

O User Manual

ANYCUBIC 4MAX

Thank you for choosing **ANYCUBIC** products.



Please read the user manual carefully.



Please visit http://www.anycubic3d.com/en/ for more information.



Email us on support@anycubic3d.com or james@anycubic3d.com for technical support.

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ANYCUBIC Website



Facebook account



Youtube channel



Safety instruction



ANYCUBIC: 3D printer generates high temperature. Do not reach inside of the printer during operation. Allow time for the printer to cool down after printing. Contact with extruded materials may cause burns. Wait for printed objects to cool before removing them from the build platform.



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



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



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 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.



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



It is recommended to use protection glasses when cleaning/sanding the printed models to avoid small particles contacting eyes.



In case of emergency, immediately turn off the **ANYCUBIC** 3D printer and contact us or consult for professional advice. Never leave the **ANYCUBIC** 3D printer unattended during operation.

Technical Specification

Printing

Technology: FDM (Fused Deposition Modeling)

Build Size: 210mm * 210mm * 300 mm

Print accuracy: 0.1-0.4 mm

Positioning Accuracy: X/Y 0.0125mm, Z 0.0025mm

Extruder Quantity: Single

Nozzle Diameter: 0.4 mm

Print Speed: 20~60mm/s

Travel Speed: 60mm/s

Supported Materials: PLA, ABS, HIPS, Wood

Temperature

Ambient Operating Temperature: 8°C - 40°C

Operational Extruder Temperature: max 250°C

Operational Print Bed Temperature: 100°C

Software

Slicer Software: Cura

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

Software Output Formats: GCODE

Connectivity: SD card; USB port

Electrical

Input rating: 110V/220V AC, 50/60Hz

Physical Dimensions

Printer Dimensions: 400mm * 425mm *500mm

Net Weight: ~15.5Kg

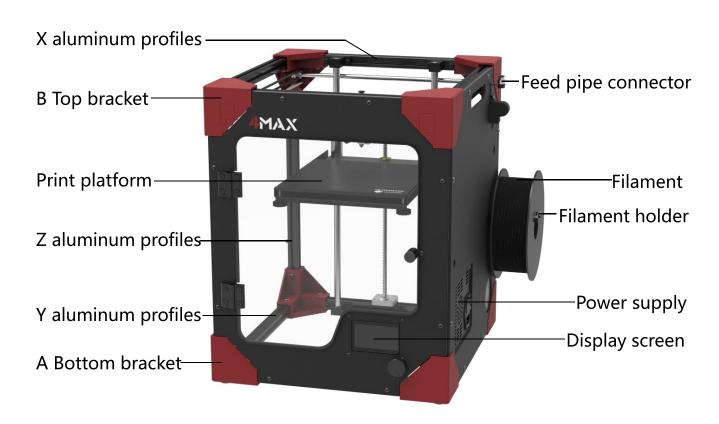
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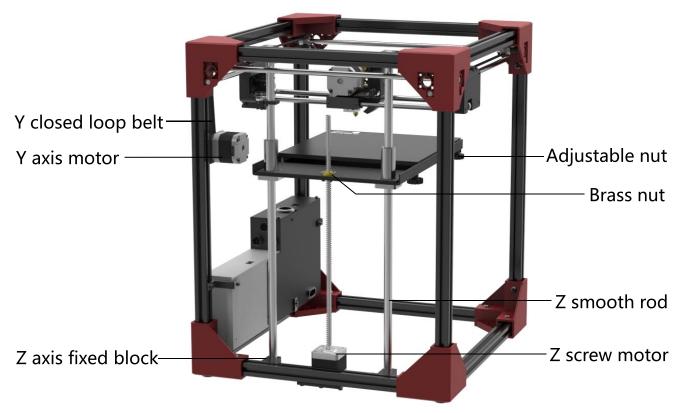
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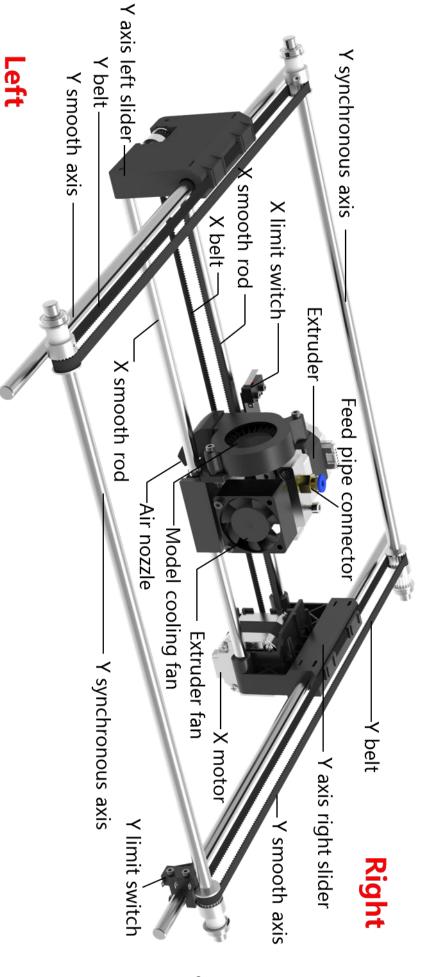
Installation section

- 1. Be cautions during assembly as some parts may have shape edges.
- 2. It is suggested to use a flat desktop and place the parts in an orderly manner for quick assembly.
- 3. Each step has a list of required accessories, assembly diagram and tips. Please read the installation techniques and precautions before assembly. The length of the screw can be measured with a ruler during assembly. There may be spare screws and parts in bags.
- 4. It is suggested to tear off the protective film from the aluminum-composite panel.
- 5. The color of some parts may be different from that in the manual, but the assembly is the same.
- 6. 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.

Overview

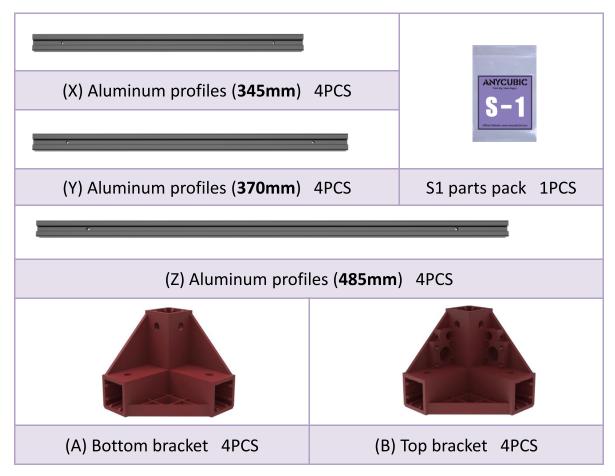




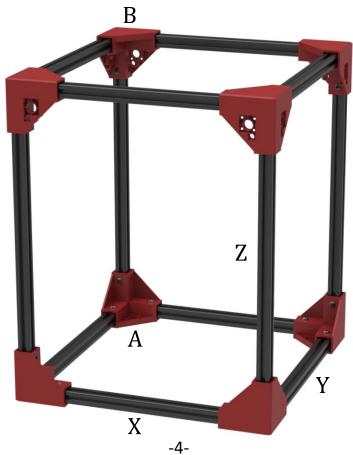


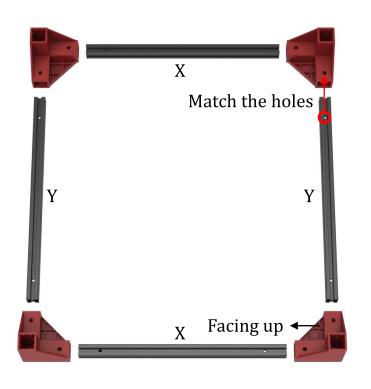
S1 Frame

List

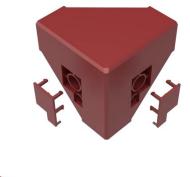


Result

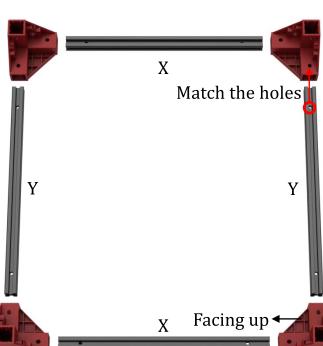




① Insert the aluminum profiles into the bottom brackets (A).



