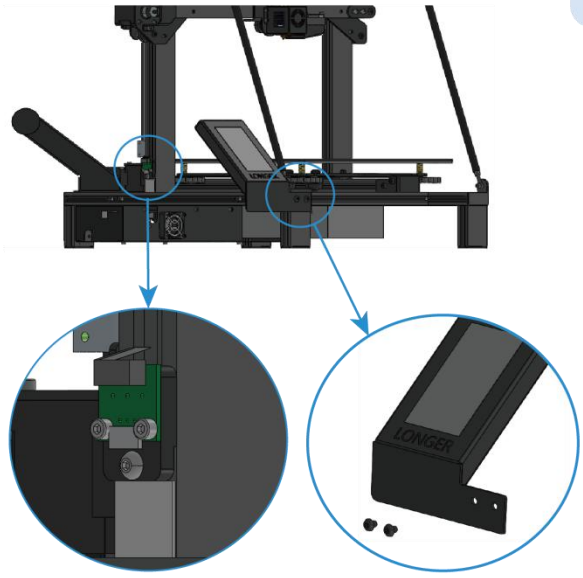


Install the Lead Screw Bearing Bracket.

Install the filament holder to the top beam of the printer.

6 Preparation: Touch screen, touch screen back cover, screws

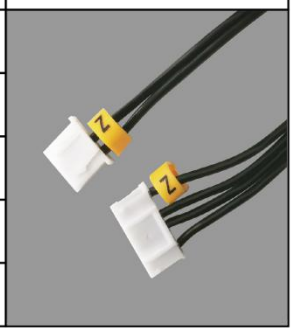




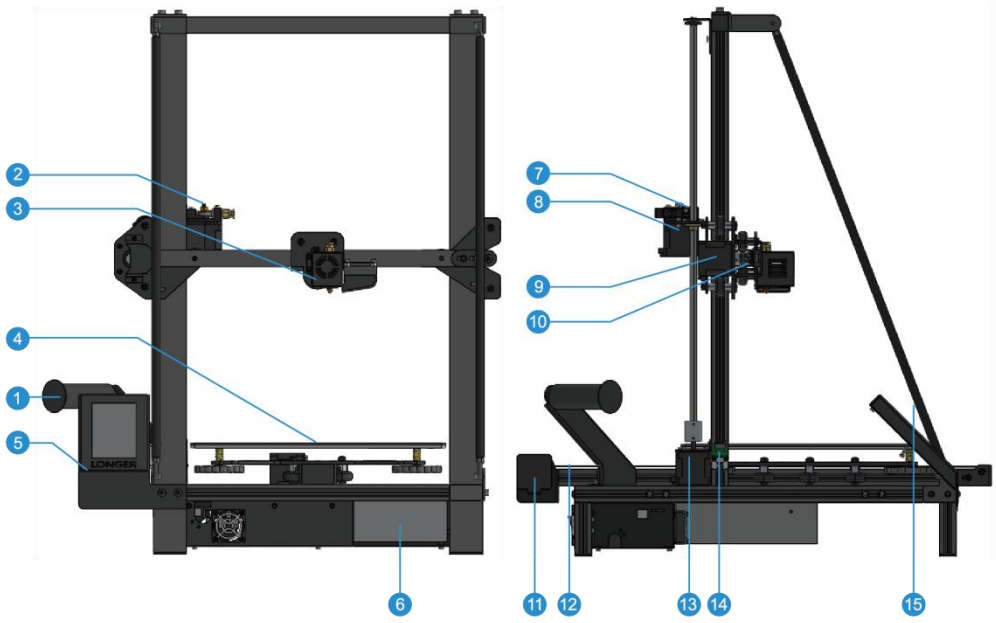
▲ Install the z-axis limit switch. The installation height is flush with the upper edge of the white label.

▲ Mount the touch screen to the left on base.

7 Connect:

Number of cables / label	Two wires	Four wires	The picture below shows 2-wire cable and 4-wire cable
E	7	8	
X	10	9	
Y	12	11	
Z	14	13	
LCD		5	

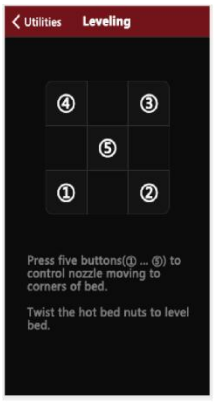
* Please reference the printer description and cable terminals with orange rubber letters to connect the cables.
* The numbers from 7 to 14 in the table above correspond to the serial numbers in the "PRINTER INTRODUCTION" section.

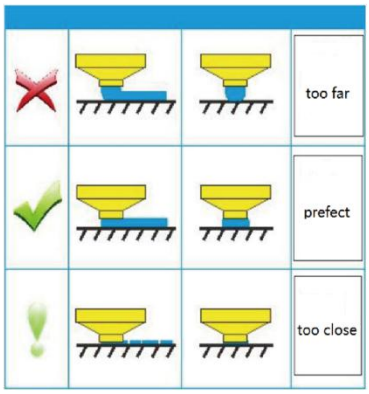


1 Filament holder
2 Extruder
3 Hot end
4 Hot bed
5 Touch screen
6 Power supply
7 E filament detector
8 E extrusion motor
9 X-axis motor
10 X-axis limited switch
11 Y-axis motor
12 Y-axis limited switch
13 Z-axis motor
14 Z-axis limited switch
15 Supporting Rod

LEVELING

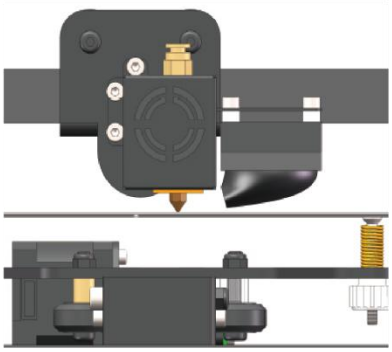
- Please click on the touch screen "More"-> "Leveling", starting from the icon in the lower left corner, click the icons counterclockwise in turn. After each click on the icon, wait for the nozzle to move to the corresponding position and adjust the leveling nut. Try to keep the nozzle and the platform at a proper distance.

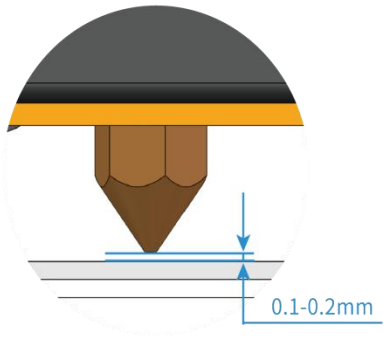




- The distance between the nozzle and the platform is controlled to the height of 0.1-0.2mm, about the thickness of A4 paper.

  (Put on a A4 paper, feel the slight friction when you pull the paper)





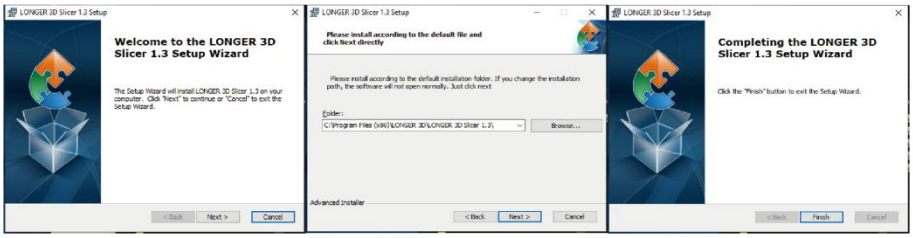
SOFTWARE INSTALLATION AND OPERATION

INSTALLATION

longer 3D Slicer.msi

Double-click to open the file with .msi , there's a pop-up window to appear, click "Next", "Confirm" and "Finish".

Please save as default path when the slice software is installing, otherwise the slicer is not able to run normally.

