

M
MOOZ

OPERATION
INSTRUCTION

DOBOT MOOZ-2 PLUS

INDUSTRIAL GRADE TRANSFORMABLE METALLIC 3D PRINTER

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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.	

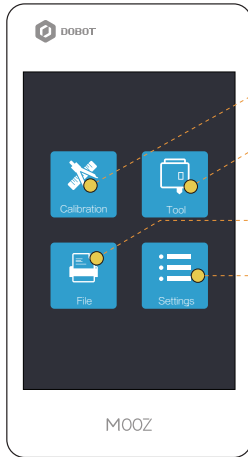


Note: Updated Firmwares, User Manuals, Softwares and Tutorial Videos will be uploaded to our official website www.dobot.cc constantly, please use them for better experience. Any support, please contact us: mooz@dobot.cc.

I

Operation Panel

1.1 Home Page



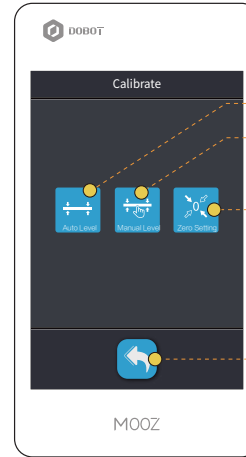
3-Point Leveling Interface

Control Tools Interface

File Directory Interface

Settings Interface

1.2 Calibration Page



Automatic levelling

Manual levelling

Entrance to zero point setting interface

Return

1.3 File Directory Interface



Display supported Gcode files in the current disk

Page backward

File execution button: After selecting the file, press the button to start printing or engraving or carving

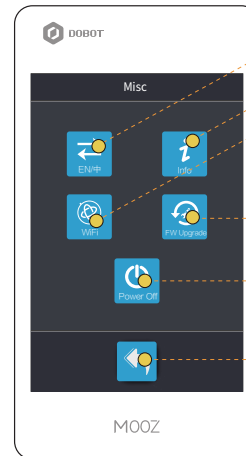
Page forward

Return

Protective Cover

File delete: Delete the selected file

1.4 Settings Interface



Switch languages

Machine information

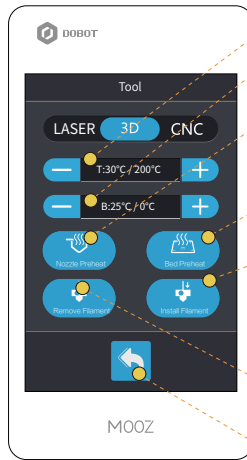
WiFi

Restore factory settings

Power-off

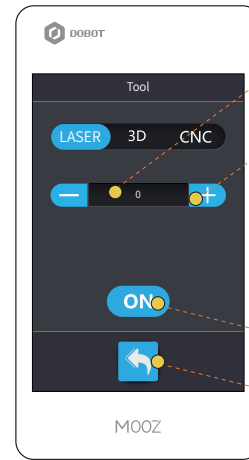
Return

1.5 3D Print Functional Module Control Interface



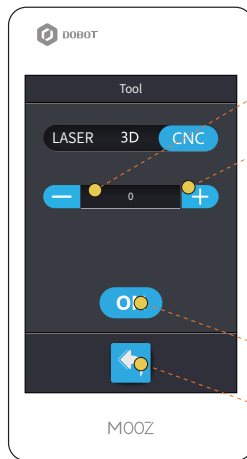
- Set nozzle preheat target temperature
- Set heated bed preheat target temperature
- Preheat nozzle: For testing whether the nozzle heating is normal, press again to stop heating
- Preheat heated bed: For testing whether the bed heating is normal, press again to stop heating
- Filament feed button: For installing filament and testing extrusion performance, provided that the nozzle is preheated to about 200°C
- Filament retraction button: For removing filament, provided that the nozzle is preheated to about 200°C
- Return

1.6 Laser Engraving Functional Module Control Interface



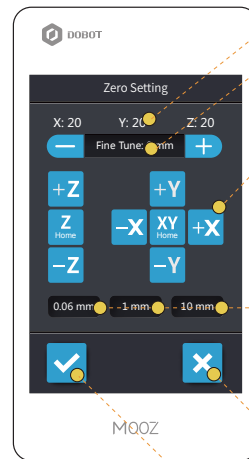
- Display current laser intensity
- Laser intensity adjustment +/-: Adjustment range: 0-255. Laser is not turned on if the intensity is 0. Laser is turned on at full power if the intensity is 255. This function is generally used for machine debugging. The set intensity will not take effect on the engraving file to be executed
- Laser switch (switching between 0/255)
- Return

1.7 CNC Carving Functional Module Control Interface



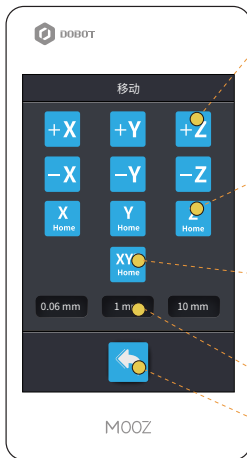
- Display current CNC spindle speed intensity
- CNC spindle speed adjustment +/-: Adjustment range: 0-255. Spindle is not turned on if the intensity is 0, and spindle is turned on at full power if the intensity is 255. This function is generally used for machine debugging, and the set intensity will not take effect on the carving file to be executed
- CNC spindle switch (switching between 0/255)
- Return

1.8 Zero Point Setting Interface



- Display current coordinates
- Fine tuning value for Z-axis zero point
- X/Y/Z motion control buttons
- Step distance switching buttons: It should be used along with motion control buttons, indicating the moving distance of linear actuators when the button is pressed (0.06mm/1mm/10mm)
- Cancel
- OK

1.9 X/Y/Z Motion Control Interface



Control motion of X/Y/Z axis linear actuators, the corresponding operations will not change any settings

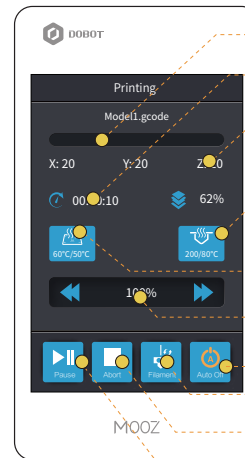
Reset X/Y/Z axis linear actuators, the corresponding operations will not change any settings

Reset all linear actuators, the corresponding operations will not change any settings

Step distance switching buttons

Return

1.10 Working Process Control Interface



Display execution progress of current file
Display time elapsed

Display current coordinates

Display current/target nozzle temperature

Display current/target heated bed temperature

Real-time working speed control buttons

Auto Power-off

Change Filament

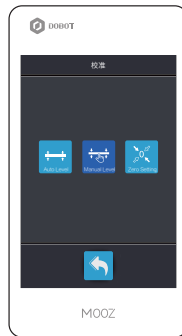
Abort

Pause/Continue

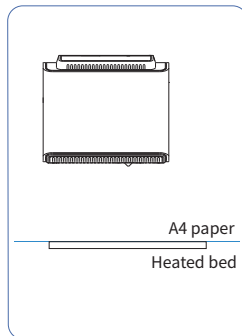
2.1 3-Point Leveling-Manual levelling

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.

