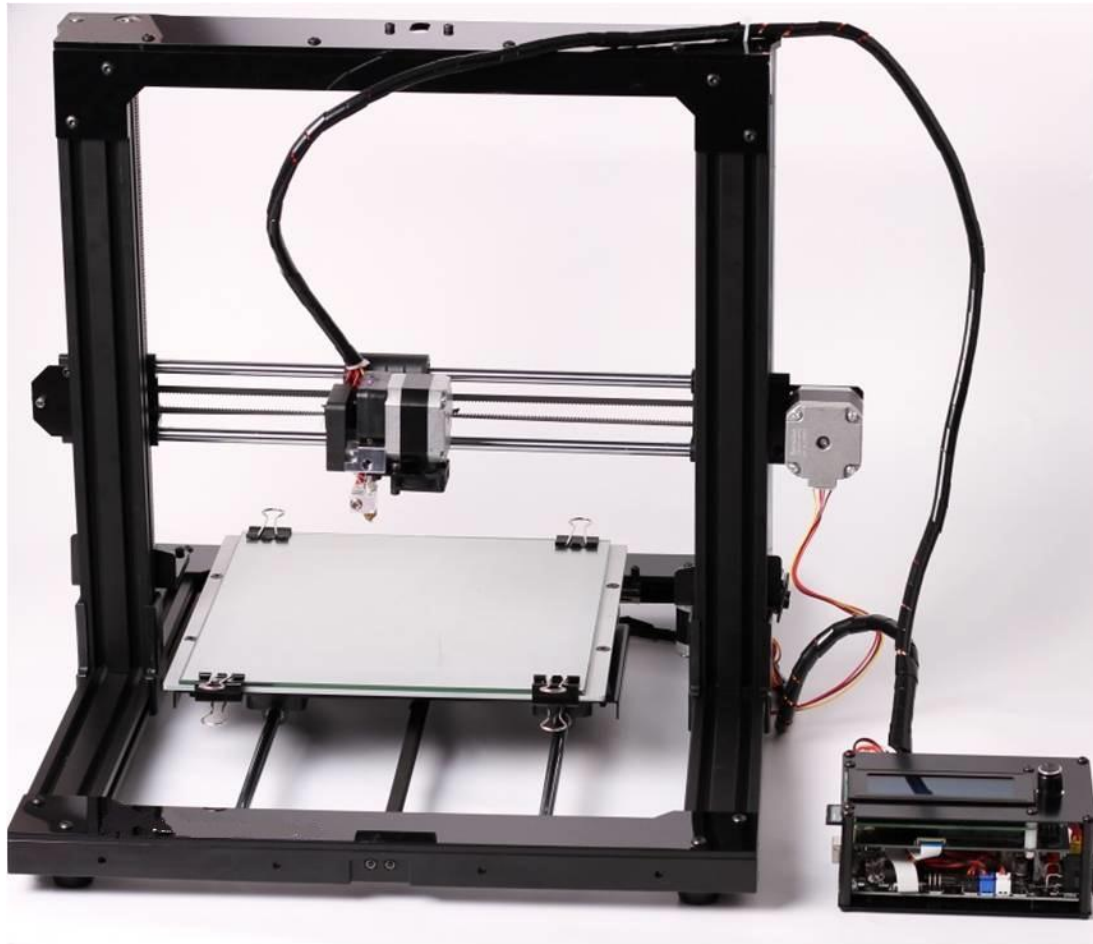


Core I3



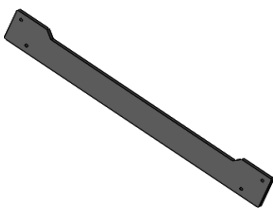
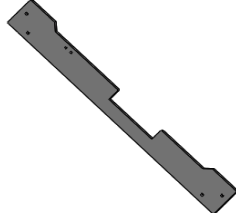
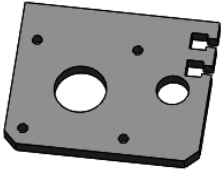
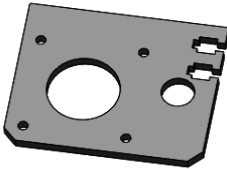
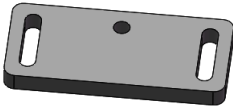
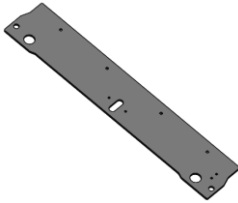




Assembly Instructions



I Components





 <p>2PCS(340mm)</p>	 <p>2PCS(400mm)</p>		
1	2	3	4
			
5	6	7	8
	 <p>3PCS</p>	 <p>4PCS</p>	
9	10	11	12



2PCS(Ø8*343mm)

1



2PCS(Ø8*420mm)

2



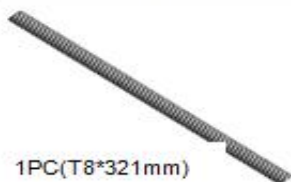
2PCS(Ø10*321mm)

3



1PC(T8*299mm)

4



1PC(T8*321mm)

5



3PCS

6



6PCS

7



4PCS

8



9



10



1PC (30*30mm, W×H)

11



1PC (40*40mm, W×H)

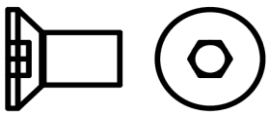
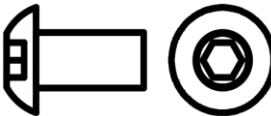
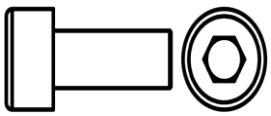
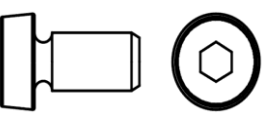

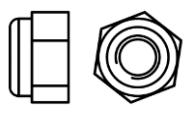
12

 <p>3PCS</p>			
13	14	15	16
			
17	18	19	20
			
21	22	23	24
			
25	26	27	28

			
 1	 2PCS	 1PC	 2PCS
 5	 6	 7	 8
 9	 10	 11	 12

			 <p>4PCS</p>
13	14	15	16
			
17	18	19	20

Screw Packing List

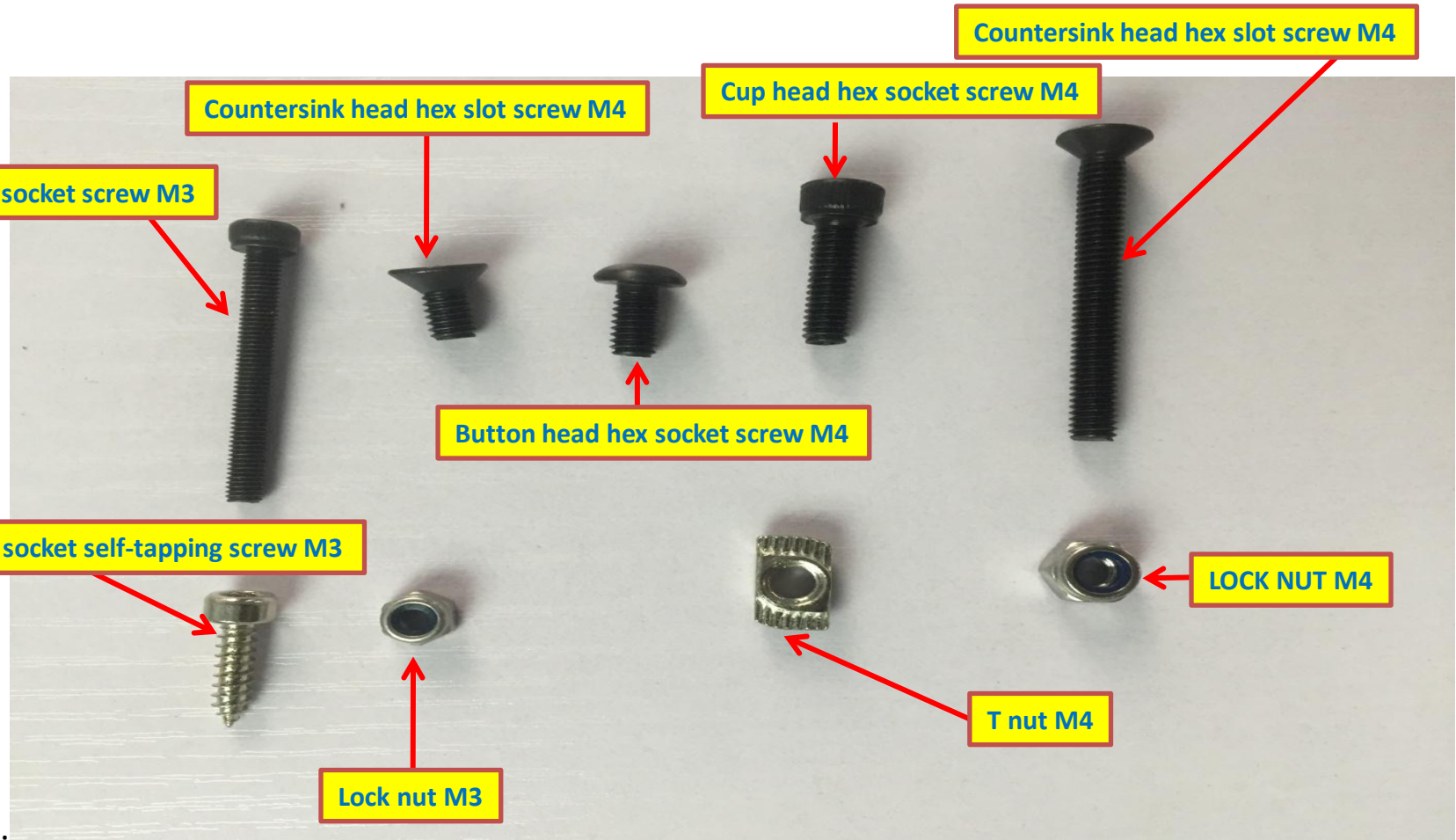
Bag #1				Countersink head hex socket screw	
Item	Descriptions	Specs	Quantity		
1	Countersink head hex socket screw	Carbon steel, M4x8	8		
2	Botton head hex socket screw	Carbon steel, M4x8	20		
3	T-nut	EU style, M4x10x6	32		
4	Cup head hex socket screw	Carbon steel, M4x14	4		
5	Cup head hex socket screw	Carbon steel, M3x8	7		
				Bottom head hex socket screw	
Bag #2					
Item	Descriptions	Specs	Quantity		
1	Lock nut	304 stainless steel, M4	10		
2	Botton head hex socket screw	Carbon steel, M4x25	10		
3	Cup head hex socket screw	Carbon steel, M3x16	2		
4	Cup head hex socket screw	Carbon steel, M3x10	10		
				Cup head hex socket screw	
Bag #3					
Item	Descriptions	Specs	Quantity		
1	Countersink head hex socket screw	Carbon steel, M4x35	4		
2	Spring	/	4		
3	Cup head hex socket screw	Carbon steel, M3x14	7		
				Cup head hex socket self-tapping screw	
Bag #4					
Item	Descriptions	Specs	Quantity		
1	Lock nut	304 stainless steel, M3	35		
2	Cup head hex socket screw	Carbon steel, M3x25	2		
3	Cup head hex socket screw	Carbon steel, M3x18	7		
4	Cup head hex socket screw	Carbon steel, M3x12	10	T-nut	
5	Cup head hex socket screw	Carbon steel, M3x6	14		
					
Bag #5					
Item	Descriptions	Specs	Quantity	Lock nut	
1	Filament tube	4*2	1		
2	Nylon spacer	2	1		
3	Nylon spacer	4	5		
4	Nylon spacer	6	2		
5	Cup head hex socket self-tapping screw	Carbon steel, M3x12	2		

Tools:



Screws and nuts:

Please refer to below pictures for definitions of screws and nuts to be used.

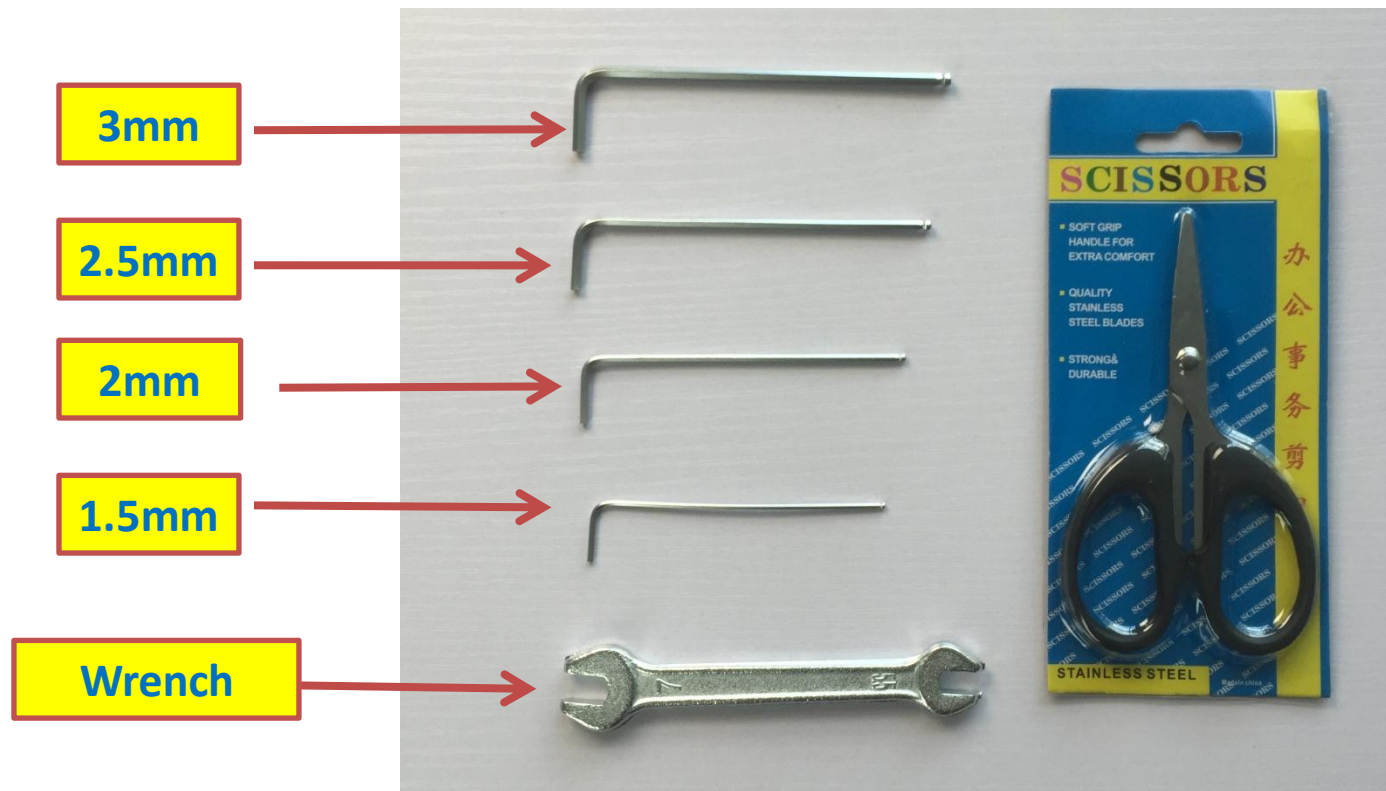


Notes:

1. T nut must be flat in aluminum profile slot, when a screw is turned into it, it wouldn't follow as fixed by walls of slot, thus screw can be tightened. If it's not in correct position, screw won't be able to be tightened into it.
2. Definitions of screw spec M3X8, M3X10, M4X8, M4X10,: M3 or M4 indicates the tooth type and diameter, x8 or x10 means its length.

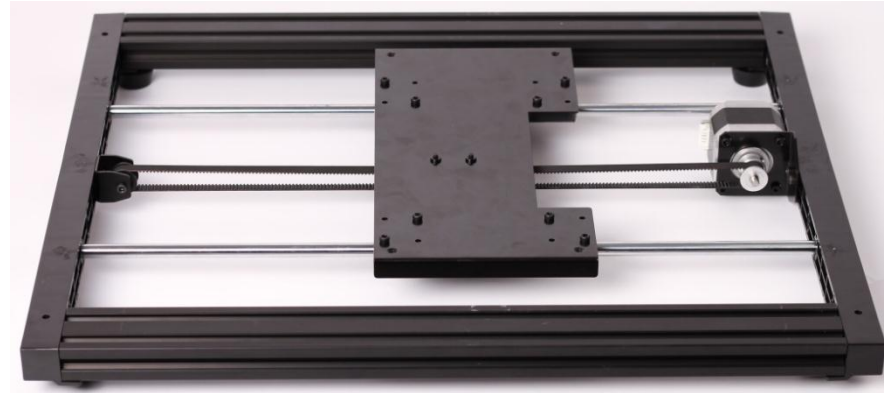
II List of Tools

Wrench x 1 (5.5-7mm), Allen Keys x 4 (Size: 1.5, 2, 2.5, 3mm), Scissor x1

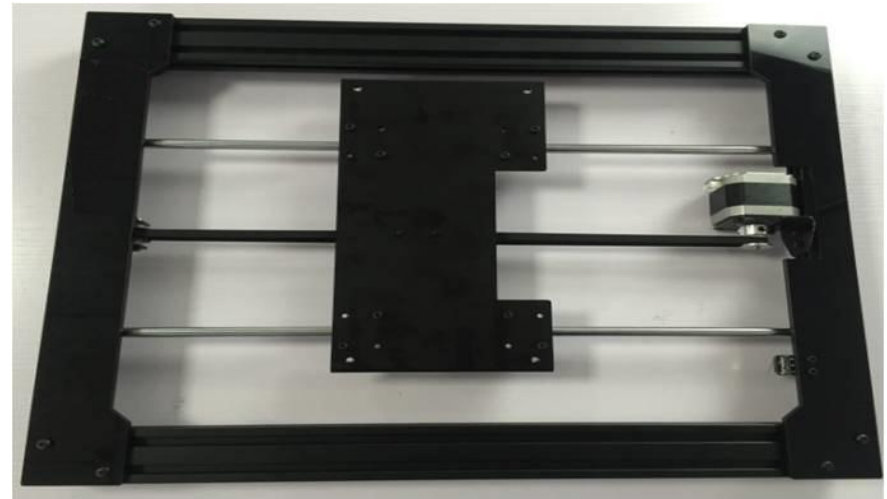


III Sequence of Assembly

1. Prepare to assemble Y motion system
 - 1.1 Assembly the frame
 - 1.2 Install the stroke switch for Y motion
 - 1.3 Pre-install the PMMA covers



2. Assembly Y motion system
 - 2.1 Build up the idle pulley assembly
 - 2.2 Mount pulley assembly to the frame
 - 2.3 Mount Y motion motor
 - 2.4 Install the foot pads and a piece of profile
 - 2.5 Put the timing belt on
 - 2.6 Fix the PMMA covers



3. Add X motion system

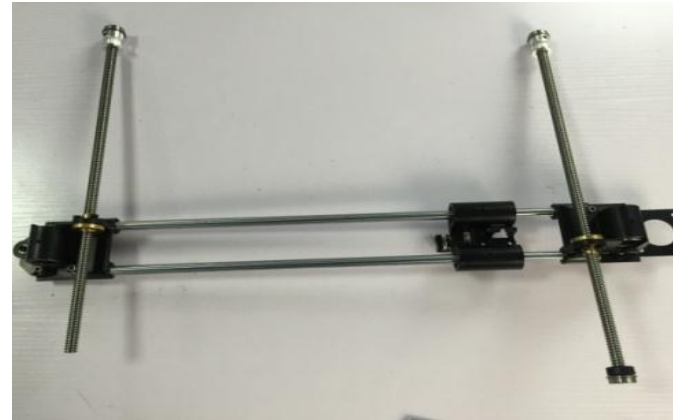
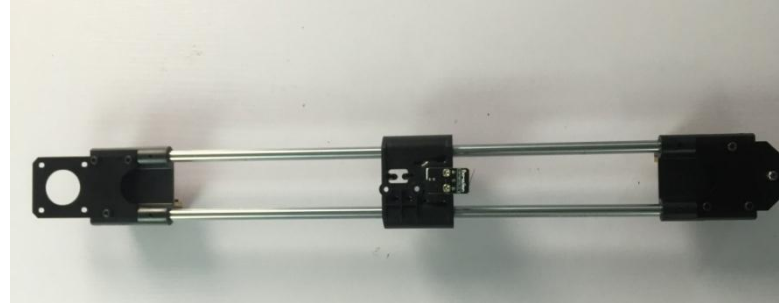
3.1 Assemble the sliding mechanisms

3.2 Install the idle pulley

3.3 Install the stroke switch

3.4 Install 2 driving screws

3.5 Install X motion motor



4. Prepare to assemble Z motion system

4.1 Assembly Z motion motor assembly

4.2 Install the right angle pieces

4.3 Install the belt adjustment block

4.4 Install the frame (profiles) for Z motion

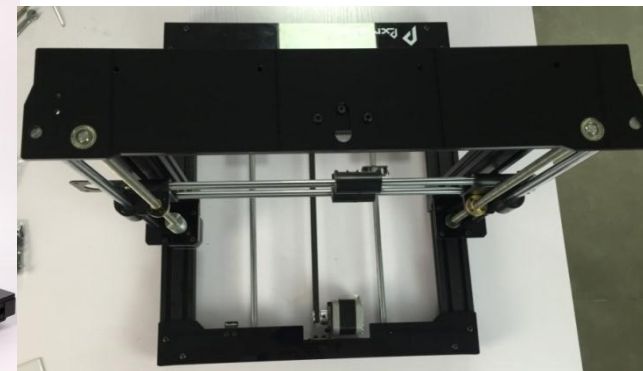
4.5 Install Z motion motor assembly

4.6 Install the connection bar

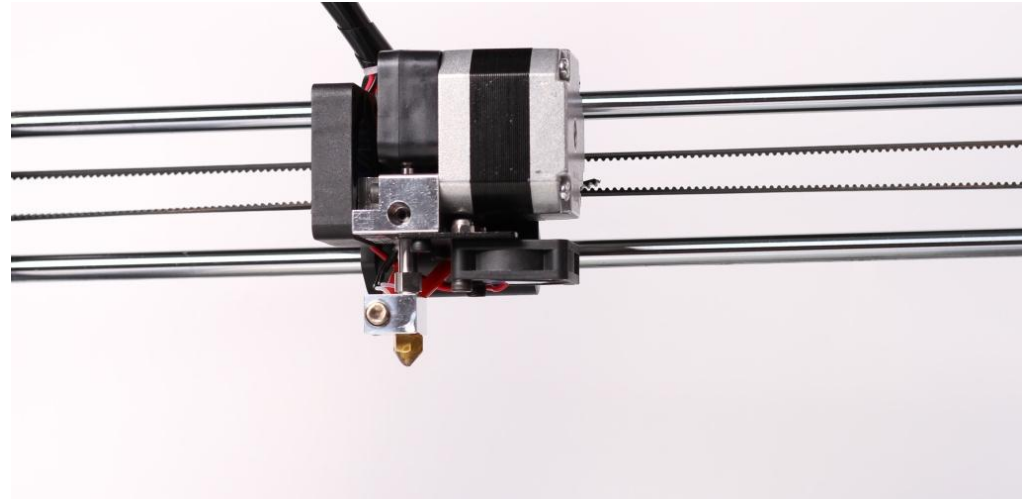
4.7 Install the decoration plate

4.8 Fix the 2 driving screws

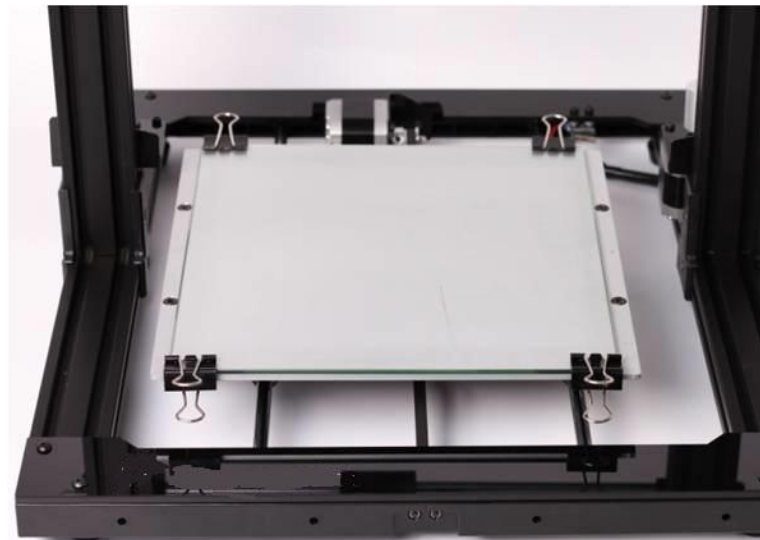
4.9 Install the timing belt



- 5. Assemble hot end assembly
 - 5.1 Install the smaller cooling fan
 - 5.2 Install extrusion motor
 - 5.3 Assemble nozzle and connected components together
 - 5.4 Install the bigger fan
 - 5.5 Install nozzle assembly
 - 5.6 Install X motion belt

