FLASHFORGE

EN/CN - A03

AD5X User Guide

用户使用手册

WARNING 注意事项

1. Please refer to this Guide for initial printer setup.
2. Hot! Avoid touching the heating nozzle in operation.
3. Moving parts in the printer may cause injuries. Do not wear gloves or other sources of entanglement in operation.

1. 请参照本指南完成打印机的初始准备。
2. 高温危险！打印机喷嘴在工作时会被加热，操作时请避免接触！
3. 可动部件可能会造成卷入挤压和切割伤害。操作机器时请不要佩戴手套或缠绕物。

Safety Notice 安全提示

Do not power on the printer until installation is completed.
请勿在打印机安装完成之前通电。

For more product information, please visit our official website.
www.flashforge.com - [Support]

CONTENTS

NOTICE

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

Note: Each 3D printer undergoes printing tests before leaving the factory. Filament residue on the nozzle or slight scratches on the build plate are normal and do not affect usage.

WORK ENVIRONMENT SAFETY

- Please keep the workspace clean and tidy.
- Please ensure the equipment operates away from combustible gases, liquids, and dust. High temperatures generated during operation may react with combustible gases, liquids, or airborne dust, potentially causing fires.
- Children and untrained individuals should not operate the equipment alone.

ELECTRICAL SAFETY

- Please properly ground the equipment. Do not modify the plug. Ungrounded equipment/improperly grounded equipment/modified plug will inevitably increase the risk of electric leakage.
- Avoid exposing the equipment to damp or direct sunlight environments. 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 Flashforge.
- Do not use the equipment during thunderstorms.
- Please turn off 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 after finishing printing to avoid high temperature burns or mechanical damage.
- Do not wear scarves, masks, gloves, jewelry, or other objects that can easily get tangled into the equipment while 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. Do not drop metal objects into the grooves at the bottom of the build plate.
- Please clean up filament debris in time. It is recommended to operate this outside the equipment.
- Any modification of the equipment by yourself will void the warranty.
- Please keep the distance between the extruder and build plate for at least 50mm during filament loading. Too-close distance may cause nozzle clogs.
- Please operate the equipment in a well-ventilated environment.
- Do not use the equipment for illegal activities.
- Do not use the equipment to make food storage containers.
- Do not place printed models into your mouth.

EQUIPMENT ENVIRONMENT REQUIREMENTS

- Room temperature: 15-30℃; Humidity: 20-70RH%

EQUIPMENT PLACEMENT REQUIREMENTS

- The equipment must be placed in a dry and well-ventilated environment. A distance of at least 20cm must be reserved around the front, back, left and right sides of the equipment. Recommended storage temperature: 0-40°C

COMPATIBLE FILAMENT REQUIREMENTS

- When using this equipment, it's recommended to use Flashforge's filaments. If non-Flashforge filaments are used, there will be certain differences in material properties, and print parameters may need adjustments.

FILAMENT STORAGE REQUIREMENTS

- Please store filaments in a dry and dust-free environment after unpacking. It is recommended to use the matching filament dry box for storage.

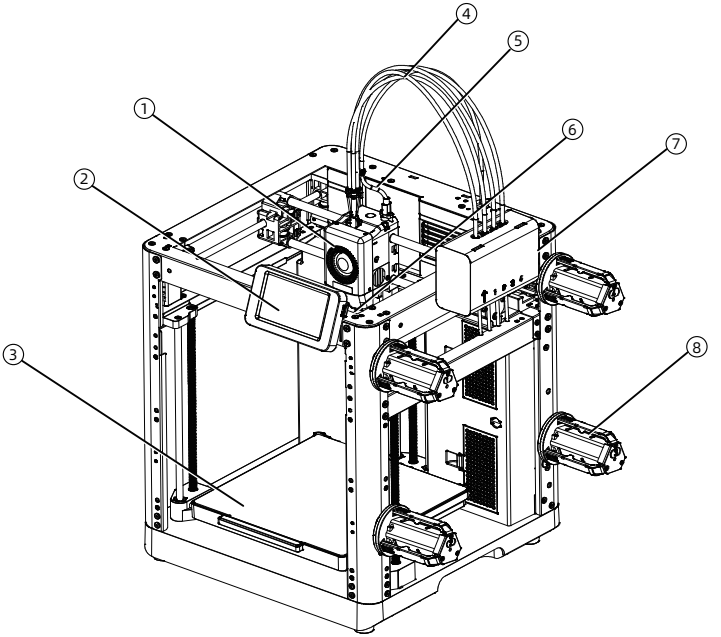
LEGAL STATEMENT

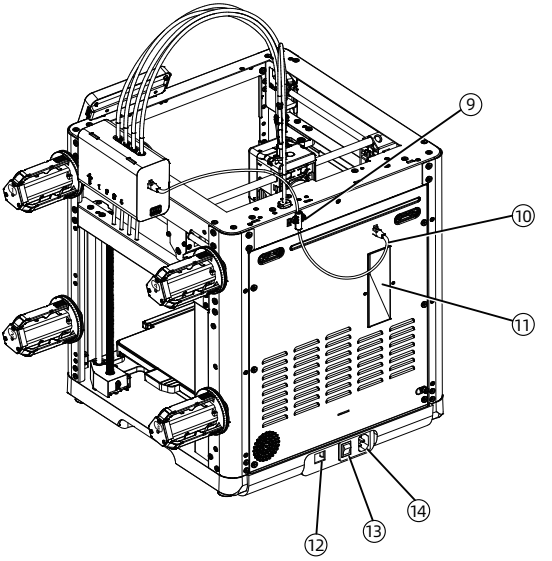
- Users are not authorized to make any modifications to this User Guide.
- Flashforge shall not be held responsible for any safety incidents resulting from the disassembly or modification of the equipment by the customer. No one is allowed to modify or translate this Guide without Flashforge's permission. This Guide is protected by copyright, and Flashforge reserves the right of the final interpretation of this Guide.