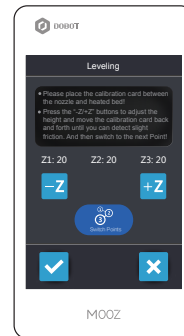
Operation steps:



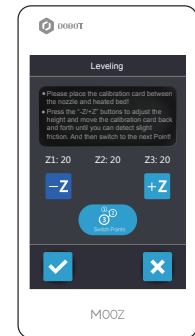
Press the “Entrance to 3-point leveling interface” button



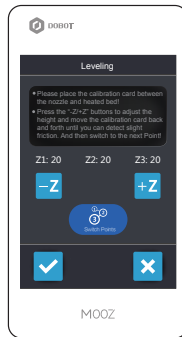
Place a piece of A4 paper on the heated bed



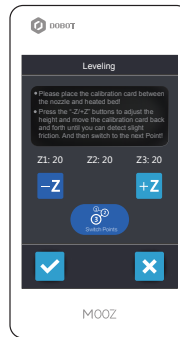
Press the “3-point leveling mode initiate/Point recording” button to enter 3-point leveling mode, and the nozzle will automatically go to a position right above **Point ①**



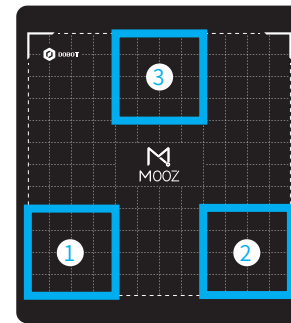
Press the “-Z” button to get the nozzle closer to the heated bed, and move the A4 paper back and forth at the same time. Stop just when the paper can slip with slight friction



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



Warning: Make sure that the cables are plugged in place before power-on! Hot-plug will cause malfunction!



Note: 1. Please access to www.dobot.cc to check for upgraded firmwares!

2. 3-point leveling mode can only be entered with 3D printing head connected.

3. Only Z coordinates will be recorded, so all you need to do is adjusting the height with a piece of paper.

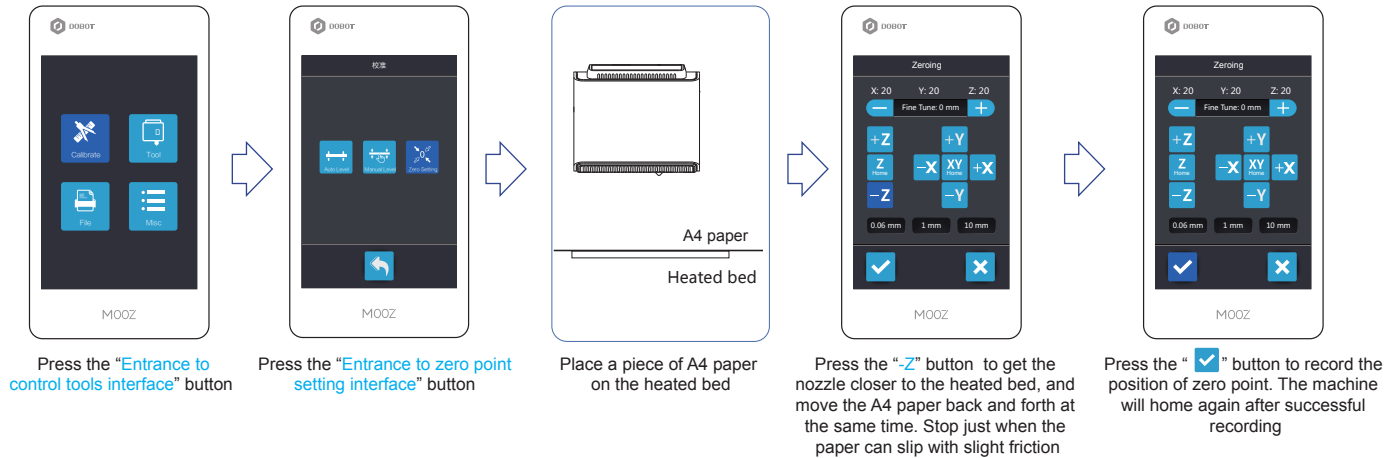
4. The recorded points will not be lost after power-off. But, once entering 3-point leveling mode, previously recorded points will be cleared automatically.

5. 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.

6. A re-assembled machine should be re-levelled.

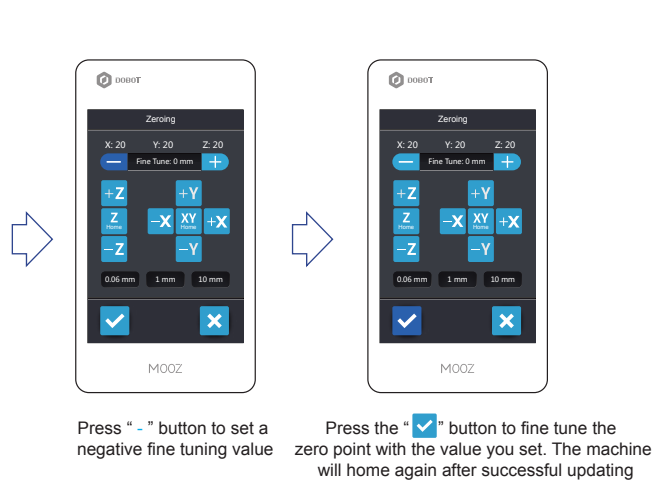
2.2 Set the Zero Point

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



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:



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 machine is reassembled or the functional module is switched.
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 190.
6. Please be prudent with the "✓" 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.

2.3 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.

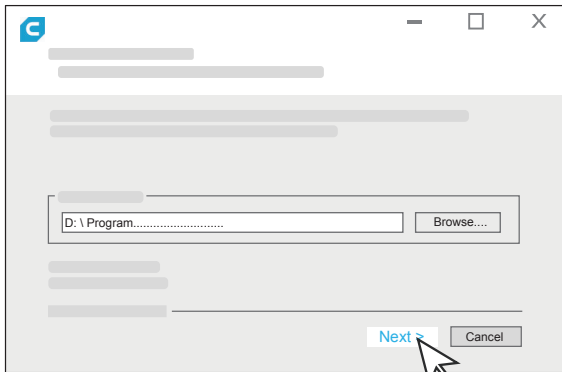
2.3.1 Install the Slicing Software

Operation steps:

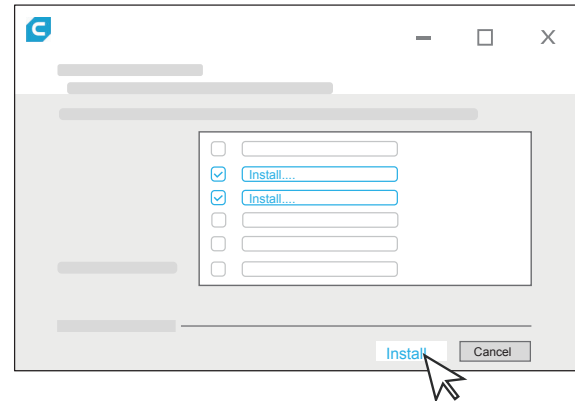
- ① Double-click  to install the software:

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.

