

BIQU KOSSEL PLUS

Product Assembling Manual



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Corner fittings assembly

Upper corner fittings assembly (A1)

①	Upper corner fittings	3
②	M4*10 round-head hexagon socket head cap screw; M4 ship-type nut	15
③	EN 2020 aluminium profile (345mm)	3
④	F623ZZ bearing	6
⑤	M3*25 round-head hexagon socket head cap screw;M3 nut	3



A. As shown in the figure, screw the screws and nuts on the corresponding holes, pay attention to the direction, screw up a few rounds and ensure it can be smoothly pushed into the aluminum grooves, each corner fitting equipped with 5 pairs of screw nut.

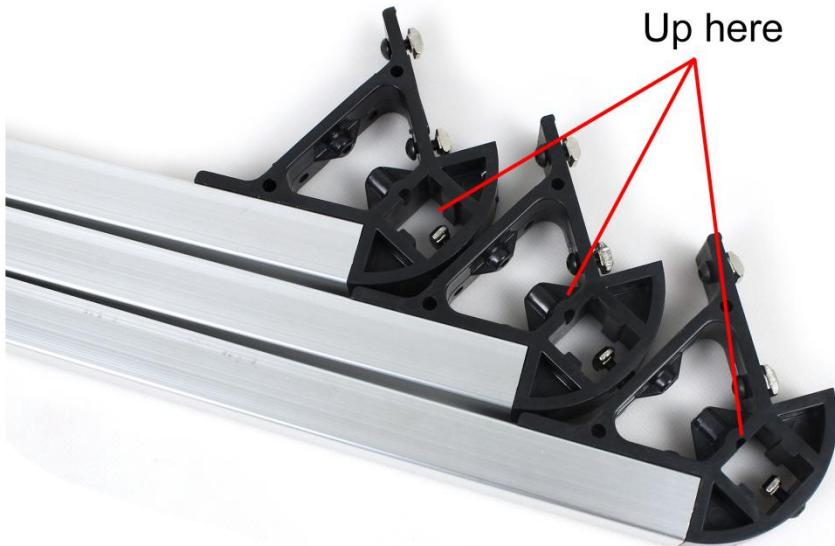


B. Fix the 345mm EN 2020 aluminum profile (three sides closed one side open) and corner fittings.



C. As shown in the figure, three parts were spliced together by adjusting nut direction, slowly push together, finally tighten the nut. !!!!!! Note: upper and lower part of corner fittings are different, at the center line hole: small hole on one surface is inlet,

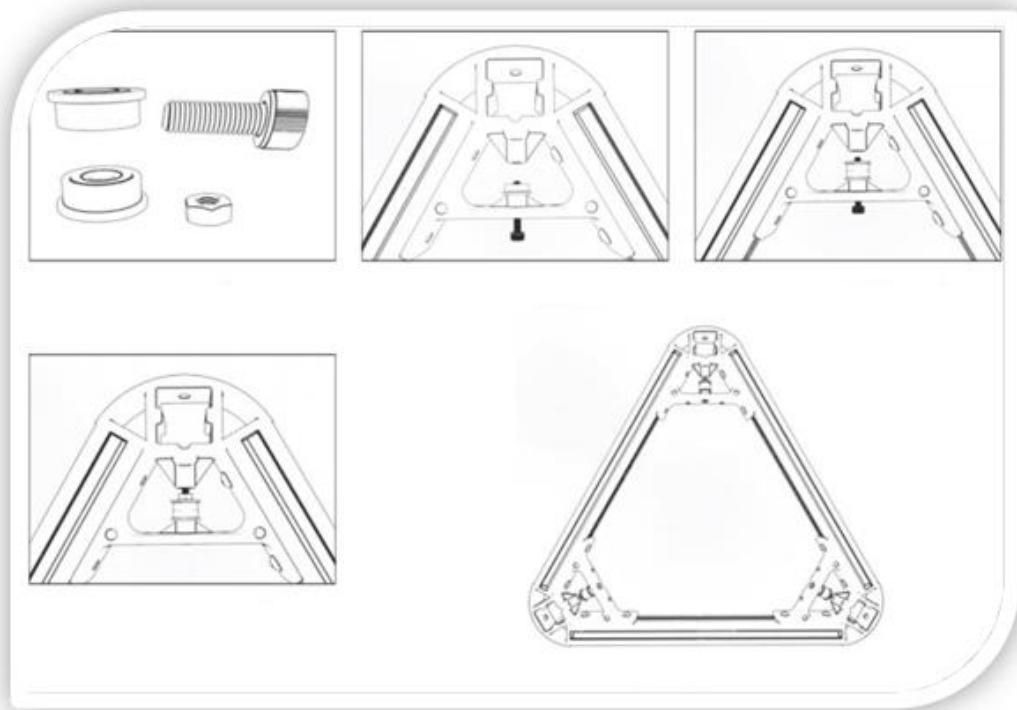
large hole on one surface is downward.





D. Install the belt guide bearing as shown in figure, assembling 3 groups. When installing, one side with flange of bearing is outward. When screwing the screws, using one hand to clamp the nut, another hand tightens the screws. **Please pay attention to the direction of the bearing installation.**





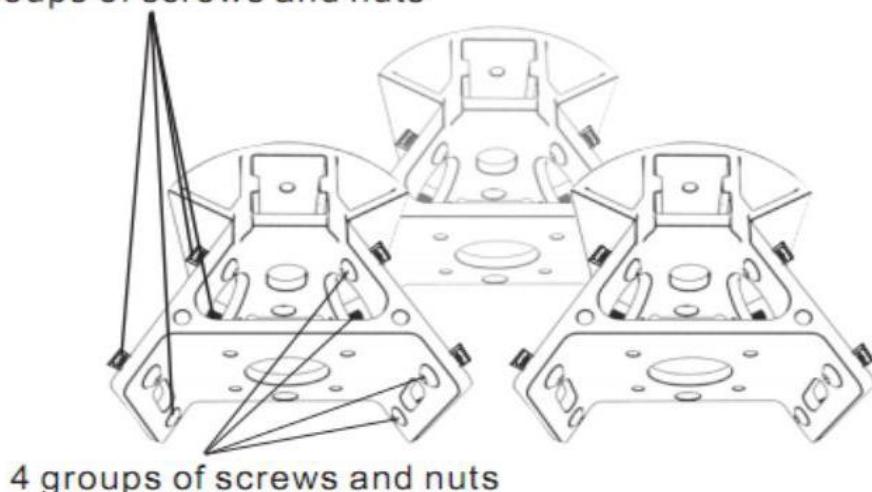


Lower corner fittings assembly (A2)

①	Lower corner fitting	3
②	M4*10 round-head hexagon socket head cap screw; M4 ship-type nut	30
③	EN 2020 aluminium profile (345mm)	6
④	Stepping motor	3
⑤	Synchronizing wheel inner hole 5 16 tooth	3
⑥	M3*8 cup-head hexagon socket head cap screw	12

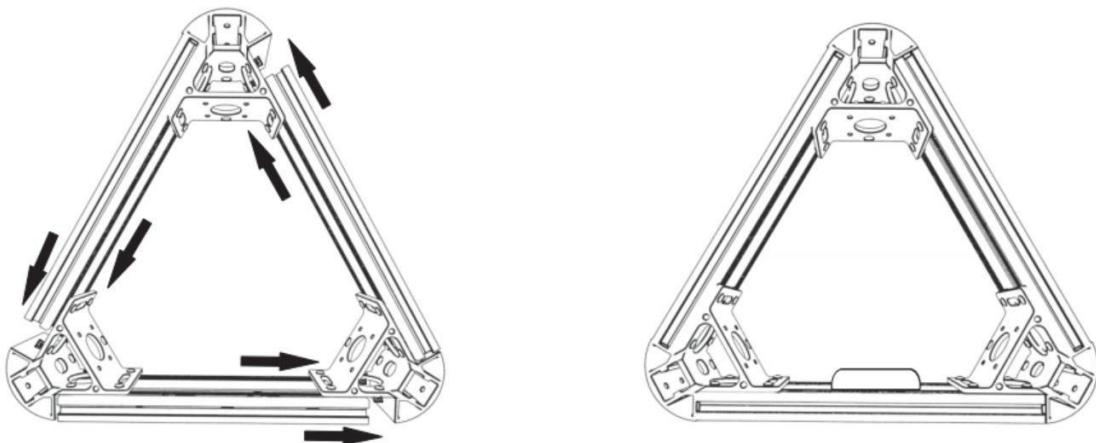
A. As shown in figure, screw M4 ship-type nut and M4*10 round-head screw up, a total of 10 pairs of lower corner fittings. Then install one side of aluminium profile of each lower corner fitting. The installation method can refer to the method of upper corner fitting.

4 groups of screws and nuts





B. After the aluminium profile of each lower corner fitting installed, then start splicing, the lower corner fittings were pushed at three directions, the effect as follows. !!!!!!!! Note: upper and lower corner fittings are different, at the joint of aluminum profile: one side is completely open, one side has small sealing ports. So the three openings were faced same side, the sealing surfaces were at the same side.

