

O User Manual

MEGA PRO

Dear customer,

Thank you for choosing ANYCUBIC products.

Maybe you are familiar with 3D printing technology or have purchased ANYCUBIC printers before, we still highly recommend that you read this manual carefully. The installation techniques and precautions in this manual can help you avoid any unnecessary damage or frustration.

More information please refer to:

1. http://www.anycubic.com/

ANYCUBIC website provides software, videos, models, after-sale service, etc.

Please go to our website to report any issues and we are likely to answer or solve all the questions for you!

2. Facebook page and Youtube channel as shown below.



ANYCUBIC website



Facebook page



Youtube channel

Team **ANYCUBIC**

Safety instruction

Always follow the safety instructions during assembly and usage, to avoid any unnecessary damage to the machine or individual injury



Please contact our customer service first if you have any issue after receiving the products.



Be cautious when using the scraper. Never direct the scraper towards your hand.



In case of emergency, please immediately cut off the power of ANYCUBIC 3D printer and contact the technical support.



ANYCUBIC 3D printer includes moving parts that can cause injury.



It is recommended to wear protective glasses when cleaning/ sanding the printed models to avoid small particles contacting eyes. And you must wear protective glasses when laser engraving.



Keep the ANYCUBIC 3D printer and its accessories out of the reach of children.



Vapors or fumes may be irritating at operating temperature. Always use the ANYCUBIC 3D printer in an open and well ventilated area.



ANYCUBIC 3D printer must not be exposed to water or rain.



ANYCUBIC 3D printer is designed to be used within ambient temperature ranging 8°C-40°C, and humidity ranging 20%-50%. Working outside those limits may result in low quality printing.



Do not disassemble **ANYCUBIC** 3D printer, please contact technical support if you have any question.

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Technical Specification

Basic Parameters

Printer Dimensions: $405 \text{mm} \times 410 \text{mm} \times 453 \text{mm}$

Net Weight: ~11kg

Input rating: 110-240V AC 50Hz / 60Hz

Output rating: 12V 25A

Ambient Operating

Temperature:

8 °C - 40 °C

Connectivity: SD card; USB port(expert users only)

3D Printing

Technology: FDM (Fused Deposition Modeling)

Build Size: $210 \times 210 \times 205 \text{ (mm}^3\text{)}$

Layer Resolution: 0.05-0.3 mm

Positioning Accuracy: X/Y 0.0125mm, Z 0.002mm

Extruder Quantity: Single

Nozzle/Filament Diameter: 0.4 mm/1.75mm

Print Speed: 20~100mm/s (suggested 60mm/s)

