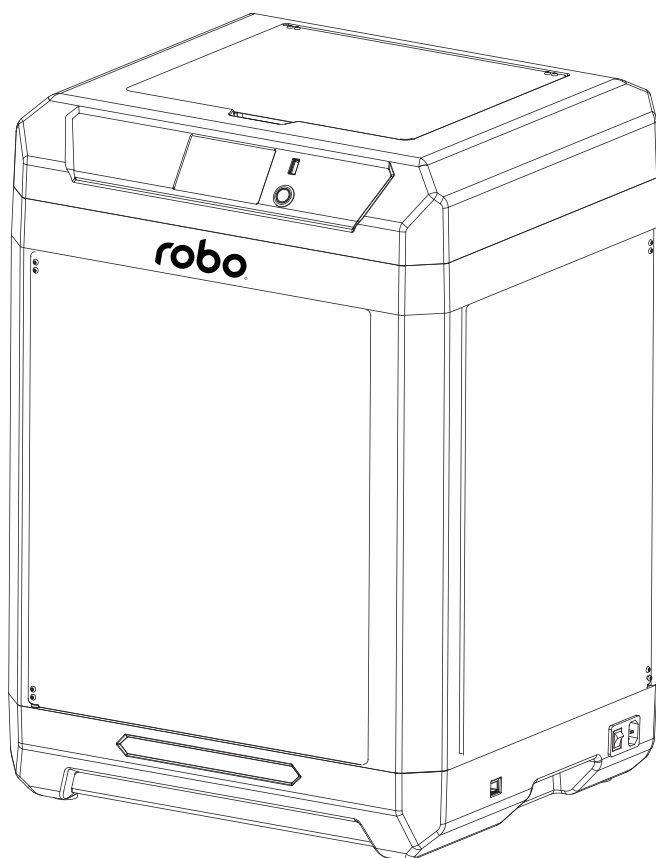


robo E4 Pro

USER GUIDE



Inside the box you will find a postcard with a complete online training course and access to 3D models and curriculum.

You can also find how-to videos here -->



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NOTICE

SAFETY NOTICE: PLEASE CAREFULLY READ AND STRICTLY FOLLOW ALL THE SAFETY WARNINGS AND NOTICES BELOW ALL THE TIME.

Note: Every 3D printer has undergone printing tests before leaving the factory. If there are some filament residues in the extruder of the equipment or some slight scratches on the build plate, it is normal and will not affect its use.

WORK ENVIRONMENT SAFETY

- ◆ Please keep the work table of the equipment clean and tidy.
- ◆ Please ensure that the equipment is away from combustible gases, liquids and dust when it is in operation. The high temperature generated by equipment operation may react with combustible gases, liquids, and airborne dust, thus causing fire.
- ◆ Children and untrained personnel are not allowed to operate the equipment alone.

ELECTRICAL SAFETY

- ◆ Be sure to ground the equipment. Do not modify the plug of the equipment. Not grounded equipment/improperly grounded equipment/modified plug will inevitably increase the risk of electric leakage.
- ◆ Do not expose the equipment to damp or hot-sun environment. Humidity will increase the risk of electric leakage. Exposure to sunlight will accelerate the aging of plastic parts.
- ◆ Make sure to only use the power cord provided by Boxlight.
- ◆ Do not use the equipment during a thunderstorm.
- ◆ Please shut down the equipment and unplug it if it is not in use for a long time.

PERSONAL SAFETY

- ◆ Do not touch the extruder, build plate, etc., during printing.
- ◆ Do not touch the extruder and build plate when finishing printing in order to avoid high temperature burns or mechanical damage.
- ◆ Do not wear scarves, masks, gloves, jewelry ornaments or other objects that can easily get tangled into the equipment when operating it.
- ◆ Do not operate the equipment while you are tired or under the influence of drugs, alcohol or medication.

CAUTIONS

- ◆ Keep the inside of the equipment clean and tidy. Do not drop metal objects into the sliding chute at the bottom of the build plate.
- ◆ Please clean up the filament debris in time. It is recommended to operate this outside the equipment.

- ◆ Any modification of the equipment by yourself will result in a voided warranty.
- ◆ Please keep the distance between the extruder and build plate at least 50mm during filament loading. Too-close of a distance may cause nozzle clogging.
- ◆ Please operate the equipment in a well-ventilated environment.
- ◆ Do not use the equipment for illegal activities.
- ◆ Do not use the equipment to make any food storage products.
- ◆ Do not put the printed model into your mouth.

EQUIPMENT ENVIRONMENT REQUIREMENTS

- ◆ The room temperature should be between 15°C and 30°C (60°F and 90°F)
- ◆ The humidity should be between 20% and 70%.

EQUIPMENT PLACEMENT REQUIREMENTS

- ◆ The equipment must be placed in a dry and ventilated environment. A distance of at least 30cm must be reserved at the left side and rear side of the equipment, and a distance of at least 45cm must be reserved at the right side and front side of the equipment.

COMPATIBLE FILAMENT REQUIREMENTS

- ◆ When using the equipment, it is recommended to use Robo's filaments. If non-Robo filaments are used, there will be certain differences in material characteristics, and thus printing parameters may need to be adjusted.

FILAMENT STORAGE REQUIREMENTS

- ◆ Please store filaments in a dry and dust-free environment after unpacking. It is recommended to use air-tight bags for storage after opening.

