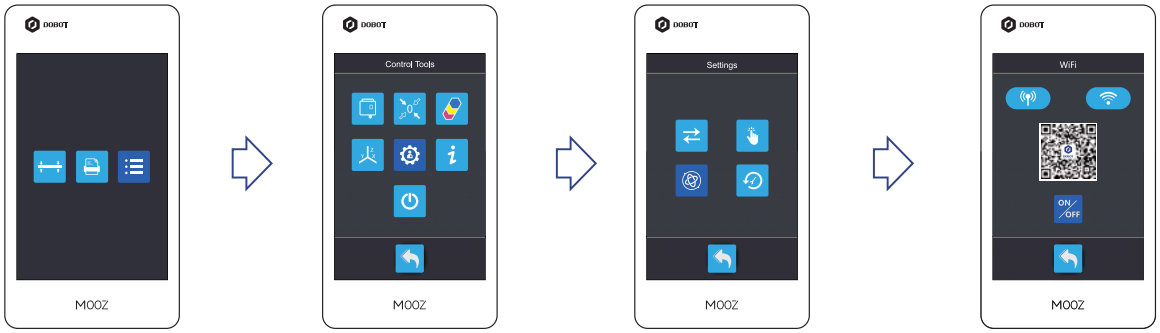
3.4 Obtain Gcode Files

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:



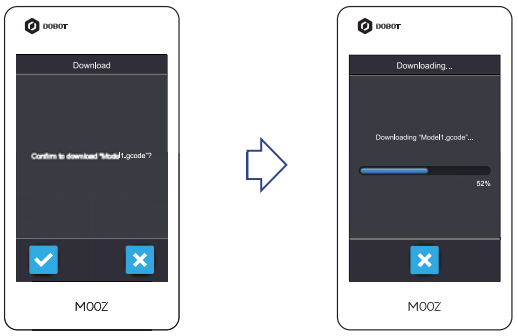
Press the "Entrance to control tools interface" button

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.

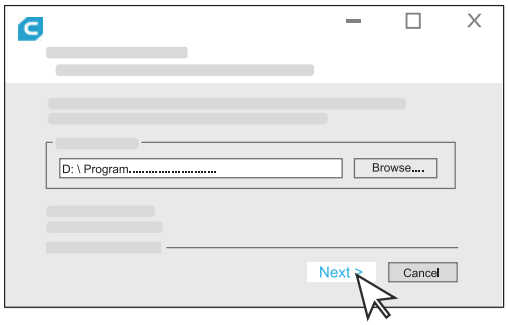
3.5.1 Install the Slicing Software

Operation steps:

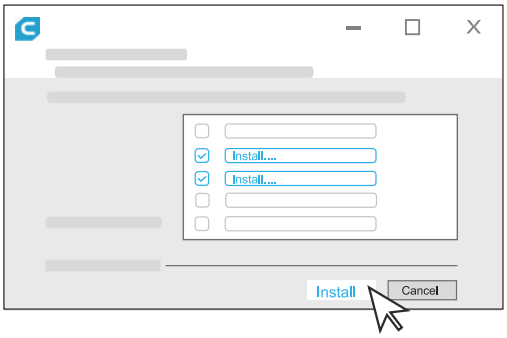
① Double-click  to install the software:

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":

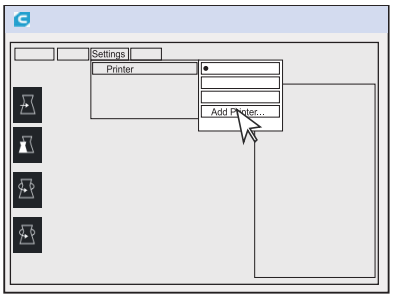


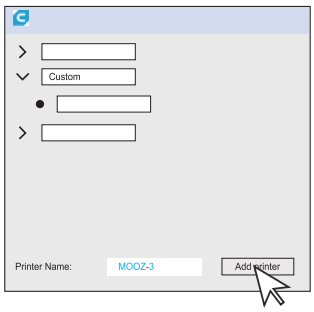
④ The window of installing arduino driver will pop up in the process of installation. Please follow the prompts to complete the installation.

