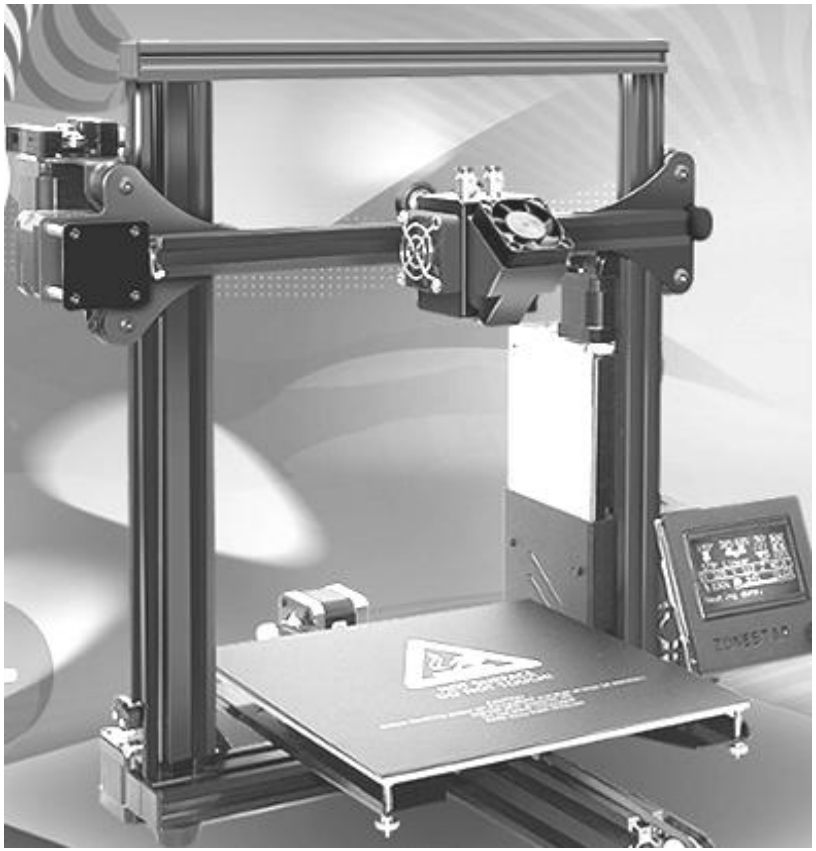
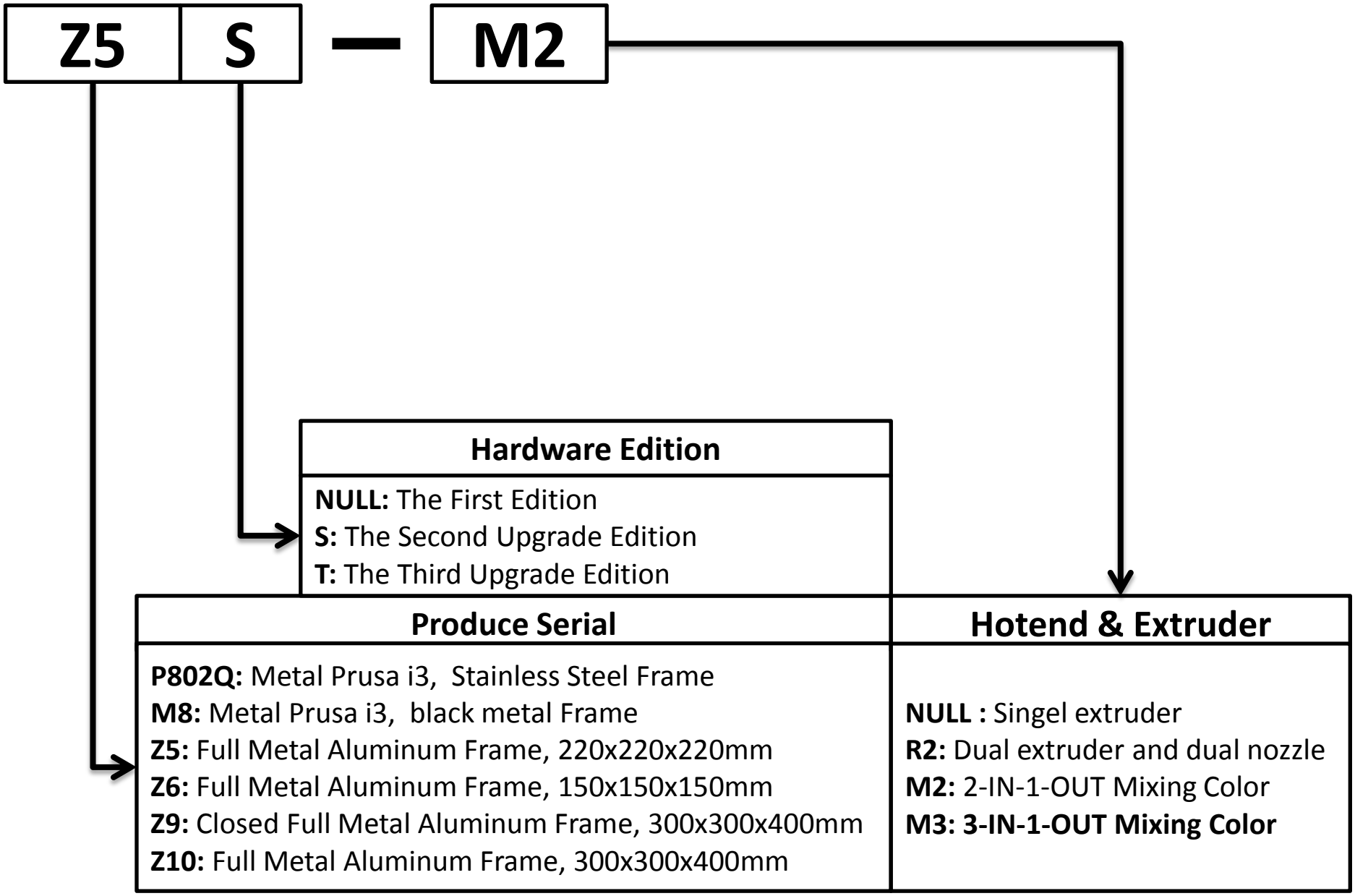
ZONESTAR



Model: Z5 Serial (2nd Edition))

User Manual

ZONESTAR product line and naming rules



Specifications and configuration

Specifications:

Building mode	FFF/FDM	**Build volume**	220mm x 220mm x 230mm (***LxWxH***)
Nozzle diameter	0.4mm default	**Layer height**	0.1~0.36mm
Extruder number	1 or 2	**Print speed**	Max. 150mm/s ***(Recommand is 40~50mm/s)***
Printing precision	±0.1mm	**Support file format**	stl, obj, gcode
Hotbed power	12V 140W +-10%	**Hotbed temperature**	110 degree max
Printing material	PLA,ABS,PETG,HIPS,PVA, etc. (recommand material is PLA for Z5M2)		
Host software	Repetier-host, Cura, etc. (recommand is Repetier-host)		
Host software system	Linux,Windows and OSX		

Configuration:

SKU	Extruder Qty.	Nozzle Qty.	Mix color
Z5S	1	1	○
Z5S-M2	2	1	●

Remark:

● : Default equipped with this feature.

○ : This function is not available by default and can be upgraded.

!! 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.

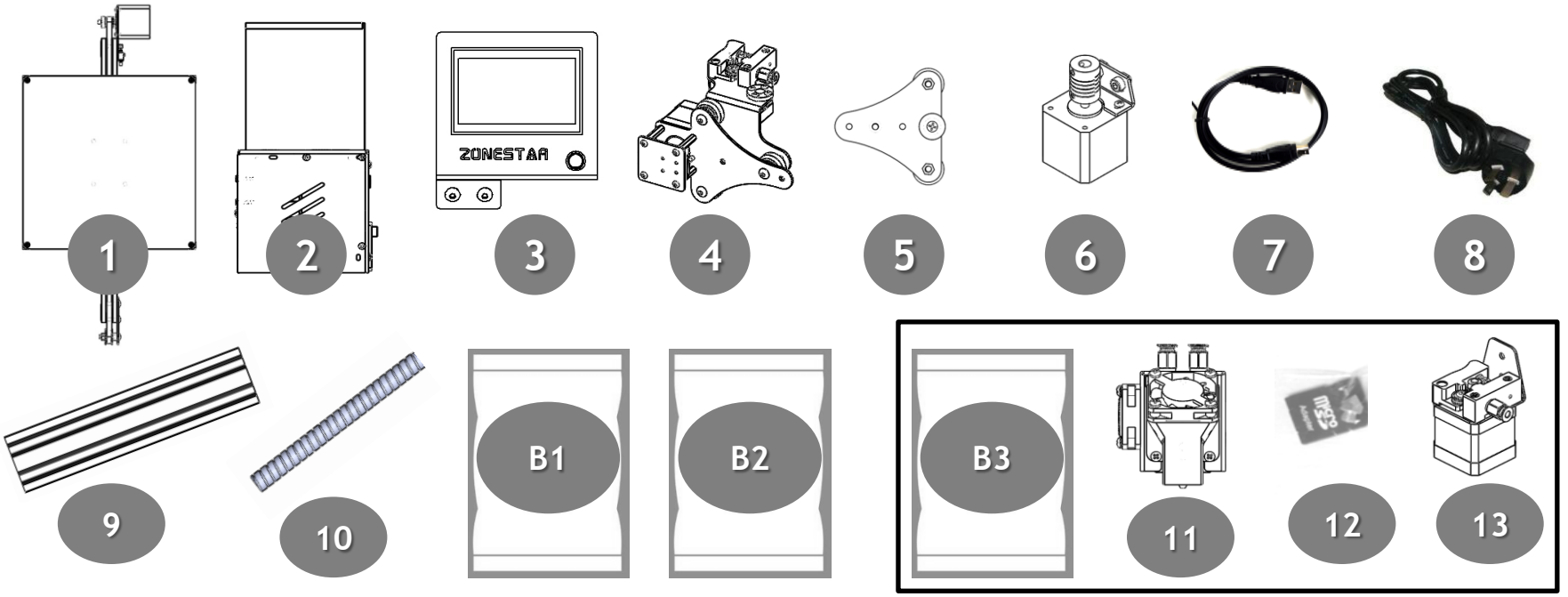
Caution: Hot!
Hotbed has high temperature even the printer stop working.

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.

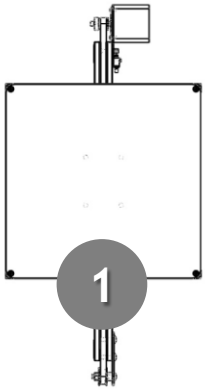
For mixing color printer, must load filament to both of the extruders, even if you print single color 3D object.

Parts

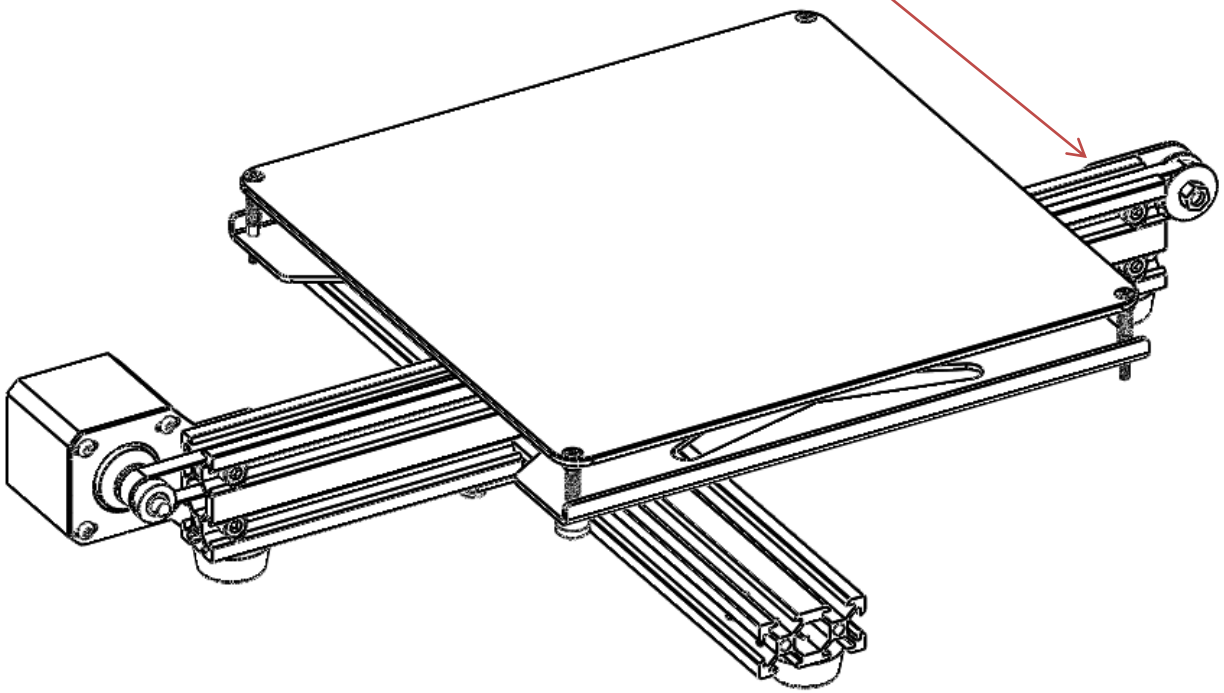


1	Base	9	Aluminum profile (5 PCS)
2	Control box	10	Lead Screw
3	Control Panel	B1	Tools
4	Z carrier left	B2	Lead screw Fix module/Z Endstop/Screws/Base Junction/Rubber pads
5	Z carrier right	B3	Timing Belt/PTFE tube(1 or 2)/Cable tie/End cover
6	Z-axis driver	11	Hotend(for Z5S/Z5S-R2/Z5S-M2 Extruder)
7	USB cable	12	SD Card
8	Power cord	13	2nd Extrudsion feeder(Only For Z5S-M2 or Z5S-R2)