LEGAL STATEMENT

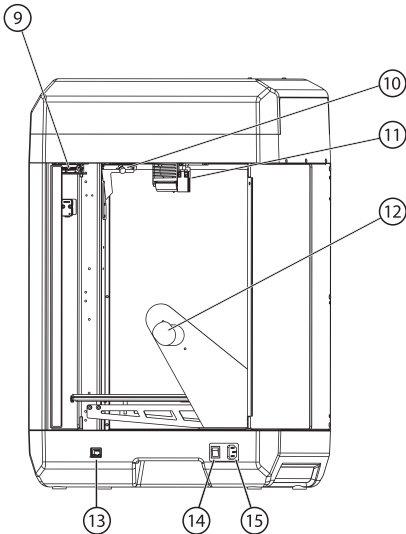
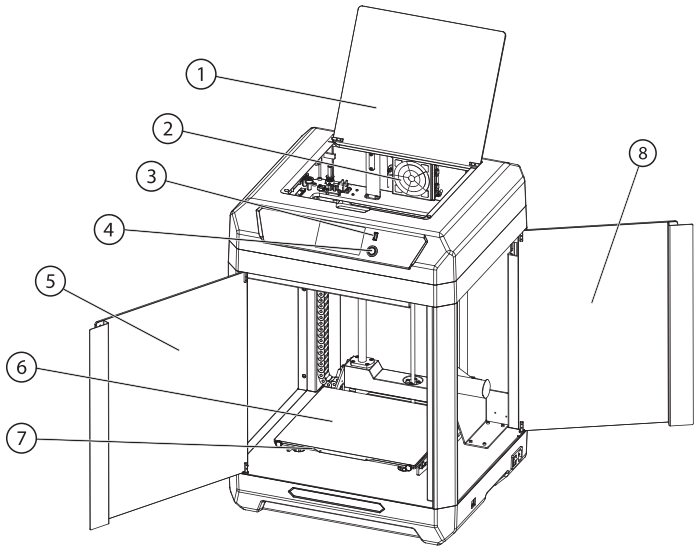
- ◆ The user has no right to make any modification to this user guide.
- ◆ Boxlight will not be responsible for any safety accidents caused by the disassembly or modification of the equipment by the customer. No one is allowed to modify or translate this guide without the permission of Boxlight. This guide is protected by copyright, and Boxlight reserves the right of the final interpretation of this guide.
- ◆ First Edition (August 2022)
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Equipment Parameter

Equipment Name	Robo E4 Pro
Extruder Quantity	1
Printing Precision	± 0.15mm or 0.002 mm/mm
Positioning Accuracy	X/Y-axis: 0.011mm Z-axis: 0.0025mm
Layer Thickness	0.05 ~ 0.4mm
Build Volume	300 x 250 x 340(z) mm
Nozzle Diameter	Default 0.6mm
Nozzle Type	Stainless steel nozzle
Printing Speed	10 - 250mm/s
Maximum Extruder Temperature	320°C
Maximum Platform Temperature	110°C
Supported Filament	ABS/PLA/PC/PA/HIPS/ASA/PETG/PA-CF/PLA-CF PETG-CF/PETG-GF
Power Supply	AC100-240V/DC 24V/20.8A, 650W
Slicing Software	RoboPrint or RoboCloud
Input/Output File Format	Input: 3MF/STL/OBJ/FPP/BMP/PNG/JPG/JPEG; Output: GX/G/gcode
Connectivity	USB flash drive/Ethernet/Wi-Fi
Operating Temperature	15 ~ 30°C
Compatible Operating System	Windows XP/Vista/7/8/10、Mac OS
Compatible Slicing Software	Slic3r, Cura [Need setting]
Smart Touch Screen	4.3-inch
Build Plate	Flexible steel plate platform (standard)
Net Weight	27kg
Equipment Dimensions	496[L] x 436[W] x 696[H] mm
Required Space for Installation	≥590 * 543 * 758mm (24" x 22" x 30" vertical)


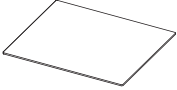

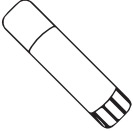
1. Equipment Introduction

Robo E4 Pro Introduction



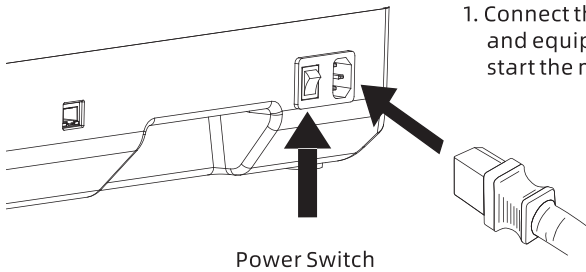
- | | |
|------------------------|---------------------------|
| 1. Upper Cover | 2. Air Filter |
| 3. USB Port | 4. Screen Switch |
| 5. Front Door | 6. Flexible Steel Plate |
| 7. Platform Plate | 8. Filament Chamber Door |
| 9. Chamber Light | 10. Camera |
| 11. Extruder | 12. Filament Spool Holder |
| 13. Network Cable Port | 14. Power Switch |
| 15. Power Port | |

1.2 Packing List

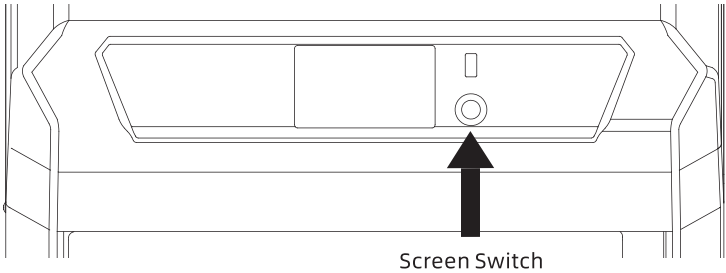
			
3D Printer	3D Printing Filament	Power Cord	Postcard
			
User Guide	Lubricating Grease x 2	Cleaning Brush	Steel Build Platform
			
Scraper	Nipper Pliers	Diagonal Pliers	Straight Screwdriver
			
Unclogging Pin Tool	Allen Wrench Set	Elbow Tweezers	Spare Extruder x 2
			
Hand Screw Bolt x 2	USB Flash Drive	Fuse x 2	Adhesive
			
Build Sheets			

2. Preparation Before Printing

2.1 Power Connection



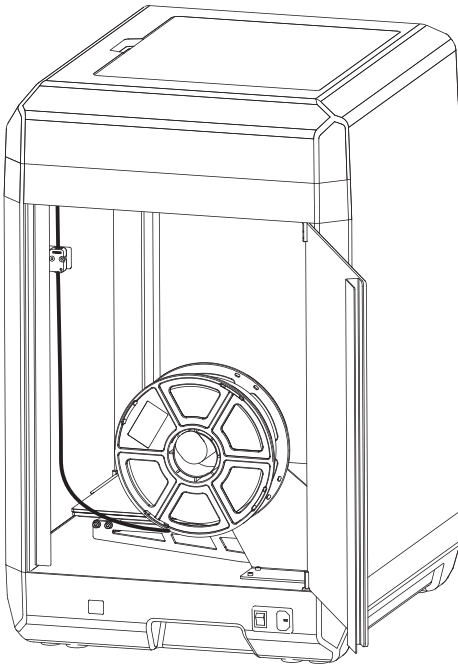
1. Connect the power cord to the socket and equipment and press the switch to start the machine.



