Assembly tutorial

Installed summary

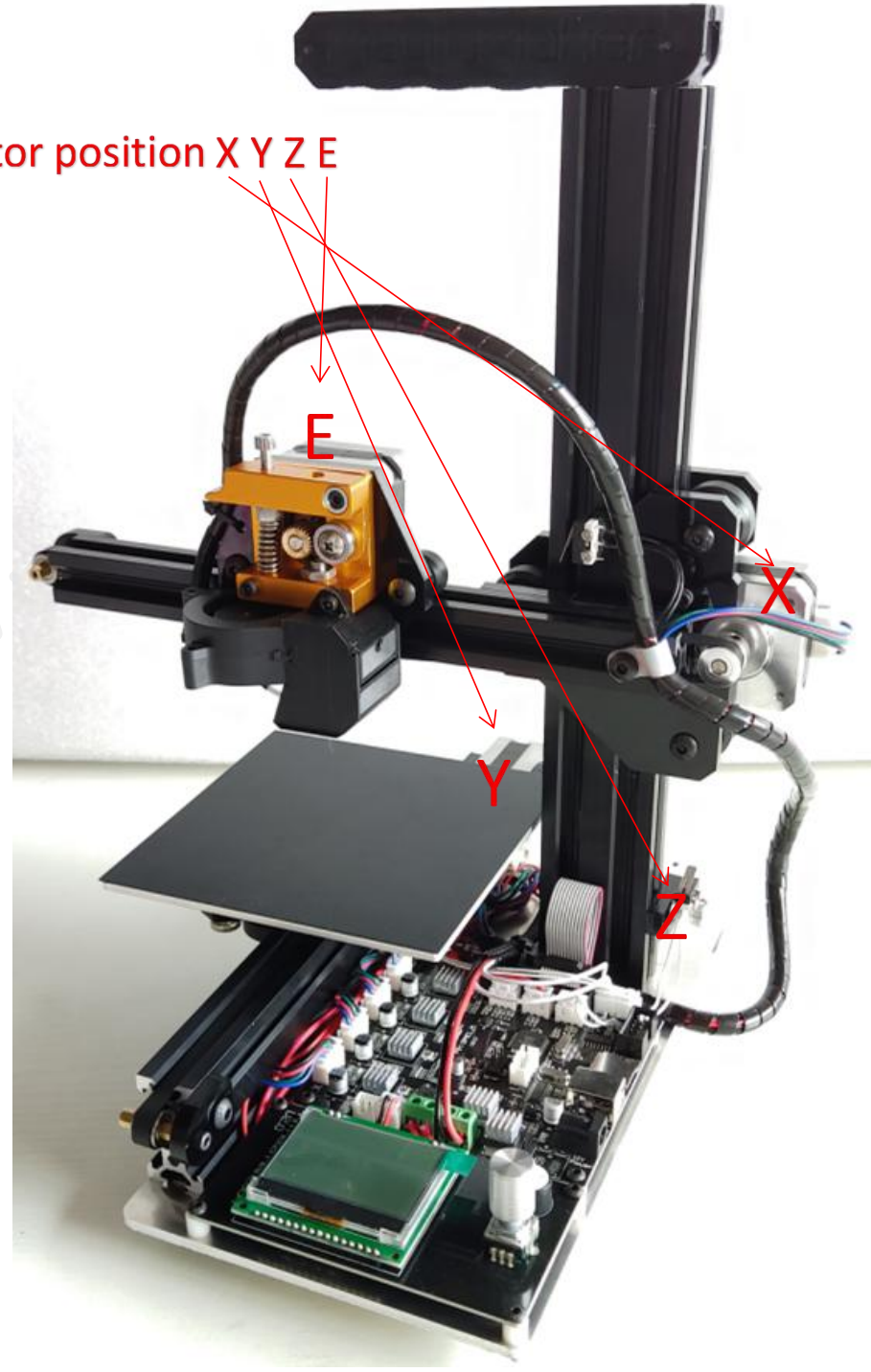
When assembling, look at the drawing carefully, pay more attention to the description and the place marked on the drawing, pay attention to the length and type of the screw mark, look at the place with text, and be sure to follow the order.

（It is recommended that the computer check, not recommended to print out, not only waste paper but also can not see clearly）

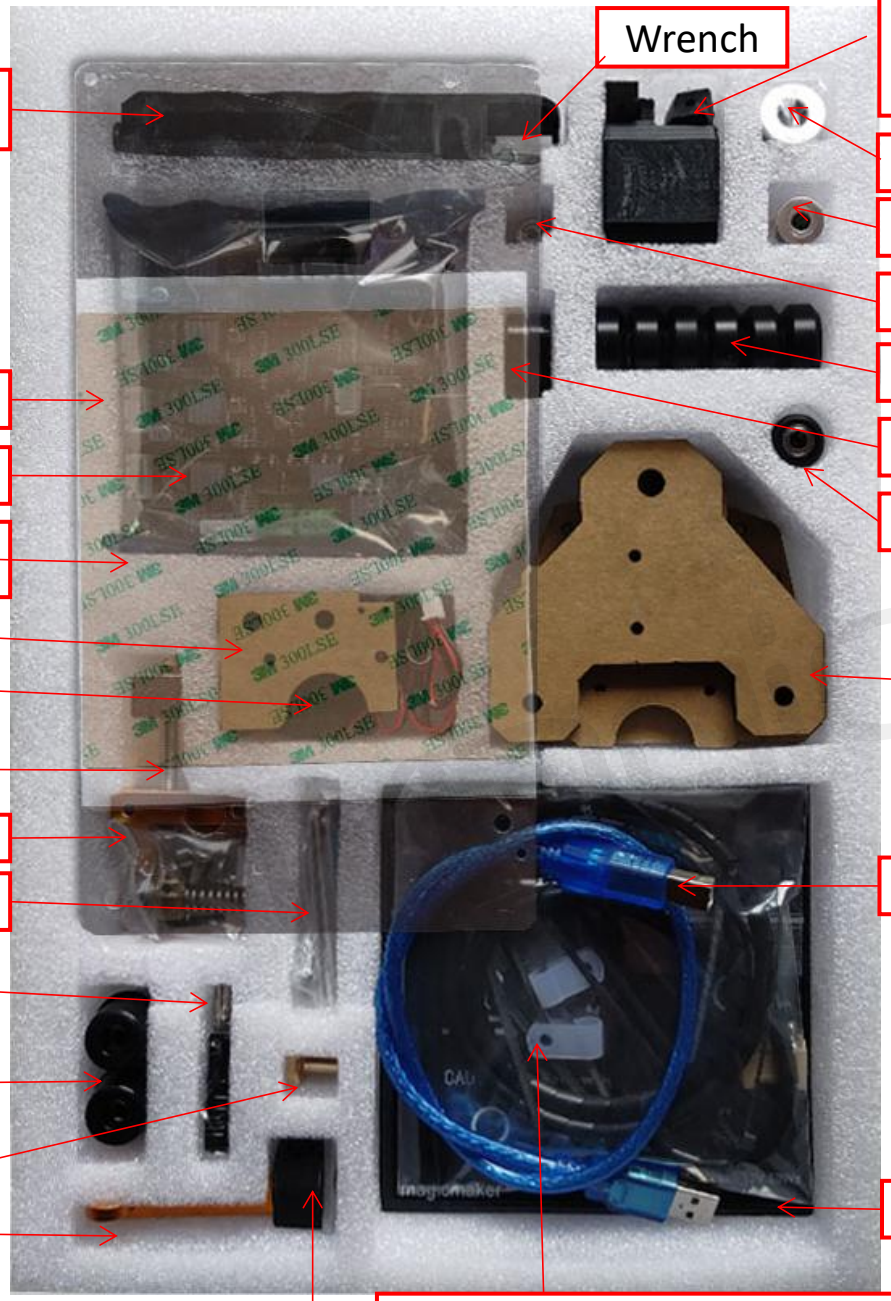
Introduce structure coordinates

It's the x-axis that moves left and right， The platform for forward and backward motion is the Y-axis， It's the Z-axis that moves up and down， Extrusion motor is E. The zero point of the x-axis is on the right (maximum point)， The zero point of the y-axis is behind， The zero point of the Z axis is below， There is no zero point on the e-axis. Clockwise rotation is positive.

If you have any questions, you can contact the customer service



There is no need to count， Direct assembly. If you can't find any accessories, you can come back and have a look



Material shelf
Wrench
Wind passage
Z Limit shelf
Fan rack
coupling
Synchronous wheel
Flange bearing
Large pulley
Guide wheel frame
Small pulley
Structural floor
a main board
High temperature
twin adhesive
Y Motor frame
Fan
Structural plate
Nozzle assembly
Extrusion accessories
inner hexagon spanner
data line
TF card
card reader
rubber feet
Screw rod nut
Extrusion arm
Hot bed suit
Screw nut shelf
Bandage+Winding tube+R Clip

Screw rod
Motor wire
Power Supply
Screw
Timing belt
Heating rod
+Thermistor
Limit switch
Hot bed line
power cord
Stepper motor
Aluminum profile
display screen +Flat Cable

Screw identification

Not all the screws have been given too much. Pay attention to collecting them and don't lose them

There are not many species, which can be distinguished according to size and length, and can be measured with a ruler

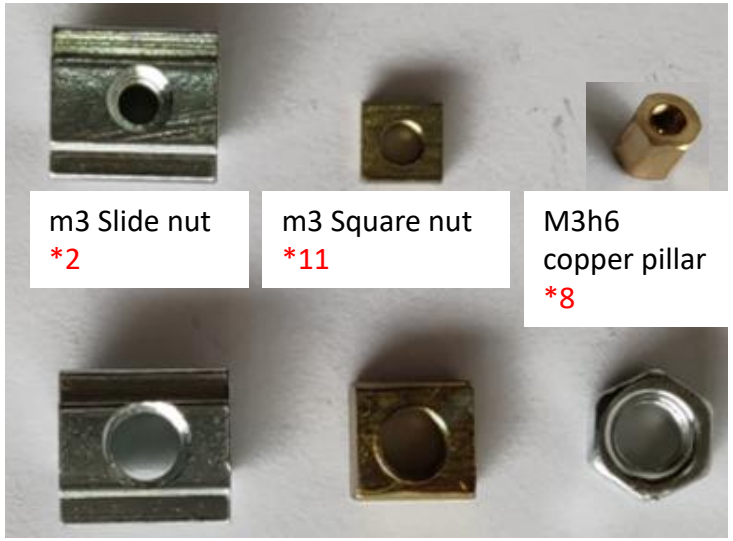
M2*10Cup head
*6

h3 Washer
*4

h6 Washer
*4

M3 shim
*12

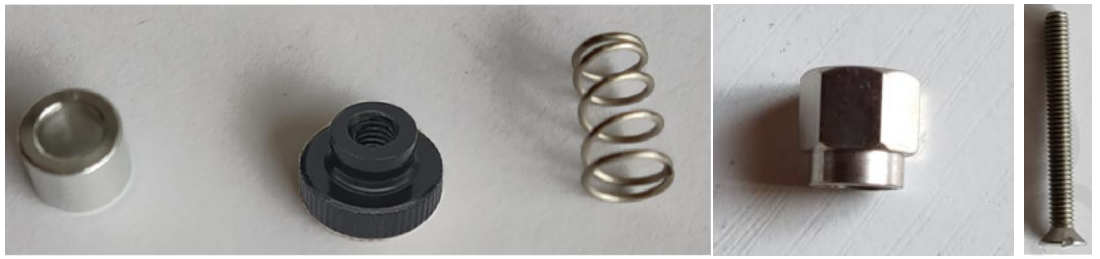
M3 soft washer
*2



m3 Slide nut
*2

m3 Square nut
*11

M3h6
copper pillar
*8



M5h6
Isolation column
*9

Adjusting nut
*3

Adjusting spring
*3

Eccentric stud
*4

m3*25 Flat head
*3

m5 Slide nut
*3

m5 Square nut
*14

m5 Lock nut
*6

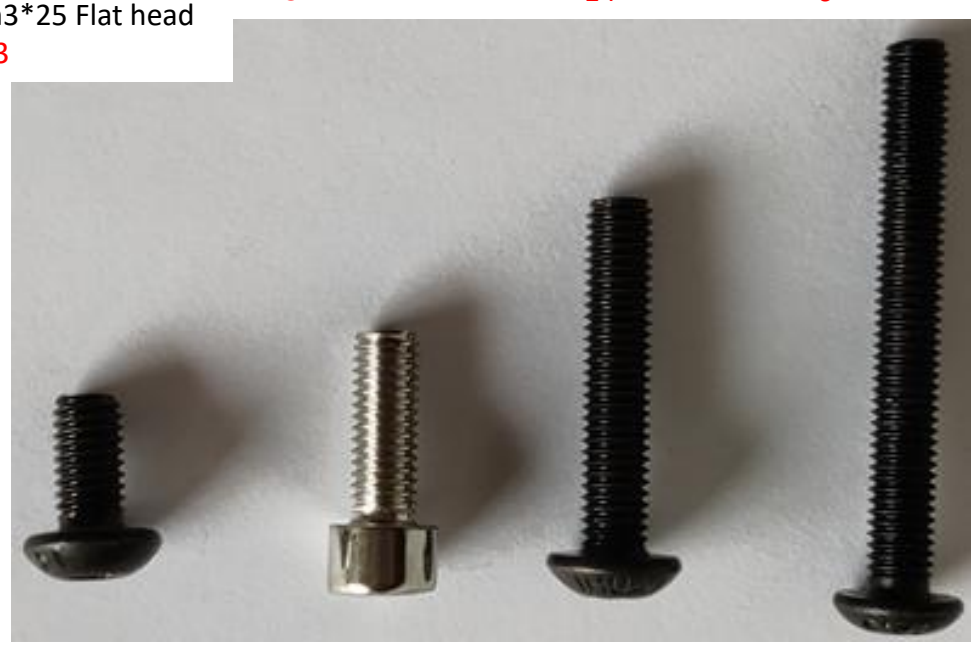
m3*30 Cup head
*3

m3*25 Cup head
*5

m3*20 Cup head
*4

m3*16 Round head
*8

m3*10 Cup head
*14



m5*10
Round head
*11

m5*14
Cup head
*6

m5*25
Round head
*6

m5*40
Round head
*3

Basic framework

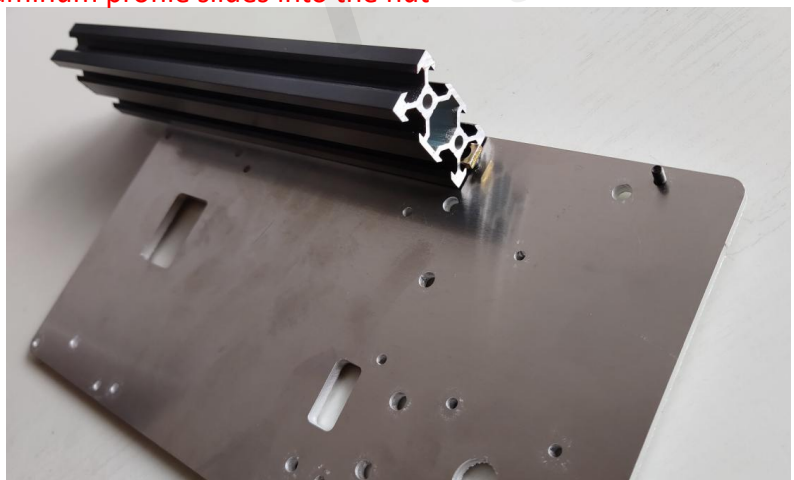
There may be some traces on the back of the aluminum plate, which does not affect the use

Look at the position in the figure, use a 5 * 10 round head to put on the bottom, and put on the M5 square nut

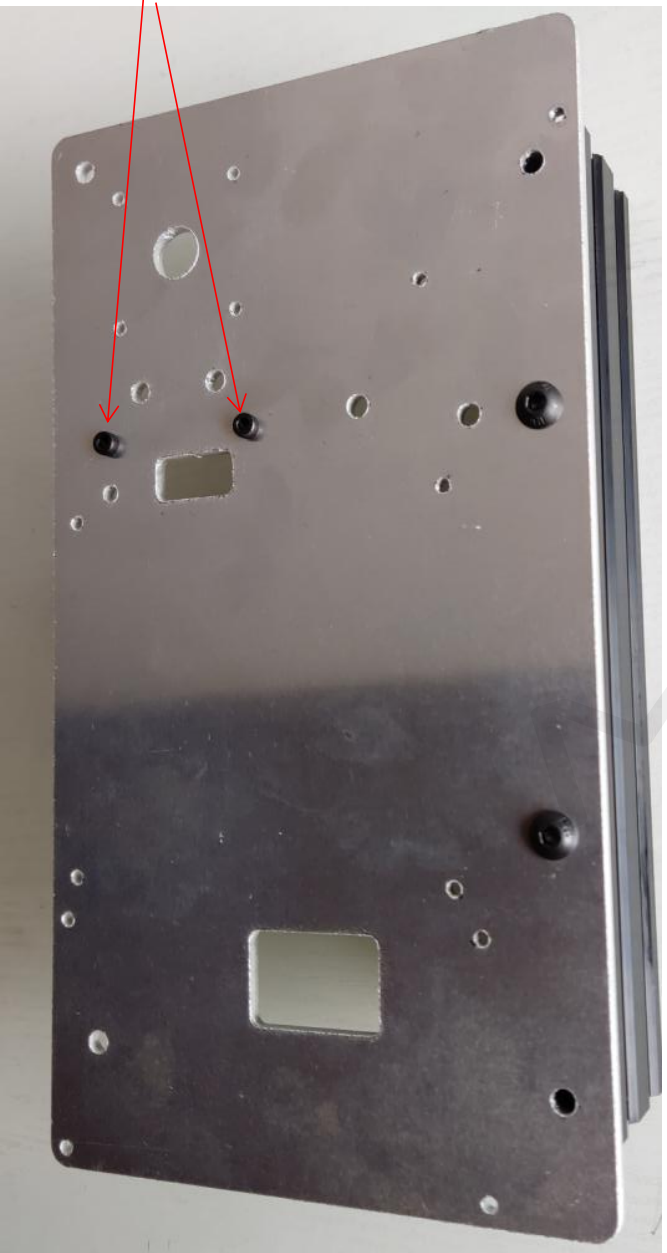
Screw 3 * 10 cup head into the marked position from the bottom

Hold the M3 screw against the profile, align the edge of the profile with the edge of the aluminum plate, and then tighten the 5 * 10 round head at the bottom to fix it

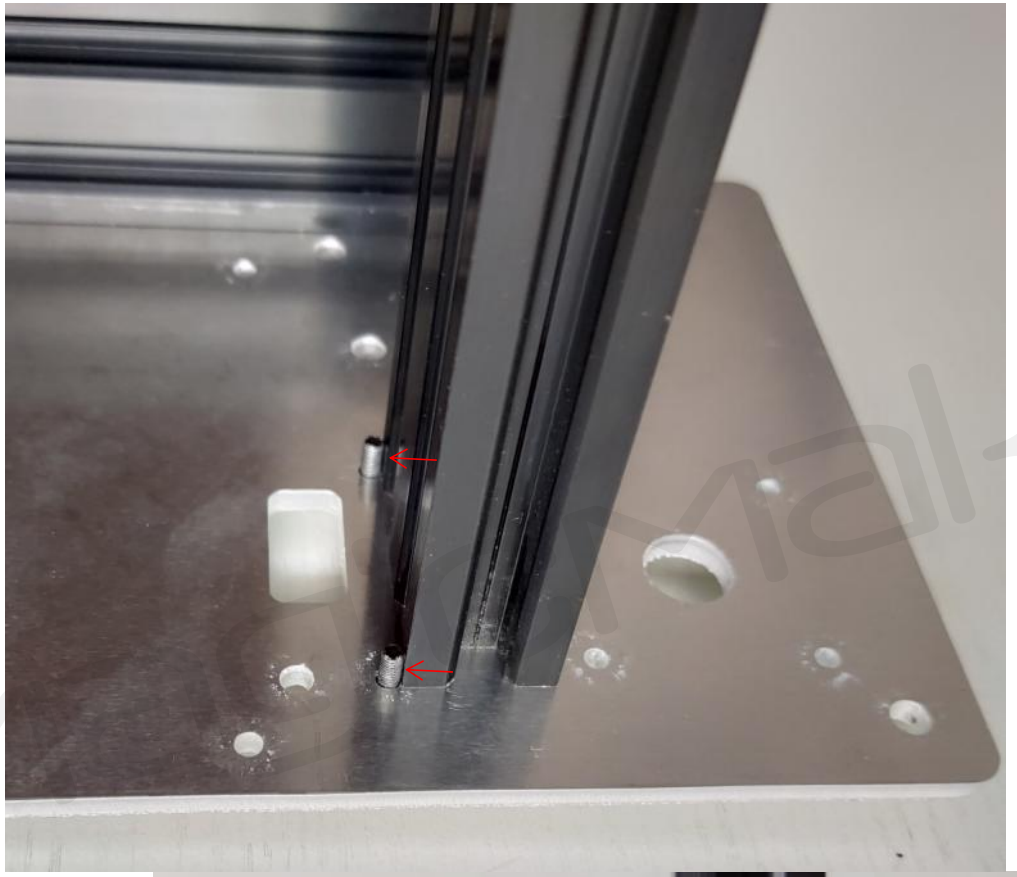
The shortest Aluminum profile slides into the nut

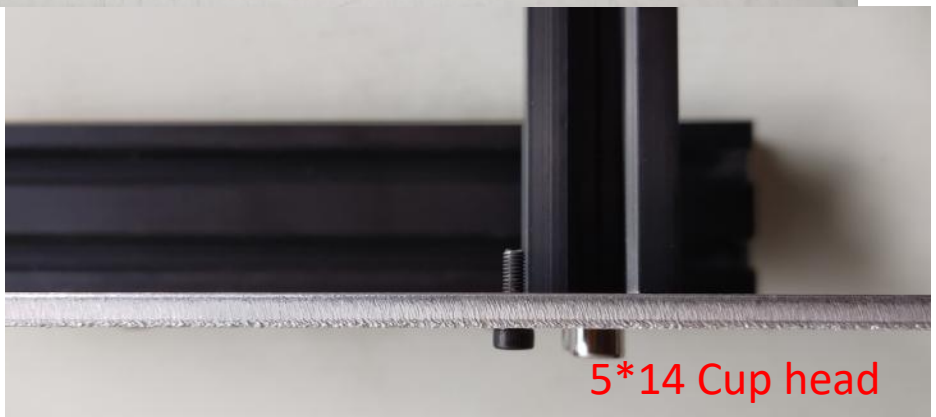


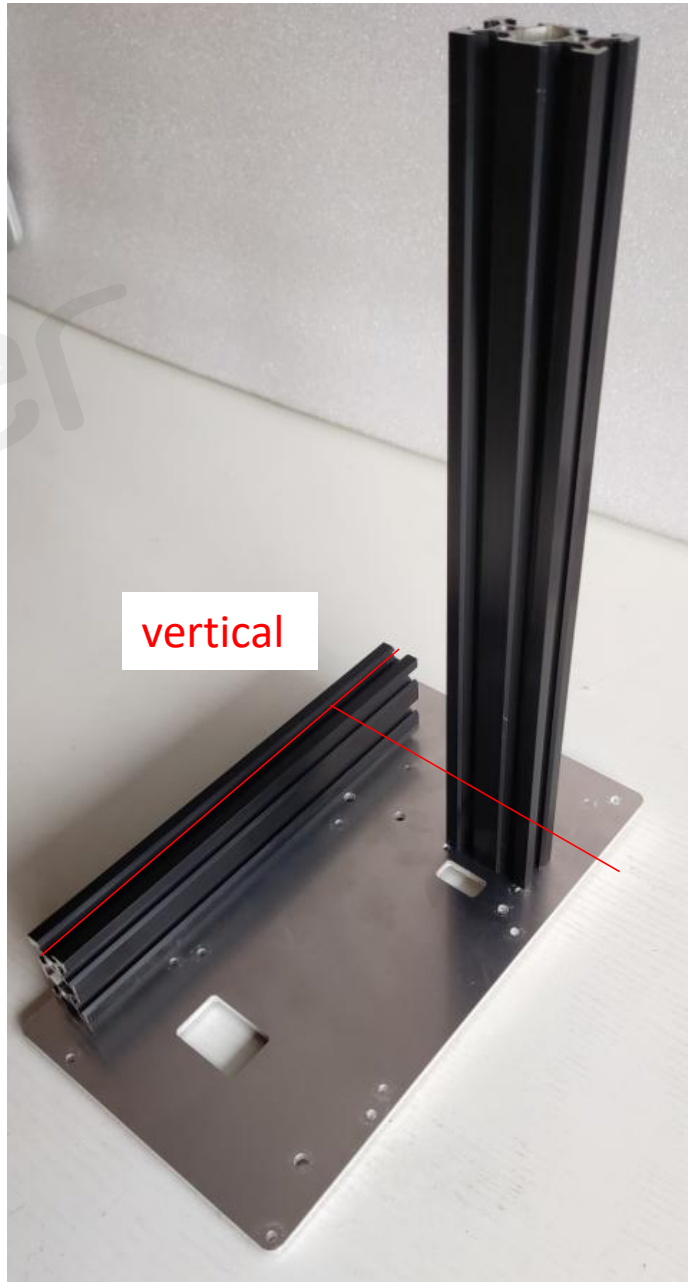
Take out the 3 * 10 cup head on the previous page，
The position in the picture is from screw in 2 3 * 10 Cup heads



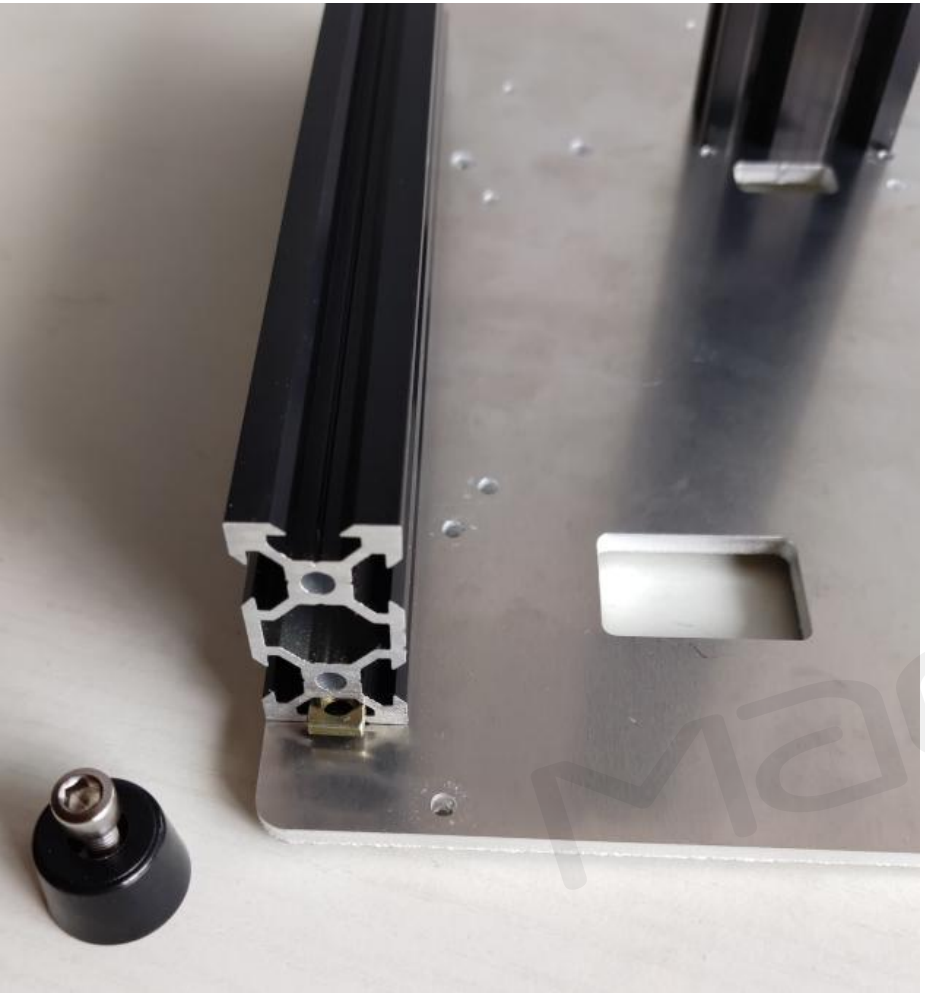
Place the longest profile, screw 5 * 14 cup head into the back of the bottom plate to fix, and the back edge against the M3 screw previously screwed in,Then tighten the 5 * 14 cup head on the back







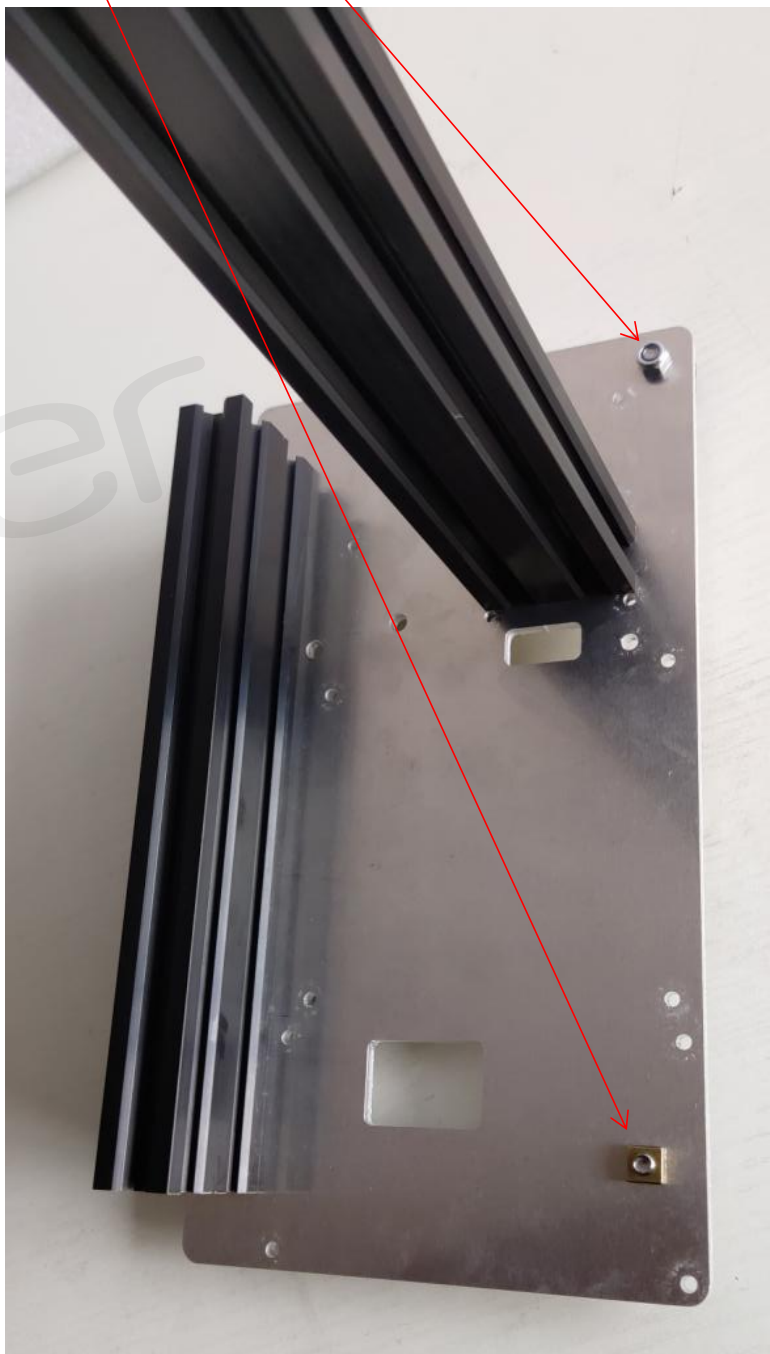
foot mat



Insert M5 square nut into profile， Push to the corresponding position of the floor hole， Then screw the 5 * 14 cup head through the rubber foot and screw in the nut to fix it
The back foot does the same thing

Fix the 4 feet according to the position in the picture

M5 square nut is used for the right front,
and M5 lock nut is used for the right rear

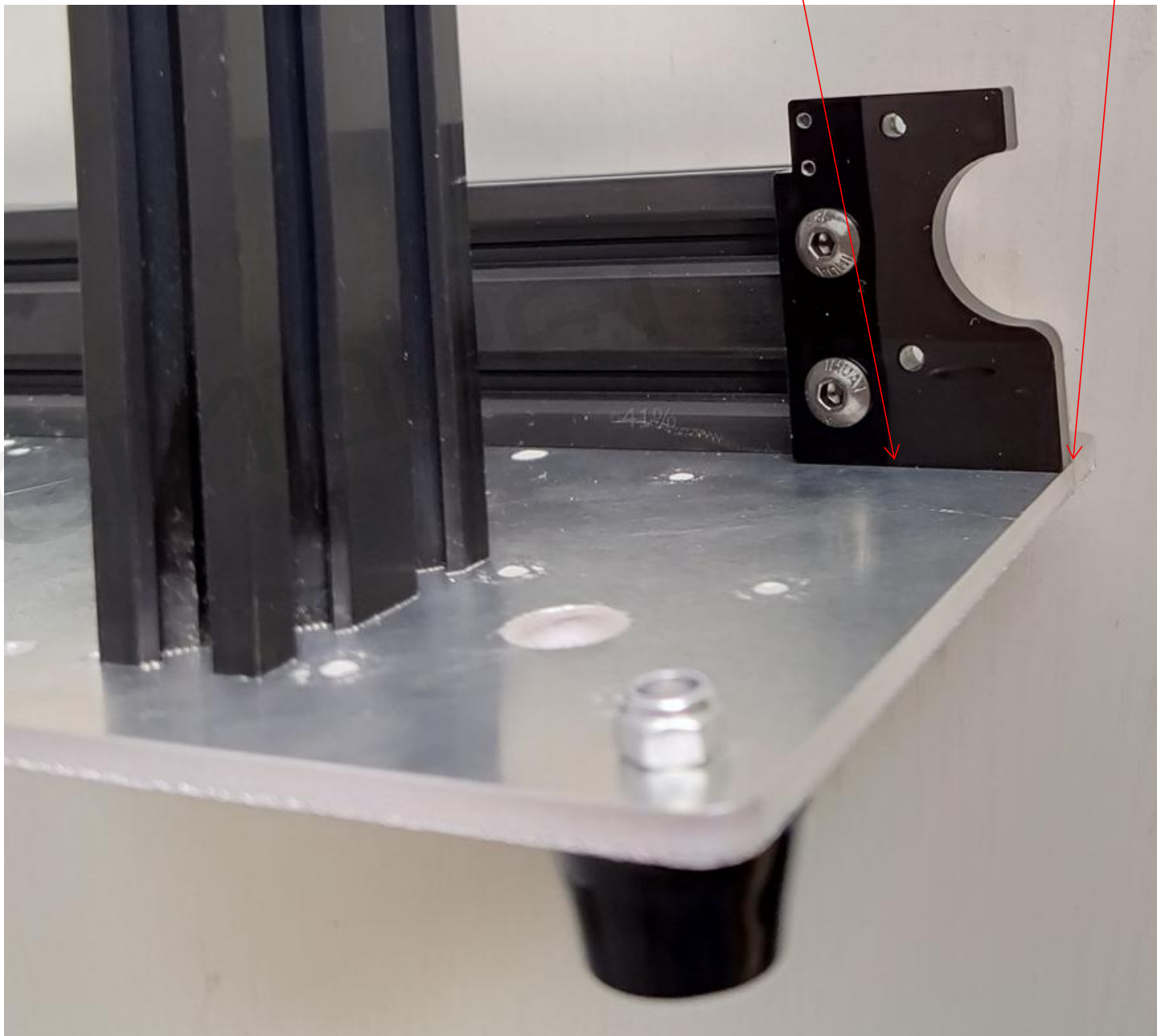


Y motor frame

Insert 2 M5 square nuts into the rear of aluminum profile

5 * 10 round head fixed

Bottom tight， Edge alignment



Z motor

Screw out two diagonal screws on one motor

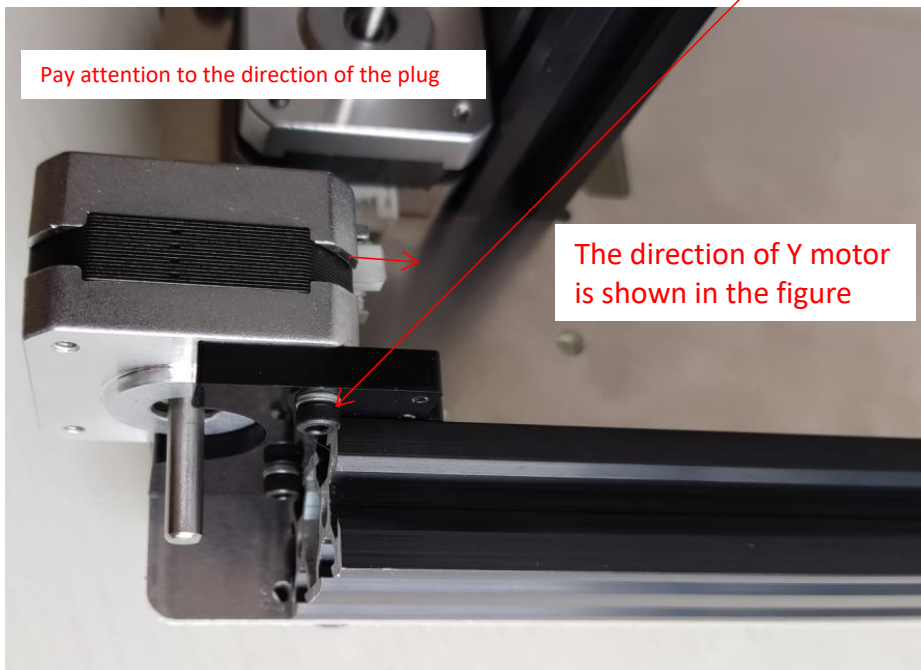
The motor direction is shown in the figure