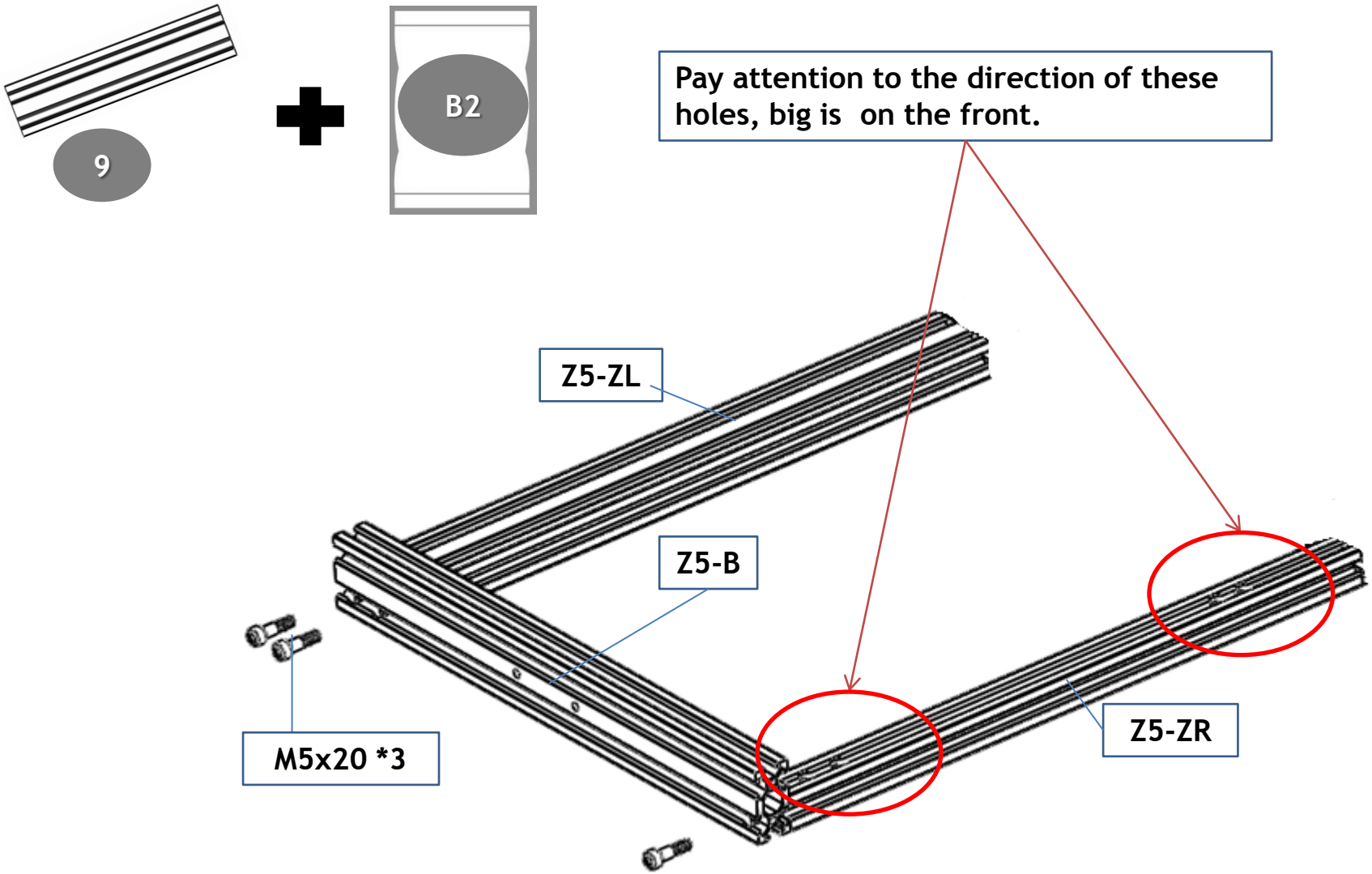
Y Axis Belt adjust



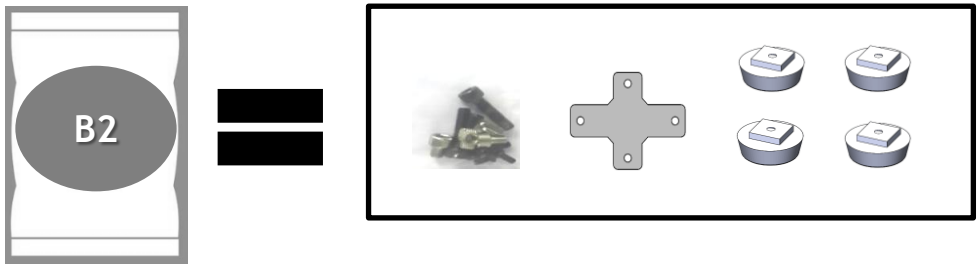
Loosen these screws and move the ider to the front to tighten the belt

