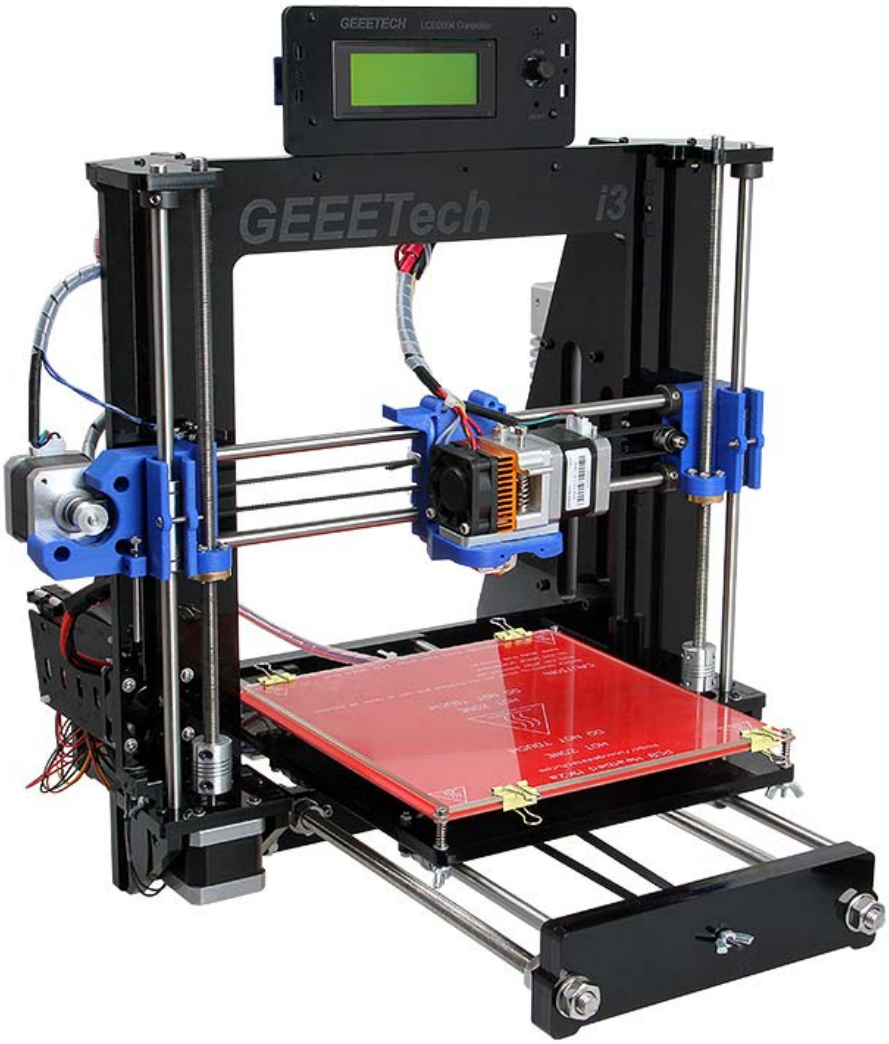
Assemble Instruction of Geeetech Acrylic Prusa I3

pro & pro B

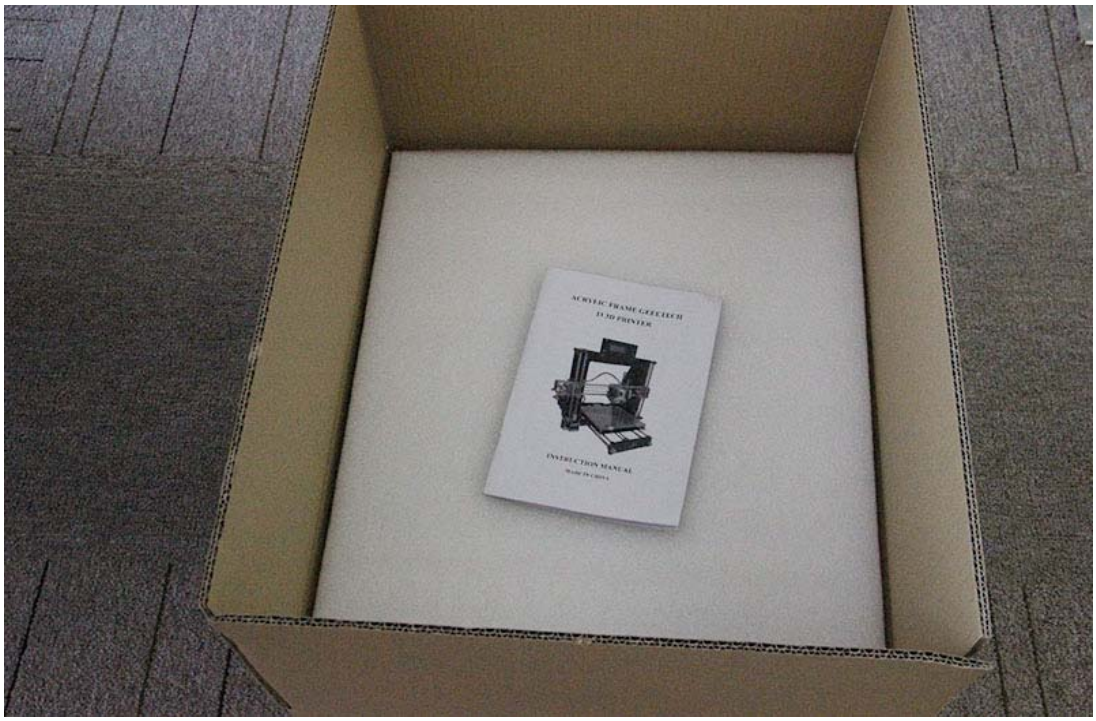


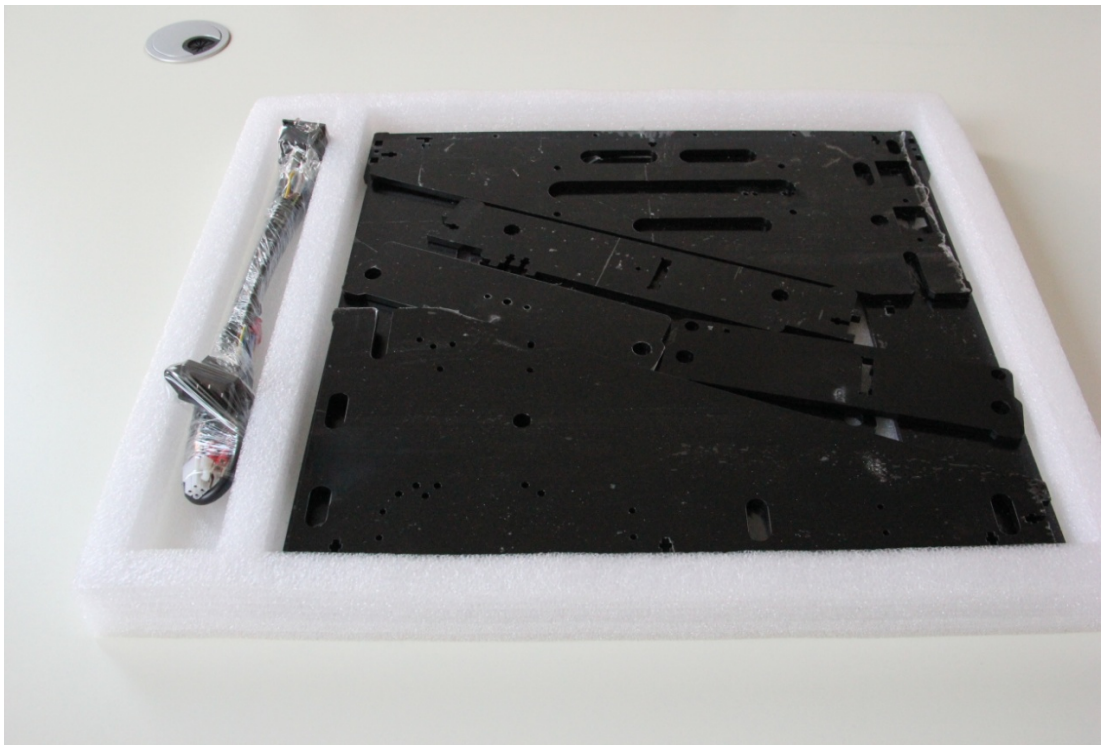
Notice:

1. This kit contains tiny parts; please keep them away from kids under 3.
2. This building instruction applies to both Geeetech Acrylic Prusa I3 pro and pro B.
3. Some pictures of the printed part may be a bit different from those in your package, no worries, they work the same, and the way to assemble is similar.
4. Building and operating 3D printer involves electricity, so all necessary precautions should be taken and adhered to.
5. Building a 3d printer requires a certain amount of handling ability and basic knowledge of working principle of 3D printer.
6. Be patient, please. If you have any problems assembling, please contact us, we will try our best to help you.

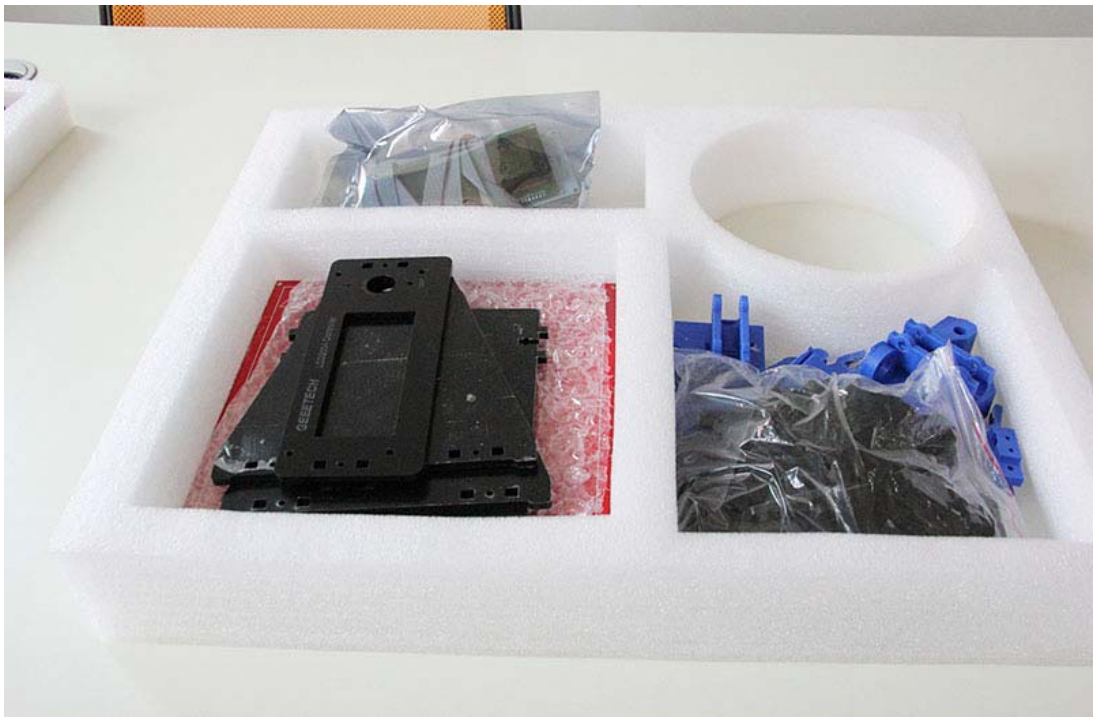
1 Unfold the box and check the package list

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.





- All the acrylic plate has been etched with part ID and the plate is covered with a sheet of kraft paper, you need to tear them off.



Tips:

1. Before assembly, you are advised to put all the parts, especially the screws and nuts in order, which will save you a lot of time looking for the required parts.

2. The part ID is corresponding to the number labeled on the bag of every part. Some parts may not have label, you can refer to the pictures on the package list.

2 Assemble Y axis

2.1 Assemble the rods of a Y axis

Step1. Assemble the 2 threaded rods.

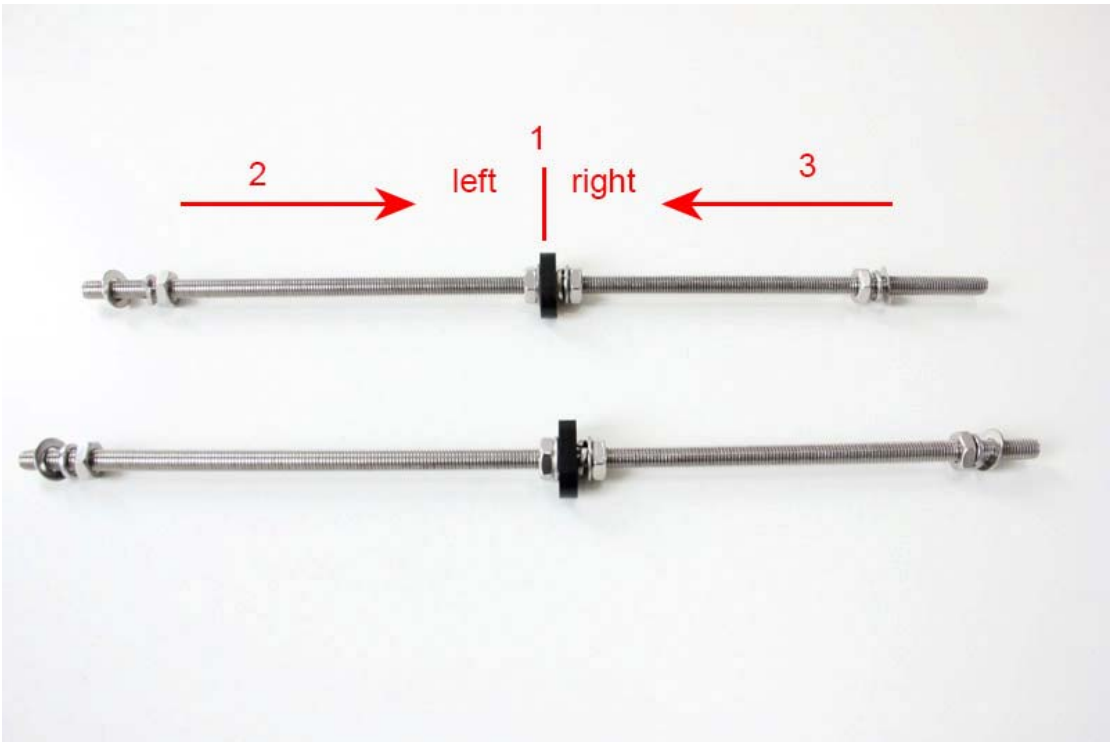
Required parts	Required number	Part ID
M10 threaded rod	2	NO.5
Y plate connecting plate	2	NO.A14
M8 spring washer	6	NO.18
M10 washer	8	NO.9
M10 nut	8	NO.12

Thread the nuts and washers into the two M10 threaded rods separately. The order should be:

1) Thread the acrylic fender (Y plate connecting plate) in the middle.

2) Thread the M10 washer > M8 spring washer >M10 nut > M10 nut > M10 washer on the left

3) Thread theM10 washer < M8 spring washer < M10 nut < M10 nut< M8 spring washer < M10 washer on the right



Step2. Assemble the 2 smooth rods

Required parts	Required number	Part ID
M8 smooth rod	2	NO.3
LM8UU Linear bearings	4	NO.39

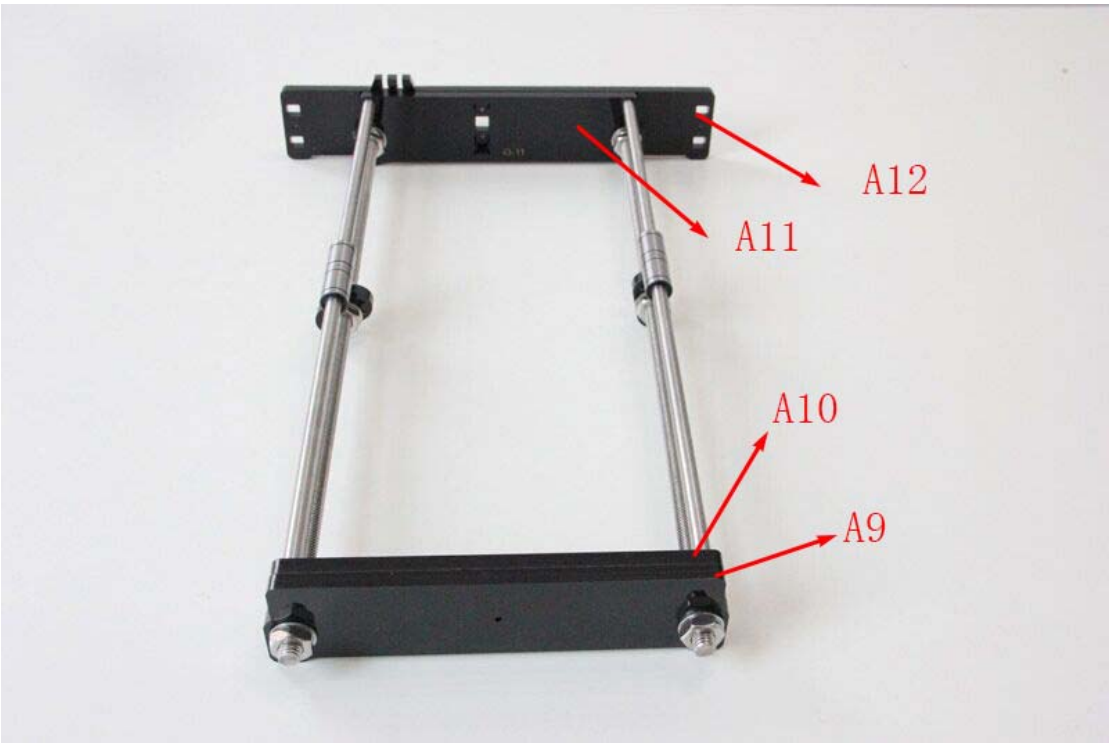
Slide 2 bearings on each smooth rod. Before you slide the bearings please make sure they are clean.

1.2. Attach the front and rear Acrylic support plates of the rods.

Required parts	Required number	Part ID
Acrylic plate(front)	2	NO. A9, A 10
Acrylic plate(rear)	2	NO. A 11, A 12
M10 washer	4	NO.9
M10 nut	4	NO.12

Step1. Slide the rods into the acrylic plate; adjust the length so that the smooth rods fit snugly between the front and rear piece.

Step2. Screw up the rods and plate with M10 nut and M10 washer.



* Tips: the Y-axis must be a rectangle, that is the rods on both side should be parallel, so is the front and back plate. Otherwise it will cause obstruction for the belt later. You can use a Digital Caliper to measure.

2.2 Assemble the Y idler

Required parts	Required number	Part ID
624ZZ Ball bearing	2	NO.38
bearing holder	1	NO.66
M3 x 20 screw	1	NO.27
M3 wing nut	1	NO.15
M4 x25 screw	1	NO.35

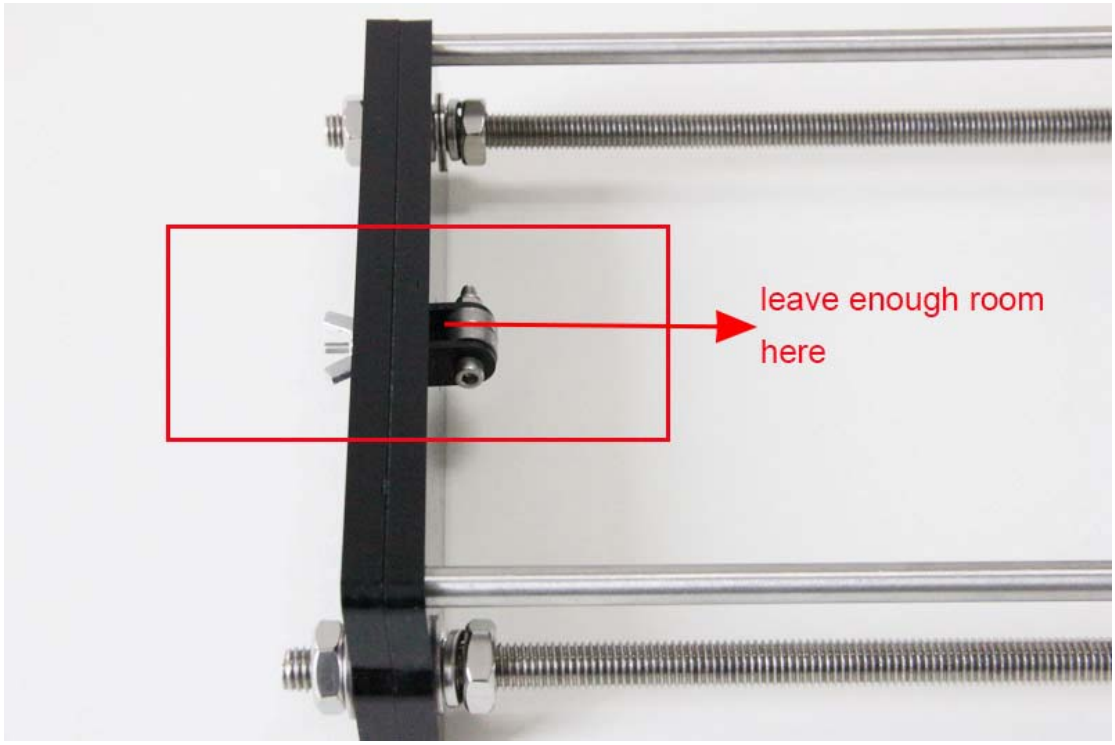
M4 lock nut	1	NO.14

Step1. Thread the M3 x 20 screw through the bearing holder.