Pay attention to the direction of the plug

Insert two 3 * 30 cup heads into the bottom for fixation

（Any diagonal can be used, not necessarily exactly as shown）

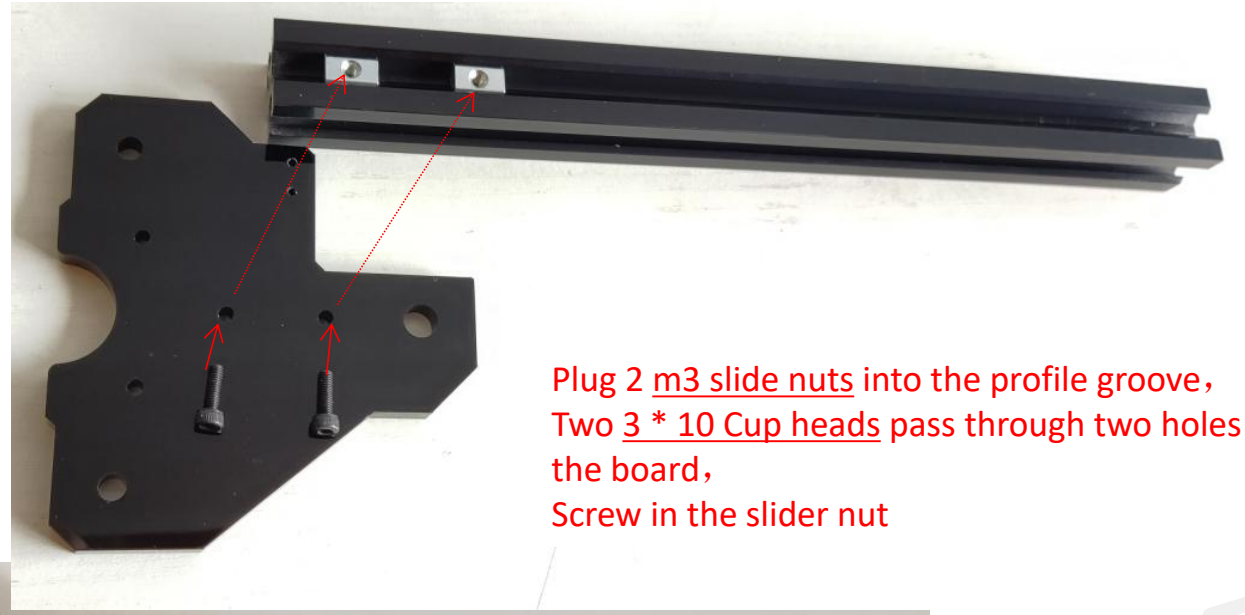
3*10 Cup head,
Wear 2 gaskets



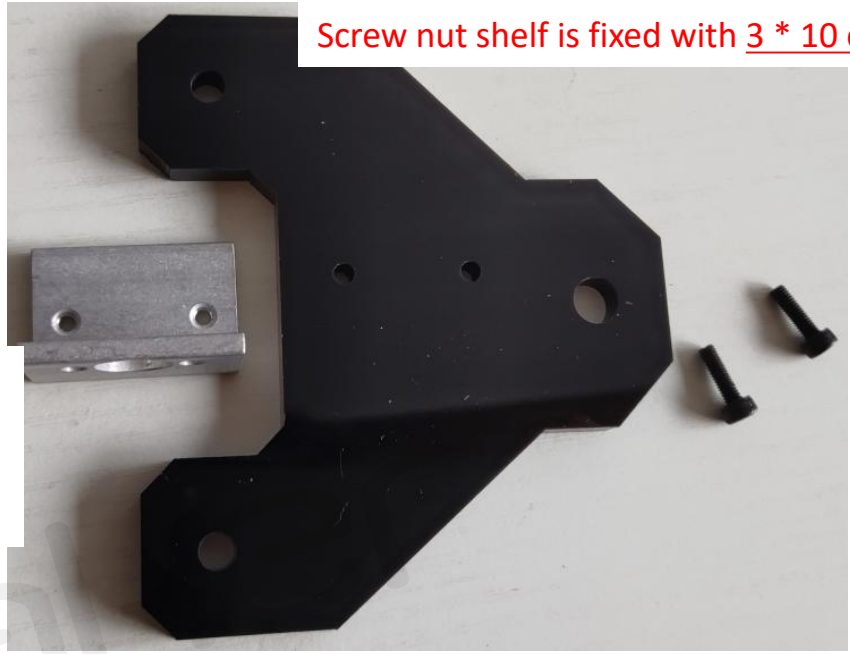
Pay attention to the direction of the plug

The direction of Y motor is shown in the figure

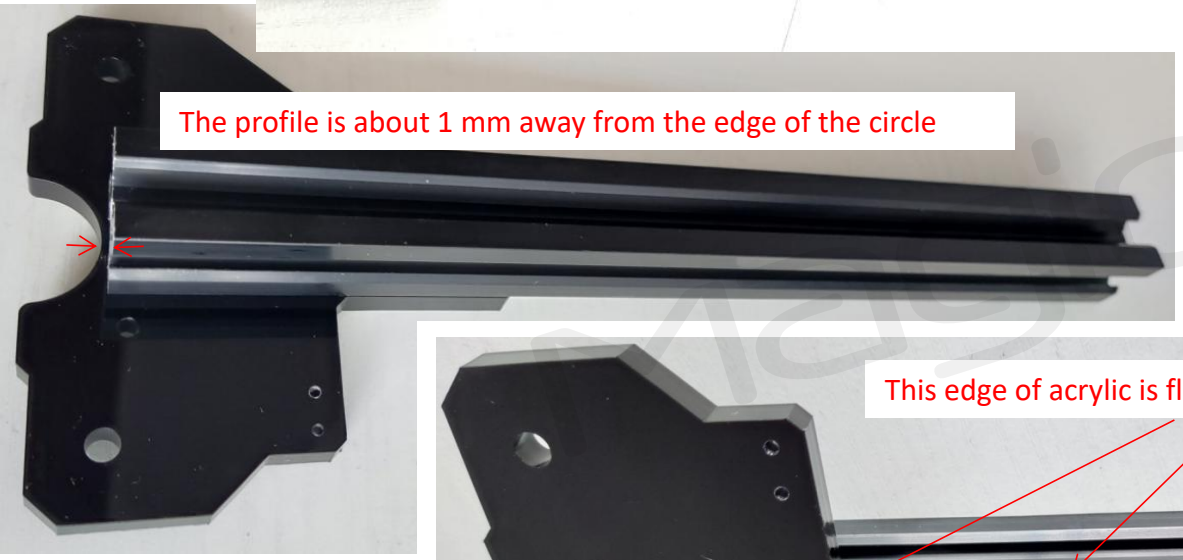
X axis



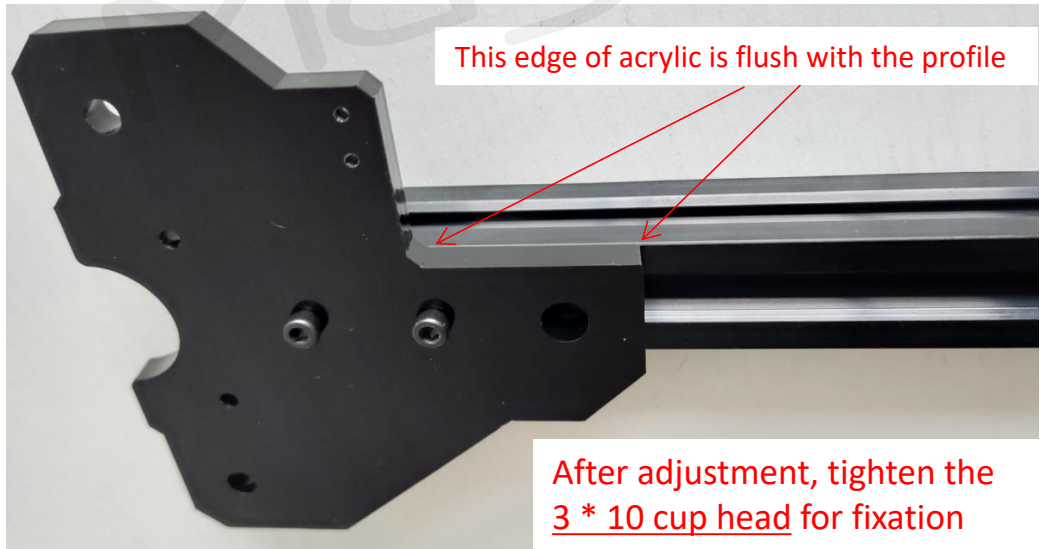
Plug 2 m3 slide nuts into the profile groove，
Two 3 * 10 Cup heads pass through two holes in the board，
Screw in the slider nut



Screw nut shelf is fixed with 3 * 10 cup head

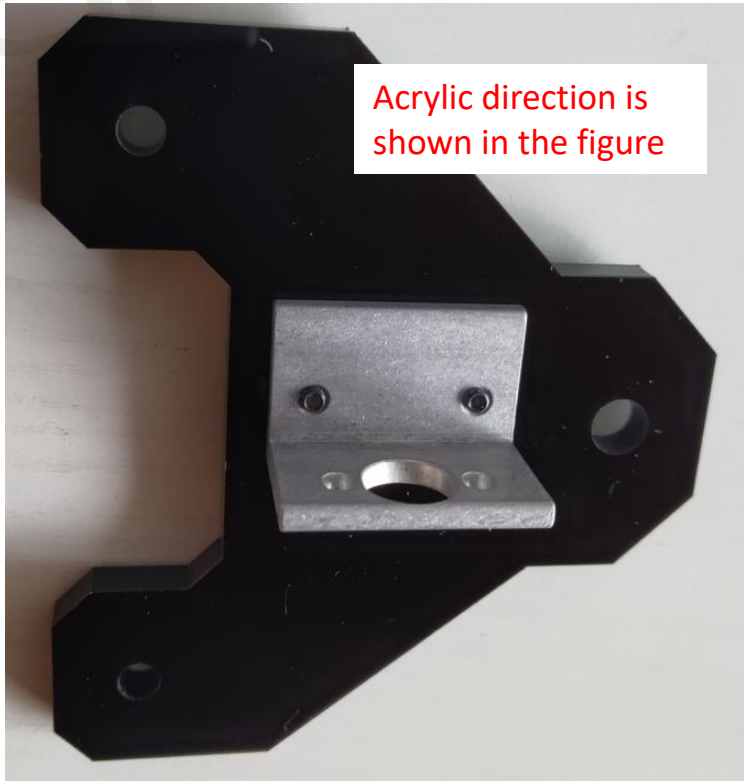


The profile is about 1 mm away from the edge of the circle



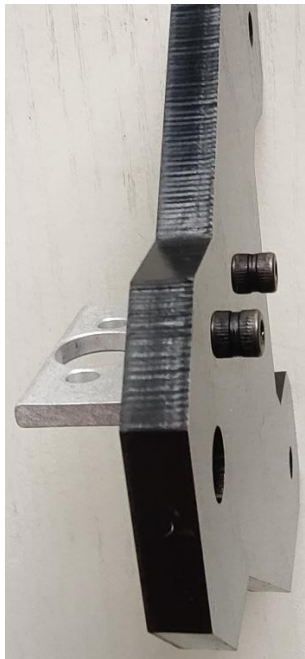
This edge of acrylic is flush with the profile

After adjustment, tighten the 3 * 10 cup head for fixation



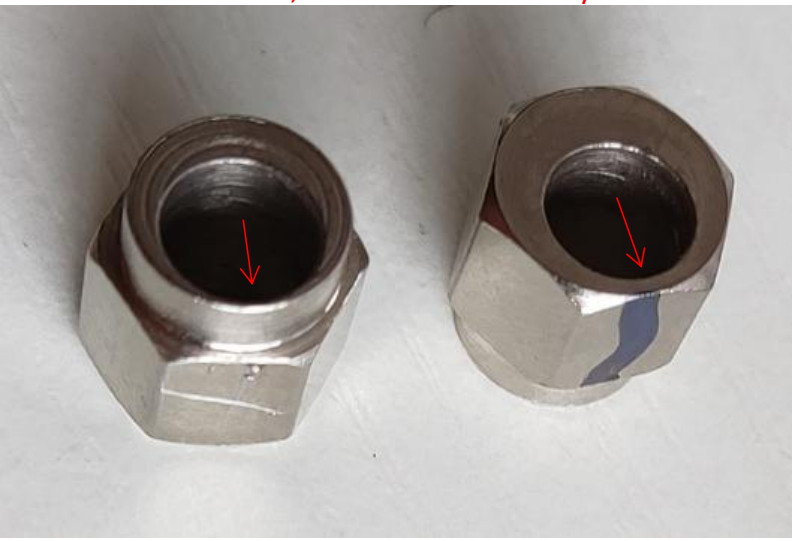
Acrylic direction is shown in the figure

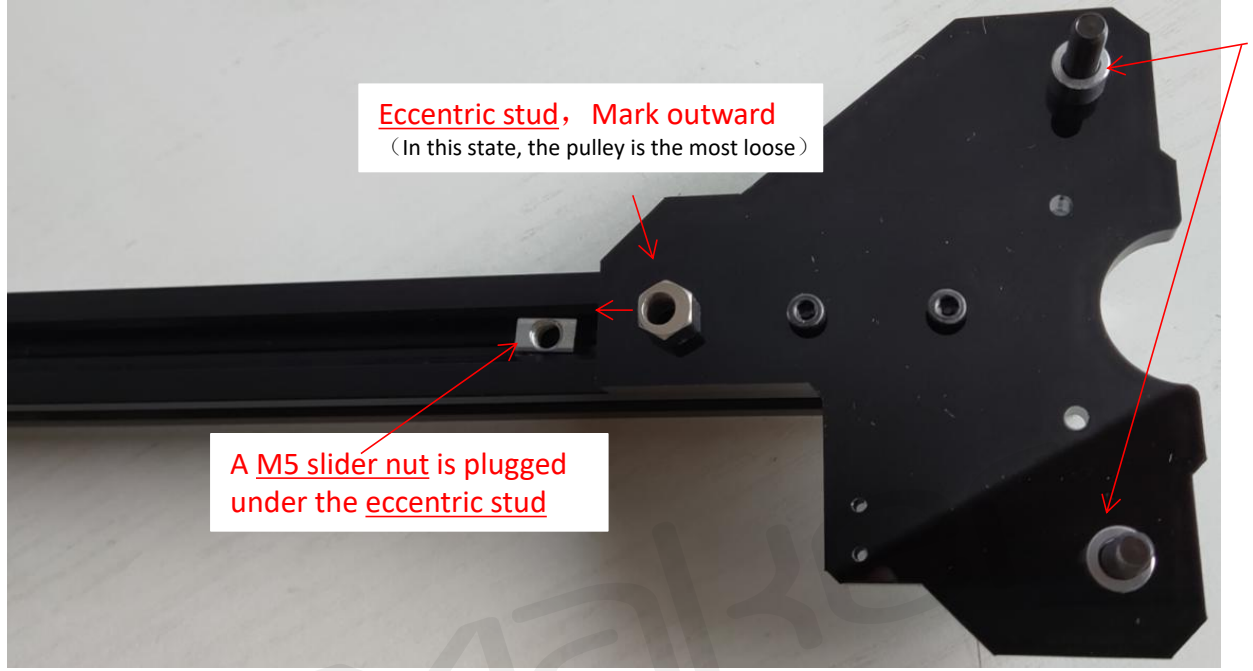
Screw in the screws from the back

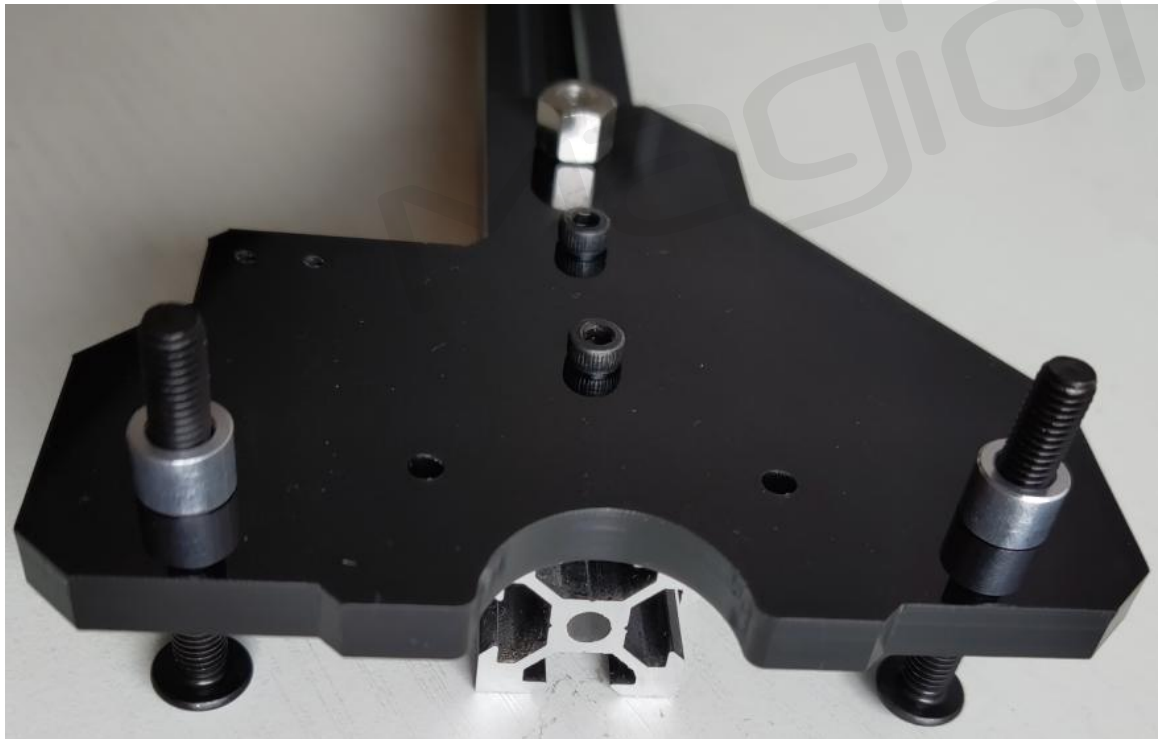


Prepare 2 Eccentric stud first，
Make a mark on the nearest side of the circle

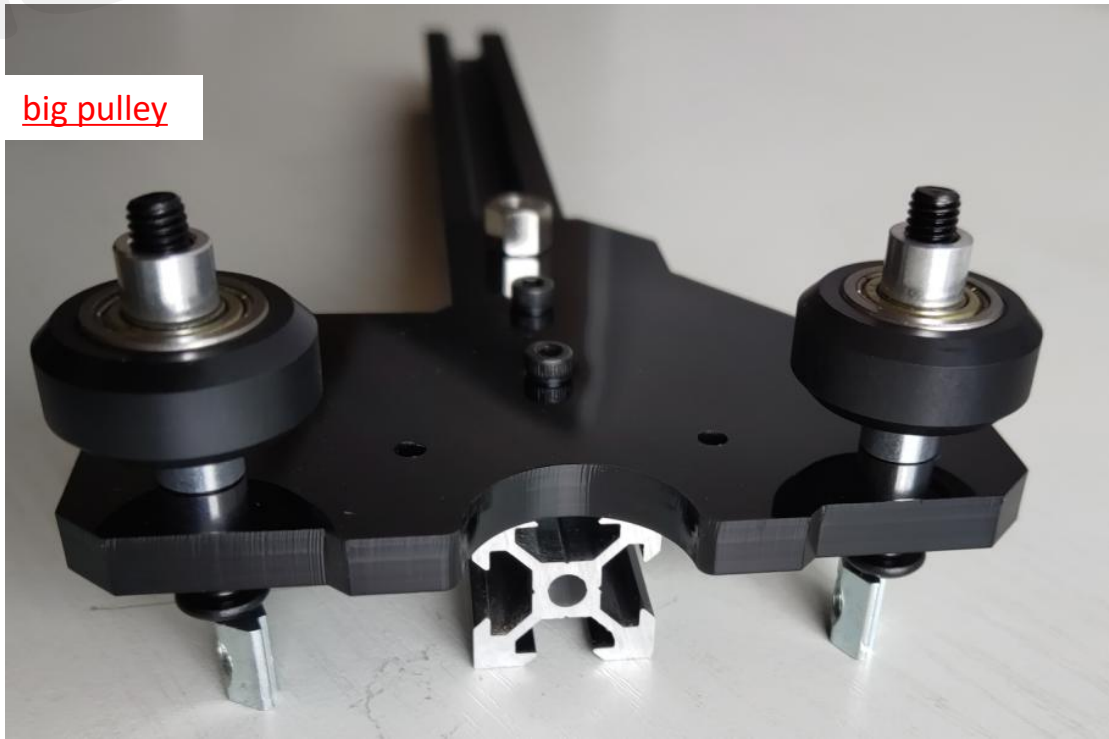
You can use a marker,， Or with a knife， If you can see it clearly



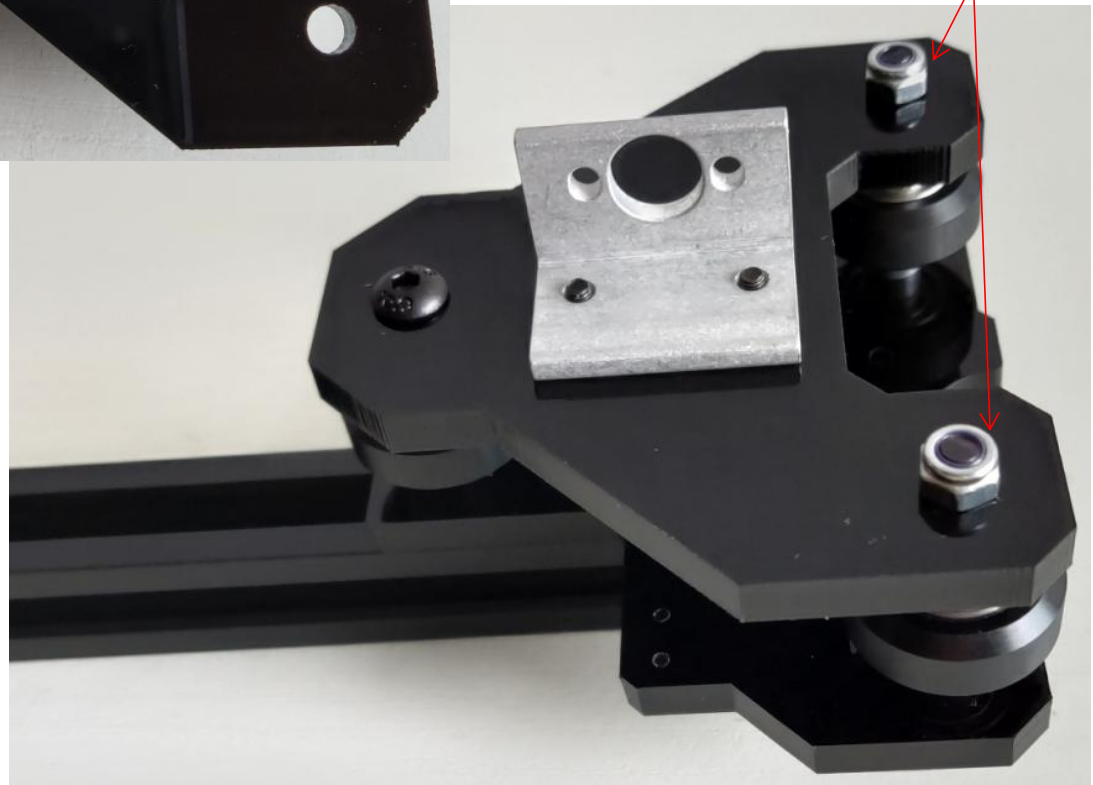




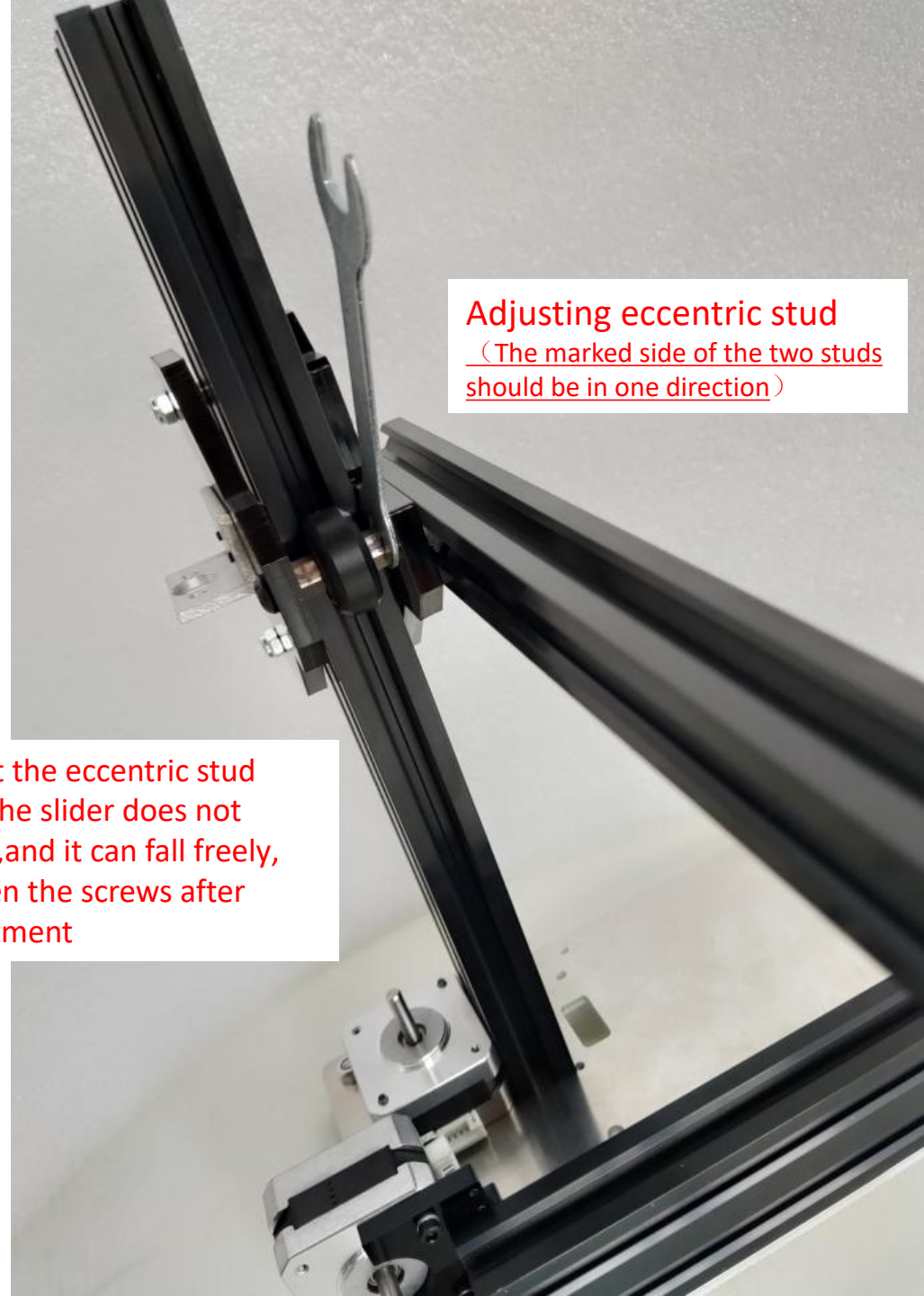
big pulley



Don't tighten the nuts yet



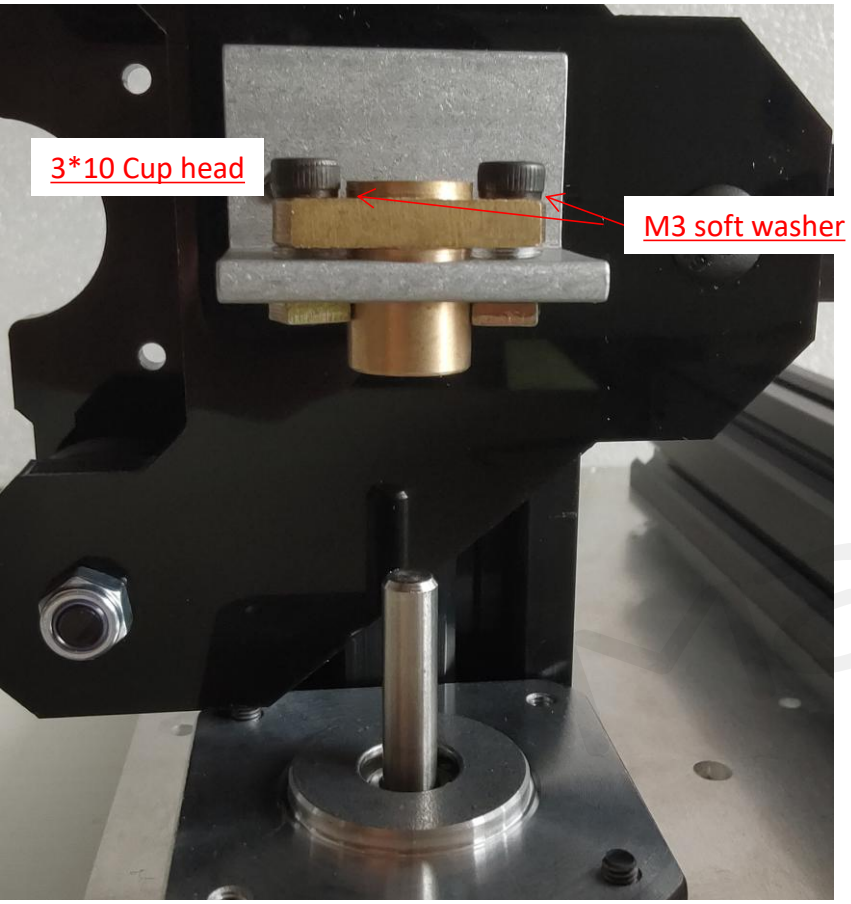

Install X-axis on z-axis
Tighten the nut


Adjusting eccentric stud
（The marked side of the two studs should be in one direction）
Adjust the eccentric stud until the slider does not swing,and it can fall freely, Tighten the screws after adjustment

Screw rod

（At this stage, please be serious, Will affect the printing effect.）

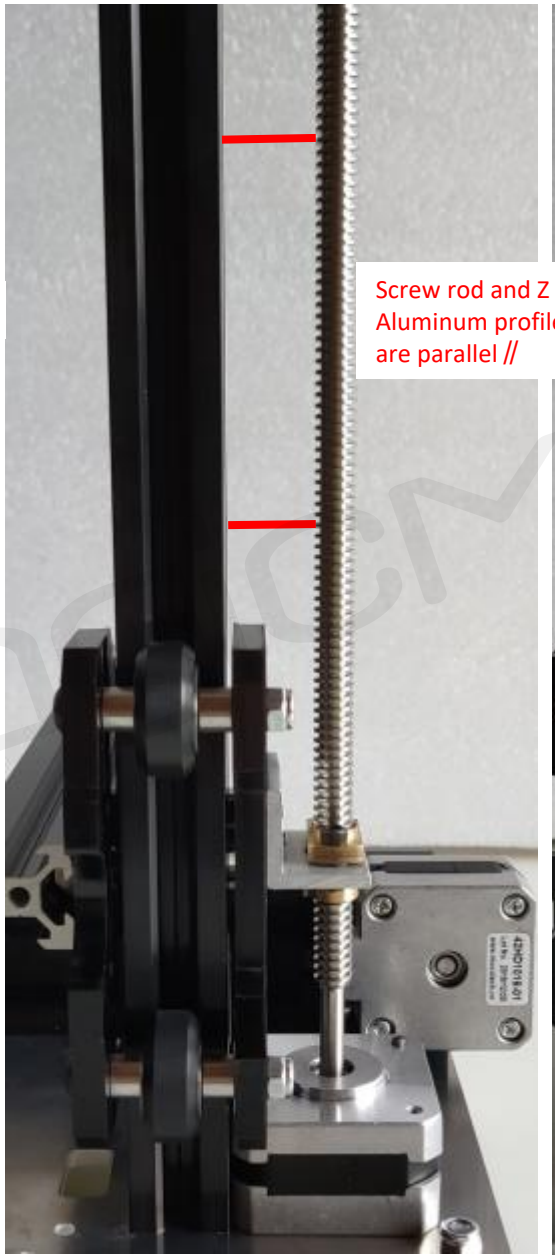
A M3 soft washer is placed between the screw rod nut and the shelf， Install m3 nut below, do not tighten it first



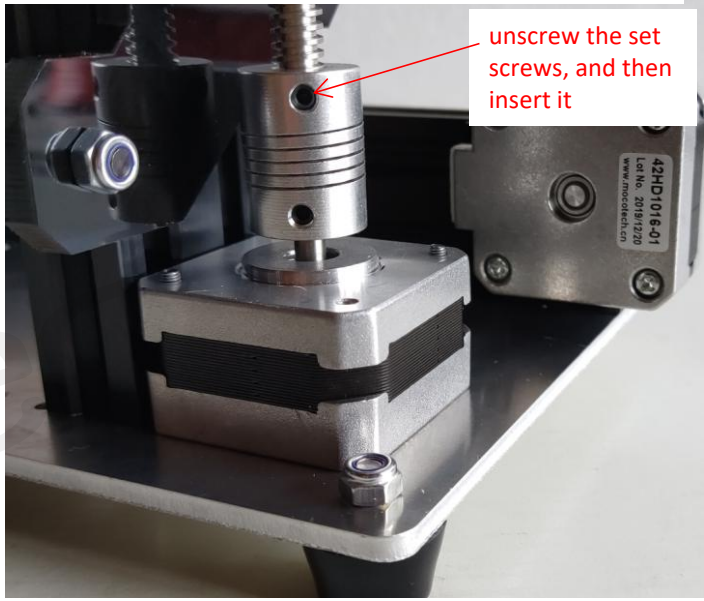
（The soft washers be stacked together, pull open）

If u have lube，
can lubricating the screw rod

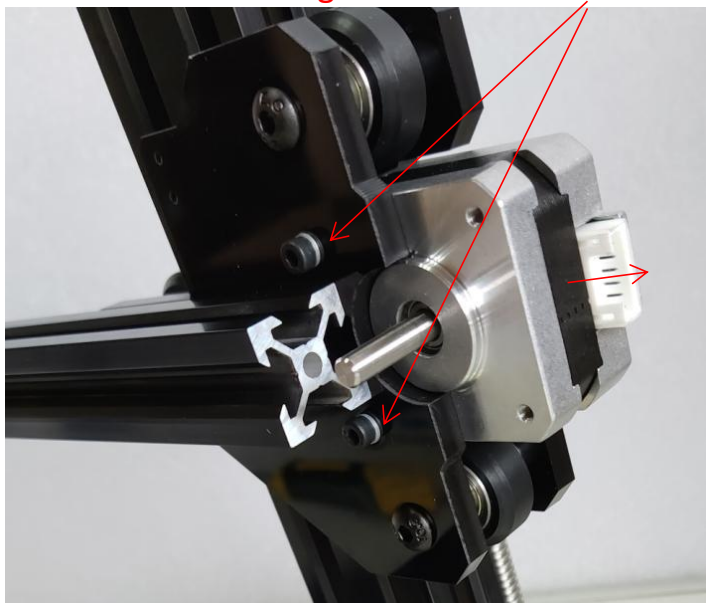
Adjust the screw rod until it is vertical to align the motor shaft below, and then tighten the screw to fix the screw rod nut.， （**in order not to affect the function of the soft washer, do not tighten it hard, only need the nut will not be loose**）



The coupling is installed between the screw rod and the motor joint,
Screw and motor shaft close, do not leave gap



X Motor， 3*10 Cup head， each screw needs to install two gasket.



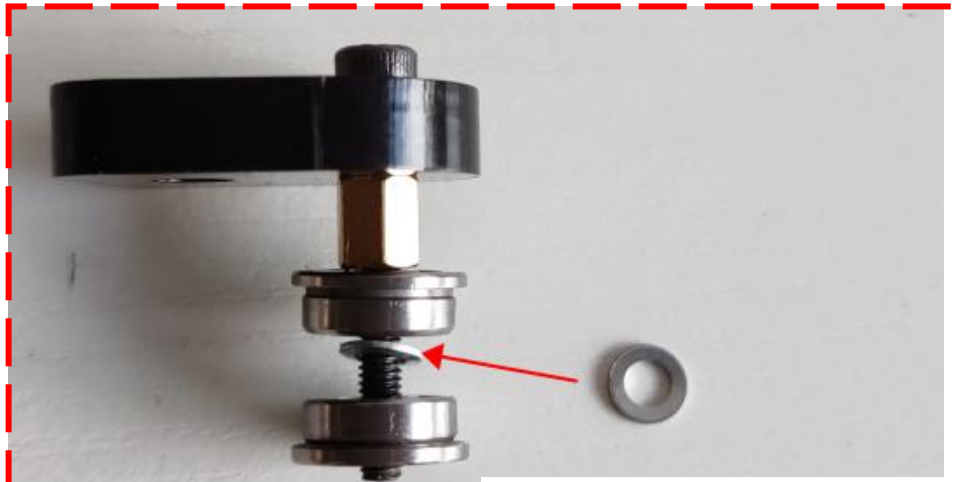
Guide wheel seat

3*25 Cup head， Screw on the copper pillar

As the picture, install 2 flange bearings,
Screw on the copper pillar to fix

5*10 round head screwed on the slider nut, not tightened

There are two sets like this

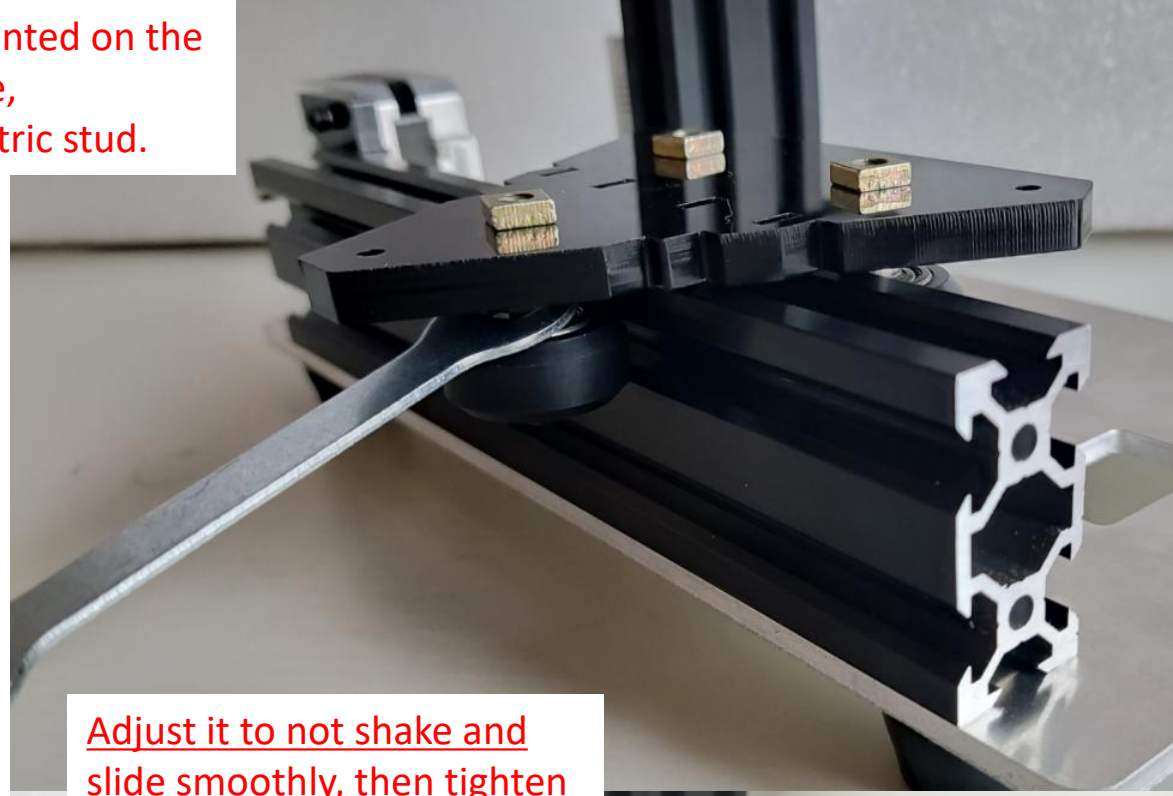


If there is a ticking sound when printing, you can put a thin gasket here,or you can also put it on first

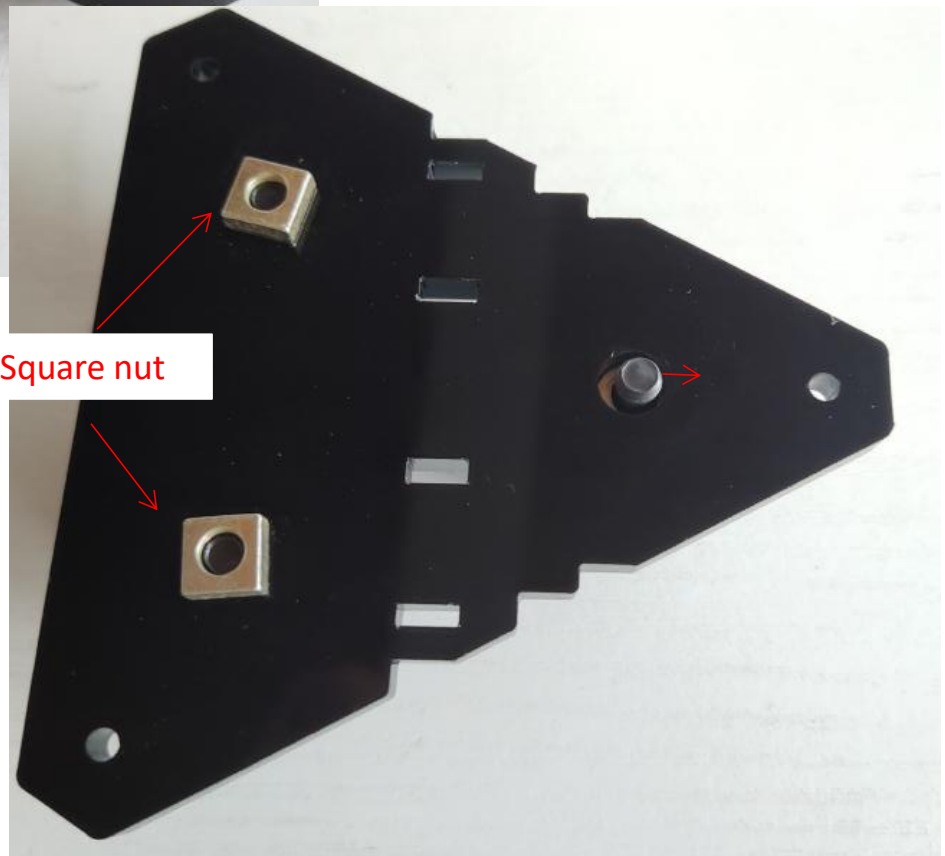
Y slider

5*25 Round head，
Put on the big pulley,

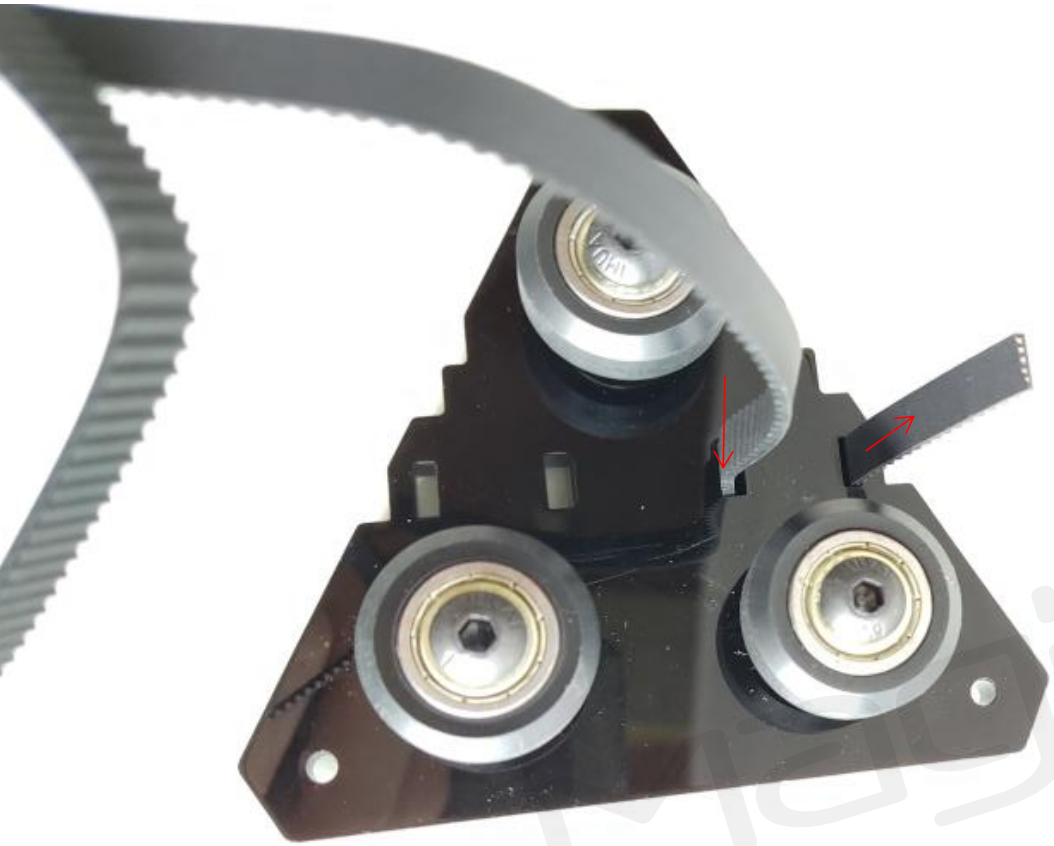
The slider is mounted on the aluminum profile,
Adjust the eccentric stud.