2.3.2 Configuration for Initial Use



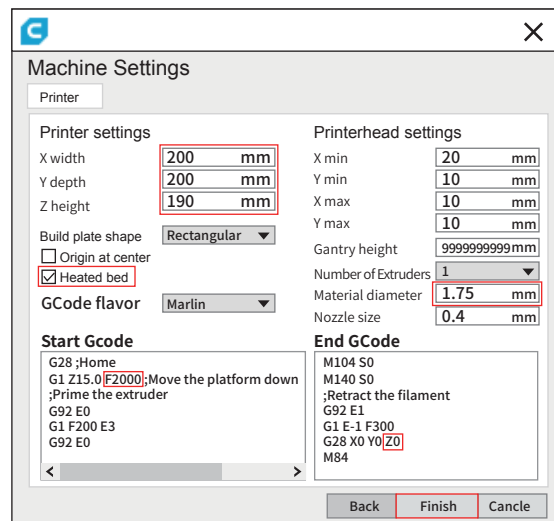
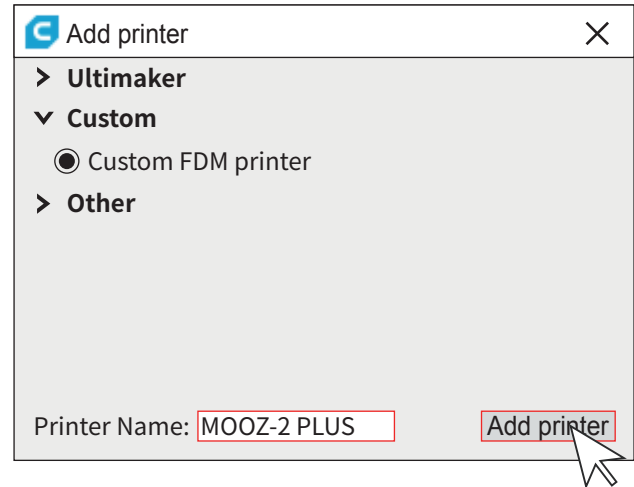
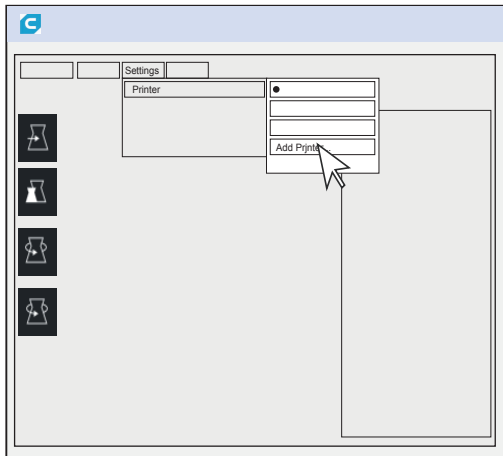
Description: Please visit www.dobot.cc to download the related tutorial videos and softwares.

Operation steps:

① Run Cura 3.1.0 and go “Settings” > “Printer” > “Add Printer” > “Custom”, name your printer “MOOZ-2 PLUS”, and click “Add printer”, dialog of Machine Settings will popup



② Configure the machine

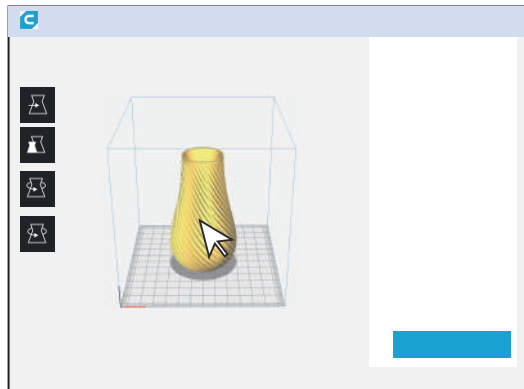


Note: Origin of MOOZ-2 PLUS is defaulted at left-bottom corner of the heated bed, so do not check the “Origin at center” box, otherwise the model will be printed outside of the heated bed.

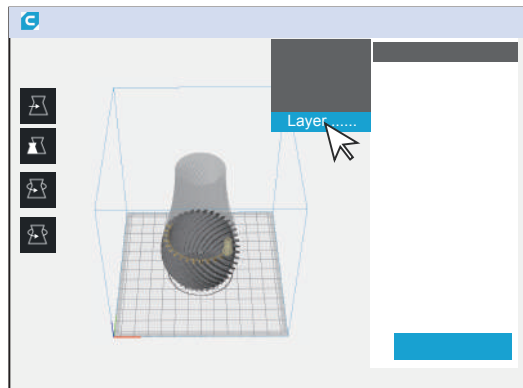
2.4 Features

Profile the model:

- ① Adjust the model: left click on the model, four options “”, “”, “” and “” will appear on the left side of the interface, and 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.



Description of key profile settings:

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.

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.

Top/Bottom Thickness: Determine the bottom/top thickness of the model.

Infill Density: Determine the filling density of the internal grid of the model, generally set at 15% or less.

Printing Temperature: Need to be set according to filament type. Suggested value for PLA is 190~220°C, and for TPU is 210~230°C.

Build Plate Temperature: Need to be set according to filament type. Suggested value for PLA is 60°C~80°C, and for TPU is 60°C~80°C, and for PETG is 75°C~80°C, and for Wood is 30°C~50°C.

Diameter: Set filament diameter to 1.75.

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.

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 build plate", it indicates that support can be added only between the print platform and the model hovering position, not on the model.

Build Plate Adhesion: Brim: A few layers of outer ring should be added on the bottom edge of the model so as to prevent warping.
Raft: Get the whole model raised by adding a raft-like base on the bottom when the heated bed leveling status is small or not satisfying.



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".

Quality		
Layer Height	<input type="text" value="0.2"/>	mm
Line Width	<input type="text" value="0.4"/>	mm
Support Line Width	<input type="text" value="0.4"/>	mm
Shell		
Wall Thickness	<input type="text" value="1.2"/>	mm
Top/Bottom Thickness	<input type="text" value="1.2"/>	mm
Print Thin walls	<input checked="" type="checkbox"/>	
Infill		
Infill Density	<input type="text" value="20"/>	%
Gradual Infill Steps	<input type="text" value="0"/>	
Material		
Printing Temperature	<input type="text" value="205"/>	°C
Build Plate Temperature	<input type="text" value="65"/>	°C
Diameter	<input type="text" value="1.75"/>	mm
Flow	<input type="text" value="100"/>	%
Enable Retraction	<input checked="" type="checkbox"/>	
Retraction Distance	<input type="text" value="6.5"/>	mm
Retraction speed	<input type="text" value="50"/>	mm/s
Speed		
Print Speed	<input type="text" value="40"/>	mm/s
Infill Speed	<input type="text" value="40"/>	mm/s
Wall Speed	<input type="text" value="20.0"/>	mm/s
Outer Wall Speed	<input type="text" value="20.0"/>	mm/s
Inner Wall Speed	<input type="text" value="40.0"/>	mm/s
Top/Bottom Speed	<input type="text" value="20.0"/>	mm/s
* Cooling		
Enable Print Cooling	<input checked="" type="checkbox"/>	
Support		
Generate Support	<input checked="" type="checkbox"/>	
Support Placement	<input type="text" value="Everywhere"/>	
Support Pattern	<input type="text" value="Zig Zag"/>	
Support Density	<input type="text" value="4"/>	%
÷ Build Plate Adhesion		
Build Plate Adhesion Type	<input type="text" value="Raft"/>	
Raft Extra Margin	<input type="text" value="5"/>	mm
Raft Air Gap	<input type="text" value="0.2"/>	mm
Initial Layer Z Overlap	<input type="text" value="0.1"/>	mm
Raft Top Layers	<input type="text" value="4"/>	
Raft Base Line Width	<input type="text" value="0.8"/>	mm
Raft Line Spacing	<input type="text" value="1.6"/>	mm
Raft Print Speed	<input type="text" value="20.0"/>	mm/s
⚙ Special Modes		
Print Sequence	<input type="text" value="All at Once"/>	
Surface Mode	<input type="text" value="Normal"/>	

2.5 Offline Printing



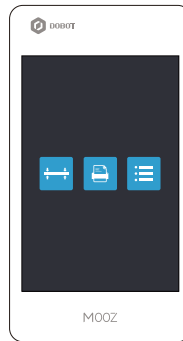
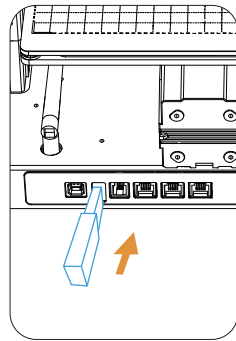
Warning: 1. After printing started, please make sure the first layer is in good bonding condition, and sort out the filament before leaving. Loose bonding may cause falling off of the model, and result in clogging of the print head. "Raft" build plate adhesion type is suggested for better bonding and easy removal of finished model.
2. After printing finished, please wait until heated bed cools down to ambient temperature, then bend the flexible gasket slightly to remove the print .



