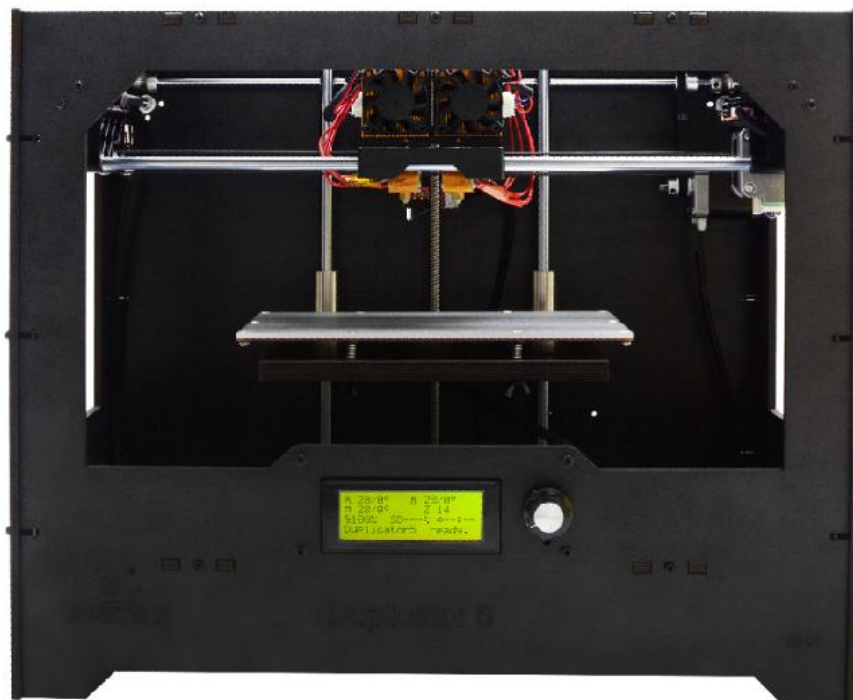


# Geeetech Duplicator 5 3D Printer

## Assembly Manual



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## **Safety Instructions**

Building the printer will require a certain amount of physical dexterity, common sense and a thorough understanding of what you are doing. We have provided this detailed instruction to help you assemble it easily.

However, ultimately we cannot be responsible for your health and safety while you are building or operating the printer. Therefore, be sure you are confident in what you are doing prior to commencing with building or buying. Read the entire manual to enable you to make an informed decision.

Building and operating involves electricity and all necessary precautions should be taken and adhered to. The printer runs on 24V supplied by a certified power supply, so you shouldn't ever have to get involved with anything over 24V. Please bear in mind that there can still be high currents involved and even at 24V they shouldn't be taken lightly.

Check the power input of the power supply unit. You can choose either 110V or 220V according to the power regulation in your country.

High temperatures are involved in 3D Printing. The extrusion nozzle of the hot end can run at about 230 °C, the heated bed runs at 110 °C and the molten plastic extruded will initially be at around 200 °C. Therefore, special care and attention should be taken when you are handling these parts of the printer during operation.

We wouldn't suggest you to leave your printer running unattended, or at least until you are confident to do so. We are not responsible for any loss, damage, threat, hurt or other negligent result caused by either building or using the printer.

## **Preparation**

1. Unpack the kit and check if all parts are in the box. Please check the condition of each part since there might be some damage during shipping. To help you with this, there is BOM in the box and each bag is labeled with its part number.

2. Contact our customer service immediately by email or through the website if you find any missing or damaged parts. And at the bottom of the BOM, there is a signature of the checker. Please take a picture of it and attach the picture in your mail.

**3. Before your assembly, please read through each chapter of this assembly manual to gain an overall idea of what is involved and how long it might take to complete the assembly job.**

4. As a preparation job, you can put all the part in order to save your time, especially the screws and nuts. Do not mix them up.

5. Ensure you have the necessary skills to carry out the assembly job or entrust someone who does.

6. Work on a big firm table or bench in a clean dry well-lit area.

7. Since this kit contains tiny parts, please keep them away from kids under 3.

8. Ask for help if you run into any problems --- our contact details are on the website and we will always do our best to solve any problems encountered.

**9. for different batches, some parts of the kits may have changed. If the parts listed in this instruction and what you received is slightly different, please don't worry. These changes will not affect your installation and usage.**

**Watch the assemble video here:**

**<https://www.youtube.com/playlist?list=PLODCkot3GriggeiHt4KxRsgxX2igi8jQ->**

## **1. Unfold the Box and Check the Package**

Unfold the package and take all the parts out to check the condition of the items.

As you can see, all the parts are packed very carefully.





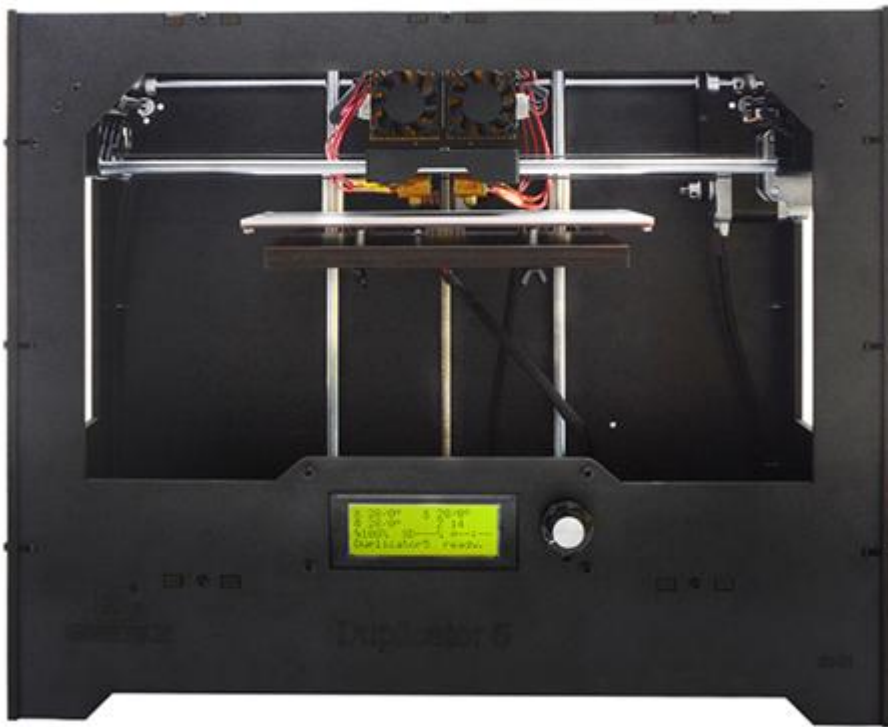
**Tips:**

1. Before assembly, you are advised to put all the parts, especially the screws and nuts in order, which would save you much time in looking for the required parts.
2. The part ID is corresponding to the number labeled on the bag of each part. Some parts may not have labels and you can refer to the pictures on the package list.

## **2. The Main Frame**

In this chapter, an introduction to the main frame of Duplicator 5 is made to get you to have an in-depth knowledge of 3D printer. At first, please prepare all the panels by attaching the necessary parts. Secondly, assemble the main frame. Finally, attach other important parts of Duplicator 5 on the main frame.

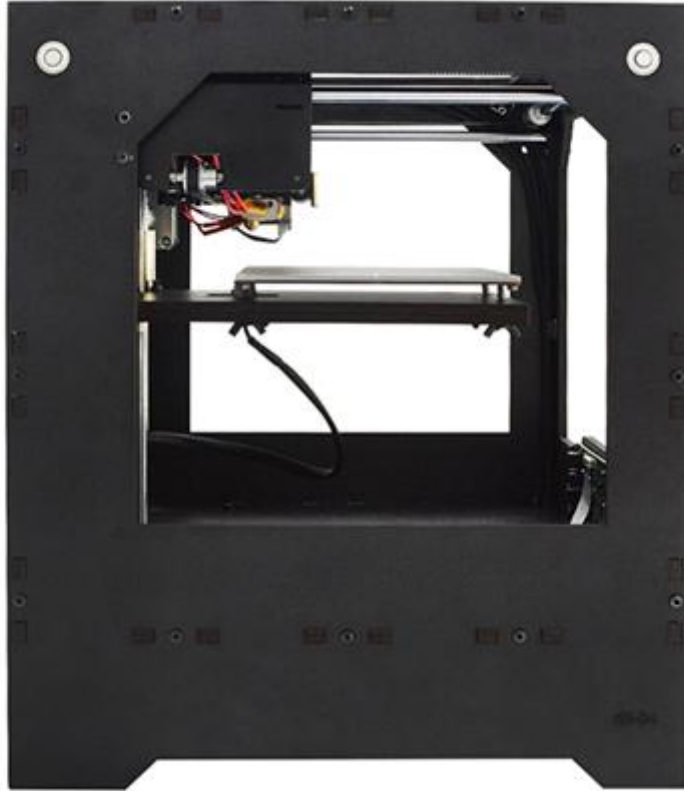
Before we start, let's get familiar the panels of the Duplicator 5 3D printer.



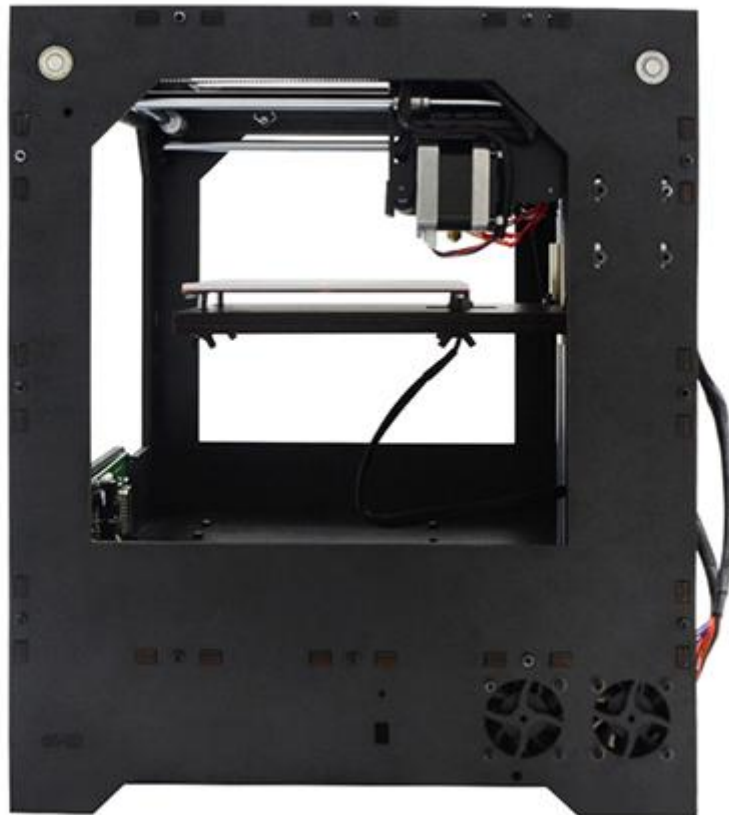
Front panel



Rear panel

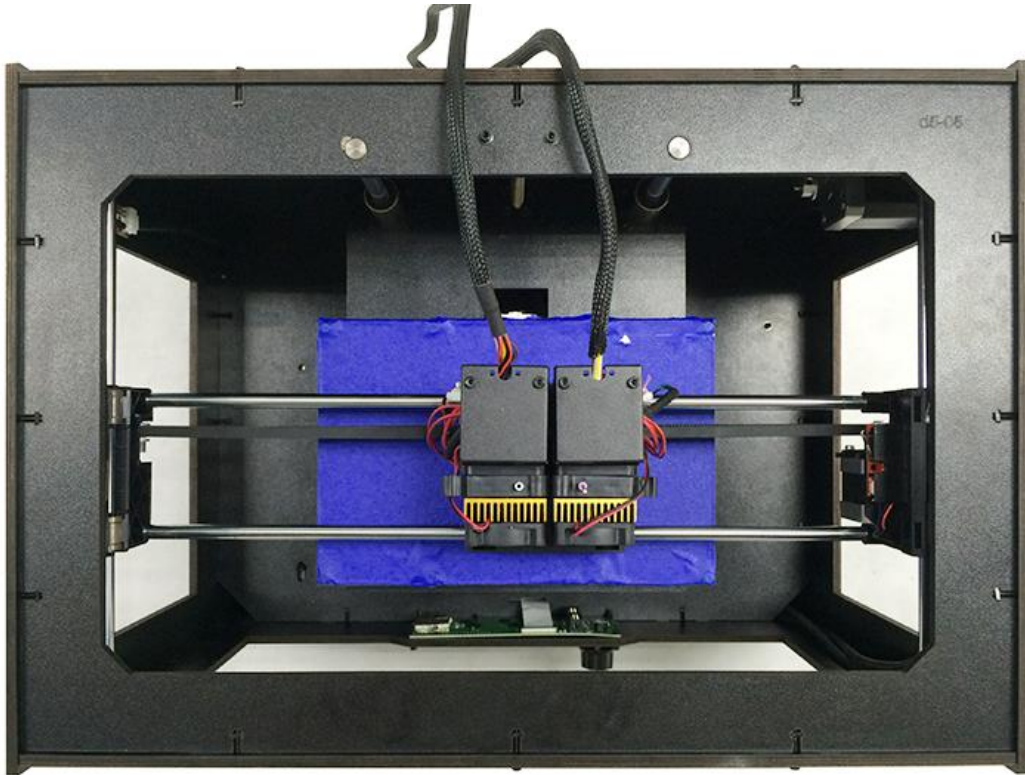


Left panel



Right panel





Upper panel







Lower panel

## 2.1 Prepare all the Panels

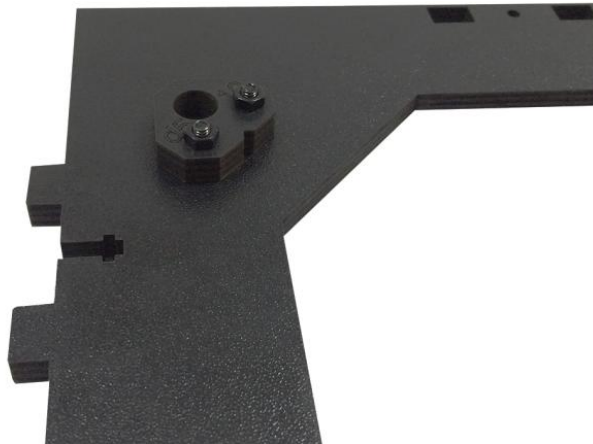
Attach the necessary parts to each of the panels. This makes it easier to join the panels together later.

### 2.1.1 Front Panel

Required parts	Required number	Part ID	Pic
Front panel	1	NO. D1	
Y axis rod fixed panel	2	NO. D10	
M3*16mm Screw	4	NO. 17	
Hex nut	4	NO. 11	

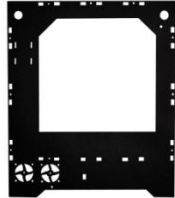




Take the front panel. Attach 2 Y axis rod fixed panels to the inside of the front panel with 4xM3\*16mm screws and 4xM3 hex nuts.

**Note:** Please pay attention to the direction of the holes on the fixed panels.





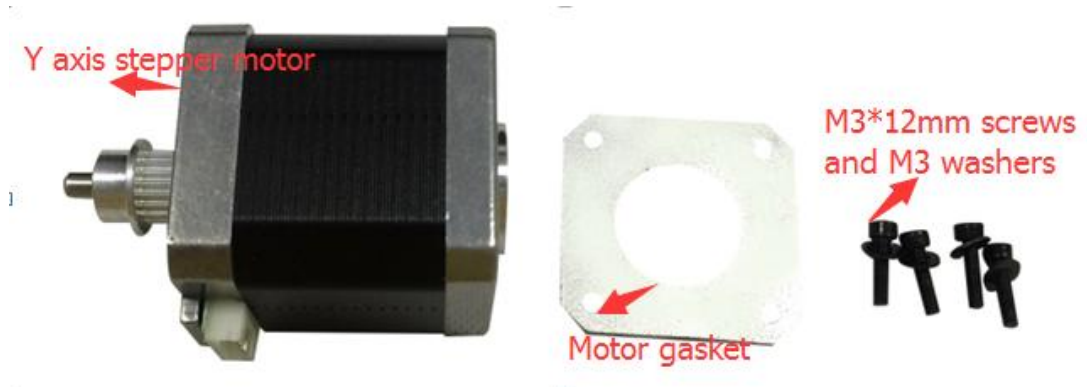
### 2.1.2 Right Side Panel

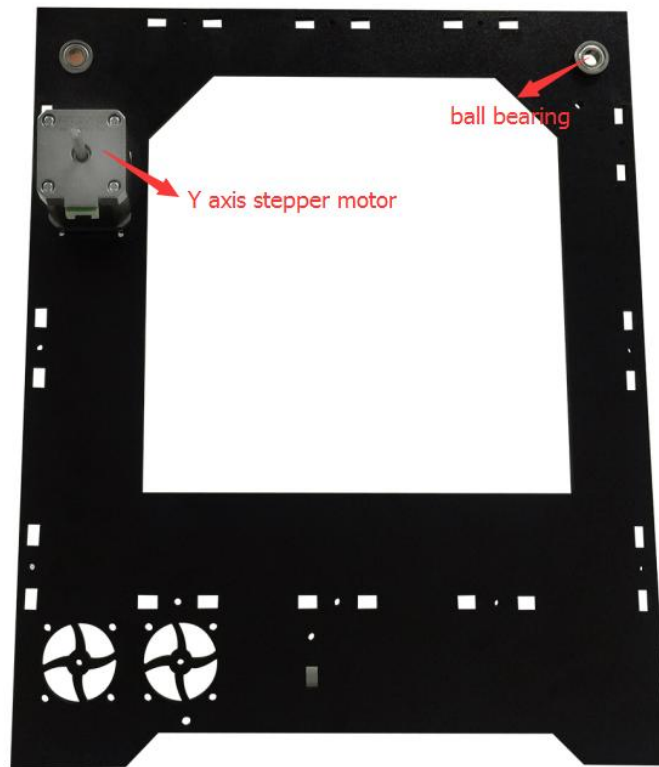
Required parts	Required number	Part ID	Pic
Right side panel	1	NO. D2	
Ball bearing	2	NO. 28	
Stepper motor	1	NO. 51	
M3*12mm Screw	4	NO. 16	
M3*20mm Screw	8	NO. 18	

Hex nut	8	NO. 11	
M3 Washer	12	NO. 5	
Motor gasket	1	NO. 38	
Pulley	1	NO. 31	
Fan	2	NO. 53	

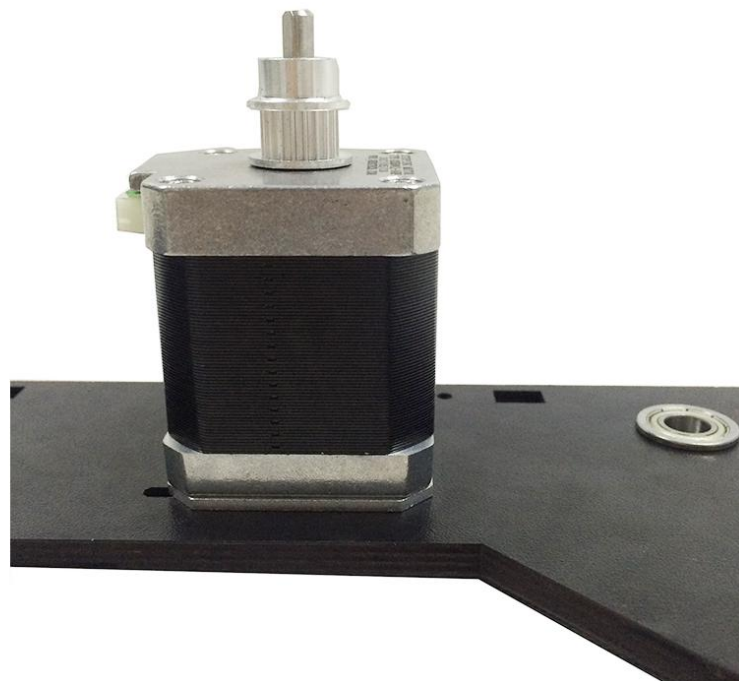
Step 1. Take the right side panel and Insert 2 ball bearings into the corresponding holes on the top of the panel.

Step 2. Attach the Y axis stepper motor to the inside of the panel with 4xM3\*12mm screws, 4x M3 washers and the motor gasket.