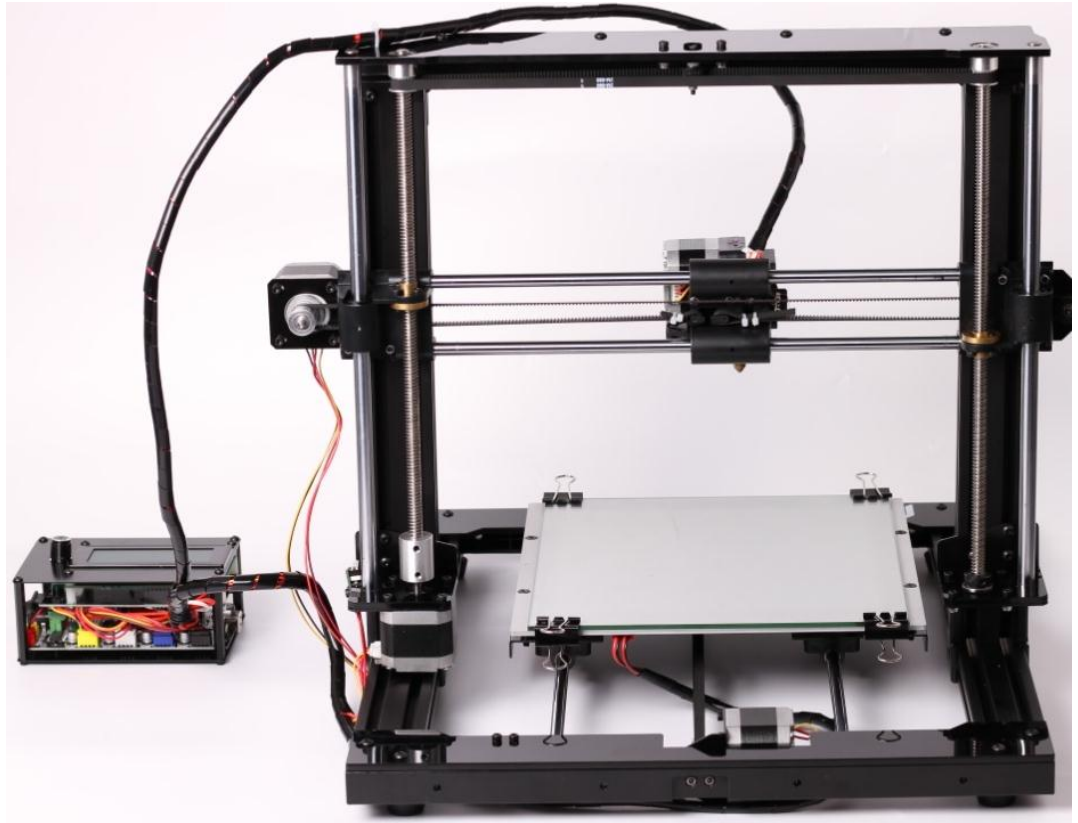


- 6. Install the platform
 - 6.1 Install the heating plate
 - 6.2 Put on the glass top



- 7. Wire connection instructions
 - 7.1 Connect wires to 3d printer
 - 7.2 Connect wires to control box

8. Z motion system self-adjustment



IV Process Details of Assembly

Material list #1:

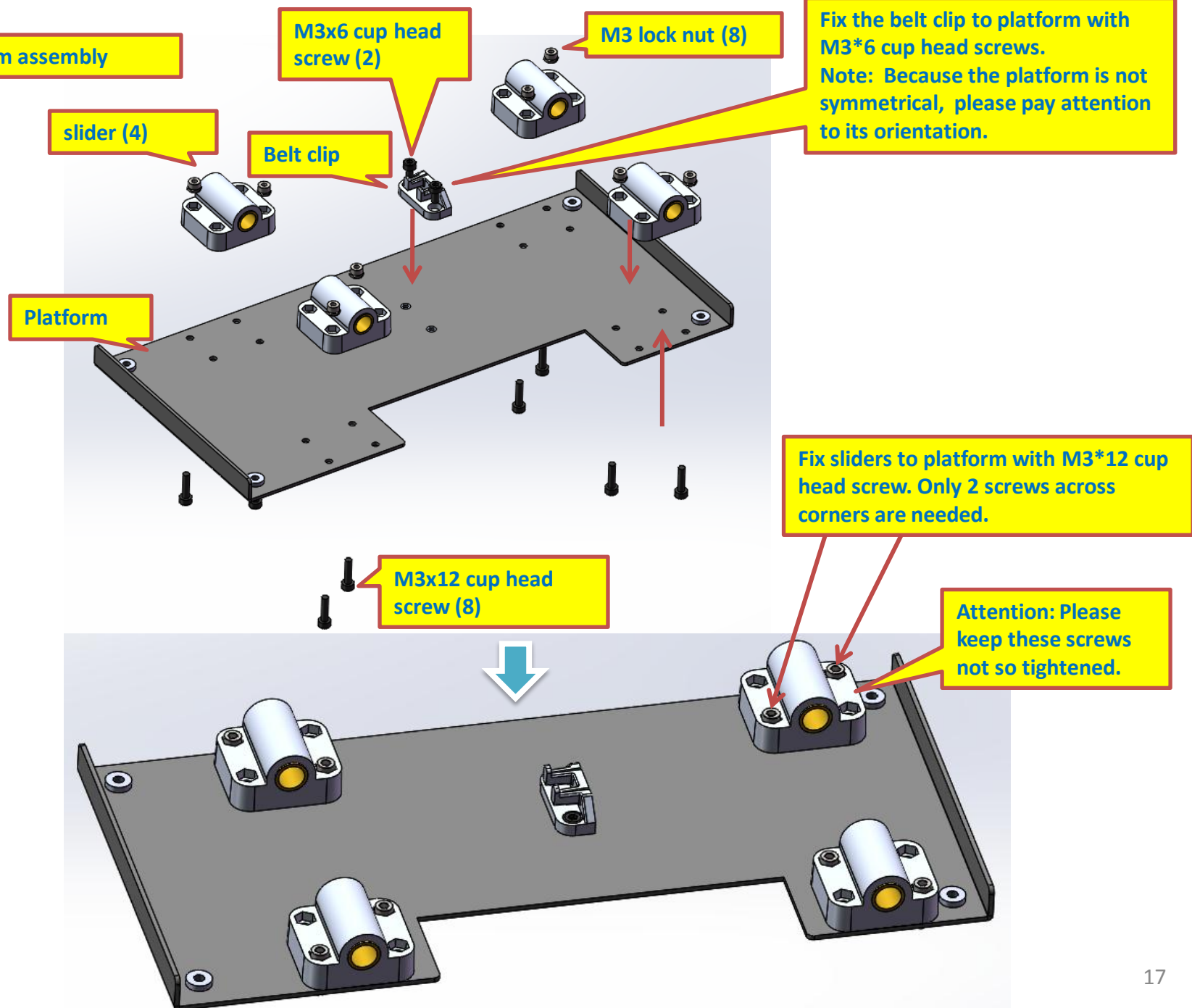
Sequence	#	Description	Q'TY	Remark
Y motion system assembly	1	Aluminum profile	2	The longer ones
	2	Connection bar	2	Plastic
	3	Guiding pin	2	The longest
	4	Slider	4	Plastic
	5	Foot pad	4	
	6	Idle pulley seat for Y	1	Sheet steel
	7	Motor seat for Y	1	Sheet steel
	8	Platform	1	Sheet steel
	9	Idle pulley	2	Plastic
	10	Pulley	1	Pre-assembled to motor
	11	Stepper motor	1	
	12	Timing belt	1	Open ended one with shorter length
	13	PMMA pc - A	1	PMMA
	14	PMMA pc - B	1	PMMA
	15	Stroke switch	1	
	16	Nylon spacer	2	Height: 4mm
	17	Belt clip for Y	1	Plastic



Attention:

- ① Use the longer aluminum profiles for this step.
- ② Use the open-ended timing belt with shorter length for this step.

1.1 Platform assembly



1.2 Remove the protective film from PMMA plates

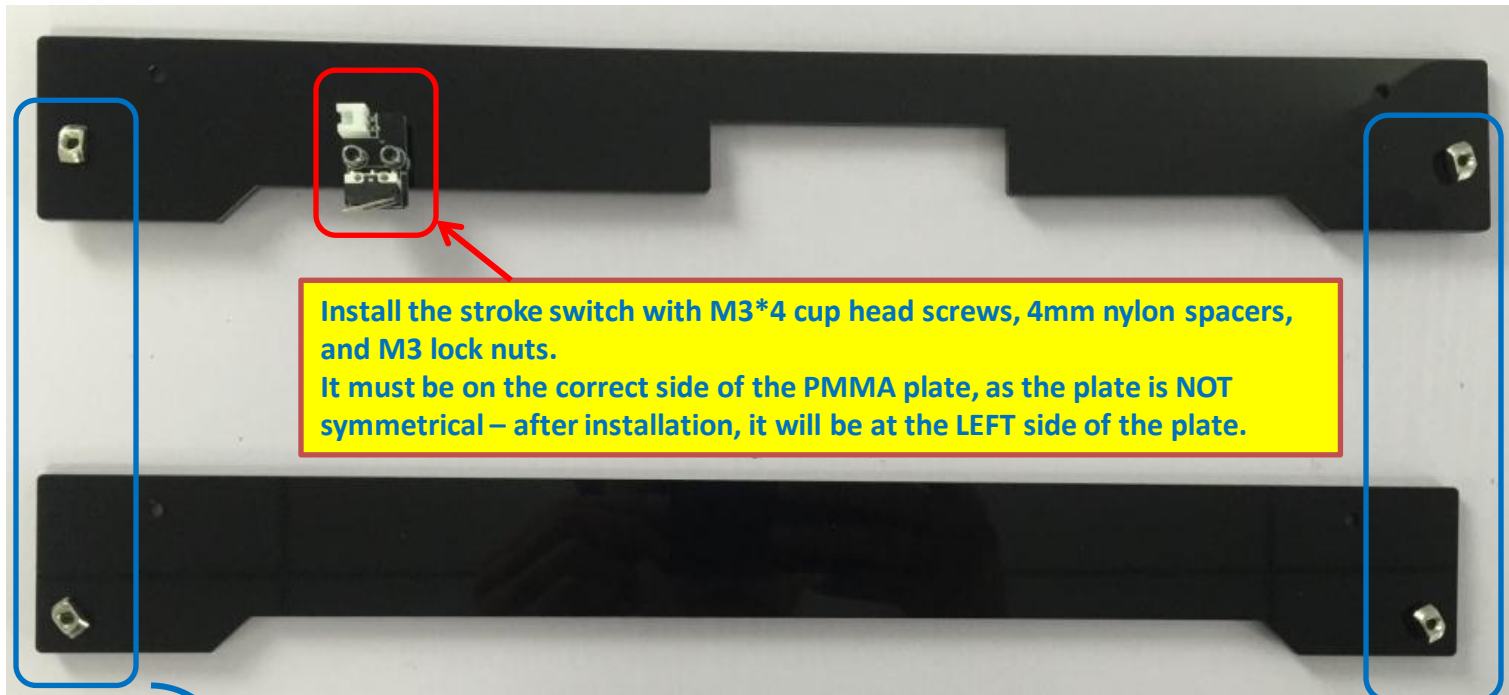


These 2 PMMA plates will be used for the next step.

Install the stroke switch with screws / nuts, pay attention to its orientation.



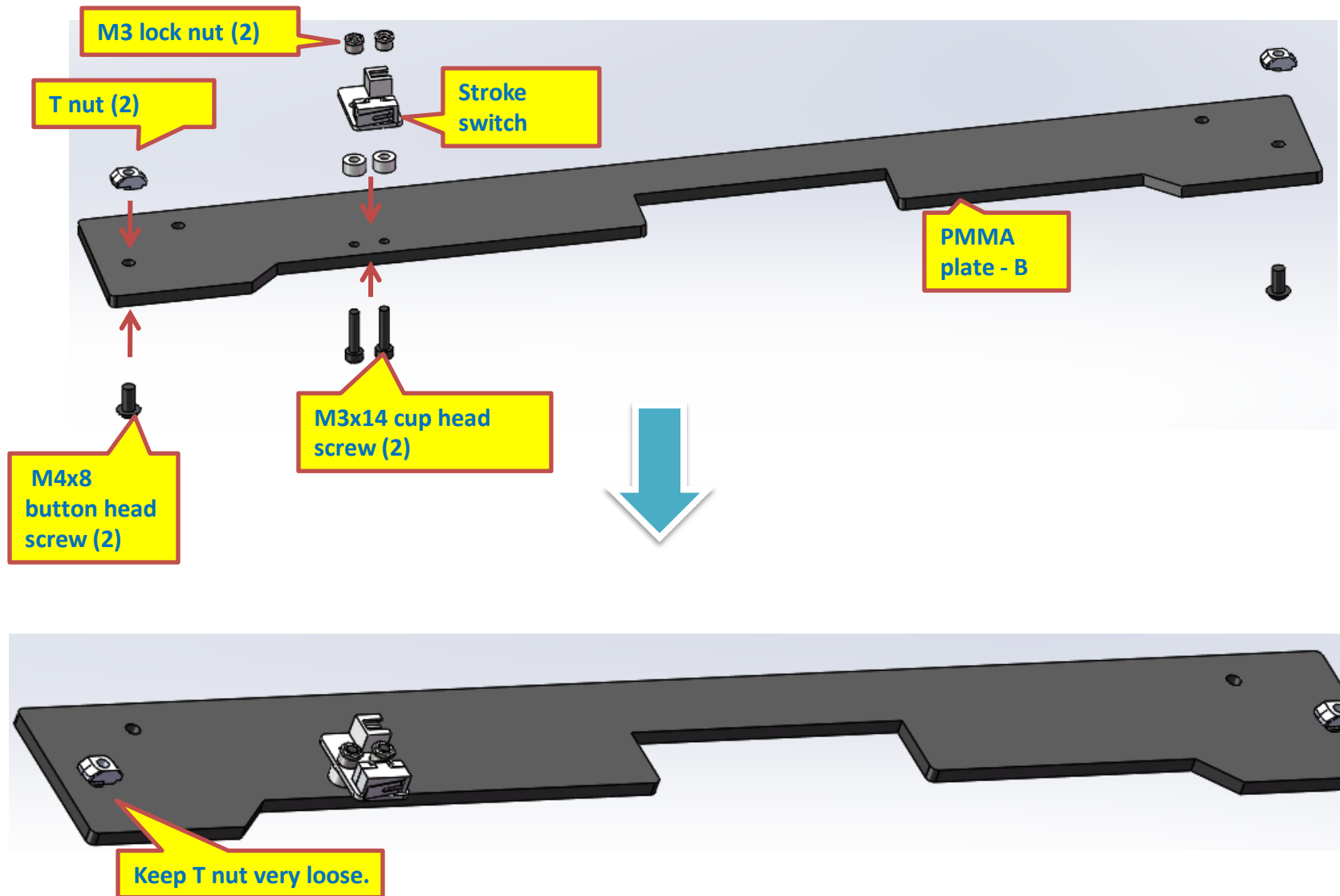
4mm nylon spacer



Install the stroke switch with M3*4 cup head screws, 4mm nylon spacers, and M3 lock nuts.
It must be on the correct side of the PMMA plate, as the plate is NOT symmetrical – after installation, it will be at the LEFT side of the plate.

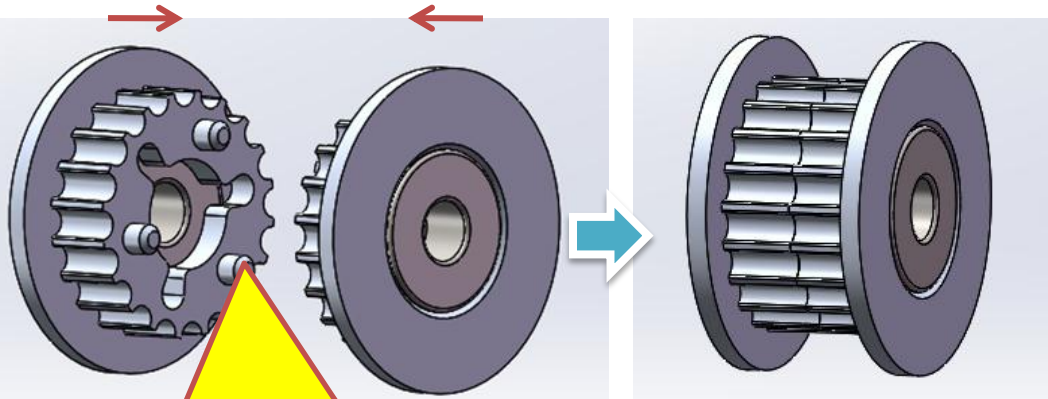
Add M4*8 button head screws and T nuts to PMMA plate, just hang them there on the plate and do not tighten them.

1.3 Pre-install the PMMA covers



2. Assembly Y motion system

2.1 Build up the idle pulley assembly (3 sets needed)



The 2 sides of idle pulley is snapping fitted with 3 pillars into slots. Pay attention to the orientation to ensure they match EXACTLY.

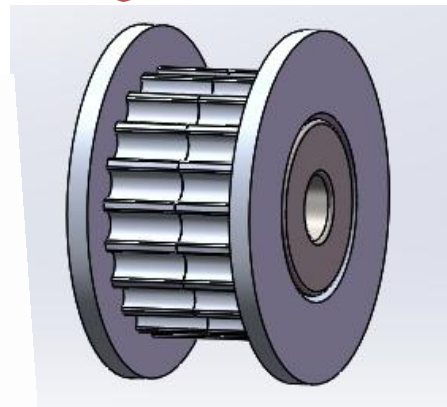
The teeth of the 2 sides must match EXACTLY.



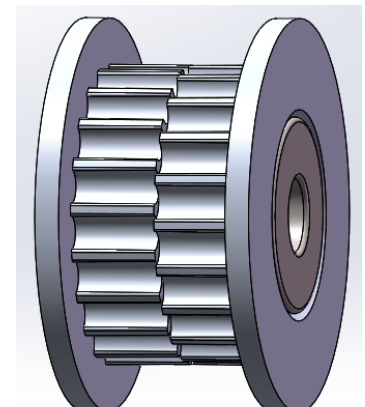
'v'



'x'



'v'



'x'

2.2 Mount pulley assembly to the frame

- ① Fix the idle pulley seat to the connection bar with M3*18 cup head screws.
- ② Then add the idle pulley by using M3*25 cup head screw, 4mm nylon spacers, and M3 lock nuts.

M3 lock nut (3)

Idle pulley seat for Y (black sheet steel component)

M3 lock nut

M3x18 cup head screw (2)

M3x25 cup head screw

Idle pulley

4mm nylon spacer (2)

Attention :
DON'T over tighten the screw. When the pulley is touched by hand, it should be able to move smoothly.

2.3 Install motor for Y motion

- ① Secure motor seat for Y to connection bar with M3*8 cup head screws and M3 lock nuts.
- ② Add motor to motor seat with M3*6 cup head screws. DON'T tighten the screws now since motor position will be adjusted later.
- ③ Secure the pulley to the shaft of motor. Pay attention to the orientation of the pulley and keep distance between it and the motor housing.

U shaped holes:
DON'T tighten
the screws in
order to adjust
motor position
later.

M3 LOCK
NUT (2)

Attention: Do not
mistake the
orientation of the
socket.

Stepper
motor

Pay attention to the orientation
of the pulley.

