ZONESTAR

Model: Z5X Serial

Quick User Manual

Specifications and configuration

Specifications:

Building mode	FFF/FDM	**Max Build volume**	300mm x 300mm x 400mm (***LxWxH***)
Nozzle diameter	0.4mm default	**Layer height**	0.1~0.36mm
Extruder number	1	**Print speed**	Max. 150mm/s ***(Recommand is 40~50mm/s)***
Printing precision	±0.1mm	**Support file format**	stl, obj, gcode
Hotbed power	24V 250W +-10%	**Hotbed temperature**	115 degree max
Printing material	PLA,ABS,PETG,HIPS,PVA, etc.		
Host software	Repetier-host, Cura, Simlify3d, etc. (recommand is Repetier-host)		
Host software system	Linux,Windows and OSX		

!! ATTENTION !!

Please strictly follow the standard operation when installation.

Please put the printer away from the reach of kids.

Must be guided by adults when children are installed or used.

Take care when installation, to avoid electrical shock hazards.

Caution: Hot!
Hotend has high temperature even the printer stop working.

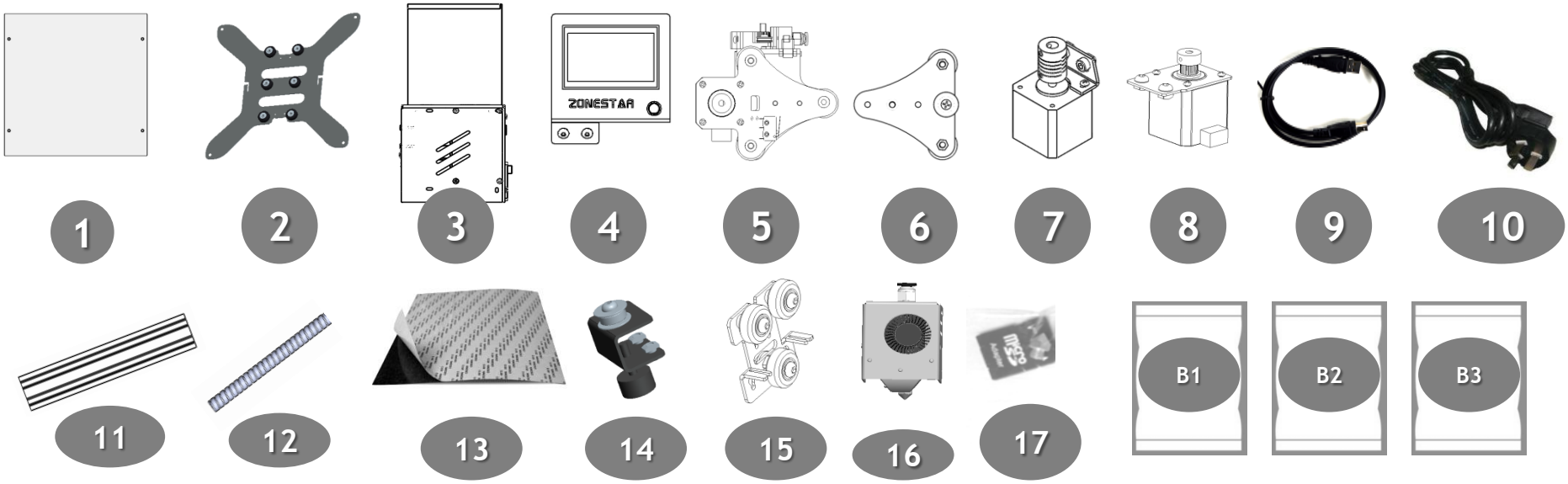
Caution: Hot!
Hotbed has high temperature even the printer stop working.

Please keep well-ventilated condition! May produce toxic gases when printer working.

Please make sure you have set the AC power select switch to the correct position before power on.

For mixing color printer, must load filament to both of the extruders, even if you print single color 3D object.

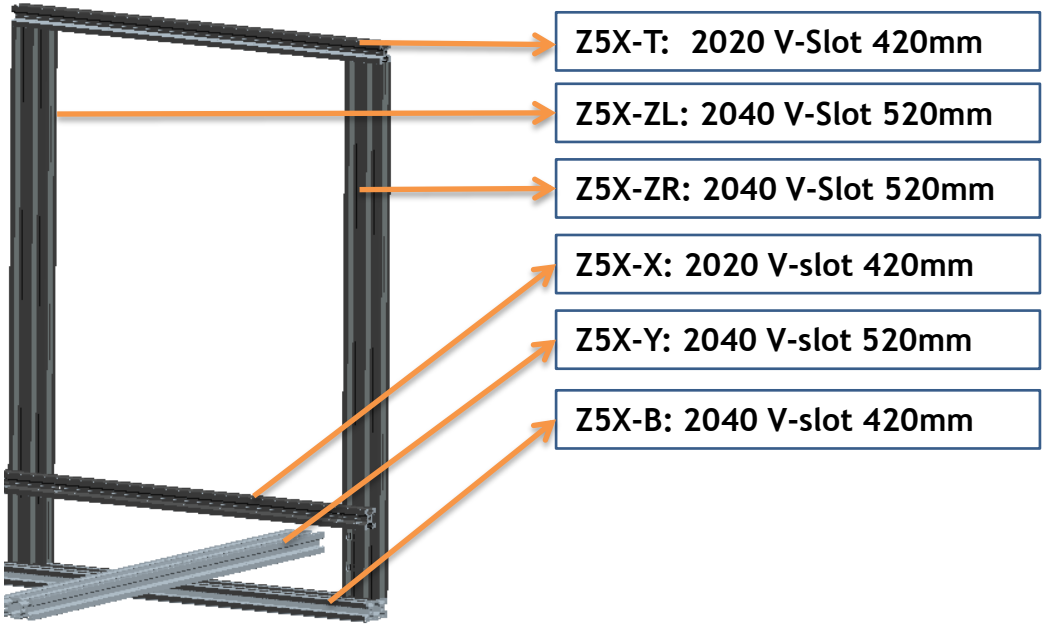
Packing List



NO	Description	Check	NO	Description	Check
1	Hot Bed	☐	11	Aluminum profile (6PCS)	☐
2	HotBed bracket	☐	12	Lead Screw	☐
3	Control Box	☐	13	Hotbed sticker	☐
4	Control Panel	☐	14	Y Idler + Rubber pads	☐
5	Z carrier left	☐	15	Print Head Bracket	☐
6	Z carrier right	☐	16	Print Head (HOTEND)	☐
7	Z Motor Module	☐	17	SD Card and spare parts	☐
8	Y Motor Module	☐	B1	Tools	☐
9	USB cable	☐	B2	Screws/Timing Belt/PTFE tube/Cable ties	☐
10	Power cord	☐	B3	Y and Z Endstops	☐

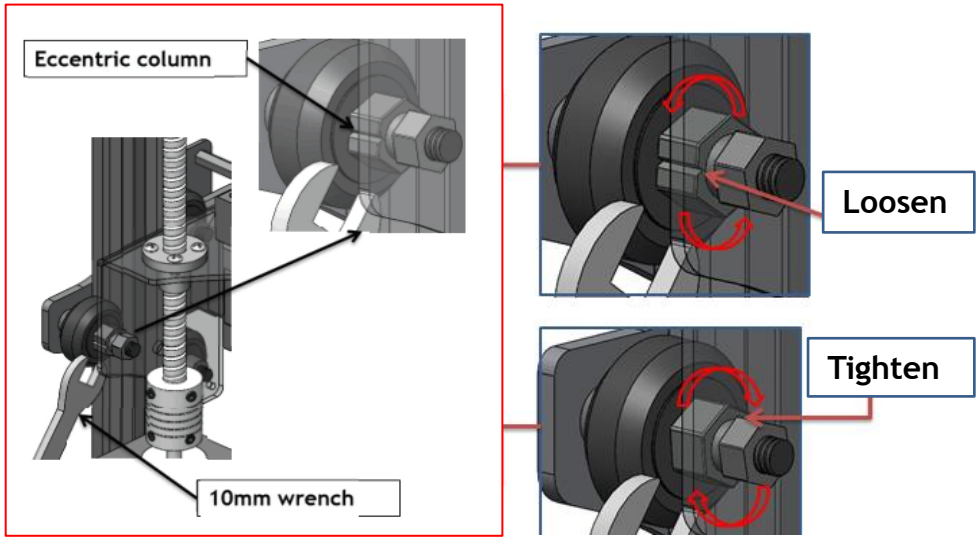
Installation

About the Profiles



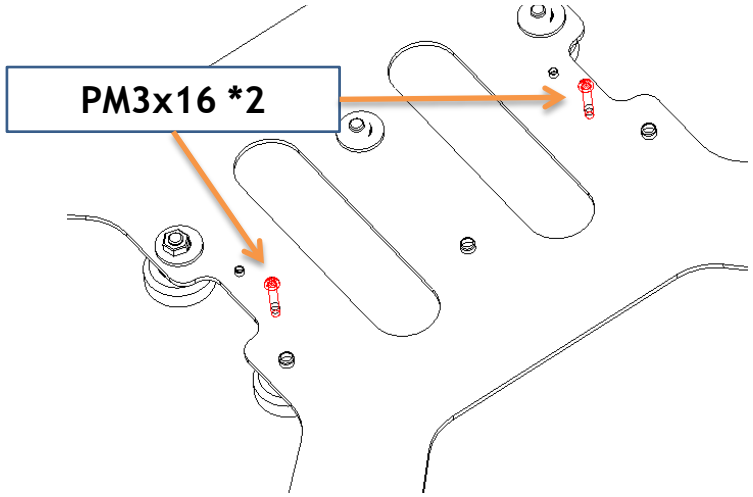
How to adjust the eccentric cloumn to let the carrier hold the rail well