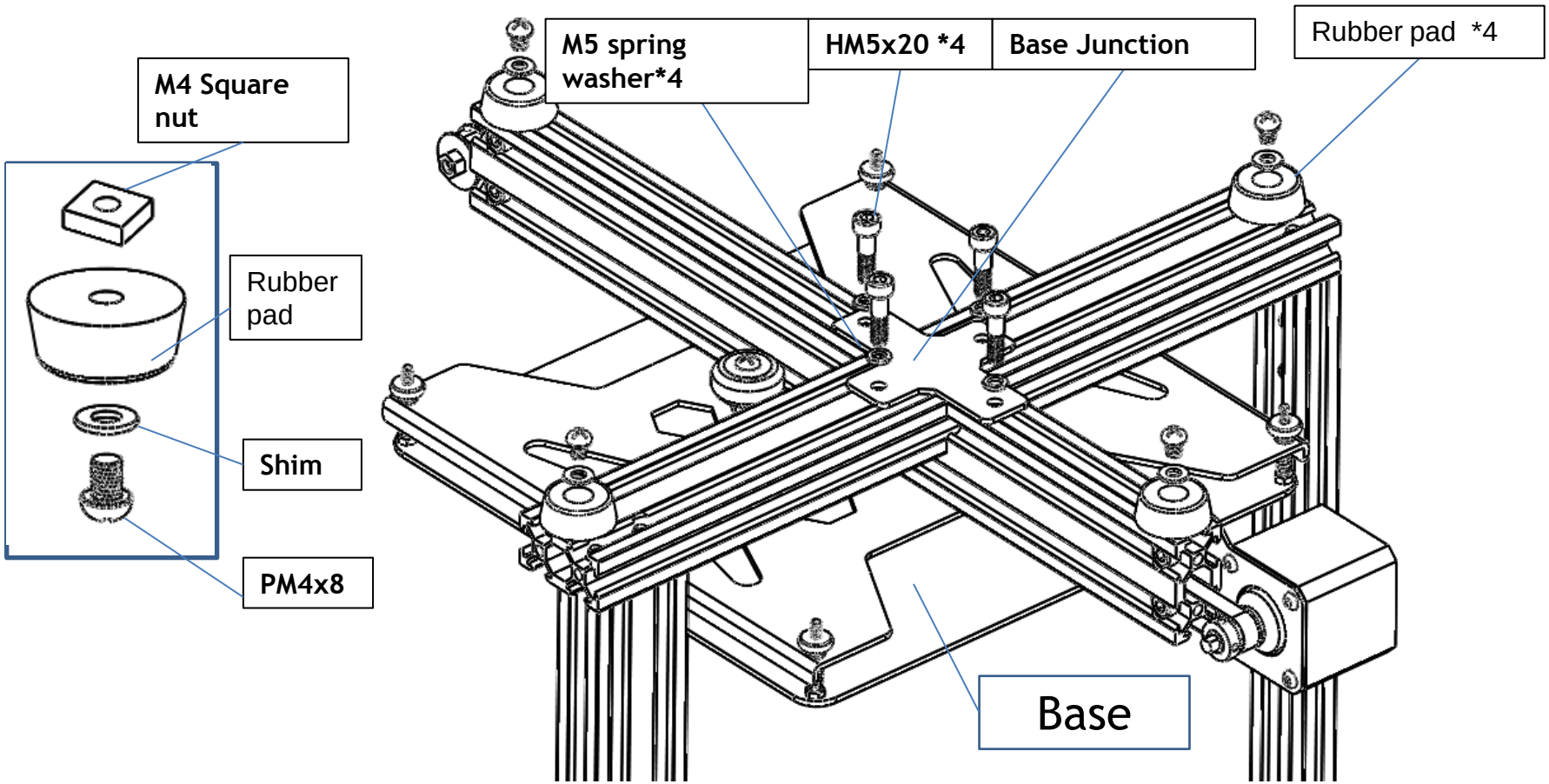


Assemble Aluminum profile

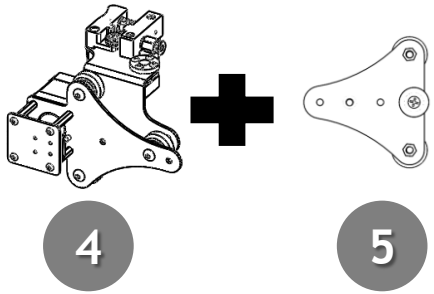


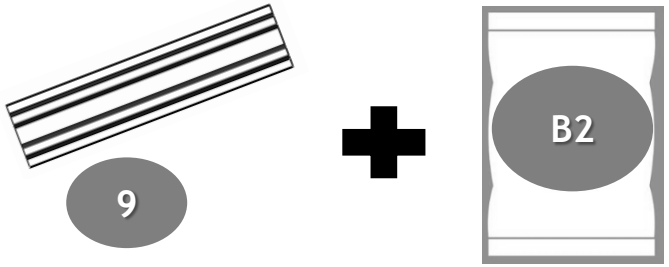
Assemble Best and rubber pads

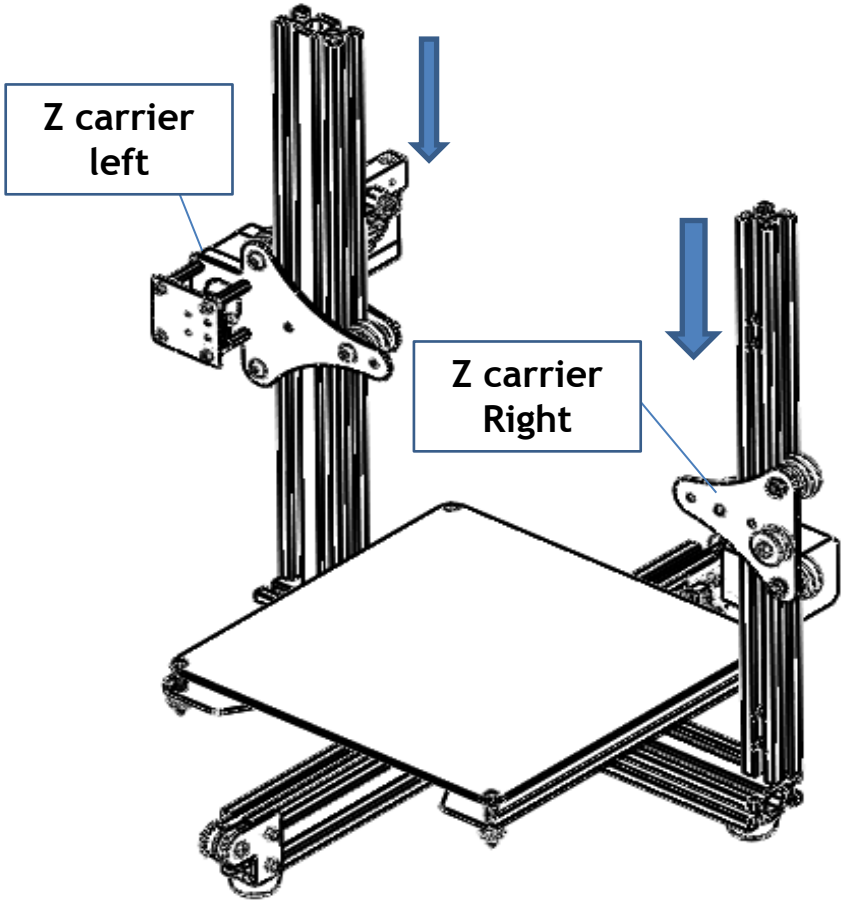


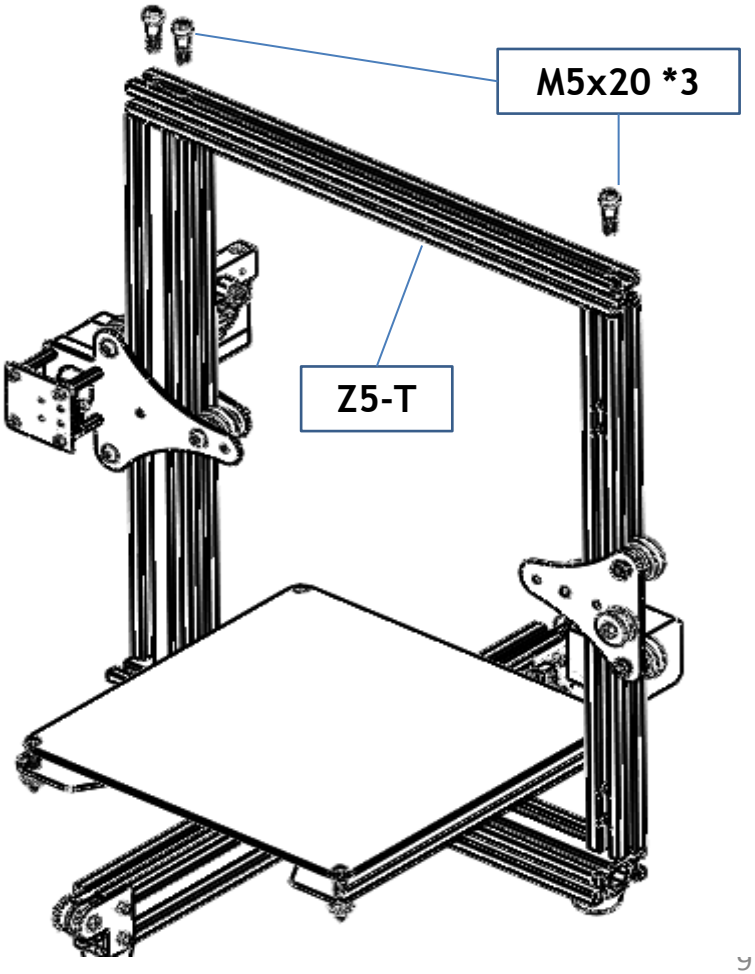


Assemble Z carrier



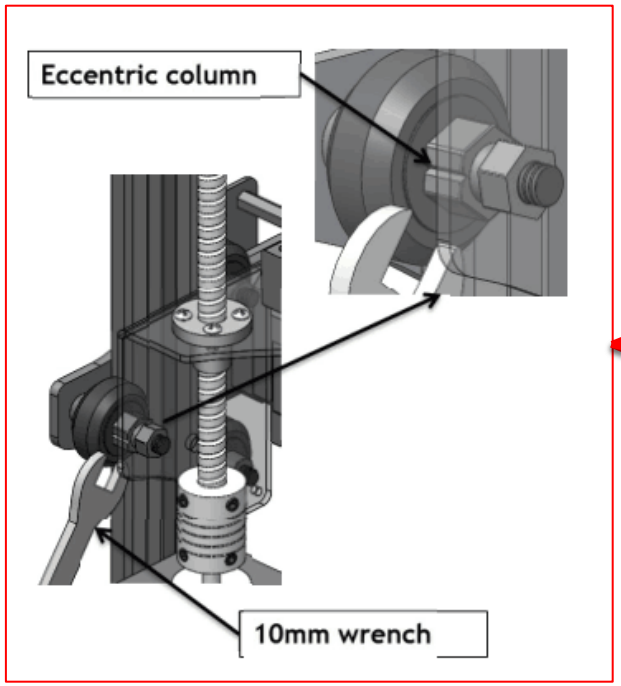


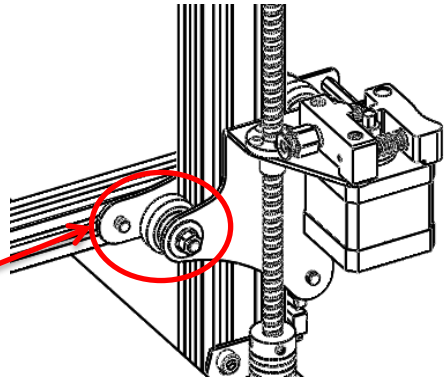


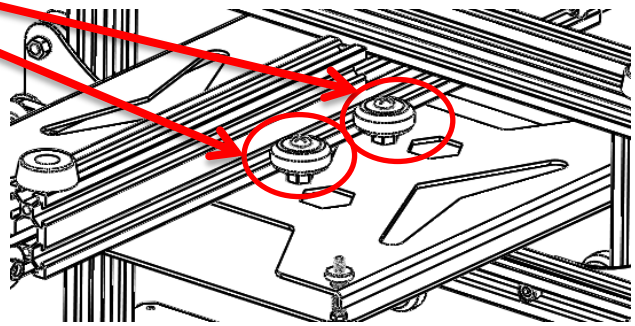


Debug

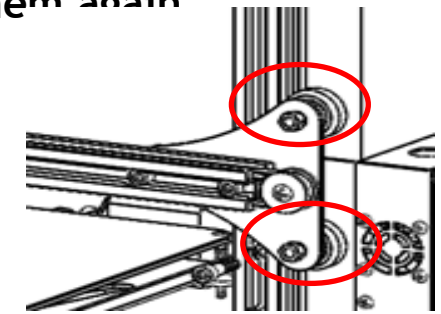
MUST rotate the eccentric cloumn and let the Z carrier **left** and hotbed bracket can hold the profile and move smoothly.



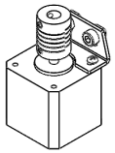




It is recommended to loosen these screws first, and then let the Z carrier **right** hold the profile well and move smoothly, and then tighten them again



Assemble Z-axis driver



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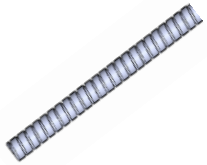

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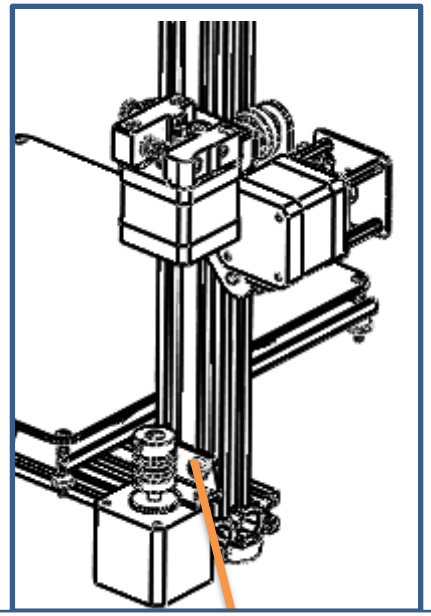
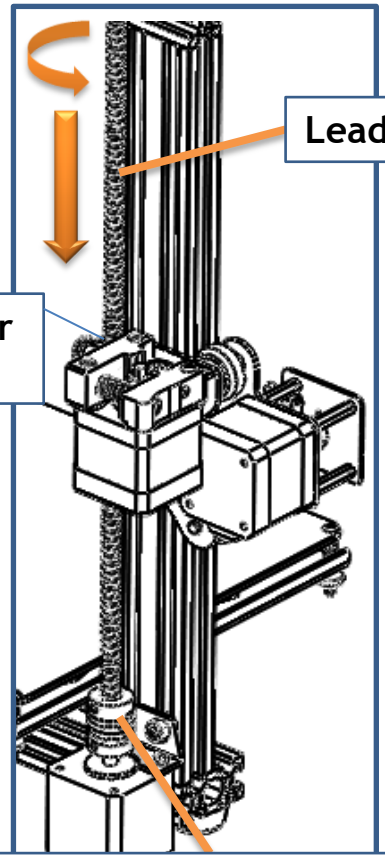
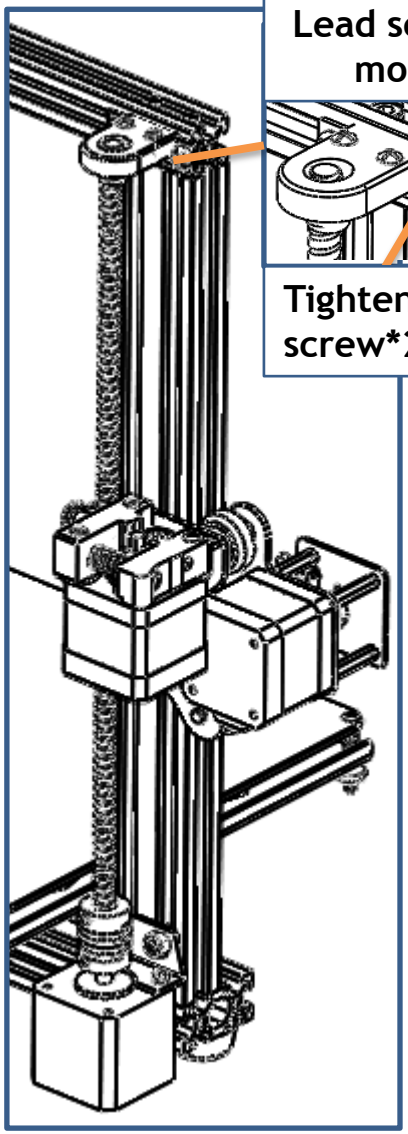


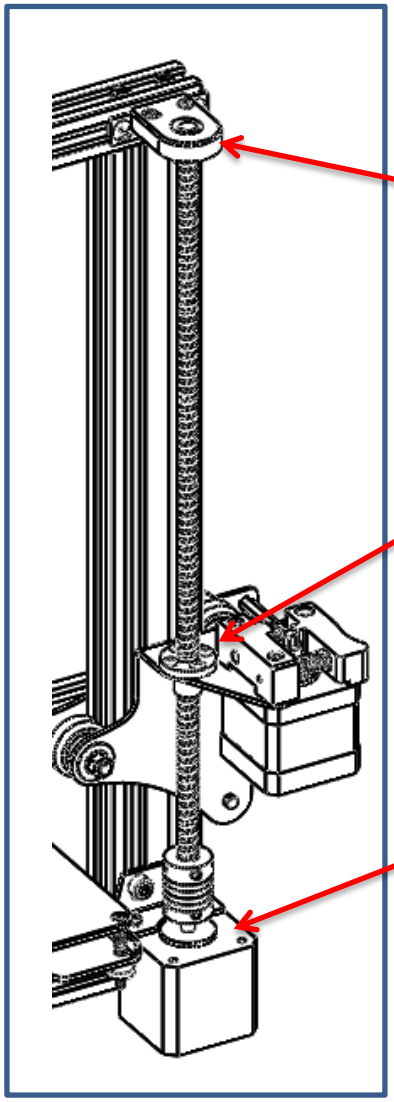
Tigthen these two screws to install the Z-axis driver to the right side of framework

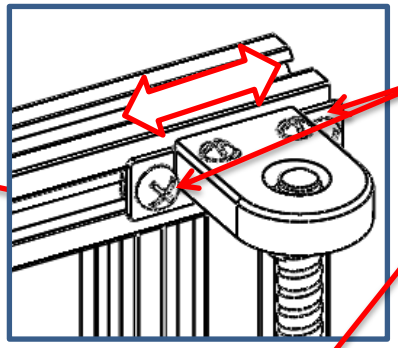


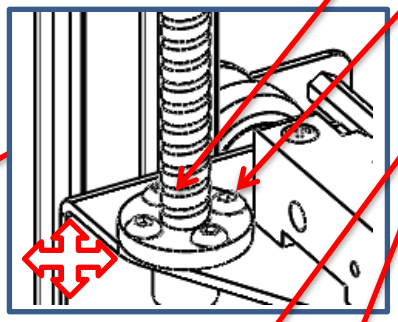
Rotate the lead screw from the top and tigthen these two jbckscrews to fix the lead screw on the Coupling

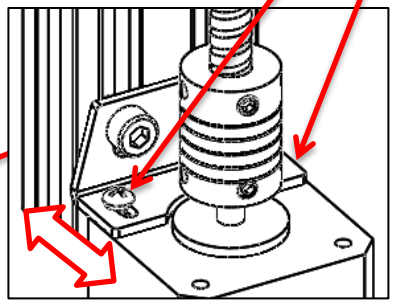


Debug: adjust Z lead screw









Loose these two screws to release the lead screw fix module.

Add lubricant to the copper nut

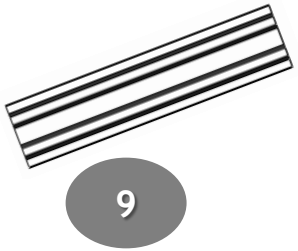
Loosen these four screws to release the copper nut.

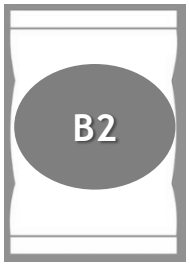
Loosen these two screws to release the Z motor.