② Remove the covers of the 4 top brackets(B).



③ Insert the aluminum profiles into the top brackets (B).

④ Z aluminum profiles must be inserted to the end of the brackets until the holes are matched to each other.

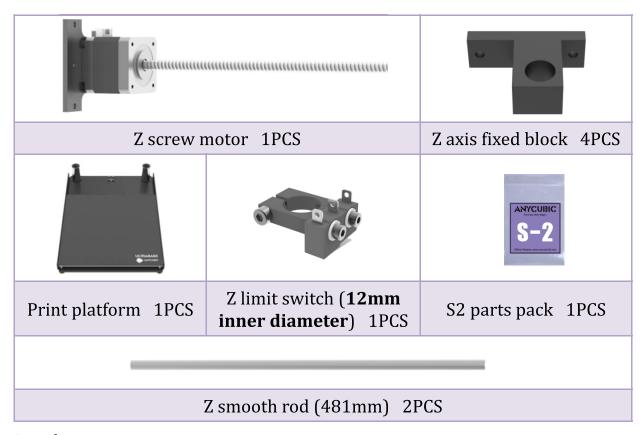


⑤ Secure the whole frame with 24 pieces of M6 screws.



After assembly, please ensure the beams are vertical to each other, and the whole frame is stable as a whole cube.

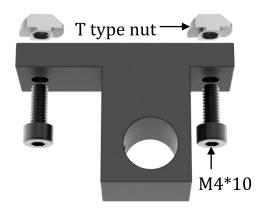
List



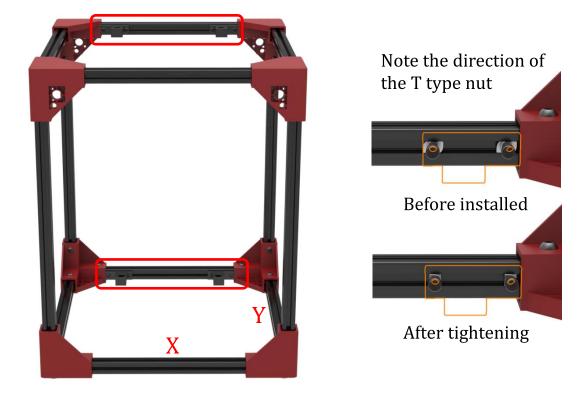
Result

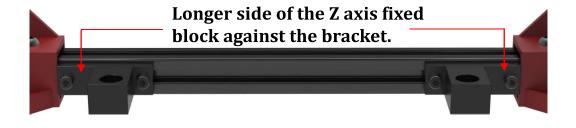


① Pre-install the screws, do not tighten for now.



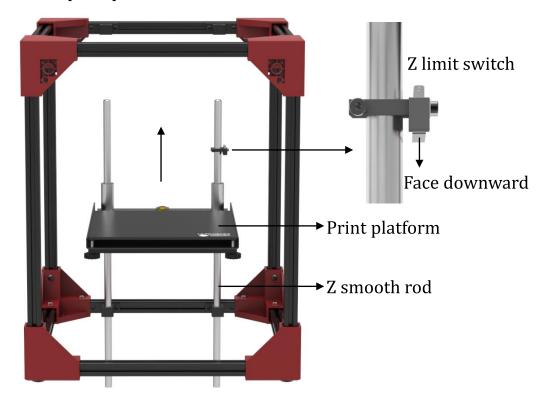
② Install 4 Z axis fixed blocks onto the X aluminum profiles.





Tighten the T type nuts and make sure the Z fixed block are secured to the aluminum profile.

③ Install the print platform and Z limit switch into the Z smooth rod.



(4) Fixed the Z smooth rods.

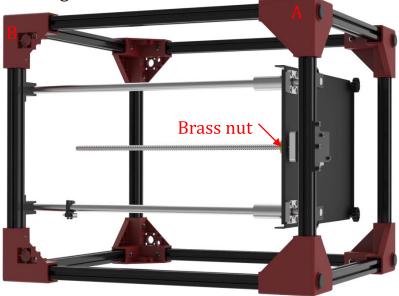


Please slide the print platform up and down to see if there is any resistance, if so, adjust the position of the Z axis fixed block until it is smooth.

(5) Pre-install the M4*10 screws to Z motor unit.



⑤ Rotate the whole frame by 90° and turn the Z screw rod into the brass nut of print platform. The platform MUST be put to the bottom (close to the Z motor) and then tighten the M4*10 screws.



Please manually rotate the Z screw rod to see if there is obvious resistance, if so, loosen those M4*10 screw and adjust the position of the Z screw motor, and remember to tighten the M4*10 screw afterwards.

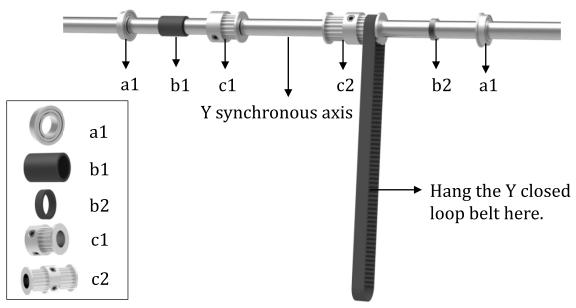
List



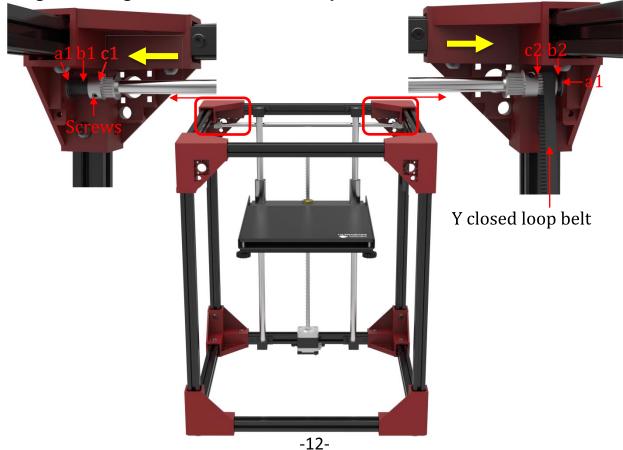
Result



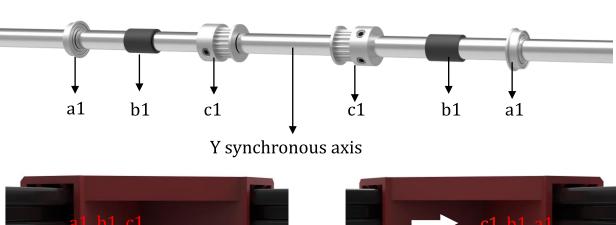
1) Note the sequence and direction of each part.

