Assembly tutorial

Installed summary

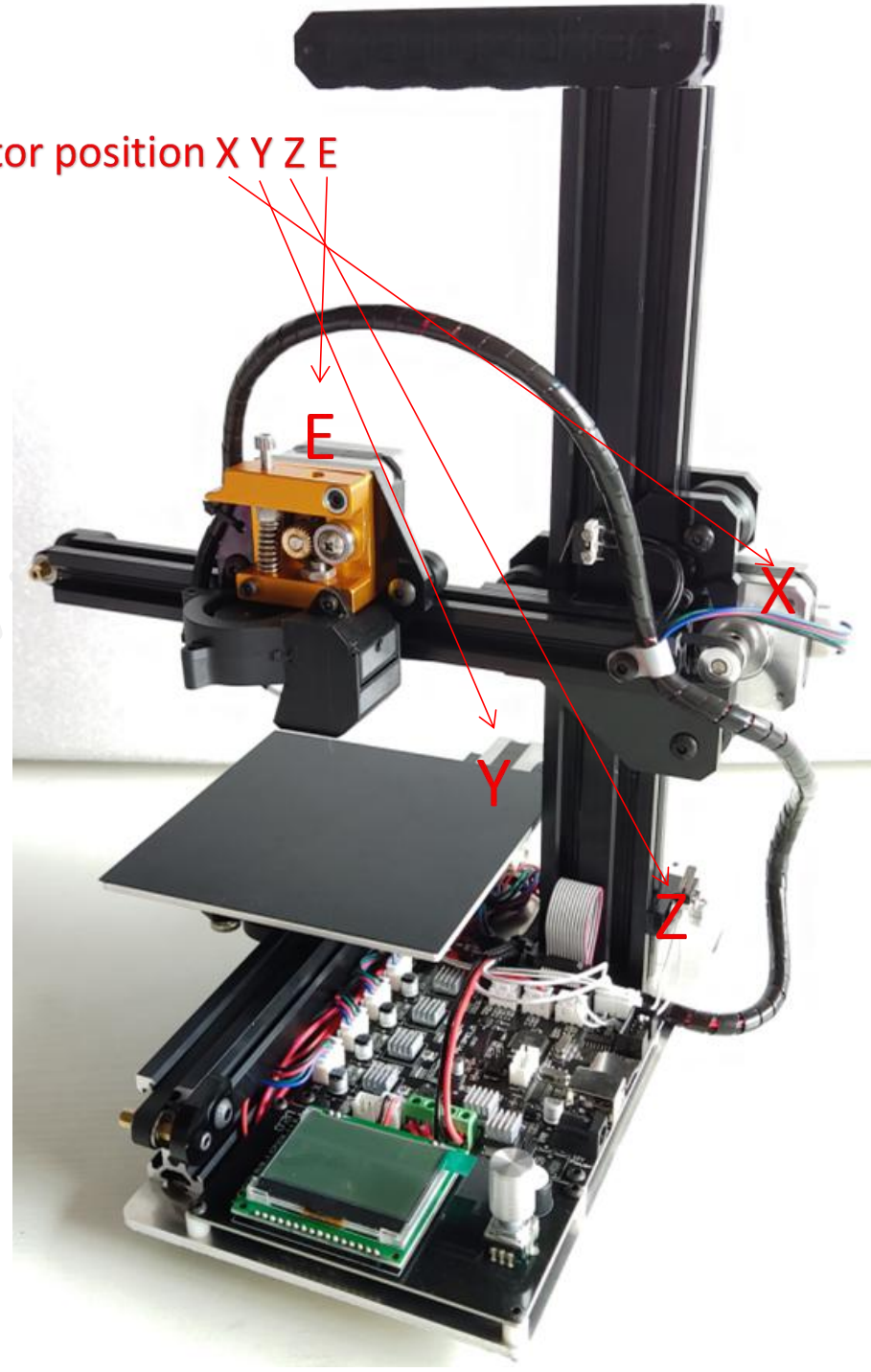
When assembling, look at the drawing carefully, pay more attention to the description and the place marked on the drawing, pay attention to the length and type of the screw mark, look at the place with text, and be sure to follow the order.

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

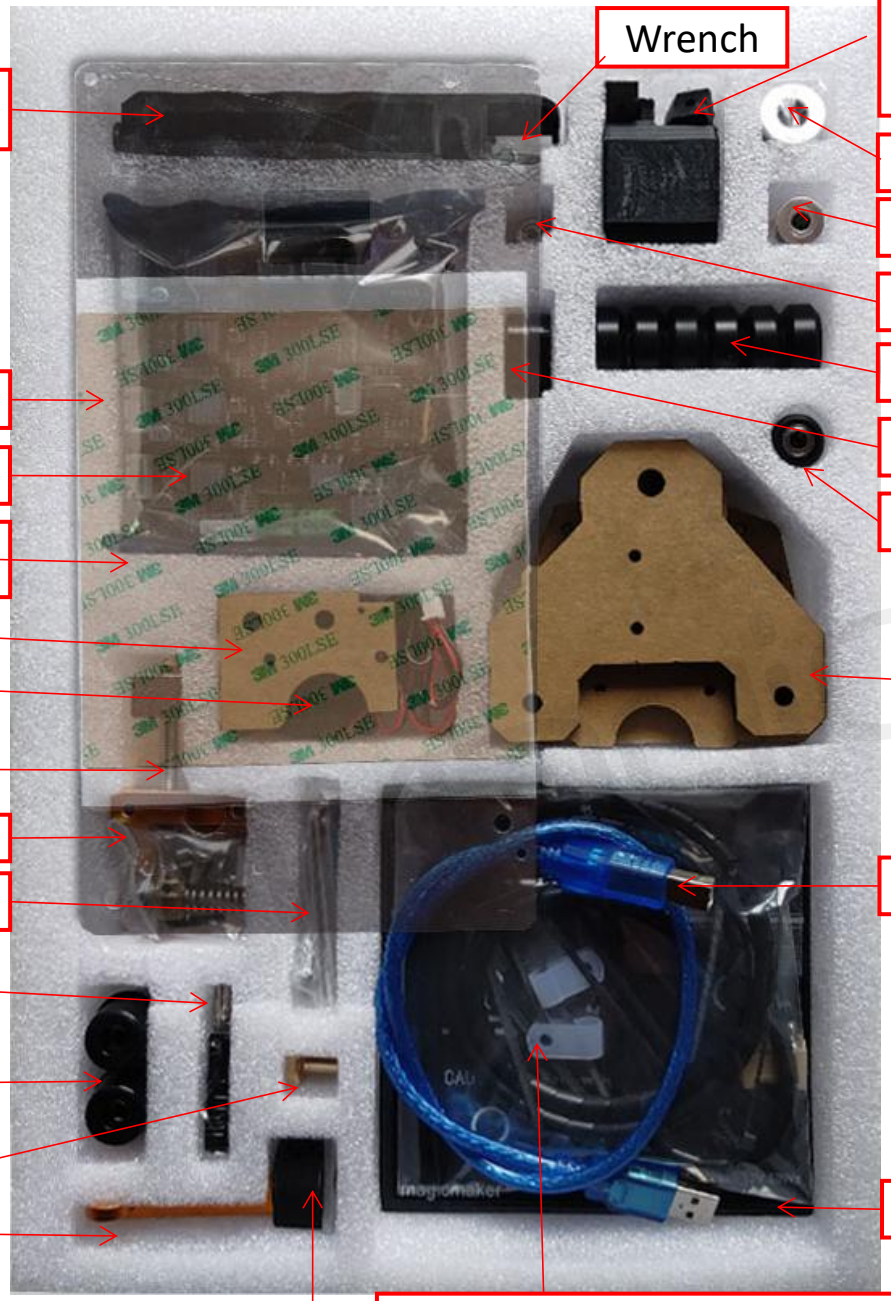
Introduce structure coordinates

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



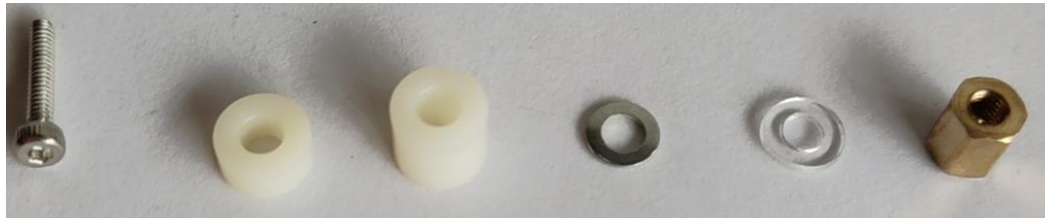
Material shelf
Wrench
Wind passage
Z Limit shelf
Fan rack
coupling
Synchronous wheel
Flange bearing
Large pulley
Guide wheel frame
Small pulley
Structural floor
a main board
High temperature
twin adhesive
Y Motor frame
Fan
Structural plate
Nozzle assembly
Extrusion accessories
inner hexagon spanner
data 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

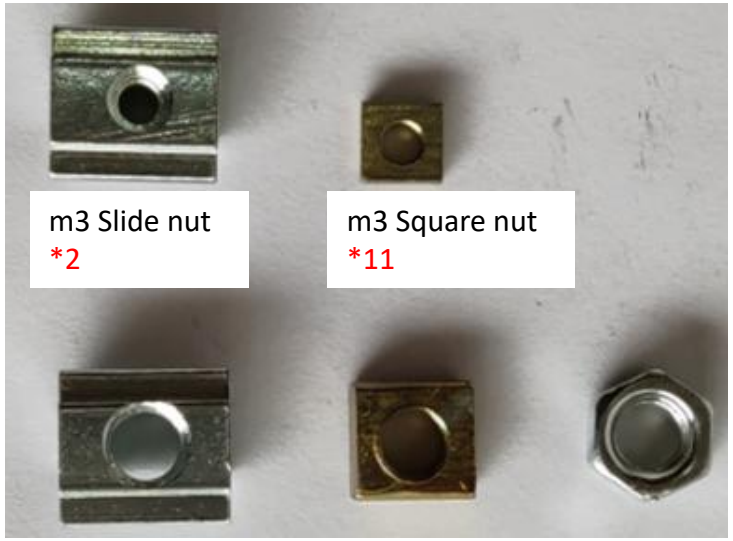
h3 Washer
*4

h6 Washer
*4

M3 shim
*12

M3 soft washer
*2

M3h6
copper pillar
*8



m3 Slide nut
*2

m3 Square nut
*11

M5h6
Isolation column
*9

Adjusting nut
*3

Adjusting spring
*3

Eccentric stud
*4

m5 Slide nut
*3

m5 Square nut
*14

m5 Lock nut
*6

m3*25 Flat head
*3

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

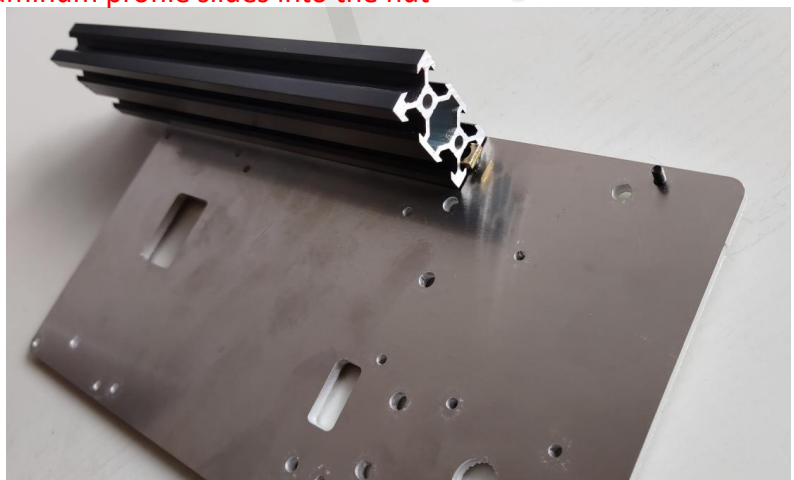
There may be some traces on the back of the aluminum plate, which does not affect the use

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

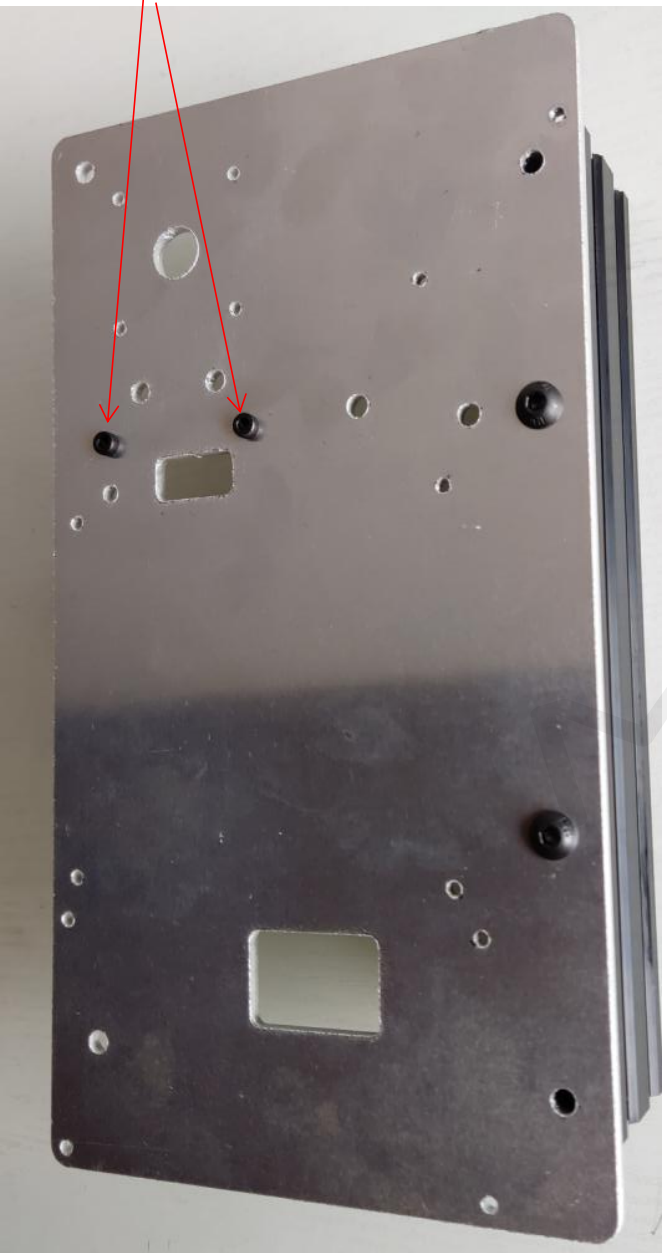
Screw 3 * 10 cup head into the marked position from the bottom

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

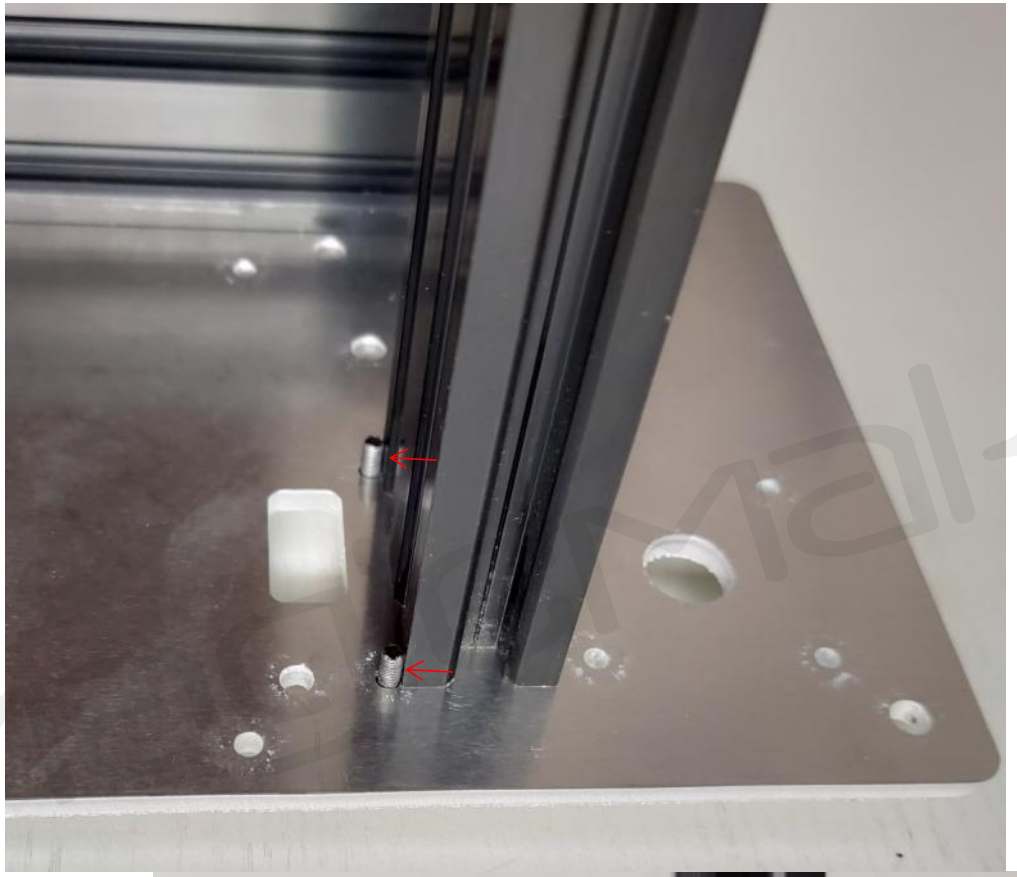
The shortest Aluminum profile slides into the nut

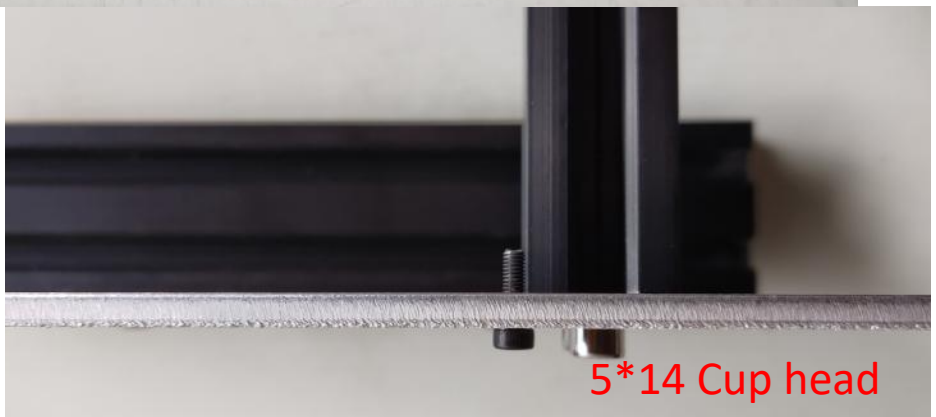


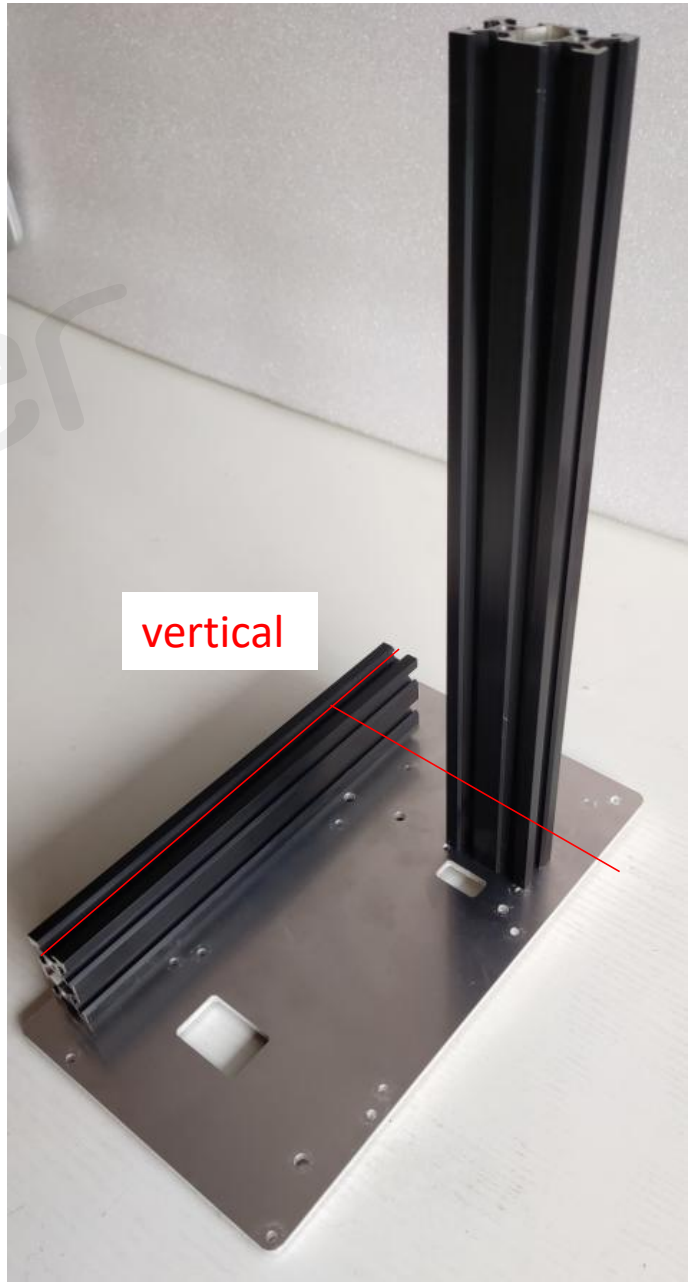
Take out the 3 * 10 cup head on the previous page，
The position in the picture is from screw in 2 3 * 10 Cup heads



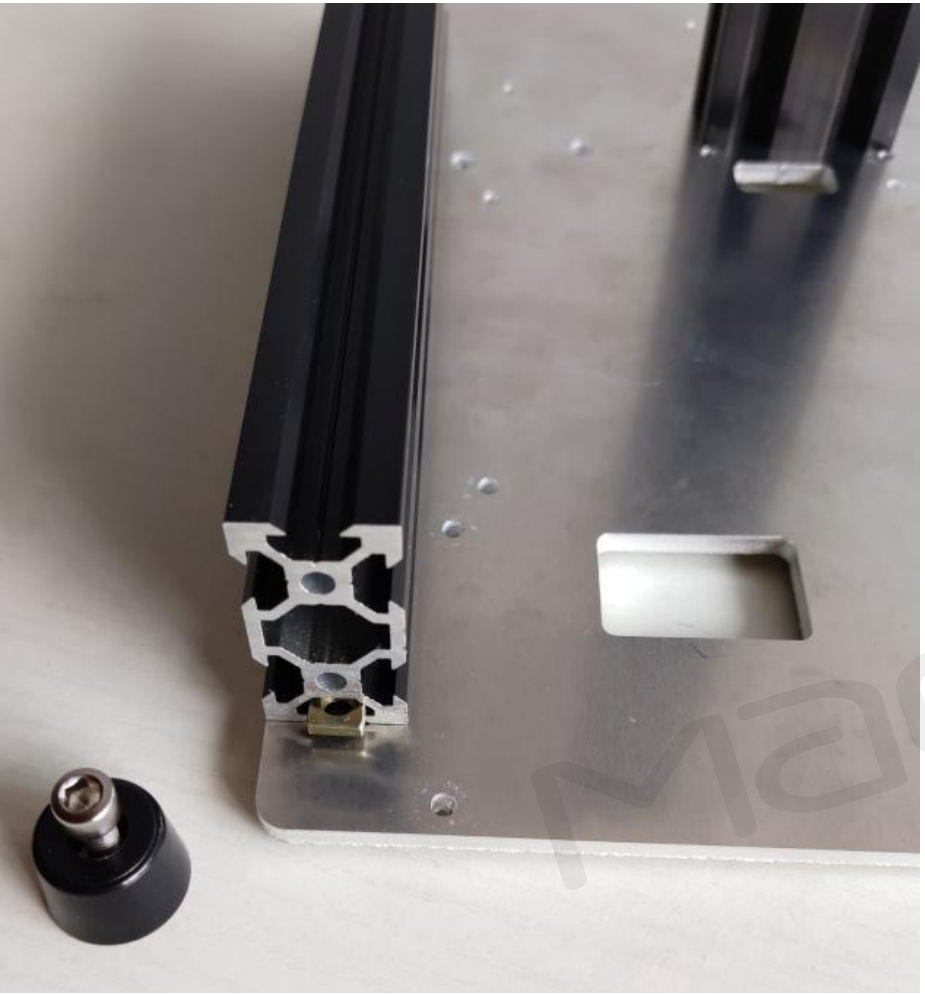
Place the longest profile, screw 5 * 14 cup head into the back of the bottom plate to fix, and the back edge against the M3 screw previously screwed in,Then tighten the 5 * 14 cup head on the back







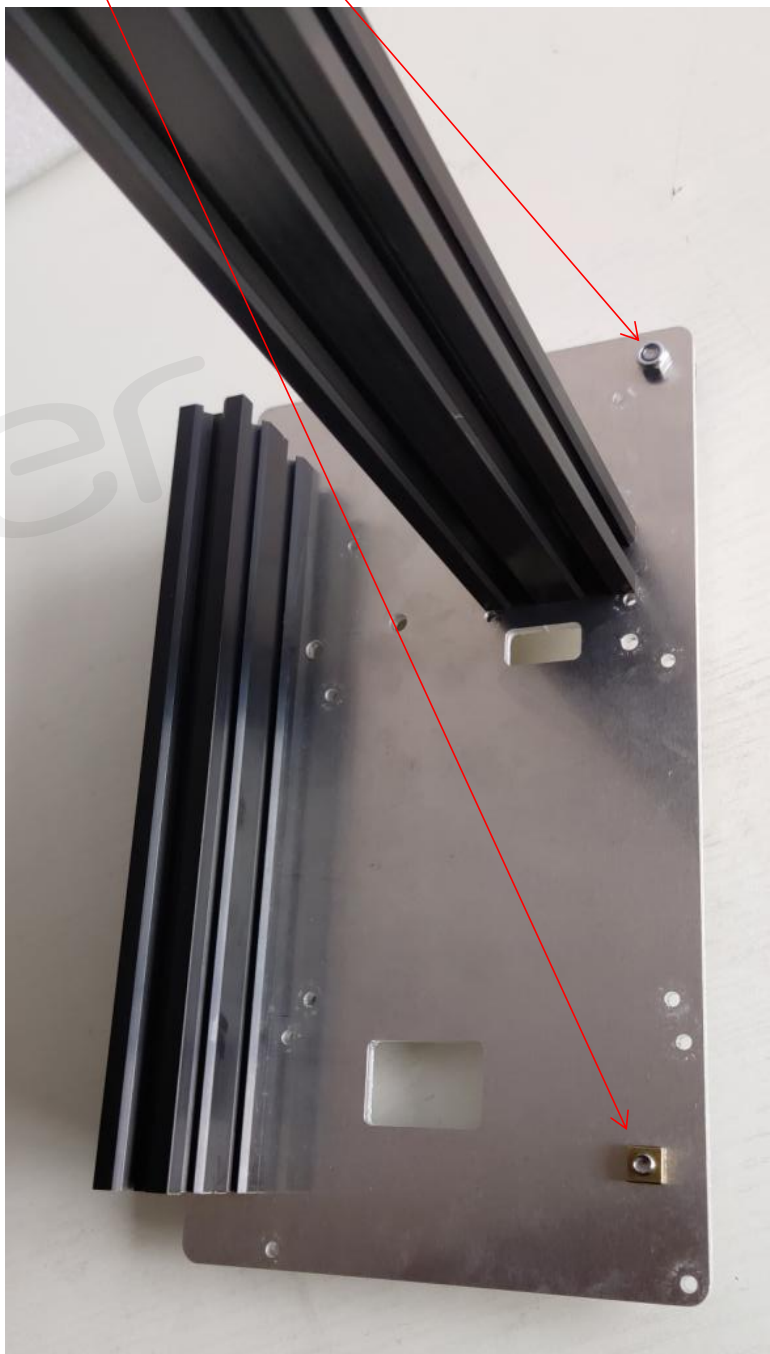
foot mat



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

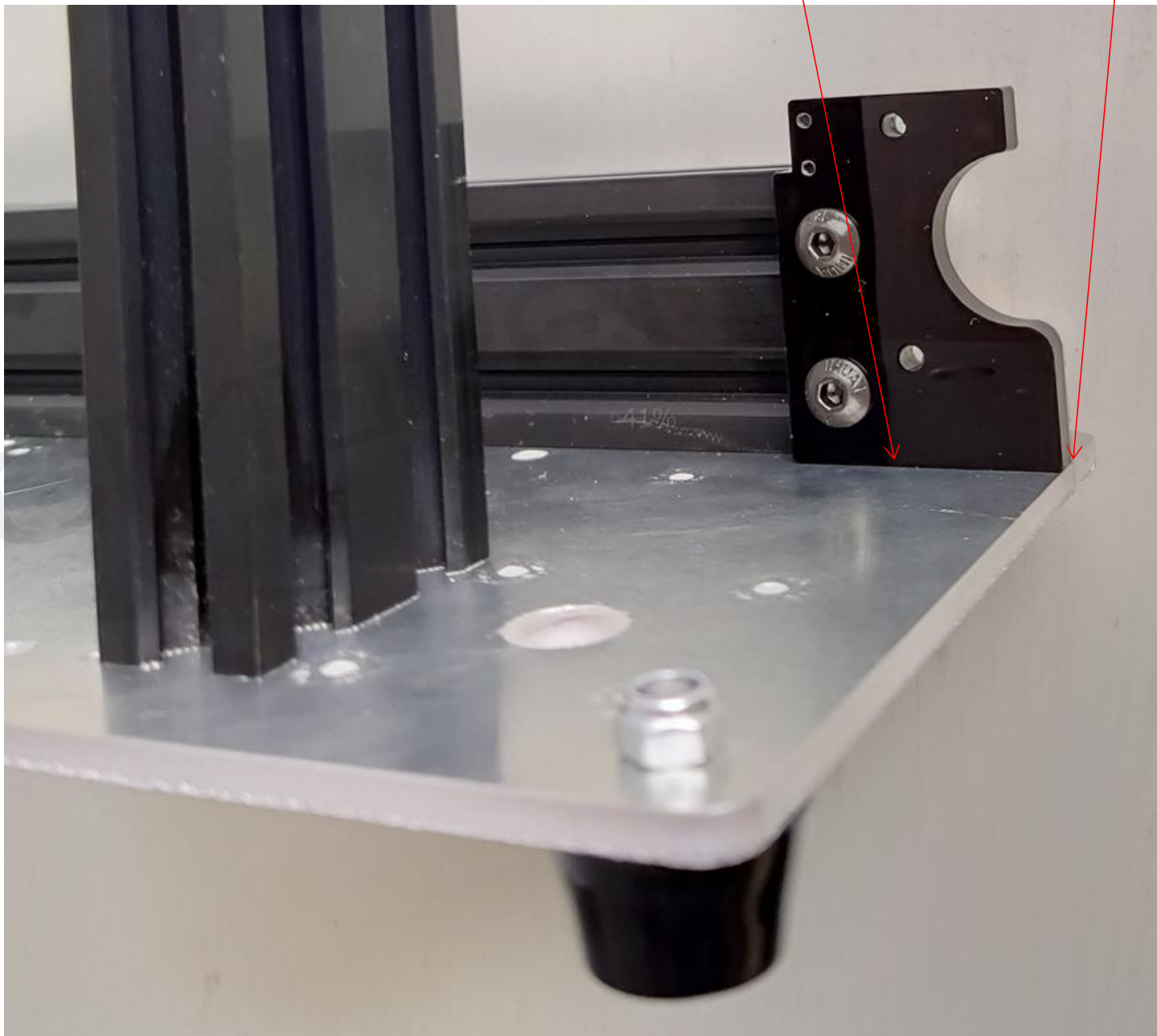


Y motor frame

Insert 2 M5 square nuts into the rear of aluminum profile

5 * 10 round head fixed

Bottom tight， Edge alignment



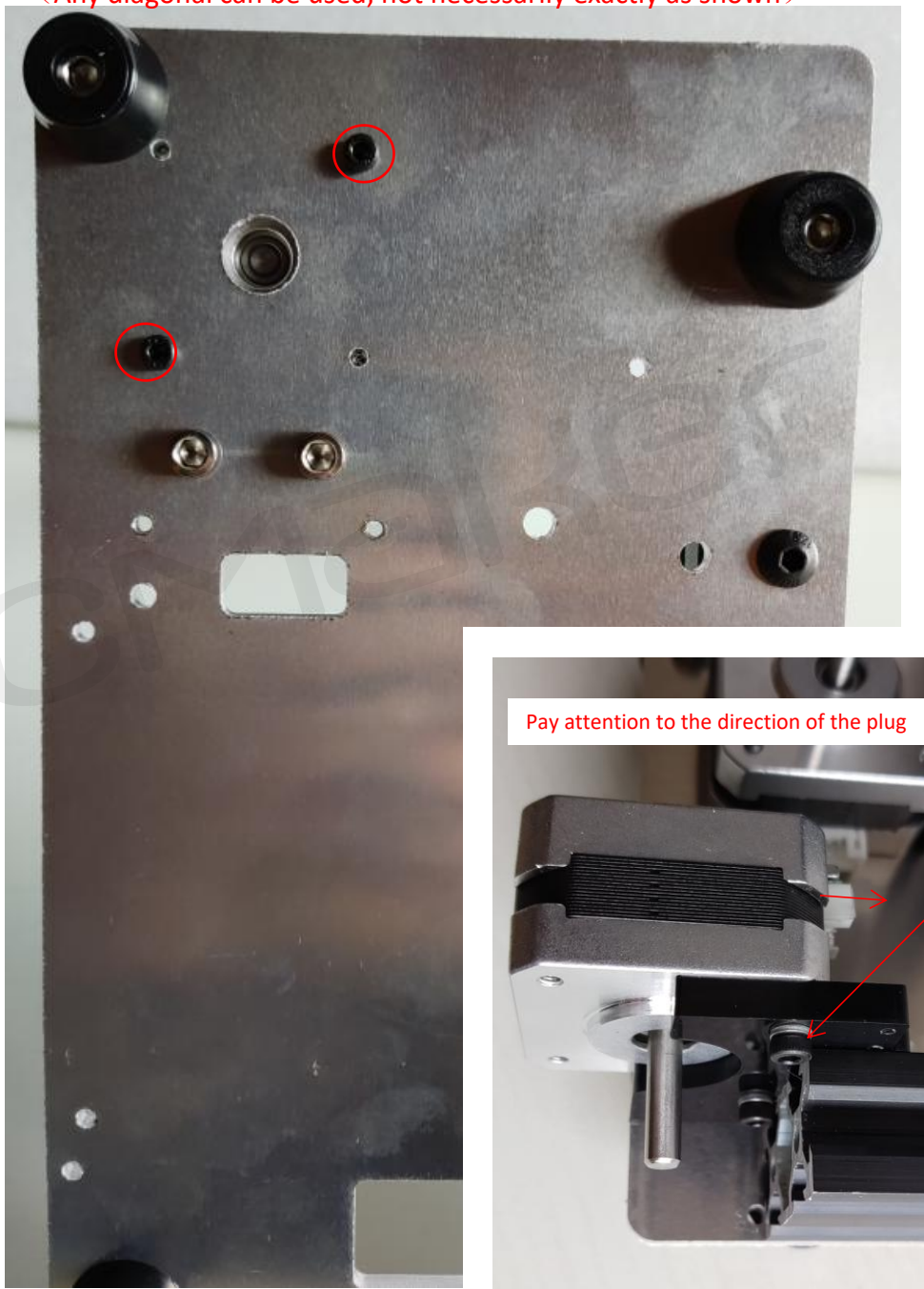
Z motor

Screw out two diagonal screws on one motor

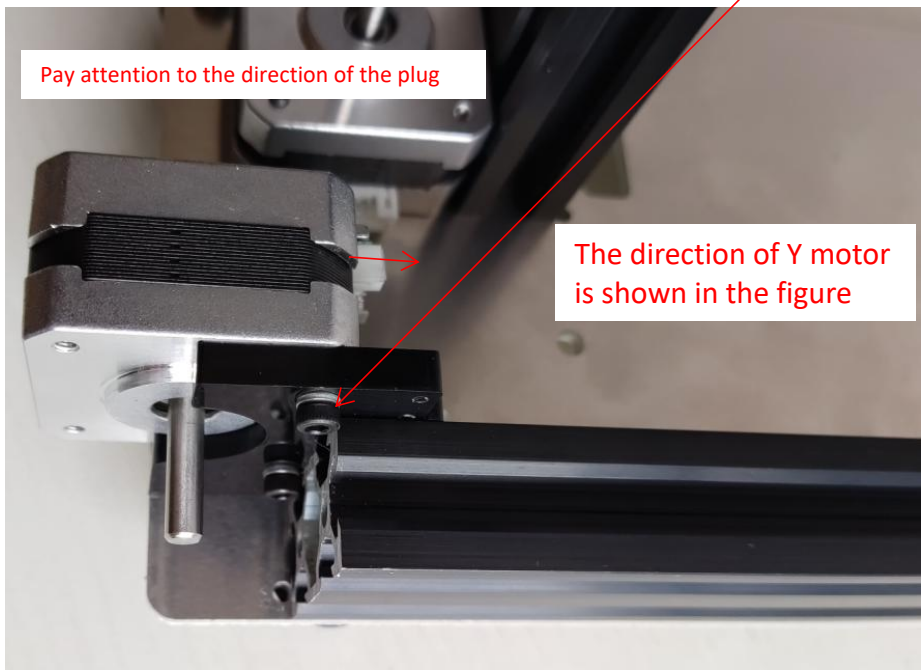
The motor direction is shown in the figure