NOTE: : There are eccenitric cloumns in Z axis carriers, print head bracket and hotbed bracket

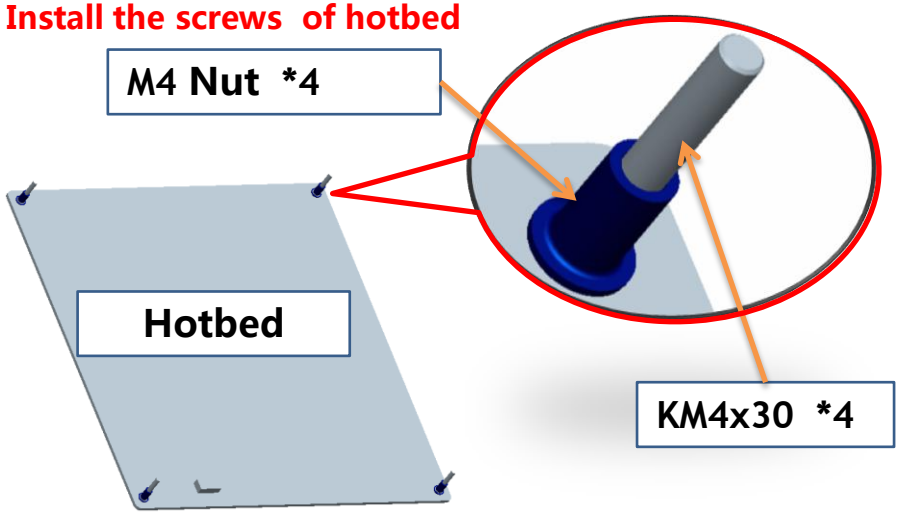


Installation

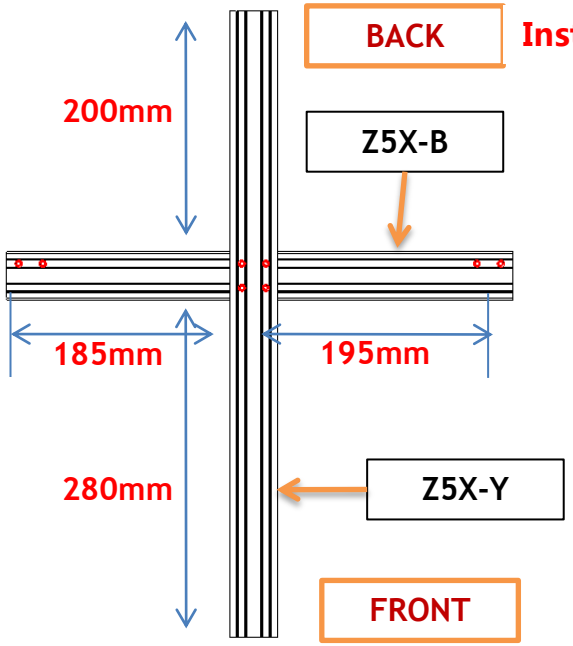
Install the screws for tig the Y axis belt

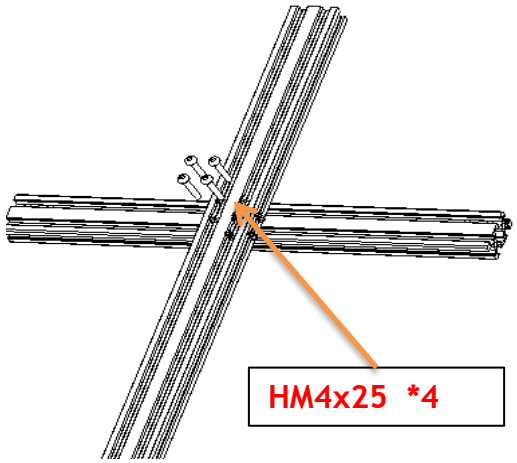


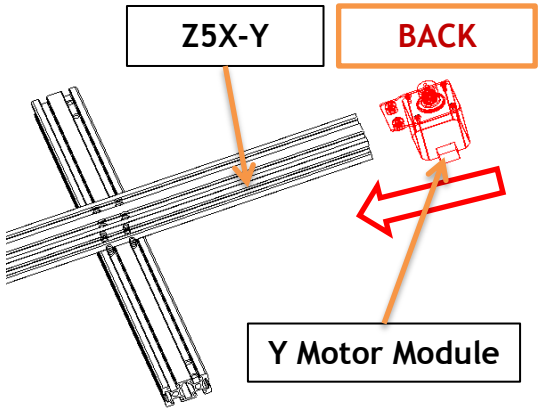
Install the screws of hotbed



Install the Bottom and Y-axis profiles





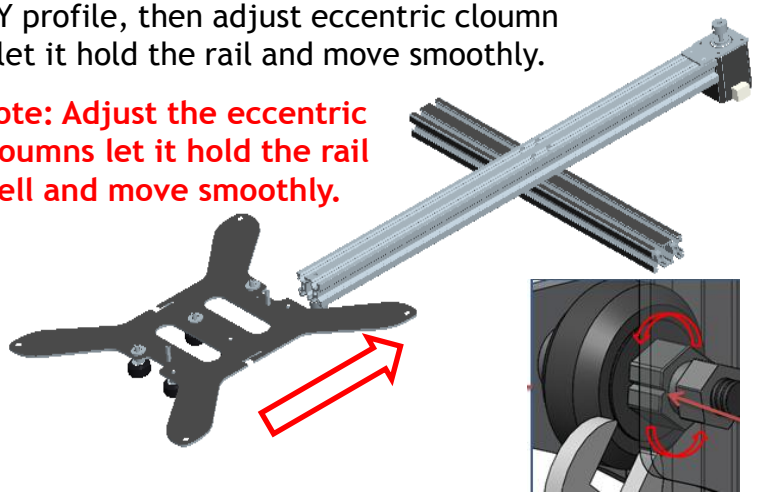


Note:
1. Keep the motor as close as possible to the end of profile.
2. You can move it back to tighten the Y belt later.

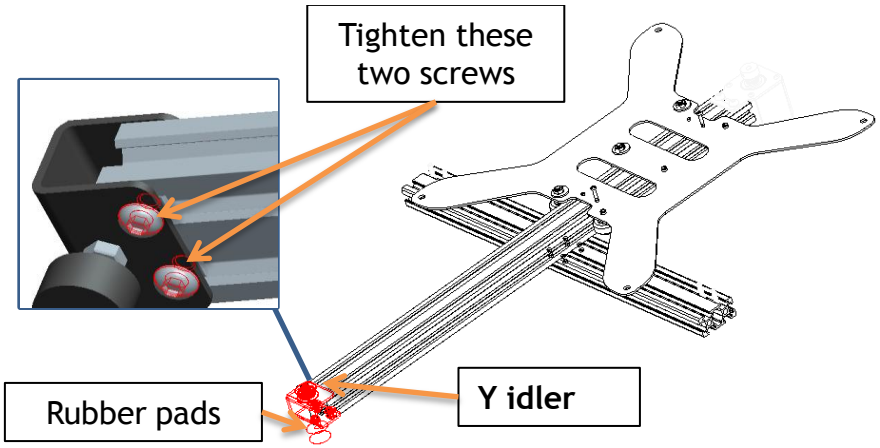
Installation

Insert the hotbed bracket from the front of Y profile, then adjust eccentric cloumn to let it hold the rail and move smoothly.

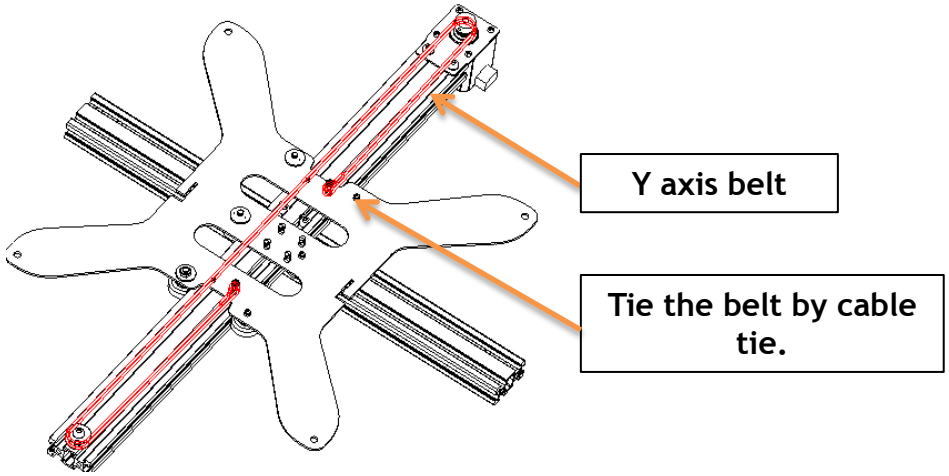
Note: Adjust the eccentric cloumns let it hold the rail well and move smoothly.