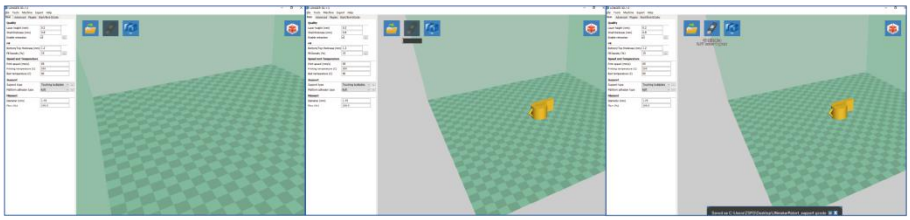


SETTING

Run the program select the software interface language in "English", select the model "LK5 Pro", select "Finish".

PROCEDURE OF SCLICING

1. Run the slicer of "LONGER 3D Slicer 1.3".
2. Modify printing parameters, import model file -> edit model -> export as Gcode file (save path is on the bottom of slicer window).
3. Copy the file into TF card, insert it into the printer, power on the printer, select the printed file, and start printing.
4. Software parameter modification: You can place the mouse arrow in the parameter setting box and it will prompt the parameter function.



MORE INFORMATION

Support Email : support@longer3d.com

Facebook ID: longer3dprinter

Youtube channel: Longer 3D

Facebook Group:Longer 3D Official Group

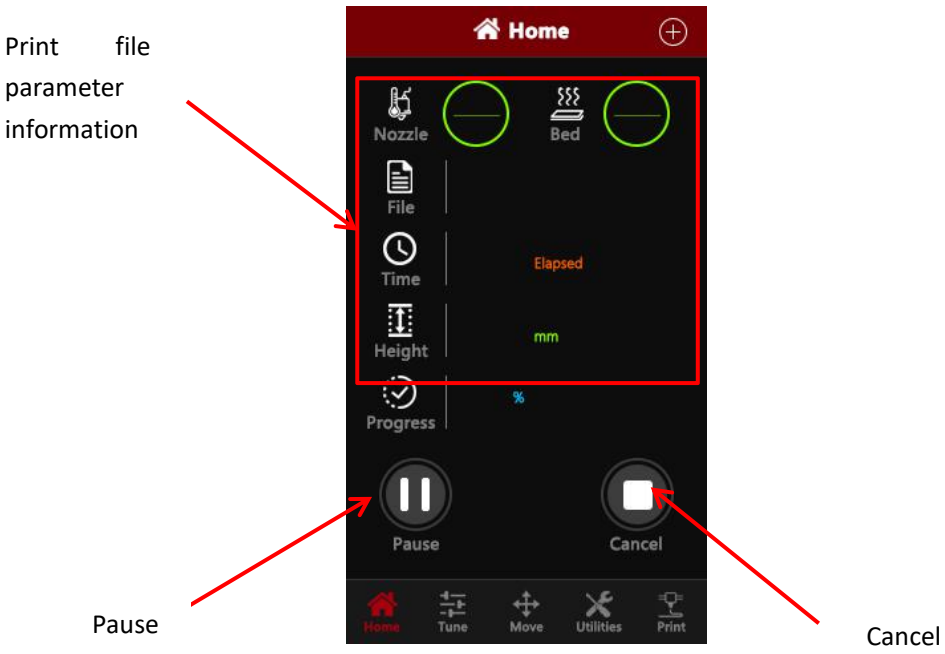
B. Machine operation

（1）Machine control interface description

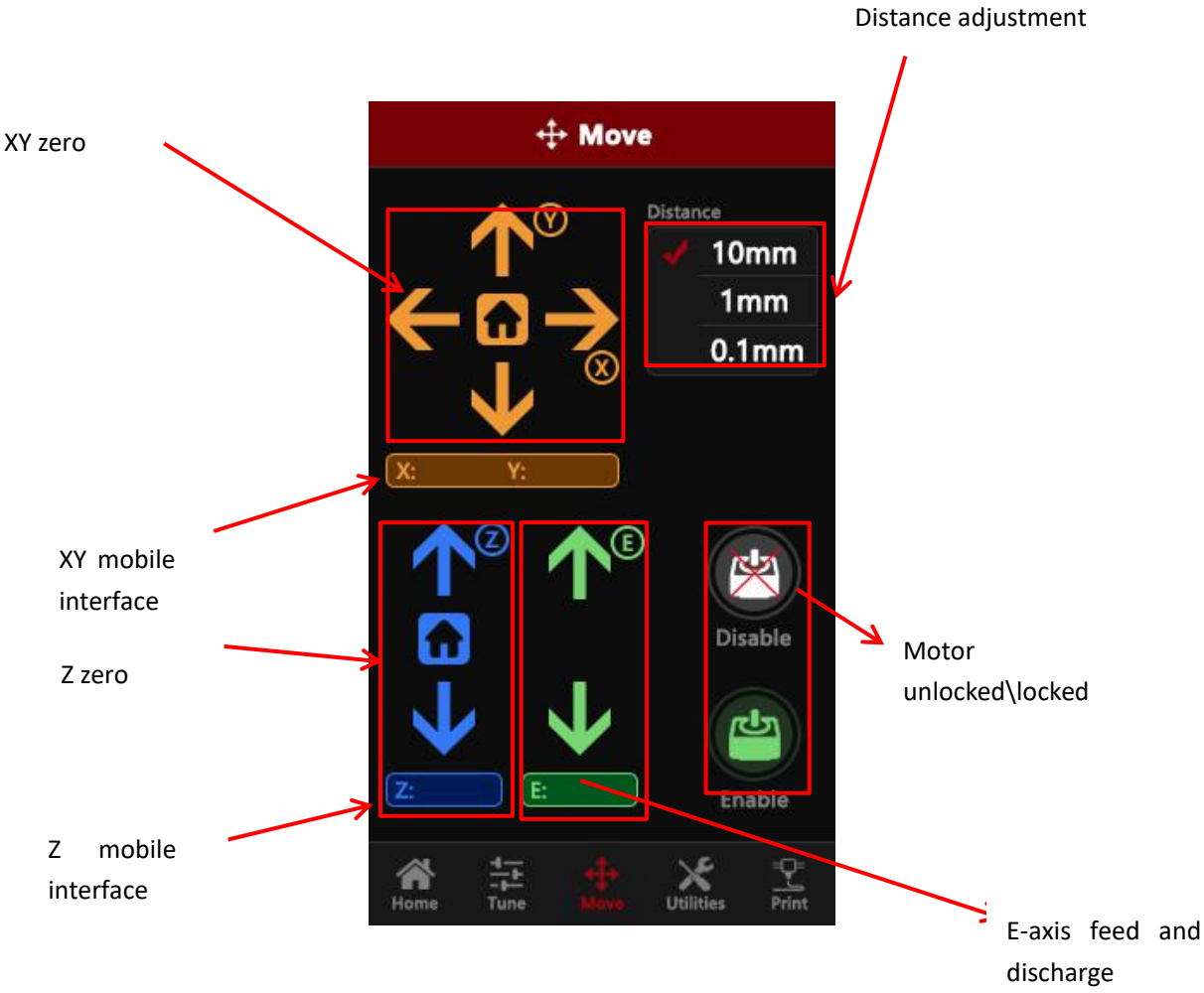
Primary interface	Secondary interface	Explain	
HOME	Nozzle temp	Display nozzle temperature	
	Heatbed temp	Display the temperature of the hot bed	
	File	The name of the file	
	Time	Print time	
	Progress	Print process	
	Height	Print height	
	Pause	time out	
	Cancel	End	
Move	X,Y	X, Y left and right movement and zeroing	
	Z	Z axis movement	
	E	In and out of consumables	
	Distance	Moving distance	
	Disable	Unlock the motor	
	Enable	Locking motor	
Tune	Nozzle temperature	Increase\lower	Nozzle temperature control
		Cool	Temperature back to 0 °C
		step（℃）	Temperature control step size
	Heatbed temperature	Increase\lower	Hot bed temperature control
		Cool	Temperature back to 0 °C
		step（℃）	Temperature control step

			size
	Fan speed	Increase\lower	Fan speed control
		stop fan	The fan stops rotating
		step	Step speed of the fan speed
	Feed rate	Increase\lower	Print speed magnification
		Restore	Restore default (100%)
		step	Print speed step size
	Nozzle flow rate	Increase\lower	Nozzle flow control
		Restore	Restore default (100%)
		step	Nozzle flow step size
	LEDs	Open \close	LEDs light control
Utilities	Filament	Nozzle temp	Nozzle temperature display
		Heatbed temp	Hot bed temperature display
		Filament type	PLA\ABS
		Cool	Nozzle\ Heatbed
		Filament change	Feeding/returning length control
		Load\Unload	Feeding/returning control
	Leveling	/	/
		/	
Print	TF card	Select print file	
	open	Start printing	