Step2. Put the M4 x25 screw through the holes with the two 624ZZ bearings in between. Lock the other end with a M4 lock nut.

Step3. Mount the assembled bearing holder onto the front support plates. And screw it with a wing nut.

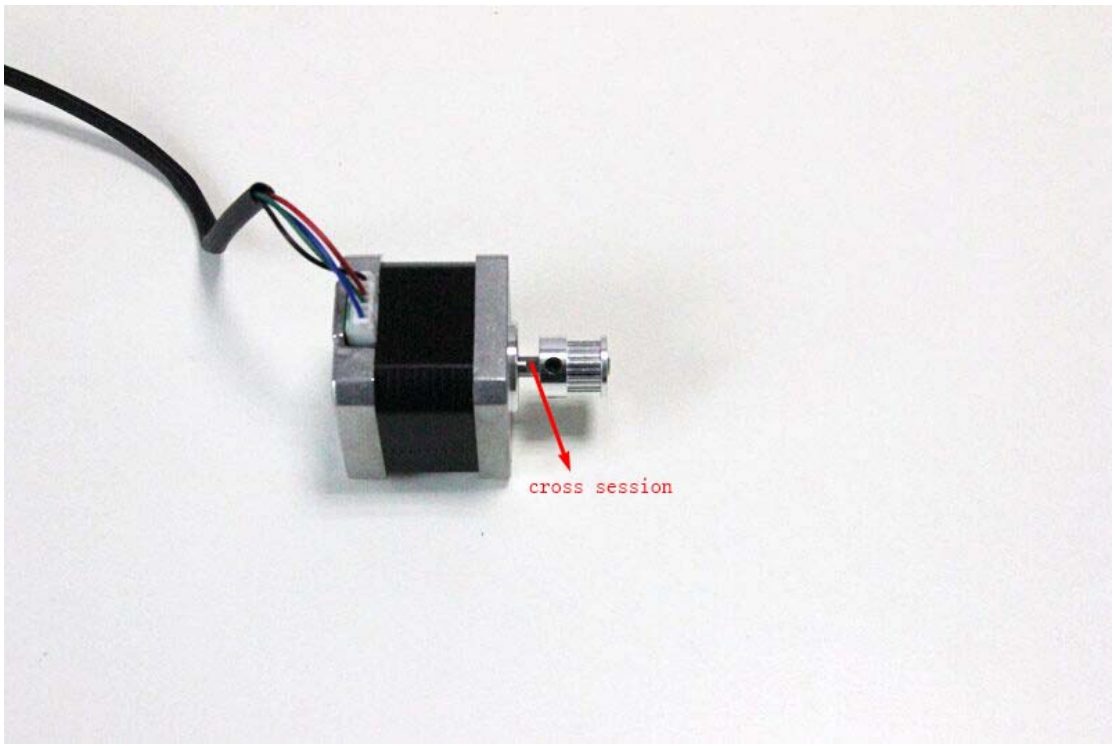
*Please leave enough room for the belt between the ball bearing and the screw.



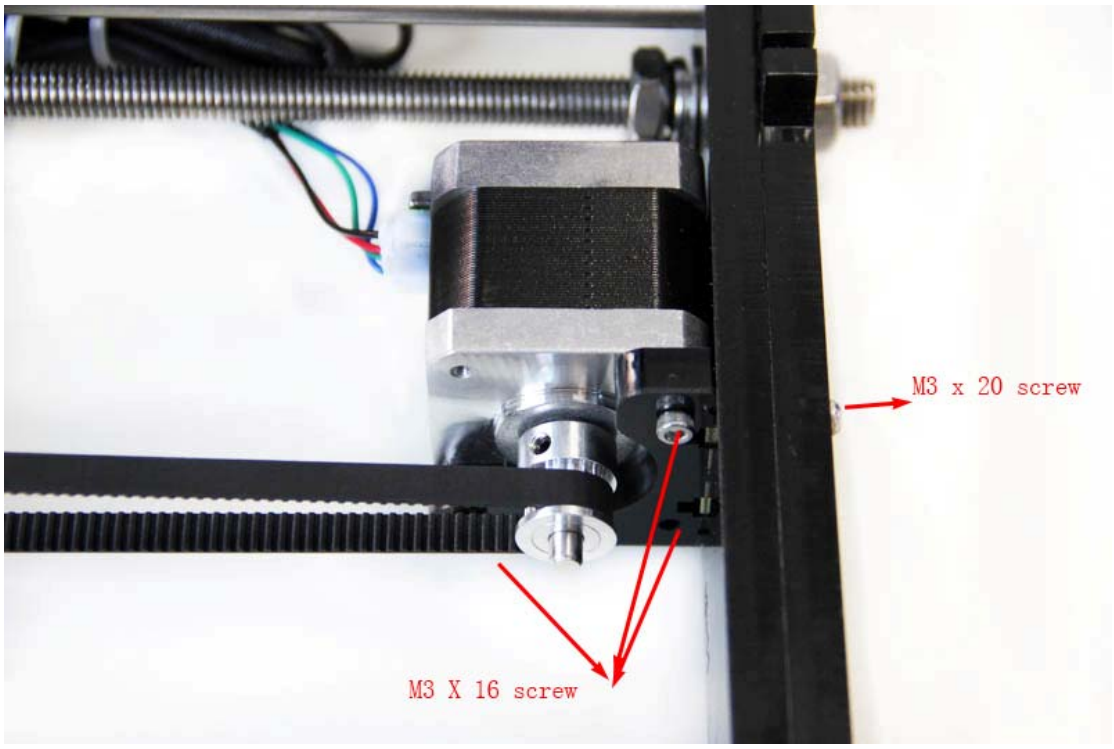
2.3 Mount the Y motor

Required parts	Required number	Part ID
Y motor fix plate	1	NO. A13
Stepper motor	1	NO.75
pulley	1	NO.43
M3 x 12 screw	3	NO.25
M3 x 16 screw	2	NO.26
M3 square nut	2	NO.16

Step1. Mount the pulley on the motor shaft, one of the screws should be screwed on the cross section of the shaft. Do not screw too tight to turn smoothly.



Step2. Insert the motor block into the slot; you may need to use a little strength to do this. But be careful in case the Acrylic broke down. Then screw the motor on the block plate with 3 M3 x 12 screws and fix the block plate with 2 M3 x 16 screws and M3 square nut.



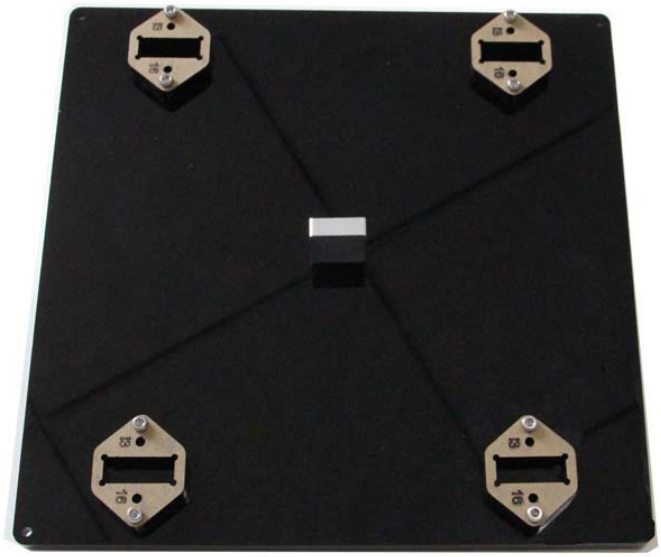
2.4 Build the printing platform

Required parts	Required number	Part ID
Y platform support	1	NO.A15
Y bearing block	4	NO.A16
Y belt mount	1	NO.67
Zip tie	4	NO.54
M3 x 10 screw	2	NO.24
M3 x 20 screw	8	NO.27
M3 nut	8	NO.11

Step1. Mount the belt mount on the bottom side of the platform with 2 M3 x 10

screws.

Step2. Mount the 4 bearing blocks on the platform with M3 x 20 screws on the same side with the belt-mount. Screw with M3 nuts.



Step3. Get the build platform plate zip-tied to the 4 linear bearings of Y- Axis.

*The belt-mount and the fenders are under the platform.

2.5 Mount the Y –axis belt.

Required parts	Required number	Part ID
Timing belt	1	NO.41
M3 x 10 screw	2	NO.24
M3 washer	2	NO.7

Step1. Drill a hole on one end of the belt（the hole can be as the diameter of the M3 screw, leave enough margin ）

Step2. Fix the belt on one side of the belt -mount with a M3 x 10 screw and washer.

Step3. Thread the belt around the pulley on the motor and the Y idler.

Step4. Drill a hole on the other end of the belt and fix it on the belt -mount with a M3 x 10 screw and M3 washer.

*Tips:

1. Before you drill your second hole, make sure to pull belt tightly to make sure to fin d proper placement of hole for a tight belt, if it is too loose, it will hinder the move of the print platform.

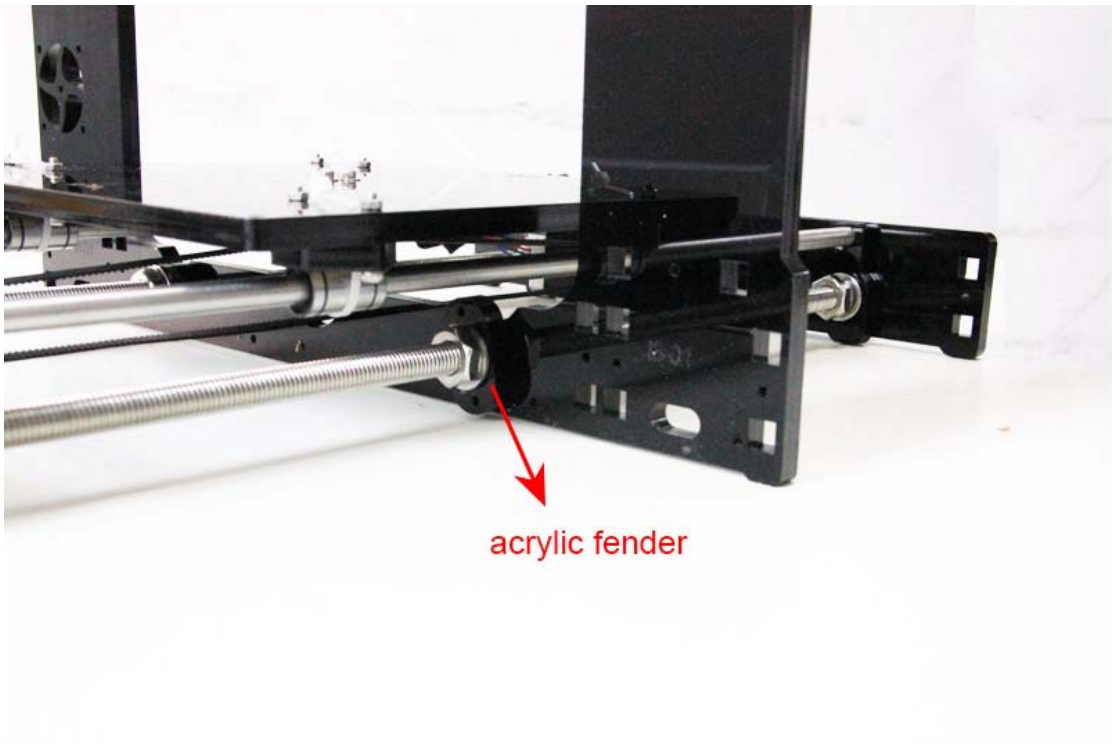
2. Loosen the Y idler wing nut when tightening belt onto the Y belt mount [No. 67] in order to make securing the belt to the block easier. Be sure to tighten wing nut fully o nce done.

3 Assemble Y - Z axis

Required parts	Required number	Part ID
X-Z frame	1	NO.A1
M3 x 20 screw	4	NO.27
M3 nut	4	NO.11

Step1. Held upright the main frame is after the acrylic fender washers on the threaded rods. Here you can use the A2 panel as a reference to measure the distance A1 and A12 (the rear plate).

Step2. Screw up the main frame to the acrylic fender with M3 x 20 screws.



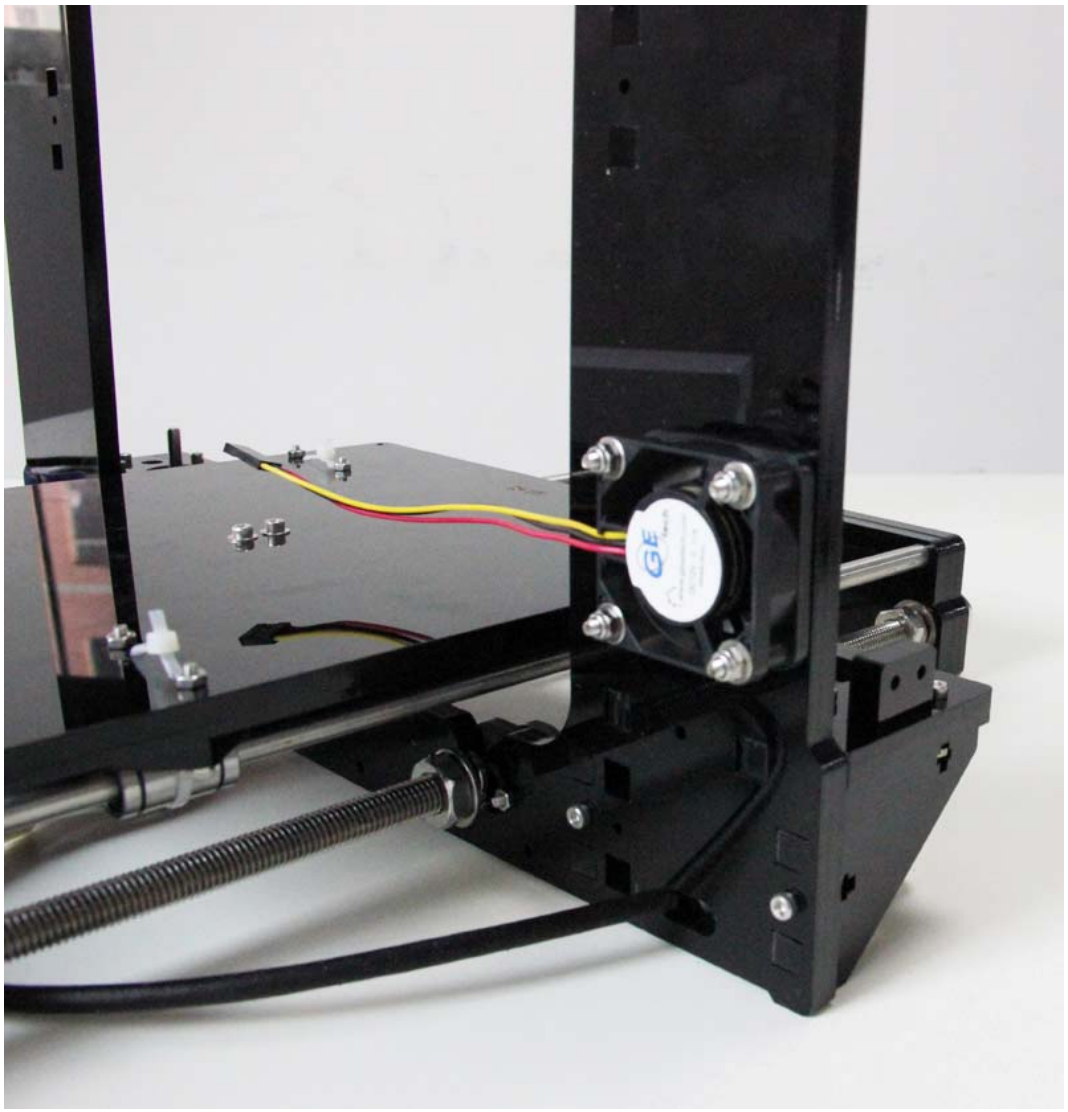
Step3. Screw up the M10 screw on the threaded rod of Y-axis. You can see the

finished picture.

4 Mount the fan

Required parts	Required number	Part ID
Fan	1	NO.70
M3 x 30 screw	4	NO.28
M3 locknut	4	NO.13

Fix the fan on the right side of the frame with 4 M3 x 30 screw and locknut. Mind the direction of the wires. (Please pay attention to the fan not others)



5 Assemble the right and left side panel

Required parts	Required number	Part ID
Acrylic left frame	1	NO.A2
Acrylic right frame	1	NO.A3
M3 x 16 screw	8	NO.26
M3 square nut	8	NO.16

Step1. Screw up the X-Z frame and the side panel then connect the rear part of the Y

axis and the side panel together. You may need to adjust the distance of the X-Z frame to the rear plate.

All you need here is M3 x 16 screws and M3 square nuts.

6 Assemble the Z axis (the vertical axis)

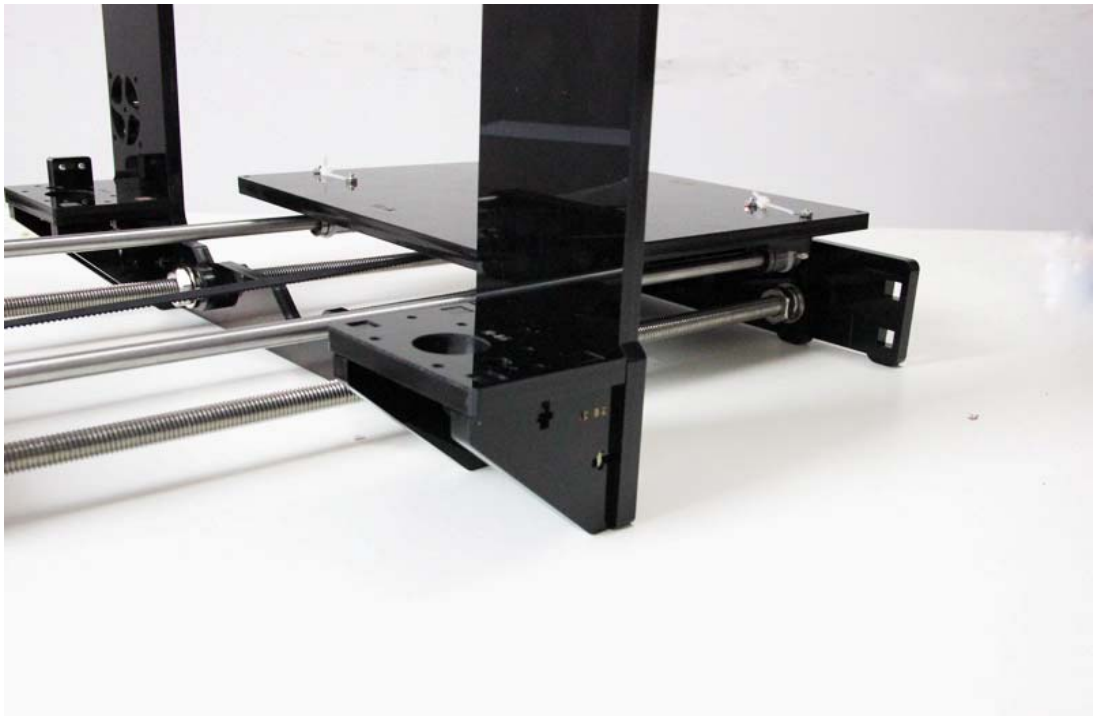
6.1 Assemble the Z-axis bottom mount

Required parts	Required number	Part ID
Z Motor fixed plate	2	NO.A4, A5
Z Motor support plate	4	NO.A6, A7
M3 x 16 screw	10	NO.26
M3 square nut	10	NO.16

Step1. It would be easier to mount the A4/A5 to A6 and A7 first, and then mount the

assembled part to A1.

Step2.Screw up the acrylic plates with M3 x 16 screws and M3 square nuts.