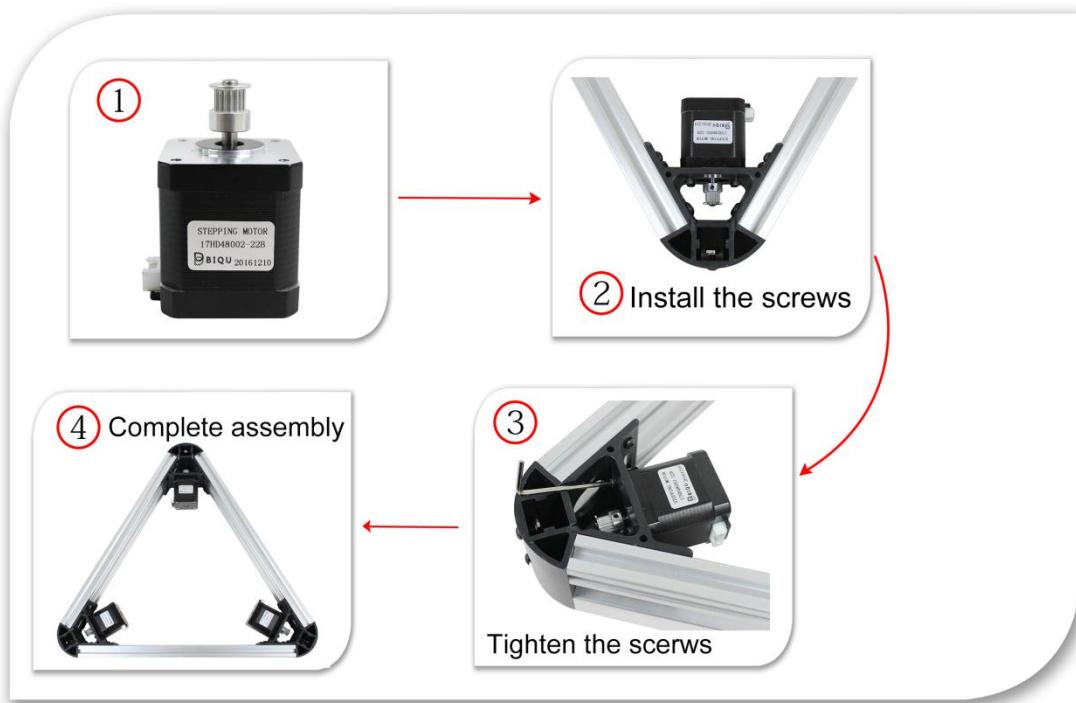
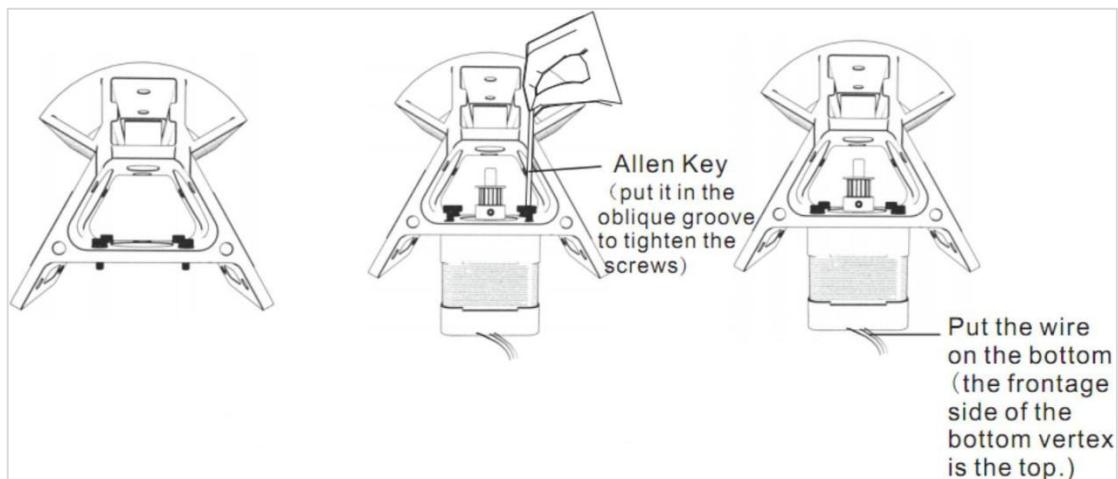


C. Install x y z axle stepping motor, a total of three groups.

I . Install stepping wheel. One jackscrew align the axial plane of motor, synchronizing wheel and motor platform reserved 3mm of interval, then tighten the jackscrew. A total of three groups.



II . Install the motor on the corner fitting. Pay attention to screw setting. Note: motor plug is on the side, not to affect hot machine.

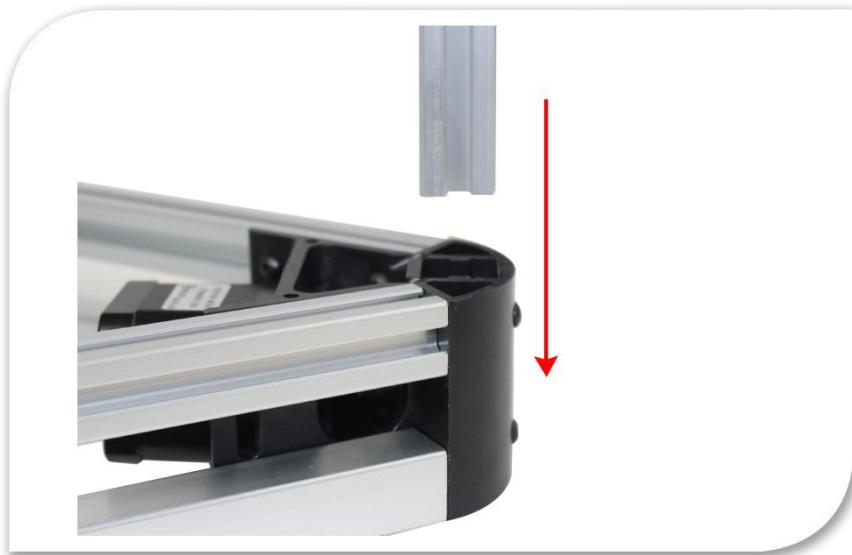


Overall framework establishment

① EN 2020 aluminium profile (850mm)

3

1. First place the opening side of lower corner fitting upward, then insert 850 mm aluminum profile into the corresponding interface of lower corner fitting.



2. After installing three pieces of 850mm aluminum profiles on the lower corner fitting, raise up the corner fitting then cover 850 mm aluminium profile, try to push



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three sides in a bit, and then knock down with weight, until the three sides level to flat aluminum profile top.!!!!!!Note: the large hole outlet surface must be upward before installation.

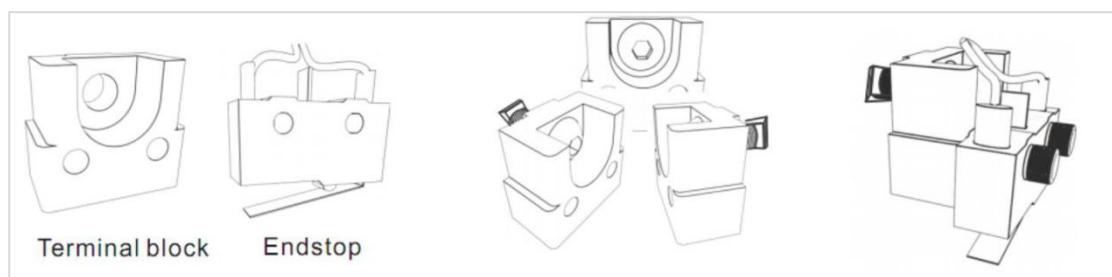


Limit switch (A3)

①	Limited block (printed part)	3
②	M4*10 round-head hexagon socket head cap screw; M4 ship-type nut	3
③	Limit switch (with terminal, length 140mm);	3
④	M2.5*12 cup-head hexagon socket head cap screw	6

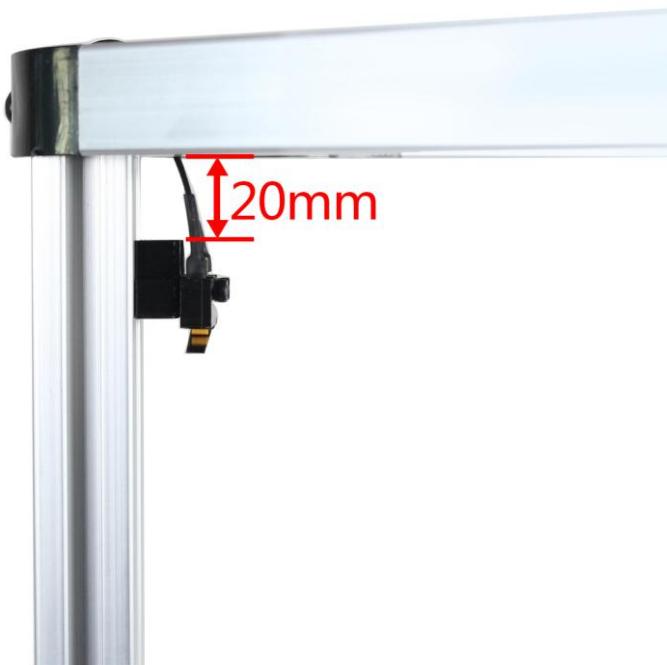


1. First, hang M4 ship-type nut and M4*10 round-head hexagon socket head cap screw on the corresponding position of limited block, screw up several cycles, as shown in the figure. Then put the limit switch to fix on limited block with M2.5 * 12 hexagon socket head cap screws, tighten, be careful not to screw too much, so as to avoid sliding.





2. Upper leading and positioning. Leading limit switch through from upper corner fitting, then to the center of aluminum profile, then go down. At this time first lock limit switch on the 850 mm aluminum profile, position is about 20 mm lower part of upper corner fitting. As shown in the figure.





3. Lower leading. Then put the whole framework side, lead the limit switch out the lower corner fitting, then across two holes of lower corner fitting. As shown in figure.





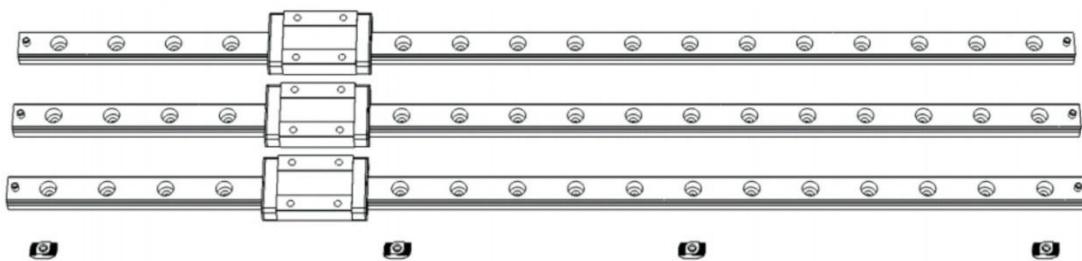
4. Dupont head connecting. Following can connect the Dupont head on limit switch. Pay attention to the direction (Dupont head plane is the top, terminal convex surface connect its right two positions). This step can also be implemented at the PCB wiring. Mentioned here only.