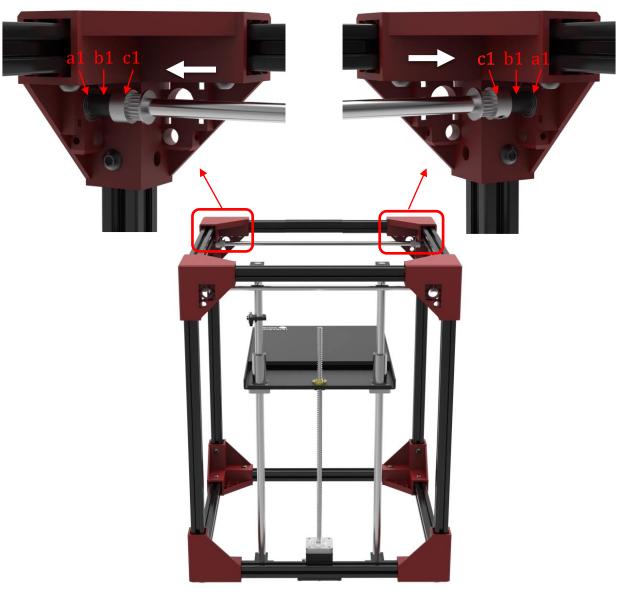


② Follow the direction of the arrows, press the two a1 into the holes of the top brackets. Hold and press c1 and c2 respectively toward the brackets, and then tighten the corresponding inserted screws on c1 and c2. After installation, the Y-axis should be rotated smoothly, and should not be loose when push it back and forth. Otherwise please loose the inserted screws, adjust and hold c1 and c2 again, and tighten those screws till they are well fastened.

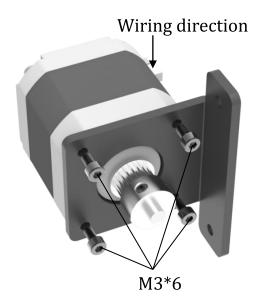


③ Note the sequence and direction of each part. The assembly method is the same as described in the previous page.



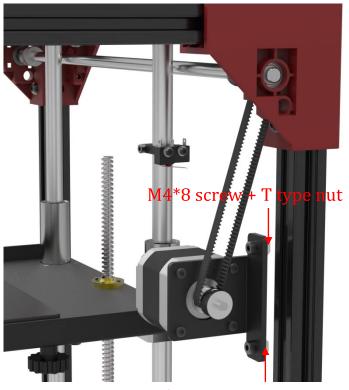


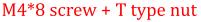
(4) Install the motor support plate.

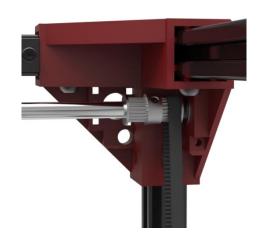


⑤ (You may put the printer on its side for easy installation)

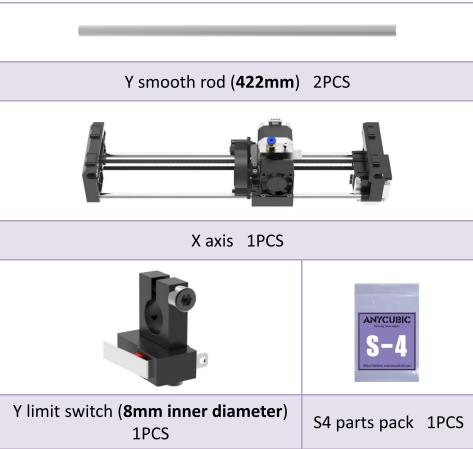
Hook the motor's synchronous wheel to the closed loop belt; Place T type nuts in the aluminum profile groove and force down the motor to tension the belt, when the belt is tight up then fasten the M4*8 screws to fix the motor.



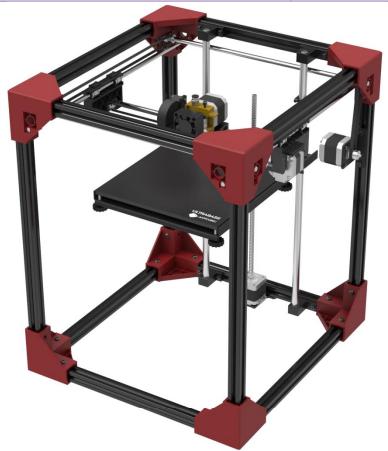




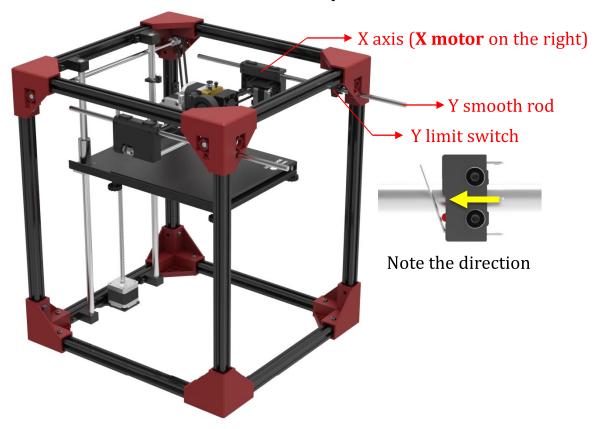
List



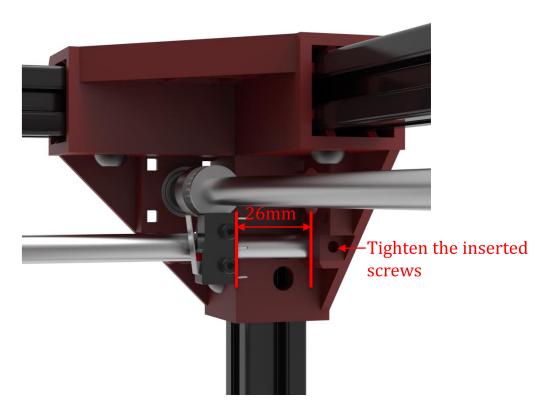
Result



① Loosen all inserted screws on the four top brackets and then install the X axis.

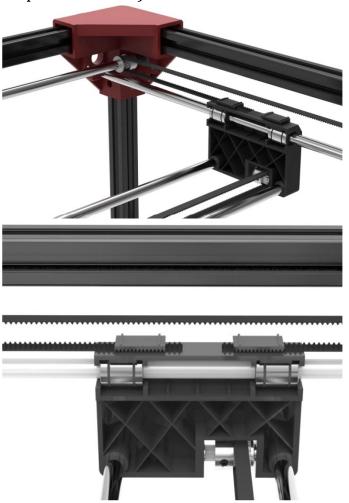


② Tighten all those inserted screws to keep Y smooth rods in place, and the distance from the limit switch to the inner surface of the bracket is \sim 26mm.