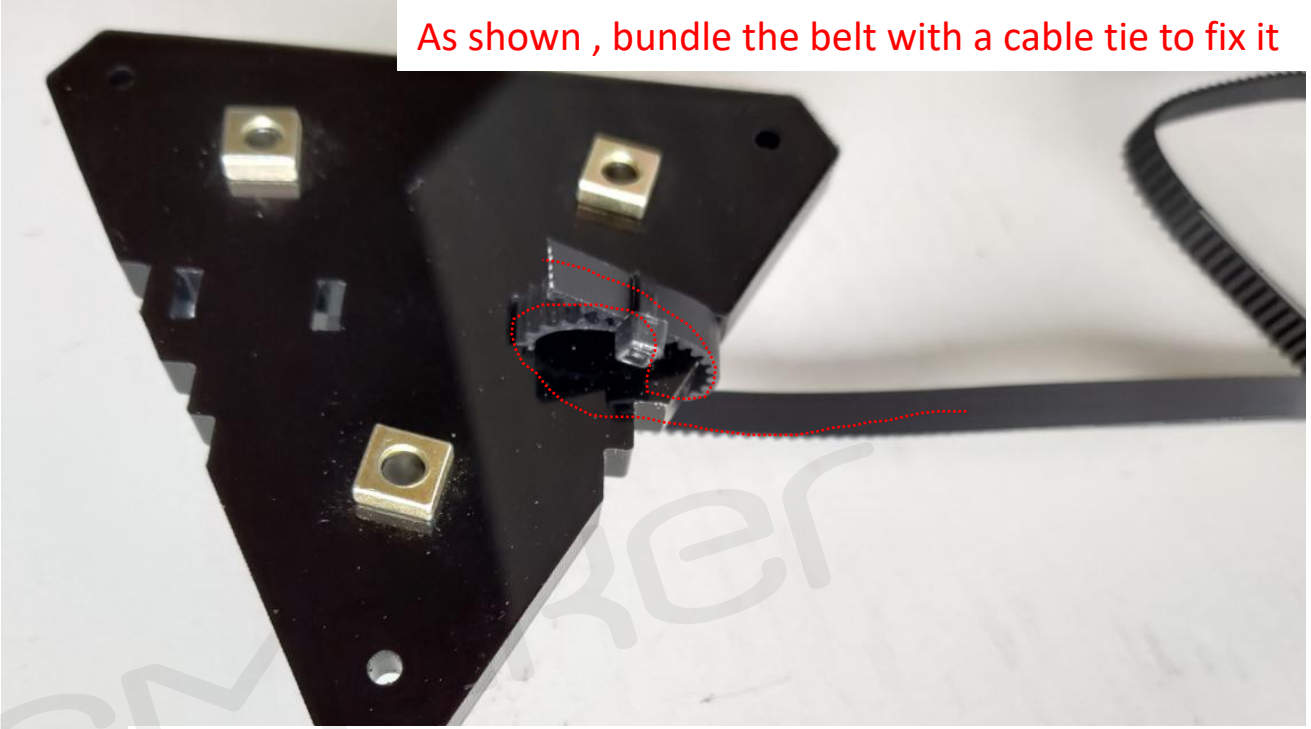
Adjust it to not shake and slide smoothly, then tighten



As shown through, The belt passes through the slider



As shown , bundle the belt with a cable tie to fix it

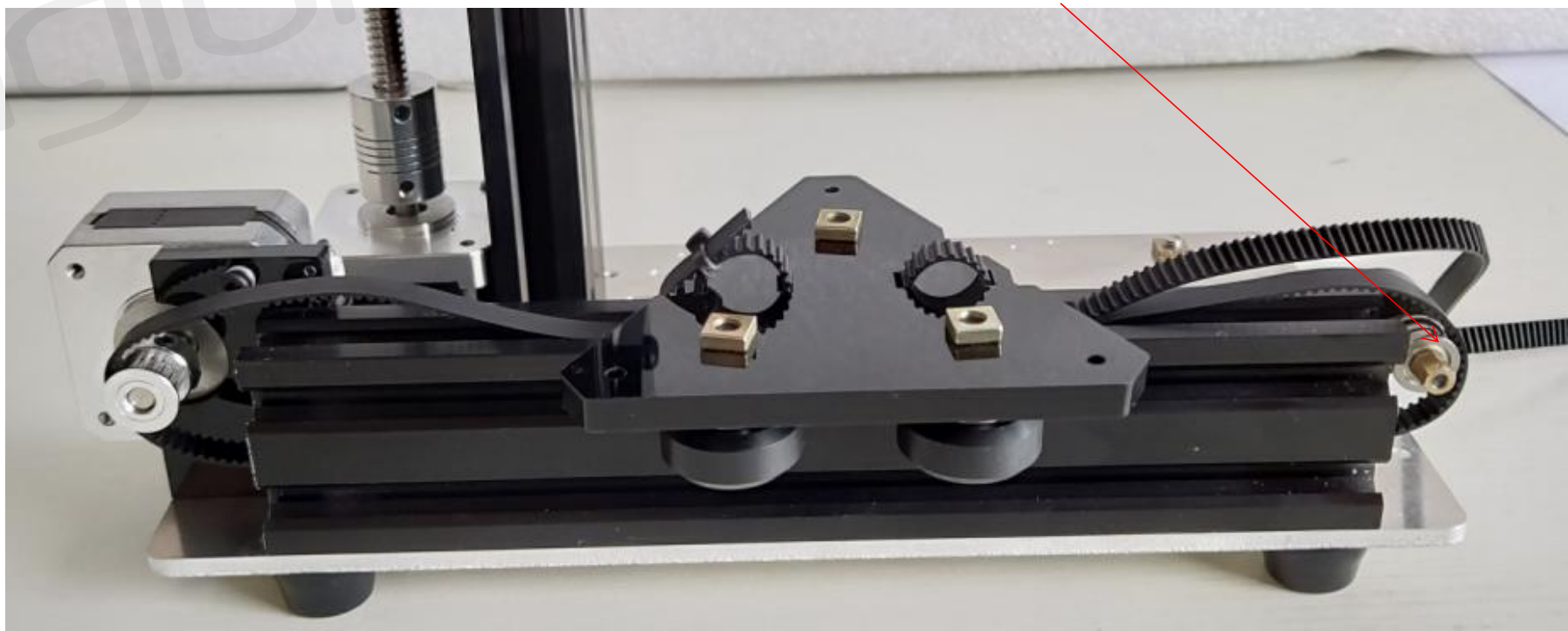


The belt goes through the hole in the Aluminum profile of the profile

The other side passes through the acrylic plate as before

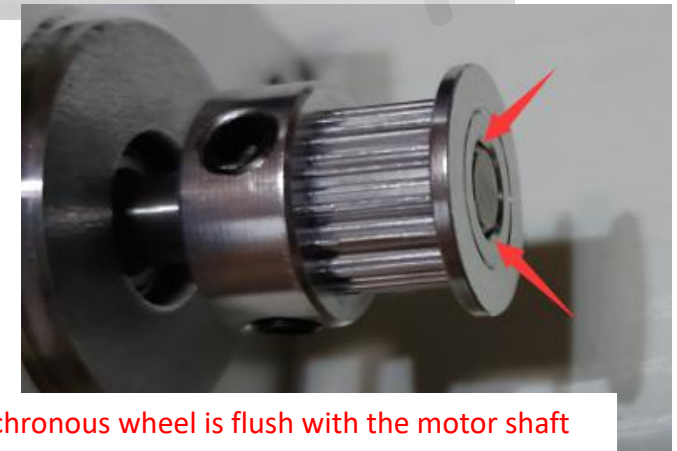
Slider slides into Aluminum profile.

The guide wheel seat is fixed against the profile (no need to tighten it)



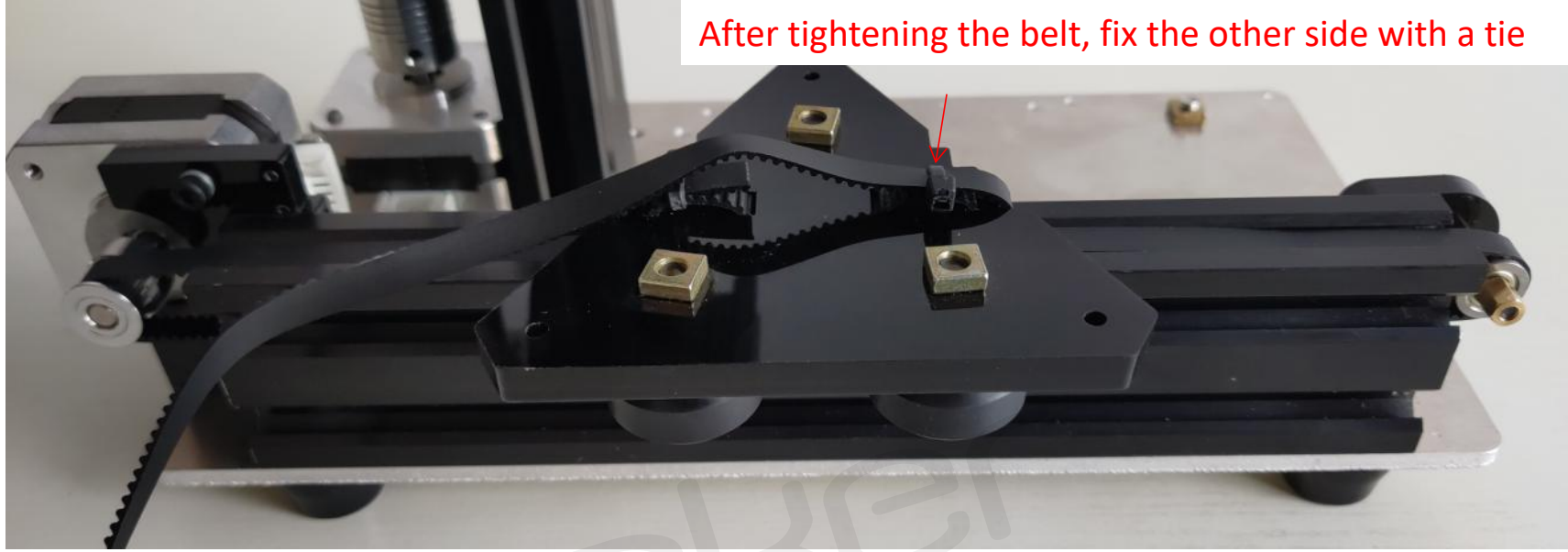
Install the synchronous wheel on the motor,The groove of the synchronous wheel is aligned with the groove of the aluminum profile, then the synchronous wheel is fixed.

carefully the direction of the synchronization wheel

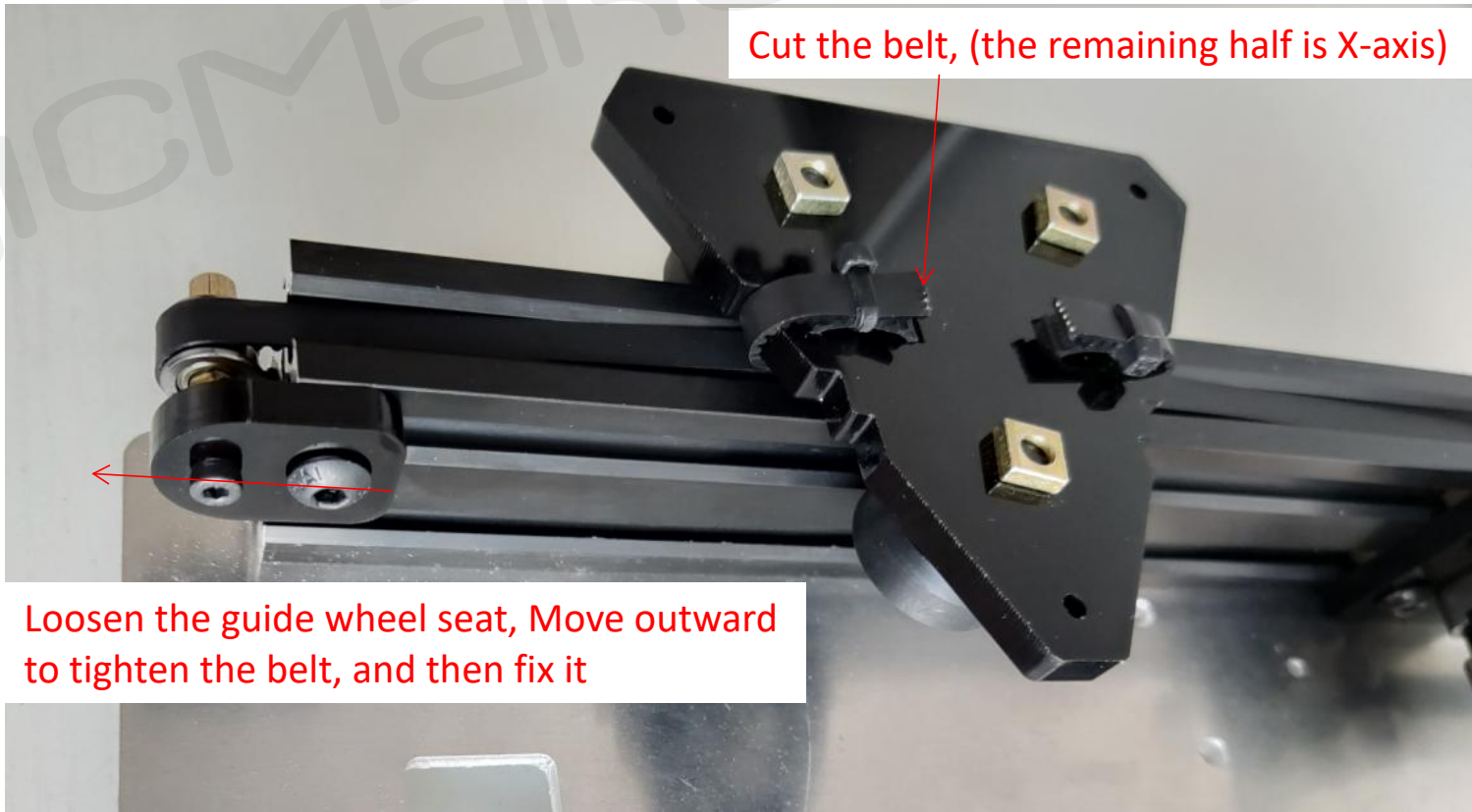


The synchronous wheel is flush with the motor shaft

After tightening the belt, fix the other side with a tie



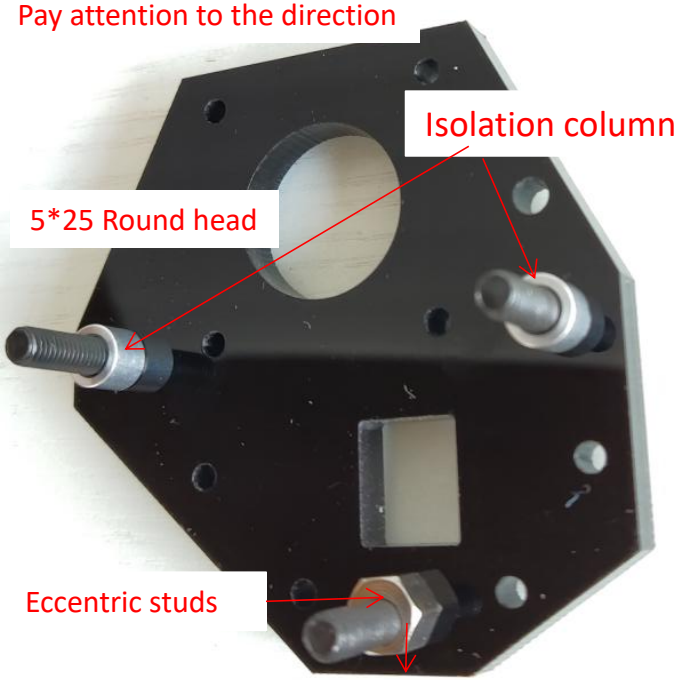
Cut the belt, (the remaining half is X-axis)



Loosen the guide wheel seat, Move outward to tighten the belt, and then fix it

X slider

Pay attention to the direction



Install the small pulley,
Screw on M5 Lock nut

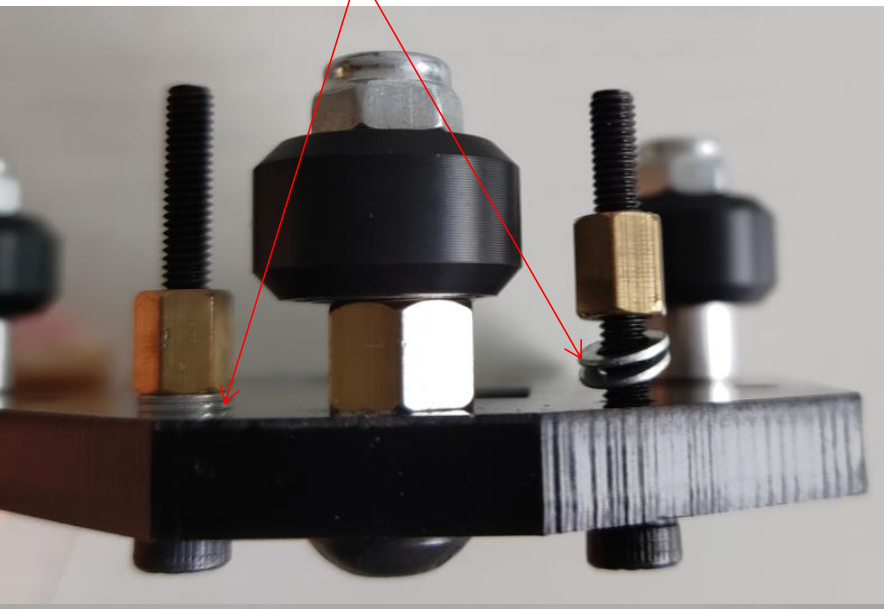
The bearing of the small pulley is relatively fragile and does not need to be tightened too tightly

The slider is mounted on the aluminum profile, then adjust the eccentric stud.

Adjust to no shaking and smooth sliding

If the pulley does not turn smoothly, Screw in the nut in the opposite direction

3*25 Cup head， Plug 2 shim and screw on the copper column

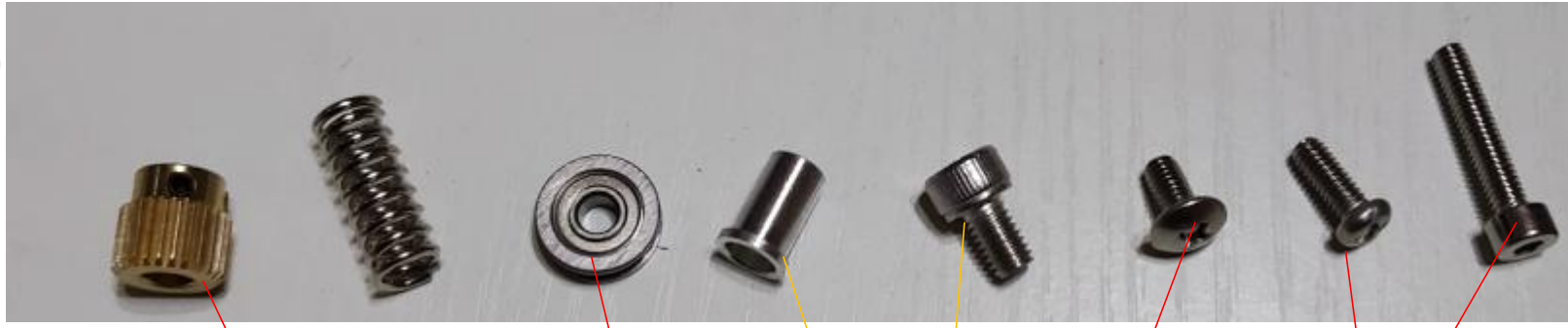


Screw the 3*10 cup head to fix the fan rack

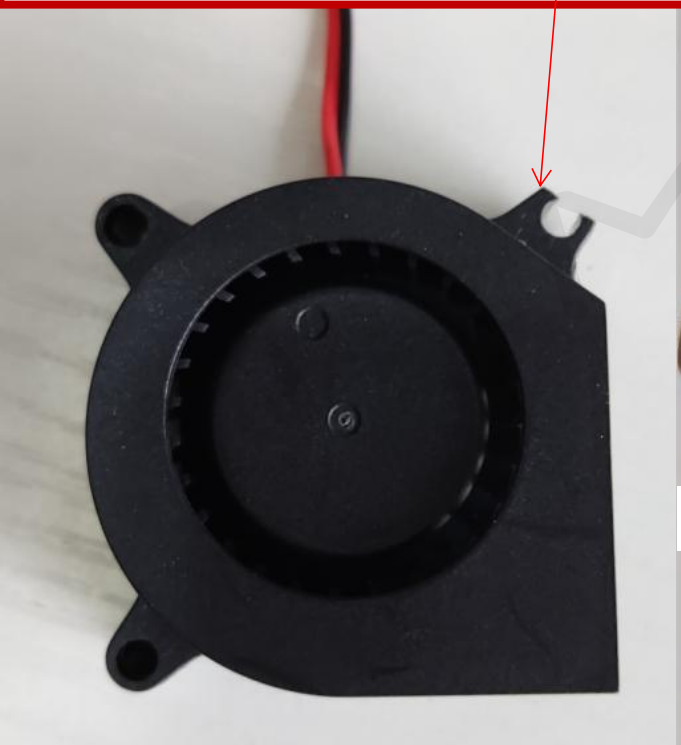
Put in the M3 square nut

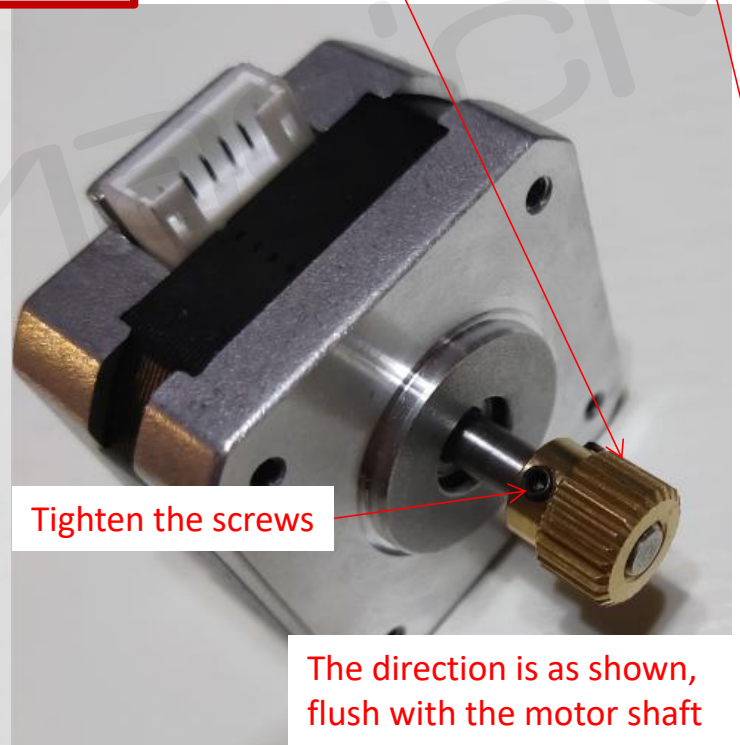
Align the acrylic edge with the fan rack edge

Accessories for extruders



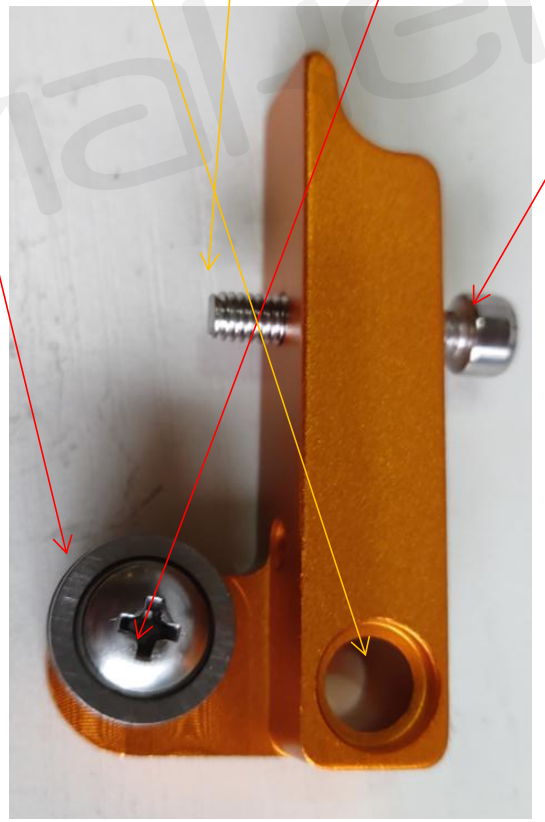
Use a knife to cut off the fan at least 1mm, be sure to cut.

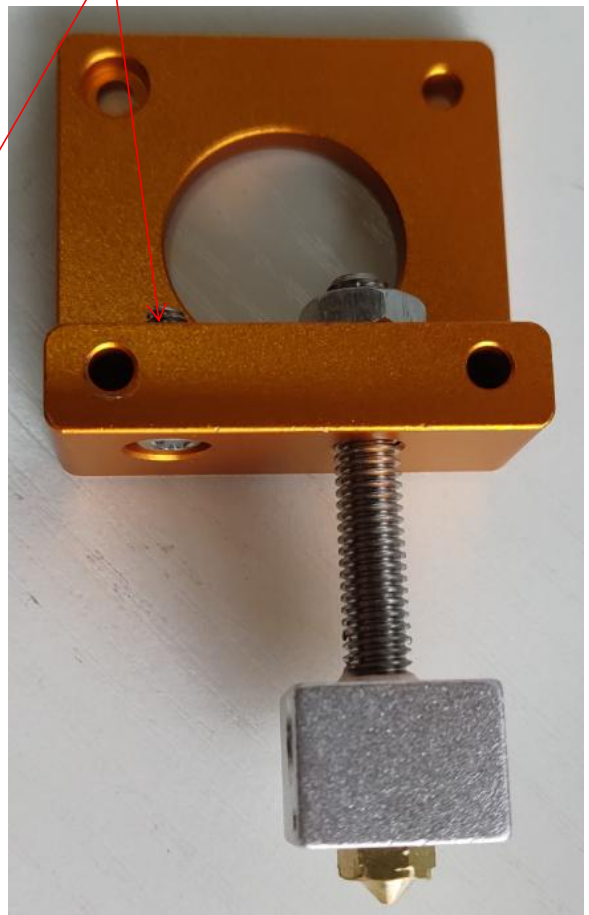




Tighten the screws

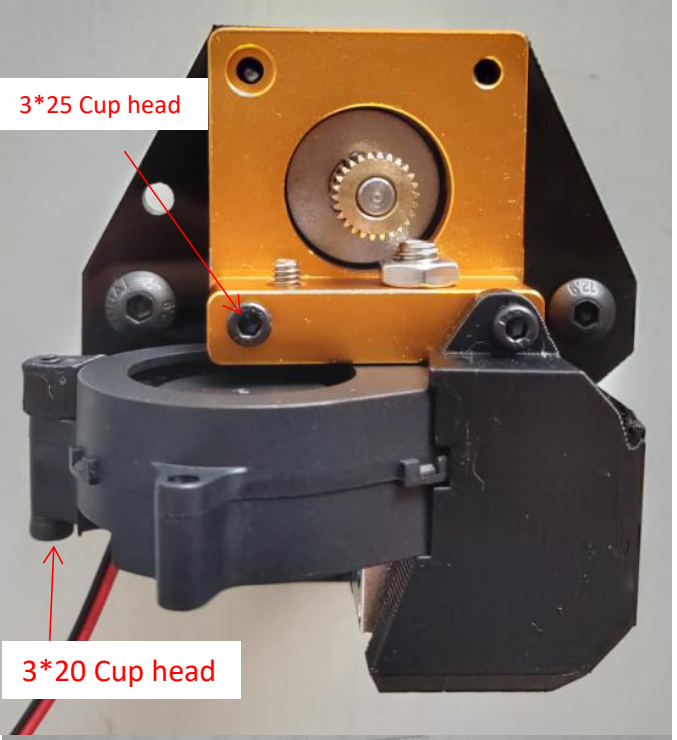
The direction is as shown, flush with the motor shaft

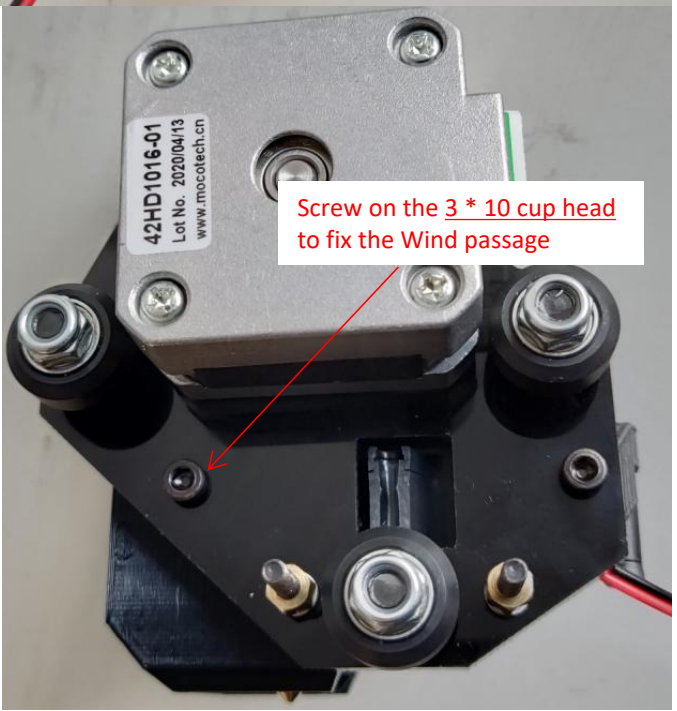




Extruder

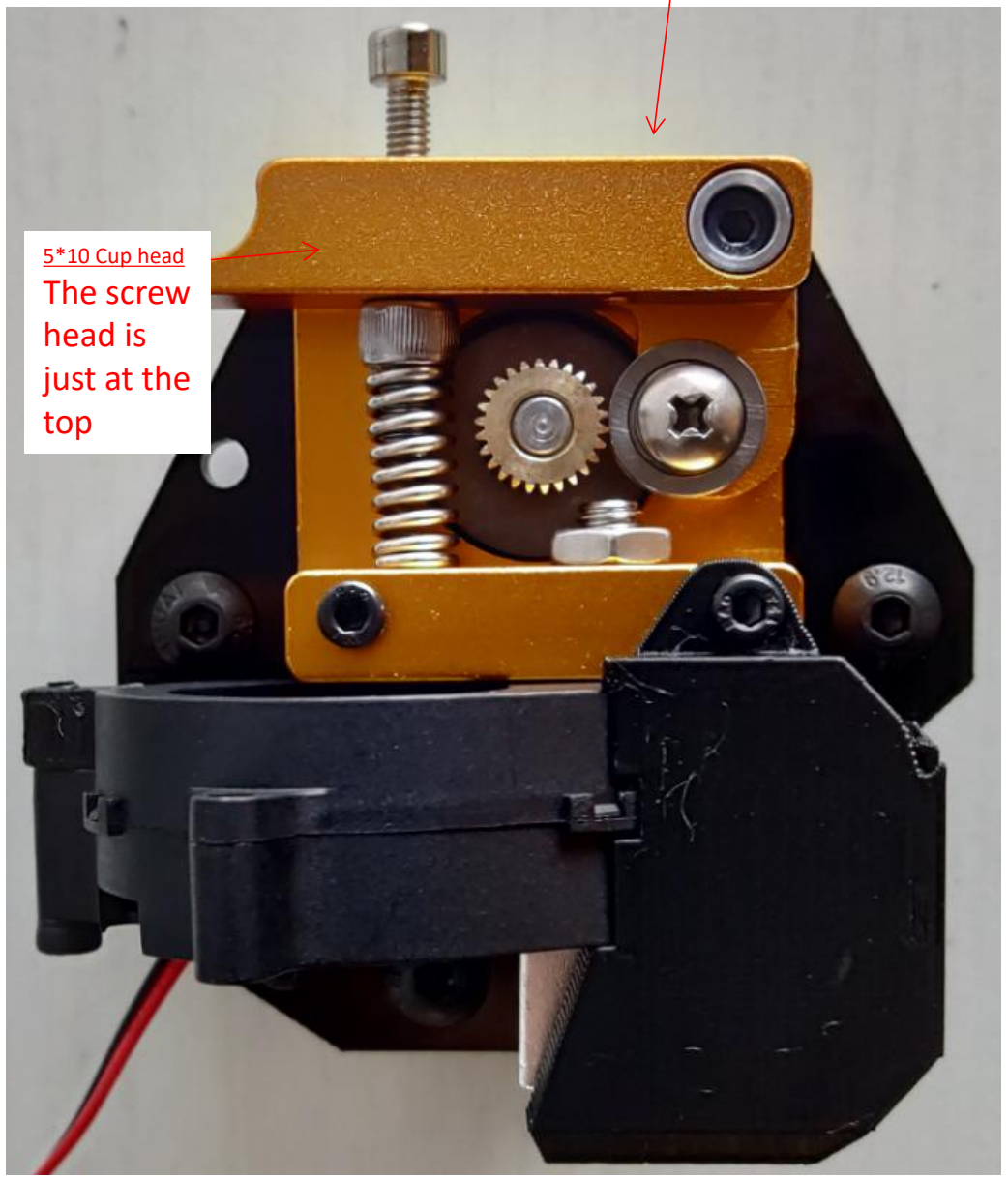
Insert the fan diagonally into the fan cover slot as shown