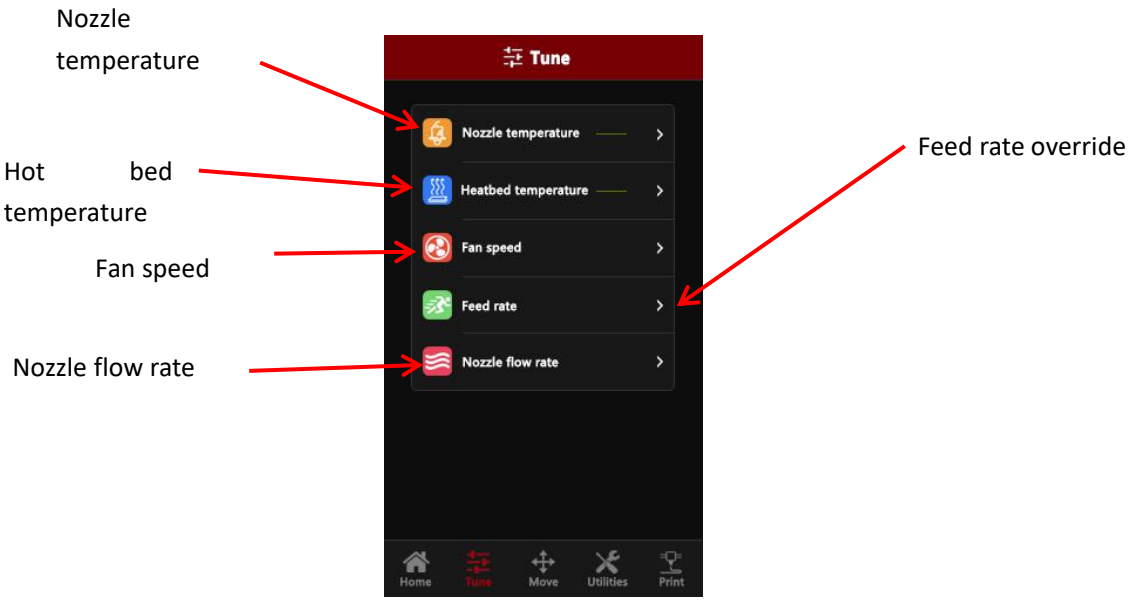
（2）Home interface

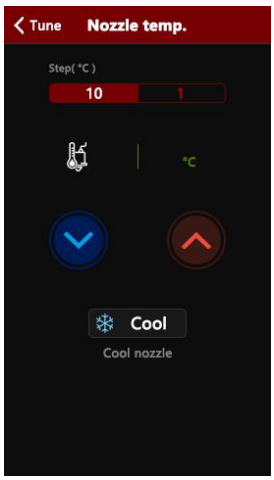


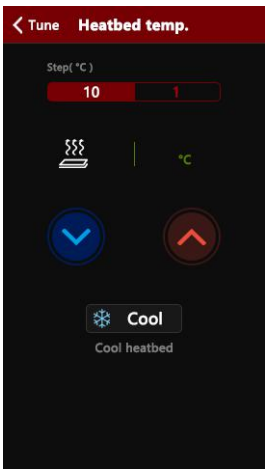
（3）Move interface

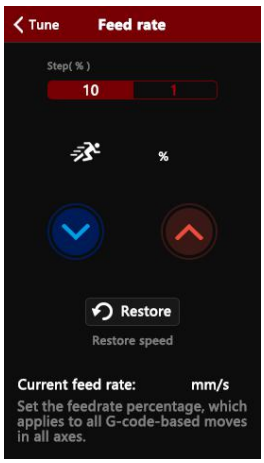


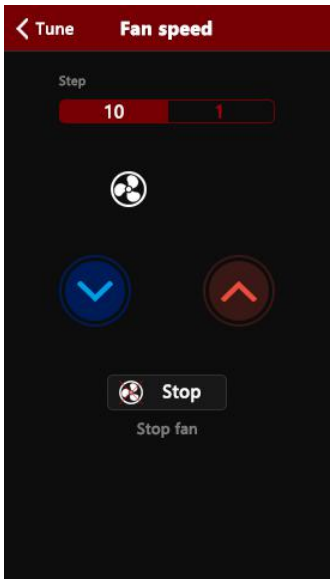
（4）Tune interface

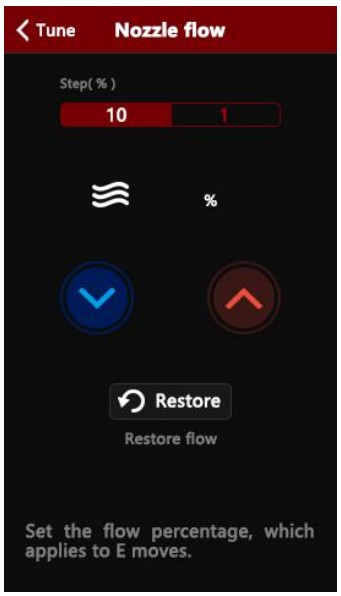




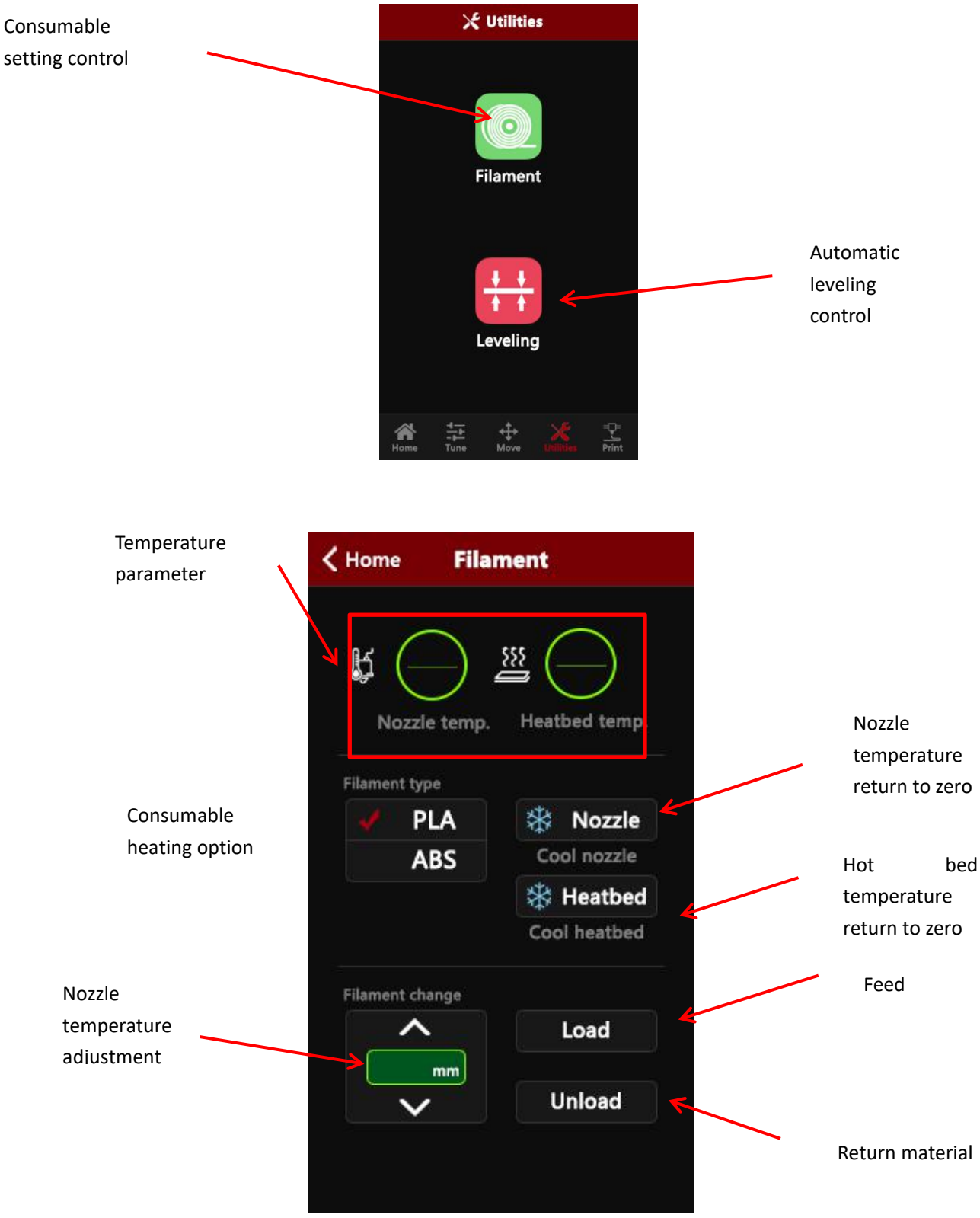


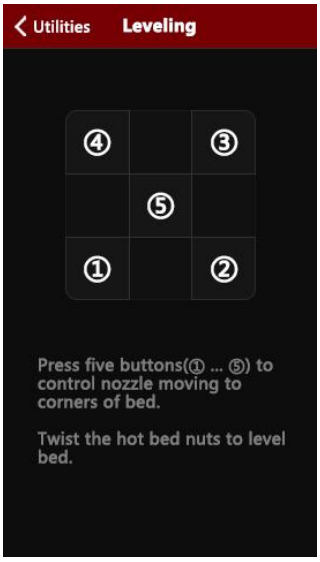






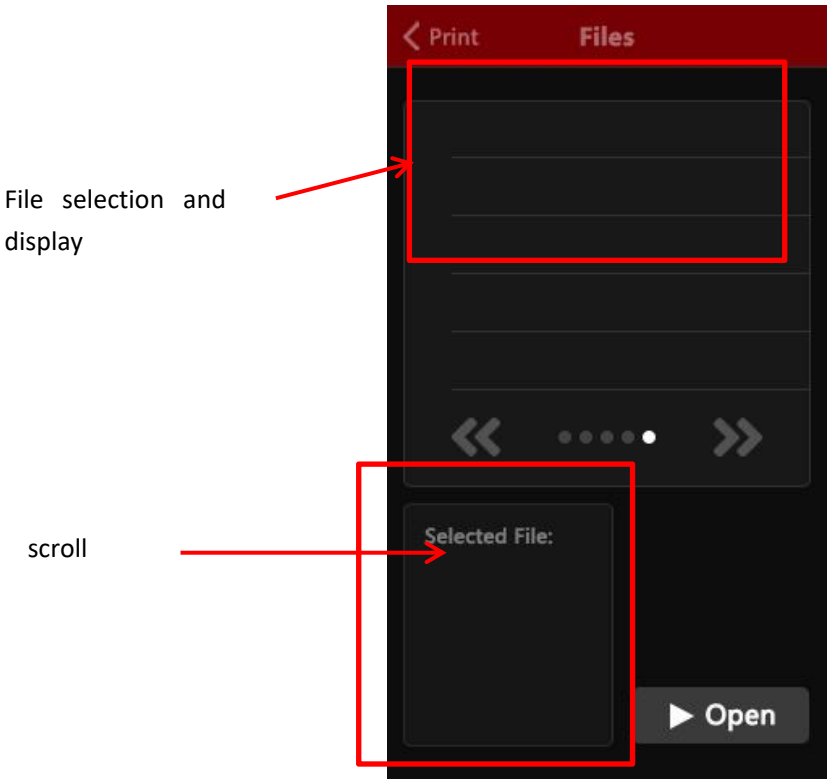
（5）Utilities interface





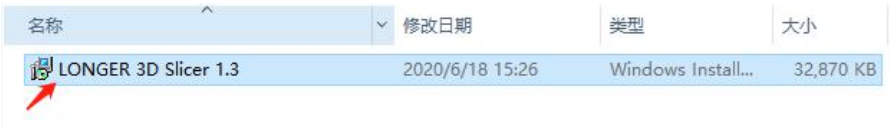
Five-point leveling page Click the five points in turn to move the nozzle and then perform leveling operation.