S4 X axis

③ Insert one end of the Y belt into Y axis slider (the black piece), and then lead the belt through the synchronous wheel from both sides. Tension the belt as good as you could, insert the belt into the other end of the Y axis slider (Do the same to the other piece of Y belt).

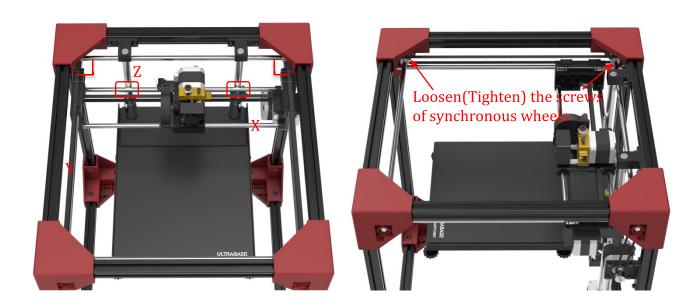


④ To fasten the belt further, **slide the Y axis to the middle**, install the tension spring on the belt just above the slider (need plier to do so).



S4 X axis

⑤ **Align X axis :** After installing the Y belt, please check if all axis are vertical or aligned to each other. Such as move Y axis backward, to check if the X axis could touch **both** Z rods at the same time without any twist (**shown in red square**). If there is a gap of one side (i.e. left side), loosen the corresponding screws of the two synchronous wheels (**pointed by red arrow**), adjust the X axis until it touches both Z rods without twisting, and then tighten them again.

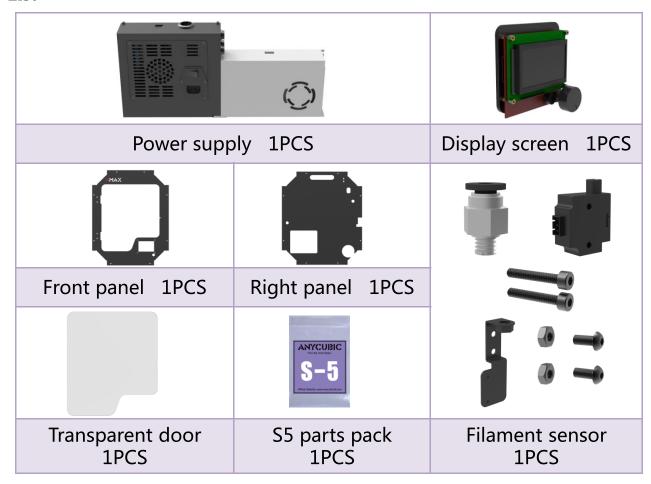


(6) The distance between the Z limit switch and Z axis fixed block is about 62mm. Tighten the screw (red square) after adjustment.



S5 Power supply, Display screen, Filament sensor

List

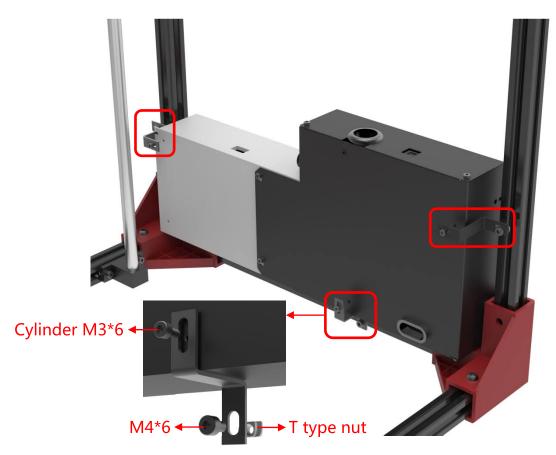


Result

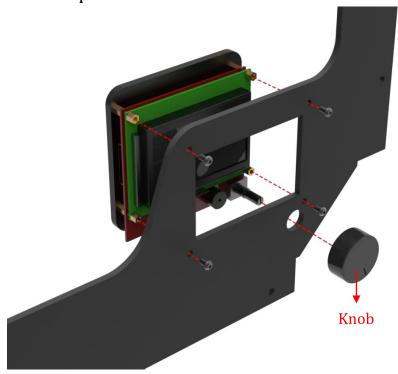


S5 Power supply, Display screen, Filament sensor

① Install the power supply on the bottom right Y aluminum profile.

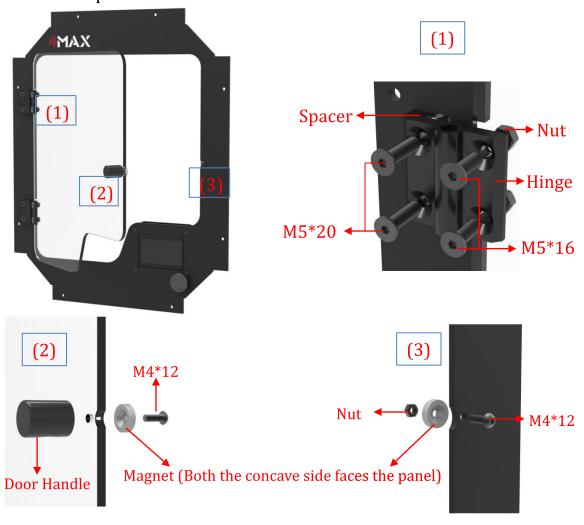


② Carefully remove the protective cover from the front panel, and then install the display on the front panel with four **round** M3*6 screws.



S5 Power supply, Display screen, Filament sensor

③ Carefully remove the protective cover from the transparent door and install it onto the front panel.

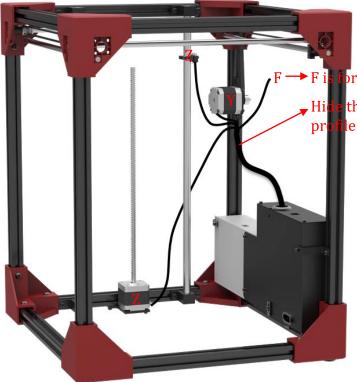


4 Remove the protective cover from the right panel and install the filament sensor onto the right panel with M4 * 10 screws.



S6 Wiring

Install the wires by the label (there are demonstrations below about the wiring, please patiently ensure all the wirings are OK).



or the filament sensor, wire it later. the wires into the aluminum le groove



Insert the wire labeled "Z" into the **two pins** (**red circle**, no positive and negative) of Z limit switch.



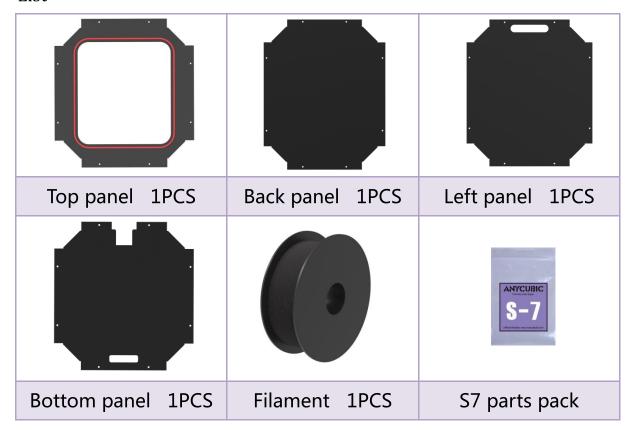


Pass around the X motor line first before inserted to X motor.



Insert the wire labeled "Y" into the two pins (**red circle**, no positive and negative) of Y limit switch.

