



MOOZ-3

OPERATION INSTRUCTION

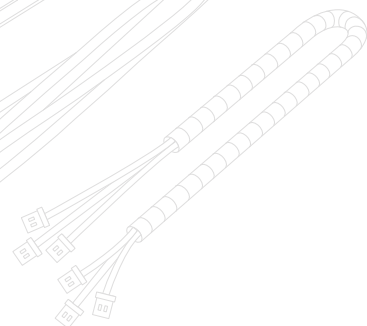
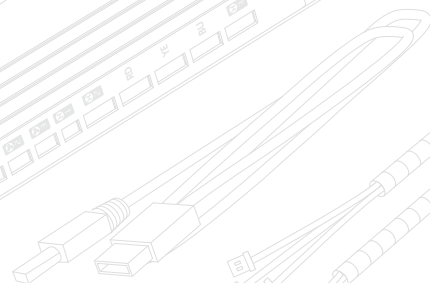
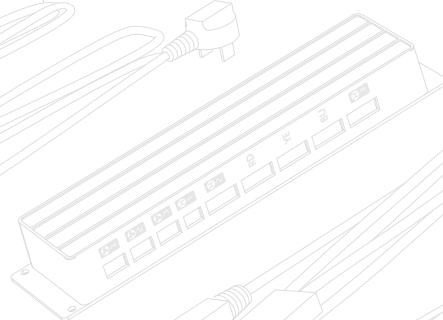
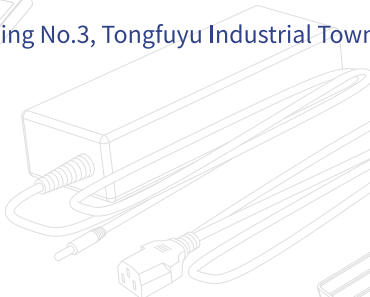
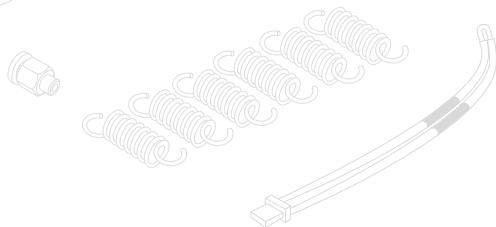
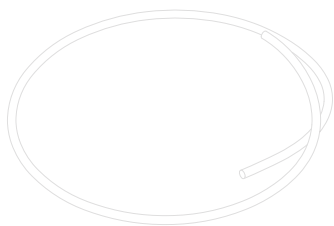
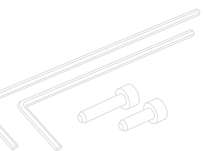
V2.0 2018-09



DOBOT

Shenzhen Yuejiang Technology Co., Ltd | China

ADDRESS: 3F, Building No.3, Tongfuyu Industrial Town, Nanshan District, Shenzhen, China



Contents

I. Fast Assembly

1.1. Accessories List 1

II. Operation Panel

2.1. Home Page 4

2.2. 3-Point Leveling Interface 4

2.3. File Directory Interface 4

2.4. Control Tools Interface 4

2.5. 3D Print Functional Module Control Interface 5

2.6. Zero Point Setting Interface 5

2.7. X/Y/Z Motion Control Interface 5

2.8. Other Settings Interface 5

2.9. Working Process Control Interface 6

2.10. Switch Mixing Mode Configuration Interface 6

2.11. Gradient Mixing Mode Configuration Interface 6

III. 3D Printing

3.1. 3-Point Leveling 7

3.2. Set the Zero Point 8

3.3. Install/Remove the Filament 9

3.4. Obtain Gcode Files 10

3.5. Use the Slicing Software 11

3.5.1. Install the Slicing Software 11

3.5.2. Configuration for Initial Use 11

3.5.3. Online Printing 12

3.5.4. Configuration of Color Mixing Scheme 14

3.5.5. Offline Printing 16

3.6. Power-Loss Resume 16

3.7. Printing Control 17

IV. Troubleshooting

4.1. 3D Printing Failure 18

4.2. Whole Machine Failure 18

4.3. 3D Print Functional Module Failure 19

4.4. Maintenance of 3D Print Functional Module 20

Parameters 21

Symbol Description



Description

Basic terms or reference information.



Note

Important precaution: ignoring it may cause malfunction of the machine and the corresponding risk.



Warning

Important warning: rules must be strictly observed, otherwise it may cause machine breakdown and personal injury.



Note: Updated Firmwares, User Manuals, Softwares and Tutorial Videos will be uploaded to our official website www.dobot.cc constantly, please use them for better experience. Any support, please contact us: mooz@dobot.cc.

Fast Assembly

1.1 Accessories List

250g PLA Filament x 3

Extruder x 3

Filament Support x 3

LCD Touch Pad

Several M3x6 Hex Screws
Several M3x8 Hex Screws

L-type Hex Screwdriver

Printer Head Control Board

8-Core Cable x 2

Spare parts:

- PTFE Pipe x 1
- Quick Pipe Connector x 1
- Spring x 6
- Temperature Sensor x 1

PTFE Pipe x 3

3 Identical Linear Actuators

Printer Head Module

Base + Main Control Board + Heated Bed +WiFi Module

12V Power Adapter

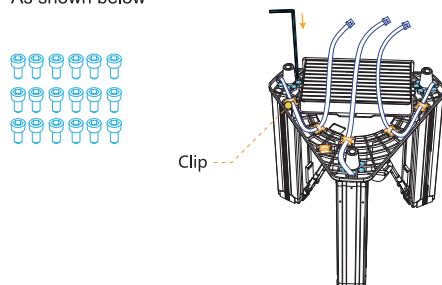
Extruder Motor Power Cable x 3

Usb 2.0 Cable (A-Male to B-Male)

1.1.1 Install the Linear Actuators

Place the base with upside down, run the cable of each linear actuator through the square hole, and fix the linear actuator on the base with screws (M3x8 hex screw x18), and then fix the cables with clips.

As shown below



Clip

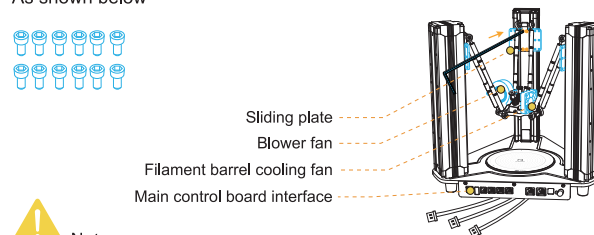


Note: The linear actuators are identical, which are differentiated into X, Y, Z by mounting positions.

1.1.2 Install the Printer Head Module

Push the sliding plate of each linear actuator upward to the end, fix the printer head module on the sliding plates with screws (M3x6 hex screw x12), Pay attention to the following notes before installing any screws!

As shown below

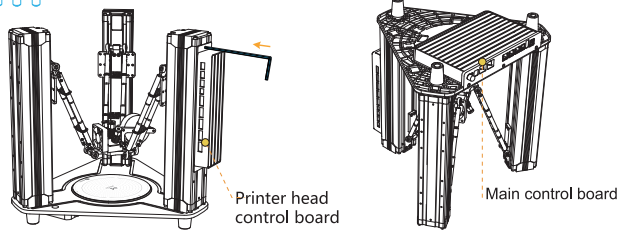


Note:

1. The printer head module should be placed in the right direction, which can be decided by the direction of the fans to the main control board interface.
2. M3x6 screws should be used to fix the printer head, since the m3x8 ones are too long and will cause interference.
3. Please install all the screws without tightening at first, so that the printer head can self-adjust by gravity, and then tighten the screws orderly.

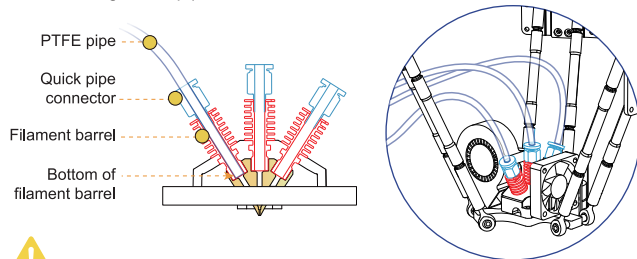
1.1.3 Install the Printer Head Control Board

Fix the printer head control board on the farthest (to the main control board) linear actuator with screws (M3x6 hex screw x3). As shown below



1.1.5 Install the PTFE Pipes

Insert the PTFE pipe to the bottom of the filament barrel, do the same to the remaining PTFE pipes. As shown below



Note:

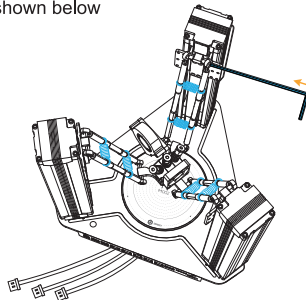
Please make sure the PTFE pipe has been inserted to the bottom of the filament barrel, otherwise it will cause clogging problem. Inserting with the quick pipe connector removed can make the process easier. The filament barrel and nozzle are sealed with sealant during factory assembling, so do not disassemble the filament barrel unless it is necessary.