Steps:

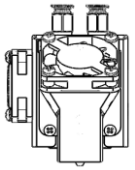
1. Add lubricant to the copper nut.
2. Loosen all of these parts, and rotate the lead screw to move the carrier from bottom to top and then from top to bottom, watch if the lead screw can be parallel to the profile, if not , move the Z motor back and forth carefully, once done, then tighten the Z motor.
3. Move the carrier to the ¼ height position, and then tigten the lead screw fix module.
4. Move the carrier to the ½ height position, and then tigten the copper nut.

Assemble X-axis profile

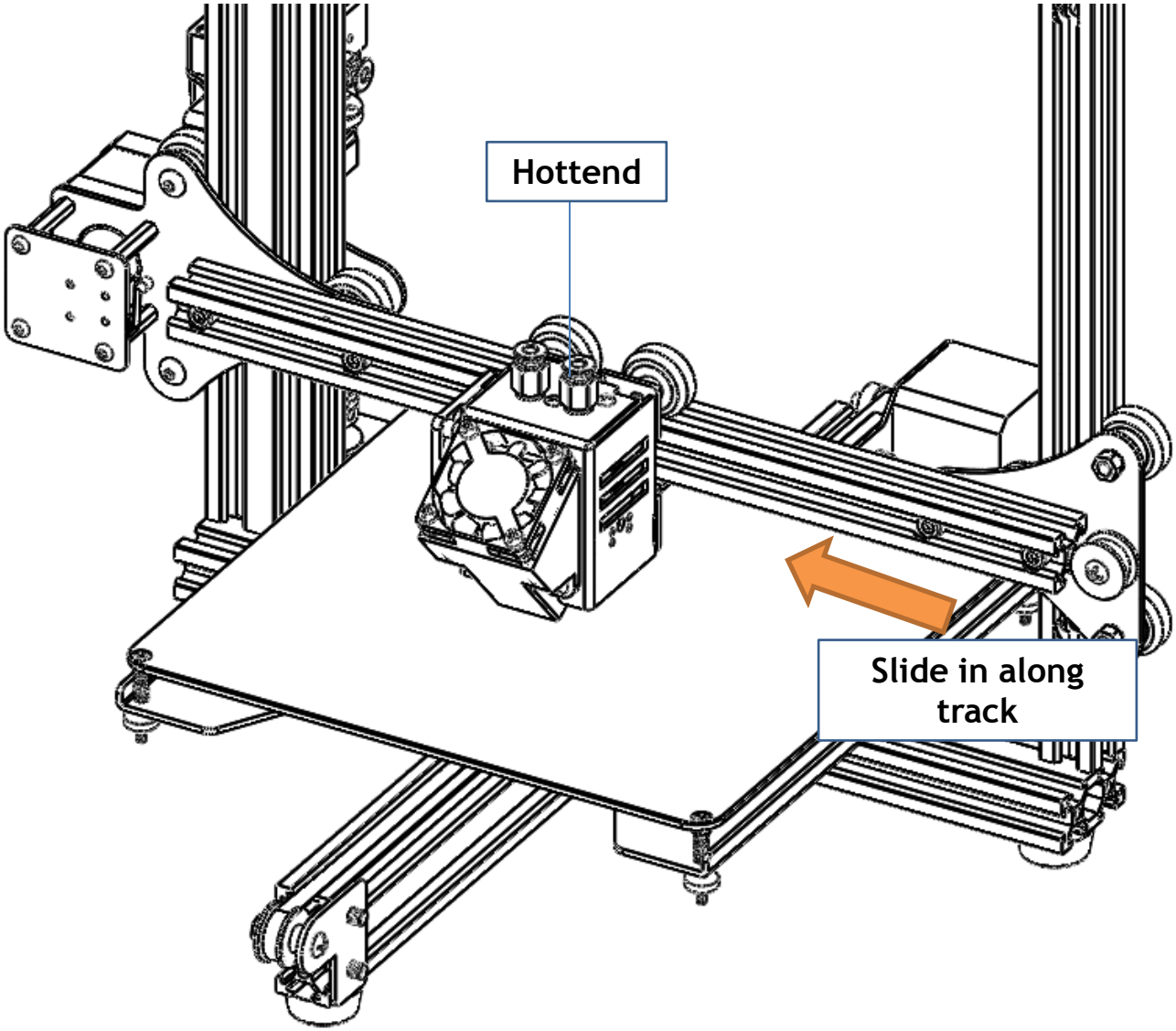




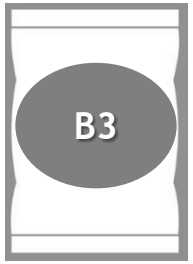
Assemble Hotend

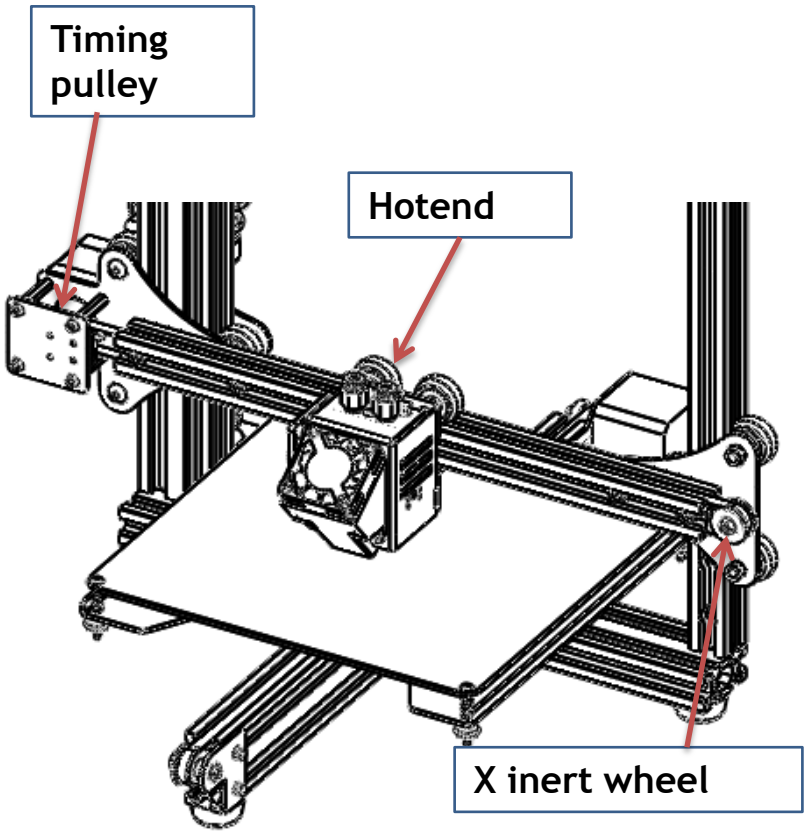


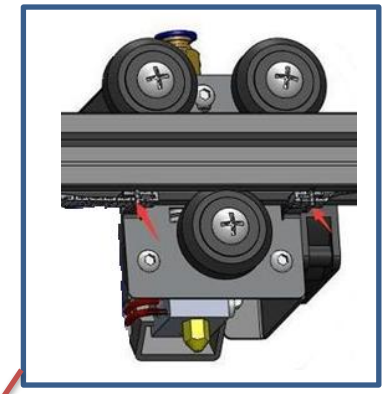
11

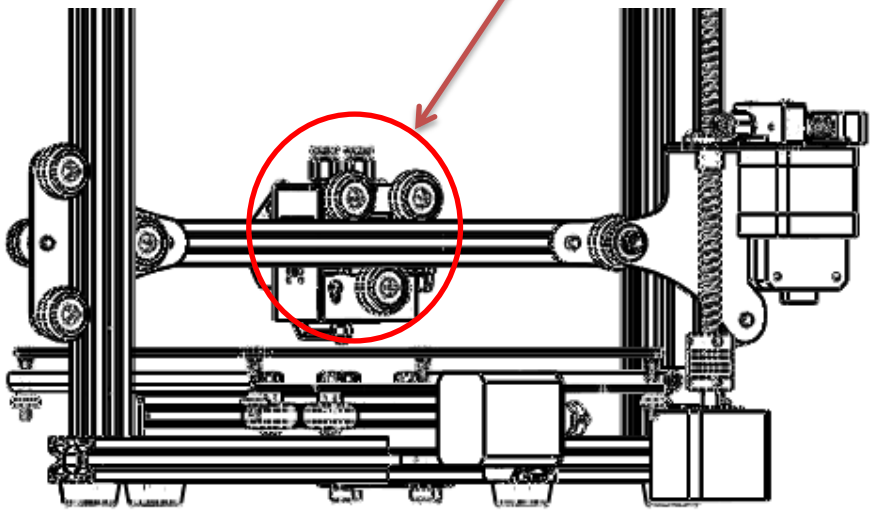


Install hotend belt



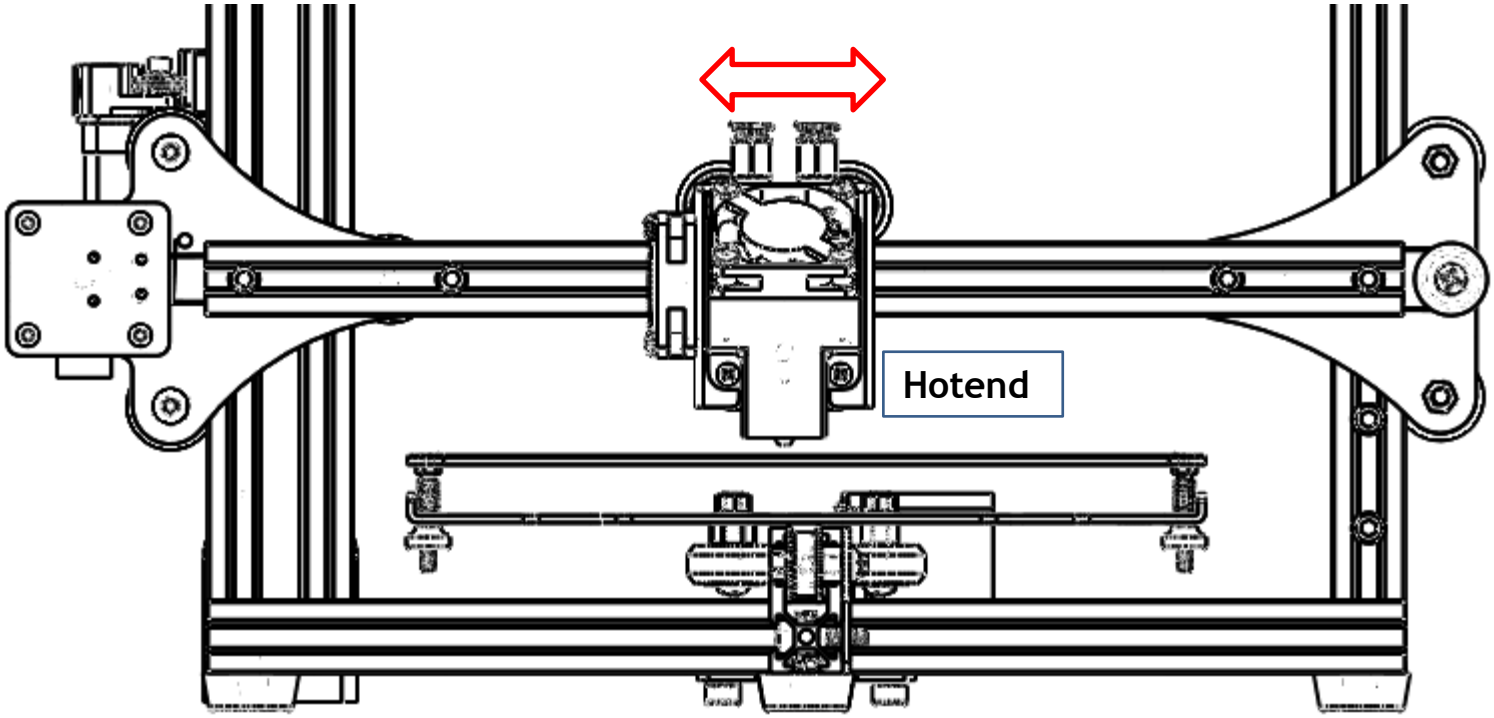






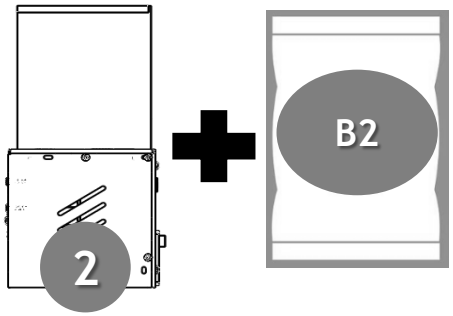
Tips: Move the X motor to left and fixed it to tighten the belt.

