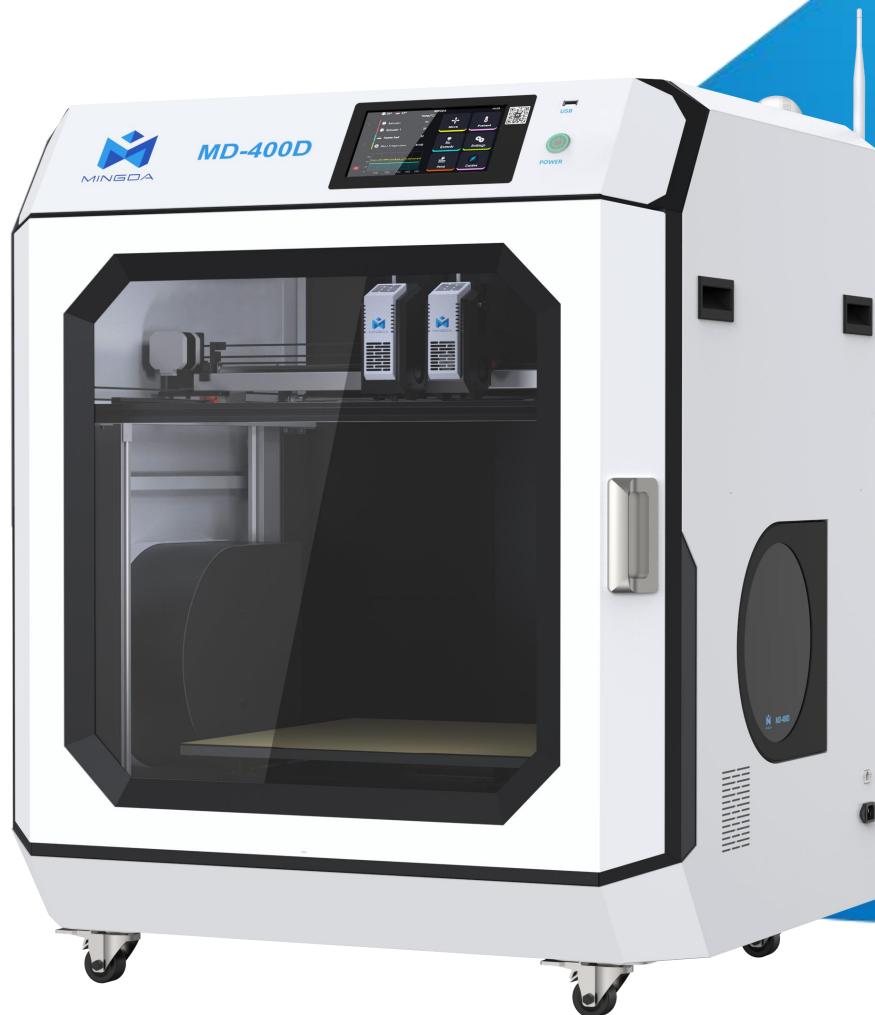




User Manual

[MD-400D 3D Printer]

*Please read this guide carefully before using this printer



Shenzhen MINGDA Technology Co.,Ltd

V1.2

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Thank you for choosing MINGDA Technology's products!

For the best experience, please read this user manual carefully and follow the instructions to operate the printer. If you encounter any issues with the printer, please contact us using the contact information provided at the end of this user manual. Our team is always ready to provide you with high-quality service.

To enhance your usage of our product, you can also learn how to use the printer through the following means:

1. User Manual: Relevant instructions and videos can be found on the included USB drive.
2. You can also visit our official website (www.3dmingda.com) for information on software, hardware, contact details, device instructions, device specifications, and warranty information, among other things.

Cautionary Notes

1. Please do not place the printer in environments with significant vibrations or instability, as machine shaking can affect the print quality.
2. Avoid touching the nozzle and heated bed while the printer is in operation to prevent potential burns from high temperatures, resulting in personal injury.
3. Refrain from moving the device during the printing process to prevent accidents and injuries.
4. Do not dismantle the equipment or alter circuit settings without authorization.
5. Avoid using the device in high-temperature or humid environments to prevent compromising device performance or creating safety hazards.
6. In case of an emergency, immediately cease using the device and power it off.

1. Overview

This manual provides instructions on the usage of the 3D printer, covering aspects such as an overall introduction to the device, operational procedures, maintenance, and care. The aim of this manual is to assist you in correctly using and maintaining the 3D printer, ensuring device performance and safety, extending the lifespan of the equipment, and enhancing print quality. We hope that you follow the requirements and recommendations outlined in this manual during usage, and maintain attention to and care for the equipment. Thank you for choosing our product, and we wish you a pleasant experience!

2. Device Introduction

Device Parameters

Basic Parameters	
Product Model	MD-400D
Machine Dimensions	690*790*910mm
Max. Build Dimensions	400*400*400mm
Duplicate Mode	400(2*200)*400*400 mm
Mirror Mode	320(2*160)*400*400 mm
Print Technology	Fused Deposition Modeling (FDM)
Rated Voltage	100-240V, 50/60Hz
Rated Power	800W
Ambient temperature	10°C-30°C / 50°F-86°F
Extruders	Two
Max. Nozzle Temperature	350°C
Max. Bed Temperature	110°C
Screen	7inch touch screen
Printing Method	USB Flash Disk / LAN Printing
Connection	USB Flash Disk / WIFI / Ethernet
Power Loss Recovery	Yes
Filament Detection	Yes
Fast Auto leveling	Yes
Camera	Yes
Fast Calibrate Offset	Yes
Supported Filament	Common filament: PLA, TPU, PETG; Engineering filament: PA-CF/GF, PET-CF/GF, HtPA-CF/GF, ABS-GF25, ABS-CF20, PA-GF25/CF25; Support filament: S-Mulit, S-HtPA, PVA, etc

Packing List



Tool List



U-disk



Nozzle*2



Diagonal pliers



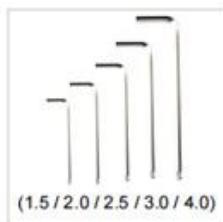
7mm Sleeve



Auxiliary
calibration board



Power cable



Allen wrench



Warning lights



Antenna

Note: The 400D is equipped with a hardened steel nozzle. If you frequently print high-temperature materials, long-term printing will cause wear to the nozzle. We recommend replacing the nozzle every 500 printing hours.

3. Operational Steps

Unboxing Inspection

Unpack and inspect the device for any damage. If there is any abnormality, please contact the manufacturer or dealer.

Device Installation

1. Install the warning light.



Red light: Indicates that the printer is in an emergency stop or fault state, requiring immediate attention or repair by the user. For example, overload, short circuit, or popup of error on the screen.

Yellow light: Indicates that the printer is in a warning or abnormal state, requiring user attention or intervention. For example, insufficient filament, or printing paused.

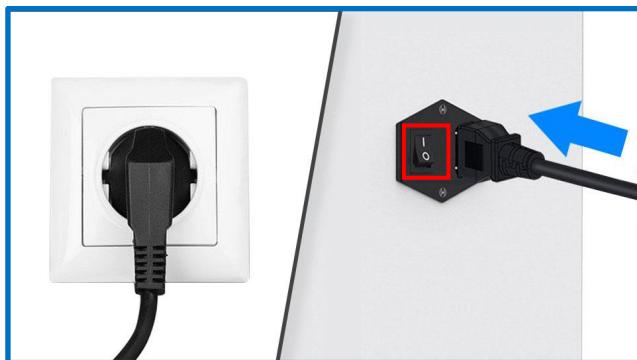
2. Install the antenna.



3. Power on

Please ensure that the print platform is clear before connecting the power and check if the device is connected properly.

In a good ventilation and dry environment



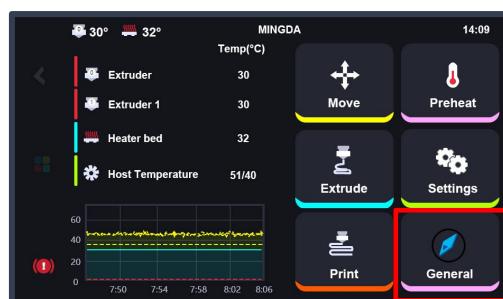
Insert a power socket, Press the switch



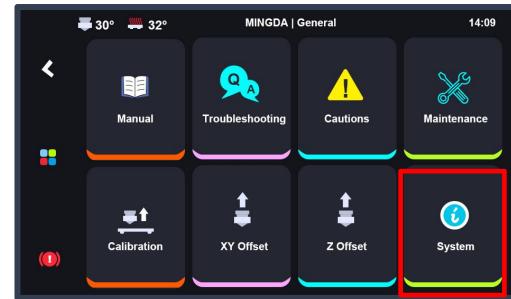
Press the power to turn on the printer

4. Power off

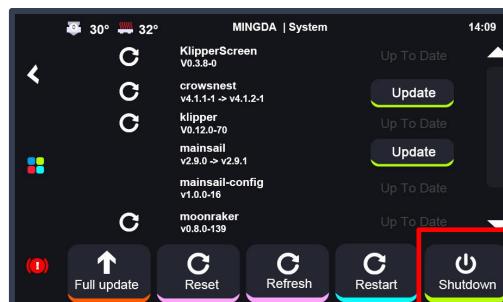
**When you turn off the printer, please don't press the power directly!
Click "General-System-Shutdown-Printer" to turn off the printer**



Click the "General" 



Click the "System" 

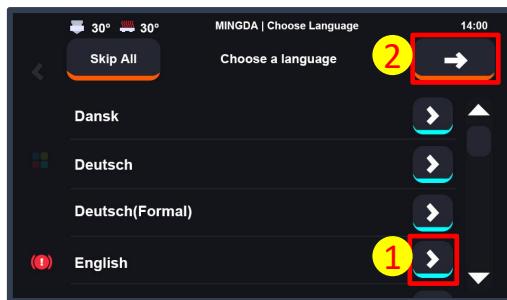


Click the "Shutdown" 

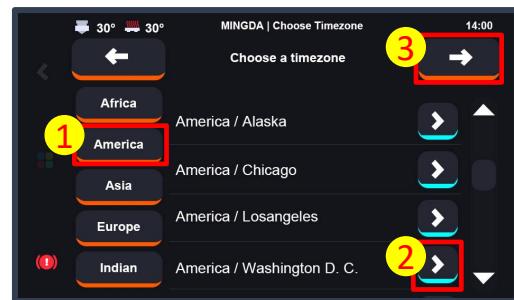
Startup Configuration

(For the first startup, it will enter the configuration wizard.)

1. Select Language and Time Zone

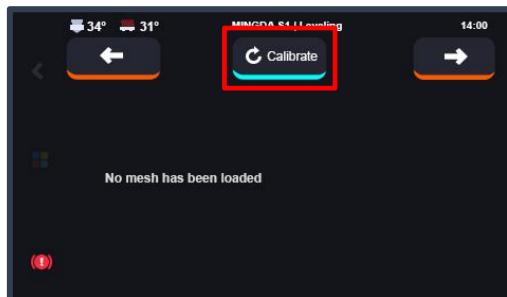


Click to choose the language, and click to proceed to the next step.

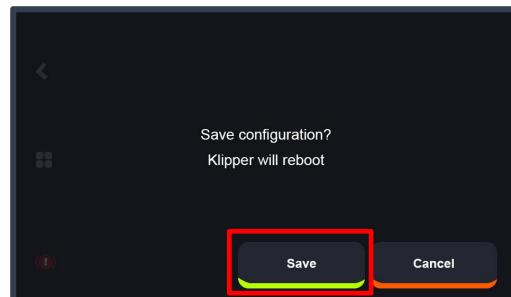


Select timezone, click to confirm, and click to next step.
 [Time zone settings will take effect after connecting to Wi-Fi and restarting the system.]