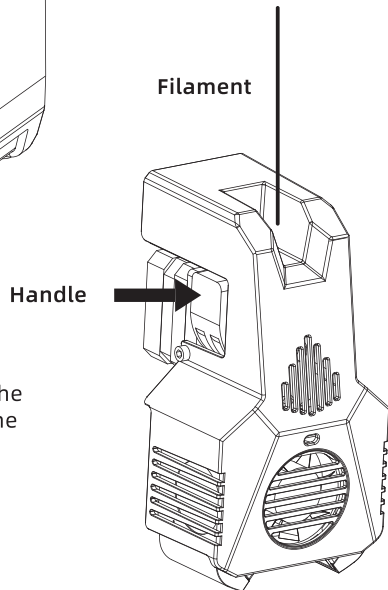
2. Turn on the screen switch and the screen light is on.

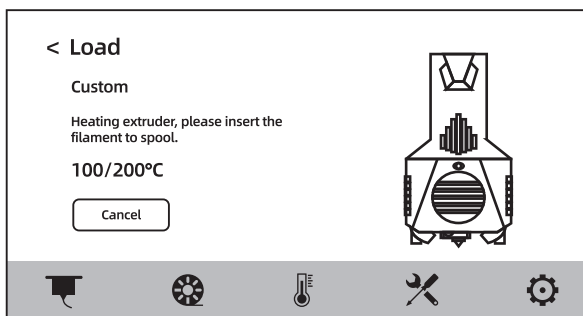
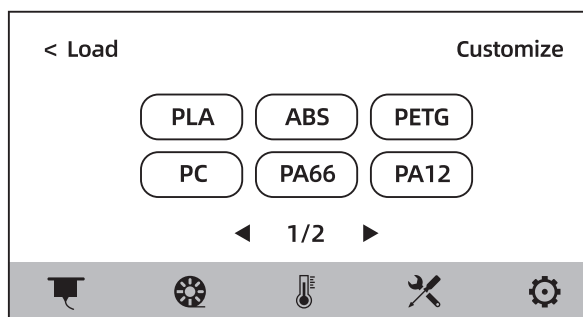
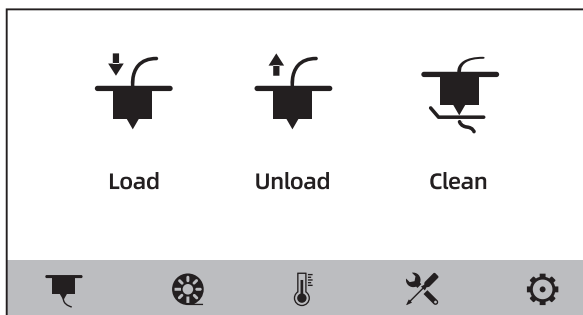
2.2 Filament Loading


1. Open the filament chamber door, hang the filament on the filament spool holder, and pass the filament clockwise through the corresponding filament sensor at the upper left of the chamber inside until the filament is visible from the other end of the filament guide tube;



2. Press the filament feeding handle on the extruder and insert the filament into the extruder;



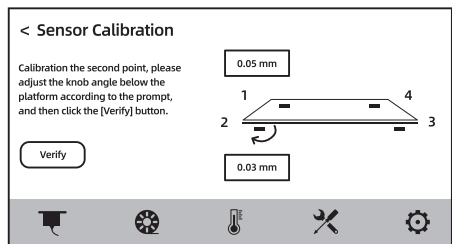
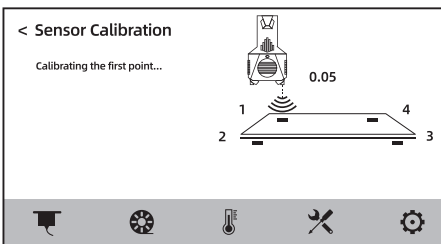
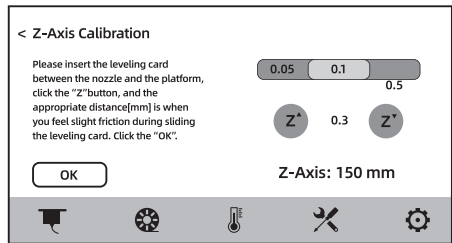
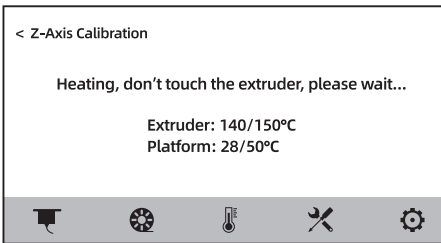
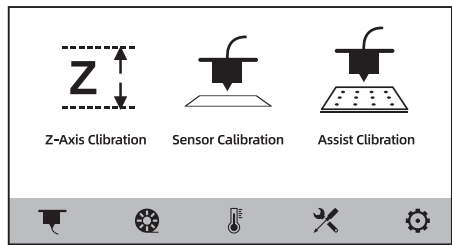
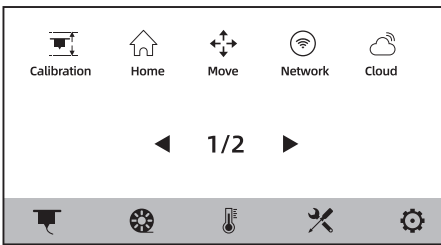


3. Click the [] - [Load] on the screen, select the corresponding filament for the extruder, start filament feeding, and operate following the prompts on the screen.

2.3 Equipment Calibration

The equipment includes the following leveling and calibration operations: Z-Axis Calibration, Sensor Calibration, Assist Calibration [complete mode, simplified mode].

The equipment has been leveled and calibrated before leaving the factory, so it is generally unnecessary to perform calibration again. However, the leveling plane may be damaged due to the vibration generated during transportation. It is recommended to perform a Z-axis calibration and a sensor calibration before first use.