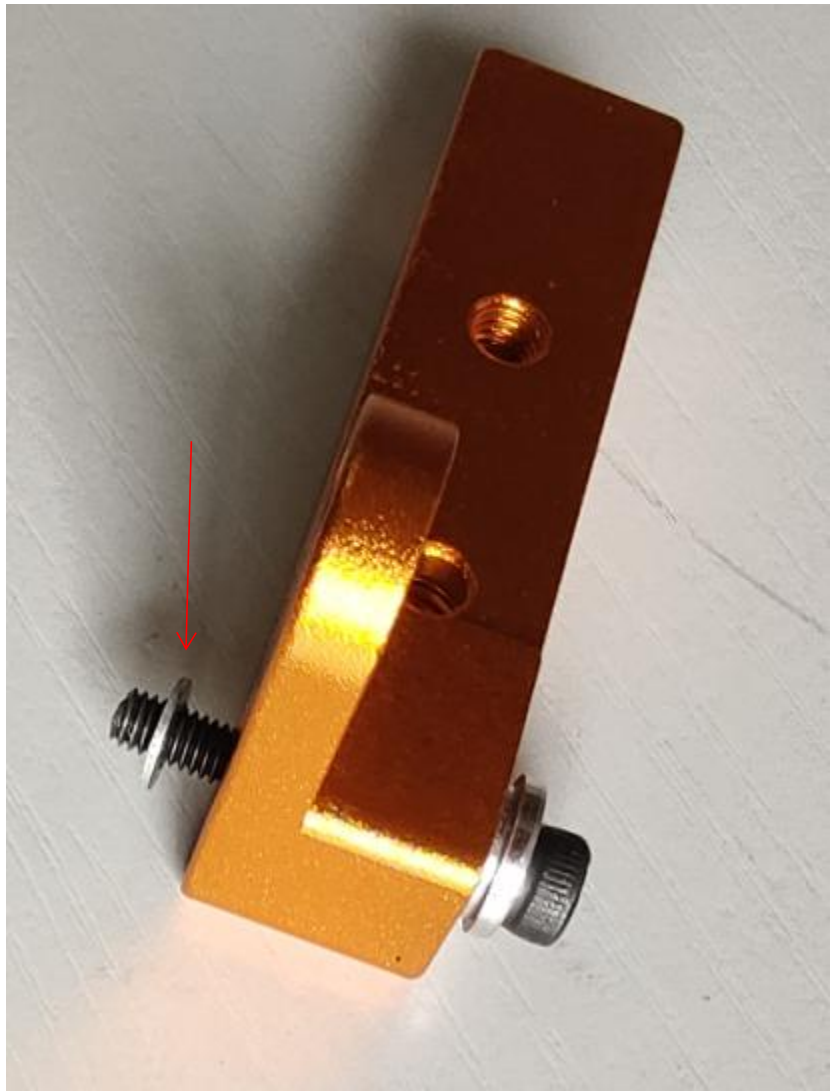


Don't screw down too much

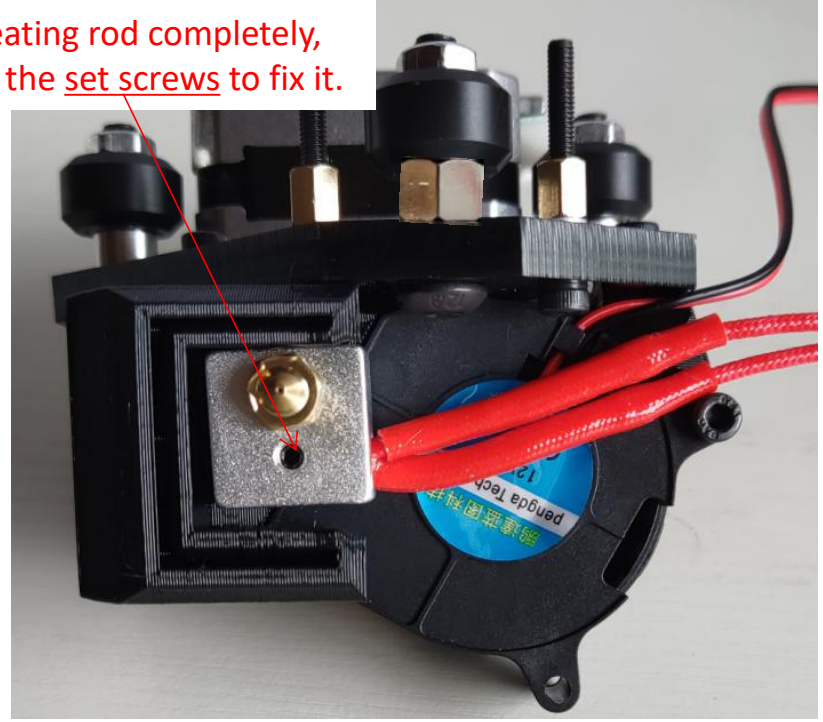
3*20 Cup head



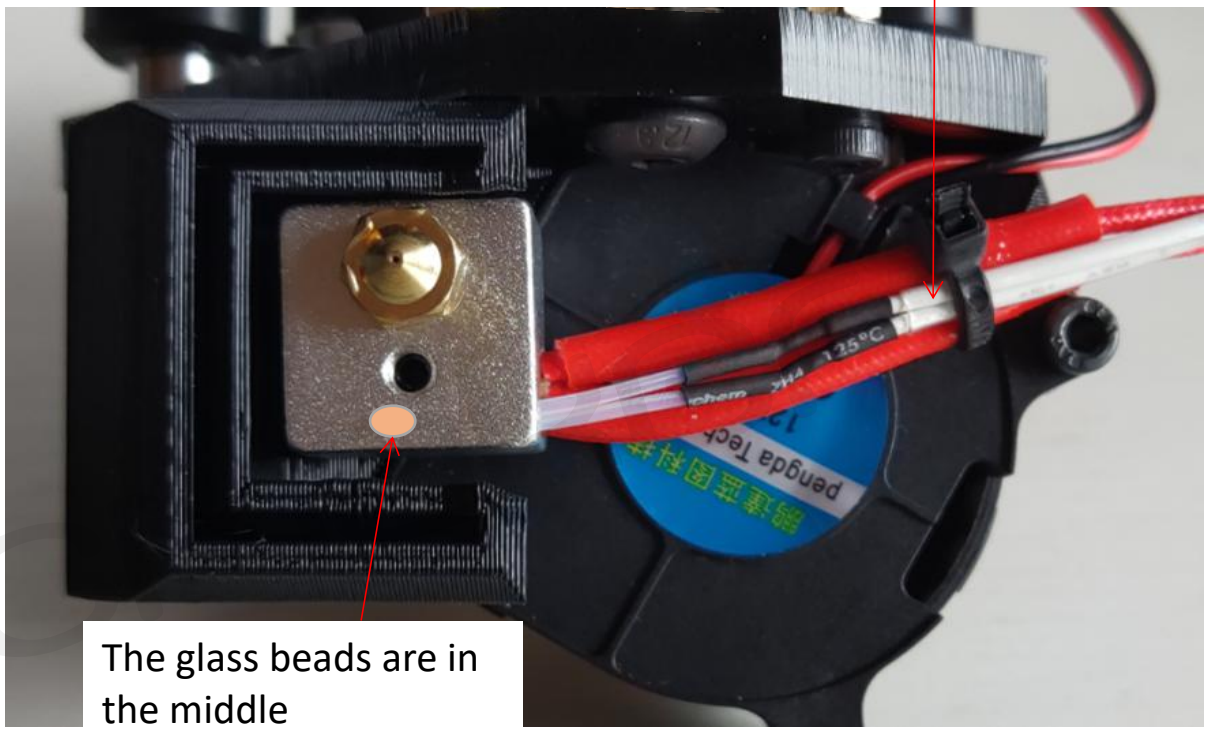
If the extrusion arm is too tight to move,A gasket can be added, or the screw is not tightened



Insert the heating rod completely, then tighten the set screws to fix it.

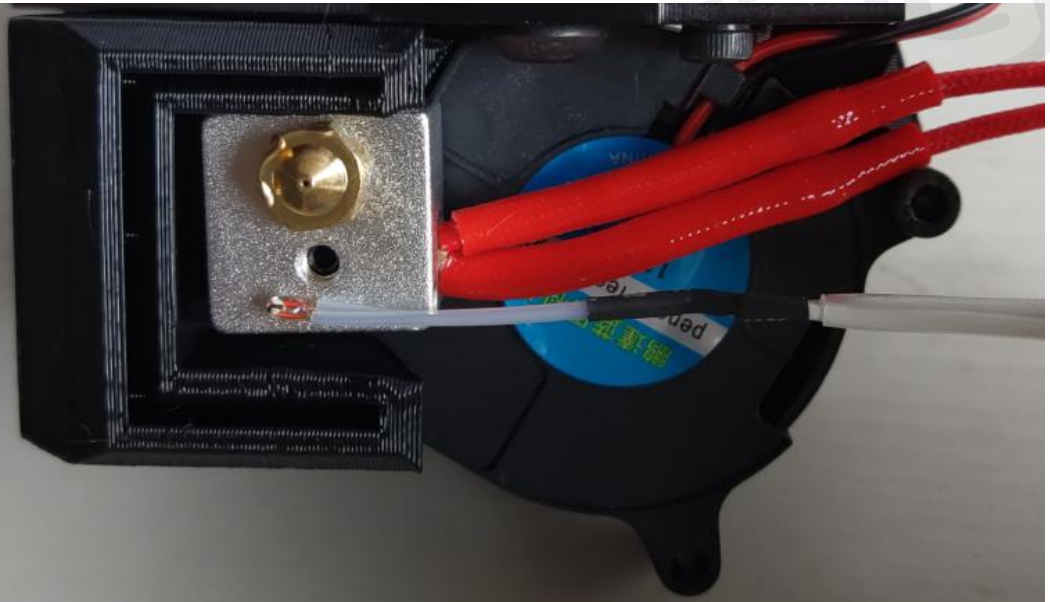


Use a cable tie to tie the heating rod and the thermistor, which should be tied to the position of the heat sensitive transparent sleeve
(do not tie the black position)

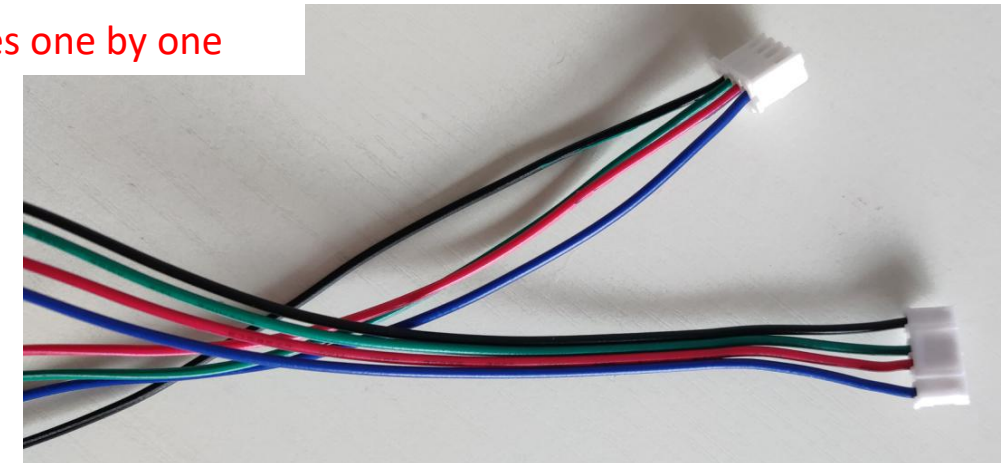


The glass beads are in the middle

The glass ball of the thermistor is inserted into the middle of the aluminum block



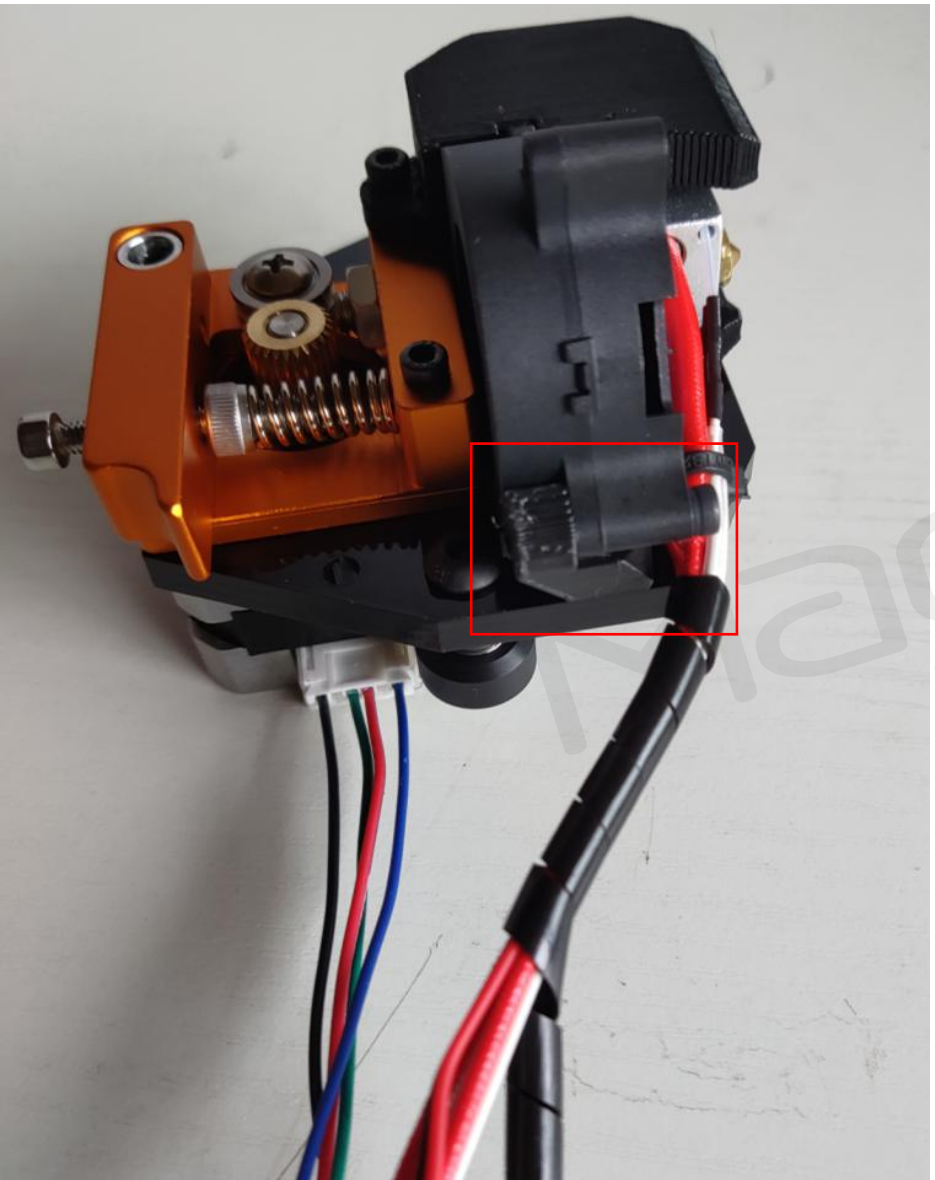
Tear the motor wires one by one



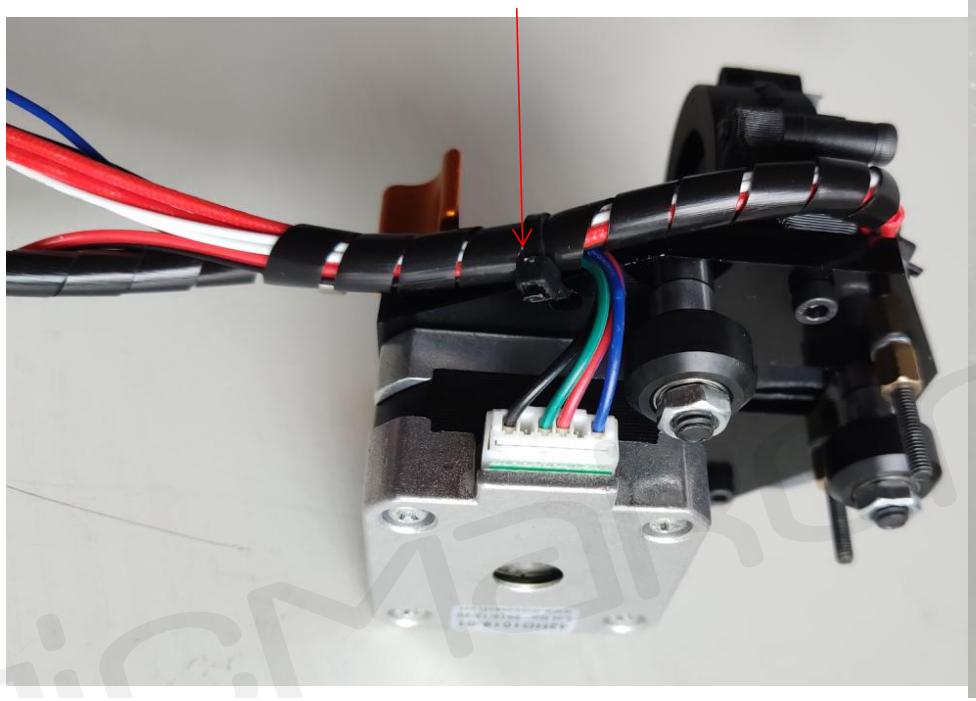
Label the two longer motor cord plugs.
The longest is the E-axis，
The next is the x-axis.

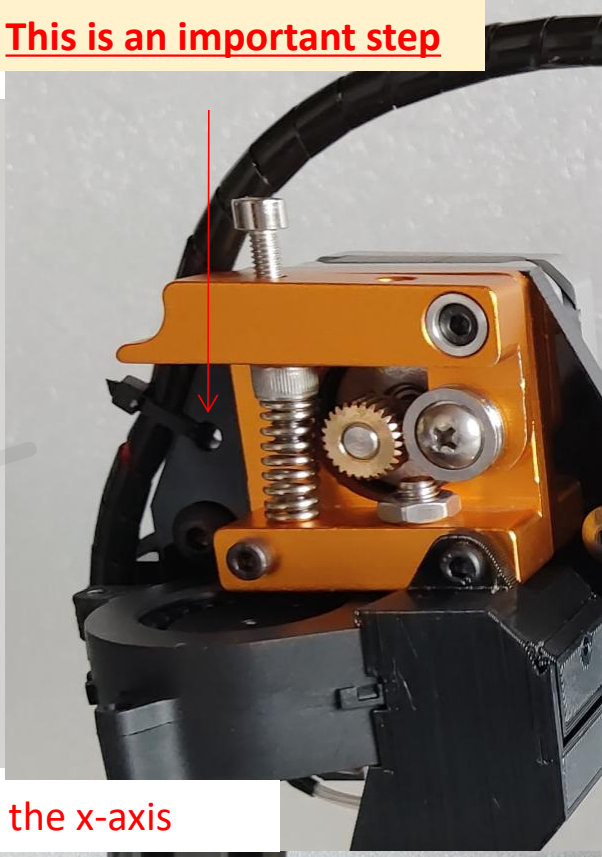
E motor-wire is the longest one

As shown, the winding tube covers the wire



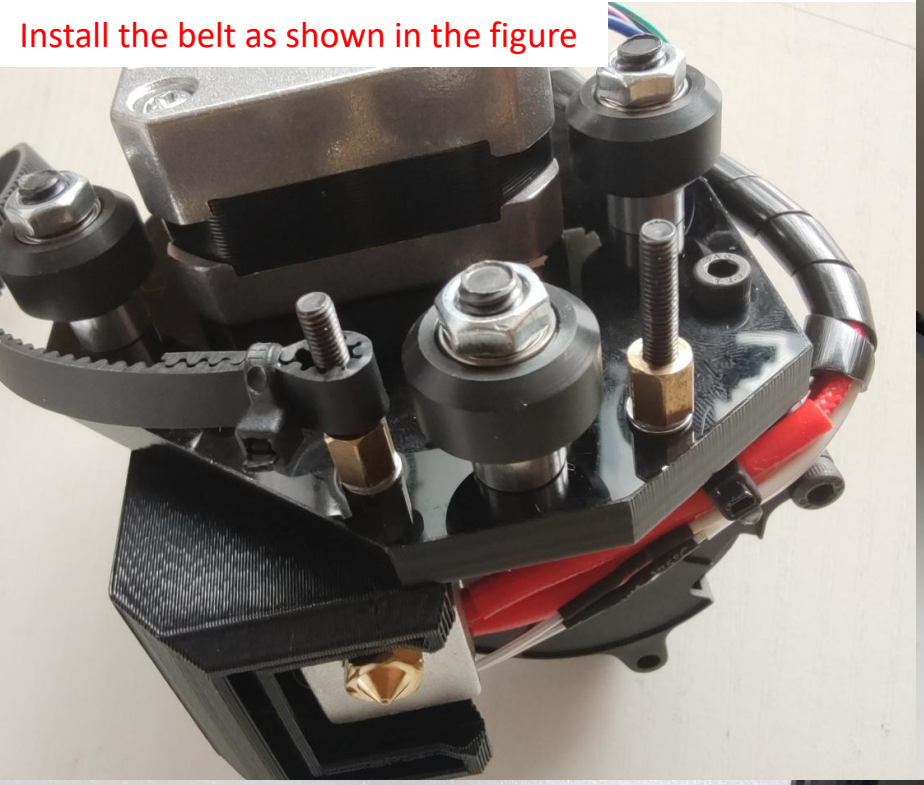
Fix the wire harness to the hole on the edge of acrylic with a tie, **This is an important step**

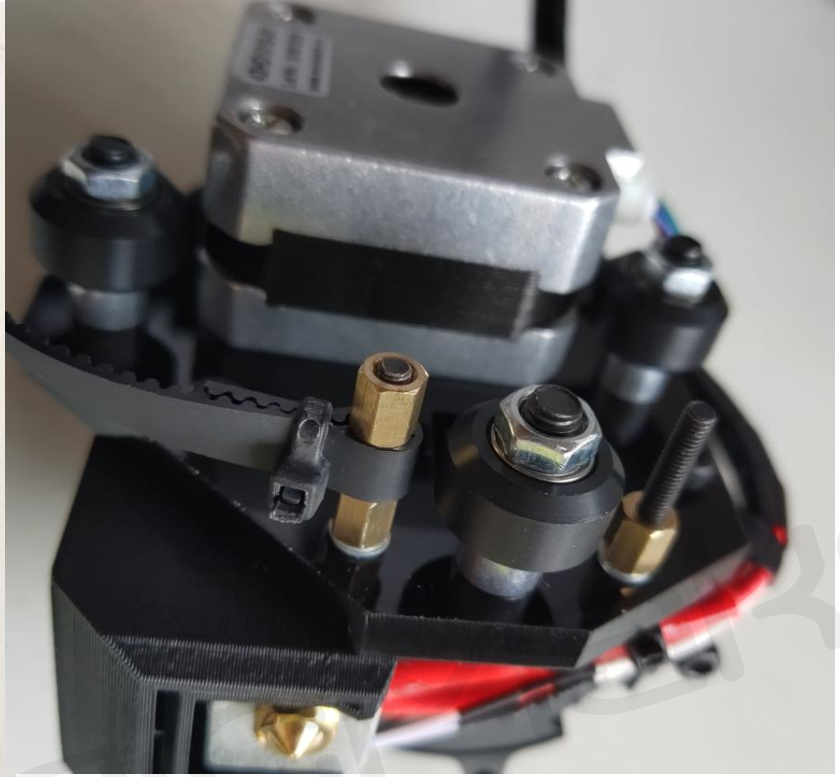


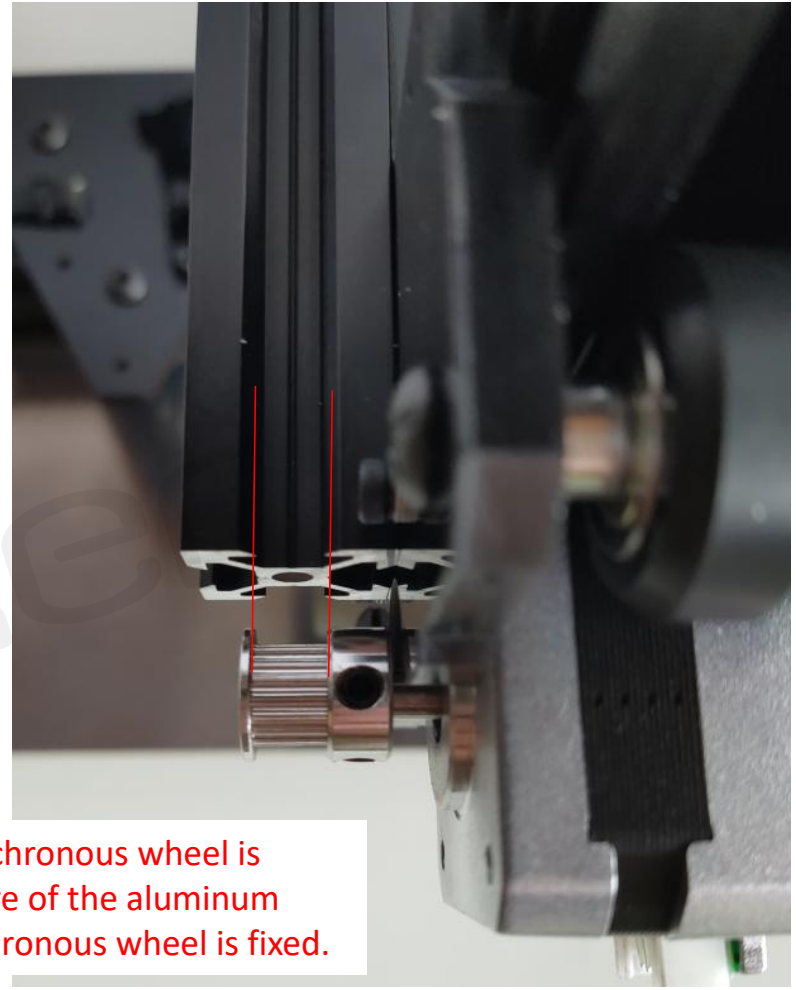


The length of the winding tube is equal to the length of the x-axis

Install the belt as shown in the figure

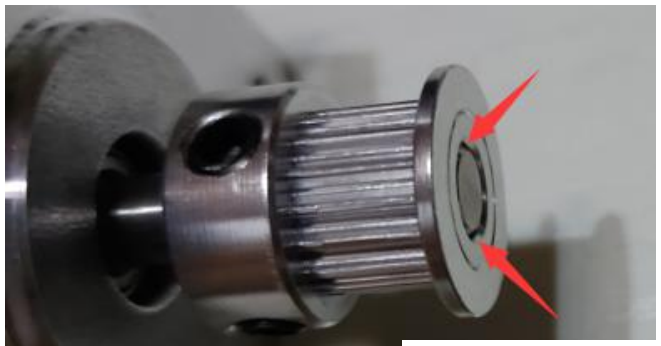






As shown， The belt goes through this way

The groove of the synchronous wheel is aligned with the groove of the aluminum profile, then the synchronous wheel is fixed.



The synchronous wheel is flush with the motor shaft

Fix this side in the same way as before and cut off the excess belt

Install the guide wheel seat

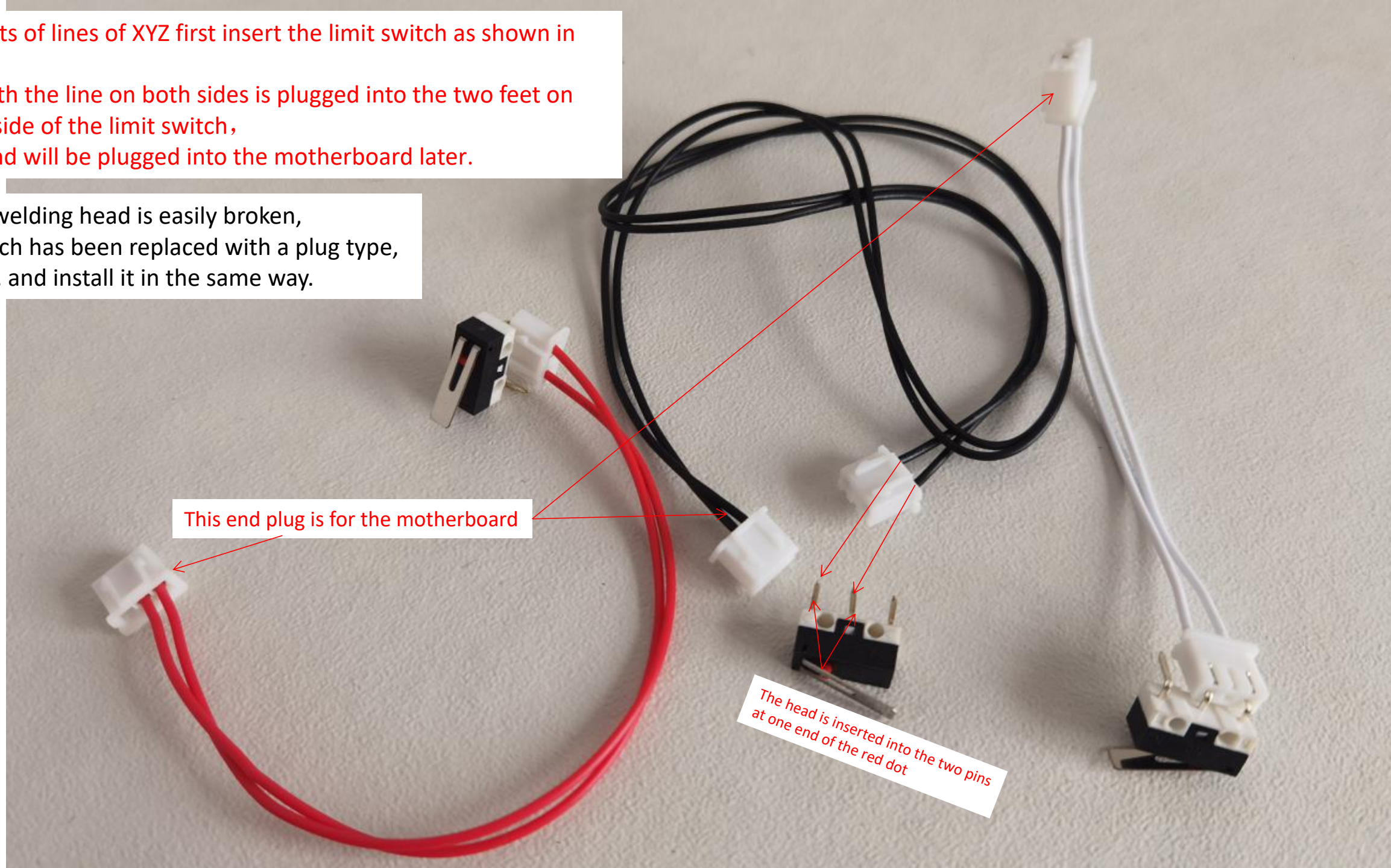
Tie up like the other side

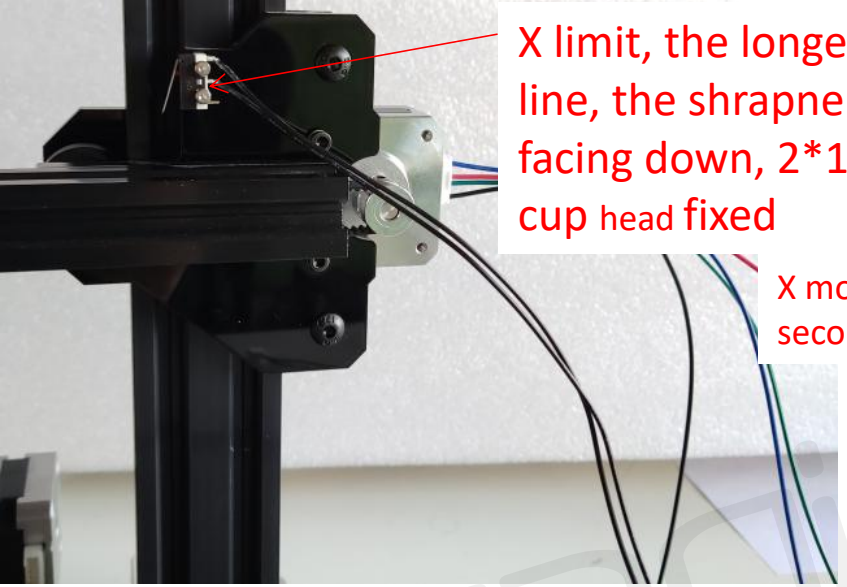
Put it on

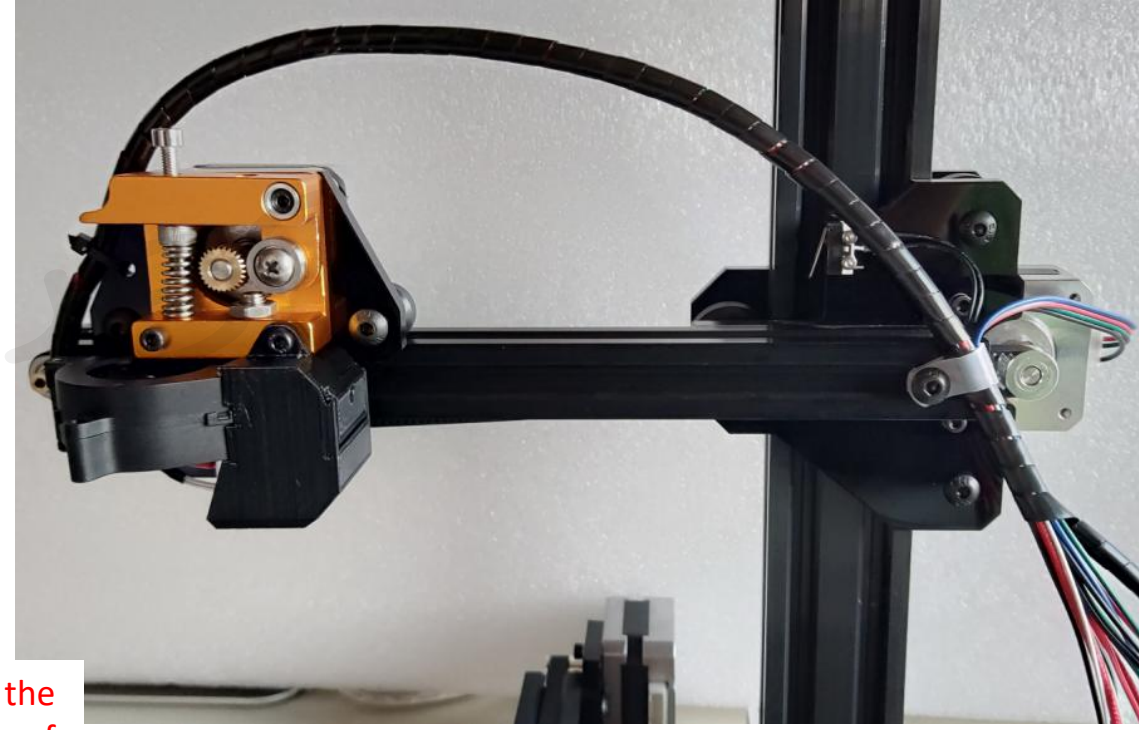
Loosen the guide wheel seat,
Move outward to tighten the belt,
and then fix it

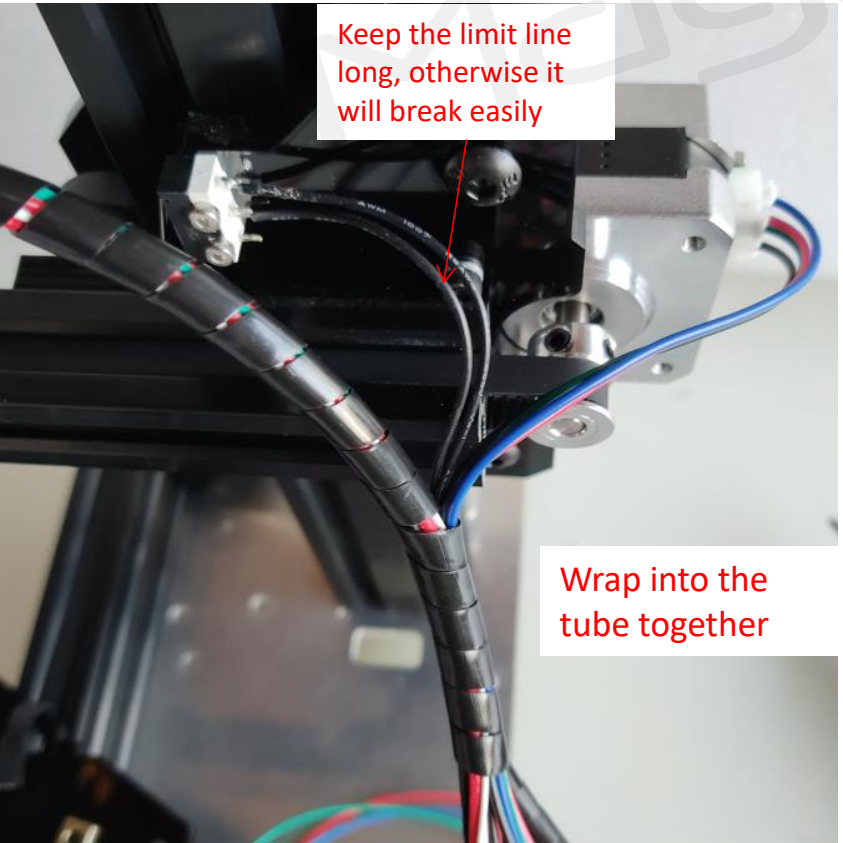
The three sets of lines of XYZ first insert the limit switch as shown in the figure,
The head with the line on both sides is plugged into the two feet on the red dot side of the limit switch，
The other end will be plugged into the motherboard later.

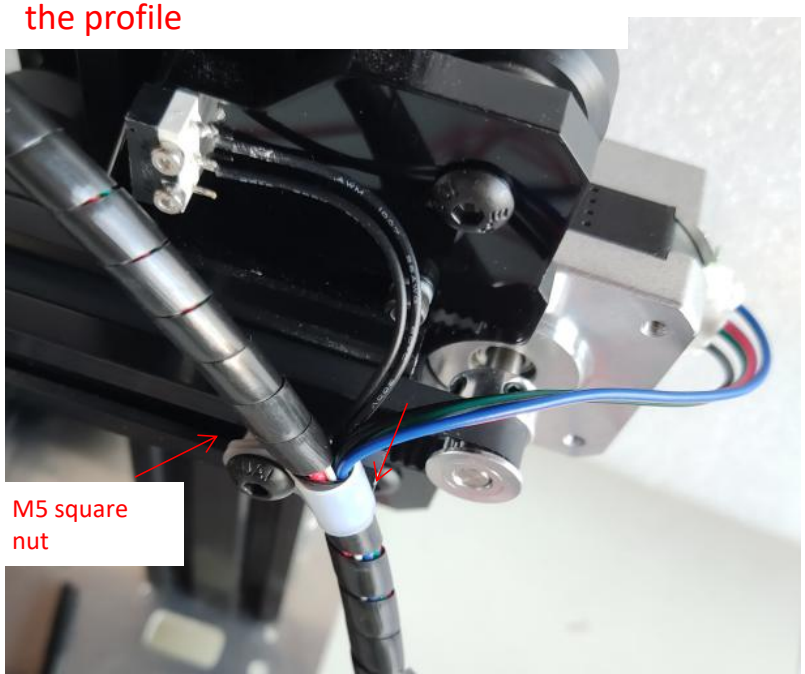
Because the welding head is easily broken,
The limit switch has been replaced with a plug type,
Plug it in first, and install it in the same way.