2. Auto Bed Leveling



Click to start auto-leveling, which will take approximately 3 minutes

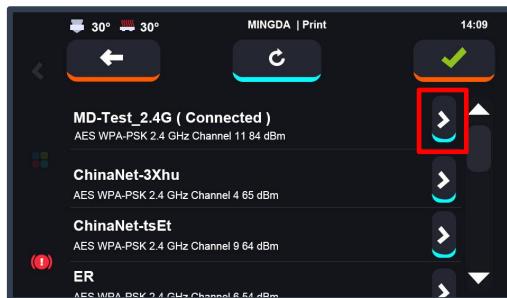


Click to save the value, the printer will reboot automatically.

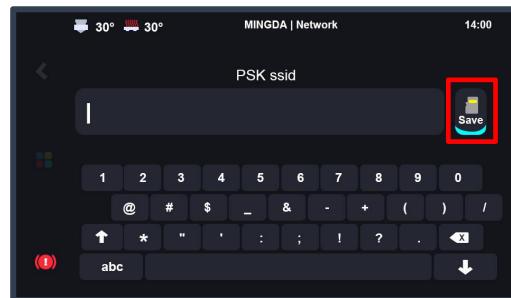
3. Wi-Fi



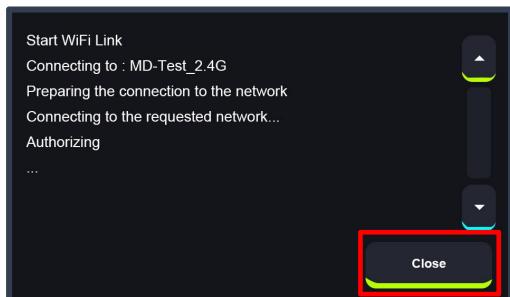
Note: If you find that the printer cannot detect your WiFi signal, you can click to skip this step for now. After completing the startup wizard, move the printer to a location closer to a stronger signal source, and then reconnect to WiFi.



Select the WiFi and click
 (If your WiFi cannot be displayed for more than 20s, please click to refresh)



Enter the WiFi password and click

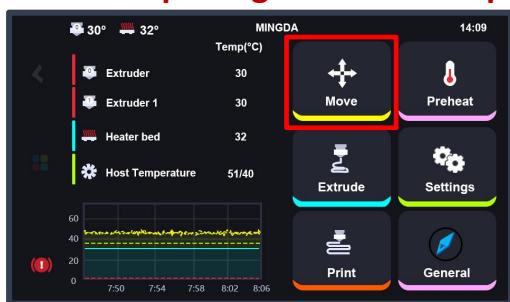


Once the connection is successful, click the Close .



Upon successful connection, click the checkmark in the upper right corner to enter the main interface of the machine. If you do not need to connect to the network, you can also click the checkmark to skip this step.

After completing the above steps, Home all Axis

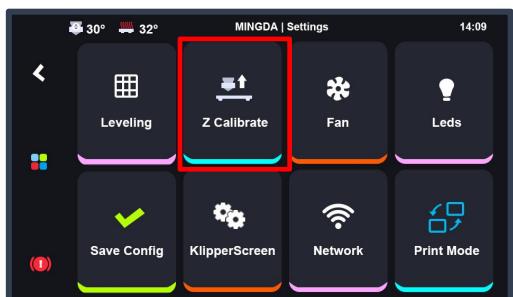


Click the "Move" 

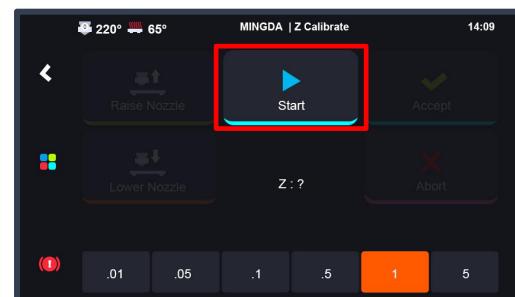


Click the "Home" 

Z Calibrate



Click "Setting-Z Calibrate" 



Click "Start"  , wait Z axis calibrating and click "Accept" and comfirm



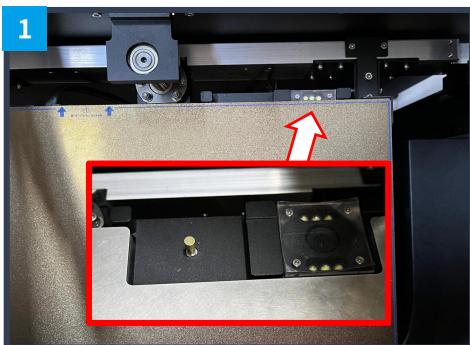
Put an A4 paper between the nozzle and heated bed.



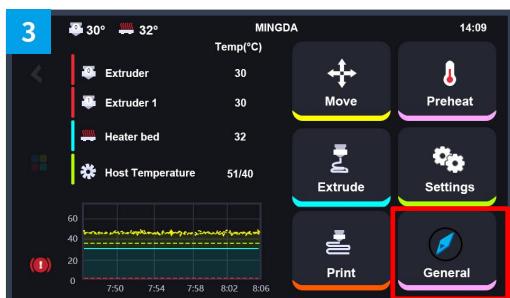
Manually move the A4 paper while adjusting the  and  on the screen until the distance of the nozzle and plate is the thickness of the A4 paper. Click the  to confirm.

Extruder Offset Calibration

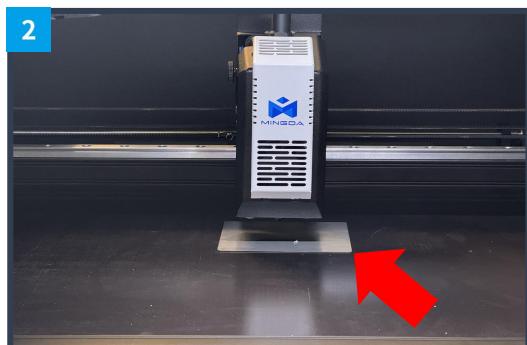
XY Axis Offset Calibration



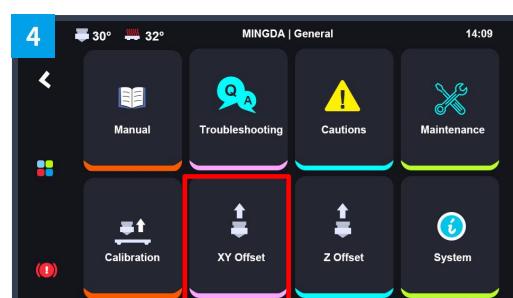
Remove the PEI sheet first, the camera was covered with PEI.



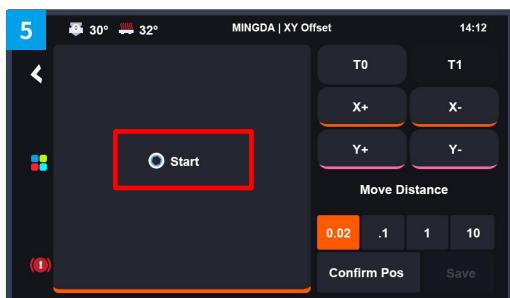
Click the "General" 



Put the Auxiliary calibration board in the center of platform



Click "XY Offset" 



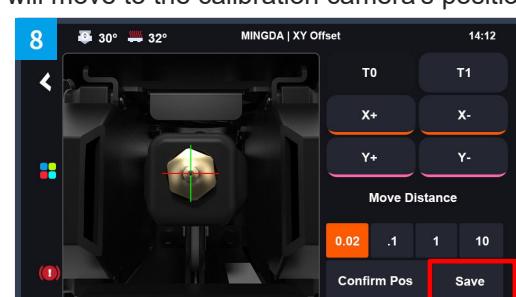
Click the "Start", and the left extruder will move to the calibration camera's position.



Fine-tune the XY axis to align the nozzle center of the left extruder with the origin of the XY axis. Click "Confirm Pos" to confirm the position of the left extruder. Meanwhile, the right extruder will move to the calibration camera's position.



Fine-tune the XY axis to align the nozzle center of the right extruder with the origin of the XY axis. Click "Confirm Pos" again to confirm the position of the right extruder.

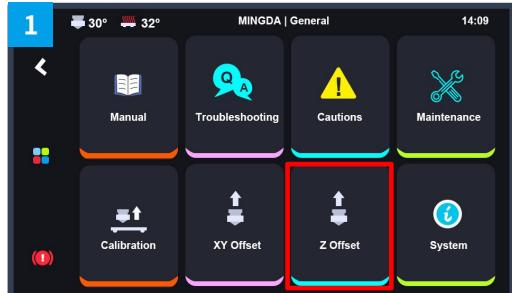


Click the "Save" to save the XY offset of the right extruder relative to the left extruder.

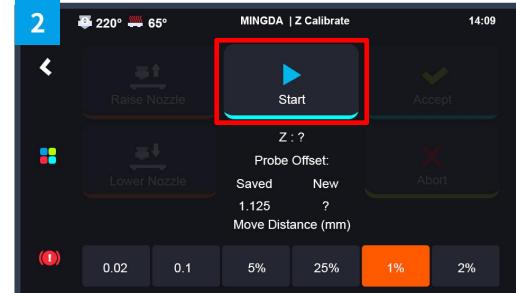
After finishing, don't put the PEI Sheet back to platform immediately. Please finish the Z offset first.

Z Axis Offset Calibration

Tips: Wipe the nozzle clean before calibration to avoid any interference during the process.



Click "Z Offset" 



2.Click "Start" to start Z offset automatically



3.After finishing, click "Accept"  and confirm

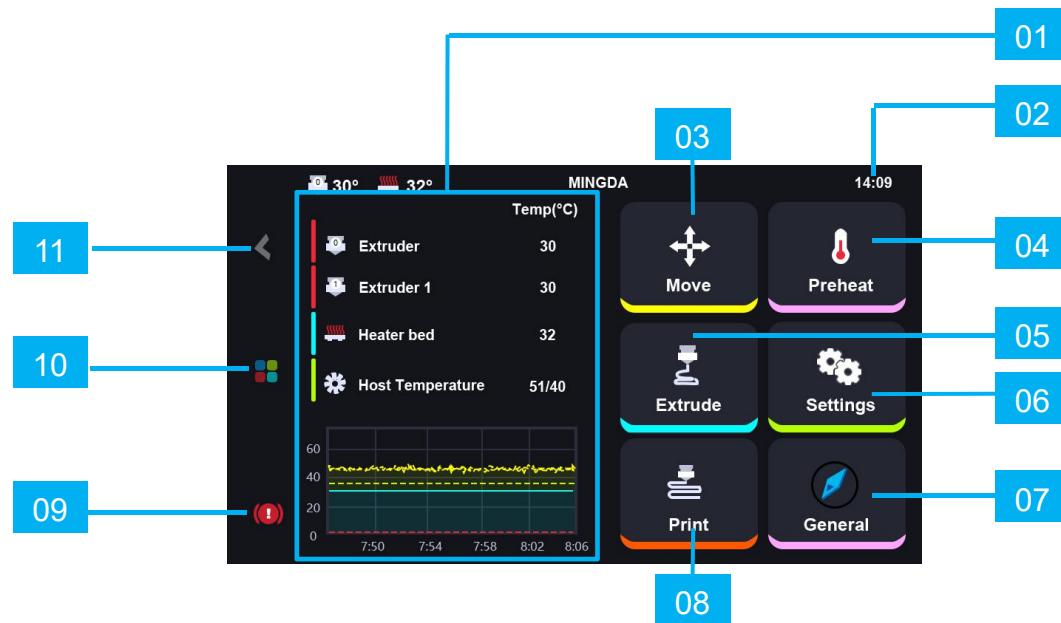


While calibrating the Z-axis offset, the extruder will move towards the sensor located the left side of the camera.