Travel Speed: 100mm/s

Operational Extruder

Temperature: Max 260 °C

Operational Print Bed

Temperature: Max 100 °C

Technical Specification

Supported Materials: PLA, TPU

Slicer Software: Cura

Software Input Formats: .STL, .OBJ, .DAE, .AMF

Software Output Formats: GCode





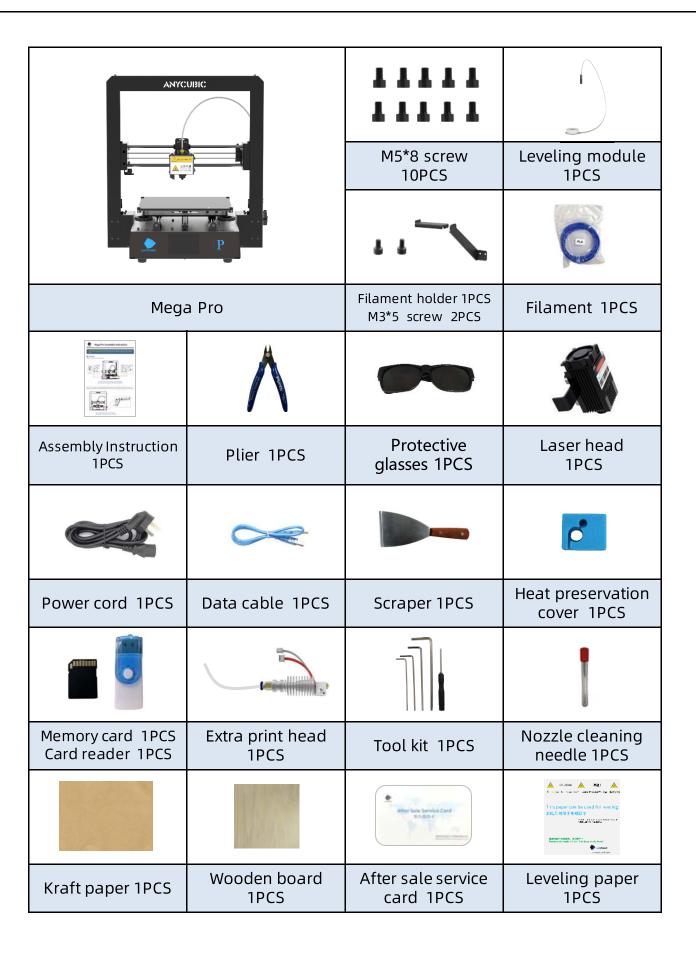




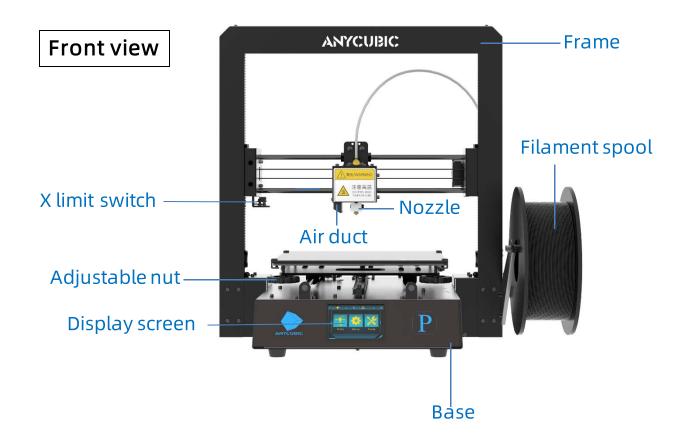


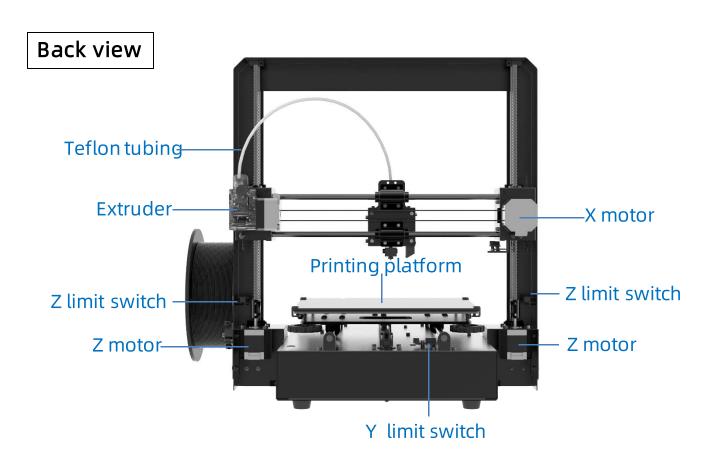


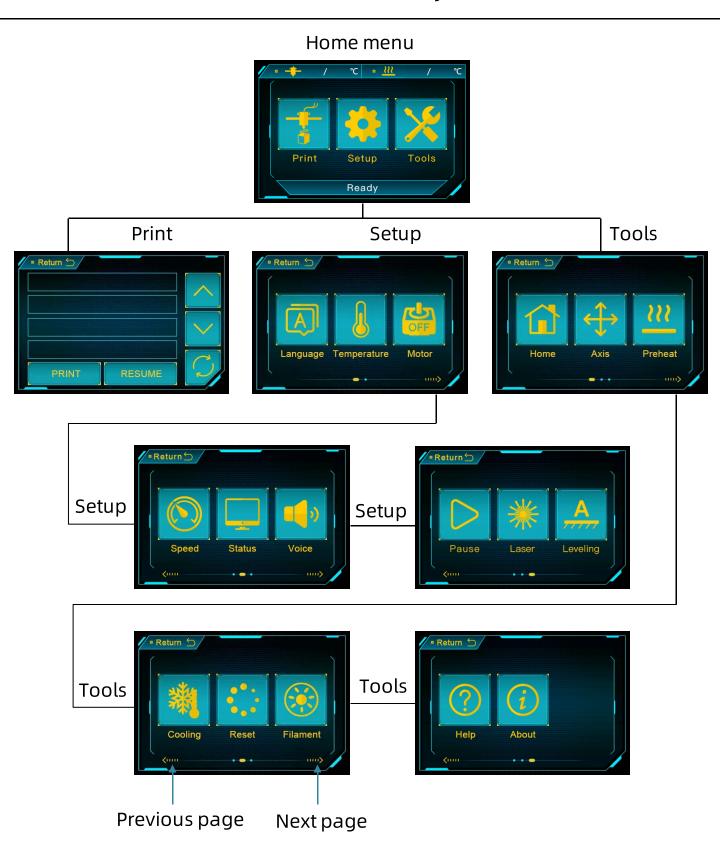
Packing list



Product Overview







Home menu



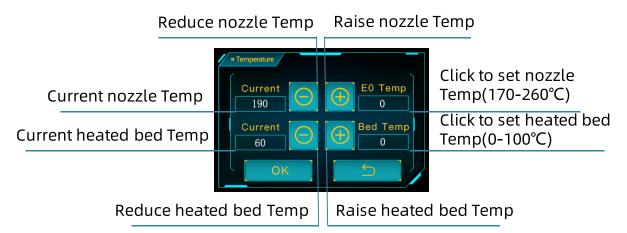
Print



Setup

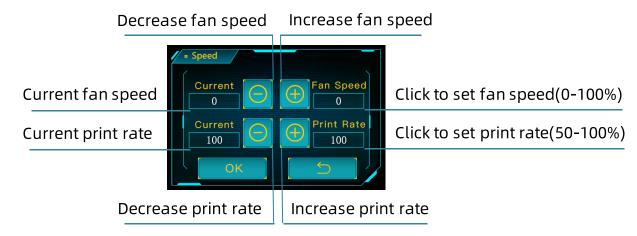
Language: Change language (English/Chinese)

Temperature:



Motor: Disable all motors (only valid when machine is not printing)

Speed:



Status: (the following with * is valid only for offline printing , i.e. print from memory card)



Voice: Turn on/off the screen sound

Pause:



*Set "height 1" \rightarrow "height 2" \rightarrow ... in ascending order, and the maximum cannot exceed 205.

Laser:



Leveling:

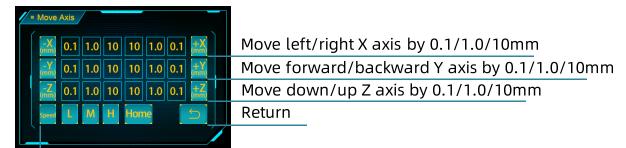


Tools

Home: (only valid when machine is not printing)



Axis: (only valid when machine is not printing)



Speed mode for axis move Low/Medium/High

Preheat: (only valid when machine is not printing)



Cooling: Cut off the power to hot-end and heated bed (only valid when machine is not printing)

Reset: Popup window to decide if reboot the mainboard

Filament: (only valid for offline print)



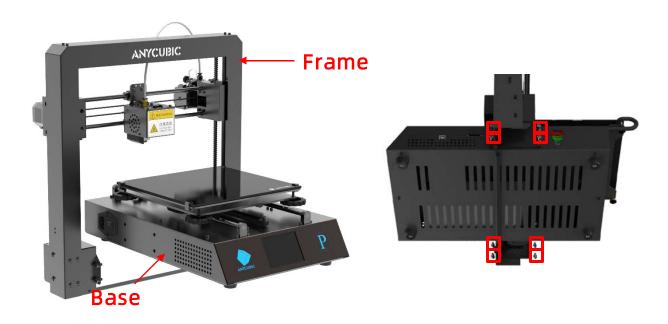
Help: Basic description of the Menu

About: Information about the product

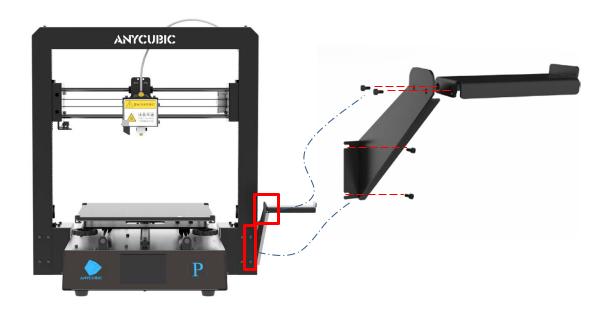
- 1. Installation section contains: ①Install the frame ②Wiring
- 2. Be cautions during assembly as some parts may have sharp edges.
- 3. It is suggested to use a flat desktop and place the parts in an orderly manner for quick assembly.
- 4. The color of some parts may be different from what in the manual, but the assembly is the same.
- 5. Firmware has been pre-uploaded to the motherboard. After completing the assembly, please level the platform and load the filament then you could start the first test print.

1. Install frame

(1) Carefully slide the base into the frame and fix them by 8 pieces of M5*8mm screws as shown in the red boxes. Fasten the screws when all the screws are pre-installed.

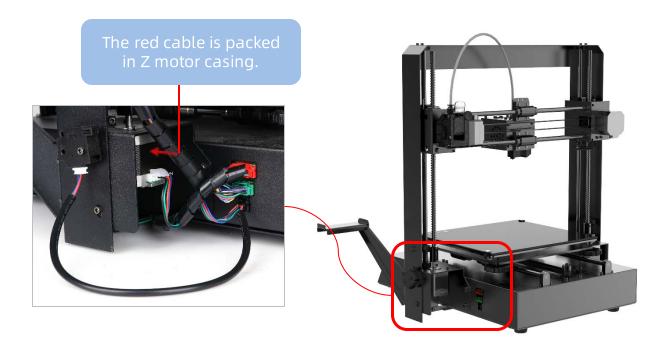


(2) Use two M3*5 screws to install the filament holder, then loosen two screws on the lower right side of the frame, so the filament holder could be inserted, and then tighten those two screws.