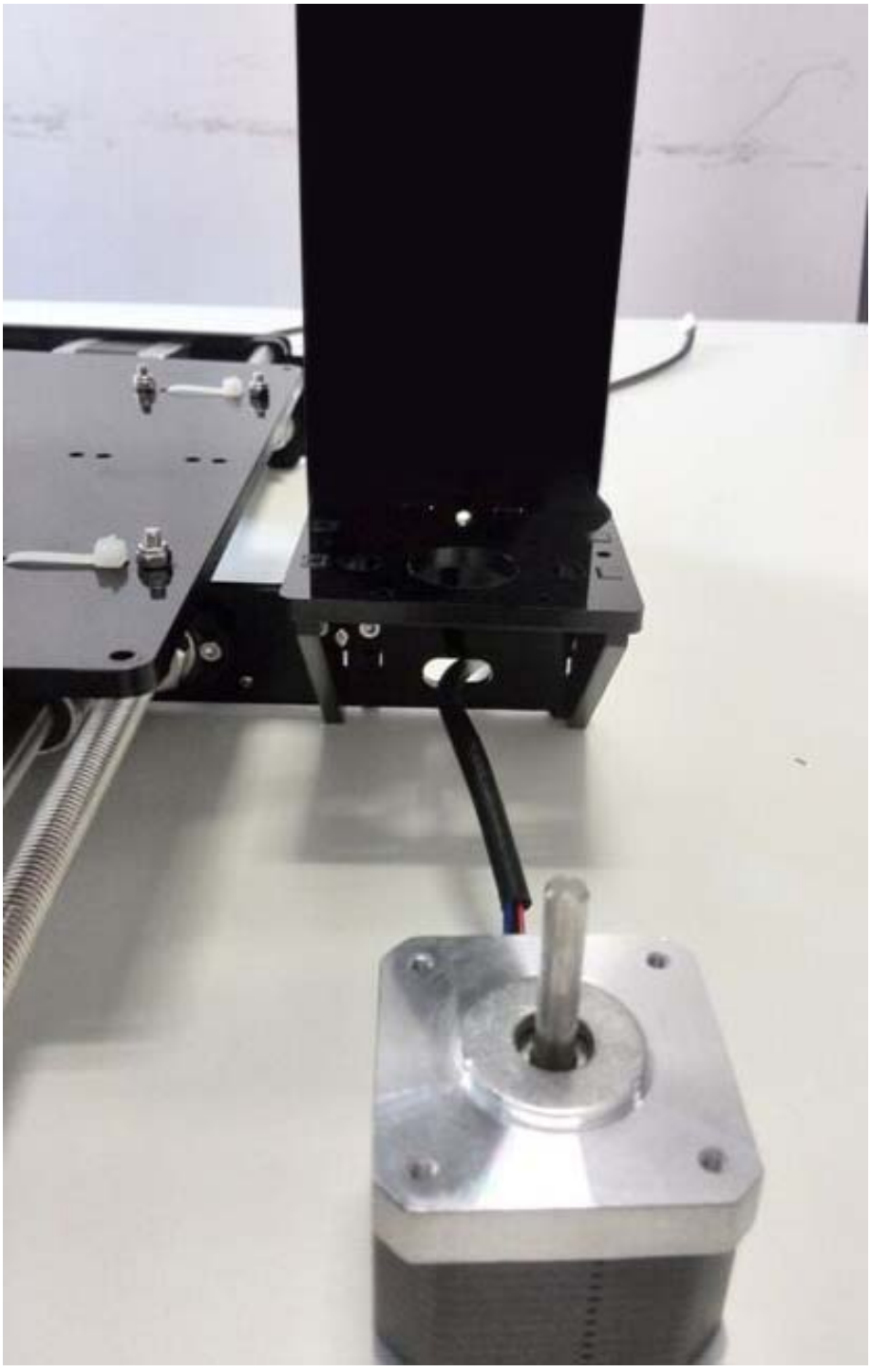


*The right and left bottom mount are different; the left one has a mount for the Z end stop. Please look at the following picture.

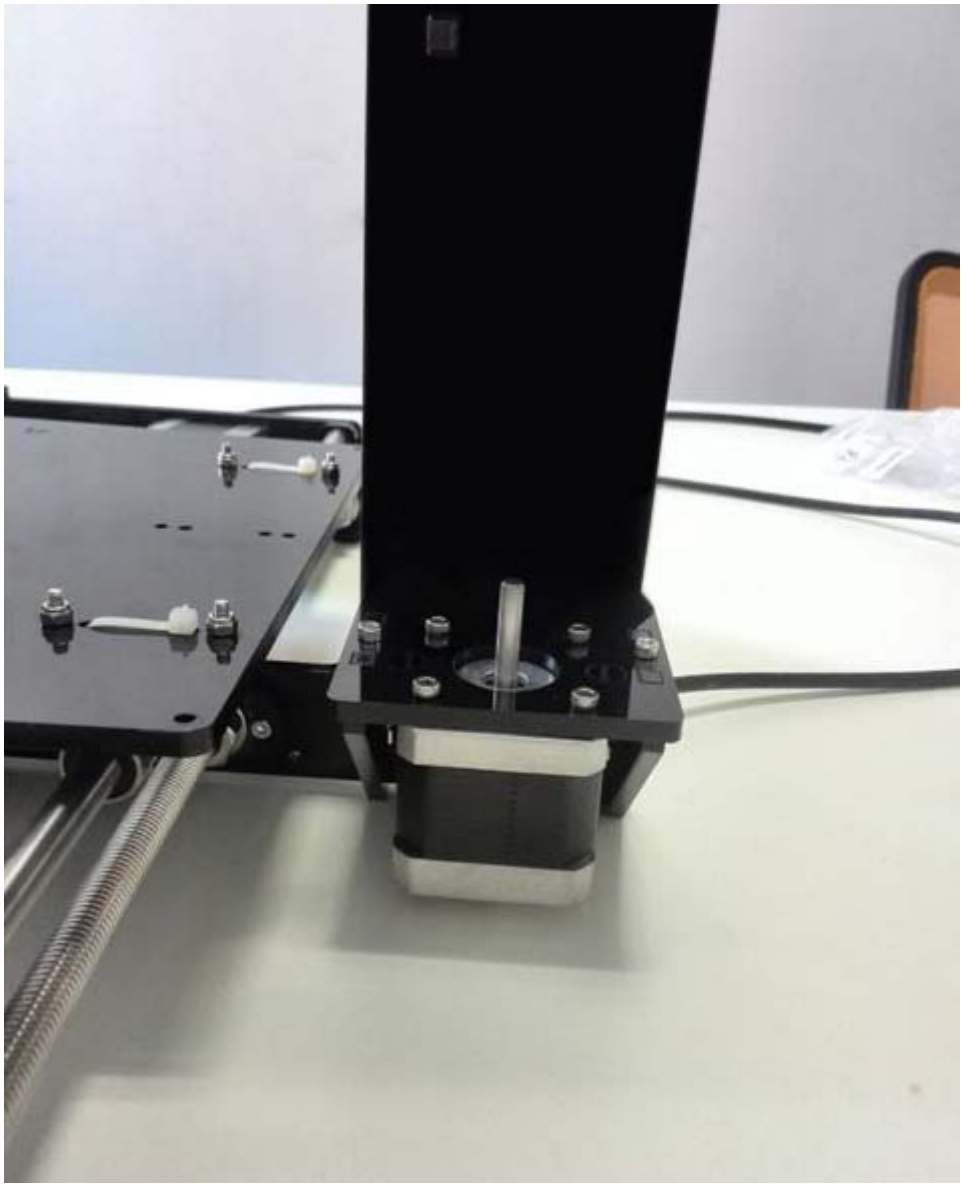
6.2 Assemble the 2 Z motors

Required parts	Required number	Part ID
Stepper Motor	2	NO.75
M3 x 12screw	8	NO.25

Step1.Thread the wires of the motors through the holes



Step2. Screw up the motors with 4 M3 x 12 screws. Do the same with the other Z motor.



7 Assemble the X axis (the horizontal axis)

7.1 Assemble the smooth rods.

Required parts	Required number	Part ID
370mm smooth rod	2	NO.2

LM8UU linear bearing	2	NO.40

Slide the two bearings into the two rods respectively.

7.2 Assemble the X-Axis Idler

Required parts	Required number	Part ID
624ZZ Ball bearing	2	NO.38
Bearing holder	1	NO. 66
M3 X30 screw	1	NO.28
M4 X25 screw	1	NO.35
M4 locknut	1	NO.14

Step1. Put the screw through the Y bearing holder.

Step2. Thread the M4 x 25 screw through the holder with the 624ZZ bearings in between. Lock the other end of a M4 nut.

7.3 Assemble the X-Axis end

Required parts	Required number	Part ID
X-axis left end	1	NO.P1
X-axis right end	1	NO.P2
LM8UU linear bearing	2	NO.40
M3 wing nut	1	NO.15
M3 x 16 screw	2	NO. 26
M3 nut	2	NO. 11

Step1. Mount the assembled idler into the right X-axis end. Here, you can insert the linear bearing into the end.

Step2. Lock it up with a wing nut and insert a linear bearing into the slot.

Step3. Insert another linear bearing into the slot of left end. Then lock the bearing with M3x 16 screw and nut. Do the same to the right end.

7.4 Assemble the X-axis rods and both ends

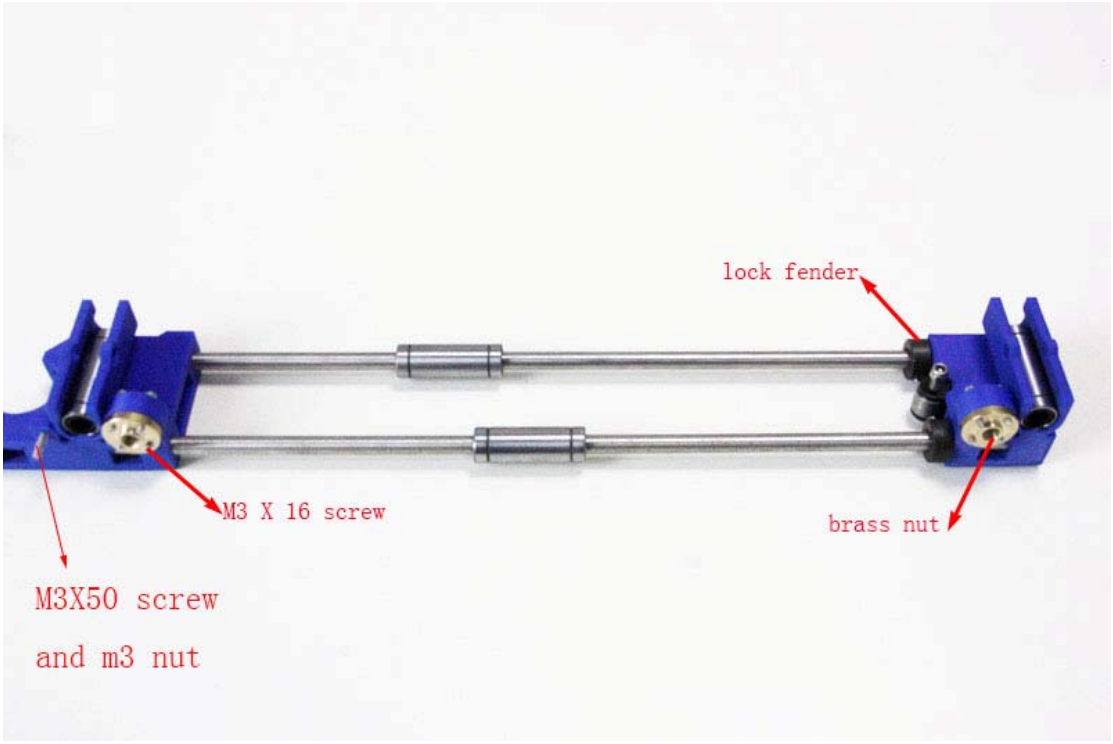
Required parts	Required number	Part ID
Brass nut	2	NO.17
M3 x 16 screw	8	NO.26
M3 x50 screw	1	NO.31
M3 nut	1	NO.11
Screw locking ring	2	NO.19

Step1. Thread the screw locking ring to both rods respectively. Screw them up

Step2. Thread the two rods into the two X-axis ends.

Step3. Mount the brass nut under both ends with 4 M3 x 16 screws for each.

Step4. Fix the M3x 5 screw on left end. (This is for the Y end stop)



7.5 Mount the X-axis belt bracket on the smooth rods.

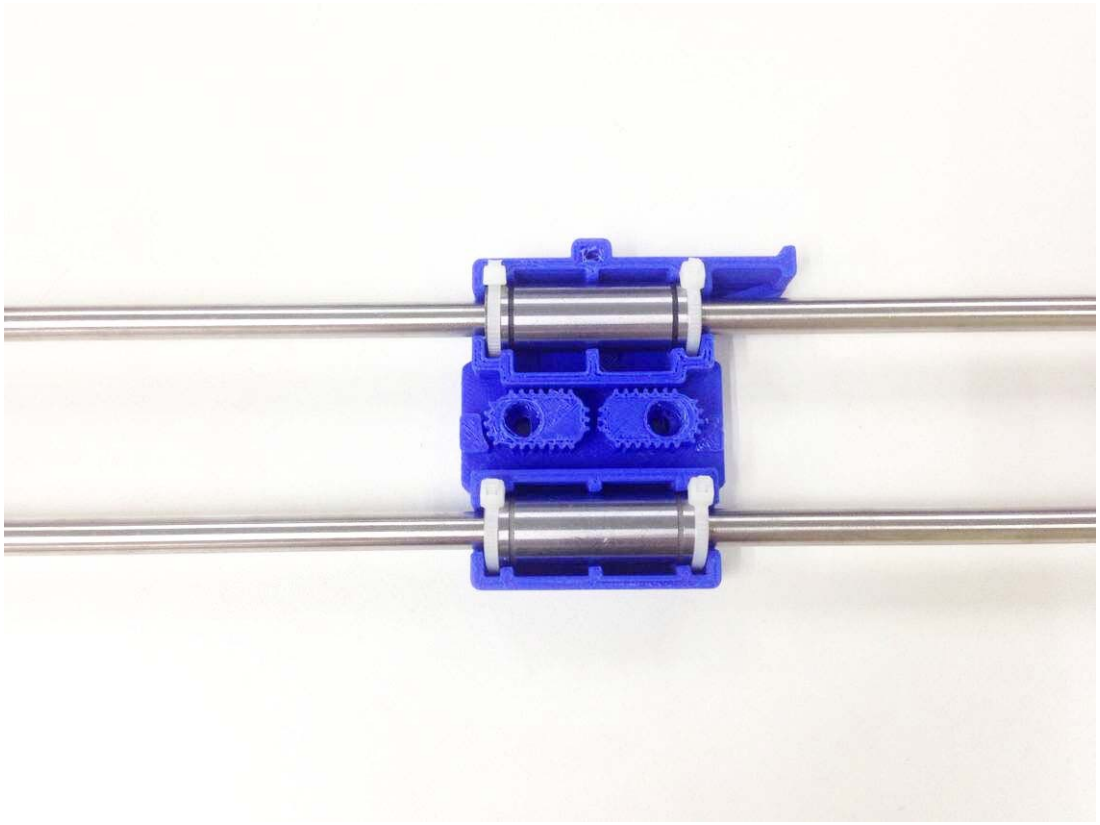
Required parts	Required number	Part ID
print bracket	1	NO.P3
Zip tie	4	NO.54
LM8UU linear bearing	2	NO.40

Step1. Mount the print bracket on the smooth rods.

1) Insert the linear bearings into the slot of the bracket as you can see from the

picture.

2) Thread the zip-tie through the extruder bracket. Tie them up with zip ties.

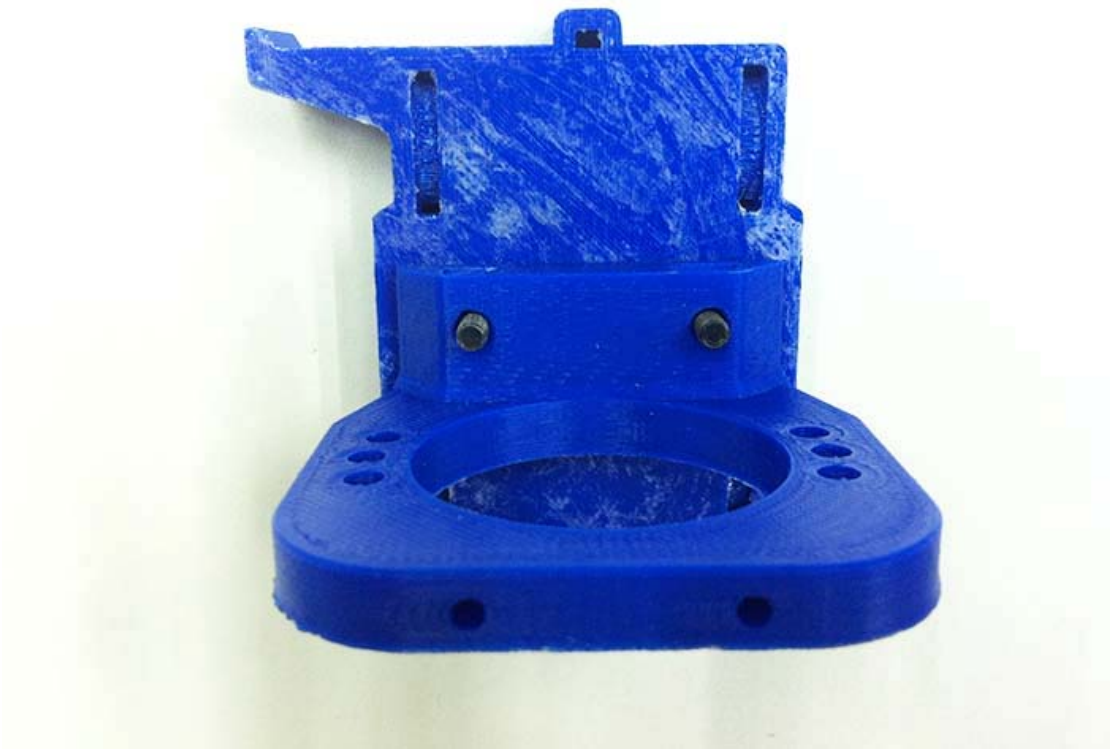


7.6 Mount the extruder holder.

Required parts	Required number	Part ID
Extruder bracket	1	NO.P4
M4 x 16screw	2	NO.34
M4 nut	2	NO.11A

Step1. Put the 2 M4 nut into the hole, as shown in the picture.

Step2. Screw up the belt bracket and the extruder support with two M4 x 16screws.

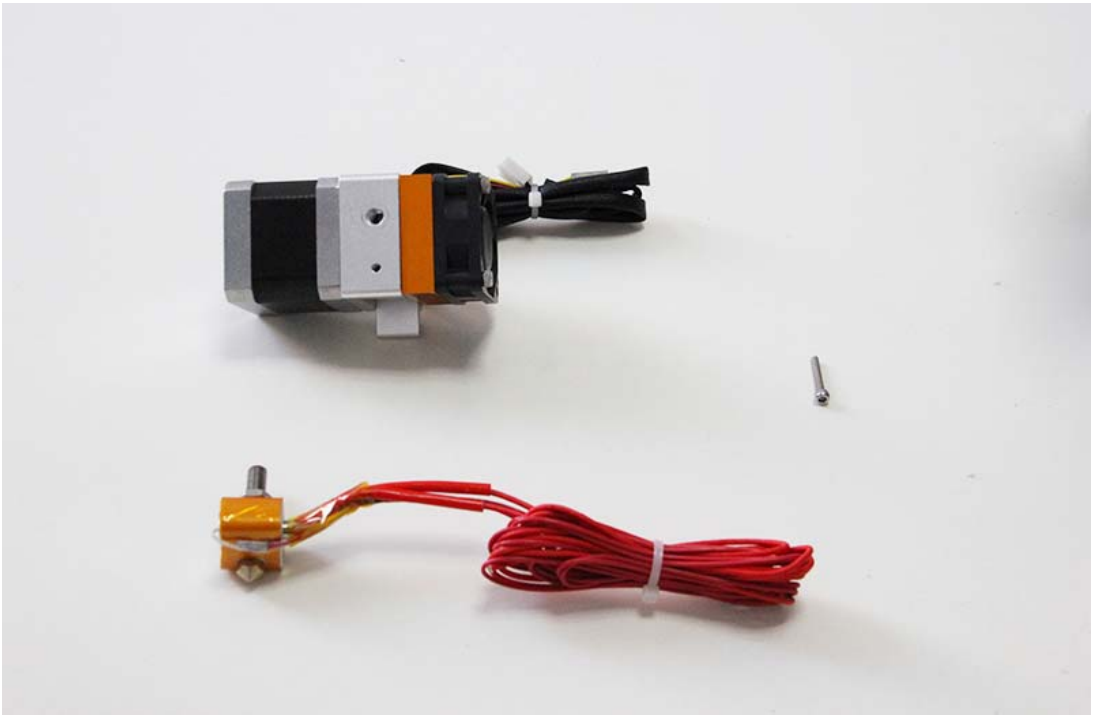


7.7 Mount the extruder

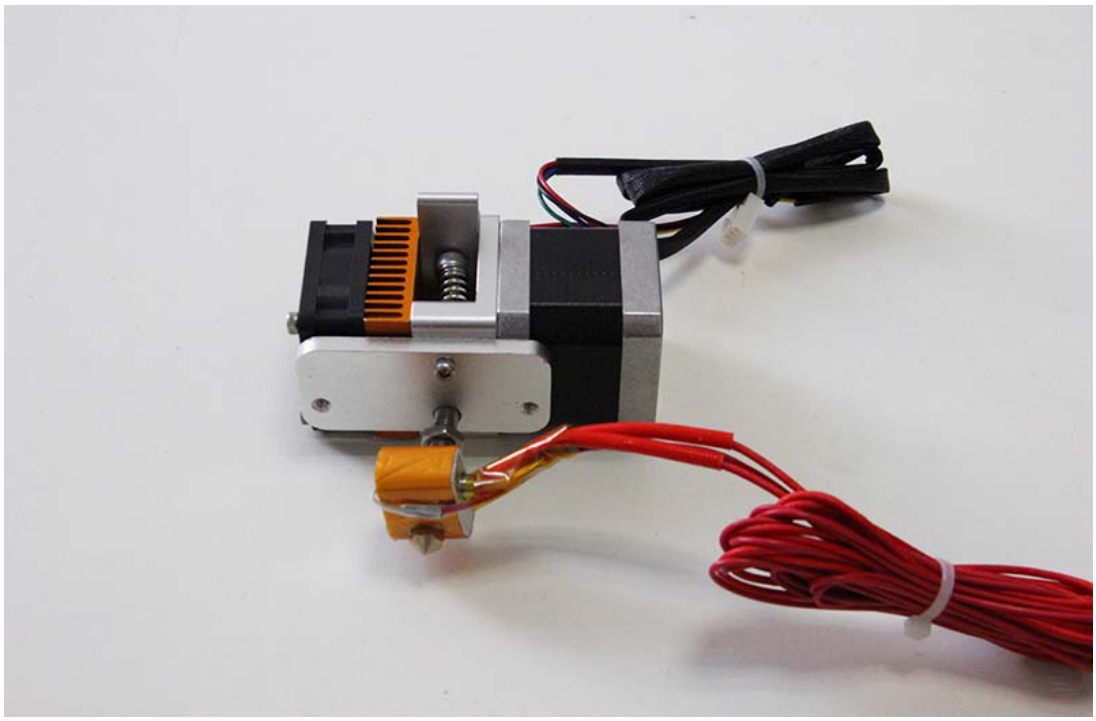
Required parts	Required number	Part ID
MK8 extruder	1	NO.79
MK8 assemble board	1	NO.65
M4 x 12 screw	2	NO.33
M4 nut	2	NO.11A

Look at the picture below, this is the fully assembled MK8 extruder in the package.

