Model: Z9V5Pro (MK3)

User Manual

The newest documents download link: https://github.com/ZONESTAR3D/Z9

!! 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.

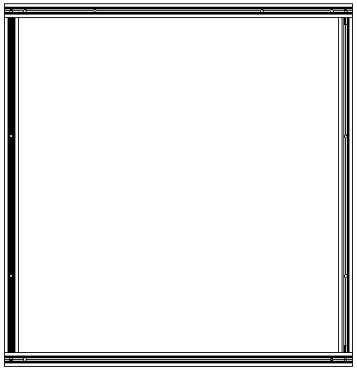
Caution: Hot!
Hotbed has high temperature even the printer stop working.

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

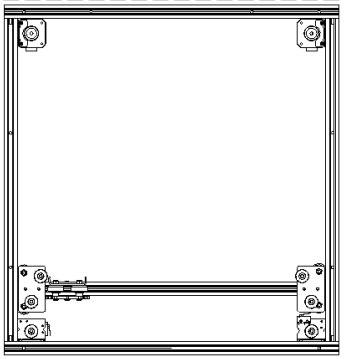
Please make sure you have set the AC power select switch to the correct position before power on.

Must load filament to all of the extruders, or use the hotend clean tool to close the empty channels of the mixing color hotend.

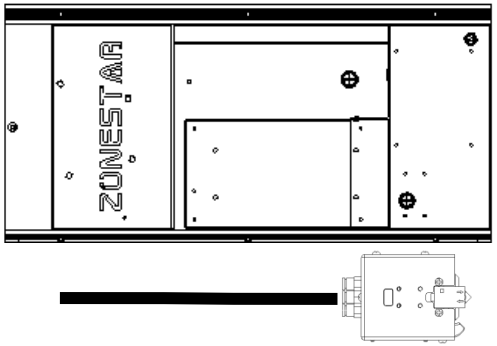
Parts



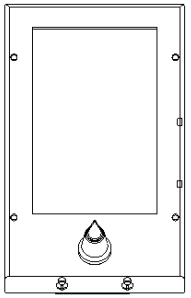
Bottom Assembly



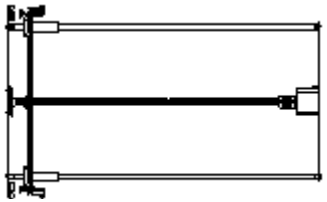
Top Assembly



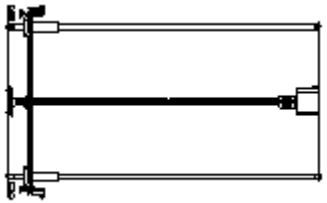
Controller Assembly and print head



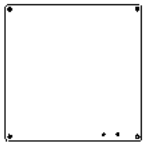
Control Panel



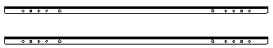
Z carrier Assembly - Left



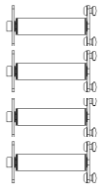
Z carrier Assembly - Right



Hotbed



Hotbed Bracket



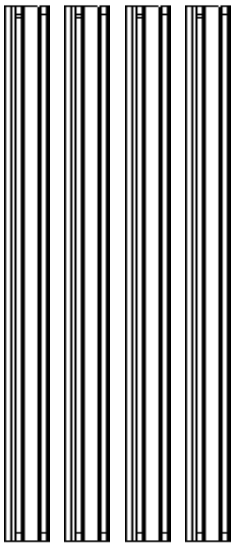
Filament Bracket

Hotbed glass

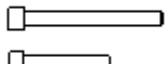
Clips (fix glass)