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

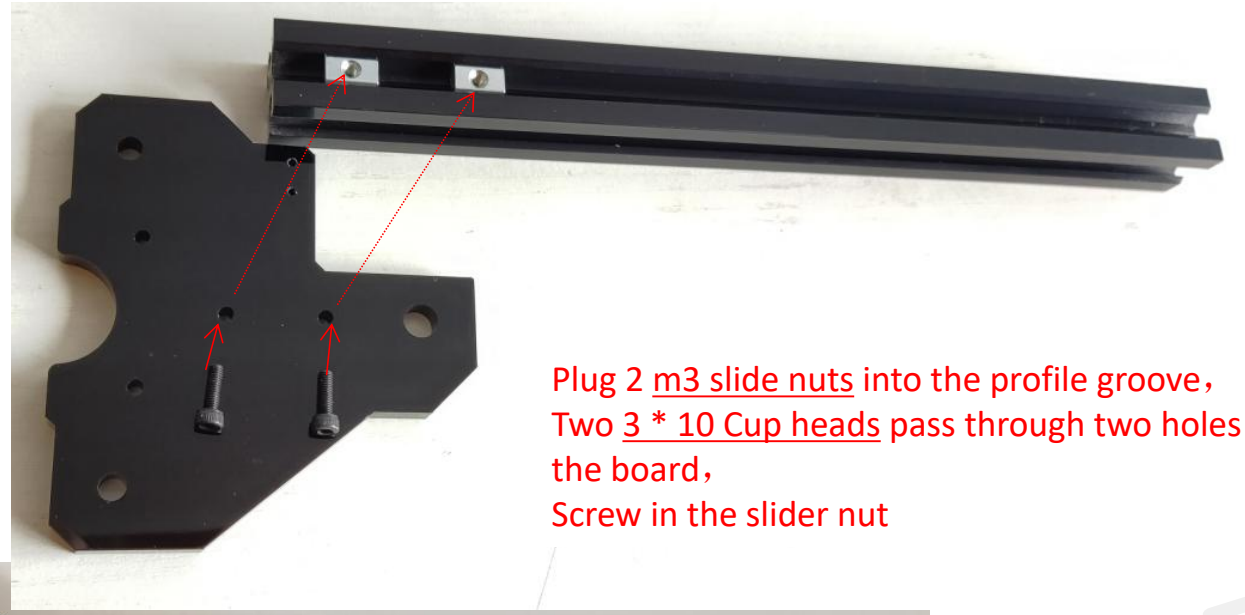
（Any diagonal can be used, not necessarily exactly as shown）



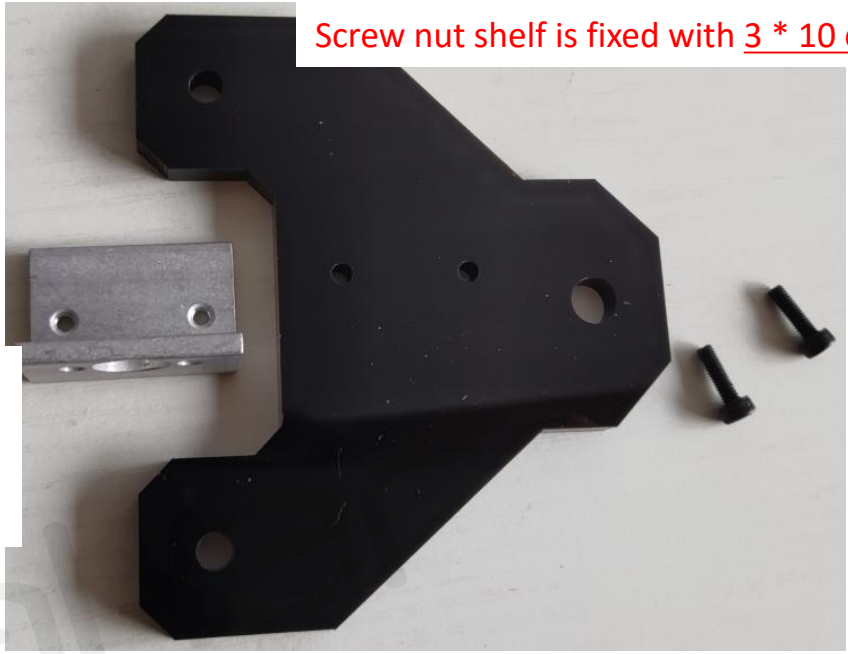
3*10 Cup head,
Wear 2 gaskets



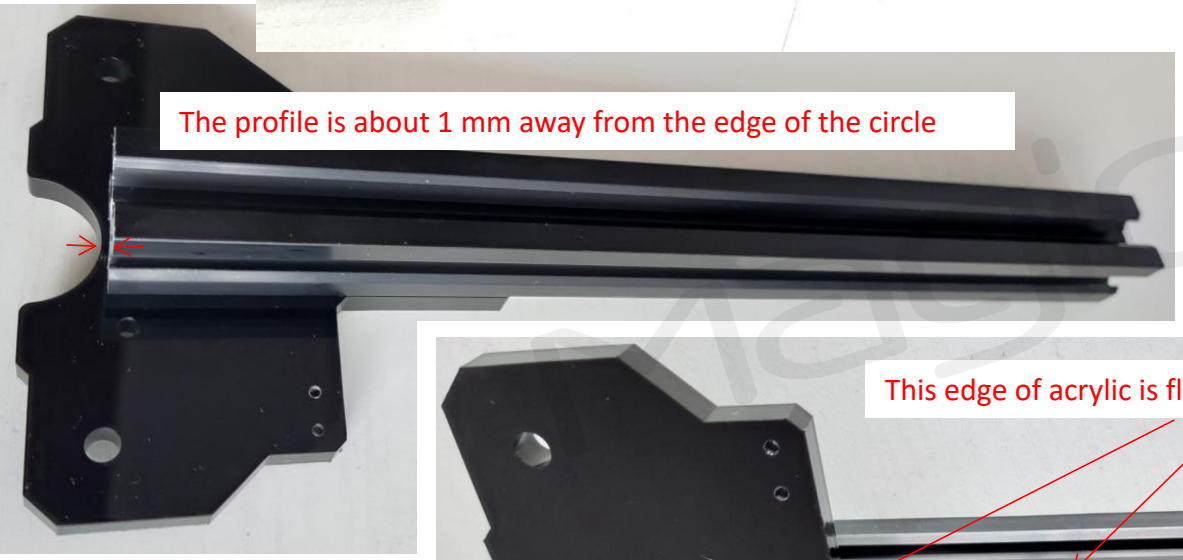
X axis



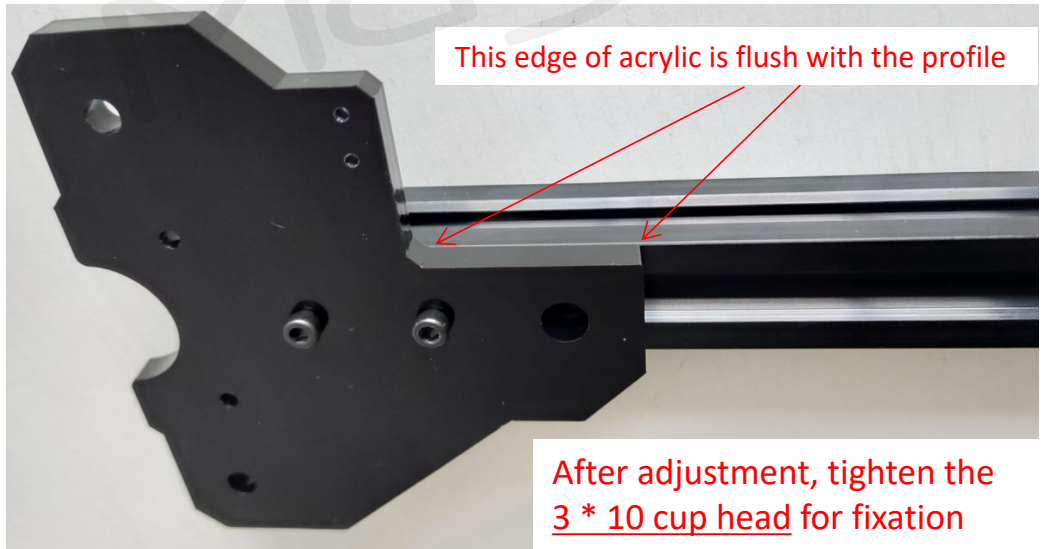
Plug 2 m3 slide nuts into the profile groove，
Two 3 * 10 Cup heads pass through two holes in the board，
Screw in the slider nut



Screw nut shelf is fixed with 3 * 10 cup head

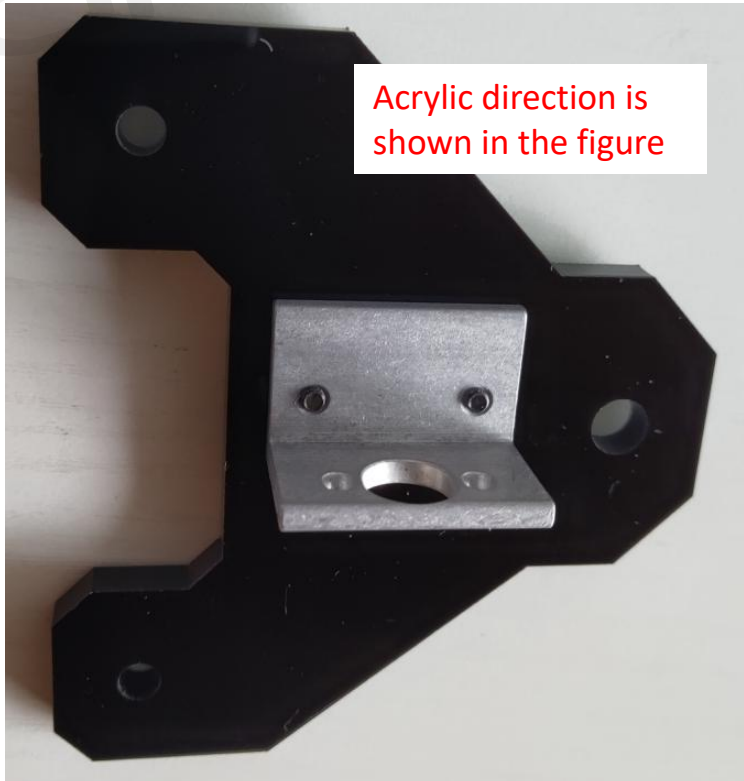


The profile is about 1 mm away from the edge of the circle



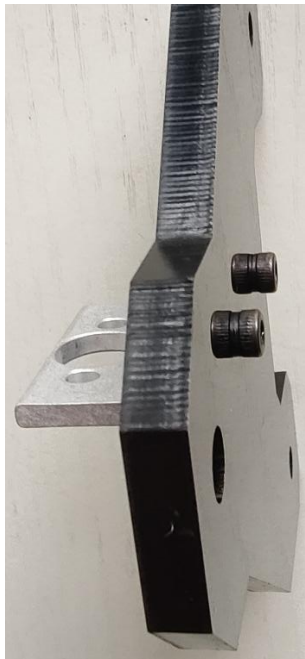
This edge of acrylic is flush with the profile

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



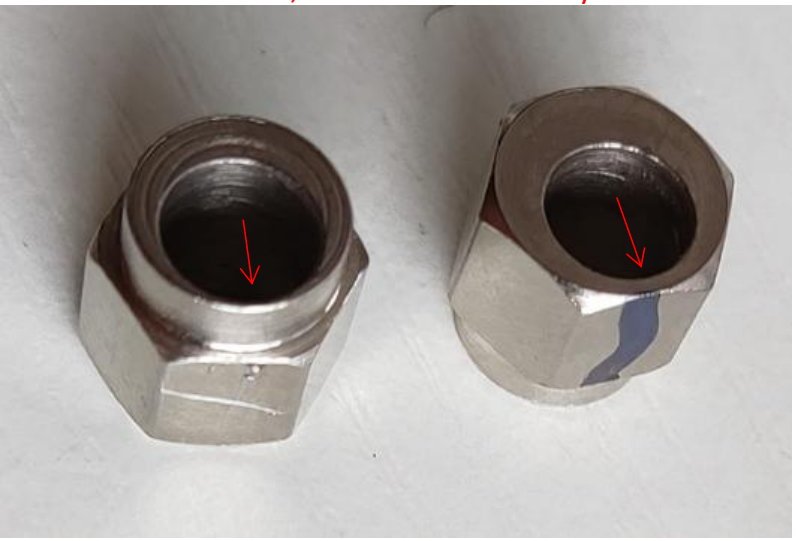
Acrylic direction is shown in the figure

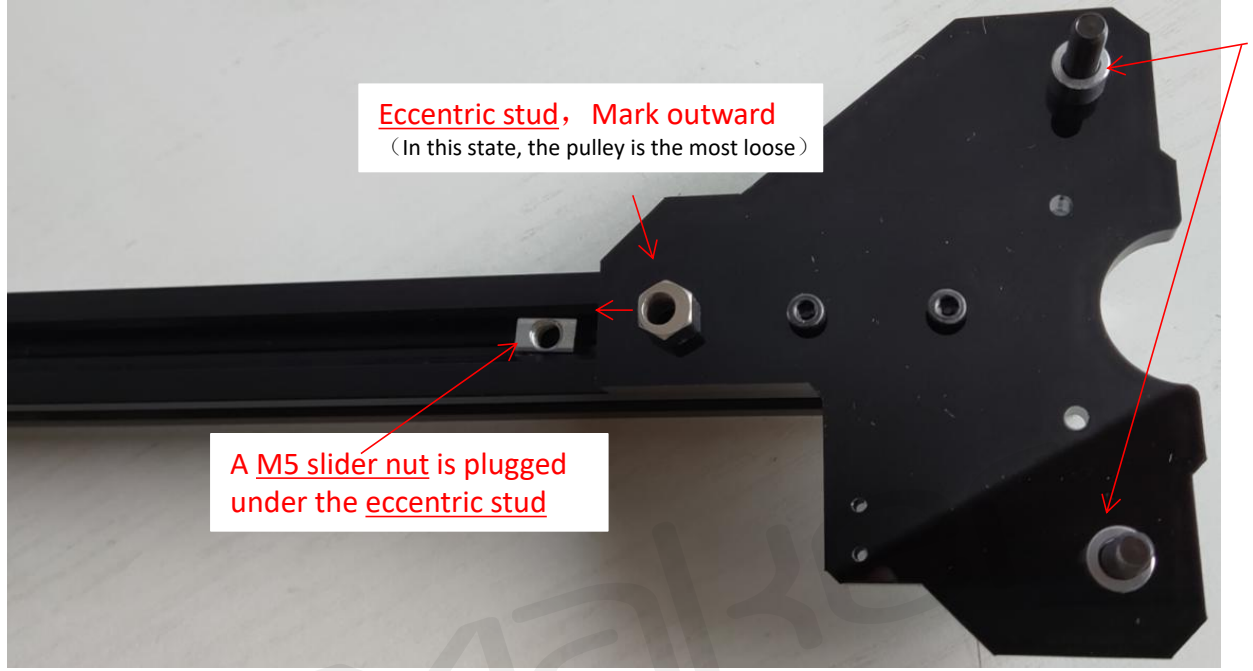
Screw in the screws from the back

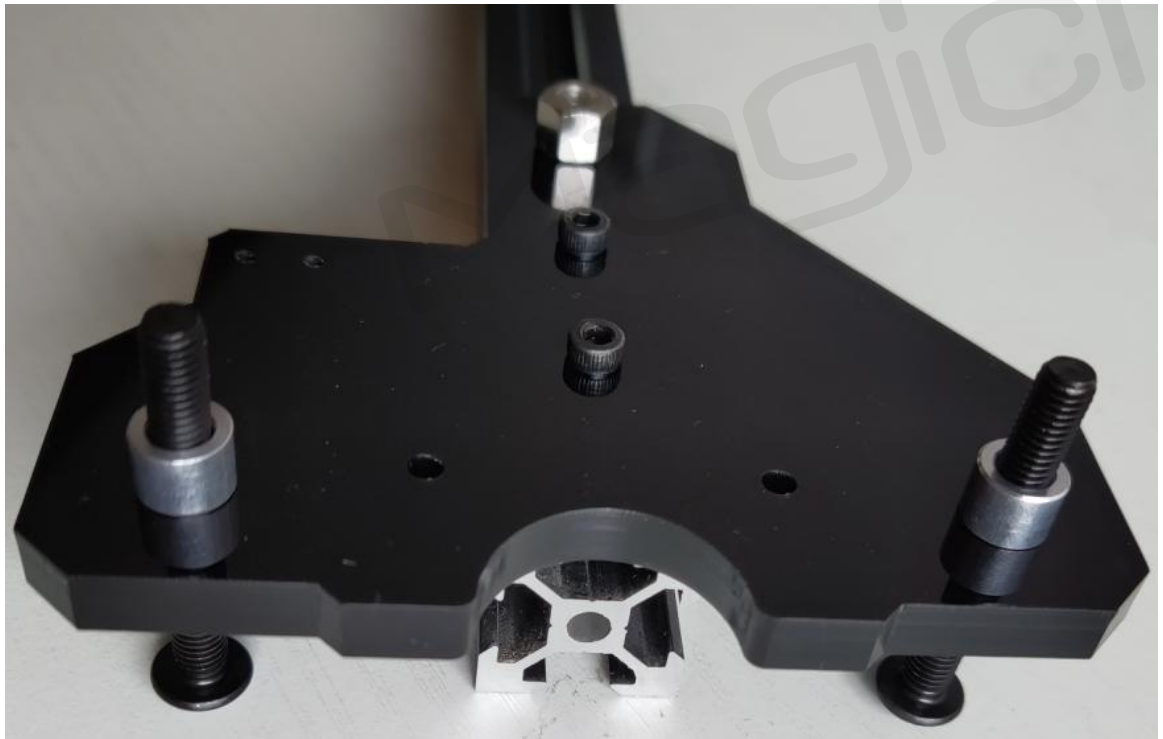


Prepare 2 Eccentric stud first，
Make a mark on the nearest side of the circle

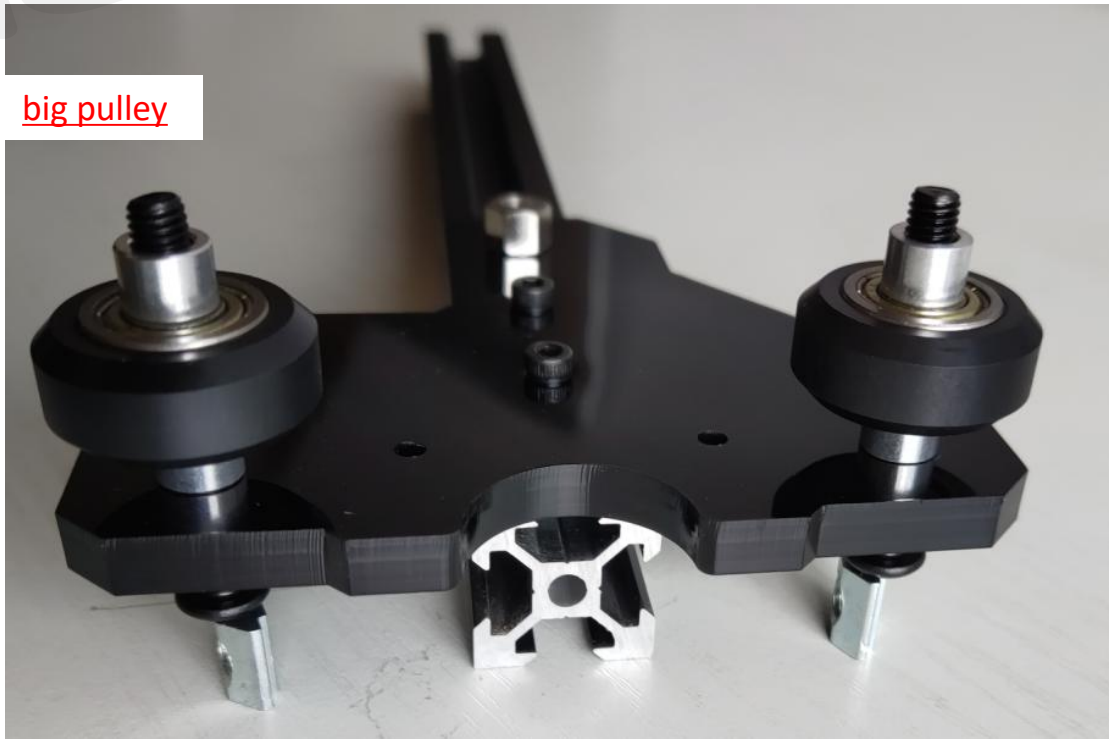
You can use a marker,， Or with a knife， If you can see it clearly



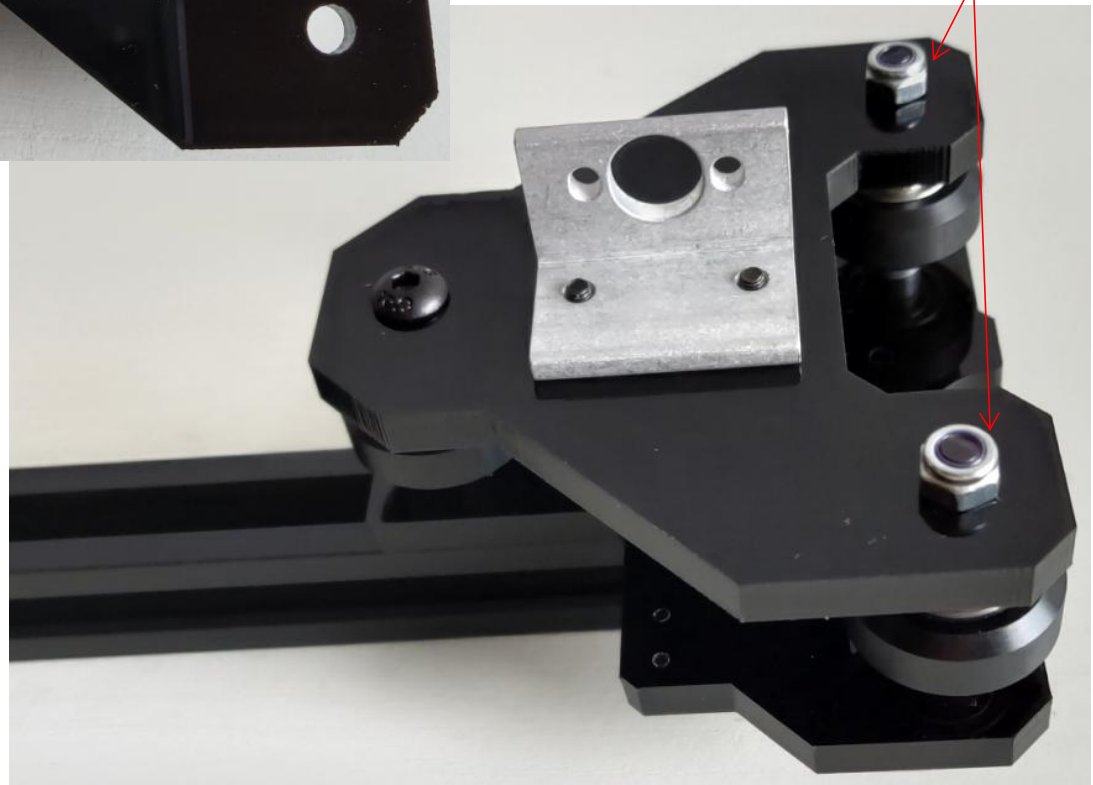




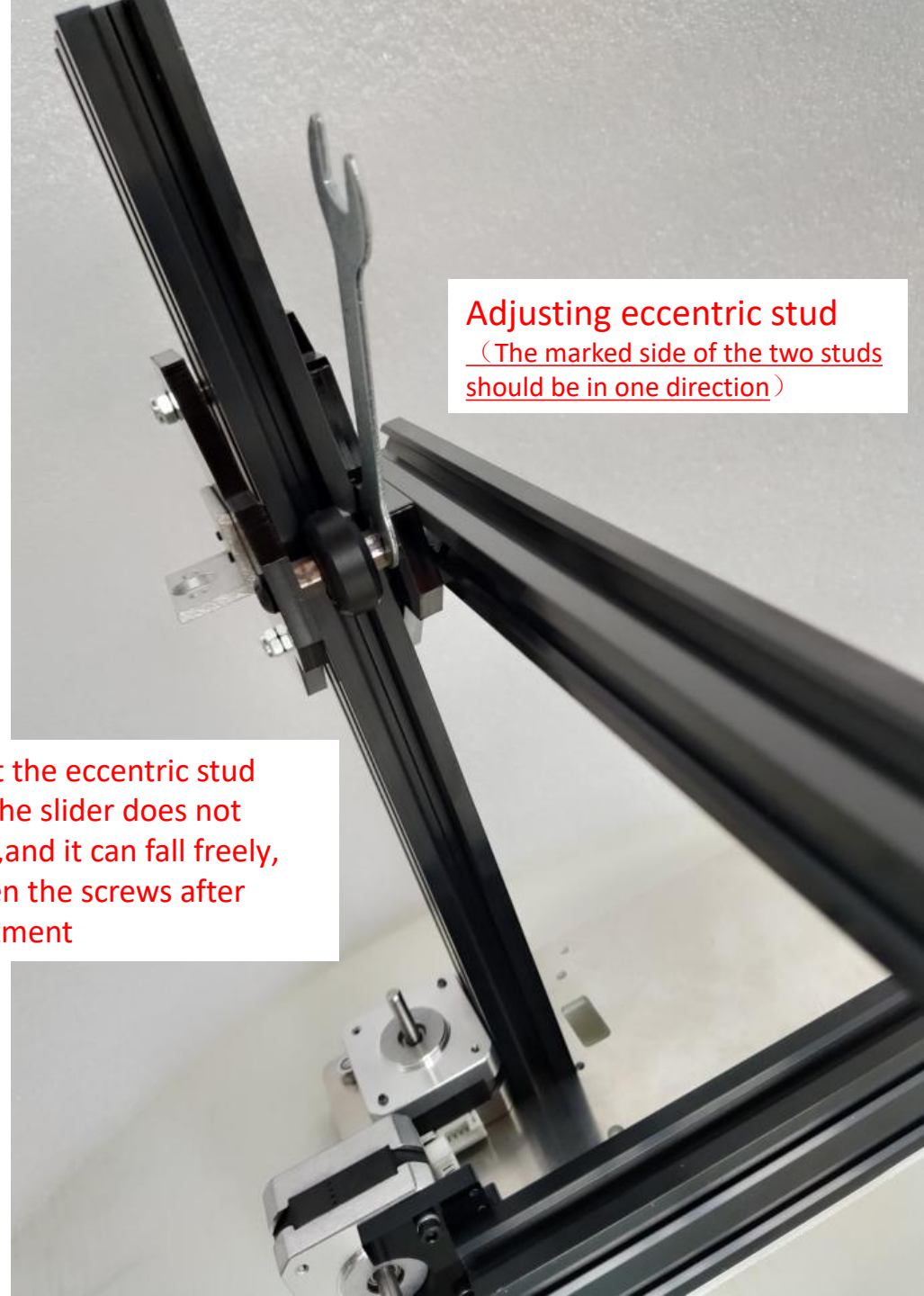
big pulley



Don't tighten the nuts yet



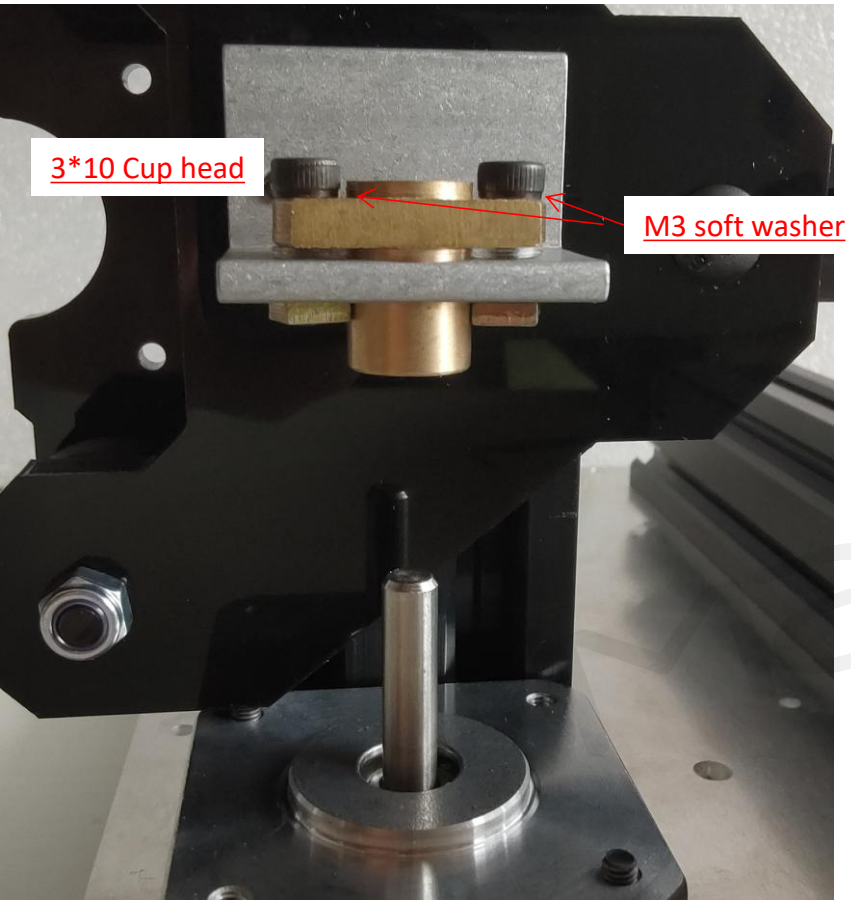

Install X-axis on z-axis
Tighten the nut


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.）

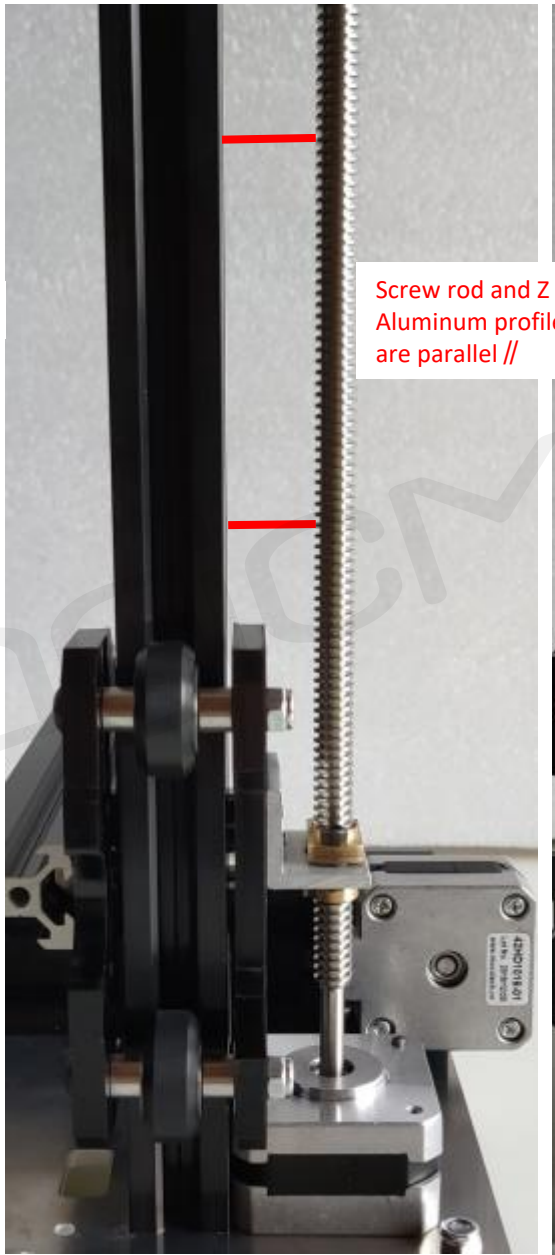
A M3 soft washer is placed between the screw rod nut and the shelf， Install m3 nut below, do not tighten it first



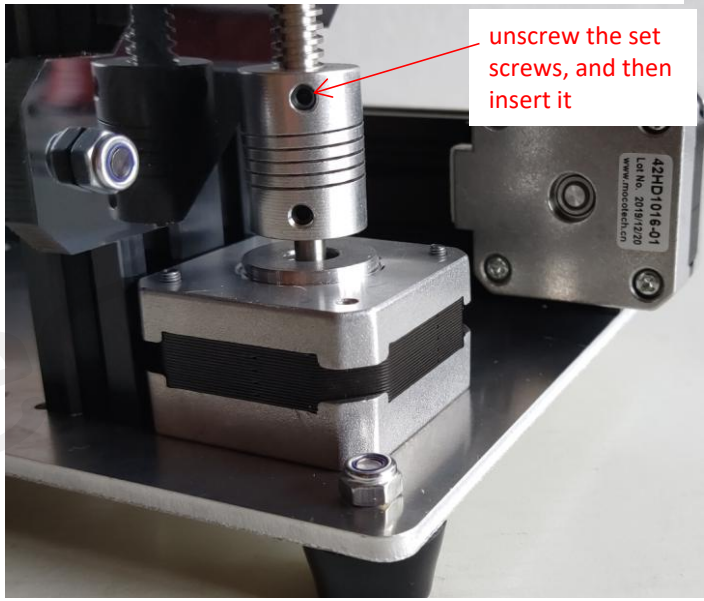
（The soft washers be stacked together, pull open）

If u have lube，
can lubricating the screw rod

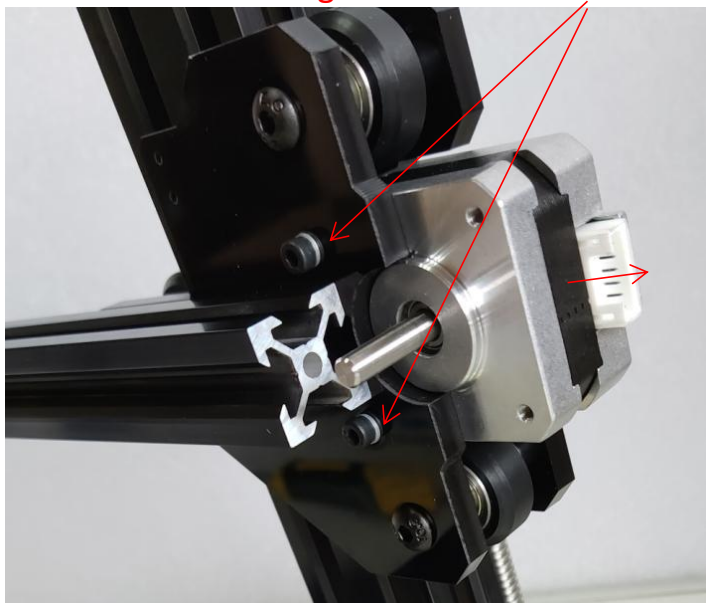
Adjust the screw rod until it is vertical to align the motor shaft below, and then tighten the screw to fix the screw rod nut.， （**in order not to affect the function of the soft washer, do not tighten it hard, only need the nut will not be loose**）



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.