（6）Print interface

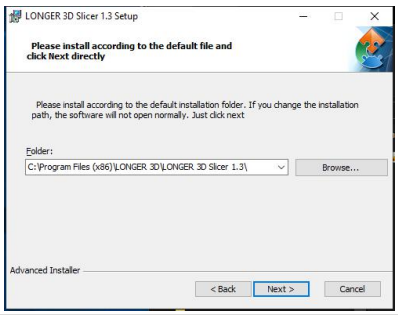


C. Installation and use of Changlang 3D slicing software

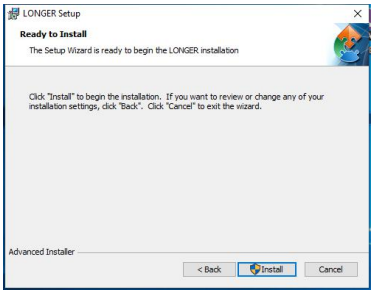
(1) Software installation

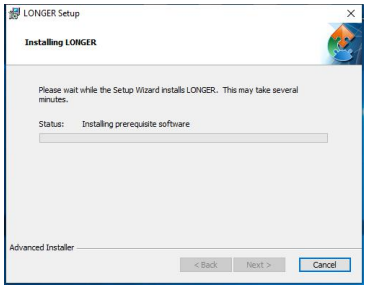


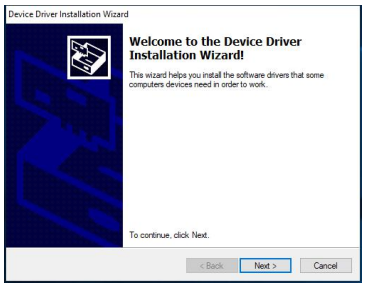
Double-click the LONGER 3D Slicer 1.3 to enter the installation guide page

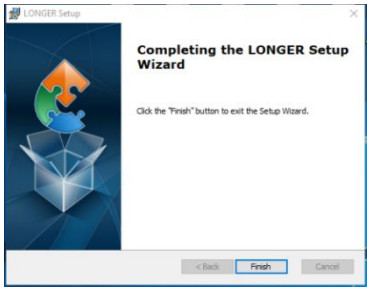


Click to enter the next step, select the default C drive for installation, otherwise the software will not open normally