- First Edition (October 2024)

1.Equipment Introduction

1.1 Printer Components





1. Extruder
2. Display Screen
3. Build Plate
4. 4-in-1 Guide Tube
5. Extruder Cable
6. USB Port
7. IFS Module
8. Spool Holder
9. Cable Clip
10. IFS Connection Cable
11. Waste Outlet
12. Ethernet Port
13. Power Switch
14. Power Port

1.2 Printer Parameters

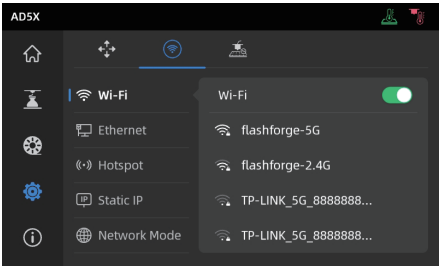
Device Name	AD5X
Extruder Quantity	1
Printing Precision	±0.1mm (testing based on 100mm cubes)
Positioning Accuracy	X/Y-axis: 0.0125mm, Z-axis: 0.0025mm
Layer Thickness	0.1-0.4mm
Build Volume	220 x 220 x 220mm
Nozzle Diameter	0.4mm (default), 0.25/0.6/0.8mm (optional)
Printing Speed	10-300mm/s
Max Acceleration	20000mm/s²
Max Travel Speed	600mm/s
Max Extruder Temp	300℃
Power Supply	Input: AC 100~120V/200~240V, 50/60Hz, 650W
Device Dimensions	363 x 363 x 413mm (excluding the display screen and spool holder) 363 x 402 x 448mm (including the display screen, excluding the spool holder)
Net Weight	11.4kg
Connectivity	USB/Wi-Fi/Ethernet
Operating Temp	15-30℃
Compatible Operating System	Windows 7/8/10/11; Mac OS: support version 10.9 or later
Slicing Software	Orca-Flashforge/Orca Slicer
Max Bed Temp	110℃
Leveling Method	One-click auto leveling
Filament Run-out Reminder	√
Power Loss Recovery	√
Smart Touch Screen	4.3-inch
Build Plate	PEI steel sheet

2. Software Introduction

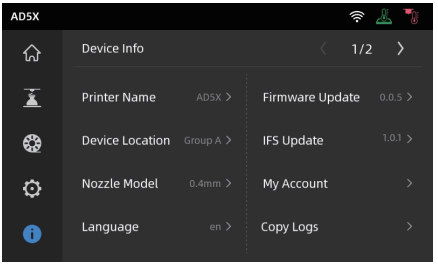
2.1 Flash Maker Instructions

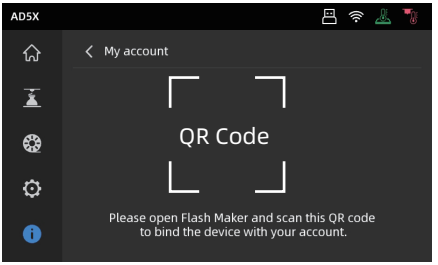
1. Download Flash Maker by scanning the QR code (see right) or from the app store, register your Flashforge account, and log in.

2. Click [⚙] - [((•))], and then turn on the Wi-Fi switch to connect to the network.



3. Click [ⓘ] to enter the information interface, and then click [My Account] to access the printer's QR code.

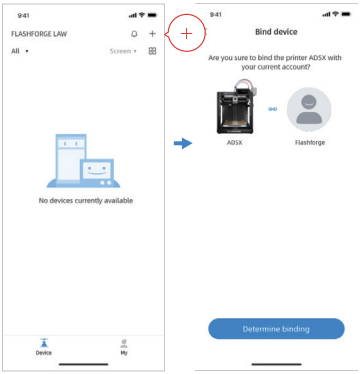




Note

- By default, the device name is set to "AD5X", and its location is set to "Group A" upon factory settings.
- You can modify the name and location on the printer's information interface as needed.
- Real-time monitoring is only available if a camera is installed and the feature is enabled.
- The APP does not support connection in the LAN Only mode.

4. Use Flash Maker to scan the QR code on the printer screen to bind the printer to your account.

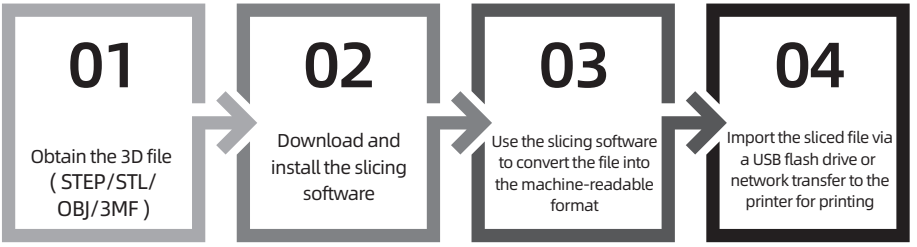


2.2 Slicing Software Instructions

Note **Before reading the brief instructions, please ensure you have reviewed the Quick Start Guide and completed the first print.**

Before printing 3D model files, you need to configure slicing presets for the corresponding printer. Recommended slicing software: **Orca-Flashforge.**

Pre-printing Steps:



Orca-Flashforge

* The steps are illustrated for one machine type.

Orca-Flashforge allows you to log in with your Flashforge account, bind your device, and remotely send files and monitor your device.

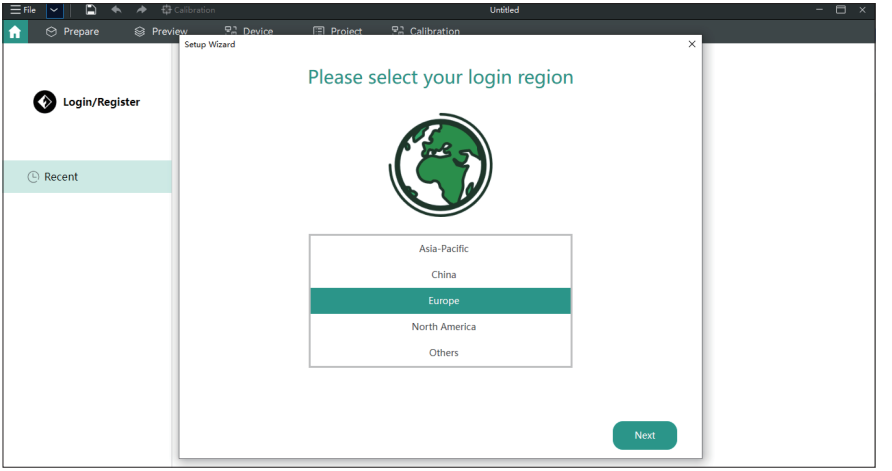
Download Instructions

Orca-Flashforge
Download Orca-Flashforge from: https://flashforge.com/blogs/download-software/software.