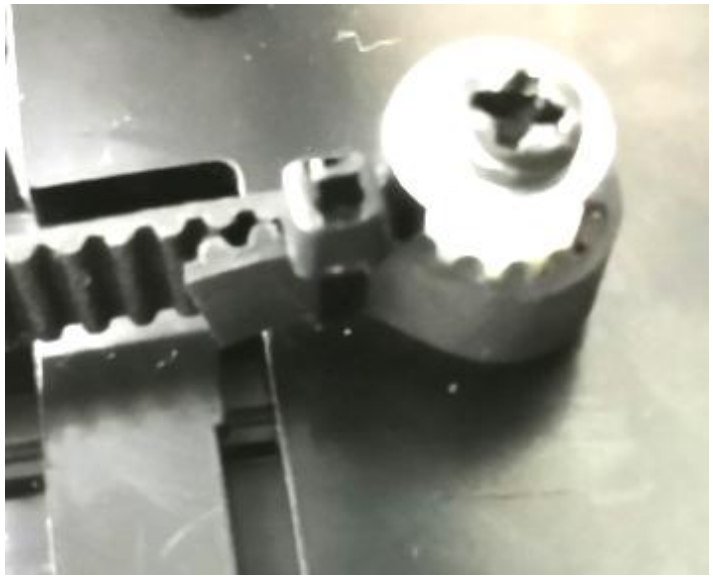


Install the Y belt idler and rubbers pad module to the front of Y profile,adjust the pad height to level the base.

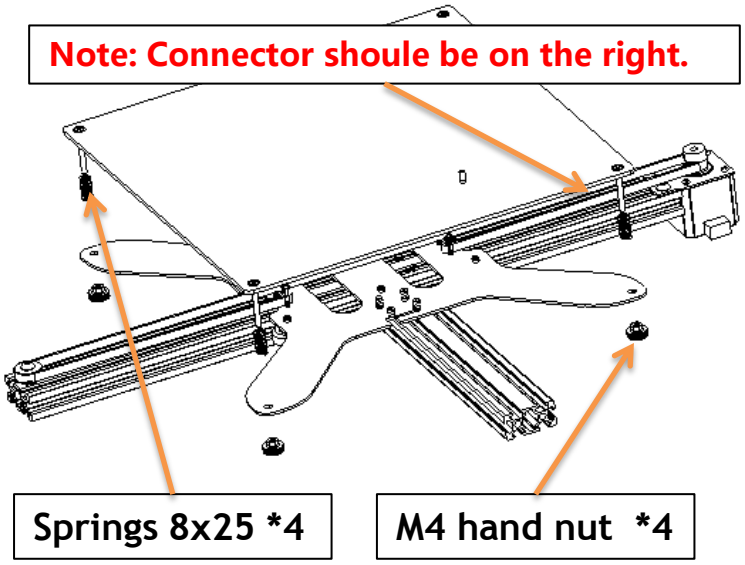


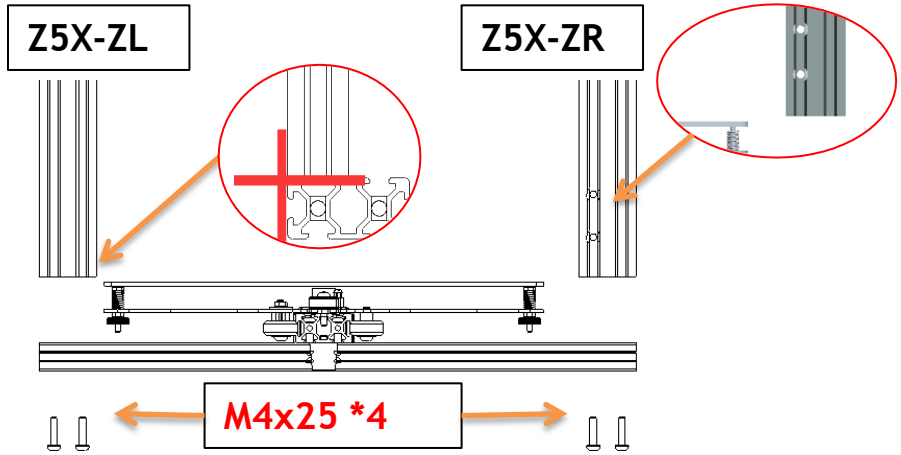
Install Y axis bed, tighten it and then tie it on the screws of hotbed bracket, check it work well and then cut the belt.





Installation

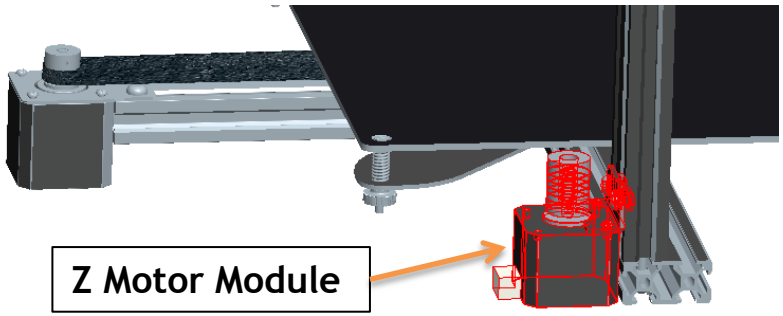


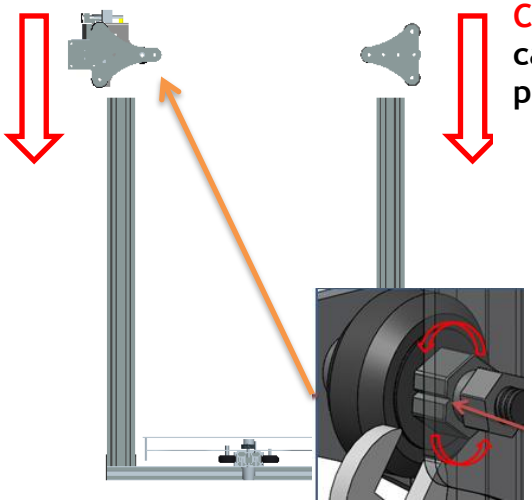


WARNING

Note: 1. Align the Z-axis profiles and the bottom profile. 2. The holes of Z5X-ZR Profile should be on the left side and bottom.

Install the Z-axis motor module to the left side profile of the Z-axis, place the motor in the lowest position, and tighten the screws.



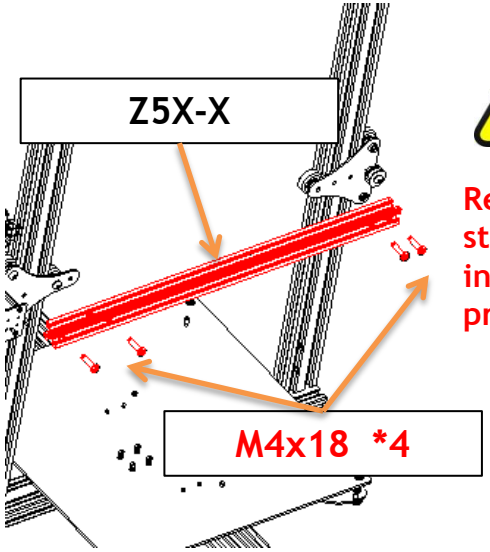


Carefully insert the carriers to the Z-axis profiles.

Note: Adjust the eccentric cloumns let it hold the rail well and move smoothly.

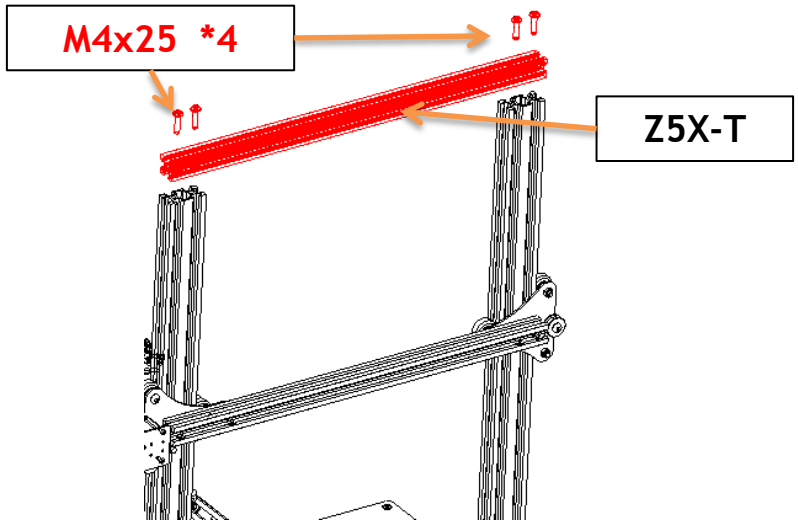
Installation

Install the X axis profile to the carrier, try your best to keep it parallel to the print platform.



Refer to the below steps to debug when install the X axis profile.

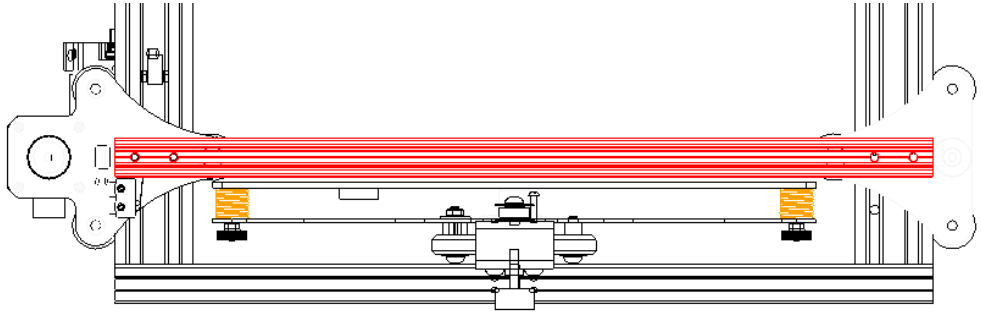
Install the TOP profile.