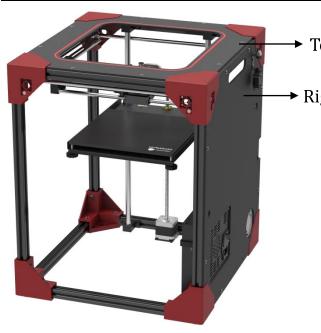
List



Result



S7 Panel



Top panel

➤ Right panel

① Remove the protective cover from all panels, then install the right and top panels with M4*10 screws and T type nuts. You may put the printer on its side carefully for easy installation.



② Pass the unconnected filament sensor wire (**F**) through the hole on right panel, and then install it to the filament sensor.



③ Insert the feed pipe into the filament guide.

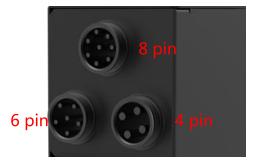
4 Connect and secure the wires of the platform and extruder.

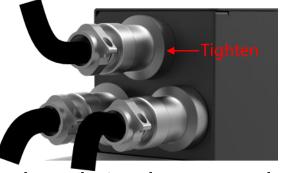


Wiring direction of print platform

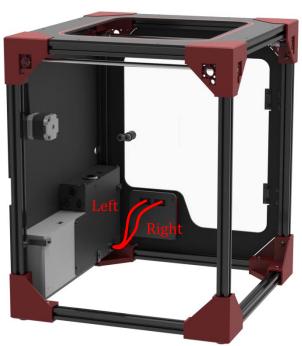


Wiring direction of extruder

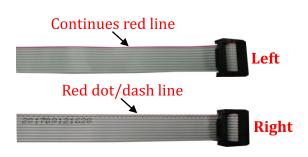




Insert the wires of the platform and extruder into the power supply.



⑤ Install the front panel with M4*10 screws and T-Nuts and connect the display wire.



S7 Panel



(6) Install the left panel, back panel, and bottom panel with M4*10 screws and T type nuts.



⑦ Mount the spool holder by M4*6 screws and T nuts onto the aluminum beam at the notch on the right panel.



(8) Put all the covers back to the top brackets.

Setup / Print

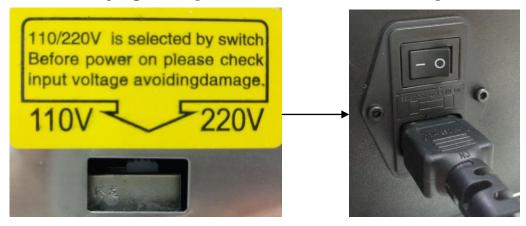
- Level
- Driver installation
- Introduction to slicing software
- Introduction to filament sensor
- Resume from outage
- Introduction to language switching

Level

It is essential to level the print platform of a 3D printer. It is required to carry out the leveling manually on **ANYCUBIC** 4MAX. After level for the first time, it's not necessary to do it again if the relative position of nozzle, limit switch and platform keeps the same. **Details are shown below.**

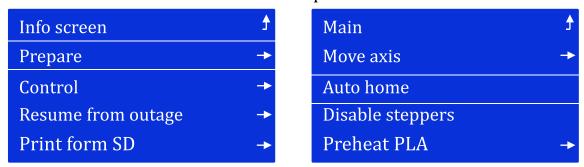
1. Level

Pray all the wires are connected properly; Select the correct voltage mode according to your local voltage ratings (110V/220V). The switch is inside the power supply and **220V** is **default**. Hex keys can be used to move the switch inside. After that, plug in the power cord and switch on the printer.



1 Auto home

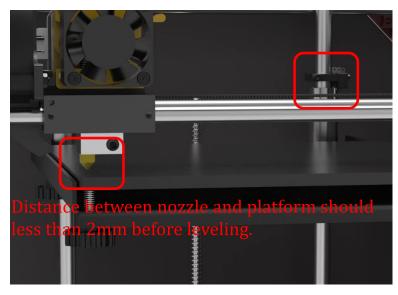
Click the knob, enter the main menu. Navigate the knob: "Prepare"→ "Auto home", and the platform will rise and the nozzle moves to the left front corner. The vertical distance between nozzle and platform should less than 2mm now.



2 Adjust the Z limit switch position

Navigate the knob: "Prepare" \rightarrow "Move axis" \rightarrow "Move X"/ "Move Y", move to coordinates (+ 006.0, + 010.0). Observe the distance between nozzle and platform, if now it is **more than 2mm**, then we have to adjust the height of the Z limit switch (slightly move the Z limit switch up), shown in next page.

Level



Move up Z limit switch few millimeters if nozzle is over 2mm away from the platform.

*if nozzle is too close (i.e. rub against the platform), please adjust Z limit switch **downwards**.

Double check: "Auto home" \rightarrow "Move X" / "Move Y" \rightarrow ensure the distance of the nozzle and the platform is about 2mm after Auto home.

(3) Level the print platform

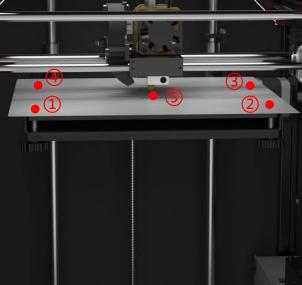
As shown in the following pictures, put a piece of paper (e.g. A4 paper) onto the print platform, and then control the movement of print head by LCD panel. When the print head moving to corner 1 (+006.0,+010.0), adjust (loosen or tighten) the corresponding adjustable nut underneath the platform to let the distance between the nozzle and platform to the thickness of the paper (until feel the drag resistance when pulling the paper).

Do the same for the rest points (+213.0,+010.0) (+213.0,210.0) (+006.0,210.0) (+106.0,+120.0). After that, run "Auto Home" again, and move print head back and forth to verify the leveling results for each corner.

*Do not let the nozzle directly rub against the platform, there MUST be a piece of paper in-between when leveling.

Level





- Ideally, after 4 corners are leveled, the center area should be spontaneously leveled, and you may proceed to do a test print.
- However, please be mindful that, in some cases, the platform may not be perfectly flat (concave or convex) due to many factors.
- ANYCUBIC promises the print platform (ANYCUBIC Ultrabase) has the flatness in the range of 0~0.2mm variation, that says every piece of Ultrabase has been tested by a 0.2mm feeler gauge (both sides of the Ultrabase have been respectively laid on a flat marble table and a 0.2mm feeler gauge could not be inserted between the platform and marble table).
- ANYCUBIC Ultrabase could be used for very long time without using masking tape, hair spray or glue stick. It is easy to remove the printed objects after it cools down. Customers only have to clean it by alcohol-soaked cloth or similar after every few prints.

2. Install filament

Preheat the nozzle first: choose "Prepare"→ "Preheat PLA"/ "Preheat ABS" on the display screen, and then proceed as shown in next steps.

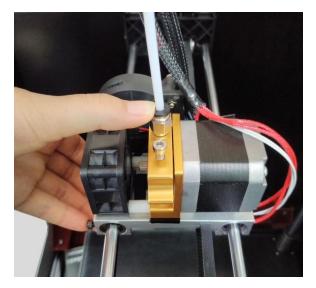
Be careful. Never touch the nozzle during heating.