2. Wiring

(1) There are 3 different color-coded (Red/Green/Black) ports and cable connectors, please install them by the same color. Lastly, insert the White connector to the filament sensor.



- > Make sure the connectors are well inserted, and no pins are bent inside.
- > Wrong or loose connection would lead to malfunction of the machine.
- (3) Customers may notice there is a ring of zip tie attached just below the plastic ring of the quick connector. Do not cut it off.

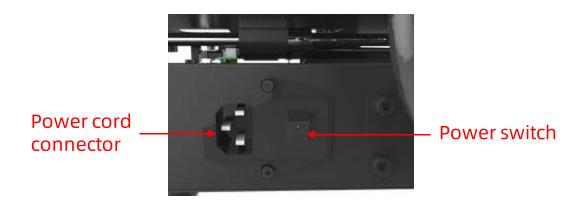


Please note: every units of the printer have been inspected and tested for actual printing. Therefore, in some cases, there might be very small marks left on the print head or on the heated bed. Those will not affect the printing quality and those means the printer has been tested for the quality. Meanwhile, we provide an extra hot end in case you need to replace it in the future. Thank you very much for your kind understanding.

Leveling the platform is a key step in 3D printing. Please follow the leveling procedures below to achieve proper leveling so the printed models could stay firmly on the printing platform and deliver good results. Otherwise, if the distance between the nozzle and printing platform is too large, the printed product will not stick properly to the platform, and if the nozzle is too close to the printing platform, the filaments would not been extruded properly from the nozzle and causing clog or even damage to nozzle or platform.

1. Double check all wirings are OK, and then connect the machine to the power outlet by power cord. Switch on the machine.

Make sure: ① the nozzle is clean without filament residue. ② the printing platform is clean, otherwise it will affect the leveling accuracy.



There are two ways to level the platform: **manual leveling** and **assisted leveling**. Choose one of the ways to level.

1. Manual leveling

(1) On Home Menu, click "Tools"-->"Home"-->"Home Z".



(2) Put the leveling paper (included on top of the printing platform) onto the printing platform, and then manually move the print head and platform back and forth to let the print head travel to the 4 corners with the order as shown below $(1)\rightarrow 2\rightarrow 3\rightarrow 4$). When nozzle is above the corner 1, manually adjust (tighten or loosen) the corresponding nut underneath the printing platform. The purpose is to adjust the distance between nozzle and print platform to about the thickness of a piece of paper (~ 0.1 mm, feel the drag resistance when pulling the paper). Please do so to the rest of the corners.





Note: Do not press on the platform when adjusting the nut, otherwise it will be affecting the leveling accuracy.

You need to adjust the 4 points of the platform 2 or 3 times to ensure leveling result is OK, otherwise the platform could be scratched.

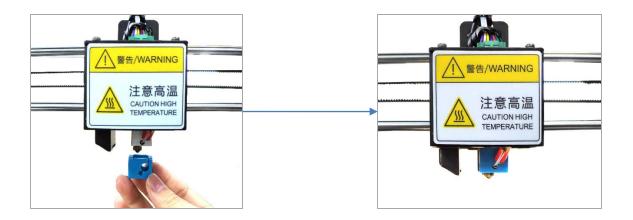
Double check: move the print head and platform at the same time, so that the printing head can be moved in diagonal order:

①→③,②→④. By doing this, to make sure the distance between nozzle and printing platform is always about a piece of paper thin.

NOTE: Avoid nozzle rub against the platform directly without the paper in-between.

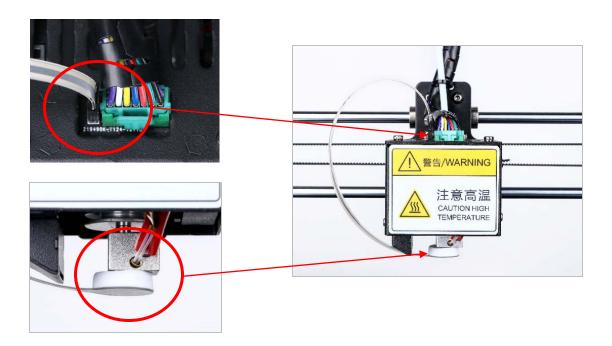


(3) After leveling, put up the heat preservation cover for the heat block.

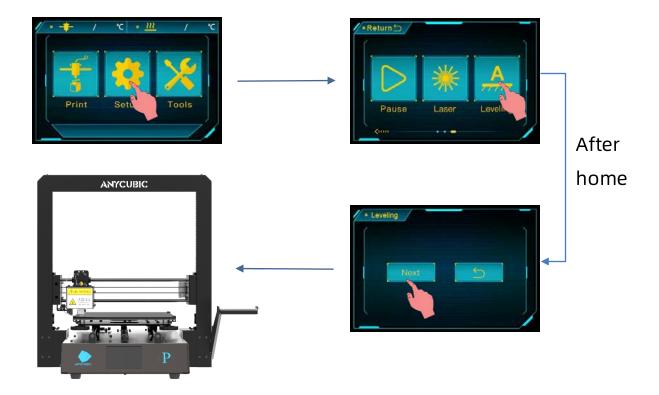


2. Assisted leveling

(1) Install the leveling module.



(2) Return to the main menu, click "Setup" →click " " to next page →click "Leveling", the printer will be automatically home. After home, click "Next" and the print head will be moving to the first leveling point.



(3) Slowly adjust (tighten or loosen) the adjustable nut underneath until the alarm just be triggered. The first alarm sound means that the distance between the nozzle and the platform is optimal. If the adjustment speed is too fast and exceeds the first trigger alarm position, the print head will be too close to the platform and scratch the platform.

Note: Do not press on the platform when adjusting the nut, otherwise it will be affecting the leveling accuracy.



Loosen the nut, the platform rises.



Tighten the nut, the platform descends.

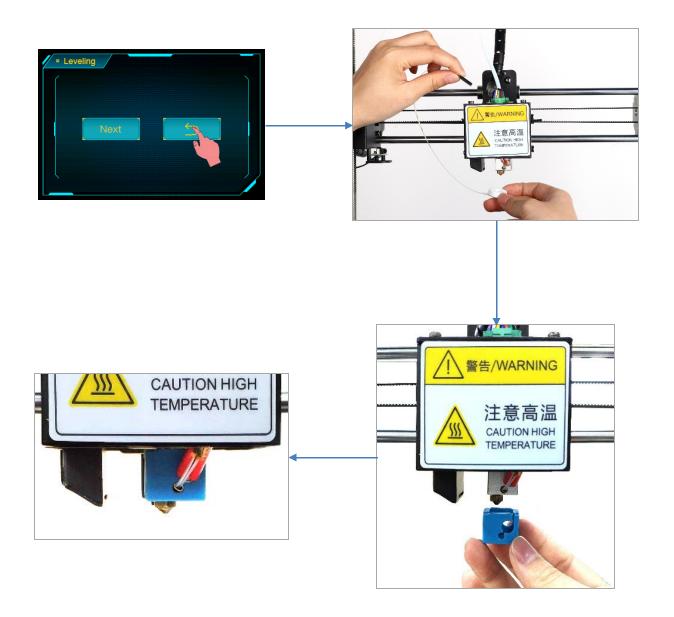
(4) Click "Next" when finished the first leveling point, the print head will move to the next point, and then follow Step 3 to adjust. Click "Next" and follow the instructions to finish the leveling of the 4 points on the platform.