1.1.7 Install the Springs

Install the springs, and check and make sure all screws (12 in total) of the linkages are well tightened. As shown below



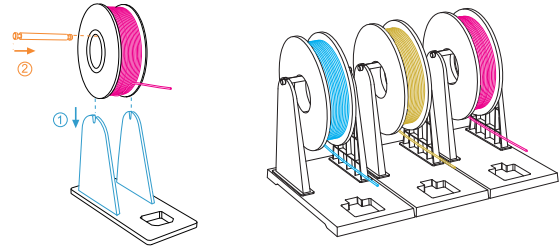
Spring x6



Note: Pull the printer head with hand gently to check for looseness and diastema after check and tightening, looseness and diastema will affect printing accuracy.

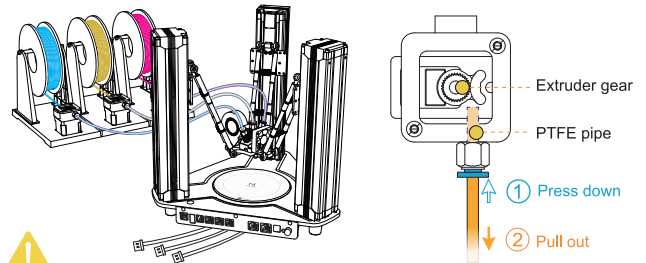
1.1.4 Install the Filament Support

Set up the filament support, and place the filament on it. As shown below



1.1.6 Connect the PTFE Pipes to Extruders

Insert the other end of PTFE pipe into the extruder as far as you can to make filament installation easier, as long as it won't interfere the gear and bearing. Place the extruder on the filament support orderly after proper connecting, make sure PTFE pipes are not crossed. As shown below

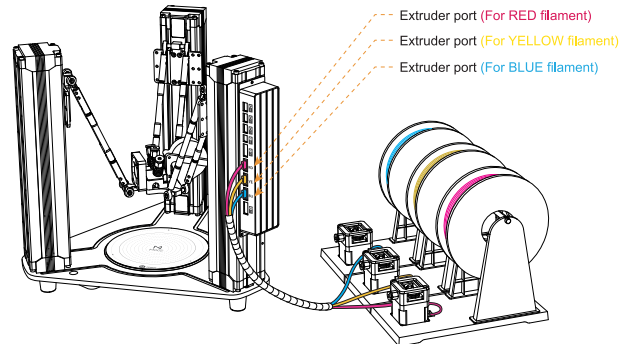


Note:

In case the PTFE pipe and pipe connector need to be detached: Press down the plastic part of the connector and pull the pipe out quickly (see the illustration at top-right). Insert the pipe a few centimeters further first can make the process easier.

1.1.8 Install Extruder Motor Power Cables

Connect the extruders to the corresponding ports of the printer head control board with cables. As shown below

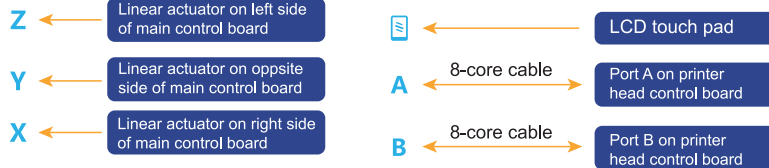
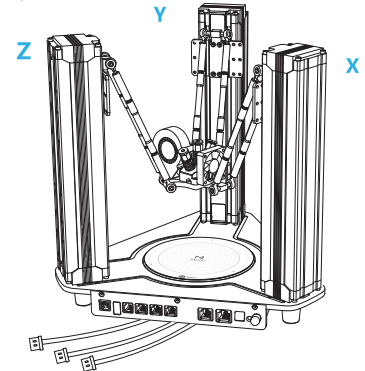
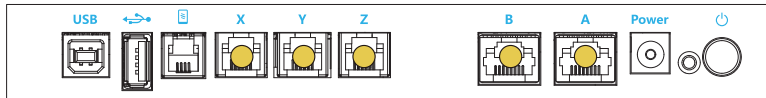


1.1.9 Connect Cables to Main Control Board



Warning: Wrong connection of cables may cause burnout of control board! Hot-plug is strictly prohibited! Always make sure that all cables are plugged in place before power-on!
Plugging of cables during power-on status will cause malfunction!

Before power on the machine, please follow the chart below and connect all cables to the main control board correctly.



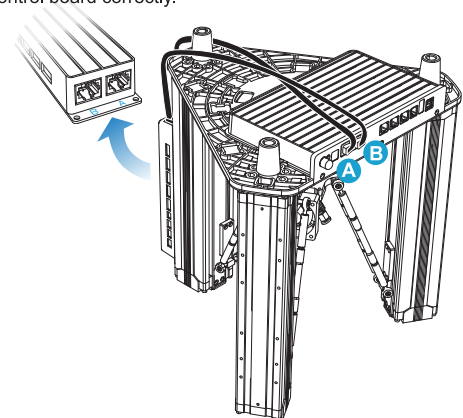
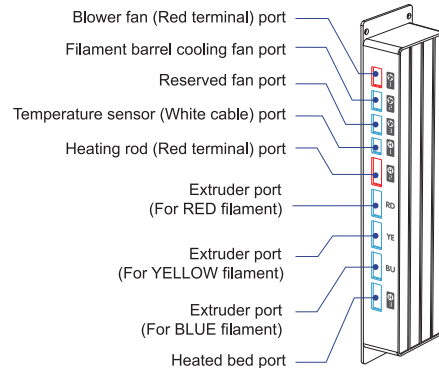
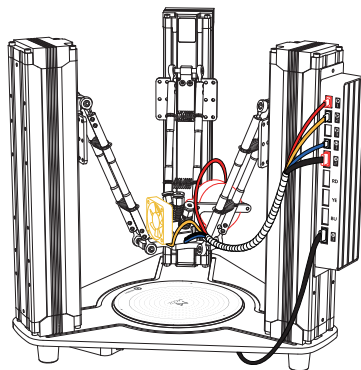
Note: The linear actuators are labeled with X, Y, Z based on mounting positions in the above drawing, which should be connected to the corresponding port on main control board correctly!

1.1.10 Connect Cables to Printer Head Control Board



Warning: Wrong connection of cables may cause burnout of control board! Hot-plug is strictly prohibited! Always make sure that all cables are plugged in place before power-on!
Plugging of cables during power-on status will cause malfunction!

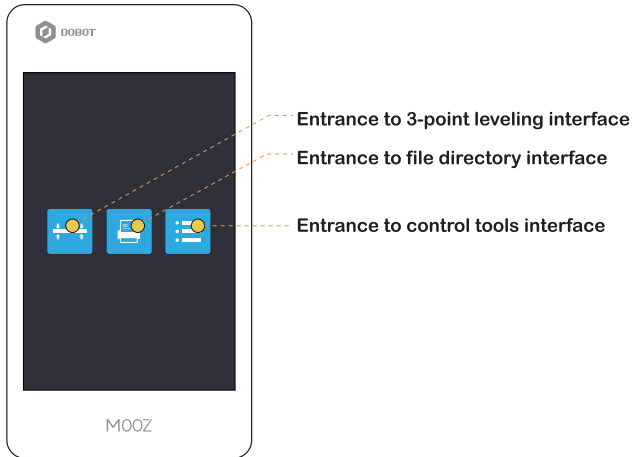
Before power on the machine, please follow the chart below and connect all cables to the printer head control board correctly.