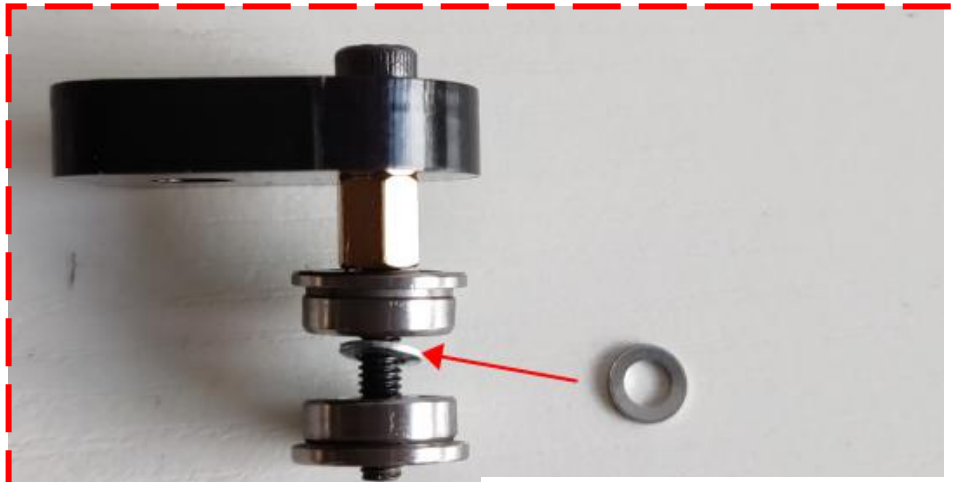
Guide wheel seat

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

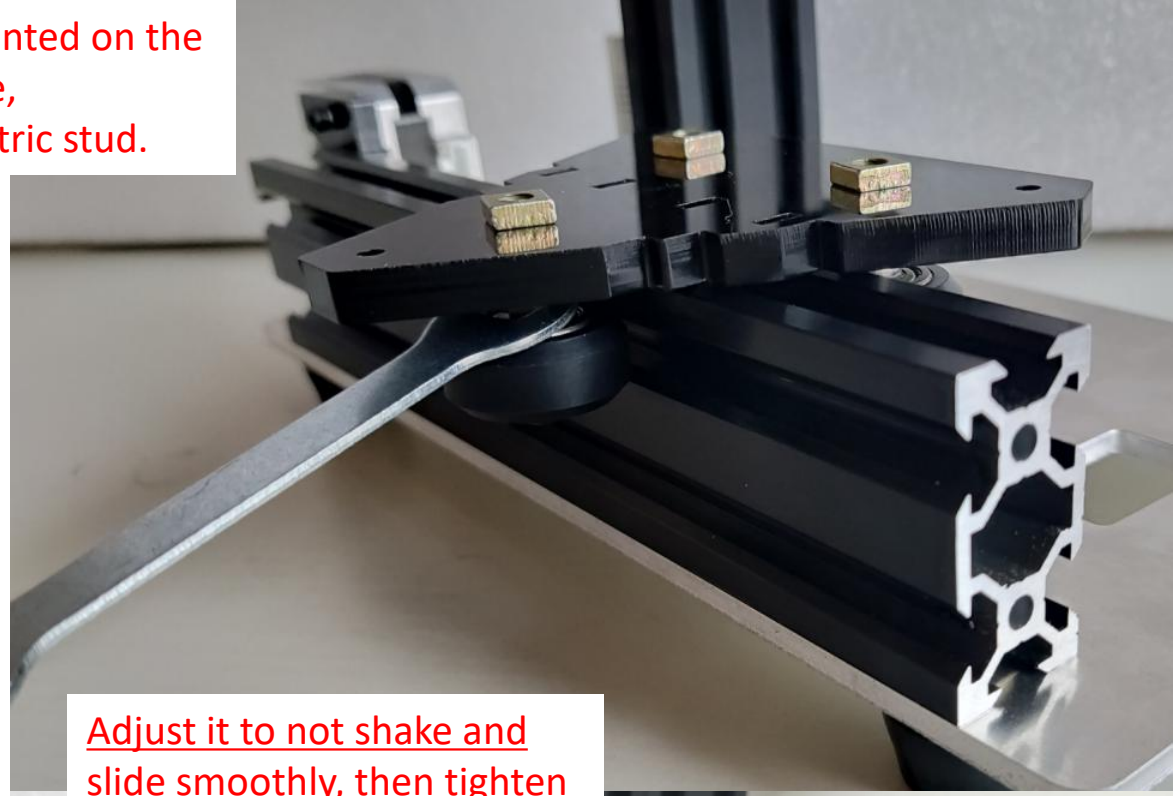


If there is a ticking sound when printing, you can put a thin gasket here,or you can also put it on first

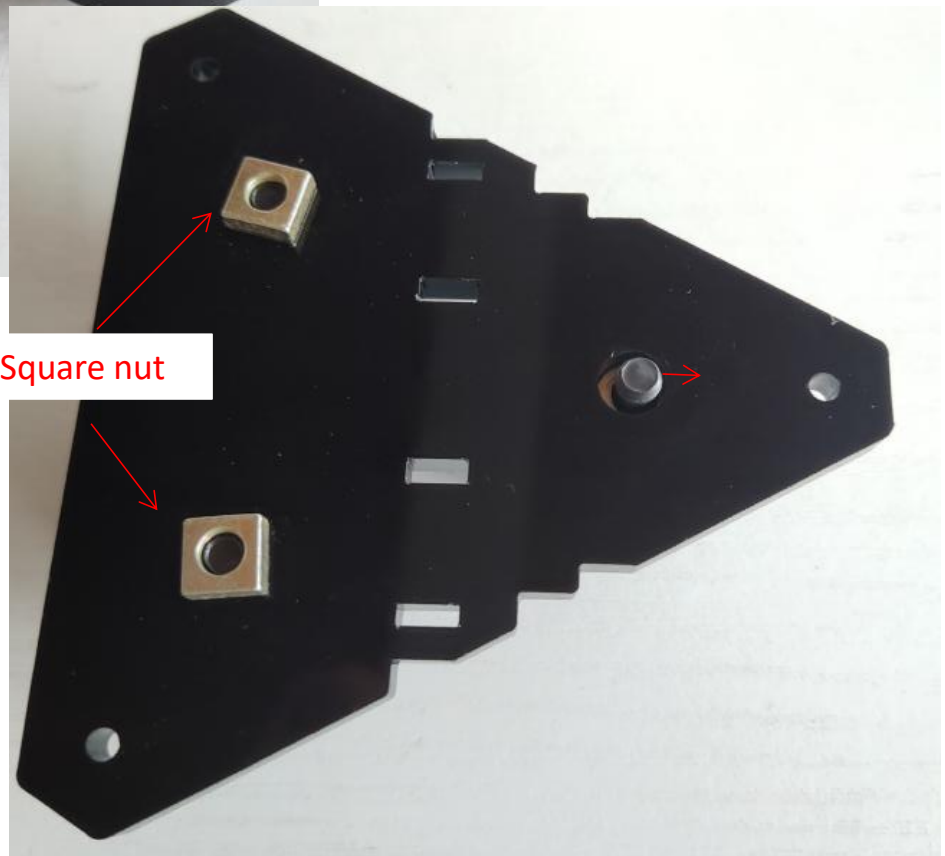
Y slider

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

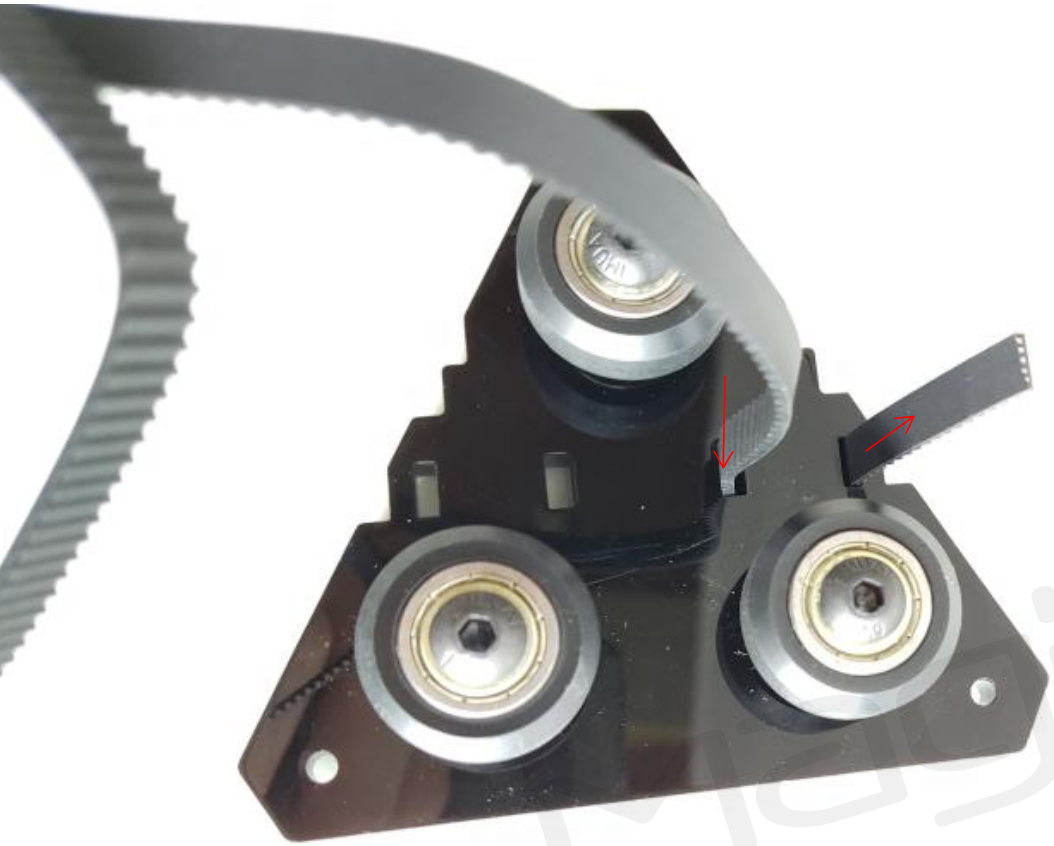
The slider is mounted on the aluminum profile,
Adjust the eccentric stud.



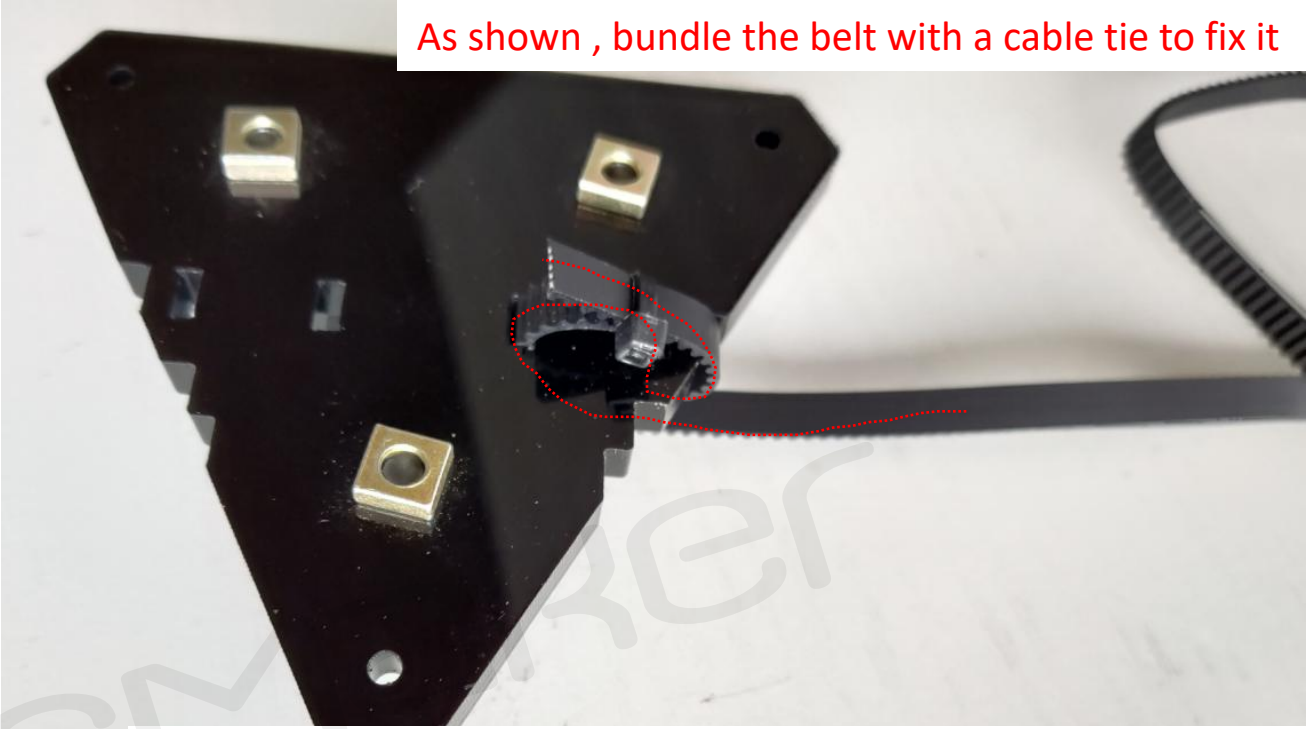
Adjust it to not shake and slide smoothly, then tighten



As shown through, The belt passes through the slider



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

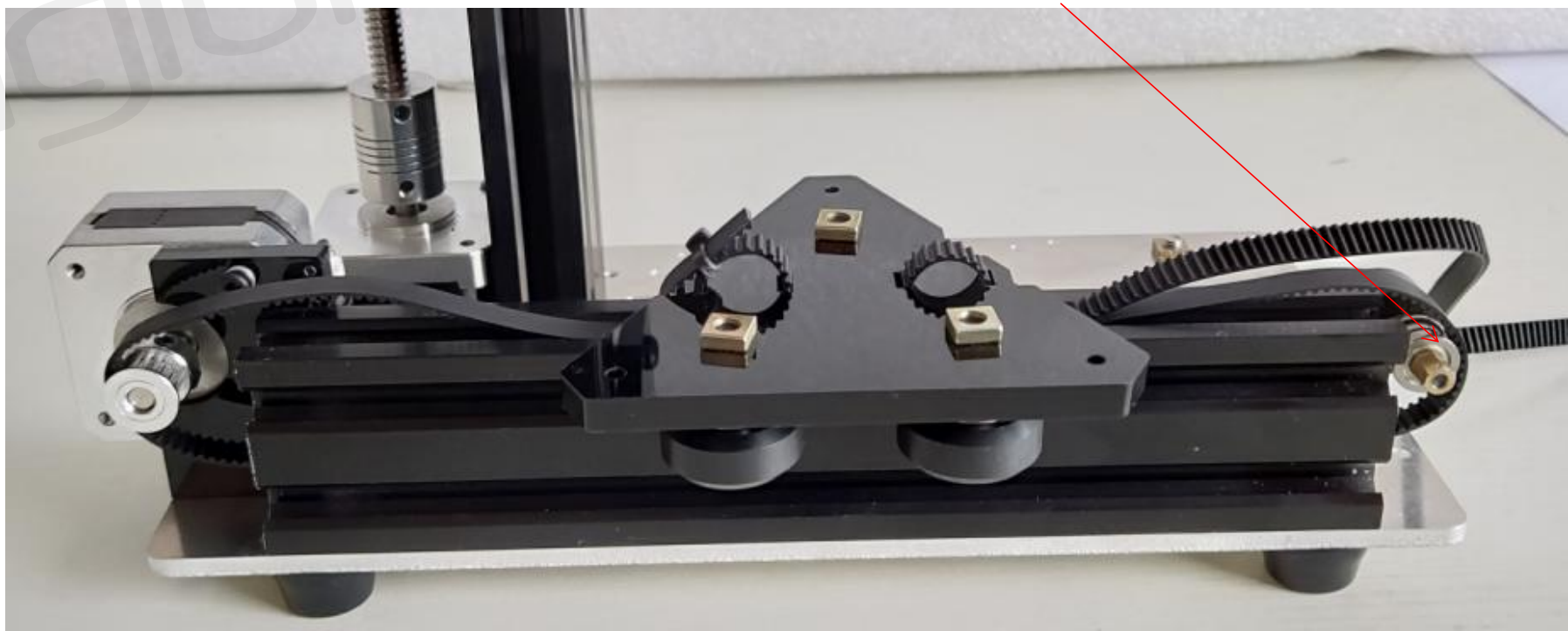


The belt goes through the hole in the Aluminum profile of the profile

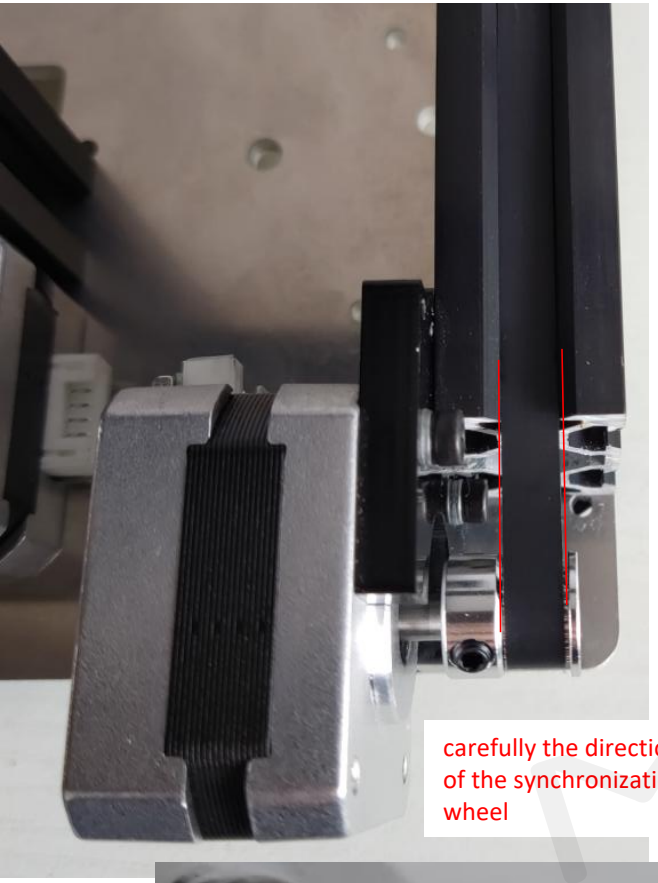
The other side passes through the acrylic plate as before

Slider slides into Aluminum profile

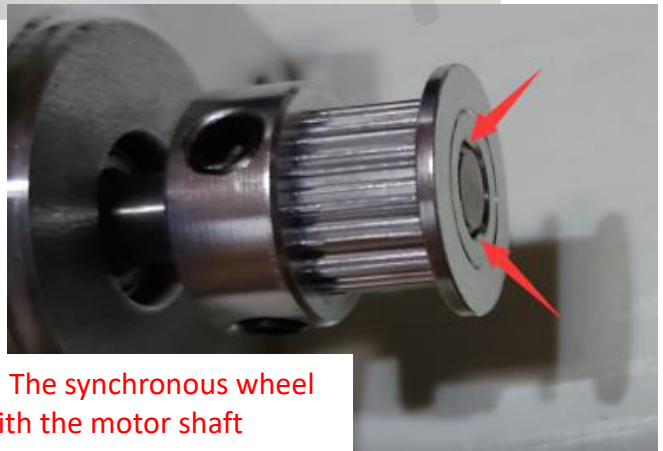
The guide wheel seat is fixed against the profile (no need to tighten it)



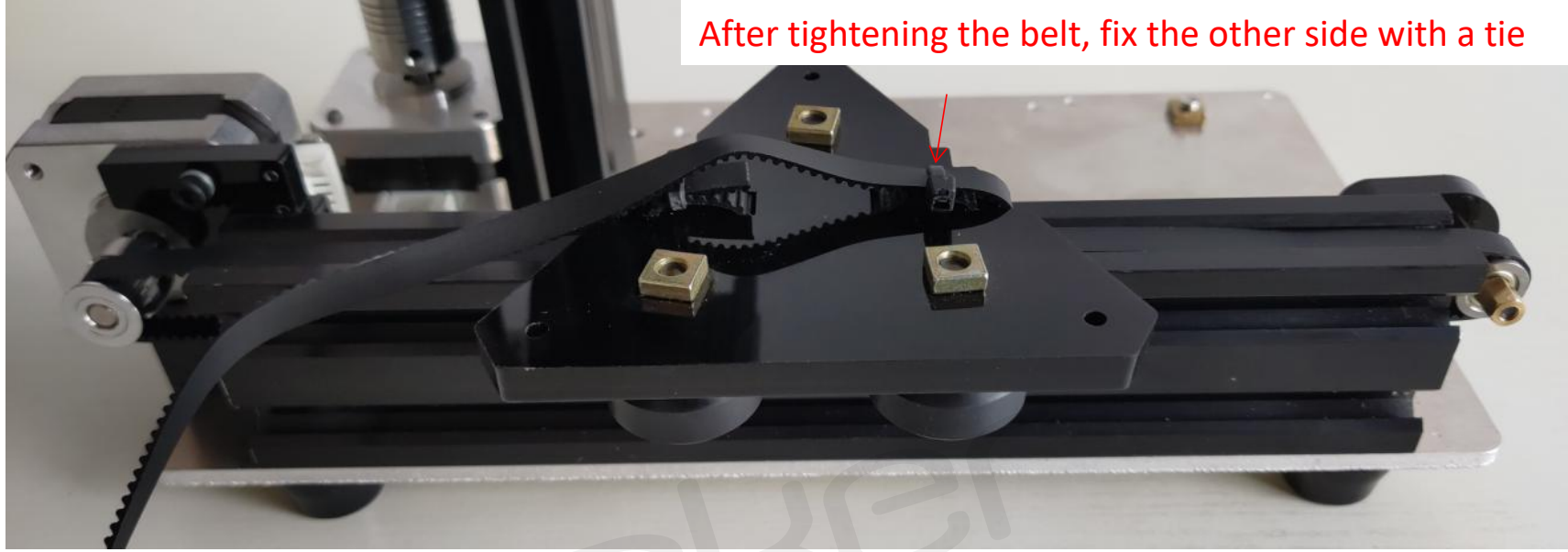
Install the synchronous wheel on the motor,The groove of the synchronous wheel is aligned with the groove of the aluminum profile, then the synchronous wheel is fixed.



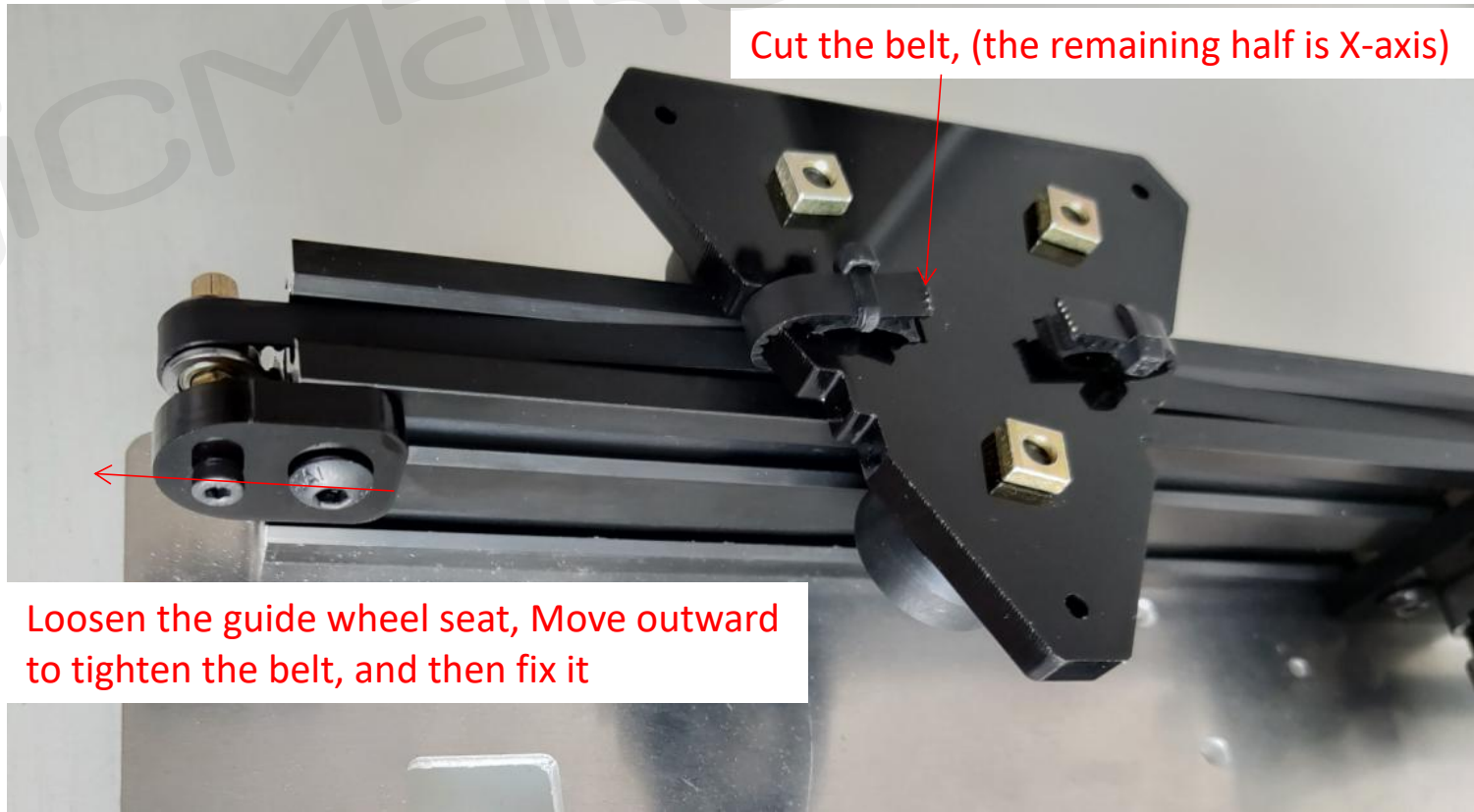
carefully the direction of the synchronization wheel



Normally, The synchronous wheel is flush with the motor shaft



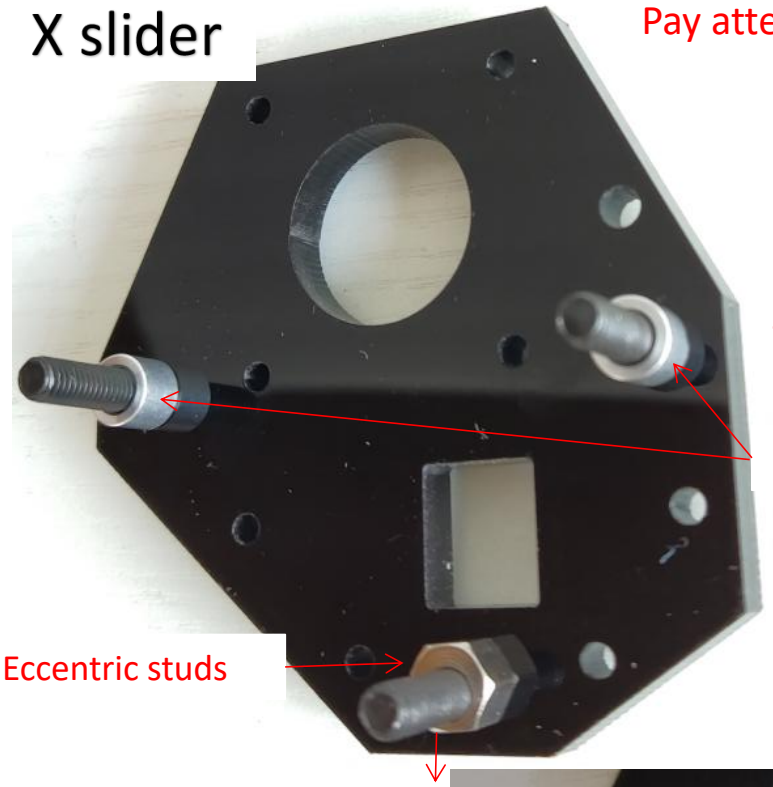
After tightening the belt, fix the other side with a tie



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

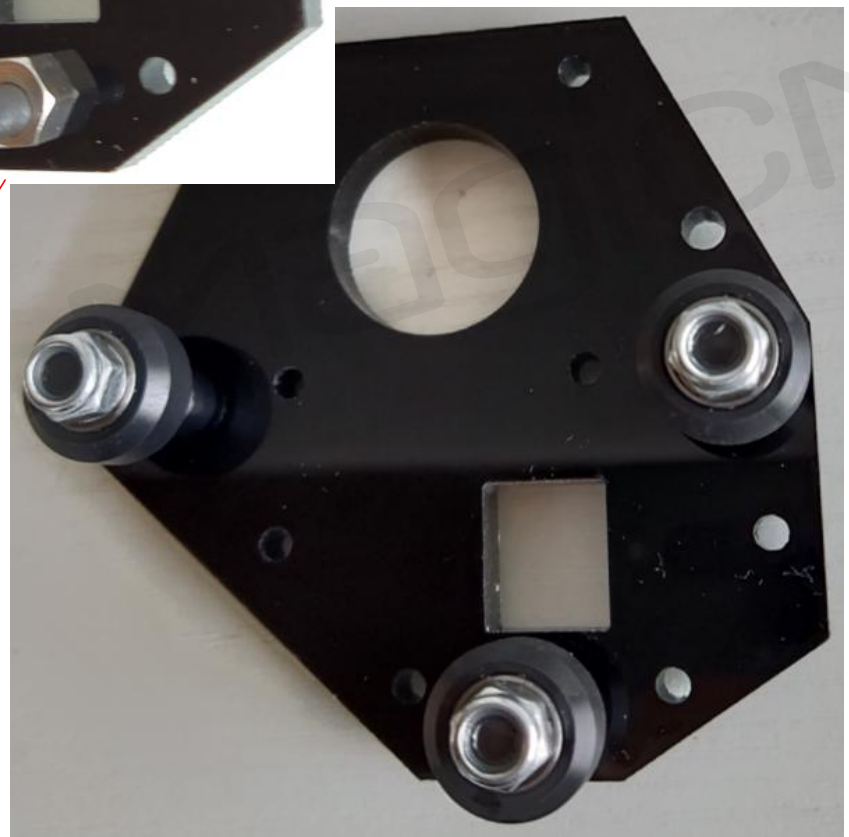


Pay attention to the direction

5*25 Round head

Isolation column

Eccentric studs



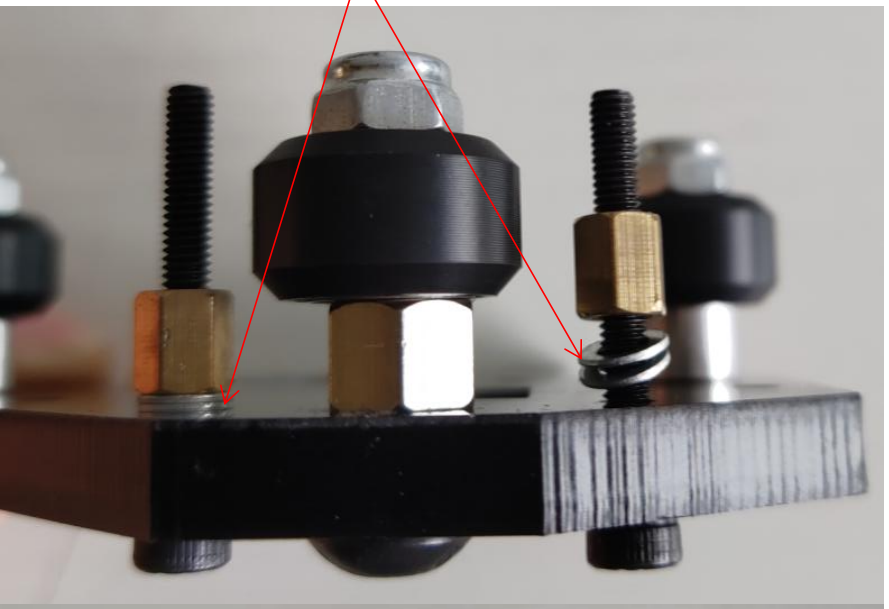
Install the small pulley,
Screw on M5 Lock nut

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

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

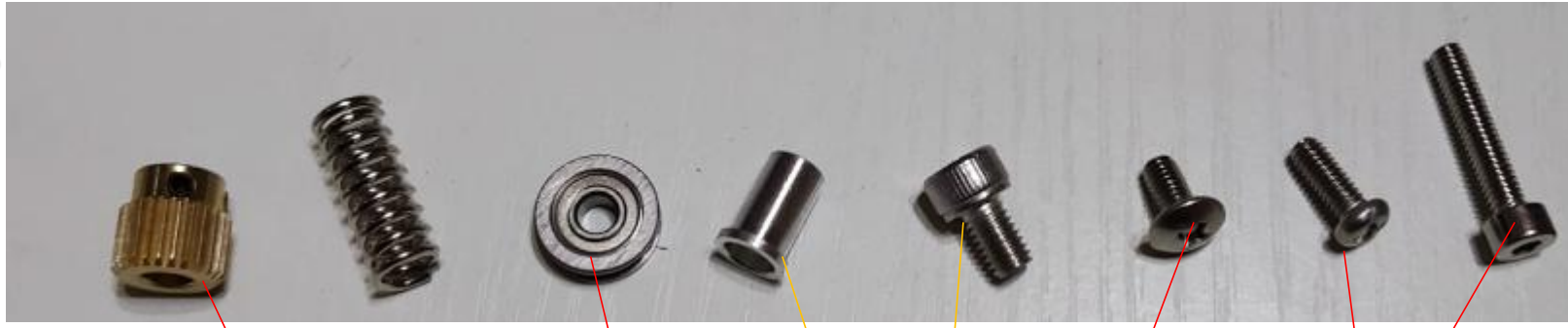


Screw the 3*10 cup head to fix the fan rack

Put in the
M3 square nut

Align the acrylic edge
with the fan rack edge

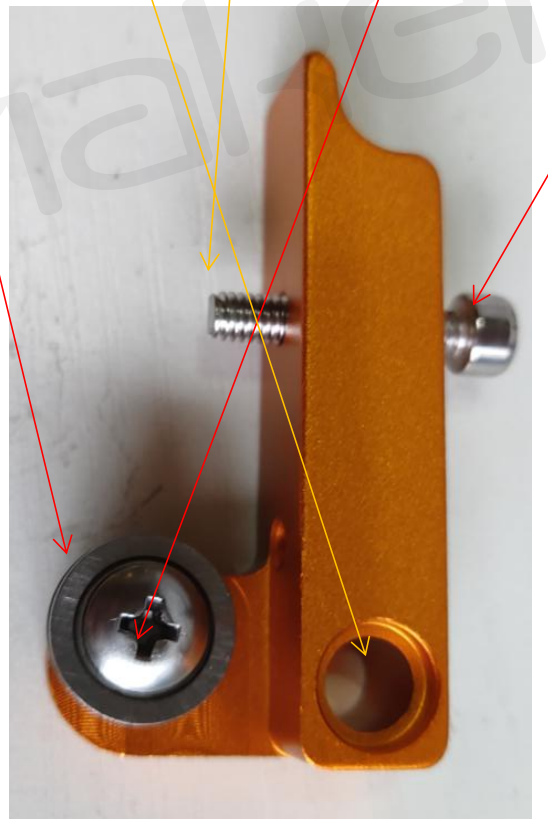
Accessories for extruders

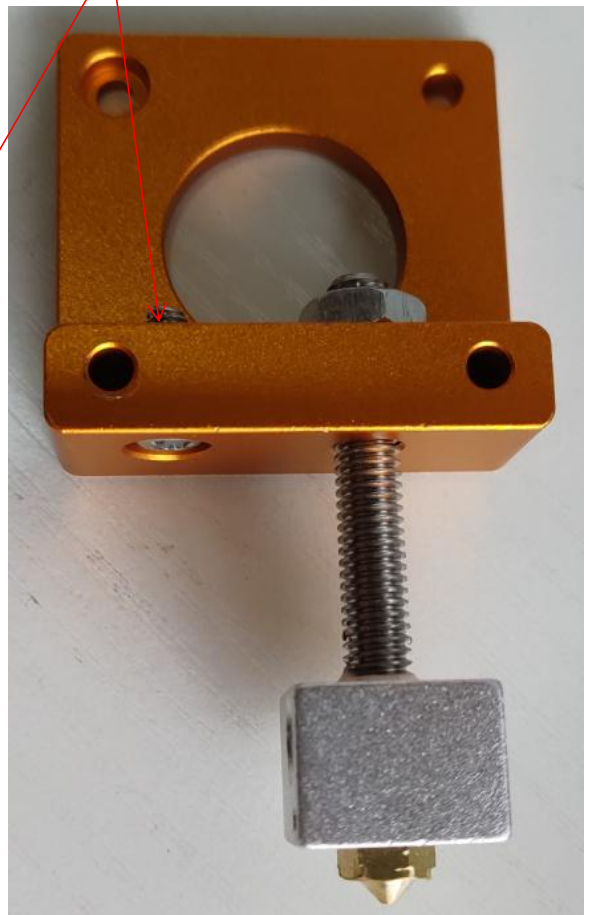


Use a knife to cut off the fan at least 1mm, be sure to cut.