Please double check and adjust those 4 points 2 (or 3) times in the order of $\textcircled{1} \rightarrow \textcircled{2} \rightarrow \textcircled{3} \rightarrow \textcircled{4}$ to ensure that the leveling result is OK, otherwise the platform could be scratched.

(5) After leveling, click " to return to the main page, then remove the leveling module, put up the heat preservation cover for the heat block.

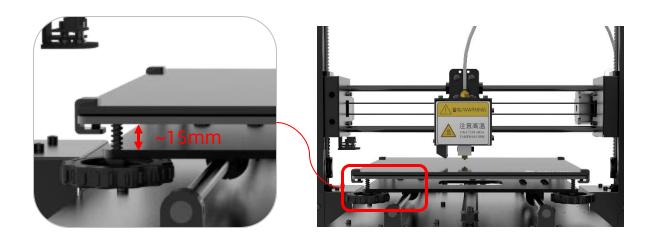


3. Supplements to leveling

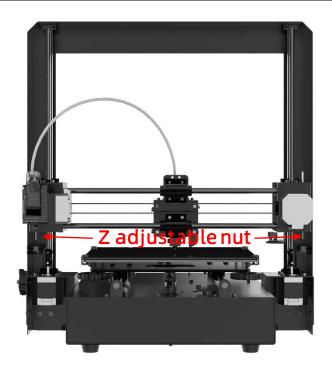
In some rare cases, after "Home All", the nozzle can be still much lower than the platform, even after fully tighten the 4 nuts underneath. On the opposite, sometimes the nozzle is still too high from the platform, even after fully loosen the 4 nuts underneath.

How to solve this:

(1) Raise the nozzle by click "Tools"--> "Axis" --> "10" on +Z column, adjust the 4 nuts under the platform, let the height in-between the support plate and the heated bed is ~15mm for all the 4 corners.



(2) At both ends of X axis, there is a Z adjustable nut. The lower tip of Z adjustable nut can trigger the Z limit switch when Home (going down), and 'tell' the machine stop moving because the Z axis is getting to zero and.



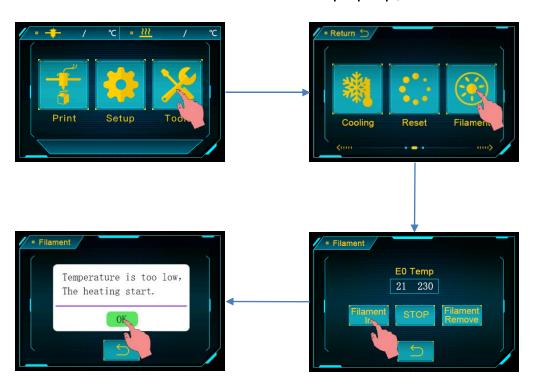
(3) Now, tighten Z adjustable nut by X mm if nozzle is lower than the platform (X is defined by how much the nozzle is under the platform), while loosen it by Y mm if nozzle is too high from the platform (Y is defined by how much the nozzle is above the platform). It may need adjustment for few times.



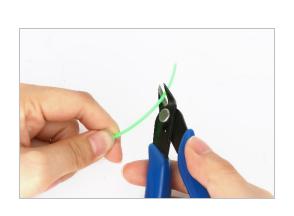
(4) Click "Tools"--> "Home" --> "Home All" to verify the results. After this, please level the platform again.

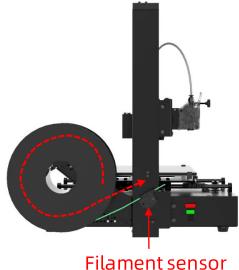
1. Filament Loading

(1) Return to the home menu, click "Tools"→ "Filament"→ "Filament in", and the interface as shown below will pop up, click "OK".

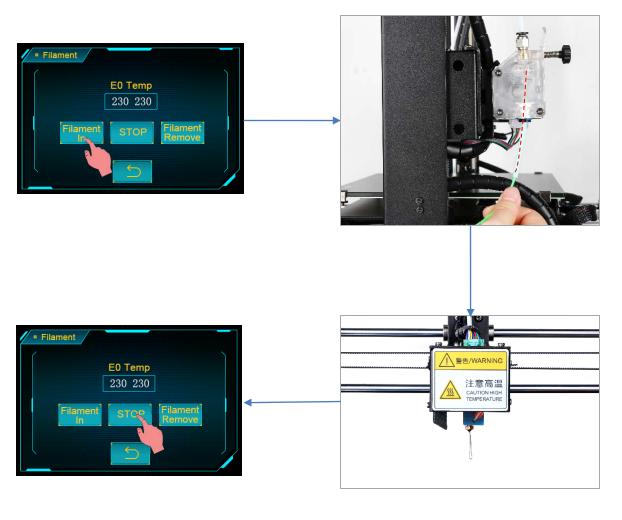


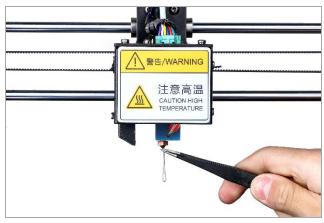
(2) Straighten the end of filament, and place the filament on the filament holder (Please note the feeding direction of filament.) then pass the filament through filament sensor. Now, wait for the nozzle reaches to the target temperature as shown on the display.





(3) When the nozzle reaches to the target temperature, click "Filament in" again, and then insert the filament into the extruder until the gear, the filament would be automatically fed in by the extruder and it would be melted through the nozzle. Now, click "STOP". You may use tweezers to clean the filament residue on the nozzle tip.





2. Test printing: insert the SD card (back side facing up) into the SD card slot on the printer base. Click on the Home Menu "Print" to enter the file list. There is a printable test file included -- "owl_pair" (author: etotheipi, www.thingiverse.com), and please print it to verify the leveling results.

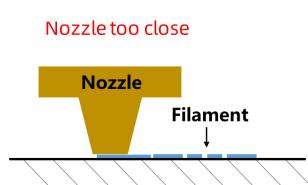




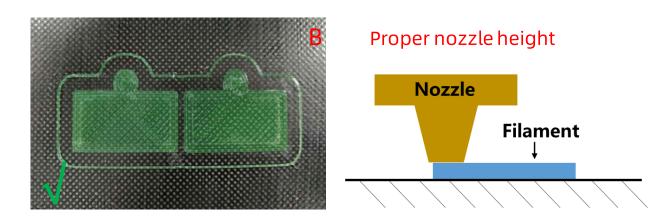
There might be 3 kinds of results for the first layer of the test prints.