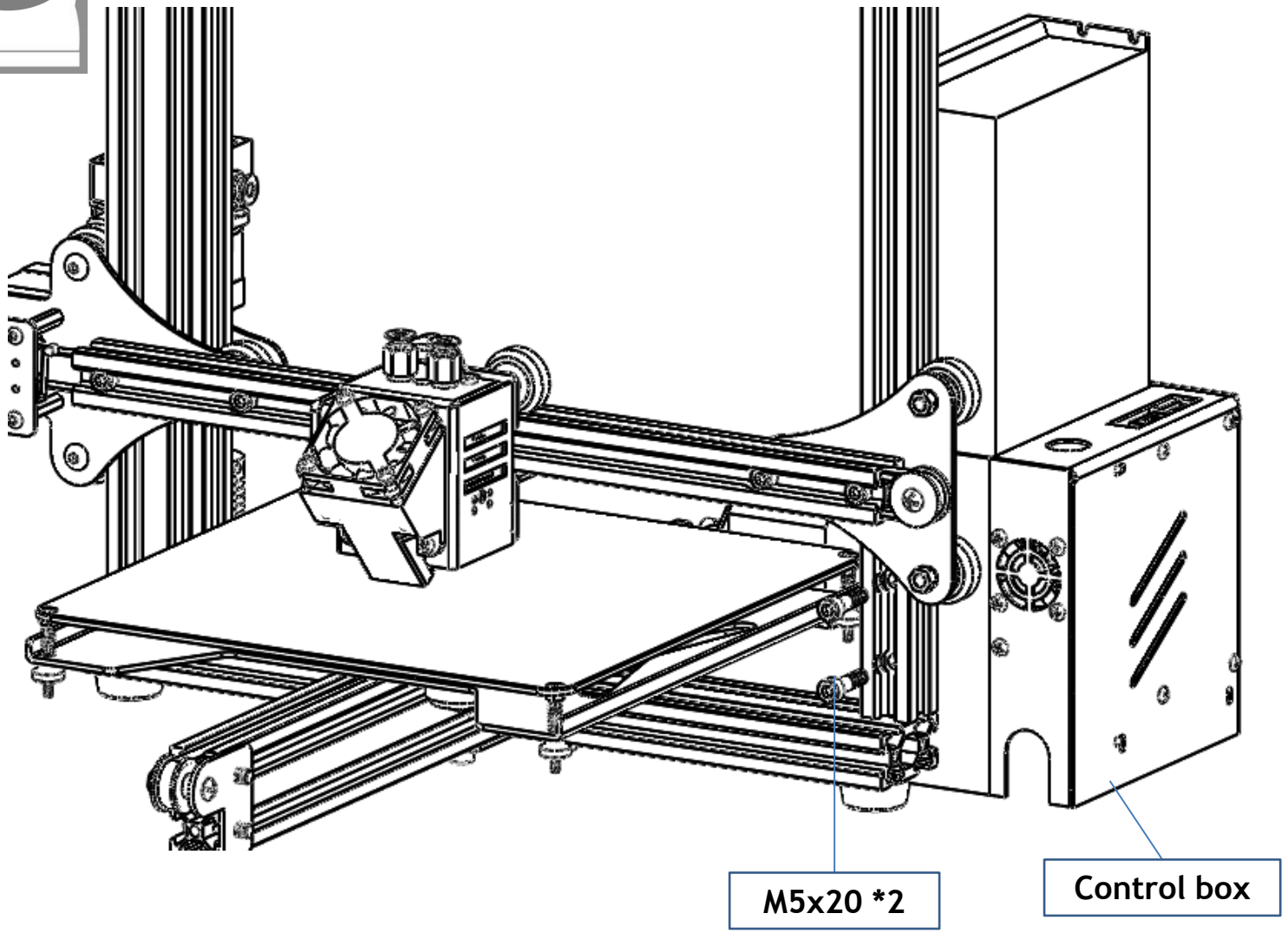
Check hotend wheels smoothly



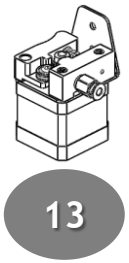
Tips: Test if it can move smoothly, and gap is very small. If not please adjust the position of the wheels.

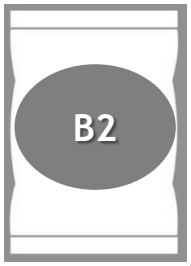
Install Control box

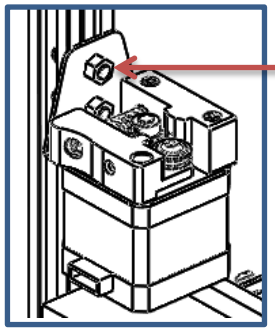


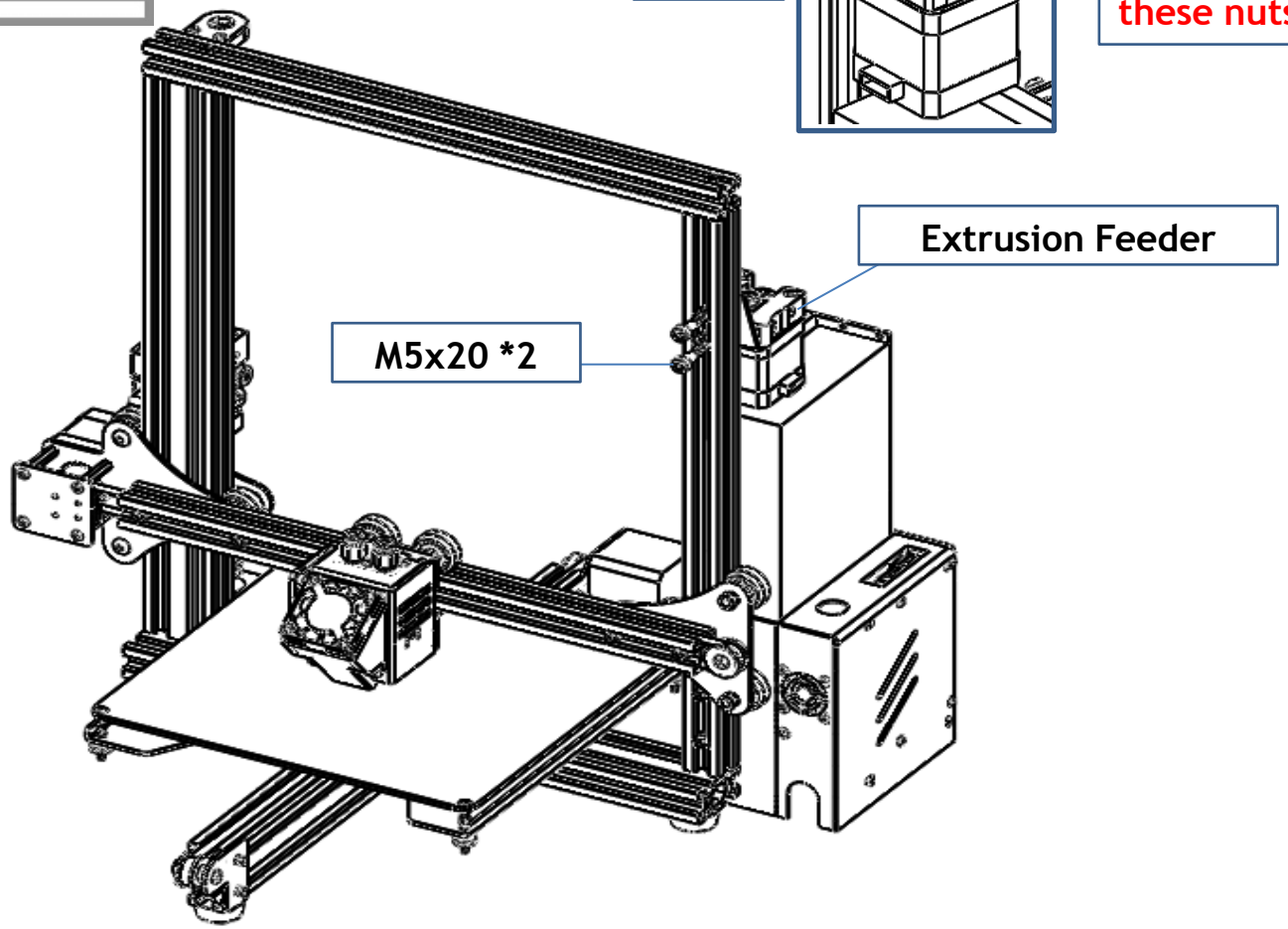


Install 2nd extrusion feeder(only for Z5M2)