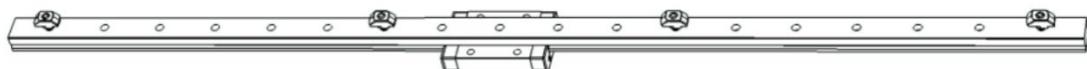


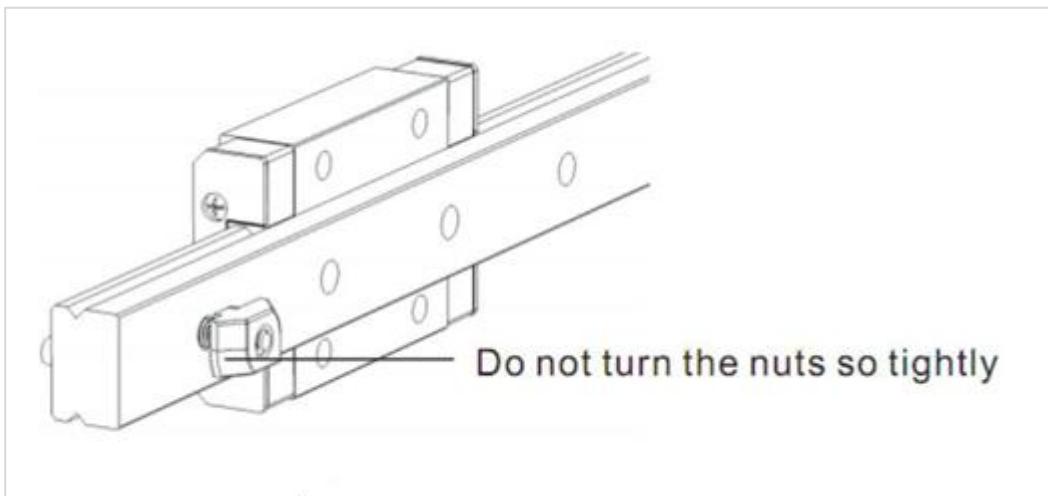
Sideway assembly (A4)

①	sideway length 600mm	3
②	M3*8 cup-head hexagon socket head cap screw; M3 ship-type nut	15
③	limited block(printed part)	3
④	M4*10 round-head hexagon socket head cap screw; M4 ship-type nut	3



1. First hang five pairs of screw nut on the sideway. A total of three groups.





2. Adjust the ship type nut direction (vertical) and then will guide post - 850 mm aluminum. Guide rail top reliable near the upper limit block below. Tighten the screw, ensure the nut rotate 90 DHS, aluminum sideways. !!!!!! Note: the operating process can't make the inside of the guide rail slider from the guide rail.



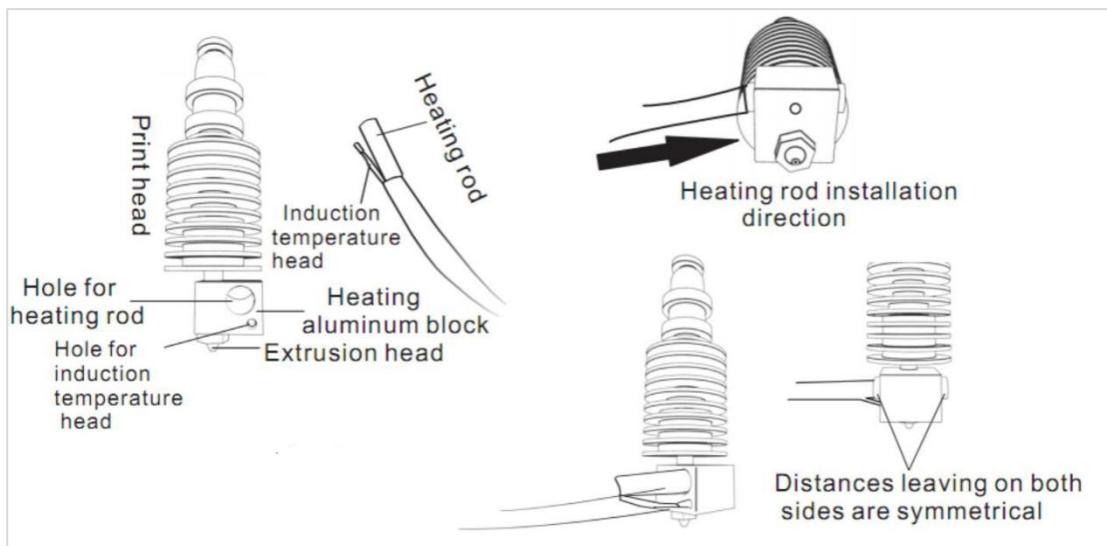
Other limited blocks under the sideway.



Print head assembly (A5)

①	1.75/0.4 nozzle	1
②	V5aluminium block	1
③	V6 1.75/4.1 All-pass tube	1
④	V6 rapid connector	1
⑤	V6 long-distance radiating tube	1

⑥ 12V/40W heating rod	1
⑦ thermistor	1
1. Lock the nozzle on the side of aluminium block with jackscrew.	
2. Lock the tube on the aluminium block.	
3. The lock the aluminium block at the bottom of radiating tube.	
4. Connect V6 rapid connector to the top of radiating tube, tighten it	
5. Finally insert heating rod and thermistor into the corresponding holes on aluminum block, temperature measuring head of thermistor can't expose. Tighten the jackscrew, lock heating rod and no falling off.	





Effective apparatus assembly(A6)

① Fisheye effector M3	1
② Radiating tube fixed block	1
③ M3*18 cup-head hexagon socket head cap screw; M3 nut	4



1. Cover extrusion head into effector,using radiating fixed block to clamp radiating tube.
2. Screw on four M3 * 18 screwsfirst, then tighten them one by one.



Carbon rod installation (A7)

- | | |
|--|---|
| ① Carbon rod Length 300mm Inner diameter 4 | 6 |
| ② M4*16 round-head hexagon socket head cap screw | 6 |

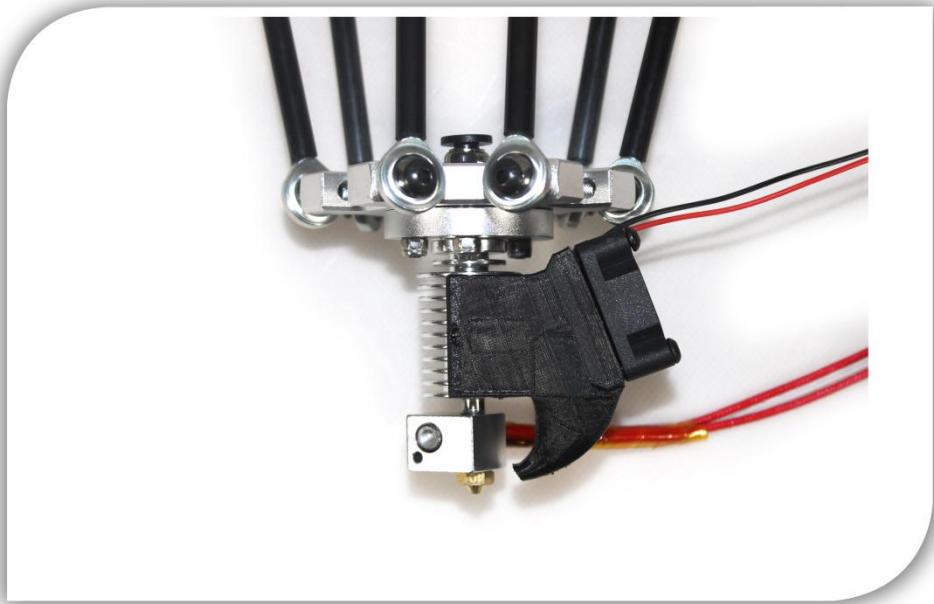
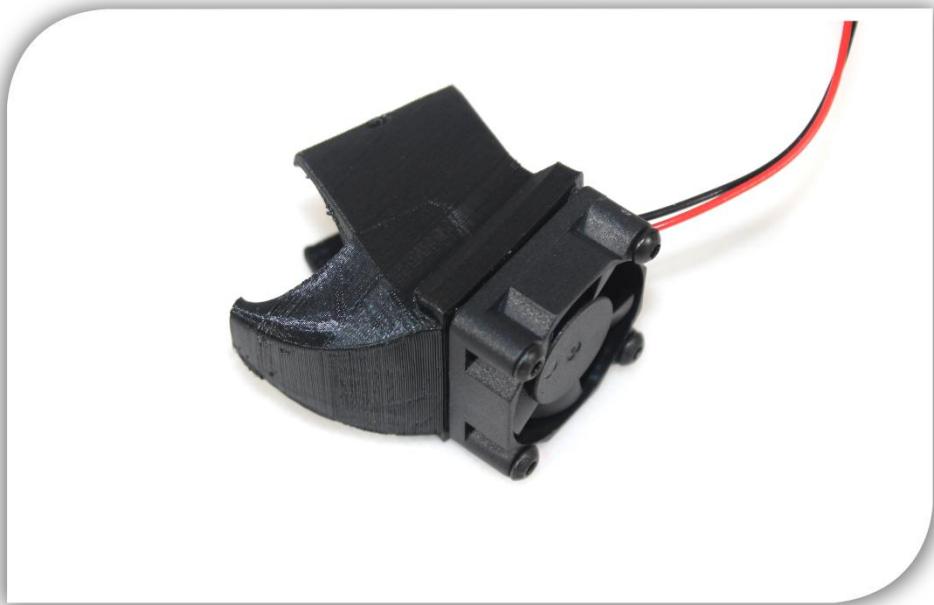


Fan assembly (A8)

①	3010 Ball bearing fan	1
②	Fan fixed block (printed part)	1
③	M3*14 round-head hexagon socket head cap screw	4



Tighten the radiator fan and fan fixed parts with screws, then install the radiator fan on the radiator pipe. **Note:** it shall not pressing the fan fixed block on the radiator pipe by force, or fan fixed parts may easily off; fan cable end is installed on the non-guide wind gap of fan fixed block; the wind gap cannot too close to the aluminum block.

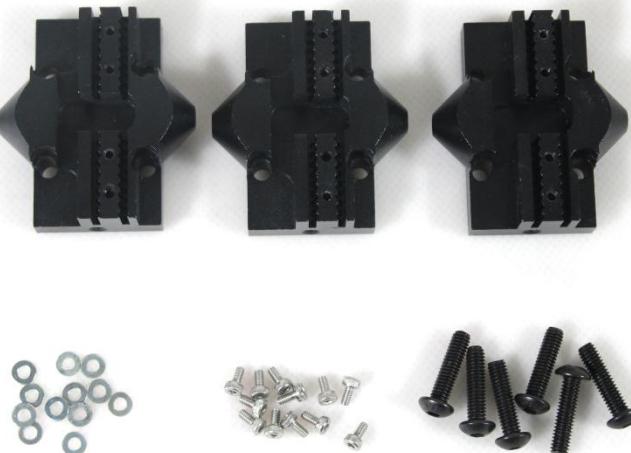




Connect the power supply

Pulley assembly (A9)

①	Black pulley	3
②	M2*4 cup-head hexagon socket head cap screw; M2 copper sheet	6
③	M4*16 round-head hexagon socket head cap screw	12
④	M4*12 round-head hexagon socket head cap screw	3



1. As shown in figure, connect the fisheye carbon rod and pulley with 6 M4*16 hexagon socket head cap screws, installing in pairs.