Note: 1. The U disk 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.
- 2.Follow the steps below to execute the Gcode file.



Enter the File interface



Select the file you want to print



Click print button to start printing



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



Start printing automatically

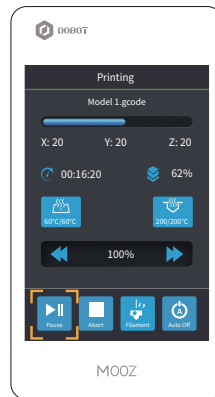
2.6 Printing Control

1 Printing Control

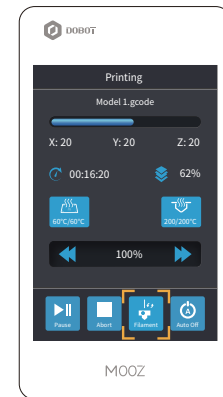
- 1.Speed Control: Change printing speed in real-time. Note that too high speed may sacrifice accuracy and service life of themachine.
2. Process Control—Pause/Continue: Press to pause the printing process, press again to continue.
3. Change filament: If the filament is about to run out, please click Change filamen button. The current process will be paused and the old filament will be aborted. Please follow the tips on the touch screen to install new filament.
- 4.Process Control—Abort: Press to abort current printing process. The process will be unrecoverable once aborted, please be prudent.
5. Auto power-off: The machine will power off automatically after finishing the current printing/engraving/carving process, the “Auto power-off” button is activated on default.



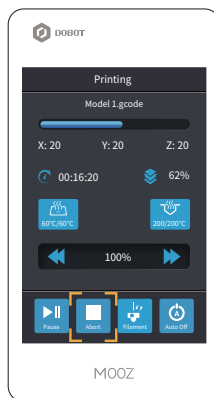
Speed Control



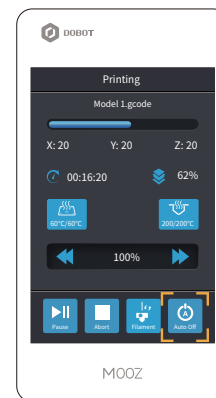
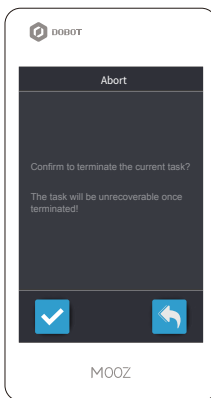
Process Control—
Pause/Continue



Chage Filament



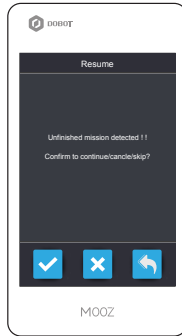
Process Control—Abort






Auto power-off

2.7 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.



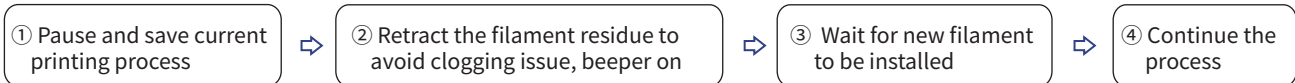
Description

- “  ” 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 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.

2.8 Filament Runout Detection

The 3D print functional module is designed with build-in filament detection sensor.

1. The filament runout detection must be turned off to preheat the nozzle, and the preheating process will be interrupted if the filament runout detection is turned on during the process.
2. If the filament runs out during printing, state of the sensor will change from “runout detection turned off” to “runout detection turned on”, and the filament runout detection function will work as follows:



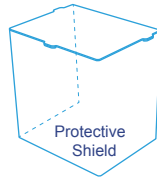
3. The filament detection sensor module has adopted modular design. If you do not need the function, or if the sensor is not working, you can unplug the temperature sensor cable (white) from the module, remove the module connecting cable (black) from the PCB board on the bottom of plastic cap, and plug the temperature sensor to the PCB board directly. Refer to Section 6.4.4

2.9 Notes for Printing with Soft Filament

1. Compared to PLA, soft filament like TPU requires higher printing temperature to reduce feeding resistance, recommended value for TPU is 210°C~230°C.
2. You must reduce extrusion force when printing with soft filament, please refer to step 4 in Section 6.4. Different kinds of soft filament may vary in required extrusion force. Since extrusion force is proportional to the spring force, inadequate or intermittent feeding issue will occur if the spring force is set too small. On the other hand, if the spring force is set too big, the filament may curl inside the extruder under high feeding resistance condition. You need to test it according to the soft filament.
3. Recommended heated bed temperature for TPU is 60°C~80°C

III

Laser Engraving



Warning :
Please wear protective glasses!
Avoid eye or skin exposure to direct radiation. Away from children!



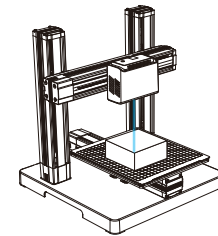
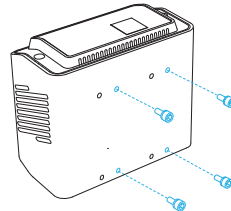
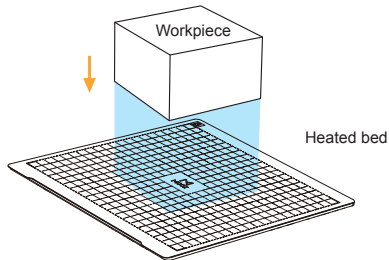
Warning: Never touch.
Away from children!



Note: Please be sure to wear the goggles and use the protective shield for safety!

3.1 Fix the Workpiece and Replace the Functional Module

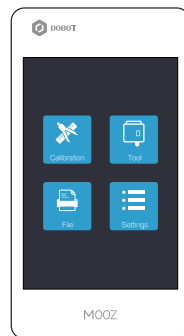
Operation steps: Stick a small piece of tape to the bottom of workpiece (traceless double-sided tape is recommended), keeping the edges of the workpiece aligned with grids and adhere it to the heated bed.