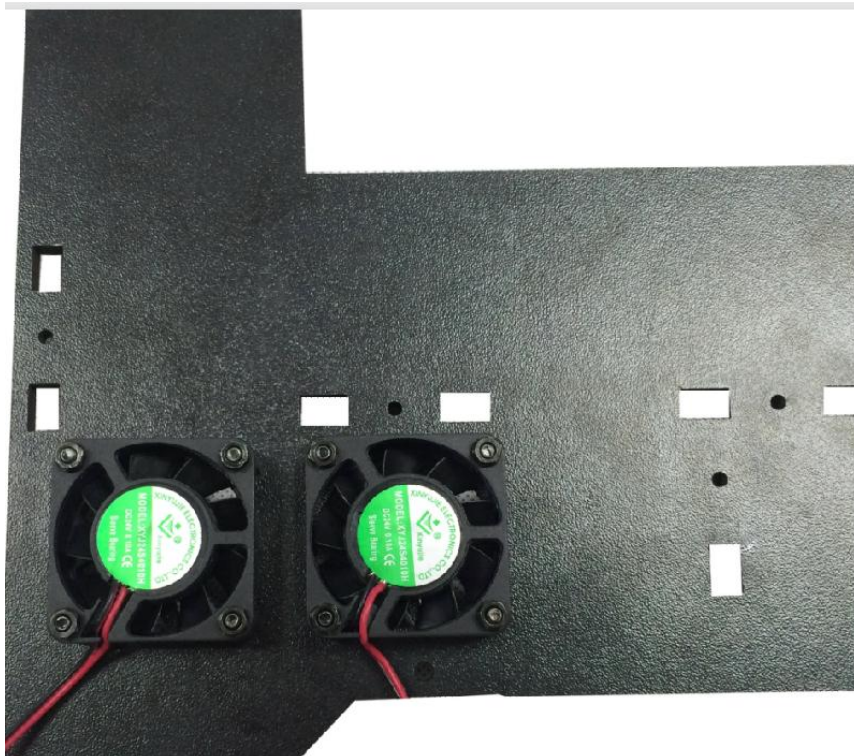
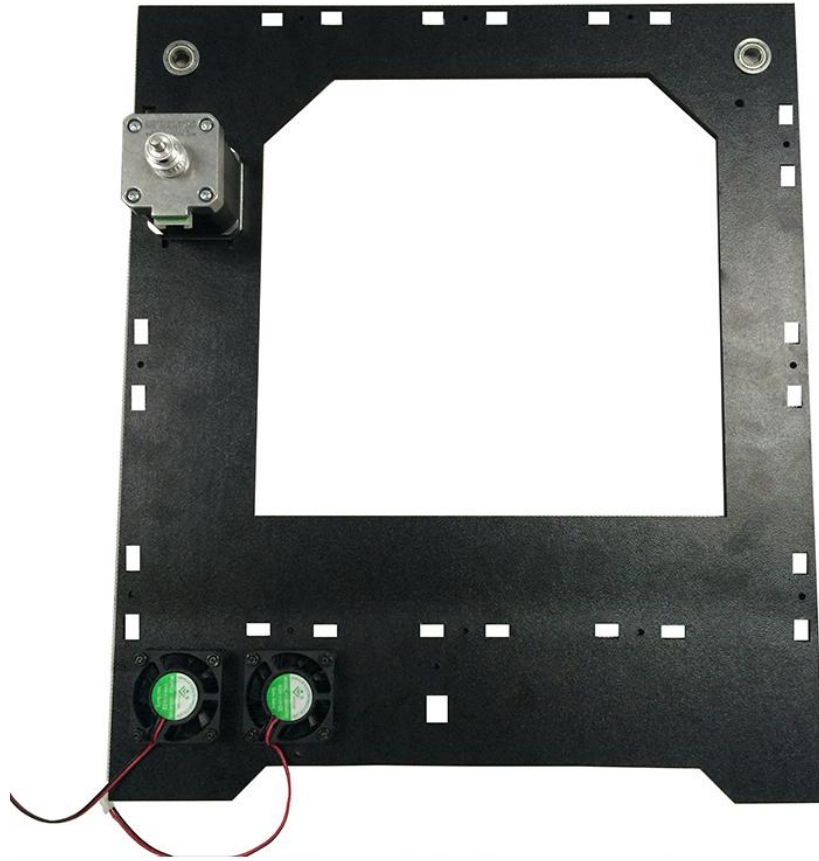


Step 3. Fix the Y axis pulley on the axis of the stepper motor with a set screw.  
(with the threaded part attached to the stepper motor)

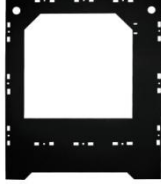








Step 4. Attach the two fans to the lower right of the panel with 8xM3\*20mm

screws, 8 washers and 8xM3 hex nuts. Please make sure that the fans are on the inside of the panel.

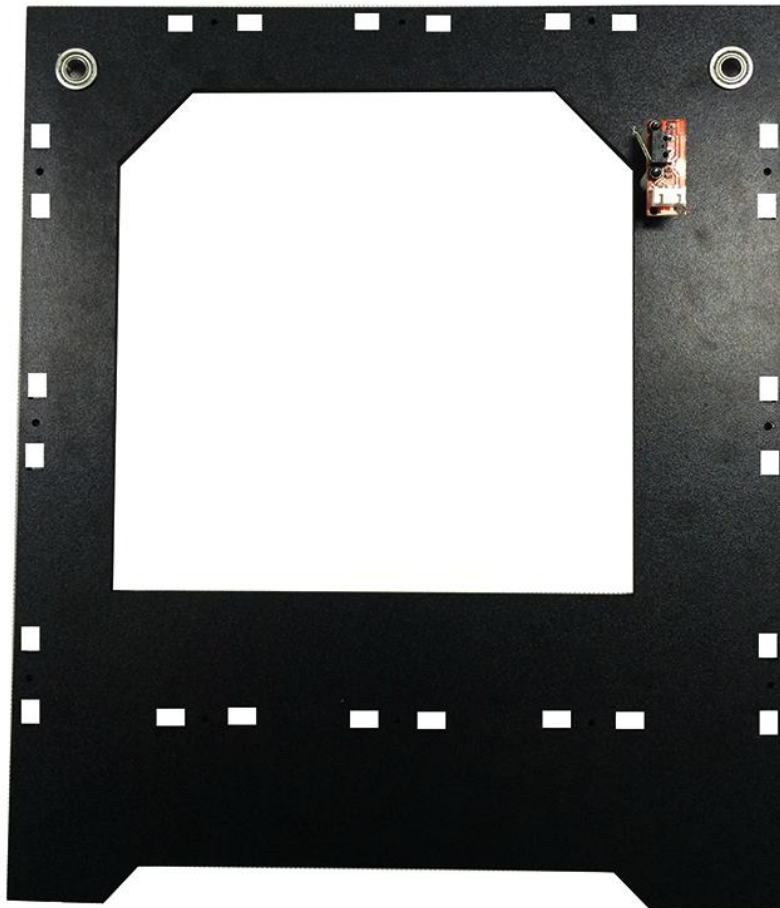
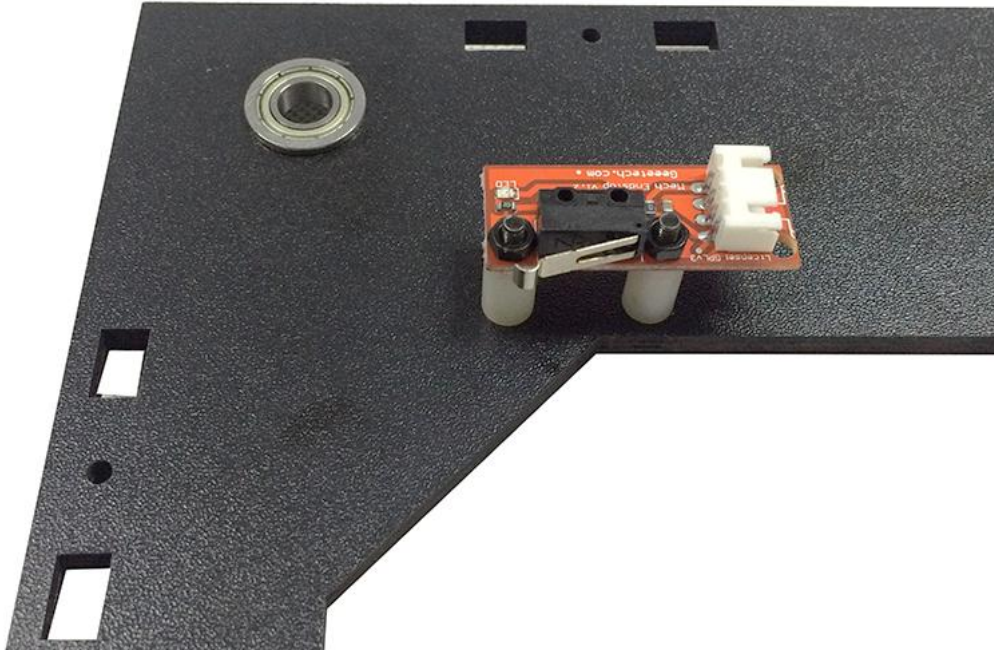


### 2.1.3 Left Side Panel

Required parts	Required number	Part ID	Pic
Left side panel	1	NO. D4	
Ball bearing	2	NO. 28	
Endstop	1	NO. 40	
Spacer	2	NO. 36	
M3*25mm Screw	2	NO. 19	
Hex nut	2	NO. 11	
M3 Washer	2	NO. 5	






Step 1. Take the left side panel and Insert 2 ball bearings into its corresponding holes.

Step 2. Attach the Y axis endstop to the inside of the panel with 2 spacers, 2x M3\*25mm screws, 2xM3 hex nuts and 2 x M3washers.



## 2.1.4 Lower Panel

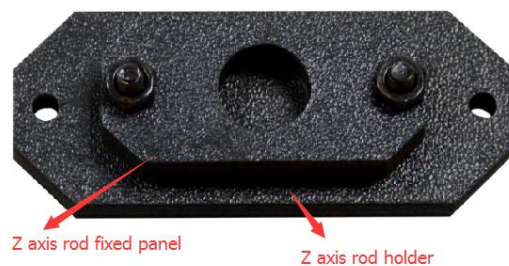


Required parts	Required number	Part ID	Pic.
The lower panel	1	NO. D6	
Z axis rod fixed panel	2	NO. D8	
Z axis rod holder	2	NO. D9	
M3*16mm Screw	8	NO. 17	
Hex nut	8	NO. 11	

Step 1. Attach the Z axis rod fixed panel (1 piece) and Z axis rod holder (1 piece) together with 2xM3\*16mm screws and 2xM3 hex nuts.

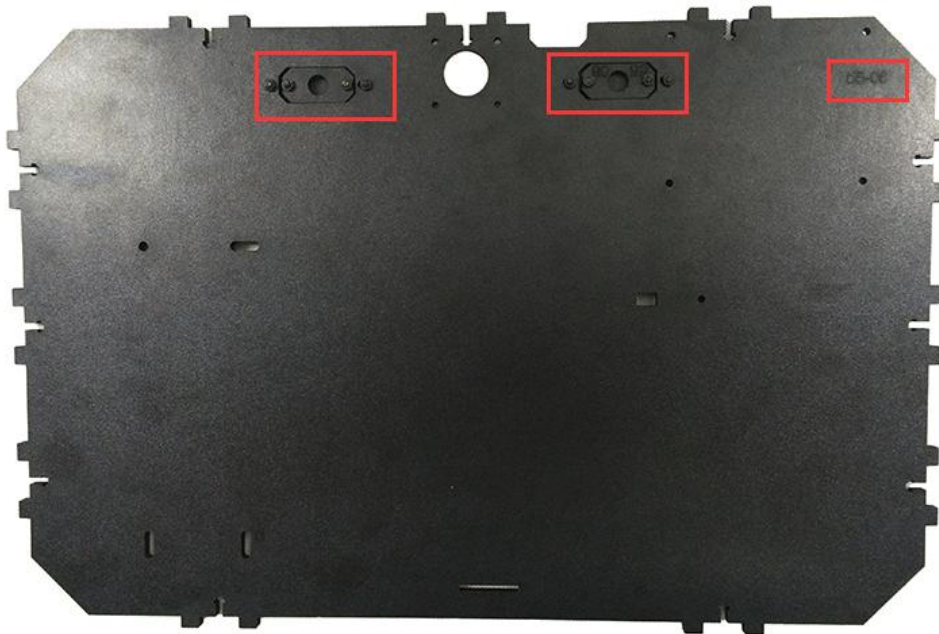
Apply this assembly method to the other two panels.

**Note:** With the Z axis rod fixed panel (with a hole on it) on top of the Z axis rod holder.



Step 2: Fix the above assembled parts on the bottom of the lower panel with 4xM3\*16mm screws and 4xM3 hex nuts.

Note: With the Z axis rod fixed panel (with a hole on it) on top of the Z axis rod holder.








bottom



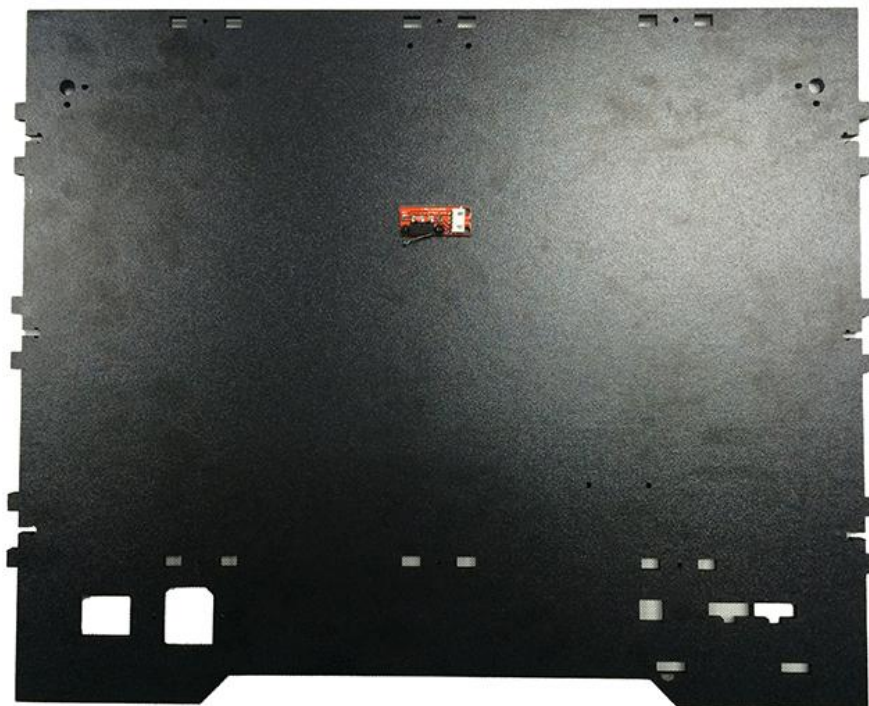
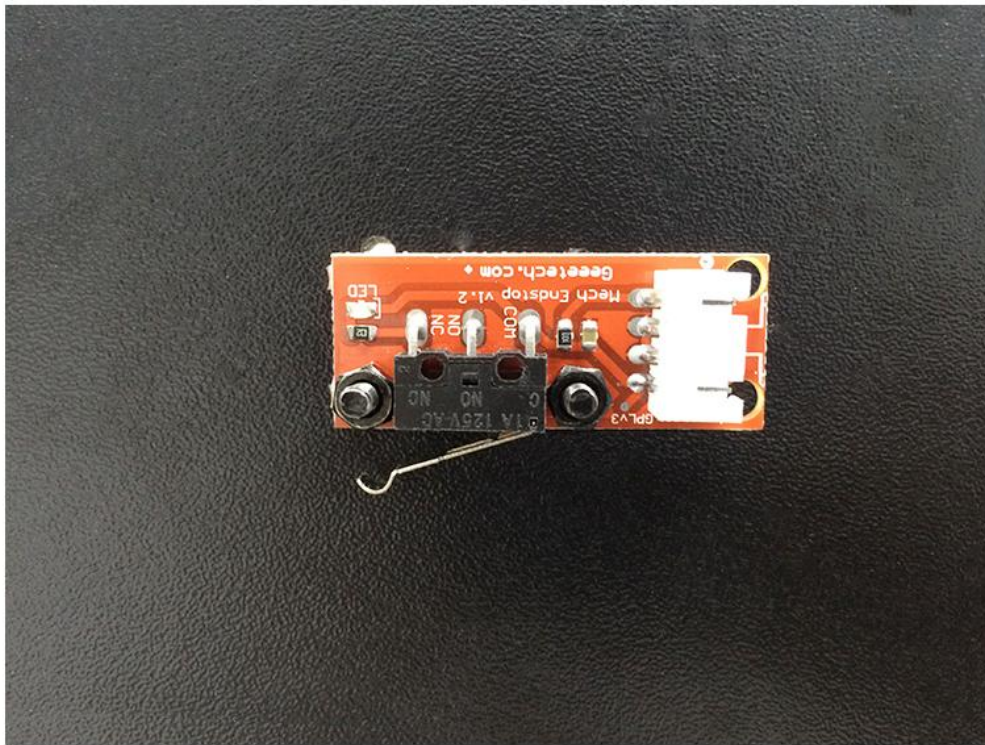
up

## 2.1.5 Rear Panel






Required parts	Required number	Part ID	Pic.
Rear panel	1	NO. D3	
Endstop	1	NO. 40	
M3*16mm Screw	2	NO. 17	
Hex nut	2	NO.11	
M3 Washer	2	NO. 5	

Take the rear panel and attach the endstop on the inside of the panel with 2xM3\*16mm screws, 2xM3 hex nuts and 2x M3 washers.

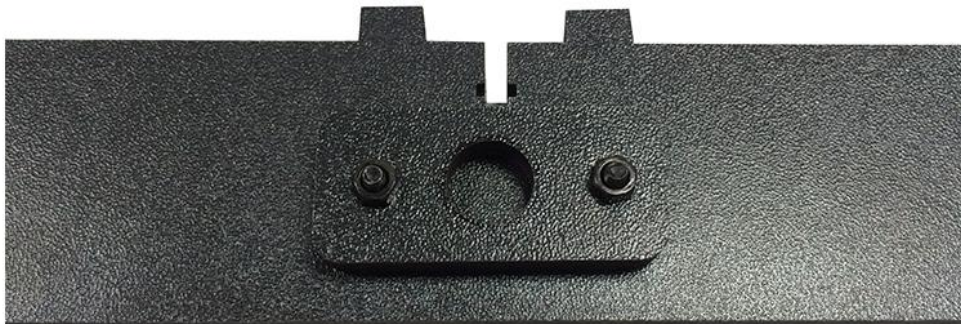
**Note: Fix the endstop tightly and avoid any inclining.**

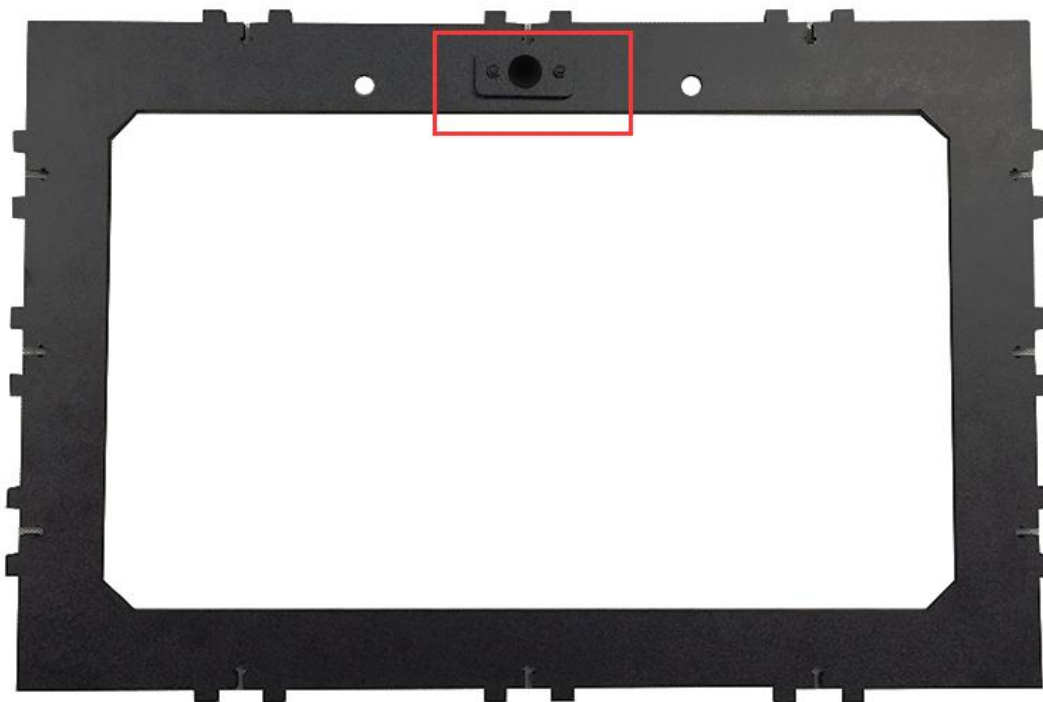


## 2.1.6 Upper Panel


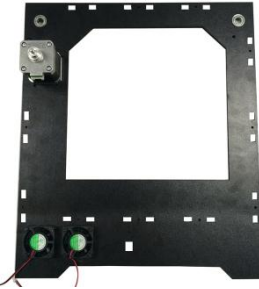
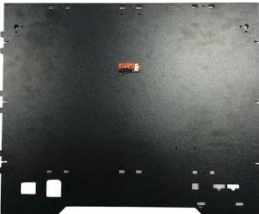
Required parts	Required number	Part ID	Pic.
Upper panel	1	NO. D5	
Z axis bearing fixed panel	1	NO. D7	
M3*16mm Screw	2	NO. 17	
Hex nut	2	NO.11	
M3 Washer	2	NO. 5	

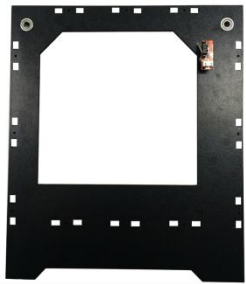




Attach the Z axis bearing fixed panel to the inside of the upper panel with 2xM3\*16mm screws, 2xM3 hex nuts and 2 washers.



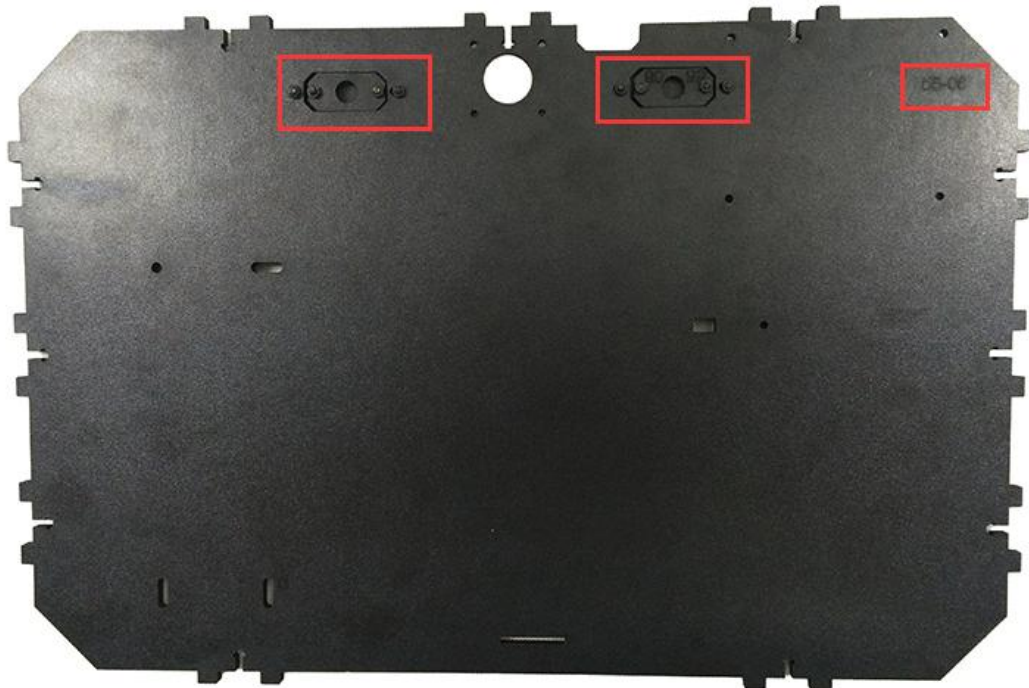


## 2.2 Assemble the Main Frame

Required parts	Required number	Part ID	Pic.
Front panel	1		
Right side panel	1		
Rear panel	1		

Left side panel	1		
Upper panel	1		
Lower panel	1		
M3*16mm Screw	35	NO.17	
Square nut	35	NO.10	

Step 1. Join the rear panel and the lower one together with 3 x M3\*16mm screws and 3xM3 square nuts. (Fix the screws in a diagonal direction. Do not fasten the screws too tightly.) (Make sure that the engraving ID side of the lower panel is upward.)