Motor seat for Y
(BLACK sheet steel part)

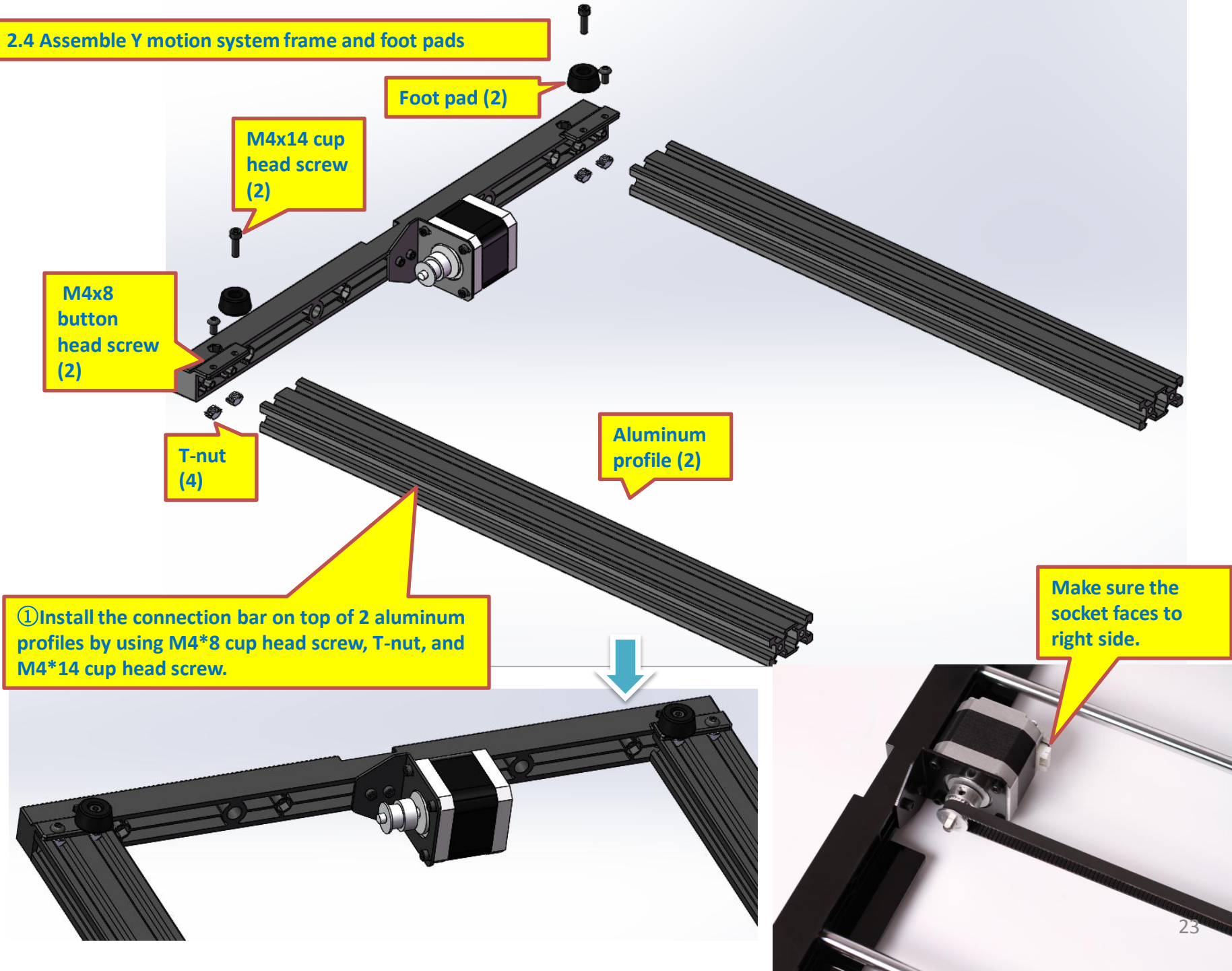
M3x6 cup
head
screw (4)

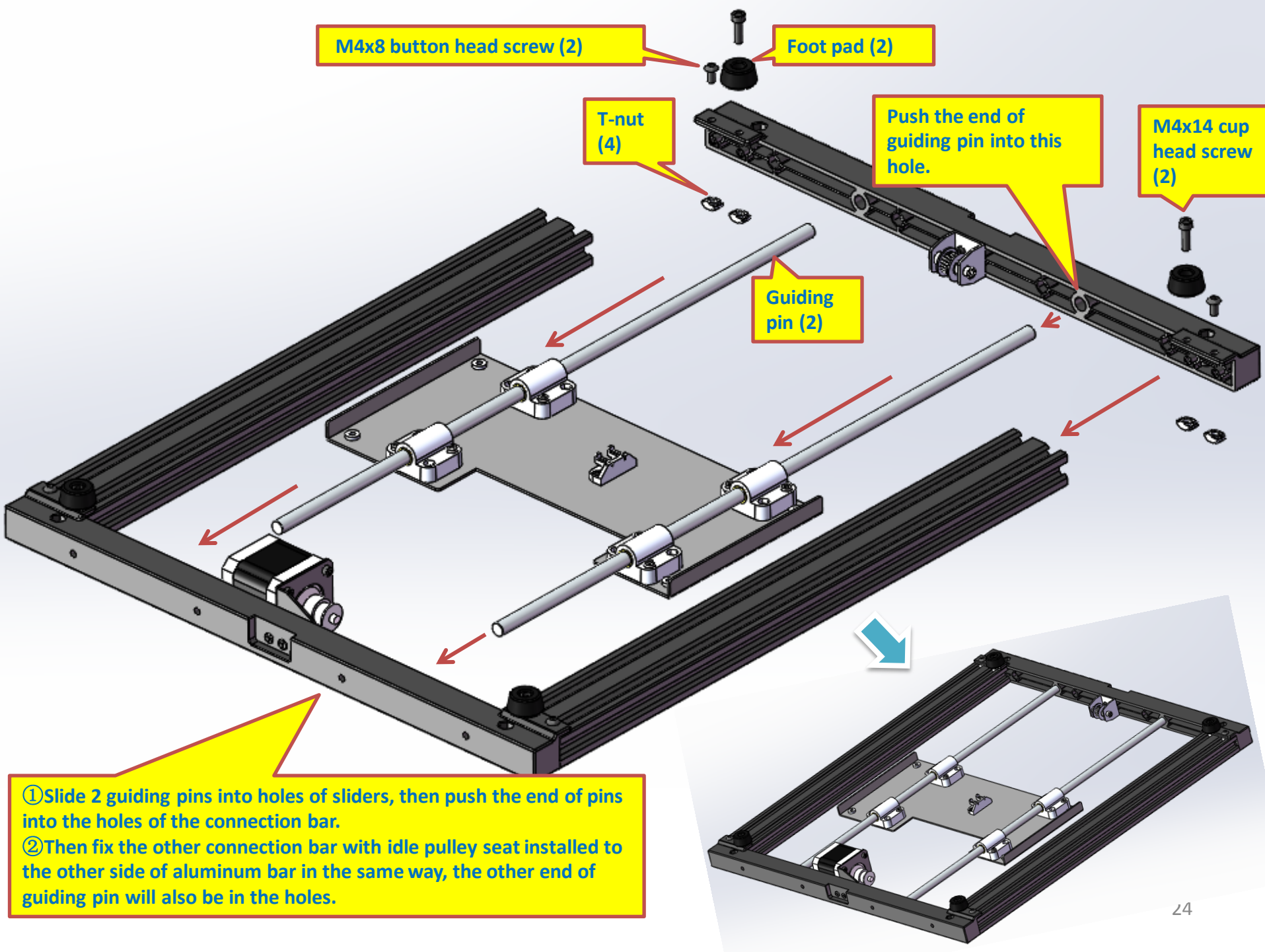
Connection bar

M3x18 cup head screw
(2)

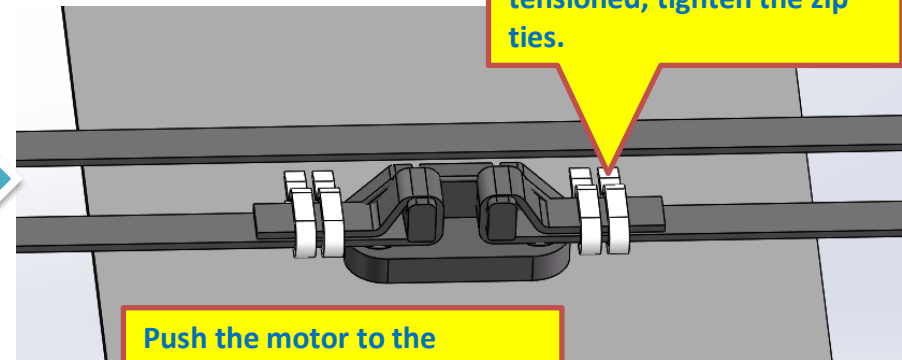
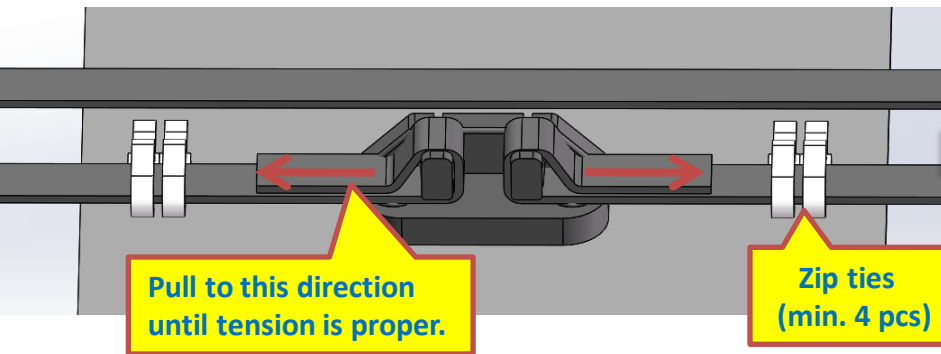
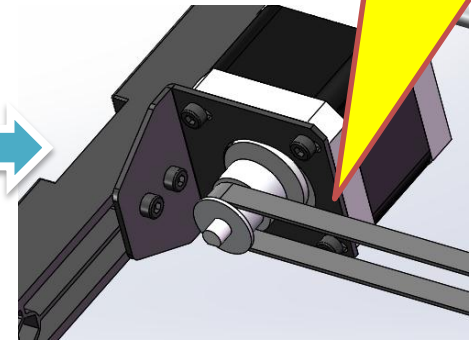
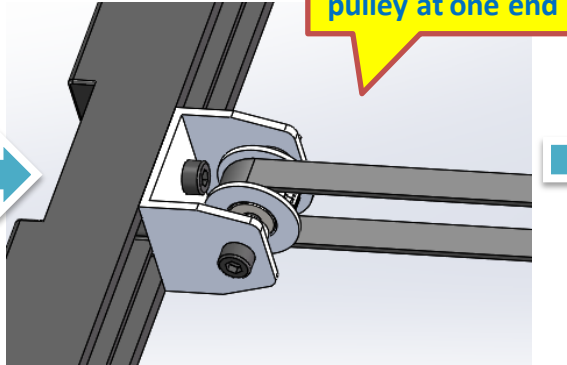
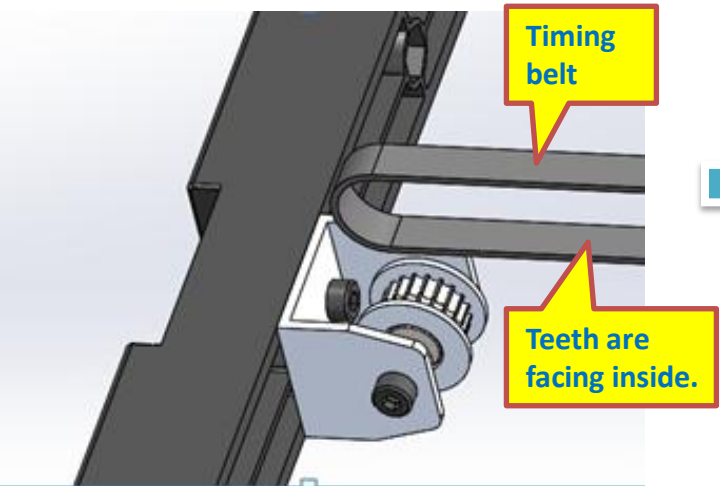
Keep 3-4mm gap here.

2.4 Assemble Y motion system frame and foot pads

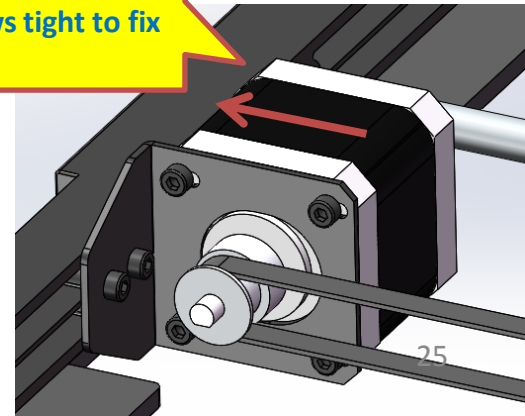
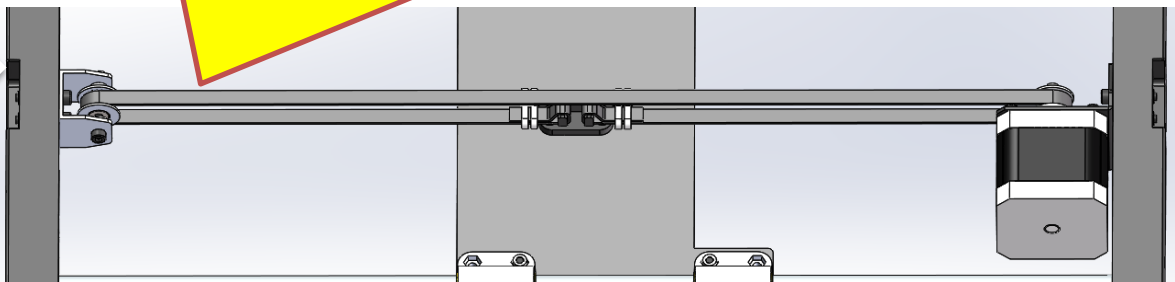




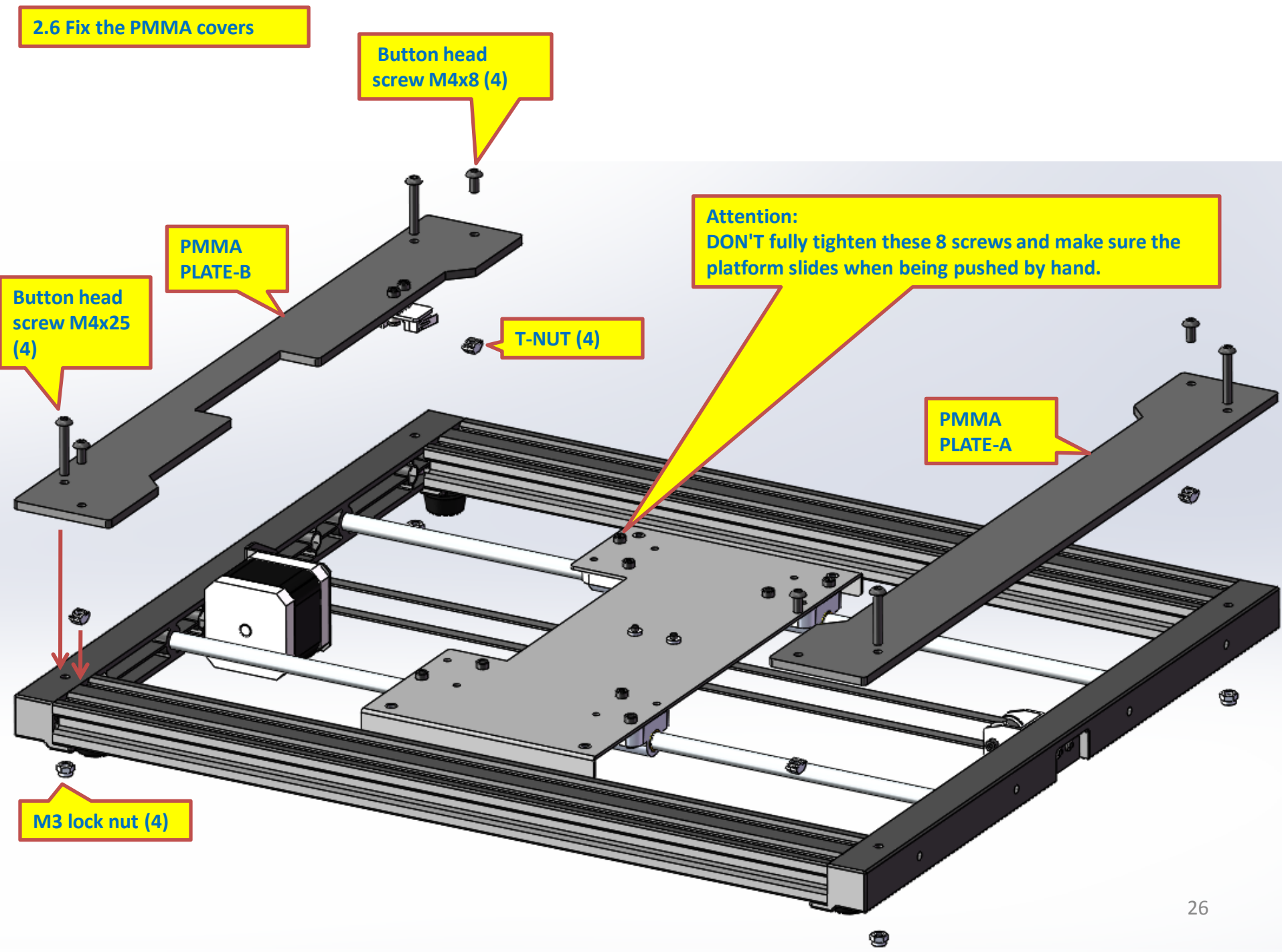
2.5 Install timing belt to Y motion system



What is proper tension of belt: The upper side and lower side are in parallel. You will get the bounced-back feeling while touching it.

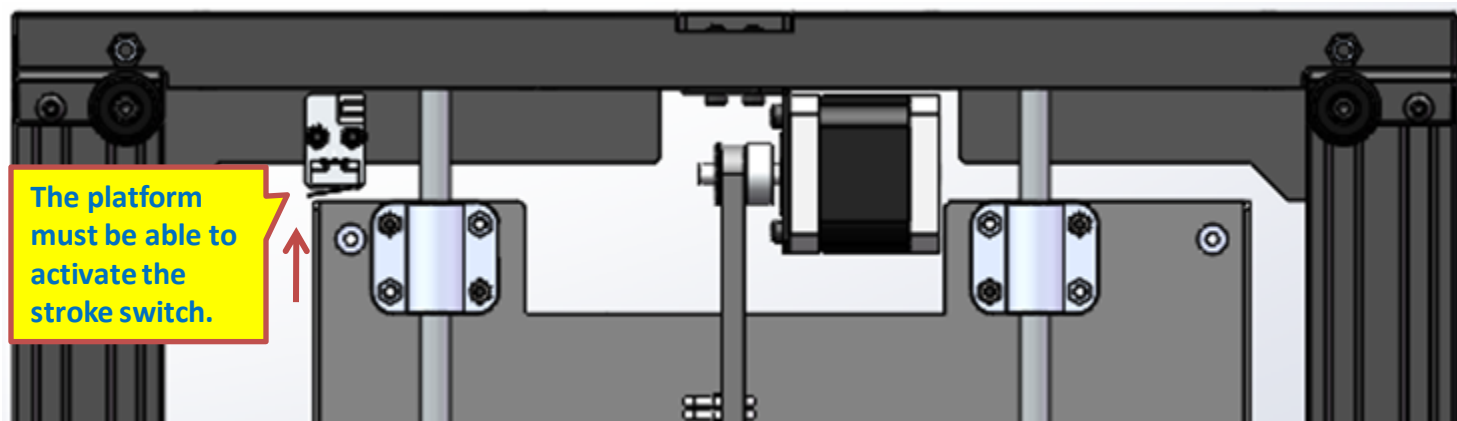


2.6 Fix the PMMA covers

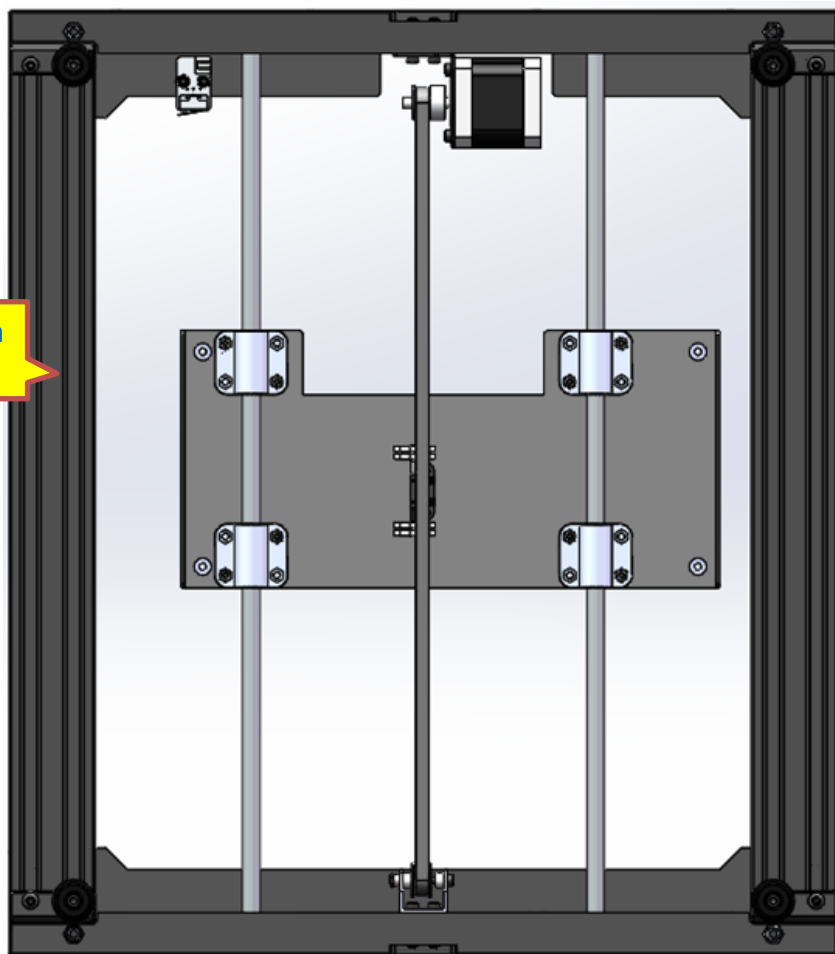


Assembly of Y motion system is complete.

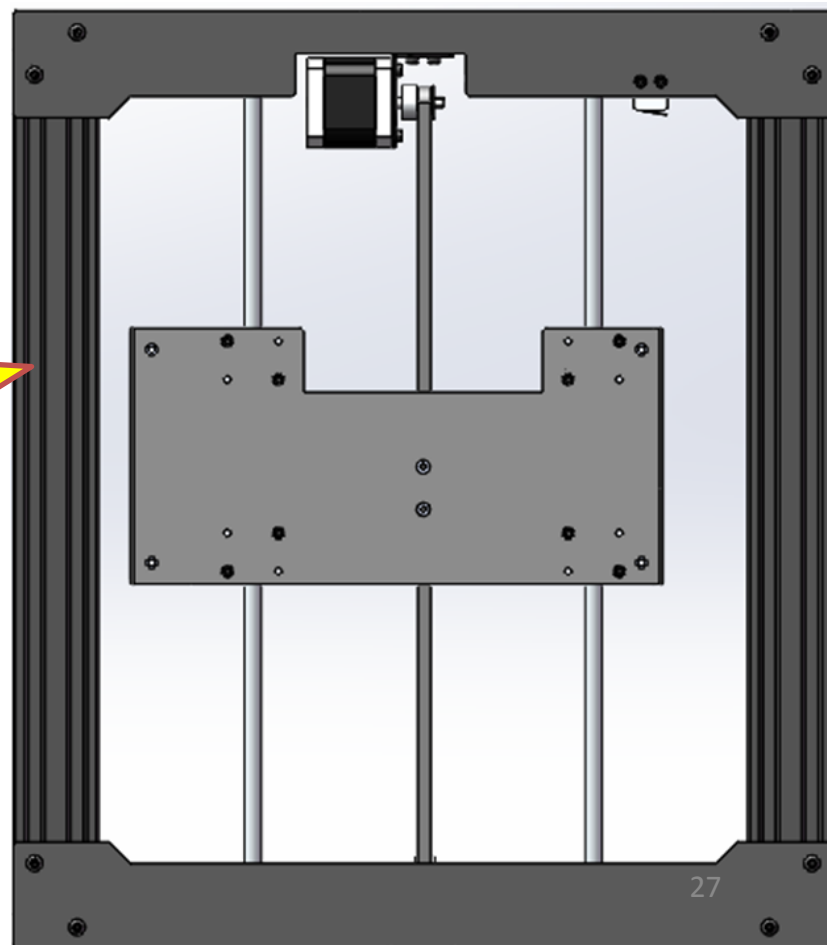
The platform must be able to activate the stroke switch.



Bottom side



Top side



Material list #3:

Sequence	#	Description	QTY	Remark
X motion system	1	Nut assembly	2	Plastic
X motion system	2	Guiding pin	2	
X motion system	3	X motion slider	1	Plastic
X motion system	4	Nylon spacer	1	Height: 2mm
X motion system	5	Nylon spacer	2	Height: 6mm
X motion system	6	Idle pulley for X	1	Sheet steel
X motion system	7	X motion motor seat	1	Sheet steel
X motion system	8	Toothed block	2	Plastic
X motion system	9	Stepper motor stepper motor	1	
X motion system	10	Pulley	1	The one with smaller hole
X motion system	11	Stroke switch stroke switch	1	
X motion system	12	Drive screw	1	Short one
X motion system	13	Drive screw	1	Long one
X motion system	14	Pulley	2	The one with bigger hole
X motion system	15	Bearing	3	
X motion system	16	Washer for drive screw	1	Plastic
X motion system	17	Timing belt	1	The longer open ended one



Attention:

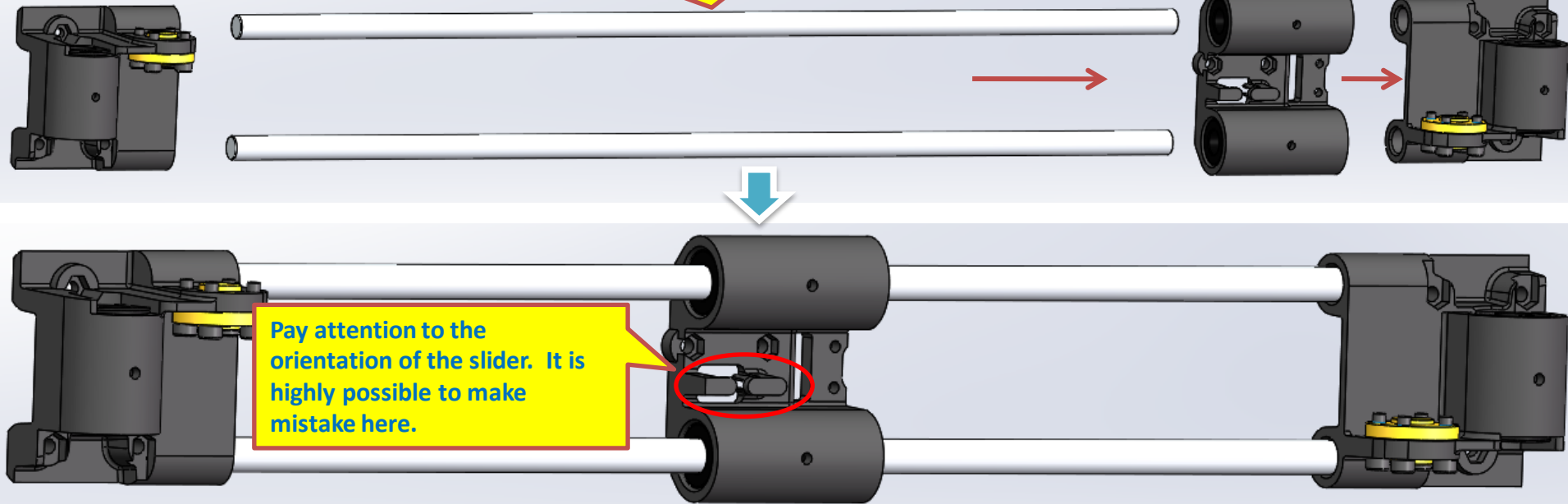
①The open-ended belt with longer length will be used here.