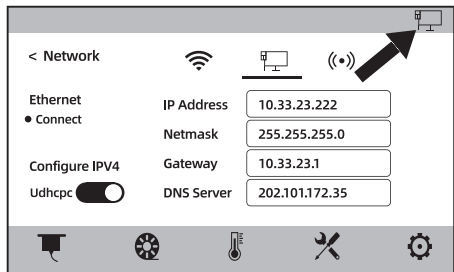
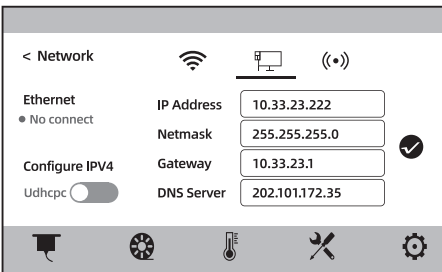
Please proceed in the following order: [you can refer to the operation video]

1. Click the [🔧] - [Calibration] on the touch screen;
2. Select the [Z-Axis Calibration];
3. Perform Z-axis calibration and operate following the prompts on the screen.
4. Select the [Sensor Calibration];
5. Perform sensor calibration and operate following the prompts on the screen.

2.4 Network Connection

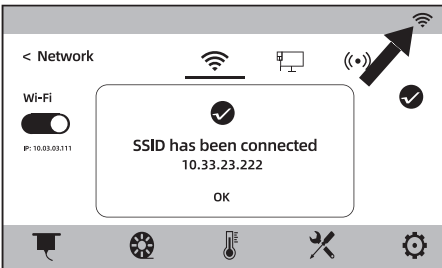
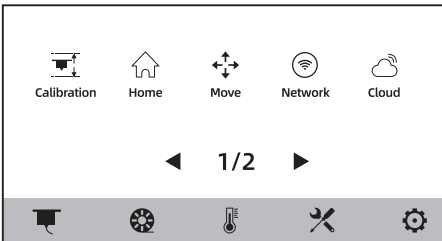
2.4.1 Wired Network Connection

1. Plug the network cable into the network cable port on the back of the equipment.
2. Click the [🔧] - [Network] on the screen, select the wired network and turn on the wired network switch. If the [🖨️] icon appears at the upper right corner of the screen, it indicates that the network is successfully connected.



2.4.2 Wireless Network Connection

Please make sure Wi-Fi is installed before connecting to the wireless network, otherwise the wireless signal will be affected.




1. Click the [🔧] - [Network] on the touch screen, select the wireless network, and turn on the wireless network switch.
2. Click to connect to the corresponding wireless network and the corresponding prompt will appear on the screen after successful connection. If the [📶] icon appears at the upper right corner of the screen, it indicates that the network is successfully connected.

3. Software Installation

Method 1: Find the installation package of the RoboPrint software in the USB flash drive and select the corresponding system version for installation.

Method 2: Download the latest slicing software installation package from our official website, www.Robo3d.com

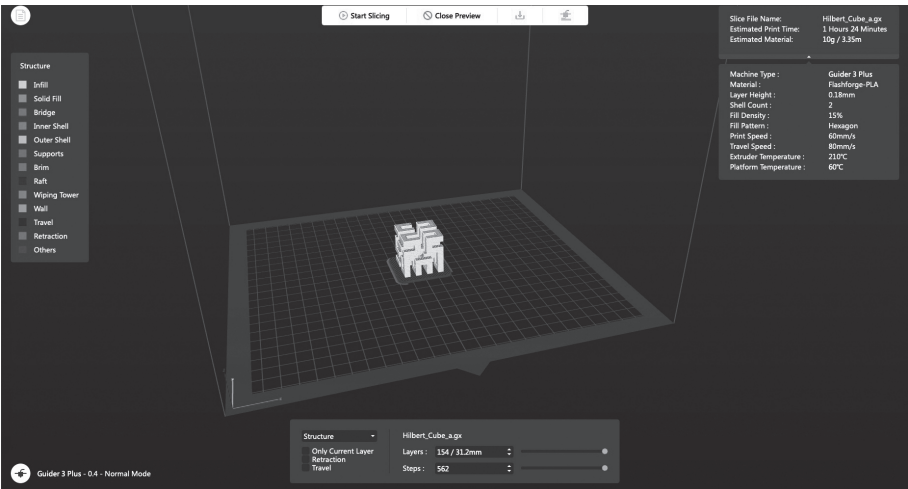
3D printing process:

- 1 Get the model file.
- 2 Slice it with the slicing software.
- 3 Transfer the file to the printer for printing using the on-printer “build” commands. 

4. First Printing

4.1 File Transfer: Wi-Fi Transfer

Import the file to RoboPrint for slicing, select the printer type as Robo E3 Pro X to connect to it [or by entering the IP address or by automatic scanning, while the IP address can be viewed in the [About] of the equipment]. After completing slicing, send the file directly to the printer for printing.



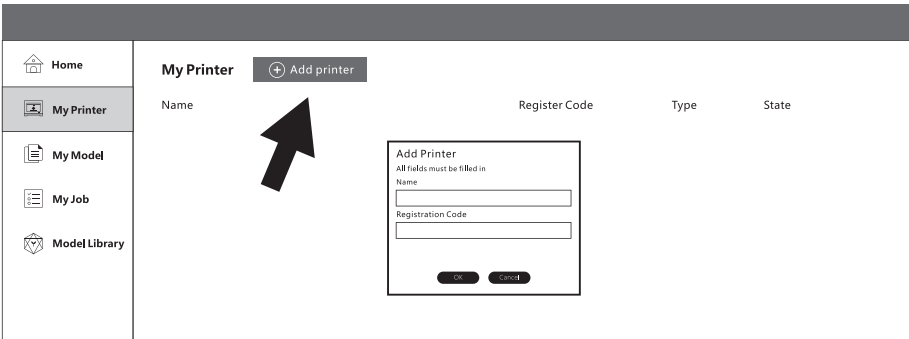
4.2 Printing From a USB Flash Drive

The equipment can also perform printing via a USB flash drive: save the sliced file to a USB flash drive, insert the USB flash drive into the equipment, and select the corresponding file to print.

4.3 Cloud Printing

Print via RoboCloud

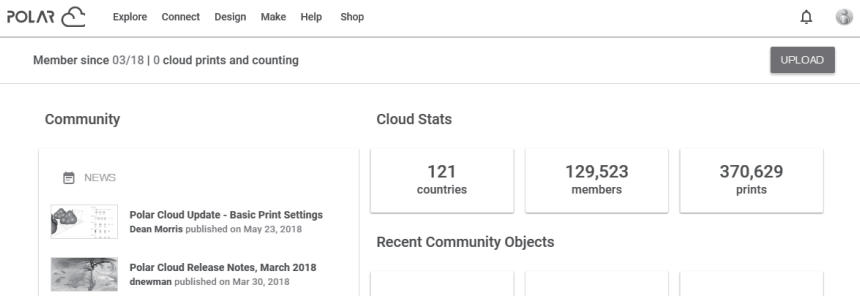
1. Enter the RoboCloud website, register an account, and then log in after completing email activation. RoboCloud website: cloud.robos3d.com/



2. Click the [My Printer] - [Add Printer].
Fill in the registration code [cloud registration code] on the "Add Printer" page, and name the printer. After clicking the "OK", these information will appear on the RoboCloud interface of the printer.