Be careful not to drop the wires

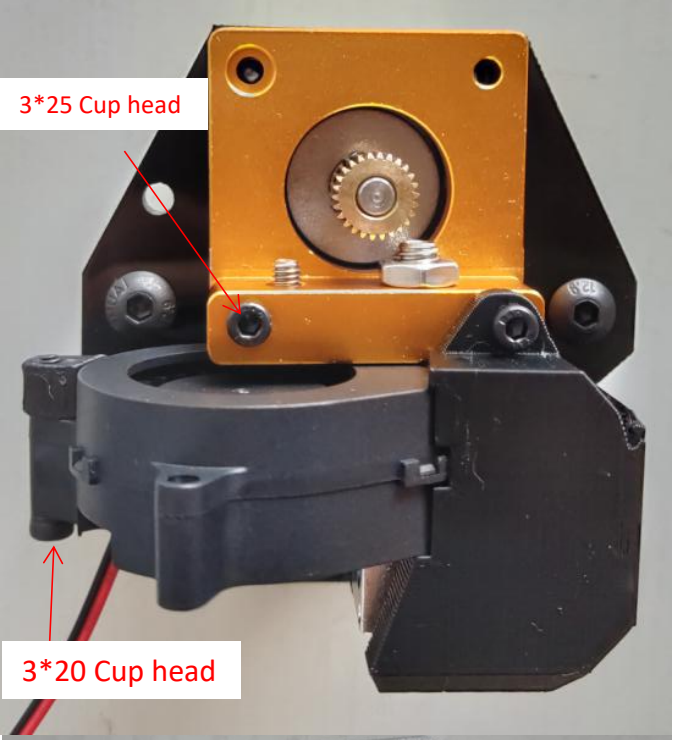
The direction is as shown, flush with the motor shaft





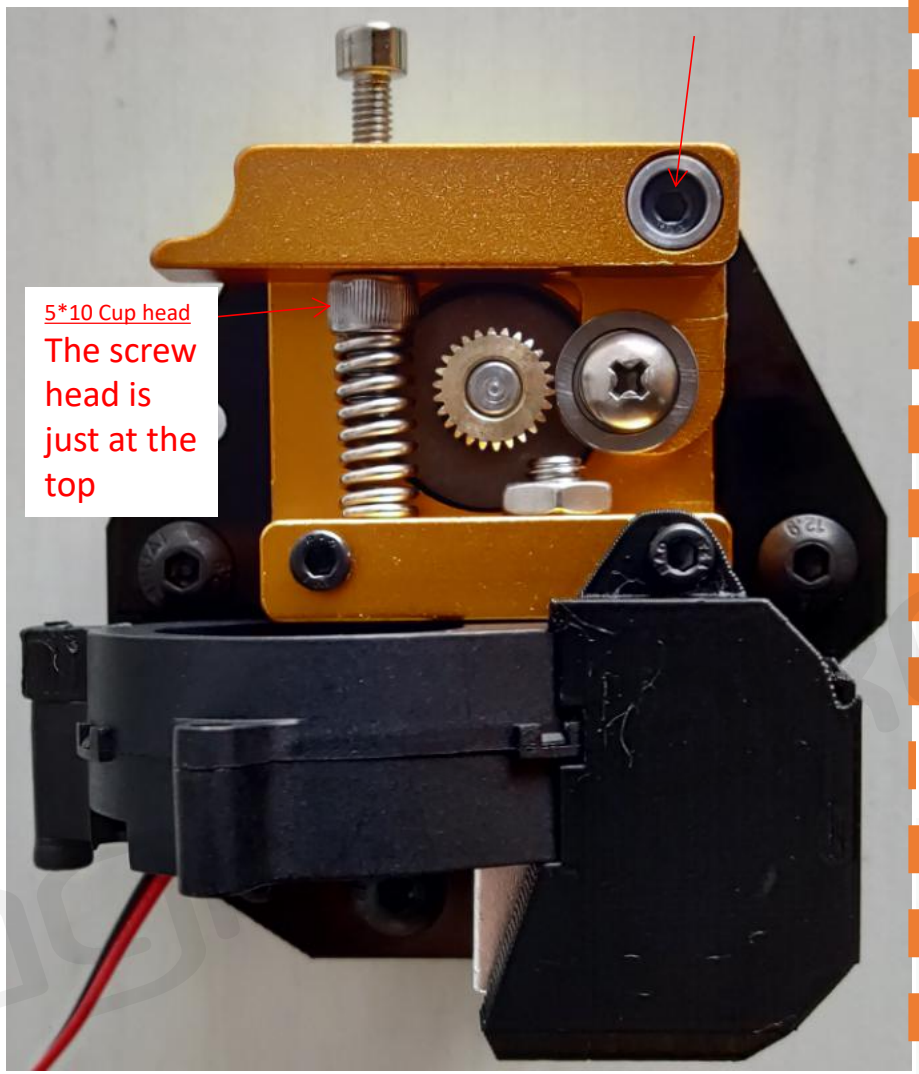
挤出机

Insert the fan diagonally into the fan cover slot as shown



Don't screw down too much

3*20 Cup head

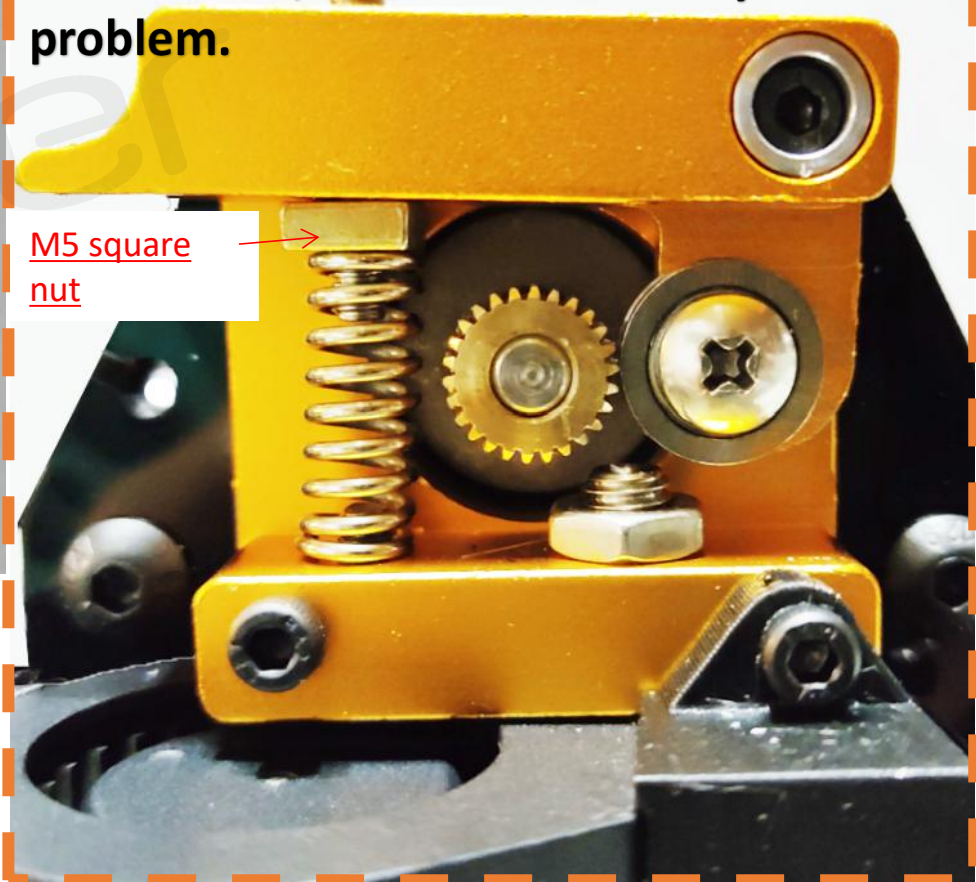


Notice:

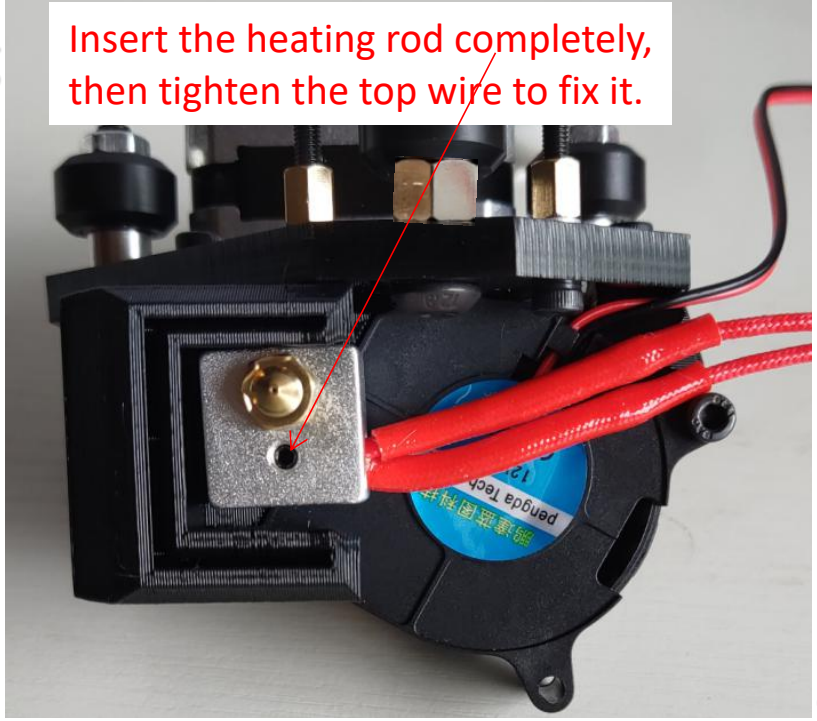
The force of part of the spring is too large, which will cause the extruder to jam during printing.

Solution:

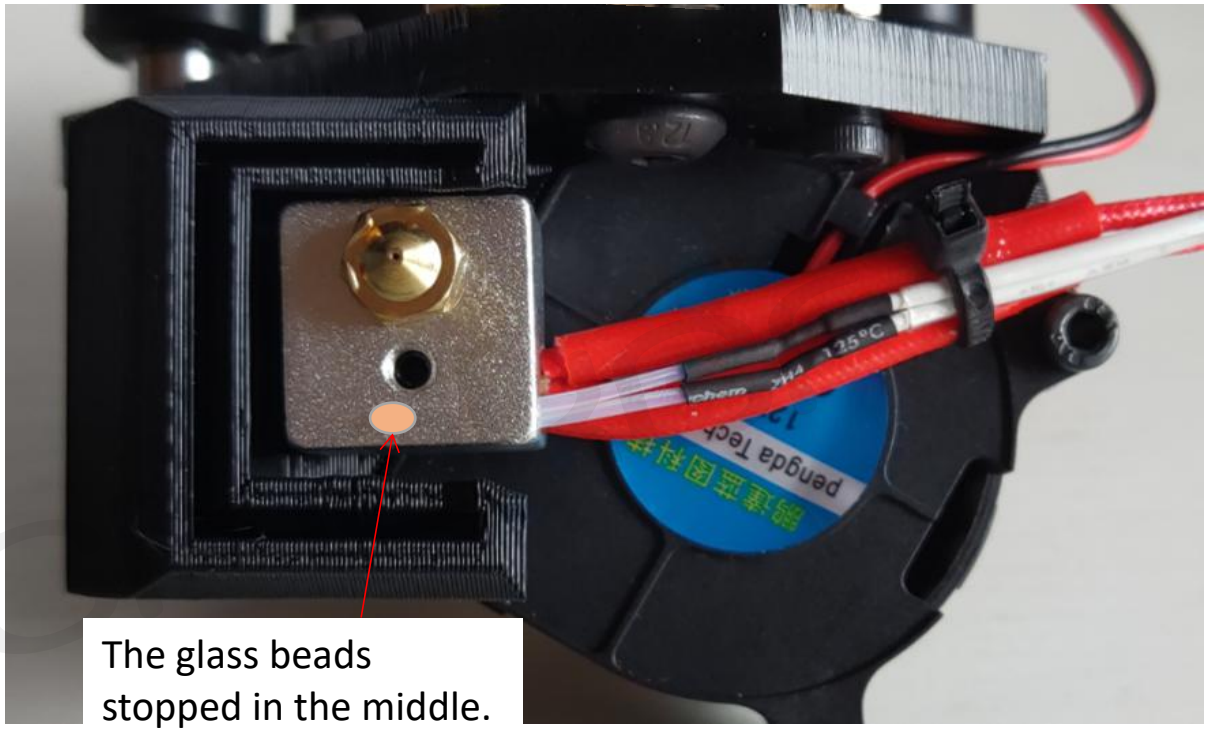
Replace the 5*10 cup head on the spring with an M5 square nut. Although it is not so beautiful,but it can effectively solve the problem.



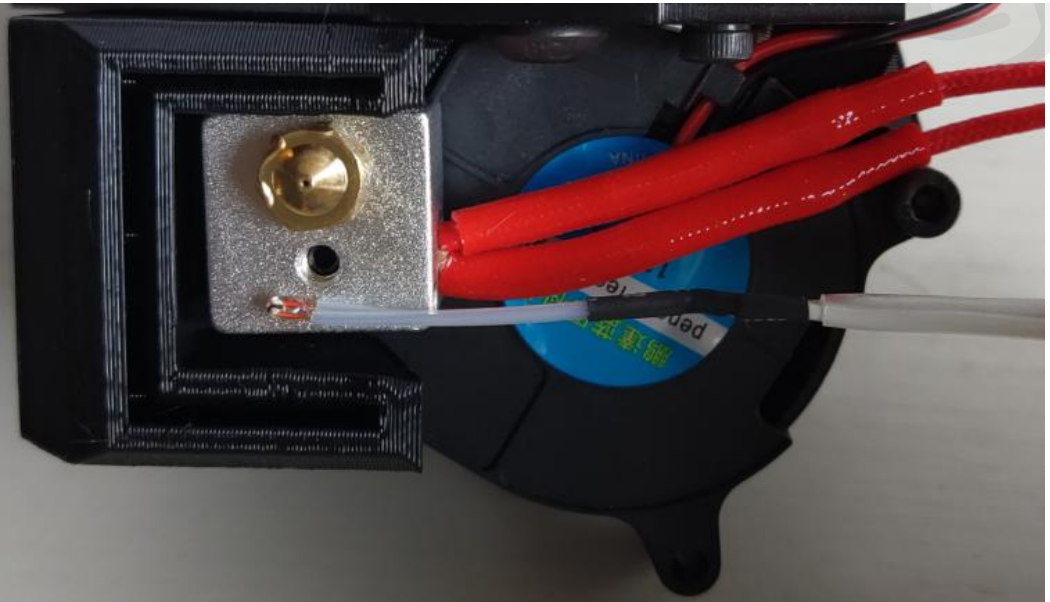
Heating rods



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

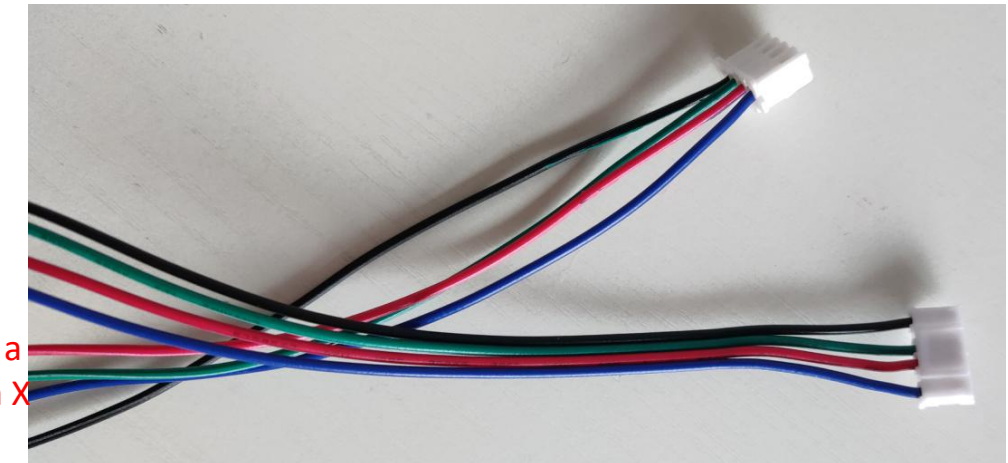


The thermal glass ball is inserted a little bit more in the middle of the aluminum block.



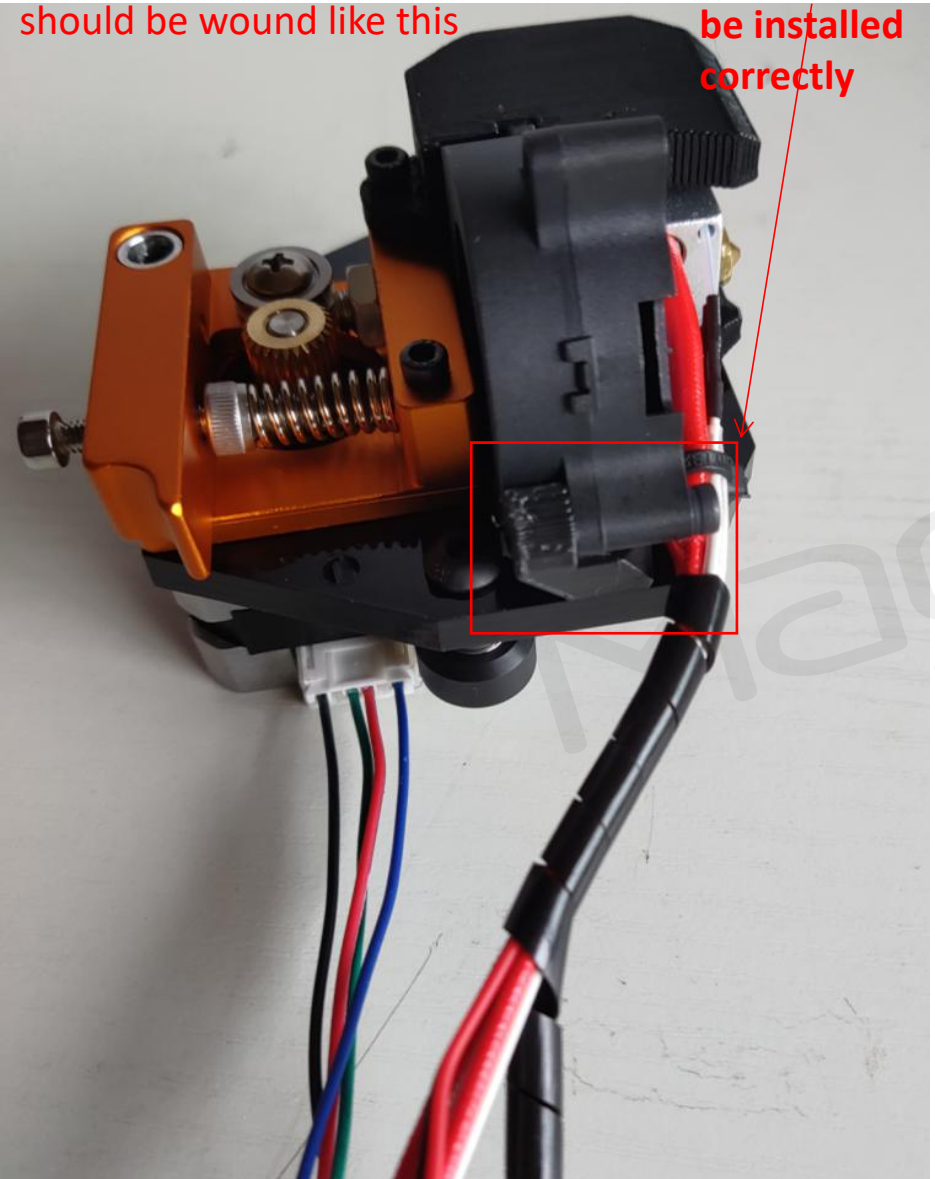
Tear the motor wires one by one, be careful not to tear the ends off.

E motor-wire, plug it into the main board and make a label to distinguish it from X motor-wire.



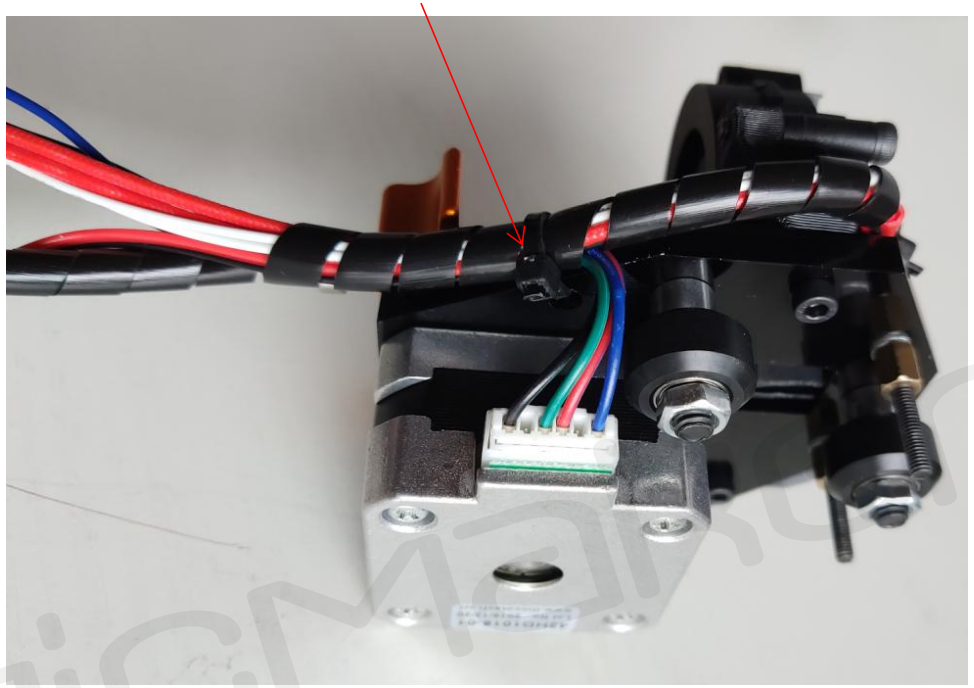
E motor-wire is the longest one

As shown, the wound tube should be wound like this



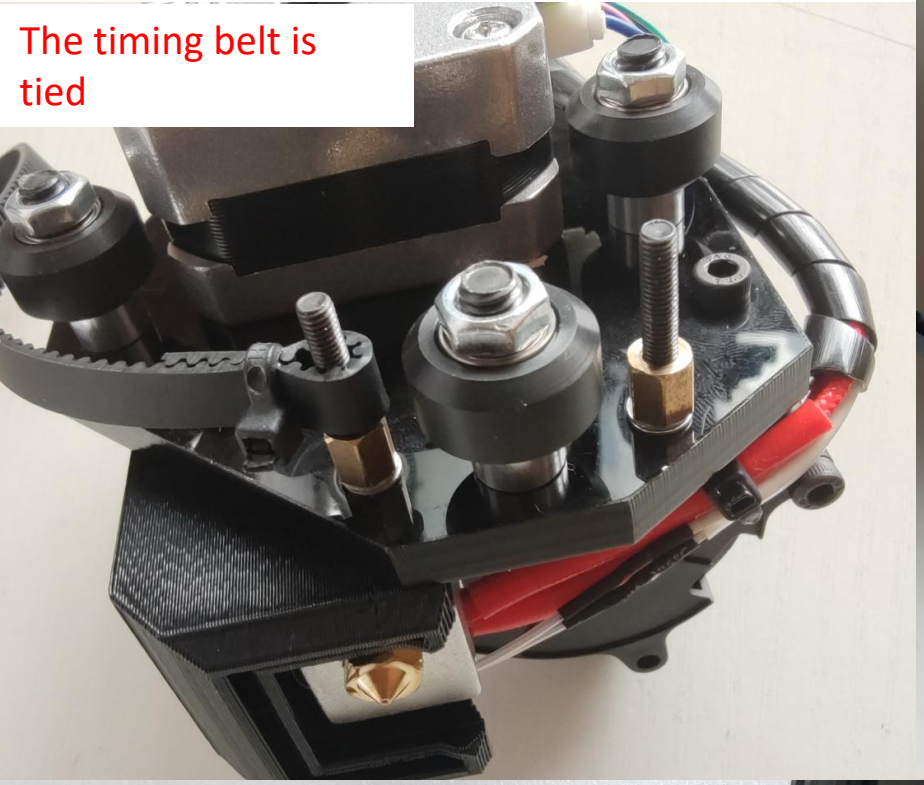
The fan frame must be installed correctly

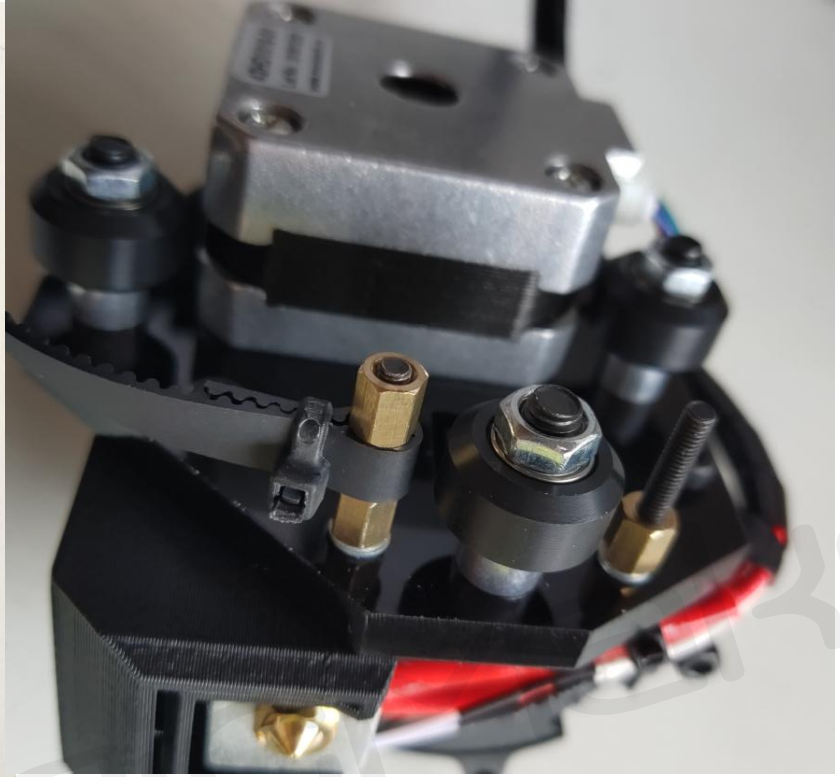
Tie it to the side hole

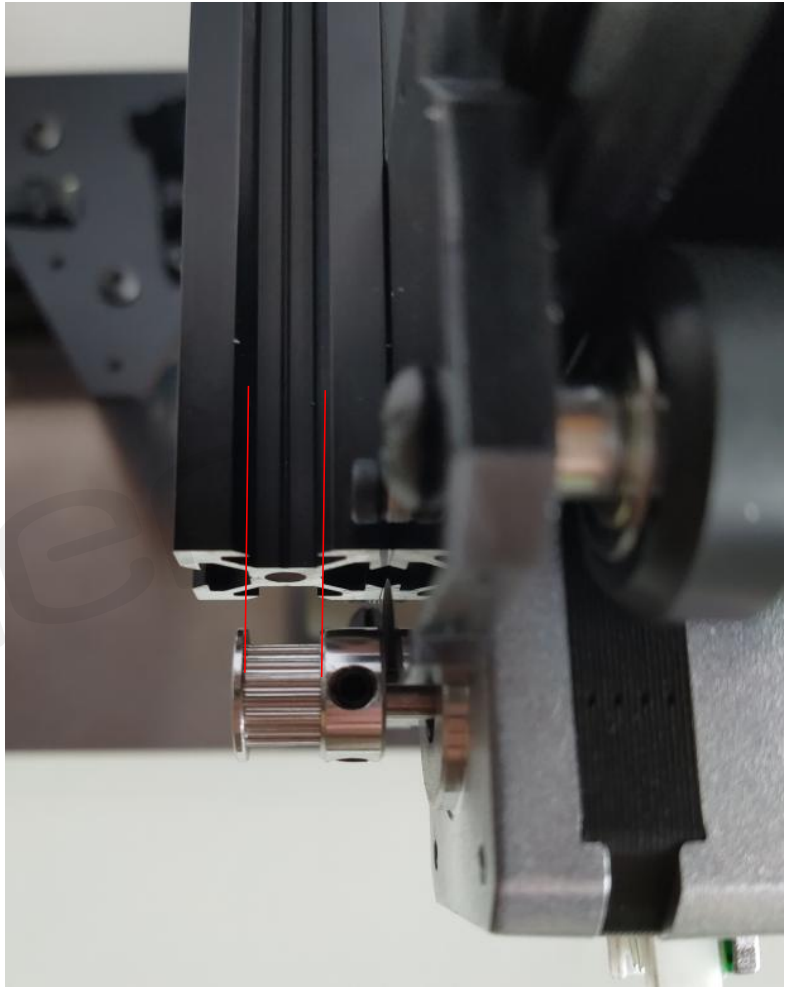


The length of the winding is as long as the X axis first

The timing belt is tied





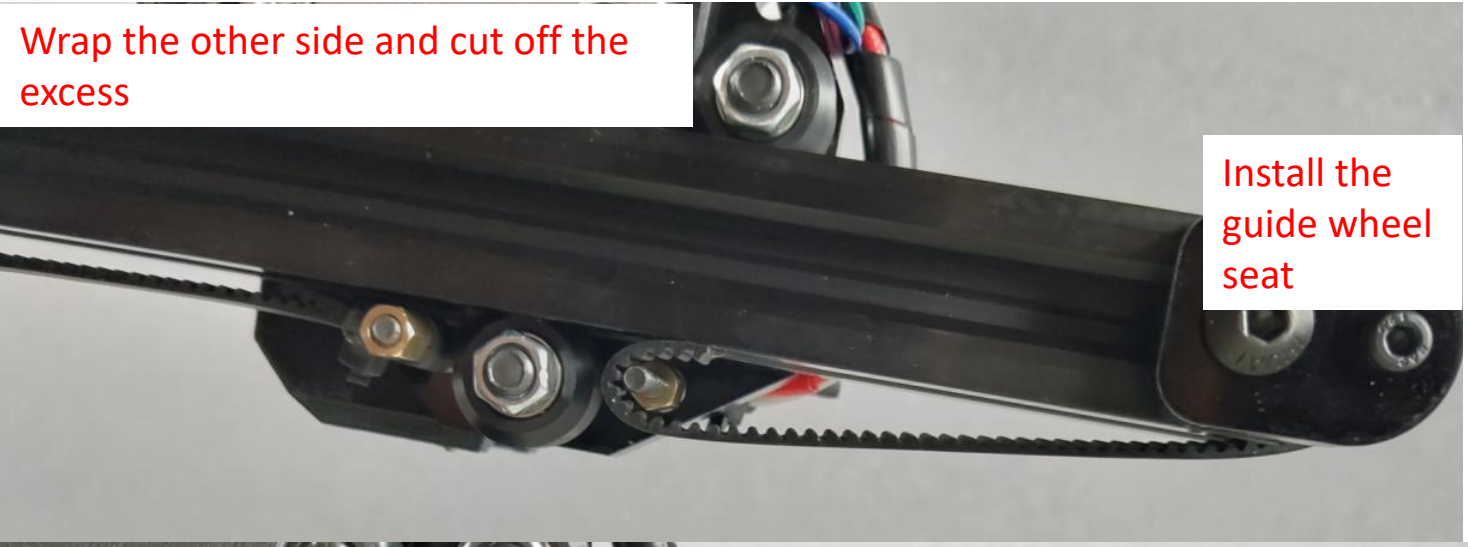


Wear the timing belt

After the tooth groove of the synchronous wheel is aligned with the groove of the profile, fix the synchronous wheel

When the synchronization wheel is flush with the shaft, it is also aligned with the profile