Or scan here to download:

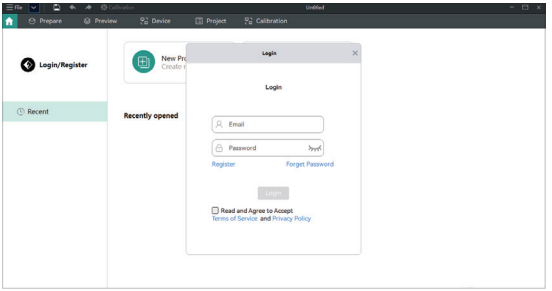
1. Open the installed Orca-Flashforge.

2. Setup Wizard:
Follow the setup wizard prompts for selecting your region, machine type, and materials.
(Note: You can select all machine types and material types in the list for later slicing options.)

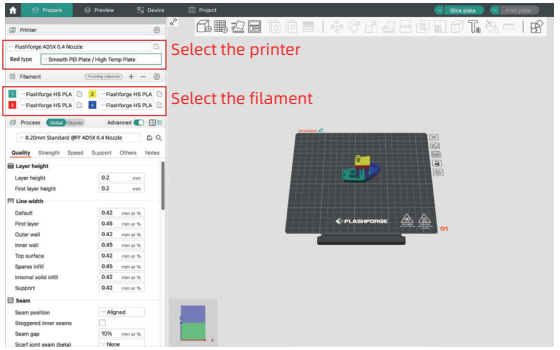


3. Account Login/Register:

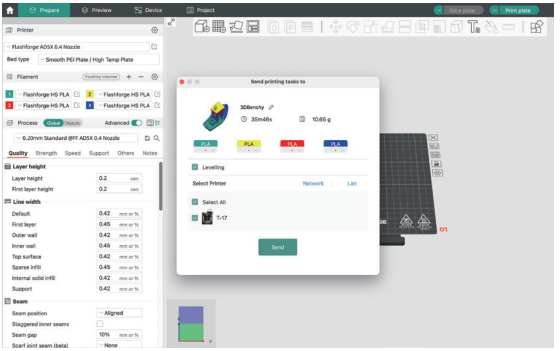
Log in to Orca-Flashforge using your Flashforge account. If you don't have an account, register one using your mobile phone number. (Note: Flash Maker and Orca-Flashforge share the same account.)



4. Create or open a project for slicing. You can select the machine type, material, and recommended parameters in the printer, filament, and process bars.
Select the printer as AD5X. If fewer than four filaments are shown, manually add them until there are four before importing your model.

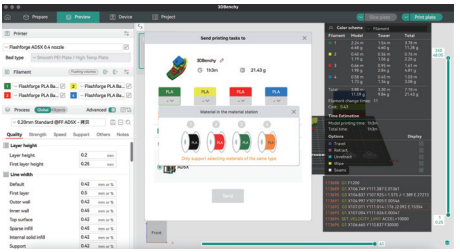


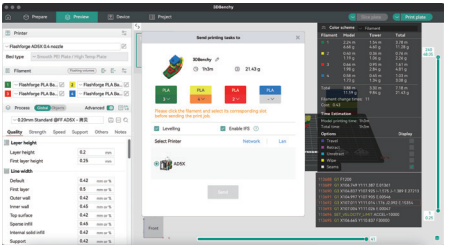
5. After slicing, select the printer and send for printing.



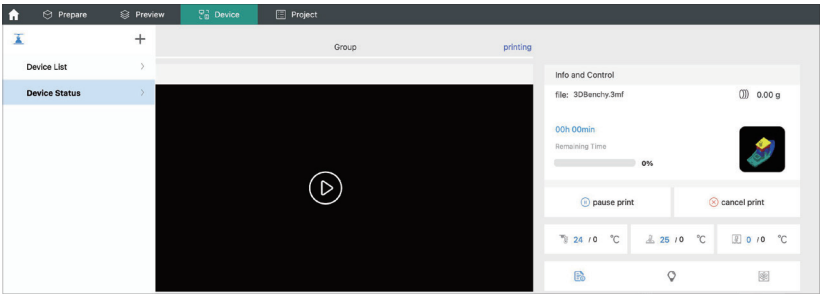
Note

For multi-color printing, filament information needs to be configured manually. Click the corresponding channel and select the filament in the matching or similar color. (Once the IFS information is configured on the device, the slicing software can retrieve the IFS information from that device, as shown below:)





6. You can remotely monitor the printing progress and pause/stop printing when necessary on the device interface. (Note: Real-time monitoring is only available with a camera installed and activated. AD5X does not come with a camera by default.)



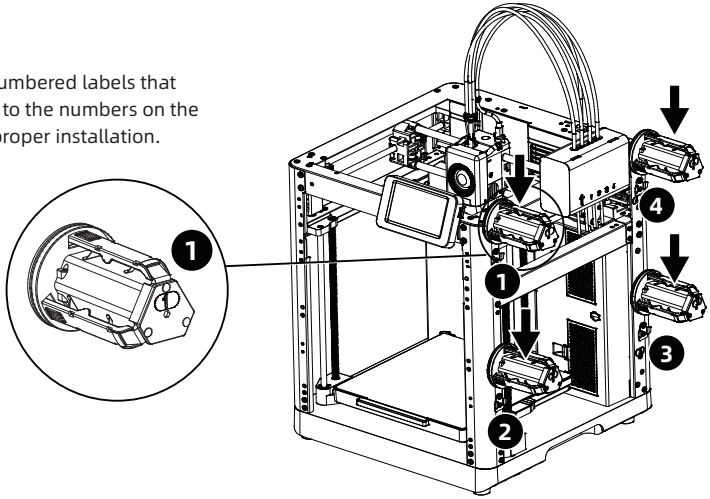
Tip:

For details and tutorials on software usage, please refer to Flashforge WiKi. (https://wiki.flashforge.com/en/home)

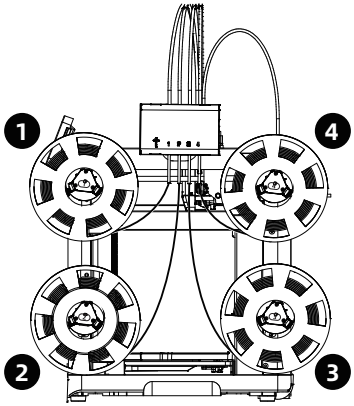
3. Load and Configure Filaments for IFS

⚠ Note **Please use the dedicated filament spool holders with the IFS module. These holders feature a reverse rewinding mechanism to prevent tangling. Please make sure the installed spool holder number, the installation position number, and the configured IFS channel number are consistent. Install as shown below.**

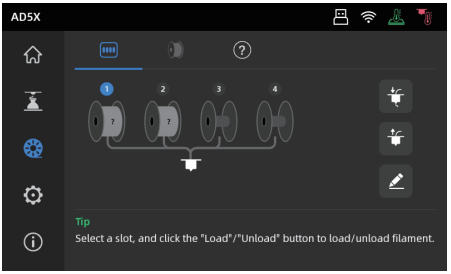
There are numbered labels that correspond to the numbers on the printer for proper installation.

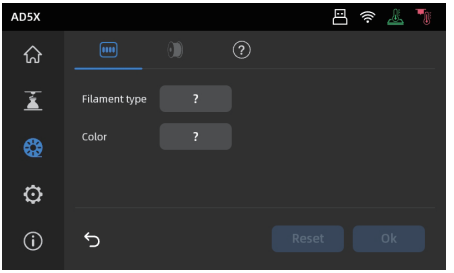


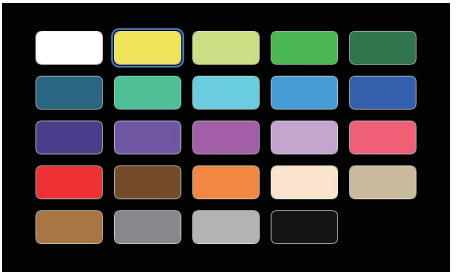
1. Load filaments following the direction shown below.
   When loading filaments, insert the four filaments into the 1/2/3/4 inlets, respectively. Thread them through the feed roller, and the device will detect the filaments and automatically feed them into the guide tubes one by one. Once all filaments have reached the tube inlet, the feeding process is completed. With IFS, you can start printing immediately after completing this loading process.

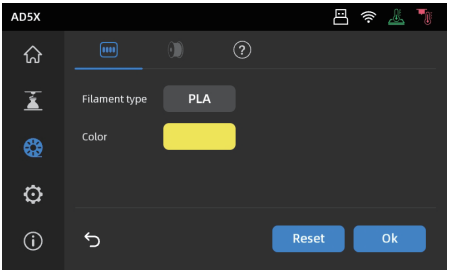


2. After loading the filaments, please manually configure the filament information. Click on the corresponding filament channel, and then click [ ] to select the corresponding filament type and color. Click [Ok].
Note: The device can only print if the filament type of the sliced file matches the configured (actually loaded) filament type.









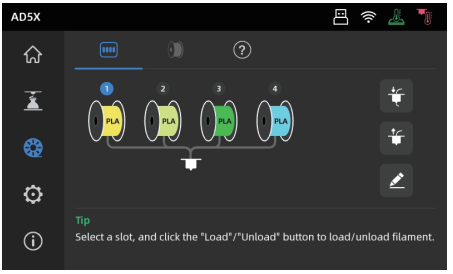
Note

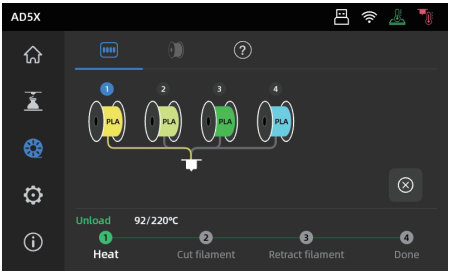
*Expanded Filament Loading:
When IFS is not in use **(note: single filament mode can only be used when the IFS signal cable is disconnected; when the IFS signal cable is connected, the device will load filament in the IFS mode by default),** users can click on the filament and select the loading button on the screen to load it **(the operation is the same as with IFS).**
***This device uses IFS mode for filament loading by default.**

4. Unload/Change Filament

1. If the filament has not entered the extruder feed roller, you can manually pull it out.

2. If the current filament is still inside the extruder, click [ ] - [ ]. The filament will retract to the top of the guide tube. Once it has retracted from the extruder, you can manually pull it out.

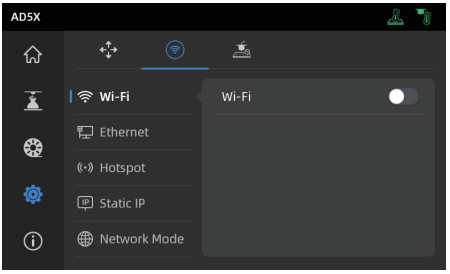




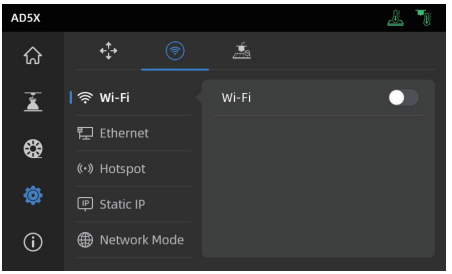
5. Network Connection

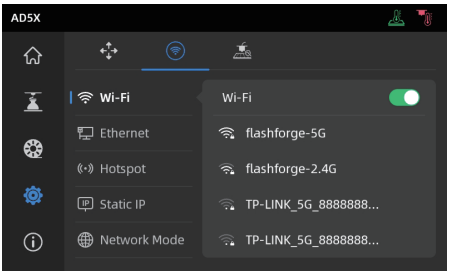
5.1 Wireless Network Connection

1. Click [ ] - [ ] to enter the network connection interface.



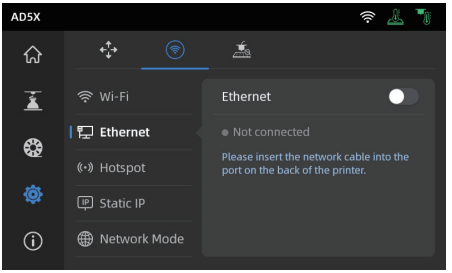
2. Turn on the Wi-Fi switch, and tap to connect to the corresponding wireless network. Once connected successfully, the network will be marked, and an [ ] icon will appear at the top right corner of the screen.