This side is upward

Step 2. Attach the upper panel and the rear panel, fix with M3\*16mm screws and M3 square nuts.

Step 3. Joint the upper panel, the lower panel and the front panel together with 8






x M3\*16mm screws and 8xM3 square nuts. (Fix the screws in a diagonal direction.  
Do not fasten the screws too tightly.)

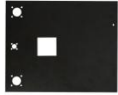










Step 3. Fix the left side panel and the right one on the above joint parts with  
24xM3\*16mm screws and 24xM3 square nuts. (Fix the screws in a diagonal direction.  
Do not fasten the screws too tightly.)



### 3. Assemble the Building Platform

Required parts	Required number	Part ID	Pic.
Hot bed	1	NO. 49	
Aluminium plate	1	NO. 47	
Linear bearing	2	NO. 25	

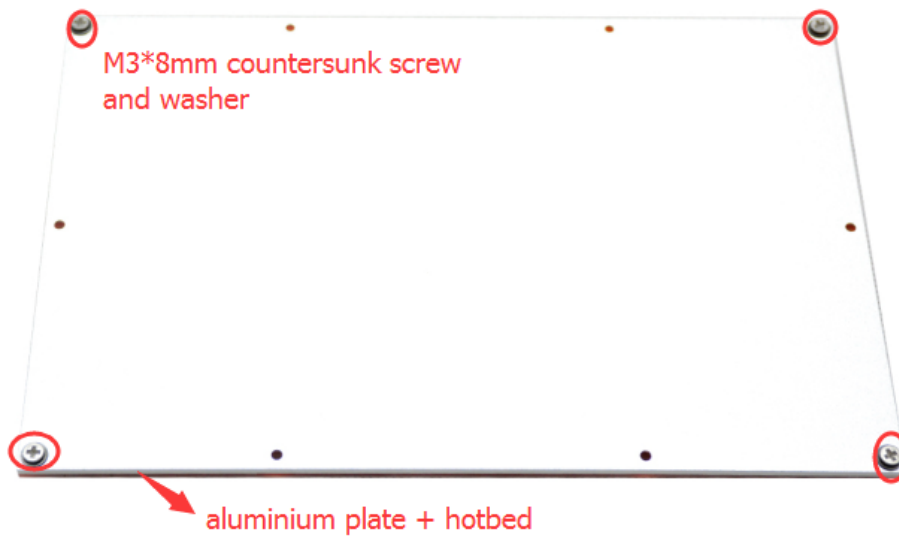
Building plate holder	2	NO. D13	
Z axis nut (attached to Z axis threaded rod)	1	NO. 12	
4x M3*8mm Countersunk screw	4	NO. 21	
4x M3*30mm Countersunk screw	4	NO. 22	
M3*20mm Screw	12	NO. 18	
M3 Washer	24	NO. 5	
Hex nut	16	NO. 11	
Wing nut	4	NO. 8	
Hotbed spring	4	NO. 24	

**Note:** Set the soldered side of the hot bed downwards.

Step 1. Attach the hot bed and the aluminium plate together with 4x M3\*8mm countersunk screws, 4 washers and 4xM3 hex nuts.

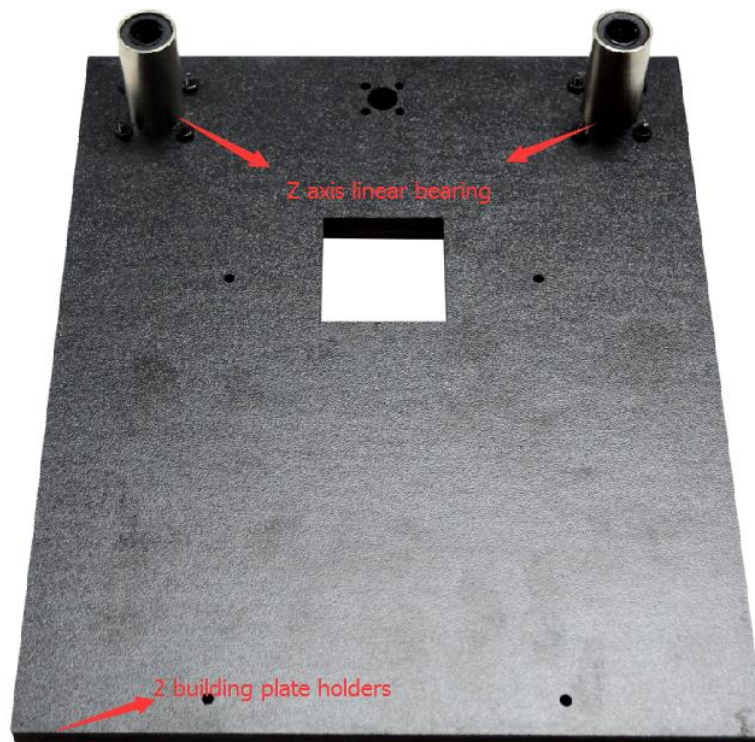
The assembly order is as follows:

4xM3\*8mm countersunk screws—aluminium plate—hot bed—4 washers—  
4xM3hex nuts



Step 2. Insert 2 linear bearings into the corresponding holes of the two building plate holders.

Step 3. Fix the two linear bearing tightly on the holders with 8xM3\*20mm screws, 8 washers and 8xM3 hex nuts.



Step4. Attach the Z axis nut to the bottom of the holders with 4xM3\*20mm

screws, 4xM3 hex nuts and 4x M3 washers.



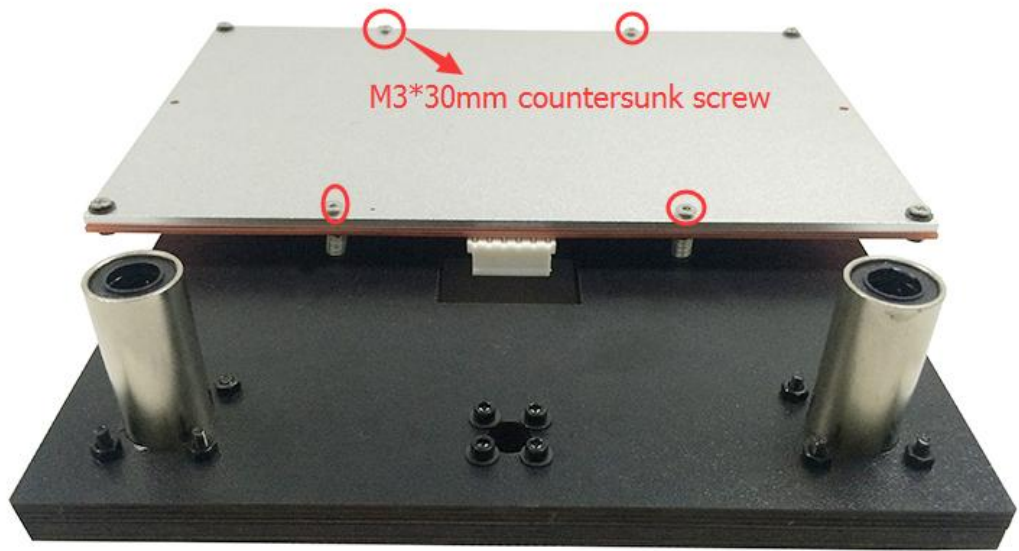
Step 5. Join the aluminium plate, hot bed and the building plate holders together with 4xM3\*30mm countersunk screws, 4xM3 square nuts, 4 springs, 4 washers and 4 wing nuts.

**Note: Do not fasten the wing nuts too tightly.**


The assembly order is as follows:

4xM3\*30mm countersunk screws—aluminium plate—hot bed—4xM3washers  
—4 springs—4xM3washers—2 building plate holders—4 wing nuts








#### 4. Assemble X axis

Required parts	Required number	Part ID	Pic.
Stepper motor	1	NO. 50	
Pulley	2	NO. 31	
Linear bearing	8	NO. 26	
Extruder carriage	1	NO. P3	
Driving wheel carriage	1	NO. P1	
Driven wheel carriage	1	NO. P2	
X axis rod	2	NO. 2	
Ball bearing	2	NO. 27	
Driven wheel shaft	1	NO. 30	

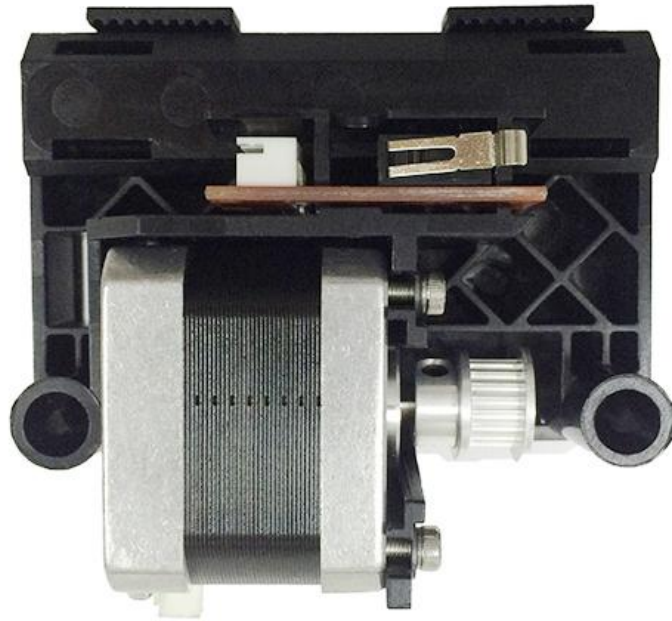


Endstop	1	NO. 40	
M3*8mm Screw	4	NO. 15	
M3 Washer	4	NO. 5	

Step 1. Assemble the driving wheel carriage.

- a. Insert 2 linear bearings into the grooves of the driving wheel carriage.
- b. Insert the endstop into the driving wheel carriage. Note the direction of the endstop.
- c. Fix the pulley on the stepper motor shaft, with the threaded part up.
- d. Fix the motor to the driving wheel carriage with 4xM3\*8mm screws and 4 washers (with the connector downwards).





Step 2. Assemble the driven wheel carriage.

- a. Insert 2 linear bearings into the grooves of the driven wheel carriage.
- b. Take the driven wheel shaft. First, loosen the set screws in the pulley and thread the driven wheel shaft through the pulley. Subsequently, attach one ball bearing on each side of the shaft.
- c. Insert the assembled pulley into the driven wheel carriage from the back.





Step 3. Assemble the extruder carriage.

Insert the remaining 4 linear bearings orderly into the extruder carriage.



Step 4. Connect the X axis.

First, fit the two X axis rods through the linear bearings on the extruder carriage.

Then insert one end of the two X axis rods into the corresponding holes of the driven wheel carriage.

Finally, insert the other end of the two rods into the holes of the driving wheel carriage.





**Note:**

1. Note the direction of the 3 carriages, the belt grooves on the extruder carriage must be aligned with the pulleys on the driving wheel and the driven wheel carriage.
2. If the holes are not perfectly fit, please trim them with a file.
3. It is suggested that you use soft headed hammer to hit the two ends of the rods, making sure that the rods are fully inserted into the holes.



### 5. Mount Y Axis Front and Rear Rods

Required Parts	Required Number	Part ID	Pic.
Y axis rod	2	NO. 3	

			
Locking ring	4	NO. 6	
Pulley	5	NO. 32	
Belt loop	1	NO. 34	

The following part shows how to assemble Y axis front and rear rods.

### Front rod

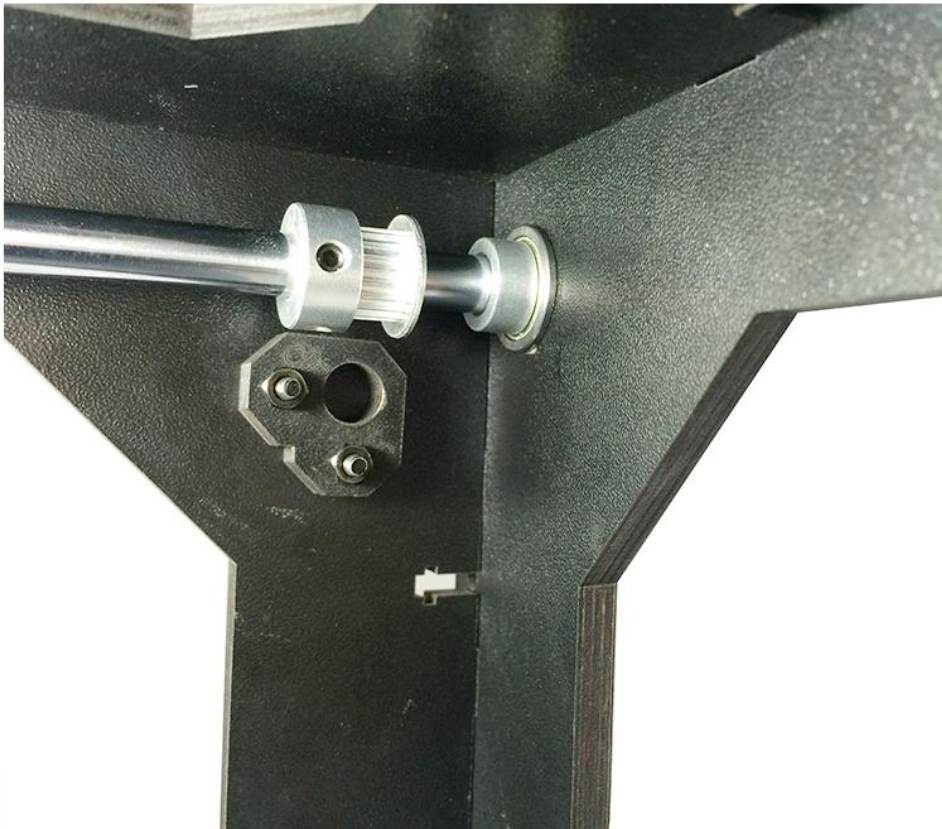
a. Prepare the rod

Y axis front rod: locking ring—pulley—Pulley—locking ring

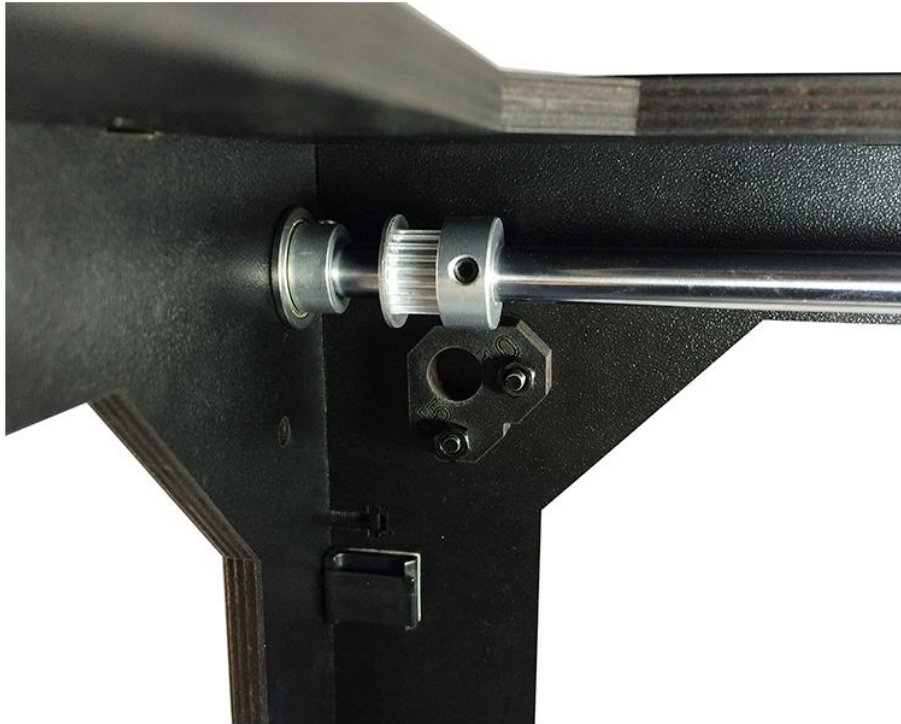




b. Fit the rod into the ball bearings of the right side panel and left side panel. Fasten the locking ring.



Right



Left

**Y axis rear rod:**

a. prepare the rod

locking ring—pulley—pulley—belt loop—pulley—locking ring



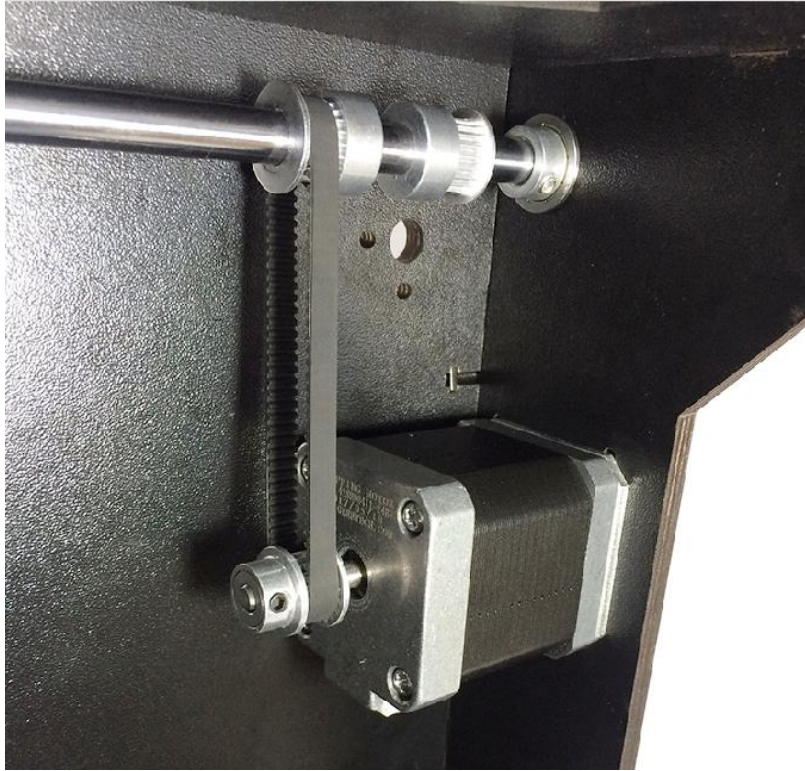




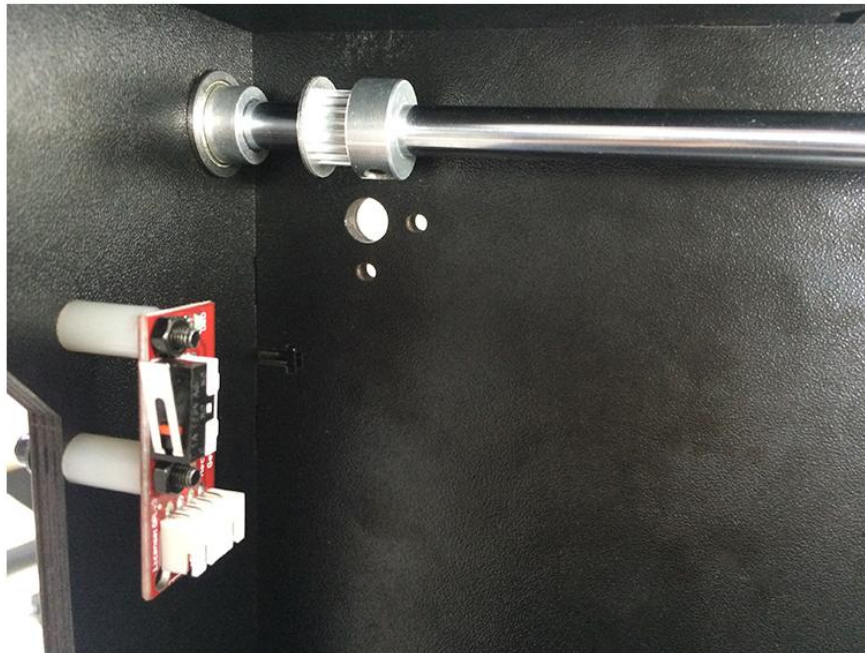
Note: Pay attention to the direction of each pulley, the two pulleys are in opposite directions.

- b. Put the belt loop to the right end of the rod with two pulleys.
- c. Fit the rod into the ball bearings of the right side panel and left side panel. Fasten the locking ring.
- d. Loop the belt around the pulley on the rod and the Y axis motor. Make sure the two pulleys are aligned.

If the belt is too loose or too tight, you can adjust the placement of the Y axis motor.





Right



Left

## 6. Connect Y Axis Left and Right Rods with X axis

Required parts	Required number	Part ID	Pic.
----------------	-----------------	---------	------

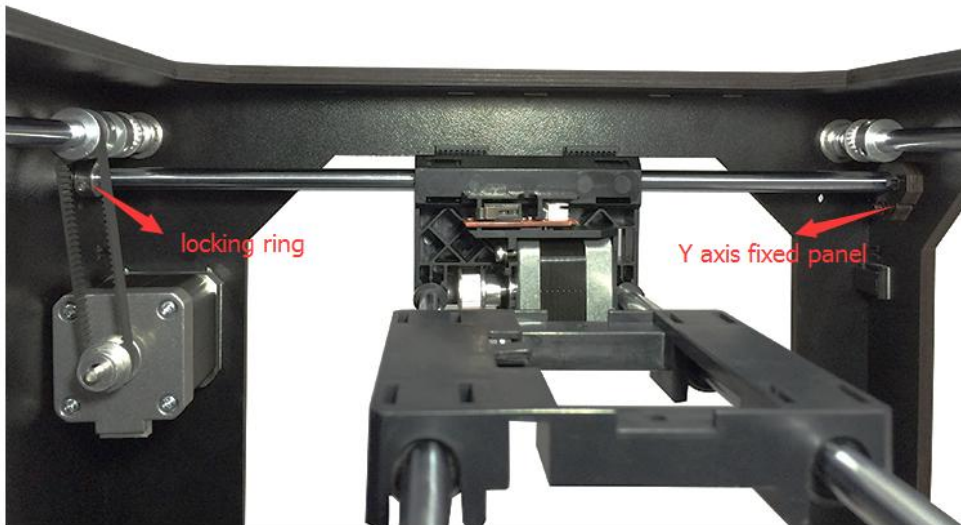
Y axis rod	2	NO. 1	
Locking ring	2	NO. 6	

Insert the Y axis rods orderly through the holes on the rear panel, 2 locking rings (one for each rod), the linear bearings on X axis driving wheel carriage and driven wheel carriage, until they reach the Y axis rod fixed panel on the front panel. Fasten the locking rings.