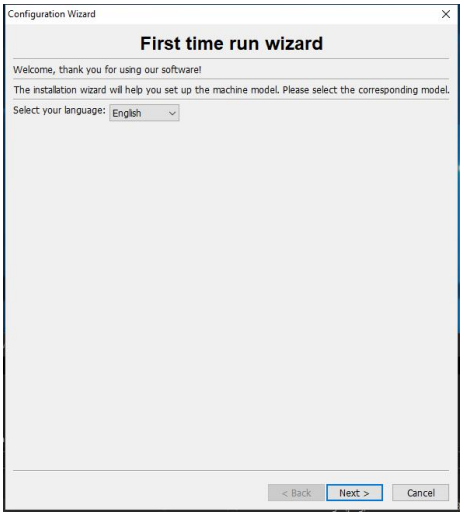




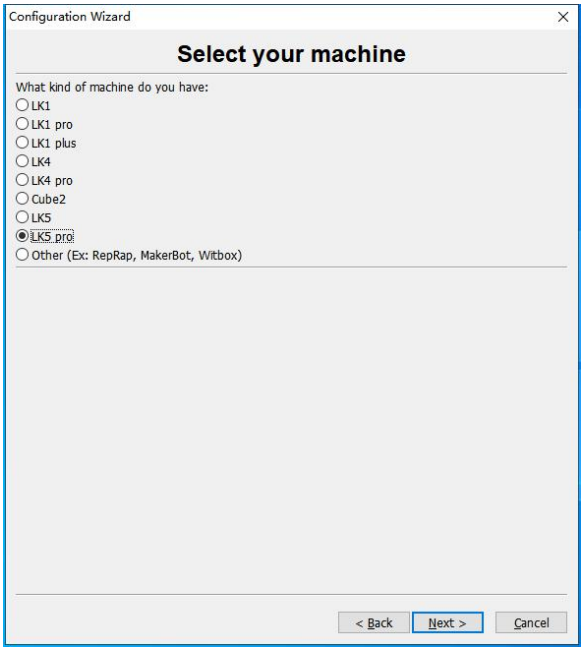


Follow the software installation guide reminder and click Next to complete the installation.

(2) Model selection

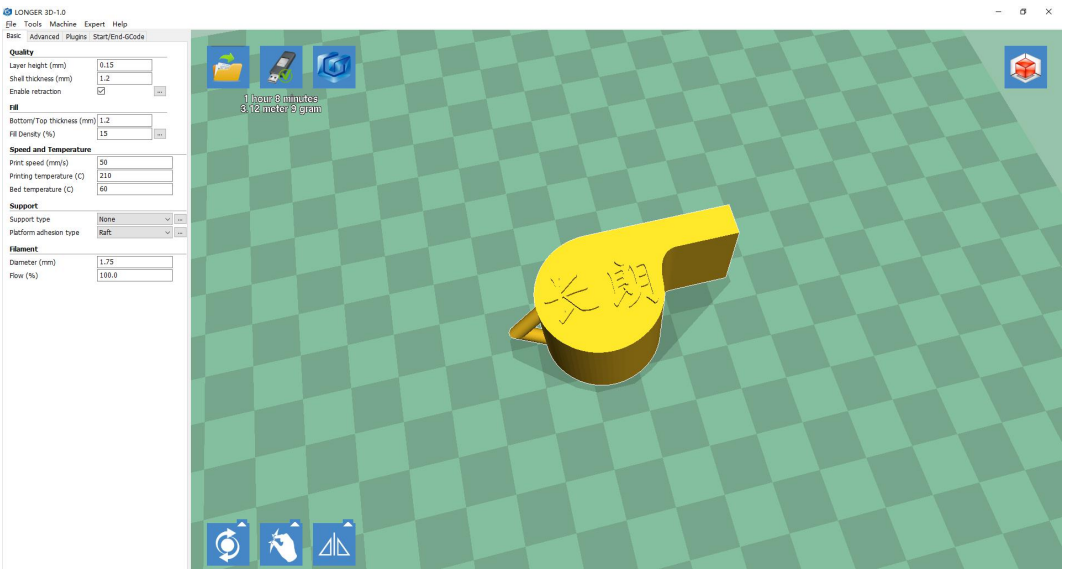


Open the software and choose the language you want



According to the model of the machine purchased, select the corresponding model. Incorrect selection will cause the machine parameters to be incorrect and the printer will not work properly. If it is a machine of another brand, you can also choose other models for related settings or use it.

(3) Software usage introduction



3D printer supports gcode format files, so you need to import the STL format model into Changlang 3D slicing software for slicing operation. To print a fine model, you need to have a deep understanding of the slicing software that controls the print path. Print out the various models you want, and set each parameter of the machine to the parameter bar to pop up the corresponding explanation.

(4) Detailed software parameters

Layer thickness: 0.1 ~ 0.4mm, high accuracy of 0.1mm, long printing time, generally 0.2mm, low accuracy of 0.4mm, short printing time.

Wall thickness: set to 0.4mm is very thin, generally set to 1.2 high, it will be firm, and printing time will increase.

Turn on rollback: The purpose of thread withdrawal is to prevent the silk from leaking out when printing quickly, otherwise it will affect the appearance.

Bottom / Top Thickness: To make the top print more perfect, the bottom is flat.

Fill density: If the intensity is not very high, 20% is fine; if the intensity is high, increase it, and the printing time will increase.

Printing speed: Generally set between 30-100, the higher the speed, the lower the accuracy.

Printing temperature: depending on the material, it is generally 190 ~ 210 degrees.

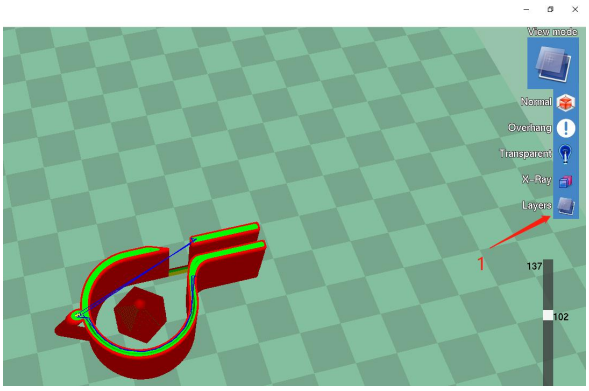
Support types: divided into semi-supported and full-supported. Models that have suspensions relative to the structure usually require additional support, but the surface will be relatively unsightly after removing the support.

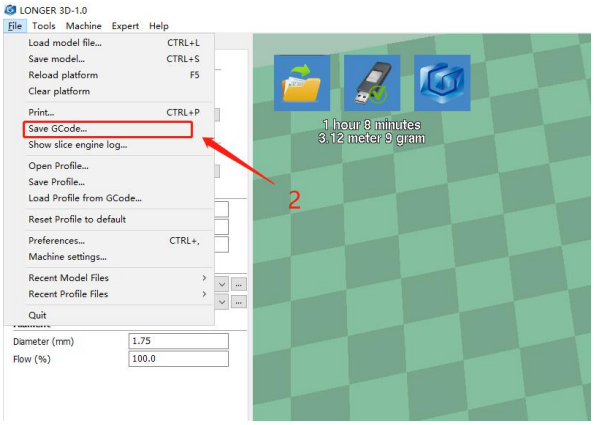
Adhesion platform: "None" adds nothing; the "bottom edge" edge increases the bottom area; the "bottom mesh" base makes the model adhere more firmly. In order to make the model stick to the base better, add a base plate or edge. It is best to add a base and edge to the model with a small base area.

Diameter: 1.75mm Flow: 100%

Nozzle aperture: 0.4mm.
Retraction speed: the speed of retraction when printing the model.
Retracted length: The length of the material withdrawn, generally 4.5 ~ 8mm.
Initial layer thickness: Print the thickness of the first layer, which is the default.
Initial layer line width: 100% will be thicker and denser, just default.
Bottom Cut: The length of the bottom cut of the model.
Two extrusion overlaps: 0.15mm. By default.
Idling speed: The moving speed of the nozzle when it does not squeeze consumables.
Bottom speed: The speed of printing the first layer. The slower speed is that the model is better attached to the bottom surface.
Filling speed / top / bottom speed / shell speed / inner wall speed: The default is 0, which is the same as the printing speed.
Minimum print time for each layer: The default is sufficient.
Turn on fan cooling: Turn on the nozzle cooling fan.