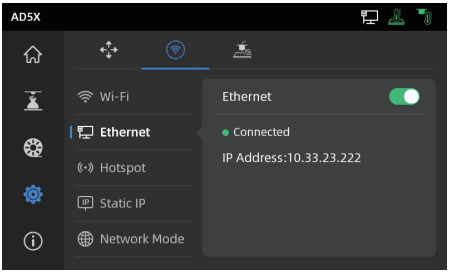




5.2 Wired Network Connection

1. Select [Ethernet] and plug the network cable into the Ethernet port on the back of the printer following on-screen instructions.
2. Once connected successfully, it will display as [Connected], and an [ ] icon will appear at the top right corner of the screen.



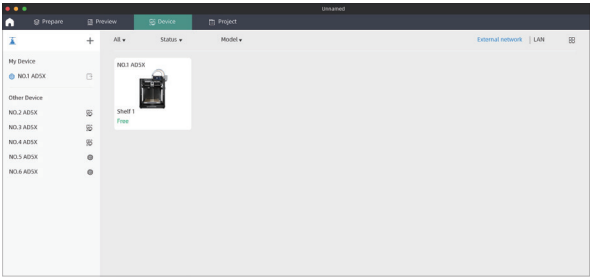


6. Print

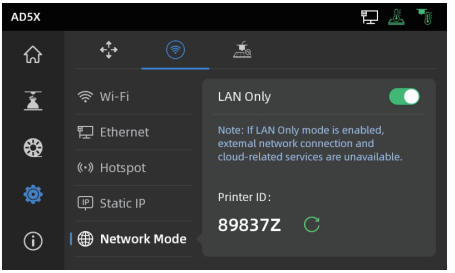
6.1 Print via Wi-Fi Transfer

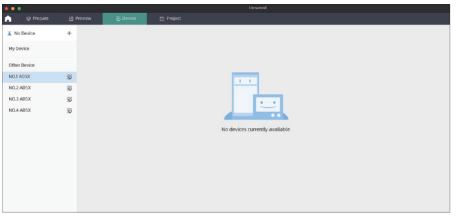
After successfully connecting the printer to the network, open Orca-Flashforge. After finishing slicing, click [Print plate] in the menu, and select the connected AD5X to send the print job. Before transferring the file, please connect the printer to a network (either wireless or wired) and bind the printer to the slicing software. The printer and the computer must be connected to the same LAN. There are two modes for printer connection: WAN Mode and LAN Only Mode.

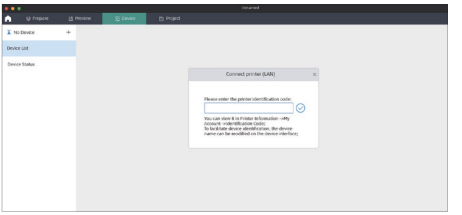
1. WAN Mode: Please log in/register your Flashforge account before connecting the printer. If the device has already been bound and connected via the mobile app, the connected device will be automatically displayed after you log in to the account in the slicing software. If the mobile app is not connected, you can click [+] on the device page to open the search list and select the desired device to connect.



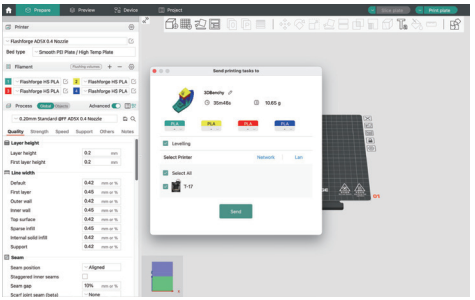
2. LAN Only Mode: Enable [LAN Only] via [Network Mode]. In the slicing software, click [+] on the device page to find the corresponding printer. Select the printer and enter the Printer ID displayed on the printer to complete the connection.





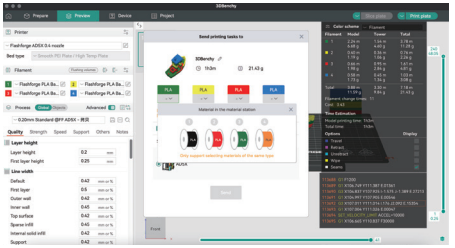


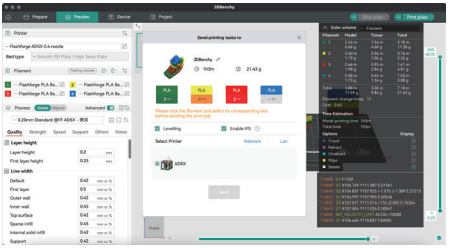
3. After connecting the printer to the slicing software, you can click [Print plate] after slicing, select the corresponding printer, and then click [Send].