Wrap the other side and cut off the excess

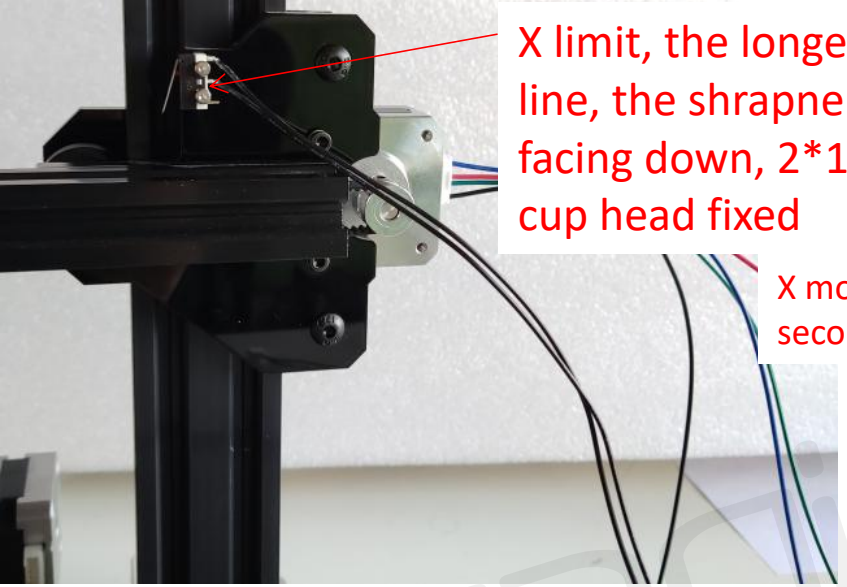


Install the guide wheel seat

Tie up like the other side

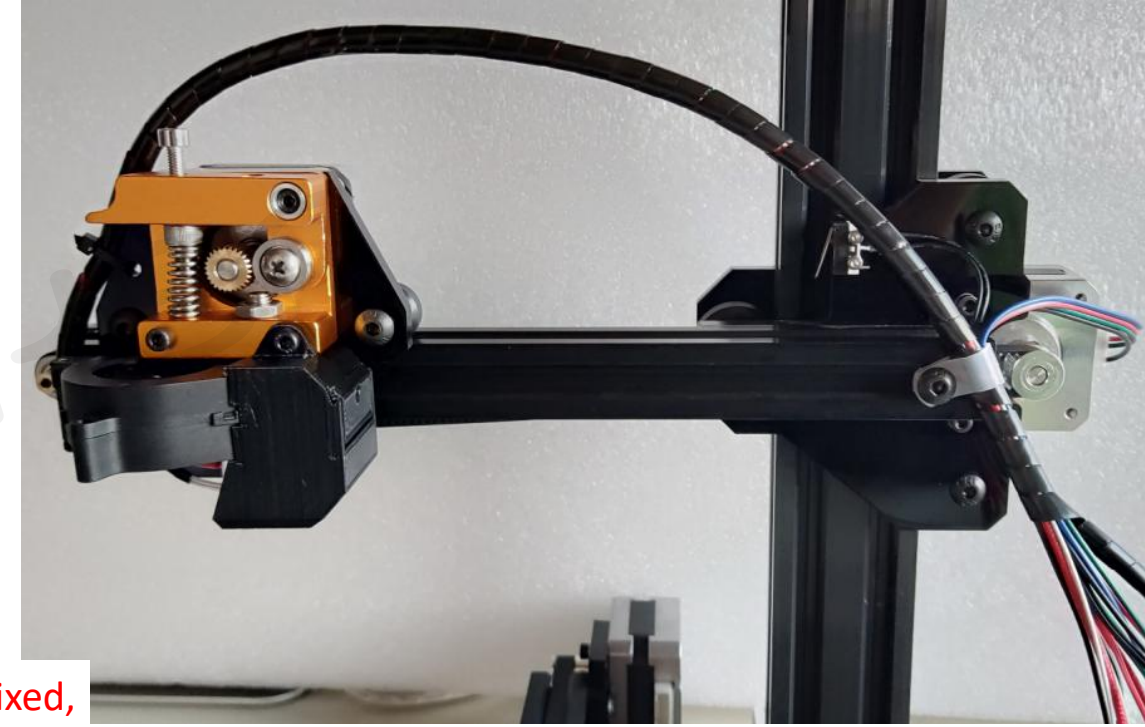
Hang up

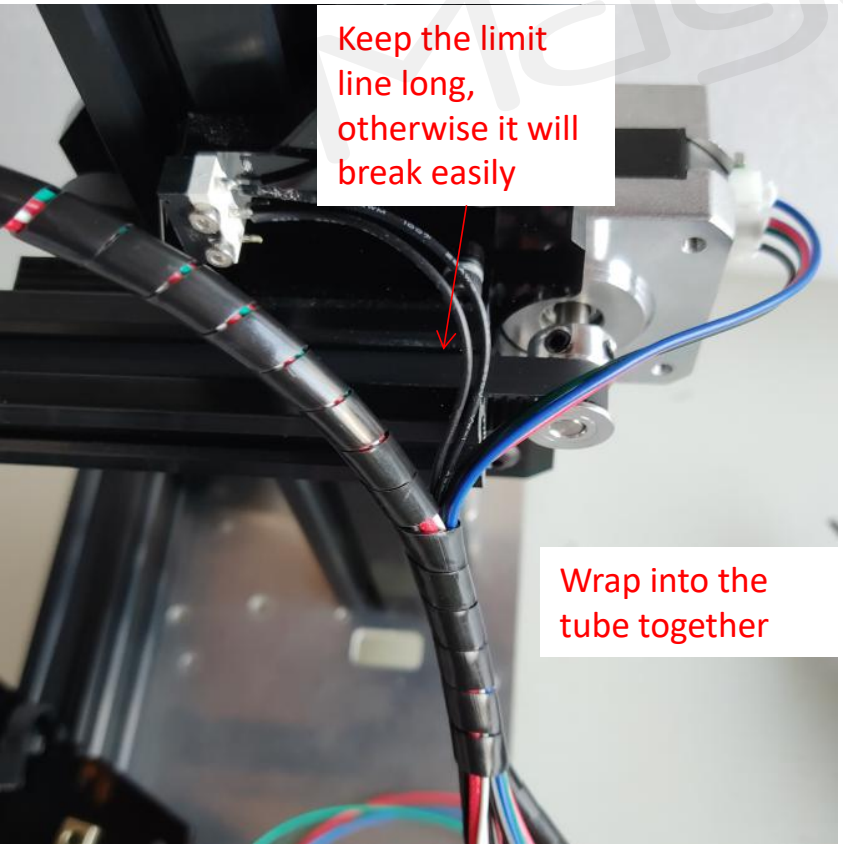
Loosen the guide wheel seat, tighten the timing belt outwards, and then fix it



X limit, the longest line, the shrapnel facing down, 2*10 cup head fixed

X motor wire is the second in length

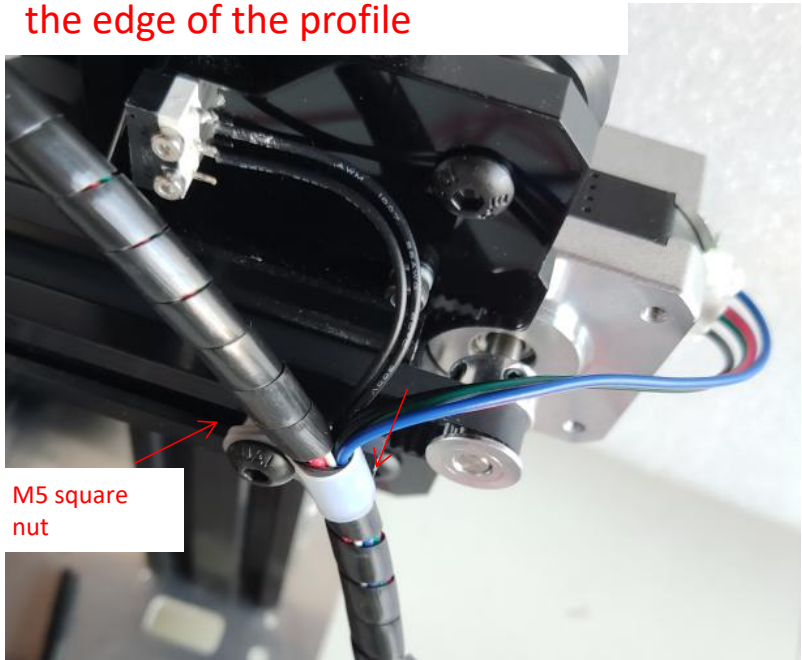




Keep the limit line long, otherwise it will break easily

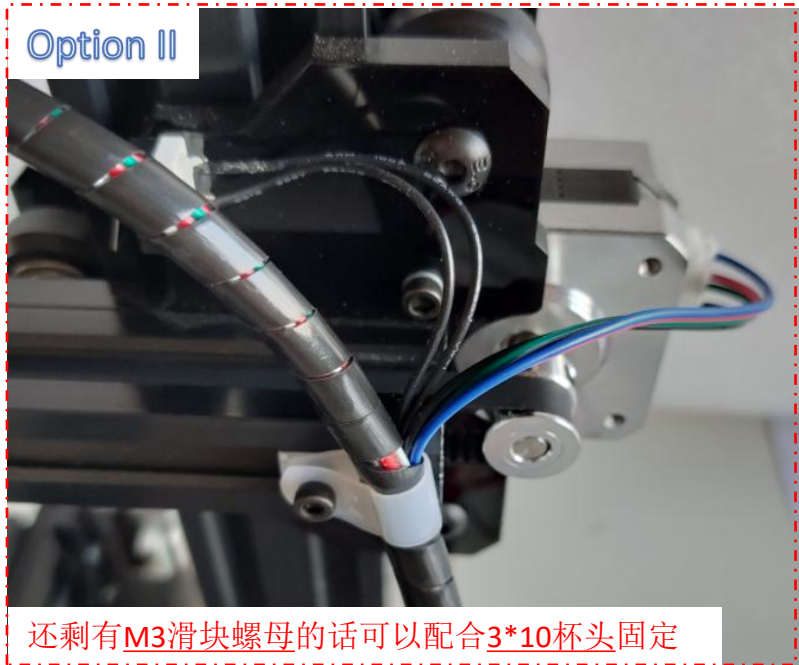
Wrap into the tube together

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

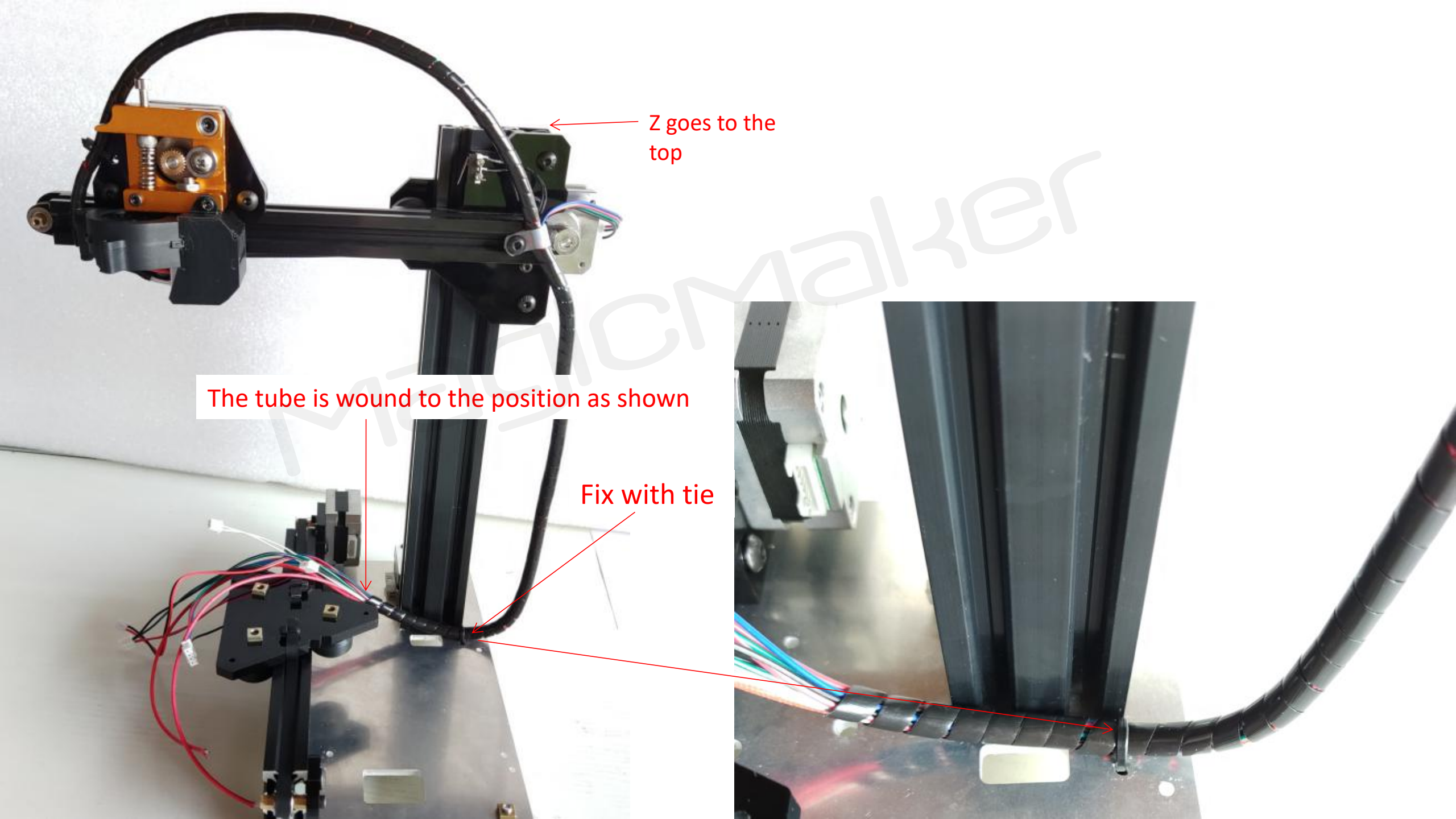


M5 square nut

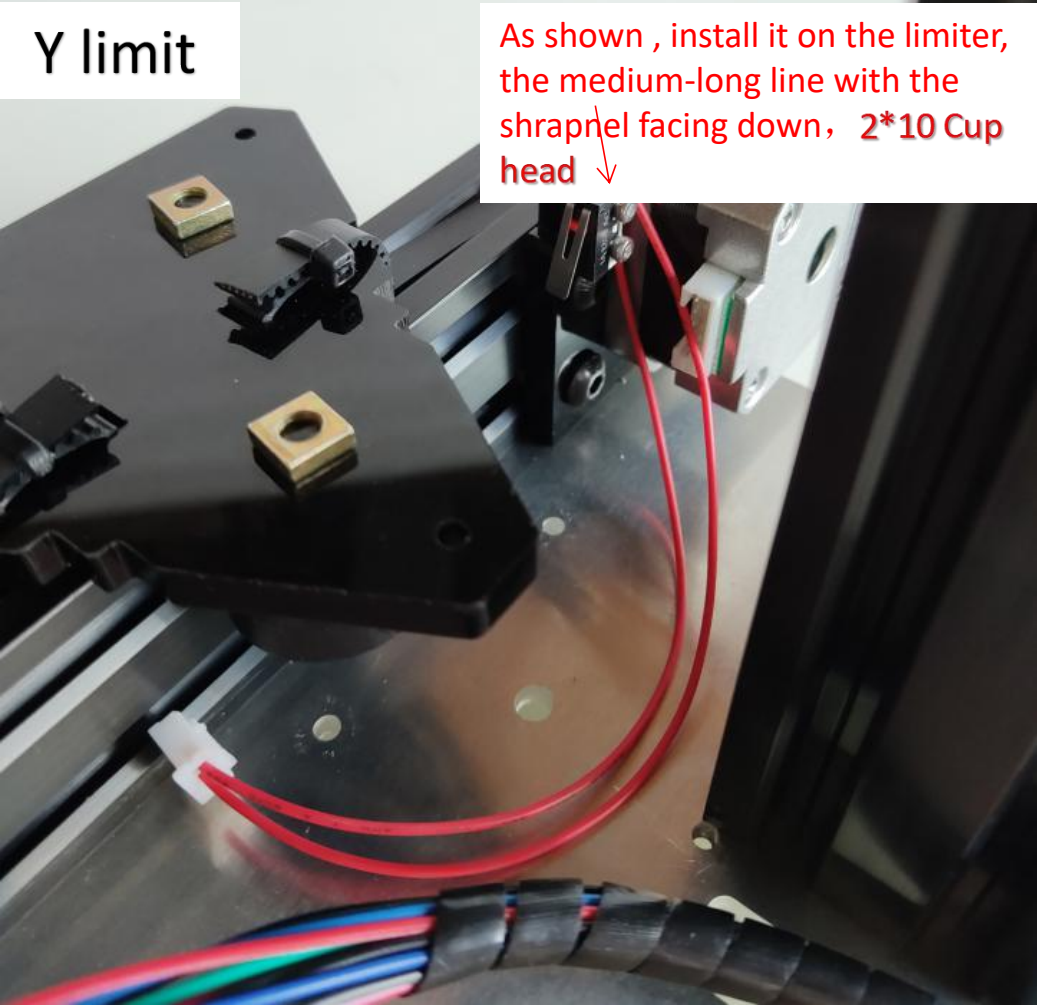
Option II



还剩有M3滑块螺母的话可以配合3*10杯头固定


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

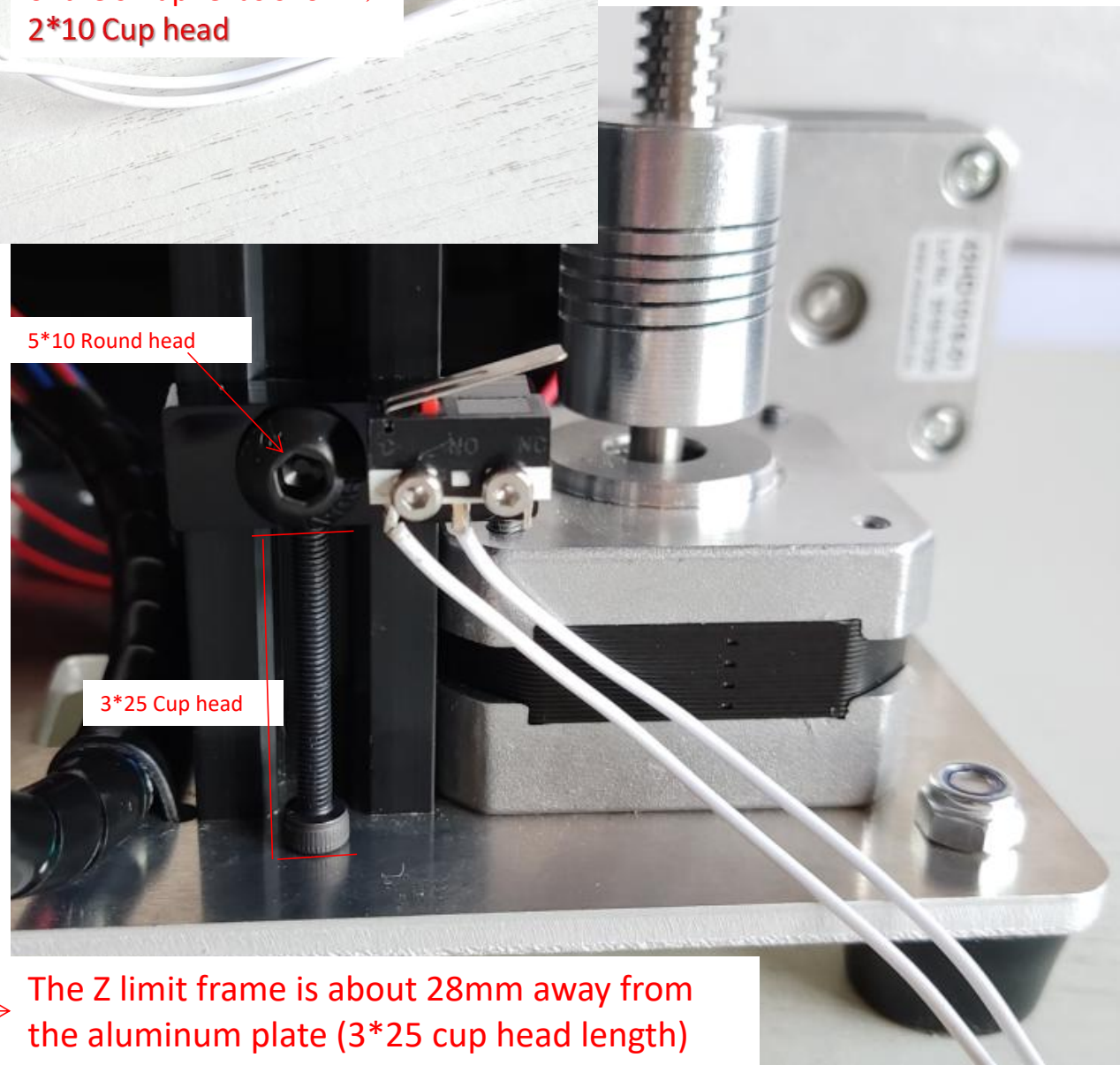
Y limit



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**



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

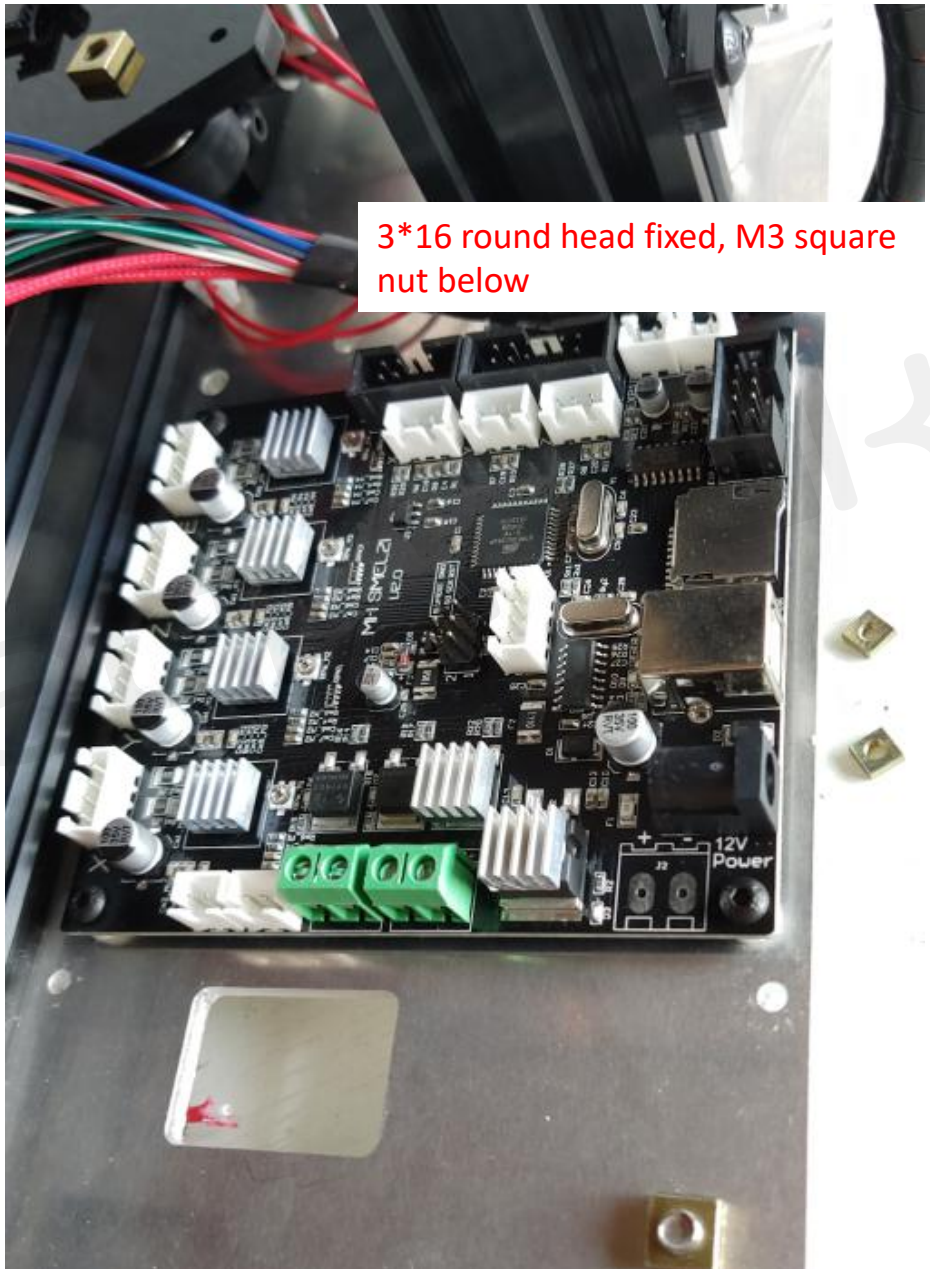
If the limit is installed higher → Z axis zero point becomes higher → the leveling platform becomes higher → the leveling spring becomes loose → the nut falls during printing → the main board is short-circuited → GG

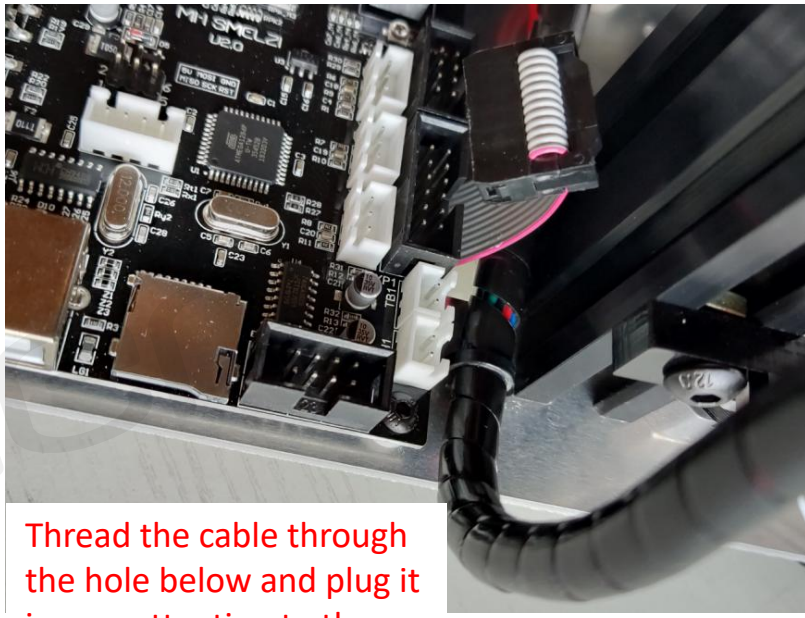
now you can understand the leveling when you can't understand it, install it as required correct

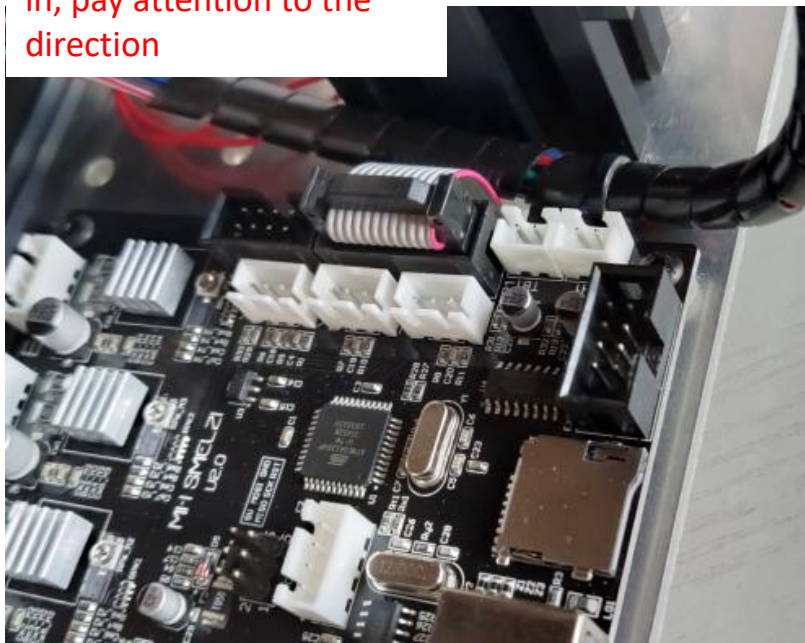
→ The Z limit frame is about 28mm away from the aluminum plate (3*25 cup head length)

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.