(5) Export gcode format for printing





After setting the parameters such as whether to add support according to different models, first adjust the model preview mode into a layer preview format to see if there are broken surfaces and path errors. After checking that it is correct, import the gcode file into the TF card, and then insert the printer Card slot.

D. Instructions for printing online

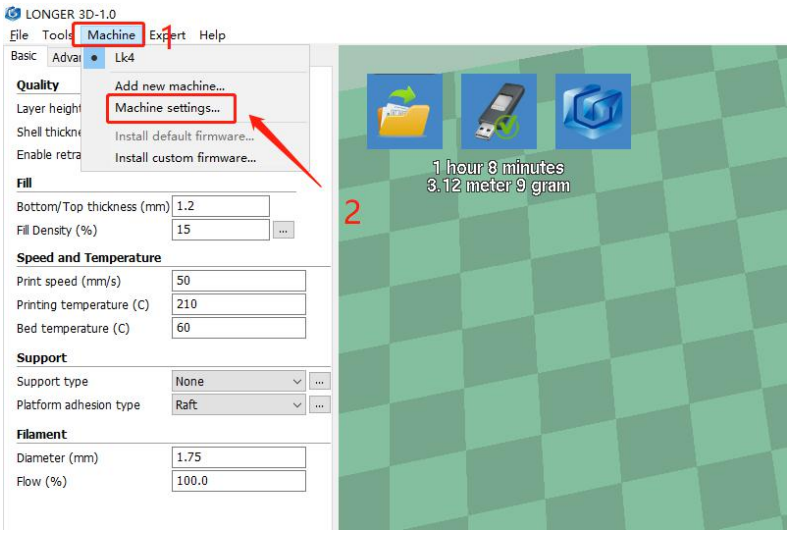
Changlang 3D printers support online printing operations, but because the computer sends instructions continuously for a long time, there are many different settings on the personal computer (some computers will set the energy-saving mode or the screen mode, etc.) and the computer will freeze if it runs. The interruption fails, and online printing is generally not recommended.

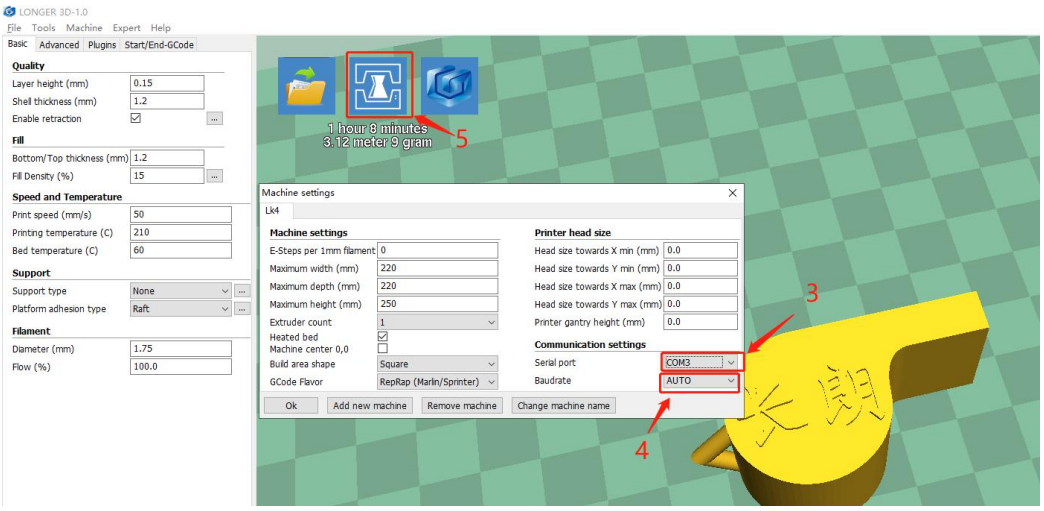
TF card offline printing is a very stable and mature printing method, and it does not occupy the computer. It is recommended to choose offline printing as much as possible. If you need to know more about the printer, you can print online according to the following steps.

(1) Printer connection

Prepare a data cable with one end connected to the printer serial port and one end to the computer USB port. Plug in the power cord and turn on the switch.

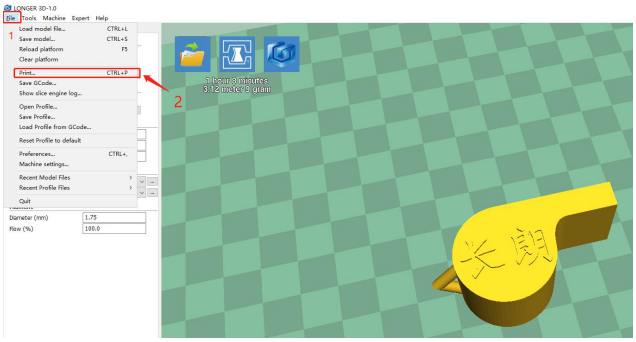
(2) Software settings

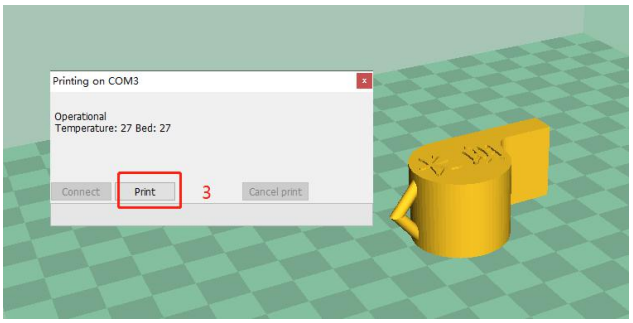




Open the Changlang 3D slicing software. The first step is to turn on the model. The second step is to open the model settings. The third step is to select the serial port number displayed by each computer. Generally, the larger serial port is selected. Normally select "AUTO" for the special rate. If you still cannot connect normally, select 115200. After the port is selected correctly in step 5, the original U disk icon will change to a printer icon. At this time, the printer is connected。