Connect the Y Axis left rod with the driven wheel carriage.

Connect the Y Axis right rod with the driving wheel carriage;









Right side



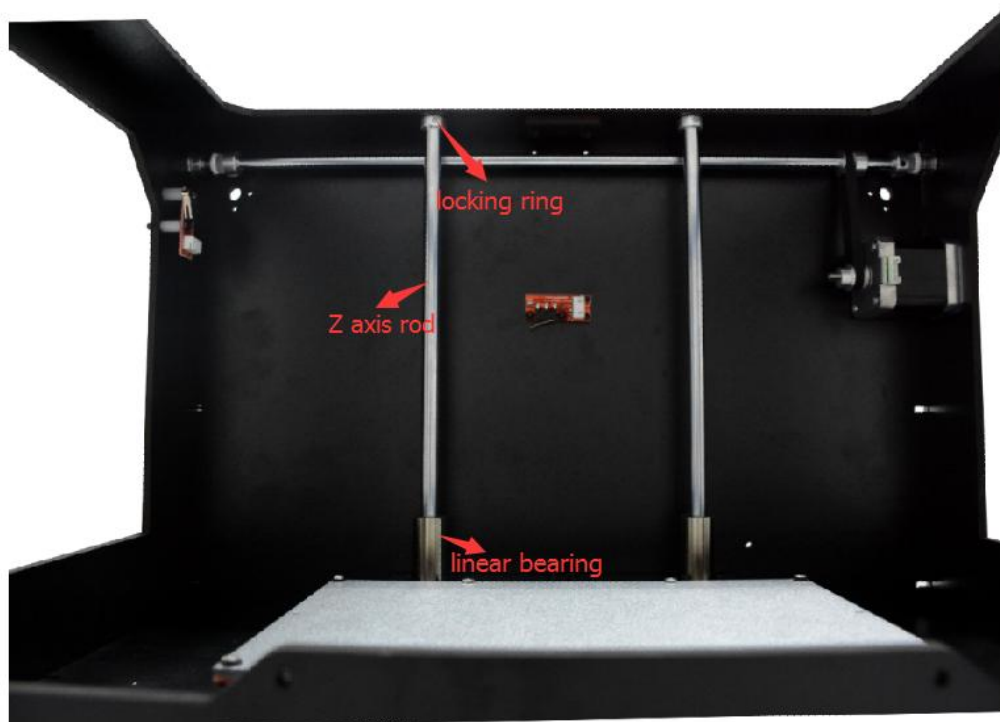
Left side

## 7. Assemble Z Axis

Required parts	Required number	Part ID	Pic.
Z axis rod	2	NO. 4	

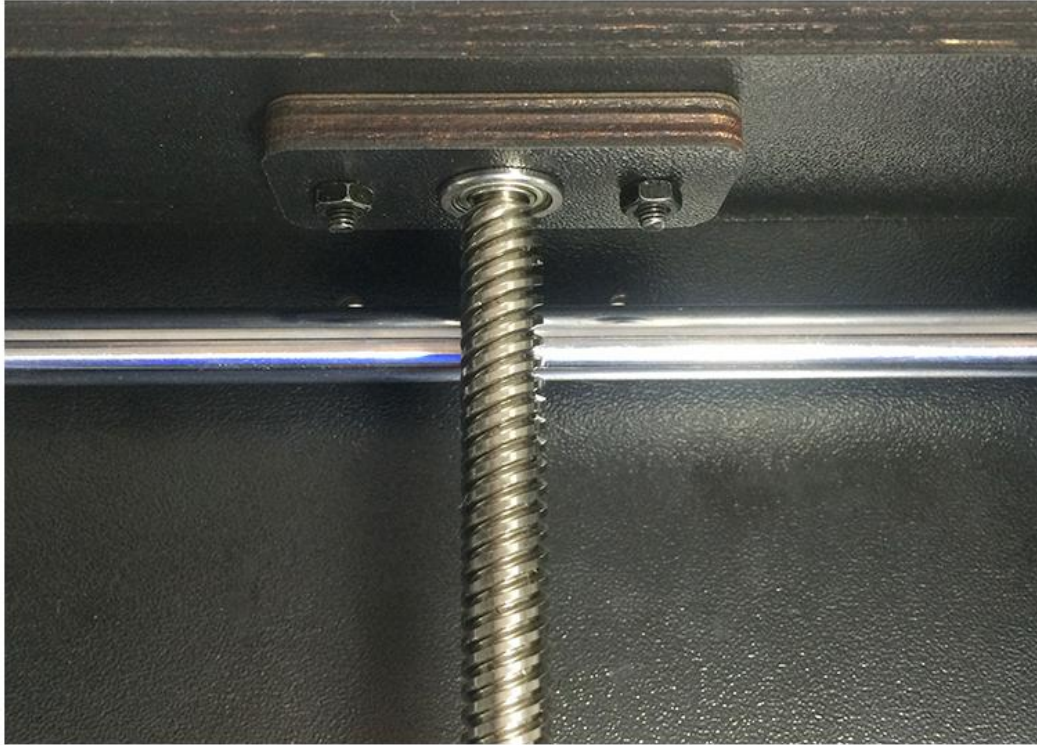
Locking ring	2	NO. 7	
Ball bearing	1	NO. 29	
Z axis threaded rod	1	NO. 52	
M3*12mm screw	4	NO. 16	
M3 Washer	4	NO. 5	

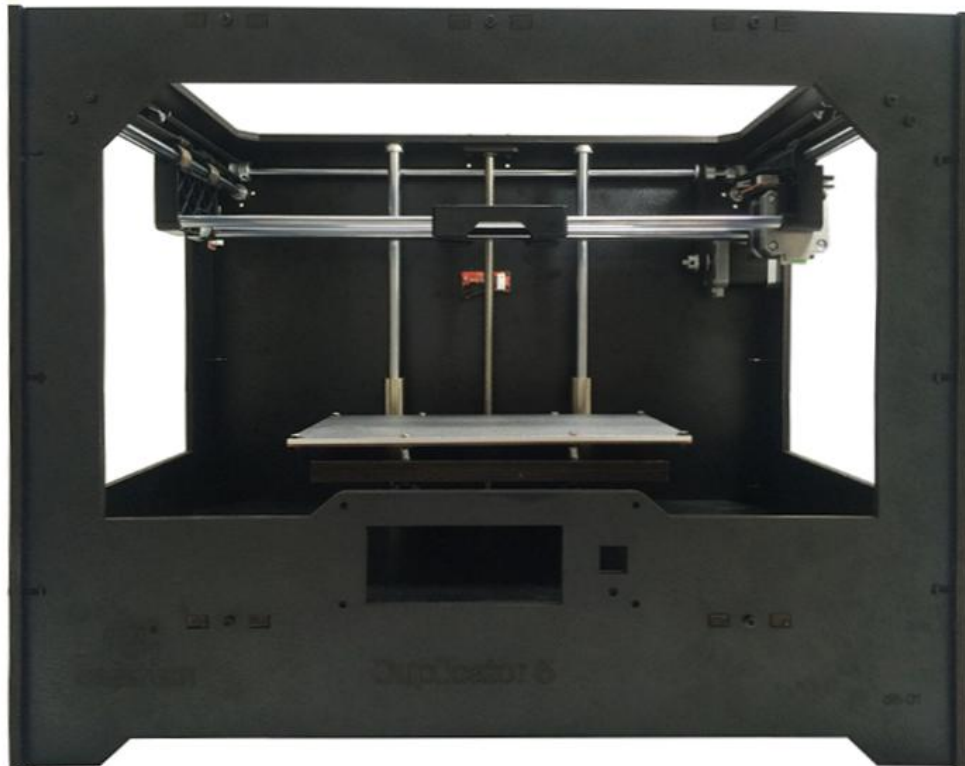
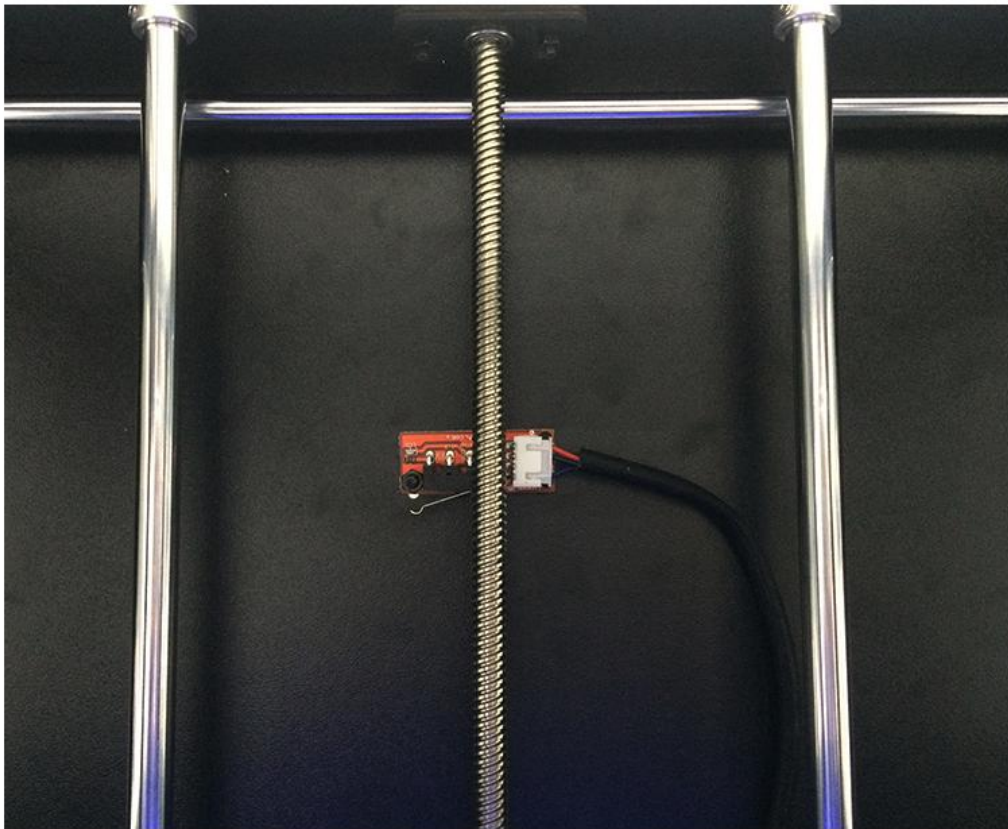
Step 1. Respectively fit the two Z axis rods into the two corresponding holes on the upper panel, two locking rings, the two linear bearings on the hotbed from the top down, until they reach the Z axis rod holder on the lower panel. Fasten the locking rings.



Step 2. Insert the Z axis threaded rod spirally from the bottom up into the


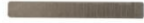
corresponding hole on the lower panel, through the Z axis nut on the hotbed and a ball bearing, until the threaded rod reaches the Z axis bearing fixed panel on the upper panel.



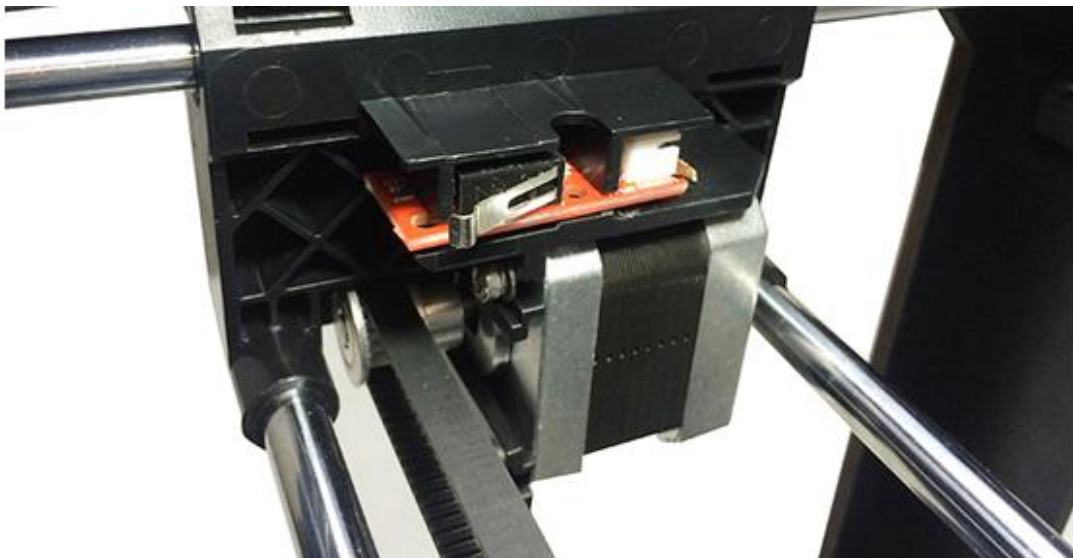


Step 3. Fix the motor tightly with 4xM3\*12mm screws and 4 washers. (Fasten the screws in a diagonal direction.)

## 8. Mount X Axis Belt

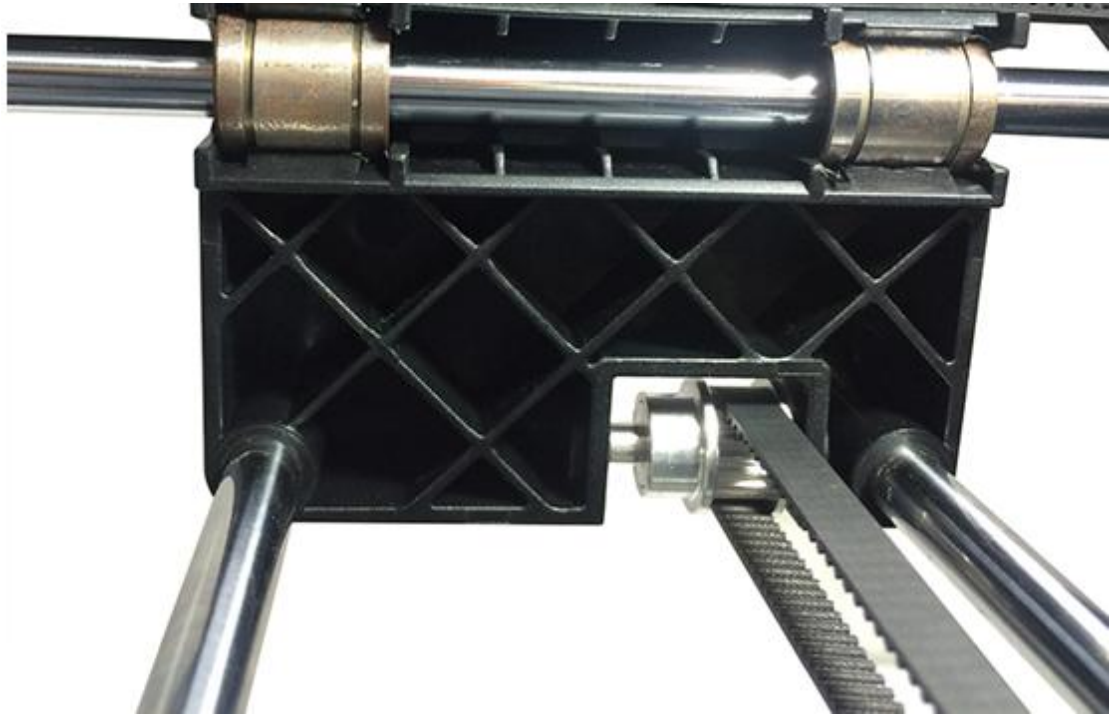
Required parts	Required number	Part ID	Pic.
Belt	1	NO. 33	
Timing belt plate	1	NO. 39	

Step 1. Loosen the 4 screws on the X axis stepper motor slightly. Loop the belt around the pulley on the driving wheel carriage from inside to outside.



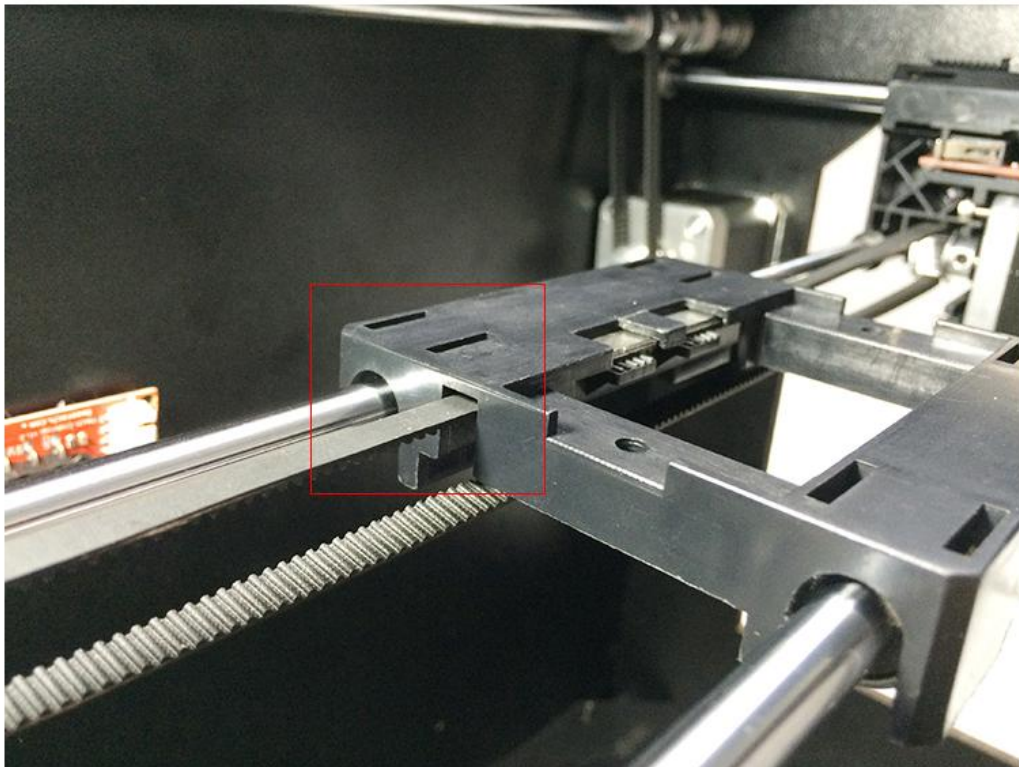
Step 2. Pull the belt from bottom up across the pulleys on the driven wheel carriage.

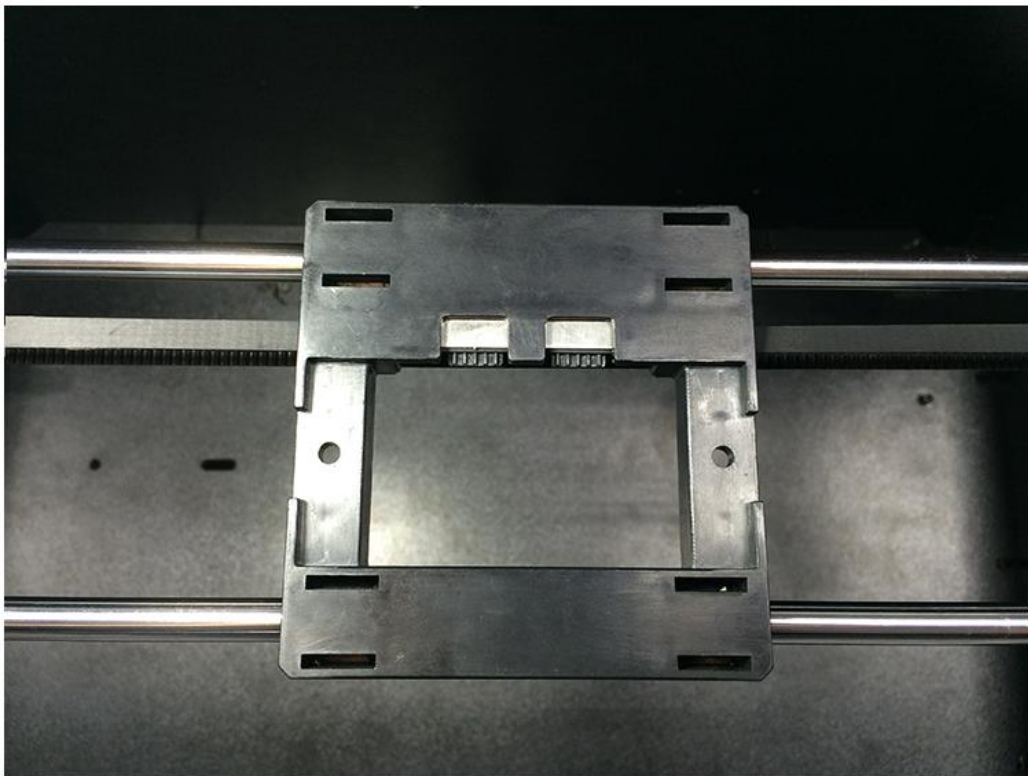
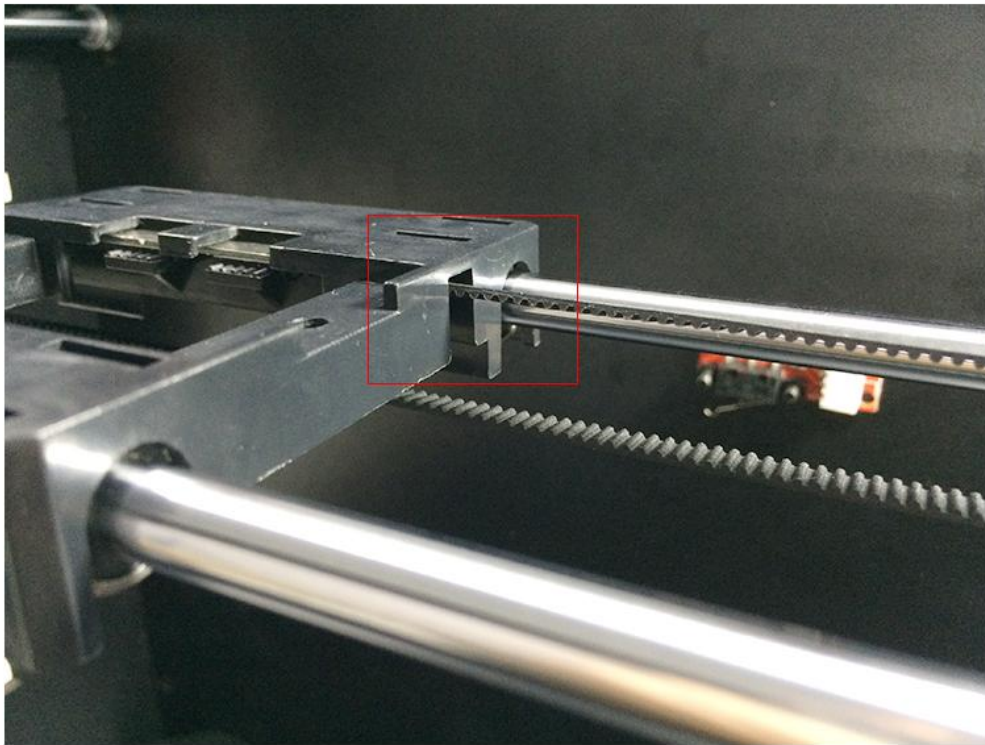




Step 3. Pull both end of the belt to the extruder carriage.