3.1 X motion system assembly

Guiding pin (2)

X motion slider

Nut seat (2)



3.2 X motion idle pulley assembly

X pulley seat (black sheet steel)

M3 lock nut

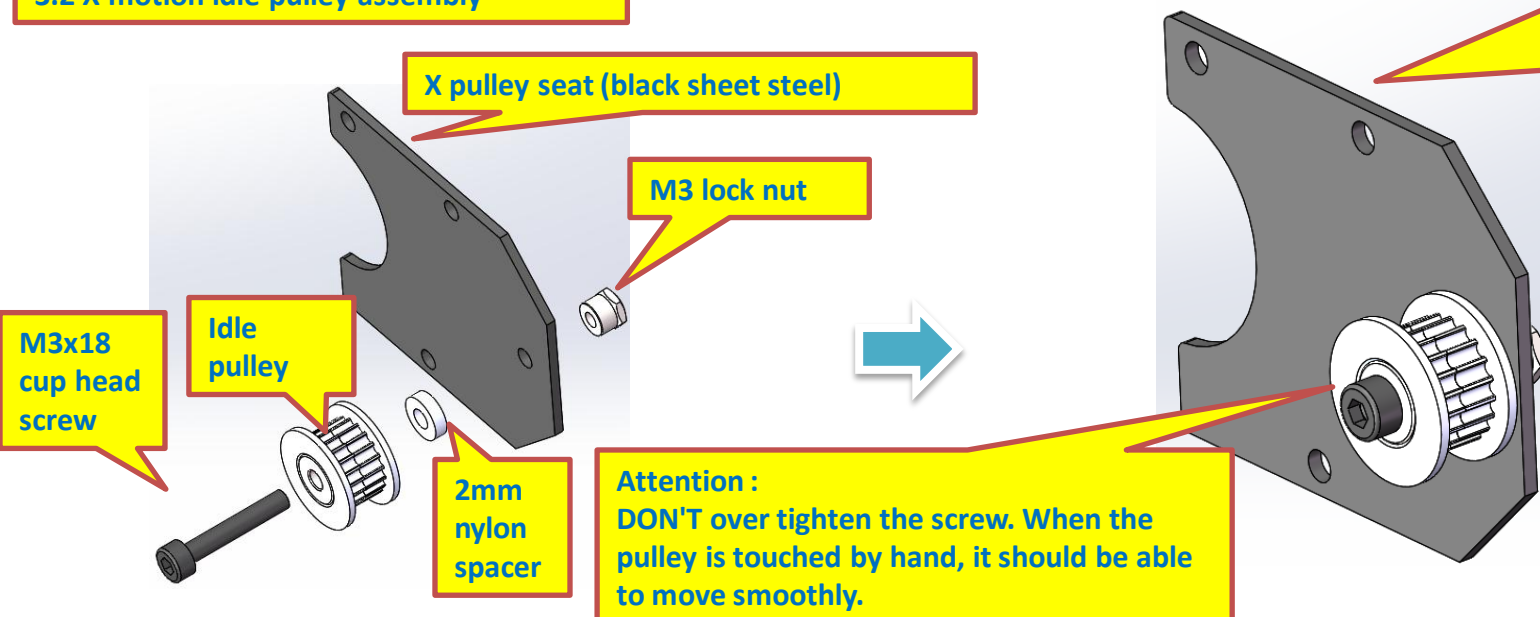
M3x18 cup head screw

Idle pulley

2mm nylon spacer

Attention :
DON'T over tighten the screw. When the pulley is touched by hand, it should be able to move smoothly.

The idle pulley for X motion is NOT symmetrical. Pay attention to its orientation during assembly.



Motor seat for X motion (black sheet steel)

M3x8 cup head screw (2)

M3x14 cup head screw (4)

M3 lock nut (6)

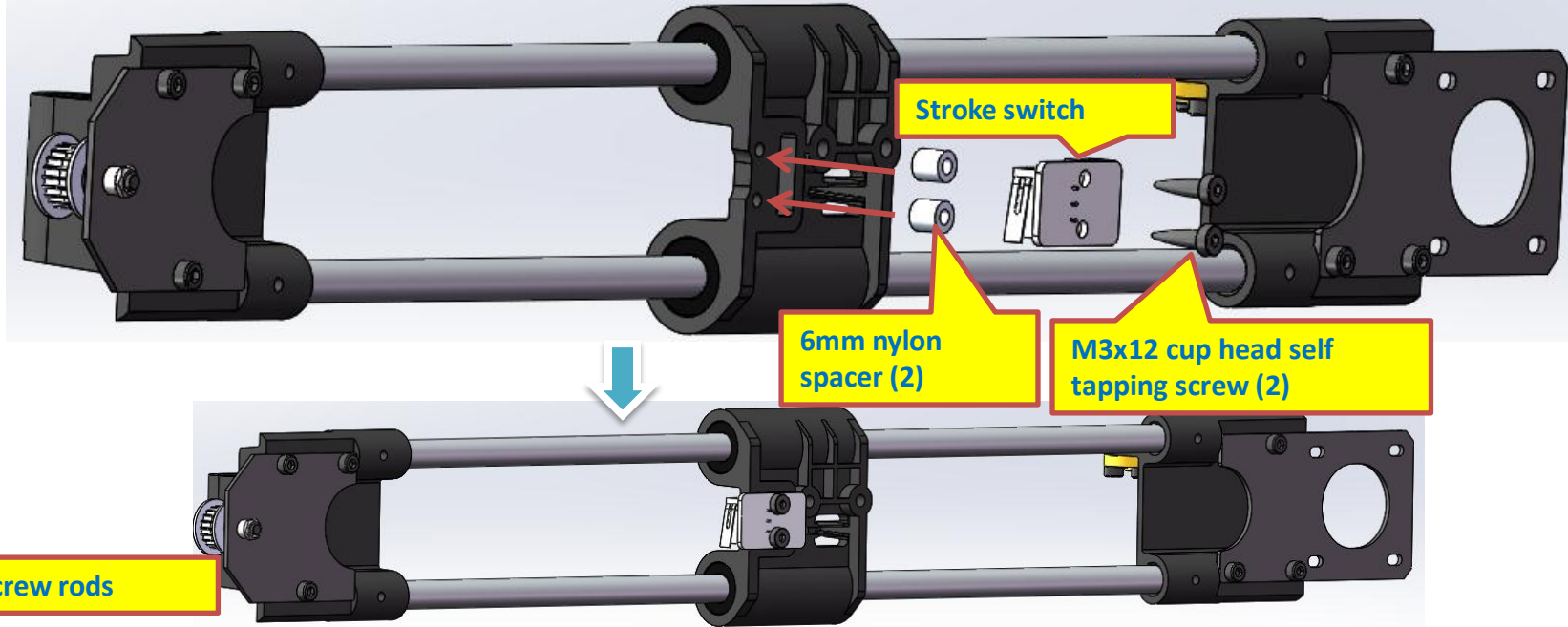
M3x14 cup head screw

M3x8 cup head screw

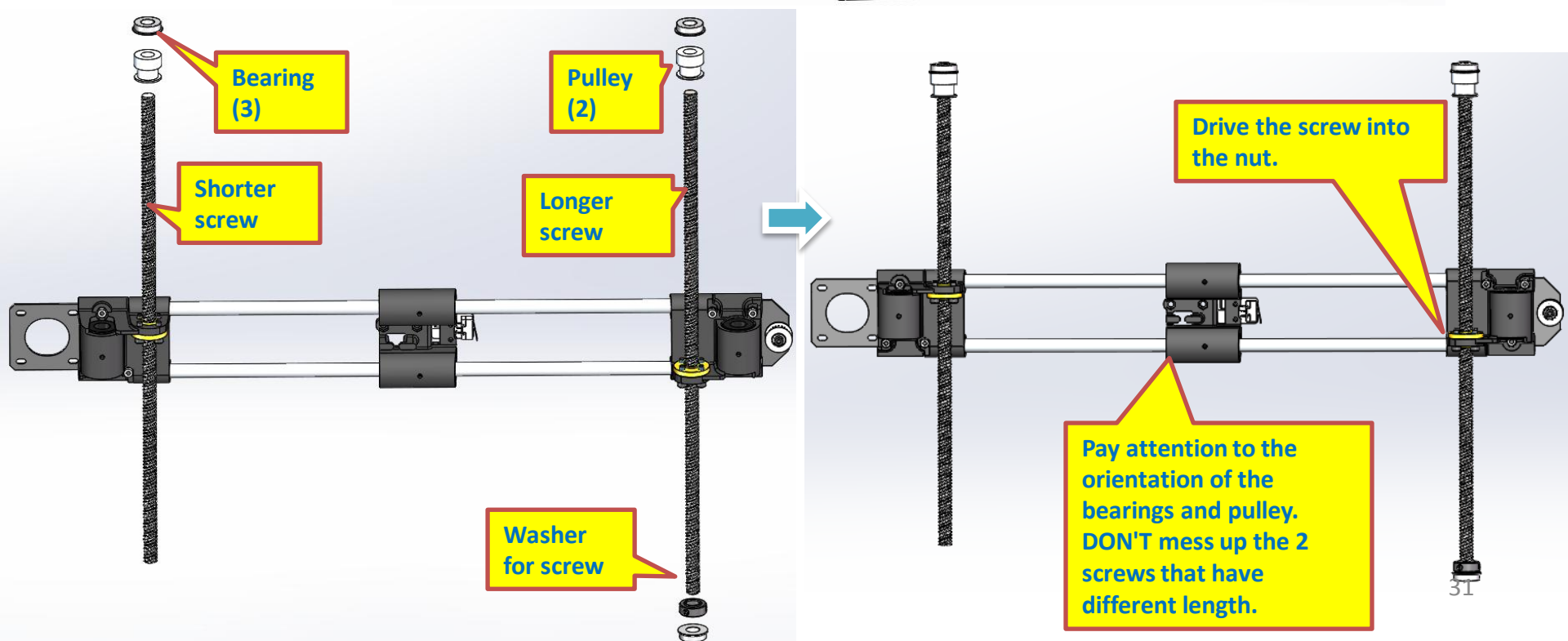


Pay attention to the orientation as shown below.

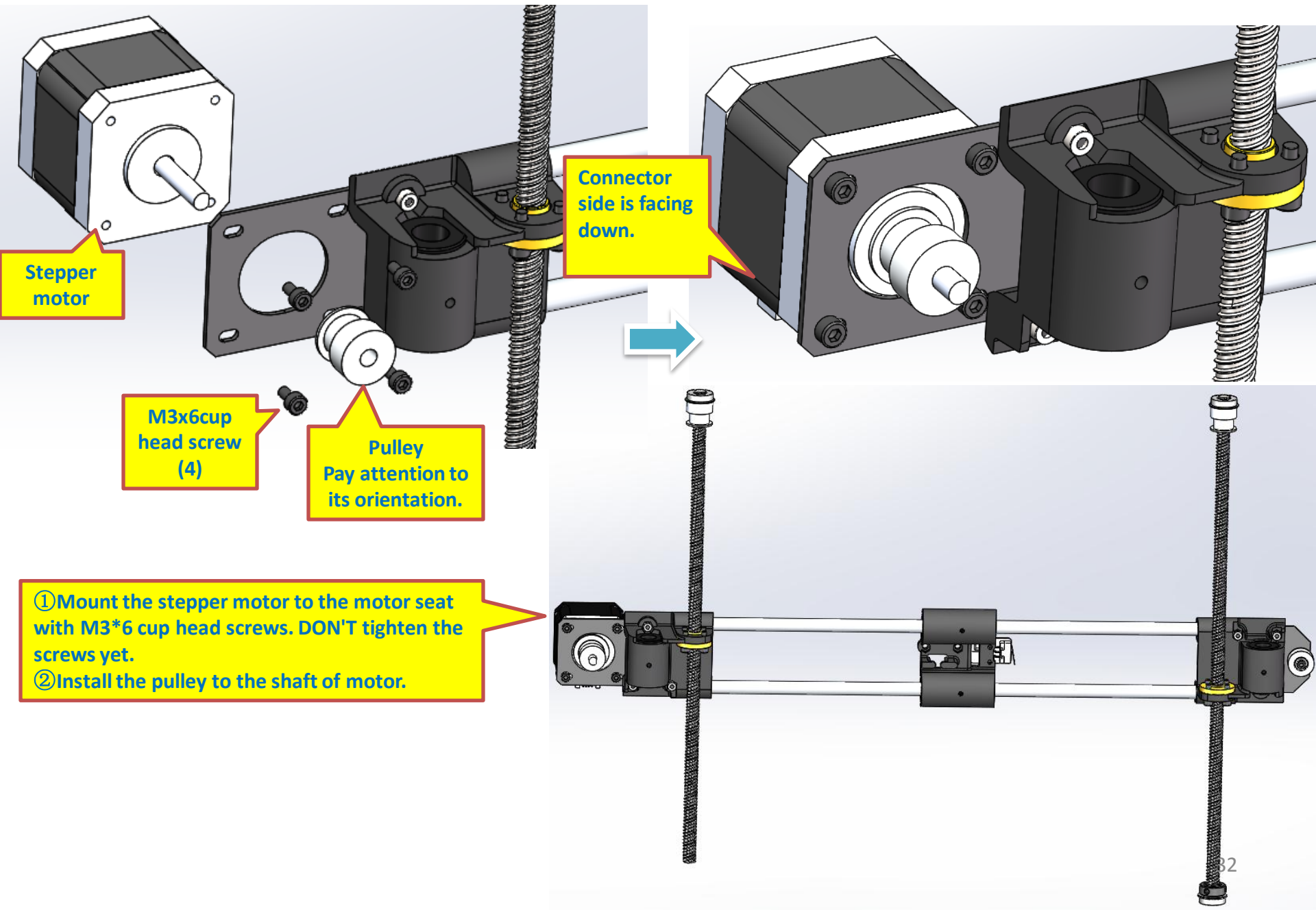
3.3 X motion stroke switch installation



3.4 Assemble the screw rods



3.5 Install X motion motor



Material list #3

Sequence	#	Description	QTY	Remark
Z motion system assembly	1	Right angle connector	4	Plastic
Z motion system assembly	2	Al profile	2	The shorter one
Z motion system assembly	3	Z motion motor seat	1	Sheet steel
Z motion system assembly	4	Z motion motor seat +	1	Sheet steel
Z motion system assembly	5	Z motor washer	1	PMMA
Z motion system assembly	6	Z motor washer++	1	Glass fiber board
Z motion system assembly	7	Stepper motor	1	
Z motion system assembly	8	Shaft coupler	1	
Z motion system assembly	9	Stroke switch	1	
Z motion system assembly	10	Guiding pin	2	Thicker one with shoulder
Z motion system assembly	11	Timing belt	1	Close ended
Z motion system assembly	12	Connection bar	1	Plastic
Z motion system assembly	13	Z motion transmission plate	1	PMMA
Z motion system assembly	14	Belt adjustment piece	1	PMMA
Z motion system assembly	15	Z fixation plate	1	PMMA
Z motion system assembly	16	Nylon spacer	1	4mm high
Z motion system assembly	16	Base with teeth	2	Plastic

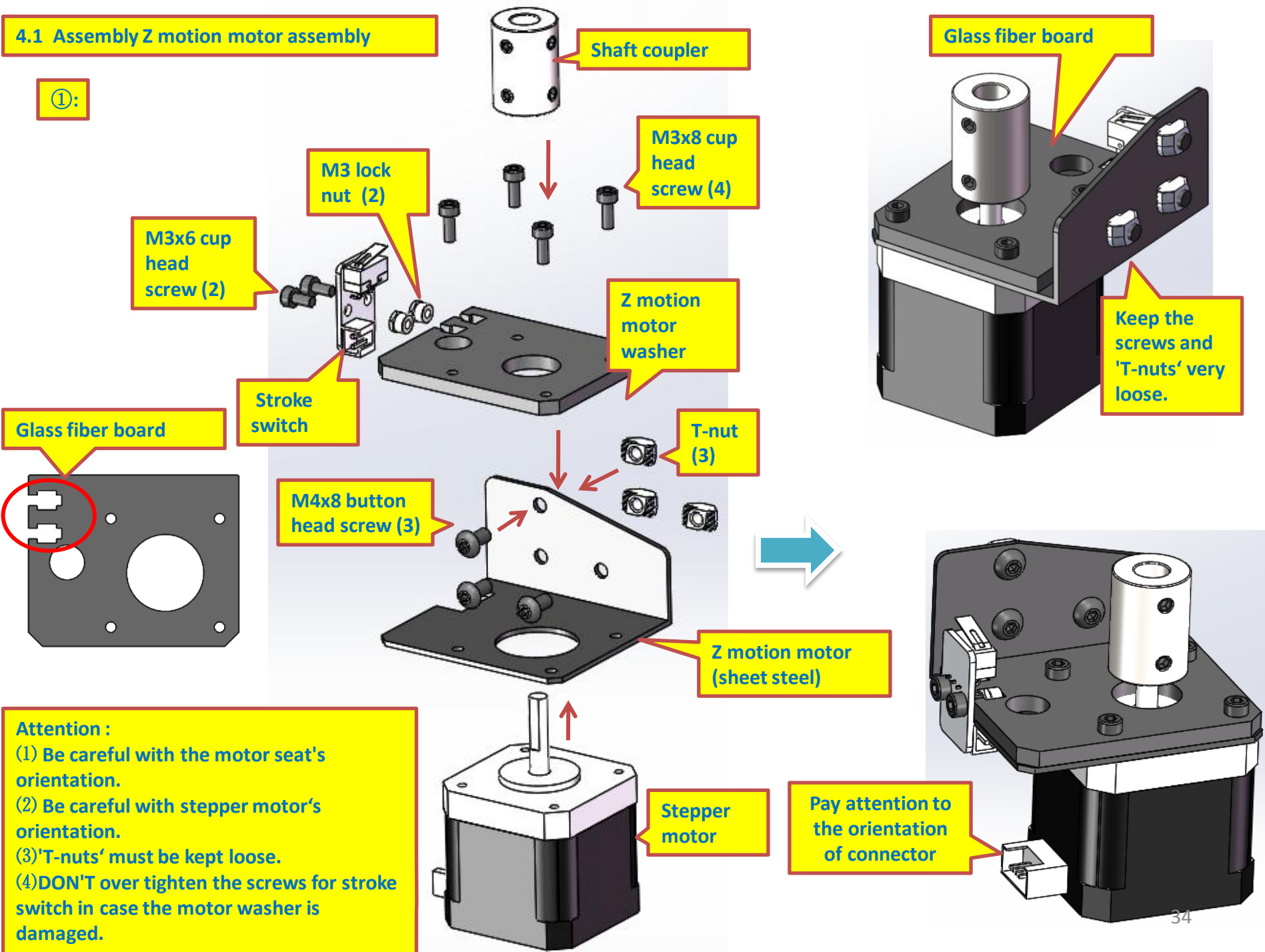
Attention:

- ① Use the shorter aluminum profiles for this step.
- ② Use the thicker and shouldered guiding pins.
- ③ The timing belt is close ended.



4.1 Assembly Z motion motor assembly

①:



②:

Attention :

- (1) Be careful with the motor seat's orientation.
- (2) Be careful with stepper motor's orientation.
- (3) 'T-nuts' must be kept loose.

M3x18 cup
head screw (4)

Z motion
motor
washer

M4x8 button head
screw (3)

T-nut (3)

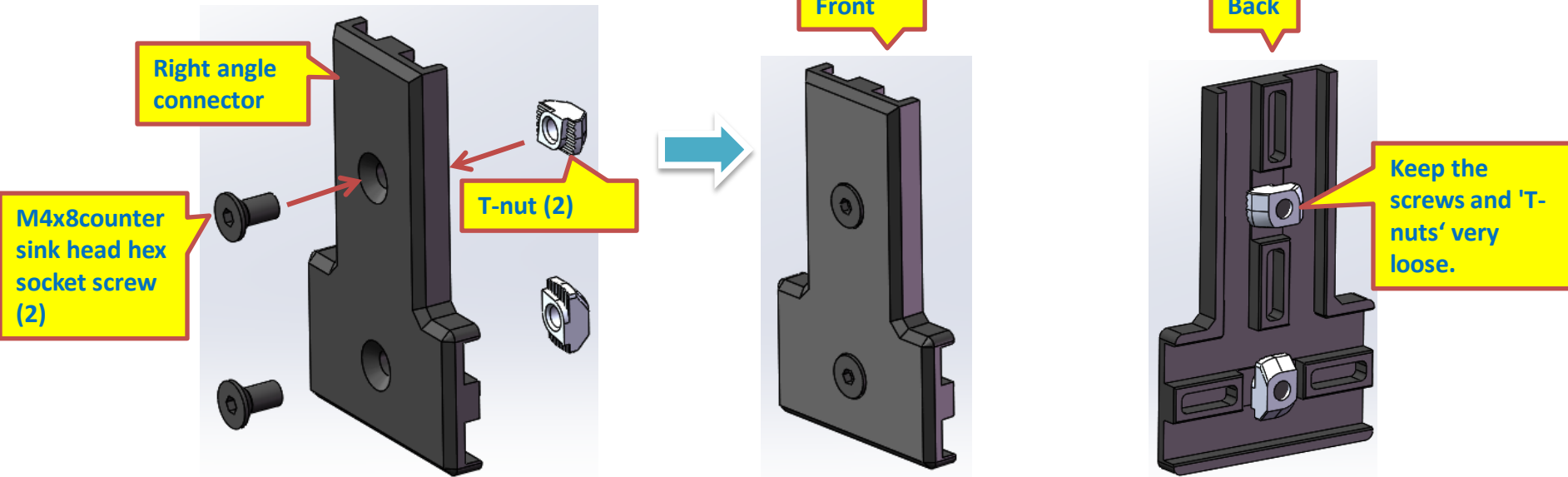
Keep 'T-
nut' NOT
tightened.