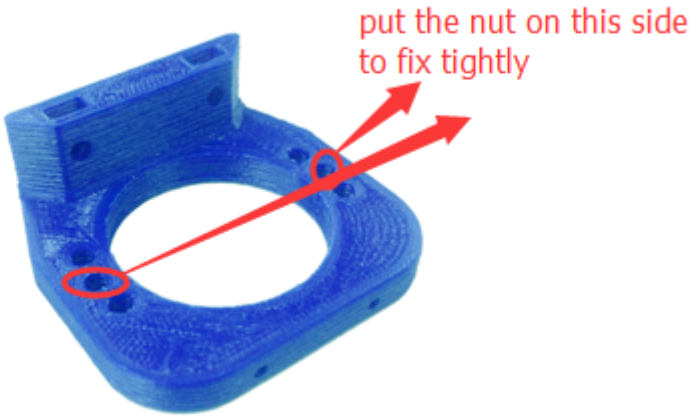
Step1. You should take the nozzle part and the bolt out.

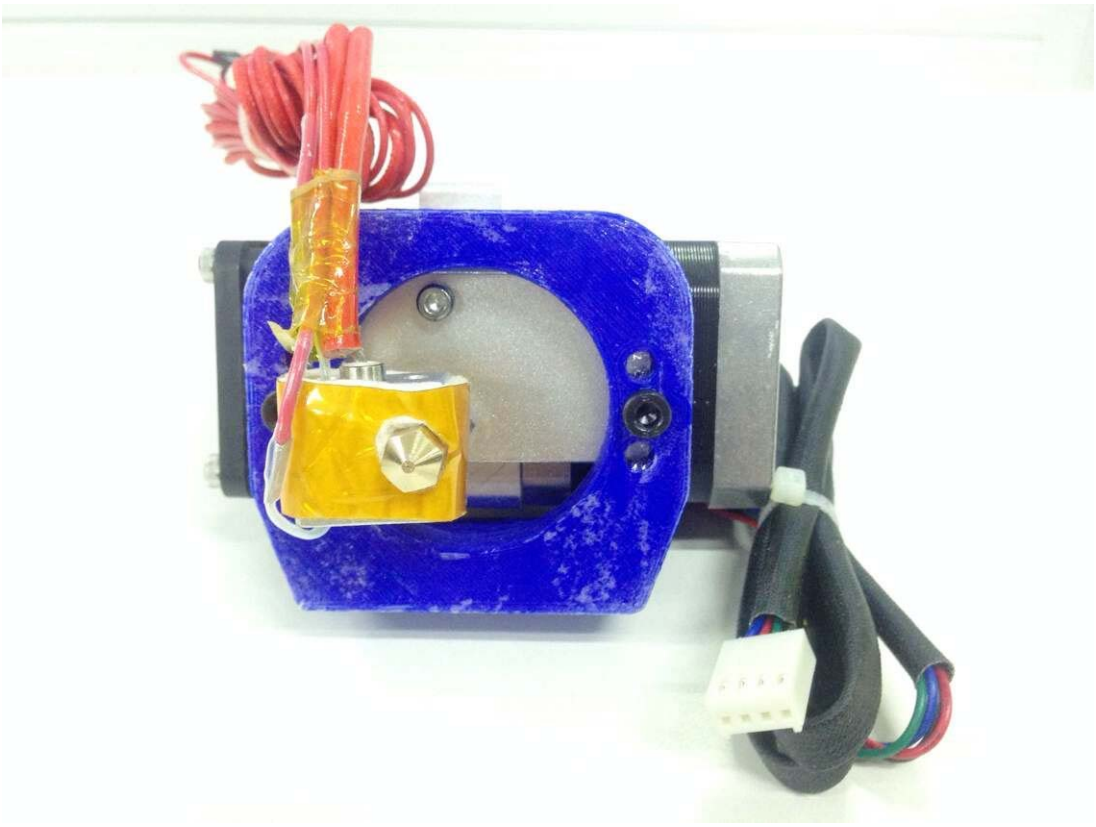


Step2. Mount the aluminum plate between the extruder.



Step3. Mount the assembled extruder on the extruder support. Use 2 M4 x 12 screws and M4 nut to fix.

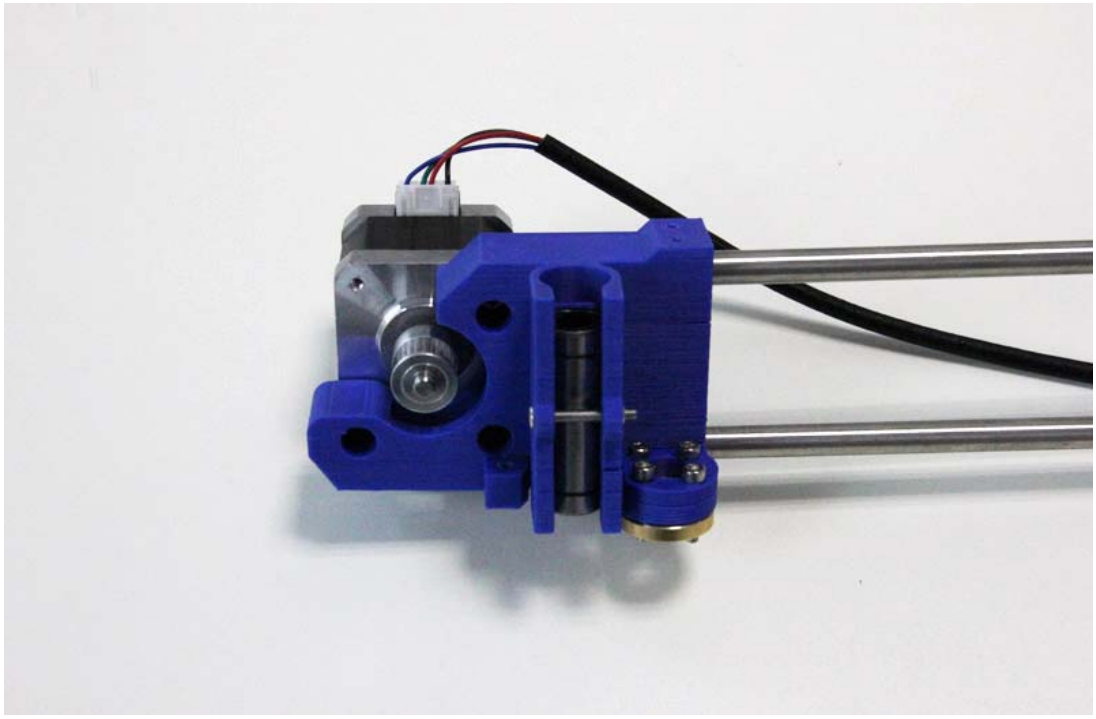




7.7 Mount the X-axis motor.

Required parts	Required number	Part ID
Stepper motor	1	NO.75
Pulley	1	NO.43
M3 x 8 screw	3	NO.23

Please pay attention to the mount direction of the pulley, which is opposite to that of the Y-axis.

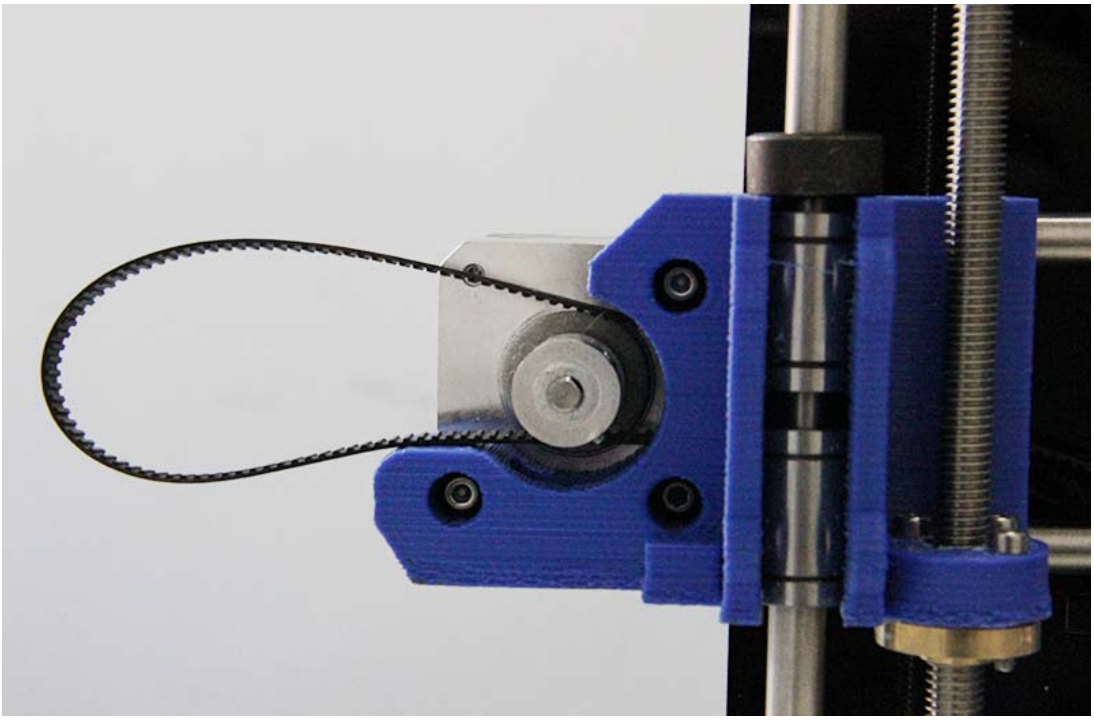


7.8 Amount the X-axis belt.

Required parts	Required number	Part ID
Timing Belt	1	NO.42
Zip tie	2	NO.54

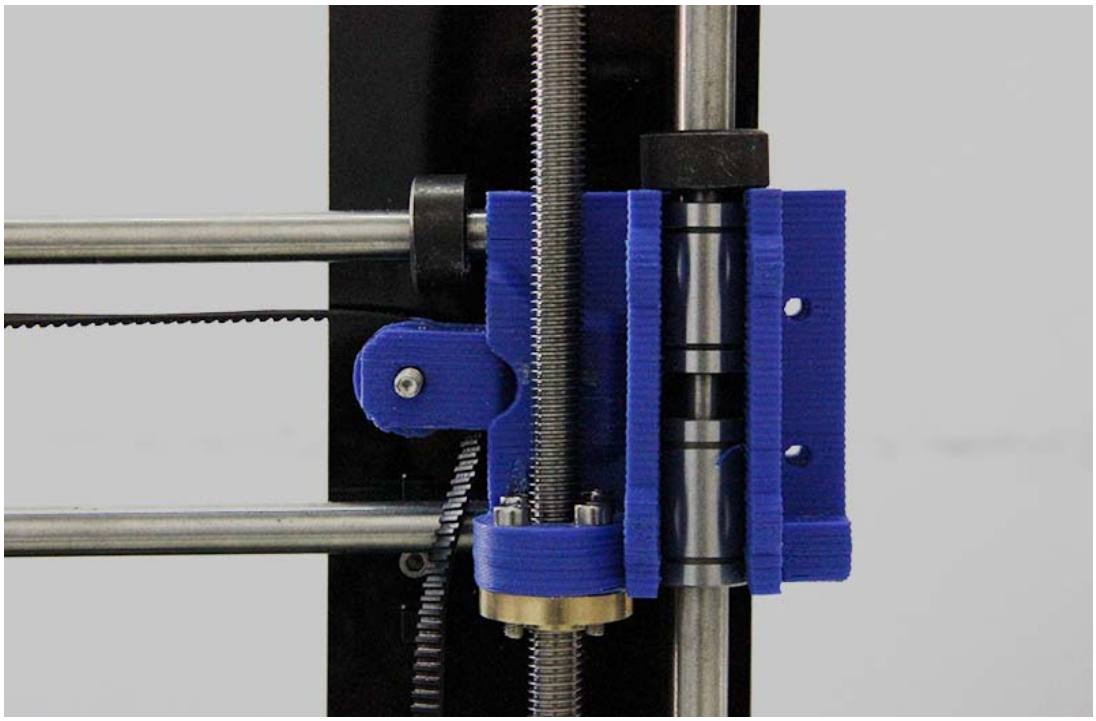
Step1. Thread the belt around pulley on the motor end.

(*The two linear bearings in the picture should be a longer one, please ignore it)



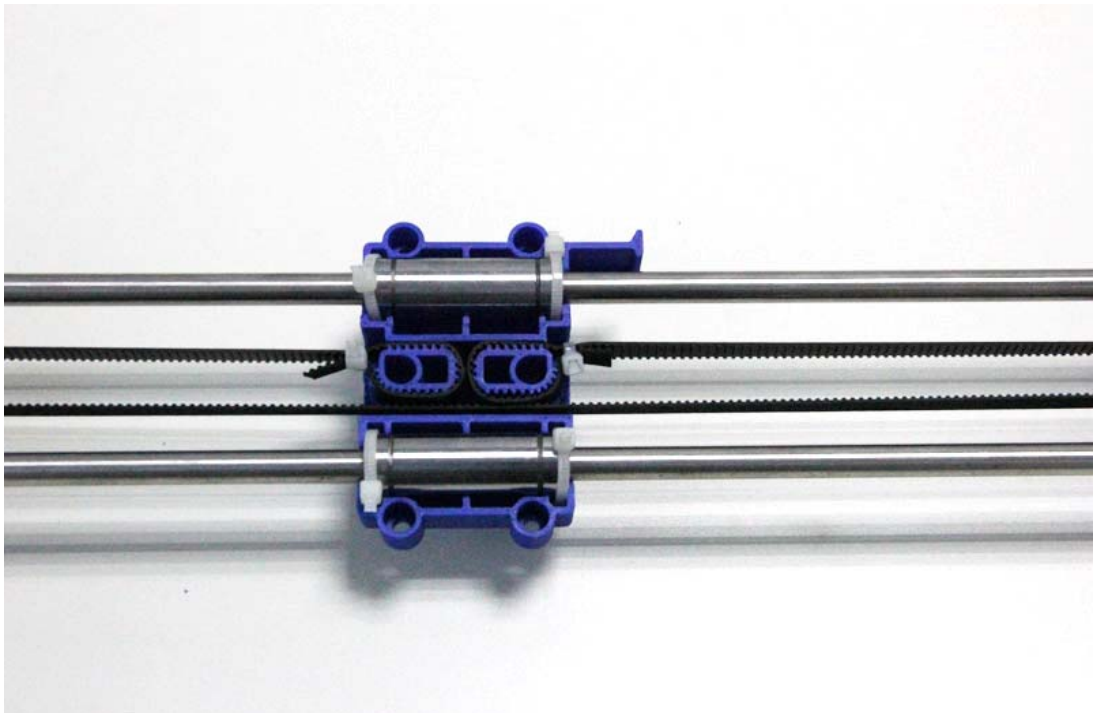
Step2. Another end of the belt should be threaded through the belt holder on the right end of the X-axis.

(The belt holder in the picture is different from yours, do not worry, it is ok for you to understand)



Step3. Insert the belt into the slot.

*Pay attention to the tooth mesh of the belt and that on the bracket. Tie up both ends tightly. (This bracket may be a bit different from yours, but it doesn't matter)

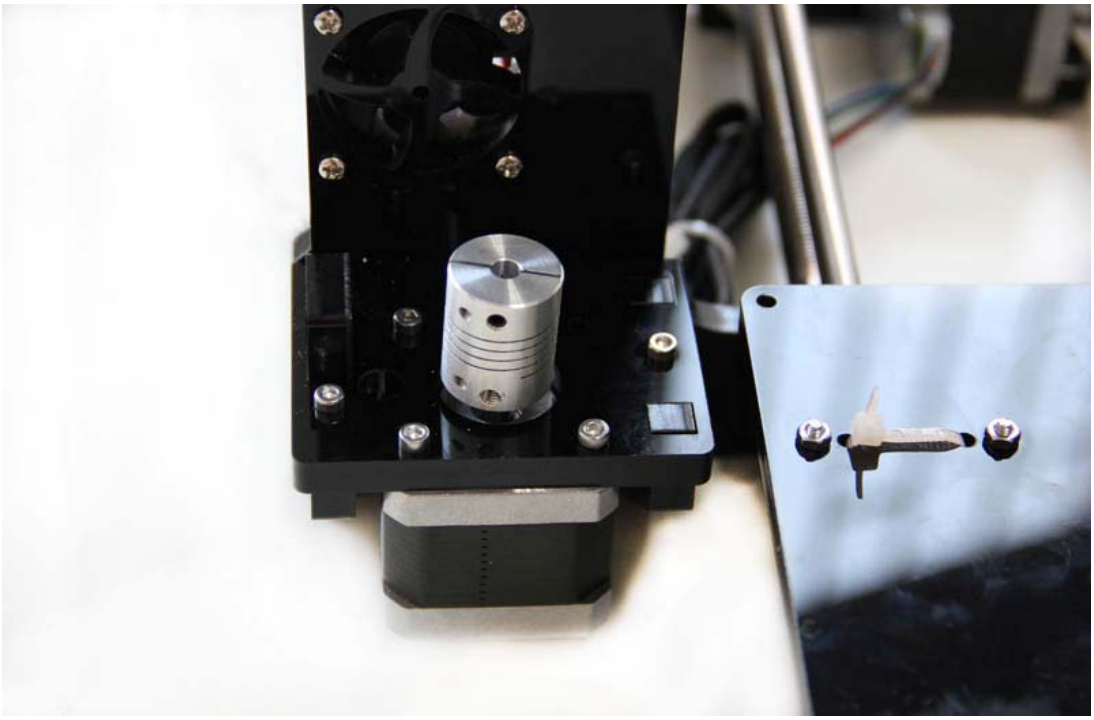


8 Assemble the X-Z axis.

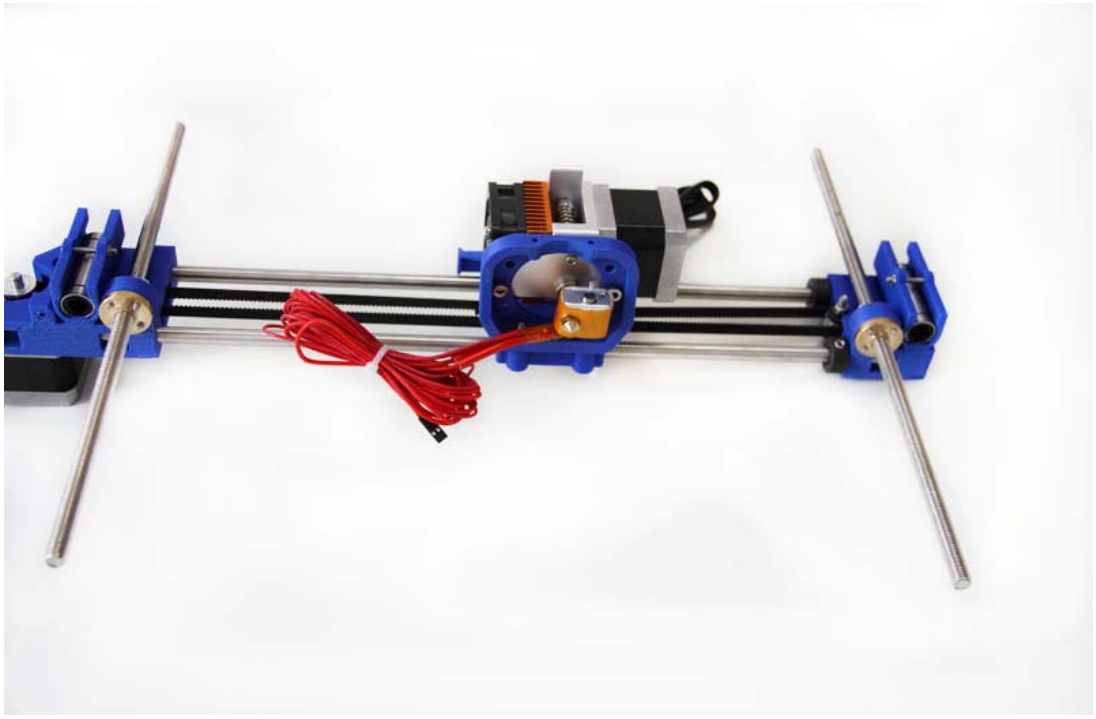
Required parts	Required number	Part ID
Couplings	2	NO.69
L322 threaded rod	2	NO.4

Step1. Fix the two couplings on both of the threaded rod. And plug it on the motor shaft.