(Take out the Auxiliary calibration board, put the PEI sheet back to the heated bed.)

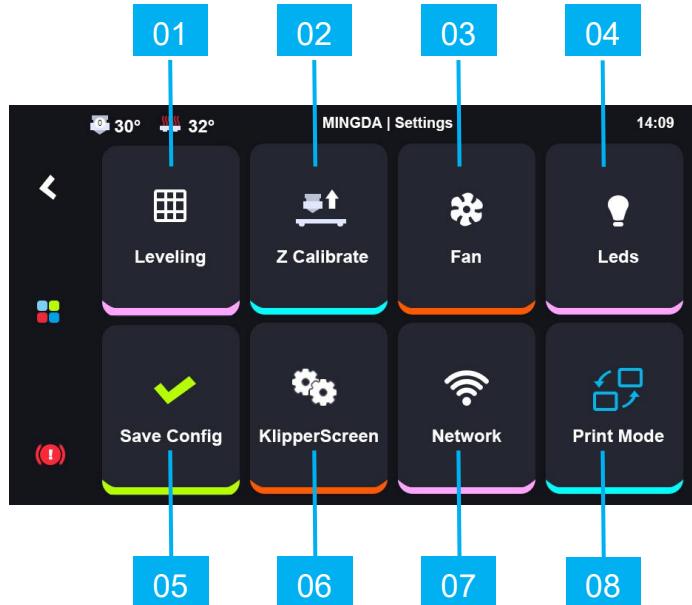
Safety Reminder: To ensure that the nozzle correctly lands on the sensor, please calibrate the XY axis before calibrating the Z axis. While the extruder is moving downward, pay close attention to its movement. If there is excessive deviation or signs of extreme extrusion pressure, click the return in the top left corner of the screen or the emergency stop  in the bottom left corner to stop the calibration. Contact customer support or refer to official videos for troubleshooting solutions.

Introduction of machine operation page



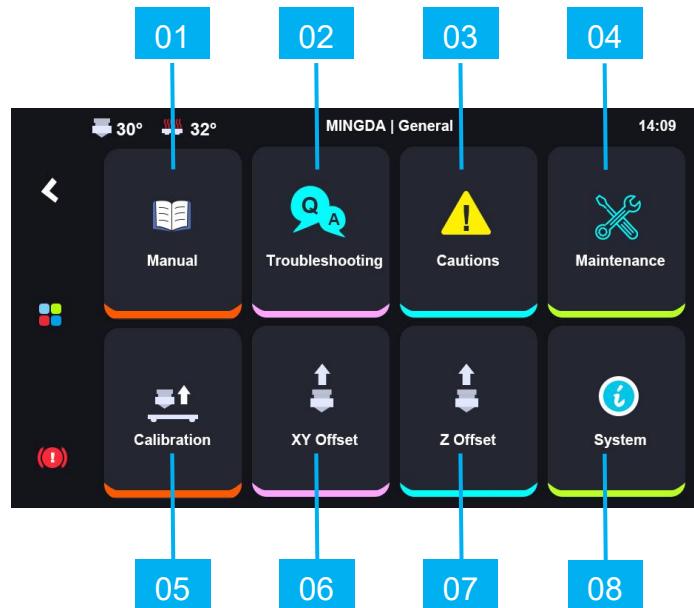
	Primary interface	Explain
01	Temperature	Temperature display area.
02	Time	Time display.
03	Move	Adjust the value of the XYZ axis.
04	Preheat	Pre-set nozzle & hotbed's temperature.
05	Extrude	To unload or load filament.
06	Settings	Printer's printing value adjustment.
07	General	More printer setting.
08	Print	Start printing.
09	Stop	Emergency stop .
10	Homepage	Return to the main page.
11	Return	Return to the previous page.

Settings:



	Secondary interface	Explain
01	Leveling	Auto-leveling
02	Z Calibrate	Calibrate Z offset
03	Fan	Cooling fan adjustment
04	Leds	Turn on/off Light
05	Save config	To save your configuration
06	KlipperScreen	Includes some basic settings such as time, language, screen timeout, notification sound toggle, and automatic shutdown after printing completion.
07	Network	To connect Wi-Fi
08	Print Mode	Select Copy Mirror or Autonomous Mode

General:



	Secondary interface	Explain
01	Manual	Manual
02	Troubleshooting	Troubleshooting
03	Cautions	Cautions
04	Maintenance	Maintenance
05	Calibration	Contains some basic test models, which can be selected to test the corresponding functions.
06	XY Offset	Calibrate XY axis
07	Z Offset	Calibrate Z axis
08	System	Check next page

Printing Interface:



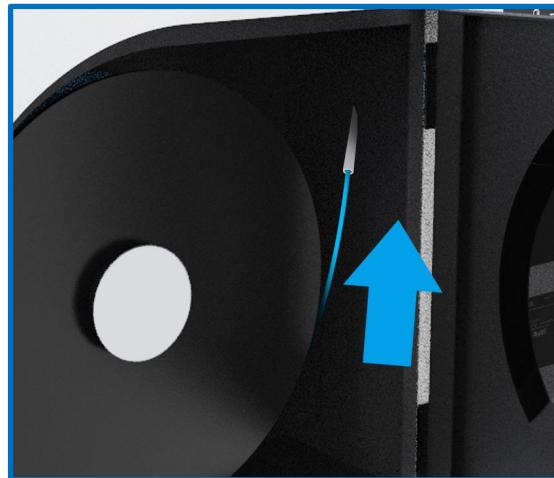
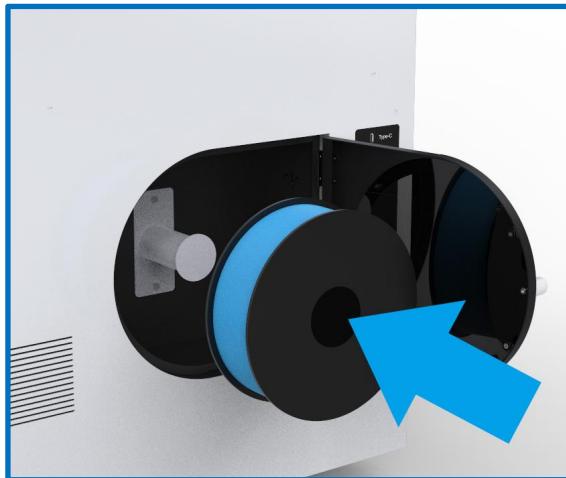
Figure 1

	Secondry interface	Explain
01	Cancel	Stop printing
02	Pause	Pause printing
03	Fine Tuning	Adjust Z-offset, Printing Speed, Printing Flow
04	Settings	Set up your Network, Extrude, light etc. [Please refer to Figure 1.]

Insert the filament

(Take PLA filament as an example)

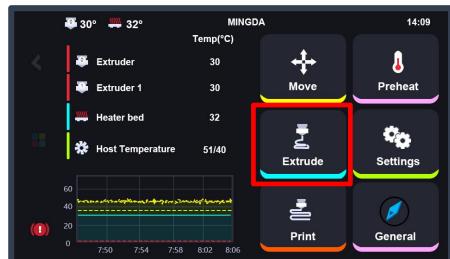
1. Hang the filament on the rack (Pay attention to the direction of feeding), insert the filament from one end of the conduit until they come out at the other end.



2. You can pull out the guide tube upwards directly, pull the handle of the inlet port, insert the Filament into the extruder.



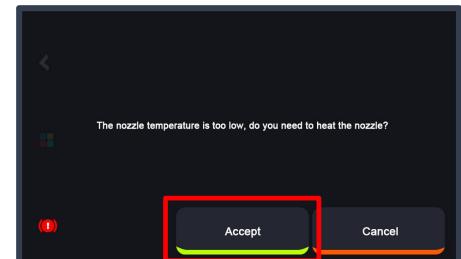
3. Load Filament for the Left and Right Extruders



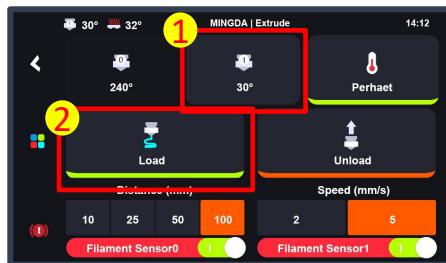
Click the "Extrude" 



Select the first extruder "T0"  , Click '100mm', click on the feed speed '5mm/s', then click 'load'  to feed out the filament.



If the temperature is low, it will show the pop-up to ask if you want to heat up automatically, click "Accept", it will start to heat up.



Switch to the second extruder "T1"  , Repeat the steps of the first extruder.

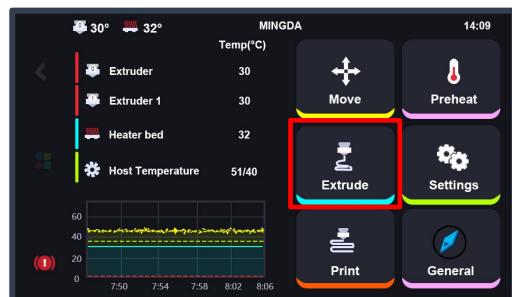


After finishing loading filament, please click the first extruder again, otherwise may result in collisions during subsequent movement commands for the extruder.

4. Once the filament feeding is completed, insert the tube into the extruder.



How to unload filament



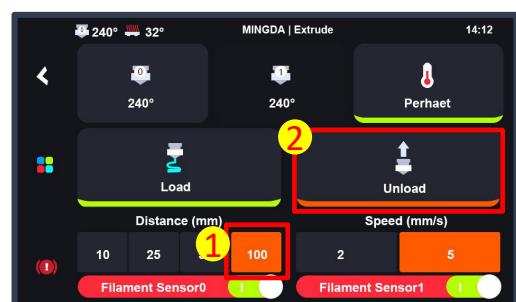
Click the "Extrude" 



Heat the hotend which was wanted to unload filament up to 240°C.
T0 is left hotend, T1 is right hotend.



Using the T0 hot end as an example, select T0 first. then set "Distance mm" as 25, "Speed mm/s" as 5, and click "load" once.

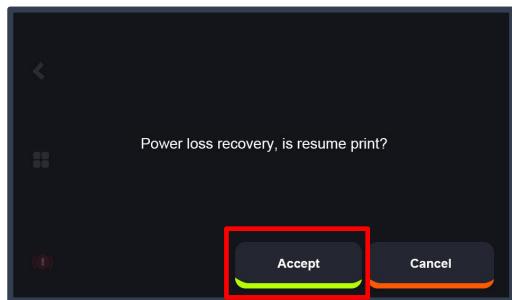


After finishing, quickly set "Distance mm" to 100, and click "unload" once. Wait for 6-7 seconds, and the filament can be taken out from the extruder.