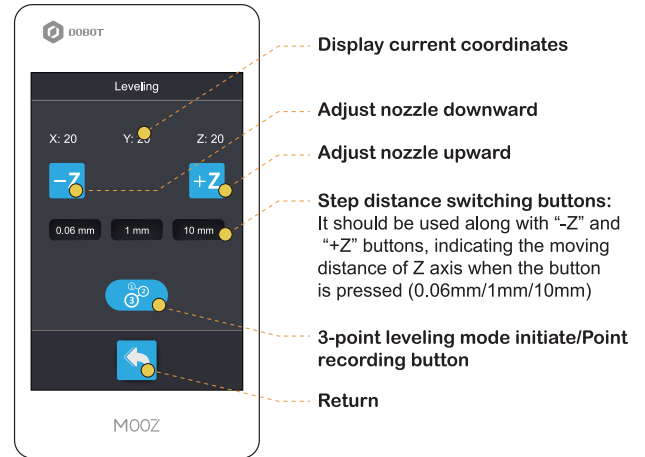
II

Operation Panel

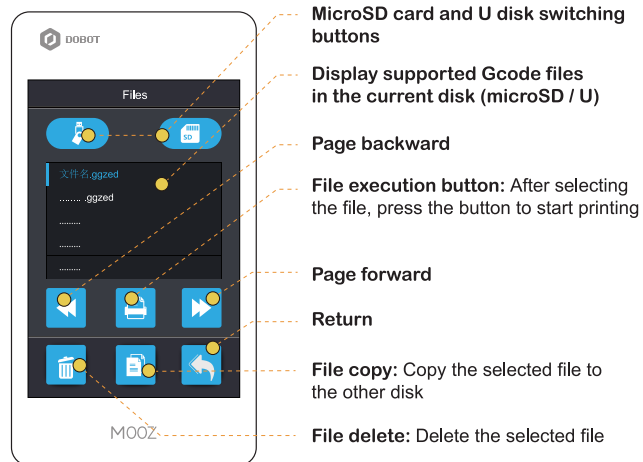
2.1 Home Page



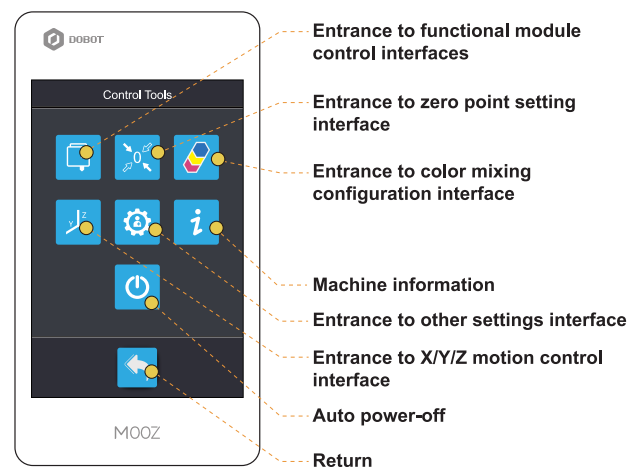
2.2 3-Point Leveling Interface



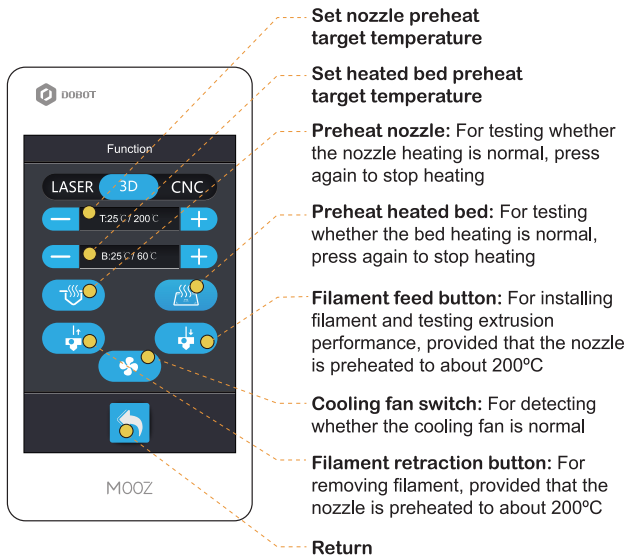
2.3 File Directory Interface



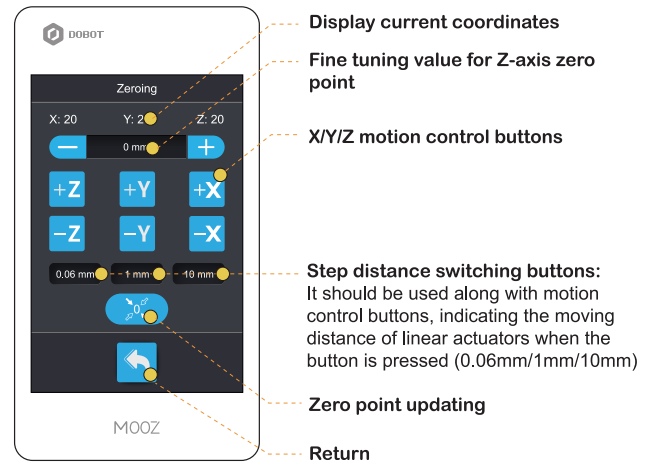
2.4 Control Tools Interface



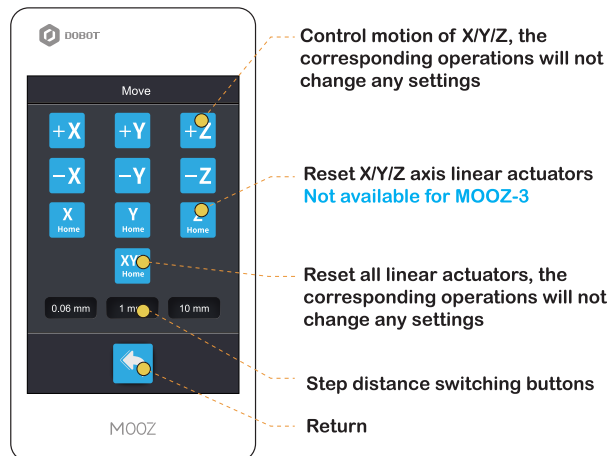
2.5 3D Print Functional Module Control Interface



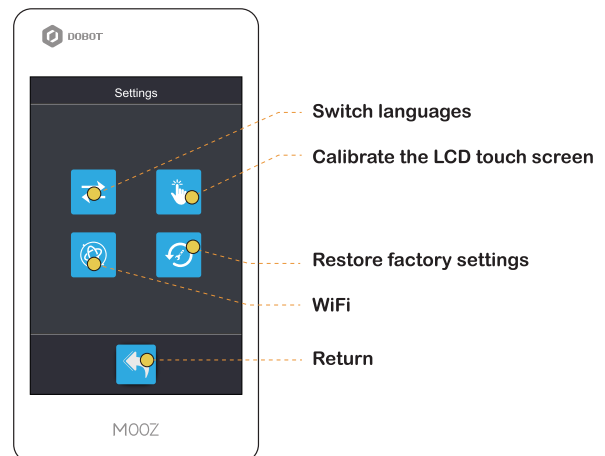
2.6 Zero Point Setting Interface



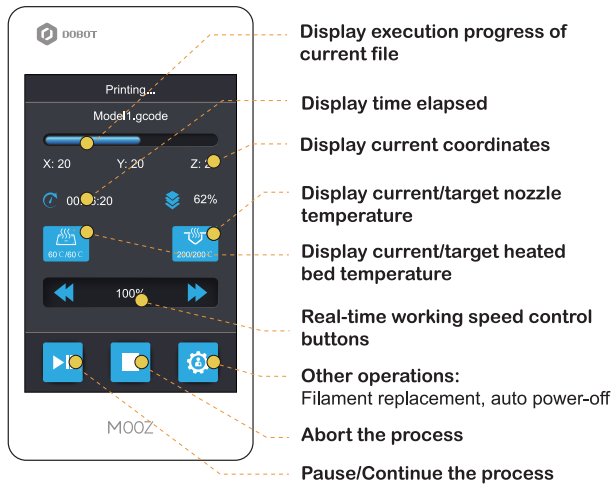
2.7 X/Y/Z Motion Control Interface



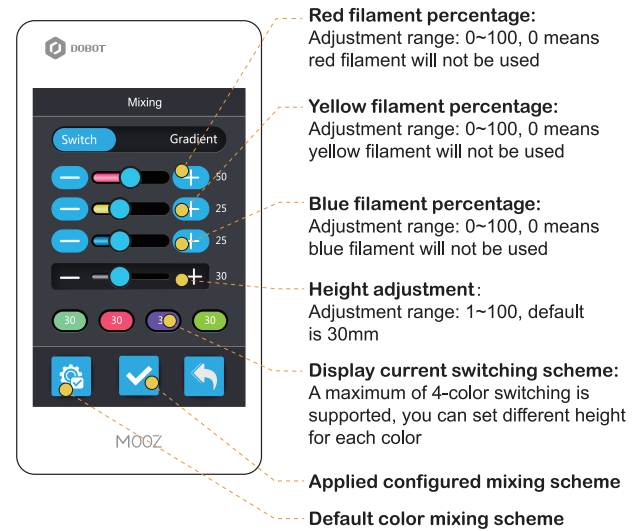
2.8 Other Settings Interface



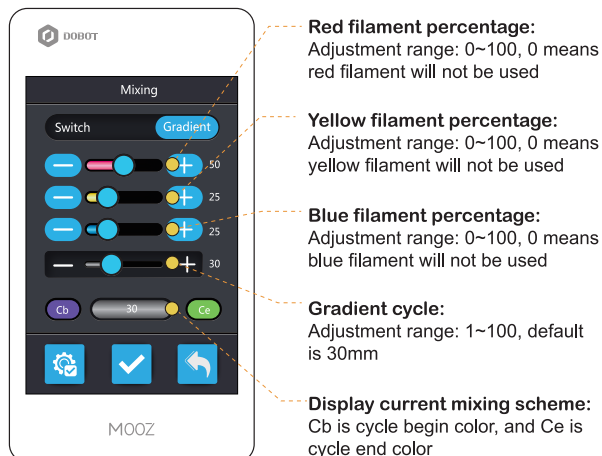
2.9 Working Process Control Interface



2.10 Switch Mixing Mode Configuration Interface



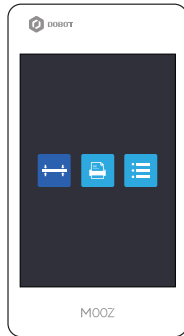
2.11 Gradient Mixing Mode Configuration Interface



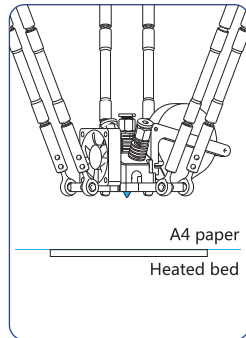
3.1 3-Point Leveling

Please follow the guide of the machine to record three different points to define a plane parallel to the heated bed, these three points must be recorded in order with nozzle in the areas shown in the drawing below, one in each. The calibration requires to be set only for the first use.