TIPS: How to Keep the X profile parallel to the print platform.

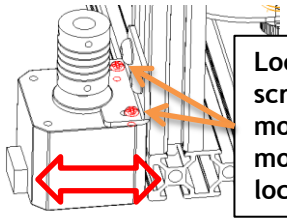
Step 1: adjust the screws of hotbed , let the hotbed surface is parallel with bottom profile.

Step 2: Put the x axis profile on the print platform, and then fixed the screws to the Z axis carriers

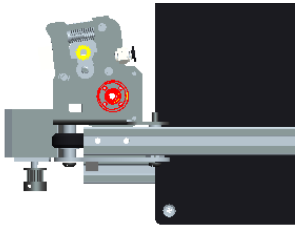


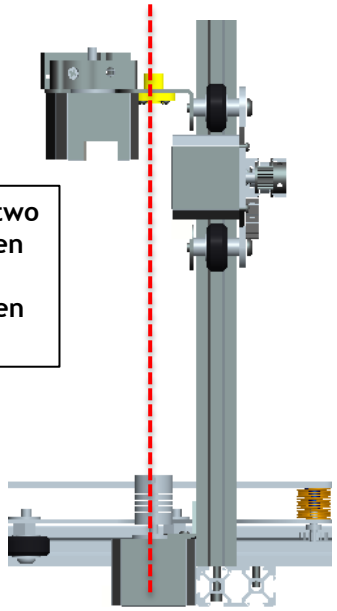
Installation

Move the Z axis motor position so that the coupling is center aligned with the copper nut

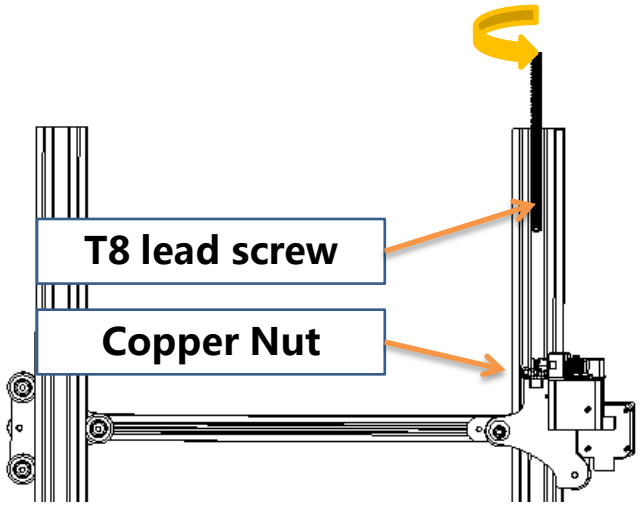


Loosen these two screws and then move the Z motor, and then lock them.

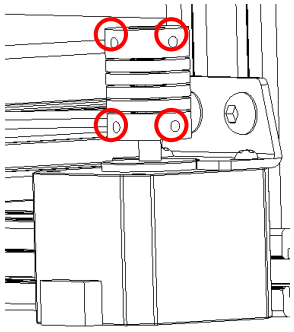




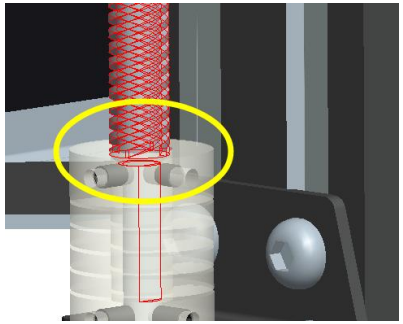
Rotate in the lead screw to the copper nut of Z left carrier, and lock it on the coupling of Z motor module.



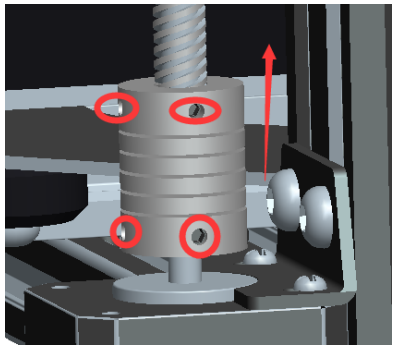
TIPS: How to fix the lead screw to the coupling



Step1: loosen all jbck-screws on the coupling



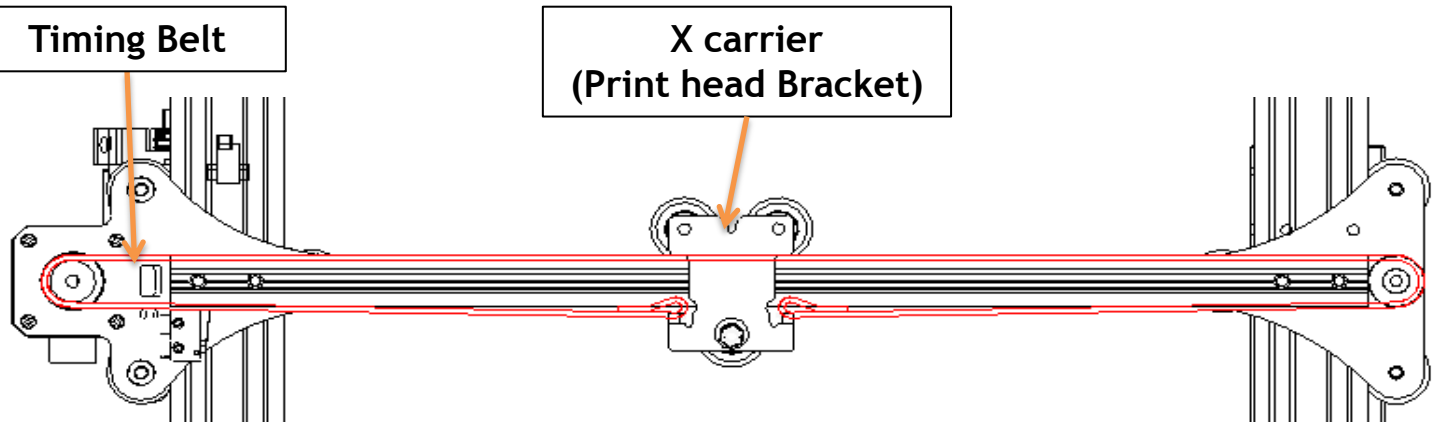
Step2:let the screws touch the shaft of Z motor

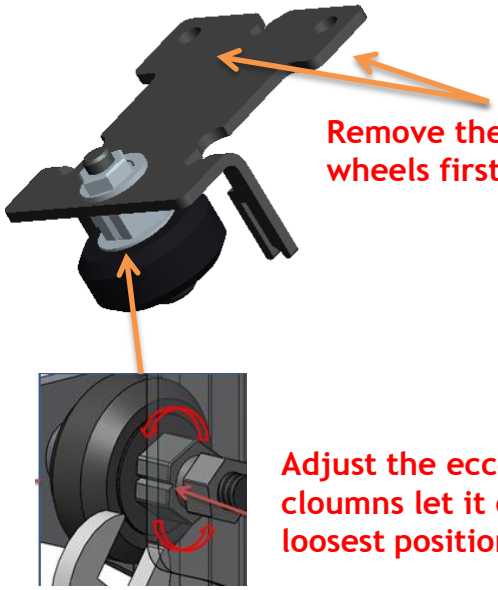


Step3: Move up the coupling and tighten the screws

Installation

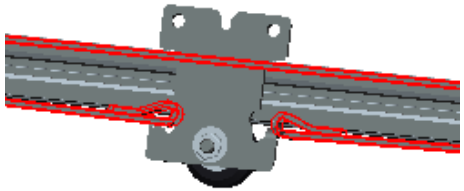
Install the x carrier and X belt



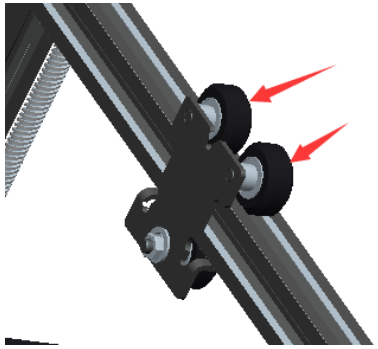


Remove the top two wheels first

Adjust the eccentric cloumns let it on the loosest position



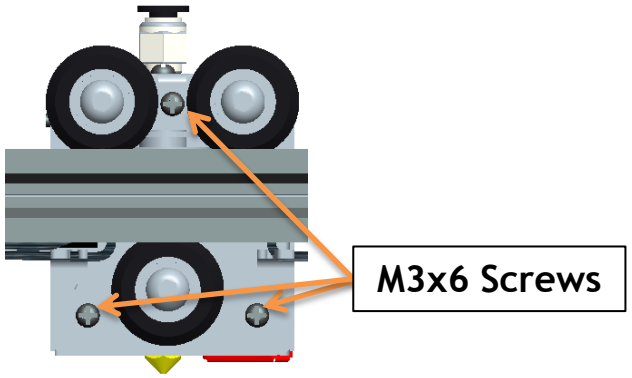
Tighten the belt on the bracket by cable tie