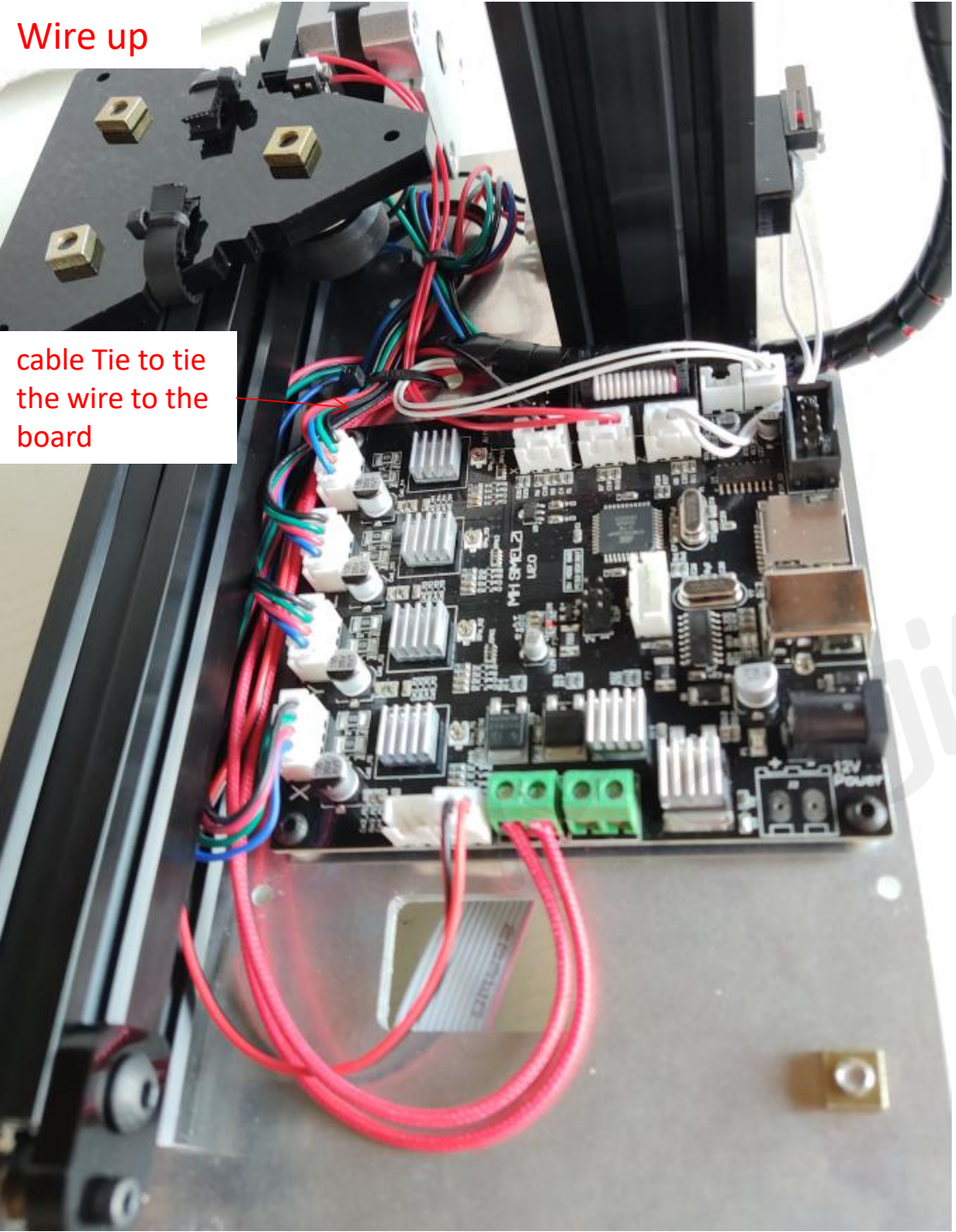




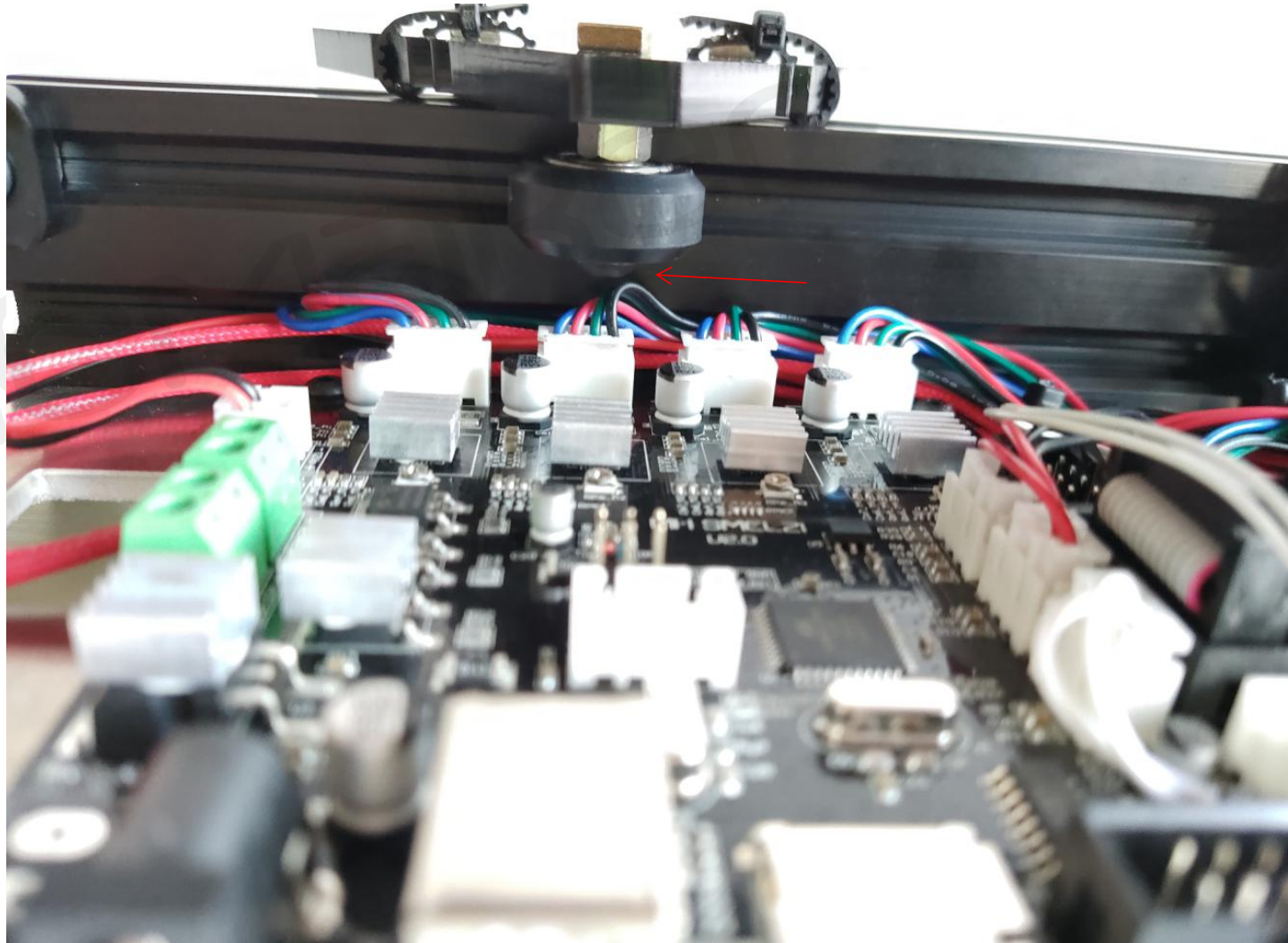


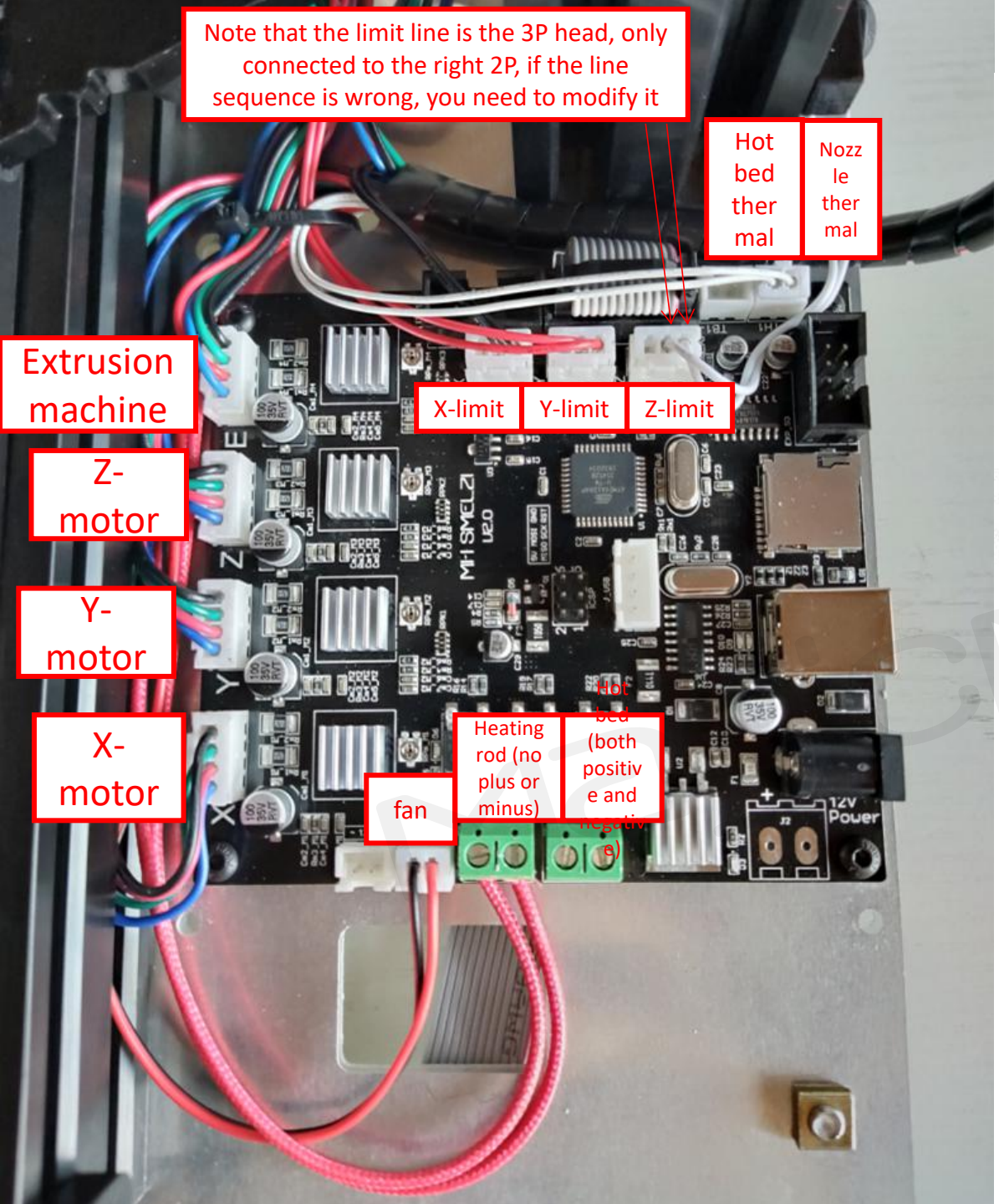
Wire up

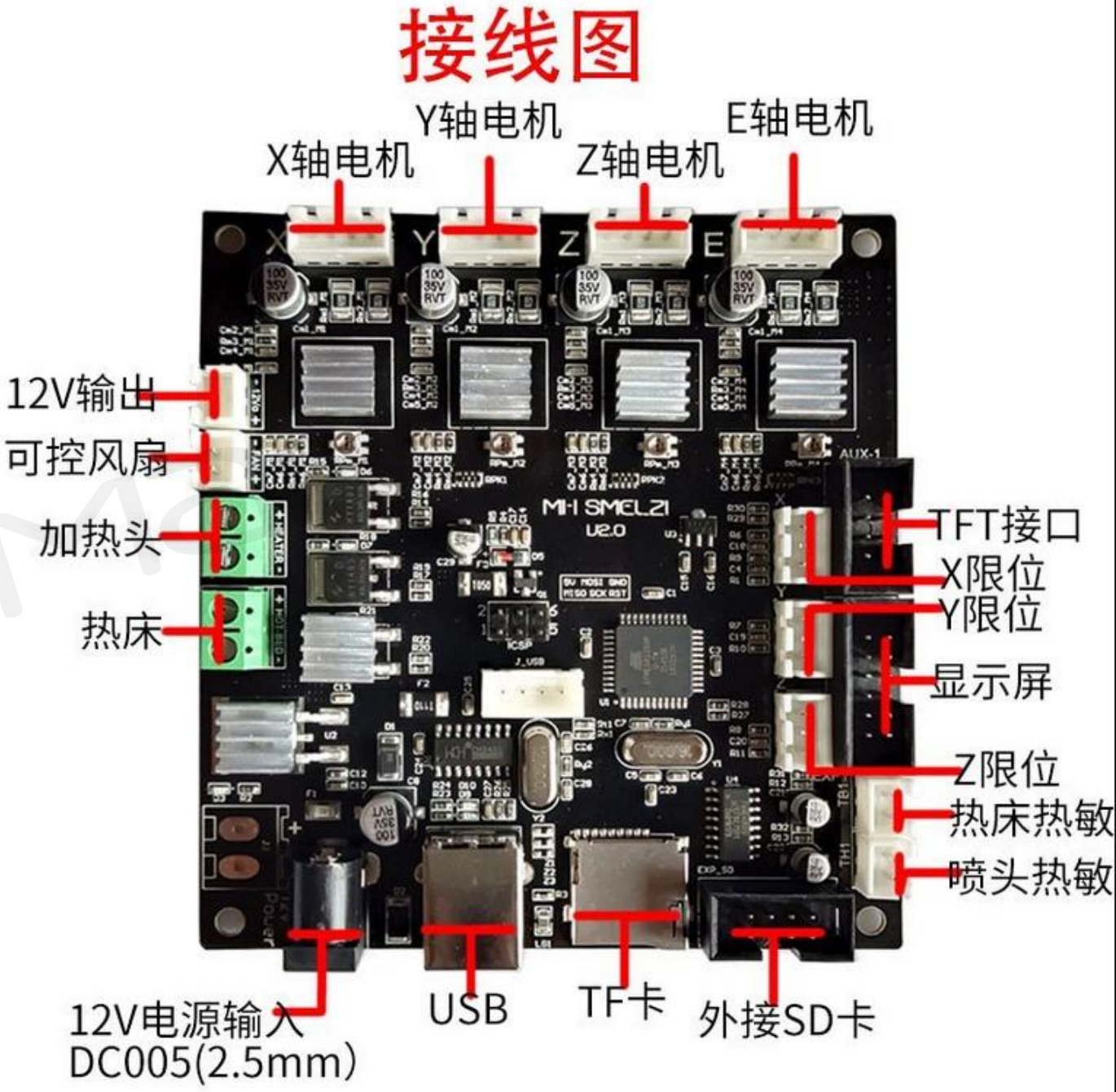
cable Tie to tie the wire to the board



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



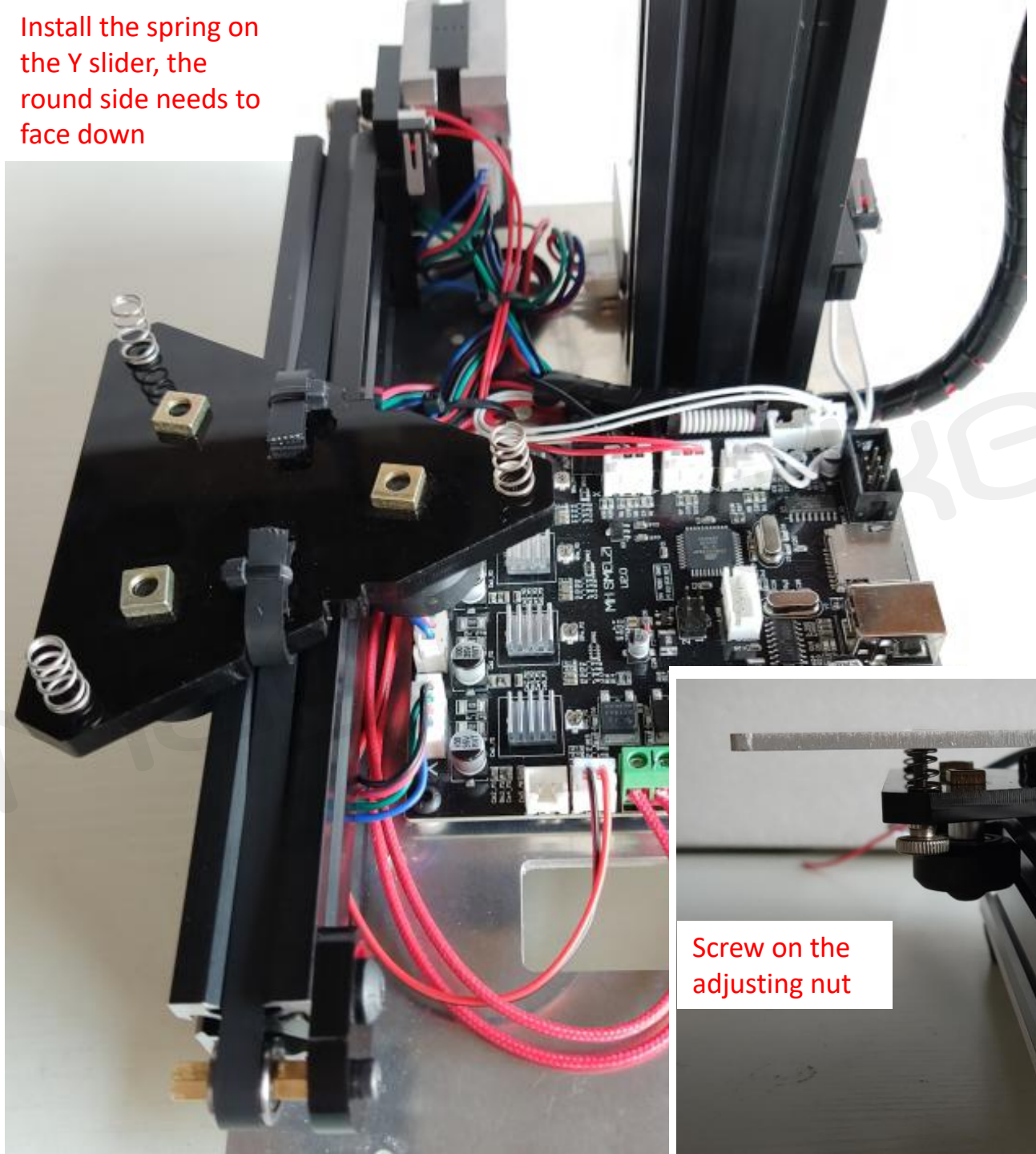

Note that the limit line is the 3P head, only connected to the right 2P, if the line sequence is wrong, you need to modify it
Hot bed thermal
Nozzle thermal
Extrusion machine
X-limit
Y-limit
Z-limit
Z-motor
Y-motor
X-motor
fan
Heating rod (no plus or minus)
Hot bed (both positive and negative)
12V Power


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

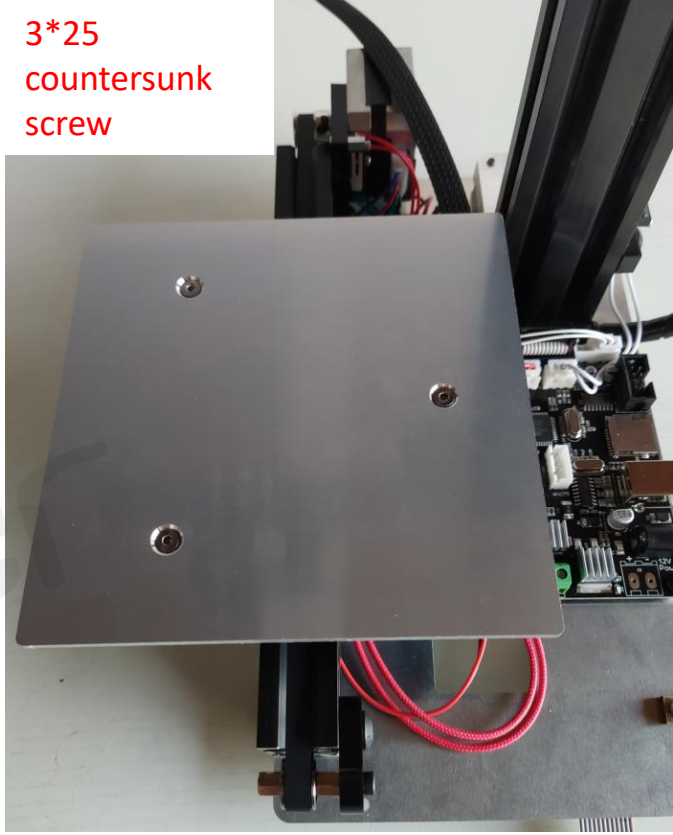
Remove the protective film from the hot bed

Plug in

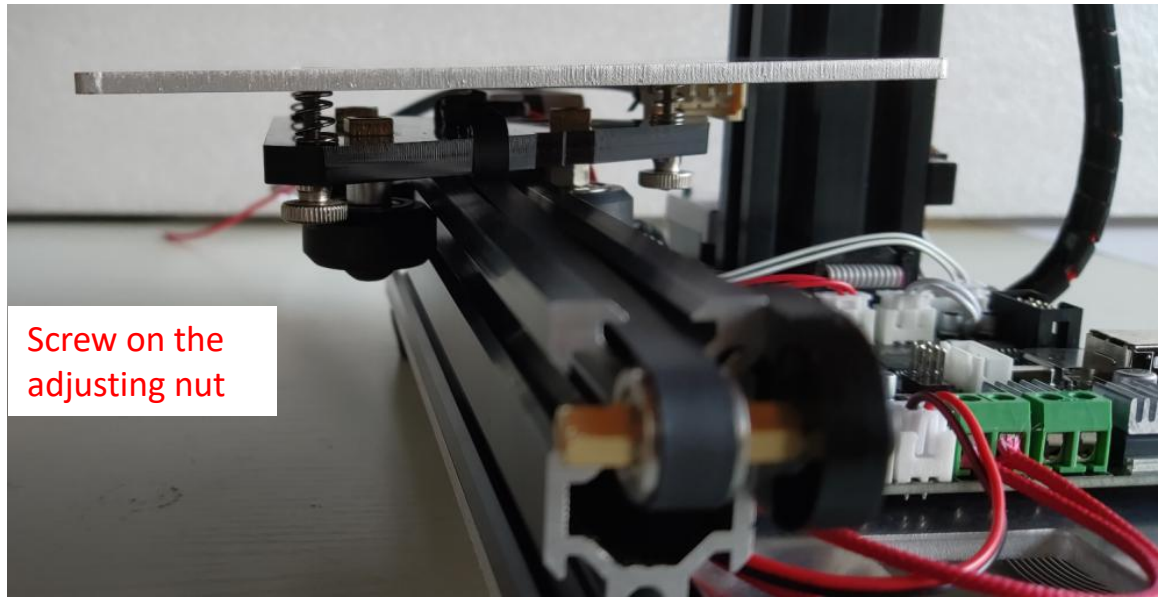
Install the spring on the Y slider, the round side needs to face down

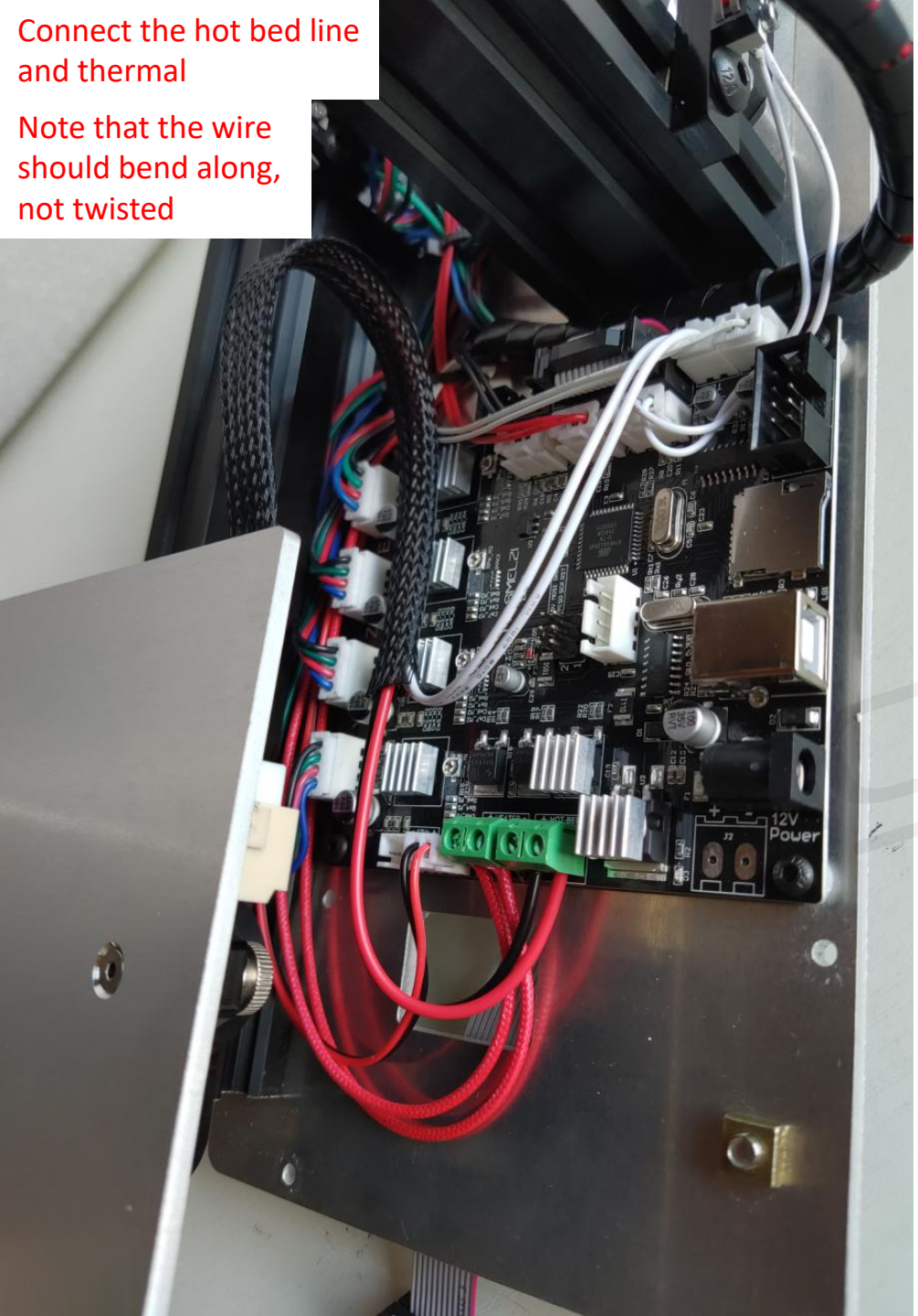


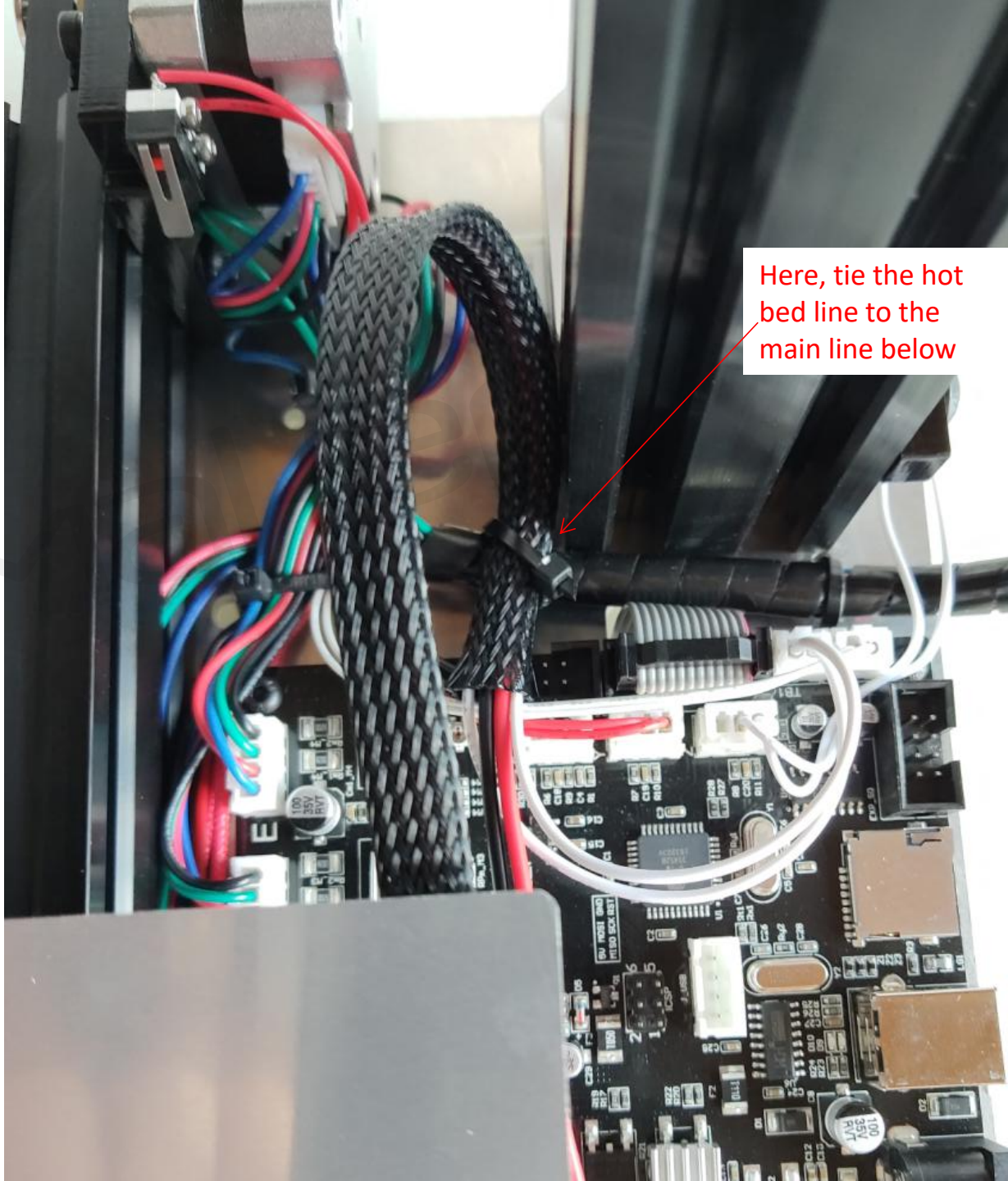
3*25 countersunk screw

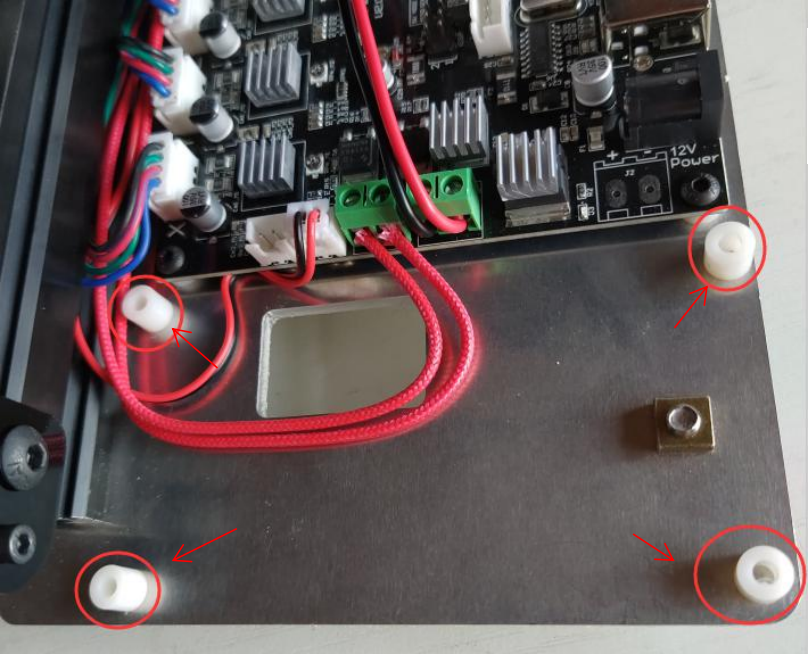


Screw on the adjusting nut



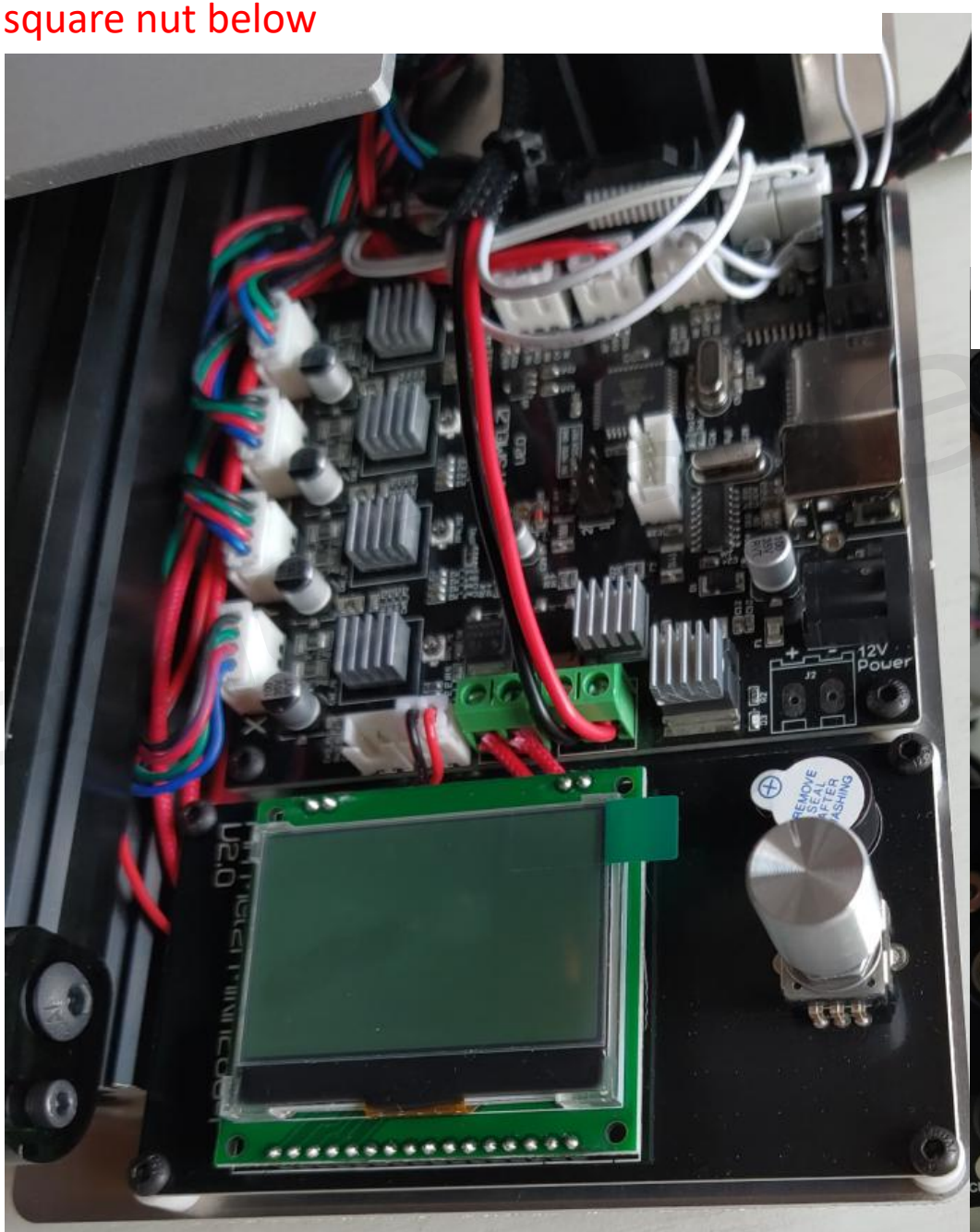

Connect the hot bed line and thermal
Note that the wire should bend along, not twisted
12V Power


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

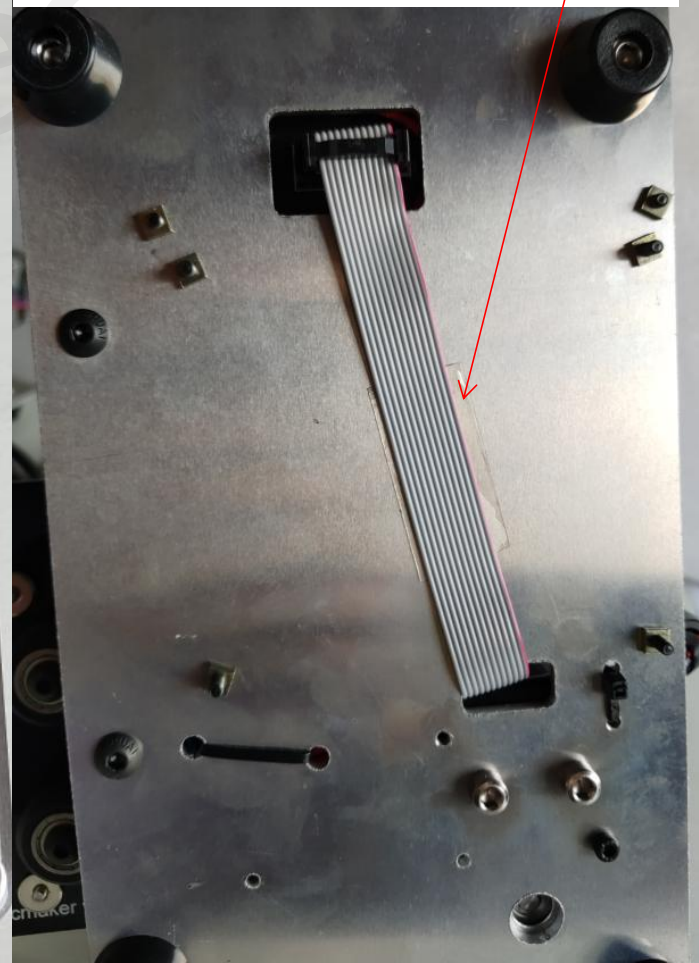


Padded the gasket, the display should pad the higher one.

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

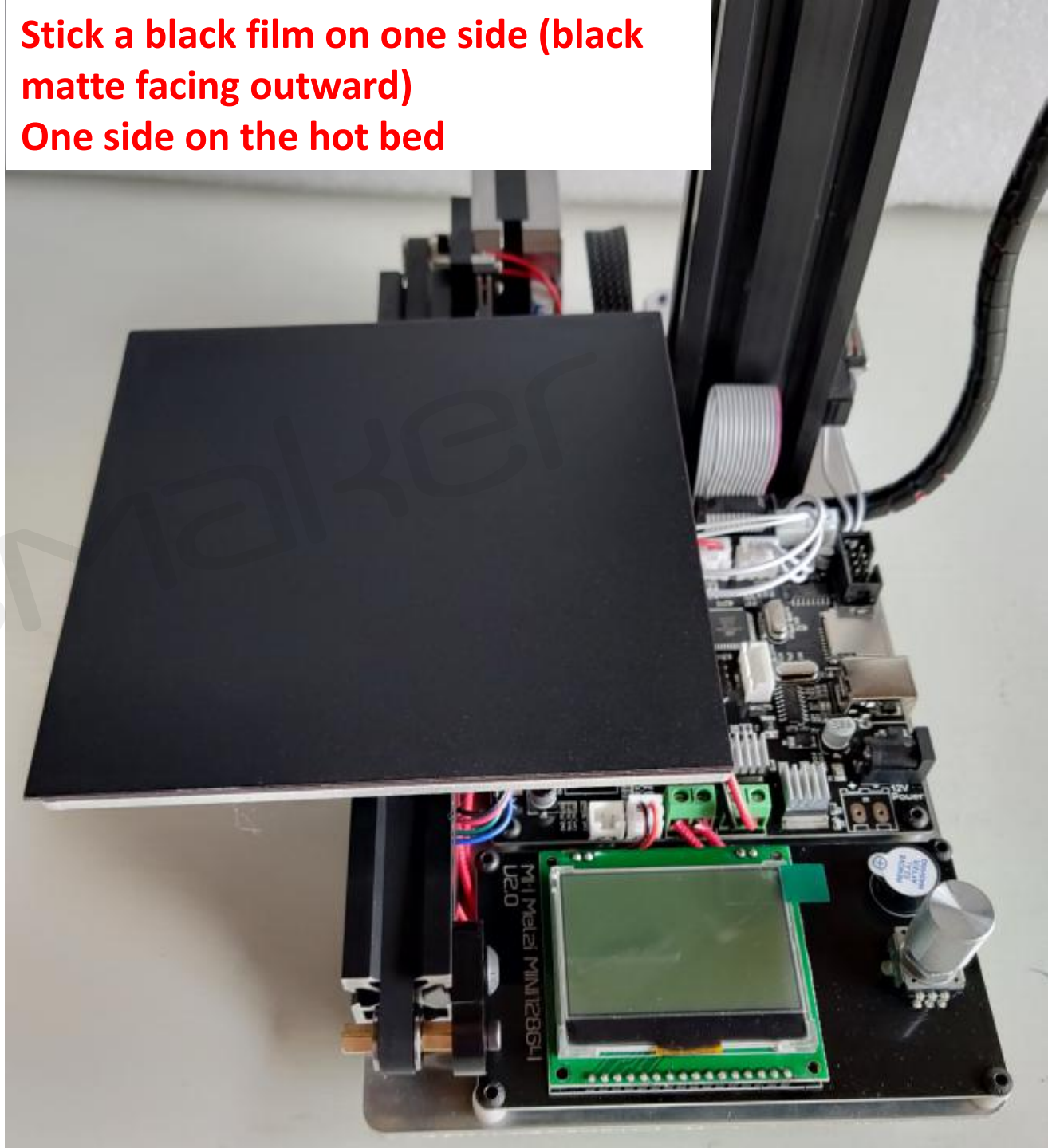
3M glue on the bright side of the black film

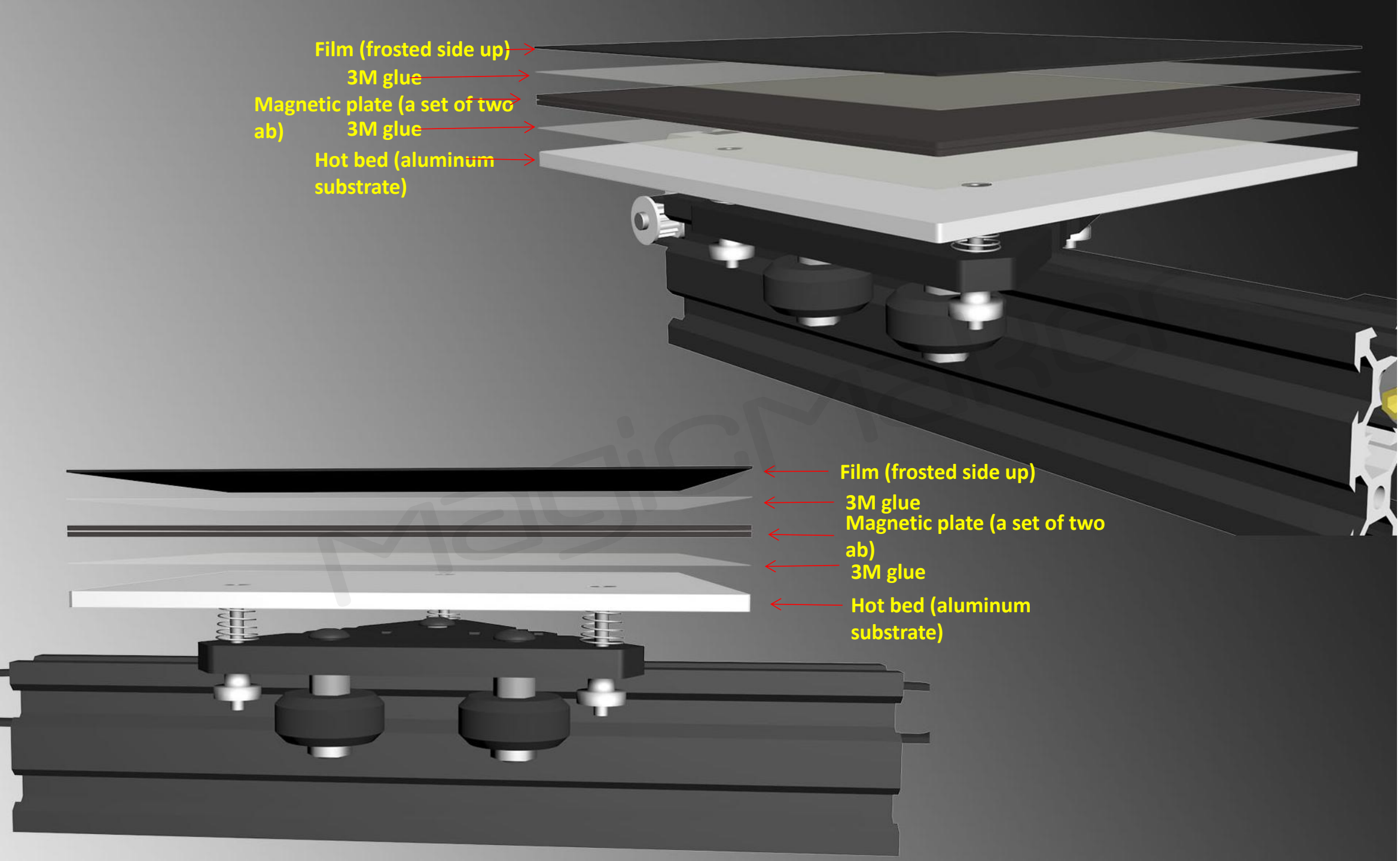
Paste slowly, put it neatly, and put as few bubbles as possible