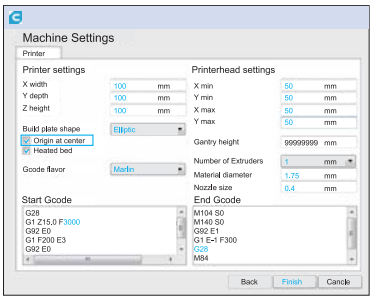
3.5.2 Configuration for Initial Use

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", diaolog of Machine Settings will popup ⇨ ② Configure the machine





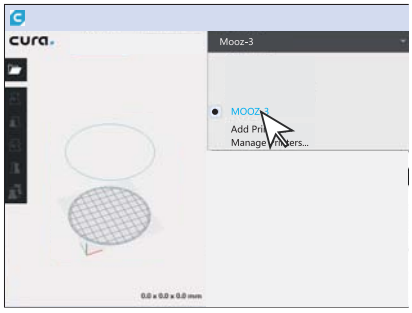


Note: Origin of MOOZ-3 is defaulted at the center of heated bed, please be sure to check the "Origin at center" box, otherwise the machine will not work normally.

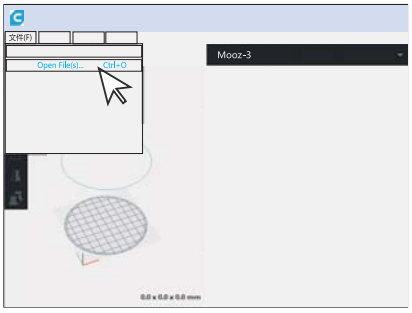
3.5.3 Start Printing

Select printer type:

① Start Cura 3.1.0, and select the printer you added and configured in Section 3.5.2

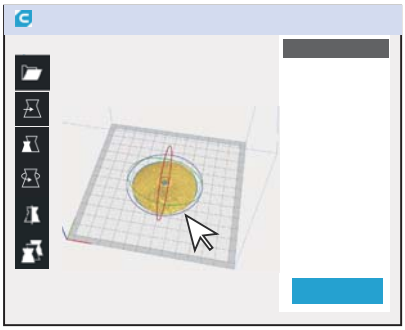


② Go “File” > “Open File(s)...” and select the model you want to slice. Cura supports STL/OBJ /AMF format models

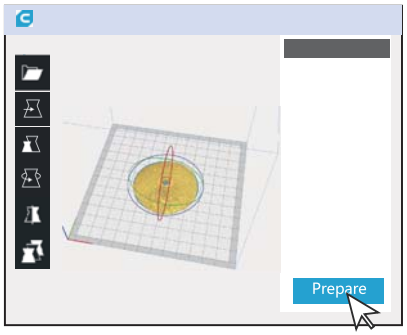


Slice the model and print:

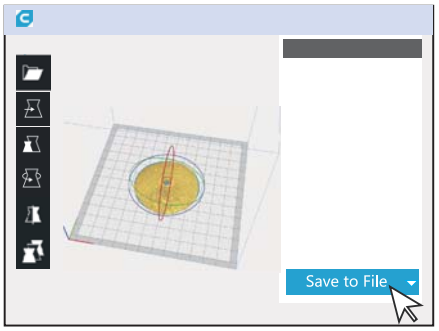
① Adjust the model: Left click on the model, four options “ ”, “ ”, “ ” and “ ” will appear on the left side of the interface, you can adjust as needed.



② Slicing: after fine tune the slice settings according to your model, click Prepare to slice it. (For proper settings please refer to the next page.)



③ Save the file to your USB disk and plug it into MOOZ to start printing via the touch panel.



Description of key slice 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 ℃, and for ABS is 230~260 ℃.

⑥ Build Plate Temperature: Need to be set according to filament type. Suggested value for PLA is 60~80 ℃.

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.