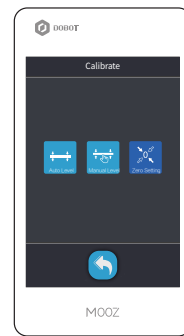
Wear the protective glasses to focus the laser and set zero point

3.2 Set the Zero Point

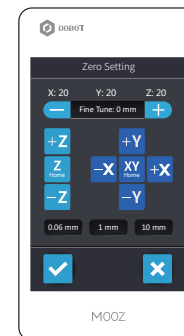
Operation Steps:



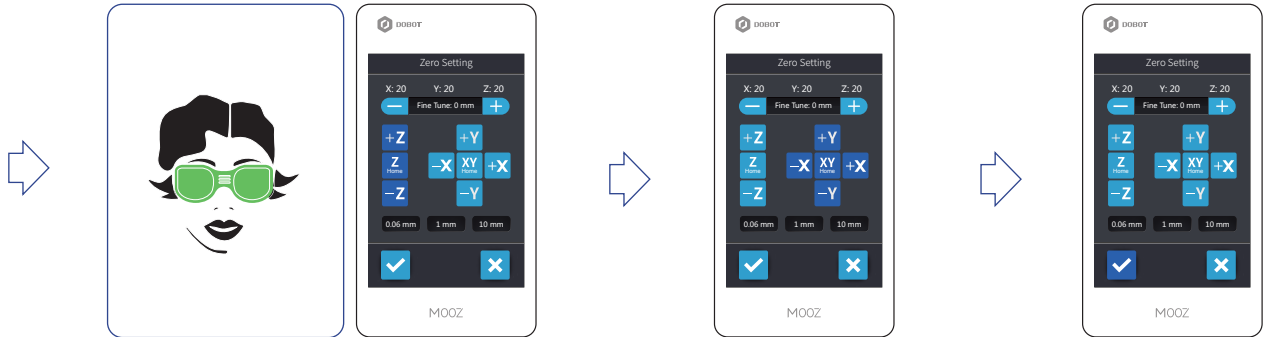
Press the **Calibration** button



Press the “**Entrance to zero point setting interface**” button



Control the X-axis and Y-axis to make the laser spot irradiated on the workpiece



Wear the goggles to control the Z-axis to focus the laser beam (until the spot is the minimum which should be judged by naked eyes). Switch the step distance to 1mm for fine tuning

Adjust the X-axis and Y-axis to move the laser spot to desired position, generally intersection at the lower left corner of the workpiece

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



Warning: Make sure that the cables are plugged in place before power-on! Hot-plug will cause malfunction!

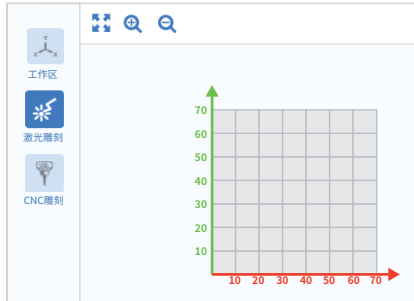


- Note:
1. For the laser engraving function, the zeros of X, Y and Z axes shall all be set.
 2. Zero point will not be lost after power-off, so there's no need to reset it. However, the zeros may be deviated and needs to be reset after the machine is reassembled or the functional module is switched.
 3. If the position or size of the workpiece changes, it is necessary to refocus and set the zero point.
 4. The laser unit is featured with focus length of 5~10mm, so it may not need to switch to 0.1mm step distance for focusing.

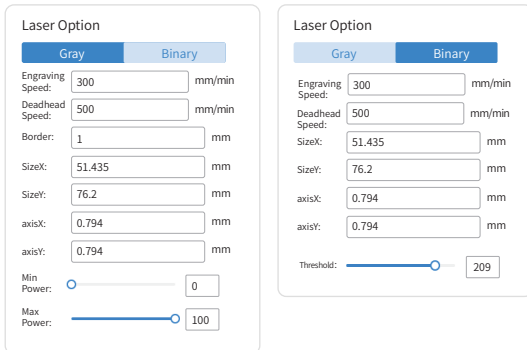
3.3 Use Software to Generate Gcodes

Prerequisites : Computer has downloaded and installed MOOZStudio.
The download path is <https://www.dobot.cc/downloadcenter/dobot-mooz.html#most-download>.

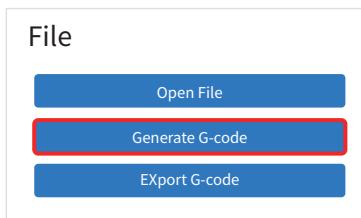
Step 1 : Double-click MOOZStudio to enter the software interface., select Laser.



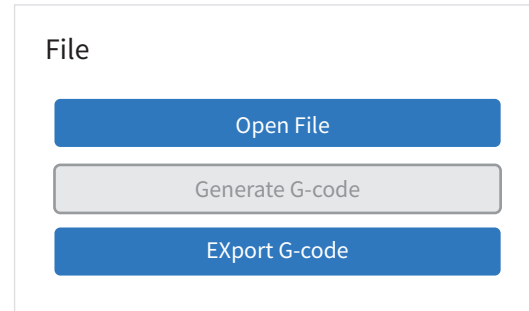
Step 3 : Set the image parameters according to different laser type (Gray, Binary). Generally there are no special requirements. Select the default parameters.



Step 4 : Click Generate G-code to generate a G-code file.



Step 2 : Click Open File to import image.



Laser parameter description:

Engraving speed : Speed of MOOZ engraving

Deadhead speed : Movement speed of each axis

Border: Width of the border

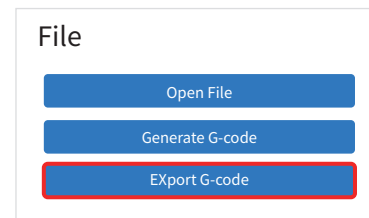
SizeY: Length of image SizeX: Width of image
axisY: Y coordinate of image axisX: X coordinate of image

Min power: Min laser power, the range is 0~100

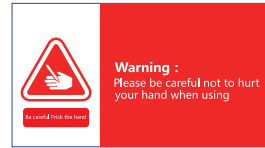
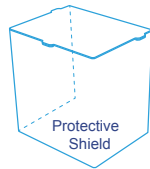
Max power: Max laser power, the range is 0~100

Threshold: When the engraving type is Binary, you need to adjust the image exposure effect, drag the progress bar to adjust the exposure effect to the best, that is, the image and the background are black and white distinct.

Step 5 : Click Export G-code to save the G-code file to a USB flash drive.



IV CNC Carving



Note: Please be sure to wear the goggles and use the protective shield for safety!

4.1 Install the CNC Platform and Workpiece

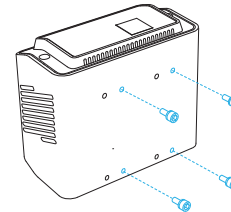
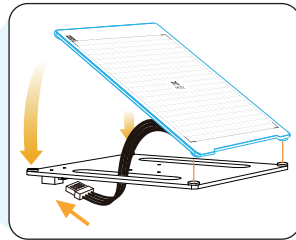
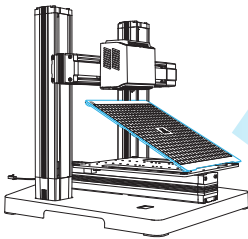


Warning : Heated bed (including the glass and magnets) is a fragile component, please operate with care! Do not mount and dismount it regularly during daily use.

Gently separate the heated bed glass and workbench.



Changing CNC Tool



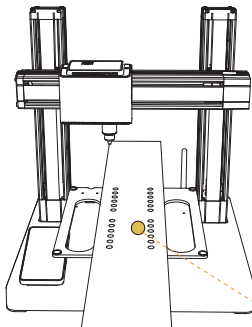
Put the dust washer on the workbench and align the holes.