Hotbed screws /nuts

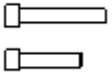
Hotbed parts



Z-axis Profile



M4x36 4PCS



M4x25 16PCS

M4x18 4PCS

Profiles cover

Cable tie

Tools

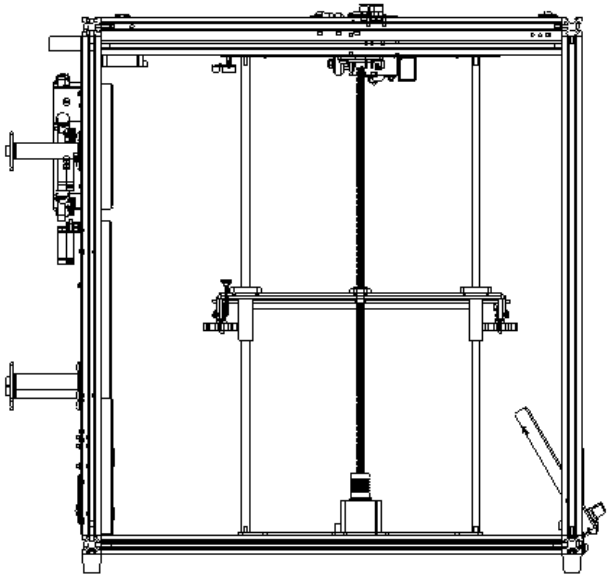
AC Power cord

USB Cable

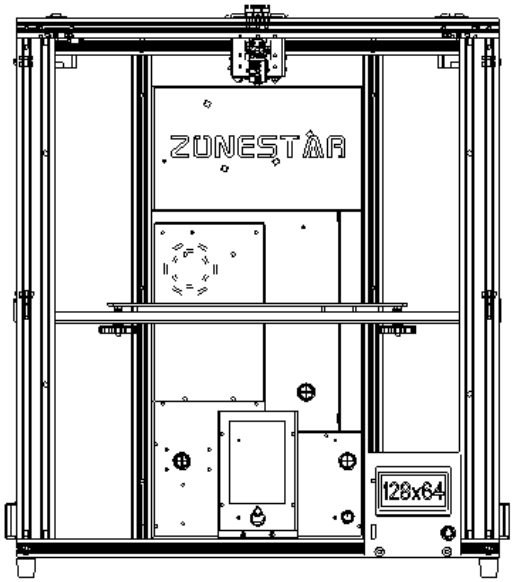
TF card/card reader

Zonestar

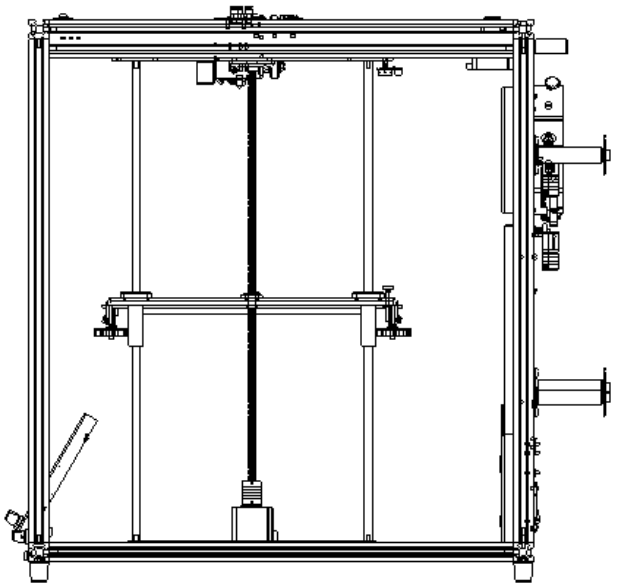
Machine View



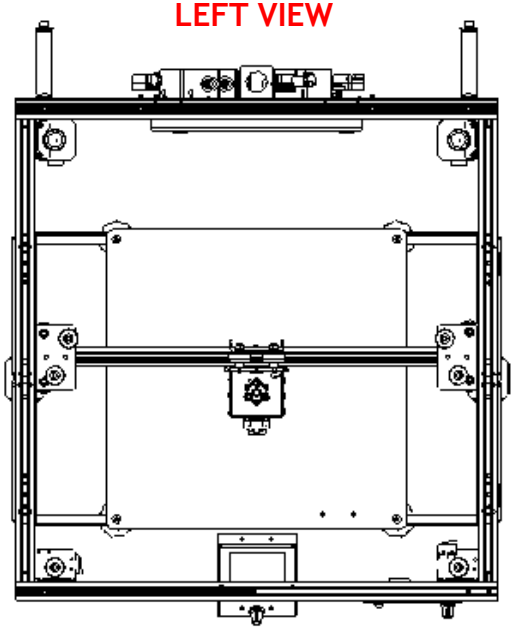
LEFT VIEW



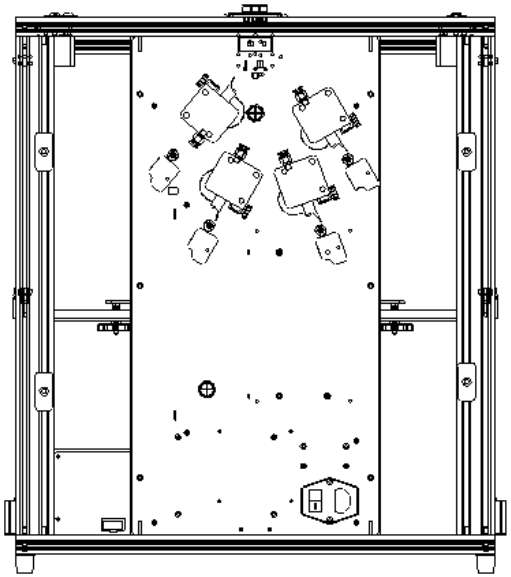
FRONT VIEW



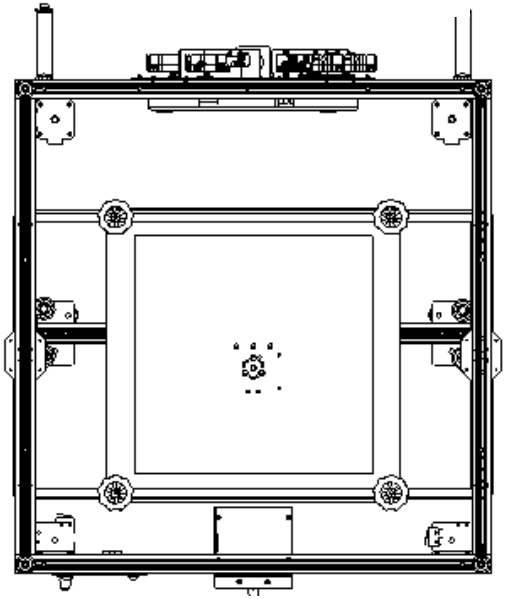
RIGHT VIEW



TOP VIEW

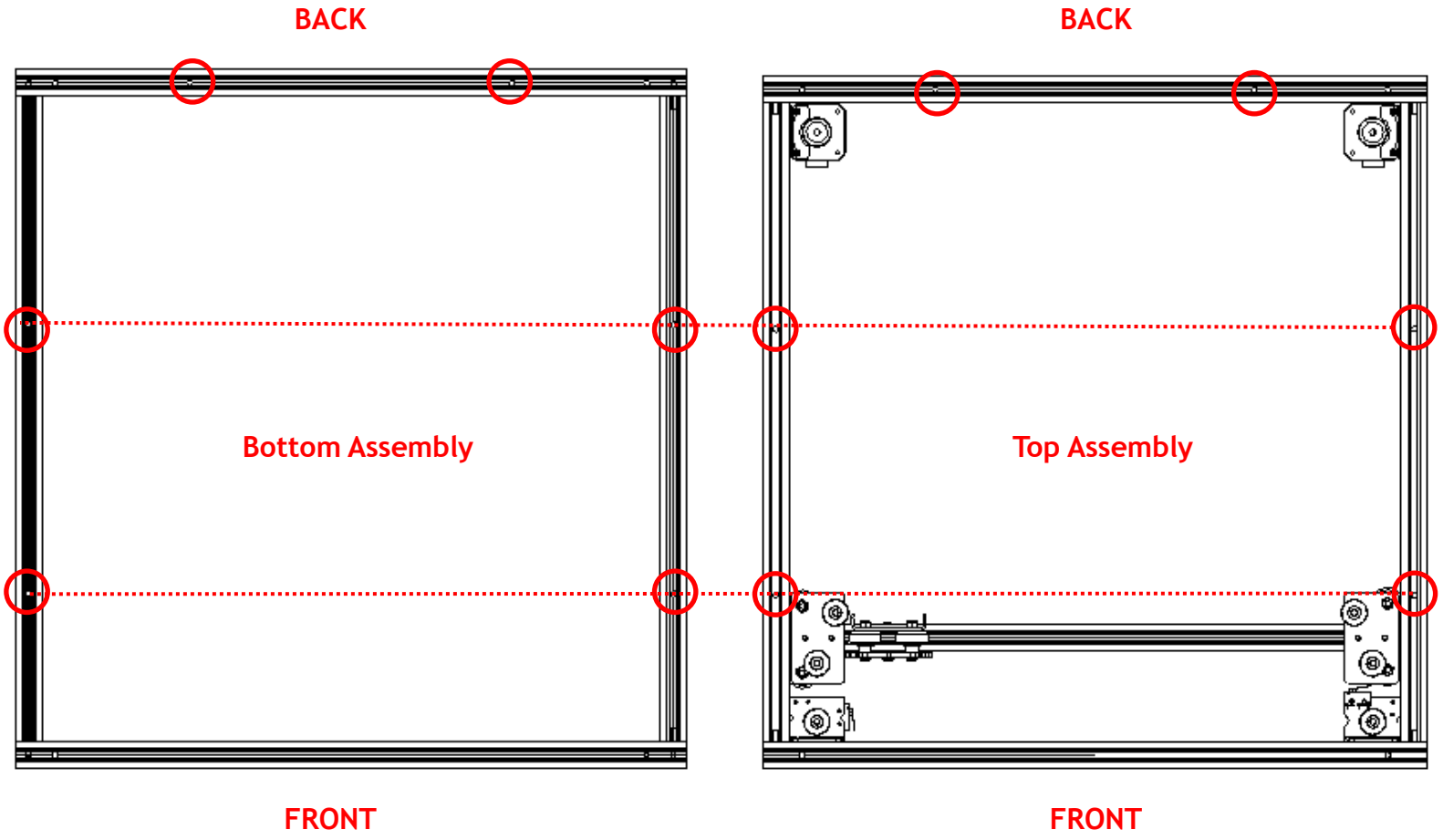


BACK VIEW



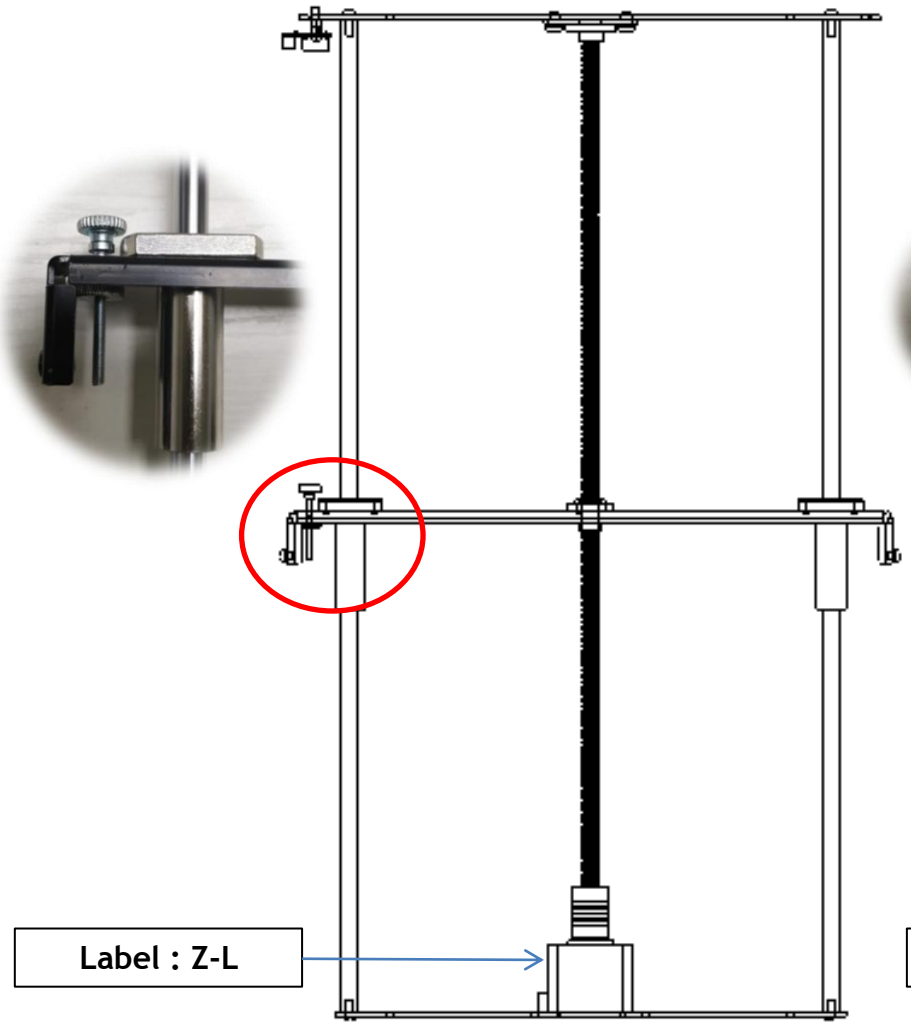
BOTTOM VIEW

Direction of parts

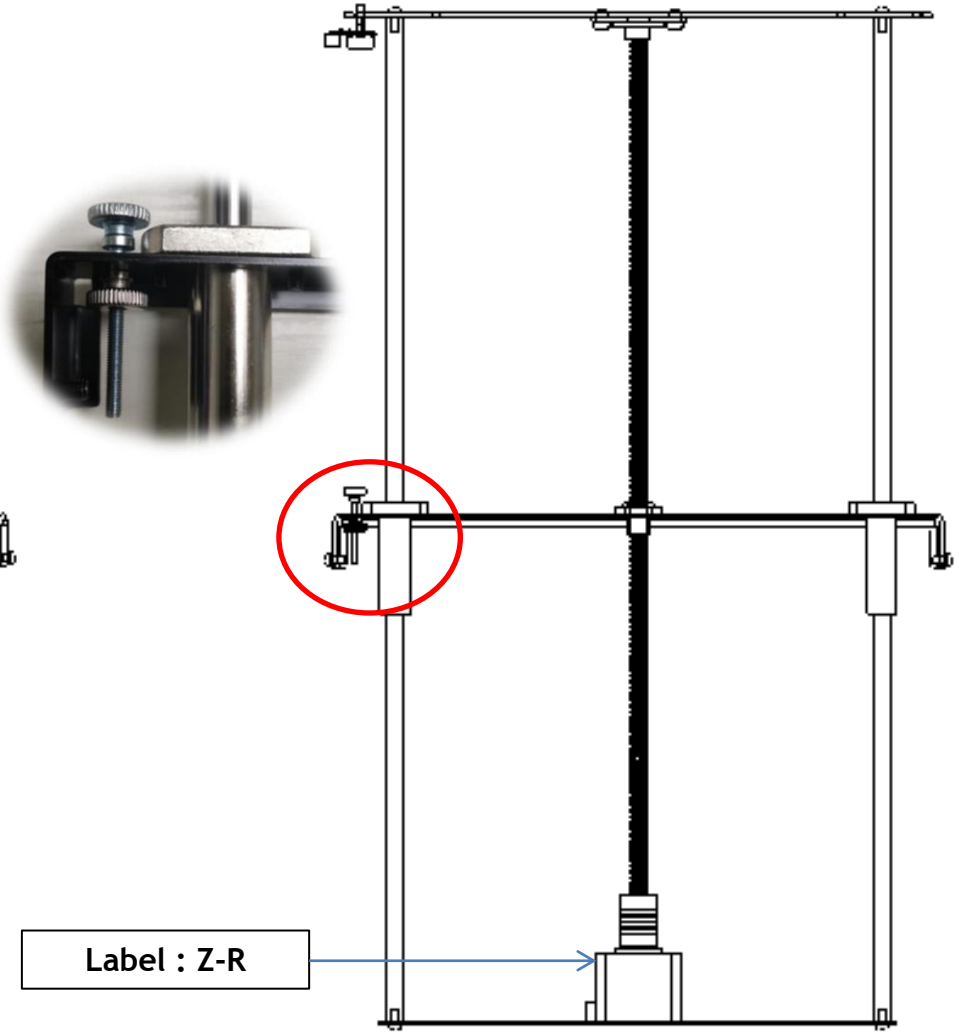