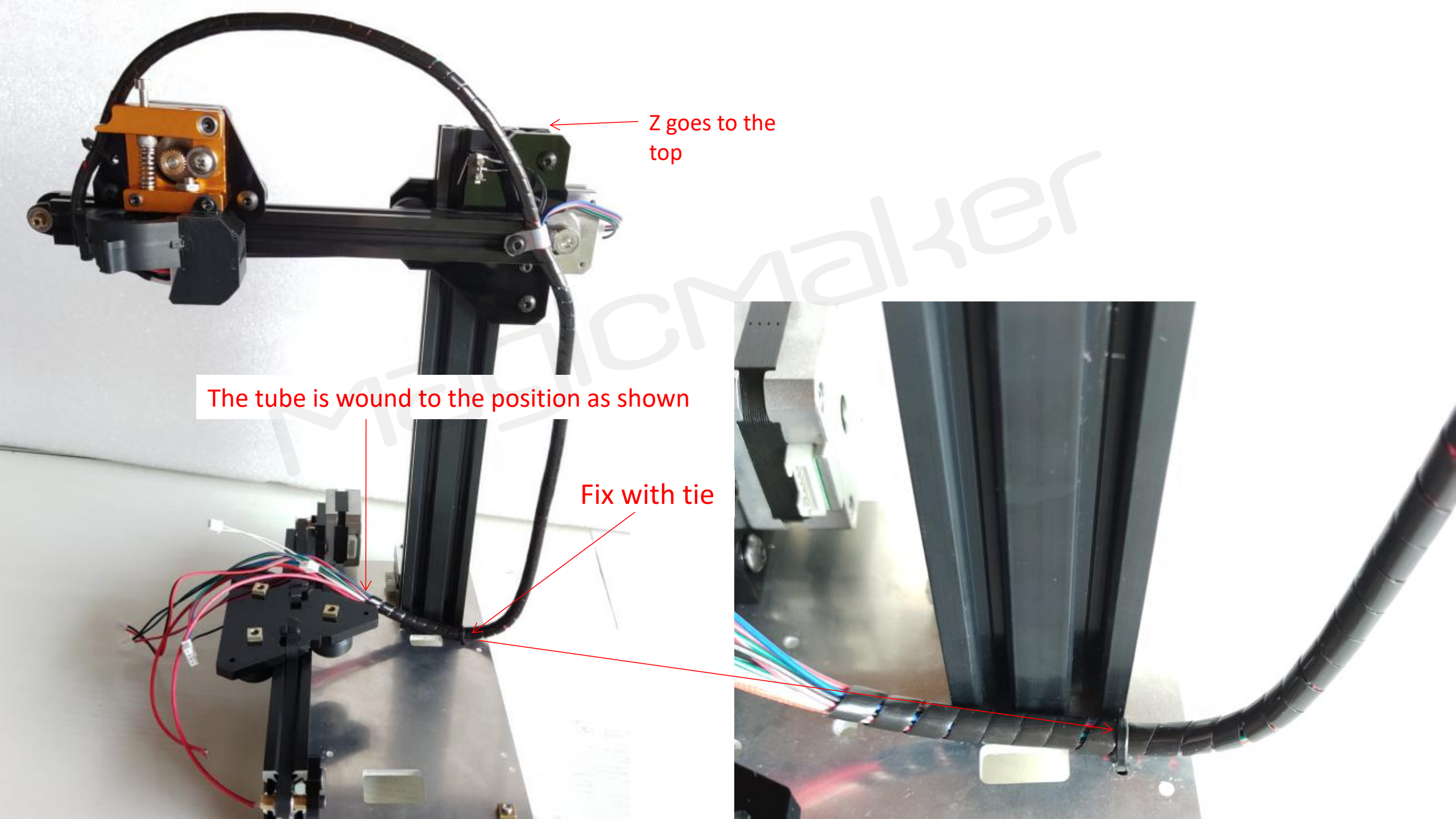



X limit, the longest line, the shrapnel facing down, 2*10 cup head fixed
X motor wire is the second in length

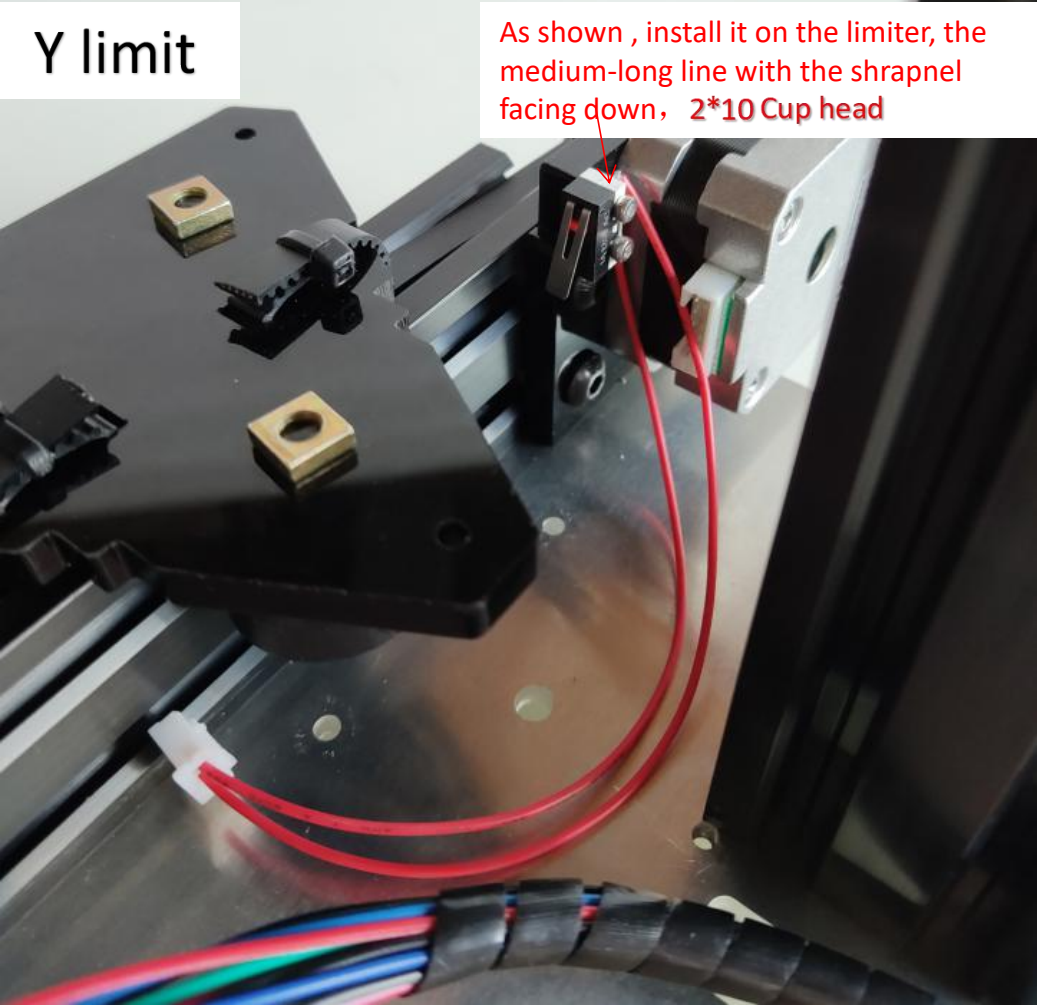



Keep the limit line long, otherwise it will break easily
Wrap into the tube together


R line card 5*10 round head fixed, the line card position is just at the edge of the profile
M5 square nut


Z goes to the top
The tube is wound to the position as shown
Fix with tie

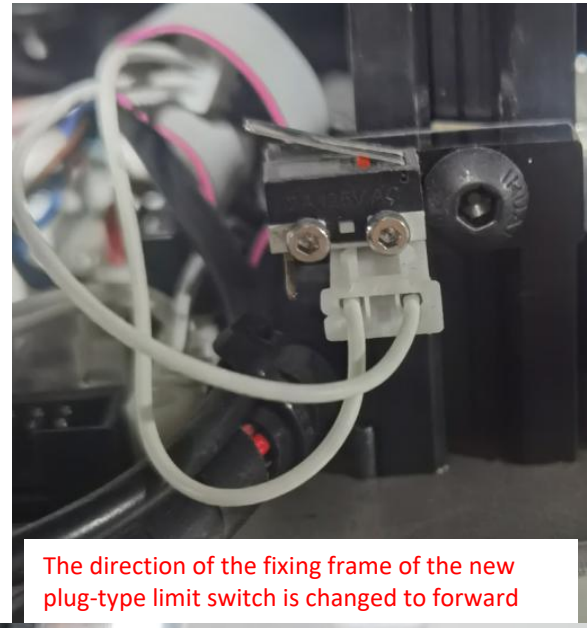
Y limit



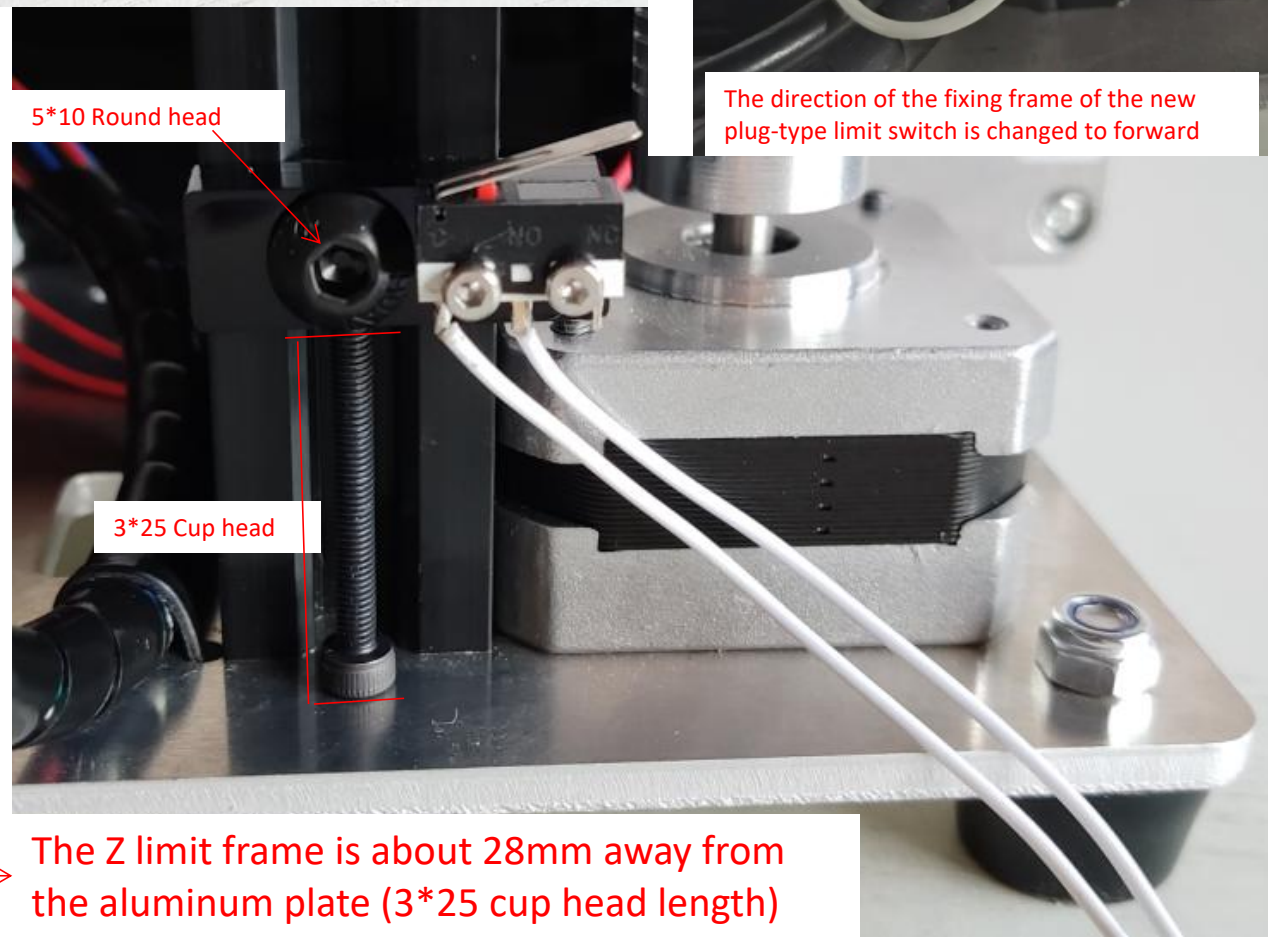
As shown , install it on the limiter, the medium-long line with the shrapnel facing down， 2*10 Cup head

Z limit

The shortest line, pay attention to the direction of the shrapnel as shown，2*10 Cup head



The direction of the fixing frame of the new plug-type limit switch is changed to forward



Pay special attention to the Z limit installation height, install strictly according to the requirements, and also pay attention not to use the wrong screws, and the limit frame is flat

If the limit is installed higher → Z axis zero point becomes higher → the leveling platform becomes higher → the leveling spring becomes loose → the nut falls during printing → the main board is short-circuited → GG

now you can understand the leveling when you can't understand it, install it as required correct

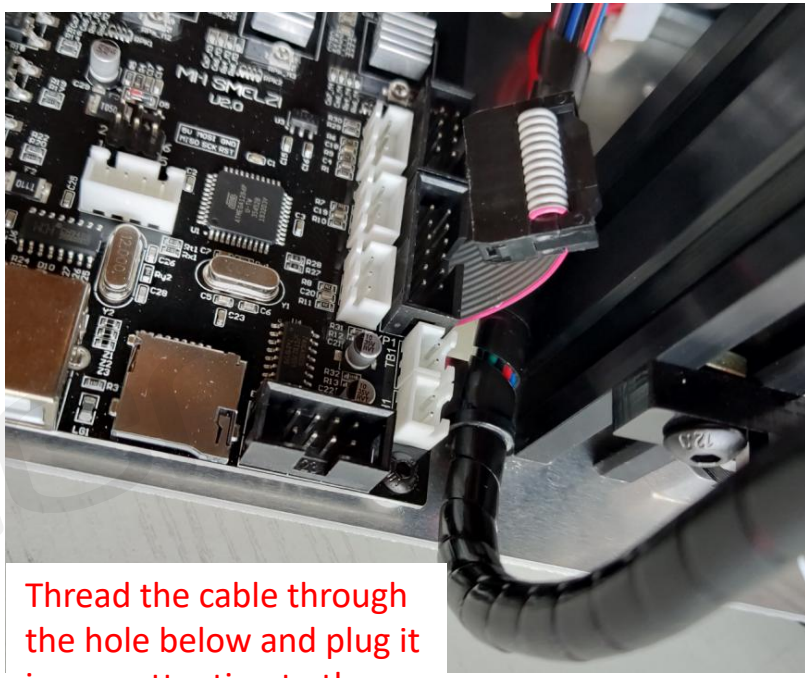
→ The Z limit frame is about 28mm away from the aluminum plate (3*25 cup head length)

Main board

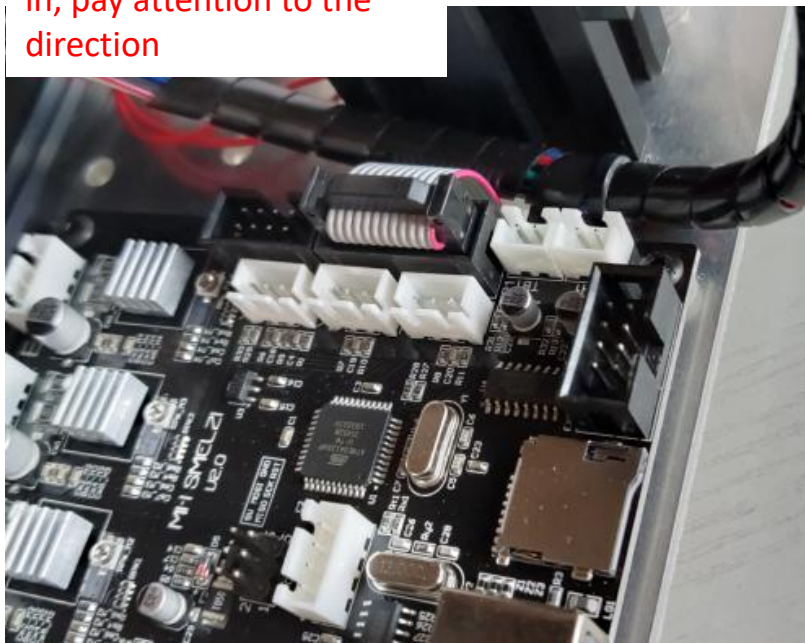
During installation and use, please pay attention to the type of screw and iron chip falling on the mainboard, which will cause a short circuit and burn the mainboard.

Install four short washers on the main board（If it is not installed properly, it will cause short circuit）

3*16 round head fixed, M3 square nut below

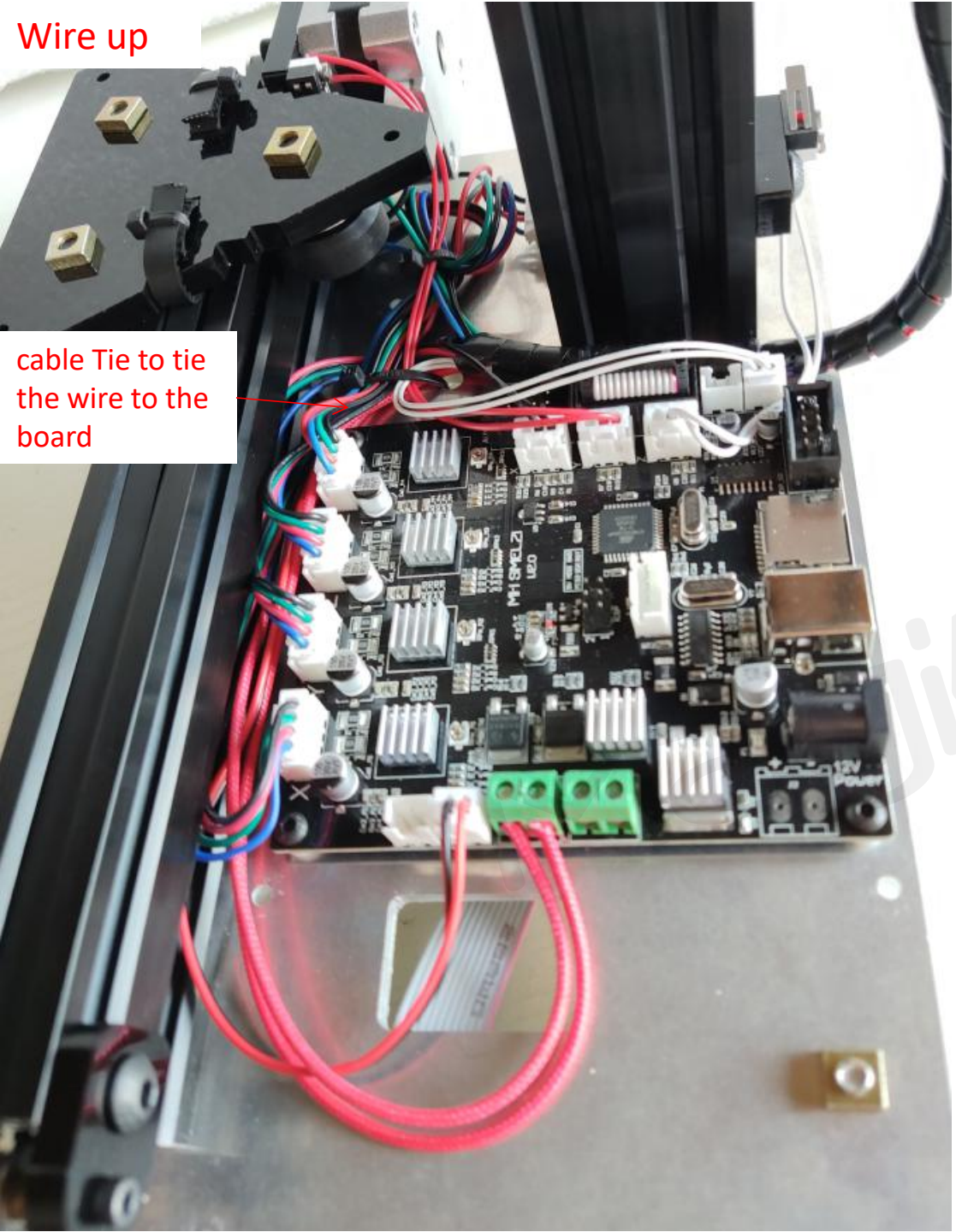


Thread the cable through the hole below and plug it in, pay attention to the direction

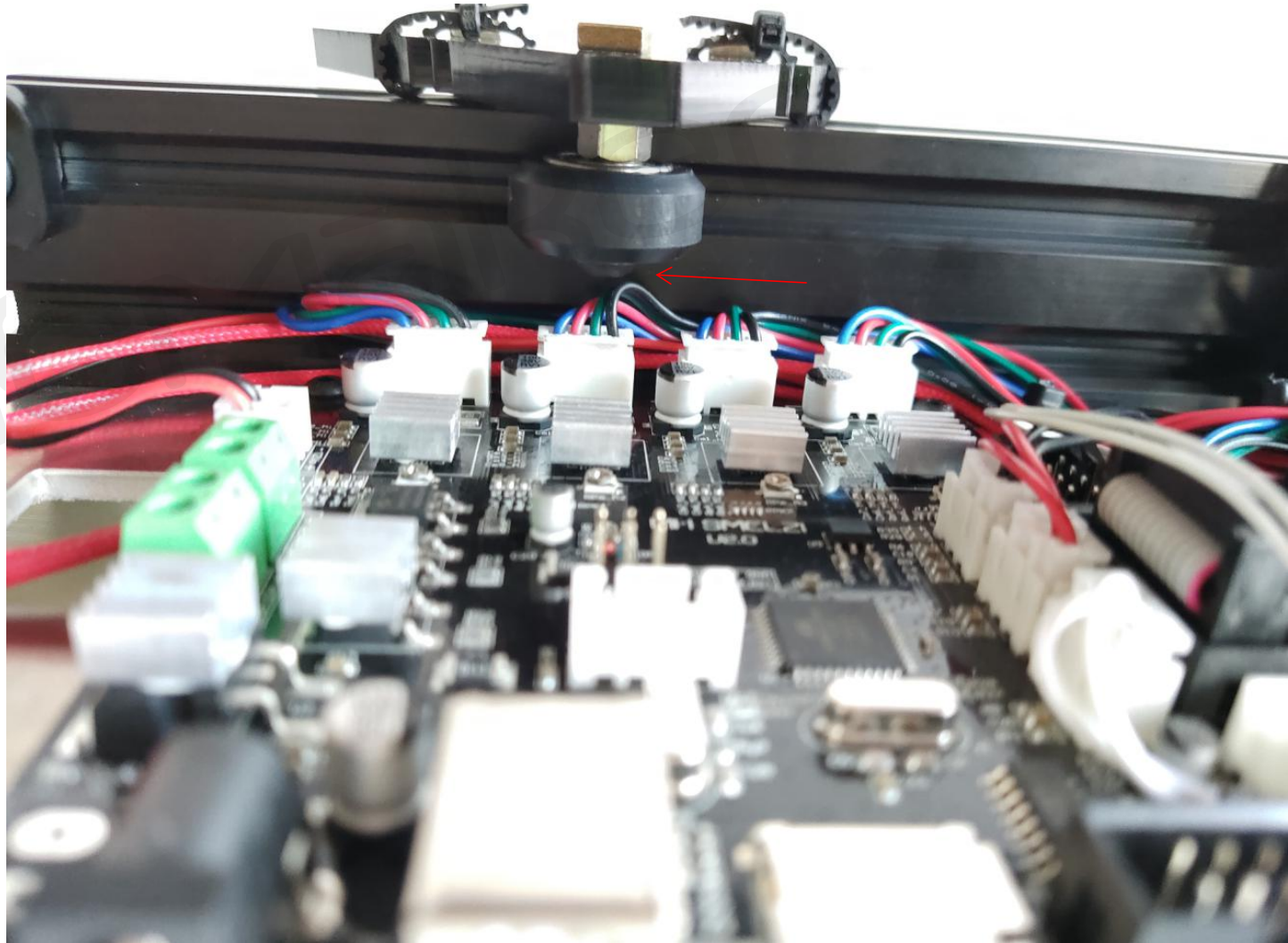


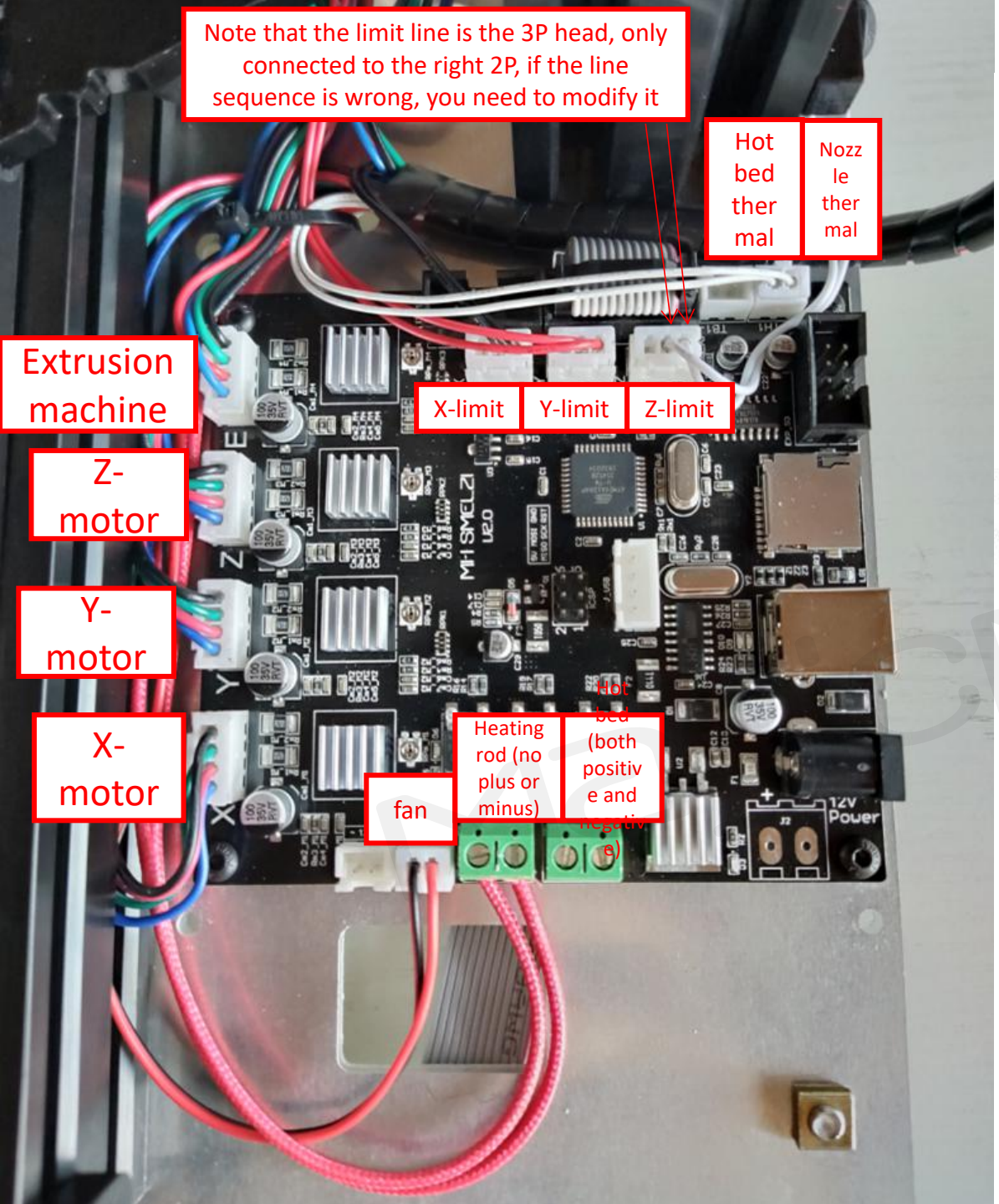
Wire up

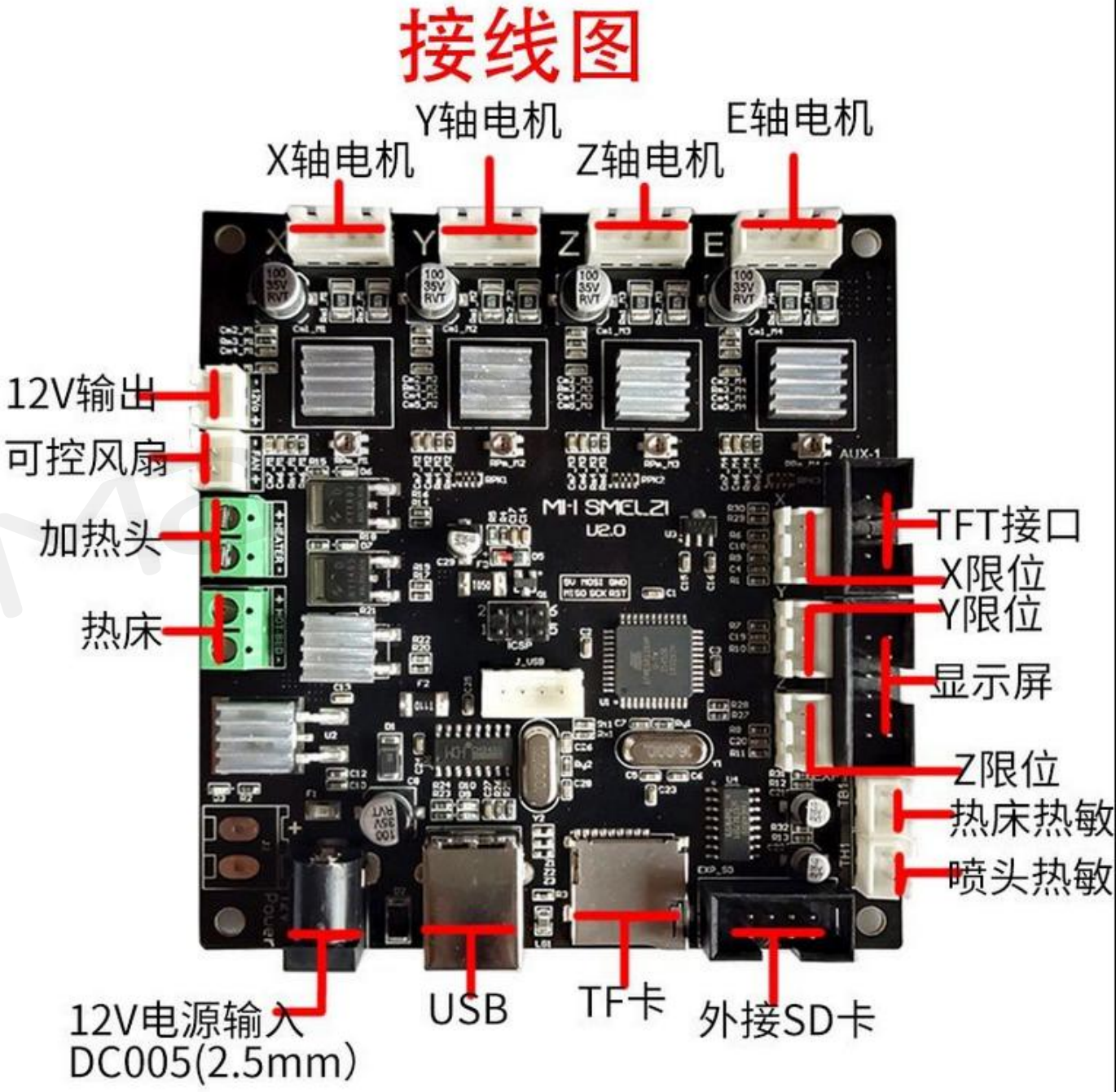
cable Tie to tie the wire to the board



Note that the motor cable should be pressed down and inserted into the groove of the profile, otherwise the slider will hang



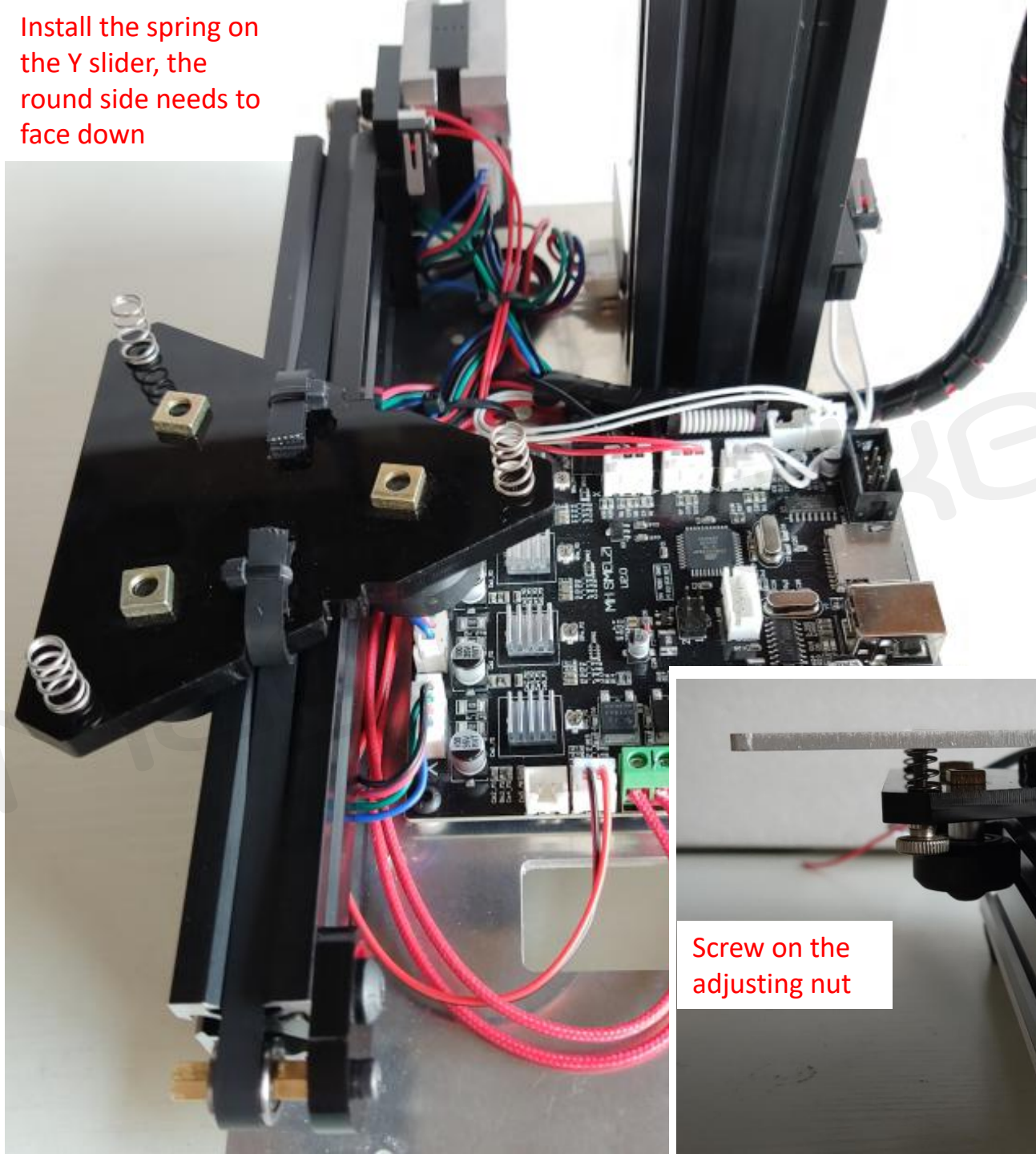

Note that the limit line is the 3P head, only connected to the right 2P, if the line sequence is wrong, you need to modify it
Hot bed thermal
Nozzle thermal
Extrusion machine
X-limit
Y-limit
Z-limit
Z-motor
Y-motor
X-motor
fan
Heating rod (no plus or minus)
Hot bed (both positive and negative)
12V Power


接线图
X轴电机
Y轴电机
Z轴电机
E轴电机
12V输出
可控风扇
加热头
热床
TFT接口
X限位
Y限位
显示屏
Z限位
热床热敏
喷头热敏
12V电源输入
DC005(2.5mm)
USB
TF卡
外接SD卡

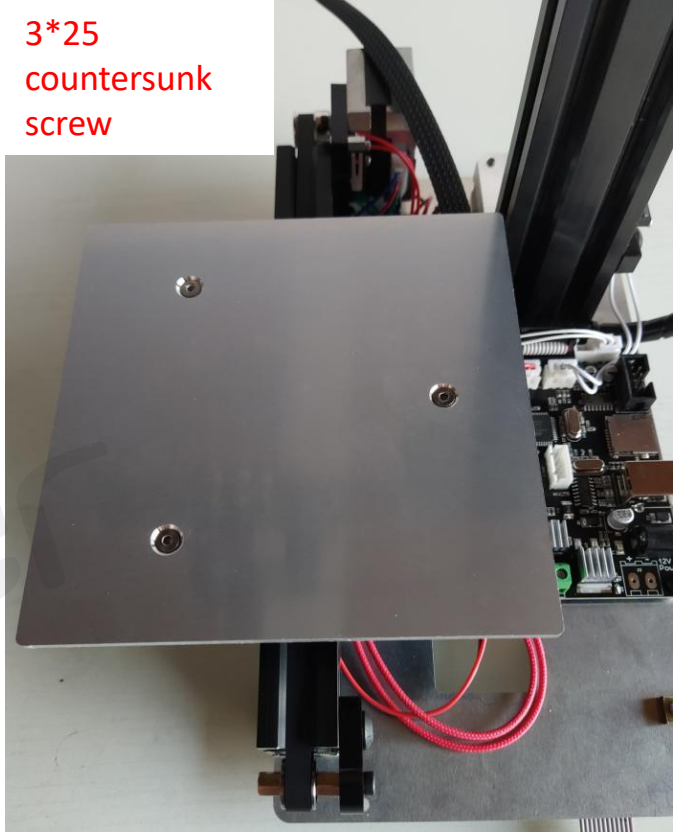
Remove the protective film from the hot bed

Plug in

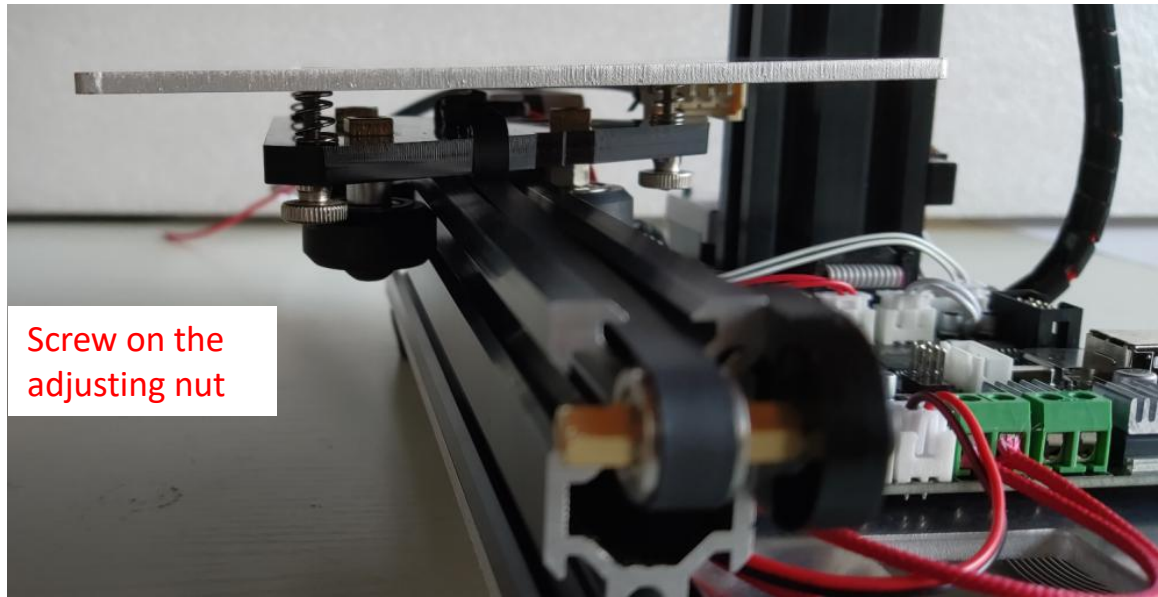
Install the spring on the Y slider, the round side needs to face down