Resume printing after power failure

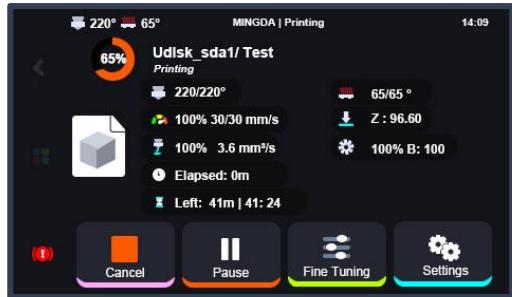
When the printer is in the midst of the printing process, power outages may occur at times. This printer is equipped with a resume printing function to assist you in resuming the print from the point of interruption.



After power is restored, the printer will prompt whether to resume printing.



After clicking 'Confirm,' the printer will begin the preheating process on the Picture 2, continuing until the specified temperature is reached.



After reaching the specified temperature, the printer will automatically transition to the printing interface.

Slicing Software Installation and Usage

Note: Copy the data from the USB drive to your computer for backup.

Our company's slicing software is designed to work seamlessly with our machines to meet customer requirements.

Installation:

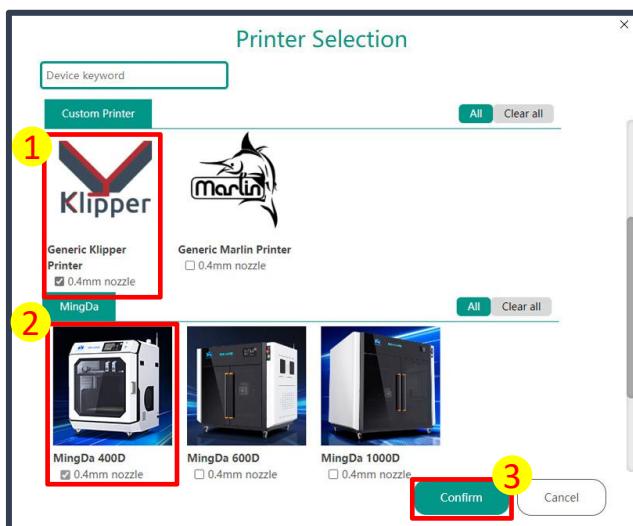
Search "<http://www.3dmingda.com/download>" in the Browser.

Download "**MINGDA Orca Slicer**" in this page

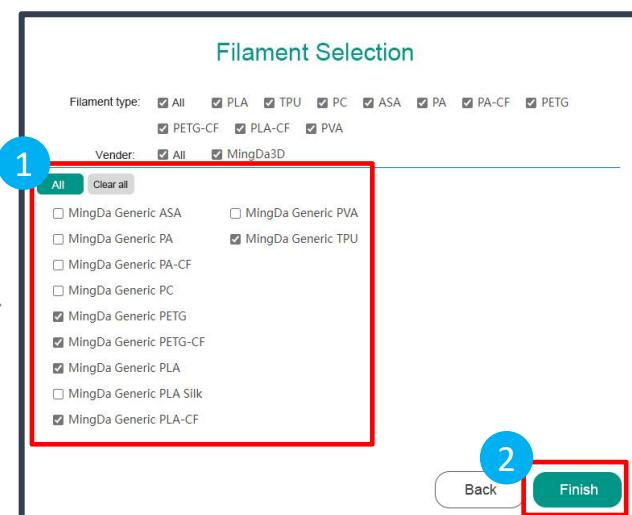
Configuration:



Upon the first run of Mingda OrcaSlicer, you will enter the configuration wizard.



Select-Generic Klipper Printer, Select MingDa MD-400D, Click "Confirm".

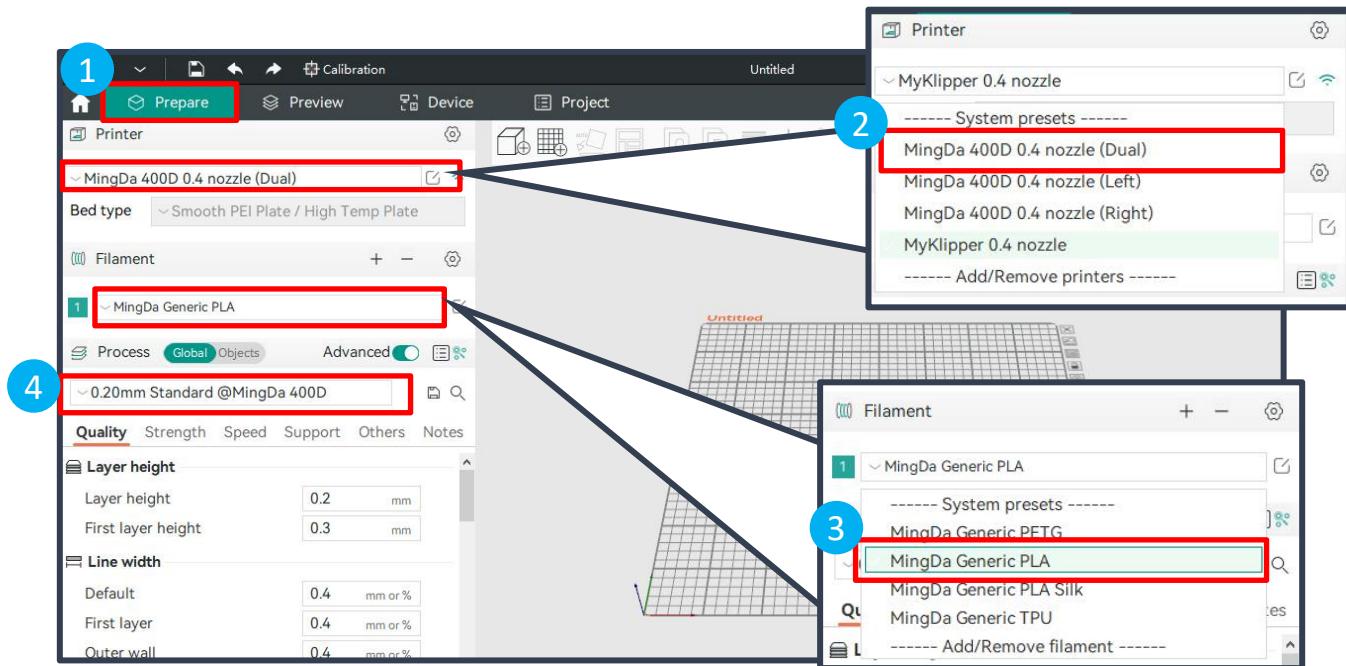


Select the desired filament type.

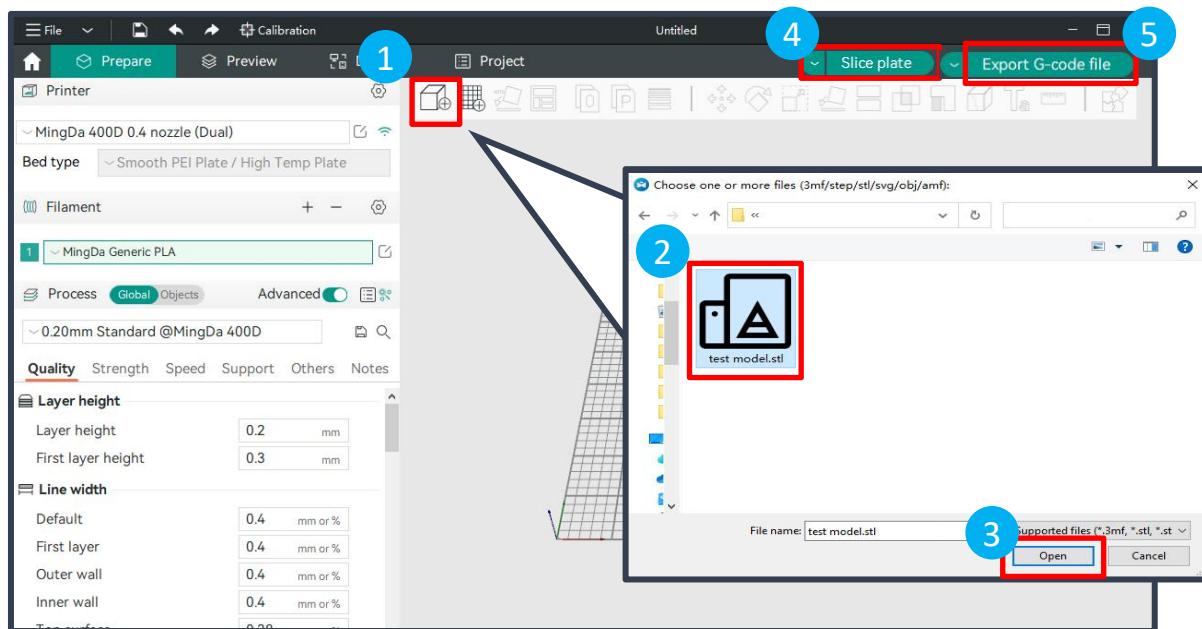
Usage

Click the "Prepare" .

Prepare



Choose the printer model and select the print material settings.



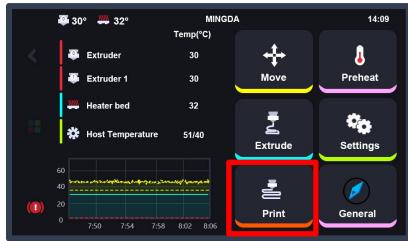
Load the STL model, adjust the print parameters. Once you confirm everything is correct, click the "Slice plate" to slice the model.

Finally, click "Export G-code file" to save the file.

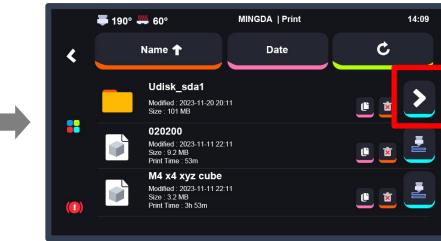
Printing



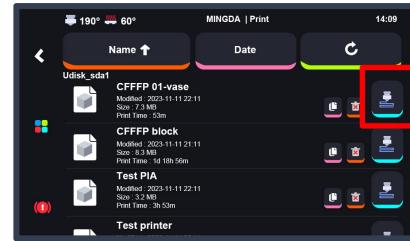
Local Printing



Insert the U-disk, then click the "Print".



Find the folder and Click the arrow on the right

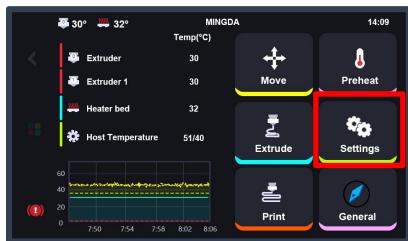


Select the test gcode which was preset in the U-disk.

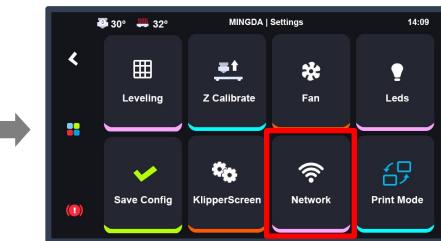


LAN Printing

Ensure that the printer and the computer host are on the same local network.