NOTE: Pay attention to the distinction between FRONT and BACK!!

Direction of parts



Z carrier assembly - Left

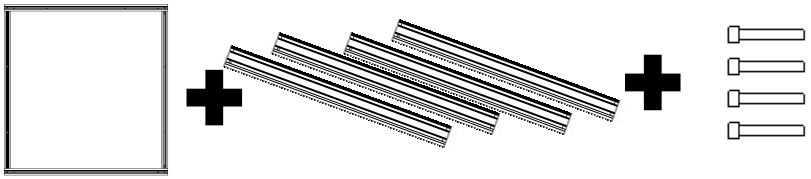


Z carrier assembly - Right

NOTE: Pay attention to the distinction between LEFT and RIGHT.

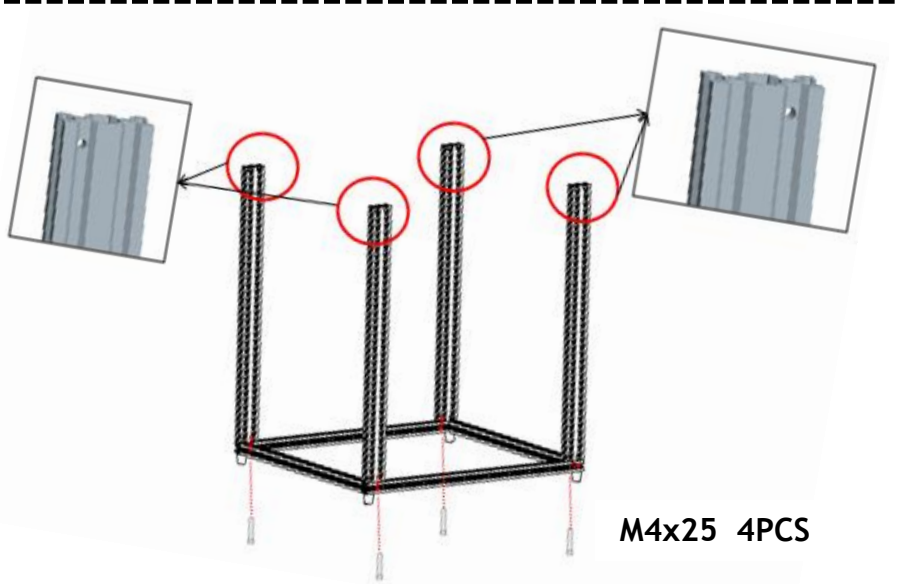
Zonestar

Assemble

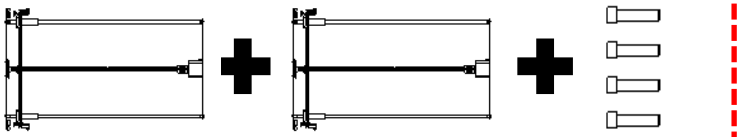


Bottom Assemly Z profiles (4x2040) M4x25 4PCS

NOTE: Pay attention to the hole on the Z profile, it should be on the top and out

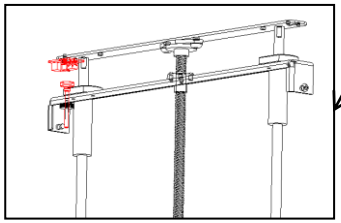


M4x25 4PCS

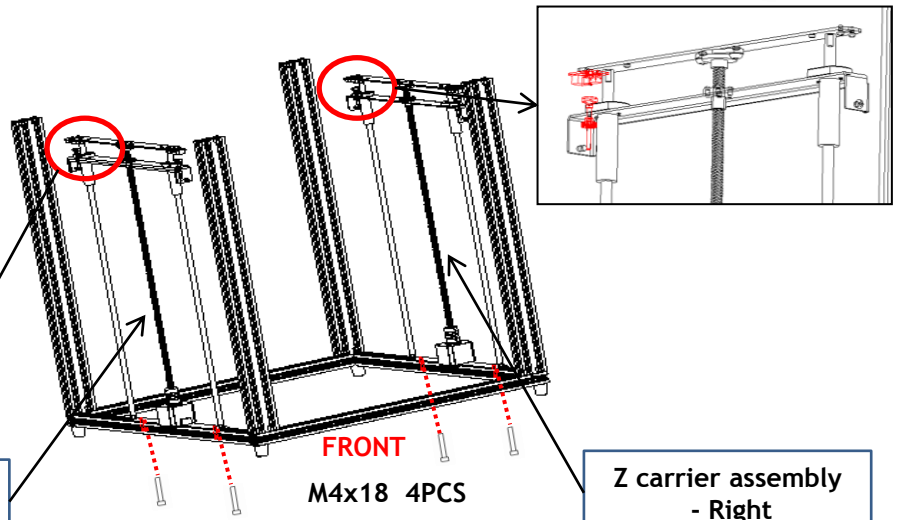


Z carrier - Left Z carrier - Right M4x18 4PCS

NOTE:
Pay attention to distinguish
Z carrier Assembly - Left and
Z carrier Assembly - Right