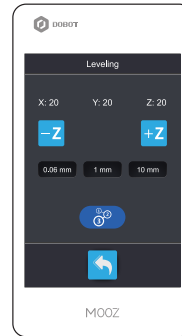
Operation steps:



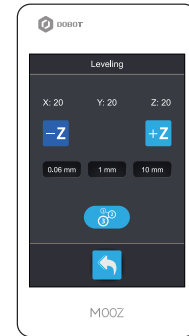
Press the "Entrance to 3-point leveling interface" button



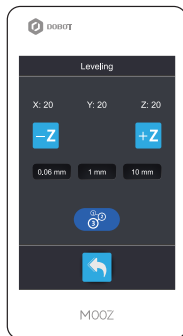
Place a piece of A4 paper on the heated bed



Press the "3-point leveling mode initiate/Point recording" button to enter 3-point leveling mode, and the nozzle will automatically go to a position right above Point ①



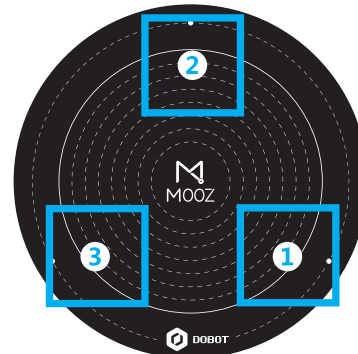
Press the "-Z" button to get the nozzle closer to the heated bed, and move the A4 paper back and forth at the same time. Stop just when the paper can slip with slight friction



Press the "3-point leveling mode initiate/Point recording" button to record Point ①. The nozzle will automatically go to a position right above Point ② after successful recording



Do the same height adjusting and point recording steps to record Point ② and ③. After successful leveling, the machine will home again and exit 3-point leveling mode

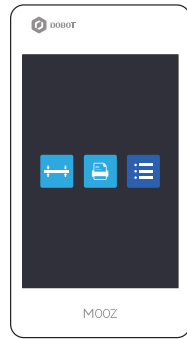


- Note: 1. Please access to www.dobot.cc to download and upgrade the mainboard firmware! 2. 3-point leveling mode can only be entered with 3D printing head connected.
- Only Z coordinates will be recorded, so all you need to do is adjusting the height with a piece of paper.
 - The recorded points will not be lost after power-off. But, once entering 3-point leveling mode, previously recorded points will be cleared automatically.
 - Friction status of the three points should be as uniform as possible. Pay attention when traveling the head downward, especially when the nozzle is getting too close to the bed. Even though the height detect protection will take effect and force the machine to go 0.06mm each press, the heated bed may also get burnt if you continuously move it downward without testing the height with a piece of paper.
 - A re-assembled machine should be re-levelled.

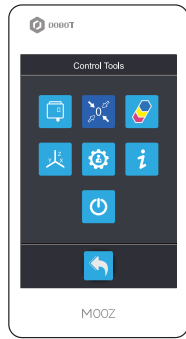
3.2 Set the Zero Point

Zero point is the start point for the machine to print, which requires to be set only for the first use.

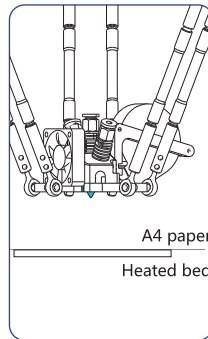
Operation steps:



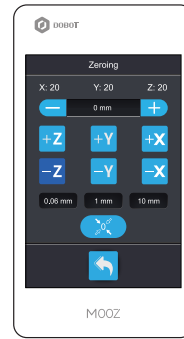
Press the "Entrance to control tools interface" button



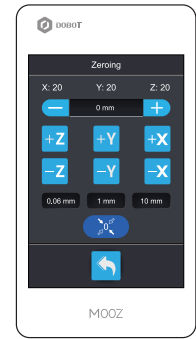
Press the "Entrance to zero point setting interface" button



Place a piece of A4 paper on the heated bed



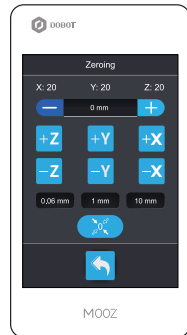
Press the "-Z" button to get the nozzle closer to the heated bed, and move the A4 paper back and forth at the same time. Stop just when the paper can slip with slight friction



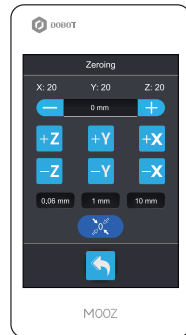
Press the "Zero point updating" button to record the position of zero point. The machine will home again after successful recording

Fine tuning:

This function allows users to fine tune the zero of Z-axis according to bonding status of the first layer, in case the zero point is not satisfactory after standard setting procedures. For instance, if the zero point is too high and causing bonding failure of the first layer:



Press "-" button to set a negative fine tuning value



Press the "Zero point updating" button to fine tune the zero point with the value you set. The machine will home again after successful updating



Note:

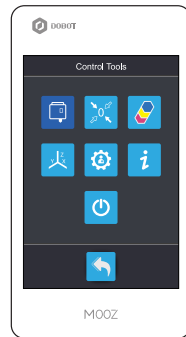
1. For the 3D printing function, only the zero of Z-axis need to be set and recorded. Zeros of X-axis and Y-axis are system default values and will not and cannot be changed.
2. Too high Z-axis zero position will lead to loose bonding at the bottom, causing the model falling off, and too low position will make it difficult to take off the model or even scratch the heated bed. Dedicated fine tuning is always required to obtain satisfactory first several layers. If the zero point is too high, please use a negative fine tuning value and use a positive fine tuning value if the zero point is too low.
3. Pay attention when moving the head downward, especially when the nozzle is getting too close to the bed. Even though the height detect protection will take effect and force the machine to go 0.06mm each press, the heated bed may also get burnt if you continuously move it downward without testing the height with a piece of paper.
4. The zero point will not be lost after power-off, so there's no need to reset it. However, the zero point may be deviated and needs to be reset after the reassembling.
5. If your printer prints in the mid air, the zero point must be wrongly set. After correct zeroing and homing, the coordinate of Z should be about 100.
6. Please be prudent with the "Zero point updating" button, pressing it will change zero point of the machine. If the fine tuning value remains 0, the operation will record current height of the nozzle as zero point. If the fine tuning value is not 0, the operation will update zero point of Z-axis using fine tuning value you set.

3.3 Install/Remove the Filament

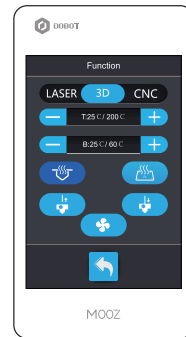
Operation steps:



Press the "Entrance to control tools interface" button



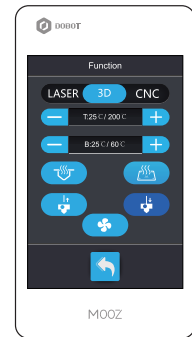
Press the "Entrance to functional module control interfaces" button



Press the "Preheat nozzle" button, and wait for the temperature to reach about 200°C

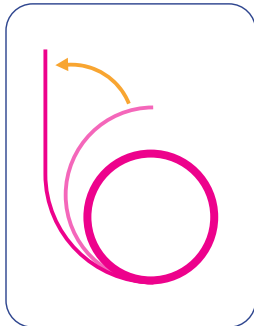


Insert the filament into the PTFE pipe (As shown below)

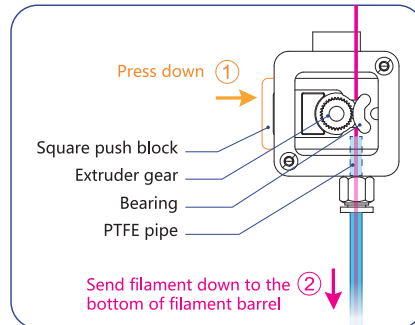


Press " " button until melted filament flows out of the nozzle

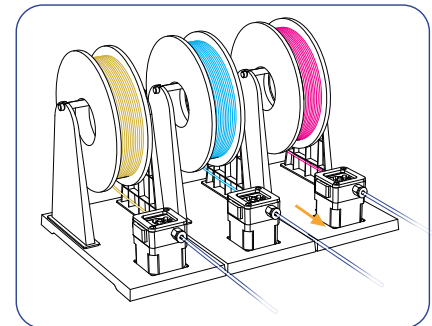
Schematic diagram for installing the filament:



Straighten the filament manually



Press down the square push block, insert the filament into PTFE pipe down to the bottom of filament barrel through the gap between extruder gear and bearing



Rearrange the filament rolls and extruders



Note: 1. If one or some of the extruder motors produce loud sound of step losing after clicking the " " button, please check whether the nozzle has been heated to target temperature. Clogging issue may also result in motor step losing problem, in this case, please heat the nozzle to the target temperature, pull out the filament, remove the swelling end and reinstall it.