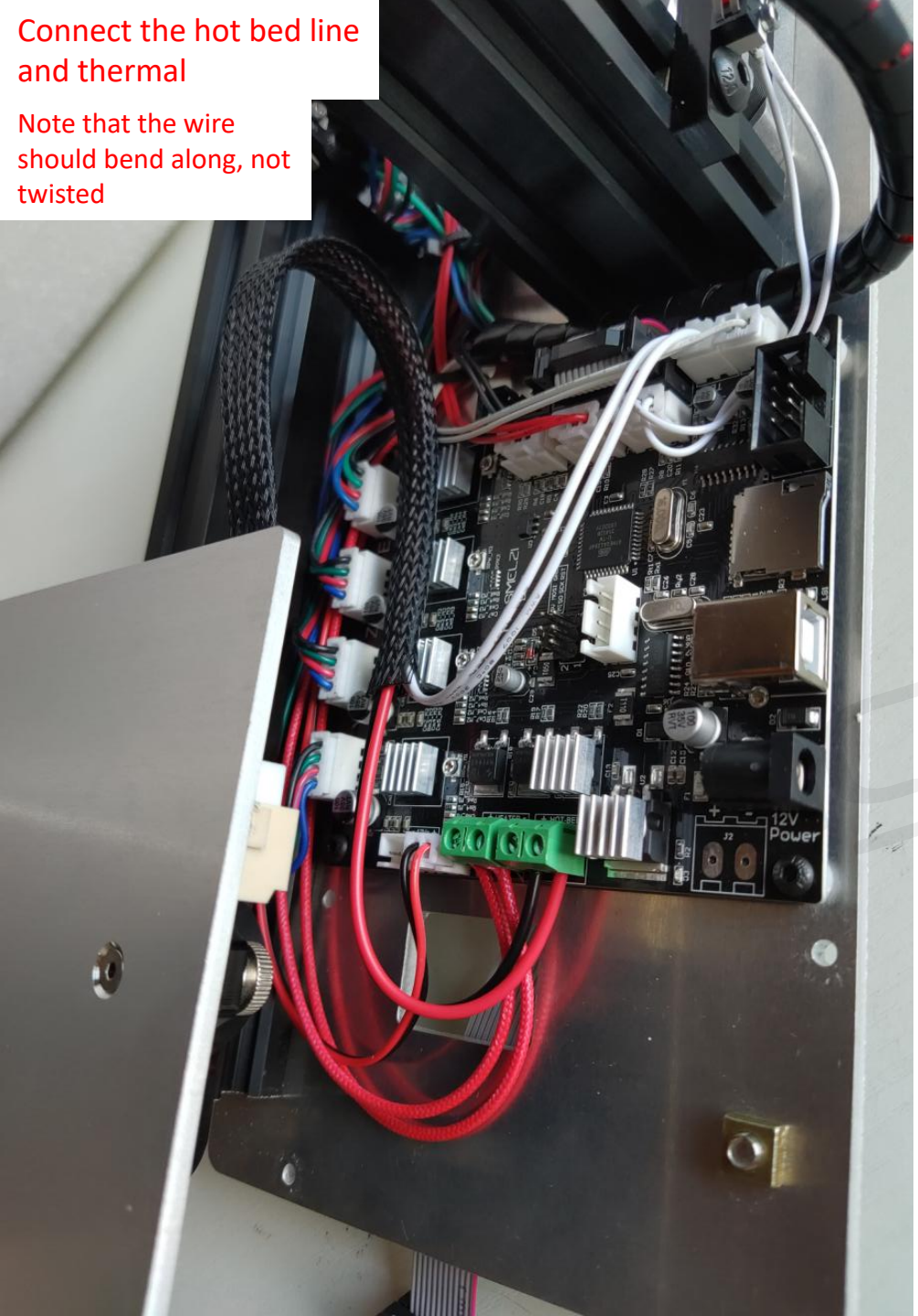


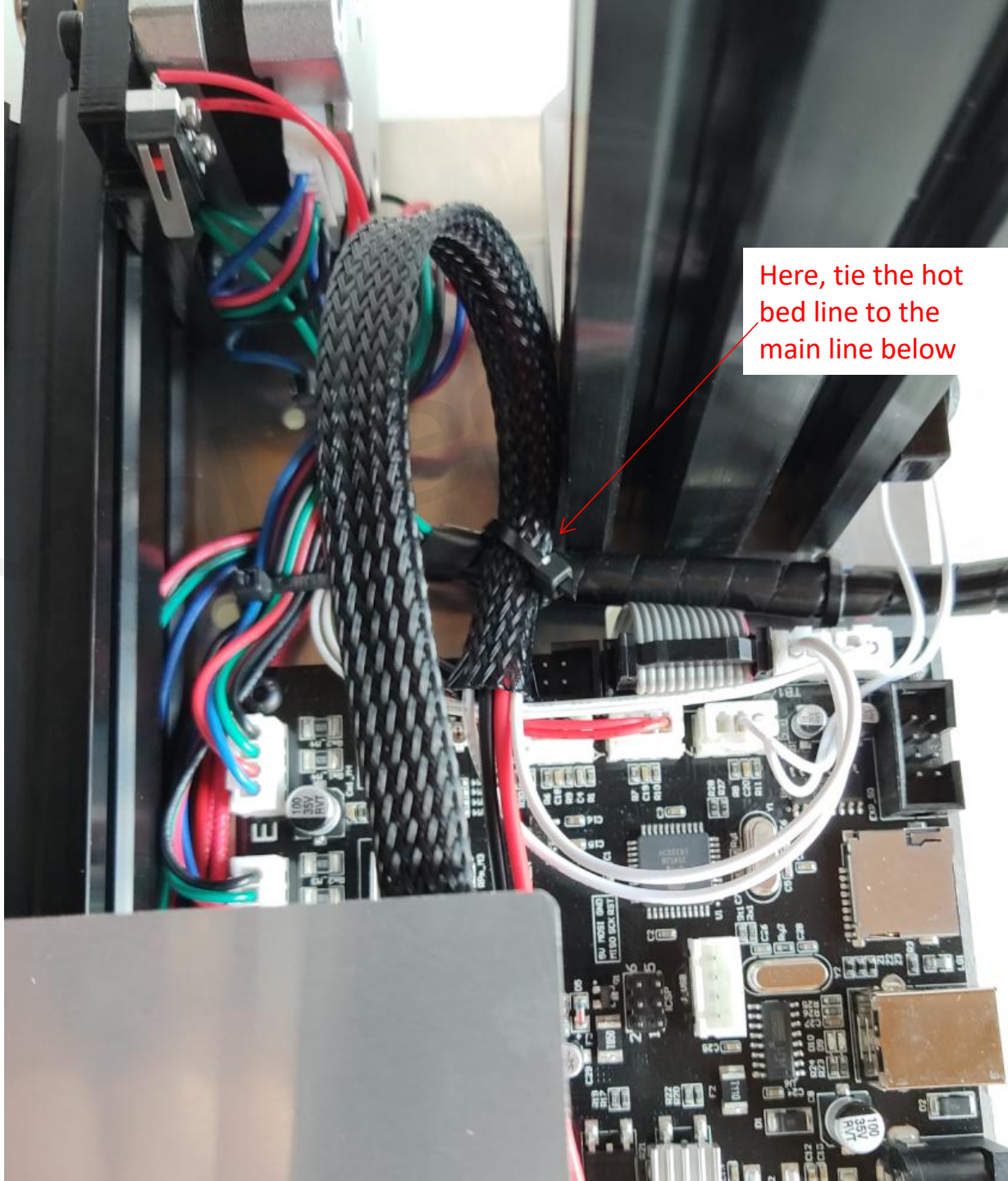
3*25 countersunk screw

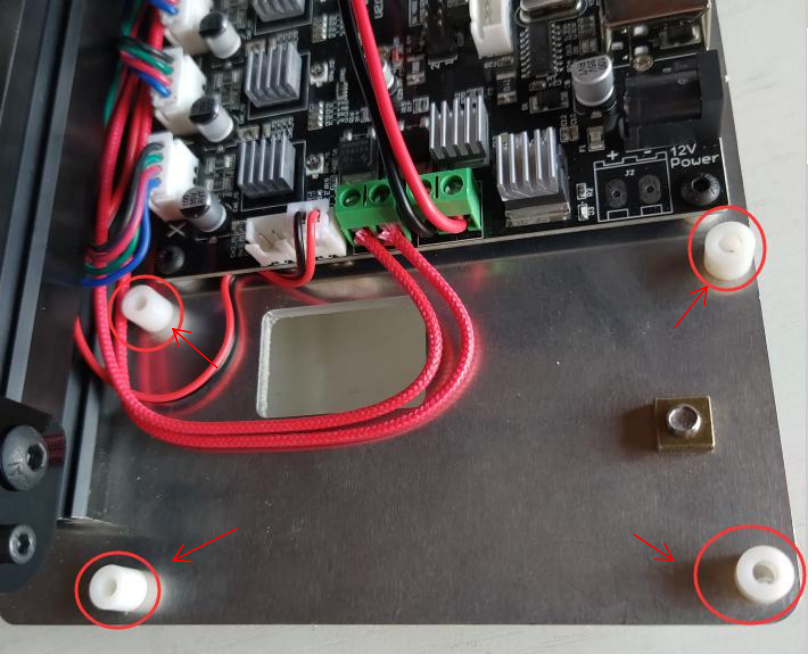


Screw on the adjusting nut



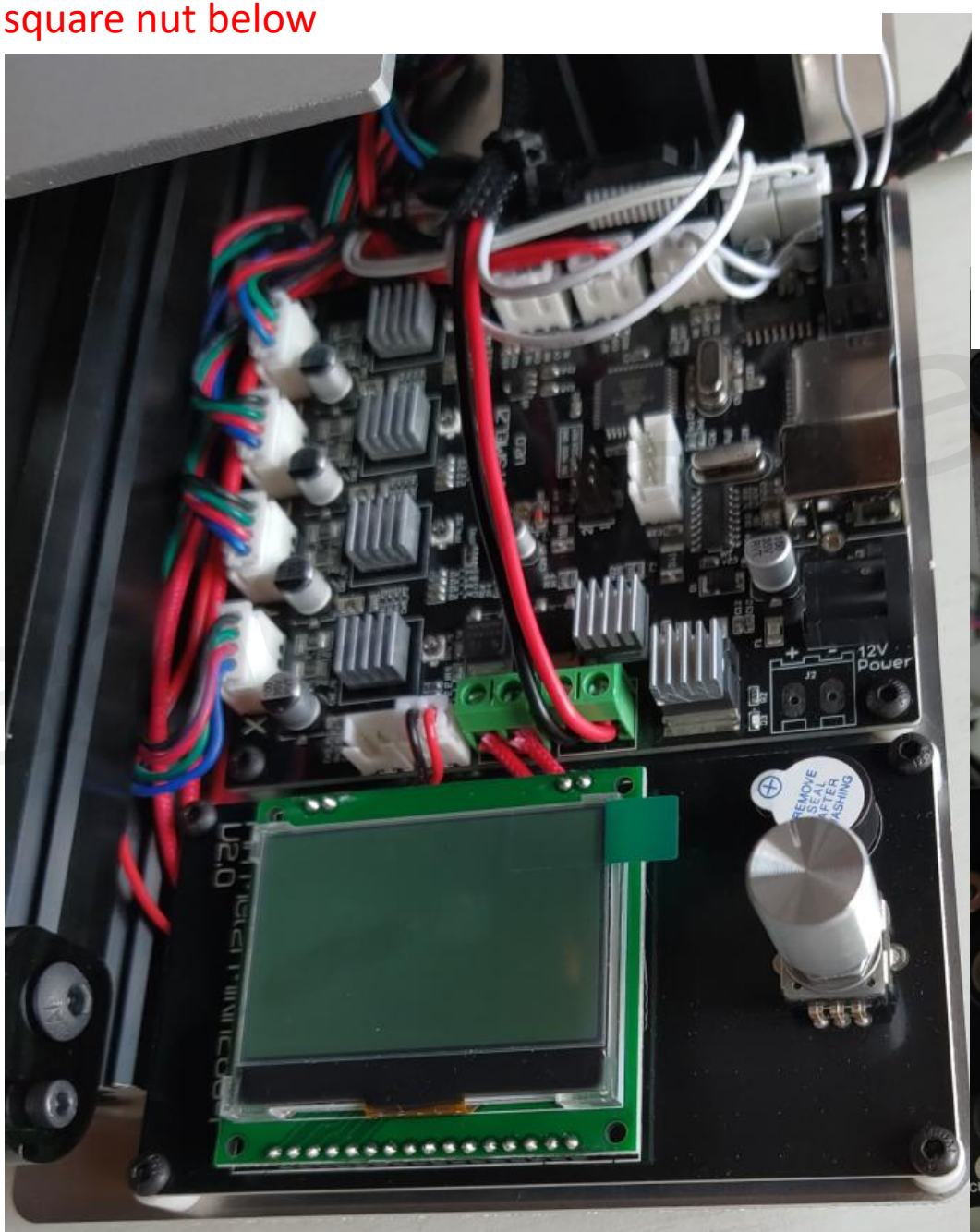

Connect the hot bed line and thermal
Note that the wire should bend along, not twisted
12V Power


Here, tie the hot bed line to the main line below

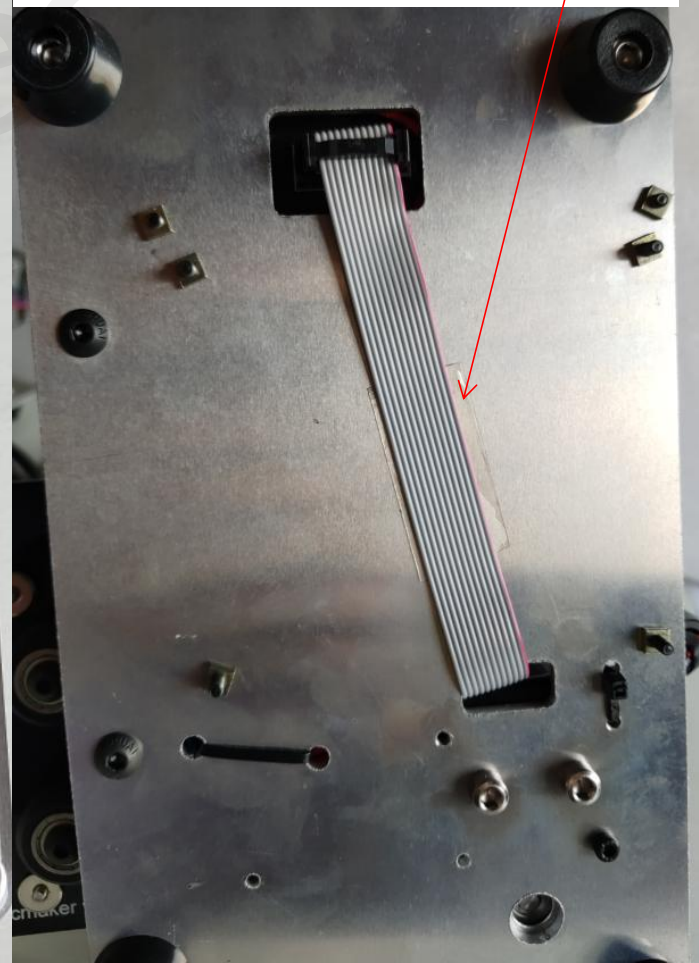


Padded the gasket, the display should pad the higher one.

Install the display， 3*16 Round head， m3 square nut below



Plug in the cable, if you have double-sided tape, you can paste it down



Attach 3M glue

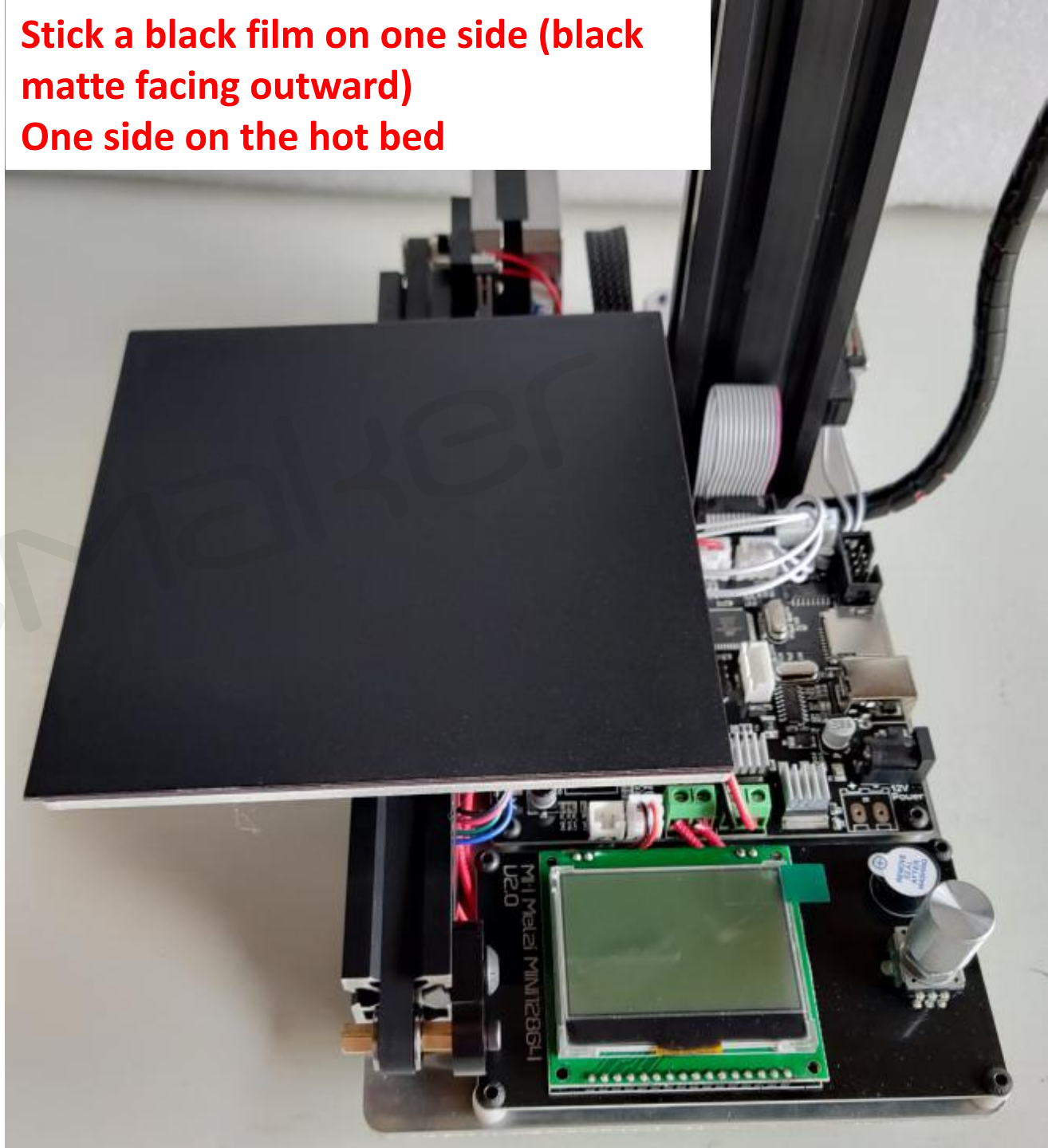
3M glue on the bright side of the black film

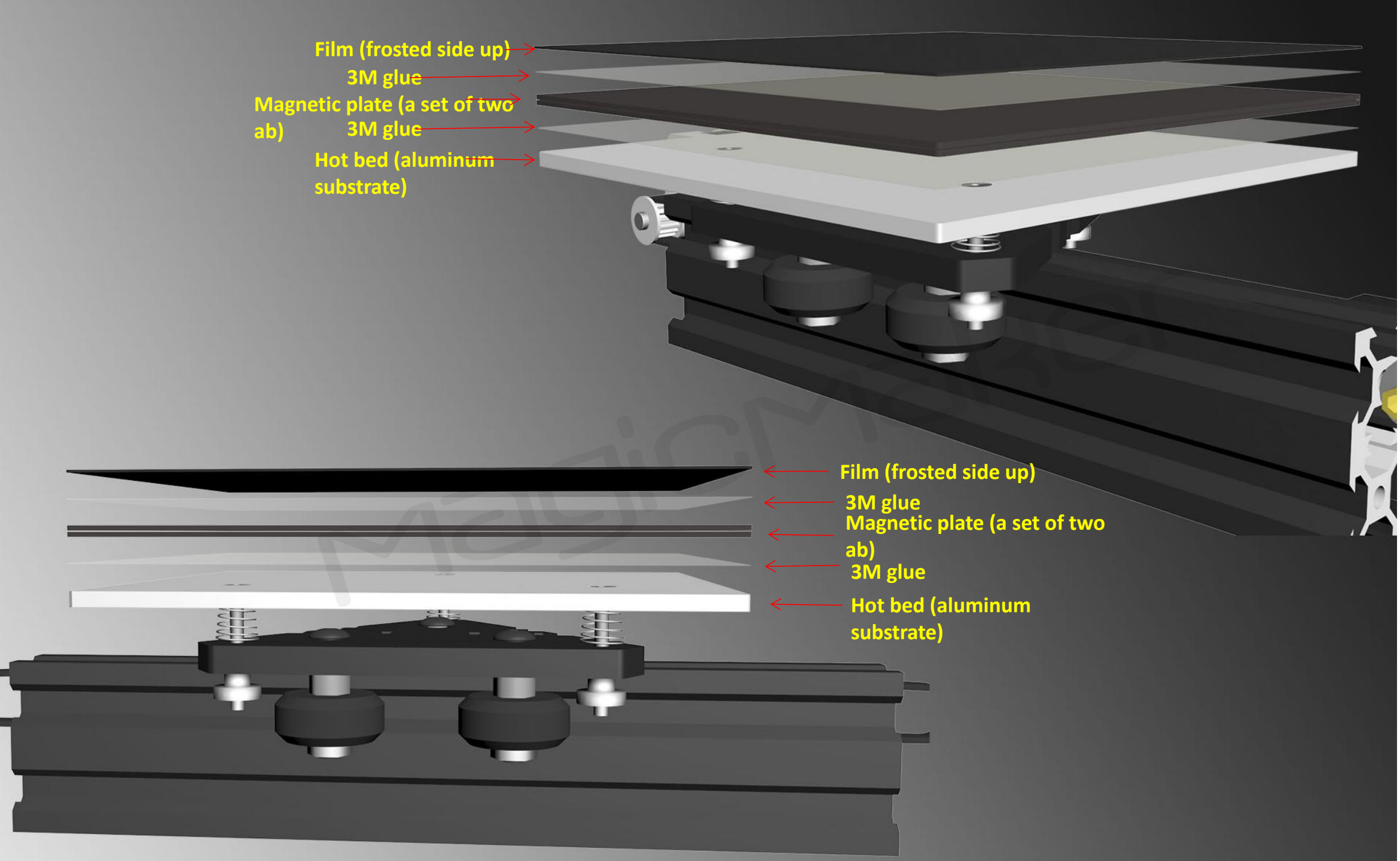
Paste slowly, put it neatly, and put as few bubbles as possible

Magnetic sleeve stick 3M glue

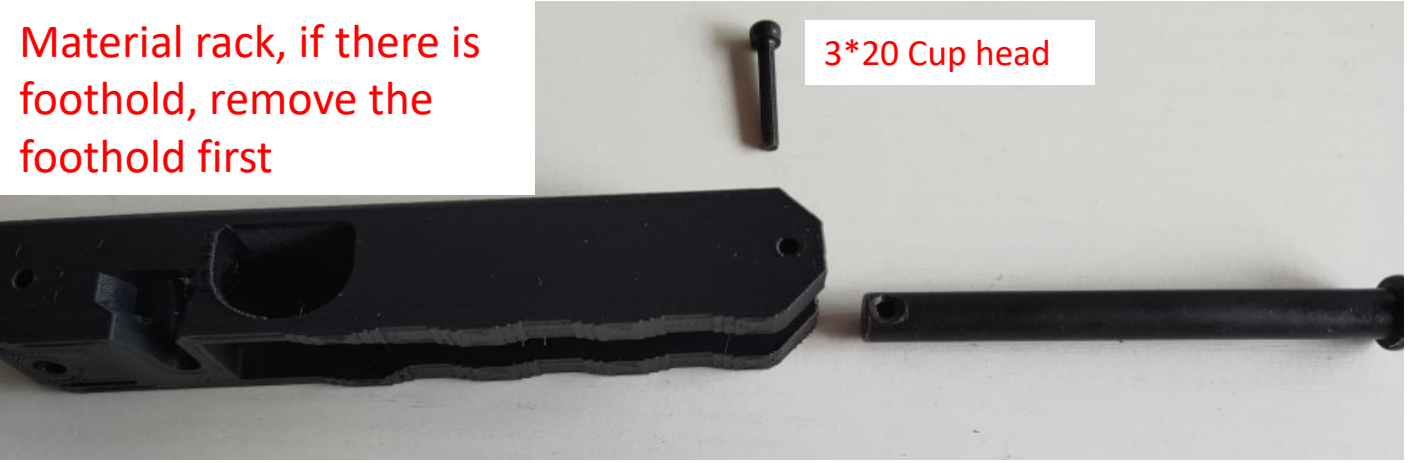
The smooth sides of the magnetic plates face inward，
The double-sided adhesive tape is pasted on the outside of the magnetic plate

Stick a black film on one side (black matte facing outward)
One side on the hot bed



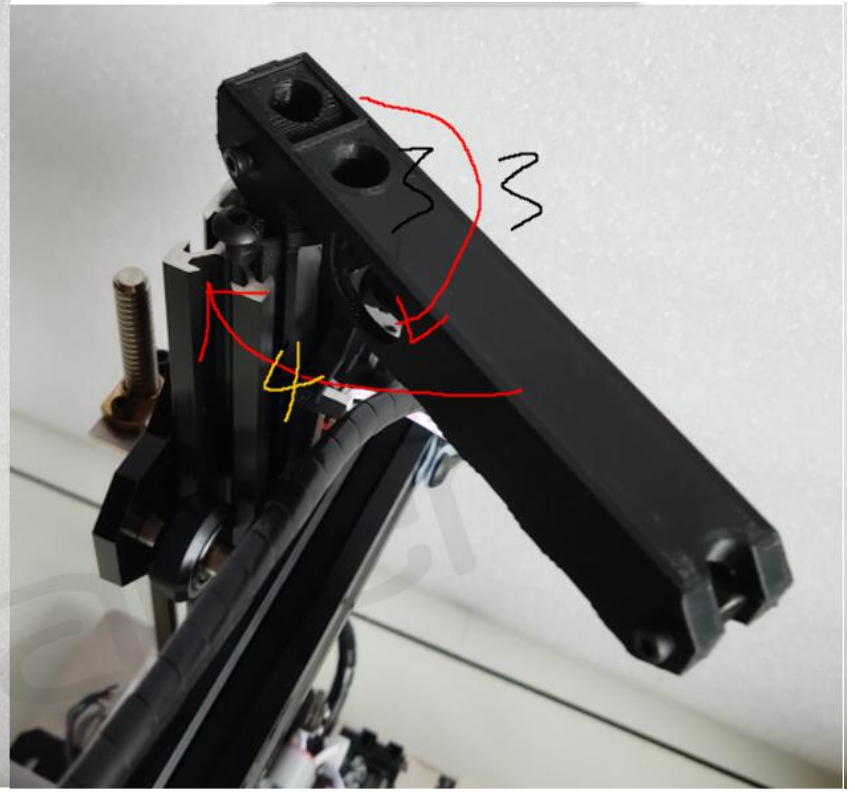

Film (frosted side up)
3M glue
Magnetic plate (a set of two ab)
3M glue
Hot bed (aluminum substrate)
Film (frosted side up)
3M glue
Magnetic plate (a set of two ab)
3M glue
Hot bed (aluminum substrate)

Material rack, if there is foothold, remove the foothold first

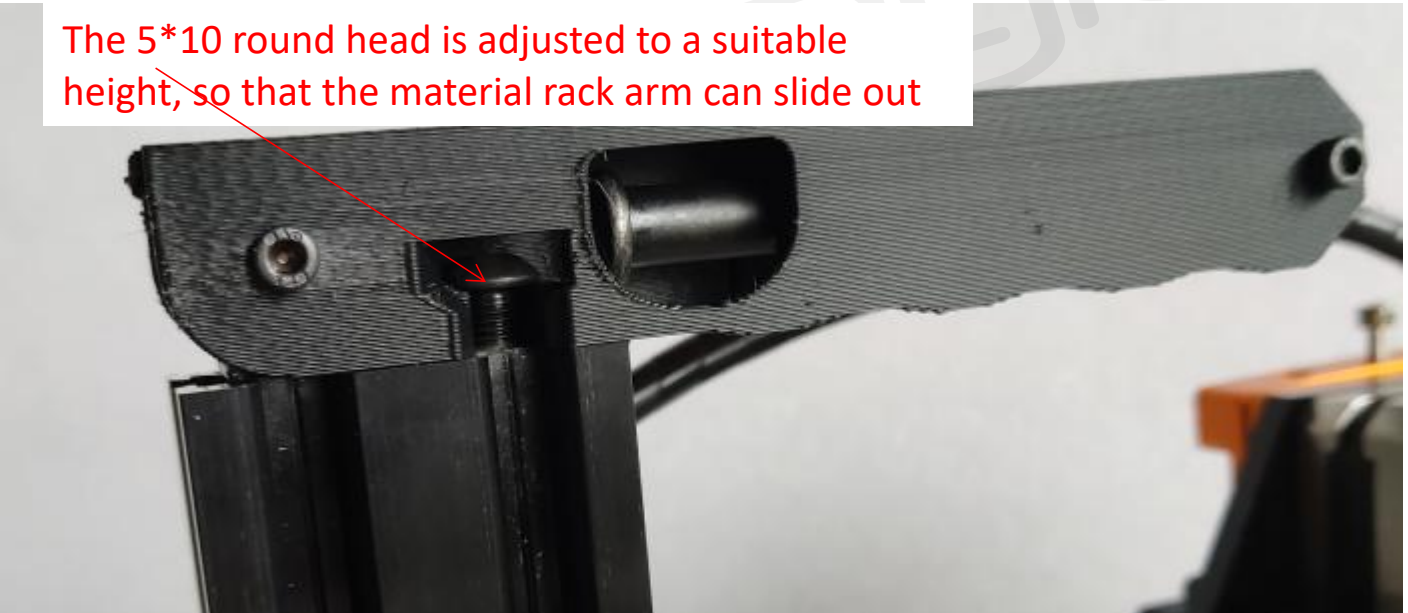


The material rack seat is screwed to the end with a 5*10 round head in the direction shown in the figure (not tightened)

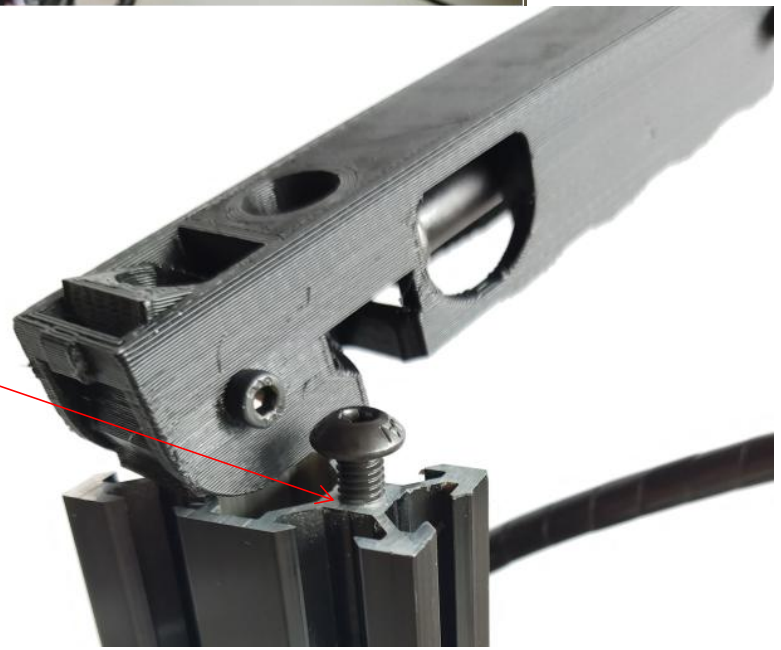
3*20 cup head screw on the rack



The 5*10 round head is adjusted to a suitable height, so that the material rack arm can slide out

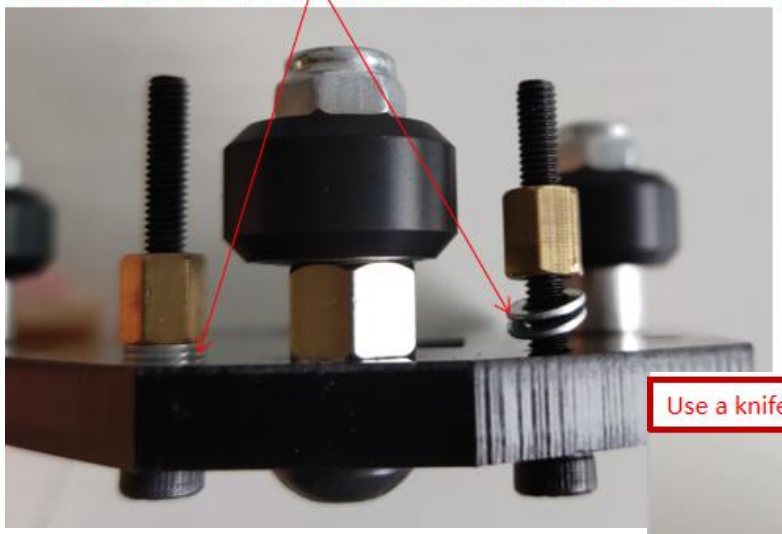


When the height is adjusted properly, you can drop 502 to fix it

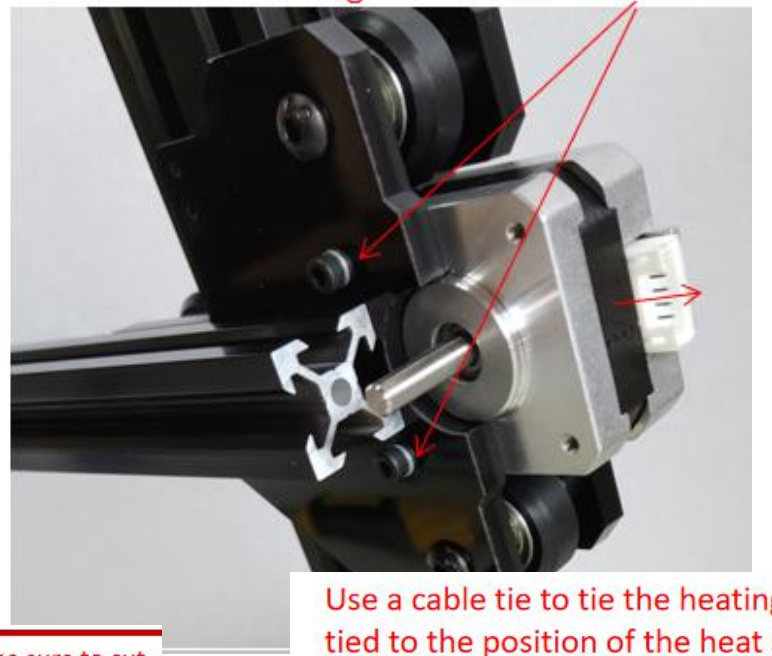


Pay attention to inspection

3*25 Cup head， Plug 2 shim and screw on the copper column



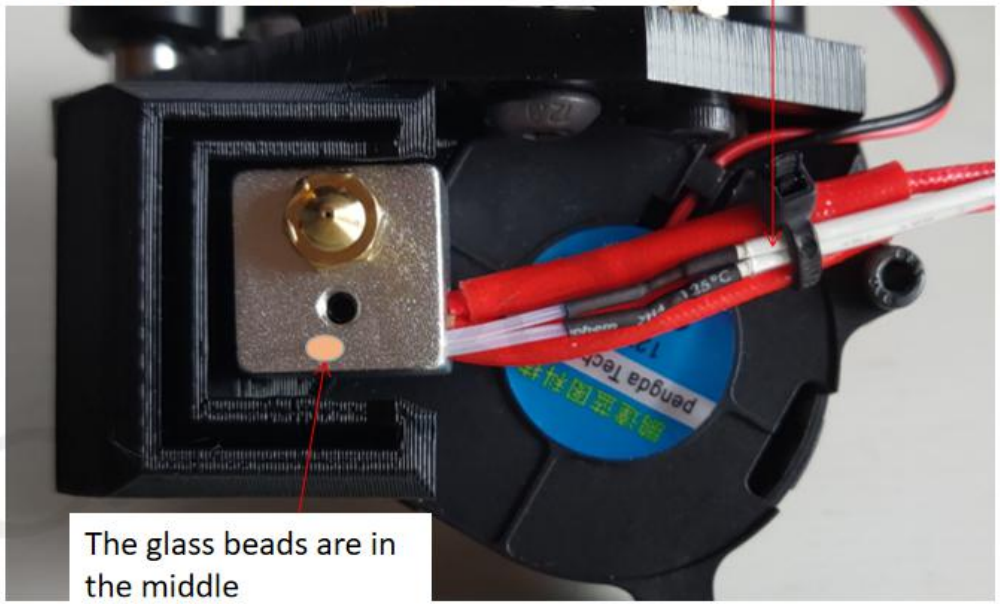
X Motor， 3*10 Cup head， each screw needs to install two gasket.



Use a knife to cut off the fan at least 1mm, be sure to cut.

Tight

Use a cable tie to tie the heating rod and the thermistor, which should be tied to the position of the heat sensitive transparent sleeve
(do not tie the black position)



When the assembly of Mini Luban is completed, please follow the manual for operation and leveling

After leveling, you can print the test.
It is best to print the test model first after leveling.

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Miniluban cura4.41 configuration file.3mf	Add files via upload
Processed test files.gcode	Add files via upload
Slicing software video tutorial link.txt	Add files via upload
Software download link.txt	Add files via upload
owl.stl	Add files via upload

If you need the mainrboard shell, you need to print it yourself, the colors can be matched at will.