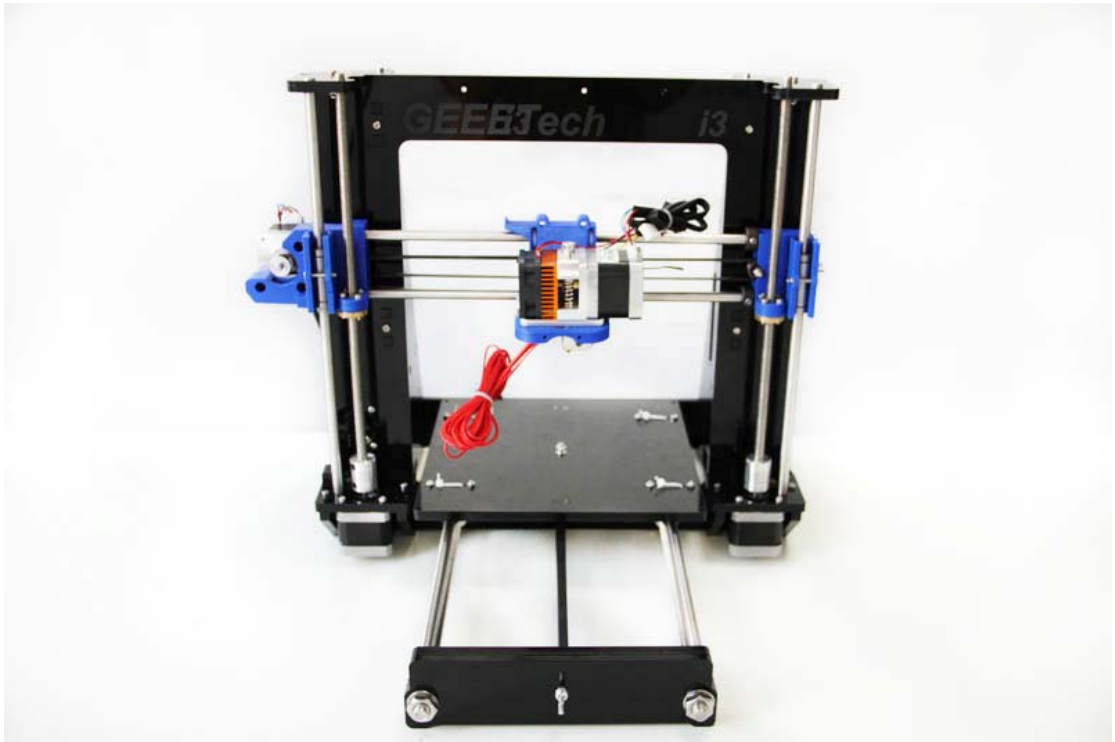
*Mind the opening of the couplings, the larger opening should be connected to the threaded rods.



Step2. Thread the threaded rods of Z axis through the brass nuts. It would be easier to do it now. Keep both end of the X axis flush.

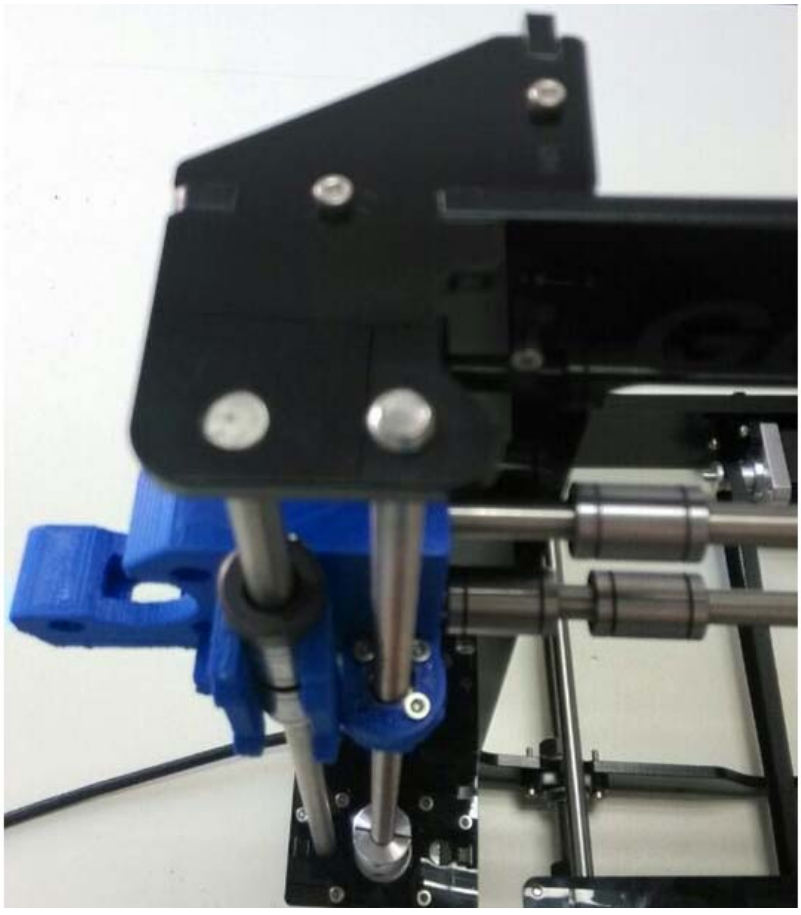


Step3. Put the assembled X-axis on the Z-axis. Then slide the smooth rod into the linear bearings.



Step4. Assemble the top mount of the Z-axis.

Required parts	Required number	Part ID
Z-axis top mount	2	NO.A8
M3 x 16 screw	4	NO.26
M3 square nut	4	NO.16



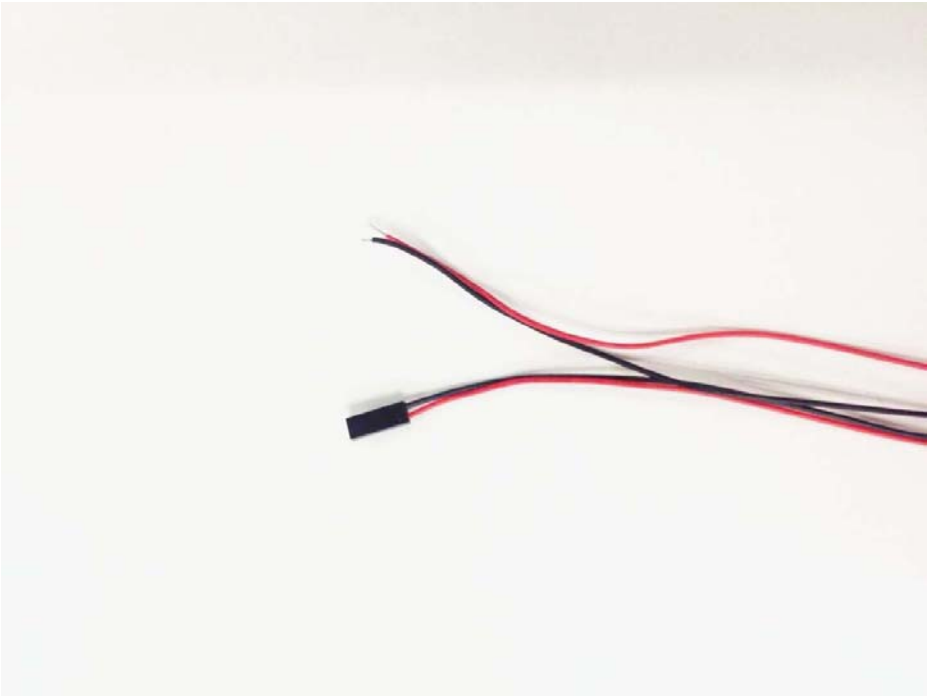
9. Attach he heated bed.

Required parts	Required number	Part ID
MK2A Heat bed	1	NO.71
Borosilicate glass	1	NO.72
Heating wire	2	NO.51
Thermistor	1	Attached on the bed
Thermometry wire	2	NO.50
Wing nut	4	NO.15
Spring	4	NO.37
M3 x35 screw	4	NO.29
clamp	4	NO.53

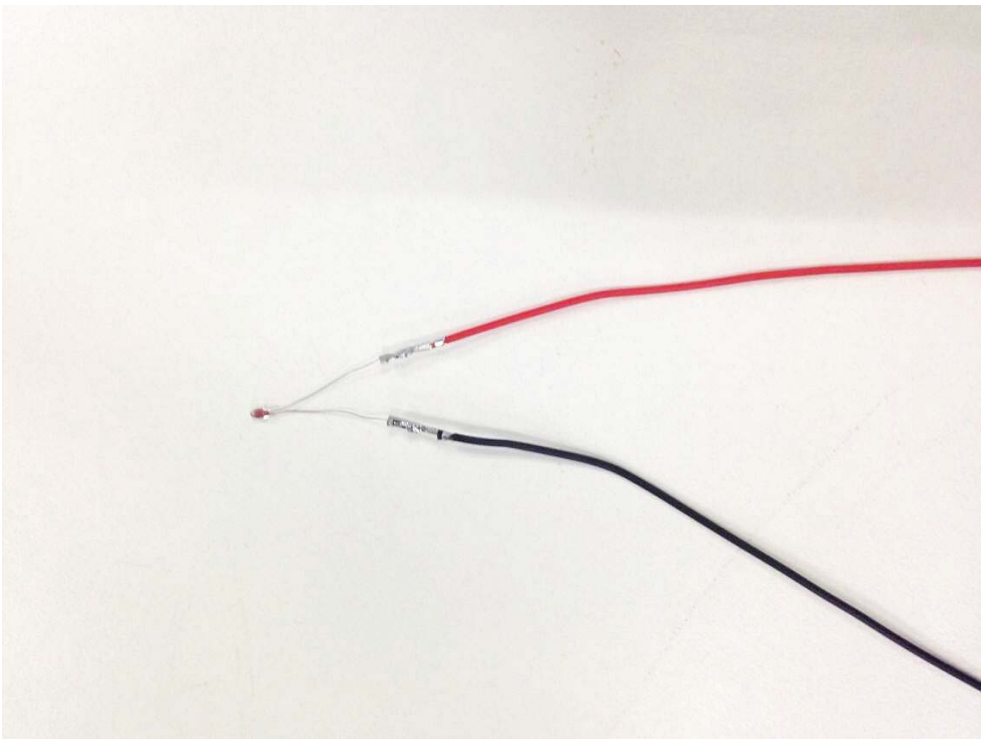
*All our heated bed is pre-soldered before shipping; you can attach the bed directly here. The following steps are just for reference if you need to change the bed in the future.

Step1. Solder the heating wire on the edge of the bed.

Step2. Take out the 2-pin DuPont wire and take off one the adapter.



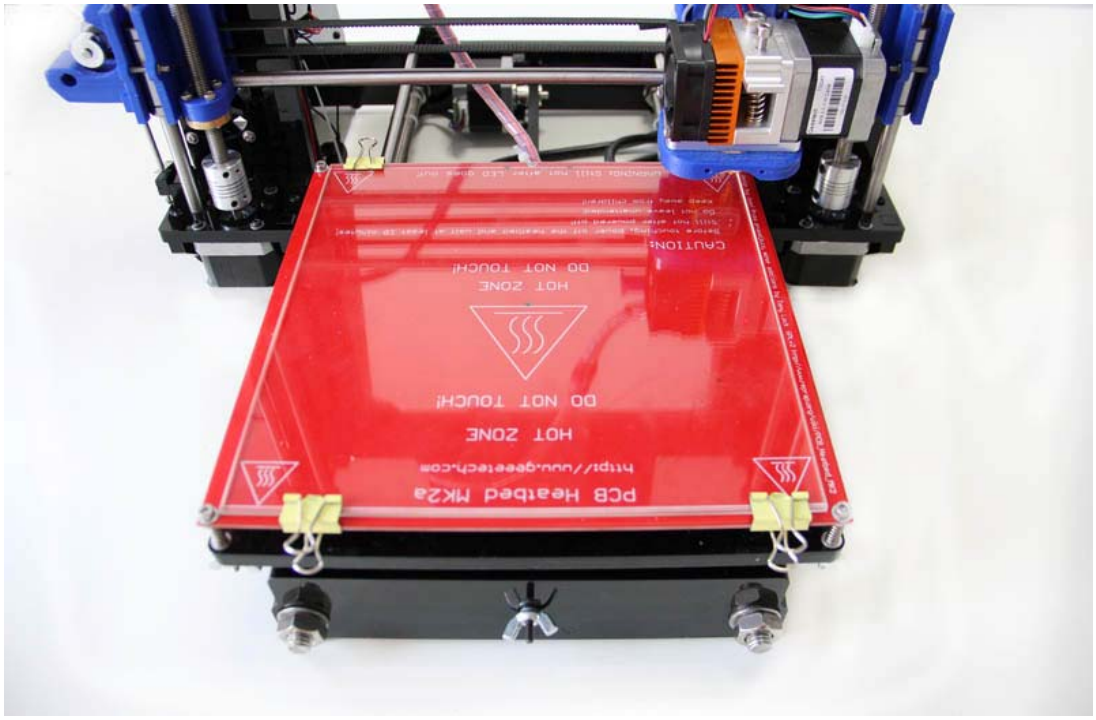
Step3. Solder the DuPont wire and the thermistor together.



Step4. Attach the DuPont wire and the thermistor on the bed with Kapton tape.

Step5. Mount the heat bed on the platform with 4 M3 x35 screws and wing nuts with springs in between. Clamp the heat bed and the glass sheet.

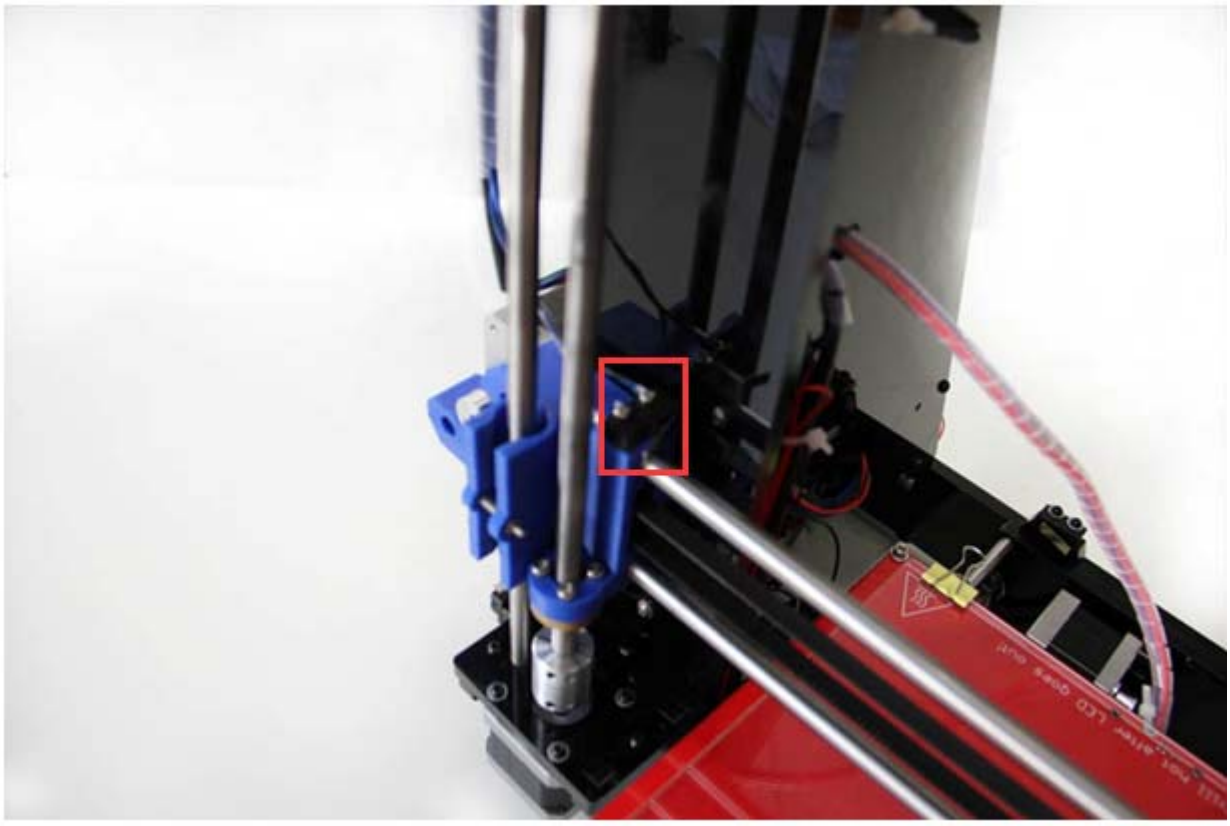
*the soldered side is better to be attached downwards.



10 Mount the end stops.

Step 1.End stop of X-axis

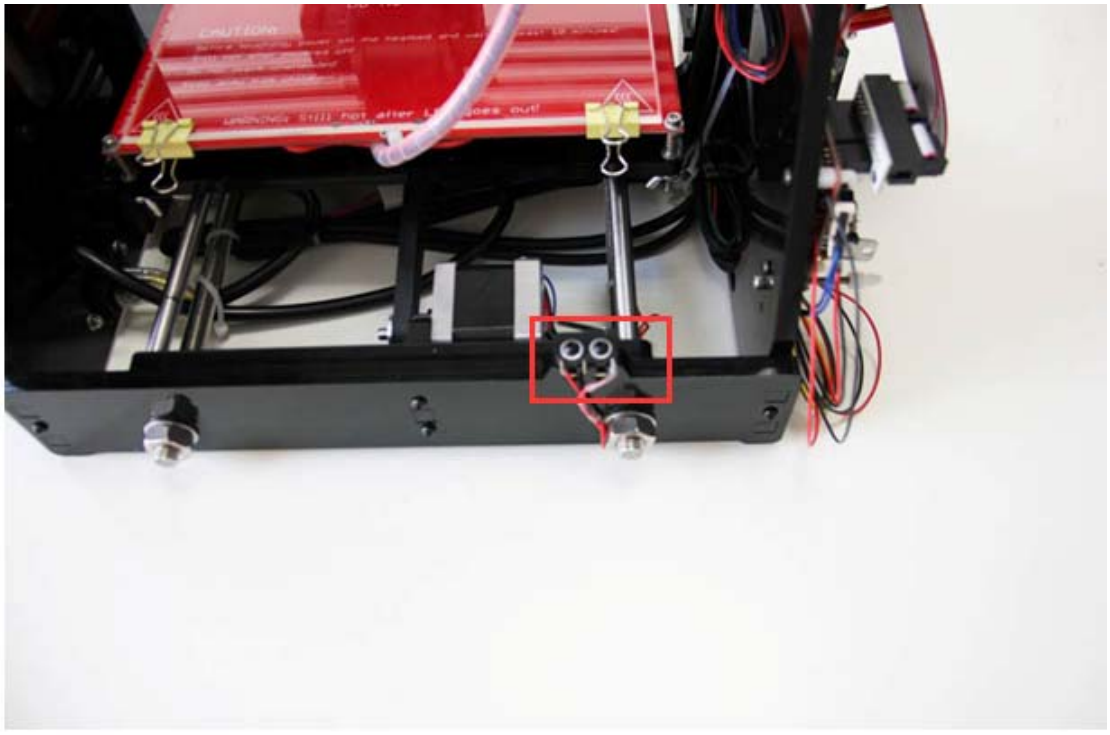
Required parts	Required number	Part ID
End stop	1	NO.44
M2.5 X 12 screw	2	NO.21



Step2. End stop of Y-axis

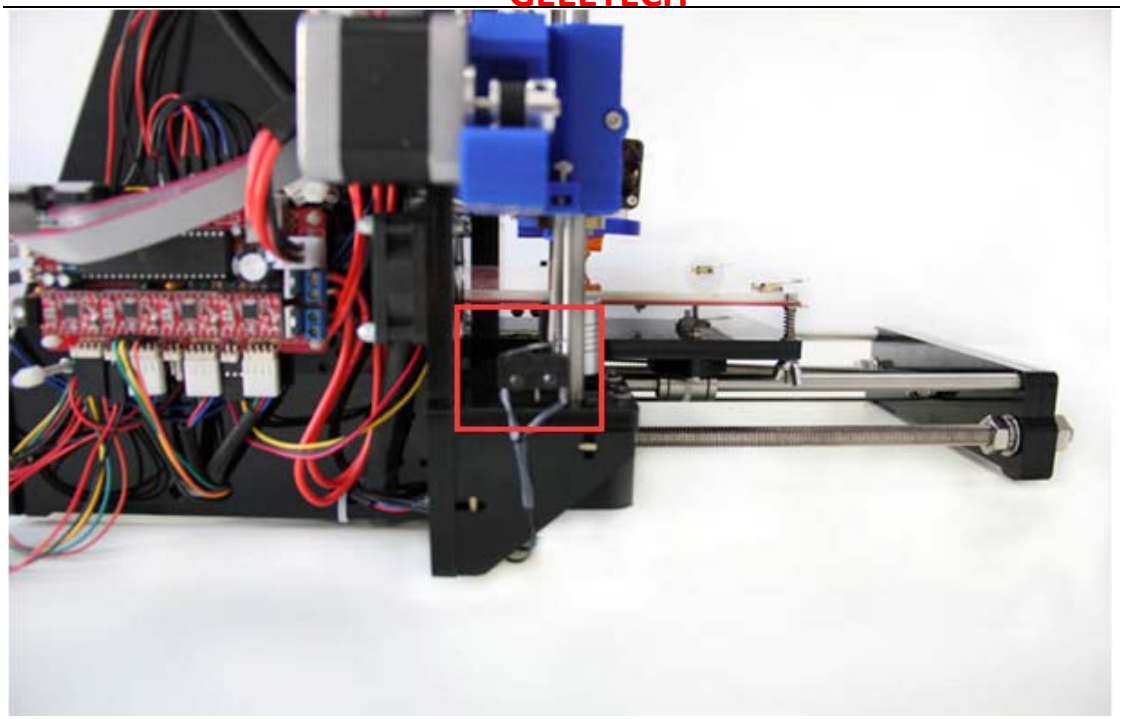
Required parts	Required number	Part ID
End stop	1	NO.45
M2.5 X 16 screw	2	NO.22
M2.5 Hex nut	2	NO.10

Note: there is no “+” and “-” for endstops, so there is no difference for the wires.