Print via Polar Cloud

- Enter the Polar Cloud website and register an account.
Polar Cloud website: <https://Polar3d.com>



- After logging in, click the avatar icon at the upper right corner, click [Settings], and click the PIN Code in the menu to query the PIN code. After connecting Robo E4 Pro to the network, turn on the Polar Cloud switch and enter the account and PIN code.

4.4 Camera Connection

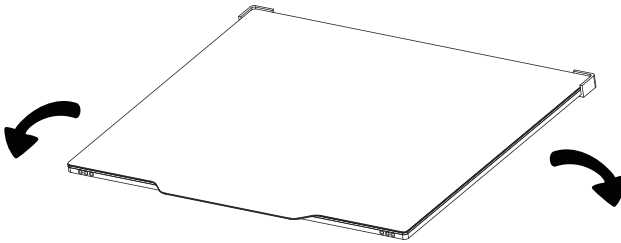
1. Please remove the camera cover before using the camera;
2. Turn on the camera switch;
3. After the equipment is connected to RoboPrint, the real-time videos and images can be viewed in the RoboPrint - [Multi-Machine Control].

4.5 Model Removal After Finishing Printing

⚠ WARNING

When removing the model from the build plate, please pay attention to the need to wait for the platform to cool down before operating. At this time, you can check the temperature icon on the status bar of the screen to confirm the platform temperature. The green icon indicates that the platform temperature is lower than 50°C, which is the appropriate state for safe operation.

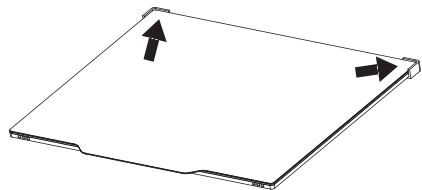
1. After printing is completed, directly lift the handle to remove the flexible steel plate and bend the platform plate to remove the model.



Flexible Steel Plate Platform

When using the flexible steel plate platform, remove the model and put the platform plate back into the equipment. Operate as follows:

1. Hold the rear end of the flexible steel plate against the positioning blocks on the left and right edges of the platform (note that it is inserted into the inside of the positioning blocks);
2. The platform will be automatically installed on the platform.

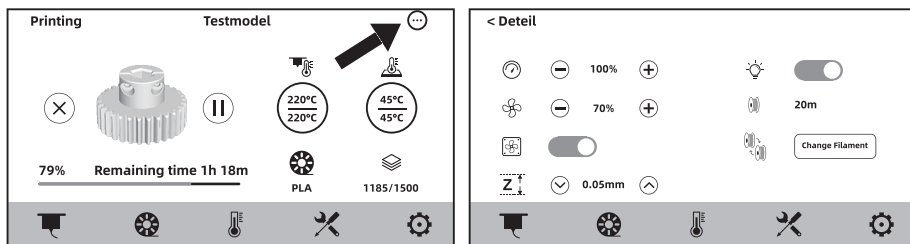
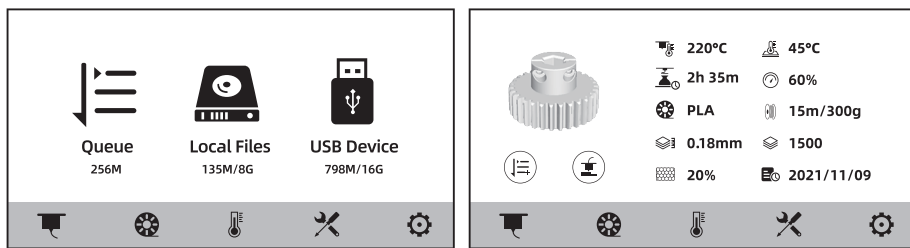


5. Equipment Operation Interface Introduction

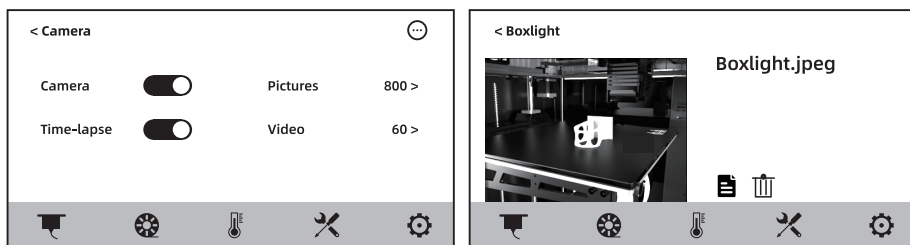
ATTENTION

As the firmware will be upgraded from time to time, please refer to the actual display screens. The following is only a brief introduction of functions.

5.1 Printing Screen

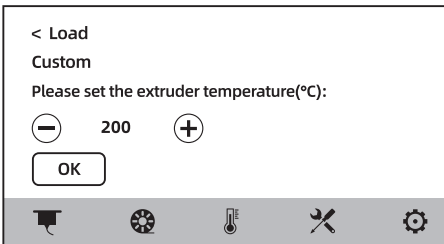
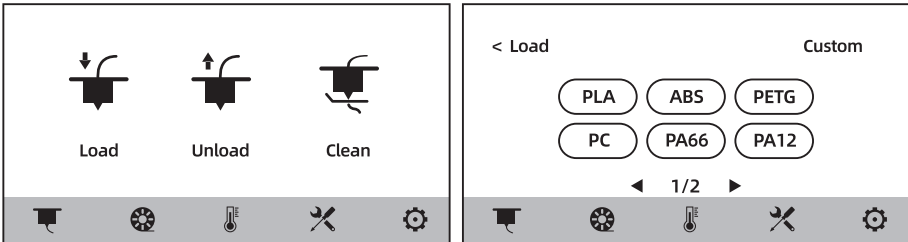


Some parameters can be adjusted during printing.
Click the [⋮] icon to control the printing speed, fan and light.



After turning on the camera, users can also store photos and videos of the printing process on the screen.