2. Wrong slicing parameter or too low zero point will also cause motor step losing, please decide according to actual situation.

3.4 Obtain Gcode Files

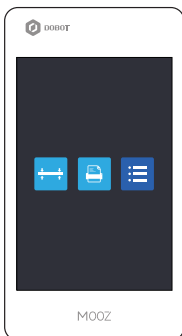


Note: Please access to www.dobot.cc or APP store to download MOOZ mobile APP.

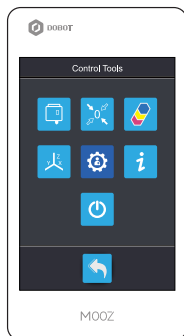
Approach 1: Use slicing software (Cura, for instance). Refer to Section 3.5.

Approach 2: Use our mobile APP to send Gcode files to the machine. Two modes are supported to build connection between the machine and your mobile, use the machine as hotspot is described here.

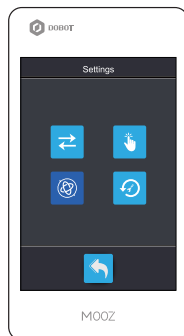
Open WiFi wireless hotspot:



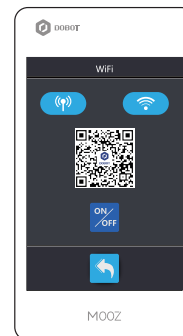
Press the “Entrance to control tools interface” button



Press the “Other settings interface” button

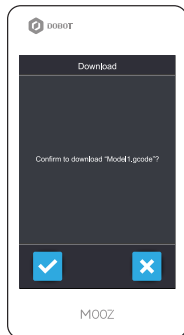


Press the “WiFi” button

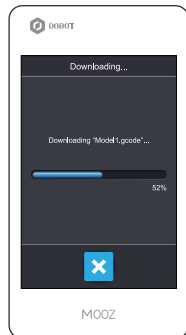


Press the “ON/OFF” button to set up a hotspot. Open the mobile APP and scan the QR code to establish connection between the machine and your mobile phone

Use the APP to choose a Gcode file and send it to the machine. Follow the prompts popped up on the touch pad to receive the file.



Confirm to receive



Wait for transmission finished

3.5 Use the Slicing Software



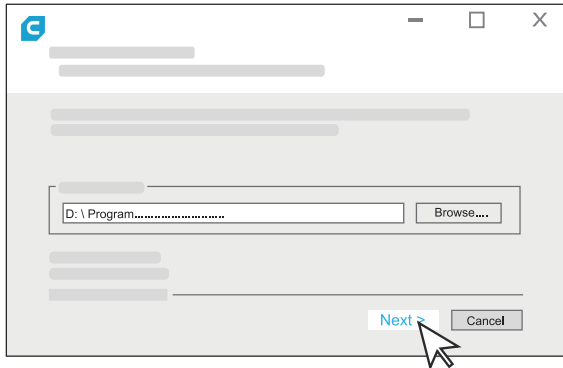
Description: MOOZ supports most third-party printing softwares, such as Cura, Repetier-Host, etc. Cura 3.1.0 is described here as an example.

3.5.1 Install the Slicing Software

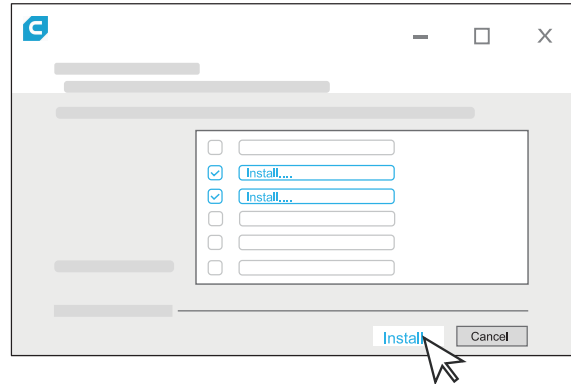
Operation steps:

- ① Double-click  to install the software:
Cura3.1.0.exe

- ② Select the installation directory. It is recommended to keep the default, click "Next":



- ③ Select the features you need. It is recommended to keep the defaults, click "Install":



- ④ The window of installing arduino driver will pop up in the process of installation. Please follow the prompts to complete the installation.

3.5.2 Configuration for Initial Use

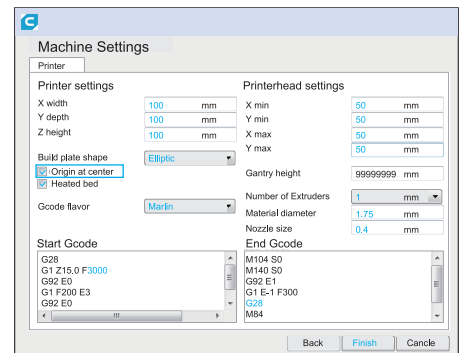
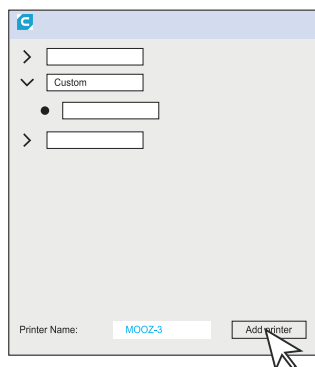
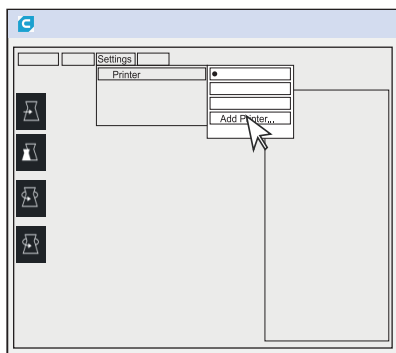
 Description: Please visit www.dobot.cc to download the related tutorial videos and softwares.

Operation steps:

- ① Run Cura 3.1.0 and go "Settings" > "Printer" > "Add Printer" > "Custom", name your printer "MOOZ-3", and click "Add printer", dialog of Machine Settings will popup



- ② Configure the machine



Note: Origin of MOOZ-3 is defaulted at the center of heated bed, please be sure to check the "Origin at center" box, otherwise the machine will not work normally.

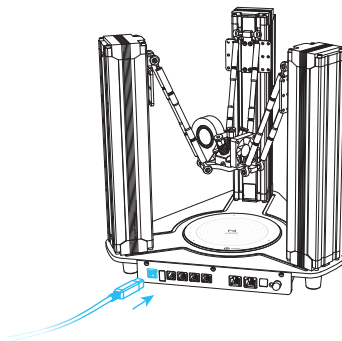
3.5.3 Online Printing



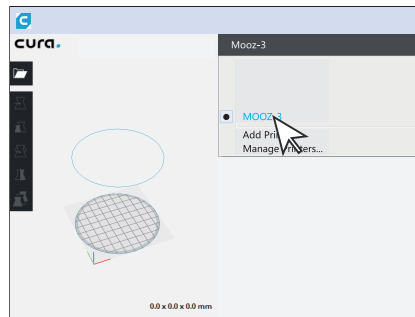
- Note:
1. Please make sure the machine has been properly linked to your PC, power it on before starting Cura. Your computer may need to install CH340 driver, please access to www.dobot.cc to download it.
 2. If the computer enters sleep mode during online printing, the printing process will be interrupted. Please check the power status of the computer before printing.