2. Then fix pulley on the sliding block of sideway with M3*12 screws. **Note: the top of pulley shall be screwed with M3*8 cup-head screws.**



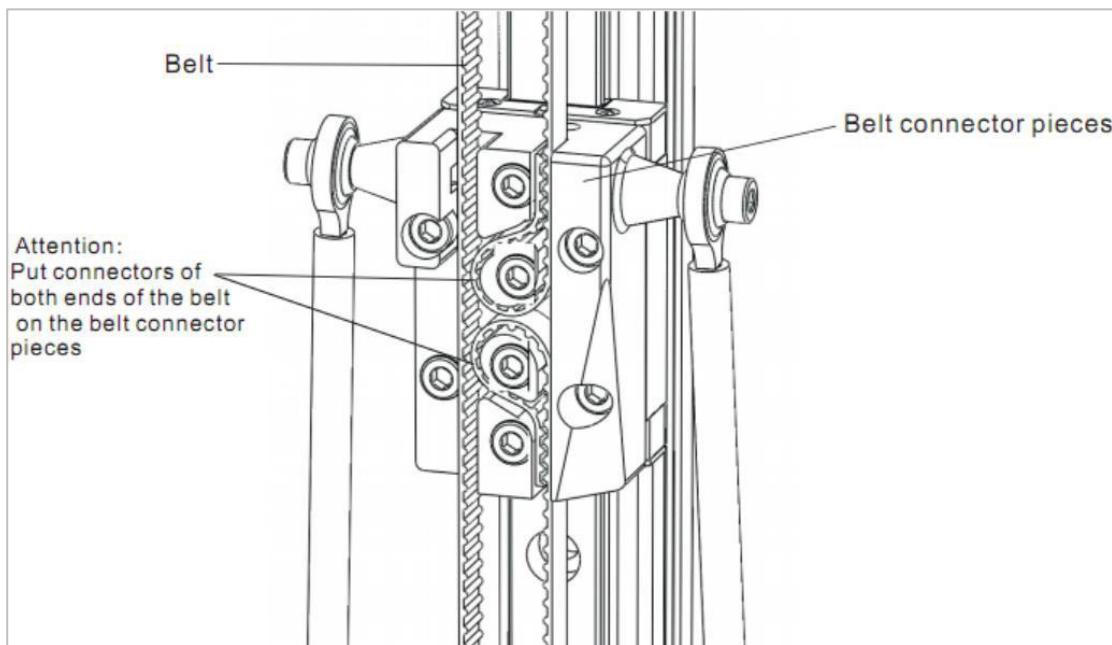
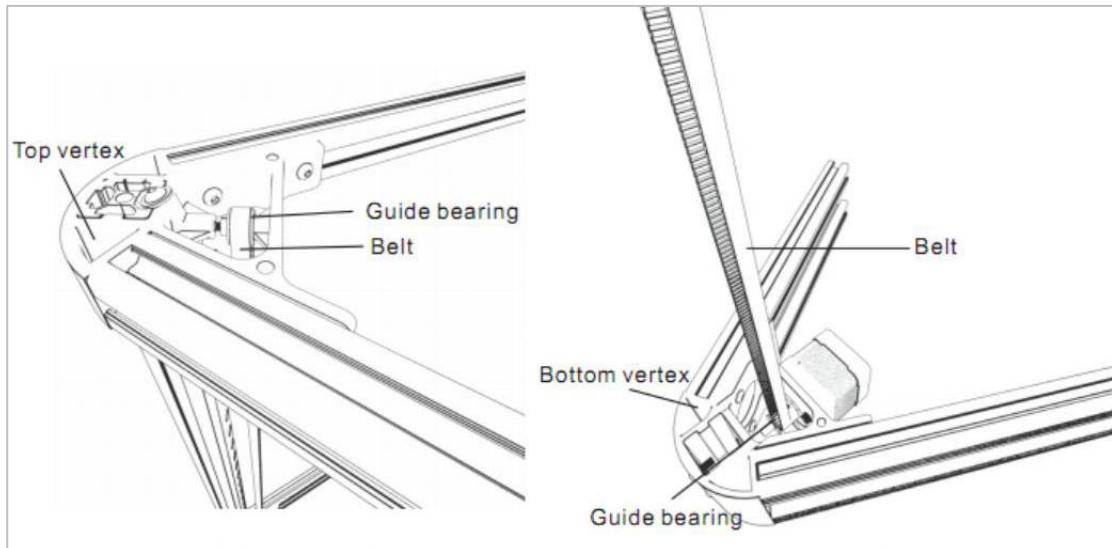
Belt installation (A10)

- | | | |
|---|---|----|
| ① | M2*4 cup-head hexagon socket head cap screw;M2 copper sheet | 12 |
| ② | Belt length 1.6m | 3 |
| ③ | Rotational spring | 3 |



(1) The belt is along the guide bearing of upper corner fitting and synchronous wheel of lower corner fitting, make its fore and aft clamped in the block gear. Then screw on M2 screw and its supporting copper sheet, press belt. A total of three groups.

o





Install three rotational springs on belt to make belt more compact. Note: installation of belt shall be tensioning

Extrusion motor assembly (A11)

①	Motor fixed block (aluminium alloy)	1
②	M3*12 round-head hexagon socket head cap screw;	3
③	Stepping motor	1
④	Gear 26 tooth	1
⑤	04-M6 golden rapid connector	1
⑥	Right hand extruder	1set
⑦	Right hand extruder with supporting screws	1set



(1) Preparation before installation.

(2) Setting stand

The motor fixed block is fixed on the 850 mm aluminum profile (usually on the left), about 280 mm from the top.

Note: when screwing the screws, make sure the nut can be rotated in order to clamp aluminium profile.

(3) Assembling

A. First using one hand to fix the motor in stand, fix the lower part of extruder with screws.

B. Fix the upper part of extruder with screws.

Material rack assembly (A12)

- | | |
|--|---|
| ① Consumable items rack (printed part) | 1 |
| ② M3*16 cup-head hexagon socket head cap screw; M3 ship-type nut | 2 |

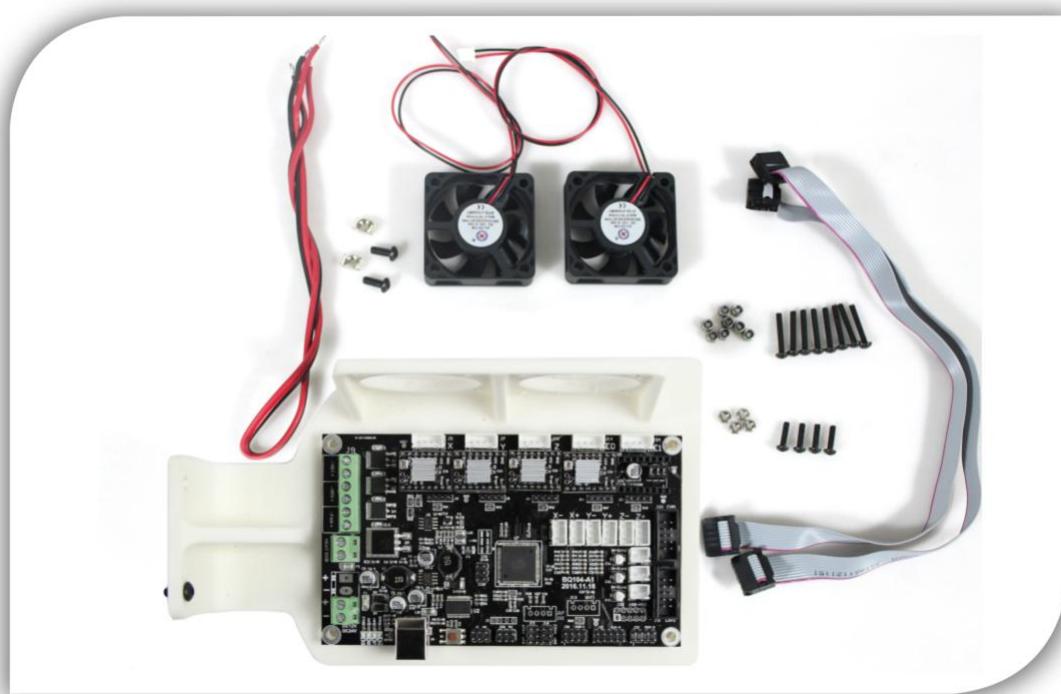


Hang the screws on the material rack, then install it on the 850 mm aluminum profile, about 50 mm from the top



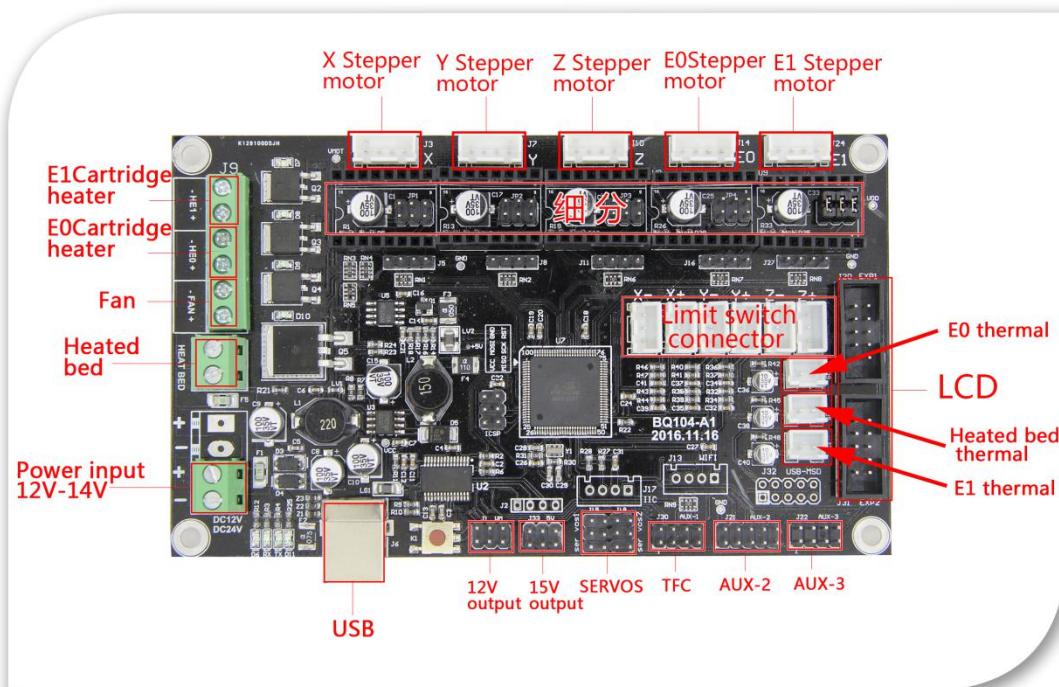
Circuit board installation (A13)

①	BIGTREETECH Gen V1.4 circuit board	1
②	TMC2100 motor driver chip	4
③	Radiating aluminum sheet	4
④	Mainboard fixed block (printed part)	1
⑤	Power wire red black wire rod length 60CM	1
⑥	LCD wire Length 30CM	2