Fix the two ends of the belt into the groove on the extruder carriage respectively. Cut the spare belt. Keep the two ends of the belt are in alignment. Fasten the two ends tightly into the groove with the timing belt plate.







Step 4. Tighten the screws on the stepper motor.

**Note: Pull the belt tightly and properly to make sure it does not slid or jump gear.**

## 9. Mount Y Axis Belt

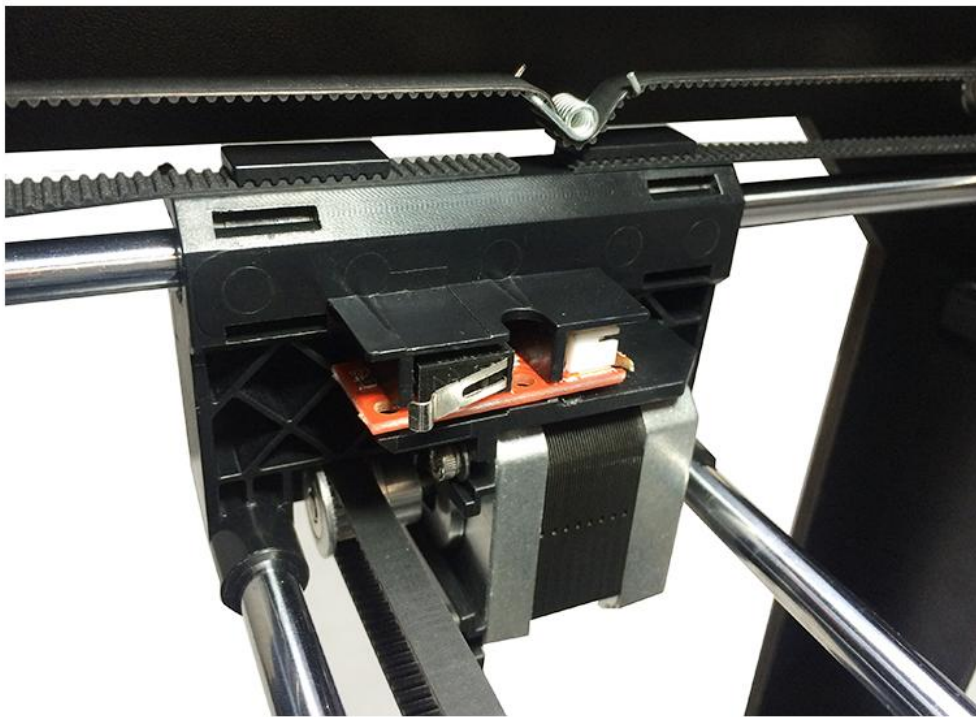
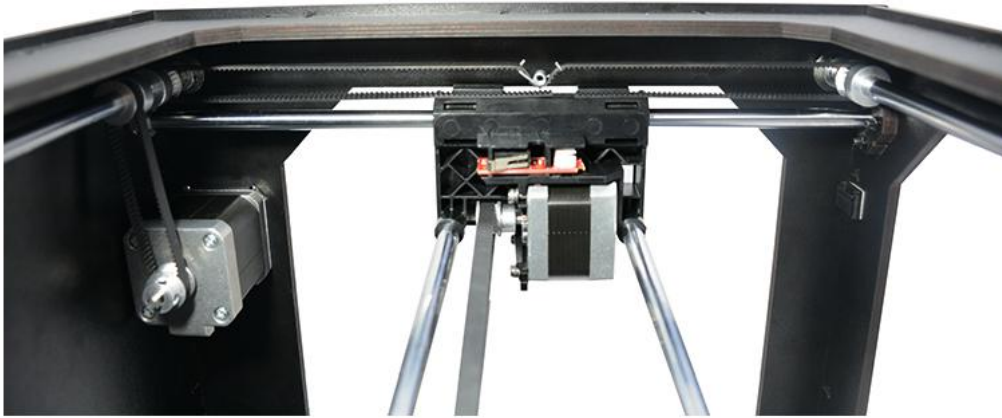
Required parts	Required number	Part ID	Pic.
Belt	1	NO. 33	
Belt spring	2	NO. 23	

Step 1. Assemble the belt on Y axis right side rod:

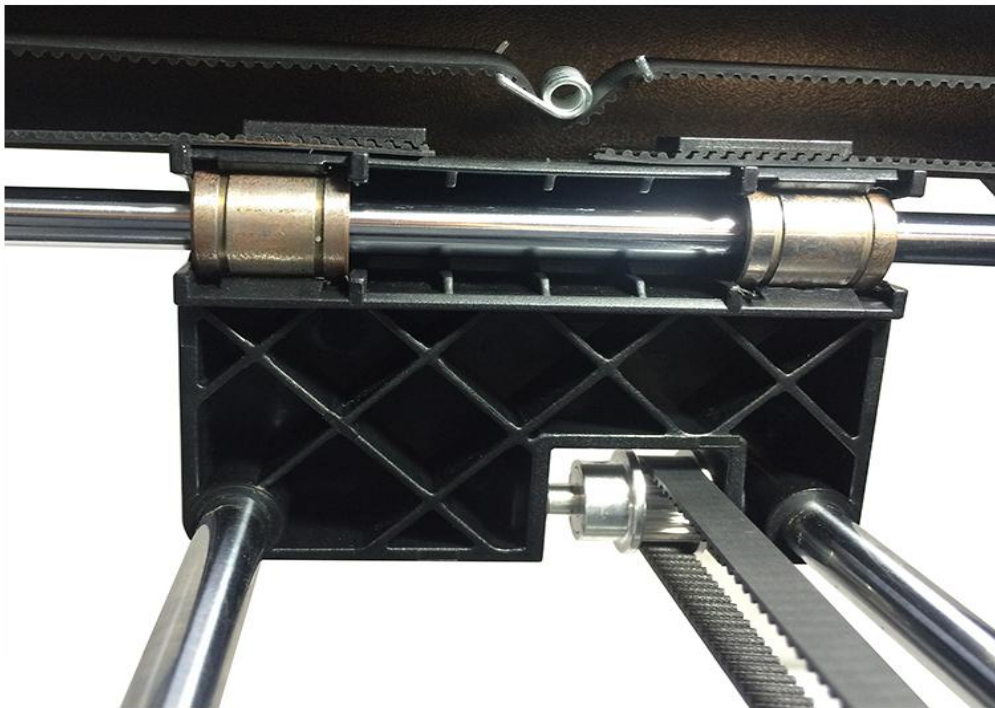
- a. Loop the belt down- top around the pulley of Y axis front rod and insert the end into the groove on the driving wheel carriage.
- b. Pull the belt to the pulley of Y axis rear rod, loop the belt from top -down around the pulley.
- c. Taut the belt, fit the belt spring on the middle of the upper belt.

**Note: At first, move the X axis to the middle of the building platform. Subsequently, fit the belt ring on the upper belt approximately in the middle of the belt.**









- d. Insert the other end of the belt into the groove of X axis driving wheel carriage. Use a pair of scissors to cut the belt in a proper way. Fasten the set screws of the front and rear pulley. Please make sure that the two pulleys are parallel and in line with each other.



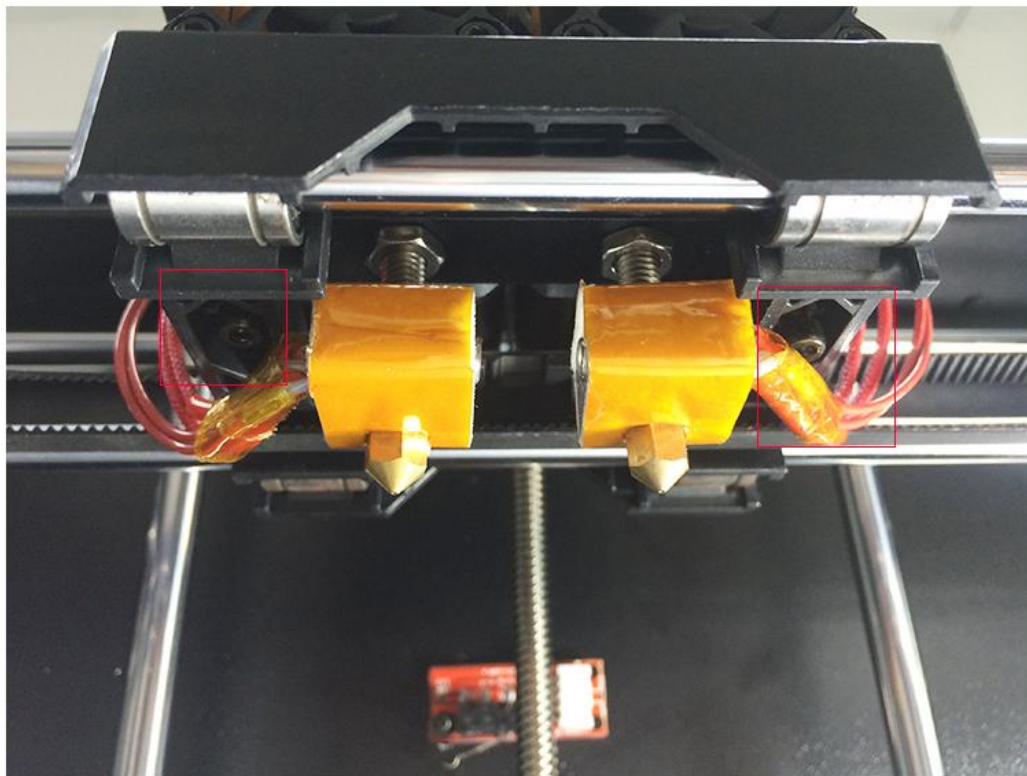
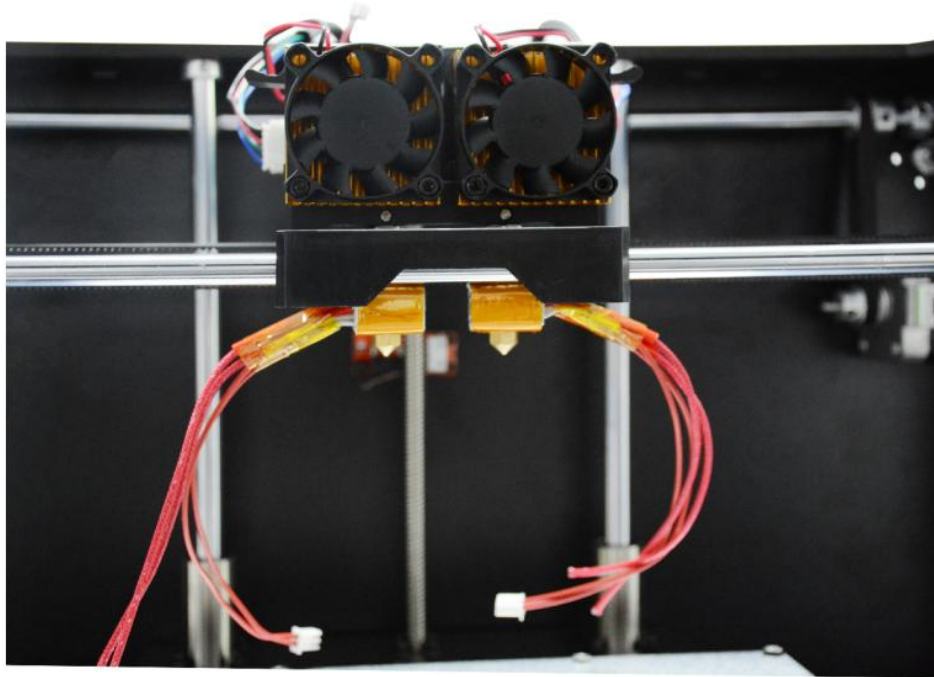
Step 2. Assemble the belt on Y axis left side rod: the same with the above assembly method.



## 10. Mount the Extruder

Required parts	Required number	Part ID	Pic.
Extension board cover	2	NO. 57	
Extension board	2	NO. 55	
Hex copper spacer	4	NO. 56	
M3*10mm Screw	2	NO. 20	
M3*6mm Screw	4	NO. 14	
M3 Washer	4	NO. 5	
Dual extruder	1	NO. 54	
Extruder wire	2	NO. 58	
Extruder motor wire	1	NO. 61	
Extruder motor wire	1	NO. 62	

Step 1. Thread the thermistor wire and the heating wire through the extruder carriage. Fix the dual extruder on the carriage with 2xM4\*10mm screws.



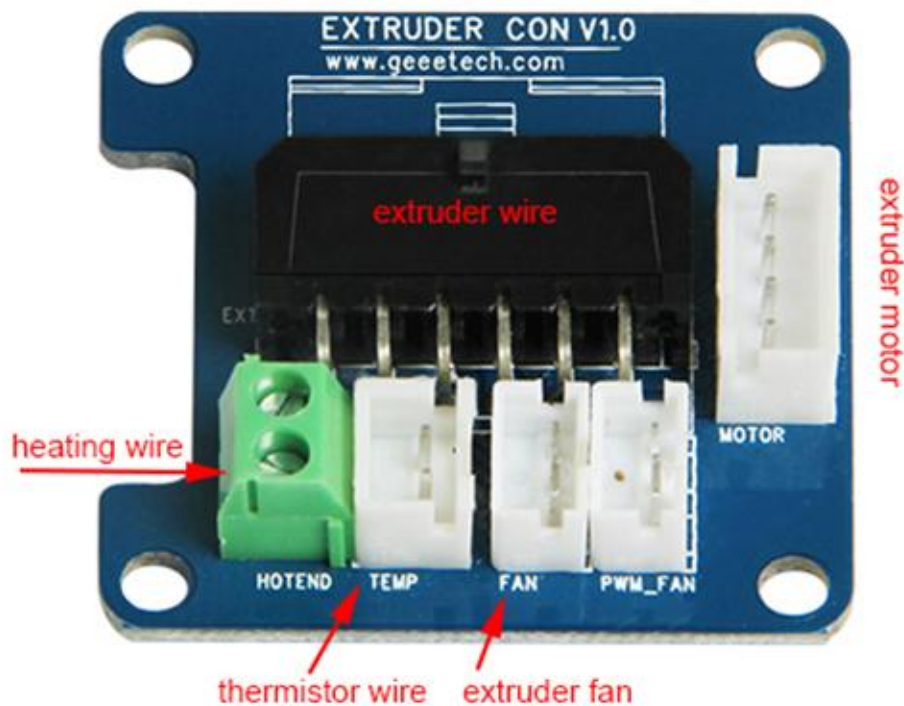
Step 2. Take 2 extruder motor wires and connect the 6 pin ports with the two

motors. Thread the thermistor wire for the hot bed, the heating wire, the fan wires and 2 extruder motor wires from the bottom up through the carriage for the extension board. Place the two extension boards on the carriage.

Step 3. Connect the 4-pin port of motor wire with the extension board (the port labeled with [motor]). Then connect the fan wire with the middle port, the thermistor wire with the right one and the heating wire with the green one.

**Note:** Loosen the screws on the green connection port, insert the heating wire and tighten the screws. Please tailor the heating wire to expose the conductive part.

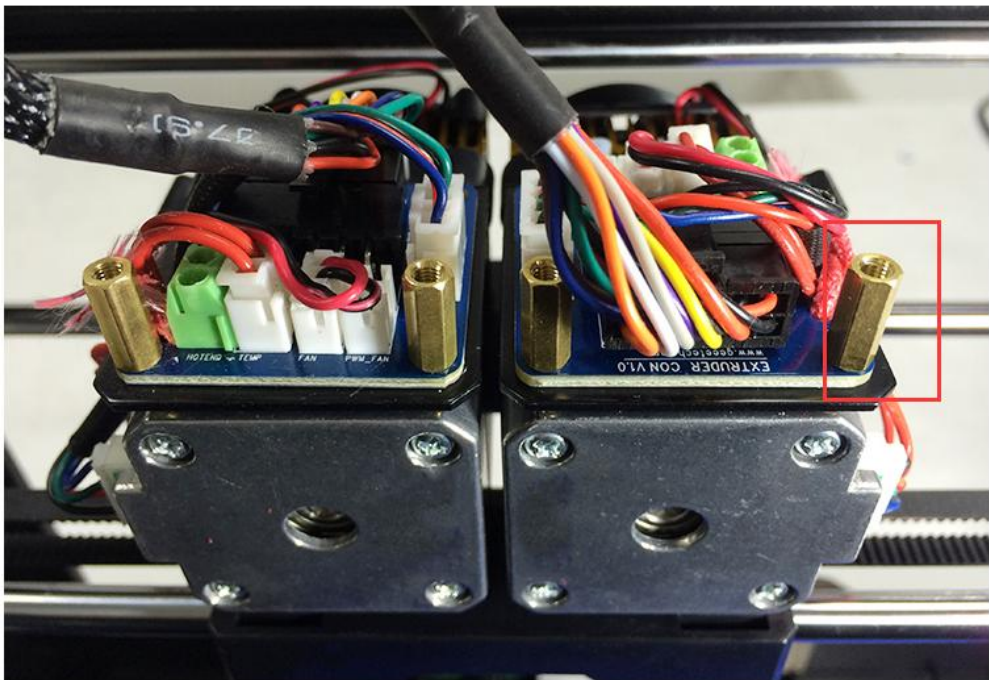
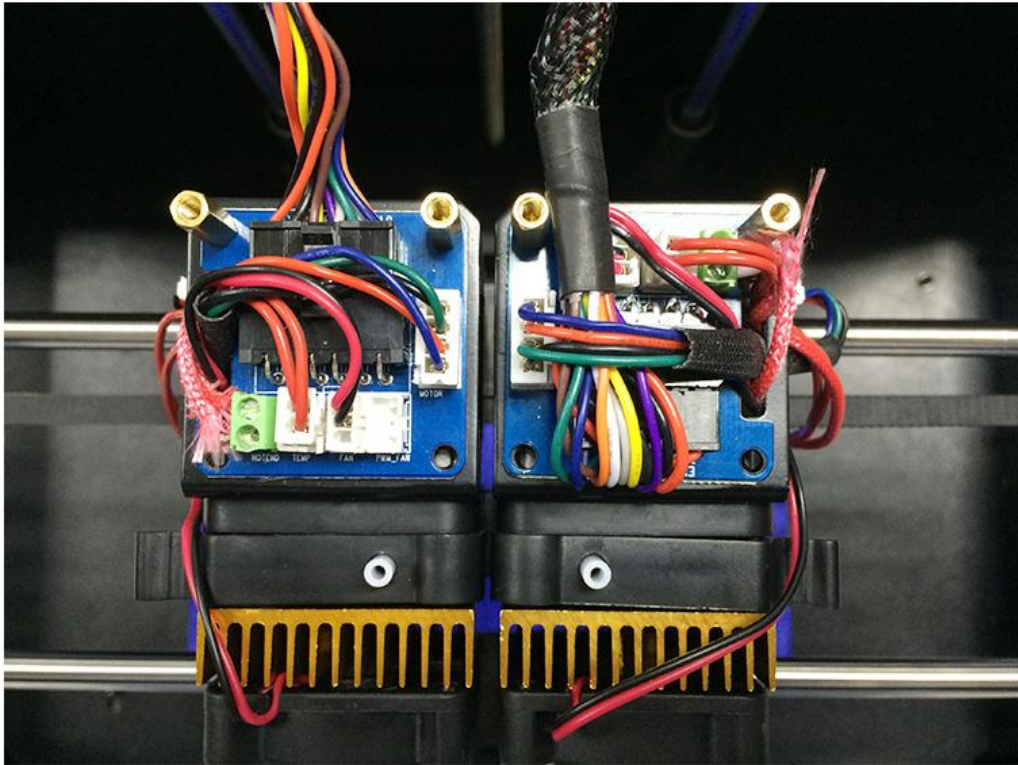
The same wiring procedures apply to the other extruder.

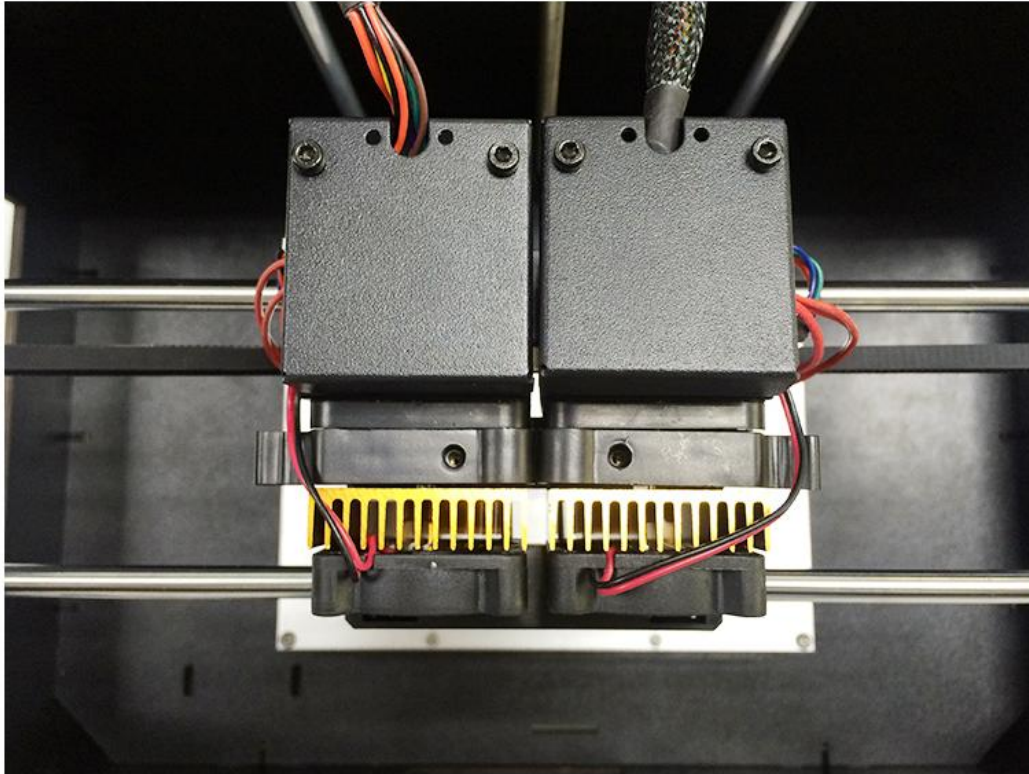


Step 4. Attach the two extension boards to their carriage with 4 hex copper spacers. (Each board with 2 hex copper spacers.)