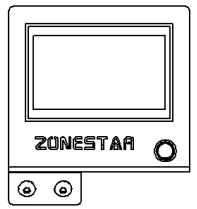




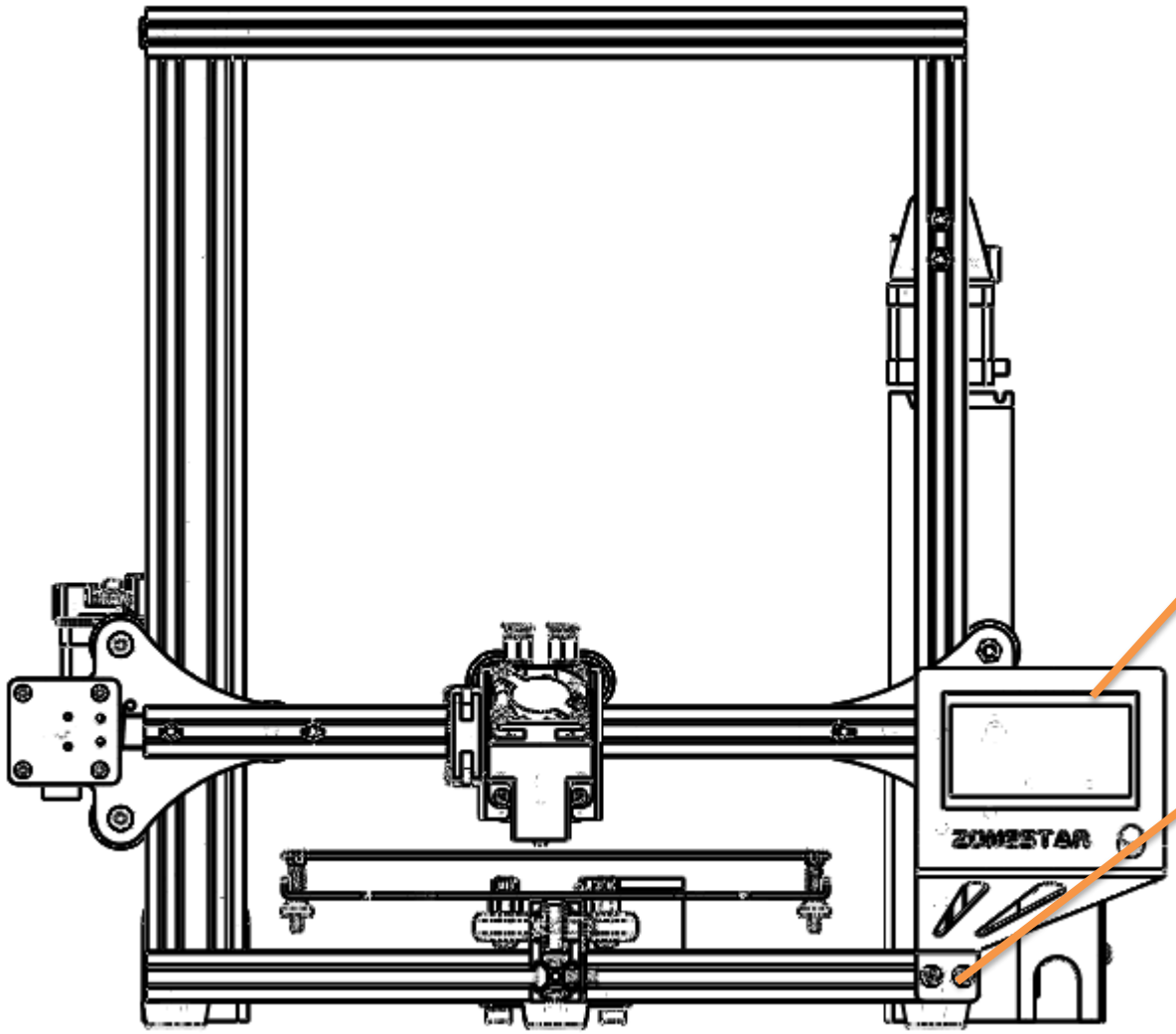




Install Control Panel



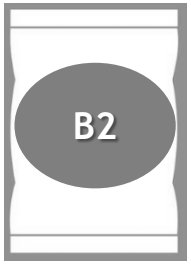
3

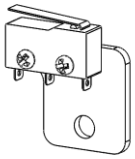


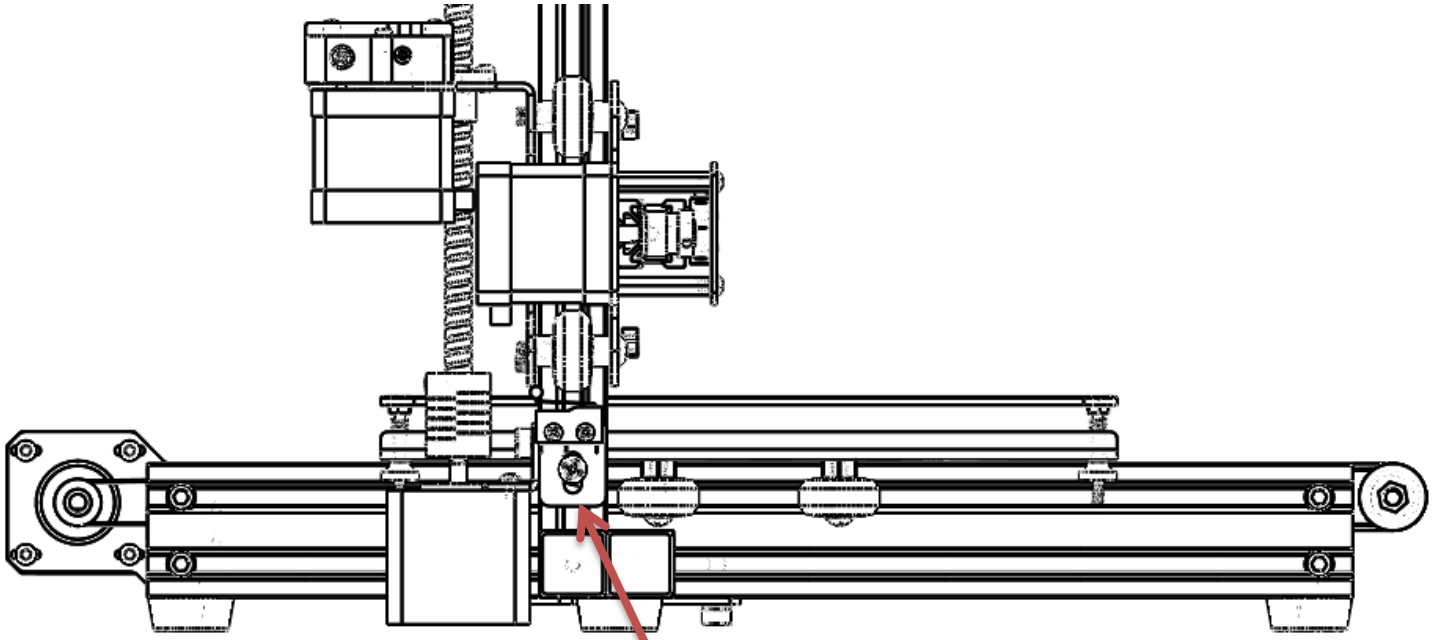
Control Panel

Tigthen these two screws to install theo control Panel to the right side of framework

Install Z ENDSTOP

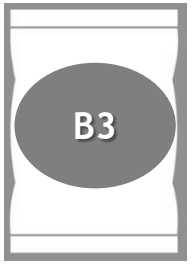


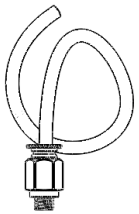




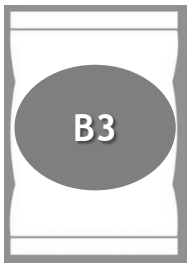
Tigthen this screws to install Z Endstop to the right side of framework

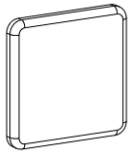
Install PTFE

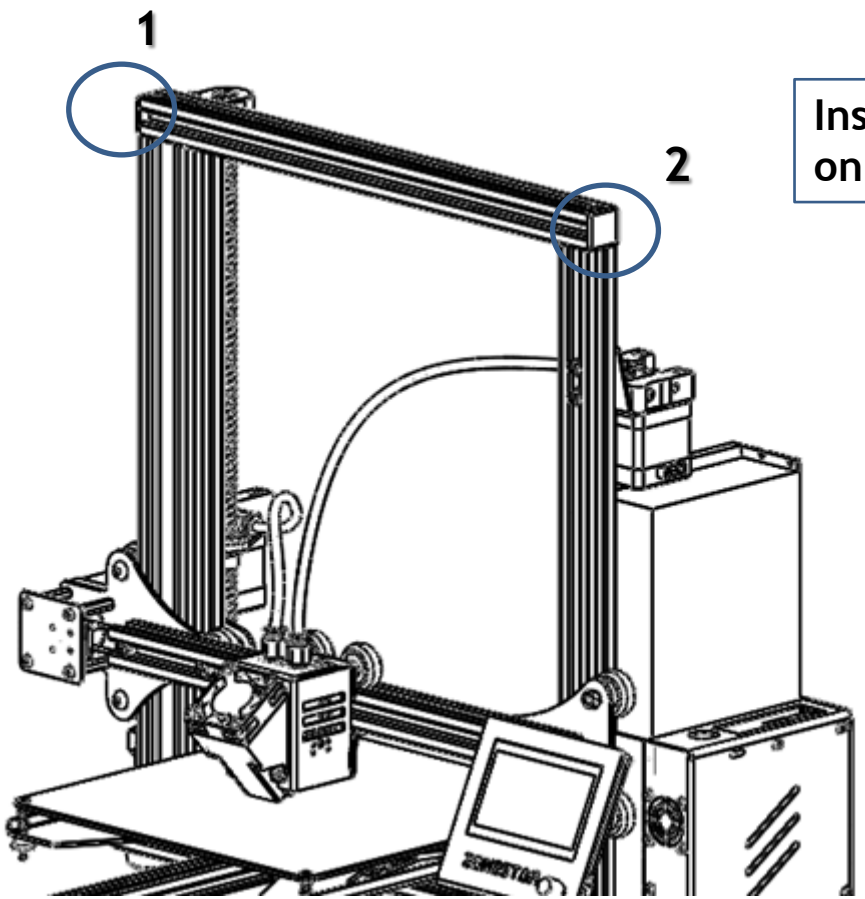




Install End Covers of Profile

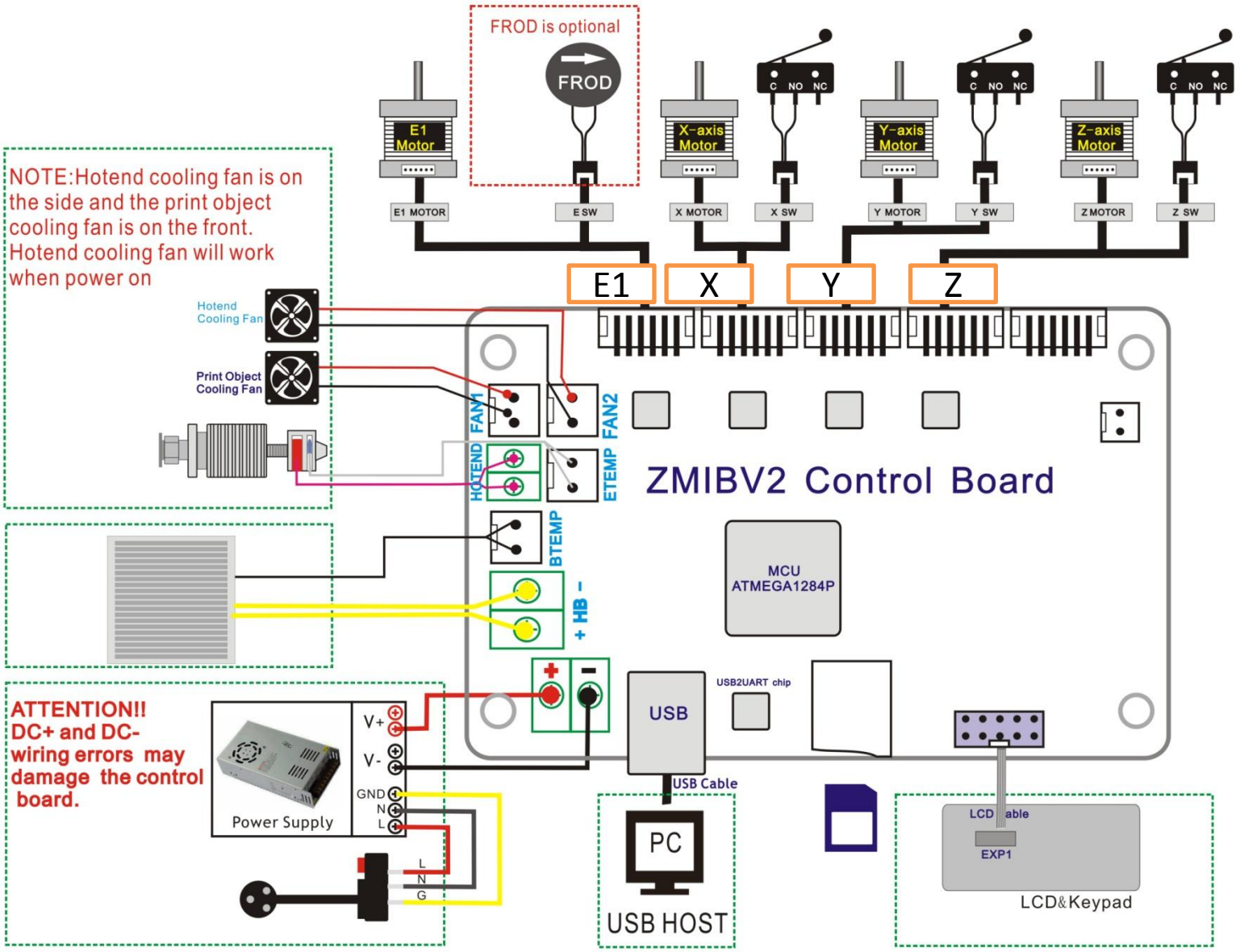




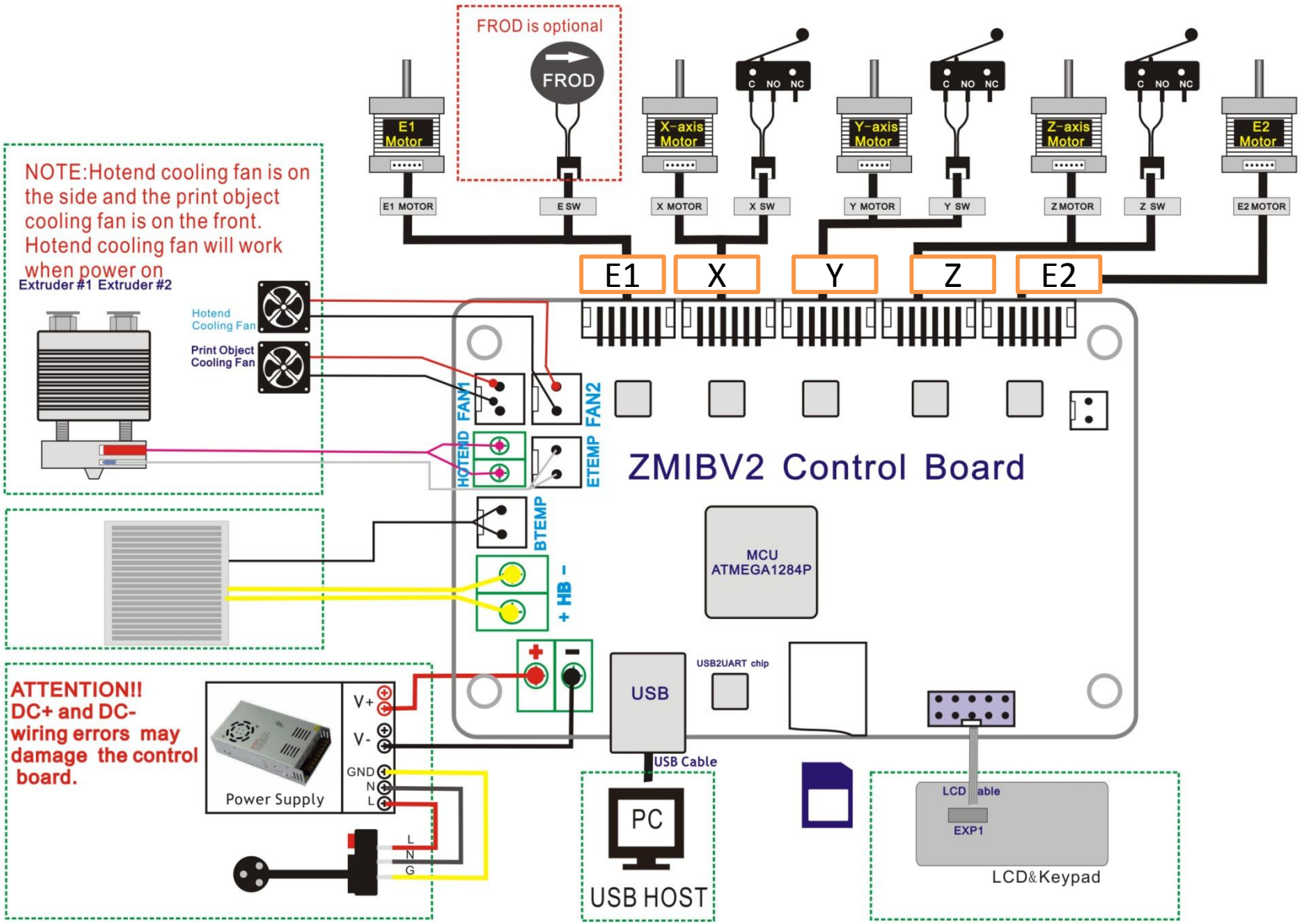


Instasll the End covers on the top profile

Wiring Diagram (Z5S)