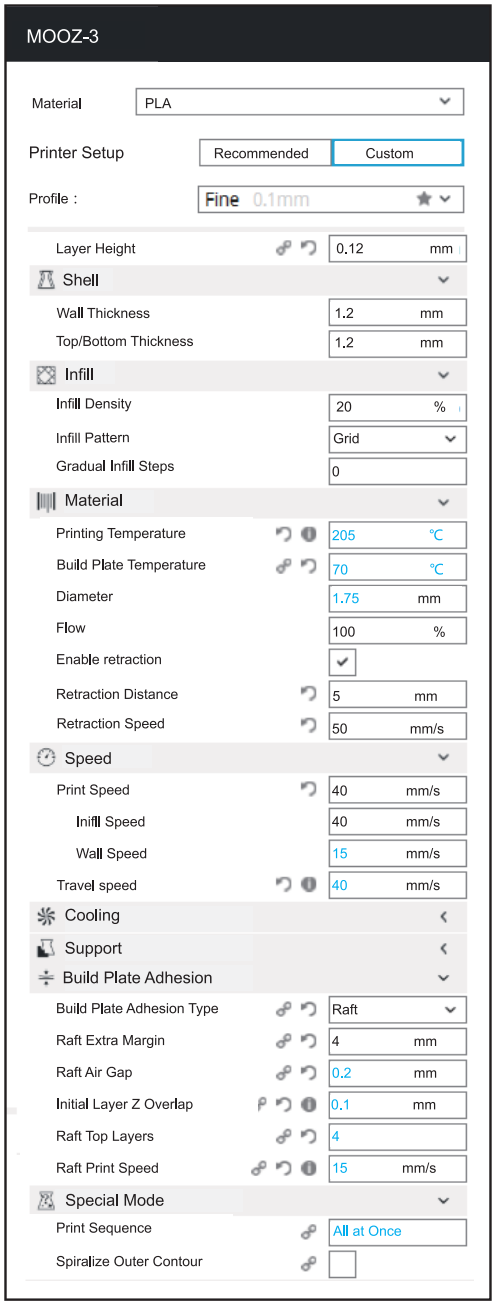
⑧ Support Placement: If the model has any hovering part, the option must be switched on. Generally, "Everywhere" indicates that support can be added on the model itself. If you select "Touching buildplate", it indicates that support can be added only between the print platform and the model hovering 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.

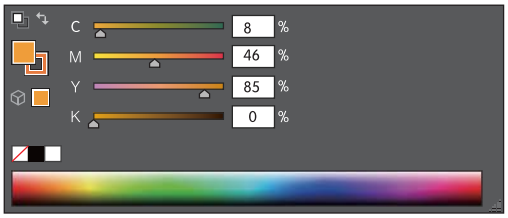
Note:

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.



3.5.4 Configuration of Color Mixing Scheme

The machine adopts CMY subtractive color mixing model, wherein C stands for Cyan, M stands for Magenta, and Y stands for Yellow. For gradient mixing mode, the gradual color changing process will follow the CMYK chromatography in general. You can use image-editing software, Photoshop for instance, for accurate color configuration.



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

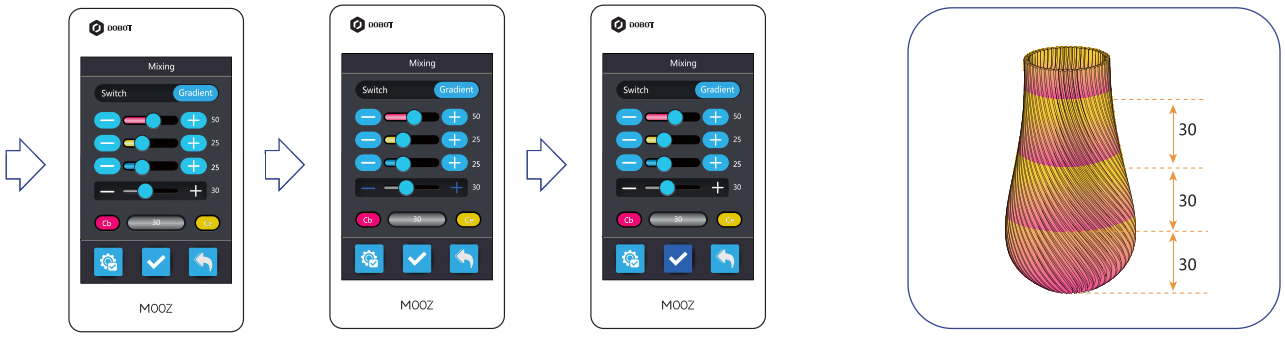
Press the “Entrance to control tools interface” button

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: The system default gradient mixing scheme requires 3 rolls of filament.

3.5.5 Offline Printing

Warning: 1. Make sure the machine has been properly leveled and zeroed before executing any Gcode files. We strongly advice you to check if the zero point is suitable by moving the Z coordinate to 0 manually and test the friction status with a piece of A4 paper.

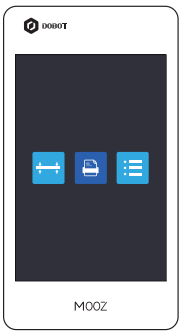
2. After printing finished, please wait until heated bed cools down to ambient temperature. Place a knife or spatula under the print and apply a small amount of force to remove it. Do not try to drag or pull the print off, otherwise the heated bed sticker may swell and result in severe unevenness.