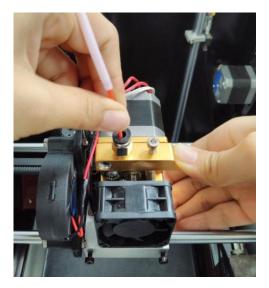
Level

① Straighten the end of filament, insert the filament into filament sensor and then the feed pipe connector (as shown below).



- ② On the extruder, press the black plastic ring of the connector, and remove the feed pipe. Push the filament and let it pass the feed pipe.
- ③ When the target temperature reached, press the handle on the extruder and push the filament in until the filament is melted through the nozzle. You may use tweezers to clean the nozzle.
- (4) Finally, re-insert the Teflon feed pipe into the feed pipe connector again.





Level

3. Test print

Insert the SD card into the SD card slot. Click "Print form SD" on LCD and select the test file "owl_pair" (author: etotheipi, www.thingiverse.com), then the machine will be automatically warm up and begin to print after reaching to target temperature.



There might be 3 kinds of results for the first layer of the test prints (shown in next page).

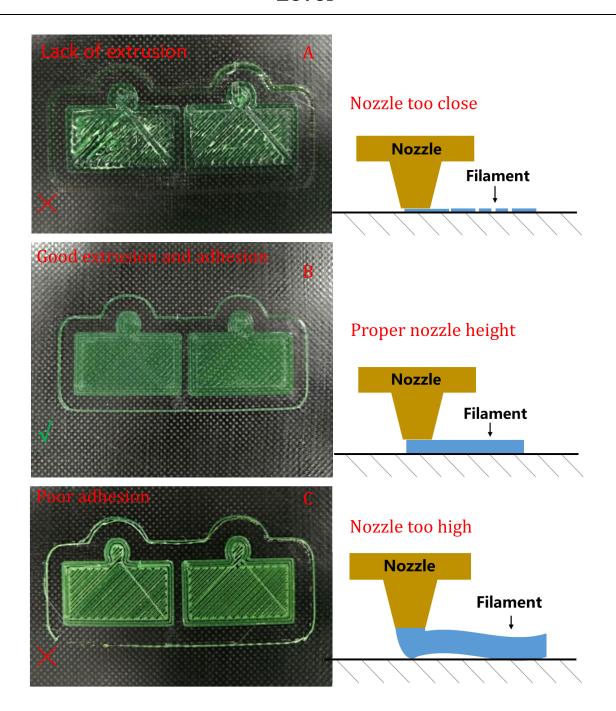
If the result is like that in Fig. A, tighten the corresponding adjustable nuts ¼ circle at a time and test print again after clean the platform;

If the result is like that in Fig. C, loosen the corresponding adjustable nuts ¼ circle at a time and try again;

It may need adjustment for few times until satisfying results as Fig. B.



Level

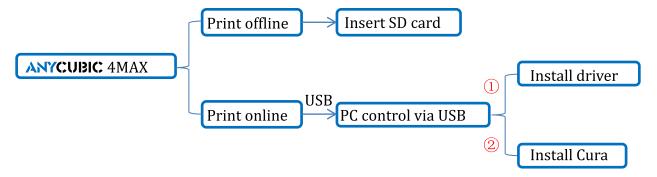


Driver installation

There are two operational mode for **ANYCUBIC** 4MAX : print offline and print online.

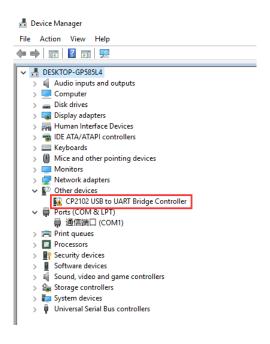
Print offline: As shown previously, after platform leveled, insert SD card, click "Print form SD" on the LCD and print a selected file (Gcode files ONLY).

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



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

First, turn on the machine, connect the printer (mainboard USB port) and your PC via USB. **ANYCUBIC** 4MAX uses CP2102 chip for communication. The CP2102 driver may not be installed automatically, so we have 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.

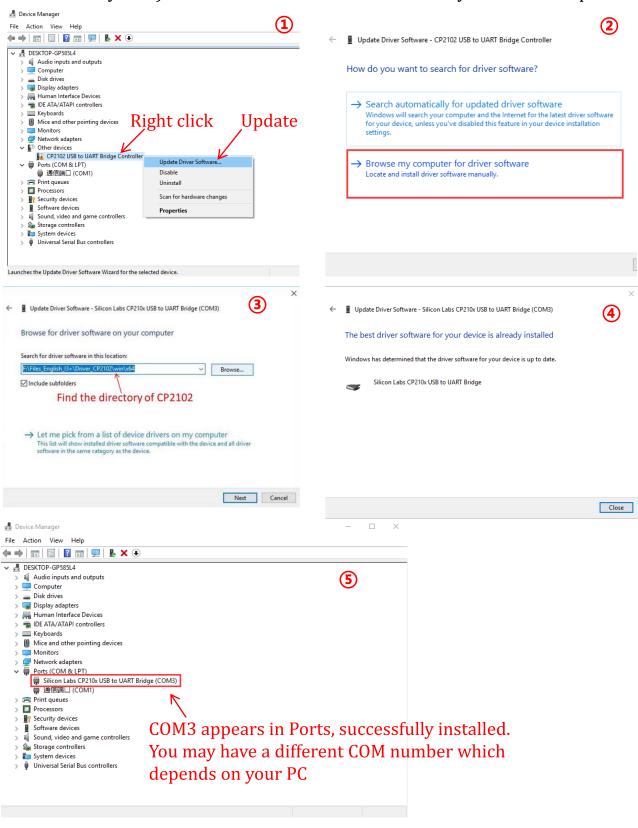


Driver installation

CP2102 driver files are located in the SD card.

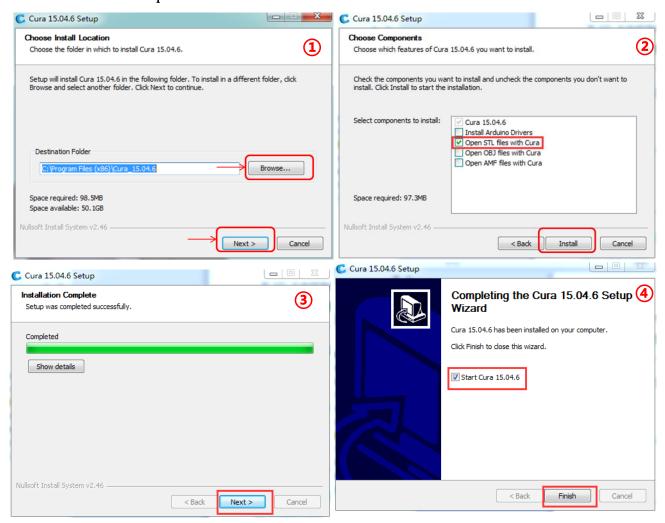
"Files_English_4max"→"Driver_CP2102"→"Windows"

("CP210xVCPInstaller_x64" is for 64 bit system and "CP210xVCPInstaller_x86" is for 32 bit system). Here we take Windows 7 64 bit PC system for example:

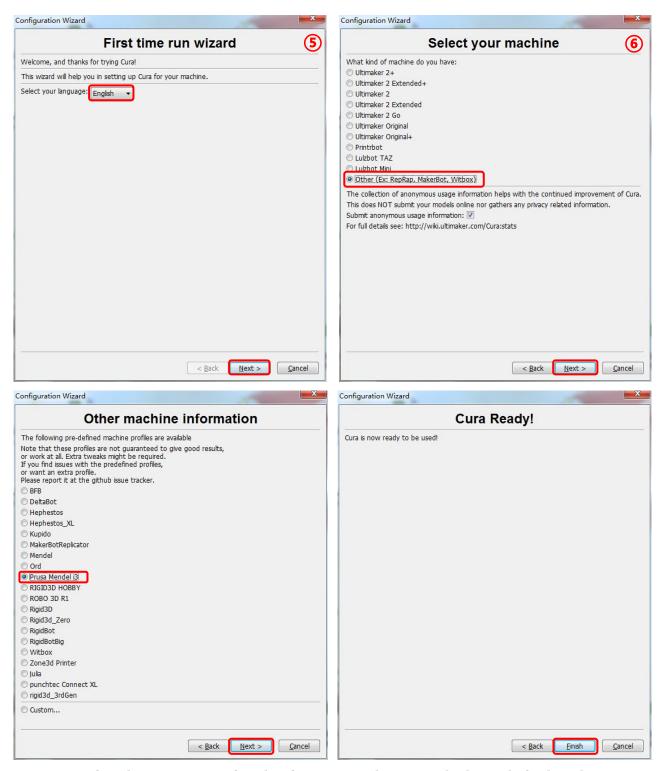


1. Cura installation

Cura15.04.6 is used for example. It is located in SD card \rightarrow " Files_English_4max" \rightarrow " Cura" \rightarrow " Windows". Double click "Cura_15.04.6", and follow the steps as shown below.



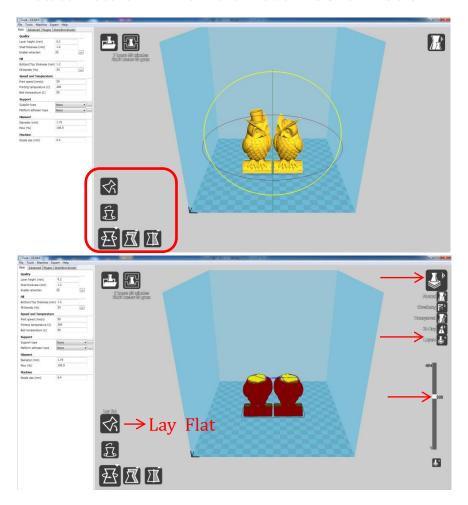
Next, before start Cura for the first time, there will be more settings about the language and machine types, as shown below:



Upon finish, open Cura for the first time, there might be a default robot model, customers may click "File"→ "Clear platform" to delete it.

2. Manipulate 3D model in Cura

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

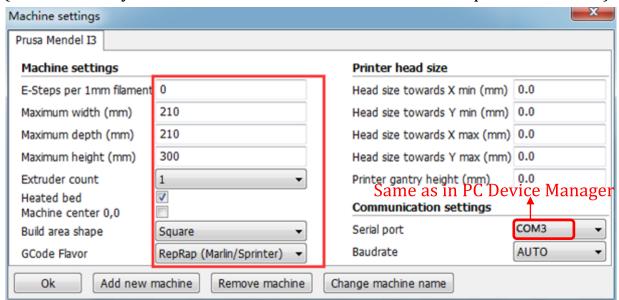


Other operations:

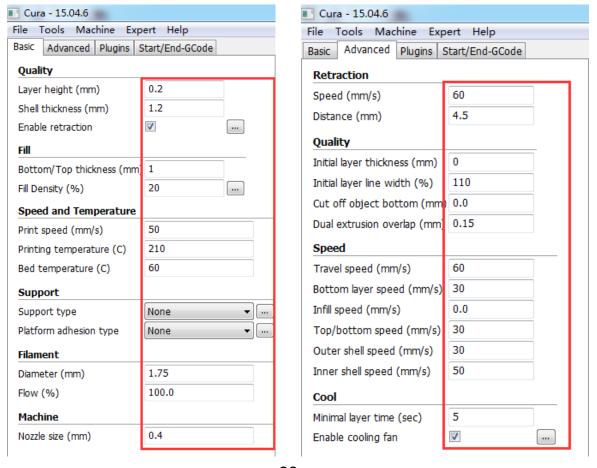
- (1) Change viewing angle: right click the model, hole on and move the mouse.
- (2) Zoom in/out: scroll the mouse wheel.
- (3) Position change: left click on the model, hold on and drag the model to move.
- (4) After rotating the model, it is strongly recommended to click on the 'Lay Flat' icon to ensure that flat portion of the model is well attached to the platform.

3. Cura settings

(1)In the menu bar, select "machine" \rightarrow "machine settings". Please choose the same Serial Port (**COM**) as shown in your PC \rightarrow Device Manager \rightarrow Port (customers may have a different COMx other than the example COM3 below).



(2) Click "OK" for the settings to return to the main interface, and then set the "Basic" and "Advanced" parameters separately, as shown below:



Attention:

Layer height: determine the important parameters for print quality, usually set to 0.1-0.3.

Shell thickness: usually set to a multiple of the nozzle diameter.

Fill density: The larger the parameter, the more solid the model is.

Print speed: printing too fast may make printer shaky, 30-60 is suggested. **Printing temperature:** PLA should be 190-210 $^{\circ}$ C, and ABS should be 230-240 $^{\circ}$ C.

210 01

Filament diameter: 1.75mm.

Nozzle size: 0.4mm.

Retraction speed: Increasing the retraction speed and distance can reduce the stringing problem, but set it too high may cause clogging.

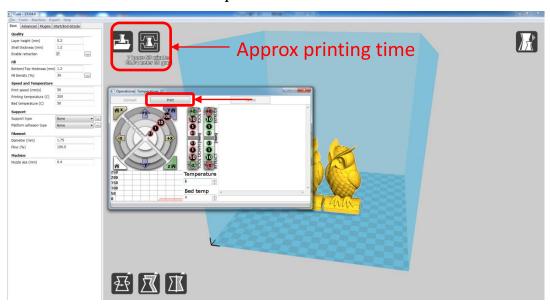
Travel speed: 60mm/s is suggested, the printing accuracy would be affected if it is too fast.

Outer shell speed: Reducing the outer shell print speed would create a more smooth model surface.

4. Print online

After the parameters have been set up, you can print online via Cura.

As shown below, click on the upper left corner "File" \rightarrow "Print", Cura will automatically connect to the printer. The user can click "Print" icon when it is available. Then the temperature would rise and it will start to print when reaching to the target temperature. Use tweezers to carefully get rid of the preextruded filament at the nozzle tip.



5. Print offline

After completing all the parameter settings, click on the Cura software main interface "File" \rightarrow "Save Gcode". Save the model Gcode file to the SD card, and then use the SD card 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.

Introduction to filament sensor

1. When filament break during an ongoing print and the machine alarms with beeping, the interface shown in (1) (2) will be popped up.

PRINT PAUSED

Insert filament

and press button

to continue...

Nozzle: E1 210/210

This window appears when the nozzle temperature stays high.