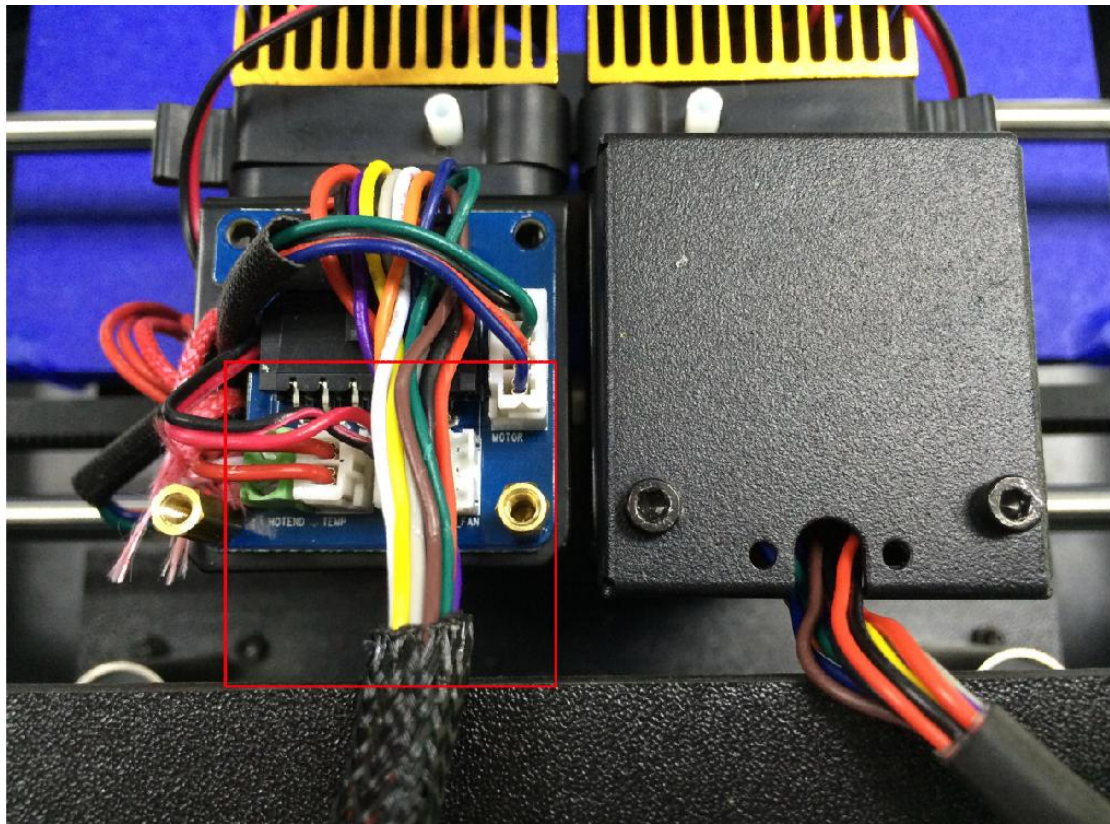
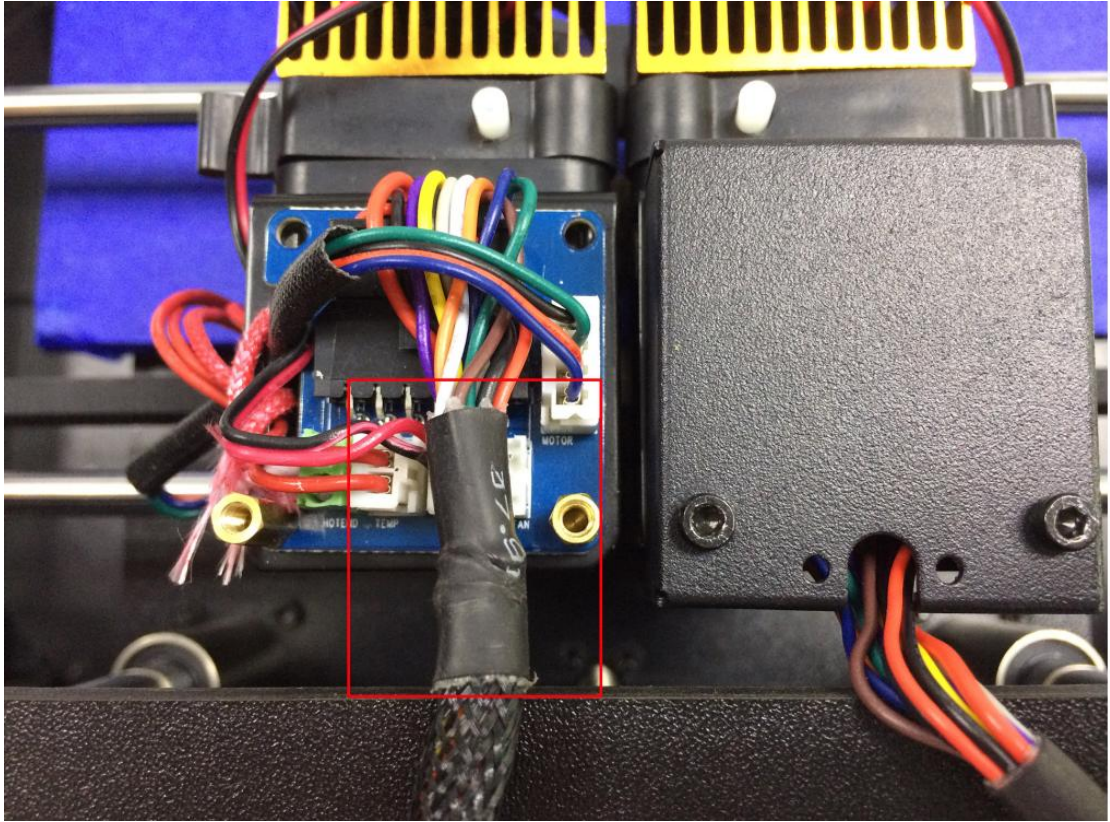
Step 5. Connect the 2 wires (i.e. extruder wire) for the dual extruder and control board with the extension board. Fix the extension board covers on the board with 4x M3\*6mm screws and 4xM3 washers.

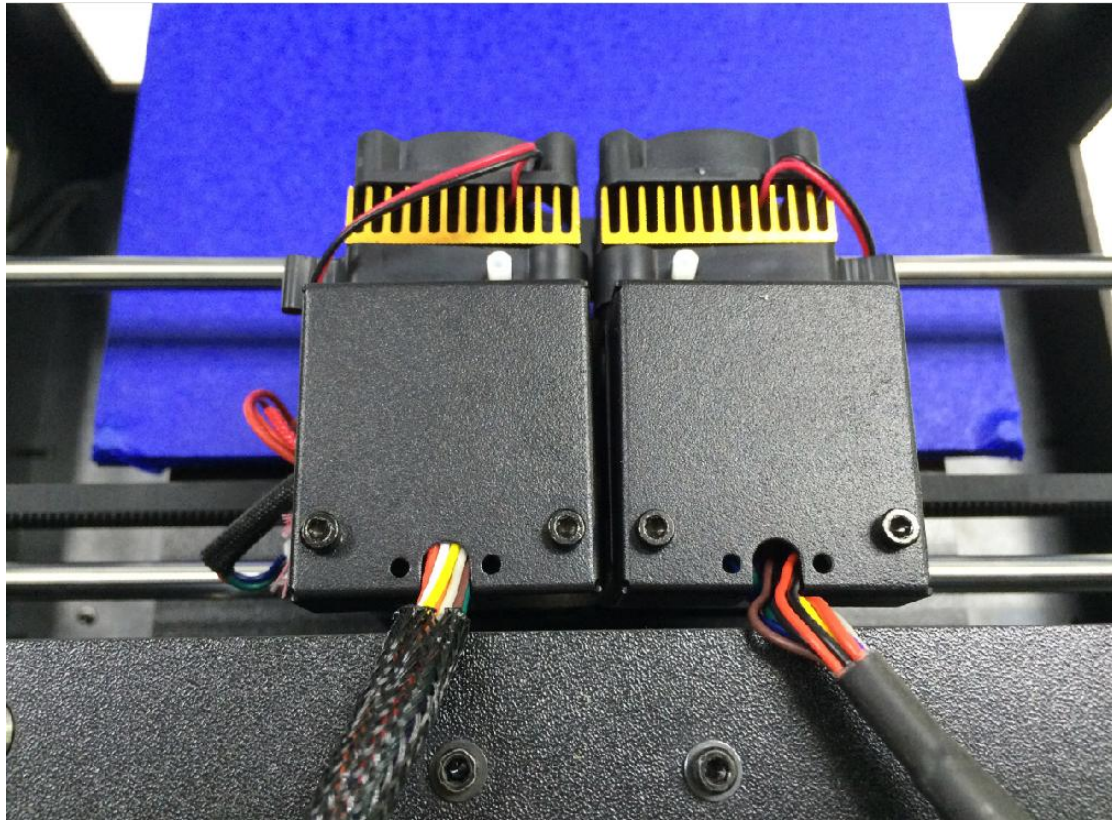











Note: After your assembly, if the plastic insulated part of the extruder wire would influence the normal use of Y axis endstop, please follow the below pictures to make some modification.



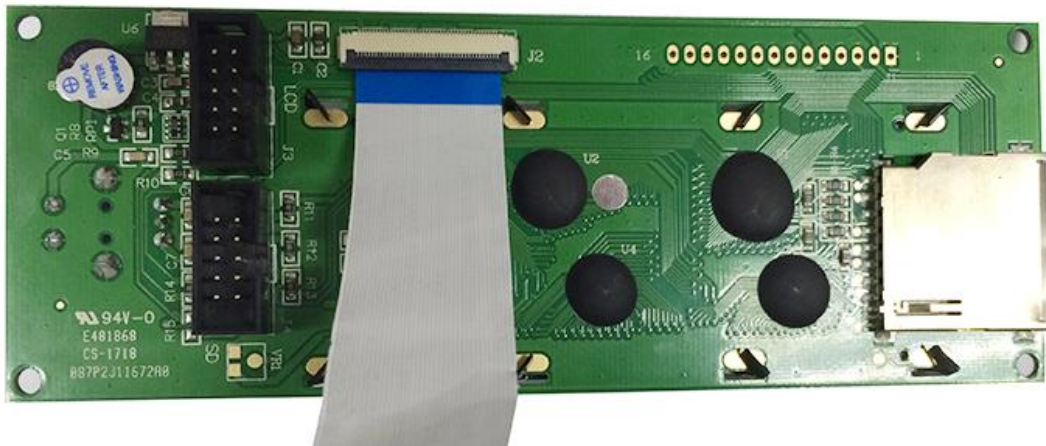


## 11. Mount the LCD Control Panel

Required parts	Required number	Part ID	Pic.
LCD 2004	1	NO. 45	
Knob	1	NO. 46	
M3*16mm Screw	4	NO. 17	
Hex nut	4	NO. 11	
M3 Washer	4	NO. 5	

Step 1. Connect the LCD cable with the port on the back of LCD control panel.

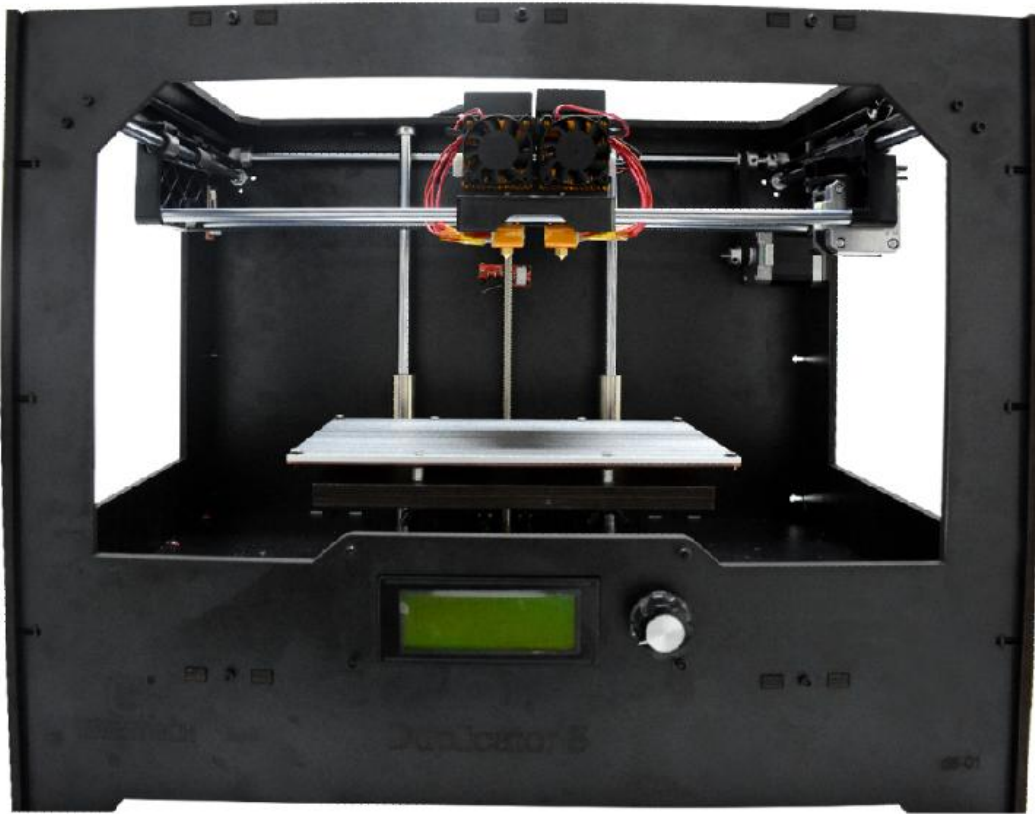
Thread the wire through the corresponding rectangular hole on the lower panel.






Step 2. Attach the LCD control panel to the inside of the front panel with 4xM3\*16mm, 4xM3 hex nut and 4xM3 washers. (Tighten the screws in a diagonal direction.)





Step 3. Loosen the knob screws slightly. Fit the knob with the screw attached to the flat part of the metal handle, and tighten the screw.



## 12. Mount the power supply unit

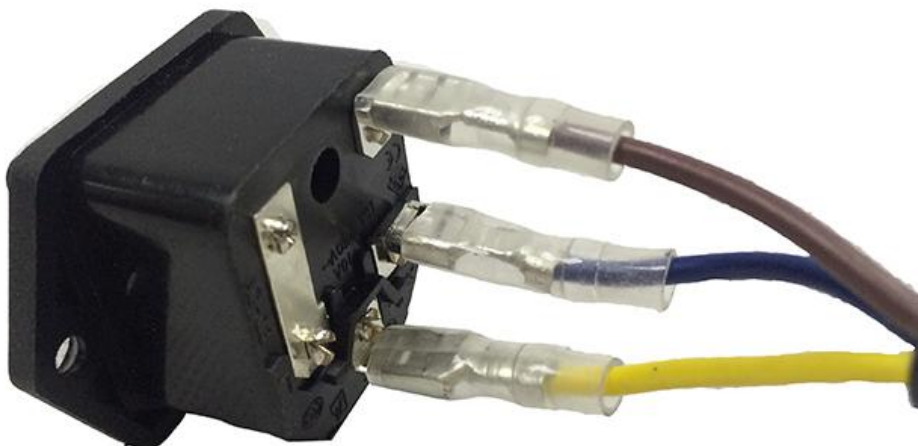
Required parts	Required number	Part ID	Pic.
Power supply unit	1	NO. 44	
Power cable	1	NO. 63	
M2.5*12mm Screw	2	NO. 13	

M2.5 Nut	2	NO. 9	
M4*10mm Screw	4	NO. 20	

Step 1. Attach the power socket to the second hole on the right bottom corner of the lower panel with 2xM2.5\*12mm screws and 2xM2.5 nuts. Insert the power switch into the hole on the right.




Step 2. Connect the ground wire (yellow), zero line (blue) and live wire (brown) with the power socket.



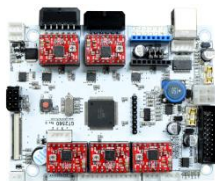


Step 3. Mount the power supply unit on the bottom of the lower panel with

4xM4\*10mm screws.




Step 4. Connect the other three wires, that is, ground wire (yellow), zero wire (blue) and live wire (brown), to the power supply unit. Connect live wire (brown) with the “L” port, zero wire (blue) with the “N” port and ground wire with the  port.



### 13. Mount the Control board

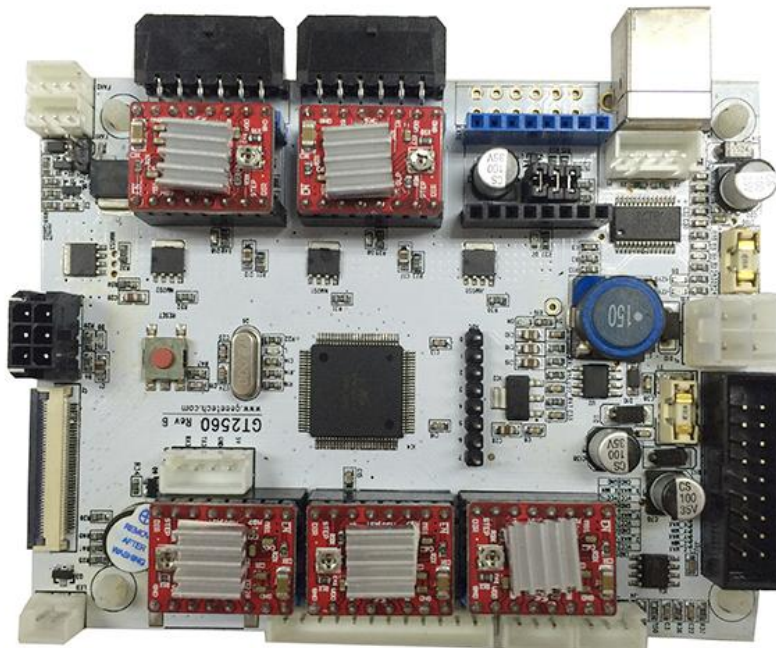
Required parts	Required number	Part ID	Pic.
Control board	1	NO. 41	
Spacer	4	NO. 37	
Heat sink	5	NO. 42	

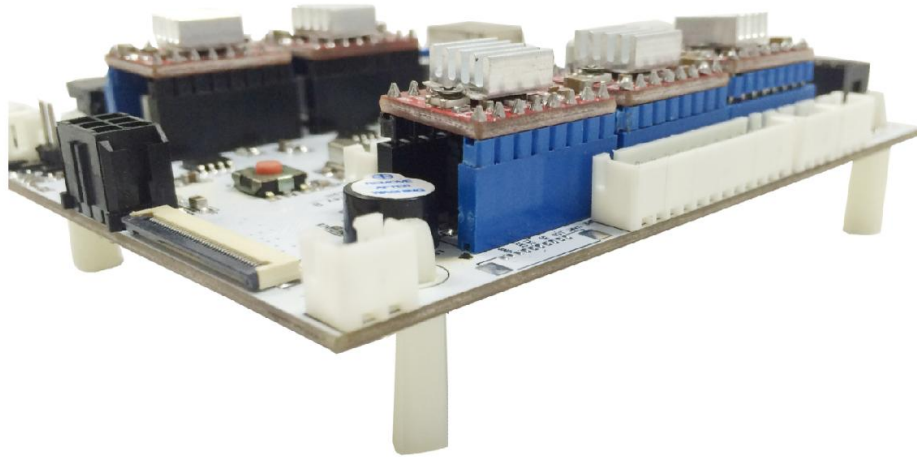


Sticker	2	NO. 43	
M3*16mm Screw	4	NO. 17	
M3 Washer	4	NO. 5	

Step 1. Cut 5 rectangular scraps of the stick according to the size of the heat sink. Stick the 5 scraps to 5 heat sinks orderly. Subsequently, attach the heat sinks to 5 A4988 chips respectively.

Step 2. Insert 4 spacers into the 4 corresponding corners on the control board.