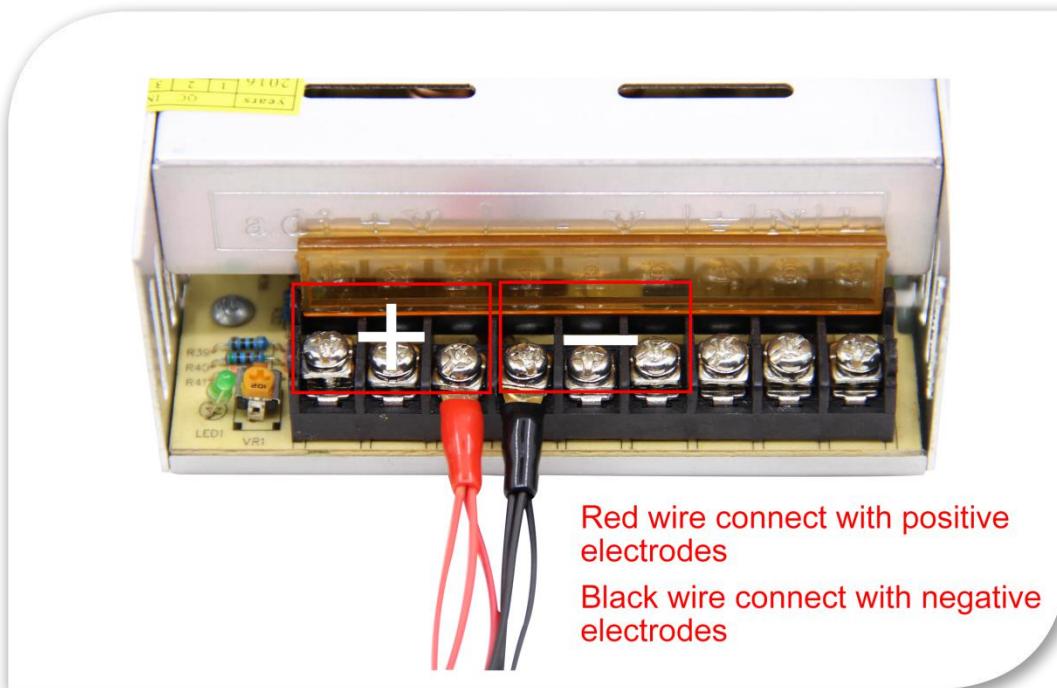
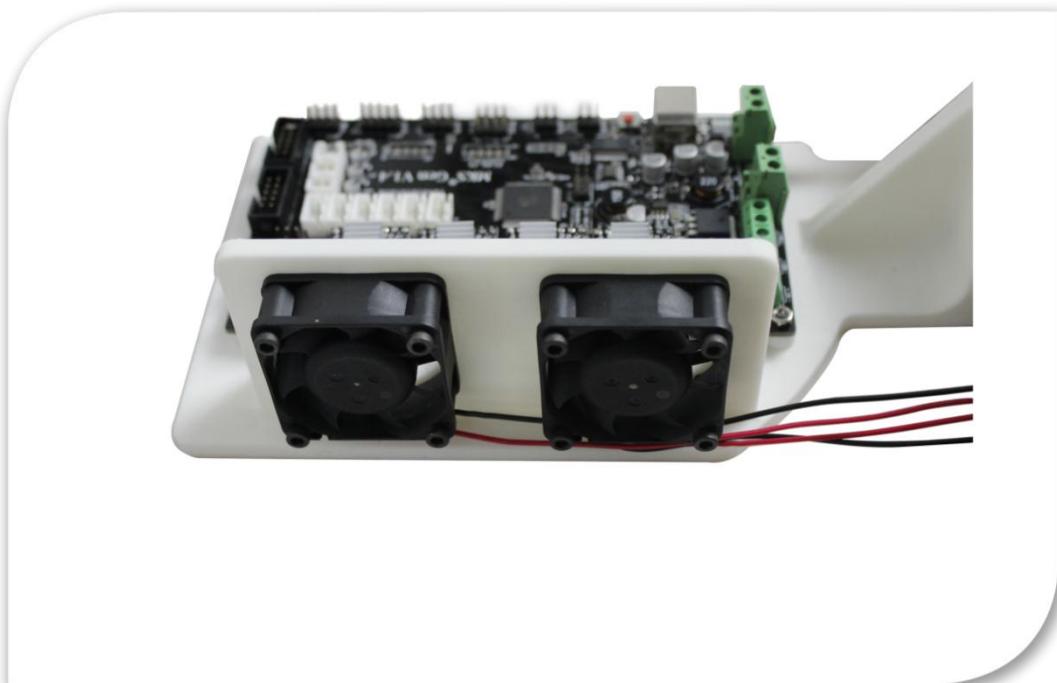
Circuit board installation

General connection diagram



1. Fan wiring (B1)

- | | |
|---|---|
| ① 4015 fan 12V 0.18A | 2 |
| ② M3*12 round-head hexagon socket head cap screw; M3 six-side nut | 4 |
| ③ M3*25 round-head hexagon socket head cap screw; M3 locking nut | 8 |



Red wire connect with positive electrodes

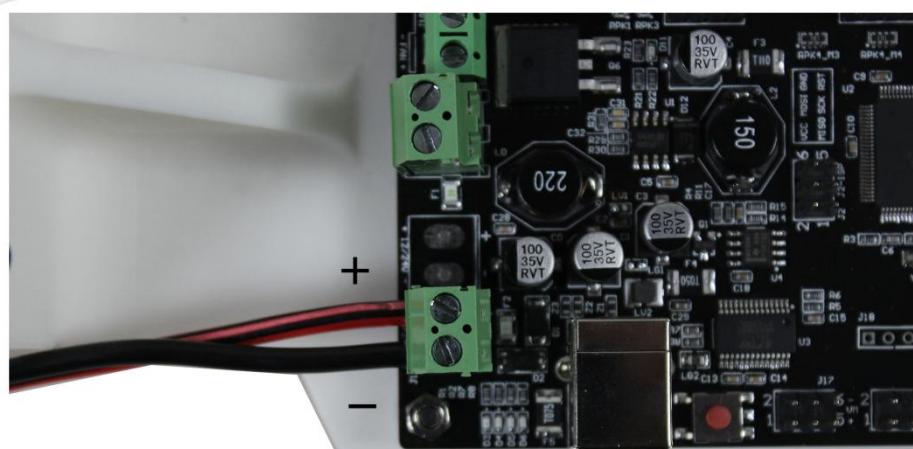
Black wire connect with negative electrodes

- (1) First fix circuit board on printed part with M3*12 screws.
- (2) Fix two fans on the side of printed part with M3*25 screws. **Note: the side with wires was downward.**

- (3) Fix the main board fixed block on aluminium profile.