M3 lock nut (4)

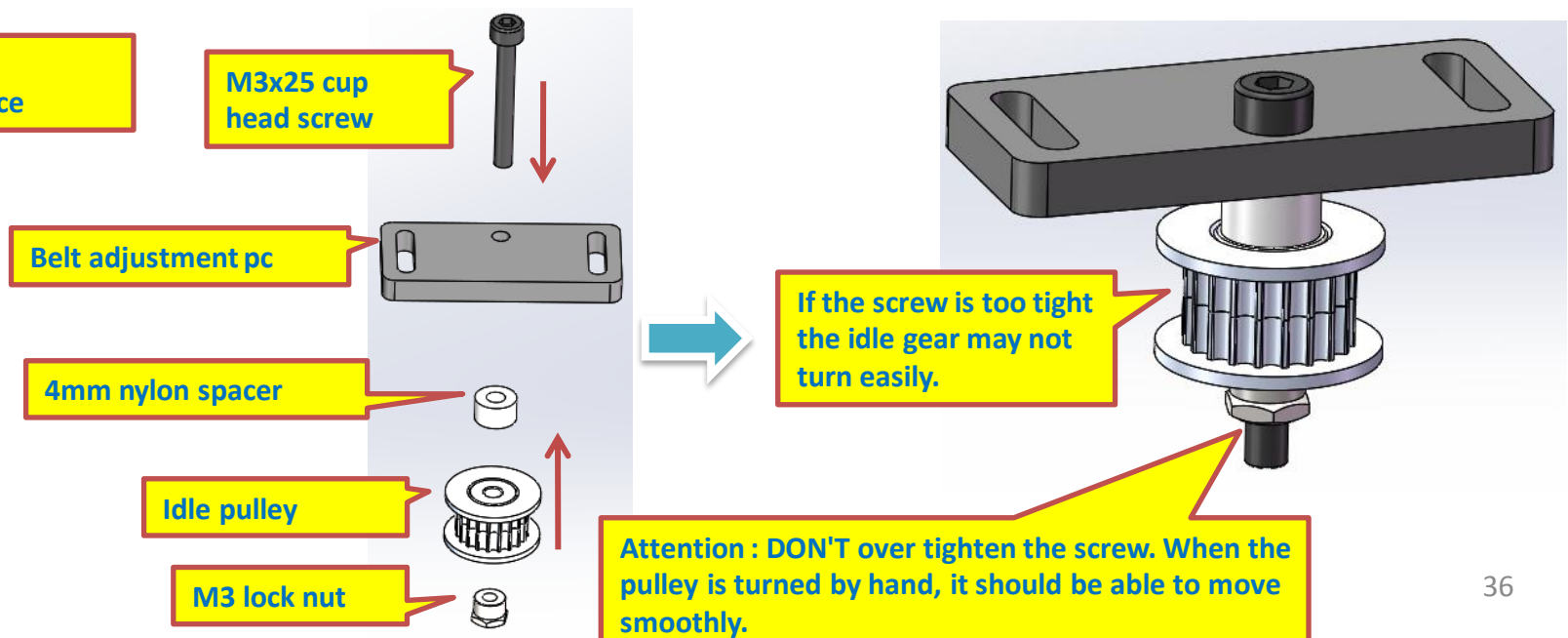
Z motion motor seat+ (sheet
steel)

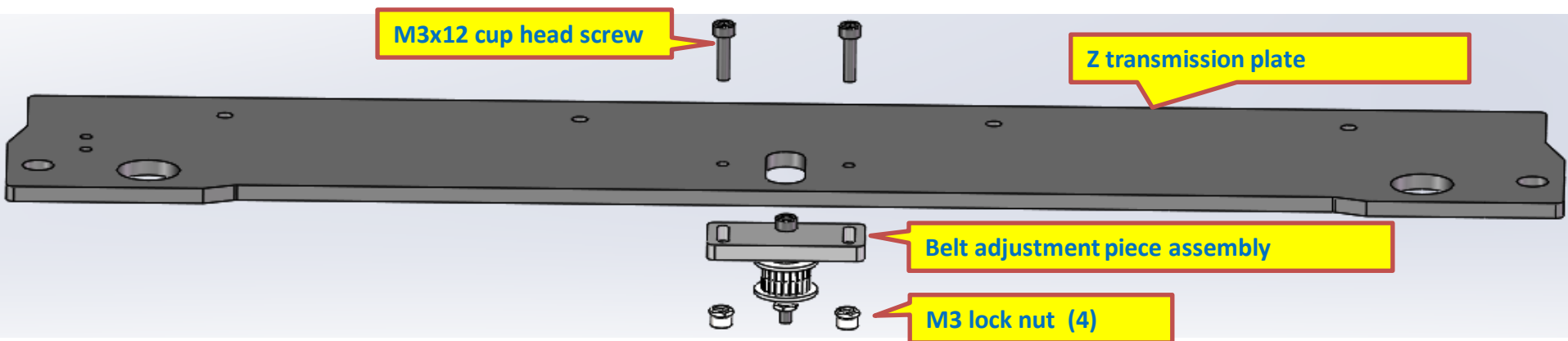


4.2 Prepare for right angle connector (4 pcs)



4.3 Install belt adjustment piece

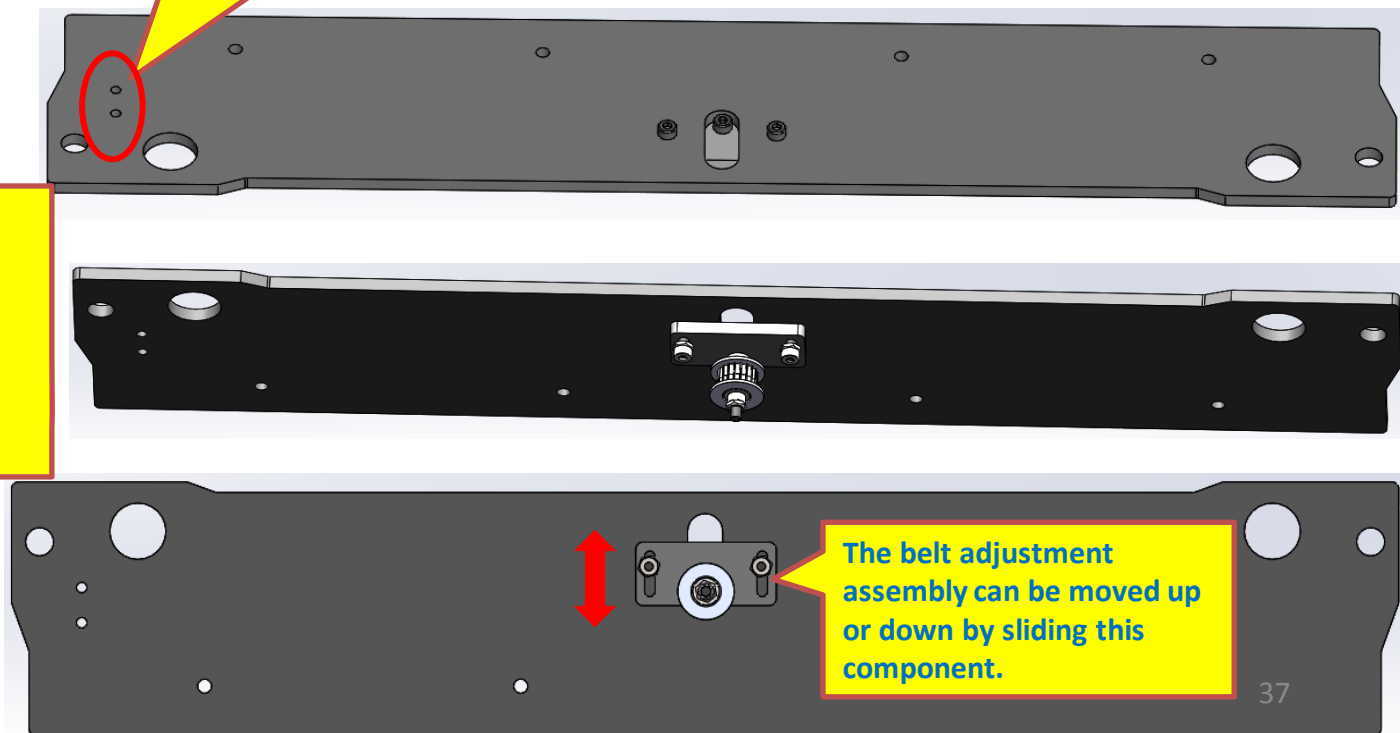




Check the orientation of Z transmission plate.

Attention :

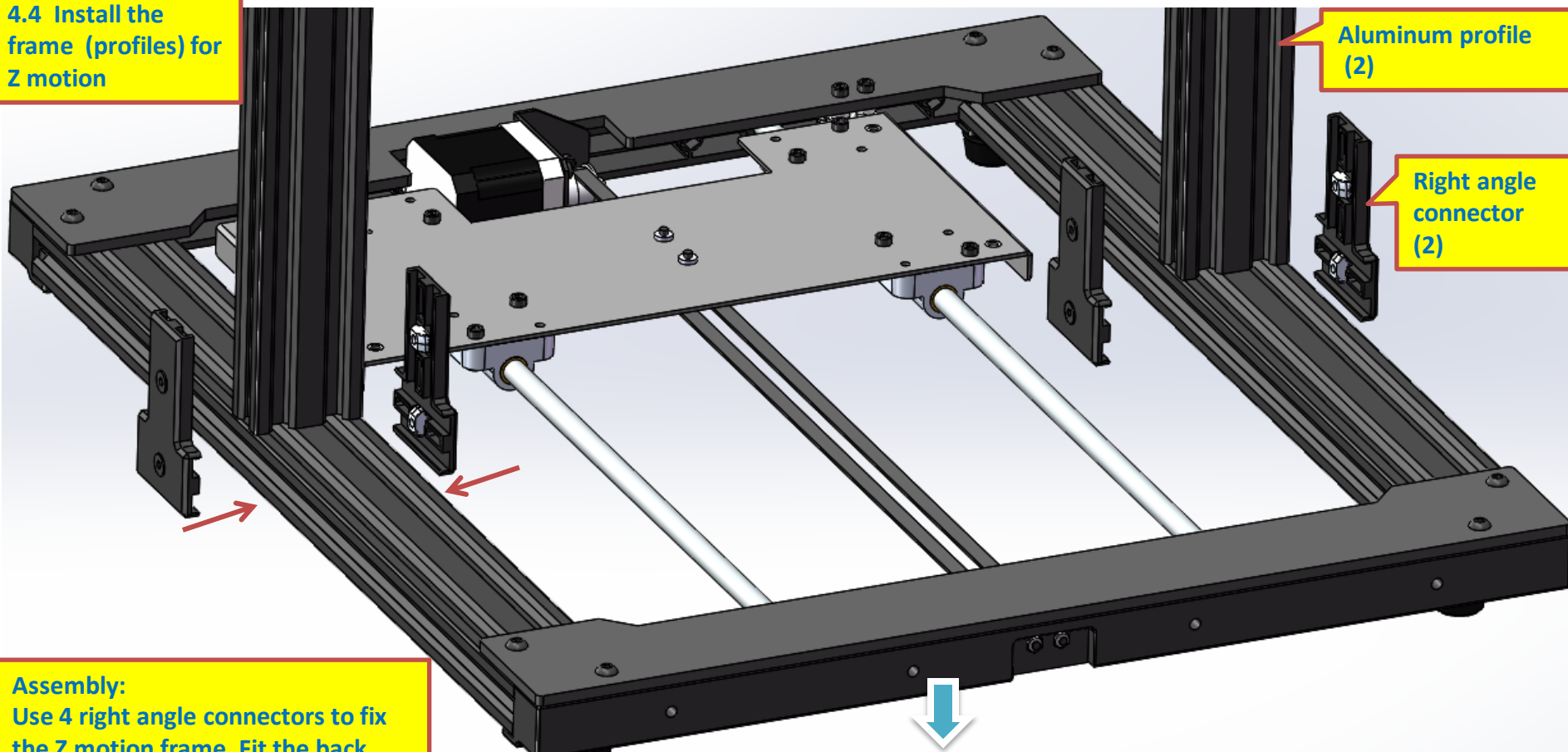
- (1) Z transmission plate must be installed in correct orientation.
- (2) Belt adjustment piece must be installed in correct orientation.
- (3) 'M3x12 cup head screw' must be kept loose at this step.



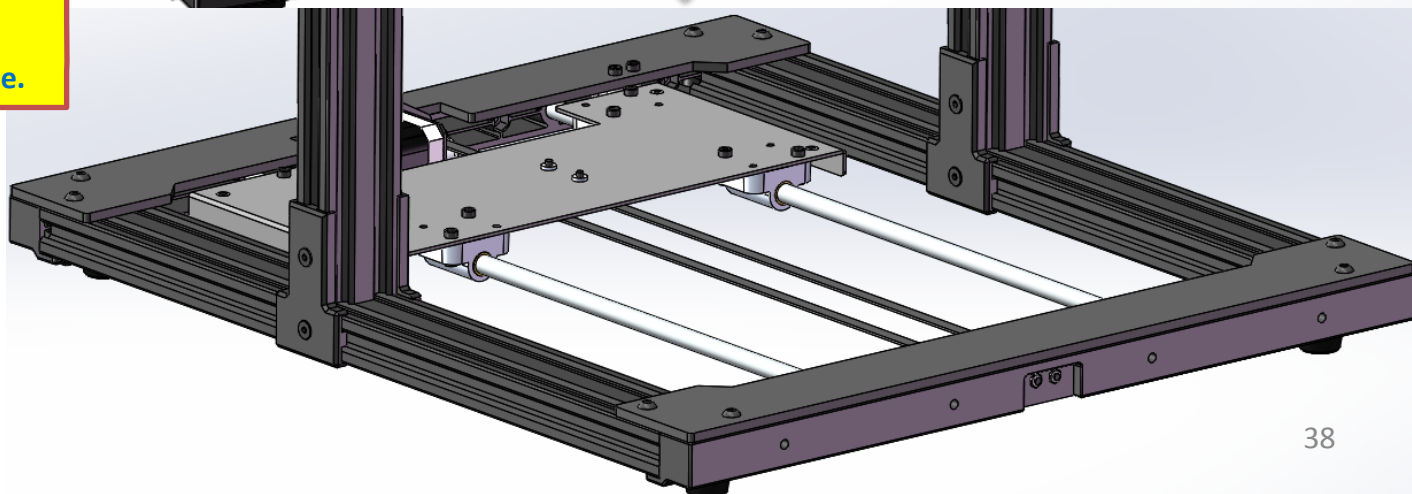
4.4 Install the frame (profiles) for Z motion

Aluminum profile (2)

Right angle connector (2)



Assembly:
Use 4 right angle connectors to fix the Z motion frame. Fit the back side features of the connectors correctly to the slots of the profile.



Positioning of Z motion system

Distance:
224mm

Position: As shown above, the distance from right angle connector to PMMA plate A is 224 mm.
Methods to measure: ① Use a ruler;
② Use the platform top glass (220x240x3 mm) plus any of the PMMA part.
(4 mm thick) to get 224 mm to measure.

No clearance is
allowed here.

4.5 Install Z motion motor

Mount the pre-assembled Z motor assembly ① to the profile.

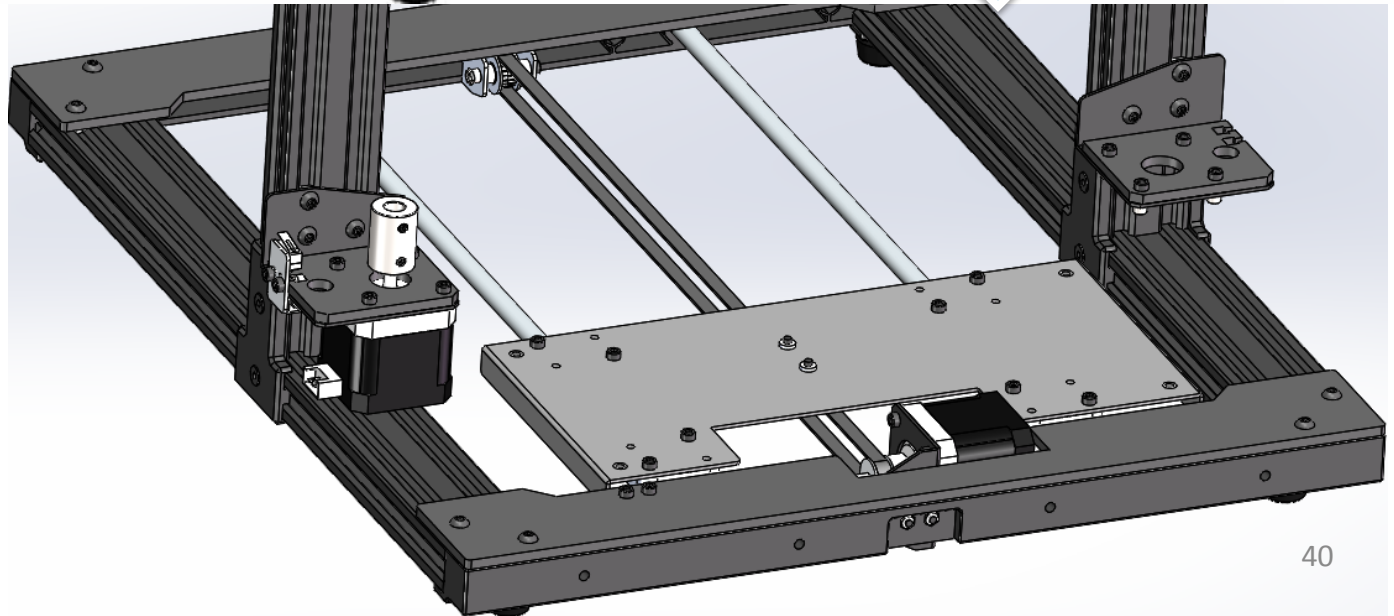
Mount the pre-assembled Z motor assembly ② to the profile.

The edge of sheet steel part needs to cling to the top of right angle connector.

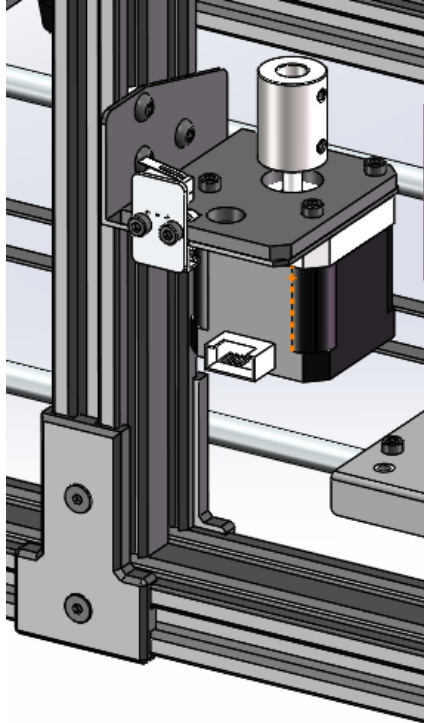
Notes:

(1) Pay attention to the orientation of parts per the fig.

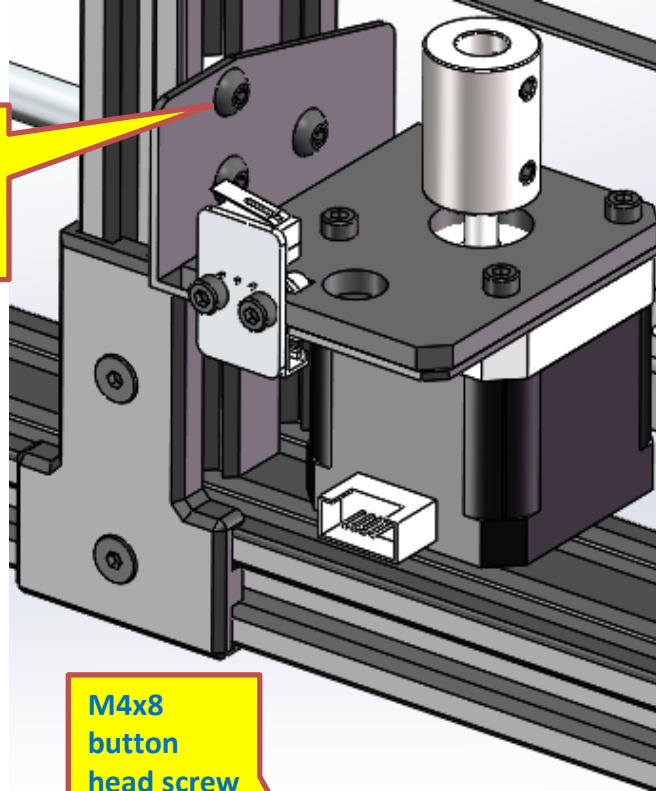
(2) The lower side of sheet steel part of motor assemblies must cling closely to the top side of right angle connectors.



①:

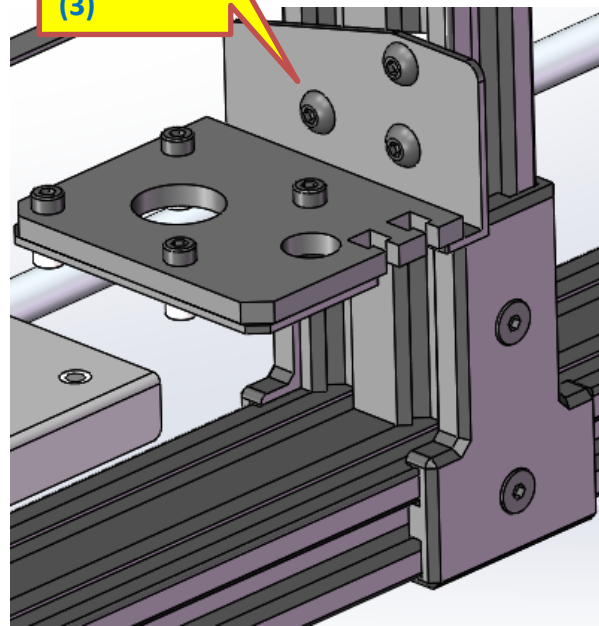
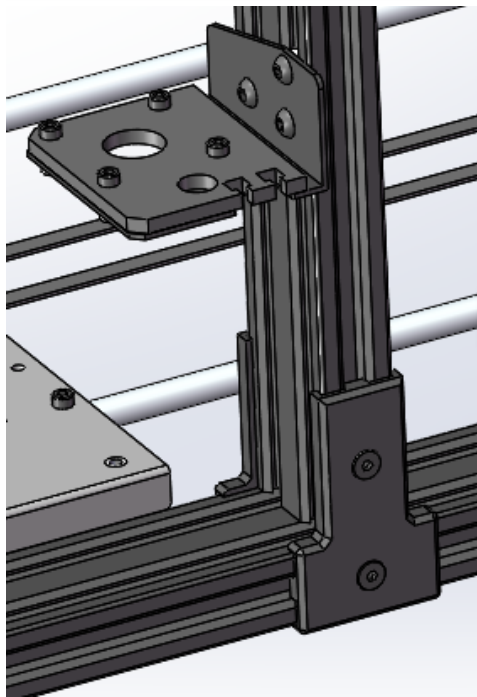


M4x8
button
head screw
(3)



M4x8
button
head screw
(3)

②:



Secure assemblies ①
and ② to aluminum
profiles with pre-
assembled M4x8
button head screws
and 'T-nuts'.