Note

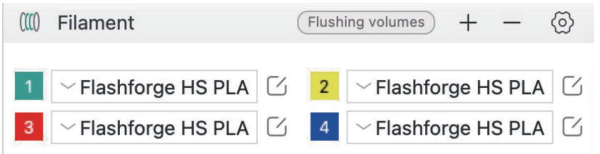
For multi-color printing, filament information needs to be configured manually. Click the corresponding channel and select the filament in the matching or similar color. (Once the IFS information is configured on the device, the slicing software can retrieve the IFS information from that device, as shown below:)



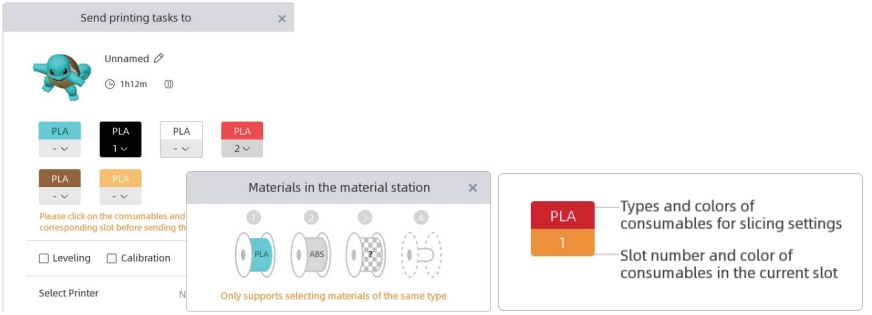


Note

The numbers embedded before each color in the Filament bar are just the order numbers for filaments and are not related to the IFS channel numbers.

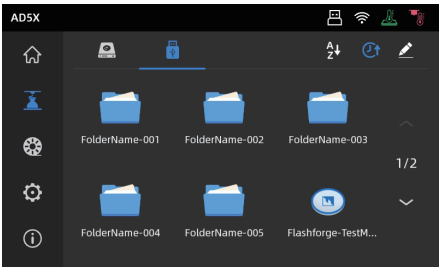


4. Before sending the print job, please confirm in the pop-up window that each selected channel for the colors matches your needs. If the channel info shows "?", it indicates that the filament on the device has not been configured. If the channel info is blank, it means that no filament is installed in that channel on the device. (Please ensure that the filament in that slot matches the filament configured in the sliced file.)

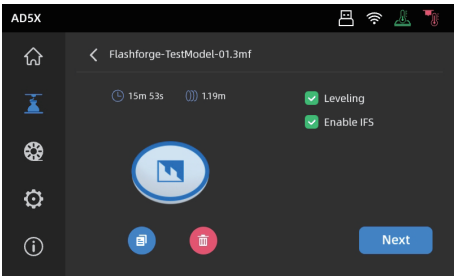


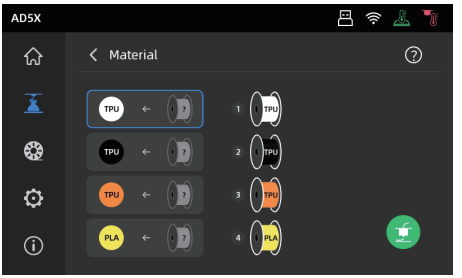
6.2 Print via USB

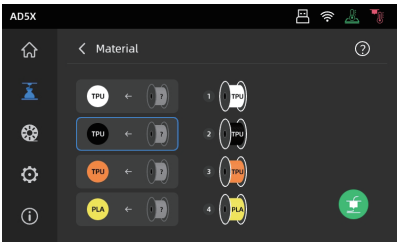
1. In the slicing software, select [Export plate sliced file]. This will save the sliced file in the 3MF format. Save this file to a USB flash drive, insert the USB flash drive into your printer, and select the corresponding file to print.



2. Click [Next] to configure IFS channels. You can manually change the filament options to match your actual printing needs. On the screen, you can manually select the channel for each color.



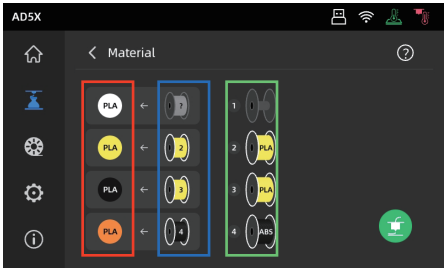




3. Click the box on the left, and then select the desired filament channel from the right. You can select a channel multiple times. If no filament matches the color specified in the file, you can either place the specified filament in the IFS channel or select a filament with similar properties and a close color match. After configuring the channels, you can click to print. If the filament selected during slicing does not match the type of filament on the IFS, you will not be able to select that filament for printing. For example, as shown below, for a print file sliced with PLA, you can select channels 2 or 3 with PLA for printing, but channel 4 with ABS cannot be selected.

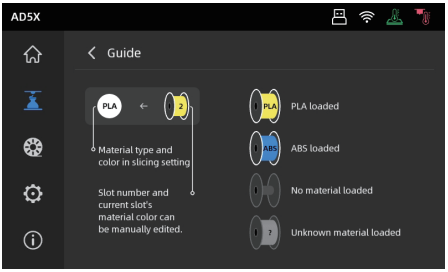
Note

If the file imported to the USB flash drive is in G-code format, the channel cannot be manually modified. Only 3MF files support further modifications.



*Explanation:
Red box (left): Here displays the filament type and color configured in the slicing software.
Blue box (middle): Users can click to manually modify the corresponding installed filament spool. After selecting this column, click on the corresponding filament loaded in the actual channel in the green box. Once selected, it will be mapped to the print material.
Green box (right): Here displays information of the actual loaded filament on the device.

4. You can refer to the [Guide] for the mapping between them.



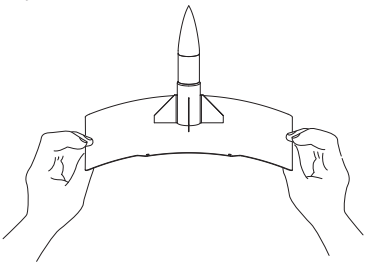
6.3 Model Removal After Printing

Note **When printing is completed, the nozzle and build plate may still be at a high temperature. It is recommended to allow them to cool down before removing the model.**

After printing is completed, directly take out the flexible steel plate and bend the platform to remove the model. Ensure there is no residual filament on the platform before the next print.

Tips on Model Removal:

1. Please take the platform plate outside the printer for model removal to prevent model debris from accumulating inside the printer. It's recommended to keep the chamber clean.
2. For models printed with TPU or other flexible materials, it is recommended to use a scraper for removal, which ensures you can remove the flexible model from the bed without causing damage.