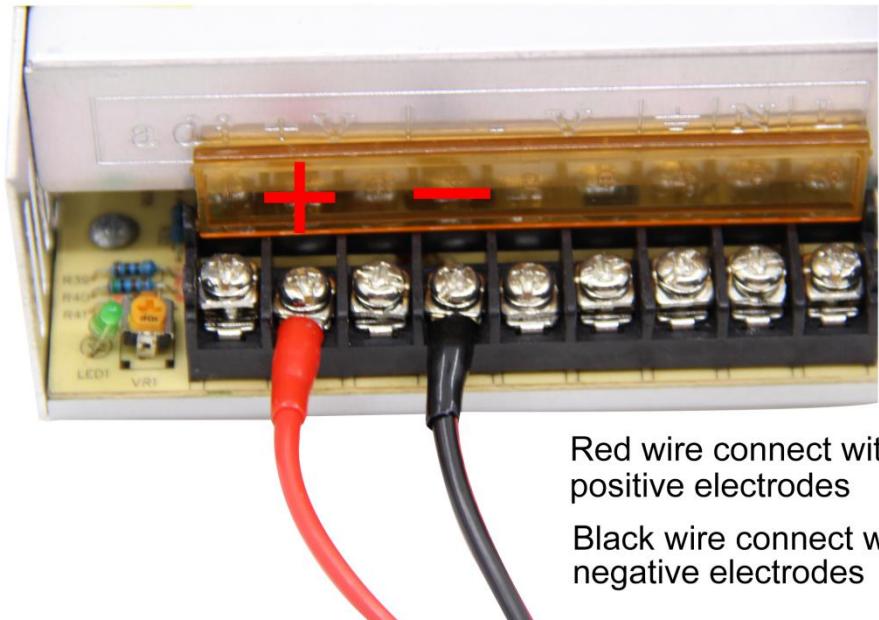


2. Power supply wiring

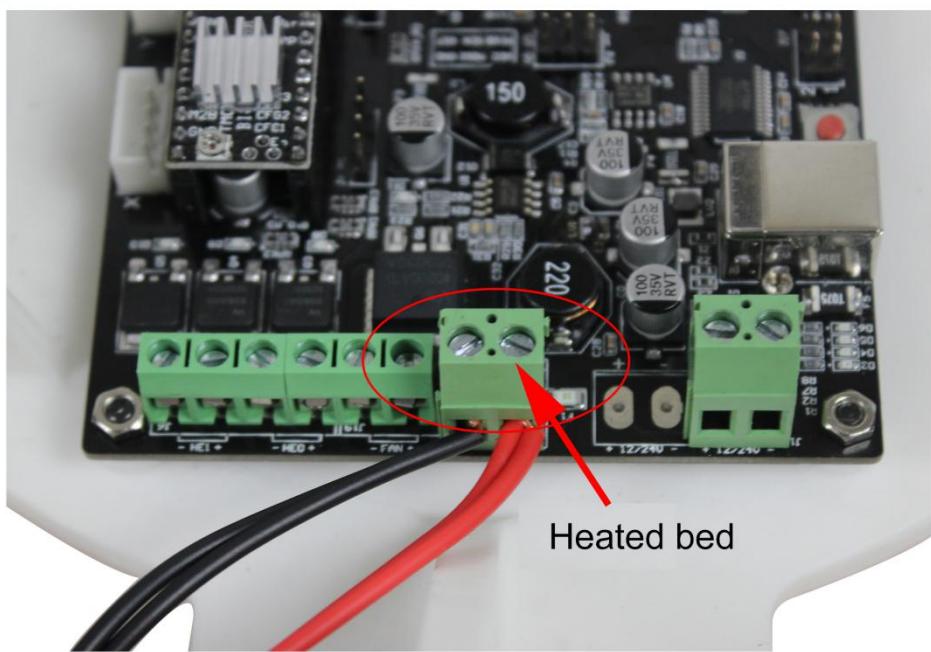


Red wire connect with positive electrodes

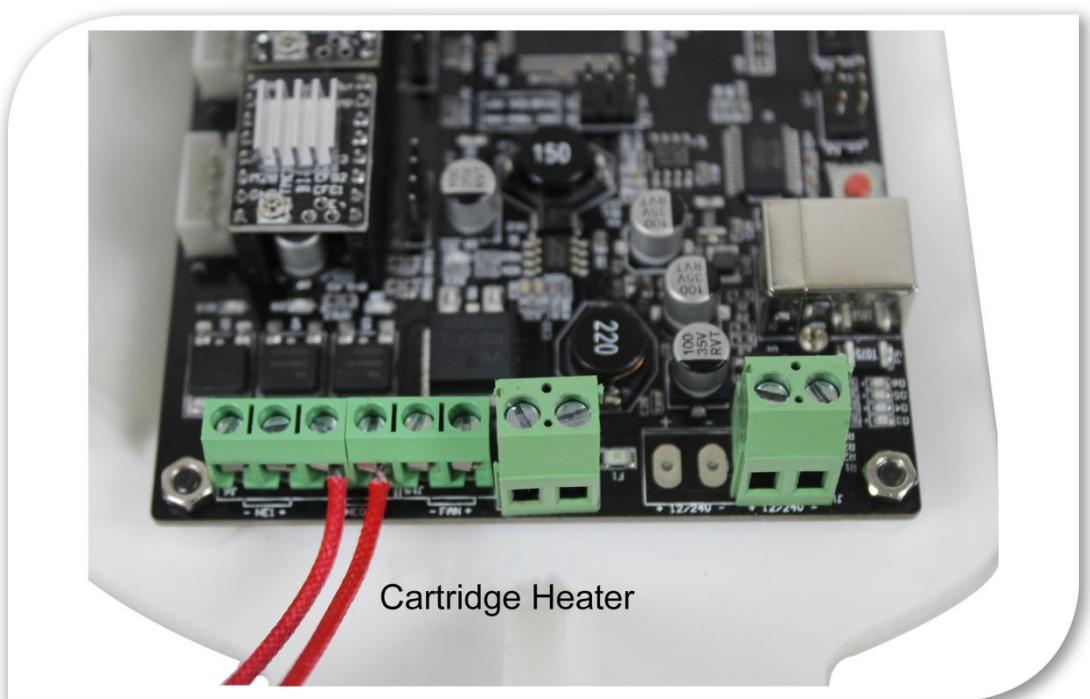
Black wire connect with negative electrodes



3. Hot machine wiring diagram

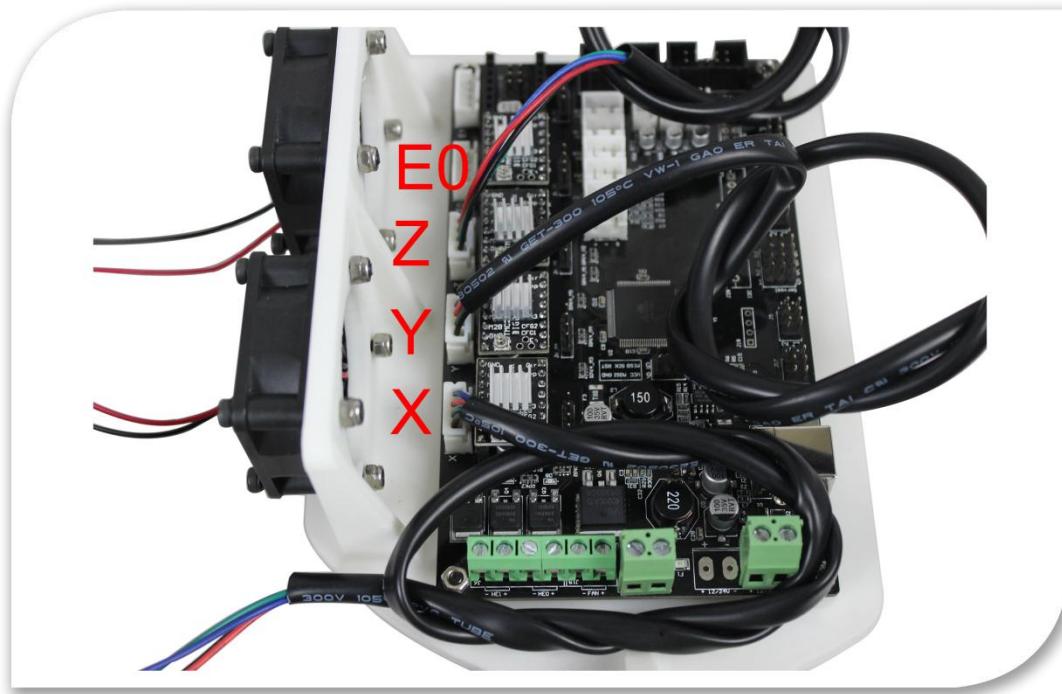


4. Print heating head and thermistor of print head wiring

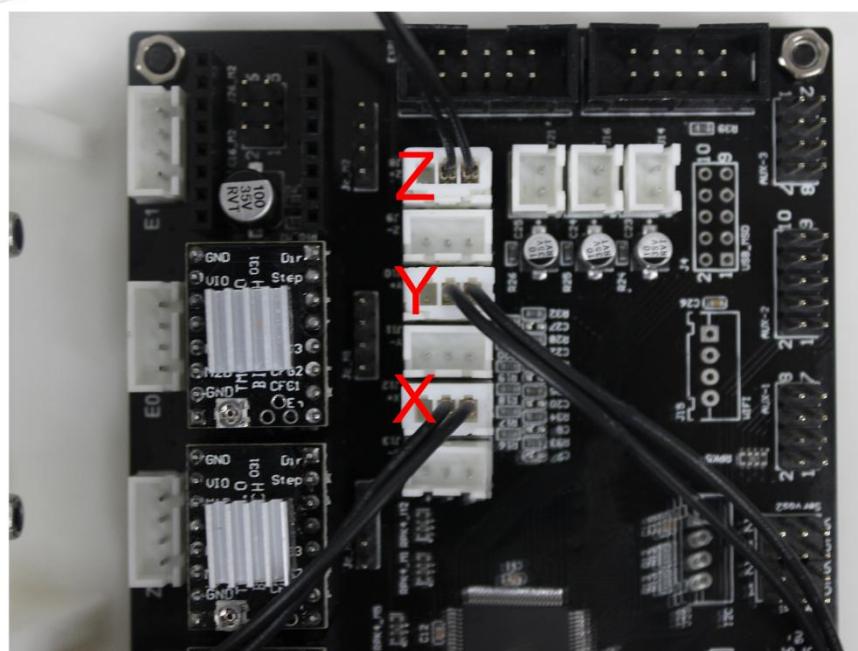


5. Axle motor and limit switch wiring diagram

- (1) Insert motor line on the corresponding motor. The motor and limit switch of the same corner is on the same axle (X, Y or Z).

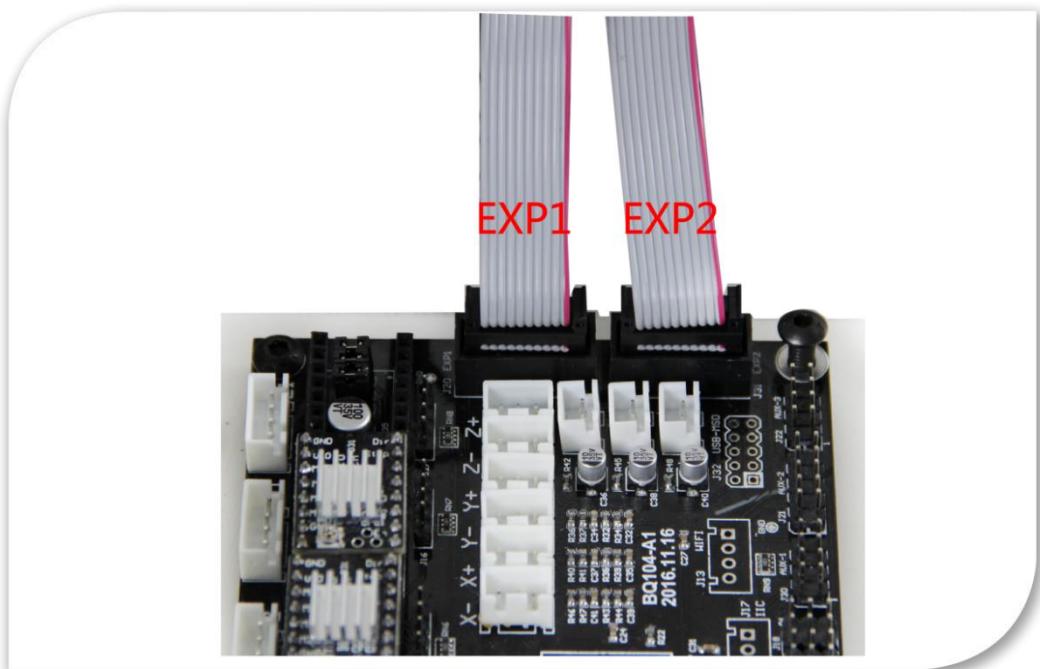
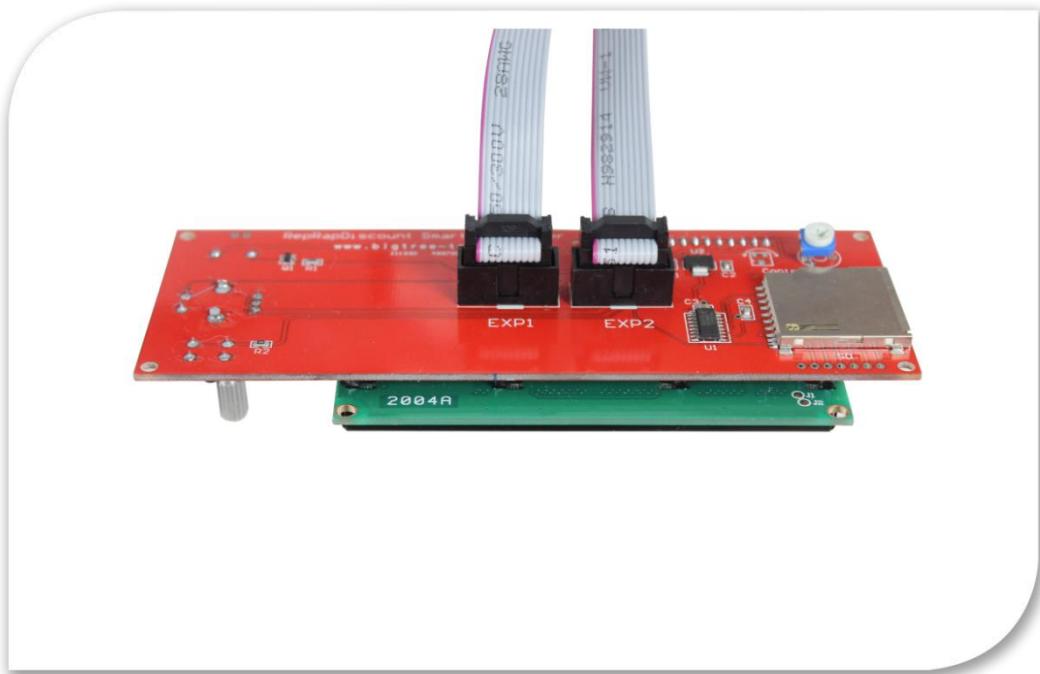


(2) As shown in the figure, in wiring scope of limit switch, we need to use wiring position. Limit switch is connected to “S”“+”, **thin film pressure sensor** is connected to “S”“—”of Z area. The wire of motor and limit switch on the same corner shall be connected to the corresponding positions of the same axle. **Pay attention to the motor wiring direction, don't reverse the connection.** As shown in the figure.