Note: 1. The U disk or microSD card format shall be Fat32 with the capacity not greater than 32GB.

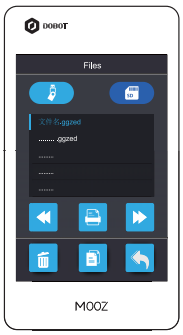
3. Applying masking tape before printing can greatly reduce risk of getting the heated bed sticker scratched!

Operation steps:

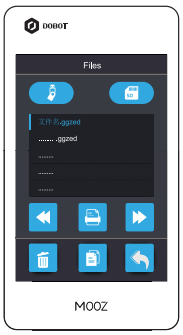
1. Preheat nozzle and heated bed to target temperature, and test extrusion performance of the 3D print functional module. Refer to Section 3.3.
2. Follow the steps below to execute the Gcode file.



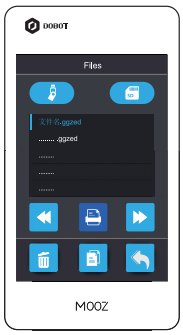
Press the "Entrance to file directory interface" button



Switch to microSD card or U disk



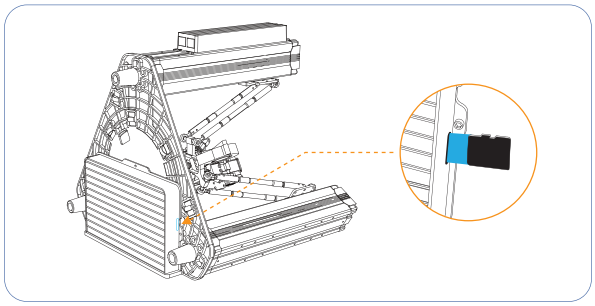
Press to select the file you want to print



Press the "File execution" button to start printing

Wait for the heated bed and nozzle to be heated to the target temperature

Start printing automatically



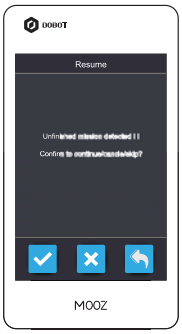
microSD card slot

Note:

The main control board is designed with microSD card slot, which can be used to store Gcode files supported by the machine. MicroSD card is neither standardly equipped nor required. Format of microSD card you used shall be Fat32 with the capacity not greater than 32GB.

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 cancle the process after power recovery.



Description

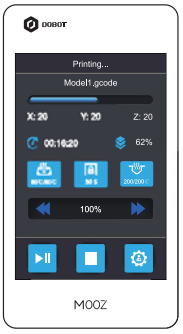
" " Continue: Resume the unfinished printing process

" " Cancle: Cancle the unfinished printing process

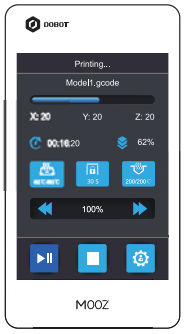
" " Return: The system will prompt you again next time you turn on the machine, provided that no file is executed after the power recovery. Your can use the "Return" button to check and prepare the machine, such as nozzle preheating and filament replacement.

3.7 Printing Control

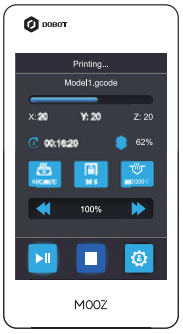
1. **Speed Control**: Change printing speed in real-time. Note that too high speed may sacrifice accuracy and service life of the machine.
2. **Process Control—Pause/Continue**: Press to pause the printing process, press again to continue.
3. **Process Control—Abort**: Press to abort current printing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

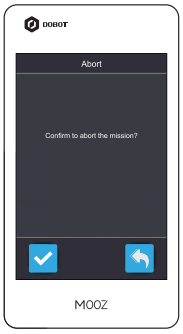


Speed Control



Process Control—Pause/Continue





Process Control—Abort

Auto power-off

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.