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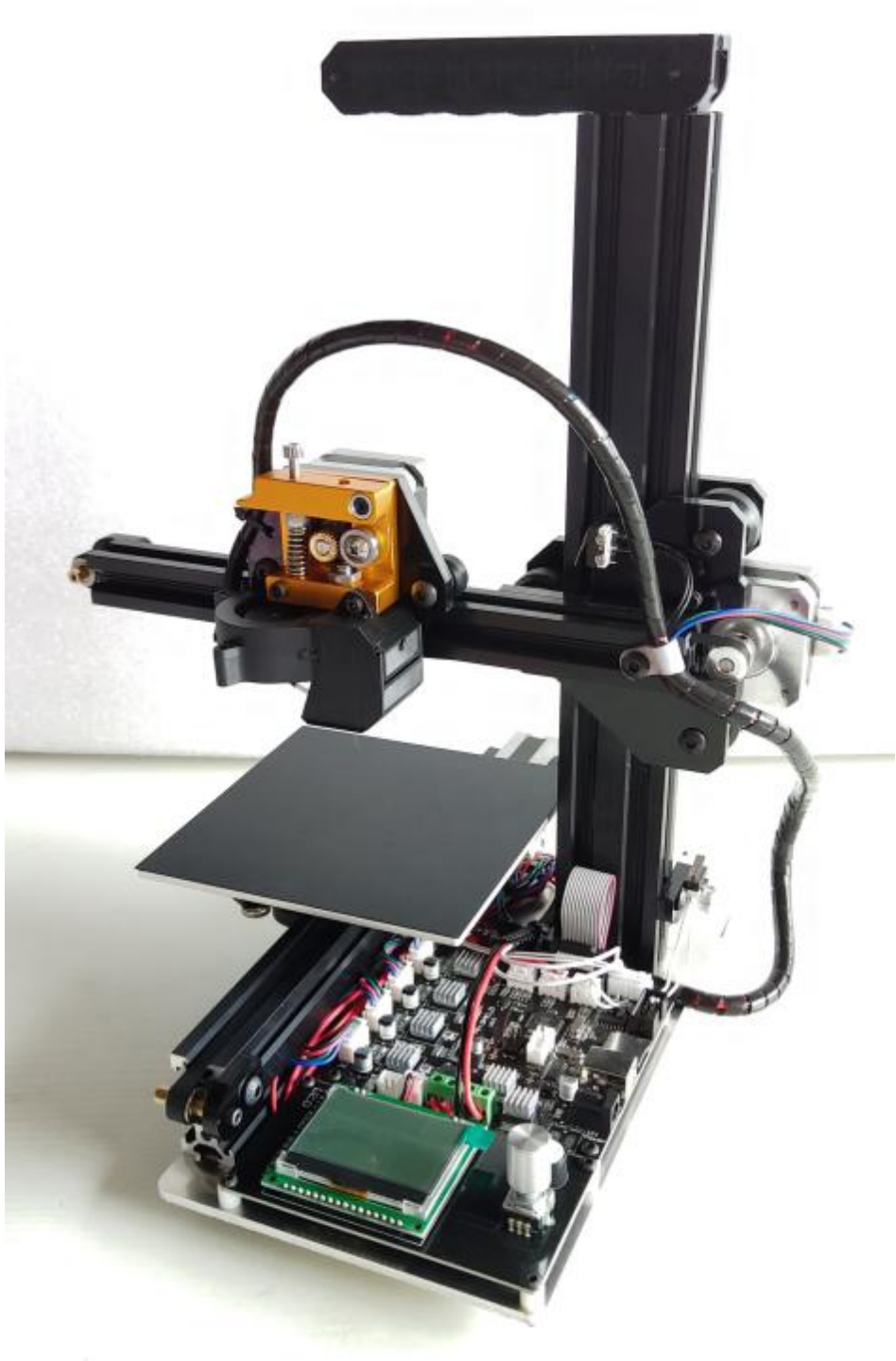
magicmaker3 Create Auxiliary frame for soft material printing1.4.rar

..	
1.cpp	Create 1.cpp
Auxiliary frame for soft material printing1.4.rar	Create Auxiliary frame for soft material pri
Main board cover2.2.STL	Add files via upload
Screen cover2.1.STL	Add files via upload
Wire cover1.4.STL	Add files via upload



Network address of data：
https://github.com/magicmaker3/magicmaker

Notes (must read)

1. The first printing must be leveled, and the platform nozzles must be re-leveled after disassembly

2. Do not frequently push any motor of the machine, it may burn out the driver chip

3.The fan will only turn when the temperature of the nozzle exceeds 40 degrees. In order to prevent the nozzle from damaging the parts, please unplug the power after the fan does not turn (forced shutdown, etc., you can unplug it and plug it in immediately)

4. If the platform is unstable because the gap between the nozzle and the platform is large, if the model is too tight, it is because the gap is too small, but in any case, the nozzle should not touch the platform

5. If there is a printing problem, first eliminate the slicing problem, first print the test file that I uploaded in the "SLuban slice software" folder

6. Pay attention to the same direction when releasing the magnetic suction platform, the suction will become weak after rotating

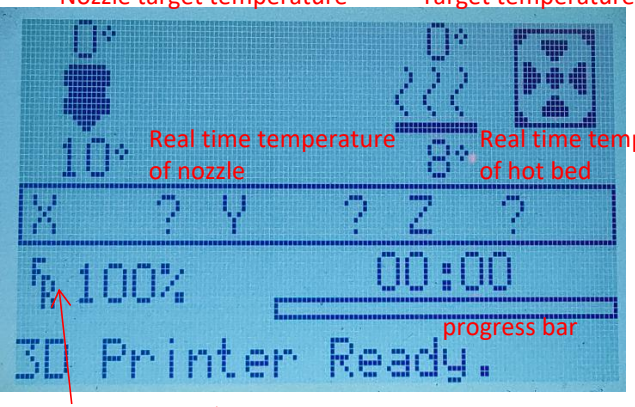
7. Low proficiency is not recommended for layer thickness above 0.2 (recommended 0.1 and 0.2)

8. The file name does not recognize Chinese, please change to pinyin or number after importing the memory card

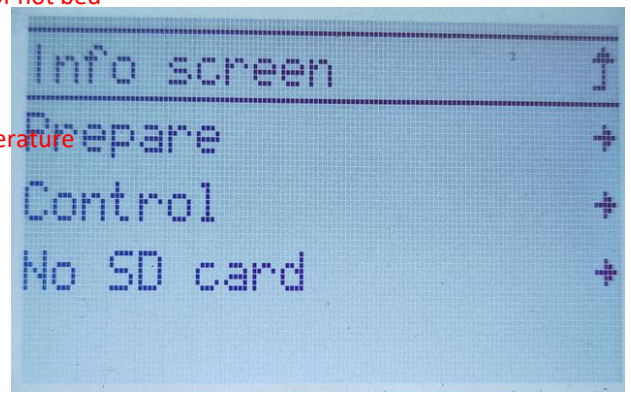
9. When encountering problems, read the tutorial carefully and think more

It must be leveled before printing, please see the manual for details

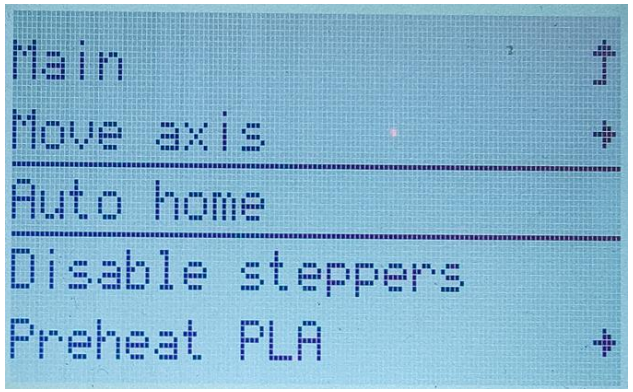
Knob operation, rotating button = select instruction, press button = confirm



Normal boot screen,display temperature should be similar to room temperature (Temperature display - 14 indicates that the thermal sensor is not connected properly)

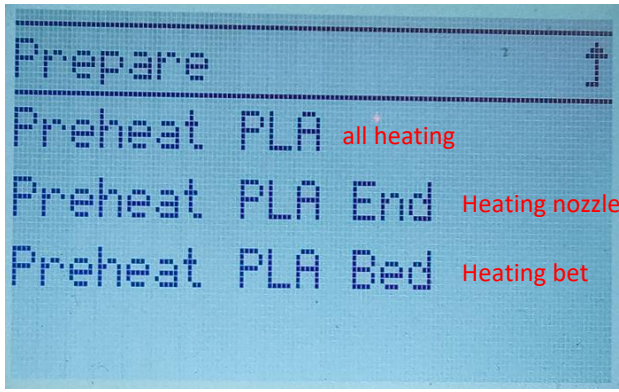


Click to enter the first-level menu, no card inserted or poor card quality will show no card (rate above class 4), after plugging qualified card, you can enter the menu and select the file for printing

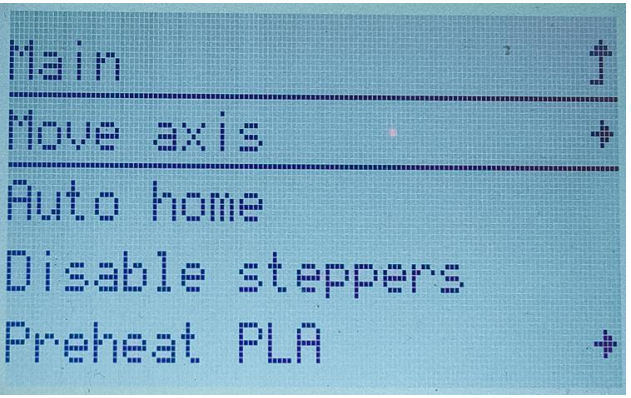


Click prepare enter the secondary menu

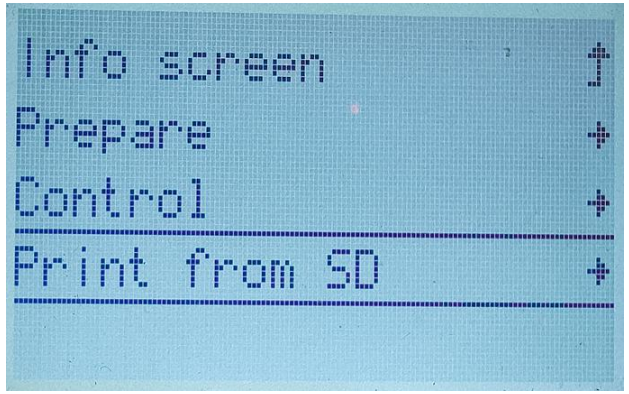
Click "Auto home" to check whether the motor and limit are normal, and then the leveling can be carried out



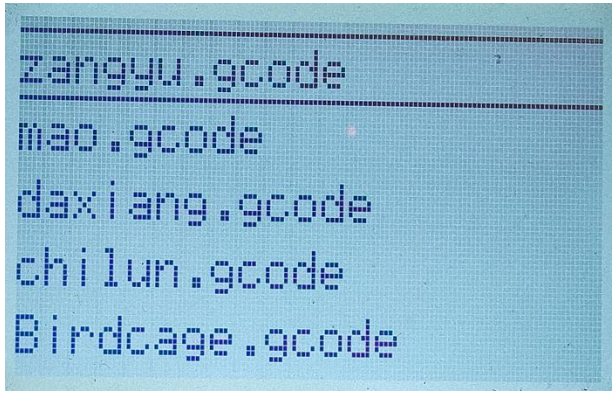
To heat the nozzle separately, click "preheat PLA"



Click "move axis" to move each axis independently, and the movement amount can only be within the coordinate range



After inserting the card, click "Print from SD" to select file printing



The file name can only be English letters and Arabic numerals
The suffix is . gcode

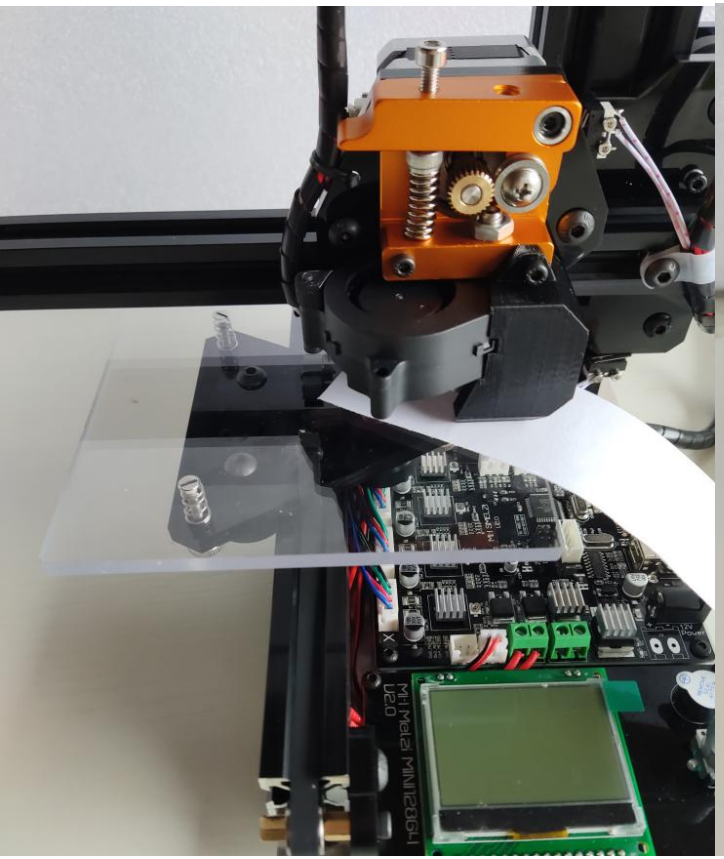
Leveling (this step must be done)

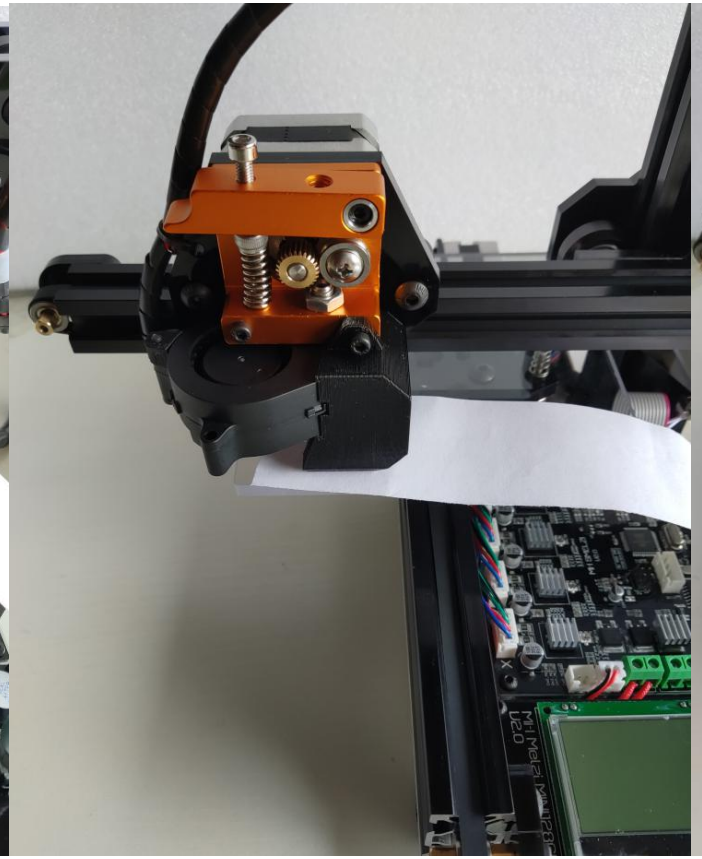
Leveling Description: leveling platform is adjusted so that the same nozzle and the distance of each platform location, if not leveled, it will cause the nozzle blown platform, thereby damaging the nozzle. following leveling course, very simple, sure to operate patiently

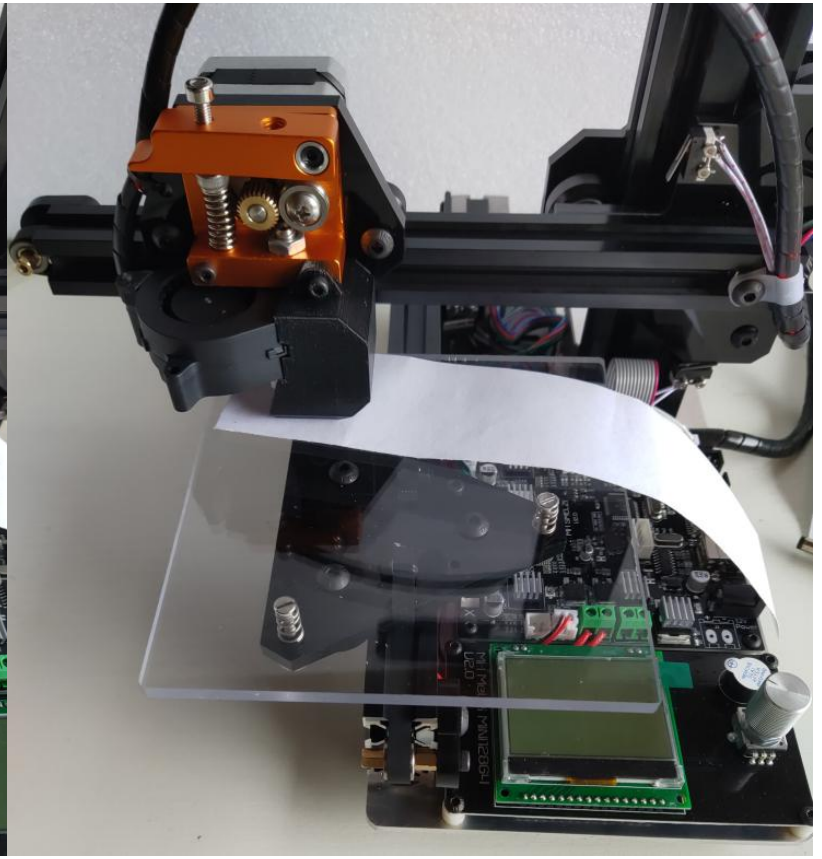
Step1 Tighten the three adjusting nuts to the end first， And then go back to the origin and zero the three axes

Step2 Power off， Place a sheet of A4 paper between the nozzle and the platform， Then fine tune the three nuts under the platform， Adjust the distance between the nozzle and the platform to the thickness of A4 paper

Step3 Adjust the nut while dragging the A4 paper， The paper can be dragged and some scraping is appropriate， Move the nozzle to three corners of the platform in turn， The spacing of the three corners is adjusted and it is finished， Cycle at least twice.



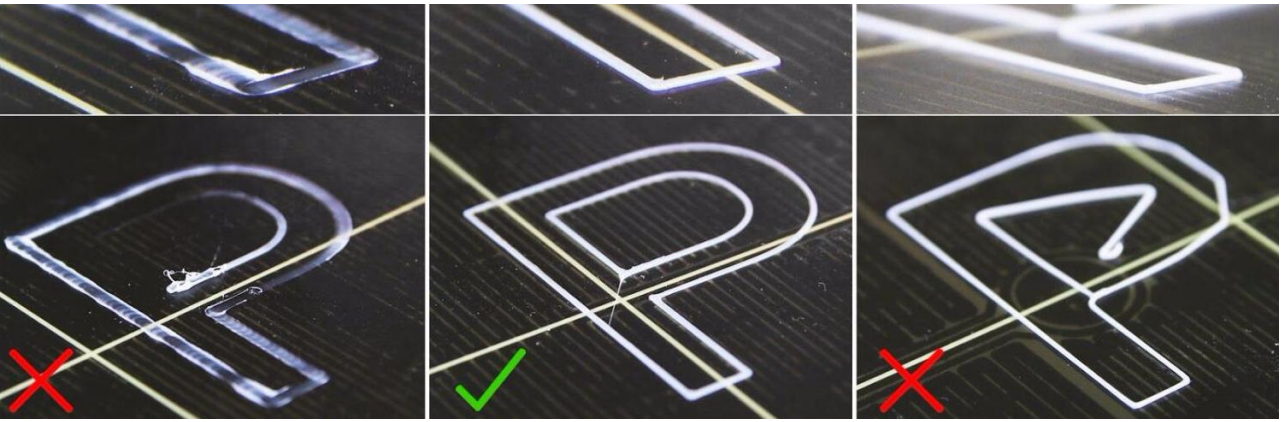




The first time you print,it need someone to watch,Avoid accidents.

Leveling

As shown in the normal state



Small spacing, extruding sheet, scraping platform

Good spacing and good effect

Large spacing, unstable adhesion

After leveling, observe under the hot bed. The hot bed cannot be supported by anything other than the spring. The hot bed will be bent.

Solution: move the Z limit up a little, and then level it again

Advanced leveling

The same process above, without using A4 paper, directly observe the distance between the nozzle and the platform on the side of the screw on the 3 sides, just adjust the nozzle to leave the platform, you can see that there are seams.

Reference operation demonstration videohttps://www.bilibili.com/video/BV1Fz411i7m6/

Loading and unloading materials

Loading materials： The middle finger or index finger drags the fan frame, press the extruding arm with the thumb, and insert the filament directly. It is best to straighten the filament before inserting. If it cannot be inserted normally, please adjust the insertion direction and insert it along the groove of the bearing.

Be sure to press the extruding arm with two fingers

Replace material： If you finish printing normally before, and the nozzle has cooled down (below 50 degrees), there is a high chance that you can pull it out gently. If it doesn’ t work or it’ s struggling, follow the normal procedure.

Turn on first, then operate on the operation panel to warm up

Point preparation---preheating---preheating PLA---sprinkler

After the nozzle is up 180 degrees, press and hold the extruder arm, and continue to insert the original wire in to see if there is any wire from the nozzle below. After the wire is drawn, insert about 2cm, then quickly pull it out, and then replace the new wire， Just insert it to the end.

It looks very complicated, if you can understand it, it is very simple. It will be completed in a few seconds after preheating. Follow the procedure to greatly reduce the chance of jamming.

Change material during printing: Tentatively print, wait for the machine to stop, press the extruder arm, pull it out directly, and then insert the new material directly, and then click to continue printing. The new material is prepared first. This process is as fast as possible, so that the model will be less affected.

Print test

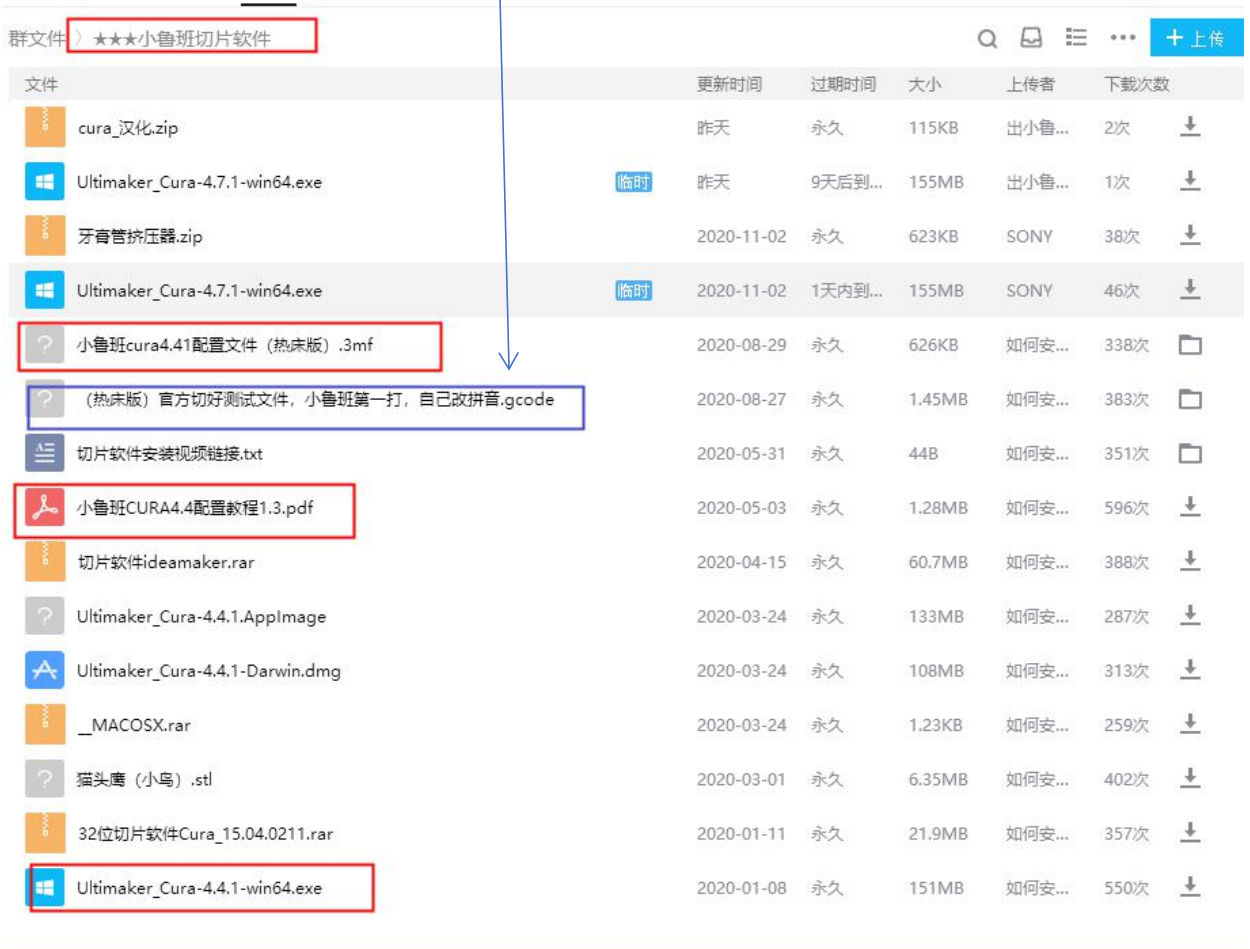
Download the cut test model in the official group, import the memory card, and then insert the memory card into the printer, select the cut file ***.gcode to print, and the machine will first preheat the print head to the printing temperature.Start printing, observe whether there is a scraping platform on the first layer of nozzles, and whether there is a sticky platform on the exit wire, and the first layer of printing can leave the machine without any problems

In the later stage, if the nozzle, platform has been adjusted or large-scale movement to make the platform uneven, you need to re-level it

It is recommended to print a larger model and observe carefully in the early stage of printing, whether the nozzle is scratched or not sticky, stop in time if this situation occurs, and then level again

sliced(Convert the STL model file into a machine-recognizable code file)

Download the slice software and tutorial, follow the slice tutorial operation, video tutorial link：
https://www.bilibili.com/video/BV17K4y1t77R/



Slicing software is the software that converts the model file in .stl format into a printable .gocde format

.stl is a three-dimensional model, which can be designed with three-dimensional modeling software, or can be downloaded online, and it needs to be a closed polygon.

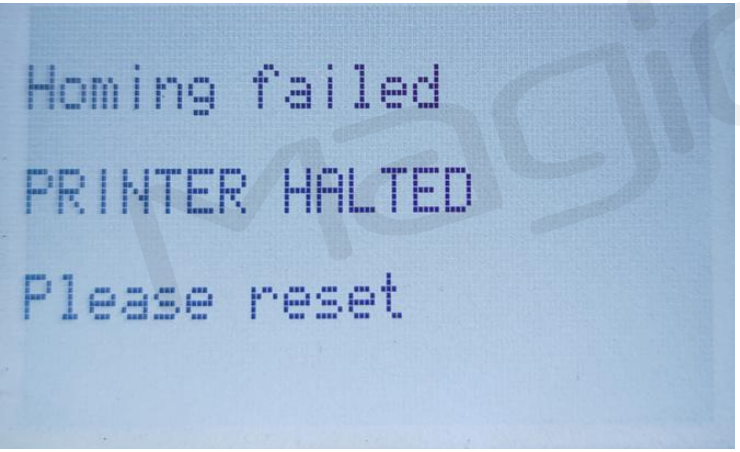
.goced is the code file after the stl file is converted by the slice software. The file is a bunch of G code, and you can edit and change it yourself.(Don’t understand too clearly)

All in all, the model you design needs to export .stl, and the downloaded model needs to be .stl.

When imported into the machine, the executable file of the machine is .goced.

SLuban can only understand English and numbers

Error analysis

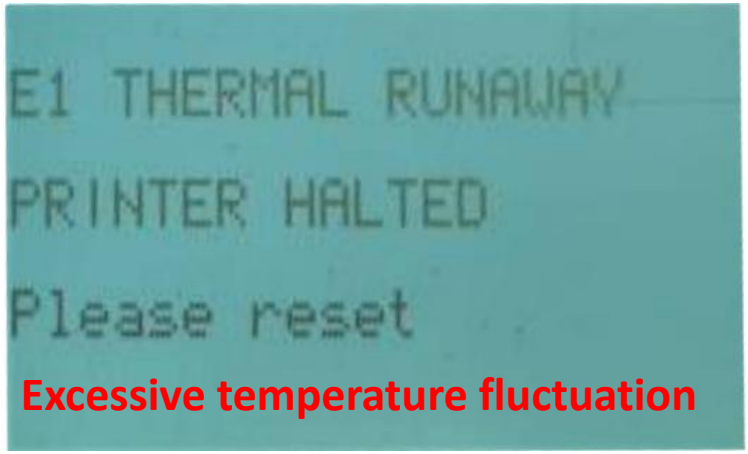


Possible causes:

1. Wrong position of limit switch plug
2. Wrong insertion of motor plug

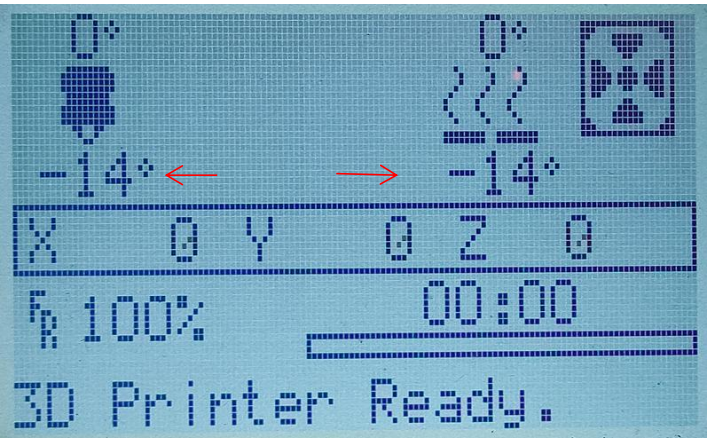
Possible causes:

1. The thermal bead is not stuffed in the middle of the aluminum block
2. The heater wire is connected incorrectly or not securely

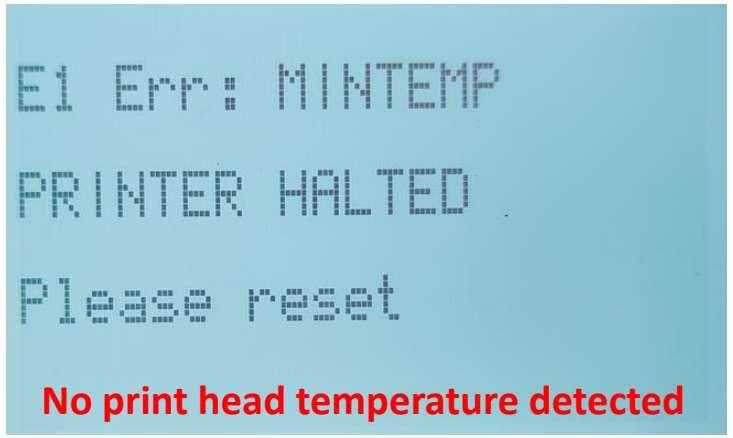


Solution：

1. Check whether the thermal plug is good
2. Open the rear cover of the fan housing



Temperature display -14 means that the thermal sensor is not installed, check the thermal line and thermal plug.
The nozzle on the left, the hot bed on the right

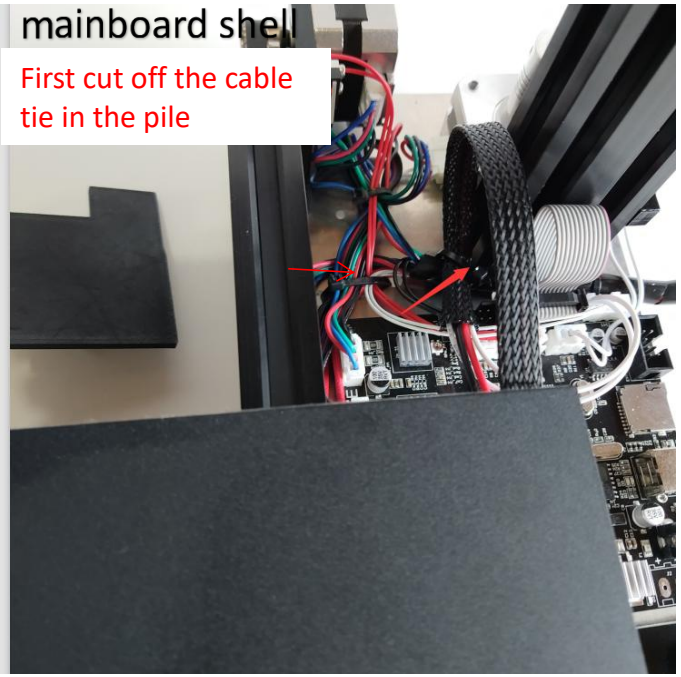


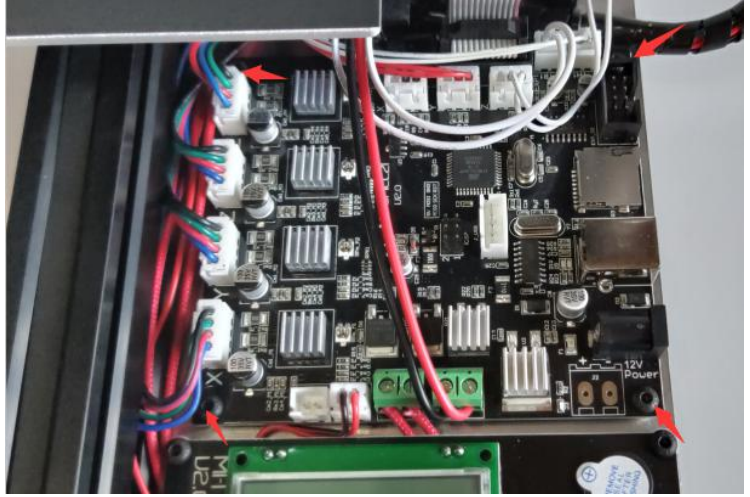
Check the wiring of the temperature probe on the nozzle

Check the wiring of the temperature probe on the hot bed

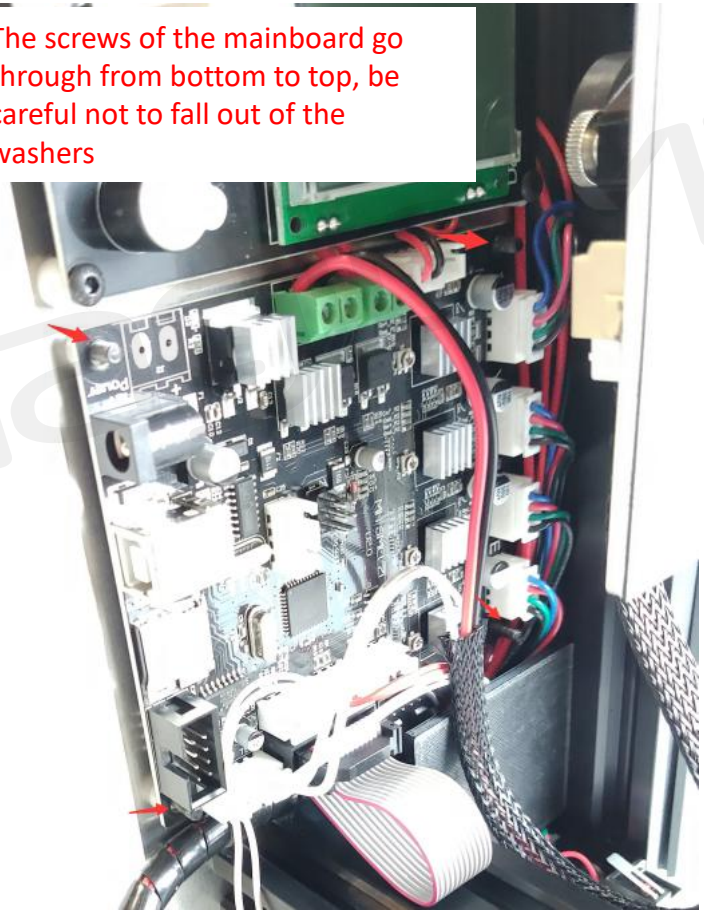
Install after printing the mainboard shell

First cut off the cable tie in the pile



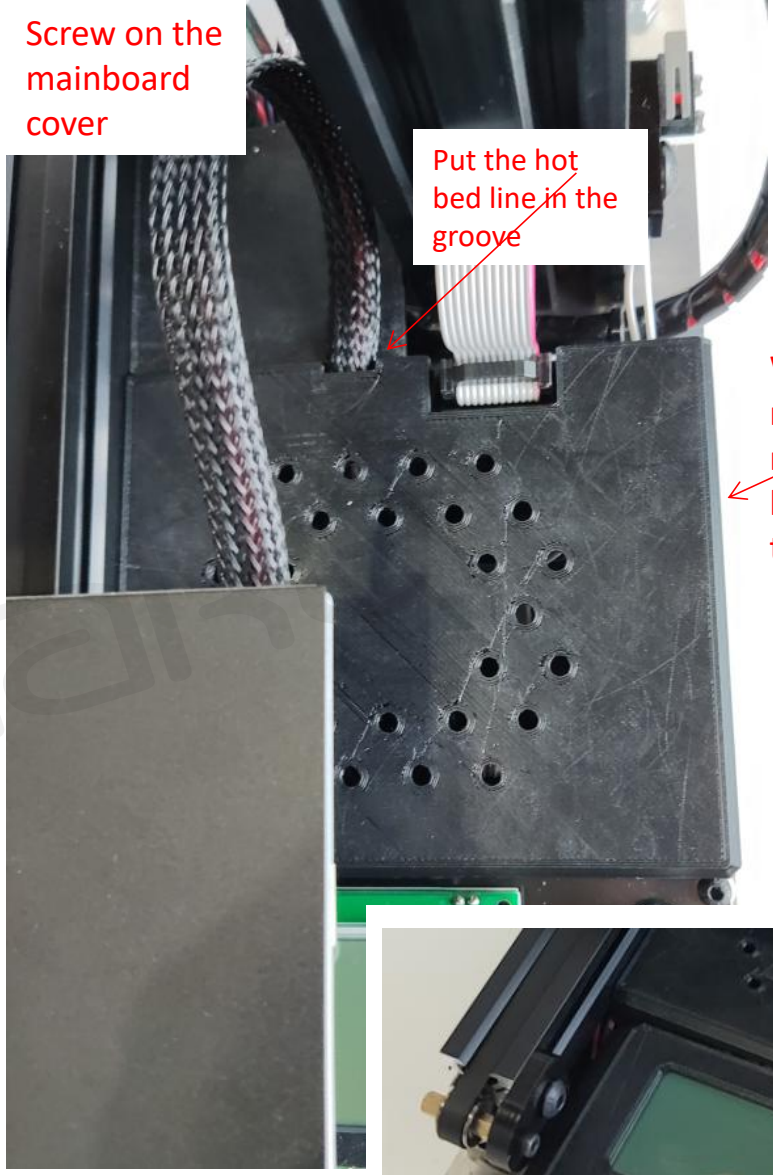


The screws of the mainboard go through from bottom to top, be careful not to fall out of the washers



Screw on the mainboard cover

Put the hot bed line in the groove



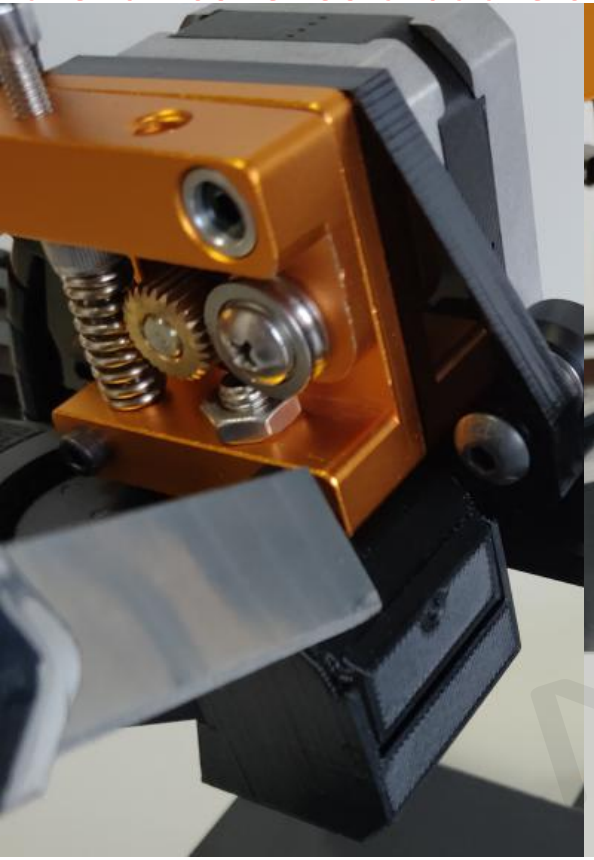
When installing and removing the mainboard cover, be sure to pull out the card first

Put on the wire cover, align the position and screw on the 3*10 cup head

The screen cover is installed in the same way

Controllable fan cover (ABS needs to be unsealed)

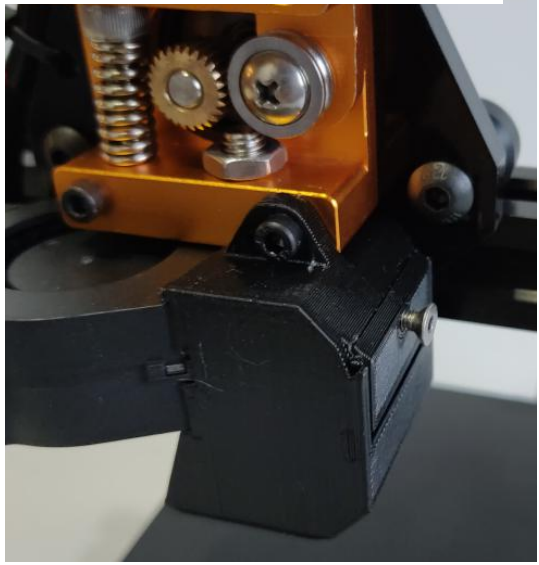
Use a knife to cut into the slit in the back cover of the fan cover so that the cover can be opened



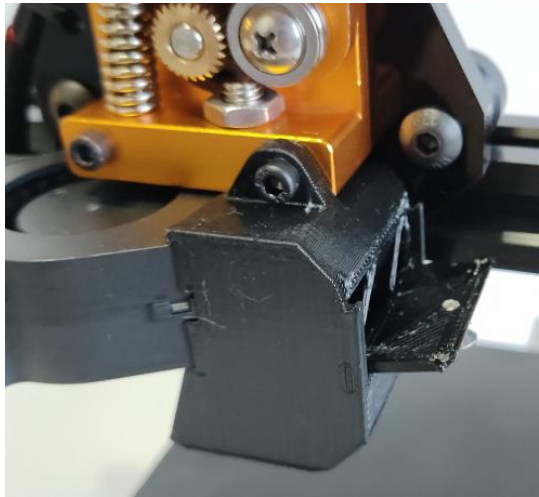
Twist a short M3 screw (the one in the extrusion bag)

Screw not to exceed the cover

Covered status:
The model is freezes fast, suitable for PLA



Open state:
The model freezes slowly,suitable for ABS



Before using TPU and other soft materials, it is recommended to use PLA to make an auxiliary frame and install it.