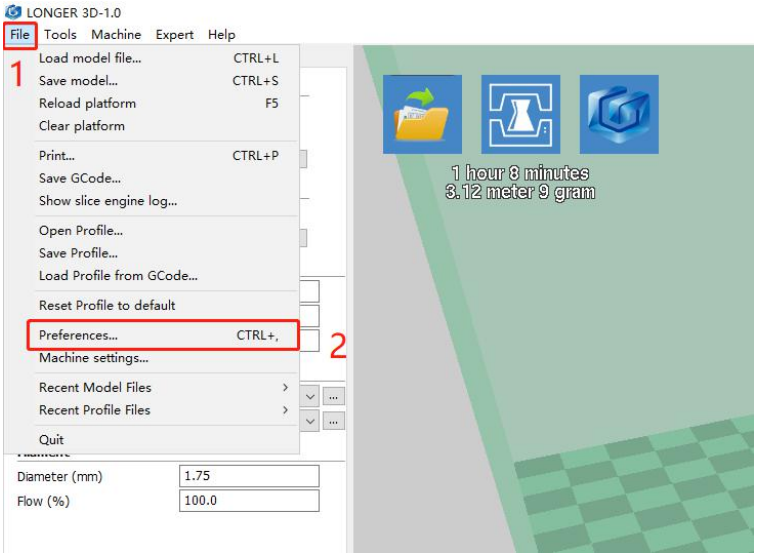
(3) Online printing

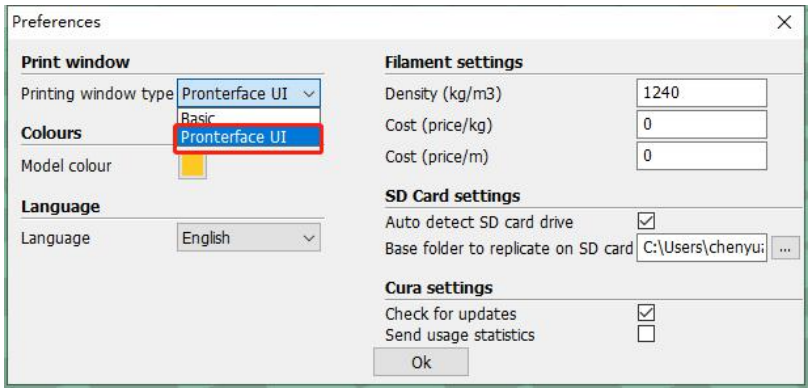


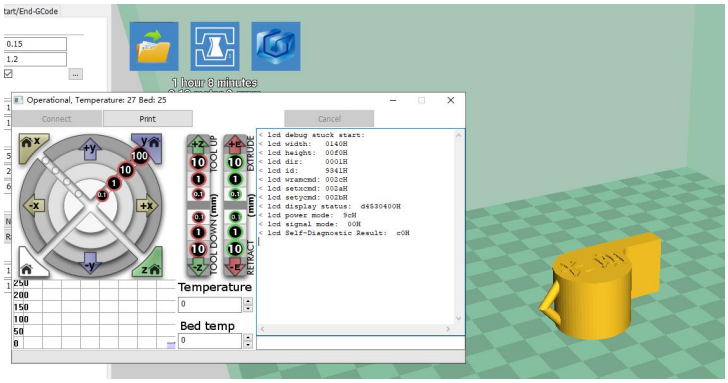


After slicing the model to be printed, open the file in the first step and directly select the print in the second step. If the printer is connected at this time, the print status bar will pop up. If there is no connection, the save gcode code will pop up. In the third step, click print. At that time, the temperature of the hot bed and the temperature of the print head will rise to the set temperature, and then printing will start。

(4) Professional settings



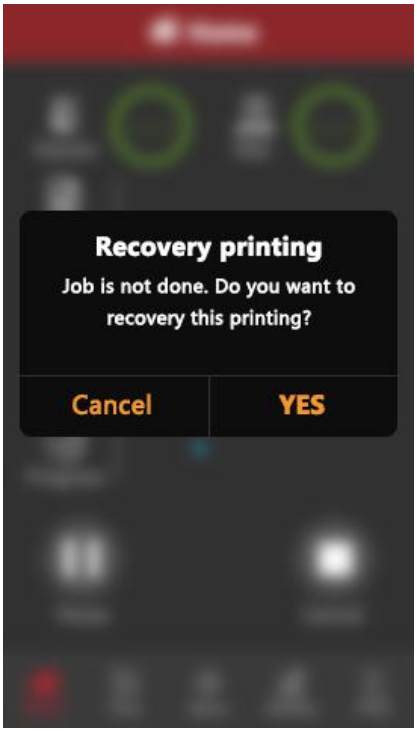




If you want to print a more professional page online, you can set it by the following steps. Select file in the first step, select parameter settings in the second step, and change the print window settings in the third step to professional. Then start printing the page online and it will become a professional page, you can send G codes, you can control the movement of each axis. If non-professionals use it with caution, it is generally not recommended.

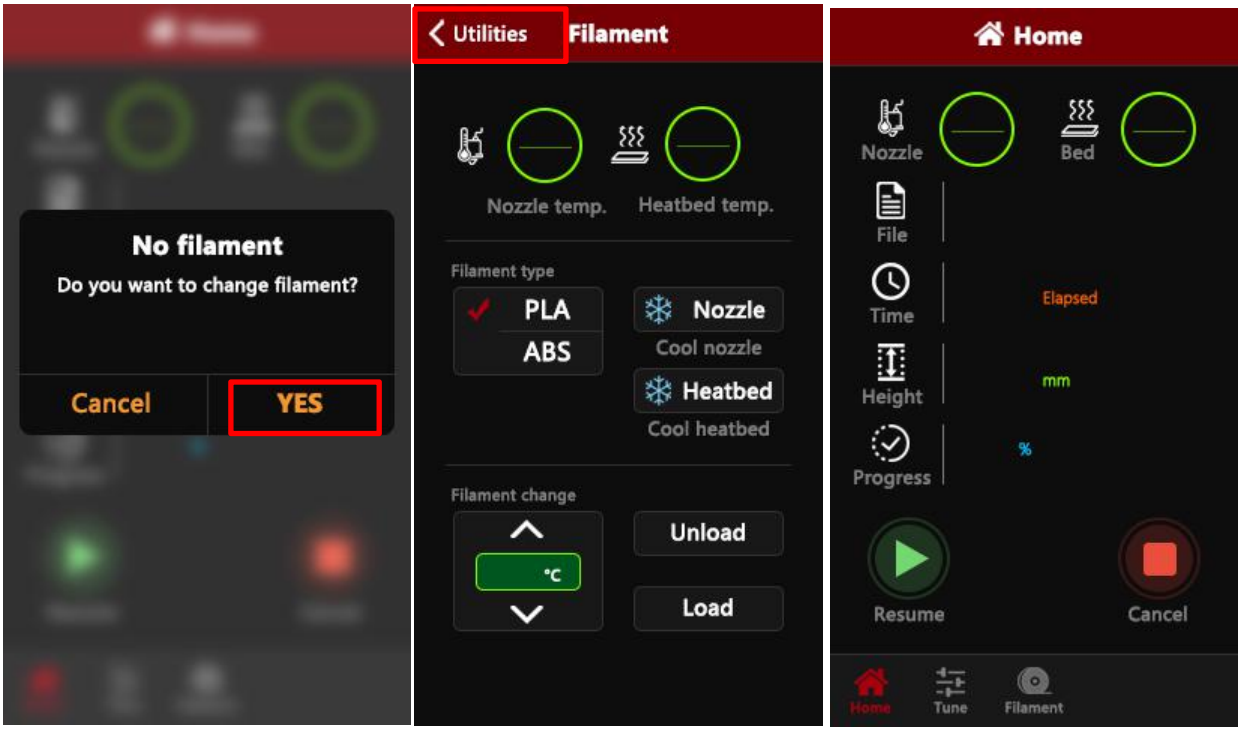
E . Resume printing and filament run-out detection function

（1）Power failure



When printing, the power is suddenly turned off. If the height of the printed model exceeds 0.1mm, the icon will be displayed when the power is turned on. Only the icon will be displayed once. After waiting for the temperature to rise, normal printing can be resumed

（2）Broken material detection

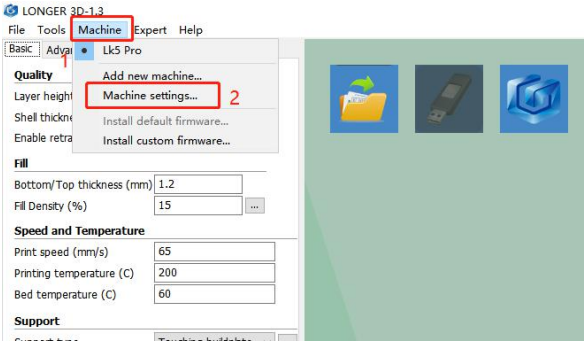


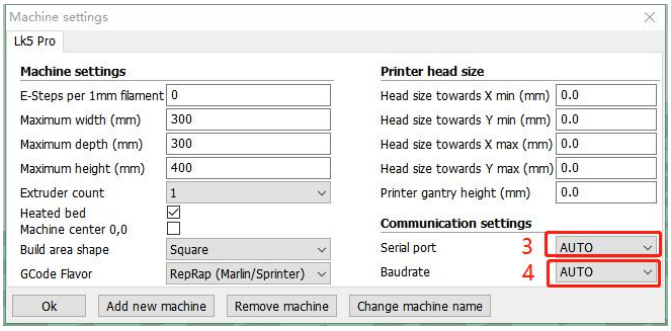
At this point, pull the Teflon tube out of the extruder end, take out the material, refill the consumables to the nozzle, click YES, after replacing the material, click Utilities, and finally click Print to start, the model will print.