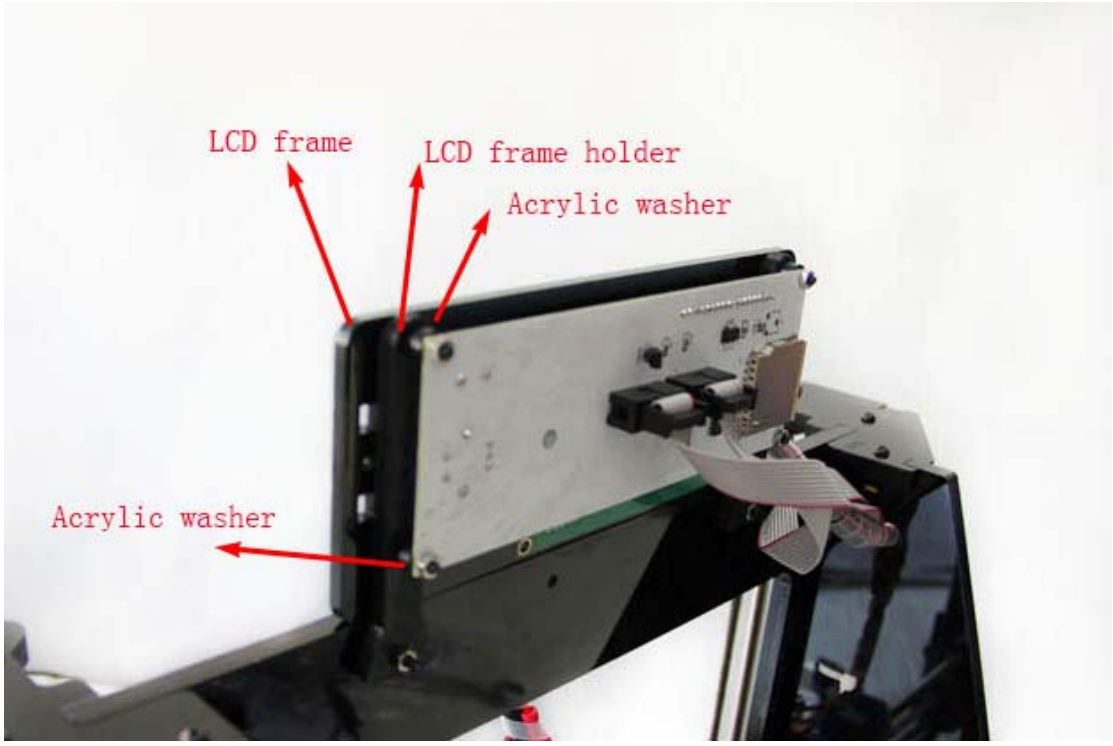
Step3. End stop of Z-axis

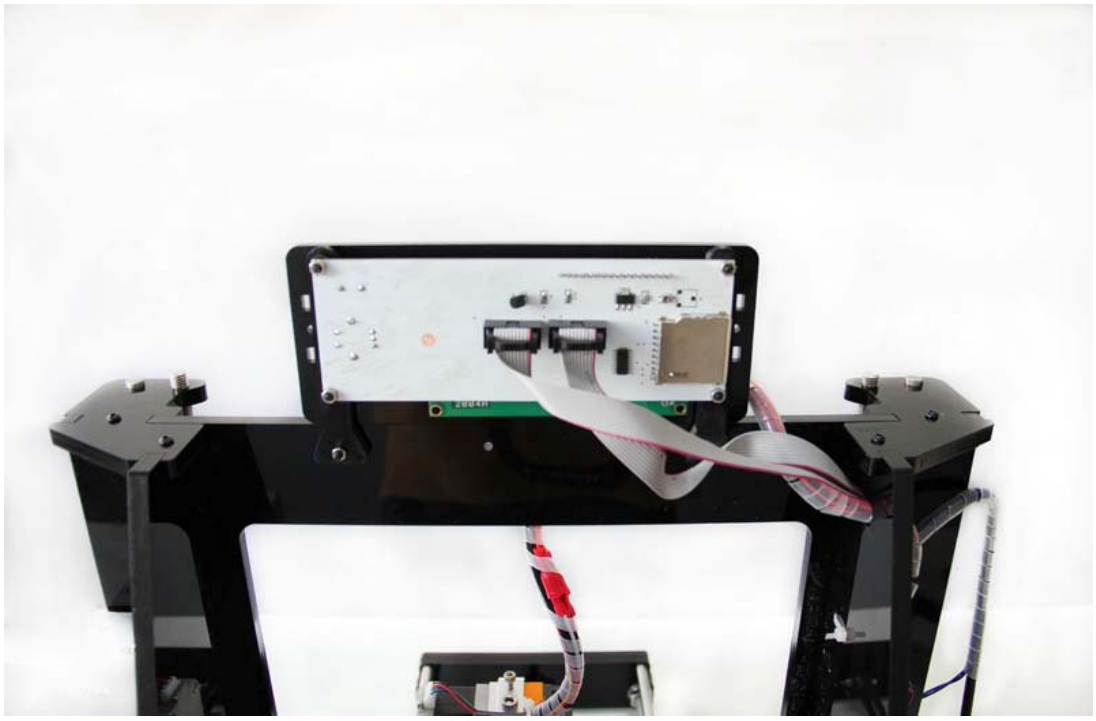
Required parts	Required number	Part ID
End stop	1	NO.46
M 3 X 16 screw	2	NO.26
M 3 nut	2	NO.11



11 Mount the LCD panel frame.

Required parts	Required number	Part ID
LCD 2004	1	NO.80
LCD frame	1	NO.A21
LCD frame holder	2	NO.A23
Acrylic washer	4	NO.A20
M3 x 20 screw	6	NO.27
M3 nut	4	NO.11

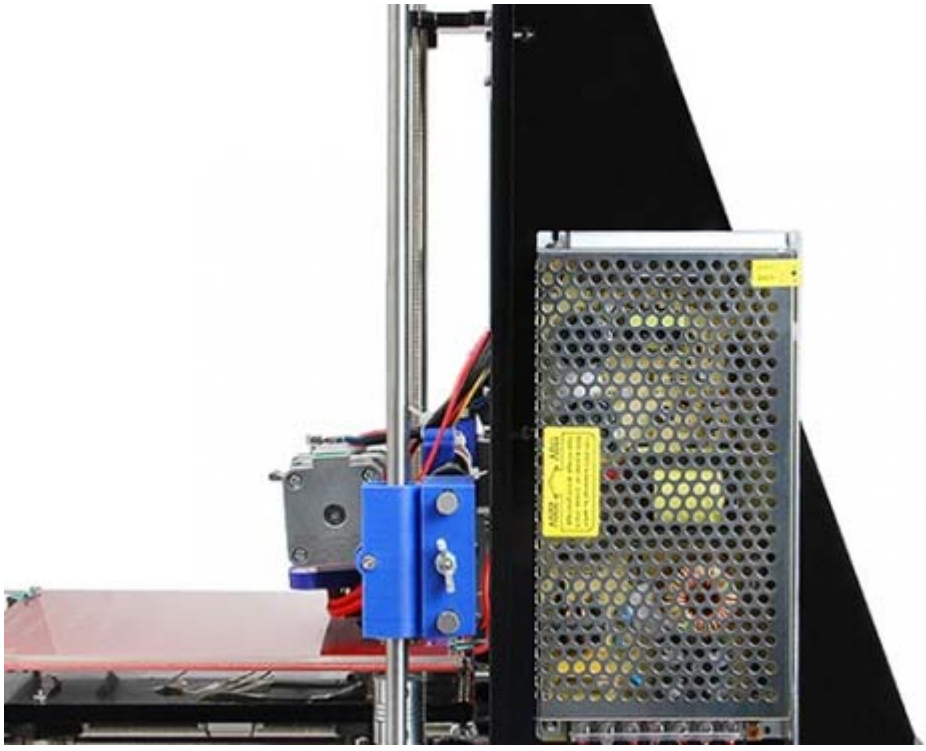

LCD frame
LCD frame holder
Acrylic washer
Acrylic washer



12 Mount the PSU

Required parts	Required number	Part ID
Power supply	1	NO.74
M3 x 10 screw	3	NO.24
M3 x 16 bolt	2	NO.36
M3 nut	2	NO.11
3D Power cable	1	NO.52

Step1. Mount the PSU (Power supply unit) on the right side panel with 3 M3 x 10 screws.



Step2. Mount the AC socket with M3 x 16 screws.

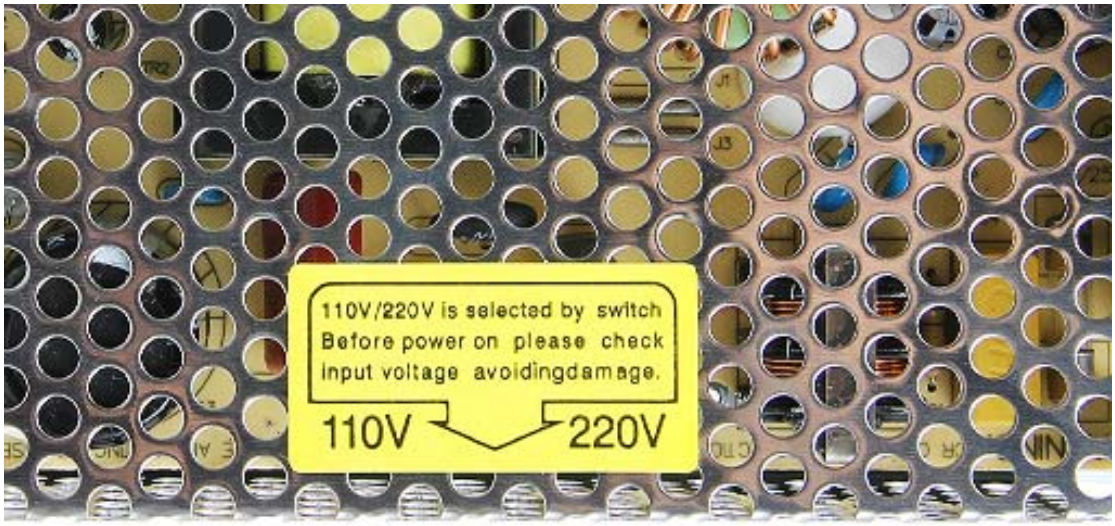
First you have to take off one end of the connectors to get both the power button and the power socket into the hole.

***(The connection of wire in this picture is very important; you should pay close attention in case the PSU suffer a shortcut)**

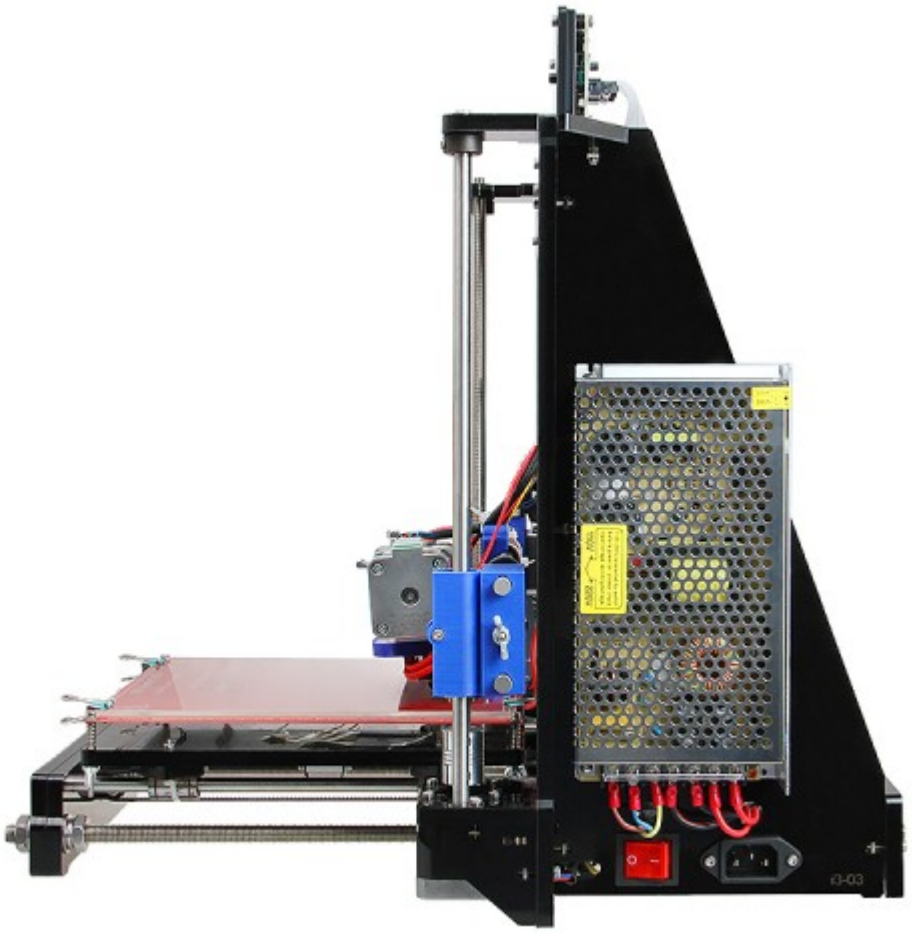
Step3. Connect the power cable to PSU.

1) Mind the color of the wires. The wrong connection of the wire will cause serious damage to the PSU and even to the control board of the printer.

2) Pay attention to the switch on the right side of the PSU, there are two options of voltage: 110 V and 220V, choose according the standard in your country. As shown in the following picture. You can use some hard sticks to reach the switch.



see the finished picture here.



13 Mount the control board

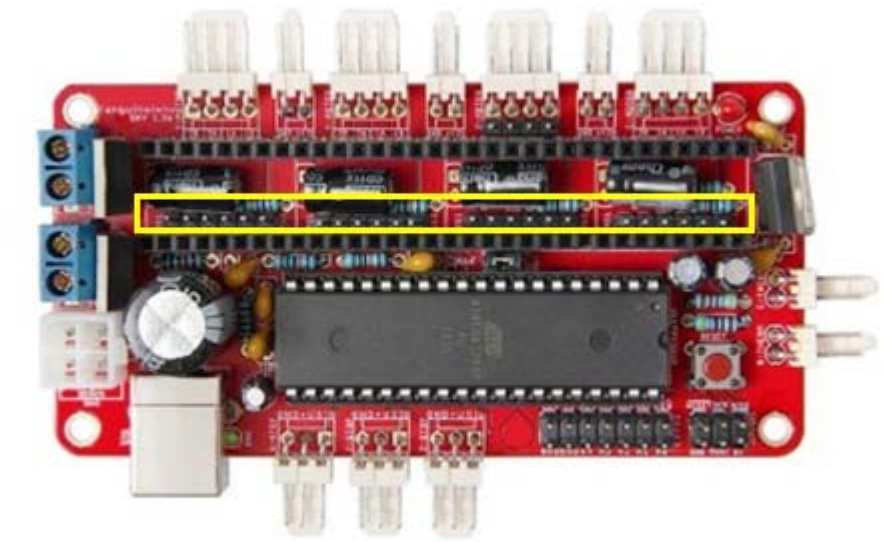
Example 1: Sanguinololu

Step1. Plug the jumper caps on the following pins of the board. (In the yellow circle)

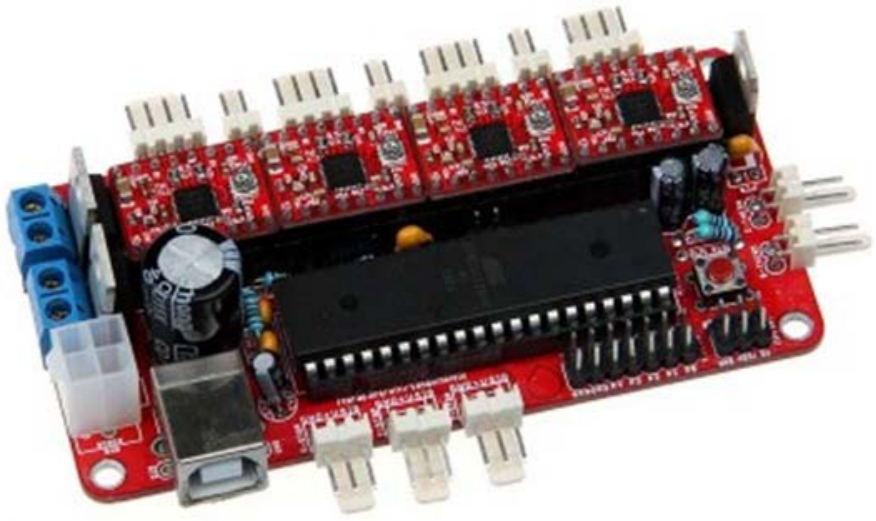
These caps are very tiny; do not throw them away inadvertently.

The jumper caps are packaged along with the board, do not lost them.

You need to plug 12 caps in all.



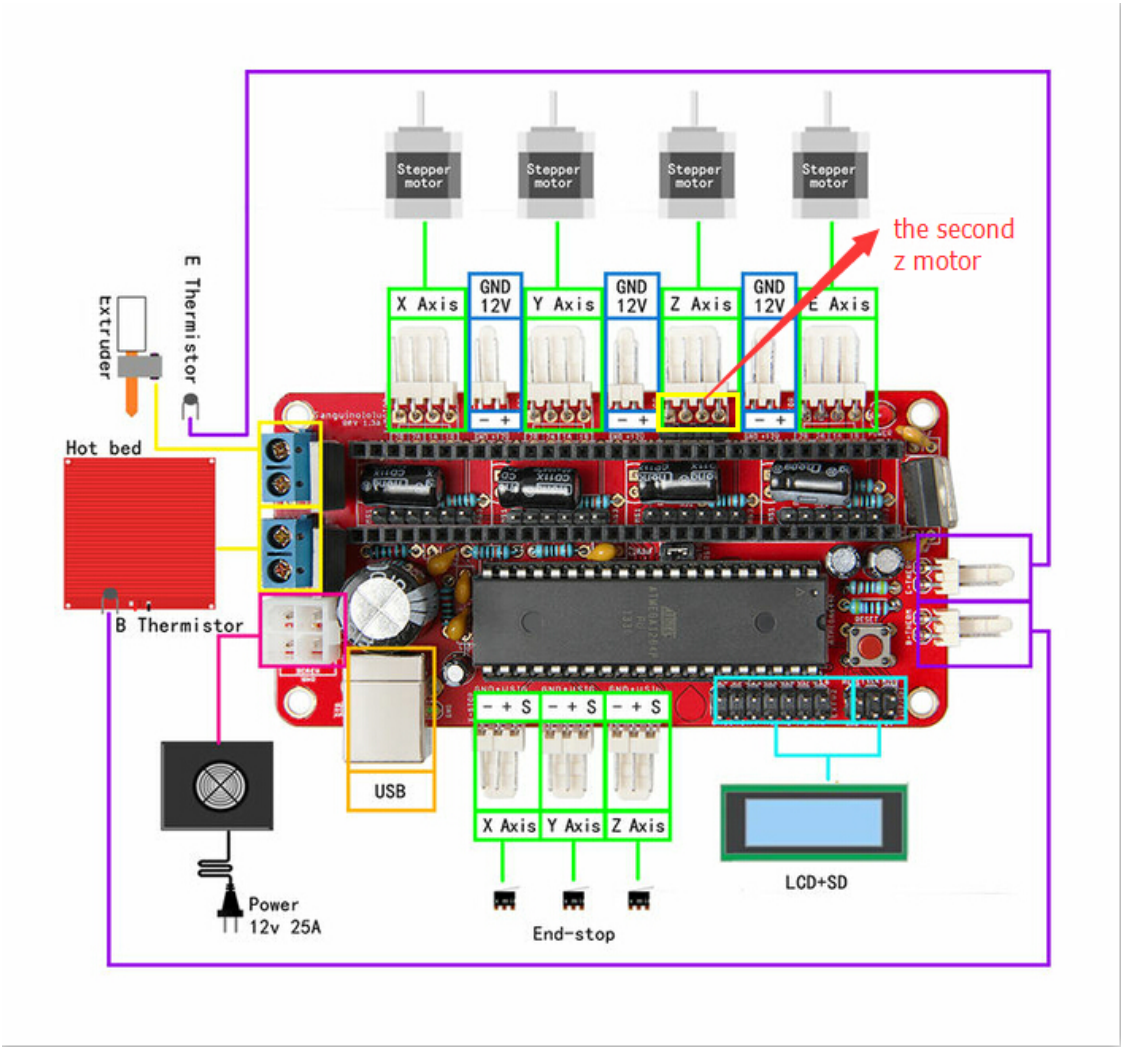
Step2. Stack the 4 A4988 on Sanguinololu



Step3. Stick the heat sink on the chip of the 4 A4988.