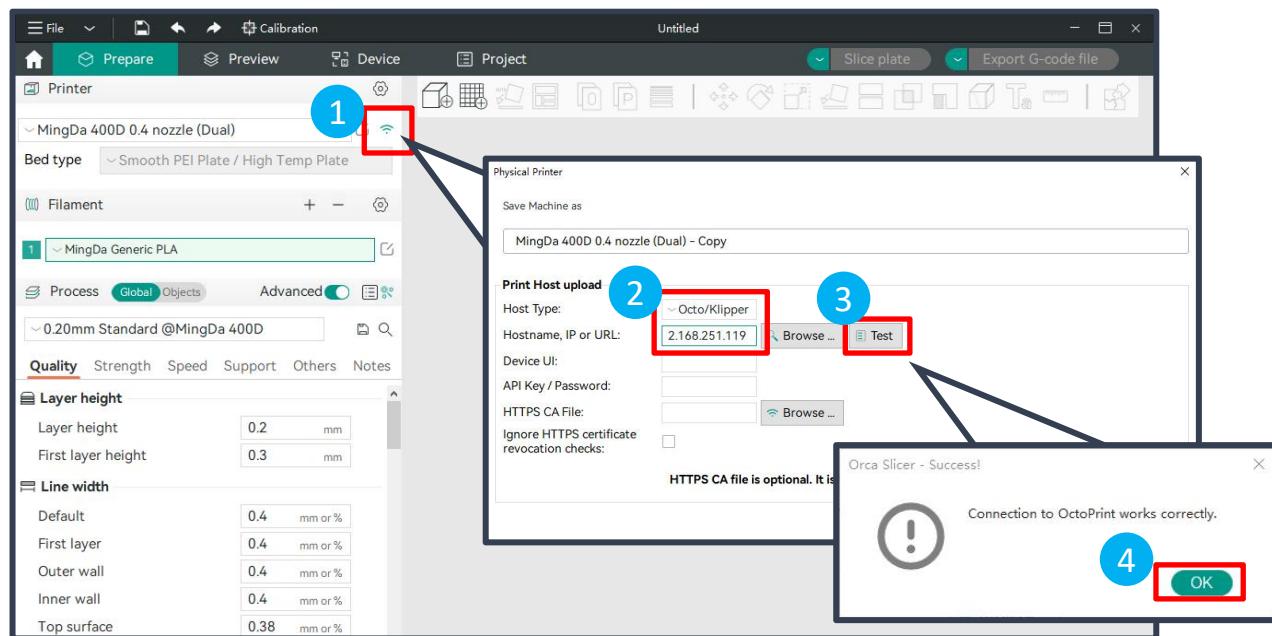
Click "Settings" to enter the settings page.



Click "Network" to enter the network page.

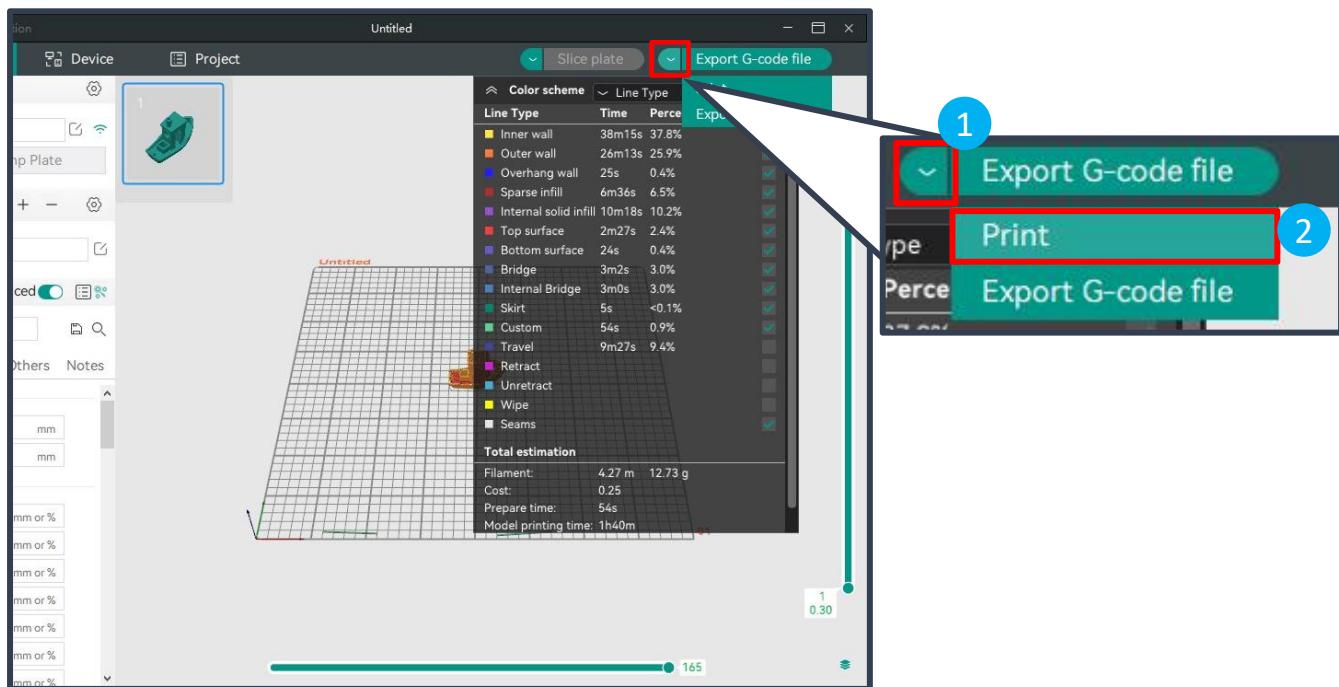


Check the printer's IP address.

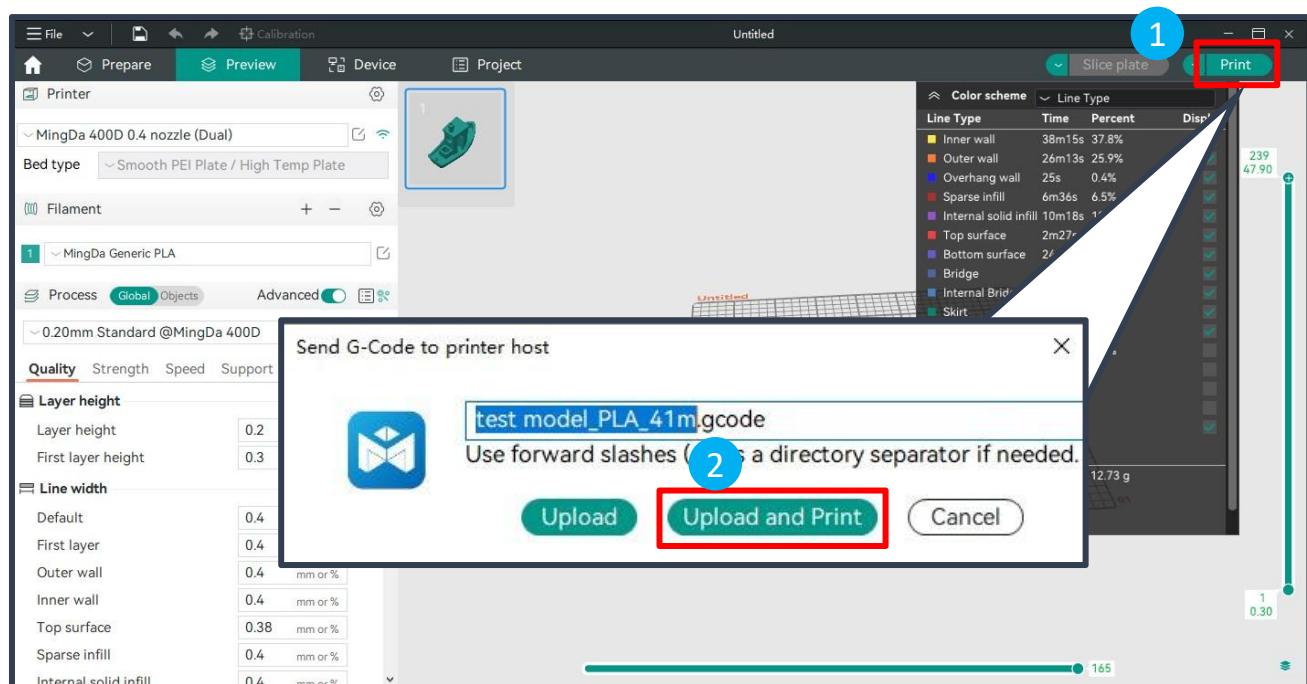


In Mingda OrcaSlicer, click the WiFi icon, select Host type as Octo/Klipper, enter the printer's IP address, and press Enter. Click the "Test" to verify the successful connection.

File Transfer:



Click the dropdown icon  in the top right corner , select "Print."

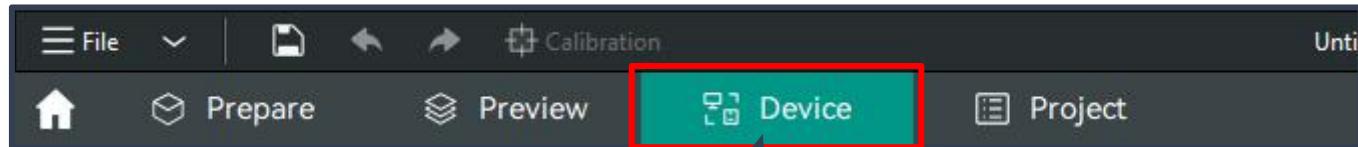


Click "Print" and choose "Upload and Print."

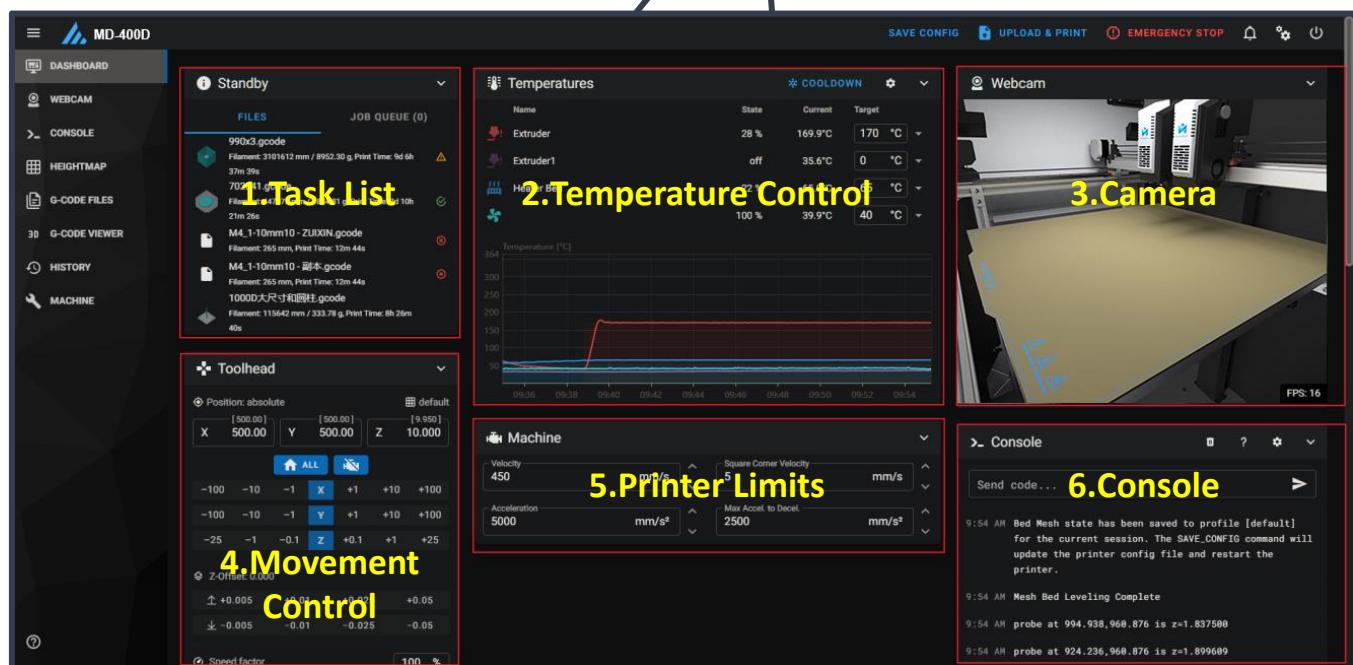
Device Connection

After successful connection, click on "Device"