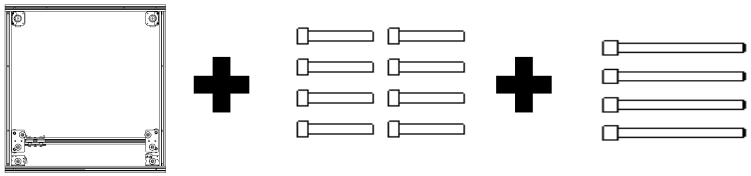
Z carrier assembly - Left

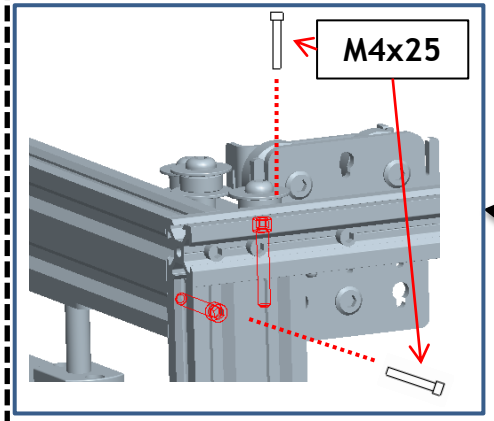


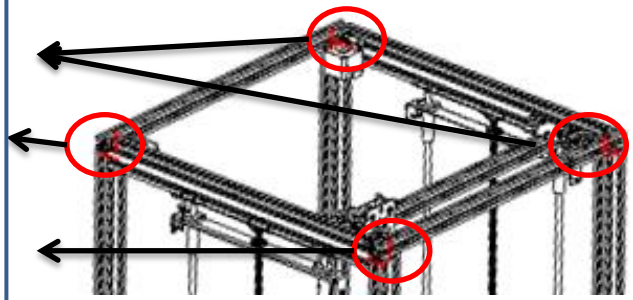
M4x18 4PCS

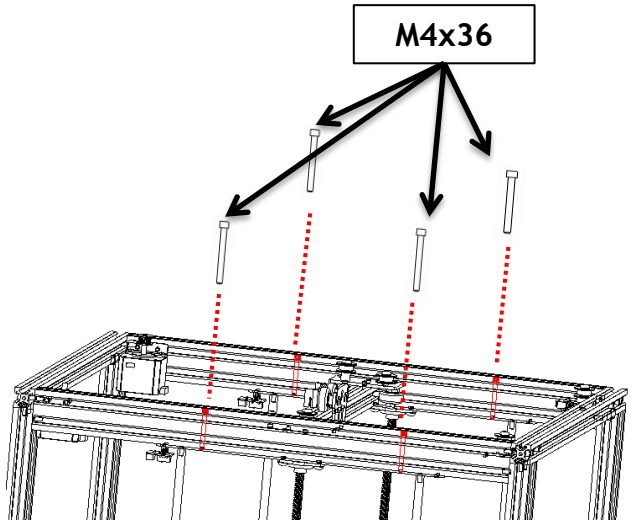
Z carrier assembly - Right

Assemble

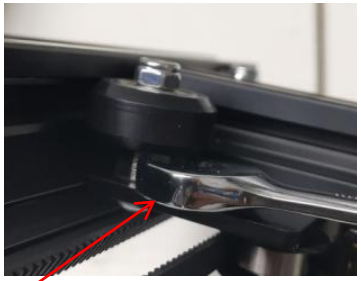




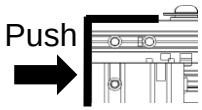


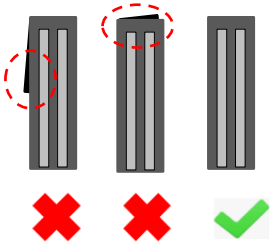


ATTENTION!!



NOTE: Adjust the eccentric column so that the x-axis can not shake left and right. It is okay if there is a little gap.

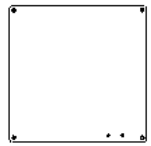


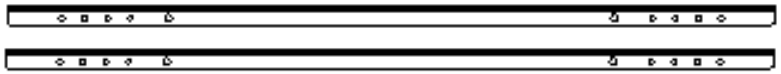


NOTE: Ensure that the profile on the top 2 sides is flush with the z-axis profile

Zonestar

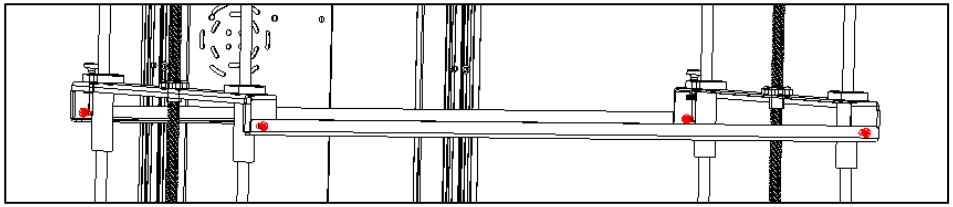
Assemble



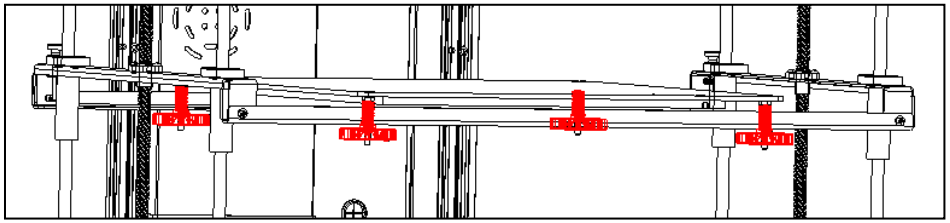


Hotbed Bracket

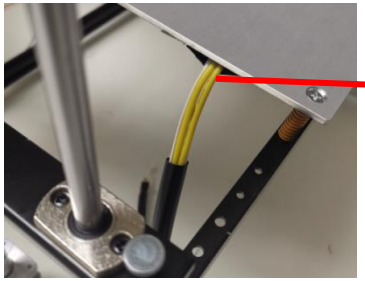
Hotbed screws

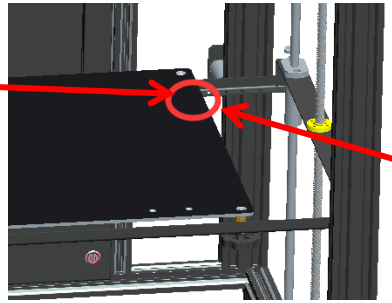


Take down these M4 screws first and then tighten hotbed bracket on the Z carriers

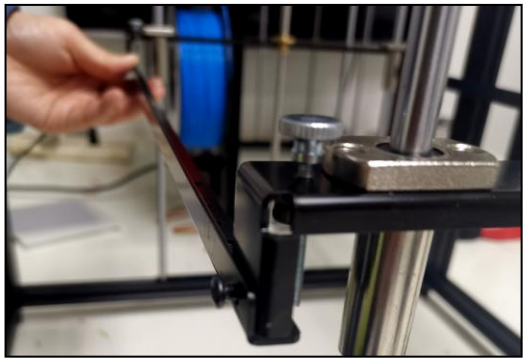


Install springs and hand nuts for hotbed



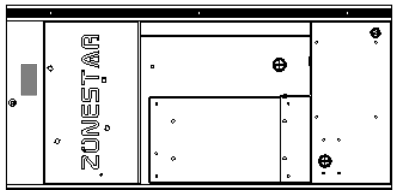


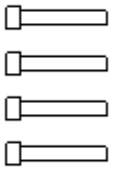
Put the hotbed cable to the left-back corner