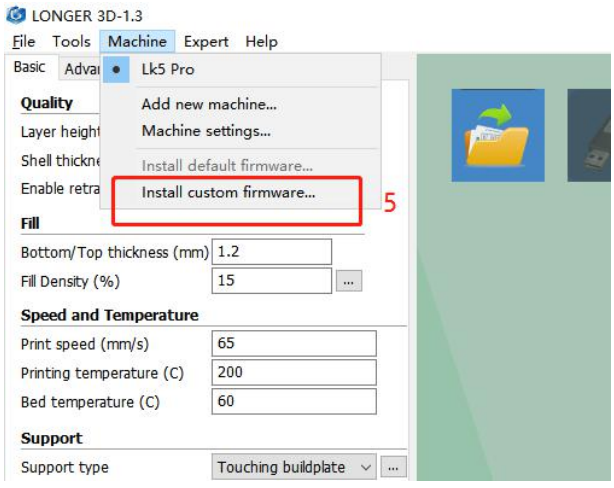
F. Guide to common problems in machine use

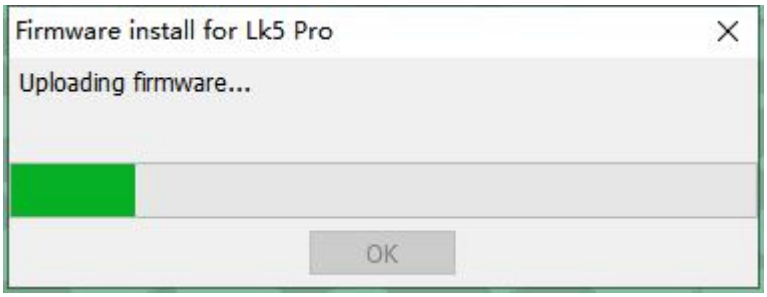
Question 1: How to update the firmware?

Sometimes individual DIY users want to add some special functions to their 3D printers, or there are unknown bugs in the original firmware, then the firmware needs to be updated, and each machine will be sent to the user after strict and detailed factory inspection and burn-in. Generally, you don’t need to update the firmware. If you encounter printer abnormalities during use, you can contact after-sales personnel. After-sales personnel recommend that you perform the following steps when updating the firmware for maintenance.



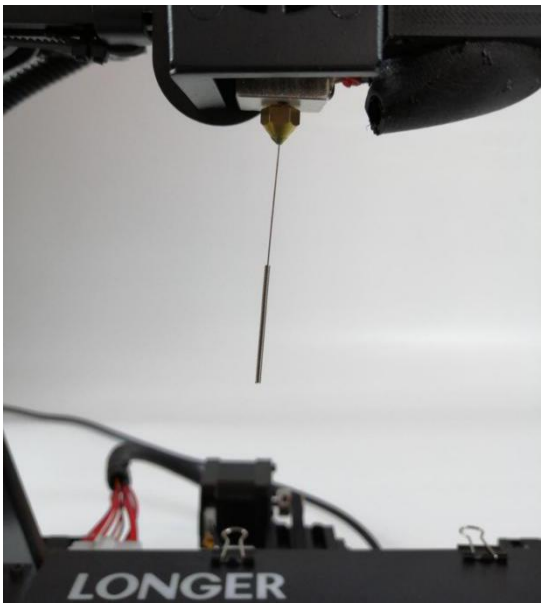






First connect the serial cable to the 3D printer, the first step is the model, the second step is the model setting, the third step is to select the port, the fourth step is to confirm whether the baud rate is AUTO, and the fifth step is to choose to burn the specified firmware (will be The file selection box pops up, then select the firmware corresponding to the .hex format)

Question 2:What if the filament does not discharge from the machine?



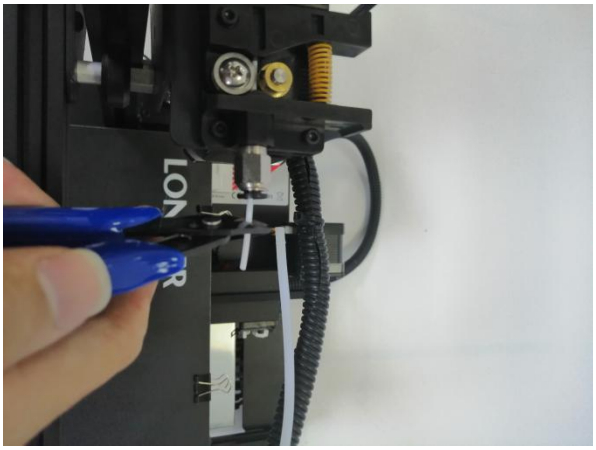
1. After the machine nozzle is heated, the consumables are normally fed into the feeding mechanism by hand, and then passed through the Teflon tube to enter the nozzle.
2. When it is found that the gear of the feeding mechanism emits a "beep" sound, it can first check whether the consumables are wound, causing the extrusion mechanism to pull the material.
3 If this is not the reason, raise the machine nozzle and use the 0.4mm needle in the toolbox to insert it from below the copper nozzle and rotate while inserting.
4. Under normal circumstances, this needle can be used to open the copper nozzle, so that the feed is smooth. The reason for this blocking is generally that there are impurities in the consumables, which leads to plugging.

Question 3:

When the machine returns the filament, it can't be returned. What should I do when stuck in the pneumatic joint?

1. Before returning the material, please heat the nozzle first, and then withdraw the consumables as soon as possible. If you can't pump it, you can re-feed the material with the advanced material, and melt the extruded block formed at the end of the consumable in the nozzle.

2. When withdrawing the consumables, before the end of the consumables reaches the pneumatic joint, we will usually pull the Teflon directly from the Teflon and cut the end of the consumables.



3. Because the end of the consumables in the nozzle will be deformed by heat, if the end deformed consumables are directly pulled out, it may be stuck to the pneumatic joint or the limit switch for damage detection. (The limit switch for the broken material detection is single. Towards).

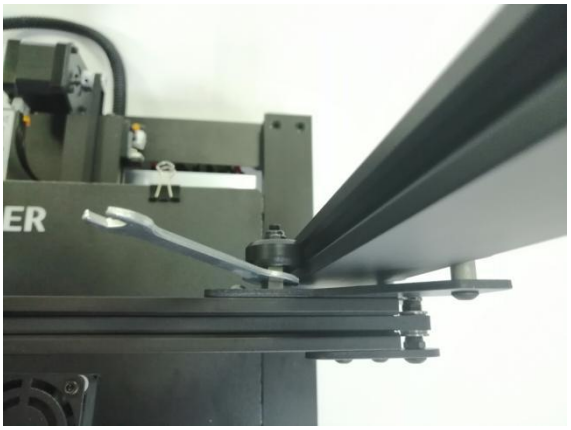
Question 4: What should I do if I cannot resume printing after power shutdown?

If the power is suddenly turned off when the part is first printed, the machine will not save the print data. Unless the height of the print exceeds 0.5mm, the power failure will be supported. If the height is less than 0.5mm, it is recommended to reprint directly.

Question 5:

When the machine is leveling, the nozzle moves to the left, it can be leveled normally. When the nozzle moves to the right, it is found that the distance between the nozzle and the heated bed are very far or very close. If the spring is adjusted to the extreme position, it still cannot be leveled. What should I do?

If this happens, the X-axis beam is generally loose. At this time, the hex socket on the right side of the machine can be adjusted with a wrench to adjust the tightness.



Question 6: After the machine heats up, the filament is discharged normally. However, when the printing is performed for the first time, the curling occurs on the

1. After the user gets the 3D printer, if the leveling is found to be curled on the first layer of silk, it feels like it is gently falling on the platform. It can be judged that the leveling is not adjusted, and the nozzle is too high from the hot bed. ,
2. At this point we need to re-level, the quality of the leveling can largely determine the success rate of the part printing.
3. In addition, in order to ensure good contact between the model and the platform, we can set the larger plane of the model face down when slicing, and can also be set in the slicing software to add Raft to the model, which can make the model stick to the platform. Firm.