A: Nozzle too close, lack of extrusion, the nozzle rub against the platform. Slowly tighten the corresponding nuts underneath by half circle or level again.

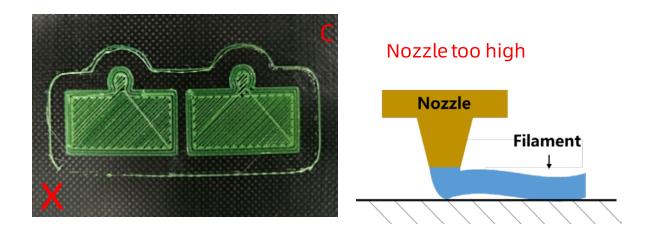




B: Proper nozzle height, good extrusion and adhesion.



C: Nozzle too high, Large gap, filaments are not even adhere to the platform. Slowly loosen the corresponding nuts underneath the platform by half circle or level again.

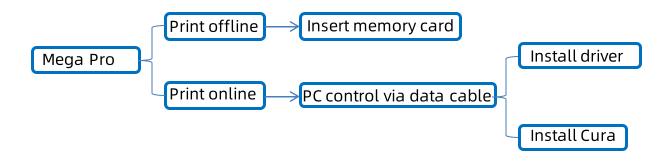


Driver installation

There are two operational mode for Mega Pro: print offline and print online.

Print offline: As shown previously, insert memory card into the memory card slot on the printer base, click on the Home Menu "Print" to enter the file list, and print a selected file (GCode files ONLY).

Print online: Install CP2102 driver to bridging PC and machine, and install Cura for slicing and control the machine to print via data cable.

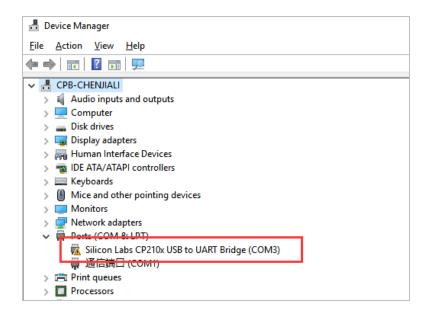


It is suggested to use **Print Offline** mode to minimize the noisy signal via data cable.

How to install the software to enable PC control (print online).

First, turn on the machine, connect the printer (data cable port) and your PC via data cable. Mega Pro uses CP2102 chip for communication. The CP2102 driver may not be installed automatically, so it is required to check that. Right click "This PC"→ "Properties"→"Device manager", if there is an exclamation mark as shown below, then it needs to be installed manually.

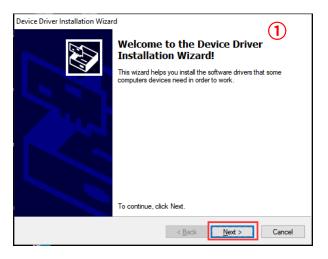
Driver installation

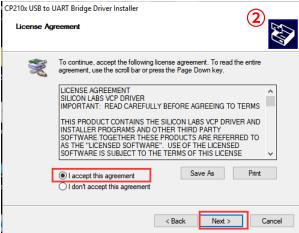


CP2102 driver file are located in the memory card (or visit our website to download), "Files_English_MEGA PRO"→"Driver_CP2102". There are two versions, Windows and Mac version.

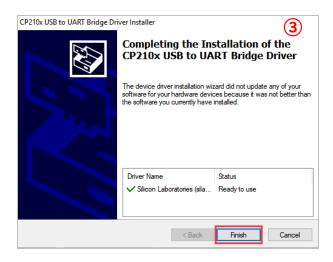
For Windows, specifically, "CP2102xVCPInstaller_x64" is for 64 bit system and "CP2102xVCPInstaller_x86" is for 32 bit system. Here we take Windows 7-64 bit PC system for example, while there is "Installation for Mac PC" in memory card for those who use Mac system.

Double click "CP210xVCPInstaller_x64.exe" to install it.

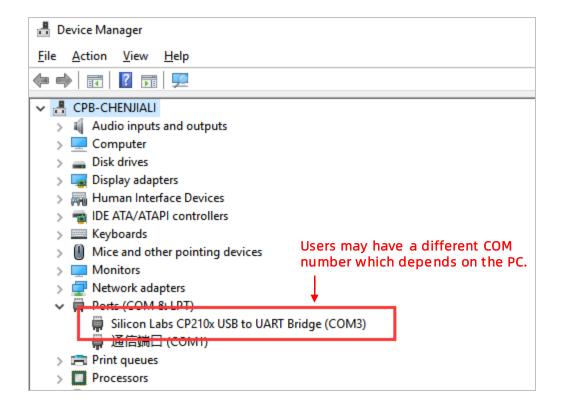




Driver installation



Right click "This PC"→ "Properties"→"Device manager" to check, you can see that the exclamation mark has disappeared.



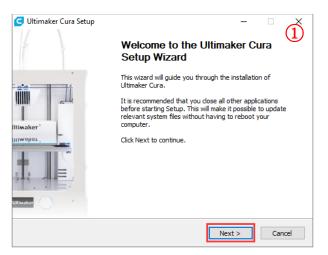
Introduction to slicing software

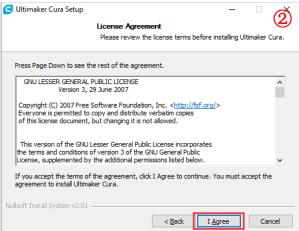
Introduction of slicing software: ① Cura installation, ② Machine settings, ③Import the configuration file, ④ Manipulate 3D model in Cura, ⑤ Slice and preview, ⑥ Print online, ⑦ Print offline

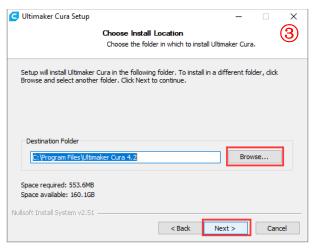
1. Cura installation

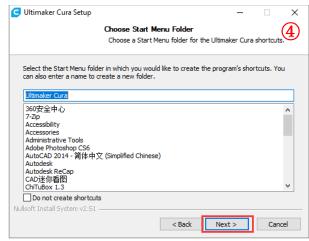
3D printer reads Gcode file and prints. It is necessary to convert 3D files (such as stl file) into Gcode files for machine to recognize. Software that convert 3D files into Gcode files is called slicing software.

Ultimaker_Cura-4.2.1-win64 is used for example here (Users may use their own slicer software). It is located in memory card—" Files_English_MEGA PRO"— " Cura"— " Windows". Double click "Ultimaker_Cura-4.2.1-win64.exe", and follow the steps as shown below.