7. Introduction to Auxiliary Functions

Note **The interface layout may change whenever there is an upgrade of firmware.**

7.1 Leveling and Calibration

During the first startup, equipment calibration will be performed. During subsequent use, choose leveling or vibration compensation as needed.

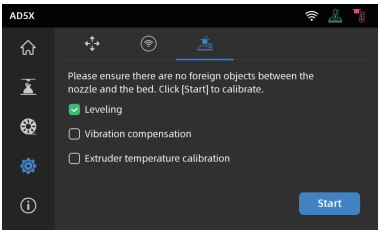
When to perform leveling:

- If continuously printing with PLA material, perform automatic leveling once with no need to do so before each print. However, performing leveling can inevitably improve the printing success rate;
- When switching between different materials (e.g., from PLA to ABS), please perform leveling before each print;
- If the platform-nozzle distance is too far (poor adhesion) or too close (no filament extrusion), please perform automatic leveling;
- After replacing the build plate or nozzle, please perform automatic leveling. Be sure to perform leveling after nozzle change to avoid the risk of damaging the extruder.

When to perform vibration compensation:

- When there is noticeable ghosting and ringing on 3D prints;
- After adjusting the tension of the synchronous belt;
- When the printer has been unused for a long time and is now being restarted.

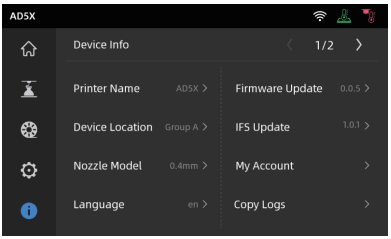
Instructions:
Click [⚙] - [] to enter the leveling and calibration interface. Choose **[Leveling]** or **[Vibration compensation]**, click **[Start]**, and the printer will automatically perform the corresponding operation. (Note: Before calibration, ensure there are no foreign objects on the platform or at the nozzle tip.)

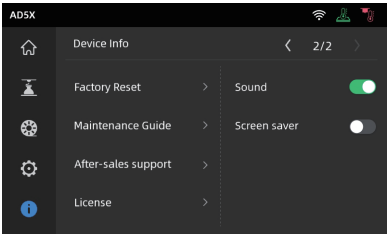


Note on when to perform PID calibration: This can be performed after replacing the nozzle or when the nozzle temperature is abnormal.

7.2 Other Functions

- In the device info interface, you can enable or disable sound and filament detection, and perform firmware updates. When [Filament Detection] is enabled, the printer will stop printing if filament runs out mid-print.
- When connected to a wireless network, click [Firmware Update] to view the current version, check for updates, and perform online firmware updates.
- Printer Name and Location: Users can customize the name and location as desired for easier management. Modifying the location can help users manage their devices for better organization. Users can also assign groups (A/B/C), which will be displayed in both the app and slicing software, allowing for easy filtering.





- Power Loss Recovery.
  After a power outage, the printer will display a pop-up prompt when power is restored. If you select [Yes], the printer will resume printing the unfinished model.

8. Maintenance

8.1 Suggestions on Platform Plate Usage

1. Powder coated PEI plate requires glue and is suitable for printing PLA/PETG/PLA-CF/PETG-CF/ABS/ASA. TPU printing does not require glue. This plate comes with the printer.
2. PEI film plate is suitable for printing PLA/TPU without glue. For PETG, it's recommended to use glue. This plate can be purchased separately.
3. PC sticker platform plate is suitable for printing PC/ABS/ASA. This plate can be purchased separately.
4. After applying glue to the platform plate, it can be cleaned with water.
5. If the platform plate gets oily, it can be cleaned with a dish detergent.
6. If the platform plate deforms significantly after long-term use, it's recommended to replace it with a new one.

8.2 Suggestions on Nozzle Usage

1. Please use one nozzle for the same type of material to avoid clogs and extend nozzle lifespan, especially when working with fiber-reinforced materials and PETG. Please avoid mixing them with other materials.
2. When switching to a different material with the same nozzle, if the new material's printing temperature is lower, adjust the setting to a higher temperature for filament extrusion to purge old filament from the nozzle.
3. When switching to a different material with a higher printing temperature, just load the new filament.
4. To clean residual filament inside the nozzle, you can perform multiple filament loading or manually clear any remaining filament using the unclogging pin tool.
5. After replacing the nozzle, please perform leveling again.

8.3 General Maintenance

1. After every 1,000 hours of printing, please perform maintenance on key components: Wipe the X, Y, and Z-axis linear shafts clean with a dust-free cloth or paper.
2. After cleaning the Z-axis lead screw, please apply the provided or a suitable lubricant evenly.
3. To prevent filament from absorbing moisture, breaking, or causing issues with the guide tube, please unload the filament from the printer and store it in a sealed, moisture-proof container if the printer will be idle for more than two days.
4. Please promptly clear any filament or foreign objects from the lead screw.

For detailed maintenance instructions, please refer to Flashforge Wiki.

9. Q&A

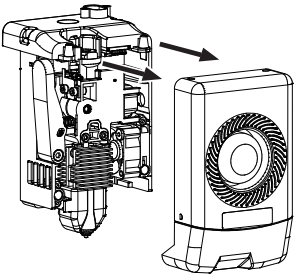
Q1. What to do if the nozzle is clogged?

Troubleshooting Step 1: Manually press the handle at the extruder, cut off the filament, then remove the guide tube and check if the filament tip is flat. If not, trim it to be flat, reinsert the guide tube and filament into the extruder, and then click for loading to check.
Troubleshooting Step 2: Remove the extruder and check if the filament is blocked inside it.

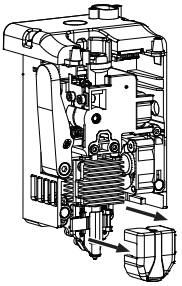
Q2. How to replace the nozzle?

If there's filament inside the nozzle, please unload it first or manually cut it off.
Then follow these steps:

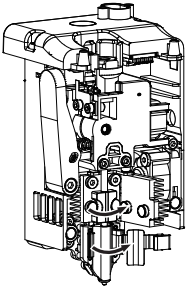
1. Remove the extruder's front cover.