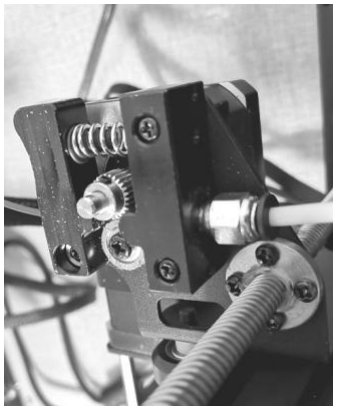
Install the wheels again

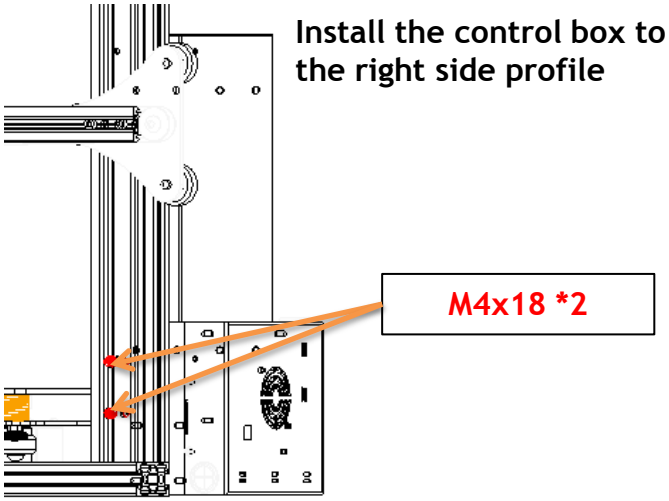
Installation

Install the print head (hotend) to the bracket and lock the screws.



Insert the PTFE tube to the fittings to connect the extrusion feeder with the hotend

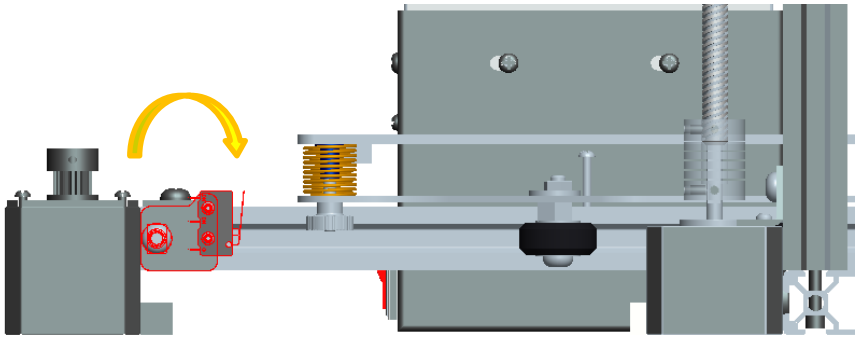




Install the control box to the right side profile

Installation

Install Y ENDSTOP to the back- right of Y profile, clockwise rotate about 30 degree before fixed it, so that it can be triggered by the wheel when hotbed move to the back.

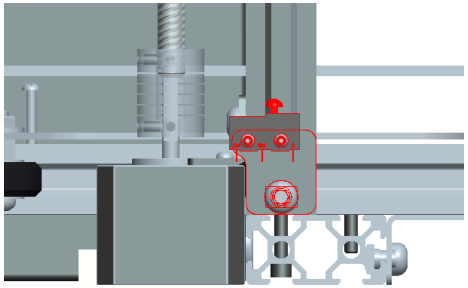


Install Z ENDSTOP to the outside of Z right profile.

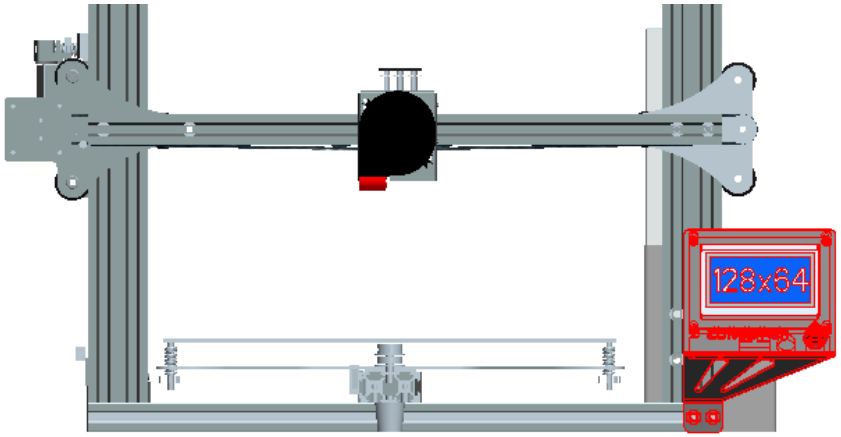
How to set the installation height of Z ENDSTOP

1.Rotate the Z coupling to move down the print head until the nozzle touched the hotbed.

2.Move the Z ENDSTOP up and fix it when the red part touched the wheel.



Install the control panel to the right of bottom profile.

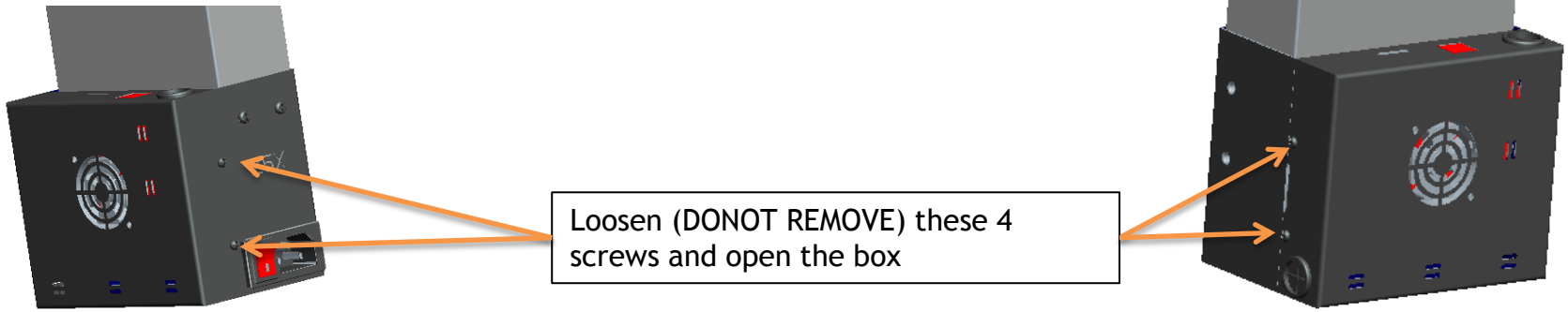


Wiring

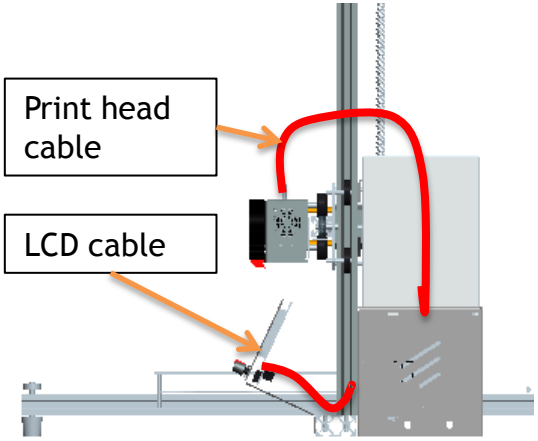
Step 1: Set the AC power switch to 110V or 220V depending on the power supply voltage in your city.

Step 2: Open the control box and refer to the wiring diagram to wiring ， then close the control box.

Step 3: Refer to the below pictures to layout the wires, if necessary, tie the wires to the frame.

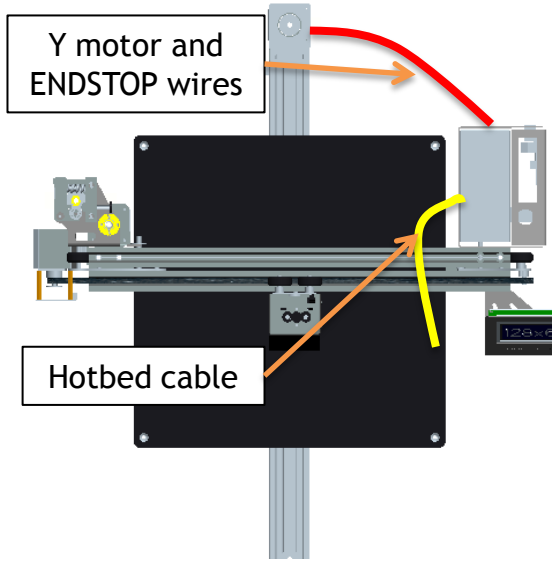


LEFT VIEW

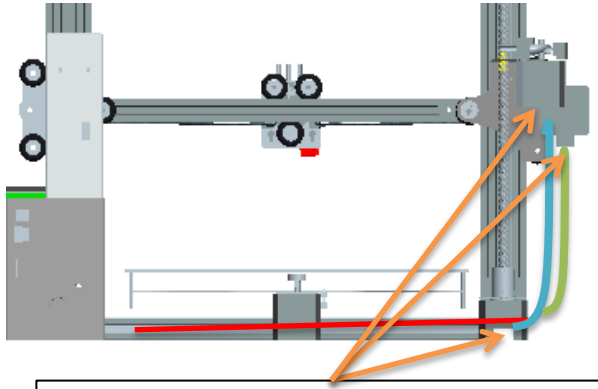


※ Print head cable in the middle of the frame .