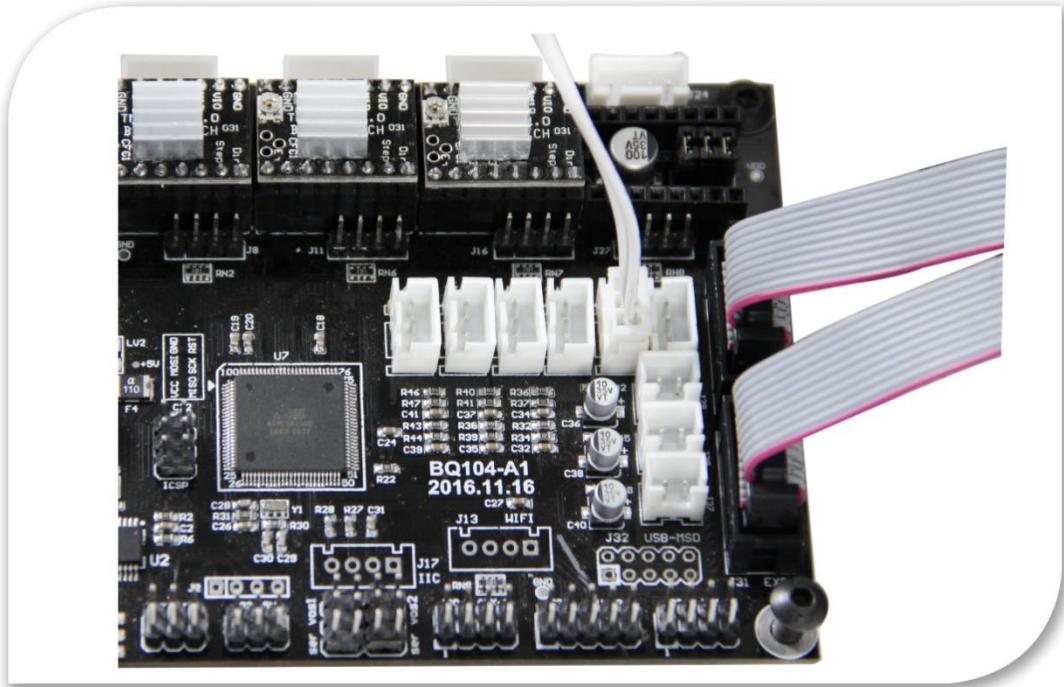
6. Display wiring diagram

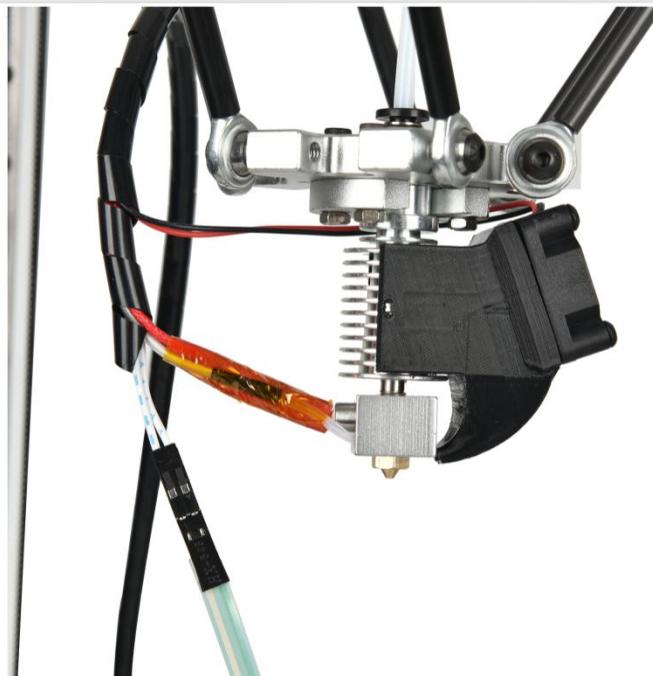
(1) In wiring, pay attention to the EXP1 port on display adapter board shall be corresponding to EXP1 of LCD, the same as EXP2. Finally put the bracket in the middle of aluminum profile and fixed it. As shown in the figure.



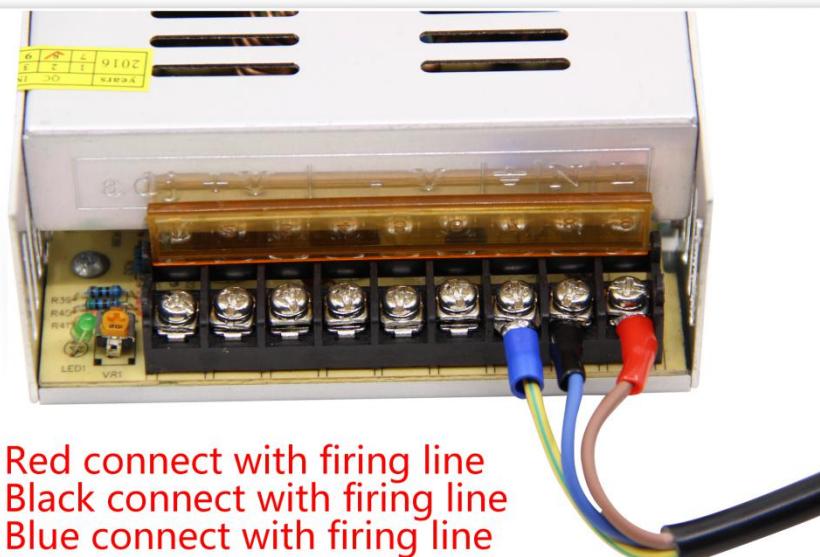
7. Automatic leveling wiring

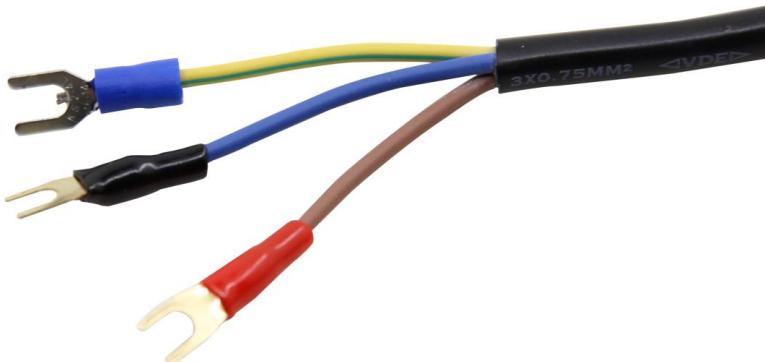
Insert one end of the sensor on the z -, s and -, and then through the bobbin to prevent near the nozzle, (note: under the condition of heating banning the use of automatic leveling The use of the details please refer to the video)





8. Power supply wiring





- (1) Distinguish the firing line, zero line and the ground line of power cord, and then accurately connect to the power input end.
- (2) To connect the power wire in the power output. **Note: positive and negative end in wiring.**
- (3) Three radiating fan wires were directly connected to the output of power. **Note: positive and negative end in wiring.**

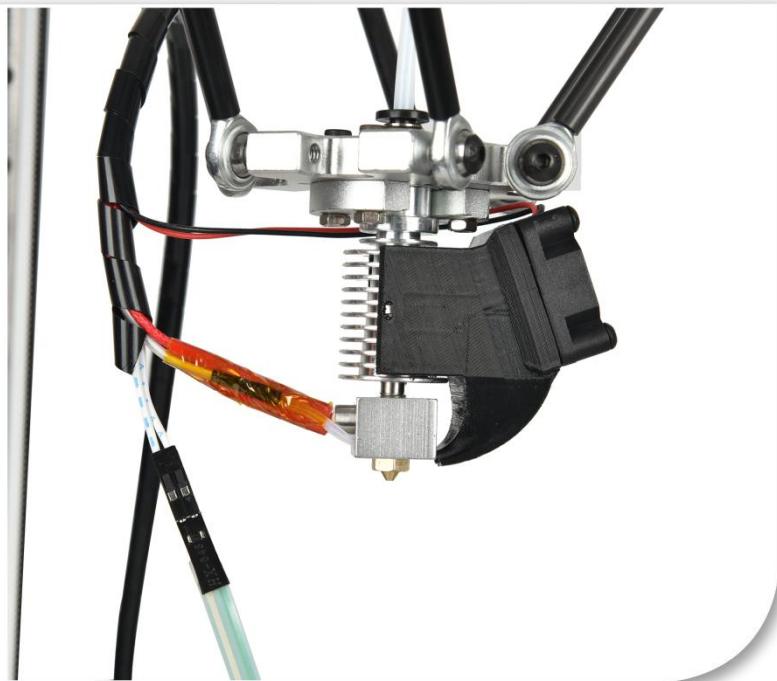
Ptfe tube and spool (A14)