 Device



Enter the control interface below the diagram



1. Task List: Drag G-code files to this task list for printing.

2. Temperature Control: Displays machine temperature changes and allows pre-setting nozzle and bed temperatures.

3. Camera: Monitors the printing status.

4. Movement Control: Controls the movement of each axis and allows compensation settings after leveling.

5. Printer Limits: Controls the maximum acceleration of the printer, usually doesn't need to be changed.

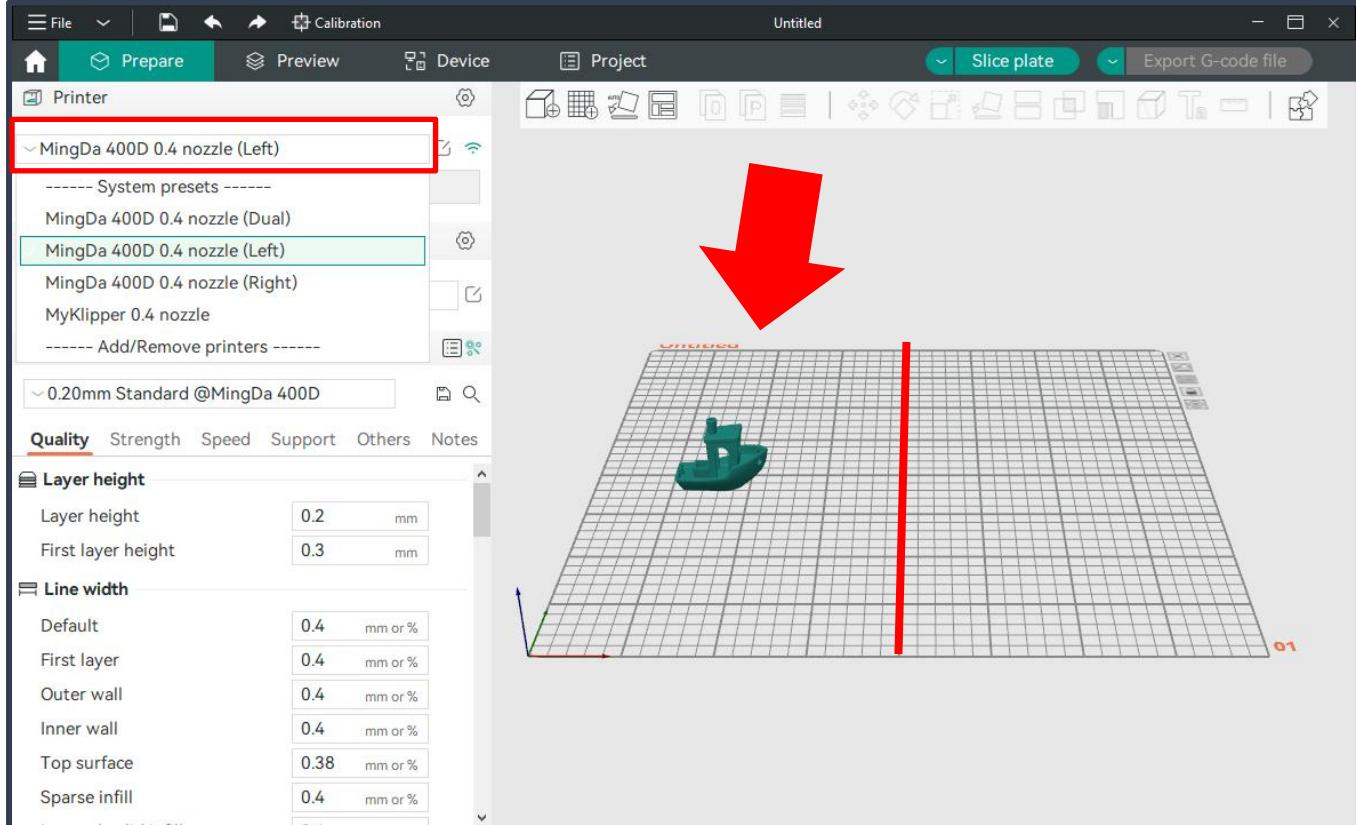
6. Console: Sends G-code commands to run the machine and displays error output.

Print Mode

Copy Mode

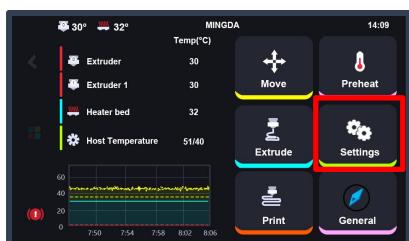
Print Size: X * Y * Z: (2*200) * 400 * 400mm

In duplication mode, select the [MingDa 400D with a 0.4mm nozzle \(Left\)](#) for slicing. The models should be placed on the left side and not exceed the centerline of the platform, as shown in the image.

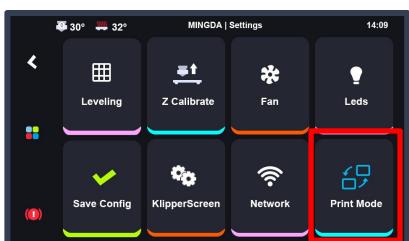


In the printer interface:

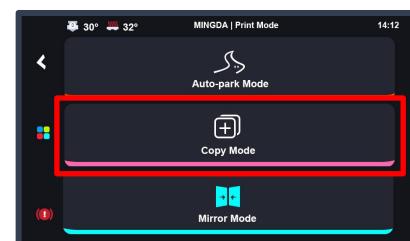
Note: After the printer restarts, it will default to Auto-park Mode.



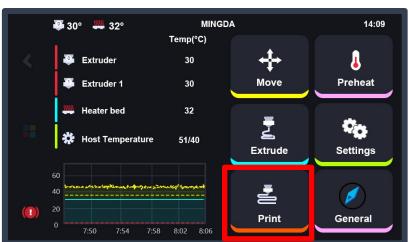
Click the "Settings" on the screen.



Choose "Print Mode."



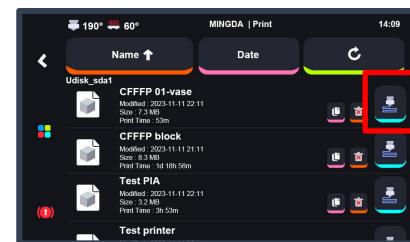
Select "Copy Mode." A message will indicate a successful switch.



Return to the main interface, select "Print."



Insert the U-disk.

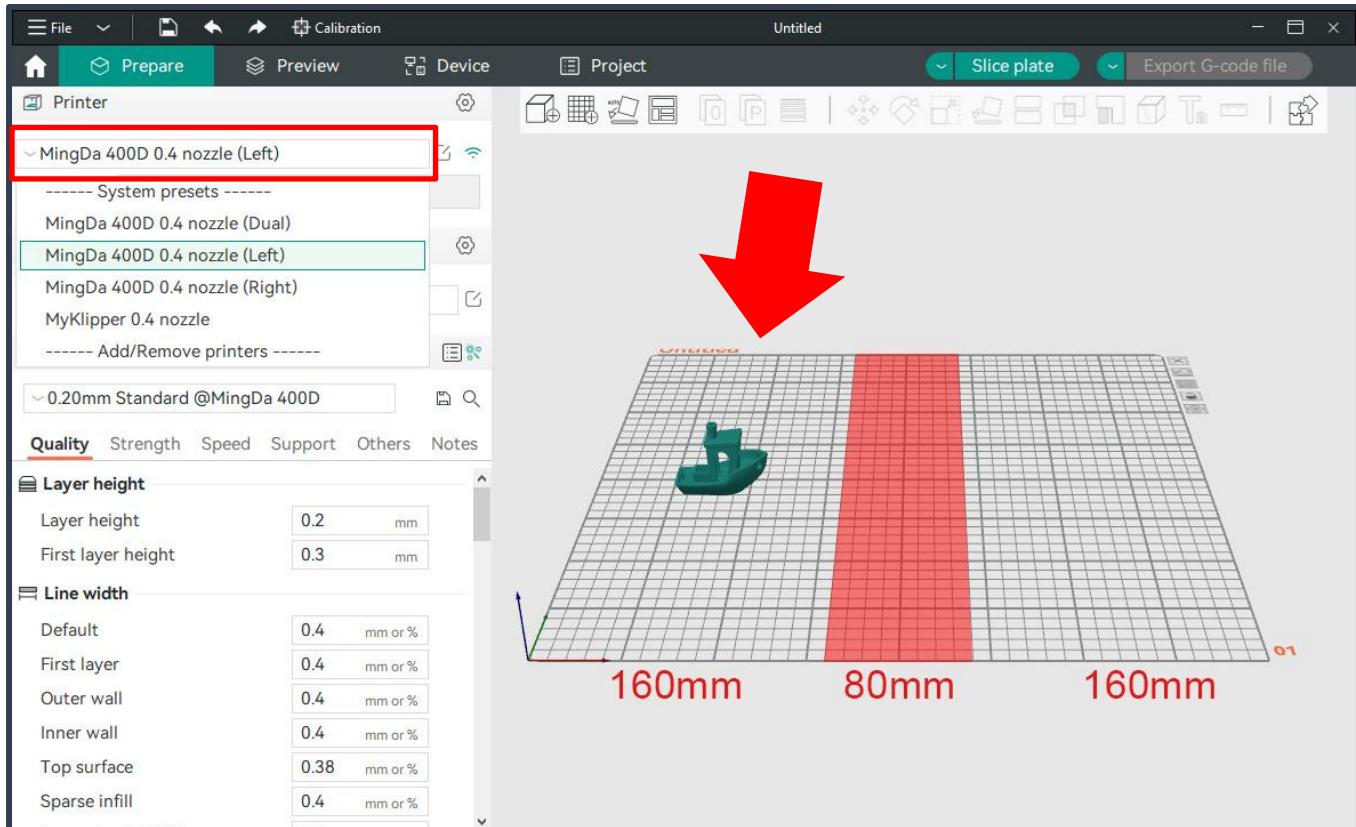


Choose the print file for printing.

Mirror Mode

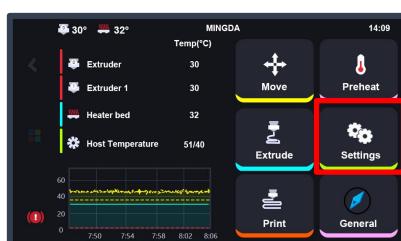
Print Size: X * Y * Z: (2*160) * 400 * 400mm

In mirror mode, select the [MingDa 400D 0.4mm nozzle \(Left\)](#) for slicing. Place the models on the left side, ensuring they do not exceed the red area on the platform in the image to prevent nozzle collisions.

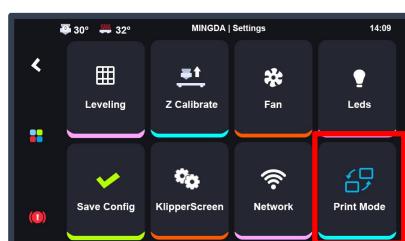


In the printer interface:

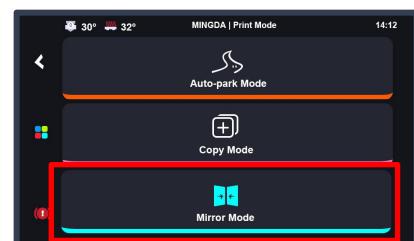
Note: After the printer restarts, it will default to Auto-park Mode.