5.2 Filament Screen



The filament screen includes:
[Load], [Unload] and [Clean].

During filament loading and unloading, users can select the corresponding filament to be installed on the screen. If the currently used filament is not listed on the screen, users can customize the filament and set the required temperature for filament loading.

Filament cleaning

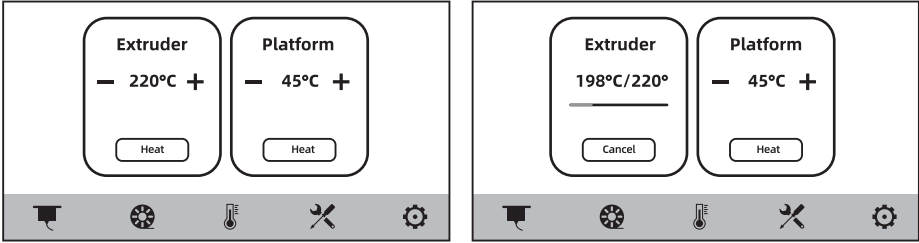
When changing between two different types of filaments, please carry out filament cleaning. In this way, it will avoid the situation that the carbonized filament leads to nozzle clogging or there is no filament extrusion due to different melting temperatures of different filaments.

When switching from a filament of high printing temperature to a filament of low printing temperature, this operation must be performed.

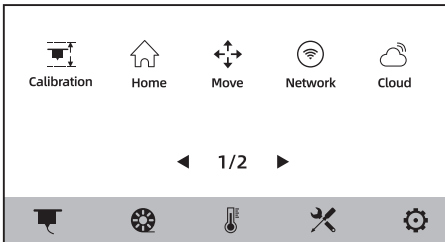
For example, when you need to switch to PLA filament after printing with PC filament, it is necessary to clean and remove the PC filament from the nozzle, so it is necessary to set the temperature required for melting PC filament until all the PC filament is extruded from the nozzle and there is no residue left in the nozzle.

5.3 Preheating Screen

The temperature of the extruder and platform can be set in advance as required on the preheating screen.



5.4 Tools Screen



[Calibration]

Z-Axis Calibration, Sensor Calibration, Assist Calibration[complete mode, simplified mode].

[Home] Here you can make each axis of the equipment return to the zero position.

[Move] Here you can manually move the X, Y, Z-axis of the equipment.

[Network] Here you can connect to the wireless network, wired network and hot spot.

[Cloud] Here you can connect to MyStemKits, RoboCloud, or Polar Cloud.

[Camera] Here you can turn on the camera and view the time-lapse video.

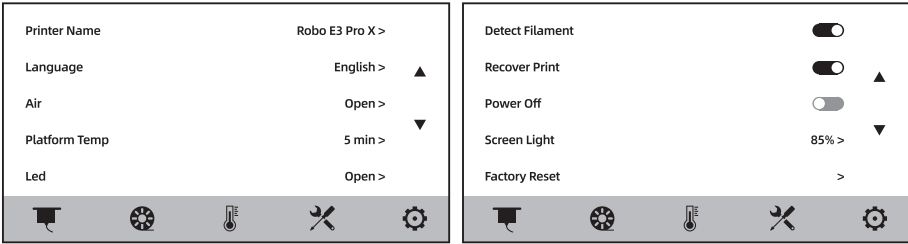
[About] Here displays the basic information about the equipment.

[Status] Here displays the running status of the equipment.

[Maintain] Here lists some maintenance items for users to check if users encounter any problems.

[Upgrade] Here is for firmware upgrade. Users can upgrade to the latest firmware of the equipment when connecting to wireless network.

5.5 Settings Screen



The several functions can be turned on or off on the settings screen.

- ◆ When the Air is turned on, the fan on the back of the equipment will be started; The front of the fan is equipped with HEPA filter cotton, which can filter the dust and odor generated during printing.
- ◆ When the Platform Temp is turned on, the platform insulation time before and after printing can be set. When in the transition state of removing the model, avoid increasing the time of reheating when the temperature drops. When this function is turned on, the platform remains the heating state when removing the model after finishing printing. Please pay attention to the high temperature and preventing burns and scalds.
- ◆ When the Led is turned on, the brightness of the light inside the chamber can be adjusted.
- ◆ When the Detect Filament is turned on, the equipment will stop printing when the filament runs out during printing.
- ◆ When the Recover Print is turned on, if the device encounters a power failure during printing, the device will automatically store the current printing position data. Then it will proceed the printing of the current model after the power is restored.
- ◆ When the Power Off is turned on, the equipment will automatically shut down after finishing model printing.

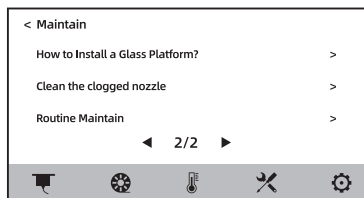
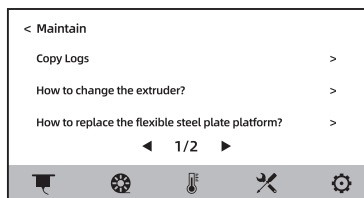
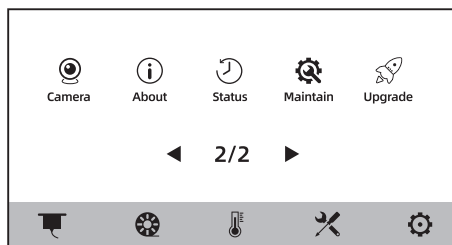
6. Maintenance

ATTENTION

As the firmware will be upgraded from time to time, please refer to the actual display screens. The following is only a brief introduction of functions.

6.1 Maintenance Screen

Users can click the [] - [Maintain] to access FAQ guides for some more common problems.



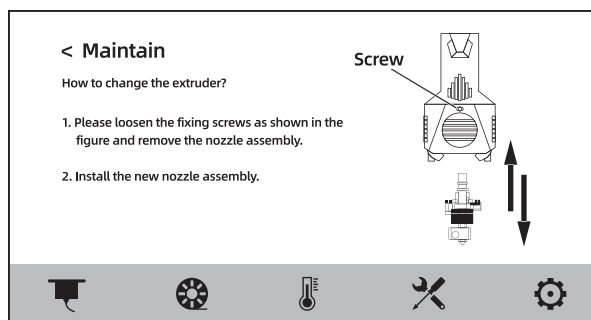
6.2 Extruder Maintenance

ATTENTION

When operating the extruder, the power supply must be disconnected.