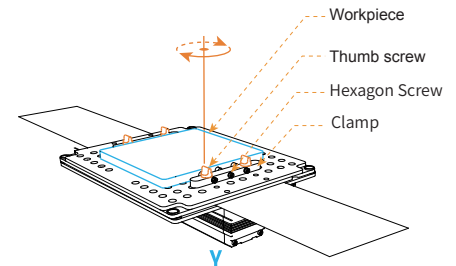
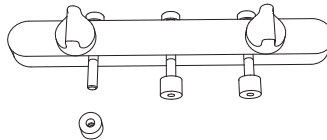
Install the length adjustment screw into the clamp.



Put the MDF plate on the dust washer and align the holes. Adjust the position of the fixture according to the size of the workpiece, and tighten the four screws to fix the fixture.



CNC dustproof gasket



Note: Please be sure to tighten the screws to fix the platform. Check them regularly in case of looseness after long time use.

4.2 Install the CNC Bit

Operation steps:

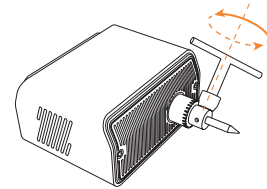
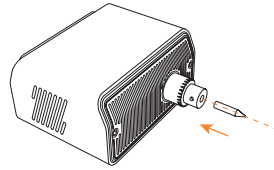
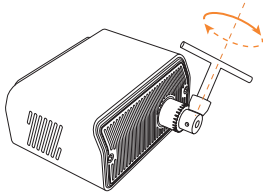
① Rotate counterclockwise to expand the chuck with the wrench



② Insert the CNC bit into the chuck as far as you can

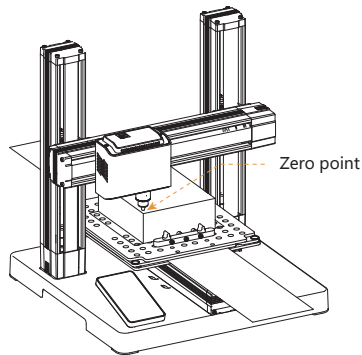


③ Rotate clockwise to clamp the CNC bit



4.3 Set the Zero Point

Operation steps: Similar to laser engraving (Refer to Section 3.2 for details on setting the zero point)



Warning: When setting the zero point, use a small step distance in the end (0.1 / 1mm) so that the CNC bit does not accidentally hit the workpiece.



Note: 1. Keep the tool tip just or about to touch the upper surface of the workpiece in case of setting Z-axis zero point.

2. The current fixing method may damage the surface of the workpiece, and the user may place a block between the hex screws and the workpiece as needed to compress the workpiece, provided that the block shall not interfere movement of the tool.

3. CNC chuck is easy to get rusty for long-time exposure to moisture. Please regularly apply anti-rust oil. In case of not in use for a long time, please remove the entire module and wrap it with plastic bag!

4. The linear actuators contain precision components, please be sure to install the dustproof gasket to prevent intrusion of flying chips.

5. The machine may produce disturbing noise during working, you may leave it somewhere away from people and wait the work to be done.

6. Always use vacuum cleaner to remove the produced sawdust, blowing it away will contaminate the linear actuators and affect service life of the machine!

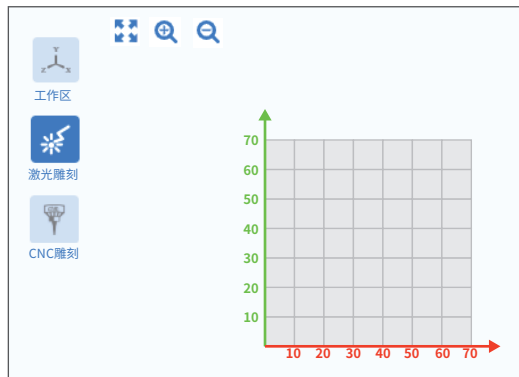
7. Please decide whether there is collision risk between the tool and CNC clamps according to the size of workpiece and pattern you about to carve, elevate the workpiece with block, or put plastic spacer between the workpiece and clamp if necessary.

4.4 Use Software to Generate Gcodes

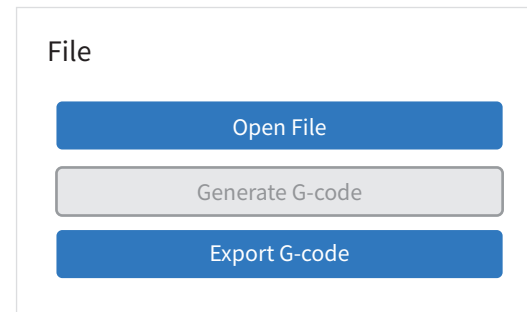
Prerequisites : Computer has downloaded and installed MOOZStudio.

The download path is <https://www.dobot.cc/downloadcenter/dobot-mooz.html#most-download> .

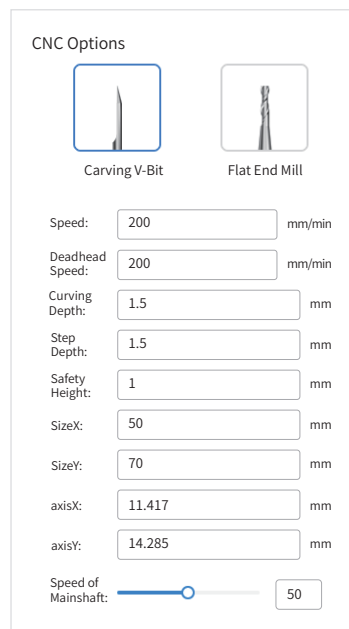
Step 1: Double-click MOOZStudio to enter the software interface. Select CNC.



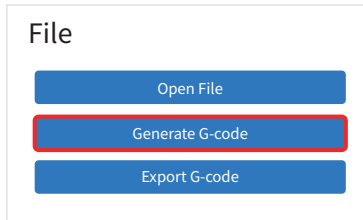
Step 2 : Click Open File to import image.



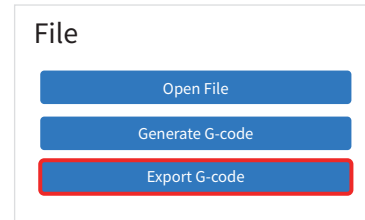
Step 3 : Set the image parameters. Generally there are no special requirements. Select the default parameters.



Step 4 : Click Generate G-code to generate a G-code file.



Step 5 : Click Export G-code to save the G-code file to a USB flash drive.



Setting Description:

- ① **Size:** Adjust the size of the carving pattern, use the zoom buttons for rough adjusting.
- ② **Carving Speed:** Adjust according to the hardness of different materials, the materials that are more difficult to carve require the slower speed. Carving speed can be adjusted real-time through the touch screen. The recommended values for wood are as follows: 3mm / layer - 120mm / min; 2mm / layer - 200mm / min; 1mm / layer - 260mm / min.
- ③ **Carving Depth:** Including the settings for maximum depth and minimum depth of embossment.
- ④ **Step Depth:** The carving depth of each layer. If the total carving depth (MAX-MIN) is greater than the step distance, the software will slice in layers.
- ⑤ **Safety Height:** The height coordinates of tool when the path is switched.
- ⑥ **Spindle Speed:** Use lower spindle speed can reduce noise and vibration in case of cutting soft material.
- ⑦ **SizeX:** Width of image
- ⑧ **SizeY:** Length of image
- ⑨ **axisX:** X coordinate of image
- ⑩ **axisY:** Y coordinate of image



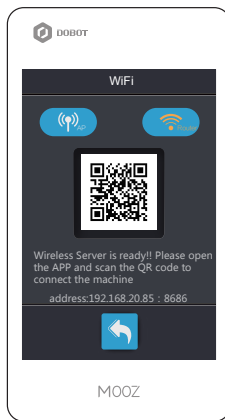
Warning: Since output torque is also reduced at lower spindle speed, if you try to cut hard material with low spindle speed, the spindle may stall and get burnt! Please do not reduce the spindle speed sharply.