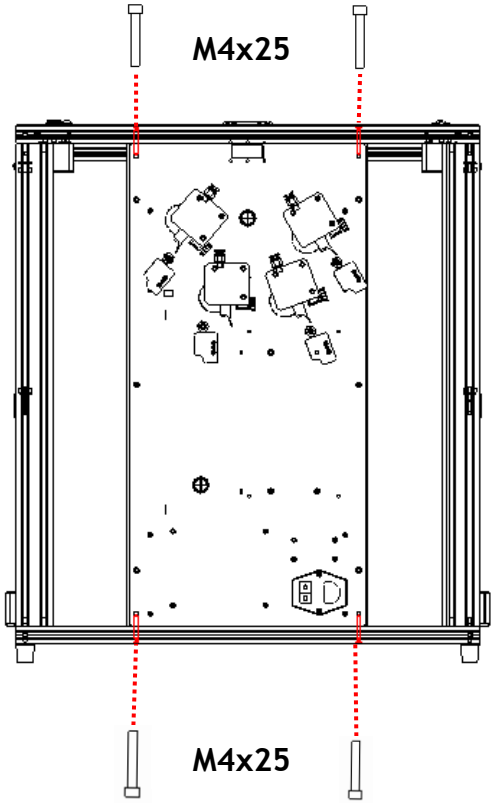
Zonestar

Assemble

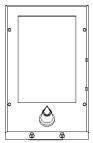




M4x25 4PCS

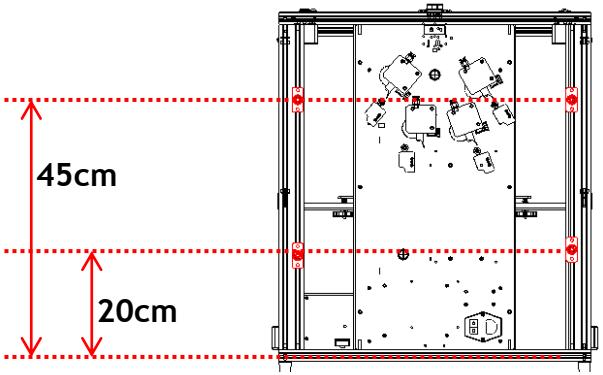


Install the control box assembly to the back of frame



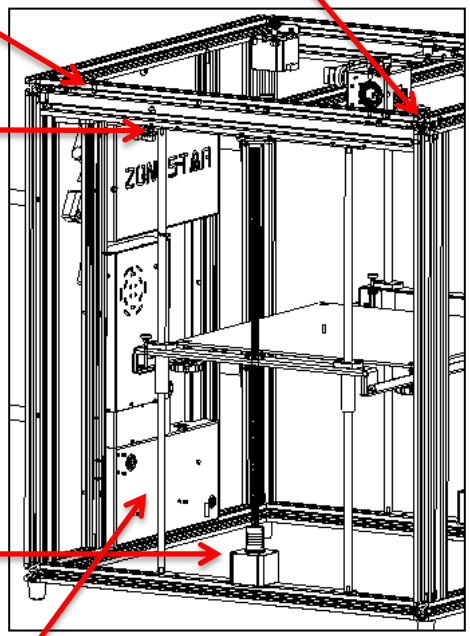
Install control panel to the bottom-front profile

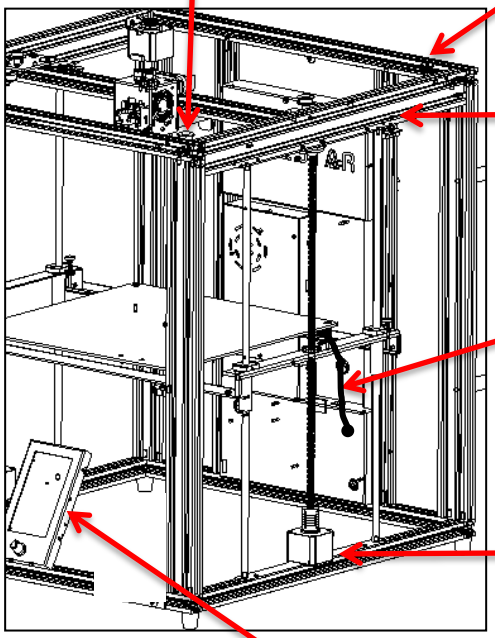
Filament Bracket

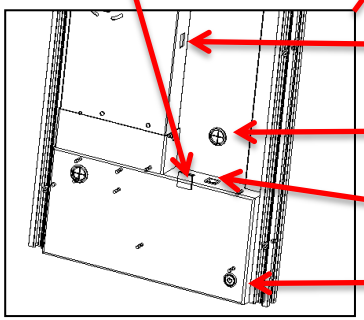


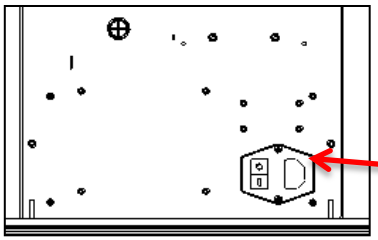
Install filament bracket to the back Z profile

Wiring - about the electronics parts









X MOTOR
(on the left/back)

X ENDSTOP
(on the left/front)

Y ENDSTOP
(on the right/front)

Y MOTOR
(on the right/back)

Z ENSTOP(L)

Z ENDSTOP(R)

Hotbed cable

Z MOTOR(L)

Z MOTOR(R)