TOP VIEW



BACK VIEW

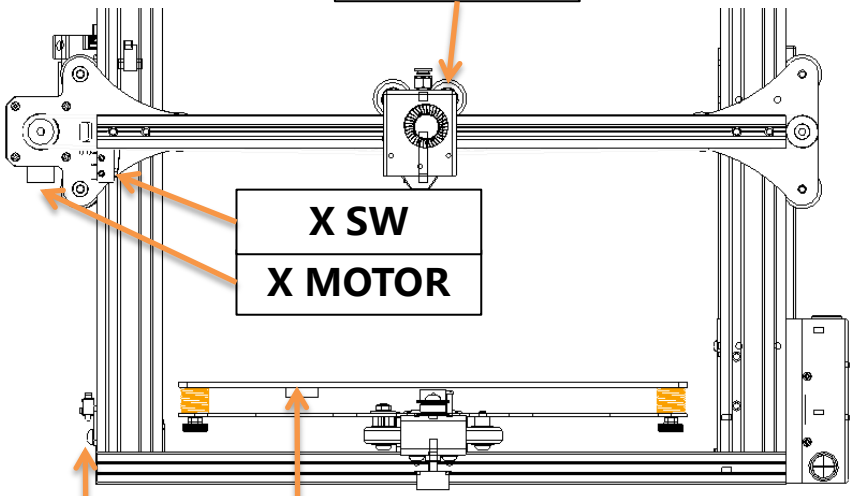


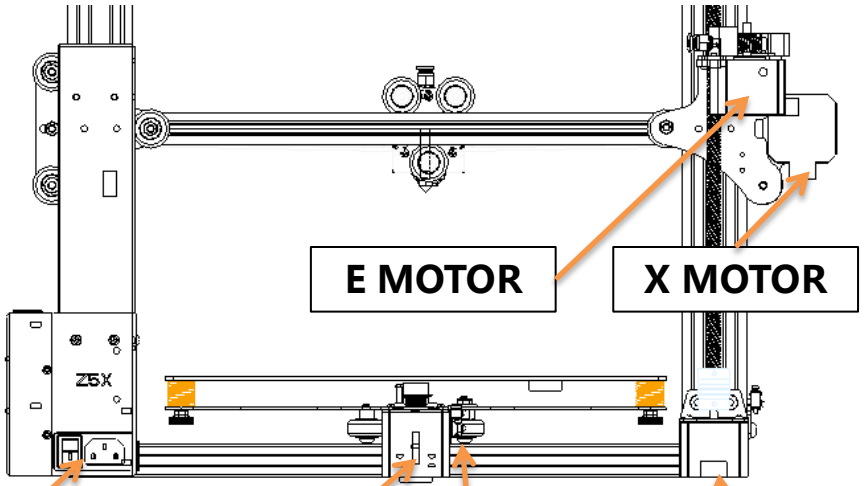
1. Cable of Z motor and ENDSTOP
2. Cable of X motor and ENDSTOP
3. Cable of extrusion and FROD