Operation steps:

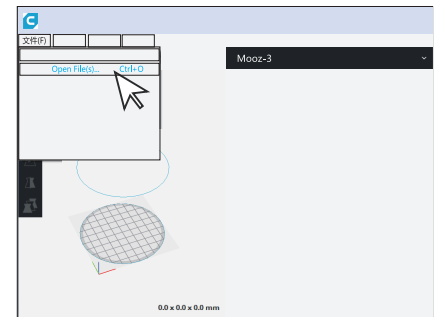
- ① Connect to the computer with USB cable, and power up the machine



- ② Restart Cura 3.1.0, and select the printer you added and configured in Section 3.5.2

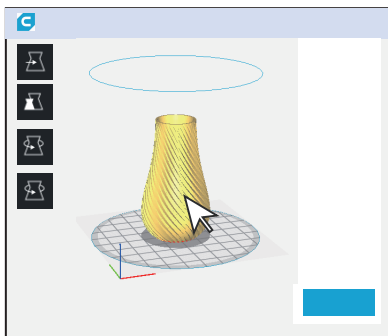


- ③ Go "File" > "Open File(s)..." and select the model you want to slice. Cura supports STL/OBJ/AMF format models

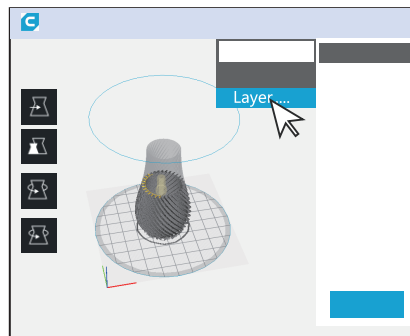


Profile the model:

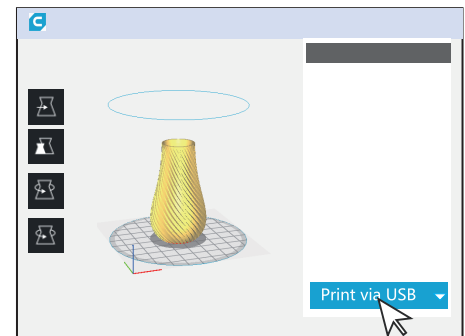
- ① Adjust the model: Left click on the model, four options "Fit", "Zoom In", "Zoom Out" and "Reset" will appear on the left side of the interface, you can adjust as needed.



- ② View the details of the slice: Click the drop-down list on the upper middle corner of the interface and select "Layer view" to view the details of the slice.



- ③ Click the drop-down list on the right bottom corner of the interface and select "Print via USB".





Description of key profile settings:

- ① **Layer Height:** For the height of each layer of printing, smaller value will produce finer surface, but cost more printing time. Suggested range is 0.05 to 0.3, not exceeding 3/4 of the diameter of the nozzle. MOOZ used 0.4mm nozzle, means not exceeding 0.3.
- ② **Wall Thickness:** For the printing thickness of the outer surface of the model, the setting of 1.2 indicates that the outer surface will go three rounds, since the width of each round equals to the diameter of the nozzle, namely 0.4.
- ③ **Top/Bottom Thickness:** Determine the bottom/top thickness of the model.
- ④ **Infill Density:** Determine the filling density of the internal grid of the model, generally set at 15% or less.
- ⑤ **Printing Temperature:** Need to be set according to filament type. Suggested value for PLA is 190~220 °C, and for ABS is 230~260 °C.
- ⑥ **Build Plate Temperature:** Need to be set according to filament type. Suggested value for PLA is 60~80 °C, and for ABS is 80~100 °C.
- ⑦ **Travel Speed:** Travel speed should be set no greater than 40mm/s, otherwise the Z linear actuators may lose some steps when traveling downward from home position too fast and cause zero point deviation.
- ⑧ **Support Placement:** If the model has any hovering part, the option must be switched on. Generally, "Everywhere" indicates that support can be added on the model itself. If you select "Touching buildplate", it indicates that support can be added only between the print platform and the model hovering position, not on the model.
- ⑨ **Build Plate Adhesion:** "Brim" indicates that a few layers of outer ring should be added on the bottom edge of the model so as to prevent warping. And "Raft" is used to get the whole model raised by adding a raft-like base on the bottom when the heated bed leveling status is not satisfying.
- ⑩ **Spiralize Outer Contour (i.e., vase mode):** Only the outer surface and the bottom of the model are printed, and continuous spiral lift will appear when printing the outer surface, which can improve the surface quality, but has requirements for the model, and that is, the model can only have one outer surface and can not be hovered.



Note:

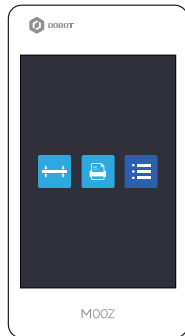
1. Hover the mouse over the option, and the corresponding hint will appear.
2. Right-click anywhere within the parameter setting area, you can "Configure setting visibility".
3. Tutorial video for using Cura is available on our official website.

MOOZ-3

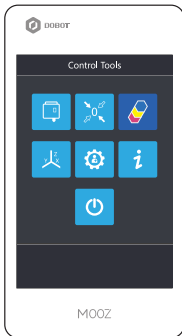
Material	PLA	
Printer Setup	Recommended Custom	
Profile :	Fine 0.1mm	
Layer Height	0.12	mm
Shell		
Wall Thickness	1.2	mm
Top/Bottom Thickness	1.2	mm
Infill		
Infill Density	20	%
Infill Pattern	Grid	
Gradual Infill Steps	0	
Material		
Printing Temperature	205	°C
Build Plate Temperature	70	°C
Diameter	1.75	mm
Flow	100	%
Enable retraction	<input checked="" type="checkbox"/>	
Retraction Distance	5	mm
Retraction Speed	50	mm/s
Speed		
Print Speed	40	mm/s
Infill Speed	40	mm/s
Wall Speed	15	mm/s
Travel speed	40	mm/s
Cooling		
Support		
Build Plate Adhesion		
Build Plate Adhesion Type	Raft	
Raft Extra Margin	4	mm
Raft Air Gap	0.2	mm
Initial Layer Z Overlap	0.1	mm
Raft Top Layers	4	
Raft Print Speed	15	mm/s
Special Mode		
Print Sequence	All at Once	
Spiralize Outer Contour	<input type="checkbox"/>	

3.5.4 Configuration of Color Mixing Scheme

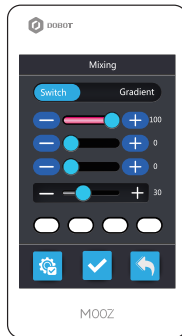
1. Switch mixing mode



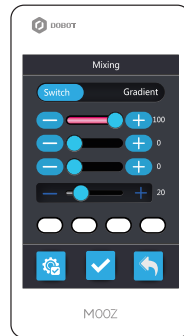
Press the "Entrance to control tools interface" button



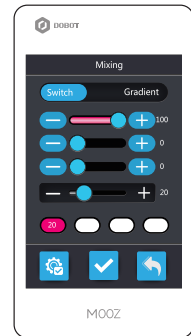
Press the "Entrance to color mixing configuration interface" button



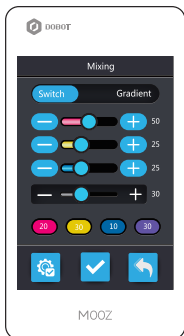
Configure color by adjusting filament percentage



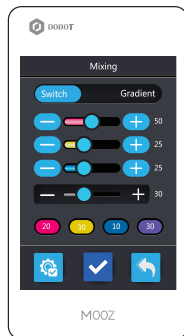
Set height for the configured color



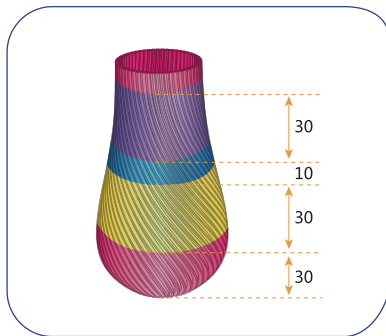
Record the configured color and height to the first block. Press the block again to clear as needed



Configure color and set height for other blocks as needed.
A maximum of 4-color switching is supported



Apply the configured mixing scheme



Estimated result



- Note:
1. If only one color block is configured and the others are left empty, the whole model will print with the very one color you configured regardless of the height parameter.
 2. If you only want to use one or two of the three filament rolls, always set percentage of the filament you don't want to use to 0 when configuring.