Magnetic sleeve stick 3M glue

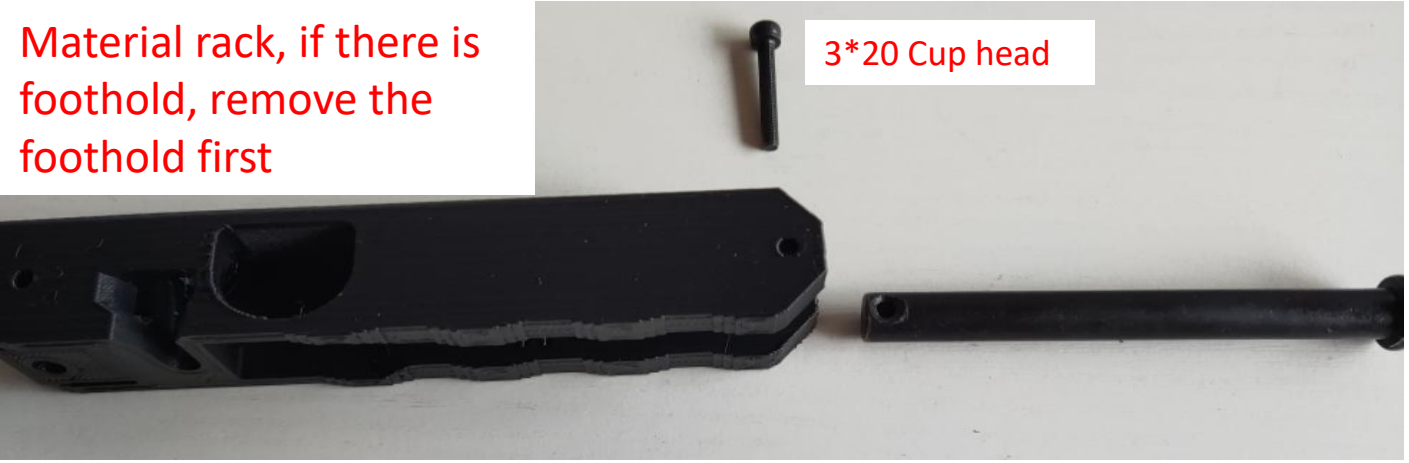
磁吸板光滑的朝内互磁的，
3M贴磨砂的外面

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



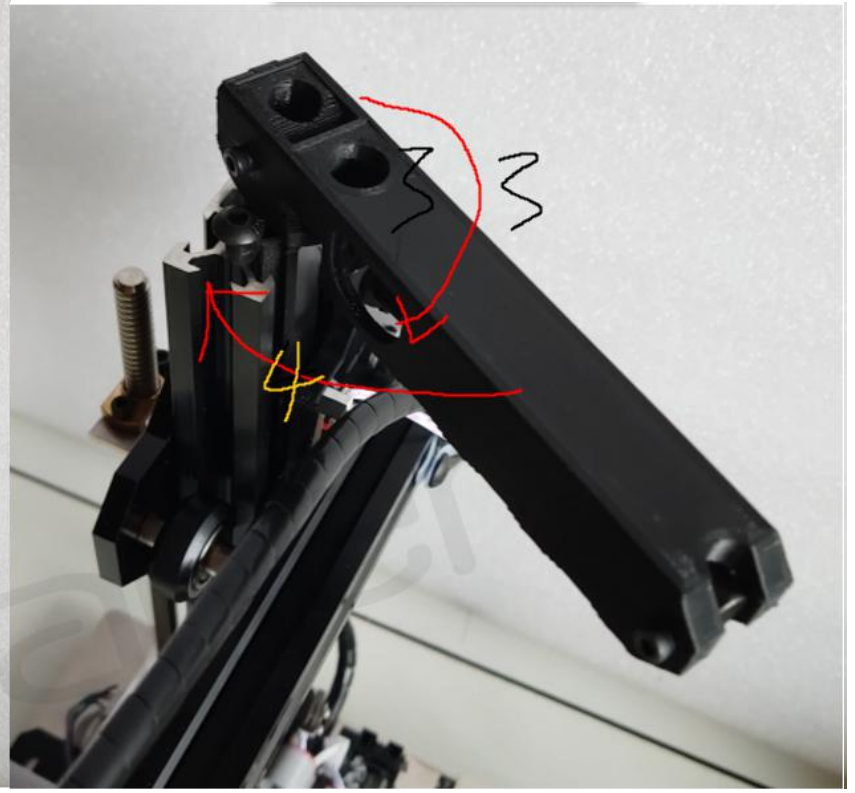

Film (frosted side up)
3M glue
Magnetic plate (a set of two ab)
3M glue
Hot bed (aluminum substrate)
Film (frosted side up)
3M glue
Magnetic plate (a set of two ab)
3M glue
Hot bed (aluminum substrate)

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

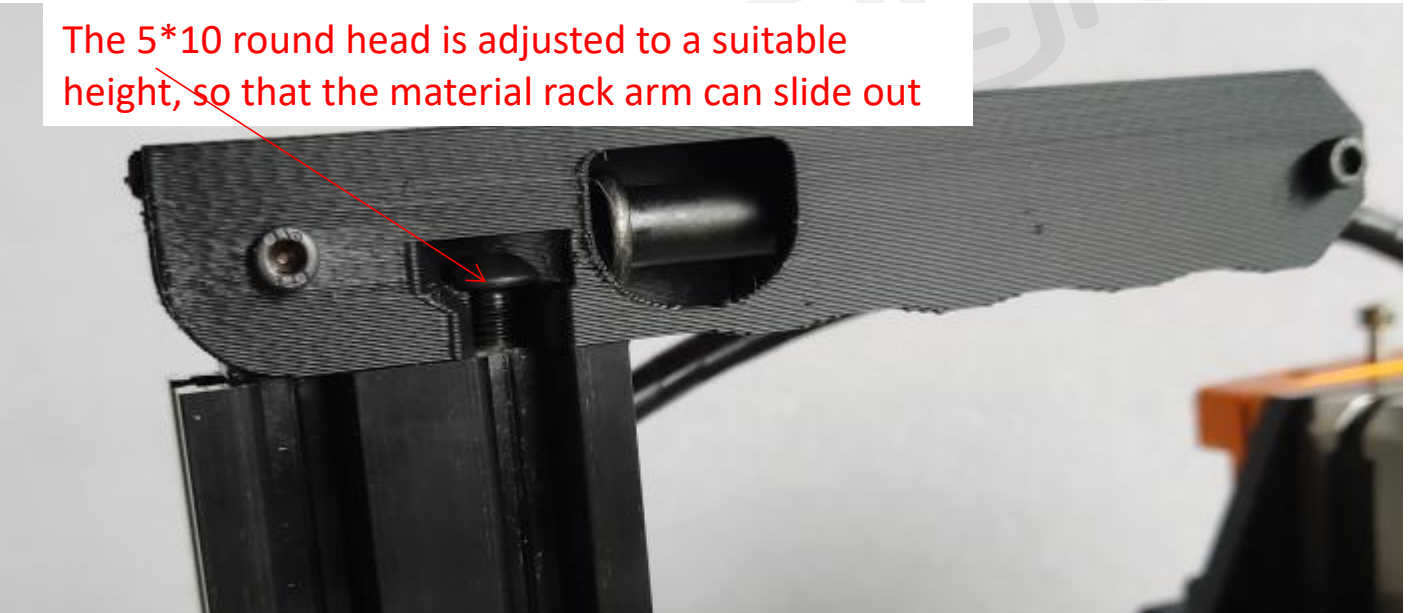


The material rack seat is screwed to the end with a 5*10 round head in the direction shown in the figure (not tightened)

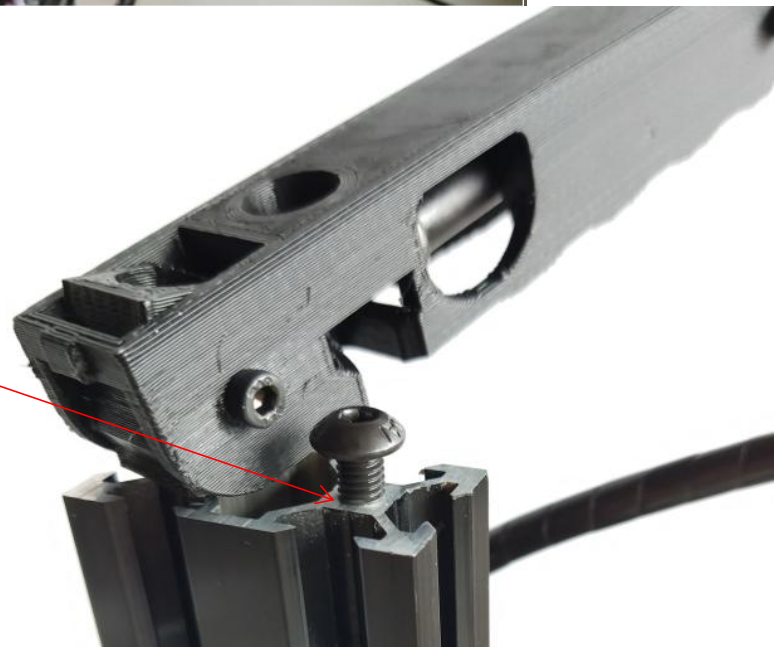
3*20 cup head screw on the rack



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



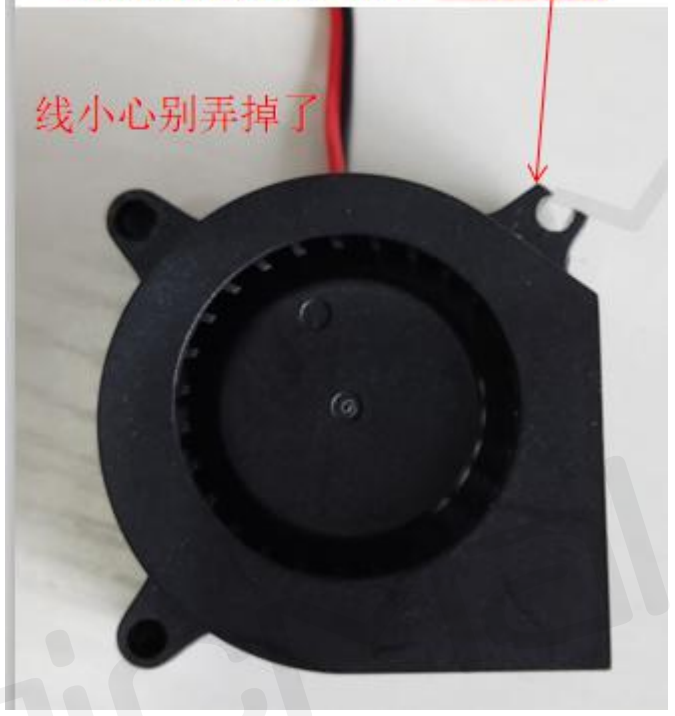
When the height is adjusted properly, you can drop 502 to fix it



易漏点

装上联轴器，丝杆和电机轴中间不要有间隙

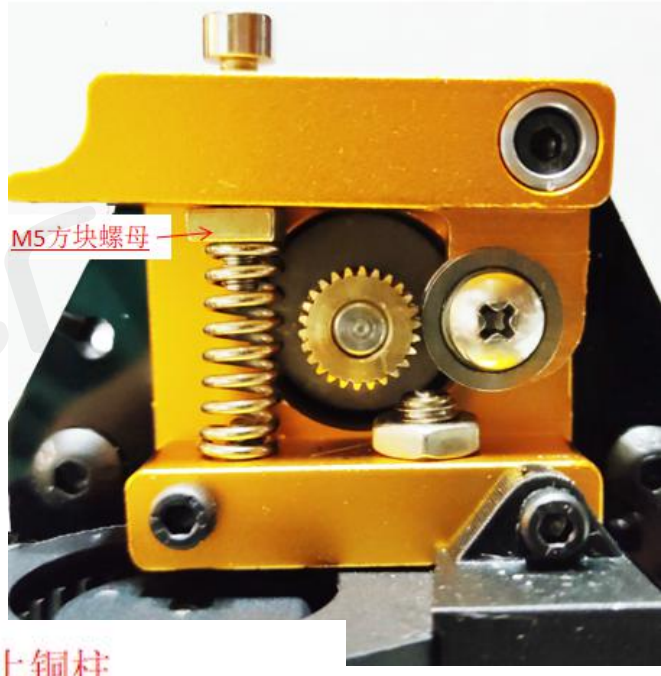
风扇用刀切掉1mm，一定要切



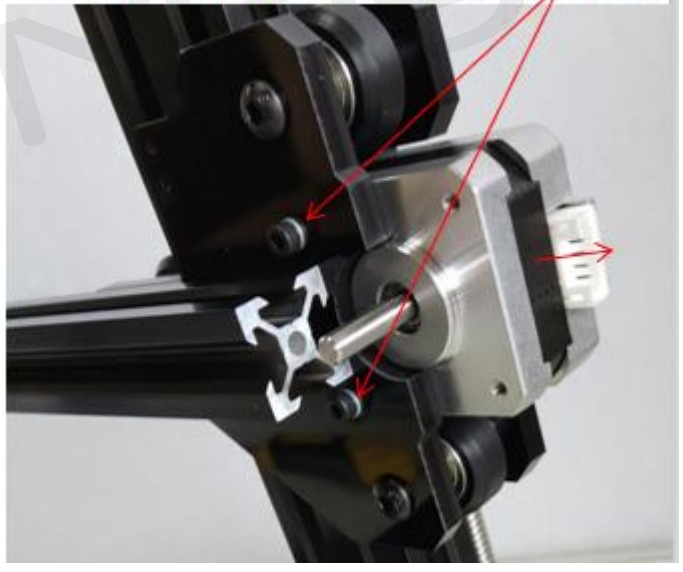
部分弹簧的力太大，会造成了打印的时候挤出机卡住不出料

解决办法：

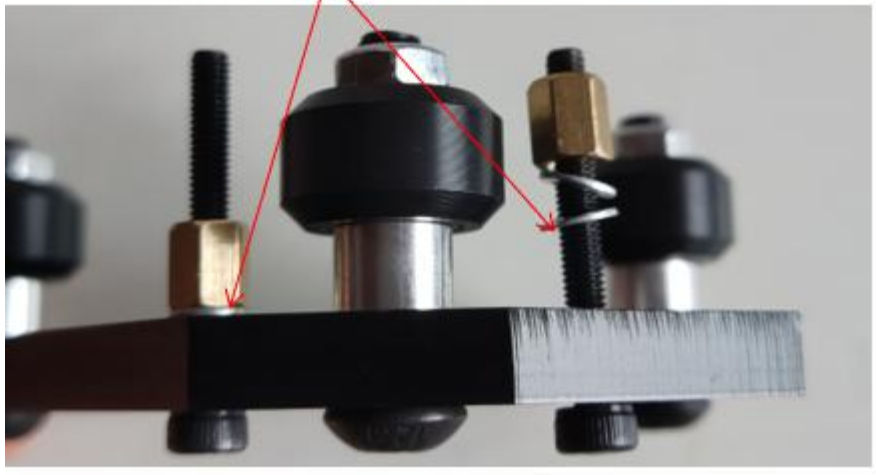
把弹簧上面的5*10杯头换成M5方块螺母，虽然没那么好看，但能有效解决问题



X电机，用3*10杯头，要各垫2个M3垫片



3*25杯头，塞2个垫片，再拧上铜柱



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

After leveling, you can print the test.
There are slicing software and cut test models in the group.
It is best to print the test model first after leveling.

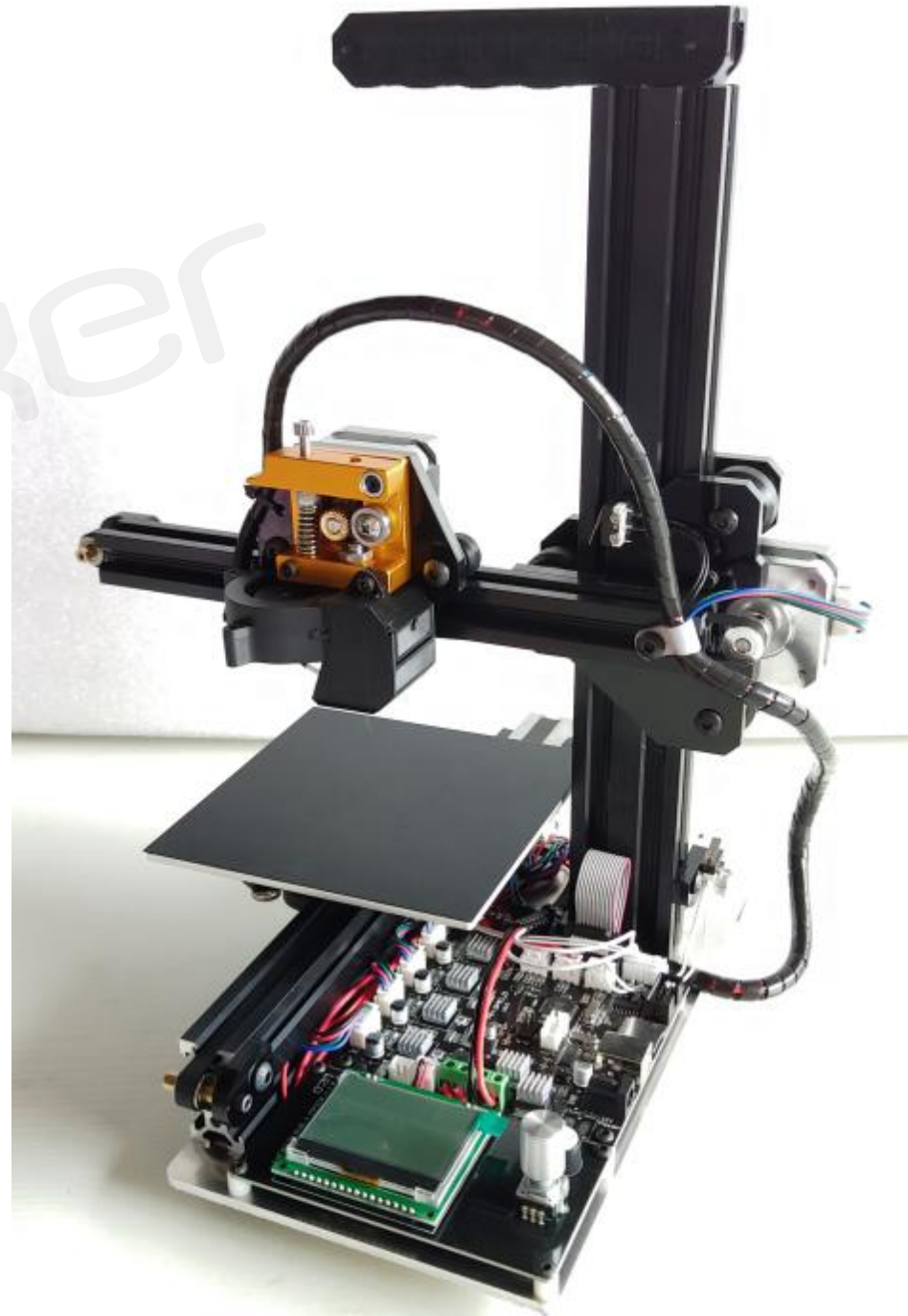
群文件 〉 ★★★小鲁班切片软件

文件	更新时间	过期时间
小鲁班CURA4.4配置教程1.3.pdf	2020-05-03 1:37	永久
切片软件ideamaker.rar	2020-04-15 16:24	永久
小鲁班切片安装配置教程-视频版.flv	2020-04-05 0:29	永久
Ultimaker_Cura-4.4.1.AppImage	2020-03-24 15:57	永久
Ultimaker_Cura-4.4.1-Darwin.dmg	2020-03-24 15:57	永久
__MACOSX.rar	2020-03-24 15:56	永久
小鲁班cura4.41配置文件热床版.3mf	2020-03-17 16:58	永久
猫头鹰（小号）.stl	2020-03-01 18:56	永久
32位切片软件Cura_15.04.0211.rar	2020-01-11 17:16	永久
Ultimaker_Cura-4.4.1-win64.exe	2020-01-08 0:16	永久
官方切好测试文件，小鲁班第一打，自己改拼音.gcode	2020-01-08 0:14	永久
小鲁班cura4.41配置文件.3mf	2020-01-08 0:14	永久

If you need the mainrboard shell, you need to print it yourself, the colors can be matched at will.or other unofficial design shells in the group, but you need to find it yourself.

群文件 〉 ☆☆☆小鲁班打印文件

文件	更新时间
可控风扇罩（完美版）.rar	前天
屏盖（初版分离.STL	2020-04-30 2:3
键盖（初版分离.STL	2020-04-30 2:3
线盖1.4.STL	2020-04-30 2:3
屏键盖一体2.1.STL	2020-04-30 2:3
主板盖2.2（加热床线导口.STL	2020-04-30 2:3
可控风扇罩（带勾.STL	2020-04-13 0:4
Y同步带防刮改善教程1.1.pptx	2020-01-17 16:
Y轴增高垫（防刮同步带.STL	2020-01-17 16:
切好层厚0.2.rar	2020-01-09 14:



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

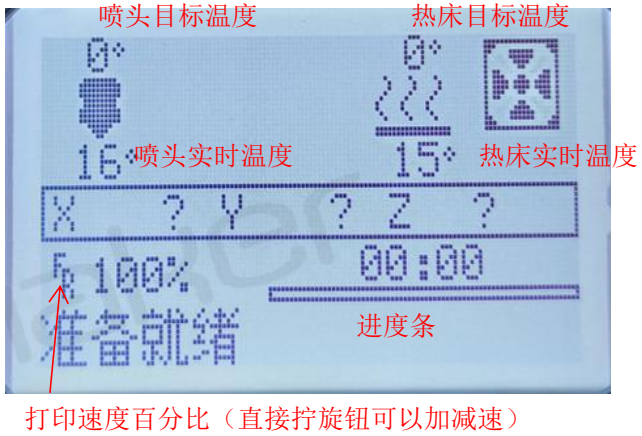
7. Low proficiency is not recommended for layer thickness above 0.2 (recommended 0.1 and 0.2)

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

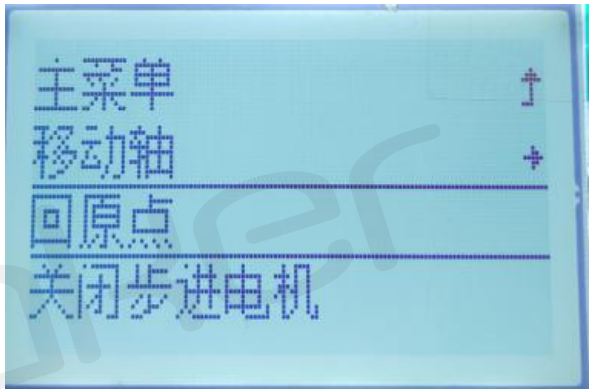
It must be leveled before printing, please see the manual for details

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



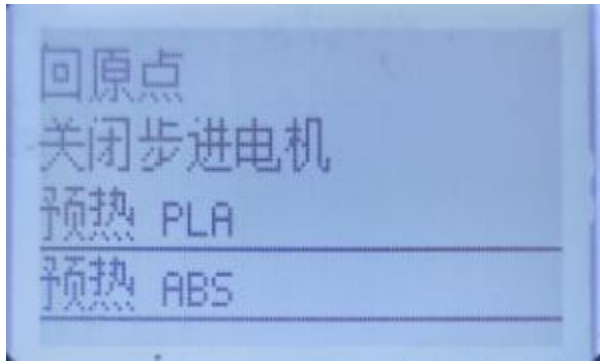
Normal boot screen, temperature display is similar to room temperature (temperature display -14 means no thermal plug is

Click to enter the first-level menu, no card inserted or poor card quality will show no card (rate above C4), after plugging qualified card, you can enter the menu and select the file for printing

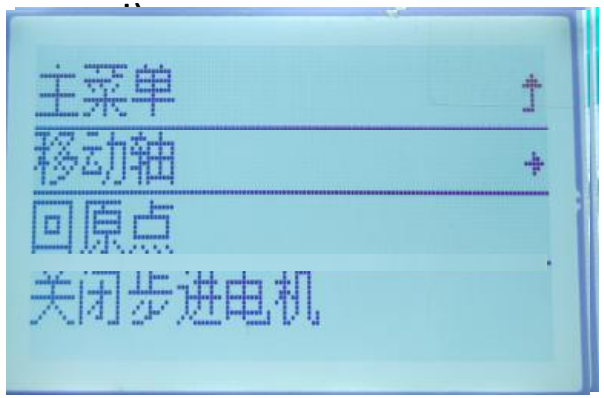


点下准备进入二级菜单

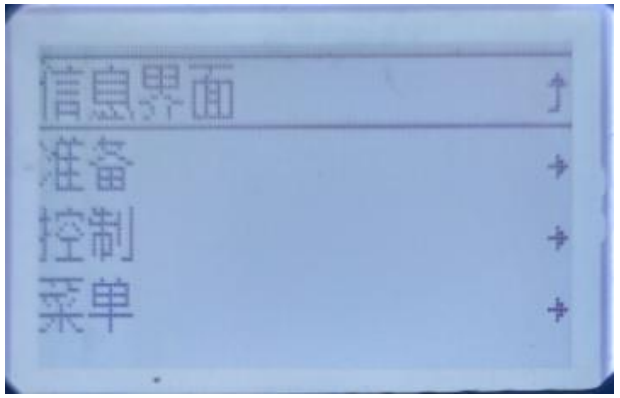
点回原点，检查电机和限位是否正常，接着可以进行调平



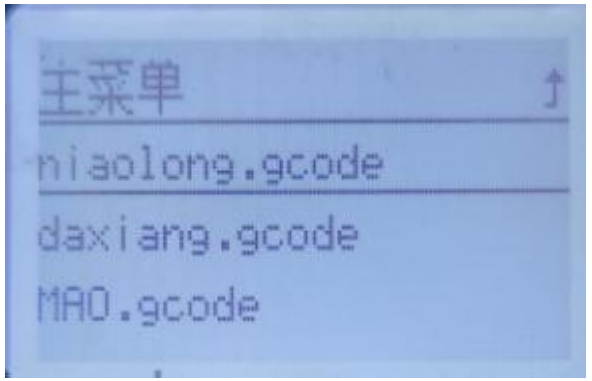
需要单独加热喷头点预热PLA（180℃）或ABS（240℃）



点移动轴，可以单独移动每根轴，移动量只能在坐标范围内，E轴有挤出保护，喷头温度预热上180度才会转(刷新固件可以关）



插卡后点菜单，就可以选择文件打印

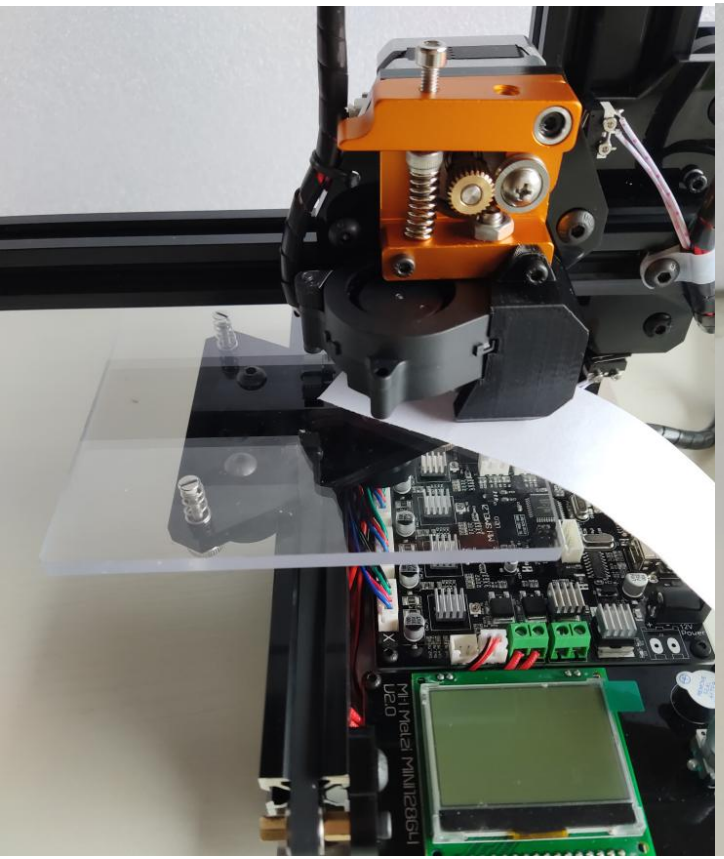
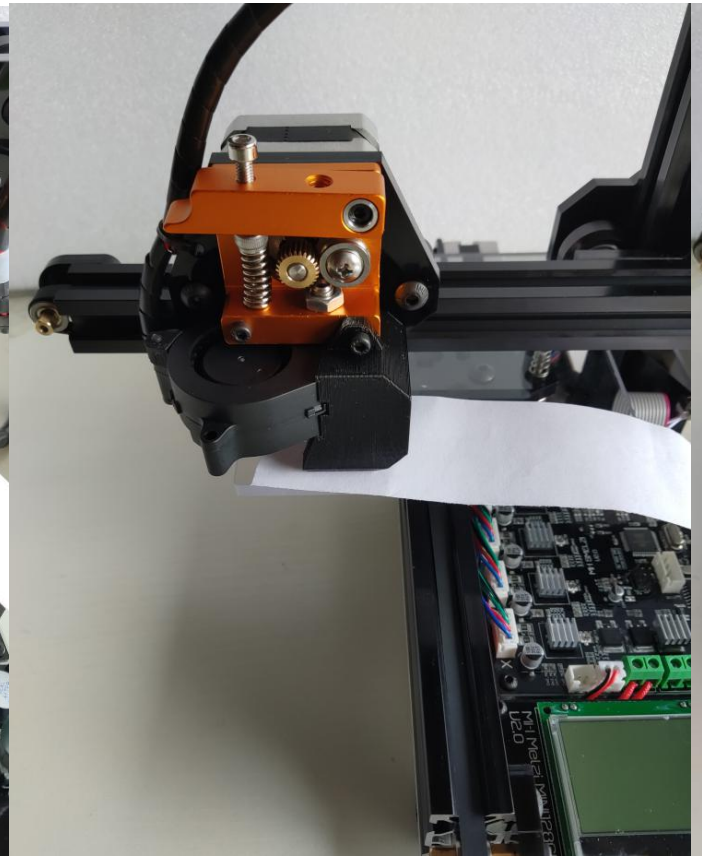
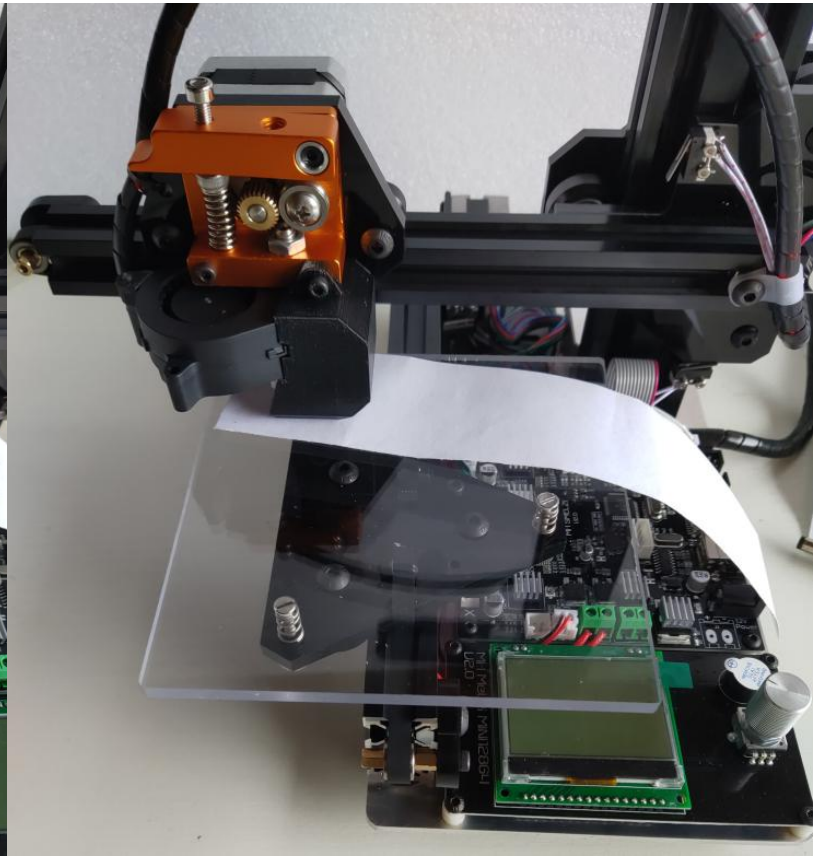


文件名不能为中文

Leveling (this step must be done)

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

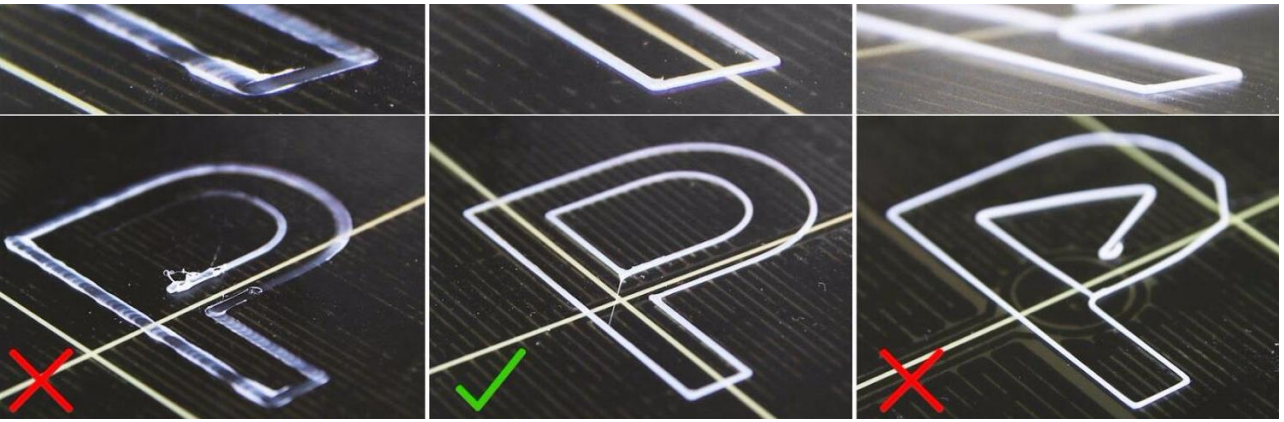
Step1　先把3个调节螺母紧到底，然后点回原点让三轴归零
Step2　关机，在喷嘴和平台间放一张A4复印纸，微调平台下面的3个调节螺母，调节到喷嘴和平台的间距为A4纸的厚度
Step3　纸在喷嘴下面边调节边拖动A4纸，纸能拖动刚刚有点刮纸就合适了，依次把喷头移动到平台3个角调节，3个角喷嘴和平台的间距调好了，整个平台间距就对了，3个角轮回调两遍。

依次移动到3个角重复调平操作，轮回调两三圈
打印的时候可以先等着开始打印，画完第一层任务外圈，确认调平没问题再离开机器
（特别是打印体积大的模型，建议每次检查）

Leveling

As shown in the normal state



Small spacing, extruding sheet, scraping platform

Good spacing and good effect

Large spacing, unstable adhesion

注意调平后观察平台下面，热床不能被弹簧以外的东西顶住，会使热床变弯，

解决办法：把Z限位向上移动一点，再重新调平

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/

装卸材料

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.到底

Be sure to press the extruding arm with two fingers, only pressing on it may cause the X axis to be slanted