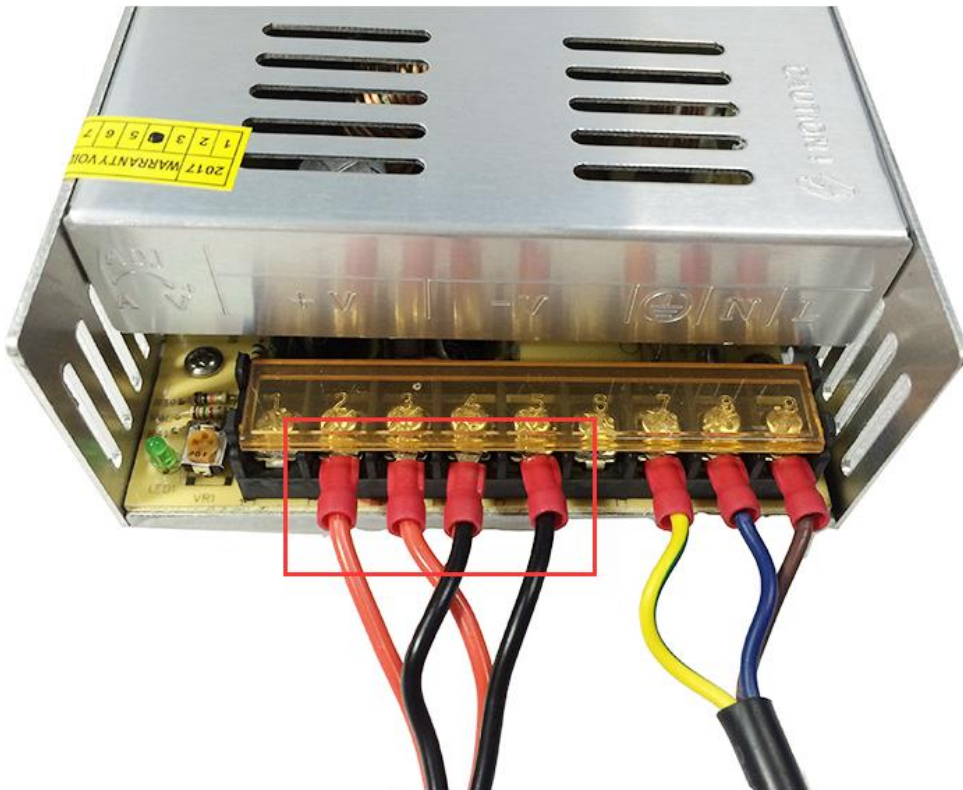
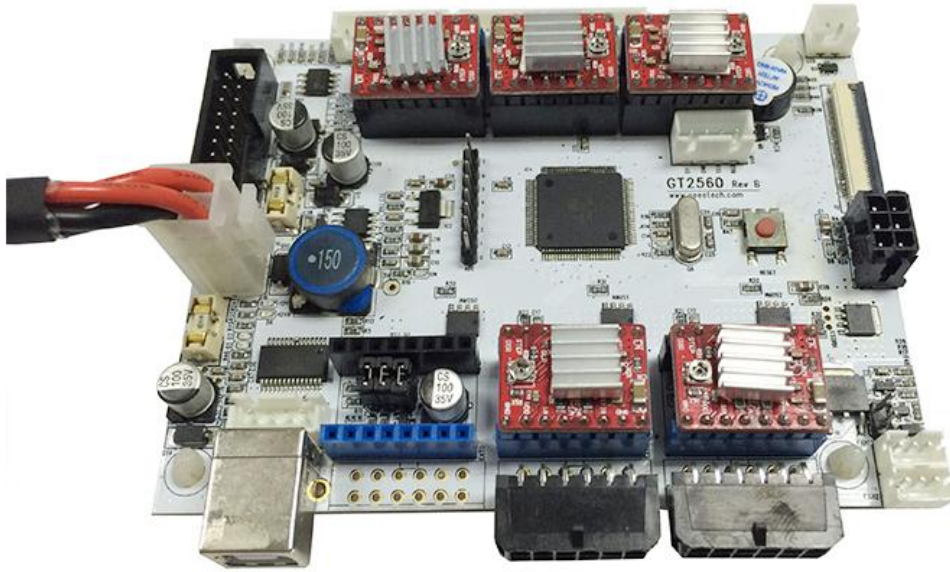


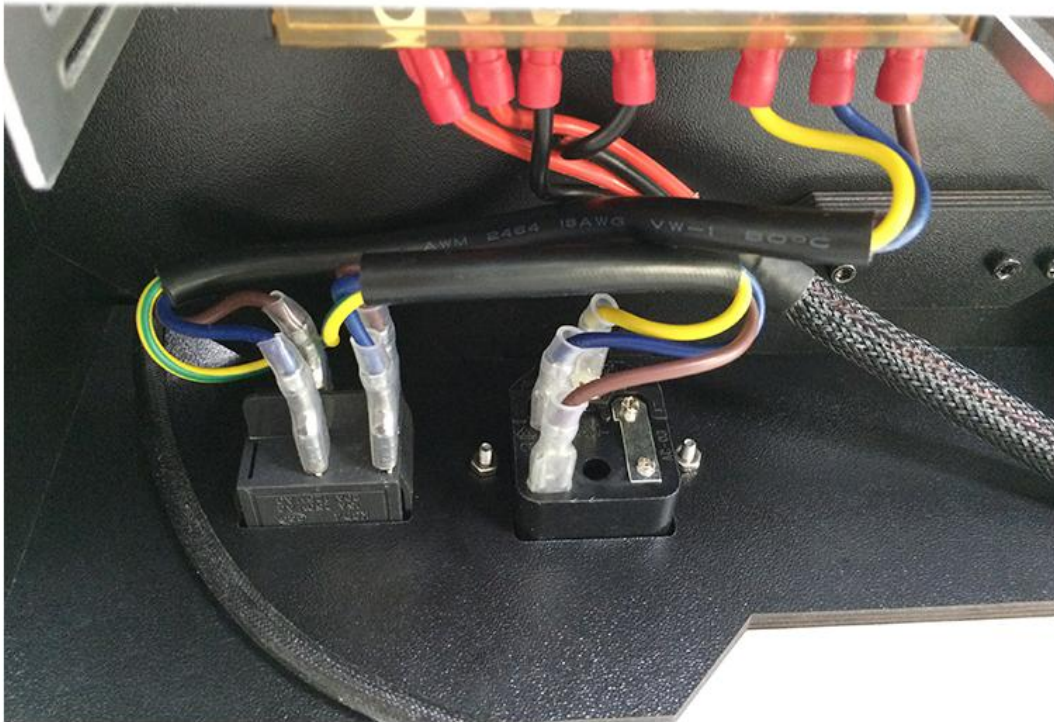


Step 3. Fit the protruding side of the control board into the sinks on the lower left part of the rear panel. Mount the control board on the bottom of the lower panel with 4xM3\*16mm screws and 4xM3 washer.



Step 4. Connect the control board with power supply unit. Please distinguish the anode wire from the cathode one (red-anode, black-cathode).

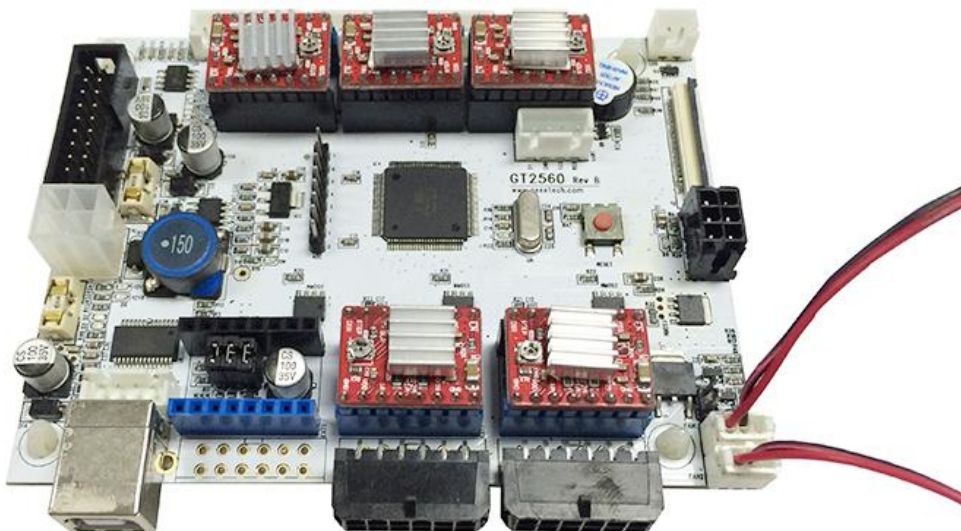




## 14. Wiring

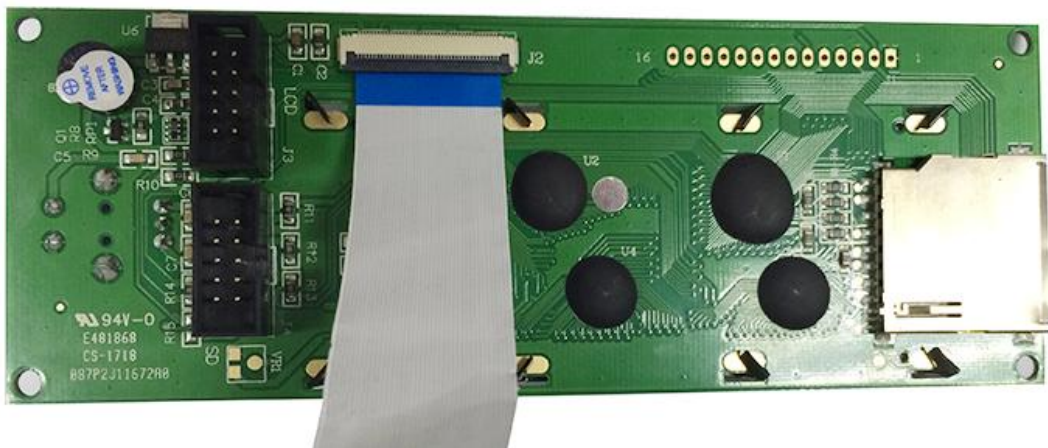
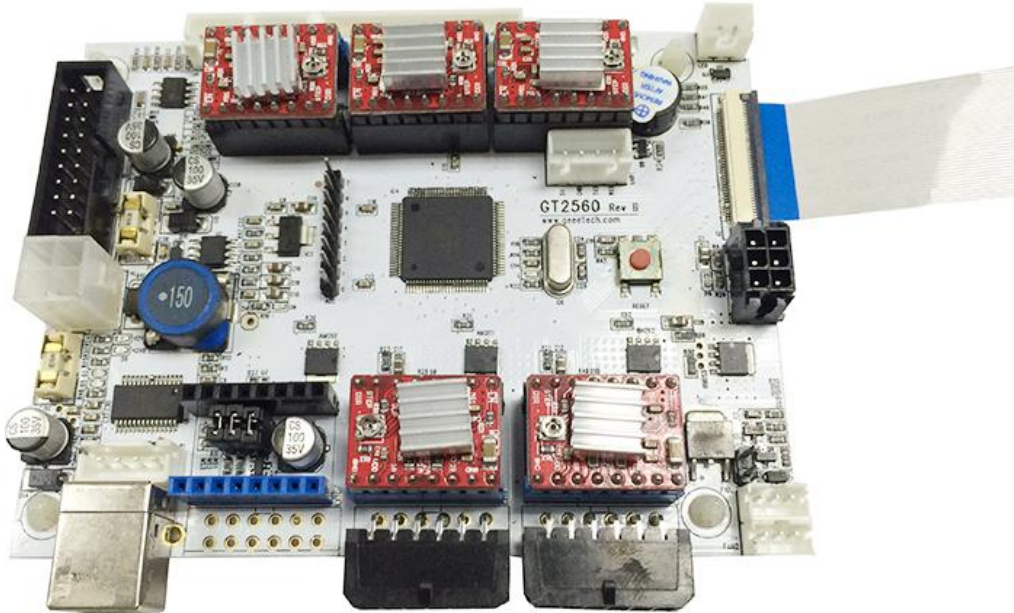
### 14.1 Connect the Fan wires

Connect the two fan wires with the corresponding ports on the control board.




## 14.2 Connect the LCD Wire

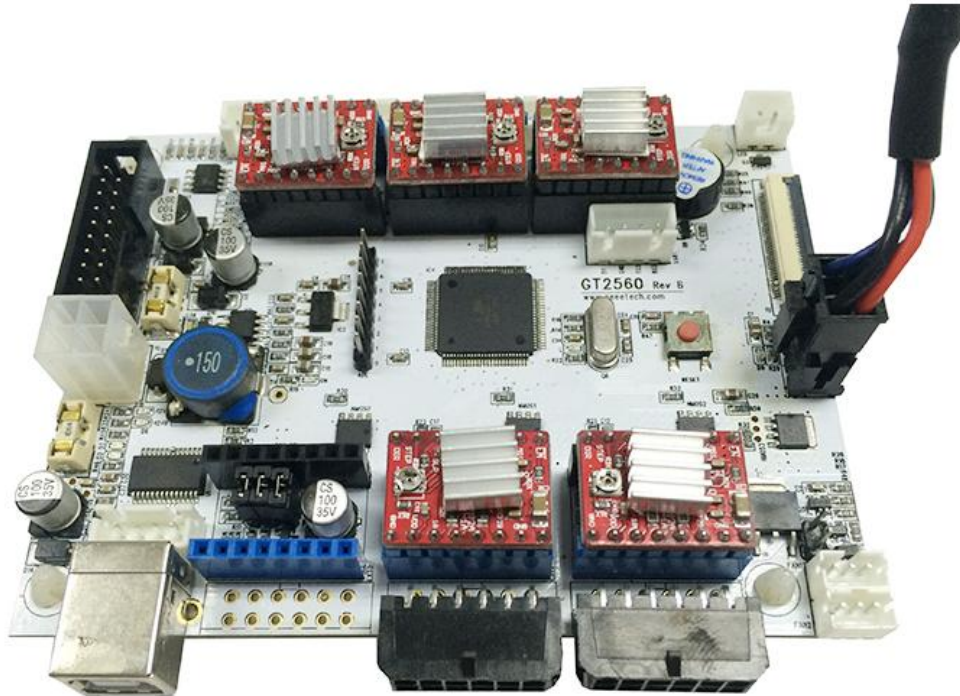
Fix the LCD wire on the control board, with the blue side on the top.



## 14.3 Connect the hotbed wire


Required parts	Required number	Part ID	Pic.
Hotbed wire	1	NO. 64	

Thread the hotbed wire through the hole on the right of the control board and the hole on the building plate holders. Fix the wire onto the connection port of the hotbed.

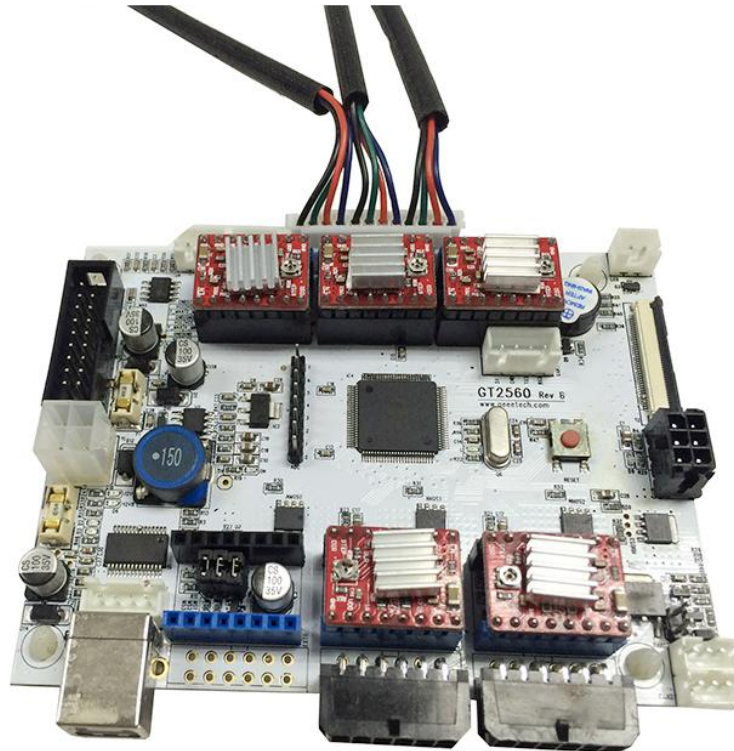




#### 14.4 Connect the X/Y/Z Motor Wires

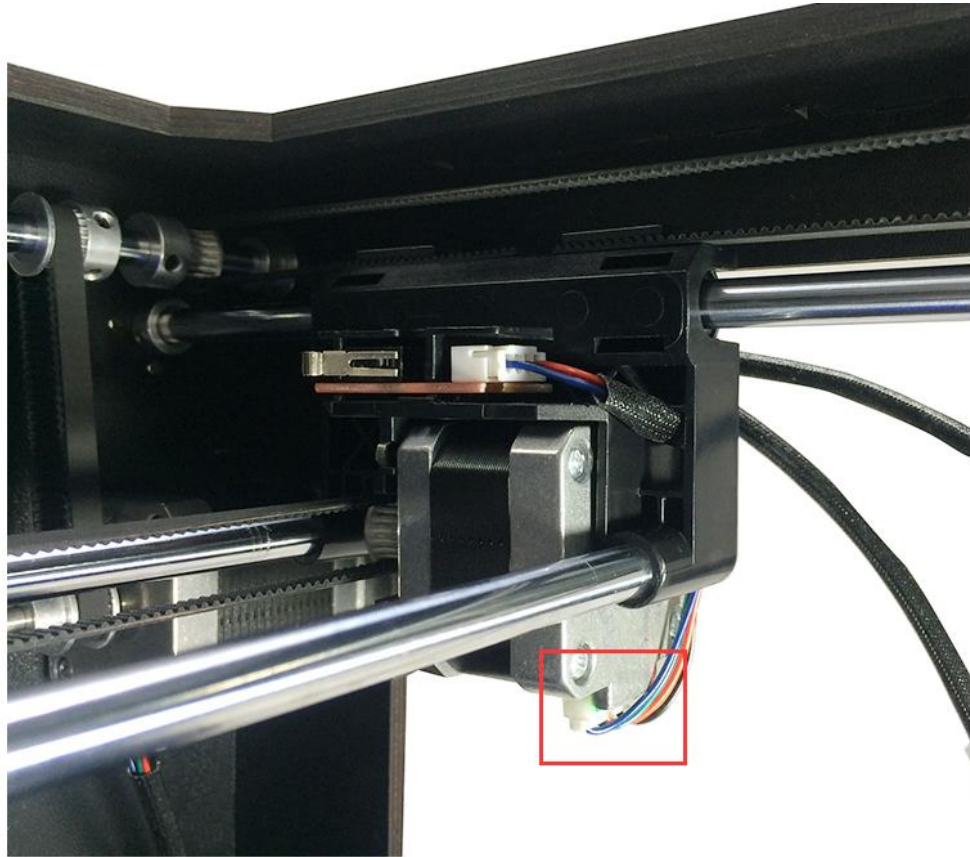
Required parts	Required number	Part ID	Pic.
Motor wire 3-1	1	NO. 60	

Step 1. Connect one end of the X/Y/Z motor wires with the control board.

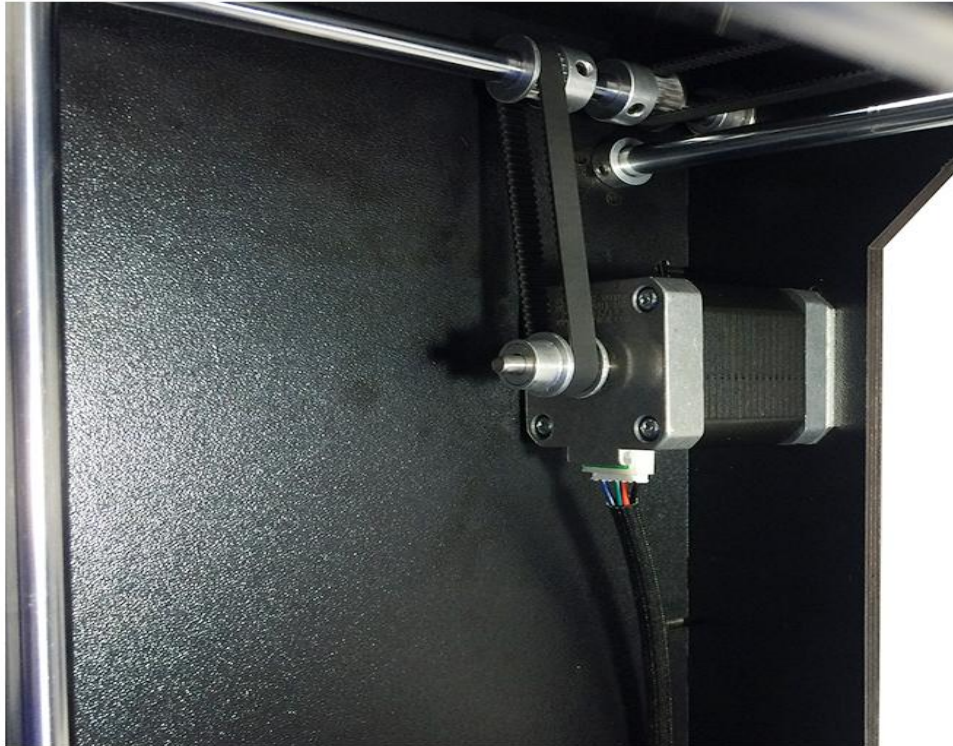


Step 2. Thread X axis motor wire (the longest one) through the hole at the angle of the front panel and right side one. Connect it with X axis motor.

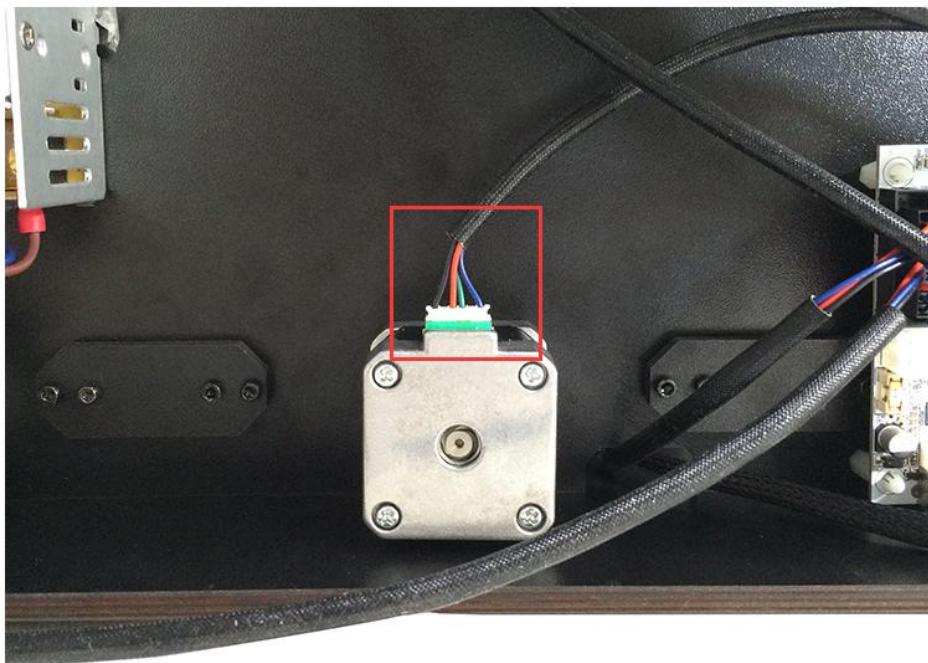





Step 3. Thread Y axis motor wire (the longer one) through the hole at the angle of the rear panel and right side one. Connect it with Y axis motor.