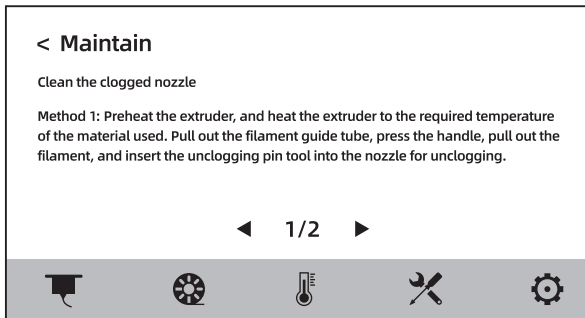
6.2.1 Nozzle Replacement

The replacement method can be viewed by clicking the [How to change the extruder?] on the maintenance screen. Please operate following the instructions on the screen.



6.2.2 Clogged Nozzle Cleaning

The cleaning method can be viewed by clicking the [Clean the clogged nozzle] on the maintenance screen. Please operate following the instructions on the screen.



6.3 Platform Replacement

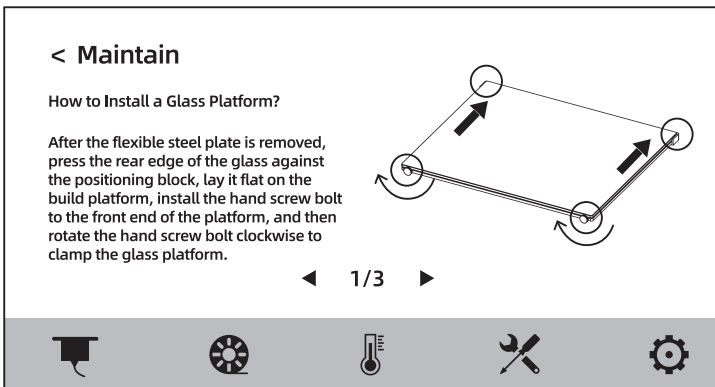
A third-party glass plate is available for this printer. We recommend using the steel plate that comes with the printer automatically.

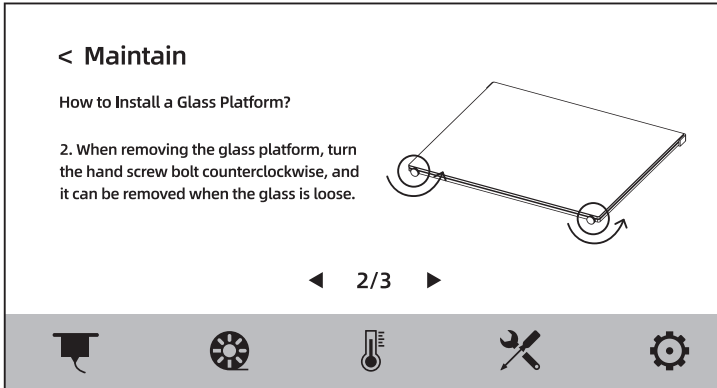
Note: After the glass platform and flexible steel plate platform are exchanged, the extruder height must be calibrated.

6.3.1 Glass Platform Replacement

The replacement method can be viewed by clicking the [How to Install a Glass Platform?] on the maintenance screen. Please operate following the instructions on the screen.

Note: The screws may become stripped after long-term use. If so, the spare screw holes on both sides can be used.

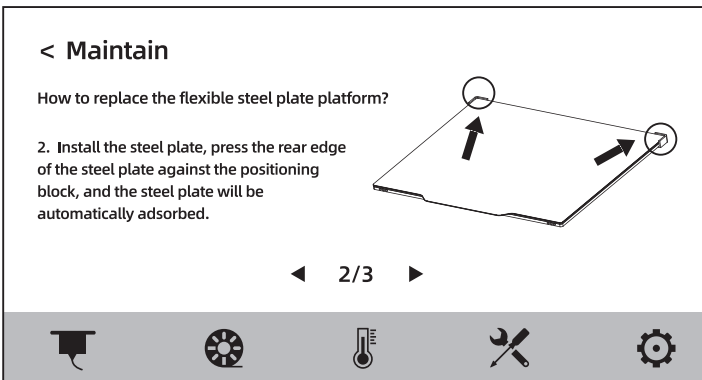
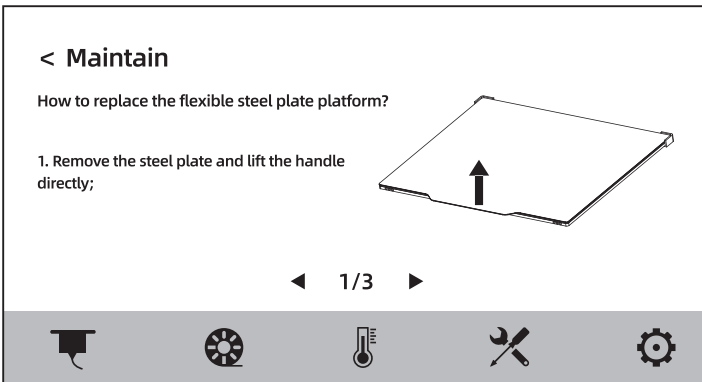




6.3.2 Flexible Steel Plate Platform Replacement

The replacement method can be viewed by clicking the [How to replace the flexible steel plate platform?] on the maintenance screen. Please operate following the instructions on the screen.

Note When using the flexible steel plate platform, please remove the front hand screw bolt.