Micro SD card
socket

110V/220V power
select switch

TFT_LCD Screen

Hole for USB cable

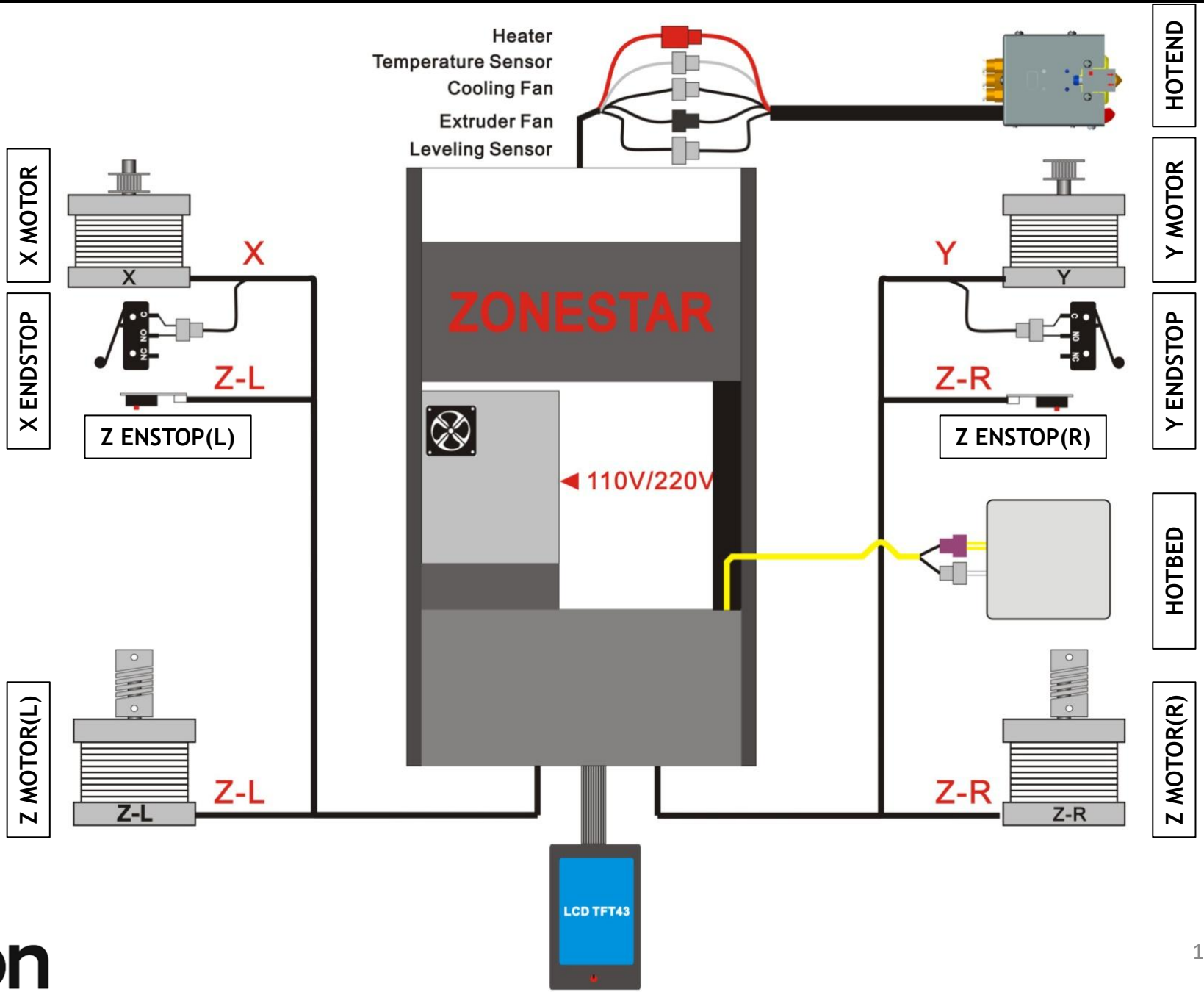
USB connector

Power Button

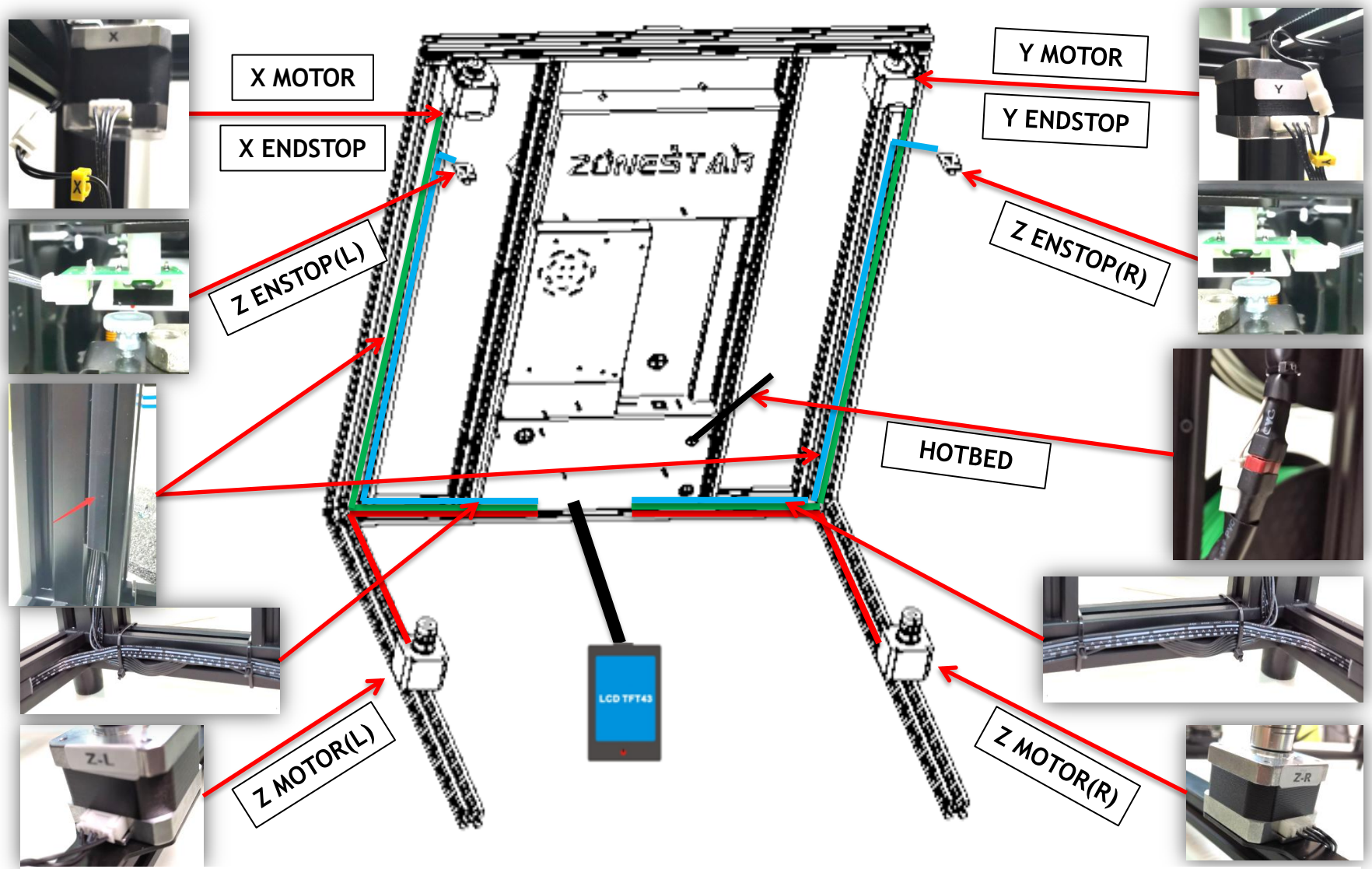
AC power cord
Socket and switch
(Fuse: 5A)

Zonestar

Wiring Block



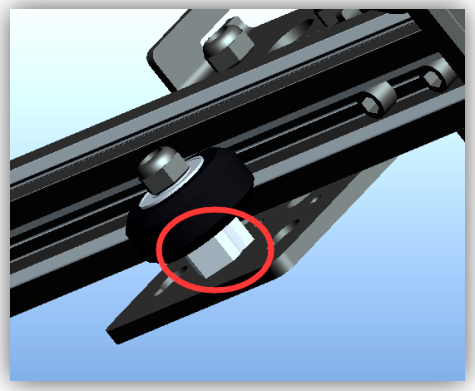
Wiring and layout the wires



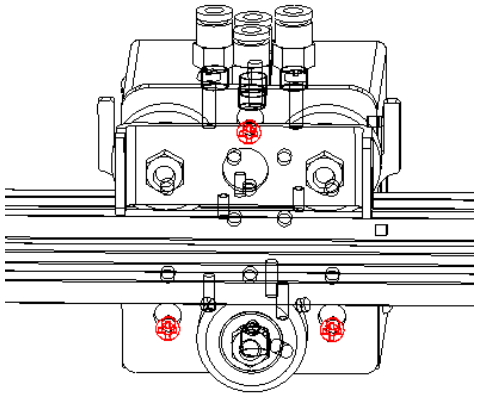
NOTE: Put the wires into the groove of profile, and cover with profiles cover.
ATTENTION: Be careful to damage the insulation of the wires!!!

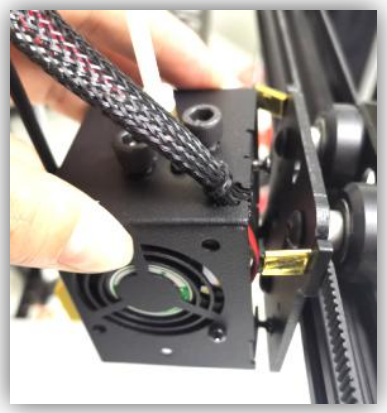
Zonestar

Install and wiring the print head



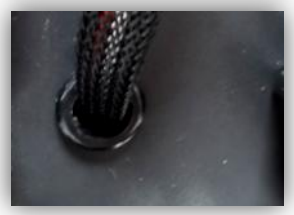
Check and adjust the eccentric column to make the X carrier hold the x-axis profile