2. Gradient mixing mode



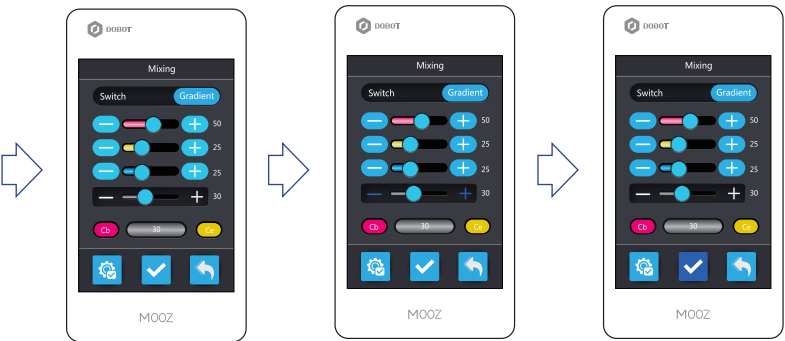
Press the "Entrance to control tools interface" button

Press the "Entrance to color mixing configuration interface" button

Switch to gradient mixing mode

Configure color by adjusting filament percentage

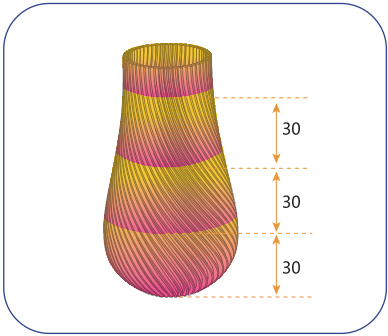
Record the configured color to the "Cb" block. Press the block again to clear as needed



Configure color and record it to the "Ce" block

Adjust gradient cycle

Apply the configured mixing scheme



Estimated result



Note: 1. The system default gradient mixing scheme requires 3 rolls of filament.
2. If you only want to use one or two of the three filament rolls, always set percentage of the filament you don't want to use to 0 when configuring.

3.5.5 Offline Printing



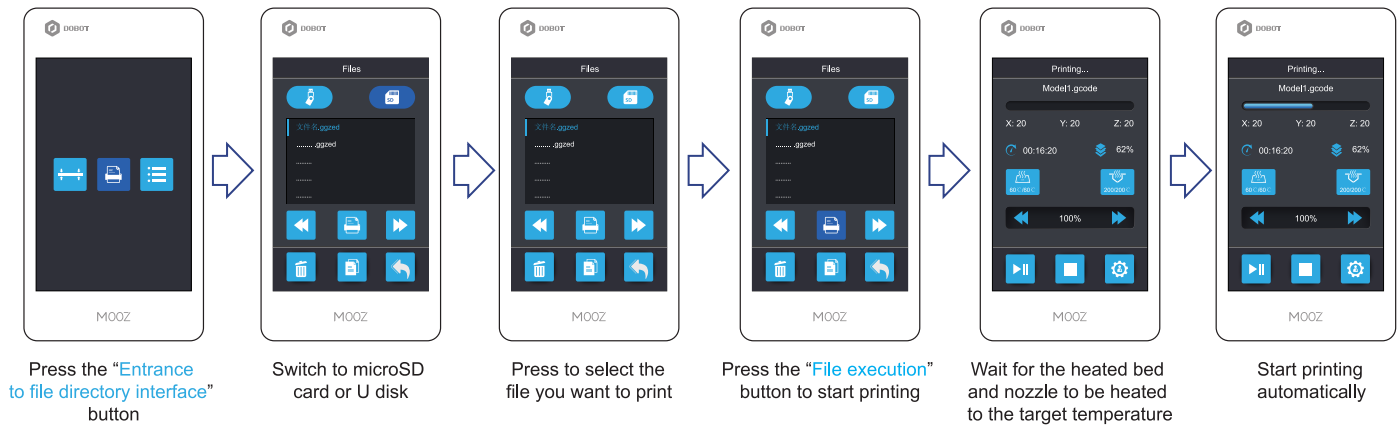
Warning: After printing finished, please wait until heated bed cools down to ambient temperature. Place a knife or spatula under the print and apply a small amount of force to remove it. Do not try to drag or pull the print off, otherwise the heated bed sticker may swell and result in severe unevenness.



Note: 1. The U disk or microSD card format shall be Fat32 with the capacity not greater than 32GB.
2. Make sure the machine has been properly leveled and zeroed before executing any Gcode files.
3. Applying gummed textured paper before printing can greatly reduce risk of getting the heated bed sticker scratched!

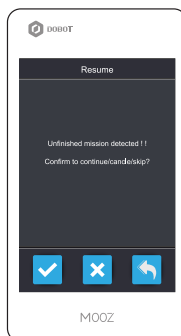
Operation steps:

1. Preheat nozzle and heated bed to target temperature, and test extrusion performance of the 3D print functional module. Refer to Section 3.3.
2. Follow the steps below to execute the Gcode file.



3.6 Power-Loss Resume

In case of abrupt power failure during printing, the machine will save current printing process and move the functional module away from the print. You may resume or cancel the process after power recovery.

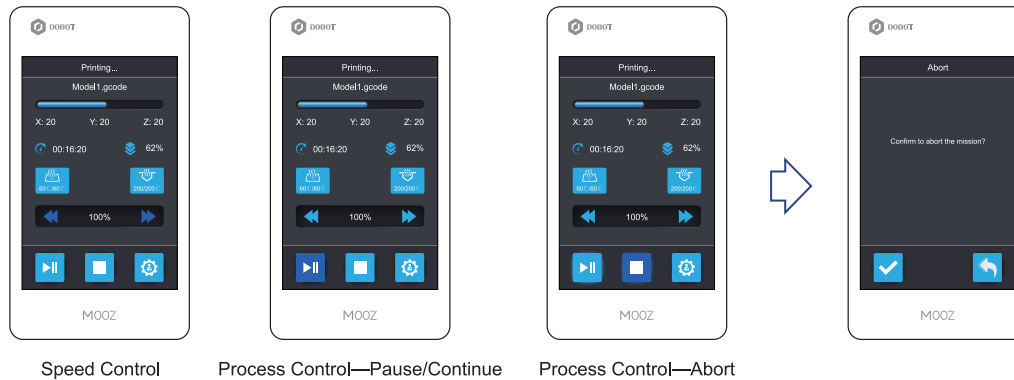


Description

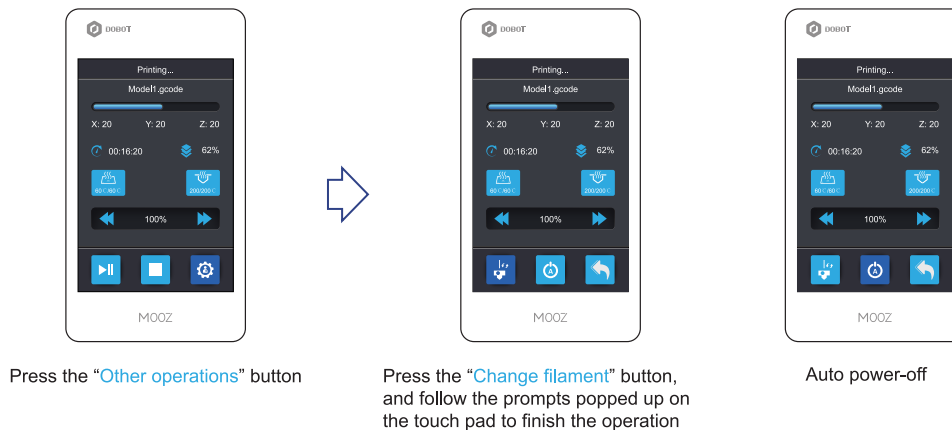
- " ☒ " Continue: Resume the unfinished printing process
- " ☐ " Cancel: Cancel the unfinished printing process
- " ☒ " Return: The system will prompt you again next time you turn on the machine, provided that no file is executed after the power recovery. You can use the "Return" button to check and prepare the machine, such as nozzle preheating and filament replacement.

3.7 Printing Control

1. **Speed Control:** Change printing speed in real-time. Note that too high speed may sacrifice accuracy and service life of the machine.
2. **Process Control—Pause/Continue:** Press to pause the printing process, press again to continue.
3. **Process Control—Abort:** Press to abort current printing process. The process will be unrecoverable once aborted, please be prudent.



4. **Change filament:** If the filament is about to run out or your desire to use another roll of filament to finish the print, please follow the steps below to change the filament. (Refer to Section 3.3 for correct filament installation and removal methods)



5. **Auto power-off:** The machine will power off automatically after finishing the current printing/engraving/carving process, provided that the “Auto power-off” button is activated.

4.1 3D Printing Failure

Q : Print center is at left-bottom corner of the heated bed

A : Wrong machine setting in slicing software, the “ Origin at center ” box must be checked, refer to Section 3.5.2.

Q : The machine prints in the air after file execution

A : Check if the zero point is appropriate. Methods:
1. Check if coordinate of Z is about 100 after homing operation.
2. Move Z coordinate to 0 manually and check the friction status with a piece of A4 paper.

Q : Poor first layer

A : 1. Re-level the heated bed.
2. Heated bed is too far from nozzle, result in loose bonding: Zero point is too high, reset or fine tune it. Refer to Section 3.2.
3. Heated bed is too close to nozzle, result in squeezing, scratching and extruder step losing issues: Zero point is too low, reset or fine tune it.

Q : The print falls off from the heated bed

A : Please set the zero point correctly, increase heated bed temperature, and make sure the first layer is successful before leaving.

Q : Unable to read Gcode files in U disk or microSD card

A : 1. Check if the file system format of your U disk or microSD card is FAT32, and with capacity not greater than 32GB.
2. Check if the Gcode files are stored in the root directly.
3. Reboot the machine, unplug and plug the U disk or microSD.
4. Please use qualified U disk or microSD.