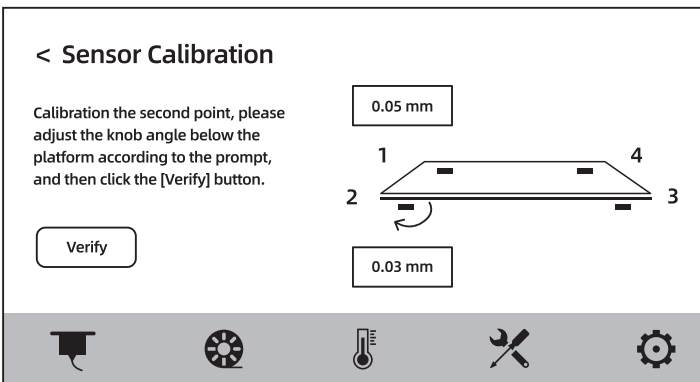
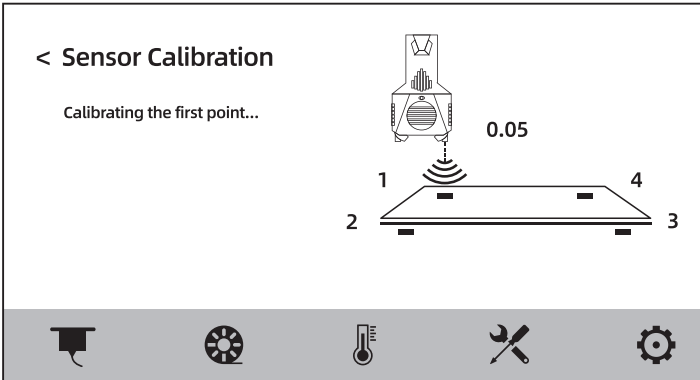


6.4 Platform Flatness Calibration

Generally, users do not need to carry out this operation. When the flatness of the equipment that has undergone Z-axis calibration or automatic leveling compensation is still improper, it may be that the previously installed platform flatness has been damaged. At this time, sensor calibration is required to adjust the platform flatness. Please operate following the prompts on the screen.


Special Note

1. Please perform sensor calibration when using flexible steel plate platform.
2. Before sensor calibration, the extruder will be heated. Please be careful to avoid touching the extruder to avoid burns.



7. Q&A


Q1: How to deal with clogged nozzle?

Click the [] - [Maintenance].

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Q2: How to replace the nozzle?

ATTENTION: Please disconnect the power before replacing the nozzle. Do not operate while powered on.

Click the [] - [Maintenance].

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Q3: Is there a need to recalibrate after replacing the nozzle?


Yes.

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Q4: When I click to start printing the model, the extruder moves, but there is no filament extrusion at the beginning of printing. How can I solve this situation?

1. Observe the filament guide tube to confirm whether the filament enters the extruder; If not, please click the [Load] button again until the filament is extruded from the extruder;
 2. Check whether the nozzle is clogged. If so, please check the Q1 for the solution.
- ////////////////////////////////////

Q5: The relative position between the nozzle and the platform is too high [far away from the platform] or too low [touching the platform] during printing. How can I calibrate/level it?

Click the [] - [Level and Calibration] - [Z Calibration] and then operate according to the screen prompts.

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Q6: Can filaments of other brands be used?

Filaments of other brands can be used. But the parameters need to be adjusted due to the temperature difference of different filaments.

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Q7: Is the equipment compatible with all AC inputs?

The equipment is compatible with 220V-240V or 100-120VAC input voltage. If the input voltage is different in different regions, it cannot be directly powered on, that is, for countries using 110VAC voltage, users shall purchase the equipment corresponding to 110VAC voltage.

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Q8: Can the equipment automatically shut down after finishing printing?

Yes. This function can be enabled on the [] screen.

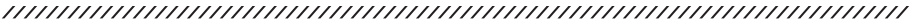
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Q9: Is it safe to print ABS material?

ABS material will release toxic gases during heating, so it is recommended to turn on the HEPA air filter for filtration during or after printing. If conditions permit, it is recommended to place the equipment in an open environment for printing. It is recommended to print nontoxic materials such as PLA.

Q10: The printed model is warping or not sticking well. How can I deal with this situation?

- Scheme 1: Increasing the platform temperature can effectively alleviate this problem, as the high temperature can increase the adhesion between the platform and the model.
- Scheme 2: Choosing to add a raft when slicing the model can effectively alleviate this problem.
- Scheme 3: Apply glue. (Not recommended)
- Scheme 4: If the distance between the nozzle and platform is too large, it should be reduced accordingly, which can be done via the expert mode of extruder calibration and the calibration function.
- Scheme 5: Confirm whether the platform is laid flat. The calibration function can be used, and it is recommended to perform a full-process automatic leveling.



Q11: Must a raft be added when printing a model?

Not necessarily. When printing the raft, the filament extrusion amount is larger and the printing success rate is higher. Under the condition of raft heating, the adhesion between the model and the platform plate increases, which makes the model adhere to the platform well when printing, and also increases the printing success rate.



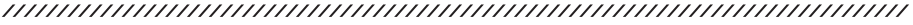
Q12: After inserting the USB flash drive, the print file can not be found, and the screen displays all as folders. What should I try?

1. Please check the file type. The printers can only read files that have been sliced using RoboPrint. If the file is a .stl file, it will not be able to be read by the printer.
2. Please check the formatting of the USB drive. The equipment supports FAT32 file system. Please format the USB flash drive into FAT32 format.



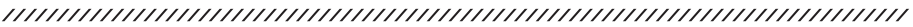
Q13: Why can't I connect to my Wi-Fi network?

1. Please check whether the password contains special characters. If so, please modify it and try again.



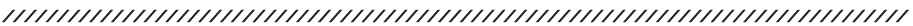
Q14: What do I need to know when updating the firmware?

Please do not disconnect the power and the network when downloading or updating the firmware to avoid update failure.



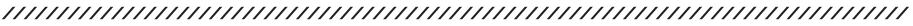
Q15: Why is the boot screen white?

If the start-up sound can be heard, please replace the screen or the flat cable; If not, please contact our after-sales support personnel.



Q16: Is it normal that yellowish-brown stains appear on the guide rails after a long time of use?

It is a normal phenomenon. The guide rails come with lubricating oil, and yellowish-brown stains will appear when the guide rails are used for a long time.



Q17: Is it normal for the machine to shake during printing?

It is a normal phenomenon. The faster the printing speed is, the more obvious the shaking of the machine will be.

8. Help and Support

Boxlight professional customer care personnel and salesmen are on standby for you at any time and are ready to help you with any problem you may have with the printer. If the issues or questions are not covered in this User Guide, you can seek for solutions on our official website or contact us via email or phone.

Some explanations and solutions of common problems can be found in our official website. Many of your problems can be solved by looking at the FAQs and support pages on our Robo-specific website www.robo3d.com.

Boxlight customer care team can be reached by email or phone during regular business hours using the contact us form on the support tab of the website or by submitting a ticket to customer care@boxlight.com or help@robo3d.com.

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Note

Clogged nozzles are a part of 3D printing and are not a printer defect. This is why we include parts for unclogging as well as a spare extruder should you need to change it out.

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