About Electronics Parts

FRONT VIEW

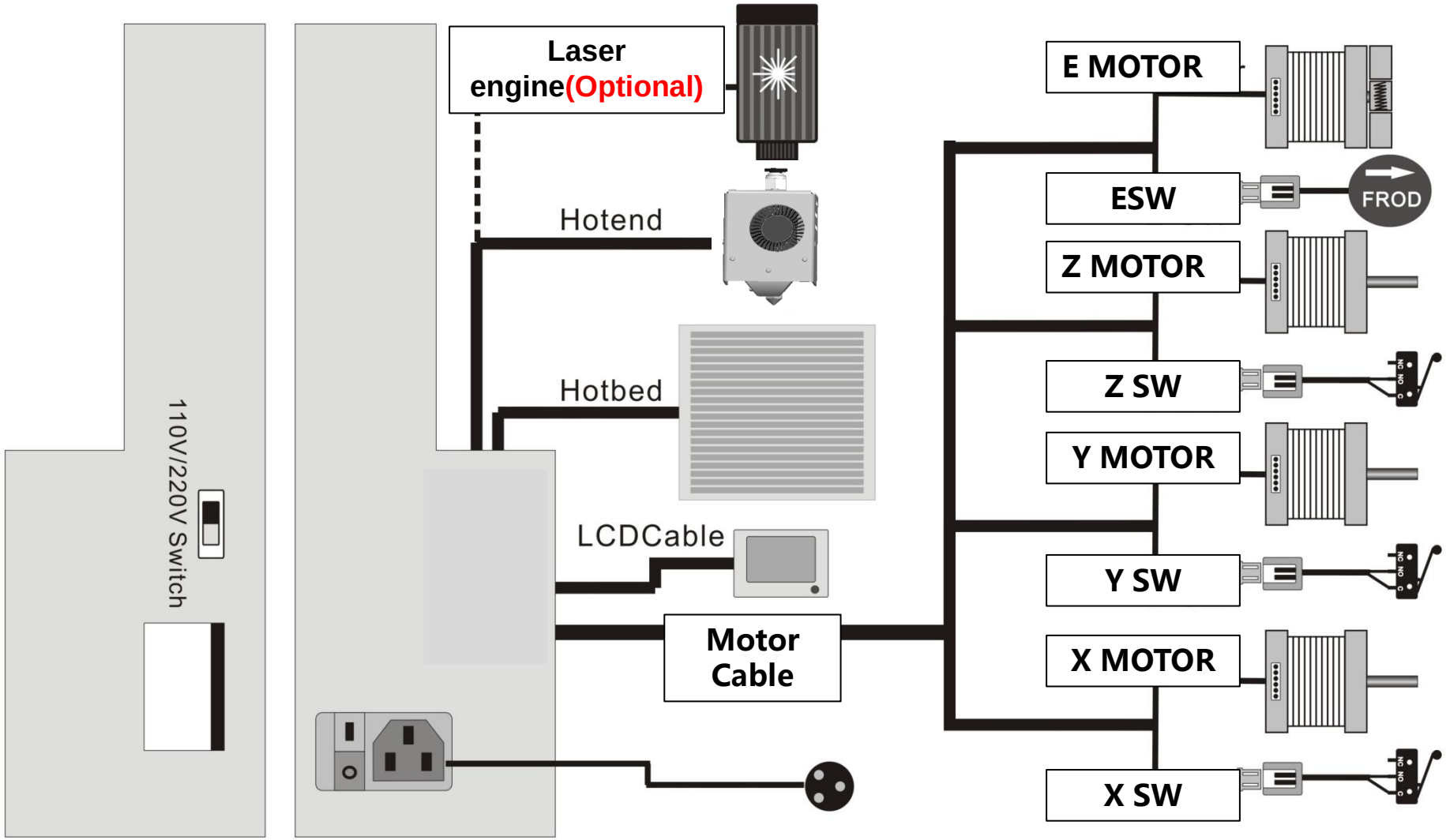
BACK VIEW



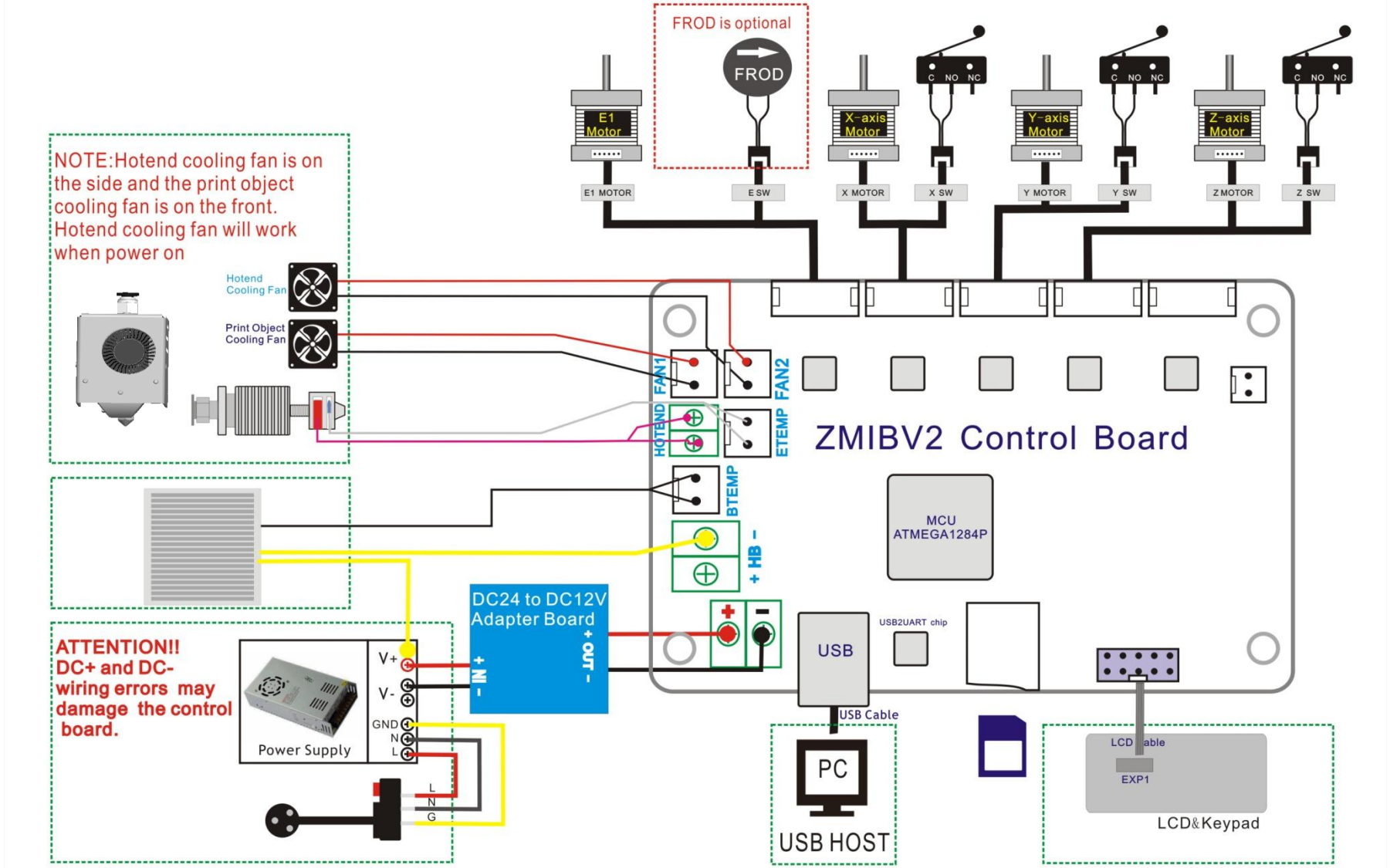


Wiring Diagram Block

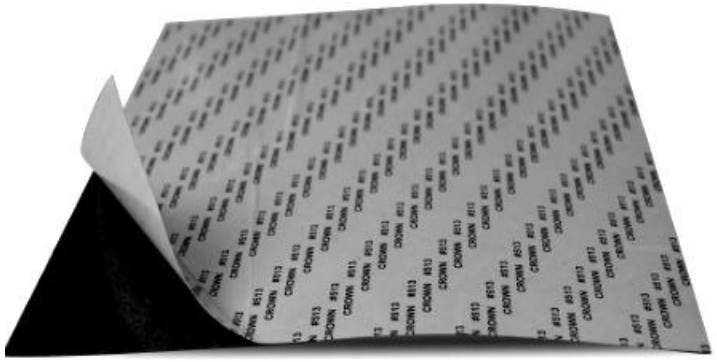
NOTE1: FROD(filament run out detect) is an optional part.
NOTE2: Laser engine is an optional part.



Wiring Diagram



Paste the hotbed sticker

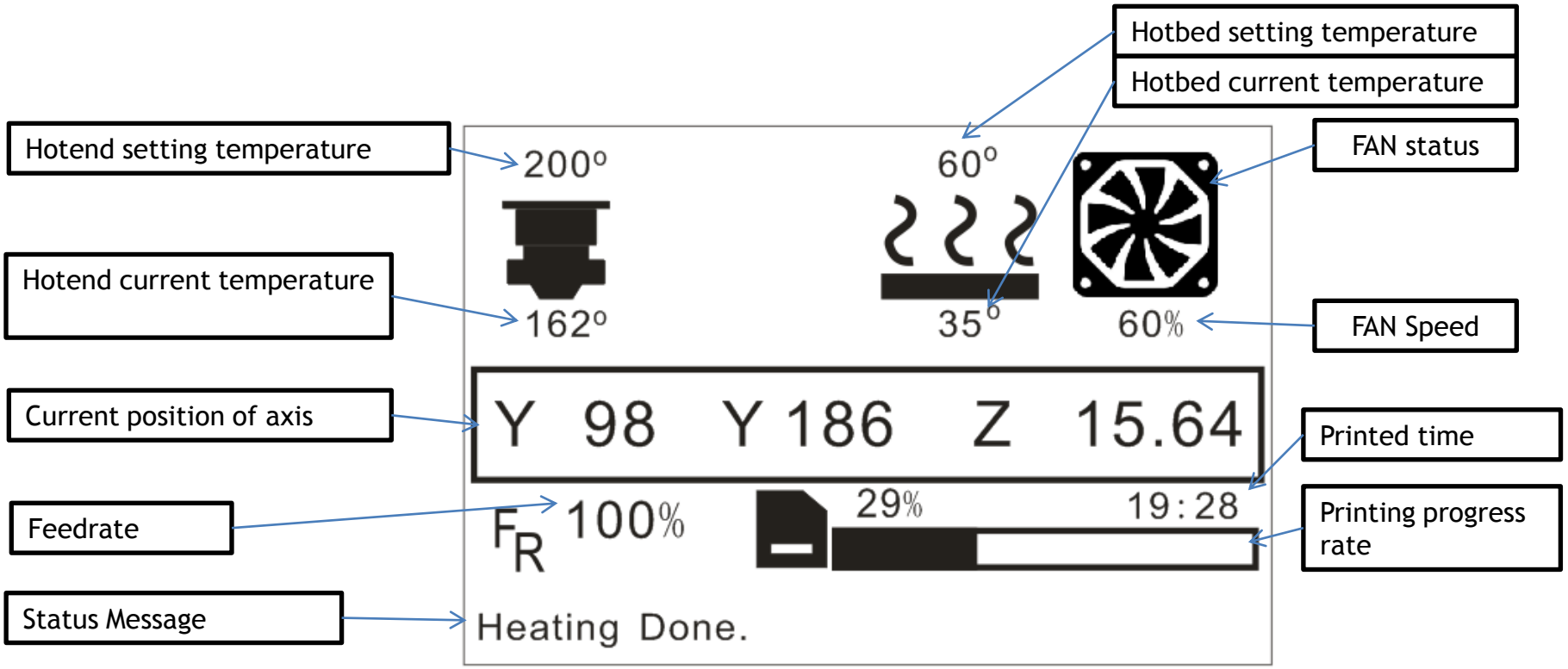


Remove the paper

Paste on the hotbed

LCD Menu and Operation

Knob operation: <***Clockwise rotation***>: Next Item / Value +. <***Counterclockwise rotation***>: Previous Item / Value -. <***Push***>: Enter / Execute.



For details on the LCD menu, please refer to the file "LCD Menu Description.pdf" in the SD card.

Prepare to print - level the hotbed

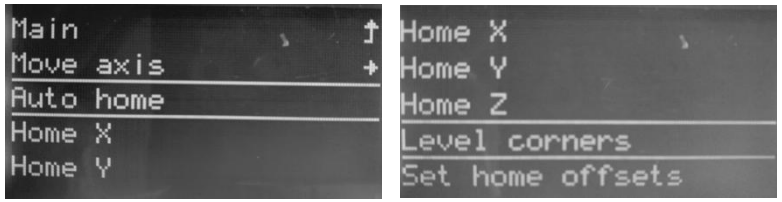
1. Clean nozzle: make sure there aren't any filament at the end of nozzle, if not, remove it by a diagonal pliers.

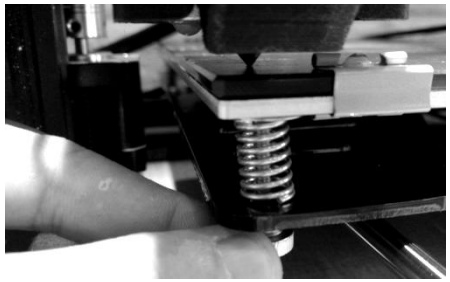
2. Choose “Prepare”>> “Auto Home”>>, wait the hotend go to the orig position.

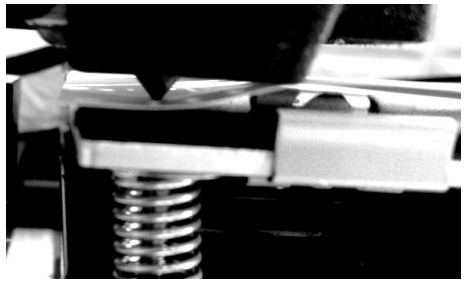
3. Watch the nozzle and make sure the nozzle is higher than the bed, otherwise tighten the hand nuts under the bed to pull down the hotbed or loosen these nuts to move up the bed.

4. Choose “Prepare”>> “Level Corners”>>, the nozzle will go to the first corner, adjust the hand nuts under the hotbed, let the nozzle almost touch the hotbed. In order to get a properly distance, you can put a A4 paper on the hotbed, and when the distanse between the nozzle and hotbed can only insert a paper, it will be perfect.

5. Choose “next corner”, and adjust again. Repeat this step again and again, until all of the four corner at the same height.