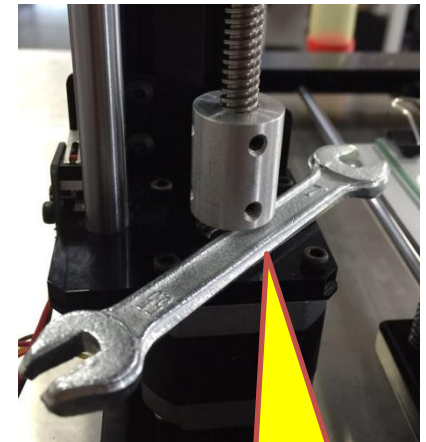
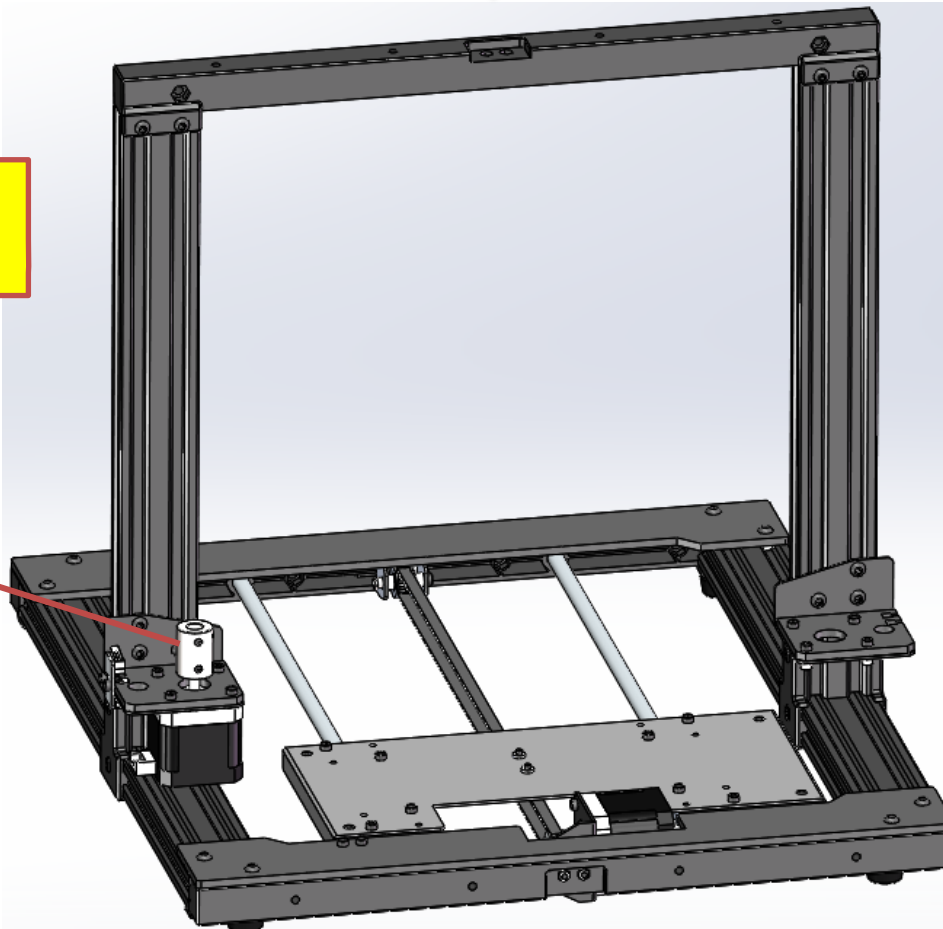
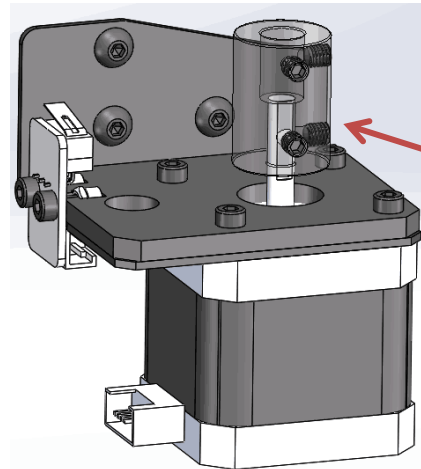
4.6 Z motion system connection bar installation

Connection bar

T-nut (4)

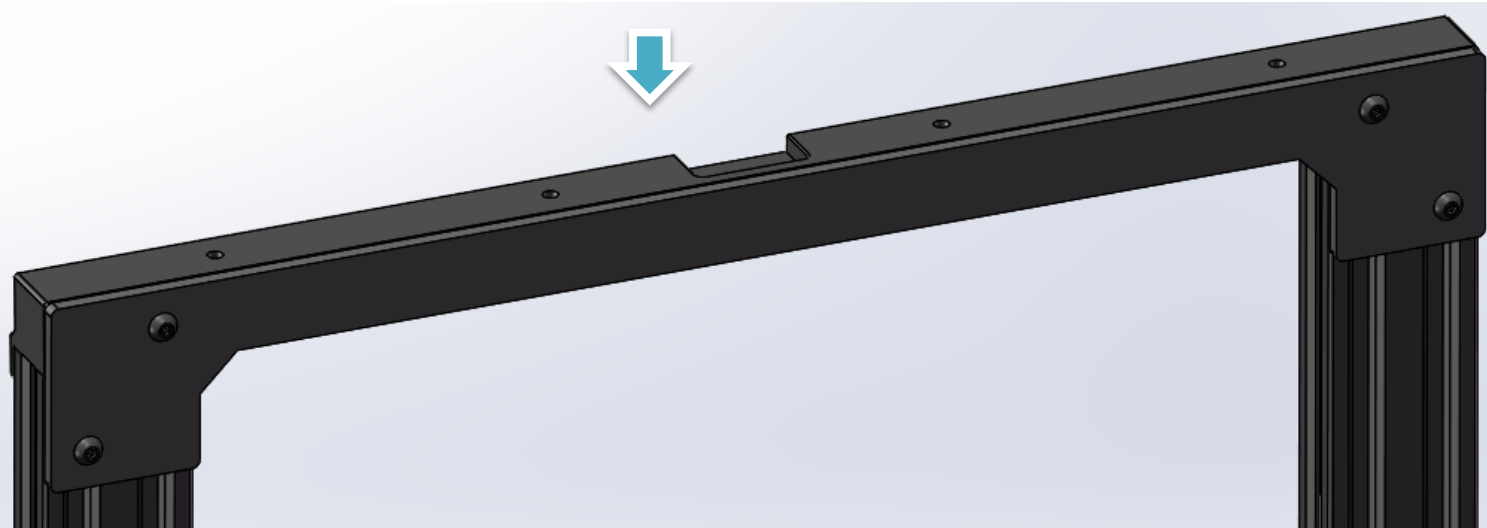
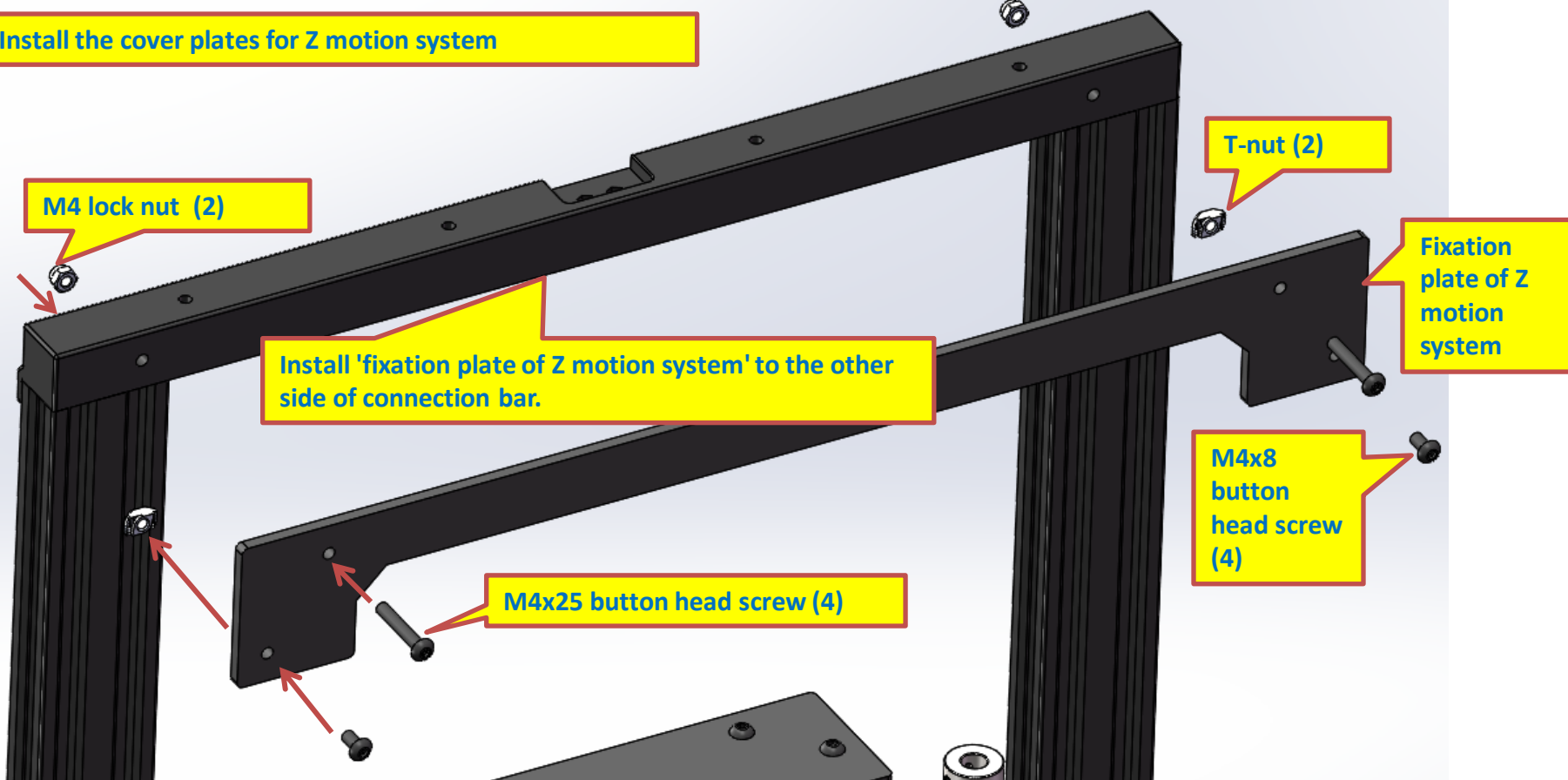
M4x8 button
head screw (4)

Check the picture at right side
for orientation of components
installed.

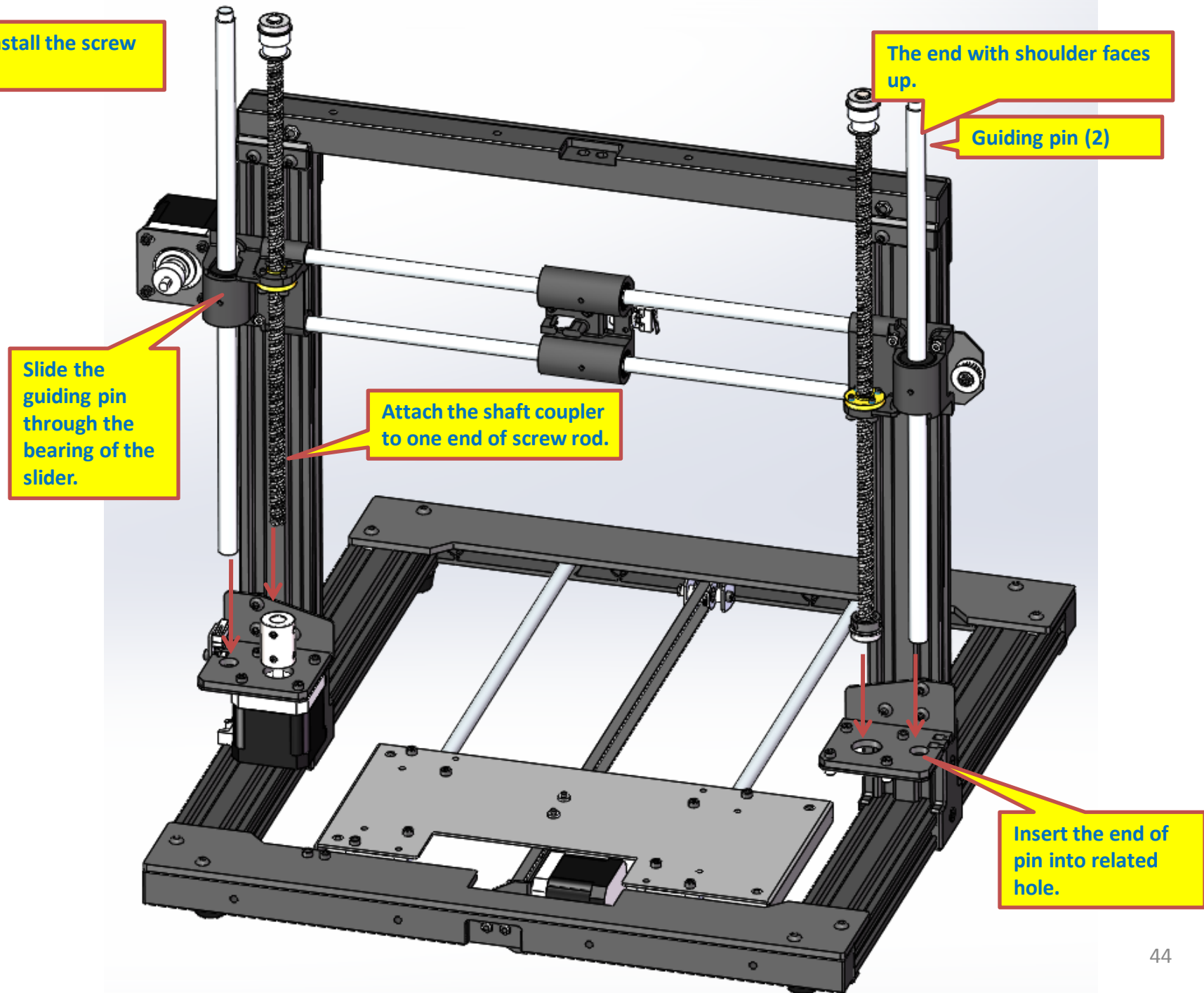


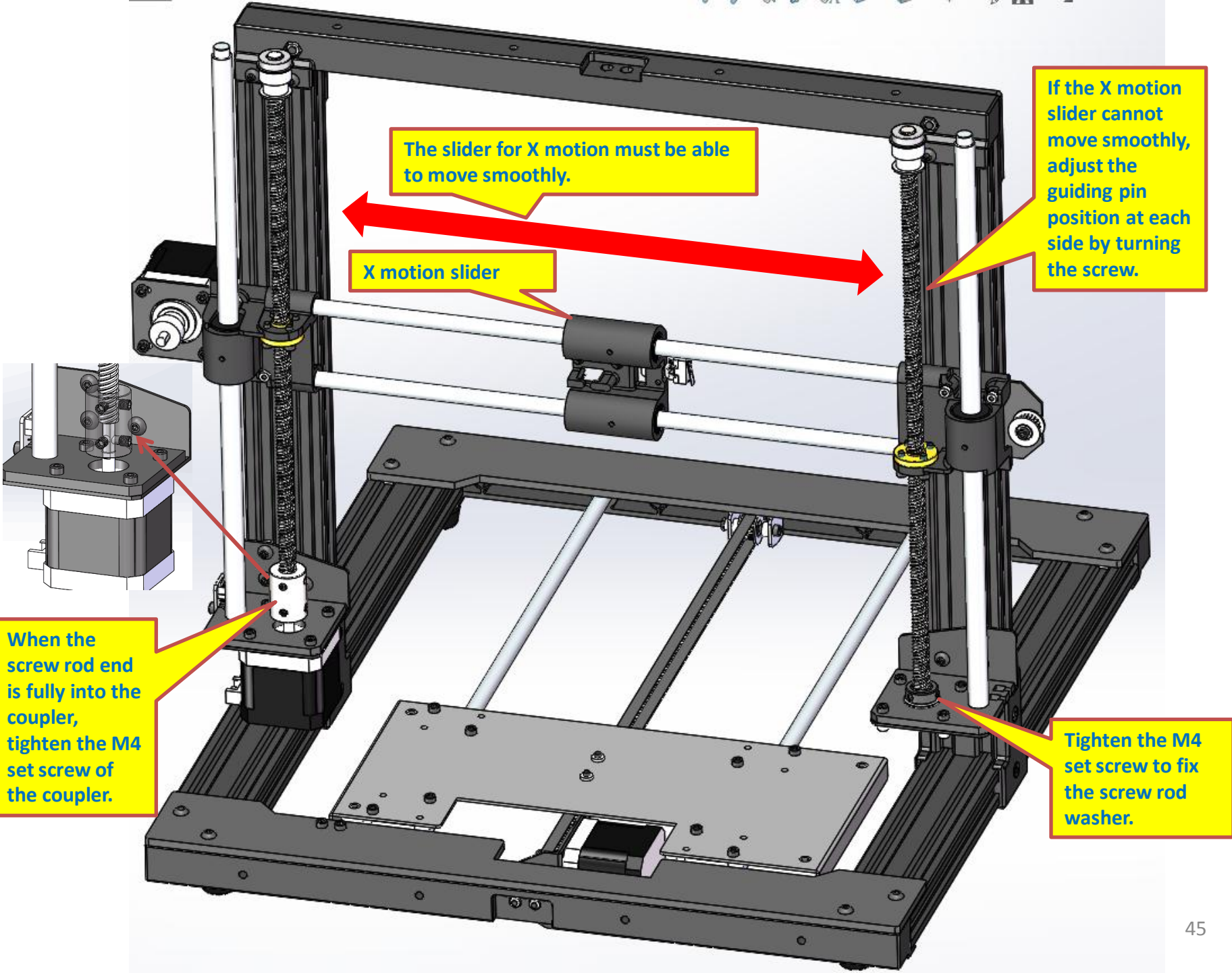
The distance from shaft
coupler to the bottom is
about the thickness of the
wrench.

4.7 Install the cover plates for Z motion system



4.8 Install the screw rods





The slider for X motion must be able to move smoothly.

X motion slider

If the X motion slider cannot move smoothly, adjust the guiding pin position at each side by turning the screw.

When the screw rod end is fully into the coupler, tighten the M4 set screw of the coupler.

Tighten the M4 set screw to fix the screw rod washer.

4.9 Install the
Z motion
timing belt

M4x25 button head
screw (4)

Z motion
transmission
assembly

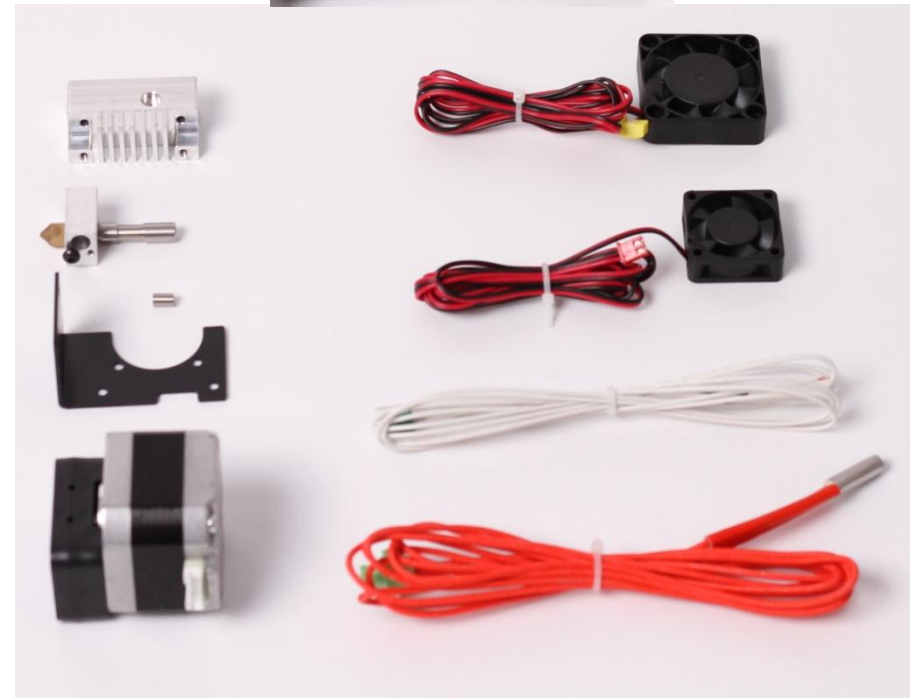
M4 lock nut (4)

Close ended
timing belt

Add tension to the belt by sliding the belt
adjustment piece . When tension is proper, fix
the adjustment piece by fastening the M3*12
cup head screw.

Material list #4:

Sequence	#	Description	QTY	Remark
Hot end assembly	1	Heat sink	1	Aluminum
Hot end assembly	2	Extrusion motor	1	Motor
Hot end assembly	3	Heat sensor	1	Wire
Hot end assembly	4	Heater	1	Wire
Hot end assembly	5	Throat	1	
Hot end assembly	6	Bigger fan	1	
Hot end assembly	7	Smaller fan	1	
Hot end assembly	8	Nozzle assembly	1	
Hot end assembly	9	Connection plate	1	Sheet steel
Hot end assembly	10	Timing belt	1	Open ended one with longer length



Attention:

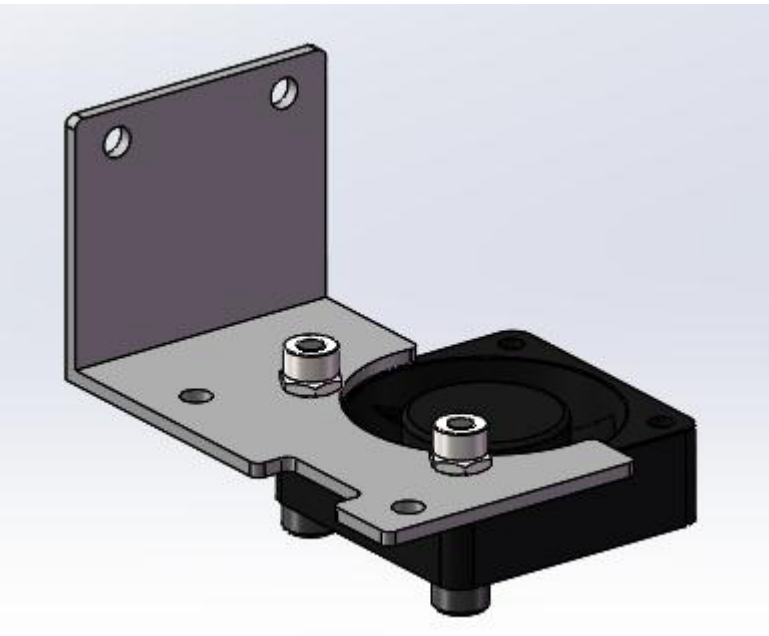
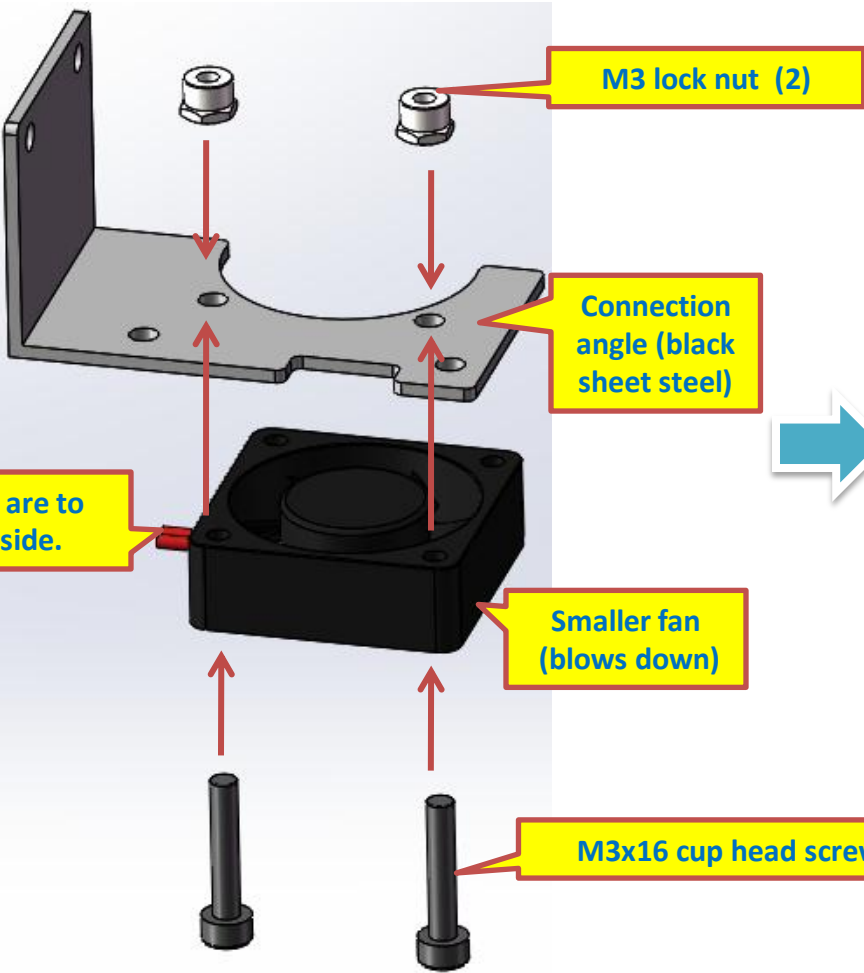
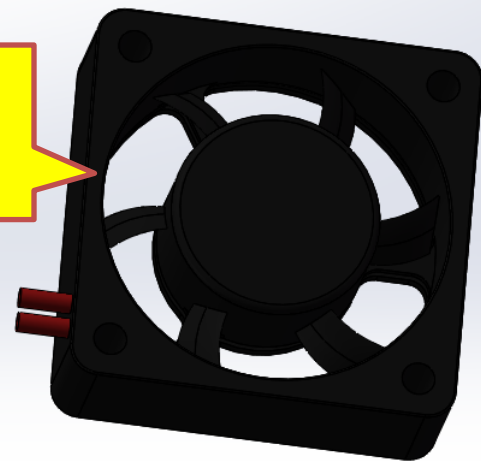
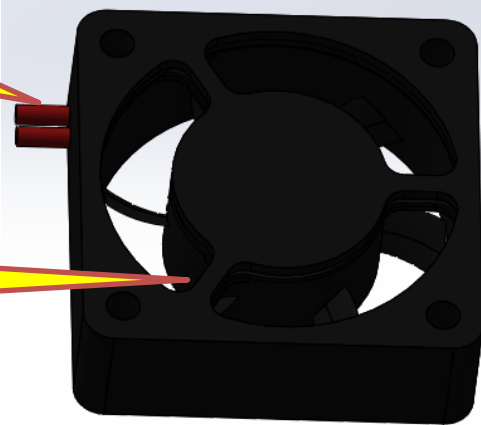
①The open ended belt with shorter length will be used here.