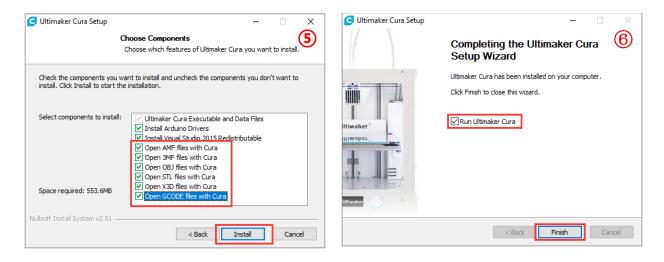




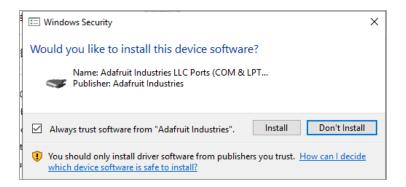




Introduction to slicing software



Note: Printing online requires the installation of a driver, as shown below. If you don't print online, you don't need to install it.

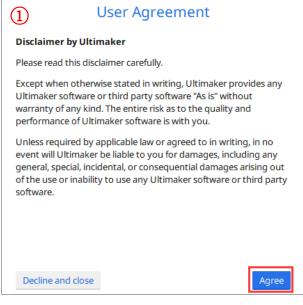


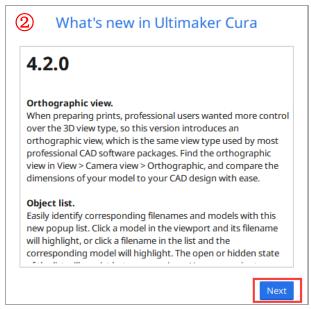
2. Machine settings

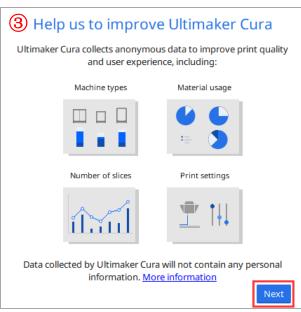
Upon completion of installation, the first launch of the software will display the following welcome screen. Click "Get started" to start the machine settings.

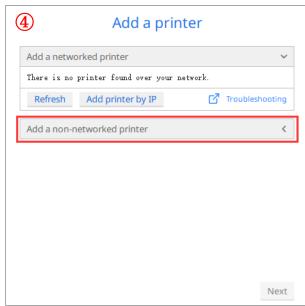


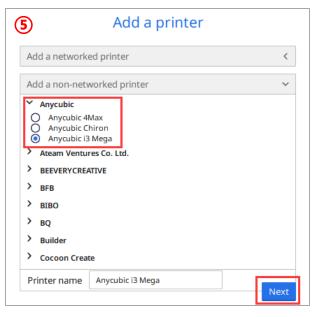
Introduction to slicing software

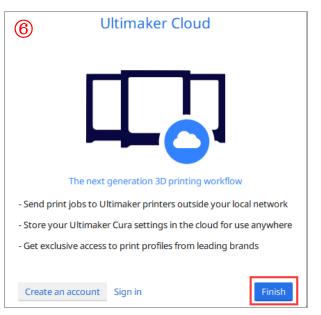






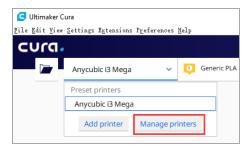




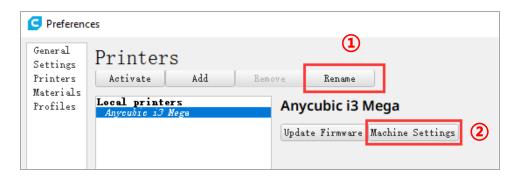


According to the wizard, we have selected the "Anycubic i3 Mega" model. Now, we will set the model parameters of Mega Pro based on that model.

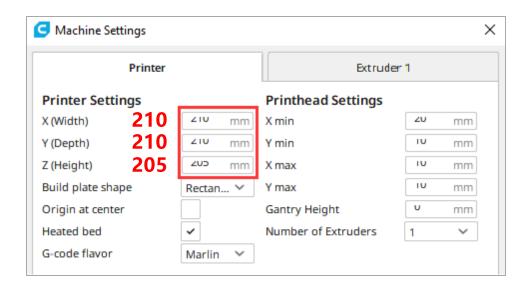
(1) Click "Manage printers", as shown below.



(2) Click "rename" to change the machine name to "Anycubic Mega Pro", and then click "Machine Settings".



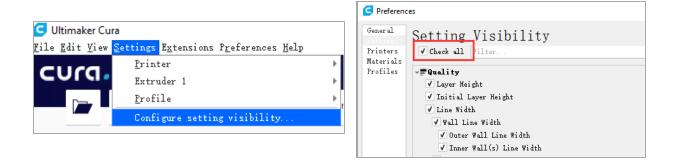
(3) Modify the "XYZ" parameters as 210, 210 and 205 respectively on the "Machine Settings" page, as shown below.



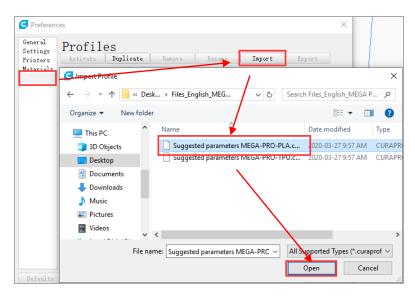
3. Import the configuration file

After continuous testing, we provided users the suggested printing parameters of different filaments for Mega Pro, and the user could directly import the parameter files in the memory card to the software.

(1) Click "Settings"- "Configure setting visibility...", and then check "Check all" to make all Settings visible.

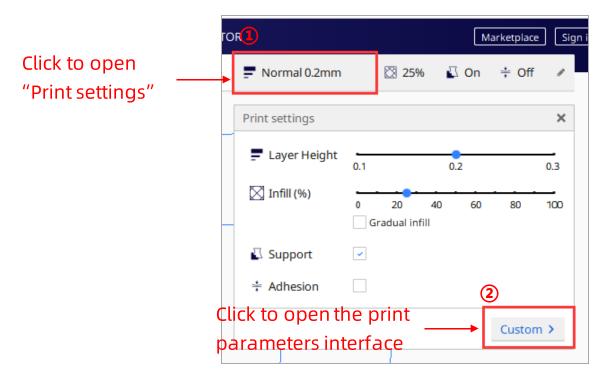


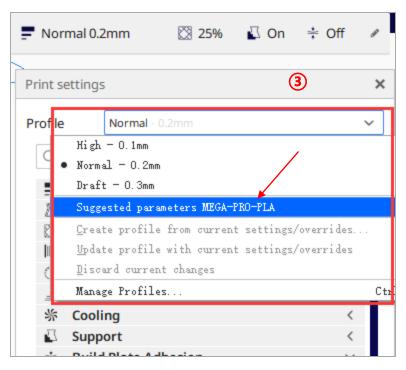
(2) Click "profile" on the left, and then click "import" to open the "import profile" dialog box, then select the "Suggested parameters MEGA-PRO-PLA. curaprofile" (file path: memory card → "Files _ English _MEGA PRO"), and click "open". After successful import, the following success prompt will pop up. Please import the "Suggested parameters MEGA-PRO-TPU. curaprofile" file as so.