5.1 WiFi Transfer

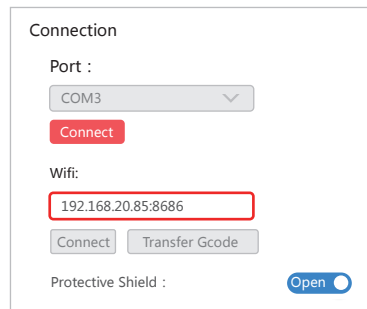
You can transfer a G-code file from PC to MOOZ-2 PLUS via WiFi.

Prerequisites: MOOZ-2 PLUS and PC must be in the same LAN segment.

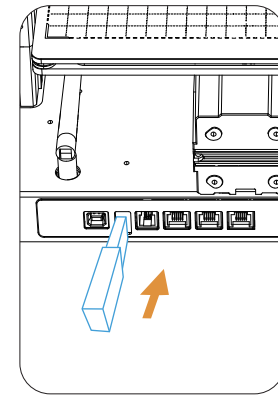
Step 1 : Click Setting>WiFi>Router on the touch screen to select an available wireless network and connect it. A WiFi address will be displayed on the screen after the connection is successful.



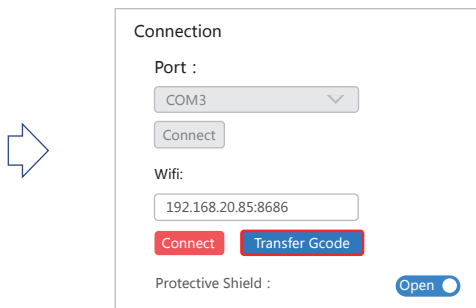
Step 2 : Open MOOZStudio and input the WiFi address generated on the touch screen into the box as shown in the figure below. Click Connect.



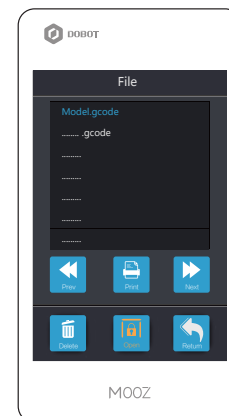
Step 3 : Insert USB flash drive into USB interface on MOOZ-2 PLUS.



Step 4 : Click Transfer Gcode to transferring G-code file. When the progress bar shows 100%, the transmission is successful. The name format of the transferred file will be automatically modified to gcode_X.gcode, X represents the serial number.



Step 5 : Disconnect the WiFi connection and click File on the touch screen to select the file for printing.

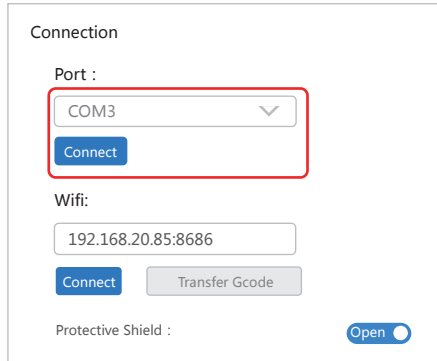


5.2 USB Control

Users can control each axis of MOOZ-2 PLUS, set working origin, or print, etc. on MOOZStudio using USB online function.

Prerequisites: MOOZ-2 PLSU and PC have been connected via USB cable

Step 1 : Open MOOZStudio, select the serial port, and click Connect.



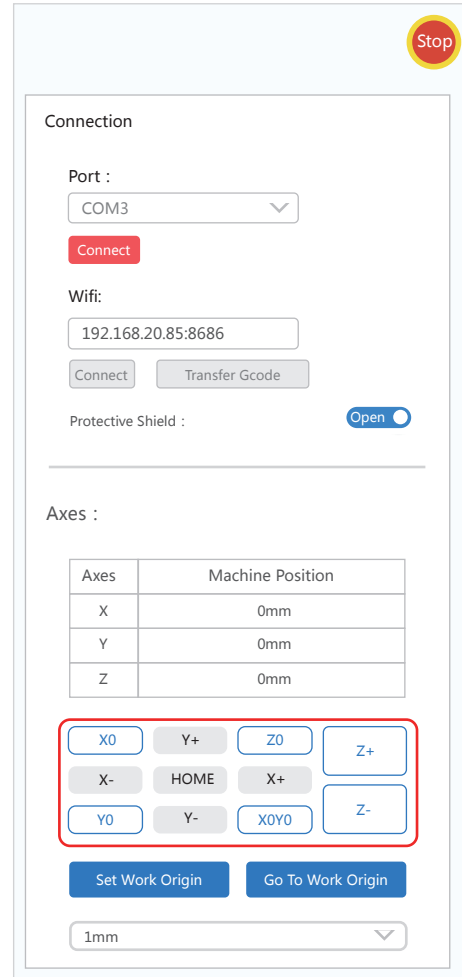
Connection

Port :
COM3
Connect

Wifi:
192.168.20.85:8686
Connect Transfer Gcode

Protective Shield : Open

Step 2 : After the connection is successful, you can click the buttons on the axes interface to control each axis of the MOOZ-2 PLUS and set work origin, etc.



Connection

Port :
COM3
Connect

Wifi:
192.168.20.85:8686
Connect Transfer Gcode

Protective Shield : Open



Axes :

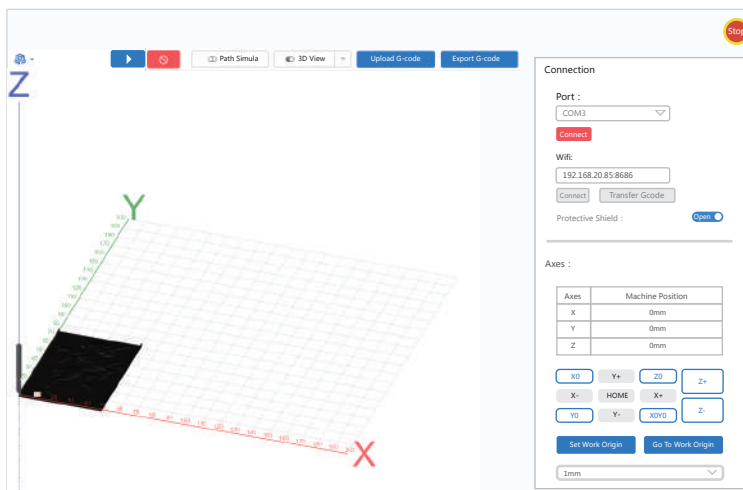
Axes	Machine Position
X	0mm
Y	0mm
Z	0mm

X0 Y+ Z0 Z+
X- HOME X+
Y0 Y- X0Y0 Z-

Set Work Origin Go To Work Origin

1mm

Step 3 : Click  to print online. If an unexpected occurs during printing, you can click emergency stop button  to stop printing.



Note: • This function is only used for laser engraving and CNC engraving.

- For your safety, the protective cover is turned on by default. You can click Open on the touch screen to close the protective cover. Please ensure your security and DO NOT TOUCH the laser beam and carving bit during the process after closing the protective cover.
- Children must be supervised by adults. Please power off the device after the use.

6.1 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 shall not be checked, refer to Section 2.3.2.