Step4. Connect all the wires to the interfaces of the board

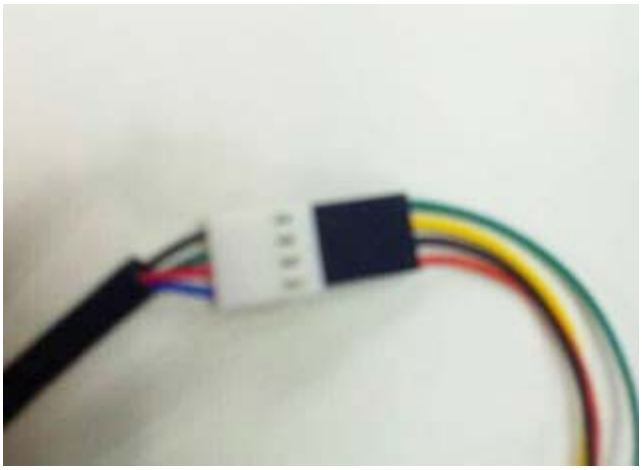
The referring wiring schematic diagram of Sanguinololu



For more information about Sanguinololu, please visit the wiki page.

Note: when connect the other Y-motor, use the 4-pin M-F DuPont cable and pay attention to the directions of the wire. If you connect them reversely, the 2 Z motor will move in different directions.

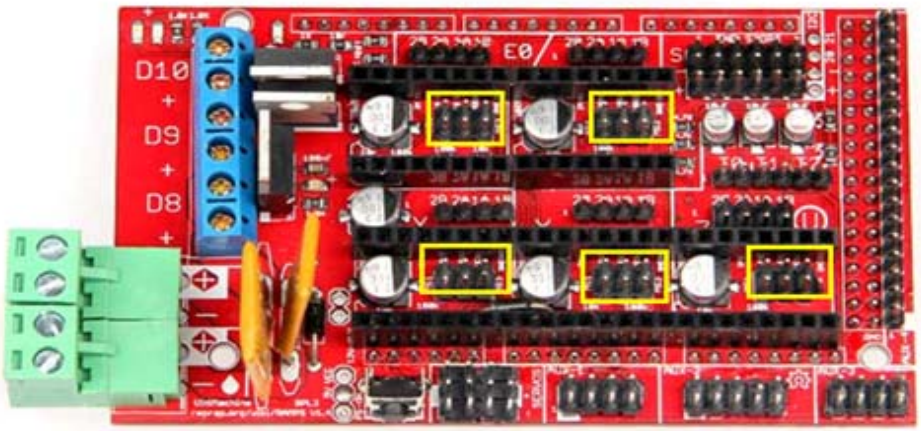
Look at the colors of the wire.



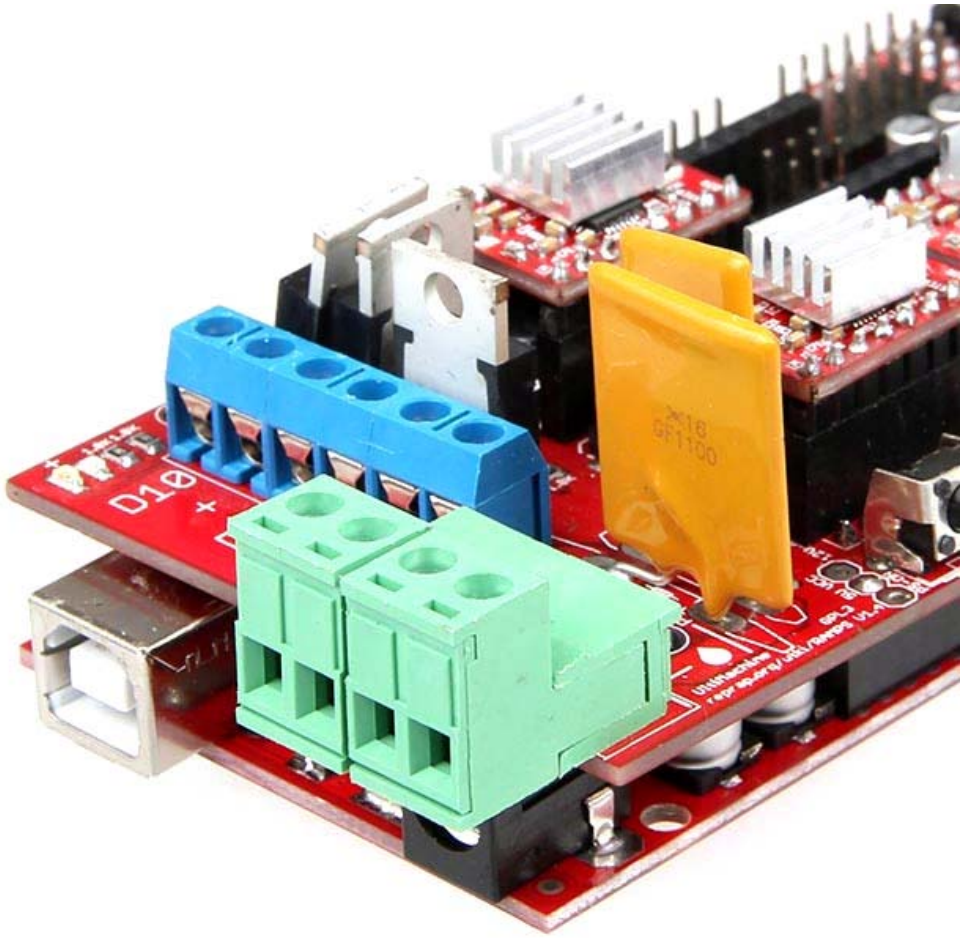
Example 2: Ramps 1.4

Step1. Plug the jumper caps on ramps 1.4.

You need 15 jumper caps in total.

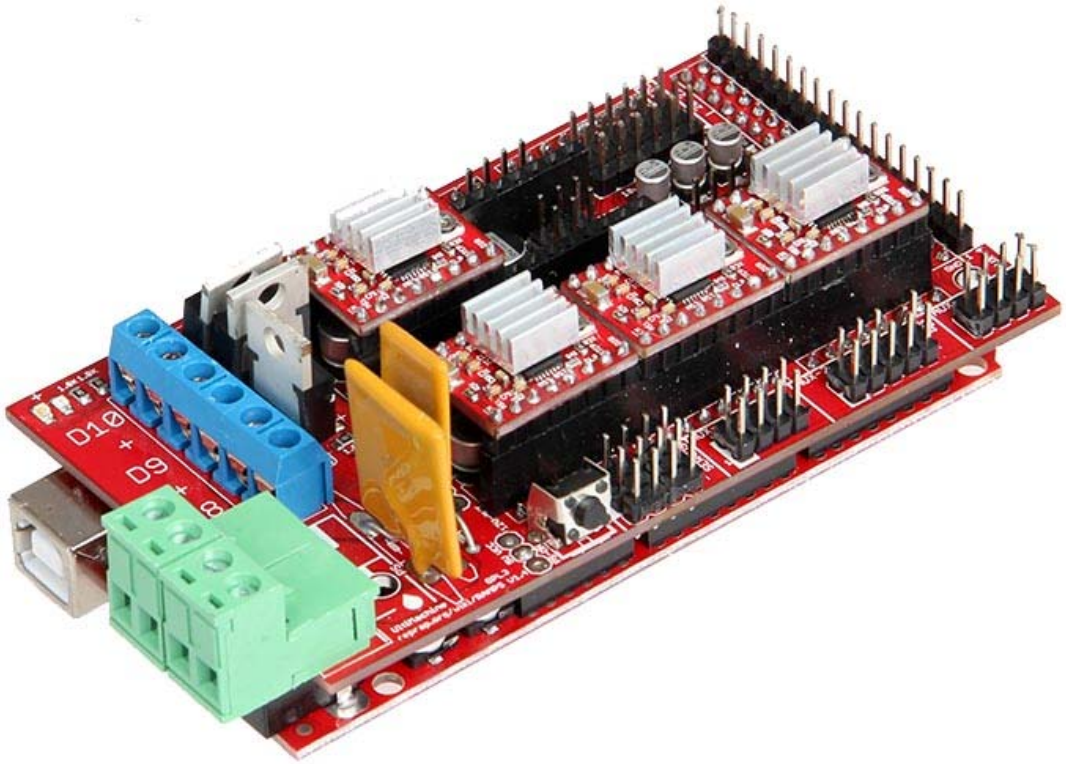


Step2. Stack ramps 1.4 onto mega 2560.

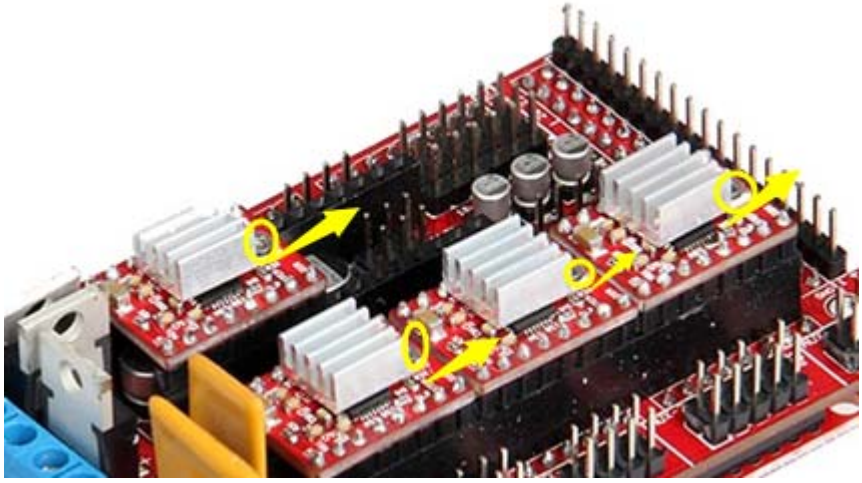


Step3. Plug the 4 A4988 motor driver boards on ramps1.4; stick the heat sinks on the driver boards.

3 for X, Y axis and extruder, 1 for Z axis



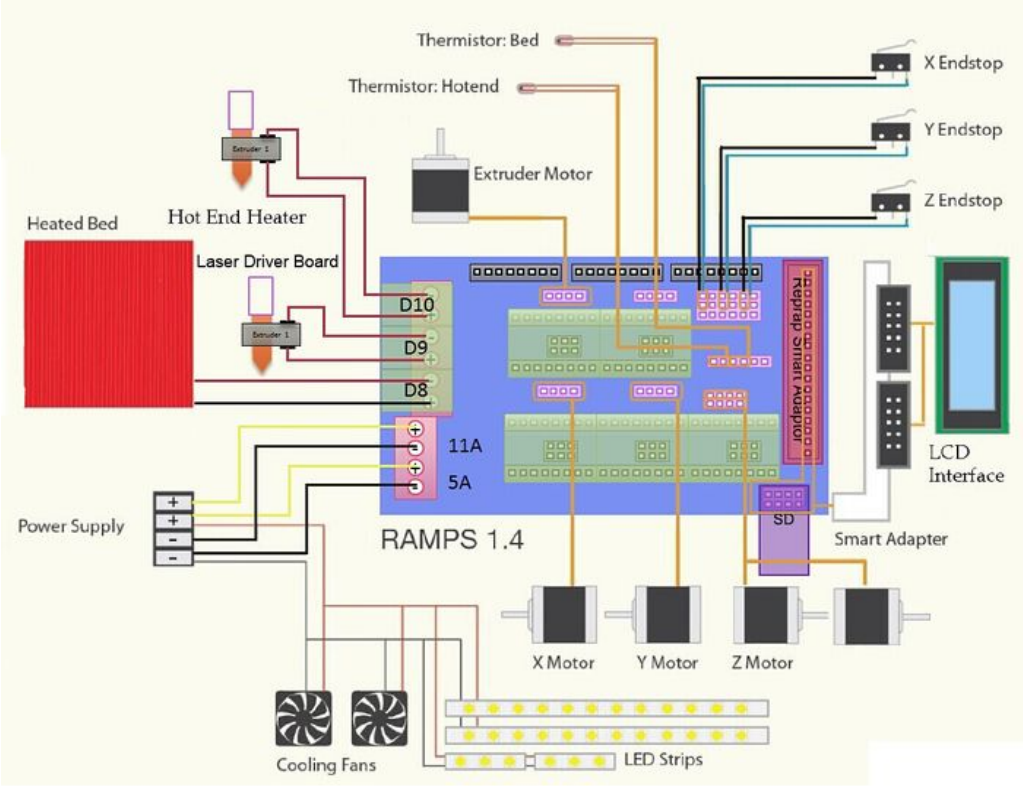
Step5. Mind the directions of the driver boards. You can see the “GND” on the board.



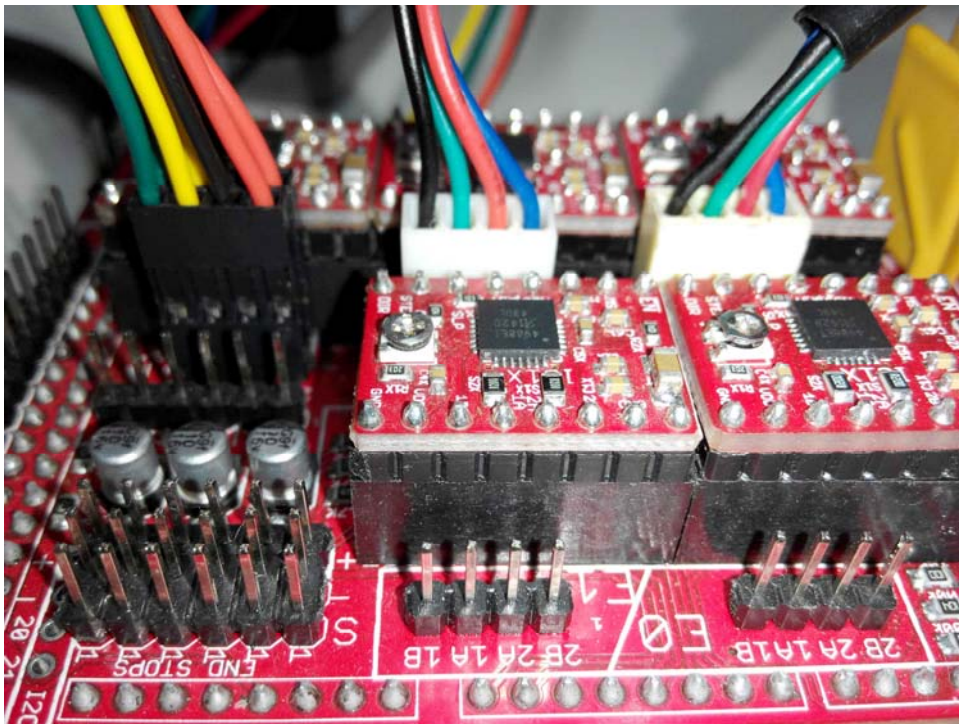
Wiring

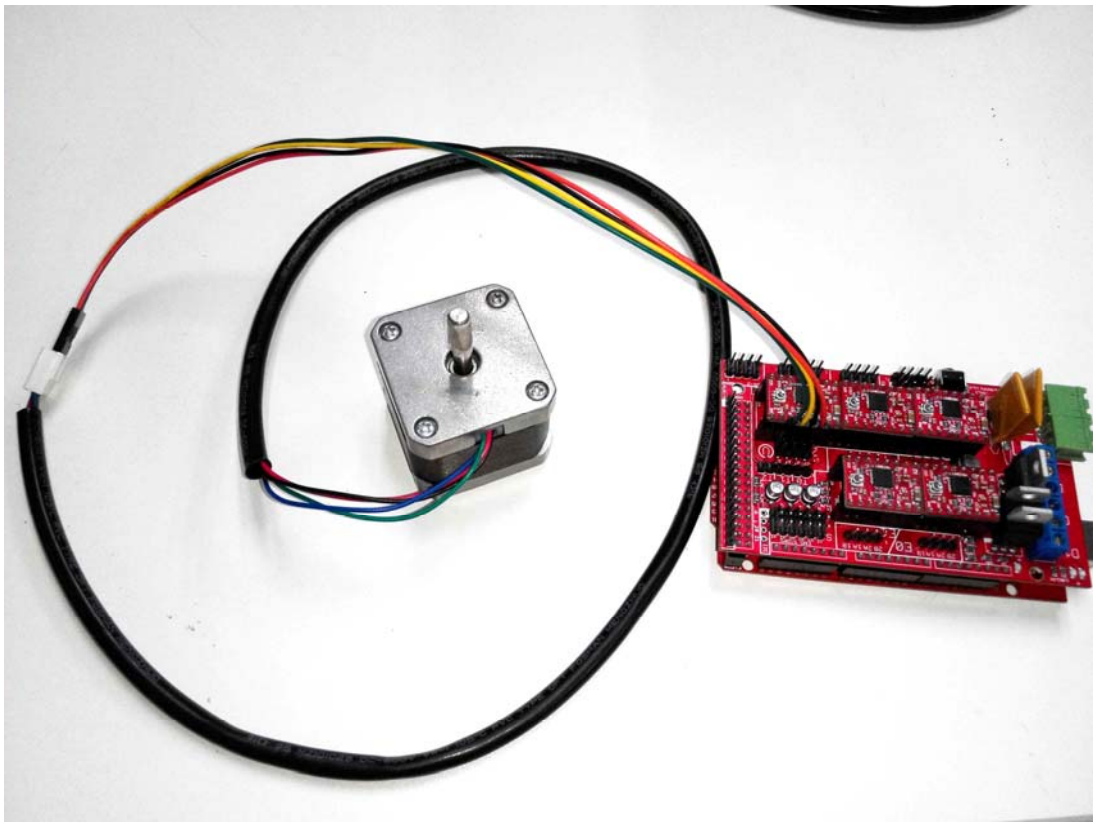
To make you see clearly, I will divide them into several parts separately.

The referring wiring schematic diagram of Ramps 1.4



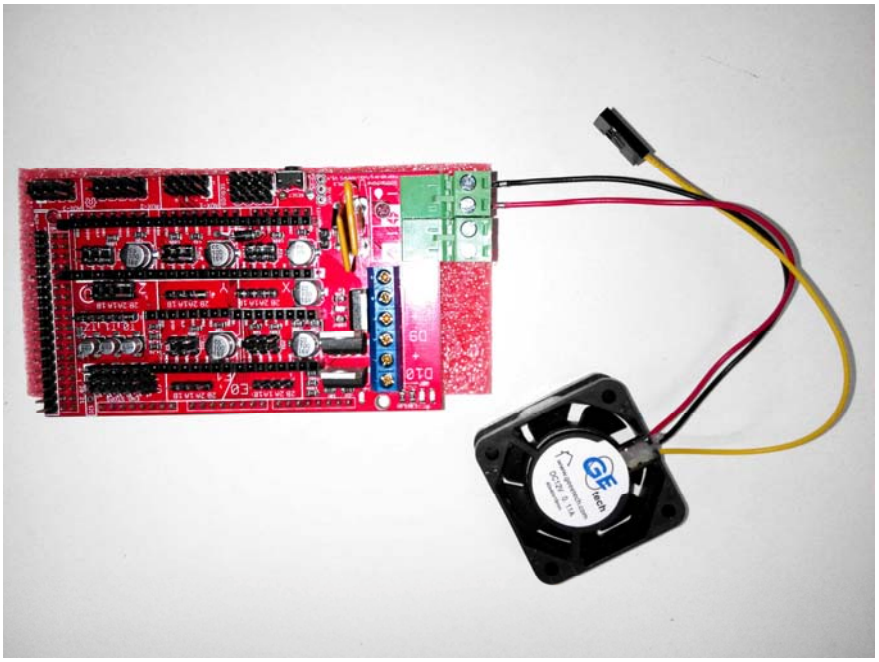
Step1. Connect motors. X and Y motors are easier; here you need to notice the Z motor, you need 2 4-pin DuPont cable to extend for Z motor.





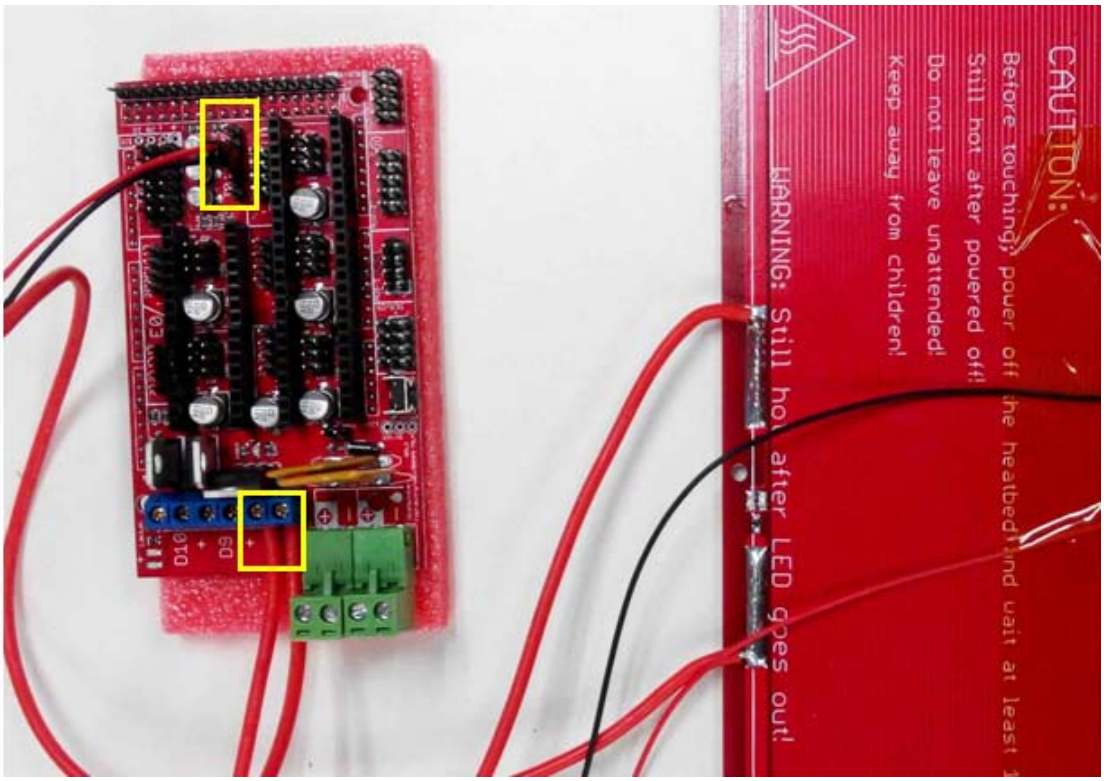
Step2. Connect the fan; both the fan for extruder and the main board are connected like this. As to the fan for extruder, you need another 2-pin DuPont cable to extend.