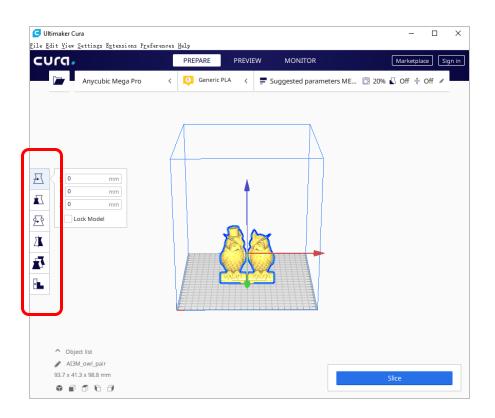
(3) Select the configuration file that you just imported.





4. Manipulate 3D model in Cura

In the Cura software interface, click on the "File" \rightarrow "Open File(s)..." to import your own three-dimensional format model (such as .stl file). Users can "Rotate" "Scale" "Mirror" the model. As shown below:



Other operations:

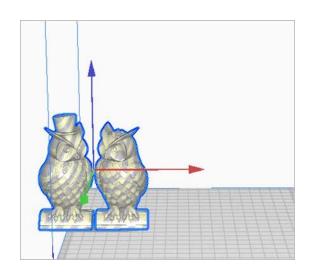
- a) Position change: left click on the model, hold on and drag the model to move.
- b) Zoom in/out: scroll the mouse wheel.
- c) Change viewing angle: right click and move the mouse.



Per Model Settings: When you open multiple models, you can configure a separate slice configuration for the specified model.

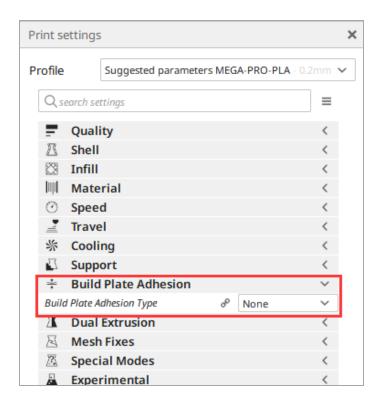
Support Blocker(E): Set the mask area on the model so that the support could not be generate on the set area.

Note: as shown in the figure on the right, the gray color of the model indicates that the model is out of print range.



After importing the model, users can customize the printing parameters according to individual needs. But the configuration files that we provide are suggested.

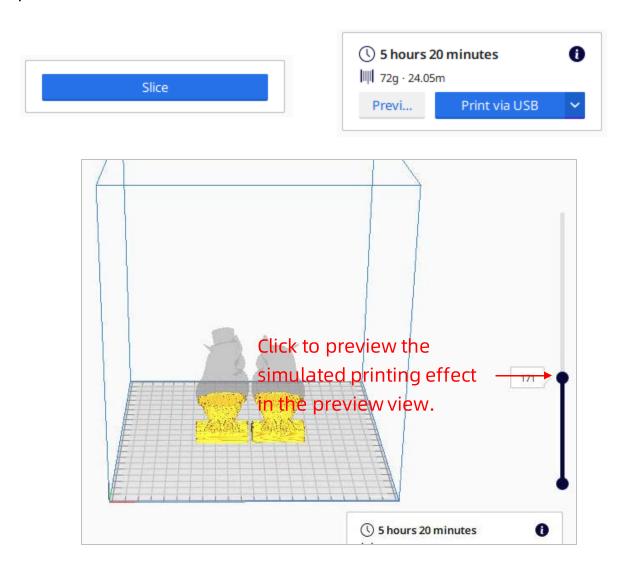
Note: "Suggested parameters MEGA-PRO-PLA. curaprofile" file is prepared for PLA filament, and "Suggested parameters MEGA-PRO-TPU. curaprofile" file is prepared for TPU filament.



Note: The "Build Plate
Adhesion Type"
parameter needs to be
set to "None" when
printing the maximum
size modle.

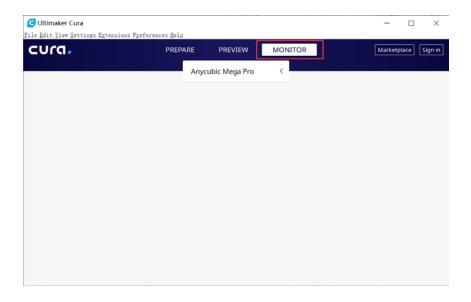
5. Slice and preview

After setting the printing parameters, click the "Slice" button in the lower right corner of the software. After the Slice is finished, click the "preview" button to preview the simulated printing effect in the preview view.

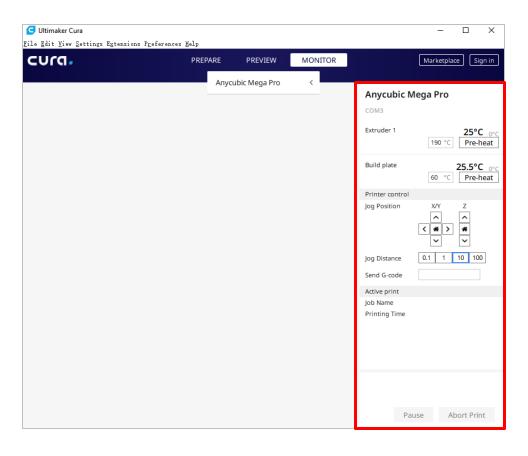


6. Print online

After the parameters have been set up, you can print online via Cura. Click the "MONITOR" on the main interface. If the printer is not connected properly, the interface will be blank.



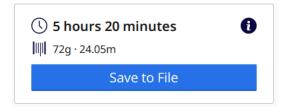
After connecting the data line, Cura will automatically connect to the printer. After waiting for more than ten seconds, the operation panel will be displayed on the right side of the interface. User can control printer through the operation panel. (In the process of printing, do not plug the data line, or it will interrupt the printing)



7. Print offline

After slicing, click "save to file" in the lower right corner of Cura software. Save the model GCode file to the **memory card**, and then insert the memory card to the printer and control via the touch screen for offline printing.

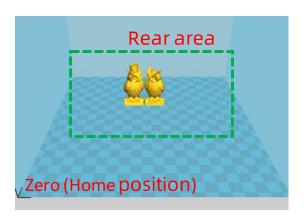
Note: the file name should only contain English letters, underscore and space. File name contains special characters could not be recognized by the printer. In order to let the printer better recognize the Gcode file in the memory card, you need to back up all the files in the memory card to the computer, and keep the memory card only for the Gcode file, please save all the Gcode files in root directory of the memory card.



Resume from outage

Mega Pro allows resume print after accidently power loss (This function only valid when print offline, via memory card only).

1. In slicing software (i.e. Cura), it is required to place the model at the rear of the platform. Because during "RESUME", machine will home first and could touch/interfere with the unfinished object if the model was placed in the front area.