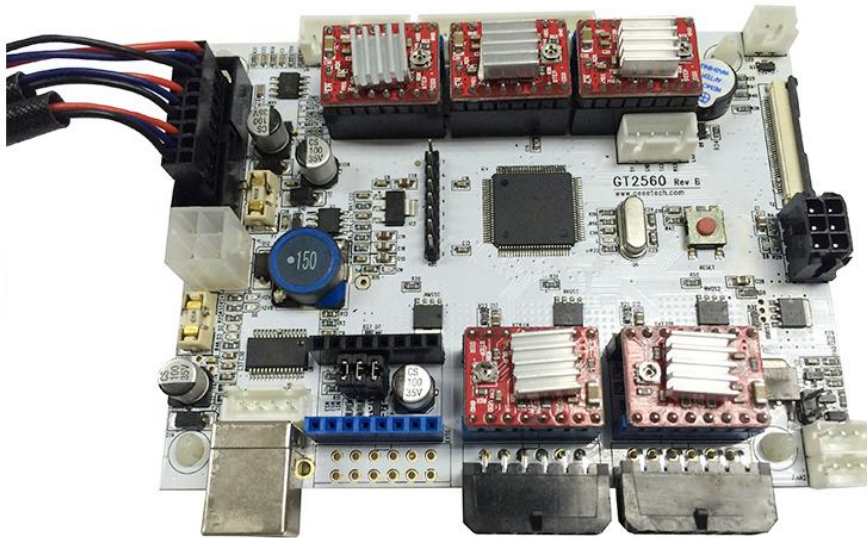
Step 4. Connect the short motor wire with Z axis motor on the bottom of the lower panel.



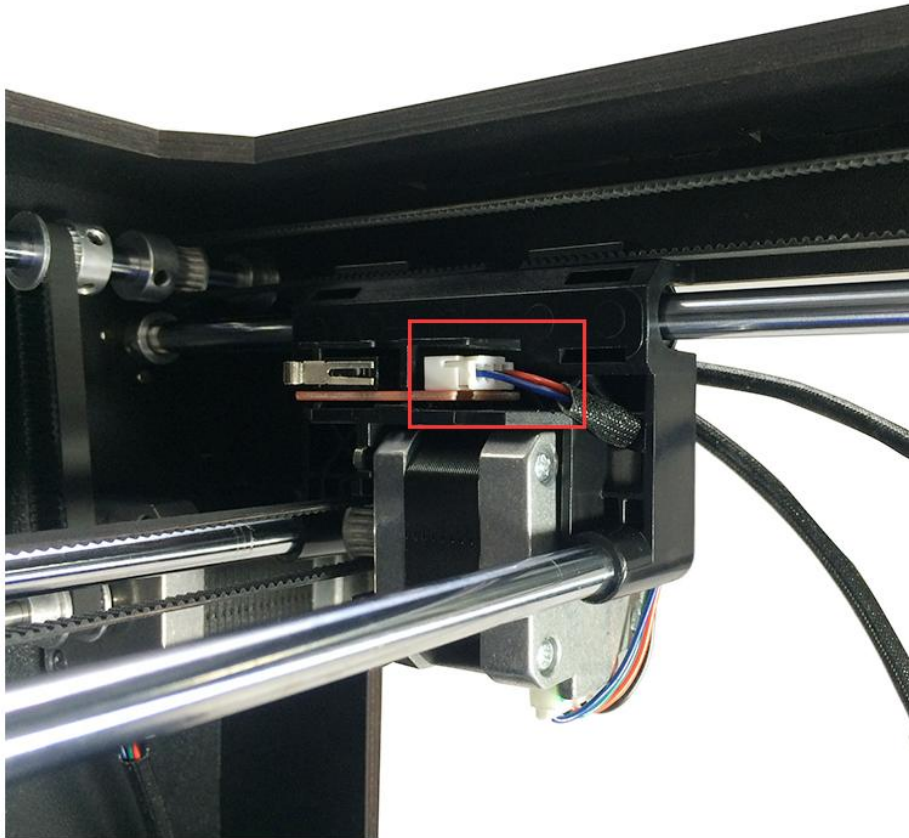
## 14.5 Connect the X/Y/Z Endstop Wires

Required parts	Required number	Part ID	Pic.
Endstop wire	1	NO. 65	

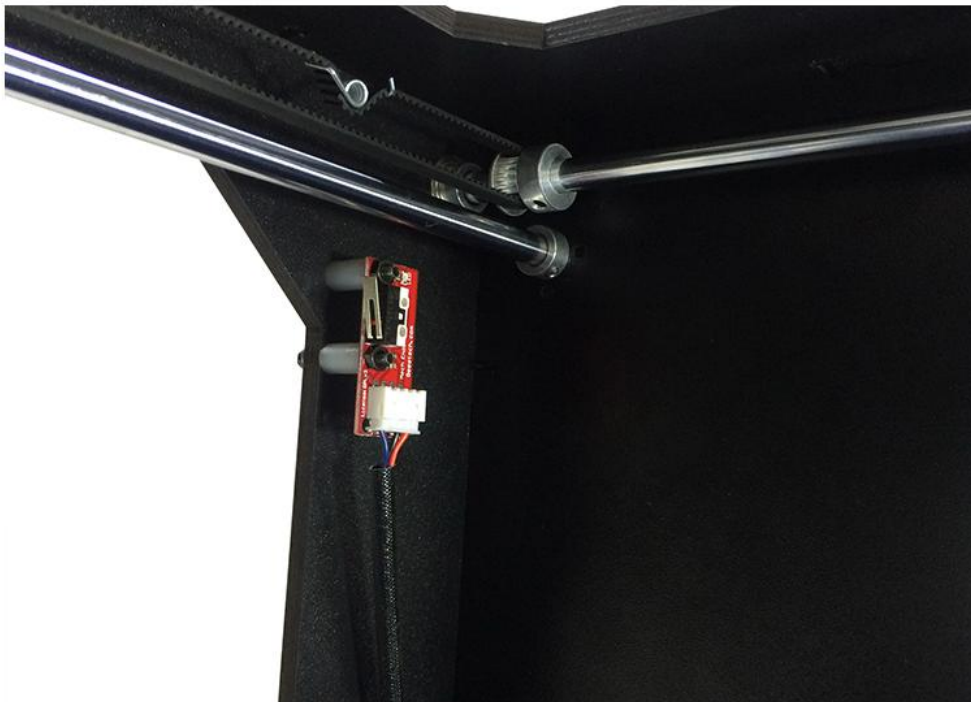
Step 1. Connect one end of the X/Y/Z endstop wires with the control board.



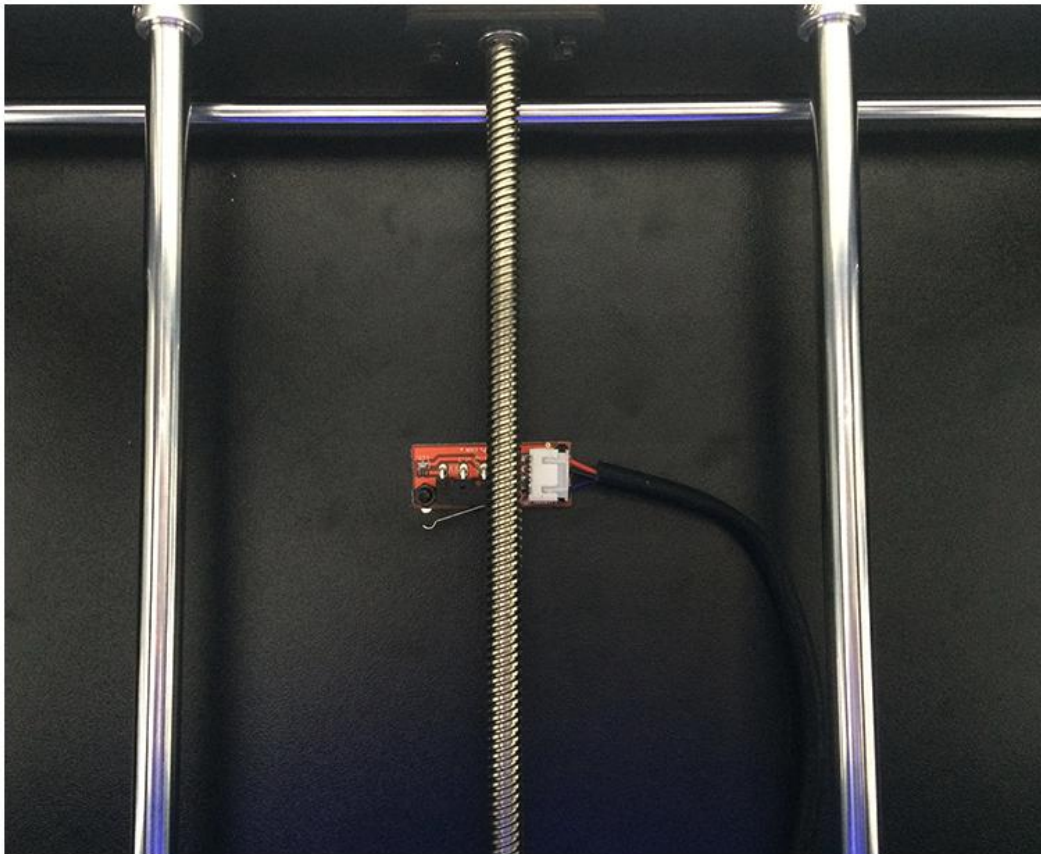
Step 2. Thread X axis endstop wire (the longest one) through the hole at the angle of the front panel and right side one. Connect it with X axis endstop.



Step 3. Thread Y axis endstop wire (the longer one) through the hole at the angle of the front panel and right side one. Connect it with Y axis endstop.

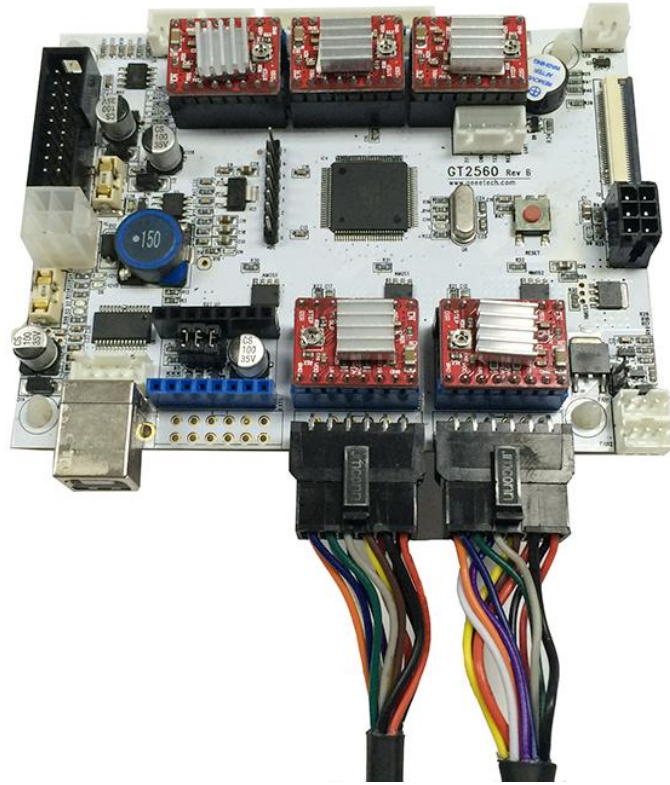


Step 4. Thread the short wire through the rectangular hole on the left of the control board. Connect it with Z axis endstop.

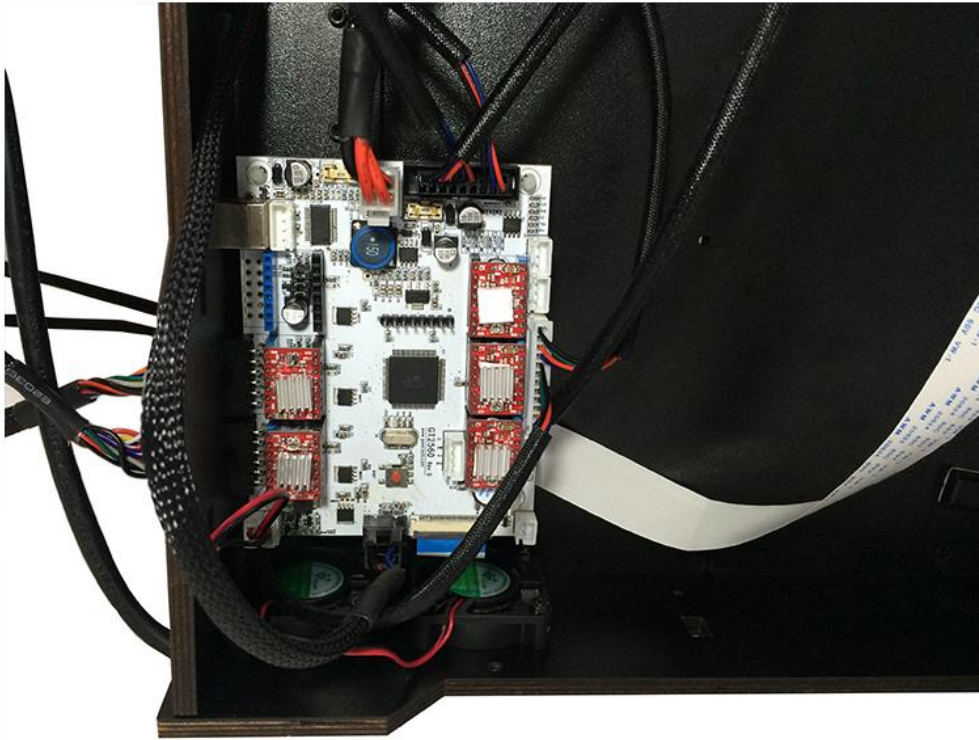


## 14.6 Connect the Extruder Wires


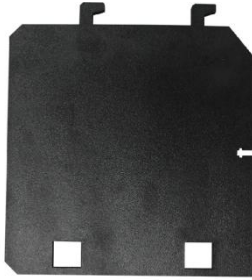
Connect the two extruder wires with the connection port of control board on the bottom left of the rear panel.



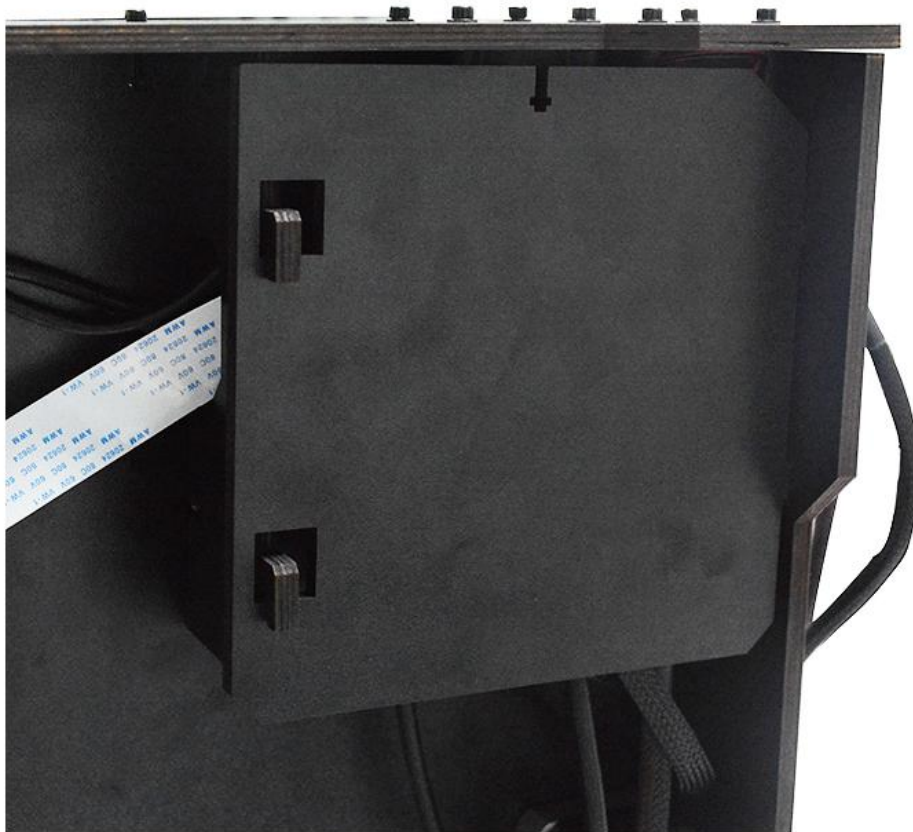
The following picture shows the wires connected on the control board.



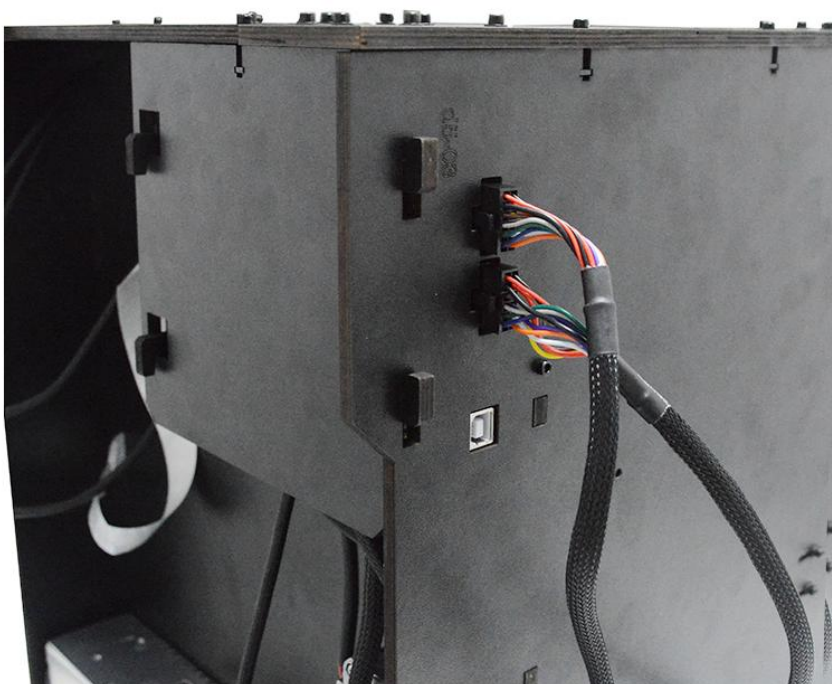
### 15. Mount the Control Board Fender

Required parts	Required number	Part ID	Pic.
Control board fender	1	NO. D12	
Holder for control board fender	1	NO. D11	

Step 1. Fit the fender and holder of fender into the corresponding holes on the main frame.




Step 2. Use 2xM3\*16mm screws and 2 square nuts to fasten the two parts together.






## 16. Tidy out the Wires

Required parts	Required number	Part ID	Pic.
Cable clips	8	NO. F4	

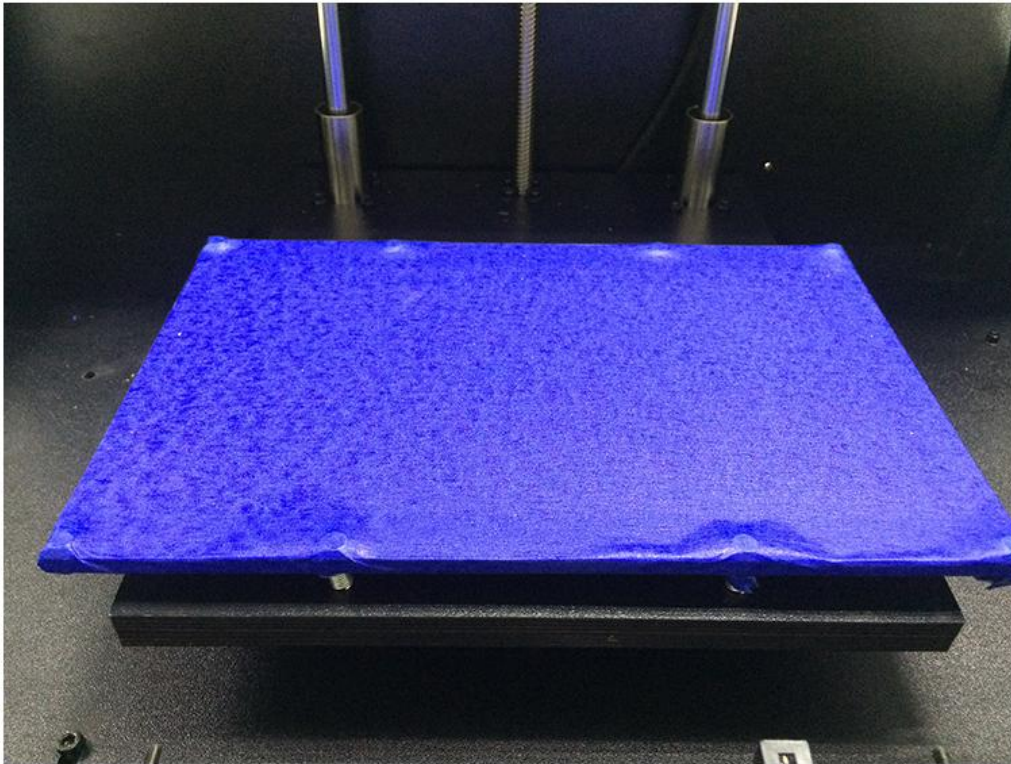
Tidy out the wires by using the cable clips.






## 17. Paste the Tape


Required parts	Required number	Part ID	Pic.
Tape	1	NO. 48	

Paste the tape evenly on the building platform.



### 18. Assemble the Filament Holder Set

Required parts	Required number	Part ID	Pic.
Filament panels	3	NO. D14	
M3*16mm Screw	6	NO. 17	
Square nut	6	NO. 10	

PVC tube	2	NO. D14	
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Join the filament holder parts together with 6xM3\*16mm screws and 6 square nuts.





Now the overall assembly job is completed!!!

## **19. Warm Tips**

Before your maiden print, it is vital that the printer is correctly calibrated. Skipping or rushing this step will result in frustration and failed prints later. “More preparation may quicken the speed in doing work.” Thus it is important to take the time to make sure the machine is correctly set up.

Every machine may have its own calibration procedures and this manual will not attempt to cover all the variations. Instead here is a list of key points that should be kept in mind.

- Frame is stable and correctly aligned.
- Rods are correctly aligned
- Belts are taut.
- Driving wheel turns smoothly.
- Hotbed is level in relation to the path of the extruder.
- Filament rolls freely from the spool, without causing too much tension on the extruder.
- The current for stepper motors is set to the correct level.
- Wires are correctly connected.
- Couplings and pulleys are fixed tightly.

Firmware settings are correct, including: axis movement speeds and acceleration; temperature control; end-stops; motor directions.

The dual extruder is calibrated in the firmware with correct steps per mm for filament.

The point regarding the extruder step rate is vital. Slic3r expects that the machine will accurately produce a set amount of filament when told to do so. Too much extrusion will result in blobs and other imperfections in the print, while too little extrusion will result in gaps and poor inter-layer adhesion. For how to set up the printer, please refer to the user manual.

Download the user manual here please:

<https://www.geeetech.com/geeetech-duplicator-5-diy-dual-extruder-3d-printer-p-1016.html>