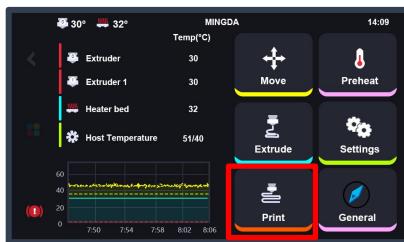
Click the "Settings" on the screen.



Choose "Print Mode."



Select "Mirror Mode." A message will indicate a successful switch.



Return to the main interface, select "Print."



Insert the U-disk.

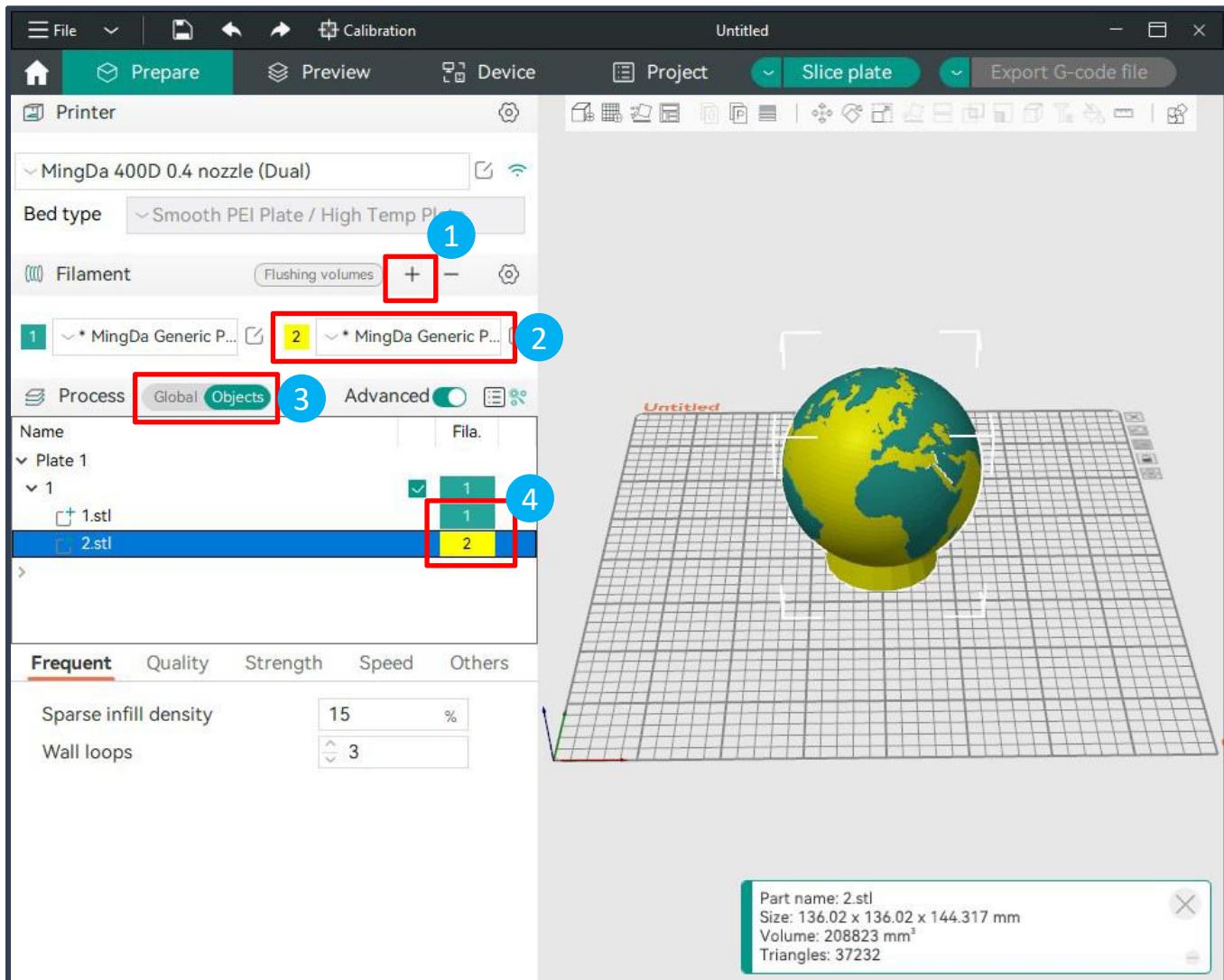


Choose the print file for printing.

Print Two Colors

Printing size: 400 * 400 * 400mm

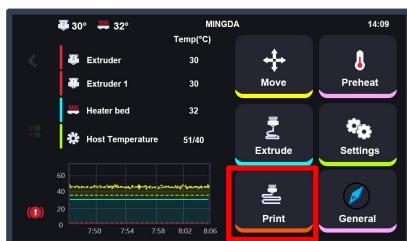
Selecting the [MINGDA 400D 0.4 nozzle \(Dual\)](#)



1. In the filaments column on the left side of the interface, click "+" to add another filament.
2. Choose and modify the filament information.
3. In the Process section, click to switch to the "Objects" option.
4. Click on the color box next to the STL file to select the desired filament.

In the printer interface:

Note: When printing dual-color models, the printer will automatically switch to Auto-park Mode.



By default, it is in "Auto-park Mode"; select "Print."



Insert the U-disk.

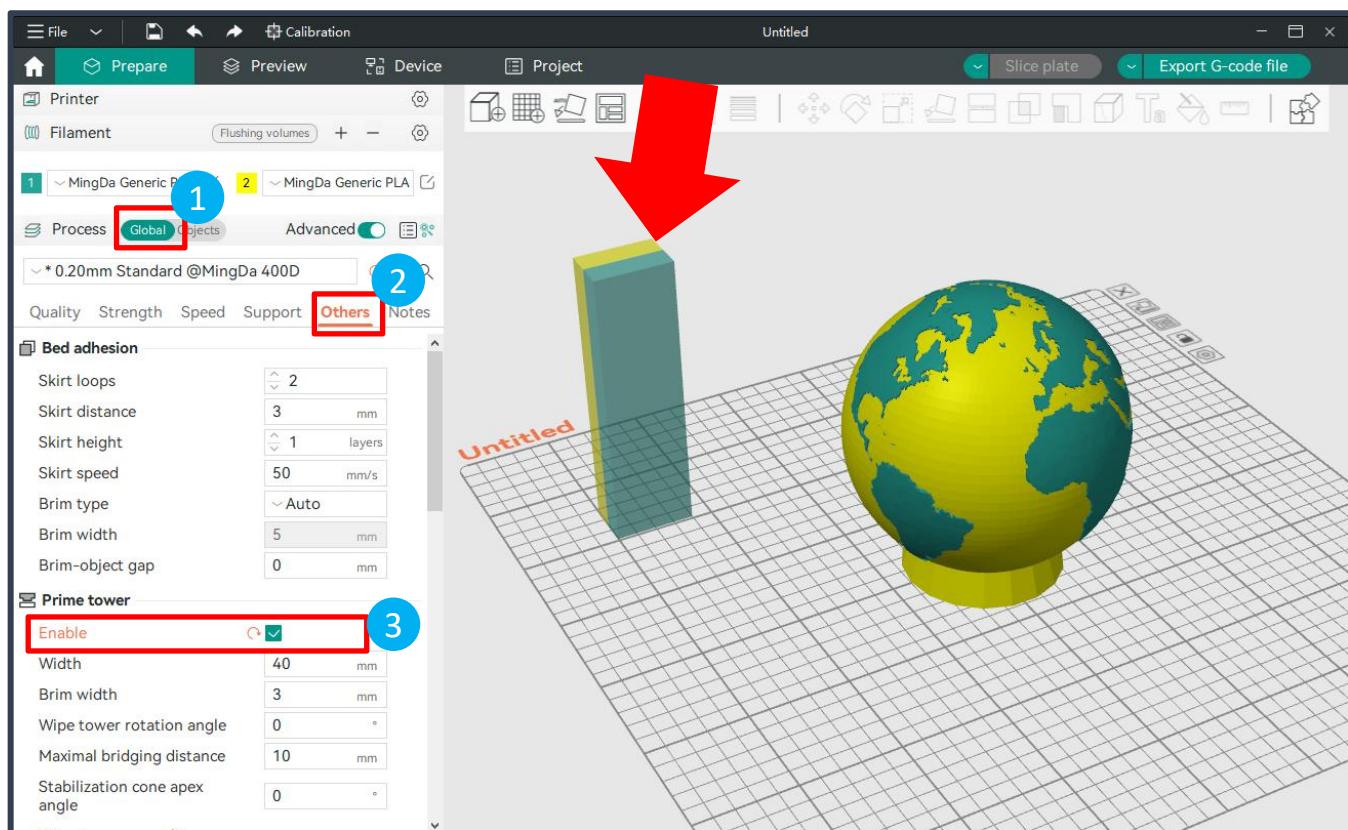


Choose the print file for printing.

Double extrusion: Start the Prime tower

Because there is always one printer in standby mode during the printing process, it is easy to cause defects such as wire drawing and material leakage. Prime tower can solve this problem, the extruder will print a prime tower before each layer printing. Any material leakage will be printed on the tower, effectively avoiding the phenomenon of material leakage when replacing the extruder.

If you want to print the following two modes, we recommend adding this option to your Gcode.