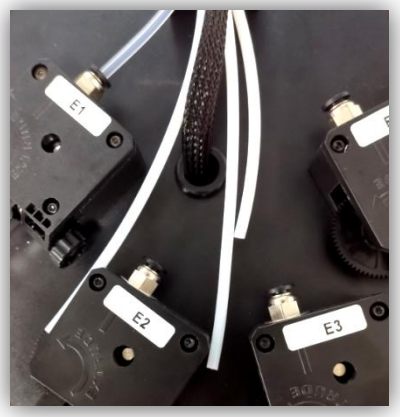


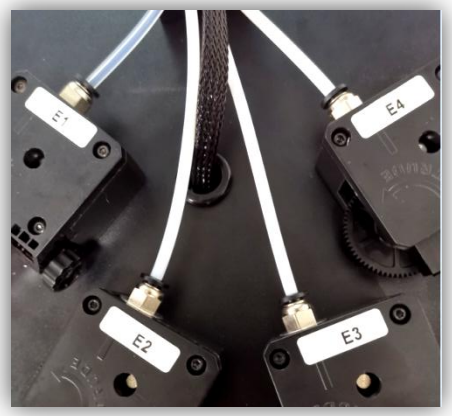
Loosen the 3 pcs of M3x6 screws and then tighten it to mount the print head

Following the color of connector and wires to wiring the hotend



Insert the wires into the control box



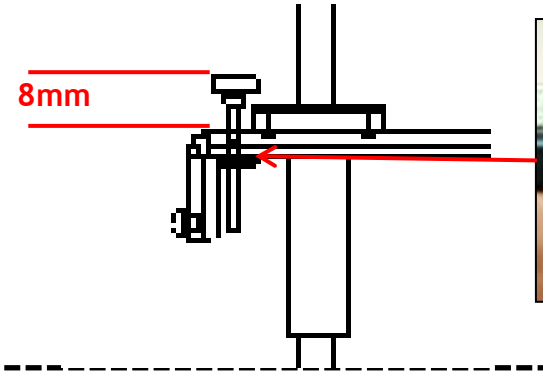


Plug the PTFE tube into the extruder feeder
E1 corresponds to the center channel of hotend and hotend , E2~E4 to the others channel.
Note: It is not necessary to distinguish E2 ~ E4

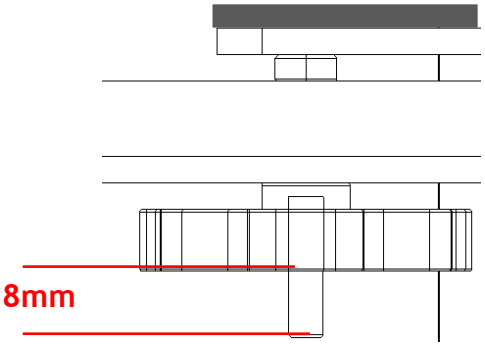
Zonestar

Install the glass and fine tune the Z height adjustment screws

Fine tune the Z height adjustment screws (left + right) and hotbed screws (4 corners) refer to the below picture



Lock after tuned



Fix the glass (super base) on the heat bed

1. Remove the hot bed protective film.
2. Fix the glass on the aluminum plate with clips*(Fig1)*, recommend to It is recommended to arrange the clips at the front and rear corners of the hot bed *(Fig2)*.
3. *One side of the glass is coated and the other side is smooth. Using the coated surface, the print can be firmly adhered to the platform; Using a smooth surface, you can get a smoother bottom of the print.*

Fig1

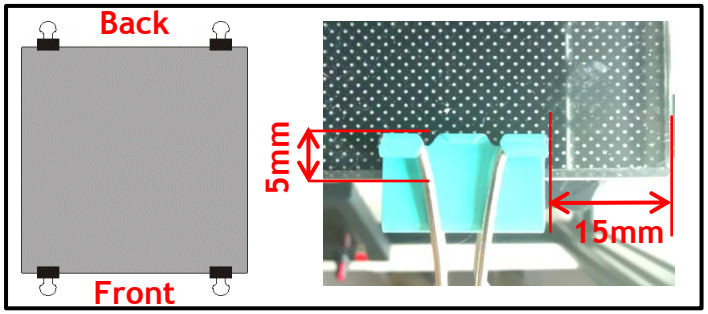


Fig2

Coating surface face up:
Hotbed temperature: >50 ℃
First layer printing speed: <35mm/s
First layer thickness: >=0.2mm

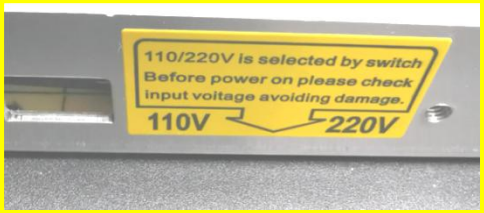
the smoother surface face up
Hotbed temperature: >70 ℃
First layer printing speed: <=20mm/s
First layer thickness: >=0.4mm

Fig2

Power ON / Power OFF

!!ATTENTION!!

MAKE SURE THE AC VOLTAGE SELECT SWITH HAS BEED SET TO THE CORRECT POSITION



Please confirm whether the switch is set correctly before turning on the power. If your city power voltage is AC 90V ~ 120V, please set this swith to 110V, otherwise set to 220V. If this setting is incorrect, the fuse in AC socket will be damaged.

POWER ON

Plug in AC power cord and turn on the power switch

Push and hold the DC power button

hold the button until the LCD shows logo

POWER OFF

Do “Power Off” on control panel

.....

Wait the LCD screen off

Turn OFF AC Power Switch

Zonestar

LCD Menu and Operation

Title bar

Menu bar

Status bar

Control handle

Printing from SD card

Prepare to printing

Setup the machine

Information of the machine

For details on the TFT-LCD menu, please refer to **"LCD_DWIN Menu Description.pdf".**

Prepare to print - Level the hotbed

1. Power on the 3d printer and then do ***"Prepare>>Auto Home>>Home All"*** on control panel, wait the hotend go to the HOME (origin) position.
2. Watch the nozzle, tighten the hand nuts under the bed to move down or loosen these nuts to move up the bed **(Fig 1)**, let the nozzle is higher than the bed about 1~2mm.
3. Do ***"Prepare>> Bed leveling>> Point 1(2/3/4)"*** on control panel**(Fig 2)**, the nozzle will go to the corners of the bed, adjust the hand nuts under the hotbed and let the nozzle almost touch the hotbed **(Fig 3)**. Continue to do the next point until all of the 4 corners has been leveled.
4. Repeat step 3 (recommend to do 3 rounds at least), until all of the four corners at the same height.

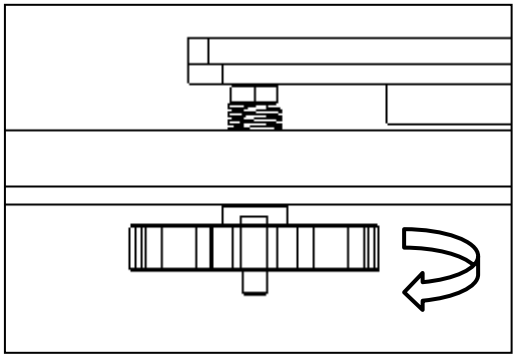


Fig 1

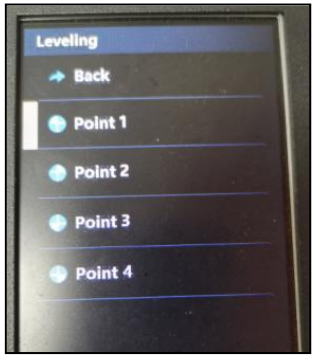


Fig 2

Fig 3

Prepare to print - Load Filament

1. Check the hotend, make sure only the center channel of the hotend connected “filament guide” and the others channels has been closed by hotend clean tools **(Fig 1).**
2. Do ***“Prepare>>Auto Home>>Home All”*** on control panel, and then do “***Prepare>>Temperature>> Preheat PLA***”, **waiting nozzle Temperature reached to 190** ℃ **(Fig 2).**
3. Use a diagonal pliers to cut off the head of filament **(Fig 3)**, and then press the handle of the ***extrude feeder #1*** and insert filament, push the filament until you can see the filament in the guide **(Fig 4)**.
4. Rotate the gear of extrude feeder #1**(Fig 5)**, watch the filament until it enter the hotend. Continue to rotate the gear **slowly** and watch the nozzle, until you can see the filament flowed out from the nozzle**(Fig 6)**.