Home all axis → start “level corners” wizard → Adjust bed height → put a paper on the bed to measure the height

Prepare to print - Load Filament

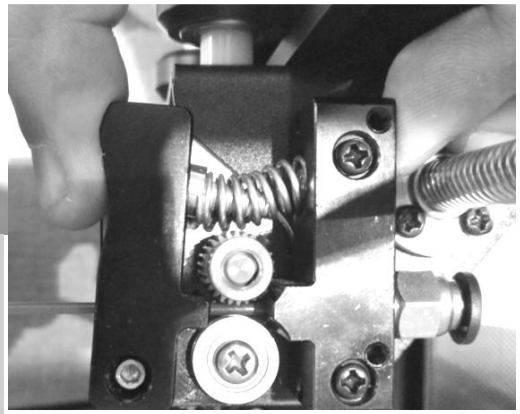
1 Preheat nozzle: Choose “Prepare”>> “Preheat PLA”, then nozzle and hotbed will be heated. **Waiting nozzle temperature reached to setting.**

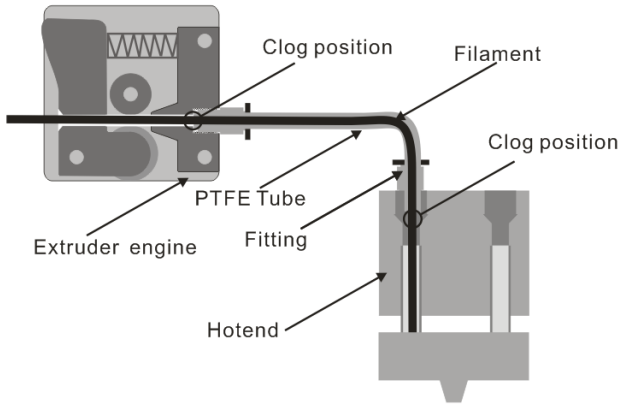
2 ***If there is filament in the hotend, do this step, otherwise skip this step.***
Choose “Prepare”>> “Move axis”>>”Extruder”>>”Move 1mm”>>”extruder: ****mm”, then Clockwise rotate the knob slowly, until you can see the filament flow from the nozzle.

3 ***If there is filament in the hotend, do this step, otherwise skip this step.***
Press the handle on the extrude feeder and pull out the filament.

4 Press the handle on the extrude feeder and insert filament, make sure the filament has been inserted to the hotend.

5 Choose “Prepare”>> “Move axis”>>”Extruder”>>”Move 1mm”>>”extruder: ****mm”, then Clockwise rotate the knob slowly, until you can see the filament flow from the nozzle.





Use a diagonal pliers to cut off the head of filament

Press the handle and insert filament into the extruder engine

When loading filament, make sure it has entered the hotend, if it clog in extruder or hotend, try to remove the fittings and load the filament again.

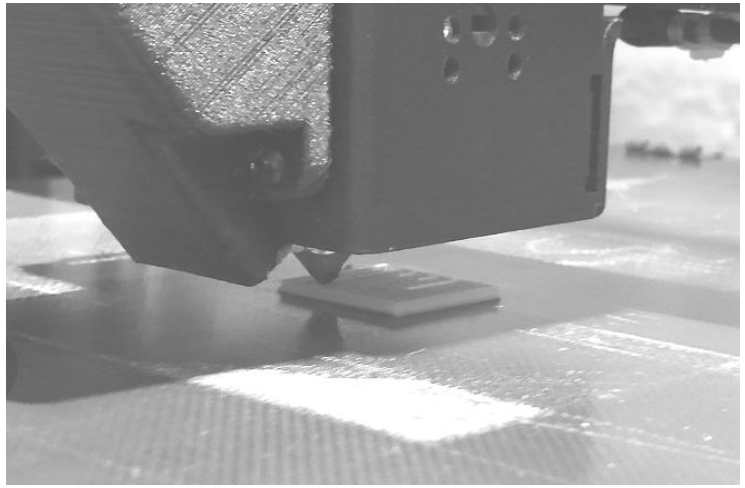
Print a test 3D object (Print from SD card)

1. Insert the SD card to the SD card socket on the control box, and then power on the control box.

2. Choose “Print from SD”>> Choose “Test_gcode\Single Color\xyz_cube.gcode”, push the knob to start printing.

3. Wait the printer to finish heating and start to print, watch the distance from nozzle to bed, double click the knob of LCD menu and fine tune the z height if the distance is not good, let the filament can stick on the hotbed well.

“Gold finger” of TF card toward to power supply



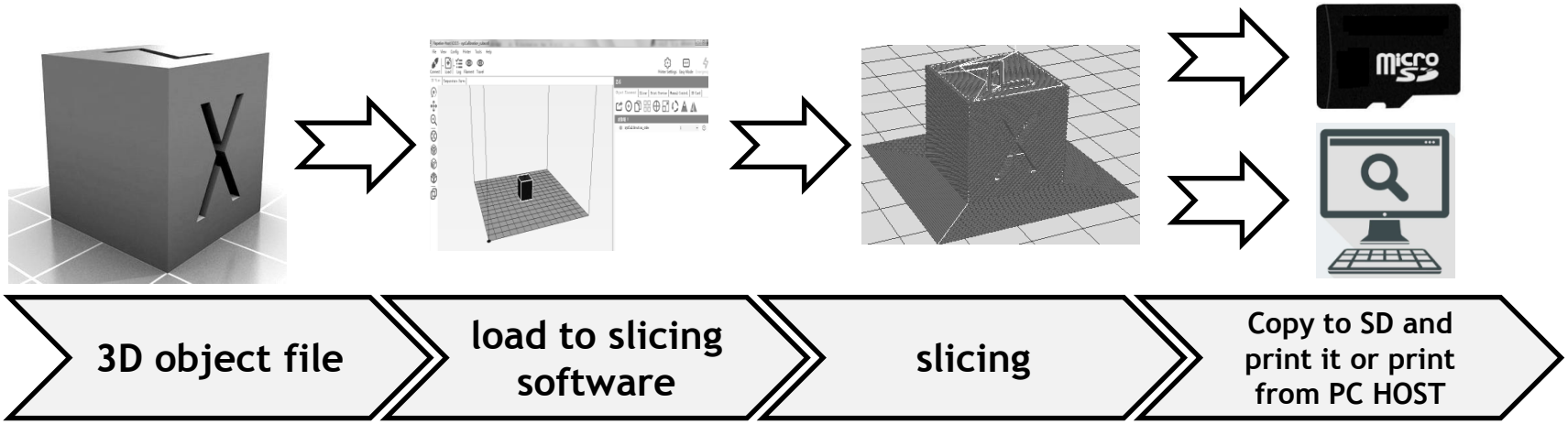
Insert SD card to control box and then start to print

Double click the knob to Open a “Babystep Z” menu fine tune z offset when start to print the first layer

Wait for printing finish!

Slicing, control and printing from PC HOST

1. *Before building a 3d object by using this 3D printer, you need to use a software to convert the 3D model file (stl, obj, etc., depending on the type of slicing software) into a machine recognizable file (**gcode file**). This process is called "**slicing**".*

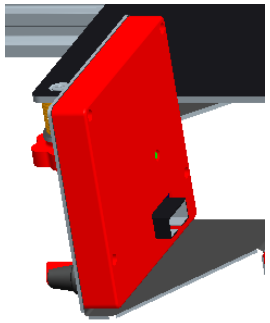


2. *Our recommended slicing and HOST software is **repetier-host**, which is a free software, you can also use any other software to slicing the 3d model as long as it can support **RepRap** protocol, for example: simplify3d, Cura, slic3r, Kisslicer, etc.*

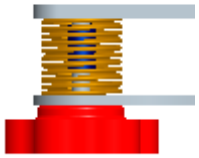
3. *More about slicing, please refer to the documents in the SD card or download it from* our cloud disk.

Improve your kit

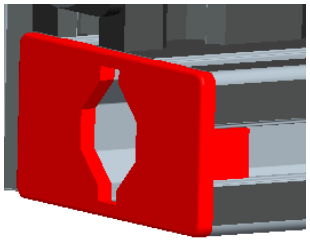
You can print some parts to improve your printer, we have put the stl and gcode files in our cloud disk, please feel free to download them.



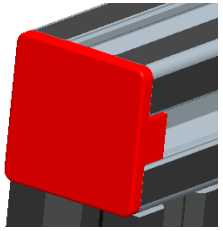
Filename: LCD 12864_case_Vx
Case for LCD12864



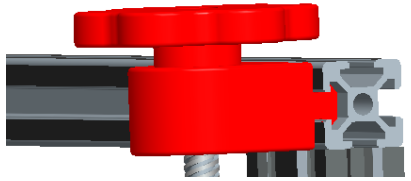
Filename: CAP_M4NUT_Vx
cap for hotbed handnut



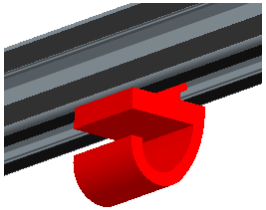
Filename: CAP_AF_40V
cap for 2040V profile



Filename: CAP_AF_20V
cap for 2020V profile



Filename: LS_CAP
Filename: LS_HOLD
Z axis lead screw hold & cap



Filename: Wire_clip_Vx
Wire Clip

Download link: ***https://www.jianguoyun.com/p/DR5syKoQyoP1BxizyaIC***
Directory: Parts STL\Common, Parts STL\Z5X
NOTE: If the download link is invalid, please find it in our website: www.zonestar3d.com

More Features

1. **FROD - Filament Run Out Detector:**
Add a filament run out detector, the printer can pause when the filament spool is used up and wait for you replace a new spool.

2. **Laser engraving:**
Only need to install a laser engine on the print head, your 3d printer can be coverted into a simple laser engraving machine.

3. **Super Base:**
If you need to print ABS/PETG, you'd better to put a glass plate on the hotbed. SuperBase is a surface coated toughened glass specially designed for 3D printer, its special coating will help printed objects pasted on the hot bed.

4. **Magnetic hot bed sticker :**
With magnetic hot bed stickers, it is more convenient to remove the printed object from the hot bed, (more suit for PLA filament).

5. **Stepping Motor Smoother:**
If you'd like to clean up the phenomenon similar to the seismic ripple on the printed object surface. By 2 PCS TH-SMOOTHERs and install it to X and Y motor, it will be effectively improved.

If you are interesting in these features, welcome to purhcase from our online store.