Q : Print center is about 15mm off heated bed center in X direction

A : 1. Check whether the right set of mounting holes is used to install the print functional module. Refer to Section 3.3.1
2. Please check if the X-axis linear actuator is installed in the right direction.

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 190 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. Check if the fixing screws of the platform is loose.
2. Re-level the heated bed.
3. 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.
4. 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, melted filament flowing upwards and clogging around the nozzle

A : Please set the zero point correctly, increase heated bed temperature, and make sure the first layer is successful before leaving. Dealing method: Remove the bottom plastic cap, and heat the nozzle to make the cleaning easier. Be careful of hot nozzle!

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

A : 1. Check if the file system format of your U disk 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.
4. Please use qualified U disk.

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.

6.2 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 green indicator light inside the functional module is on.
3. Connect the 3D print functional module and 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 or filament runout detector. Refer to Section 6.4 for maintenance.

Q : Unable to exit filament runout detection interface

A : Use the spare temperature sensor to decide if the failure is caused by faulty temperature sensor or filament runout detector. Refer to Section 6.4 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 orderly, restart the machine to decide if the failure is caused by corresponding faulty component.
2. Update the mainboard firmware.
3. Check if green indicator light inside the functional module is on. Update the touch pad firmware if so.

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

A : 1. Unplug the cables, U disk orderly, restart the machine to decide if the failure is caused by corresponding faulty component.
2. If the issue is solved after unplugging the 3D print functional module, then the failure may caused by faulty PCB board inside the functional module.

Q : Auto shutdown after pressing nozzle heating button

A : 1. Unplug the cables, U disk orderly, restart the machine to decide if the failure is caused by corresponding faulty component.
2. If the issue is solved after unplugging the 3D print functional module, please check if failure is caused by short-circuit of heating rod cables. Refer to Section 6.4 for maintenance.

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

A : Check if the 3D print functional module and heated bed are reversely connected.

6.3 3D Print Functional Module

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 6.4.

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 6.4.
2. Use the spare temperature sensor to decide if the failure is caused by faulty temperature sensor or filament runout detector. Refer to Section 6.4 for maintenance.

Q : Unable to preheat the nozzle

A : 1. Check if nozzle temperature displays normally.
2. Check if red indicator light inside the functional module is on/flashing.
3. Check if the heating rod cable is connecting to the correct socket properly. Refer to Section 6.4.
4. Heating rod is damaged.

Q : Unable to extrude filament normally

A : 1. Heat nozzle to about 250 C , try extrude several times first, then pull out the filament. Remove the bulged end and install it back.
2. Refer to Section 6.4 for maintenance if the method 1 failed.

Q : The 3D print functional module produces deep loud abnormal noise

A : The extruder cooling fan blades are damaged.

Q : Under extrusion, too little filament is extruded during printing

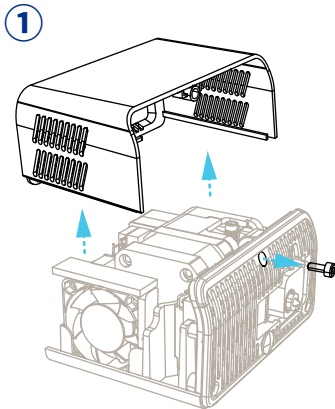
A : Carbonized material will accumulate in the nozzle after long time printing. To keep the print head in good condition, we suggest you clean the nozzle after every 1kg filament printing by applying the cold-pull method: Heat nozzle to 200 C , extrude until melted filament flows out. Stop heating and wait until nozzle temperature drops to 90~100 C , then pull out the filament, in this way, the carbonized material may be pulled out together. You may need to perform the cold-pull 4~5 times to get the nozzle fully cleaned. Method to identify if the under extrusion issue is fixed: After each cold-pull, remove the bulged end and reinstall the filament, pinch the filament near the inlet with your finger and extrude continuously to feel if the feeding resistance is reduced.

Q : Abnormal nozzle temperature display: 300 C

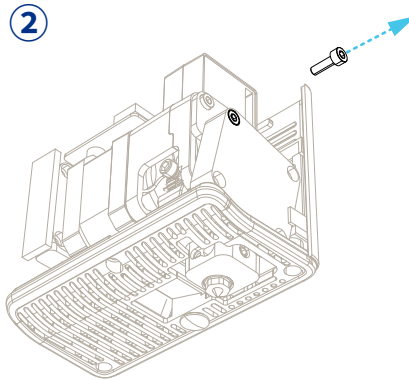
A : If the auto-leveling module is installed, the nozzle temperature will display 300, please remove the auto-leveling module to display the normal temperature.

6.4 Appendix Disassemble 3D print module

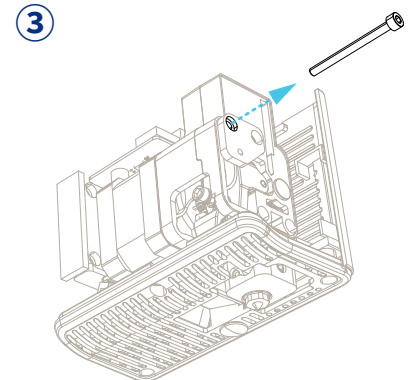
Step 1 : Remove the print head housing after loosening the screws with an Allen wrench, as shown below.



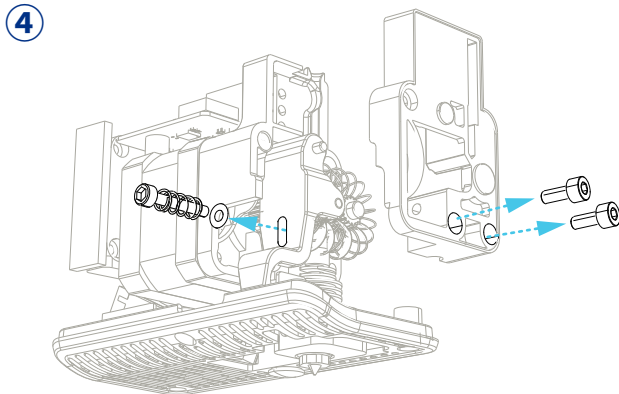
Step 2 : Loosen the screws on the right fan and remove the fan.



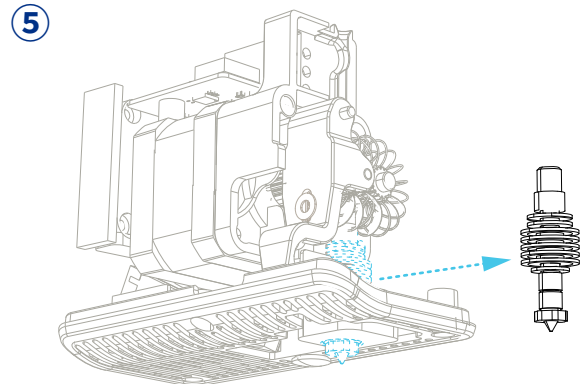
Step 3 : Loosen the fan gasket and remove it.



Step 4 : Loosen the three screws, as shown in the following figure, separate the right blade of the speed reduction extruder.



Step 5 : Take out the hot-end suite, and clean up the blocked material.





Q @Dobotarm

Shenzhen Yuejiang Technology Co., Ltd | China

ADDRESS: Chongwen Garden, Nanshan i-Park, Nanshan District, Shenzhen, China

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 a minimum distance of 20cm between the radiator & your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

All RF frequencies are not restricted in EU member states

FCC ID: 2AH14-MOOZ-2-PLUS



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