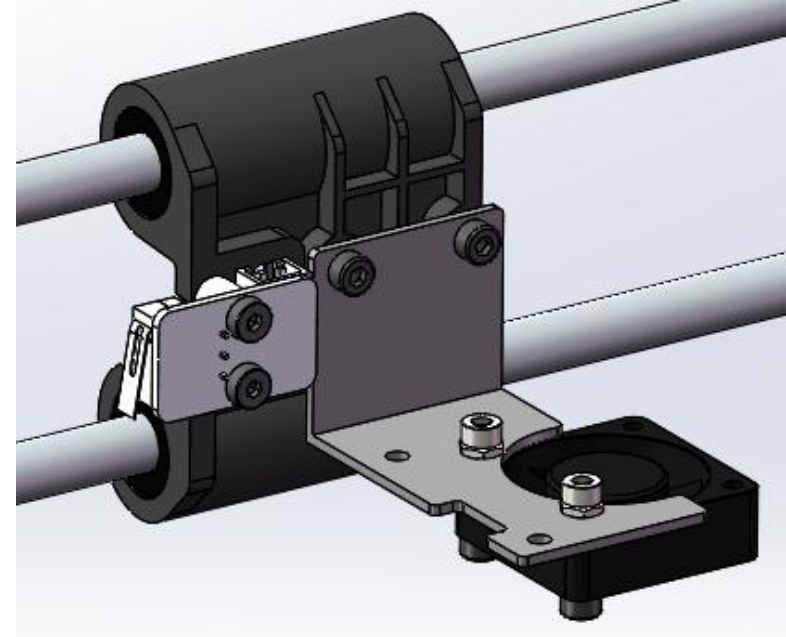
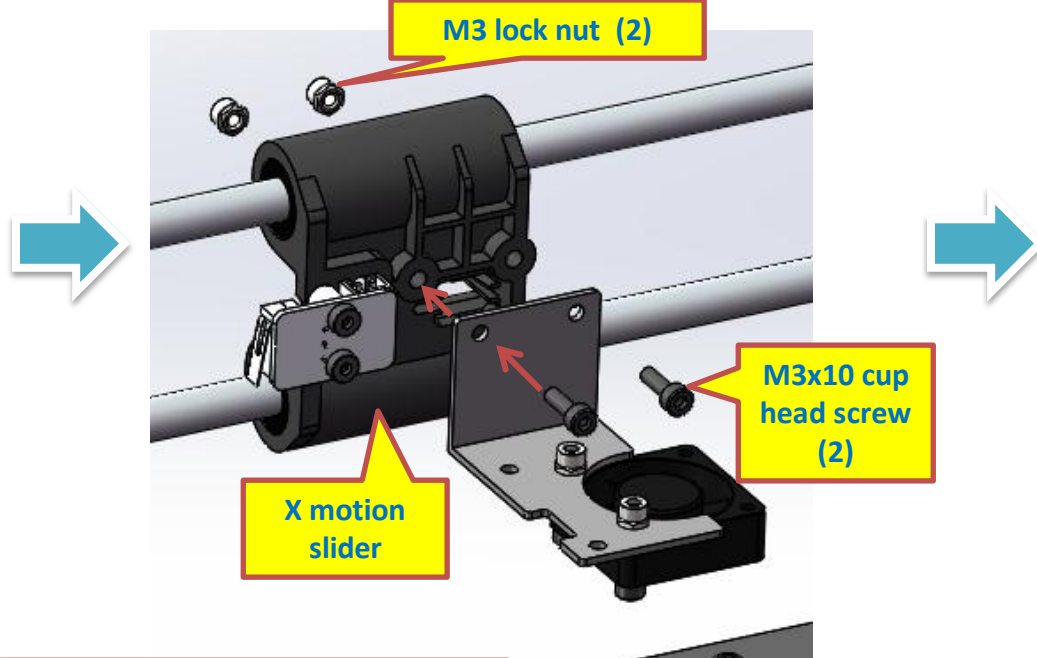
5.1 Assemble the smaller cooling fan

Wires out

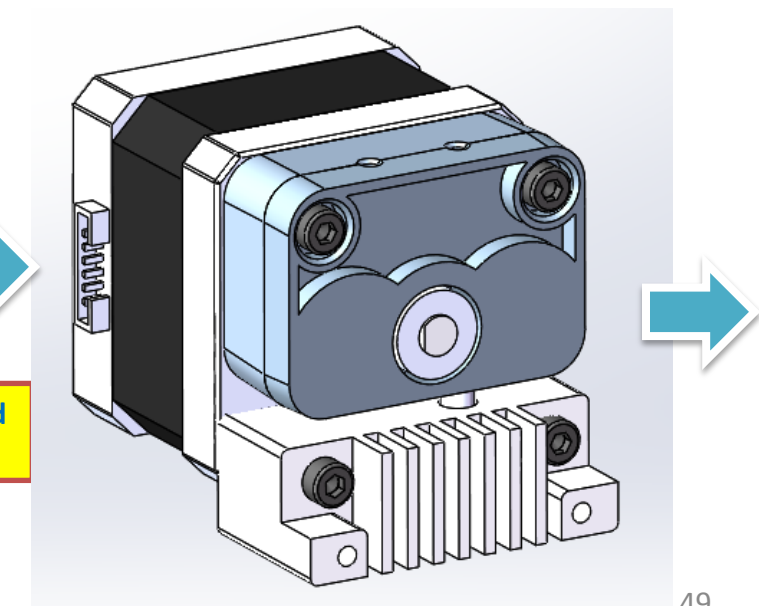
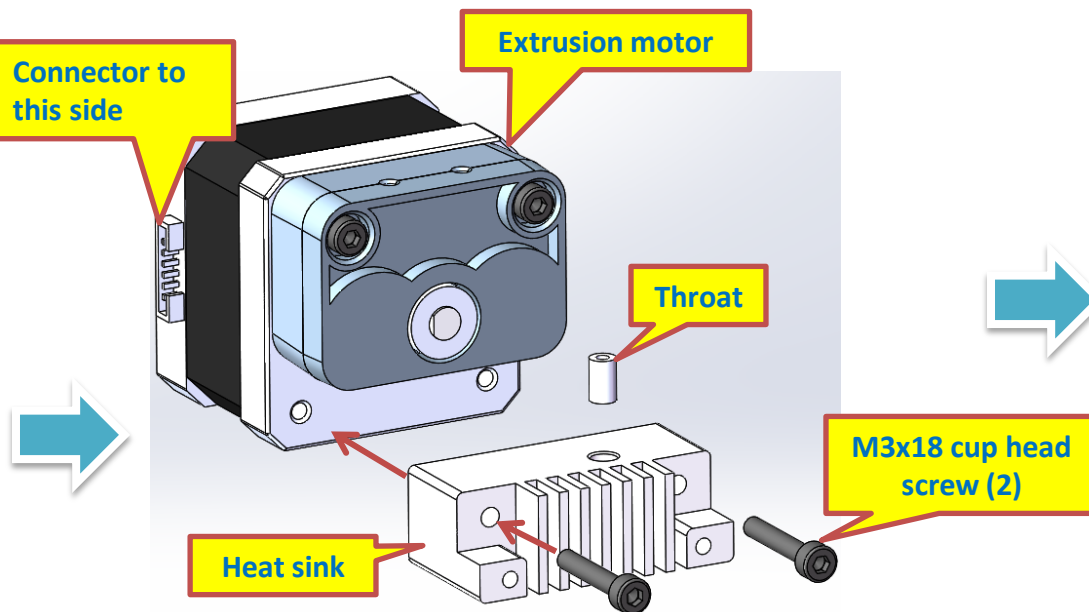
Air is in to the side without shoulder.

Air is out from the side having shoulder.

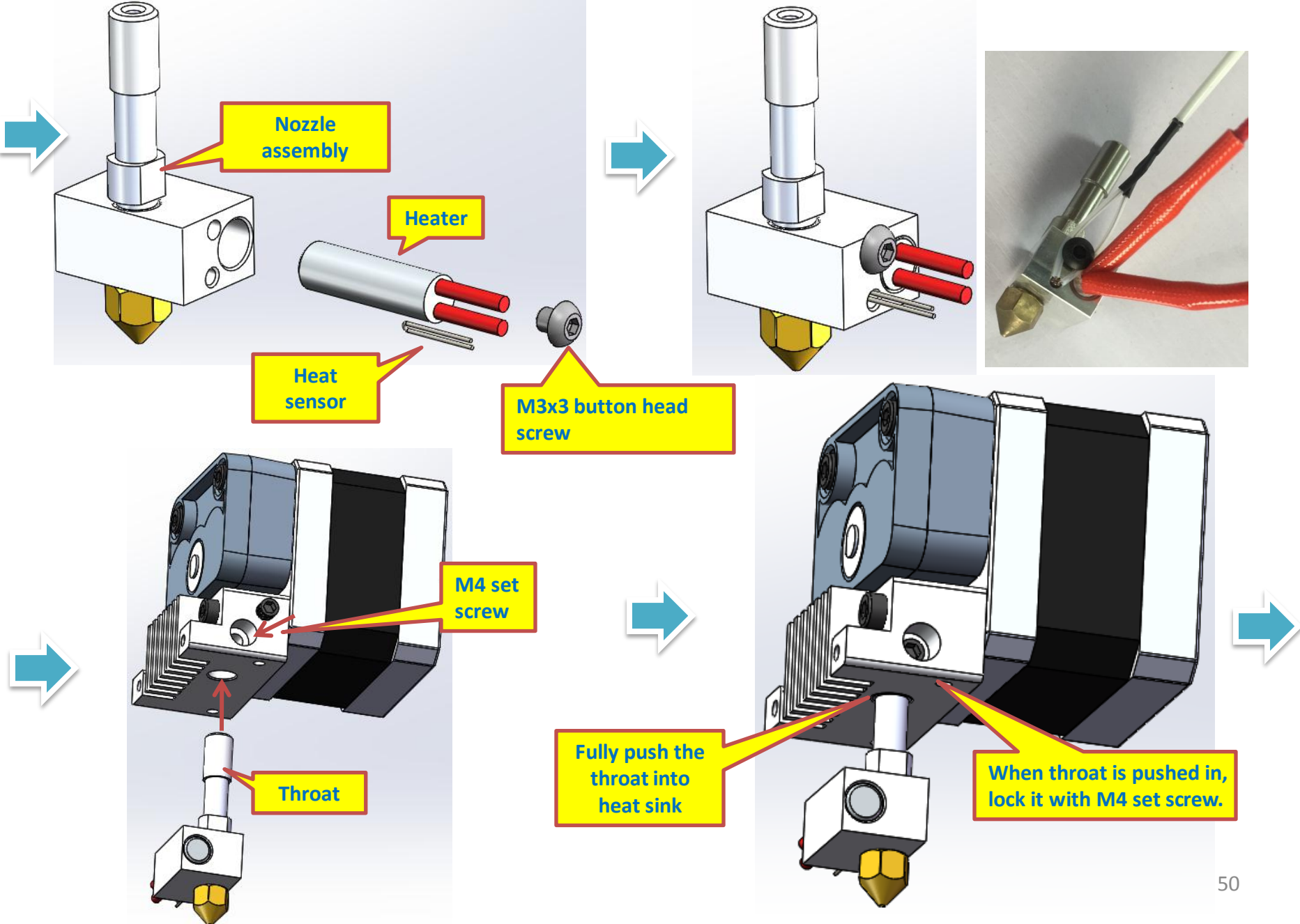




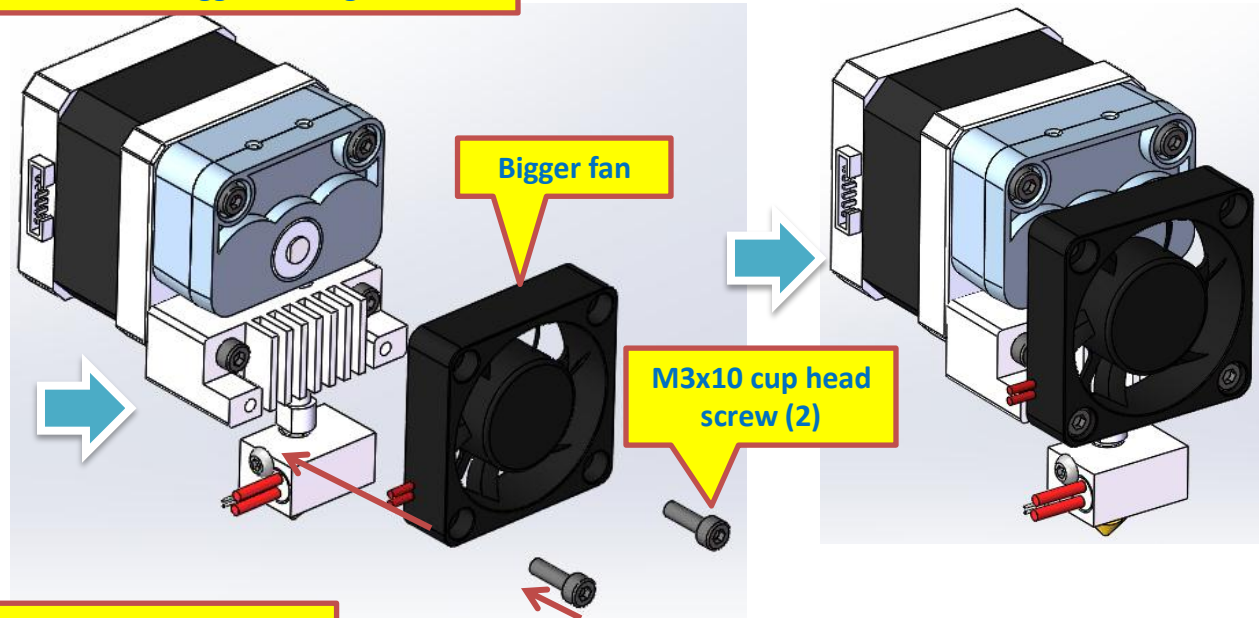
5.2 Install extrusion motor



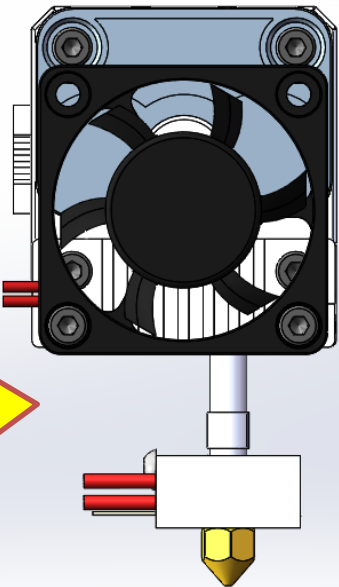
5.3 Assembly nozzle and connected components together



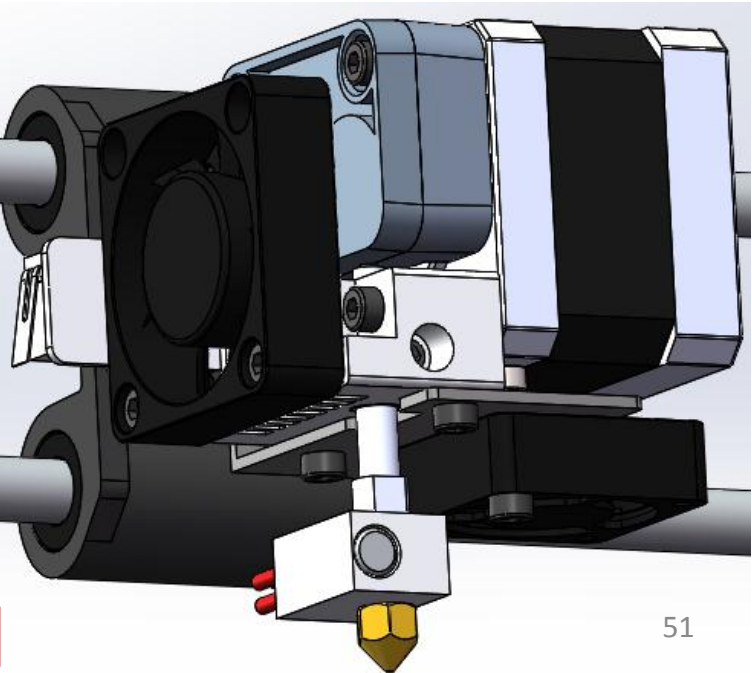
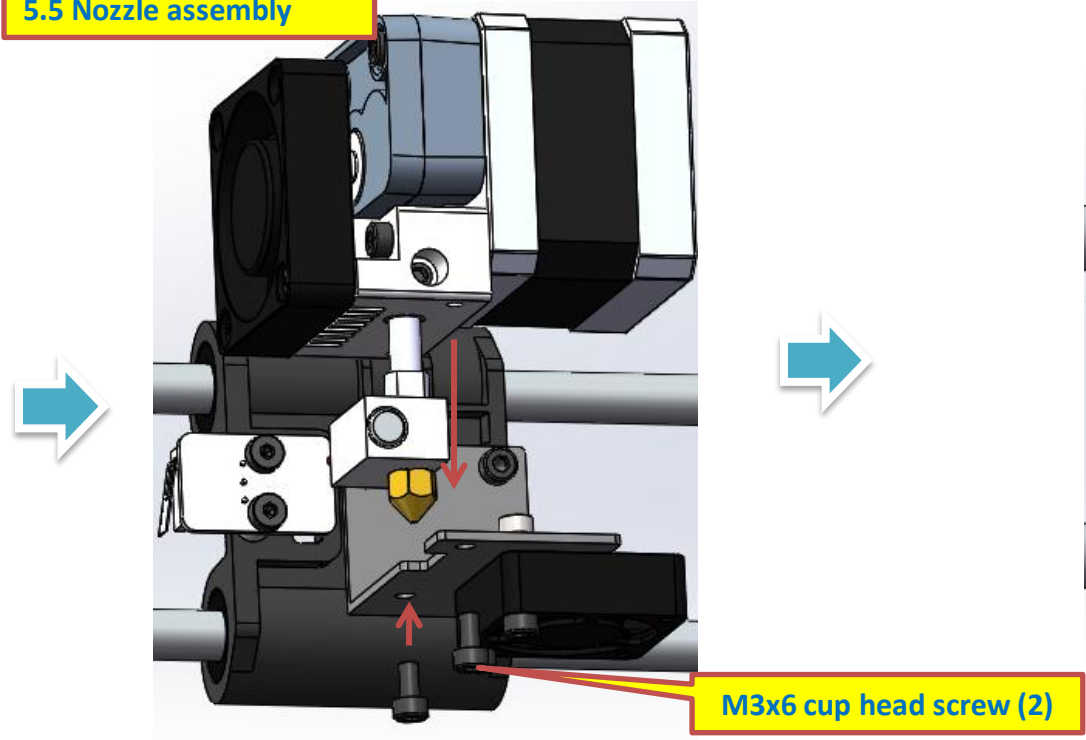
5.4 Install the bigger cooling fan



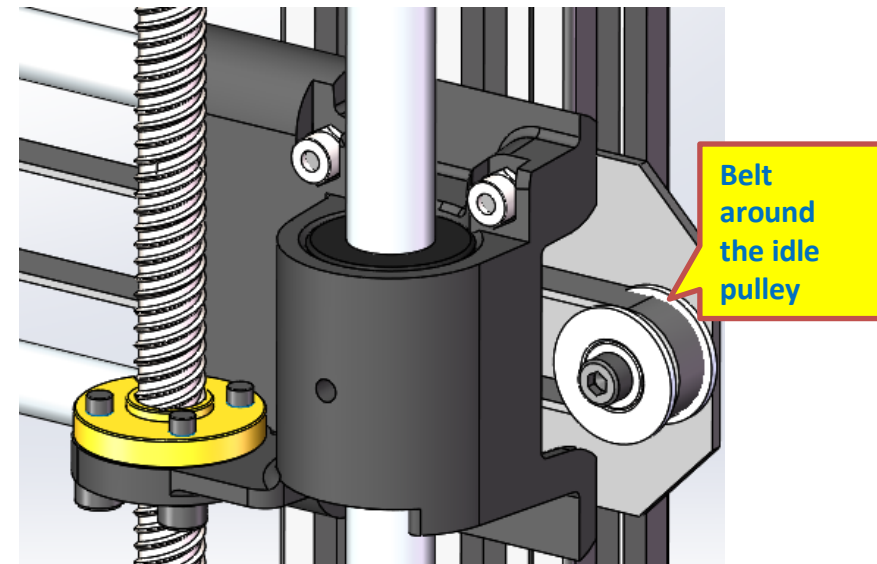
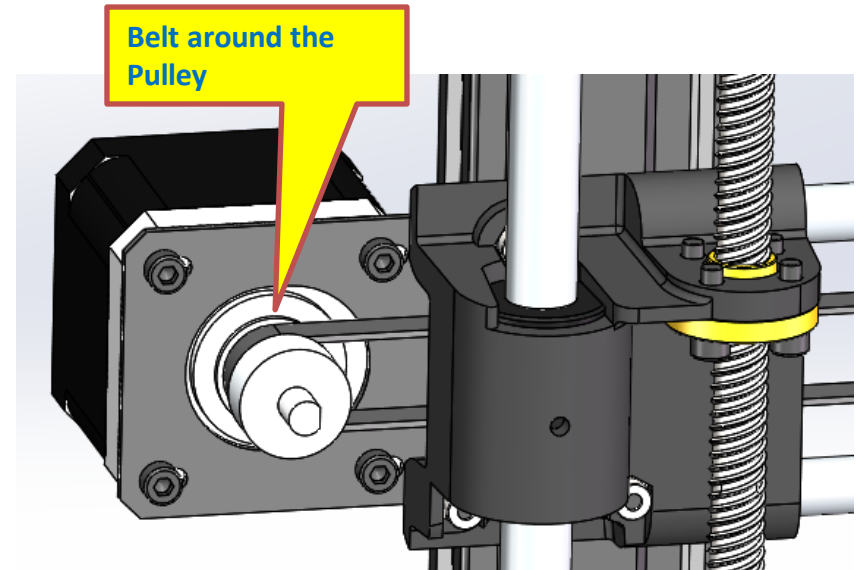
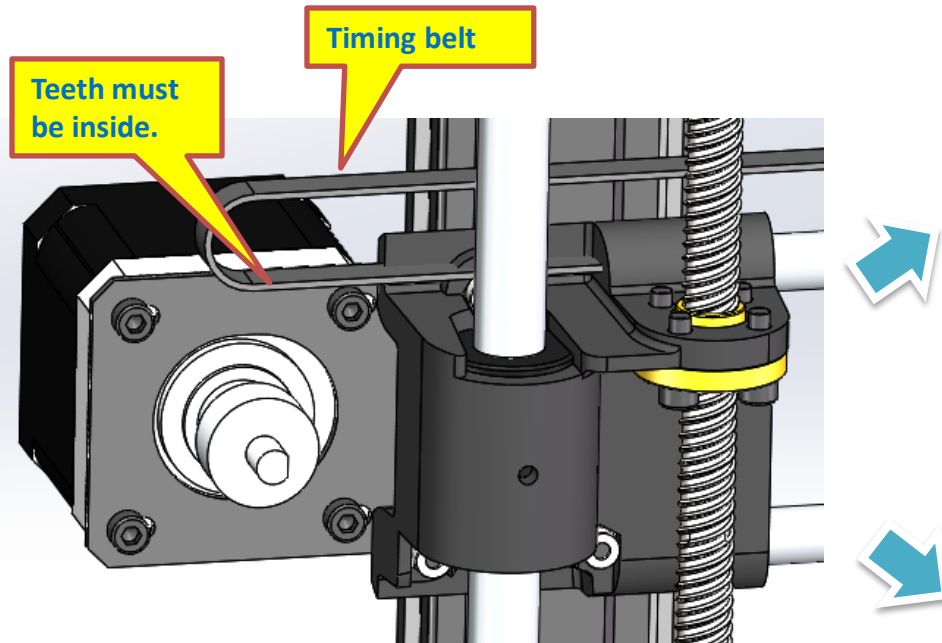
Wires of all parts are to the same direction as the picture shows.