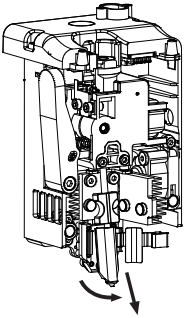
2. Remove the nozzle silicone sock.



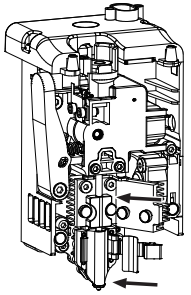
3. Release the heatsink and nozzle clip.



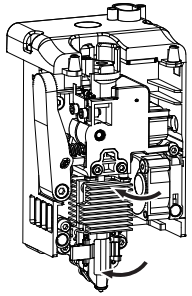
4. Remove the nozzle.



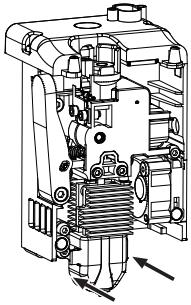
5. Install the new nozzle (0.4mm).



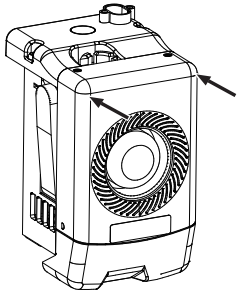
6. Secure the heatsink and nozzle clip.



7. Reinstall the nozzle silicone sock.



8. Reinstall the extruder's front cover.



When reinstalling the nozzle, ensure it is properly aligned and securely fastened. Install the silicone sleeve back into place. After replacing the nozzle, it's crucial to perform a nozzle temperature calibration and bed leveling.

Q3. Is leveling/calibration required after replacing the nozzle?

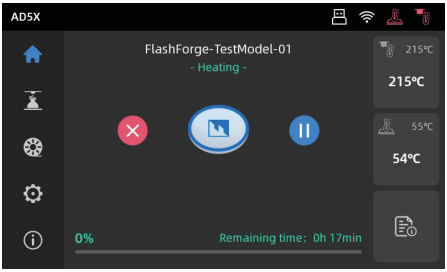
Yes. It is recommended to perform automatic leveling to ensure high print quality as slight errors may occur during nozzle installation. The device will have leveling enabled by default before each print. A temperature calibration for the new nozzle is also required.

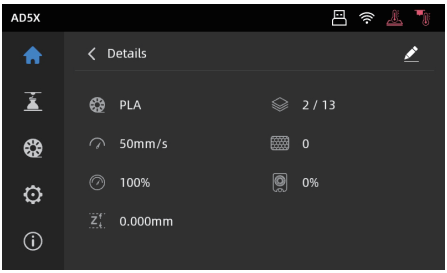
Q4.What to do if the extruder moves but no filament comes out at the beginning of printing after starting the print?

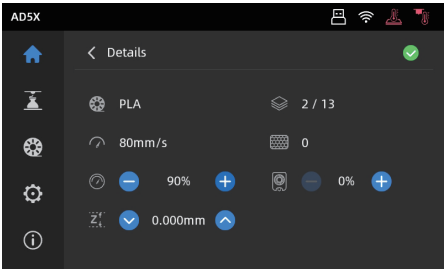
1. Observe the filament guide tube to check if filament has entered the nozzle. If not, please click the loading button until filament comes out.
2. Check if the nozzle is clogged. If so, please refer to the solution of Q1.

Q5. What to do if the nozzle position is too high (far from the bed) or too low (hitting the bed) during printing? How to adjust it?

Please check if the bed is properly installed and there is no excessive residue on the nozzle. If these issues exist, address them first. Then, go to the settings interface, select the leveling option, and perform automatic leveling or enable automatic leveling before printing. If the problem persists and your entire print is coming out poorly because the nozzle is too close or too far from the bed, you can adjust the Z-axis offset by clicking [ ]. If the bed is too far, click the up arrow. If the bed is too close, click the down arrow.







Q6. Can filaments from other brands be used?

Yes. You can use filaments from other brands, but certain parameter adjustments are required due to slight temperature differences in different filaments.

Q7. What to do if your print is warping or not adhering well?

Solution 1: Increase the bed temperature to improve adhesion between the bed and your print.
Solution 2: Add a brim when slicing your model.
Solution 3: Apply glue.
Solution 4: Clean the bed to remove any grease or residue.
Solution 5: Check if the bed is level. The leveling and calibration function can be used.

Q8. What to do if print files can not be found and the screen displays only folders after inserting the USB flash drive?

The USB flash drive format may be incorrect. The device supports the FAT32 file system. Please format the USB flash drive to FAT32.

Q9. What to do with the Wi-Fi connection failure?

1. Please check if the Wi-Fi name contains special characters. If so, modify it and try again.
2. Please check if the password contains special characters. If so, modify it and try again.

Q10. What to keep in mind during a firmware update?

Do not power off the printer or disconnect from the network during firmware download or update to prevent update failures.

Q11. Why is the screen blank on startup?

If the startup sound can be heard, please replace the screen or the cable. If not, please contact customer support.

10. Help and Support

Flashforge's professional after-sales service 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 by phone.

There are instructions and solutions to common issues that can be found on our official website. Many questions are answered at Flashforge's English official website - www.flashforge.com.

Flashforge customer support team can be reached by phone from 8:00 AM to 5:00 PM, from Monday to Saturday. In case you contact us during off-duty time, your inquiry will be answered the next working day immediately. We apologize for any inconvenience this may cause.

⚠ Note Changing different filaments may leave minor impurities in the nozzle, leading to clogs. As this can be solved by just unclogging it, it's not owing to a quality issue. If you encounter this problem during use, please contact customer support and follow their guidance for unclogging.

After-sales Service Tel: 400-886-6023
E-mail: support@flashforge.com
Address: Floors 2 & 3, Building B, Huaxing Development Building, No.328 Wen'er Road, Xihu District, Hangzhou City, Zhejiang Province, China.
Note: Please provide the product serial number which can be found on the barcode at the back of the printer when contacting customer support.

更多产品相关资料您可以登陆闪铸官网查看。

www.sz3dp.com - [技术支持]