① Ptfe tube Length 70CM	1
② Spool Length 70CM	1



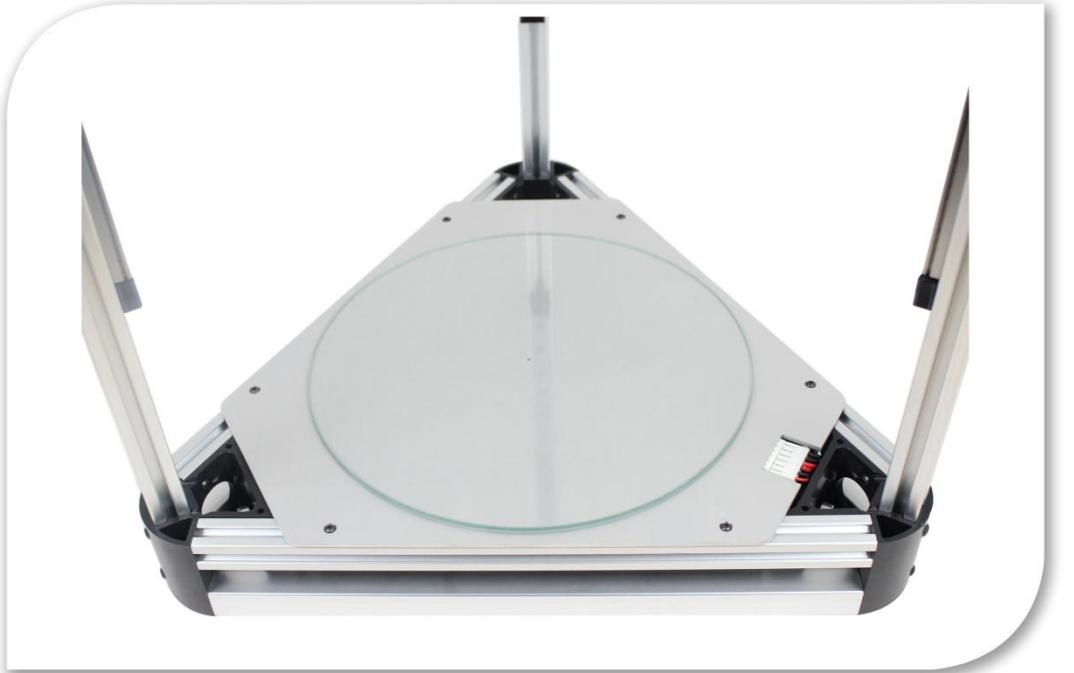
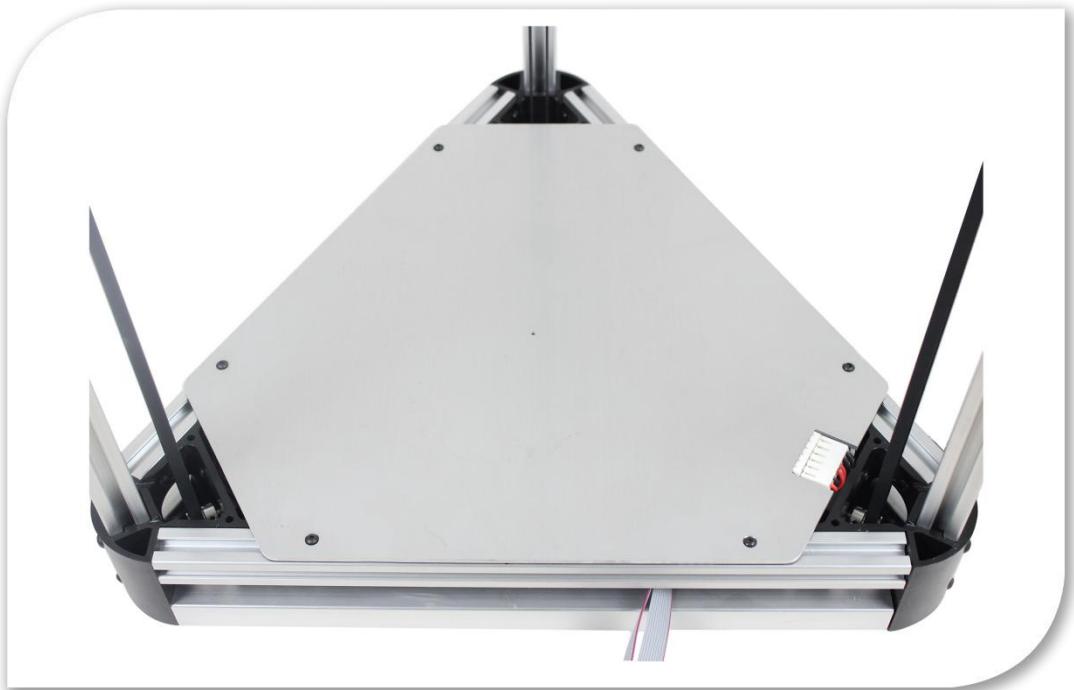
(1)One end of Ptfe tube inserted into the extrusion head, be sure to confirm it has inserted to the bottom, otherwise it will plugging material. May be inserted about 63 mm.

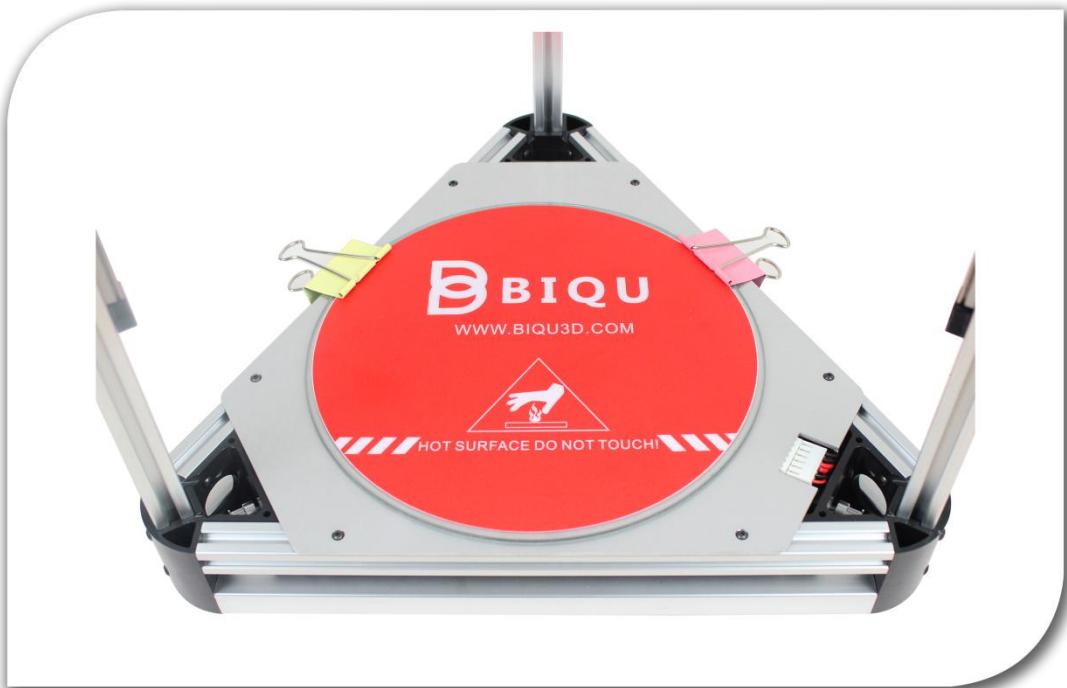
(2) The role of spool is used to twist the heating rods, thermistors, fan and the thin film pressure sensor (automatic leveling module) together.



Hot machine assembly (A15)

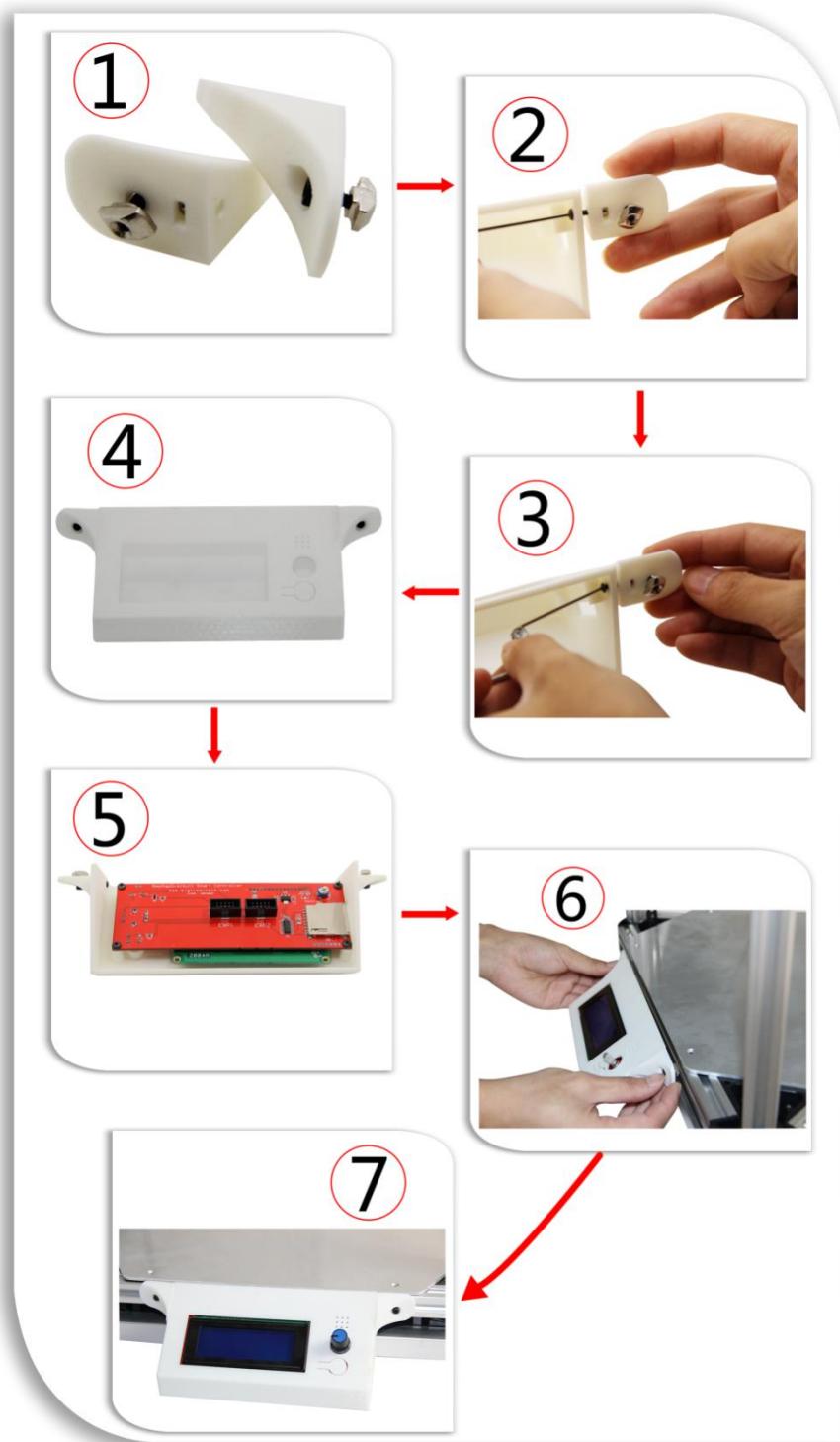
①	Hot machine	1
②	M3*8 round-head hexagon socket head cap screw; M3 ship-type nut	6
③	Glass 250mm ²	1
④	Red custom-made hot machine paster	1
⑤	Color binder clips	3





Display screen fixing (A16)

①	2004 LCD display screen (knob with cap)	1
②	Shell of display screen (printed part)	1
③	M3*8 round-type hexagon socket head cap screw	4
④	M3*10 round-type hexagon socket head cap screw; M3 ship-type nut	2
⑤	M2.5*10 round-type hexagon socket head cap screw	2



1. Fix surface corner fitting with M3*8 screw and nut
2. Fix surface corner fitting on LCD shell with M2.5*10 screw
3. Fix LCD screen on the shell with M3*10
4. Fix the installed surface corner fitting on aluminum profile



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Assembly Video



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