(1)

PRINT PAUSED
Press button to
heat nozzle.
Nozzle: E1 205/210

This window appears when the nozzle temperature decreased (2)

- 2. Remove the remaining filaments and re-installing new filaments. If the nozzle temperature is too low to install filament, press the knob and then appear the window as shown in the Fig.(3), wait for the nozzle temperature to rise. Finally, install new filaments according to page 31 "Install filament".
- 3. After the filaments re-installed, as shown in Fig.(4), press the knob: choose "Resume print", the print will start again from the last position.

PRINT PAUSED

Heating nozzle

Please wait...

(3)

PESUME OPTIONS:

Resume print

Extrude more

(4)

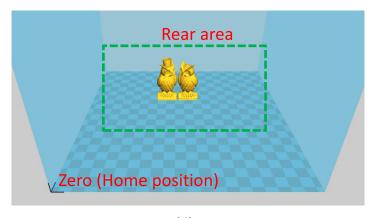
Note: (1)the filament sensor is effective only when the filament is passing through it during printing.

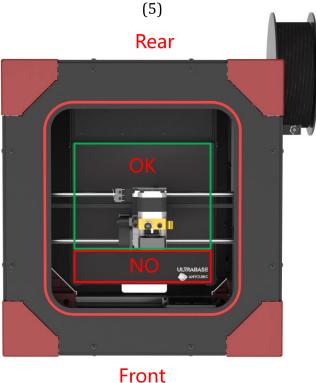
(2)the Resume function from filament break only valid with print offline (Print from SD card)

Resume from outage

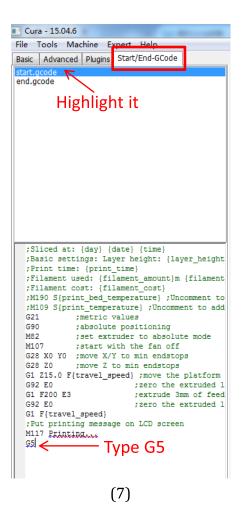
ANYCUBIC 4MAX allows resume print job after accidently power loss (This function only valid when print offline, via SD card only).

- 1. As shown in Fig.(5)(6), in slicing software (i.e. Cura), it is required to place the model at the rear of the platform. Because during "Resume from outage", 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.gcode, as shown in Fig. (7). Then, save the model as GCode file to the SD card by "File" \rightarrow "Save GCode".





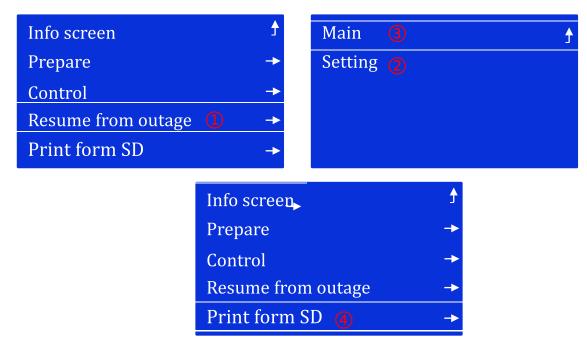
(6)



Resume from outage

3. Insert the SD card into the card slot behind the display, print the files (i.e. "owl_pair"), the machine will automatically heating on and print.

During this printing, if there is an accident power loss, the print will stop immediately. But after power comes back, customers could choose "Resume from outage" \rightarrow "Setting" \rightarrow "Main" \rightarrow "Print from SD", select the unprinted files, machine will home first and continuing on the unfinished object.



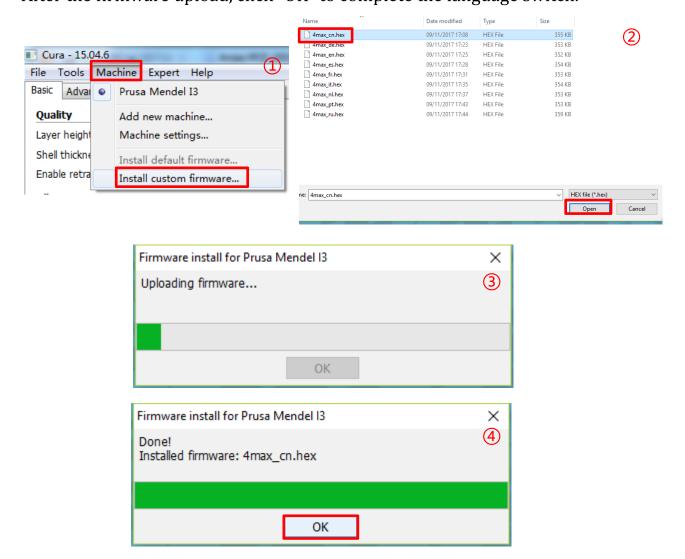
Note:

- ① In order to get smooth surface, use tweezers to carefully remove the excessive filament at nozzle before continuing print upon the last point.
- ② Do not move Z axis after power off otherwise resume will be invalid.
- (3) ANYCUBIC 4MAX 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 from outage", especially for small objects.

Introduction to language switching

Customers can upload firmware to switch to different languages and the English is default, the steps are as follows:

- 1. Use the USB cable to connect the printer and your PC, and then plug in the power cord and switch on the printer.
- 2. Find and download "4max_language packs.rar" from ANYCUBIC official website http://www.anycubic3d.com/en/.
- 3. Switch the Chinese interface as an example, open Cura slicing software and then click on the upper left corner "Machine" → "Install custom firmware", choose the files "4max_language packs" → "4max_cn.hex". Click "Open" to start uploading the firmware. Note: the serial port needs to be the same as PC Device Manager (COMx), Otherwise, the firmware can not be uploaded. After the firmware upload, click "OK" to complete the language switch.



1. Machine

1. PC cannot identify the mainboard

Please refer to Setup/Print section and re-install the driver if necessary.

2.Extruder or hot bed fails to heat

Please check the power and the thermistor connection.

3. Motors malfunction

- ① Motor do not work. Please check motor wires, motor drives, and the power supply.
- ② Motor shakes. Motor driver has not been installed well, or the motor wires have not been connected firmly.
- ③ Motor goes in one direction. Please check the limit switch wiring or if there is any interference.

4. Blue screen

Make sure EXP1 to EXP1, EXP2 to EXP2. Please adjust the contrast of LCD (on its back).

5. Unsmooth feeding

- ①Printing head jammed.
- 2 The throat tubing is clogged, swap it or clean it using cleaning needles
- Material leaks out of the printing head. The nozzle has not been tightening well.
- (4) Inspect if the heating temperature is set too low for the filament.

6. Unable to print offline

Ensure the SD card is OK; Gcode files is the only format to print offline, and the file name should be in English.

7. Lack of extrusion

The printing head jams \diamondsuit Layer set too small \diamondsuit Poor quality filament \diamondsuit Nozzle diameter is not set correctly

2. Printing

1. Warping

Platform not leveled well \diamondsuit The nozzle is too far from the platform \diamondsuit Filament problem (ABS filament shrinkage is very strong) \diamondsuit The first layer printed too fast

2. Stringing

The retraction speed and distance are set too small \Diamond Print temperature setting is too high \Diamond Poor quality filament

3. Layer Separation

Drive current is too small ♦ Print too fast ♦ Structural/assembly problems

4. Lines on the side of print

Z axis is not assembled well \Diamond Extrusion instability \Diamond Temperature fluctuation

The above is some common problems and solutions. Please contact us if you have any other question about the products, we are likely to solve all the problems for you.