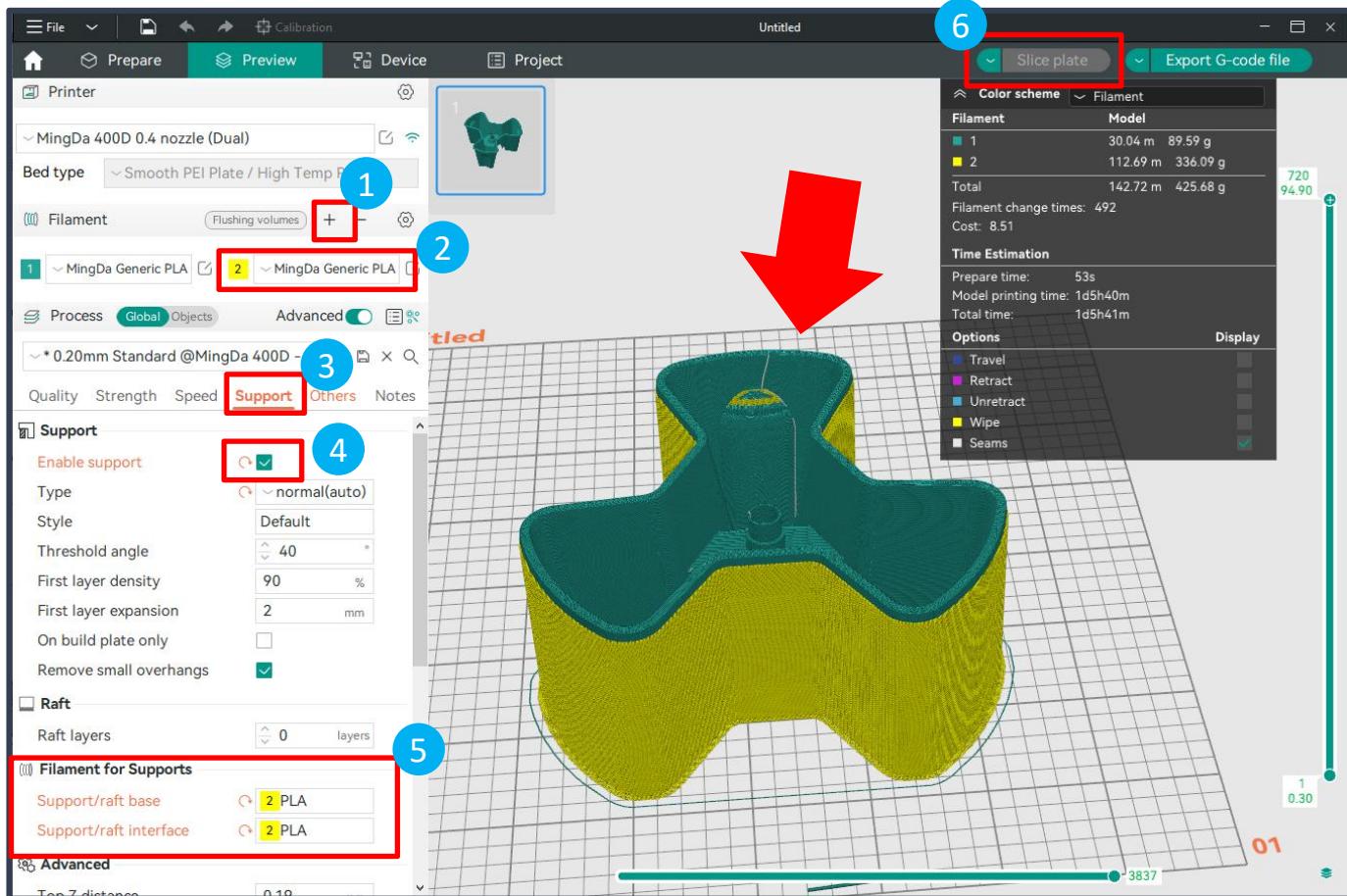
1. Select the "Global" section.
2. Select the "Others" section.
3. Check the "Enable" option in the "Prime tower" settings.

Note: The printing position of the Prime tower cannot coincide with the model

Printing Support

Printing size: 400 * 400 * 400mm

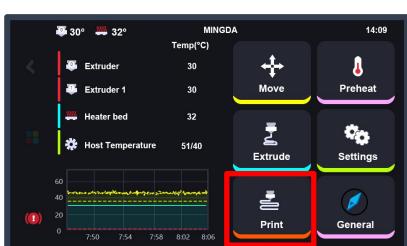
Selecting the [MingDa 400D 0.4 nozzle \(Dual\)](#)



1. On the left side of the interface, in the filaments column, click "+" to add another filament.
2. Choose and modify the filament information.
3. Then, select the "Support" section.
4. Check the "Enable support" option.
5. In the "Filament for Supports" option, choose the filament needed for supports.
6. Click "Slice plate" to preview.

In the printer interface:

Note: When printing models with supports, the printer will automatically switch to Auto-park Mode.



By default, it is in "Auto-park Mode"; select "Print."

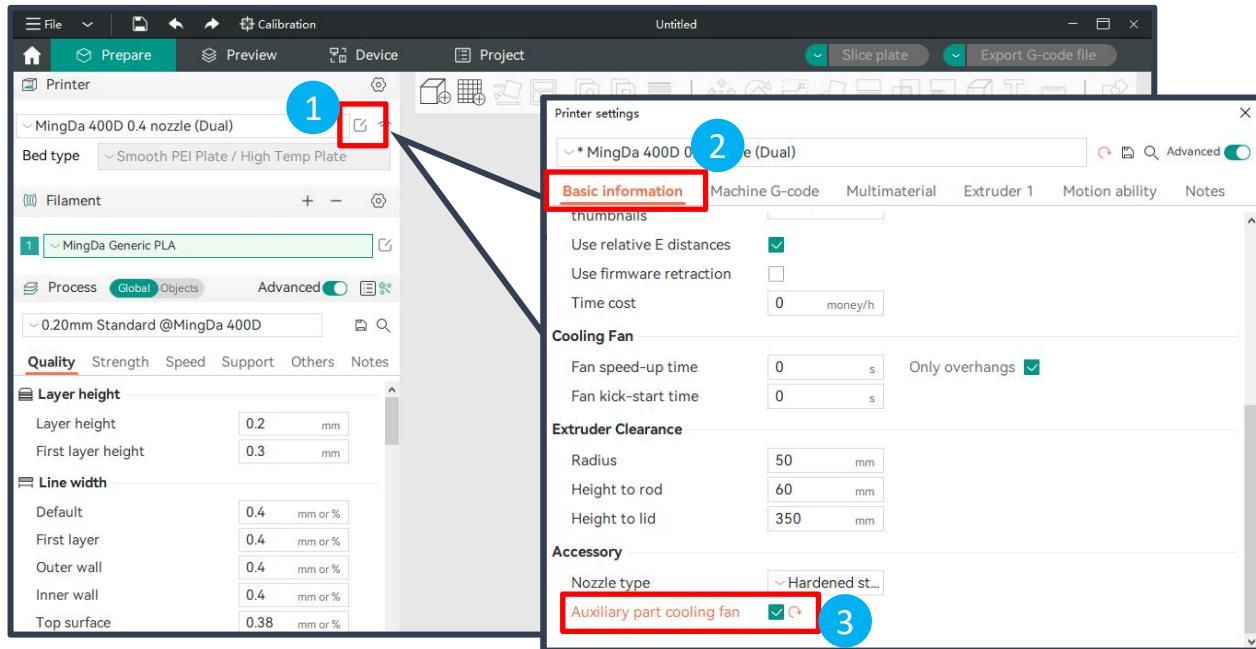


Insert the U-disk.

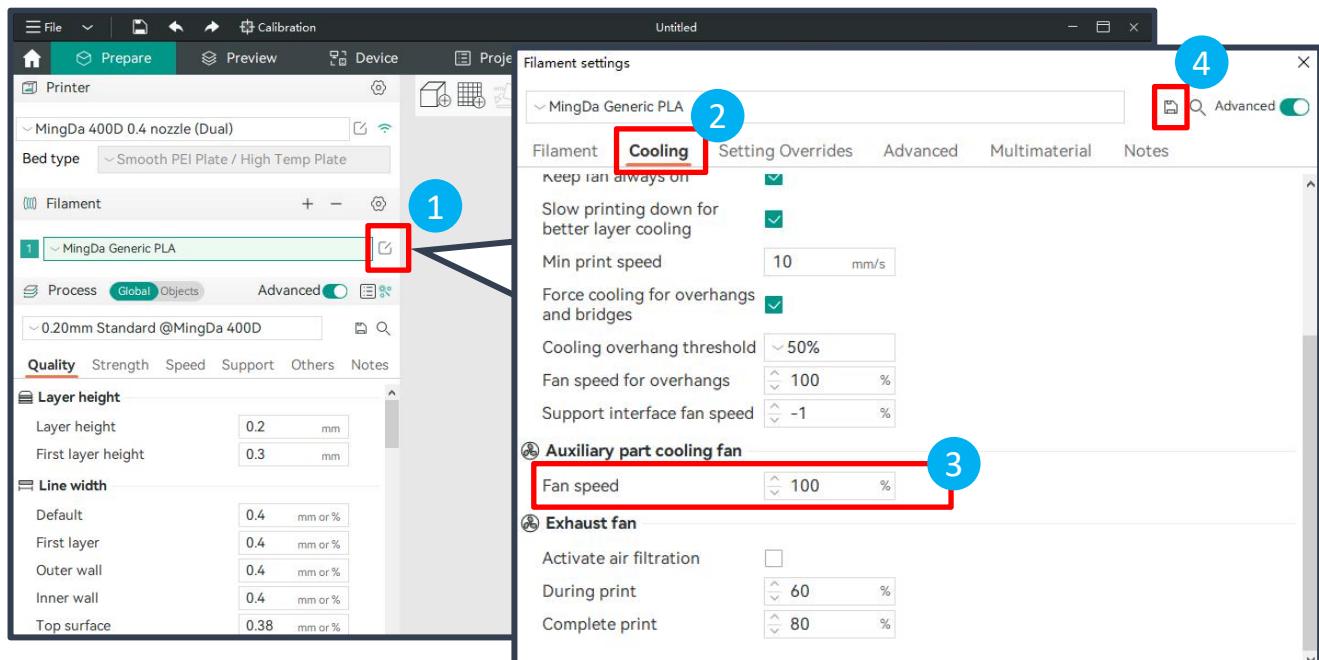


Choose the print file for printing.

Printing



Open the settings interface in the Printer tab, and check 'Auxiliary Part Cooling Fan' under "Basic Information-Accessory".



Due to the different feature of filament, if you do not need an auxiliary fan or need to adjust the fan speed, please go to the Filament tab, open the settings interface, and choose Cooling-Auxiliary Part Cooling Fan. Adjust the Fan Speed as needed.

4. Maintenance and Care

Cleaning the Nozzle: After printing is complete, promptly clean the residue on the nozzle using a tool and taking advantage of the nozzle's residual heat. Avoid touching the nozzle directly with your hands to prevent burns.

Replacing Filaments: Timely replace filaments based on the type and actual usage. It is recommended to use filaments recommended by the manufacturer. Seal filament not in use for an extended period, as excessive exposure to moisture in the air can make the filament brittle.

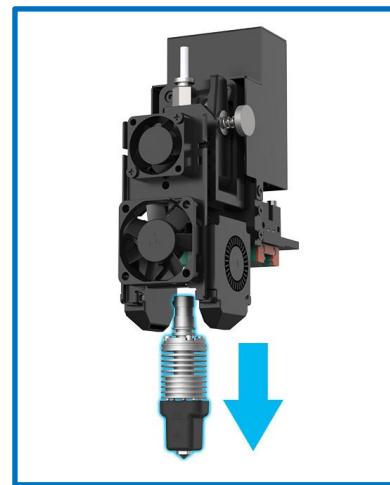
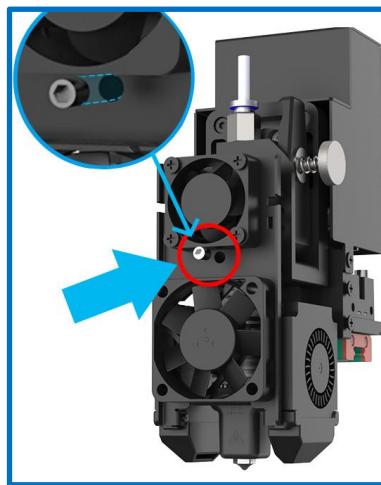
Checking the Platform: Regularly check if the print platform is flat. If there is deformation or damage, contact the manufacturer or dealer for repairs.

Regular Lubrication: Periodically apply lubricating oil to the lead screw and guide rails. During the operation of the printer, friction between various parts occurs. Without proper lubrication, it can lead to wear and damage.

Software Updates: Regularly update the printing software to improve print quality and efficiency.

Replace the hot end

1. Remove the screws on both sides of the print head cover (a total of 4);
2. Unplug the connecting terminal on the hot end and loosen the top wire that fixes the hot end;
3. Remove the entire hot end;
4. Insert the hot end that needs to be replaced, tighten the top screw when it is in place, and then plug in the connecting terminal.
5. Install the print head cover and circuit board protective cover



Note: After replacing the hot end, it is necessary to recheck the deviation values of the left and right heads. If the deviation is too large, it needs to be recalibrated

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.



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