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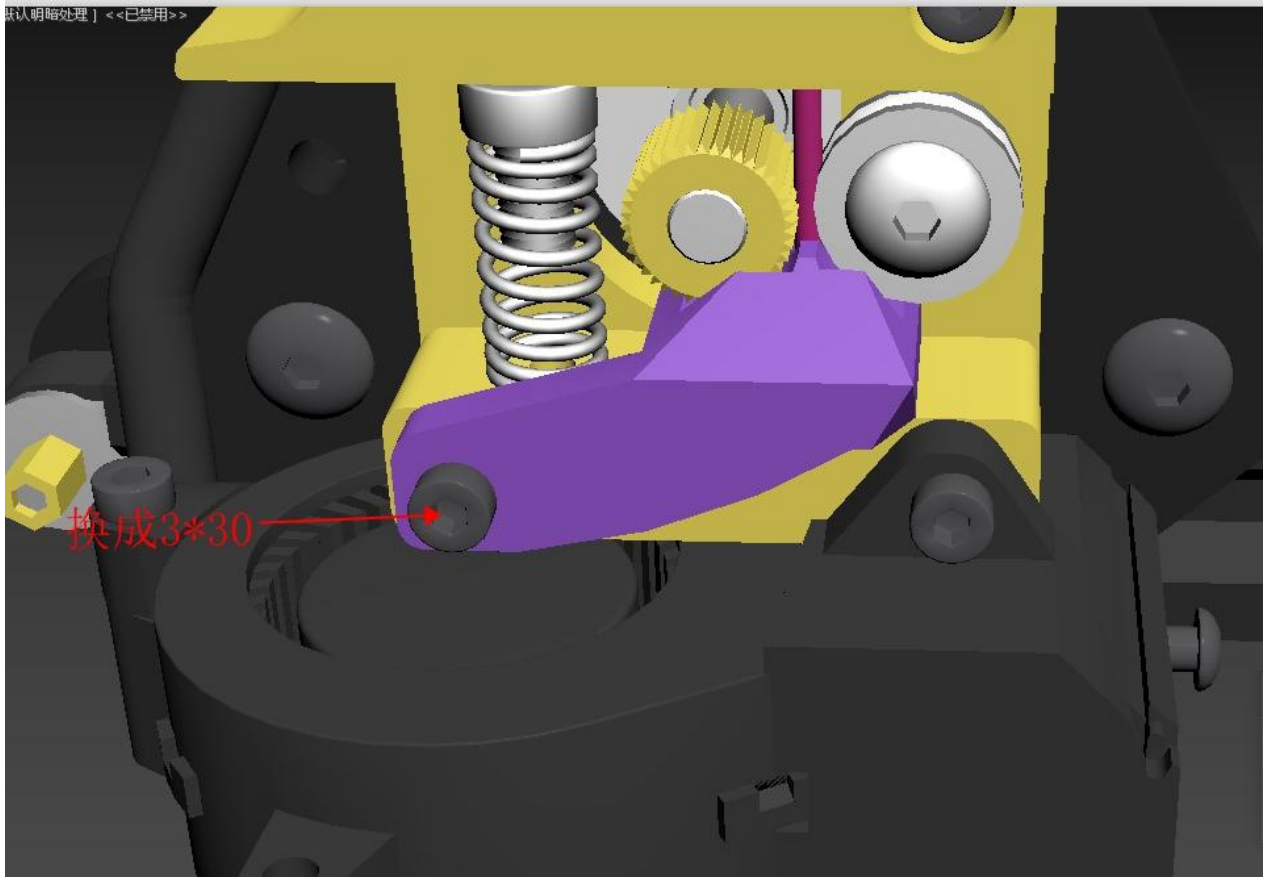
Code Issues Pull requests Actions Projects Wiki Security Insights

master magicmaker / MiniLuban / Related model files /

magicmaker3 Create Z limit new.STL

..	
1.cpp	Create 1.cpp
Auxiliary frame for soft material printing1.4.rar	Create Auxiliary frame for soft material printing1.4.rar
Fan cover2.2.STL	Create Fan cover2.2.STL
Fan rack2.1.STL	Create Fan rack2.1.STL
Main board cover2.2.STL	Add files via upload
Material carrier arm.STL	Create Material carrier arm.STL
Material rack seat.STL	Create Material rack seat.STL
Screen cover2.1.STL	Add files via upload
Wire cover1.4.STL	Add files via upload
YZ limit.STL	Create YZ limit.STL
Z limit new.STL	Create Z limit new.STL

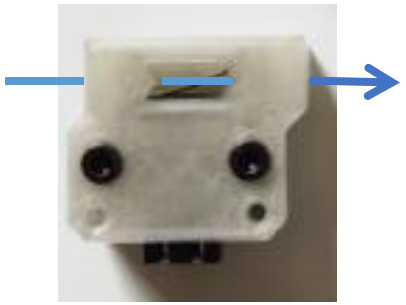
https://github.com/magicmaker3/magicmaker/tree/master/MiniLuban/Related%20model%20files



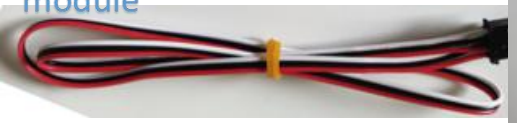
Material break detection

The material break detection is an external component, which is not mandatory.
It is recommended to test and print before installation
装上后耗材必须先从模块上穿过。

Function: It will automatically pause when the material is broken, and continue printing after resuming

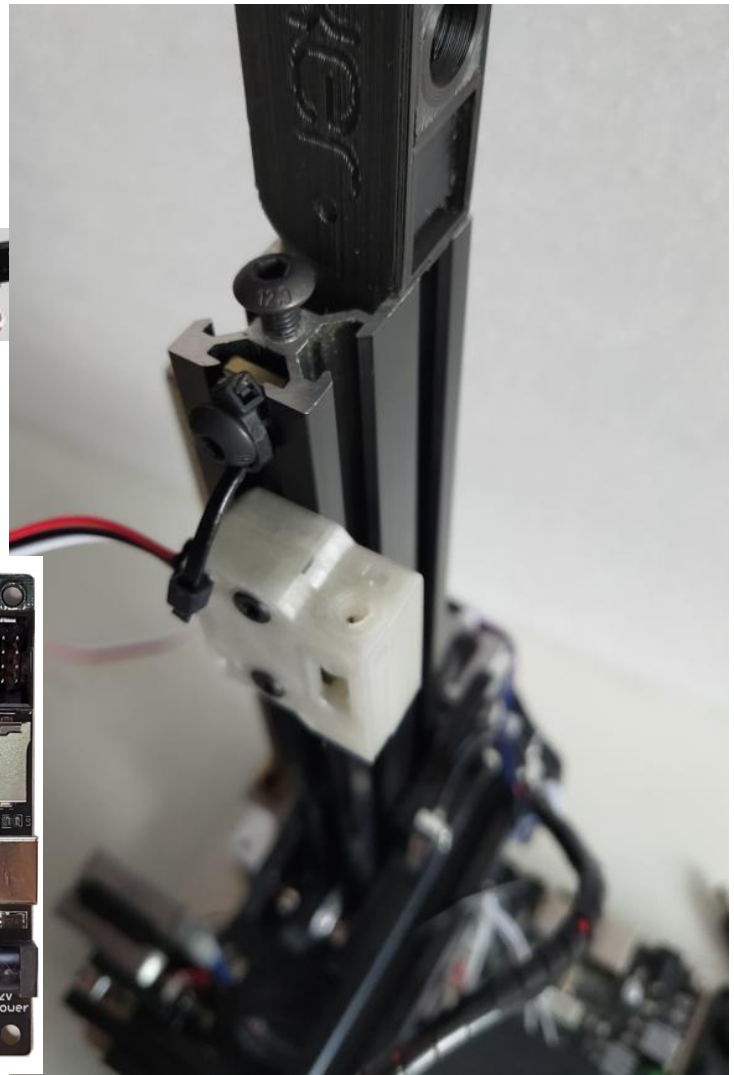


Material break detection module

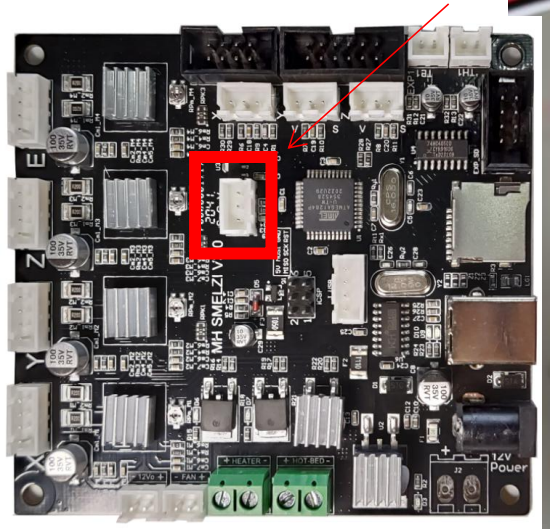


0.5m 3P line

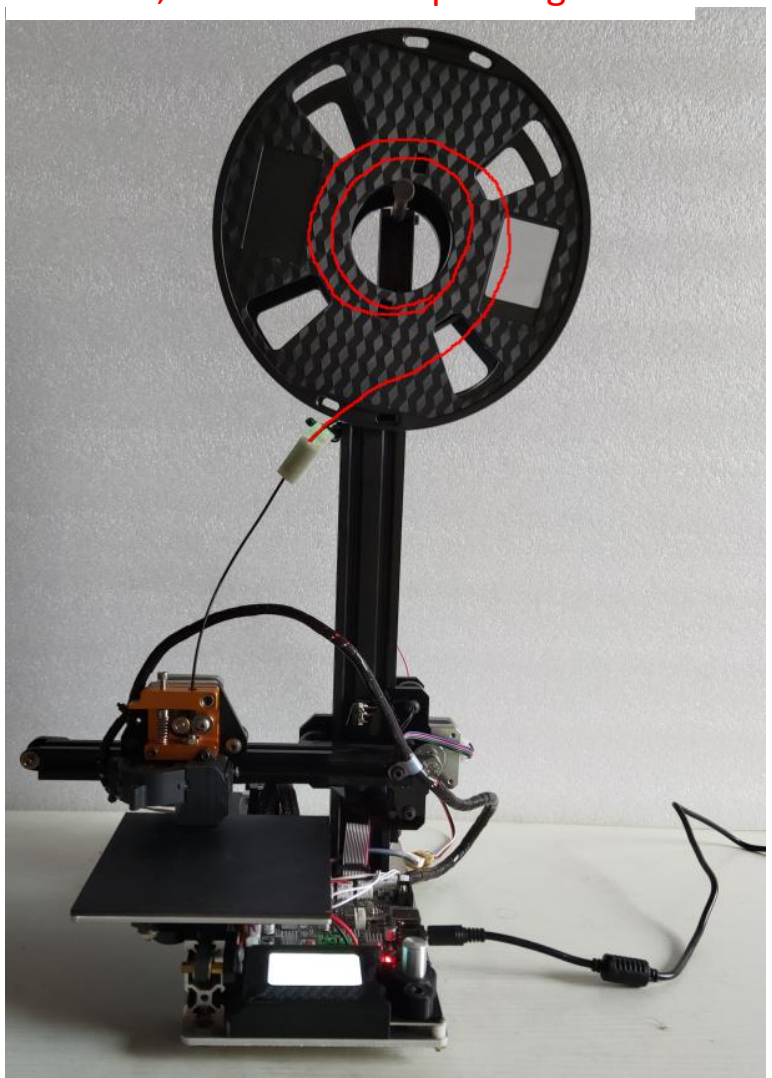
Fix one M5 screw + M5 square nut on the top of the side, and 2 tie straps are tied and fixed as shown in the figure. The tie straps should not be tightened and can be moved flexibly

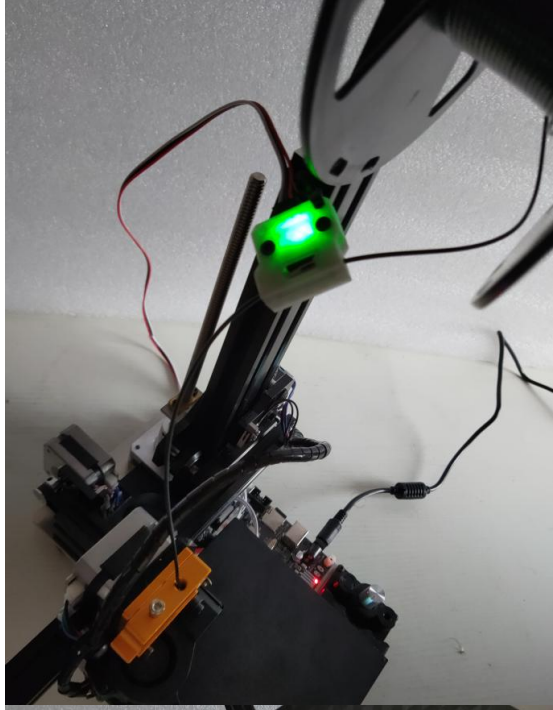


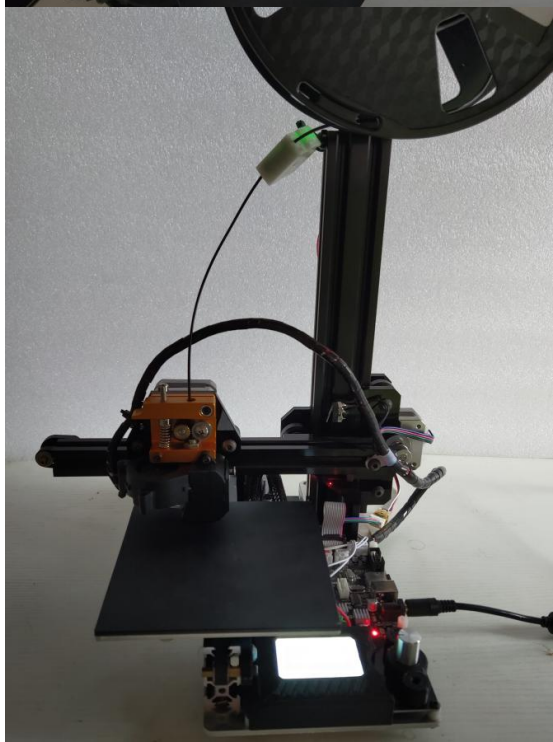
Wire the socket of the module and the mainboard



The material tray is placed as shown in the figure, and it must pass through the material break detection module, and then start printing







挤出丢步缺丝问题解析

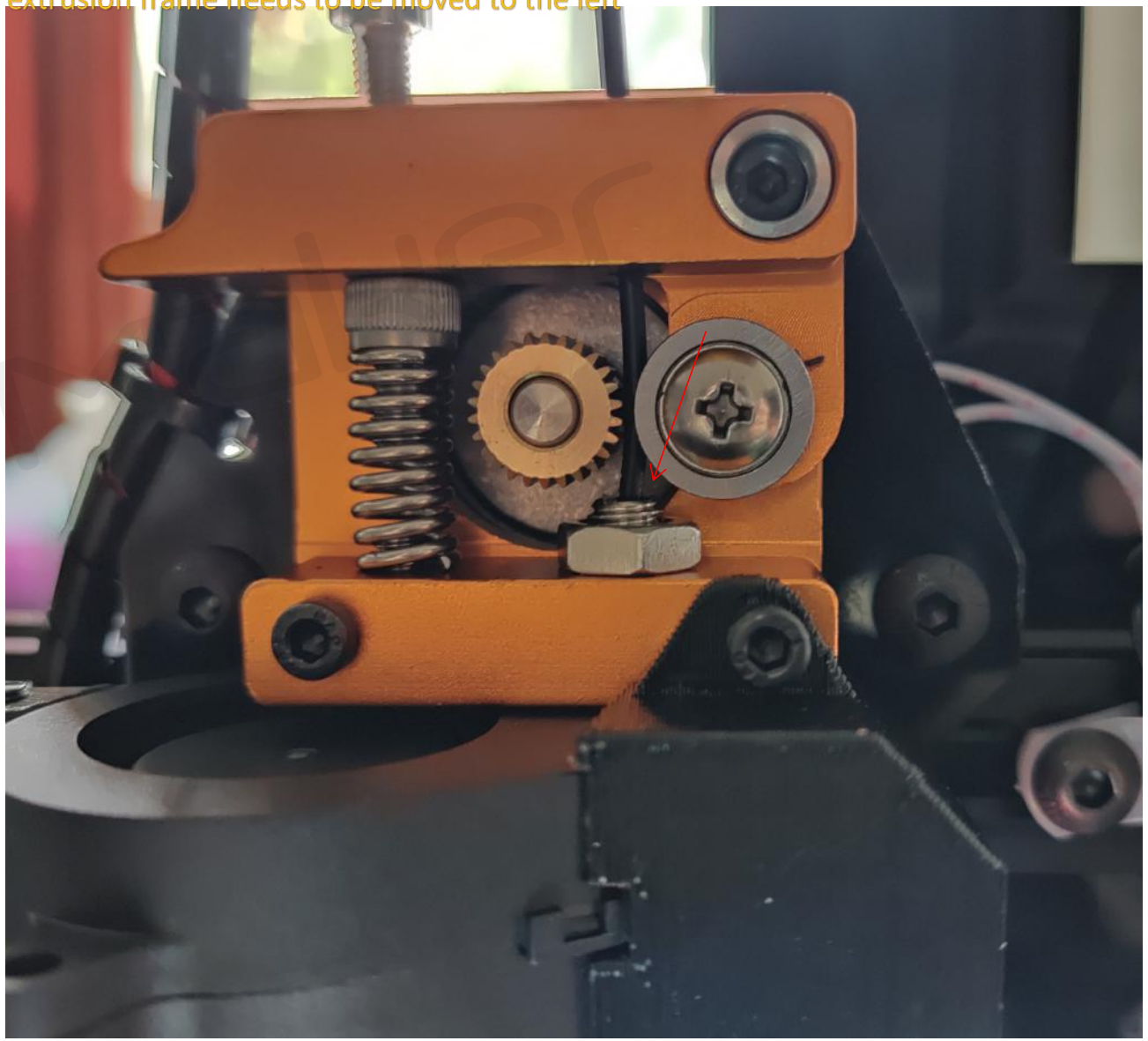
1.Poor throat heat dissipation
checking point： a.Fan rotates normallyb.The fan is not installed as required, air leakage

2.The nozzle is blocked
Check method： preheat the nozzle and manually extrude, and observe whether the filament is smooth
Solution:
a. Preheat to 230 degrees and forcefully squeeze out the material for a section, if it is caused by the scraping platform, this method may be dredged
b. Find a needle with a diameter of less than 0.4mm and pass it through (the silk glue that bundles the power cord is stripped and straightened)

3.Spring force is too large
Material will squeeze and deform

5. The current of the motor is insufficient (the current has been adjusted in the factory setting, and the above 4 problems have been checked and there is no problem before considering this)

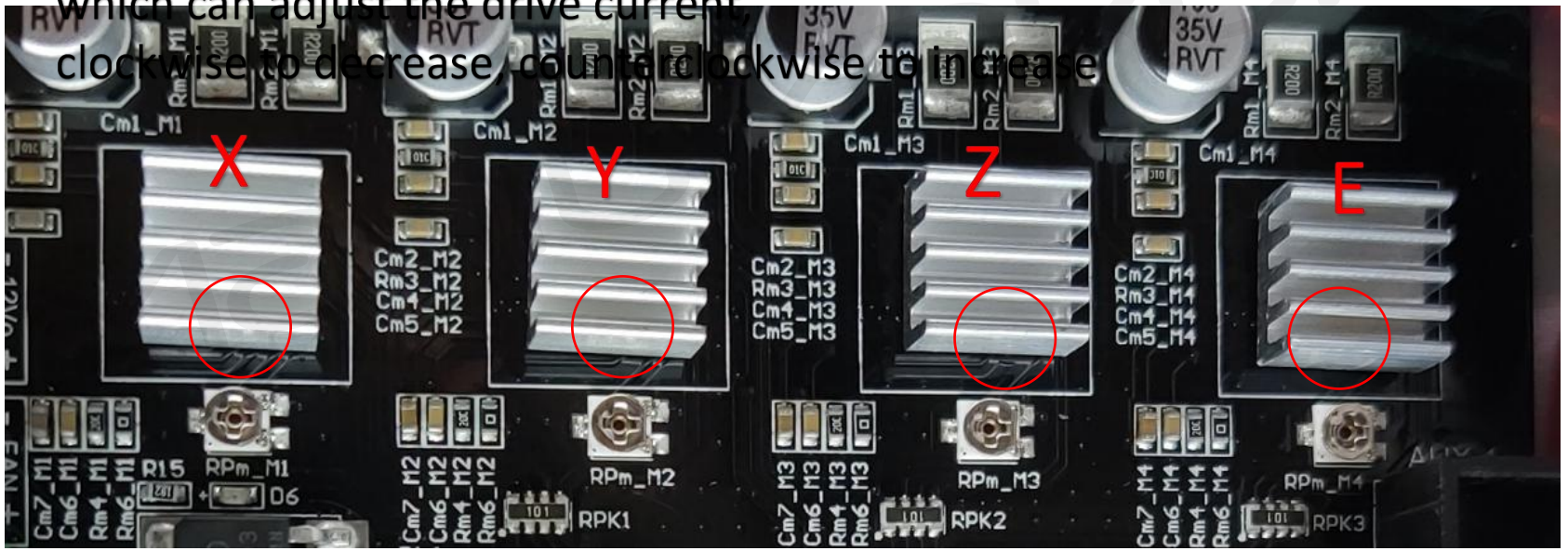
4.Material entrance is crooked
Check method: see if the filament is scraping down the wall at the mouth of the throat
Solution: Adjust the extrusion frame, try to smooth it
As shown in the picture, the filament scrapes the right side of the throat, and the extrusion frame needs to be moved to the left



Motor current adjustment tutorial（The factory current has been adjusted. Adjusting the current is risky. Please confirm and understand before operating）

（Unplug the motor before adjusting operation, otherwise it will burn the drive, so it should be powered off）

Next to the heat sink is the drive current device, which can adjust the drive current, clockwise to decrease, counterclockwise to increase



---Blind adjustment method without multimeter---

电机力气小的话，电流器逆时针转10度，再打印文件测试（层厚0.3的文件测试，电机压力大测试的结果更有用）

如果丢步，就关机再转10度，以此。

如果不丢步，就打印几分钟，手摸电机，看是否发烫，发烫厉害的话就需要调回小一下，再测试，直到不烫。如果不烫的话就继续打印，打印1小时还不会发烫就OK

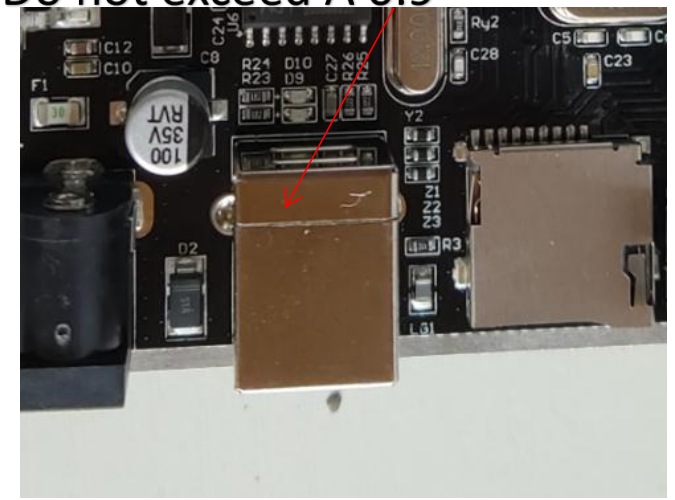
（发热的标准，手一直摸着能受得了就行，手耐热型的就考虑下亚克力受不受得了）

---Measuring Current Method---

Multimeter to DC voltage 2 V, red pen point current, black pen point grounding (data line socket shell) measured voltage value /1.6, is the actual current

Motor rated current 0.9 A,0.6A more appropriate, large easy to heat,

Do not exceed A 0.9



The final result of the adjustment

在力气和发热两个属性

Maintain

1.Avoid using in dusty environment and hot sun

2.If there is lubricating oil, it can be applied on the screw rod（Pay attention not to drop oil on the platform. If there is oil on the platform, it will not stick to the model）

3.If the nozzle is blocked,It can be preheated first and then dredged with a needle with a diameter of 0.3-0.4mm。The nozzle is not blocked, but the wire is difficult， Maybe the Teflon pipe has been worn, so the pipe or nozzle needs to be changed

Handling of common problems

1 Hot head clogging

Reason

1，Nozzle damage，It's caused by the wrong operation of the scraped platform. Change the nozzle

2，Nozzle inner wall carbonization,Usually used more than 1 year nozzle prone to appear,It can be dredged with a needle,or change the nozzle.

3，If there are impurities in the material, you can try to preheat the temperature to 230 to extrude,Then use a needle to dredge it，or change the nozzle.

4，Injury of "Teflon tube" in larynx inside,Too long use time，The temperature should not exceed 250℃，Direct replacement

5，The throat is blocked，If the fan doesn't turn, the pipe will be blocked，Check the fan

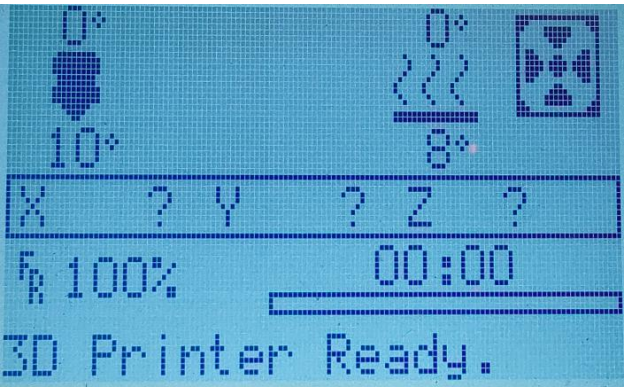
6，Incorrect wire changing operation

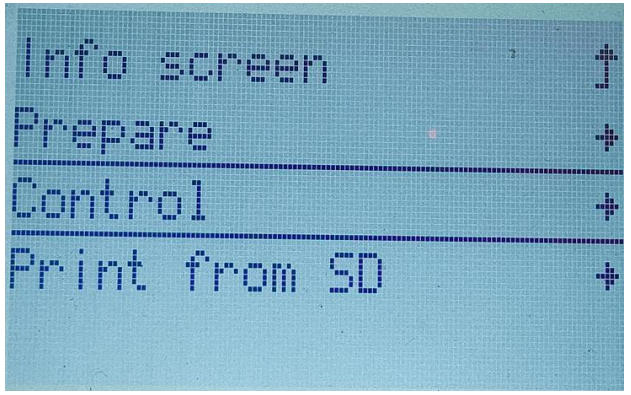
2 Memory card not recognized

The memory needs good quality, the speed is above 'class4', and the capacity is less than 16g

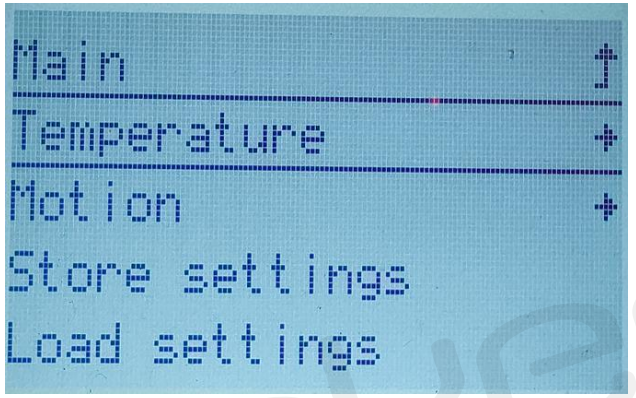
3 Do not frequently and quickly push the motor to generate electricity, it is easy to burn the drive

PID auto-tuning (temperature control is more stable and may solve some layer pattern problems

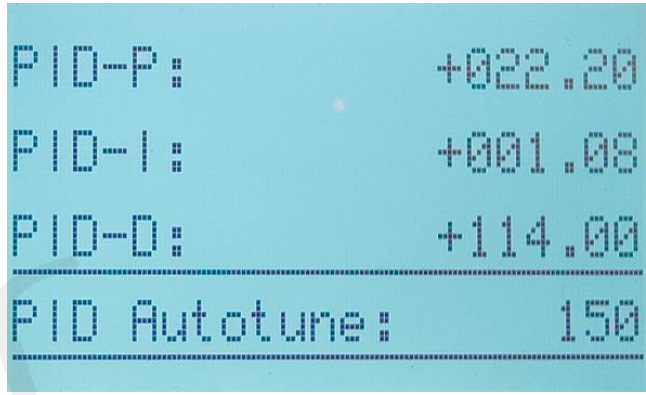




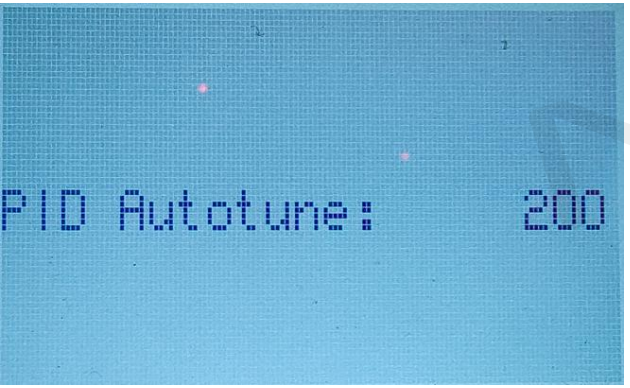
control



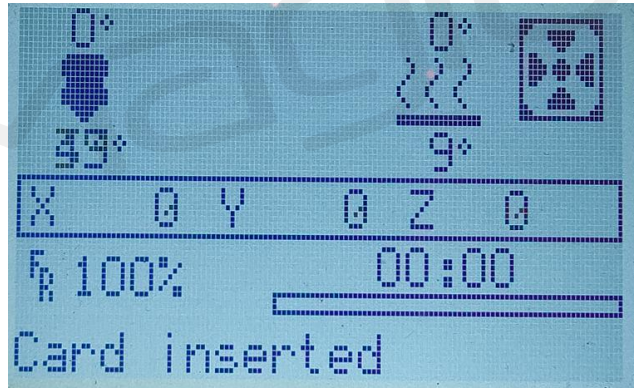
Temperature



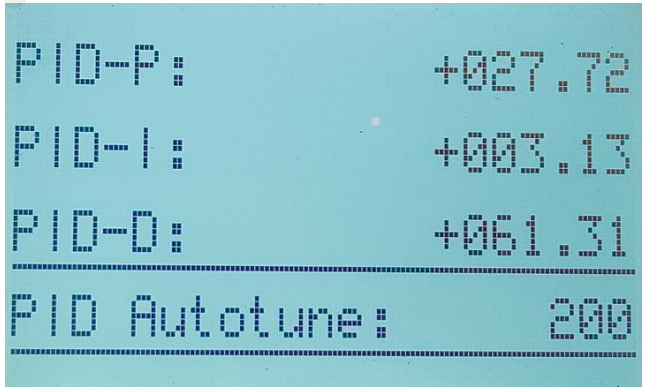
PID Autotune



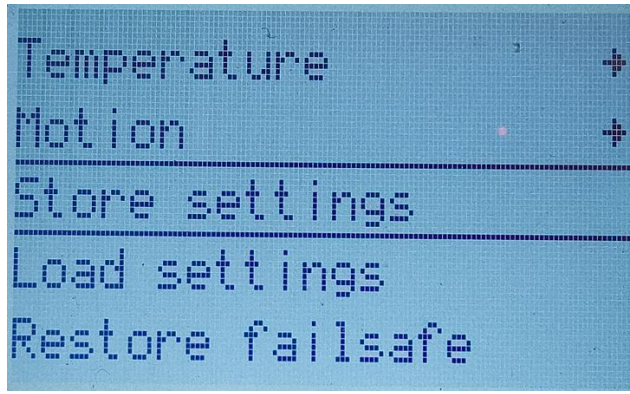
Adjusted to 200



The temperature will start to rise, wait 5-10 minutes, the temperature will drop and it will be over



P I D 3 values change, it means the setting is successful



In control-store setting
End of setting

If there is no Store option, you need to flash the latest firmware

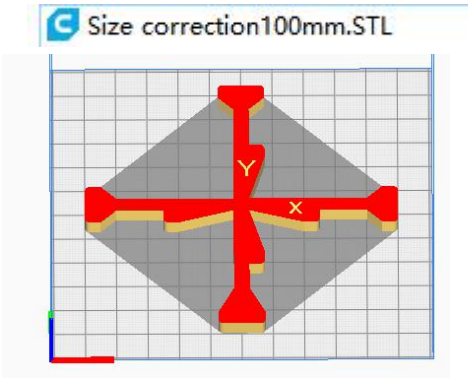
Size correction tutorial

（First adjust to stable printing and then consider correcting the size）

SLuban XY axis pulse is 100, which is brought into the formula
Actual pulse=100*100mm/99.9mm=100.1001001≈100.10（取小数点后2位）
Then change the XY pulse to 100.1.

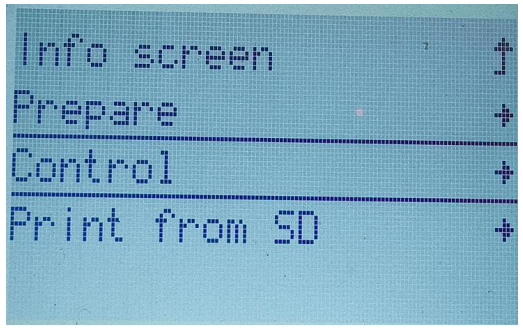
Formula: Actual pulse / theoretical pulse = actual size / theoretical pulse printing size
Actual pulse = theoretical pulse * actual size / theoretical pulse printed size
（It doesn’t matter if you don’t understand, just look at the back）

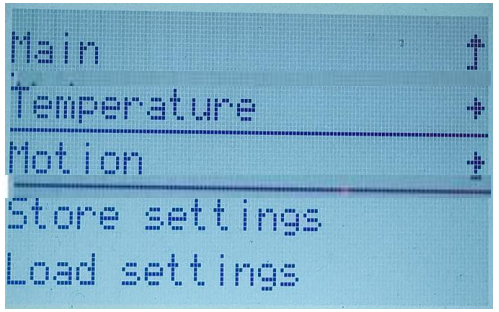
Download the inspection model and print it out,
The recommended layer thickness is 0.2, and the filling is 15

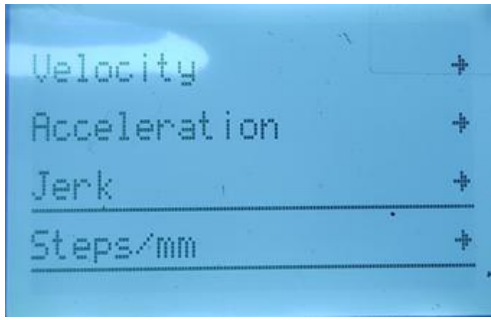


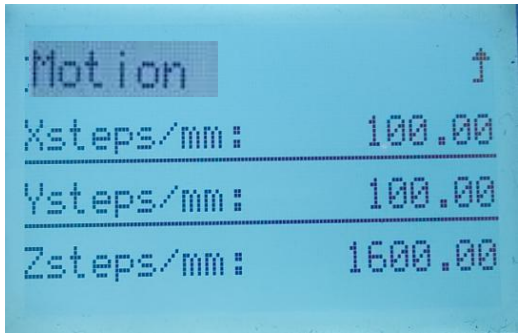
Column, the actual XY of the 100mm model with initial parameters is 99.9mm

（The first layer cannot be measured, the first layer will be squeezed against the platform, and the measurement will be inaccurate）

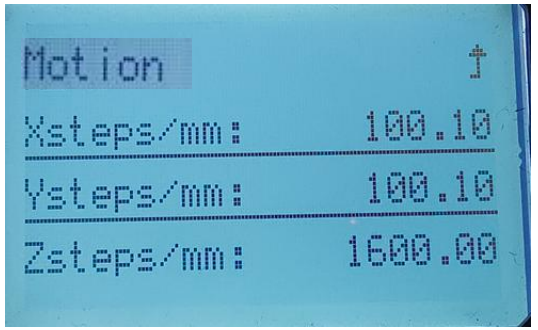




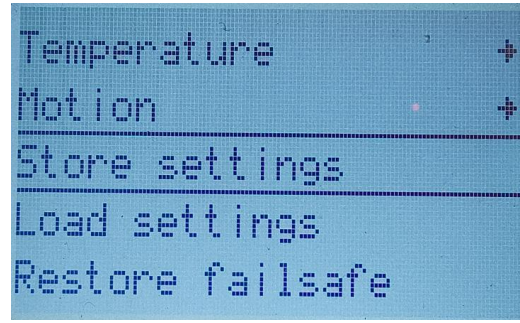




XY pulse is preset to 100



Change XY pulse to 100.10



Save Settings

Same for Z axis（The first layer of the Z-axis will be affected by leveling. Test with a 10*10*50 column. The bottom and layer heights are set to 0.1. Normal Z is installed and there will be no problems. Adjustment is not recommended.）
For the E-axis, if there is too much extrusion, adjust it to a smaller point, if it is less, adjust it to a larger point, and adjust it to be almost suitable. Print a solid model, and the filled line does not overflow or have no gaps, which means that the extrusion is suitable. Generally The preset is just fine without adjustment