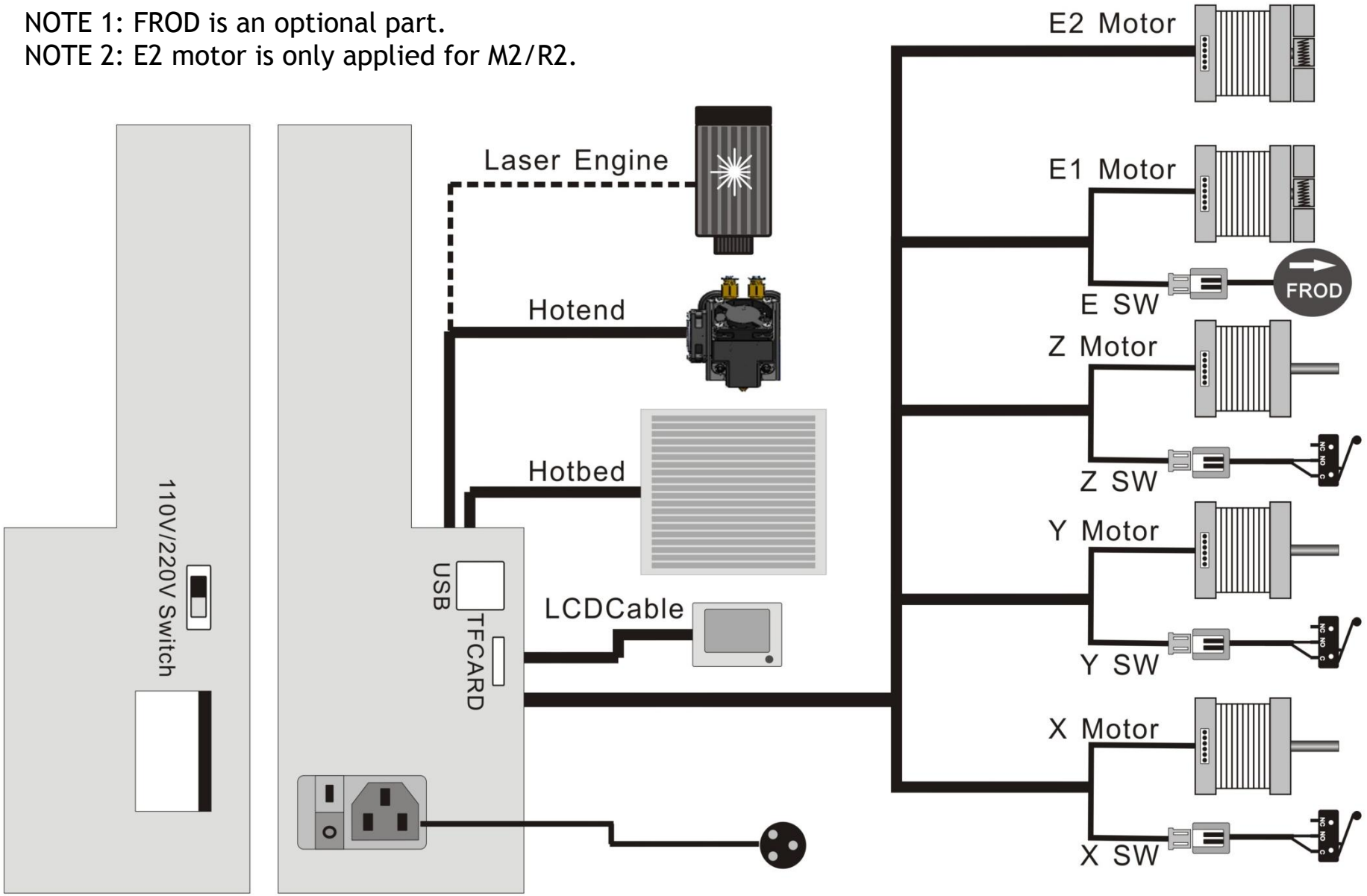


Wiring Diagram (Z5S-M2)



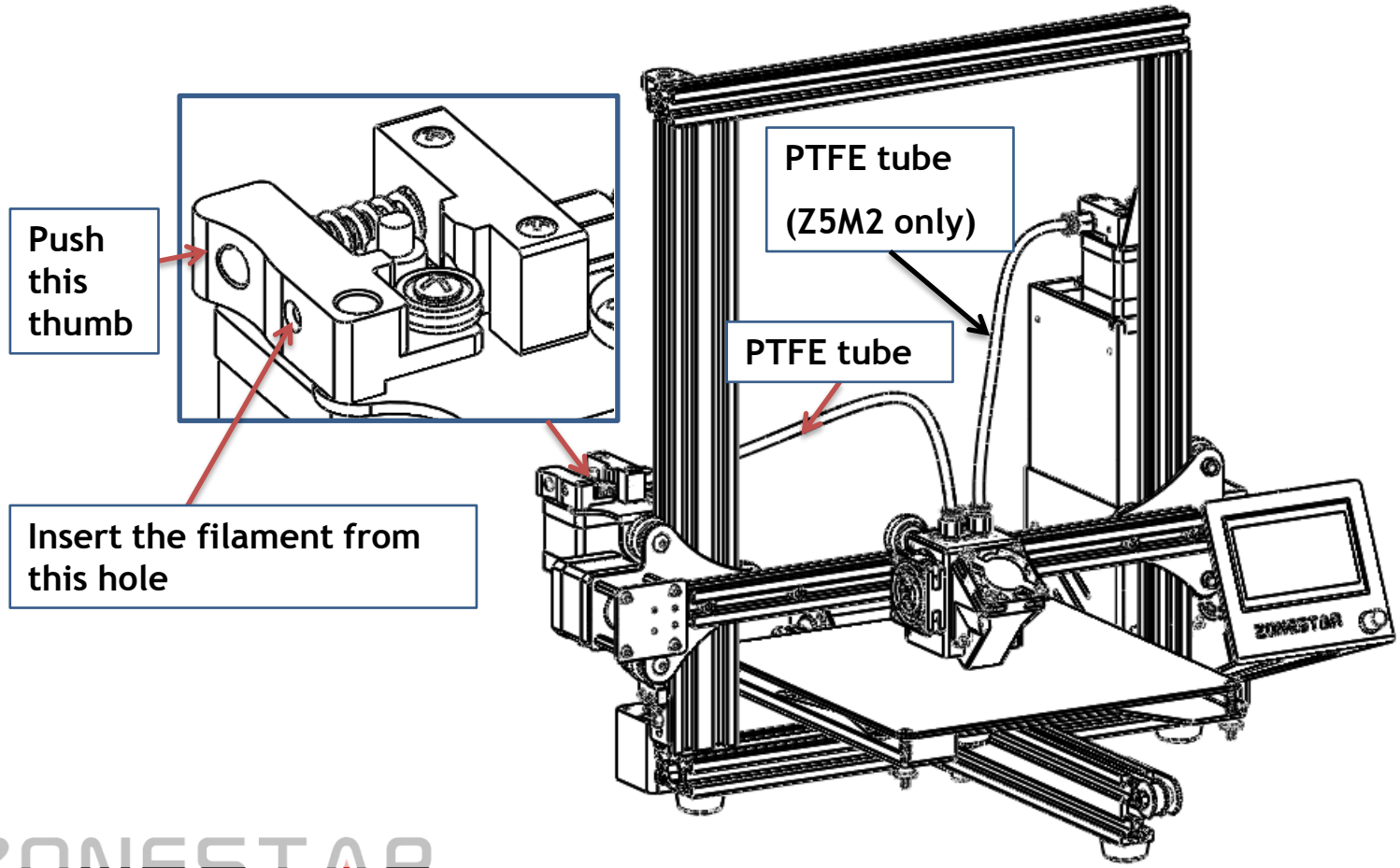
Wiring Diagram

NOTE 1: FROD is an optional part.
NOTE 2: E2 motor is only applied for M2/R2.



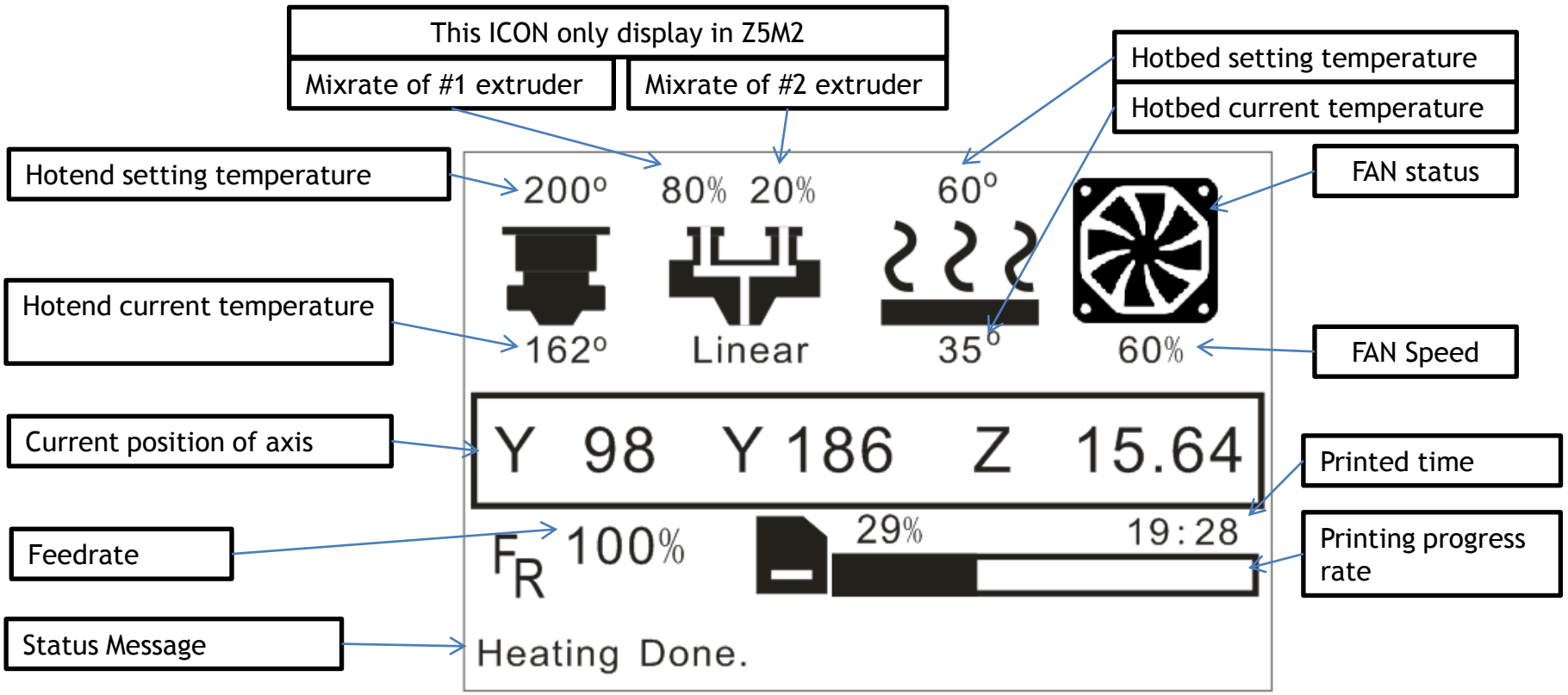
Install PTFE tube and Load filament

1. Insert the PTFE tube to the fittings to connect the extrusion feeder and hotend before load filament. (M2/R2 has two PTFE tubes need to be connected)
2. Cut the end of fialement, and then push the thumb of extrusion feeder and insert the filament, let the filament reached to the hotend.
3. If any block is encountered when inserting filament, please pull PTFE out for inspection.



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.

Debug - Set the nozzle offset on menu

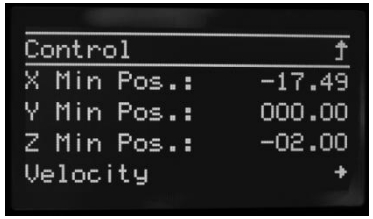
If the printed object wasn't on the center of the printing platform, you can set the offset on LCD menu.

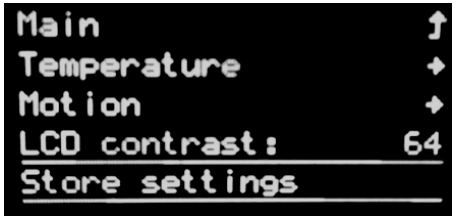
1. Choose ”Control”>> ”Montion”>>”X/Y/Z min Pos”>>Adjust this value.
2. Choose ”Control”>> ”Store settings ”>>Store the settings.

How to set the offset?

1. Decrease “X min Pos”, the printed object will move to right.
2. Decrease “Y min Pos”, the printed object will move to back.
3. Decerase “Z min Pos”, the printed object will move to higher.