Fig 1

Fig 2

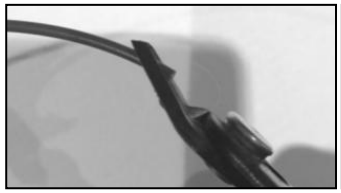


Fig 3

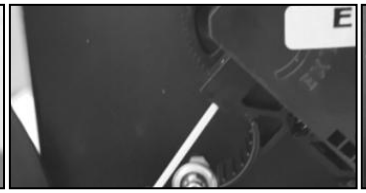


Fig 4

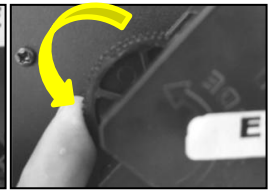


Fig 5

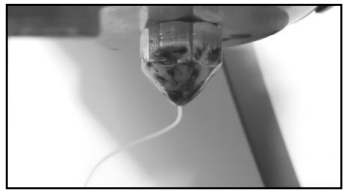


Fig 6

NOTE:

1. **We have only open one channel of the hotend when the printer left the factory, so please load one filament the hotend in your first prints.**

2. **Before loading more than one filament to the hotend, please read this guide first “Mix Color HOTEND User Guide- load and unload filament.pdf” file in the SD card**

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Print your first work

1. Insert the SD card to the SD card socket on the printer (***Fig 1***).
2. Click "**Print**" on the control panel and choose "***Test gcode\xyz_cube.gcode***" (***Fig 2***), click the knob to start printing.
3. Wait until the hotend and hotbed is reached to the setting temperature ***(Fig 3)***, the nozzle will home to the origin position and then move to above of the printing platform and extrude the filament, use a tweezers to remove the outflow filament ***(Fig 4)***.
4. Double click the knob on the control panel to open a "***Babysteps***" menu ***(Fig 5)***, rotate knob slowly to fine tune the height of printing platform, watch the distance from nozzle to bed, until the distance is well ***(Fig 6)***. Wait the printing finished, you will get your first works ***(Fig 7)***.
5. Wait the hotbed cool (**<=25 degree**) ***(Fig 8)***, and then remove the printed object from the hotbed glass***(Fig 9)***.

Fig 1

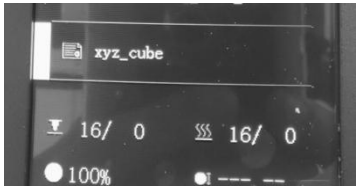


Fig 2

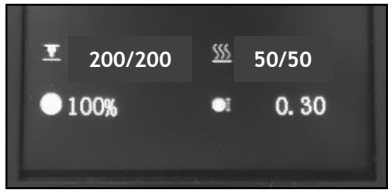


Fig 3

Fig 4

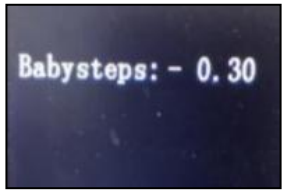


Fig 5

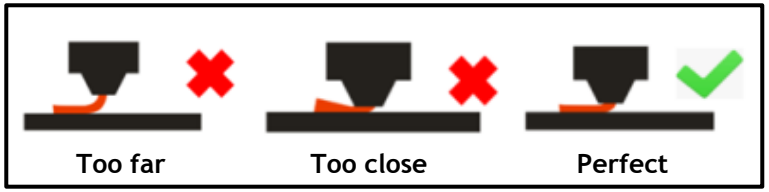


Fig 6

Fig 7

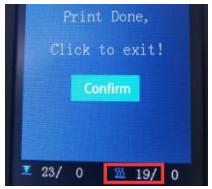


Fig 8

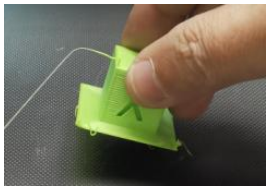


Fig 9

Slicing

About slicing

Slicing a 3D drawing translates the 3D drawing into a language that a 3D printer can understand and print. The slicing software is a computer software used in the majority of 3D printing processes for the conversion of a 3D object model to specific instructions for the printer. In particular, the conversion from a model in ***STL(Obj, Amf)*** format to printer commands in **g-code** format. This machine can use a variety of slicing software to complete slicing. We will now introduce the most commonly used slicing software: **Cura**.

NOTE: 1. Slicing software is not a part of this machine. **2.** You can download Cura for free from the internet.

Install slicing software and step up the printer

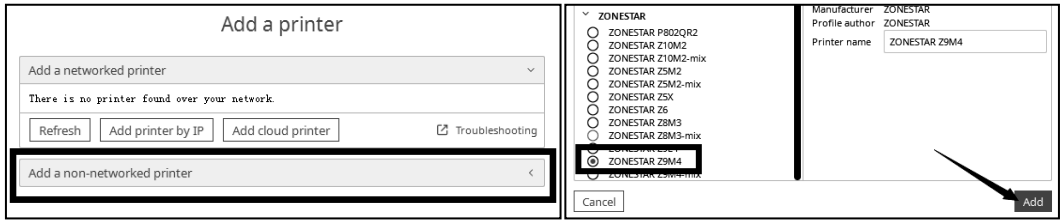
In order to run the slicing software, you need a PC or laptabe, installed windows/linux/Macos.

Step 1: Download and install ***Cura*** to your PC, please search "**ultimaker cura**" from google.

Step 2: Copy "**cura resources.zip**" from the SD card and unzip it to your PC.

Step 3: Copy "resources" file to the same directory in cura which you installed.

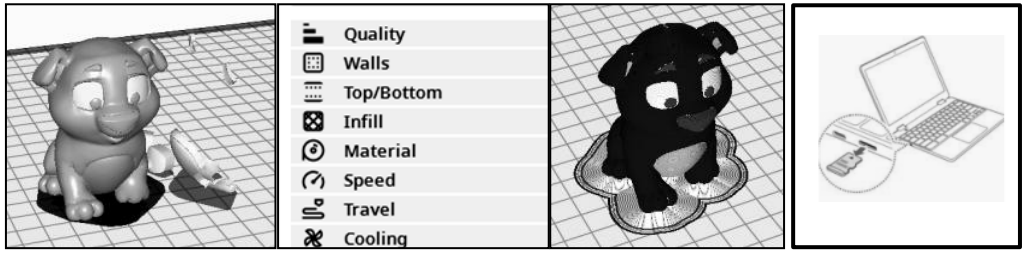
Step 4: Run ***cura*** software, and follow the below steps to choose the printer.



Download Cura

Download Slicing Guide

Slicing process



Load stl files → **Setup settings** → **Slicing and preview** → Store to SD card

NOTE: For description of slicing, please refer to the documents in the directory of "slicing guide".

Advance features

NOTE: Do not turn on these functions until you clearly understand how to use them and precautions.

◆ Auto retract feature:

The strings issue of the mixed color hot end is often more serious than that of the single color hotend. Therefore, an automatic retraction feature is set in the firmware. Using automatic retraction can improve this problem. For the detail please refer to ***How to set auto retract function.pdf***.

◆ Filament run out detection feature:

This printer is equipped with 4 *filament run out sensors*. With these sensors, the printer can pause the printing while one of the filament spool used up, and when you load a new roll filament, you can continue to print. For the detail please refer to ***How to set filament runout function.pdf***.

Switch on: MENU>>Control>>Configre>>Runout Sensor

◆ Power loss recovery feature:

While printing from SD card and power is lost, after power on again, the printer will resume to print from the last layer which printed before power lost. For the detail please refer to ***Power loss recovery feature user guide.pdf***.

Switch on: MENU>>Control>> Configre>>PowerLoss Recovery

◆ Auto power shut down feature:

While printing from SD card and the work is finished, the printer will auto shut down after about 3 minutes. For the detail please refer to ***How to set auto shutdown function.pdf***.

Switch on: MENU>>Control>> Configre>> Auto Shutdown

◆ Bed auto leveling feature:

This printer is equipped with a ***Bed leveling sensor (ZLSensor)***, with this sensor, you can correct the unevenness of the hot bed. . For the detail please refer to the guide in ***"Bed Auto Leveling Feature"***.

Switch on: MENU>>Control>> Configre>> Auto Leveling

◆ Auto mixing color feature:

Default Z9V5Pro is equipped with a 4-IN-1-OUT mixing color (M4) hotend, it has a gradient/random mixing engine to convert singel color gcode file to a gradient color object. For the detail please refer to ***How to set gradient color printing.pdf and How to set random color printing.pdf***.

Wiring Diagram(Z9V5Pro)