IV Troubleshooting

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 unpluging 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. 3. Please do not mix-use filament of different type or brand.
Q : Under extrusion, too little filament is extruded during printing	A : Carbonized material will accumulate in the nozzle after long time printing. To keep the print head in good condition, we suggest you clean the nozzle after every 1kg filament printing by applying the cold-pull method: Remove all three quick pipe connectors from the print head, then heat nozzle to 200~220℃, use your hands to feed filaments into the three channels simultaneously until all three filaments flows out for 5~15s. Stop heating and wait until nozzle temperature drops to 90~100℃, then pull out the filaments, in this way, the carbonized material may be pulled out together. Remove the bulged end and be ready for the next cold pull.You may need to perform the cold-pull 4~5 times to get the nozzle fully cleaned.

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, press down the plastic part of the quick pipe connector ② and remove the corresponding bourdon pipe ①. Remove the swelling end and reinstall it.

If the clogging issue is not solved by reinstalling the filament: Please refer to the last Q&A in Section 4.3 for maintenance of the nozzle.

In case of replacing the PTFE pipe ⑤, please screw off the quick pipe connector ② and filament barrel cap ③ after heating nozzle to target temperature.

Note: No need to disassemble the print head further to fix clogging issue. For replacing nozzle ⑯ or temperature sensor ⑨, please follow the steps below:

Remove the fixing screw of heat insulation block ⑦, take down the whole print head from the triangular piece ⑰.

Loosen the fixing screw of heating rod ⑧, for replacing the heating rod & temperature sensor suite ⑨.

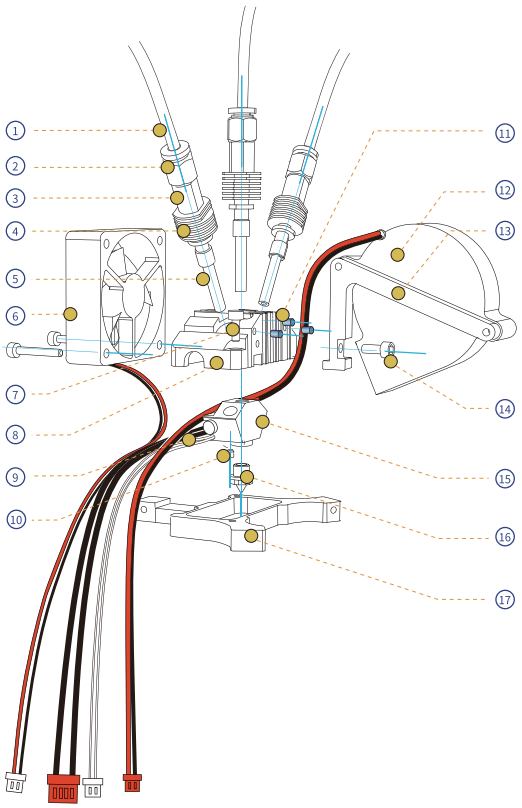
Warning: Please follow the steps above to replace temperature sensor. Fitting area between the nozzle ⑯ and filament barrel ④ is sealed with sealant during factory assembling. Please do not try to loosen the filament barrel fixing screw ⑪.

In case of replacing the nozzle ⑯, please screw off the old one with a plier or wrench. You may need to heat the nozzle to about 160℃ first.

Fit a new sealing gasket ⑯ into the groove of the nozzle, and tighten them on the heating block as hard as you can to prevent oozing issue ⑨.

Note: The sealing gasket is disposal and mustn't be reused.

① Bourdon pipe
② Quick pipe connector
③ Filament barrel cap
④ Filament barrel
⑤ PTFE pipe
⑥ Filament barrel cooling fan
⑦ Fixing screw of heat insulation block
⑧ Heat insulation block
⑨ Heating rod & temperature sensor suite
⑩ Heating rod fixing scew
⑪ Filament barrel fixing screw
⑫ Blower cooling fan assembly
⑬ Blower cooling fan support
⑭ Blower cooling fan support fixing screw
⑮ Heating block
⑯ Nozzle + sealing gasket
⑰ Triangular piece



Parameters

- Overall Dimensions: Φ350 * 325mm
- 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℃ Max.
- Heated bed Temperature: 100℃ Max. (at 20℃ ambient temperature)
- Forming Size: Φ100 * 100mm
- Applicable Materials: 1.75mm PLA
- Printing Speed: 10~100mm/s
- Operating Temperature: 0~40℃

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.

FCC Radiation Exposure Statement :

The device has been evaluated to meet general RF exposure requirement. The device can be used in fixed/mobile（min20cm）exposure condition without restriction.

Warning:

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

All RF frequencies are not restricted in EU member states

FCC ID: 2AHI4-MOOZ-3

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