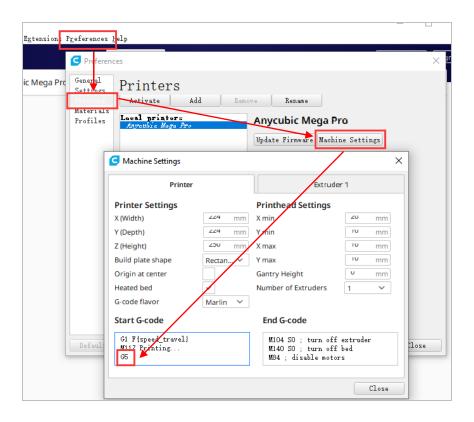


2. For the first time of using this function, customers are required to add "G5" to the "Start G-code". Then, save the model as GCode file to the memory card by "File" \rightarrow "Save GCode".

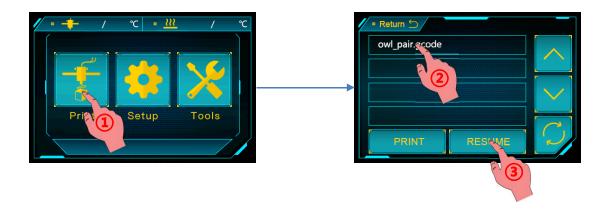
Note:

- ① "Resume from outage" is valid only for offline printing;
- ② Just type the "G5" when you use it for the first time, G5 will be automatically added later, without having to manually type it again.

Resume from outage



3. During printing, if there is an accident power loss, the print will stop immediately. But after power comes back, customers could choose "Print" \rightarrow select the unfinished file \rightarrow "RESUME, machine will home first and continuing on the unfinished object.



Note:

In order to get smooth surface, use tweezers to carefully remove the excessive filament at nozzle before continuing print upon the last point.

Resume from outage

- ② Do not move Z axis after power off otherwise resume will be invalid.
- Mega Pro supports resume from outage only when print offline
- 4 This function is developed based on Cura. We could not guarantee this function compatible with other slicing software.
- ⑤ Due to the differences of filaments, temperature, extrusion, etc...we could not guarantee a perfect surface at the point of "RESUME", especially for small objects.

Specify height pause

Mega Pro allows the user to preset a height where the printing will be paused during printing automatically, so the users may change filaments of different colors to make the model multicolored. This function needs to be set before printing.

1. Click "Setup" → "Pause".



2. Preset pause height.



Rules:

- ① Set "Height 1" \rightarrow "Height 2" \rightarrow ... in ascending order, and do not set zero as a pause height.
- 2 "Height 1" must be 0.5mm or more, and the next height must be at least 0.5mm larger than the previous height.
- 3 The maximum cannot exceed 205mm.

Specify height pause

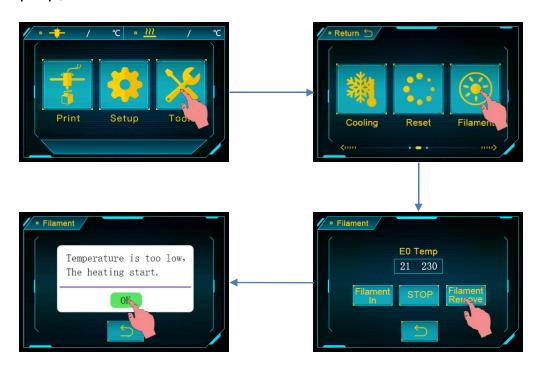
3. Click "OK" to finish the setting. (*The set parameters will always be valid for future printing models until the machine is restarted or the parameters are reset.*)

Tips:

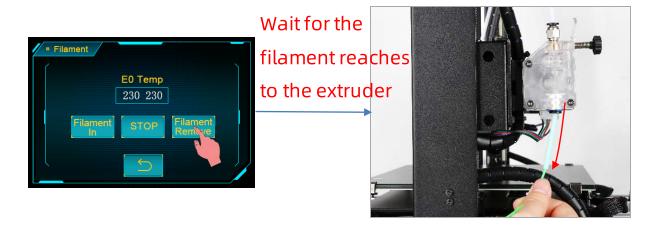
- ① When printing to the specified height, Z axis will automatically lift up, there might be excessive filaments stay on the nozzle tip and model. Please use pliers to get rid of those residuals before continue printing.
- ② When changing filament of different colors, you may want to let the new filament completely squeeze out the previous filament before continue printing.
- 3 After cleaning the nozzles, click "Continue Printing".

Replacement of the filament

1. Clean the filament residue on the nozzle tip, then click "Tools"→
"Filament"→ "Filament Remove", and the interface as shown below
will pop up, click "OK".



2. When the nozzle reaches to the target temperature, click "Filament Remove" again, and the filament would be automatically removed by the extruder. When the filament reaches to the gear of the extruder, pull out the filament.



3. Load the new filament: refer to the Page 23 "Filament Loading".

Troubleshooting

1. Motor shaking or abnormal sound

- ① The corresponding end stop could not be triggered when Home, check the wirings, and inspect any obstacles by manually moving the corresponding axis
- ② The motor cable are not connected properly, check each connection and then inspect the cable routing for any faults

2. File not printing or memory card failure

- ① Remove the memory card and insert into PC. Open the GCode files using text editor (eg. Notepad), and inspect if GCode is readable or not. If files contains of multiple "ÿÿÿ" symbol, then file has been corrupted. Try reformatting the memory card to FAT32 format and reloading the GCode file
- ② Memory card is not readable, ensure file name does not contain special characters or Change memory card
- ③ Touch screen freeze, reboot the machine and try again

3. No extrusion or extrusion motor knocking

- ① Ensure that the nozzle temperature has been set to match the filament
- ② Filament tangled on spool
- ③ Not enough cooling for the hotend
- 4 Nozzle clogged please try to replace it or clean it
- 5 Teflon tubing has been tangled, squeezed or bent

Troubleshooting

4. Filament leaking

 Nozzle or throat tube is tightened properly, try to fix/change it after cooling

5. No sticking to the bed

- ① Print too fast at the bottom layer speed, reduce it to ~20mm/s
- ② Ensure that the print platform is clean (use alcohol if necessary)
- ③ Check if the bed is proper leveled
- ④ Add a brim or raft to the model in slicing software
- ⑤ Check the bed temperature matches the filament

6. Warping/curling of the printed object

- ① Check the bed temperature matches the filament
- ② Check the infill % of the GCode. The higher the infill, the more likely to warp
- 3 Add a brim or raft to the model in slicing software.

7. Layer shifting

- ① Print head moving too fast, slow down the print speed.
- ② Check X/Y belt and the driving wheel and ensure they are properly installed.
- ③ Grease the rods and check all nuts and bolts remain tightened.

Troubleshooting

8. Freezing screen

- Inspect if the touch screen has been pressed by the metal frame at the edge
- ② Check if screen has cracks, if so, please contact us at www.anycubic.com

9. T0 sensor abnormal

- ① Check the wiring of the hotend and ensure a good connection
- 2 Check if there is any pins bent inside the connector

10. Print head move abnormal

- ① Check if choosing the right machine type in slicing software
- ② Check if any plugins in the slicing software

11. Print stopped halfway

- Check if the GCode file is corrupted
- ② Delete plugins in the GCode file
- ③ Use print offline mode (memory card) instead of print online via data cable

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