Take off the adapters and plug the cable into the power port.



Step3. Connect the heatbed.

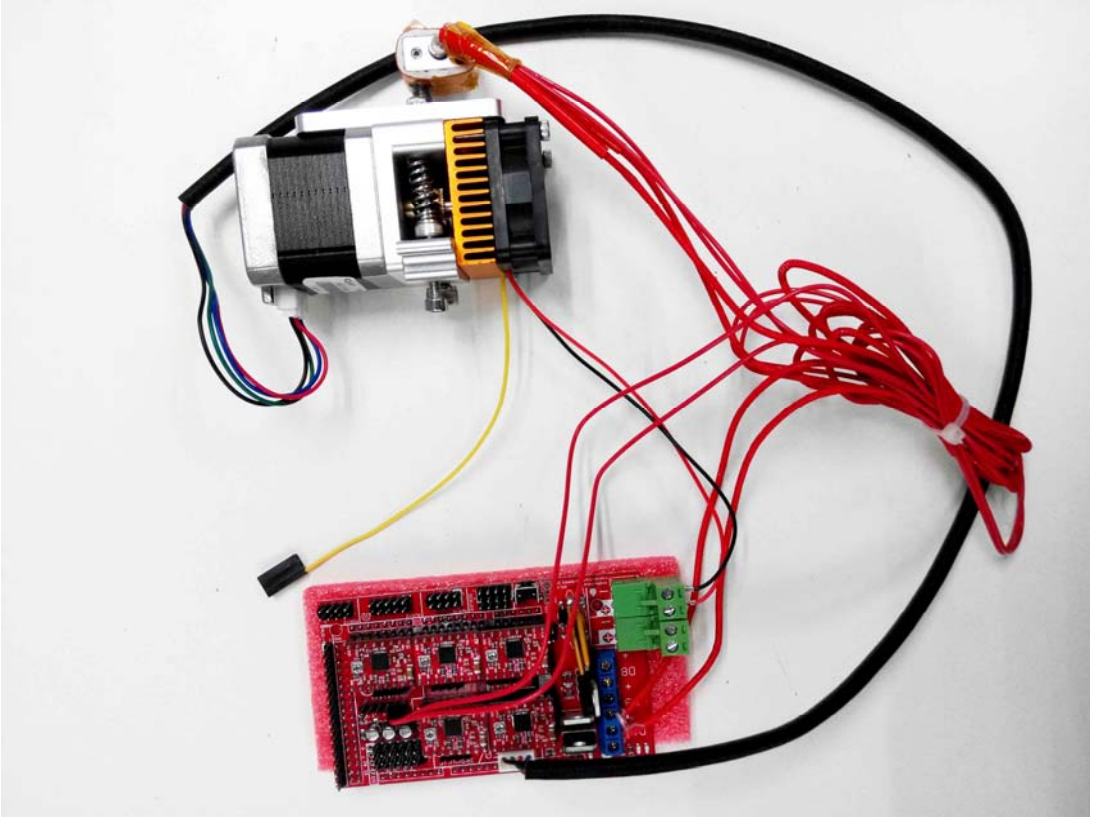
The thicker red wire is for heating and the 2-pin DuPont wire are for thermometry.



Step4. Connect the extruder

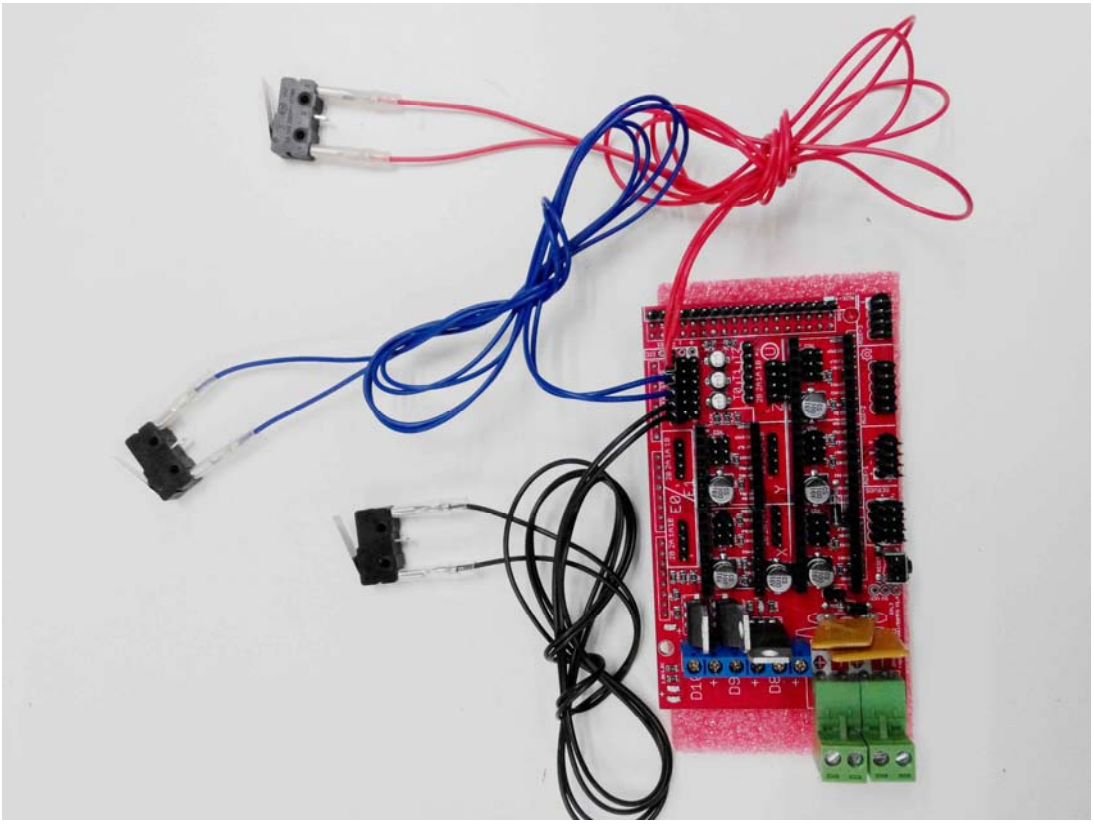
The 2-pin DuPont cable with adapter is for thermometry, the thicker one is for

heating.



Step5. Connect the end stops.

Note that there is no “+” and “-” for the endstoppers. You can connect them as you like.

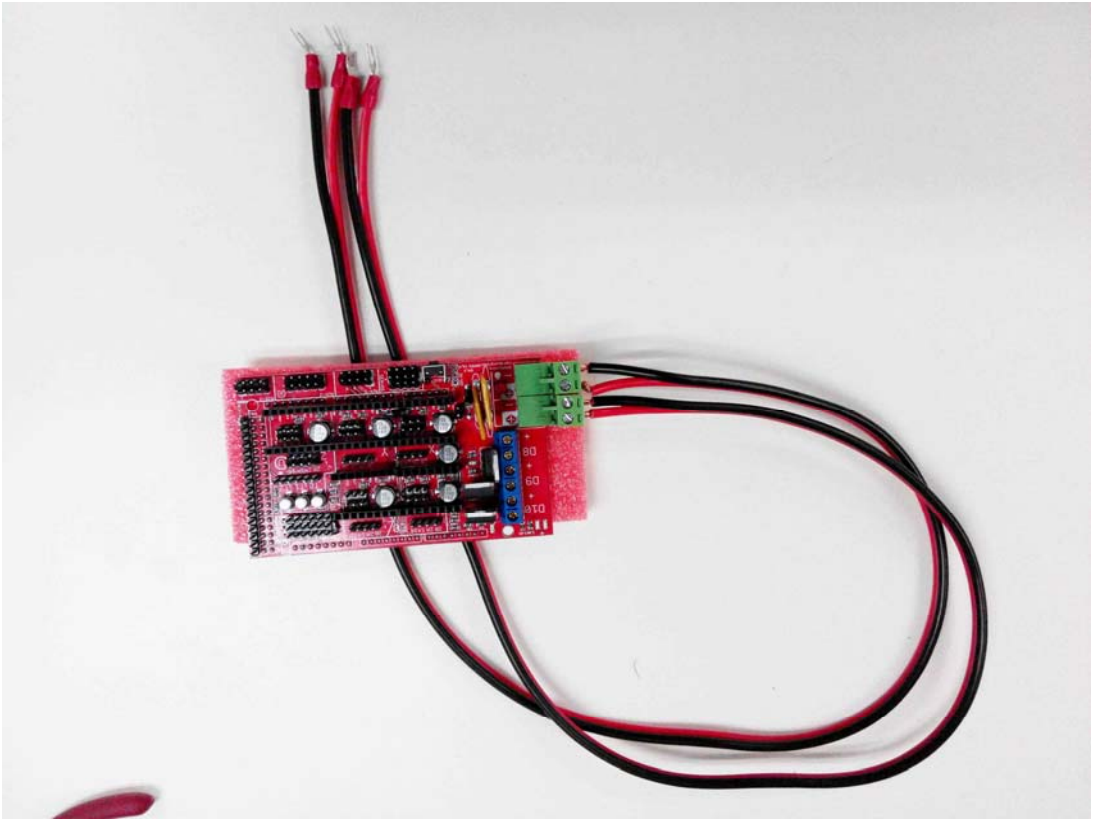


Step6. Connect the power supply.

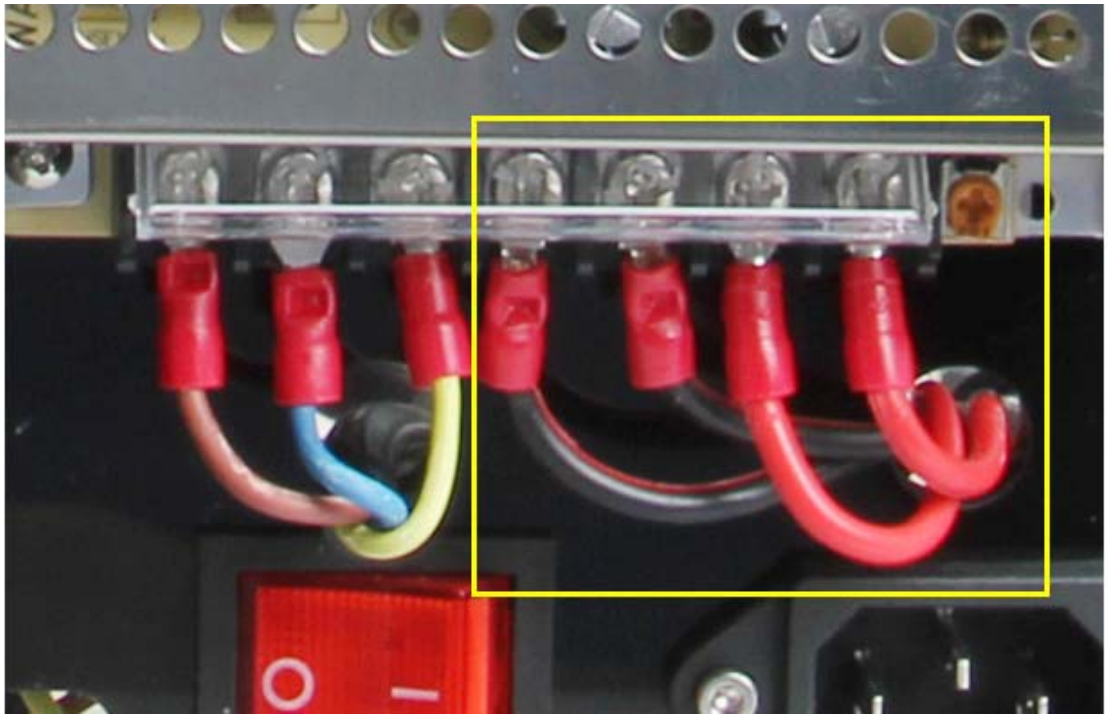
First you should take off the white adapter.

Then screw the cable into the power port. Notice the “+” and “-“

Red is “+”. Black is “-“.



Plug the other end into the PSU.



For more information about ramps 1.4, please visit the **ramps 1.4 wiki**

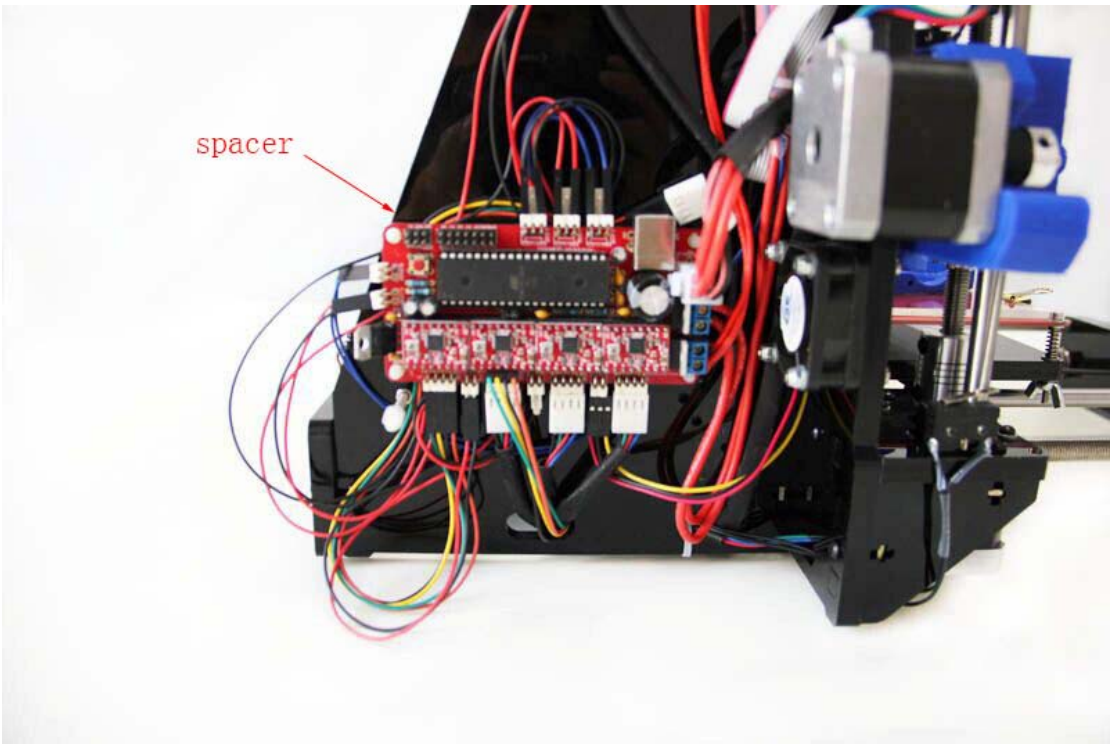
14. Mount the board

Here we take sanguilonulo as an example.

Mount the board on the left side panel of the printer. And cover the board with the acrylic plate.

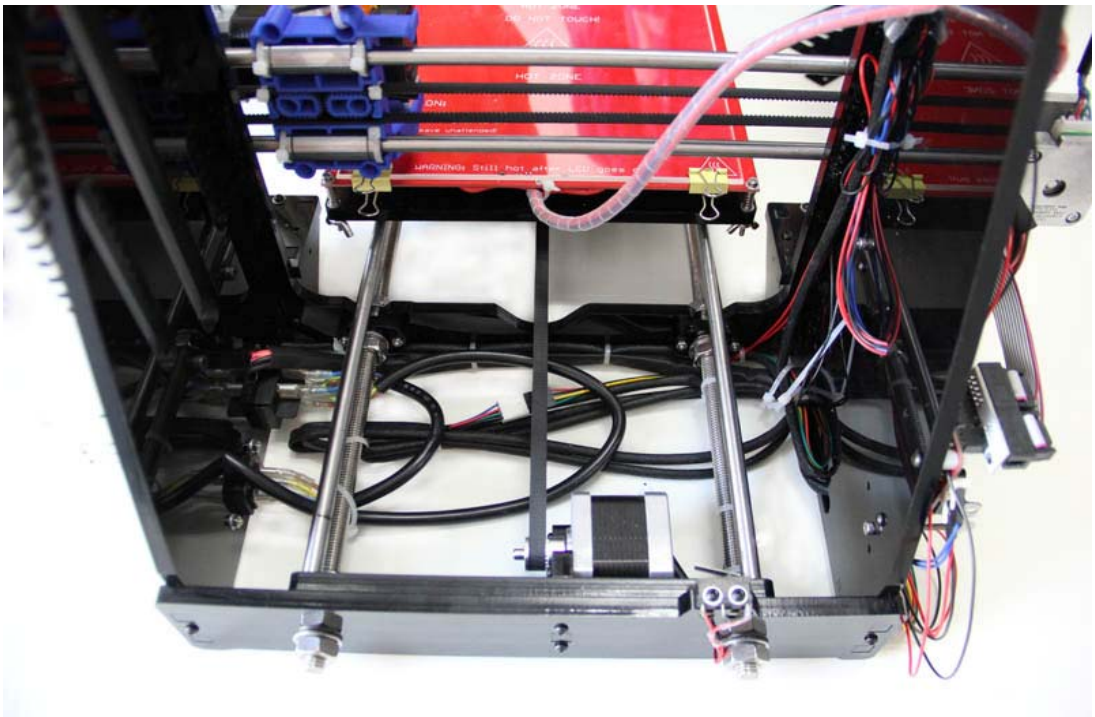
Required parts	Required number	Part ID
spacer	4	NO.48
Acrylic fender	1	NO.A19
M3x20 screw	4	NO.27
M3 x 40 screw	2	NO.30
M3 nut	4	NO.11

Please pay attention to the direction of the board, the end with Capacitor should be mounted towards the fan for better heat dissipation.



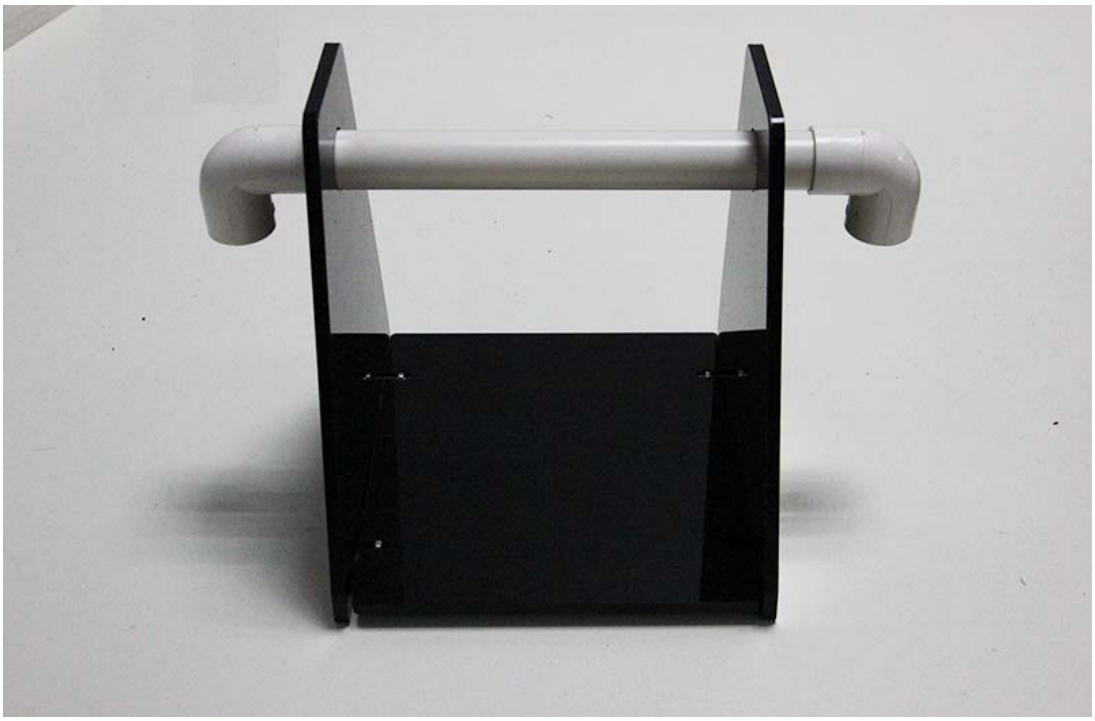
15. Tidy out the wires.

Use the wire coil to tie put those wires together. There are holes on the acrylic plates for the wires, you can arrange them as you like.



16 Mount the filament spool.

Required parts	Required number	Part ID
Filament side panel	3	NO.A17,18
M3 x 16 screw	4	NO.26
M3 square nut	4	NO.16
PVC tube	2	NO.60,61



The whole printer assembly work is already done.

Hope you enjoy the whole process.

For how to set up the printer, please visit:

http://www.geeetech.com/wiki/index.php/Acrylic_Prusa_Mendel_I3