NOTE: These parameters mean the offset of the nozzle from the spatial position of the machine print start point after homing.





Set offset

Store Settings

Prepare to print - level the hotbed

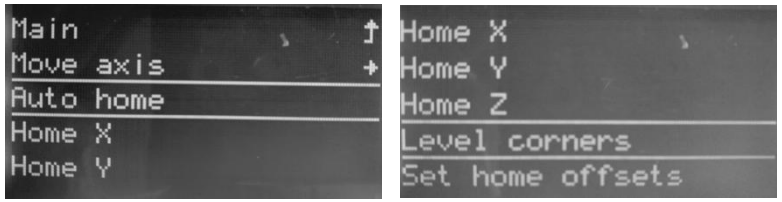
1. Clean nozzle: make sure there aren't any filament at the end of nozzle, if not, remove it by a diagonal pliers.

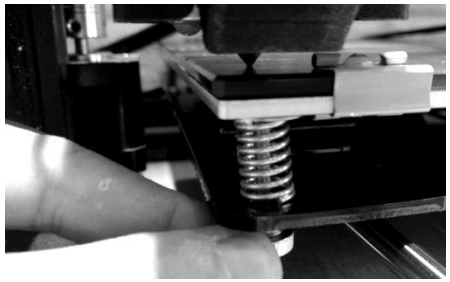
2. Choose “Prepare”>> “Auto Home”>>, wait the hotend go to the orig position.

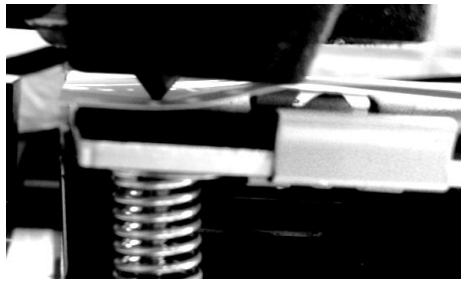
3. Watch the nozzle and make sure the nozzle is higher than the bed, otherwise tighten the hand nuts under the bed to pull down the hotbed or loosen these nuts to move up the bed.

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

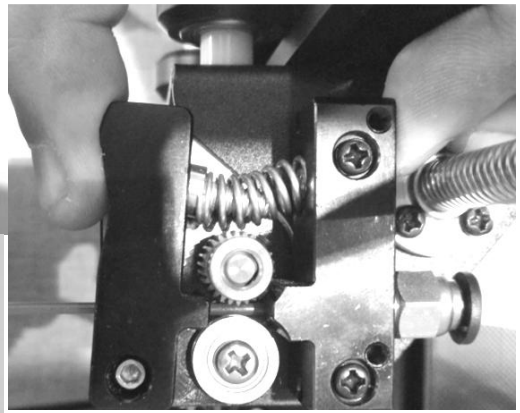
1 Preheat nozzle: Choose “Prepare”>> “Preheat PLA”, then nozzle and hotbed will be heated. **Waiting nozzle temperature reached to setting.**

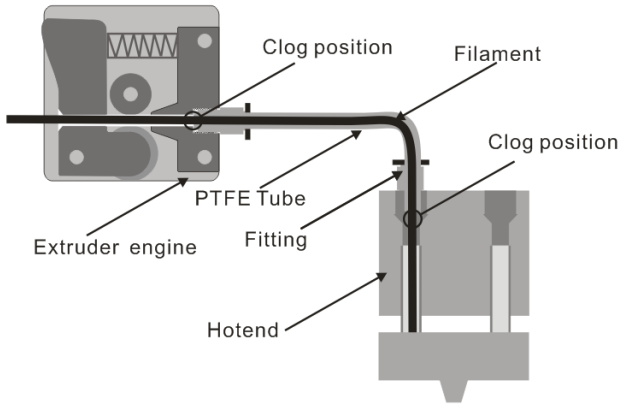
2 ***If there is filament in the hotend, do this step, otherwise skip this step.***
Choose “Prepare”>> “Move axis”>>”Extruder”>>”Move 1mm”>>”extruder: ****mm”, then Clockwise rotate the knob slowly, until you can see the filament flow from the nozzle.

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

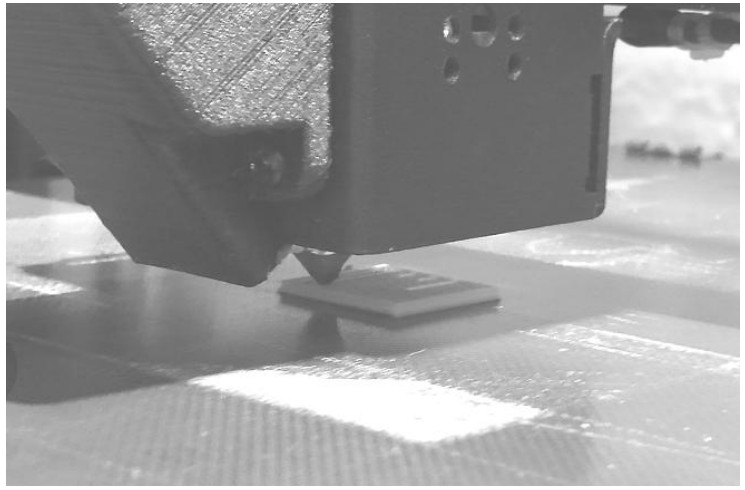
When loading filament, make sure it has entered the hotend, if it clog in extruder or hotend, try to remove the fittings and load the filament again.

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 set the z offset if the distance is not perfect, let the filament can stick on the hotbed well.



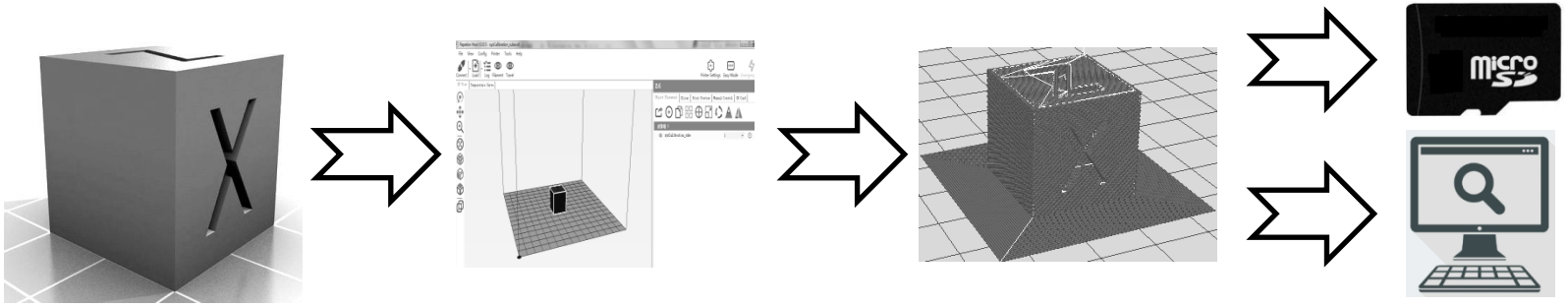
Insert SD card to control box and then start to print

Adjust z offset if the filament can't stick to bed well

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 models (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: Cura, slic3r, KISSlicer, pronterface, simplify3d etc.*

3. *For more about slicing, please refer to the document in the SD card, directory: **"PC Software & Driver\slicing & Host software"**.* You can also download the latest document from our cloud disk:
https://drive.google.com/drive/folders/0B9Z1DbrxfqbpUjNHRXhBWmlVZVU
If you want to control the printer from PC HOST, we store the guide in SD card, please find it out and read it.

How to apply the mixing color feature(for M2 only)

1

Manually extrude mixing color filament *(extruding from both of extruders at the same time)*:

Step 1*: Refer to the "Prepare to print - Load Filament" to load filament to both of extruder engine, and make sure the filament has been insert to hotend already.*

Step 2*: When nozzle temperature reached to the settings, choose "Prepare">>"Move axis" >> "Extruder">>"E1 percent">> change this value, this value means extrusion percent of extruder 1.*

Step 3*: Choose "Move 10 mm">>Add this value, watch the extruder engine, you will both of the filament will enter to the hotend, and after extrude about 50mm, the filament will flow from the nozzle and color will be different according to the mixed ratio of the setting.*

** At the beginning, the color of filament maybe comes from the remaining in the nozzle.*

2

Manul mixing *(Mixing two color filament when printing from SD card)*:

Step 1*: Start to print a monochrome object from SD card.*

Step 2*: After the printing start, choose "tune">>"E1 percent" >> change this value. The printer will* ***automatically mix*** *the 2nd extruder's filament according to the setting.*

PS: Mixing result is affected by many factors such as object shape, path planning, filament type and so on.

3

Auto mixing *(Converter a monochromatic object to a multi-color object)*:

Using this function, you can convert a monochrome object into a mixing-color object.

Step 1*: Start to print a monochrome object from SD card.*

Step 2*: After the printing start, choose "tune">>"Auto Mix Mode" >> change this value to 1 or 2. If choosing "1", the printer will* ***automatically mix*** *the 2nd extruder's filament,* ***from less to more****, according to the printing progress. If choosing "2", the printer will* ***randomly mix*** *the 2nd extruder's filament to hotend in the printing process.*

PS: Mixing result is affected by many factors such as object shape, path planning, filament type and so on.

4

*You can also set the printer to print two colors, mixing colors and use up to 16 virtual extruders when slicing. For more about mixing color feature, please refer to the document in the SD card, directory: "****Operation\Tips of mixing color feature****".*

*Y*ou can also download the latest document from our cloud disk.

Upgrade more feature

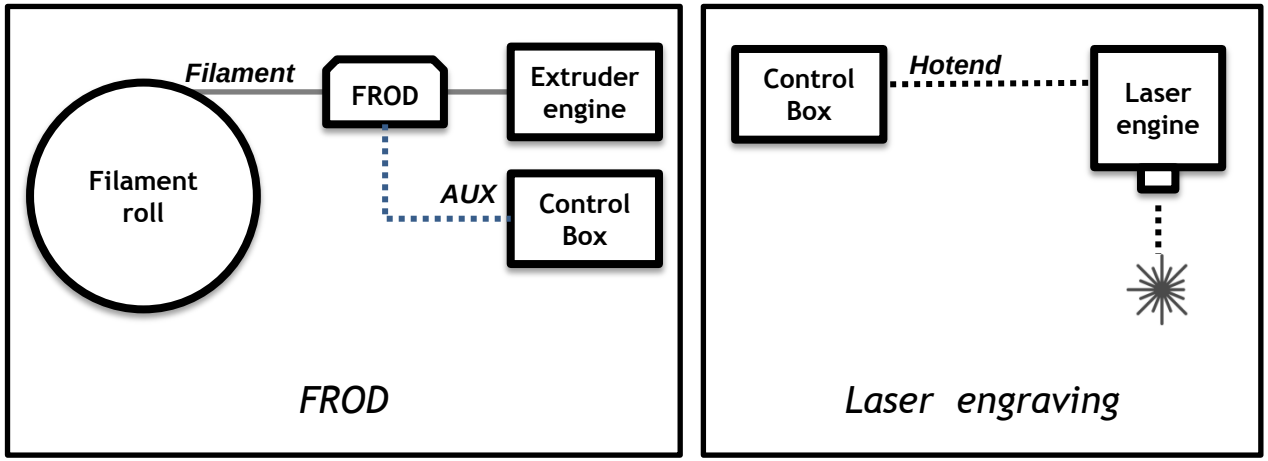
1 **FROD:**

Filament run out detector is a sensor be used to detect the filament roll use up, Z5 control box can connect one FROD. About how to connect this sensor, please refer to the wiring diagam.

2 **Laser engraving:**

Only need to install a laser engine on the print head, you can turn this machine into a simple laser engraving machine.

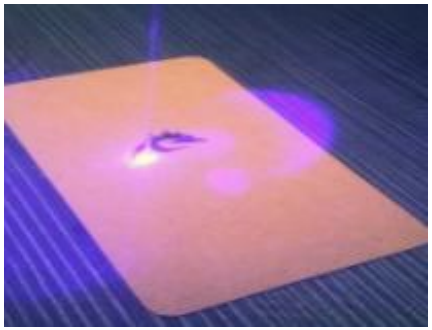
If you are interesting in these features, welcome to vist our ***online store*** *to purhcase.*



Upgrade more feature - laser kit

Click to Know More

Scan to purchase!



About ZONESTAR

ZONESTAR Innovation Technology Co., Ltd. is a high-tech manufacturer specializing in the development and production of 3D printers.

Since began to develop and manufacture 3D printers in 2013, we have successively introduced several series of products such as P802, D805, Z5, Z6, Z8, Z9, and Z10, which are popular with customers all over the world. Now, ZONESTAR has Gradually grew to be a leader in the category of DIY 3D printers.

At the same time, we are committed to applying 3D printing technology to a wider range of fields and have successfully developed 3D printers for use in food, advertising, ceramics, and other fields.

ZONESTAR has always regarded ***Innovation***, ***Quality*** and ***Service*** as our core value of the company and strived to provide customers with high-quality and high-tech products and excellent services.

www.zonestar3d.com

Youtube Channle

online store