Q : Fail to finish the print

A : 1. Check if the filament is stuck by the filament roll support.
2. Check if the extruder can feed normally at standby state.
3. Reinstall the filament.
4. Open the Gcode file with text editor and check if there is any garbled codes at the end of the file.

4.2 Whole Machine Failure

Q : Unable to control X/Y/Z movements

A : 1. Check and make sure all cables are properly connected to the right sockets.
2. Check if the nozzle temperature is normal, displaying “0” means unable to read nozzle temperature. In this case, please use the spare temperature sensor to decide if the failure is caused by faulty temperature sensor. Refer to Section 4.4 for maintenance.

Q : Movement of X/Y/Z linear actuator is abnormal

A : 1. Check and make sure the cables are in good connection.
2. Check crossly(i.e. connect X-axis linear actuator to Y port and Connect Y-axis linear actuator to X port and Connect) to decide if the failure is caused by the faulty linear actuator or control board.

Q : Unable to exit "starting..." interface after power up

A : 1. Unplug the cables, U disk and microSD card orderly, restart the machine to decide if the failure is caused by corresponding faulty component.
2. Update the mainboard firmware.
3. Update the touch pad firmware.

Q : Unable to start the machine, auto shutdown or restart

A : Unplug the cables, U disk and microSD card orderly, restart the machine to decide if the failure is caused by corresponding faulty component.

Q : Auto shutdown after pressing nozzle heating button

A : 1. Unplug the cables, U disk and microSD card orderly, restart the machine to decide if the failure is caused by corresponding faulty component.
2. If the issue is solved after unplugging the heating rod socket, please check if failure is caused by short-circuit of heating rod cables. Refer to Section 4.4 for maintenance.

Q : Buzzer on after starting, the machine shutdown a few seconds later automatically

A : Check if the heating rod and heated bed are reversely connected.

4.3 3D Print Functional Module Failure

Q : Able to heat nozzle, but unable to reach target temperature

A : Check if the temperature sensor falls out of the heating block. Refer to Section 4.4.

Q : Abnormal nozzle temperature, displays "0" other than ambient temperature

A : 1. Check if temperature sensor cable and filament runout detection cable are connecting to the correct socket properly. Refer to Section 4.4.
2. Use the spare temperature sensor to decide if the failure is caused by faulty temperature sensor. Refer to Section 4.4 for maintenance.

Q : Unable to preheat the nozzle

A : 1. Check if nozzle temperature displays normally.
2. Check if the heating rod cable is connecting to the correct socket properly. Refer to Section 4.4.
3. Functional module is damaged.
4. Heating rod is damaged.

Q : Unable to extrude filament normally

A : 1. Check if the extruder motors are working normally.
2. Refer to Section 4.4 for maintenance.

4.4 Maintenance of 3D Print Functional Module

In case of clogging issue, leading to slipping or step losing of extruder motors: Please preheat nozzle to target temperature, pull out the corresponding filament, remove the swelling end and reinstall it. Please increase printing temperature appropriately to reduce clogging risk.

If the clogging issue is not solved by reinstalling the filament: Please preheat nozzle to target temperature, pull out the corresponding PTFE pipe ① (Refer to Section 1.1.6) then use a knife to cut it flat and reinstall it. Remove the quick pipe connector ② if necessary.



Note:

Please be sure to insert the PTFE pipe to the bottom of filament barrel when assembling. If inner wall of filament barrel is blocked or contaminated by filament residue, in this case, you will not be able to insert the PTFE pipe to the bottom most position. Please pull out the cooling fan cable ④, preheat the nozzle to melt the filament residue for cleaning. Reconnect the fan cable immediately after cleaning.



Note: No need to disassemble the print head further to fix clogging issue. For replacing heating rod or temperature sensor ⑦, please follow the steps below:

Remove the fixing screw of heat insulation block ⑤, take down the whole print head from the triangular piece ⑪.

Loosen the fixing screw of heating rod ③, remove the heating rod & temperature sensor suite ⑦.



Warning: Please follow the steps above to replace heating rod or temperature sensor. Fitting area between the nozzle and filament barrel is sealed with sealant during factory assembling. Please do not disassemble further unless you decide to replace the nozzle or filament barrel.

Loosen fixing screw of the fan support ⑫, remove the blower cooling fan assembly ⑩.

Loosen the fixing screw of filament barrel ⑨, Remove the filament barrel ③ with a wrench or plier by turning anti-clockwisely.



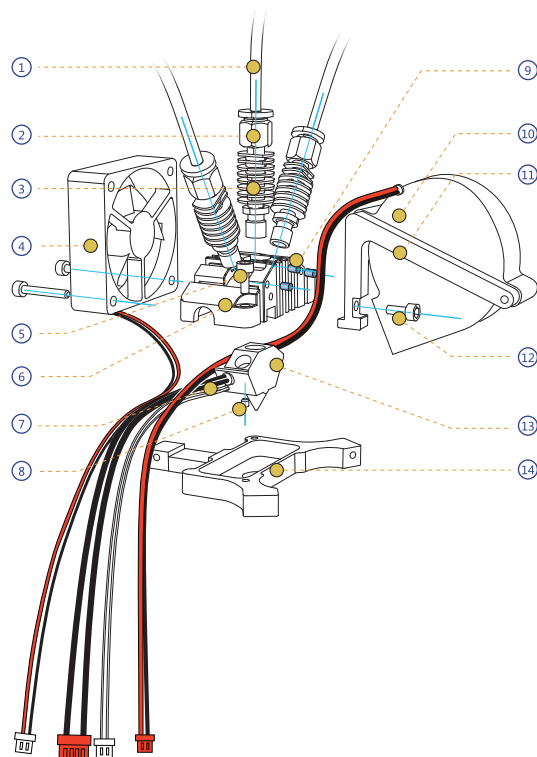
Note:

All filament barrels need to be removed for replacing of nozzle. When reassembling, please apply silicone adhesive for sealing. Method to apply silicone adhesive: Coat small amount of silicone adhesive on thread of the filament barrel before installing. Do not spill the adhesive into the filament passage. Before tightening the fixing screw of filament barrel, please make sure there is no gap between the bottom cooling fin of the middle filament barrel and heat insulation block.



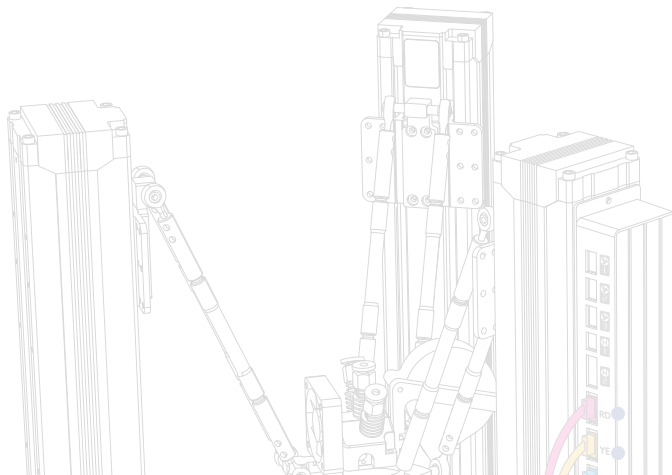
Warning: Dosage of the adhesive should be controlled to avoid overspill and blocking of nozzle passage. It is recommended to leave the first two threads uncoated.

- | | |
|--|--------------------------------|
| ① PTFE pipe | ⑧ Heating rod fixing screw |
| ② Quick pipe connector | ⑨ Filament barrel fixing screw |
| ③ Filament barrel | ⑩ Blower cooling fan assembly |
| ④ Filament barrel cooling fan | ⑪ Blower cooling fan support |
| ⑤ Fixing screw of heat insulation block | ⑫ Fixing screw of fan support |
| ⑥ Heat insulation block | ⑬ Nozzle |
| ⑦ Heating rod & temperature sensor suite | ⑭ Triangular piece |



Parameters

Overall Dimensions: $\Phi 350 * 325\text{mm}$	
Adapter Input: 100-240V~50/60Hz, 1.8Amax	
Adapter Output: 12V~10A	
Main Material: Aircraft-grade aluminum	
Operation Panel: 3.5' LCD touch pad	
3D Printing	Nozzle Diameter: 0.4mm
	Layer Resolution: 0.05~0.3mm
	Nozzle Temperature: 260°C Max.
	Heated bed Temperature: 100°C Max. (at 20°C ambient temperature)
	Forming Size: $\Phi 100 * 100\text{mm}$
	Applicable Materials: 1.75mm PLA, ABS
	Printing Speed: 10~100mm/s
	Operating Temperature: 0~40°C



Shenzhen Yuejiang Technology Co., Ltd | China
ADDRESS: 3F, Building No.3, Tongfuyu Industrial Town, Nanshan District, Shenzhen, China
For more information, please visit www.dobot.cc



DOBOT