Replace material： 如f 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

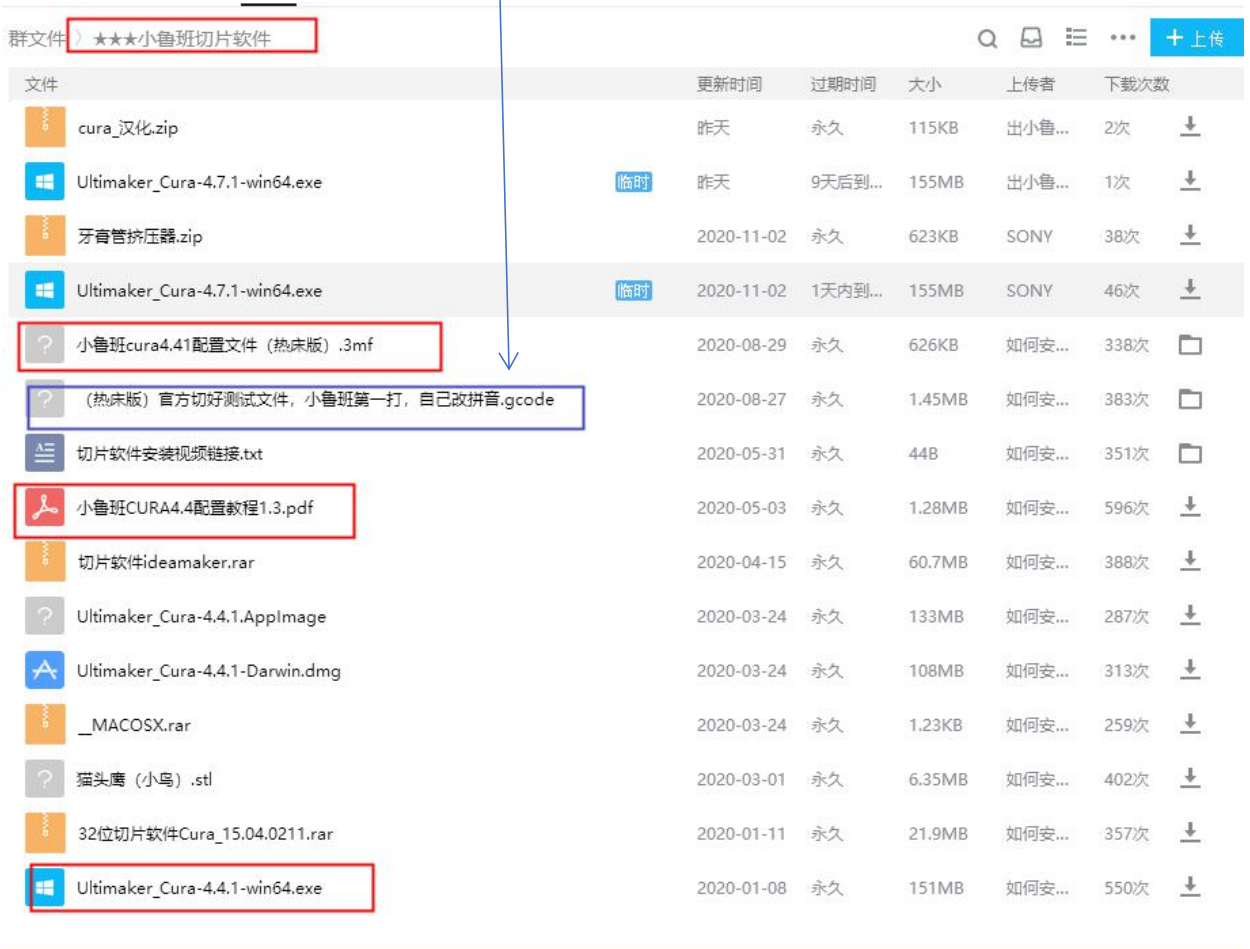
Download the cut test model in the official group, import the memory card, and then insert the memory card into the printer, select the cut file ***.gcode to print, and the machine will first preheat the print head to the printing temperature.Start printing, observe whether there is a scraping platform 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

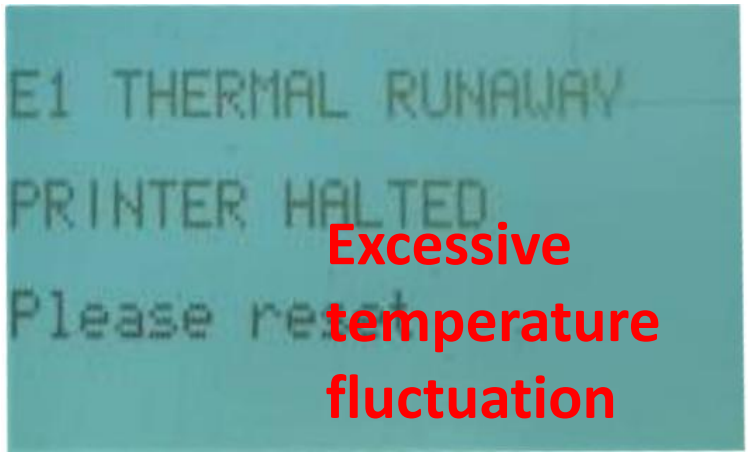
Error analysis

Common reasons:

1. The limit is inserted incorrectly
2. Wrong plug in motor

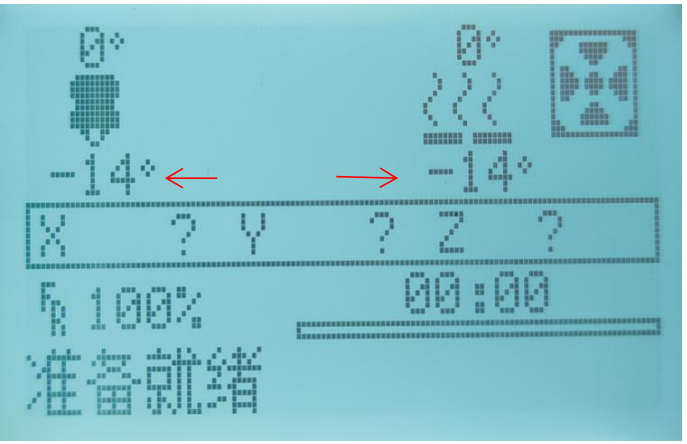
Common reasons:

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

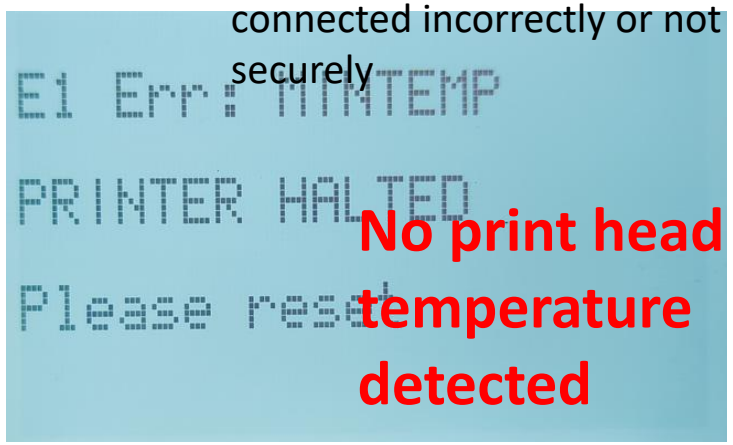


Solution：

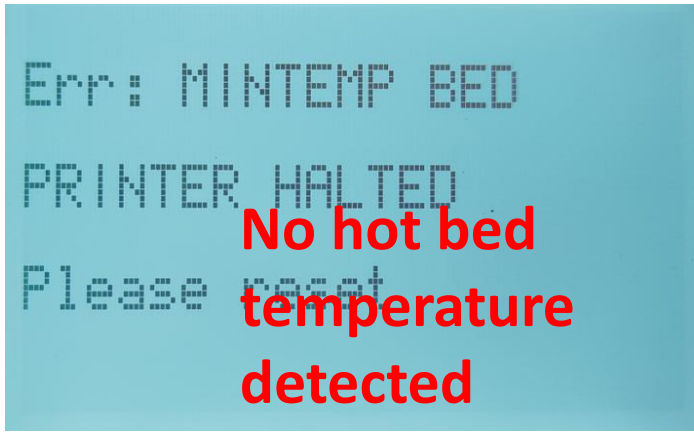
1. Check whether the thermal plug is good
2. Open the fan cover to print
3. Flash the latest version 2.3 or higher firmware



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



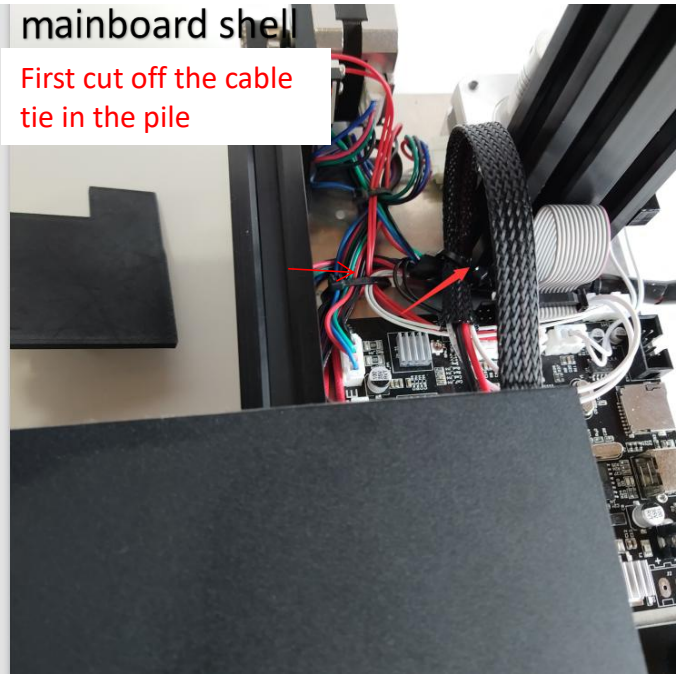
Check the thermal line and head of the print head

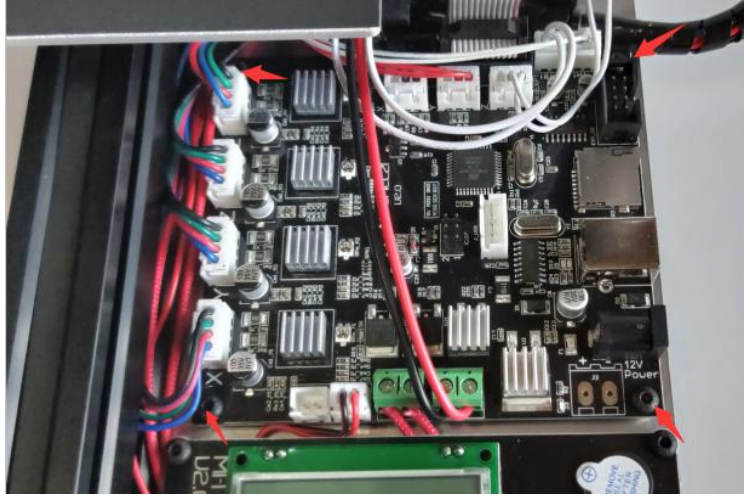


Check the thermal line and head of the hot bed

Install after printing the mainboard shell

First cut off the cable tie in the pile

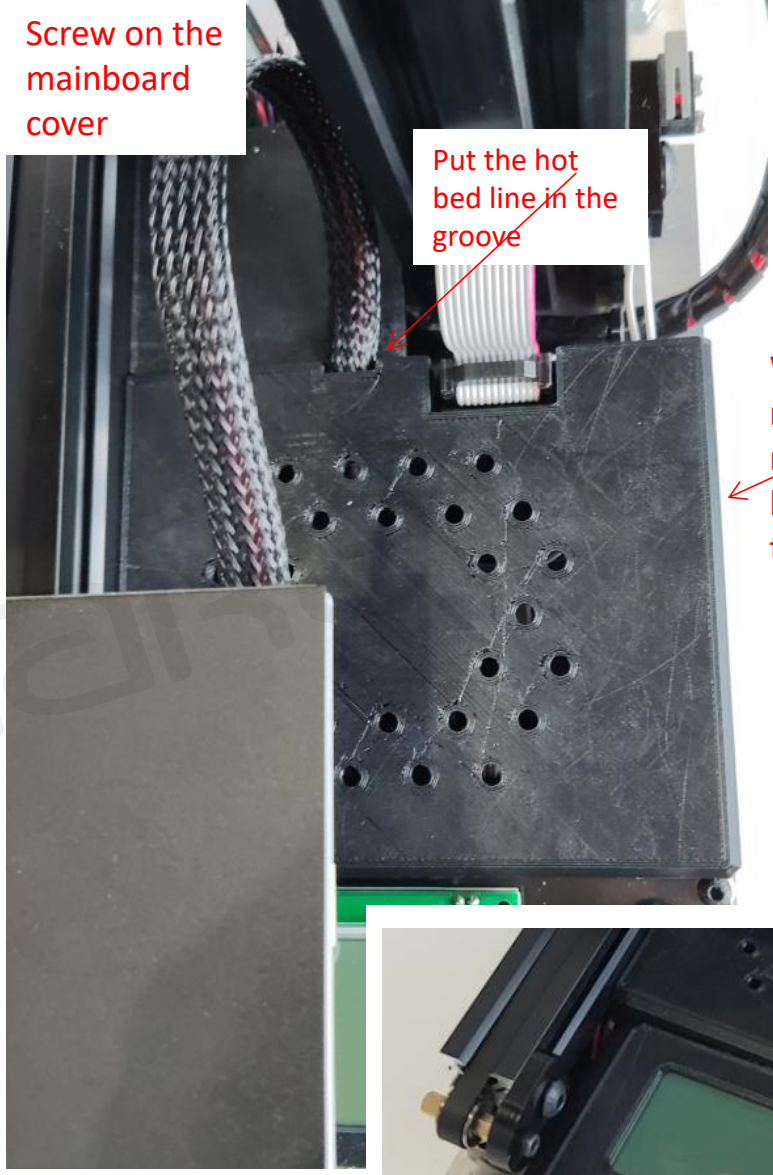




The screws of the mainboard go through from bottom to top, be careful not to fall out of the washers

Screw on the mainboard cover

Put the hot bed line in the groove



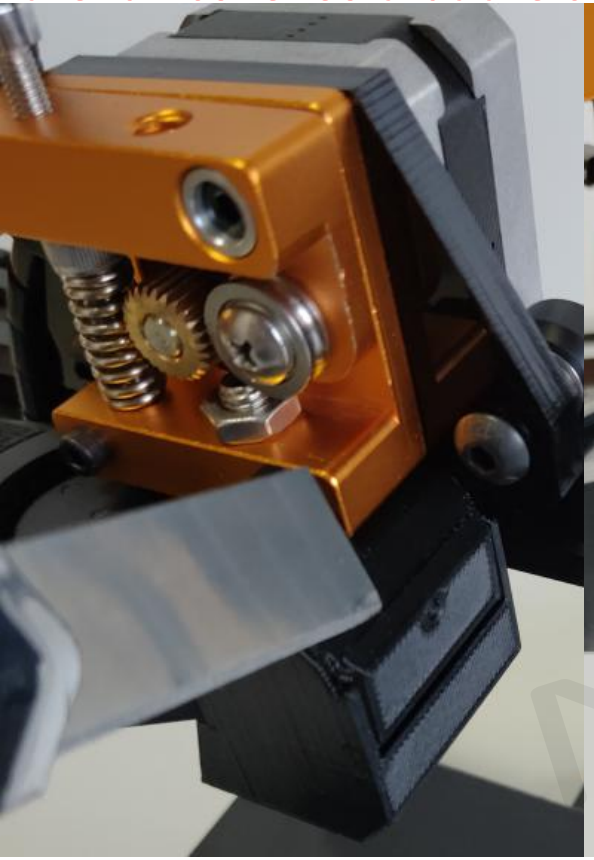
When installing and removing the mainboard cover, be sure to pull out the card first

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)

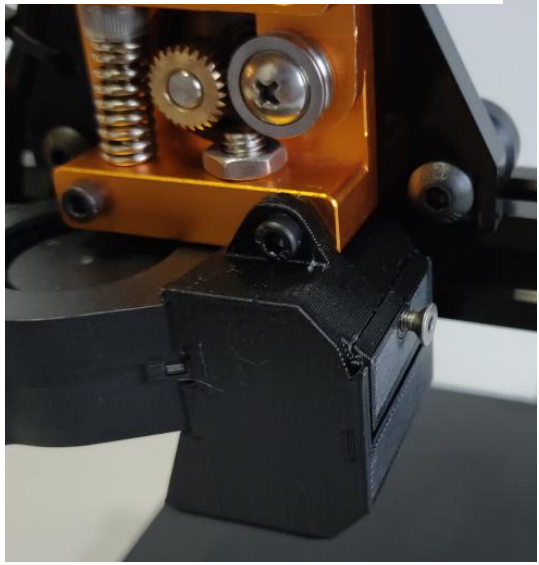
Use a knife to cut into the slit in the back cover of the fan cover so that the cover can be opened



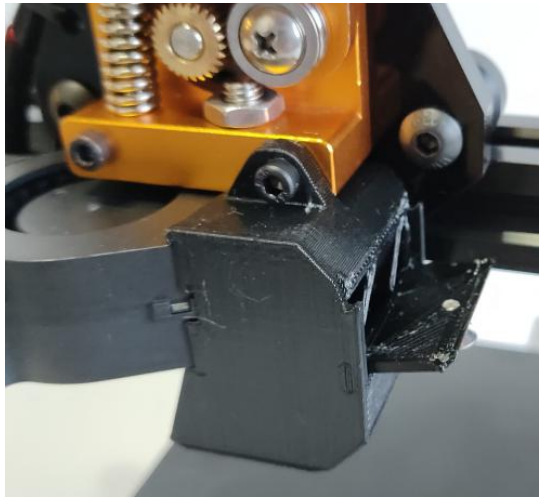
Twist a short M3 screw (the one in the extrusion bag)

Screw not to exceed the cover

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



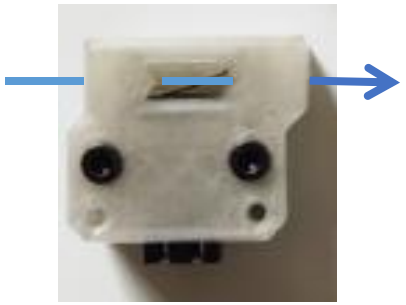
Open state:
The model freezes slowly,suitable for ABS



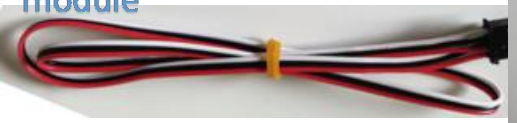
Material break detection

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

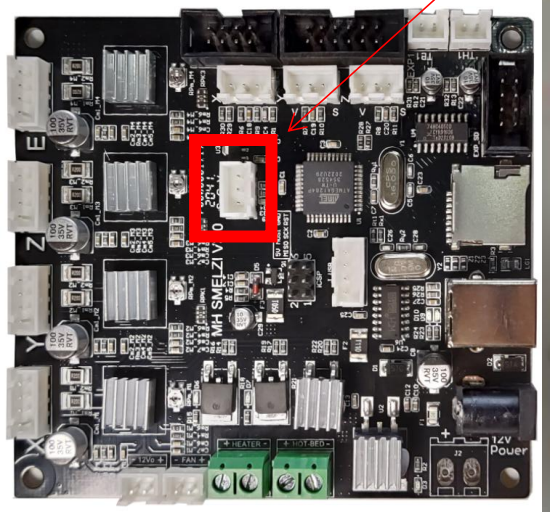


Material break detection module

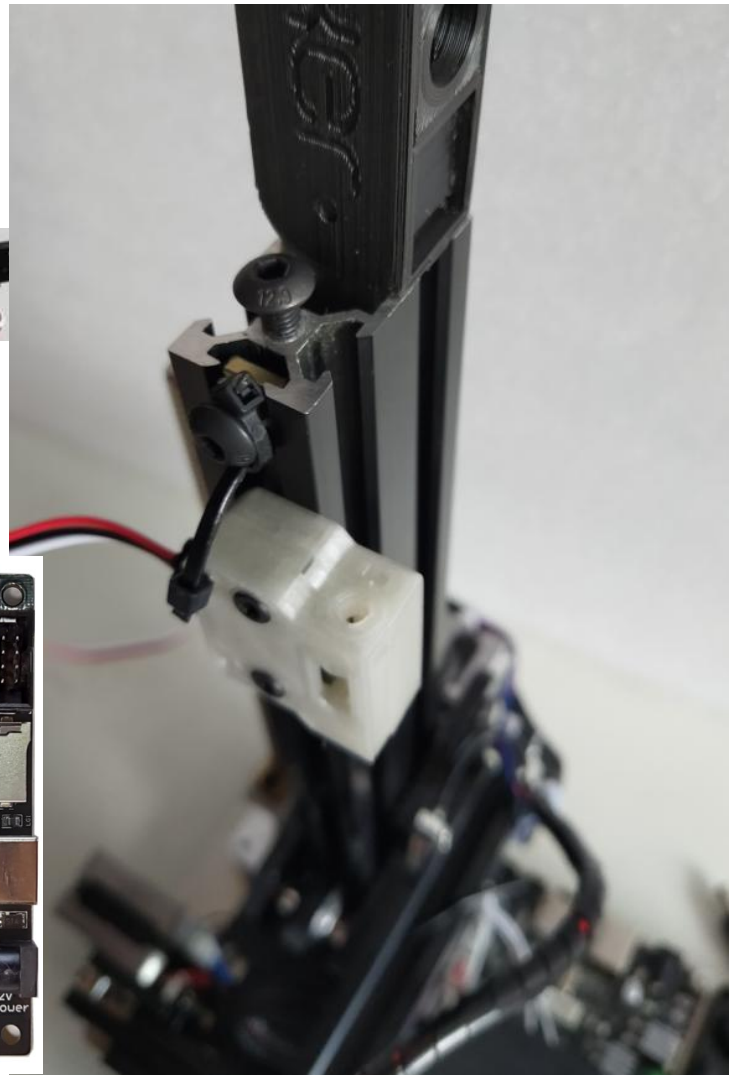


0.5m 3P line

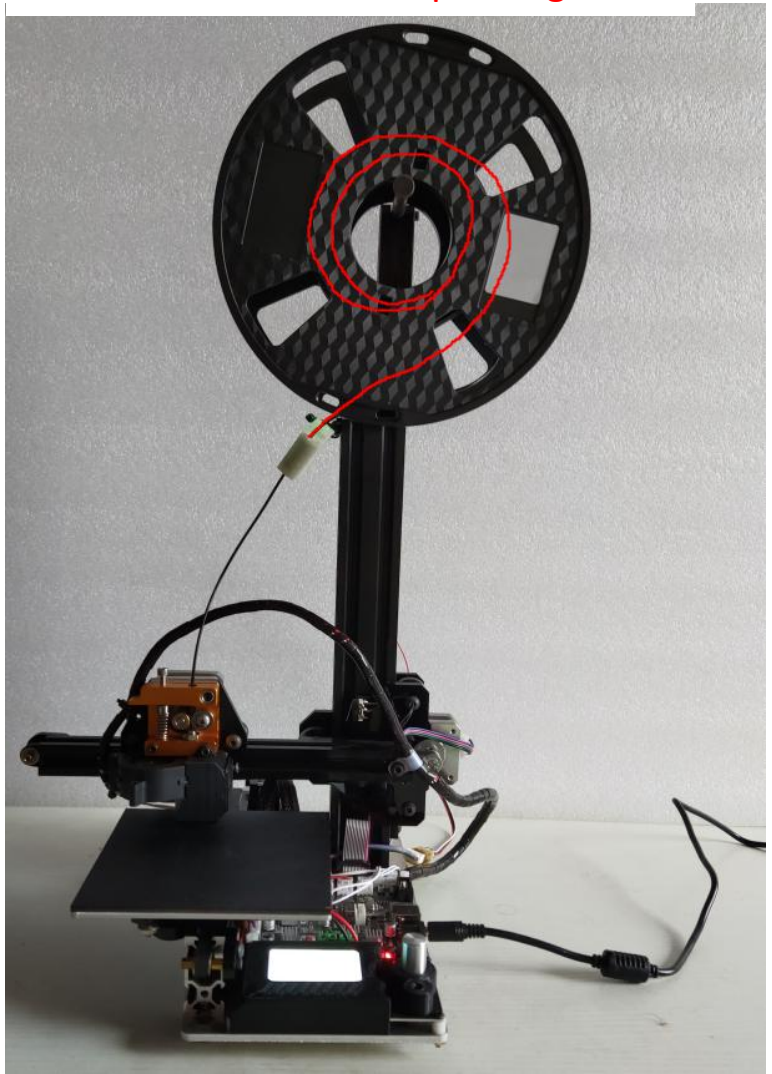
Wire the socket of the module and the mainboard

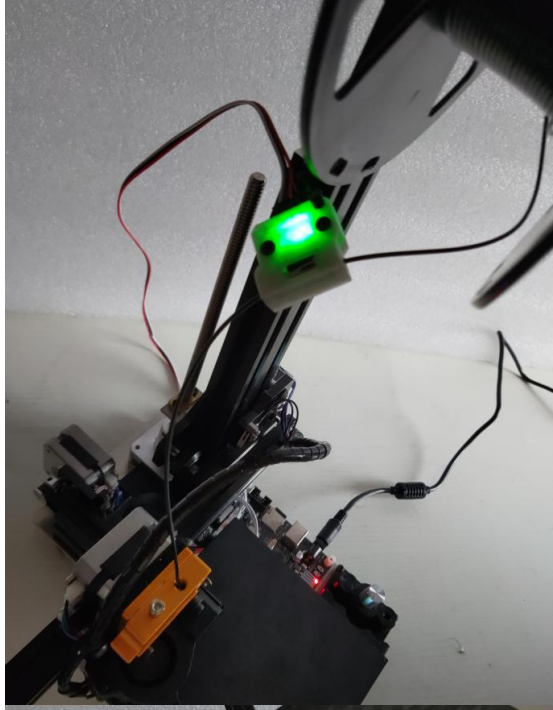


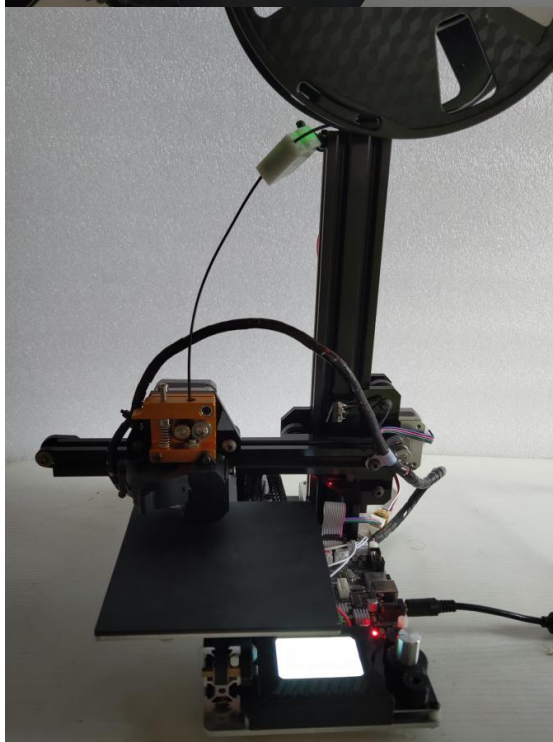
Fix one M5 screw + M5 square nut on the top of the side, and 2 tie straps are tied and fixed as shown in the figure. The tie straps should not be tightened and can be moved flexibly



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

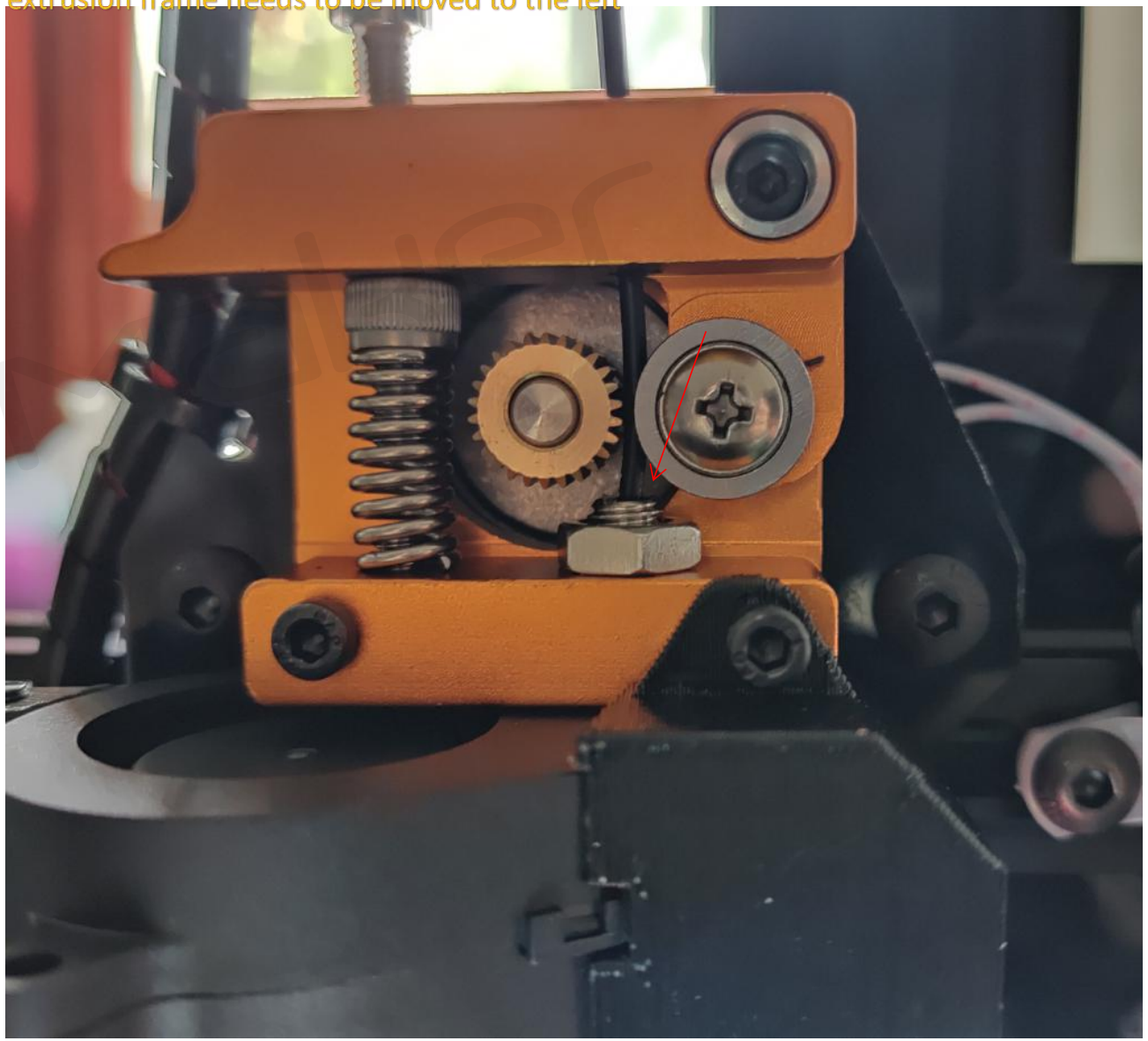
1.Poor throat heat dissipation
checking point： a.Fan rotates normallyb.The fan is not installed as required, air leakage

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

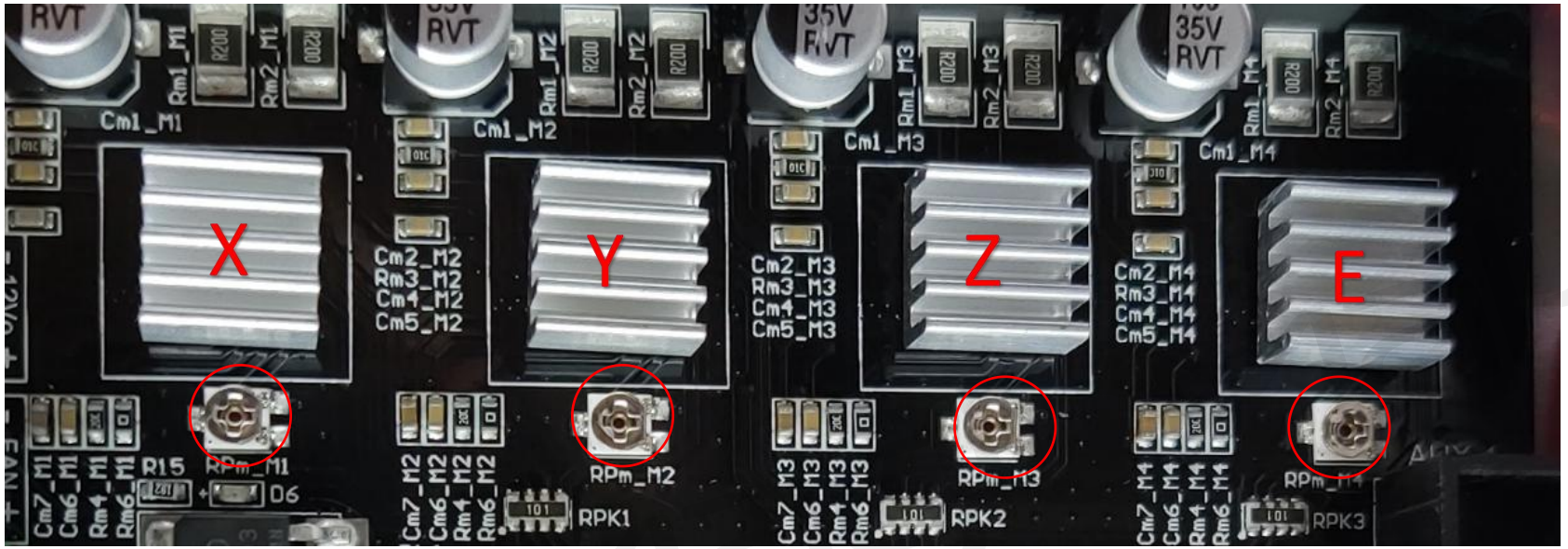
5. The current of the motor is insufficient (the current has been adjusted in the factory setting, and the above 4 problems have been checked and there is no problem before considering this)

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



电机电流调节教程（出厂电流都调好了的，调电流有风险，请确认看懂后再操作）
（调节操作前要拔掉电机，不然烧驱动，最好断电操作）

散热片旁边是驱动电流器，可调节驱动电流，顺时针调小，逆时针调大

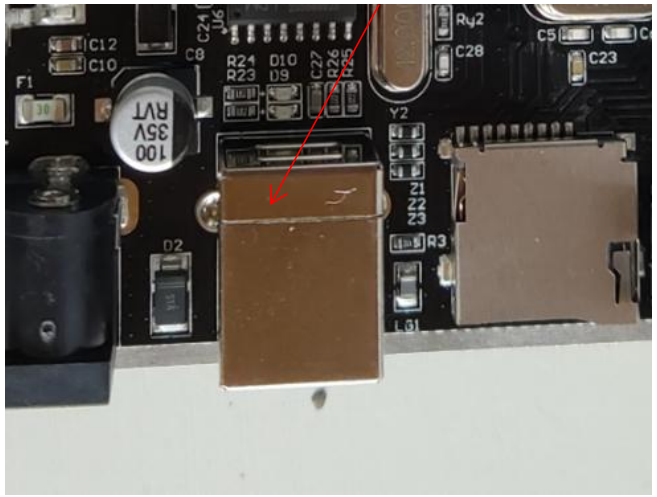


---无万用表盲调法---

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）

---测电流方法---

万用表开到直流电压2V档，
红笔点电流器，黑笔点接地（数据线插口外壳）测出的电压值/1.6,就是实际电流
电机的额定电流0.9A，0.6A比较合适，大了容易发热，
不要超过0.9A



调节最终结果

在力气和发热两个属性中调和个中间值

维护

a避免灰尘多的环境下使用，避免暴晒
B 滑轮轴承和丝杆可以上润滑油（注意油别滴到平台上了，平台粘了油不粘模型，如果粘上了拆下用洗洁剂洗干净）
c喷嘴堵头可以用直径0.3-0.4mm的针预热后通下，出现喷嘴没堵，但出丝比较吃劲的情况，是铁氟龙管磨损，就需要换喉管或喷头了

常见问题处理

1堵头

FDM堵头是难免的，原因大概有几个
1，喷嘴损伤，一般是未调平或错误操作刮平台造成的，换个喷嘴
2，耗材有杂质，可以先试着温度预热到230挤出，不行就得捅了
3，喉管铁氟龙管损伤，,主要跟耗材和温度有关，调试到耗材的最佳温度打最好，这个换的成本也不高
4，喉管堵塞，风扇不转喉管必堵，检查好风扇
5，不正确的换丝操作
（1,2，的情况可以用直径0.3-0.4mm的针捅喷头，注意笔直向上捅

2内存卡不识别

内存需要质量较好，速率C4以上，容量小于16g

3不要频繁快速推动电机发电，容易烧坏驱动