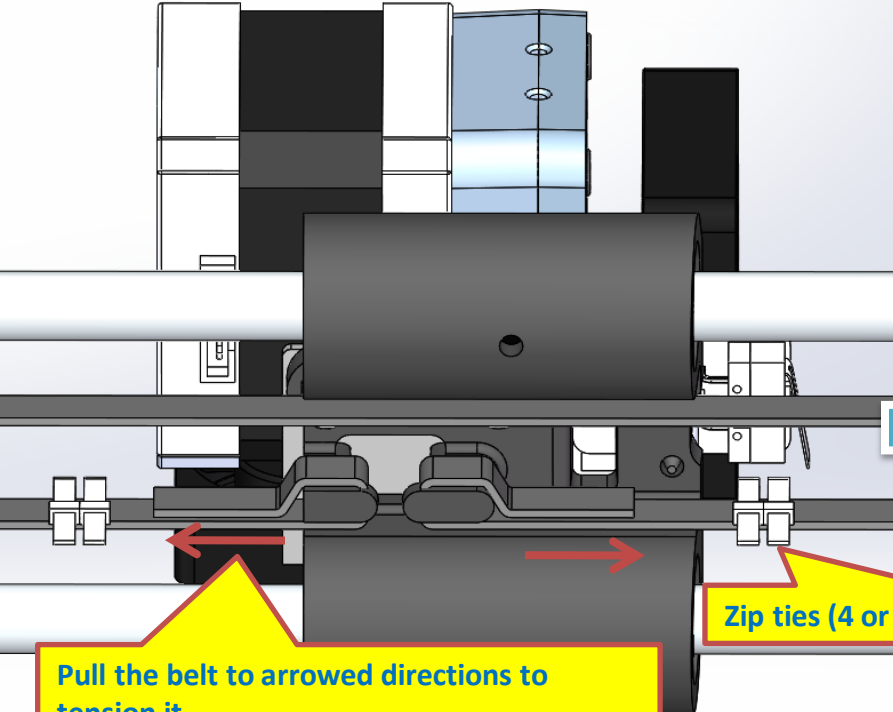


5.5 Nozzle assembly



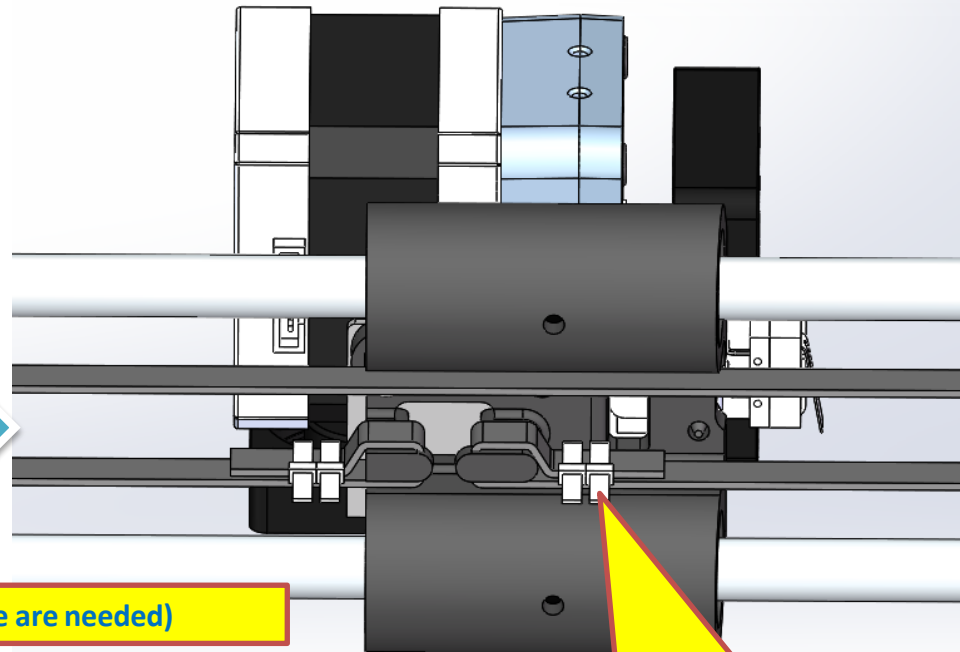
5.6 Install X motion belt



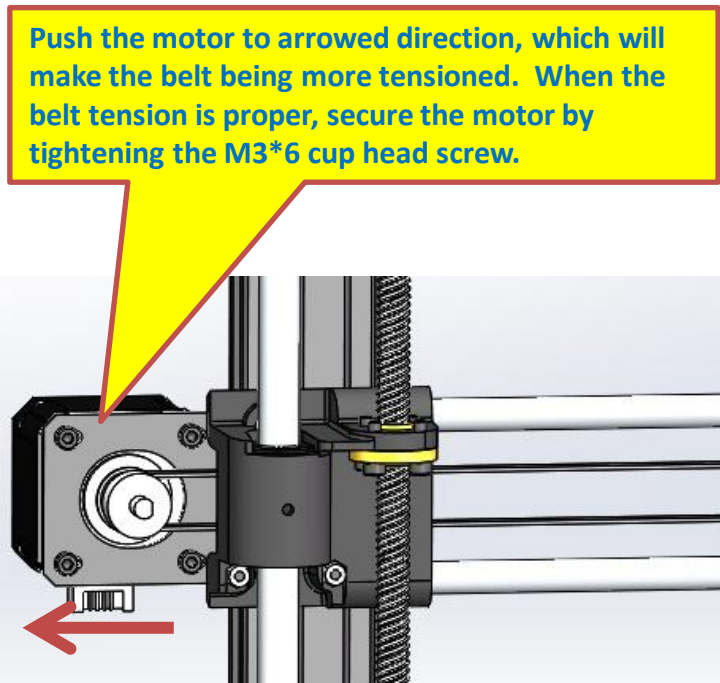


Pull the belt to arrowed directions to tension it.

Zip ties (4 or more are needed)



When belt is properly tensioned, tighten the zip ties.



Push the motor to arrowed direction, which will make the belt being more tensioned. When the belt tension is proper, secure the motor by tightening the M3*6 cup head screw.



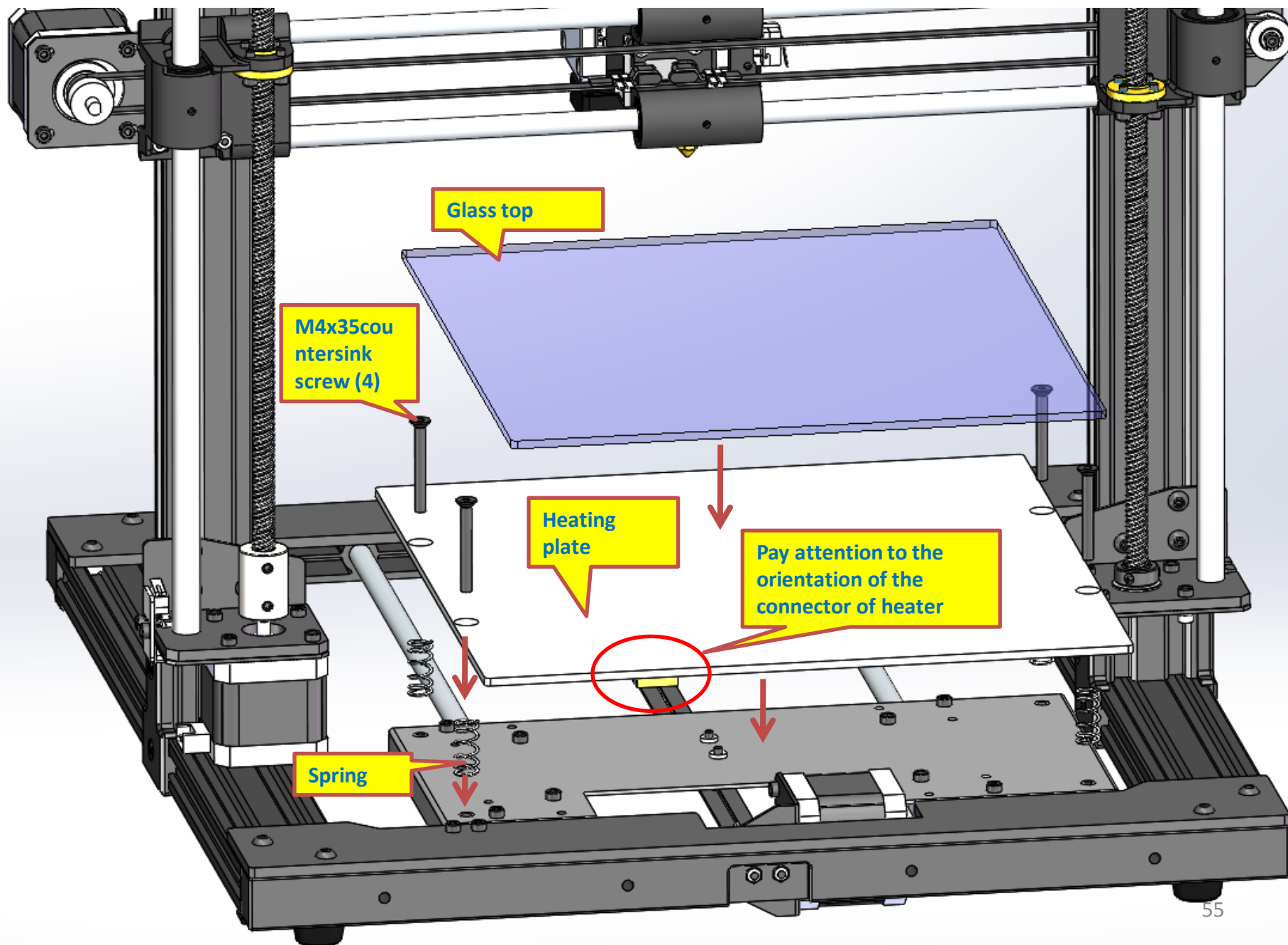
Proper tension means the upper and lower sections of the belt are in parallel. You will have the 'bounced back' feeling when you touch it by hand.

Material list #5:

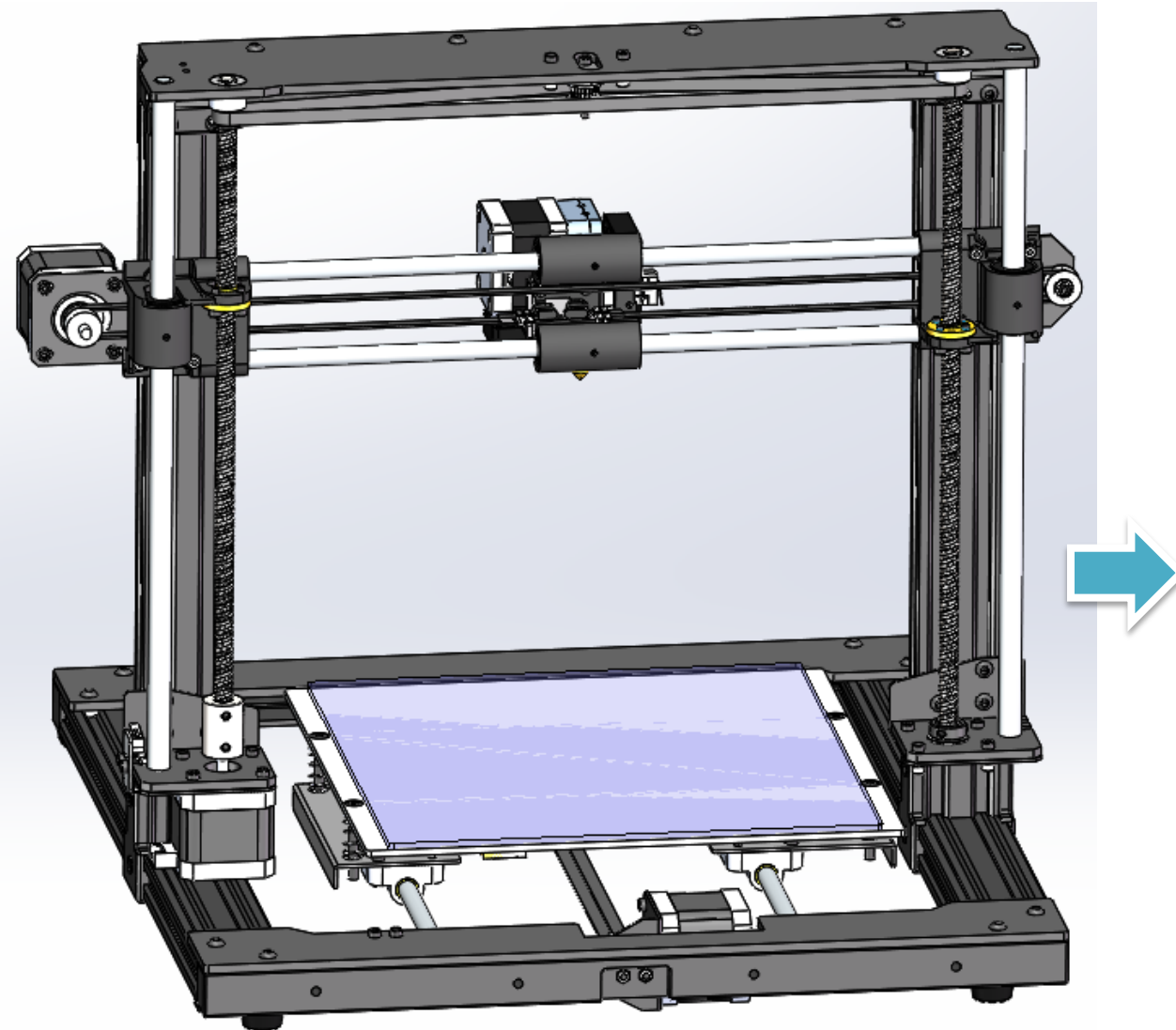
Sequence	#	Description	QTY	Remarks
Platform assembly	1	Heating plate	1	
Platform assembly	2	Top glass	1	Size: 220x200x3mm
Platform assembly	3	Clip	4	
Electrical circuit	4	Control box	1	
Wire	5	Power cord	1	
Binding tube	6	Binding tube	2	
Power supply	7	Power adaptor	1	



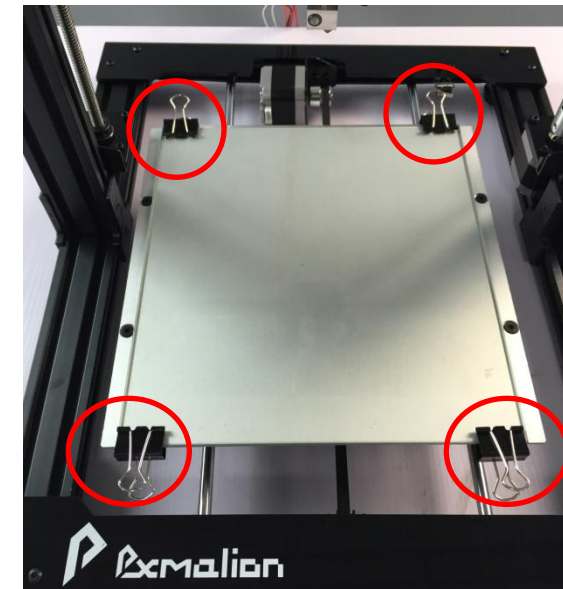
6.1 Install heating plate on platform



6.2 Install the top glass of platform

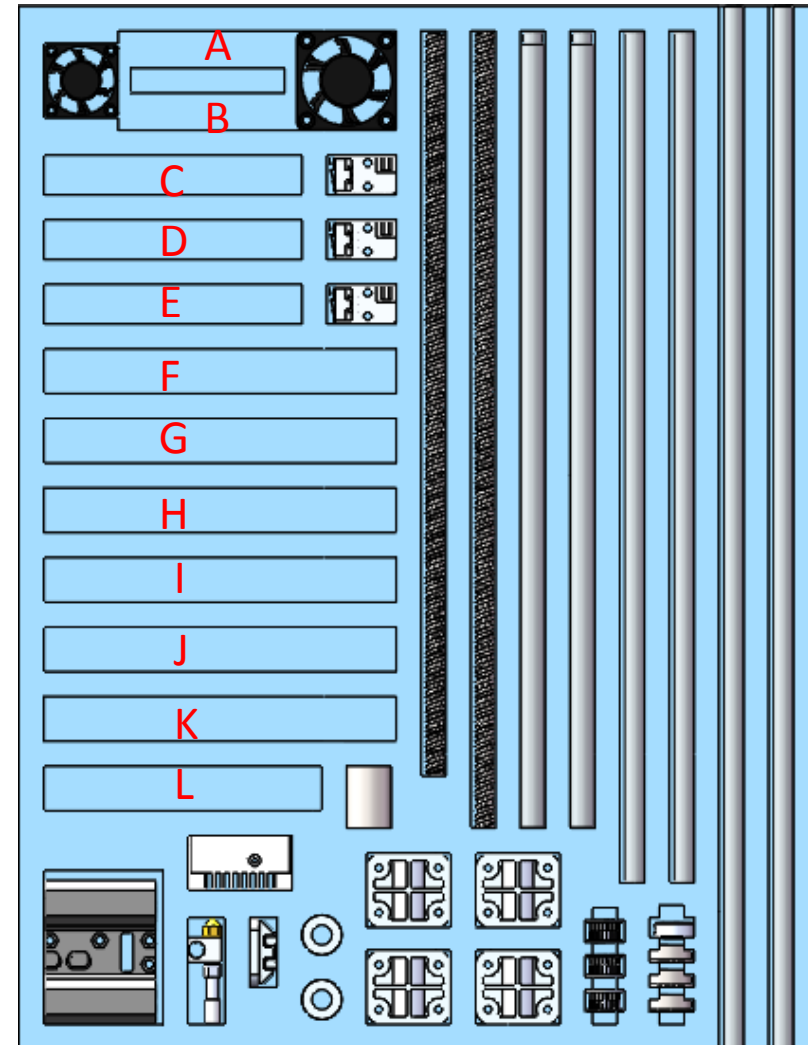


Use clips to fix the glass on the heating plate



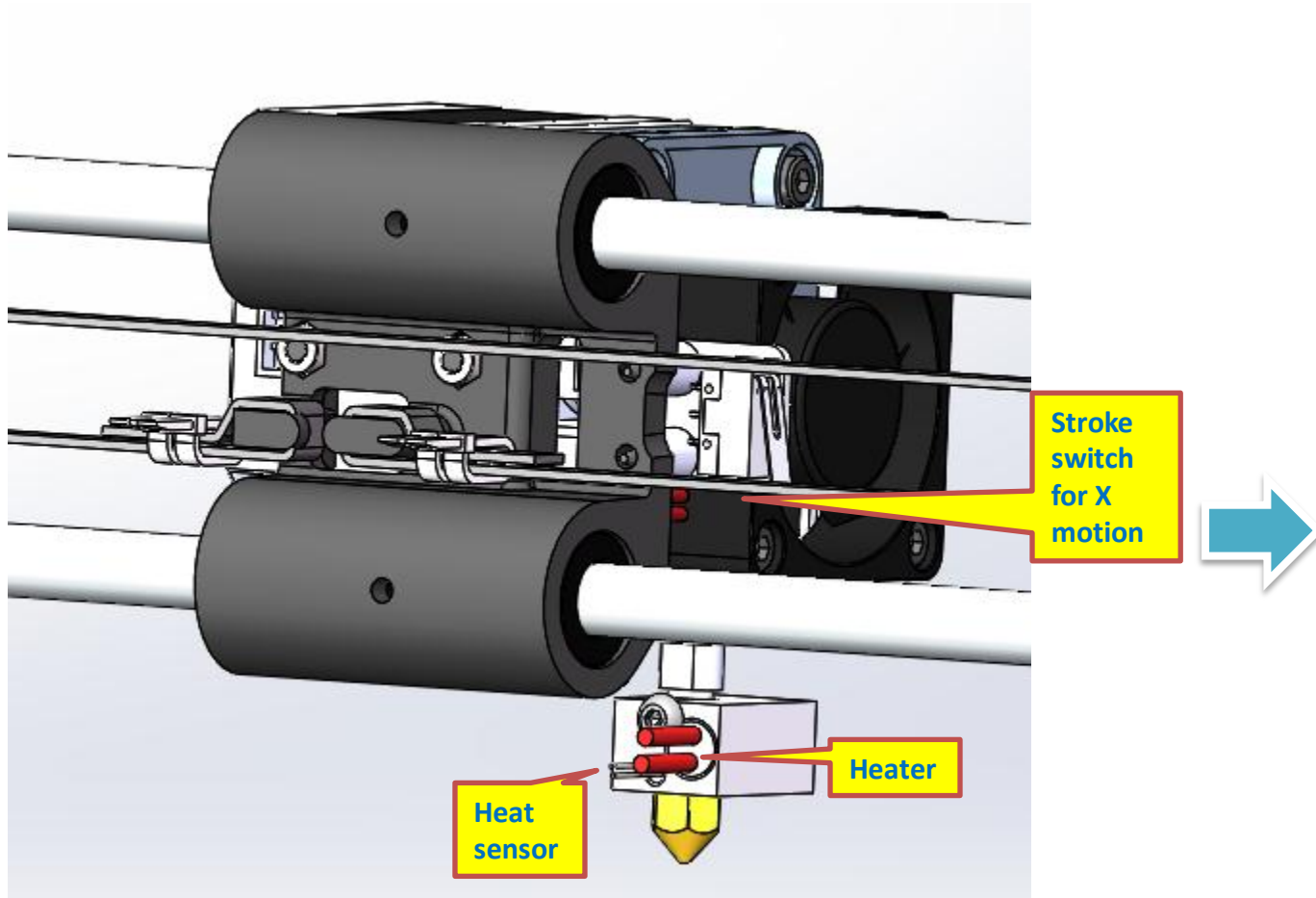
Material list #6:

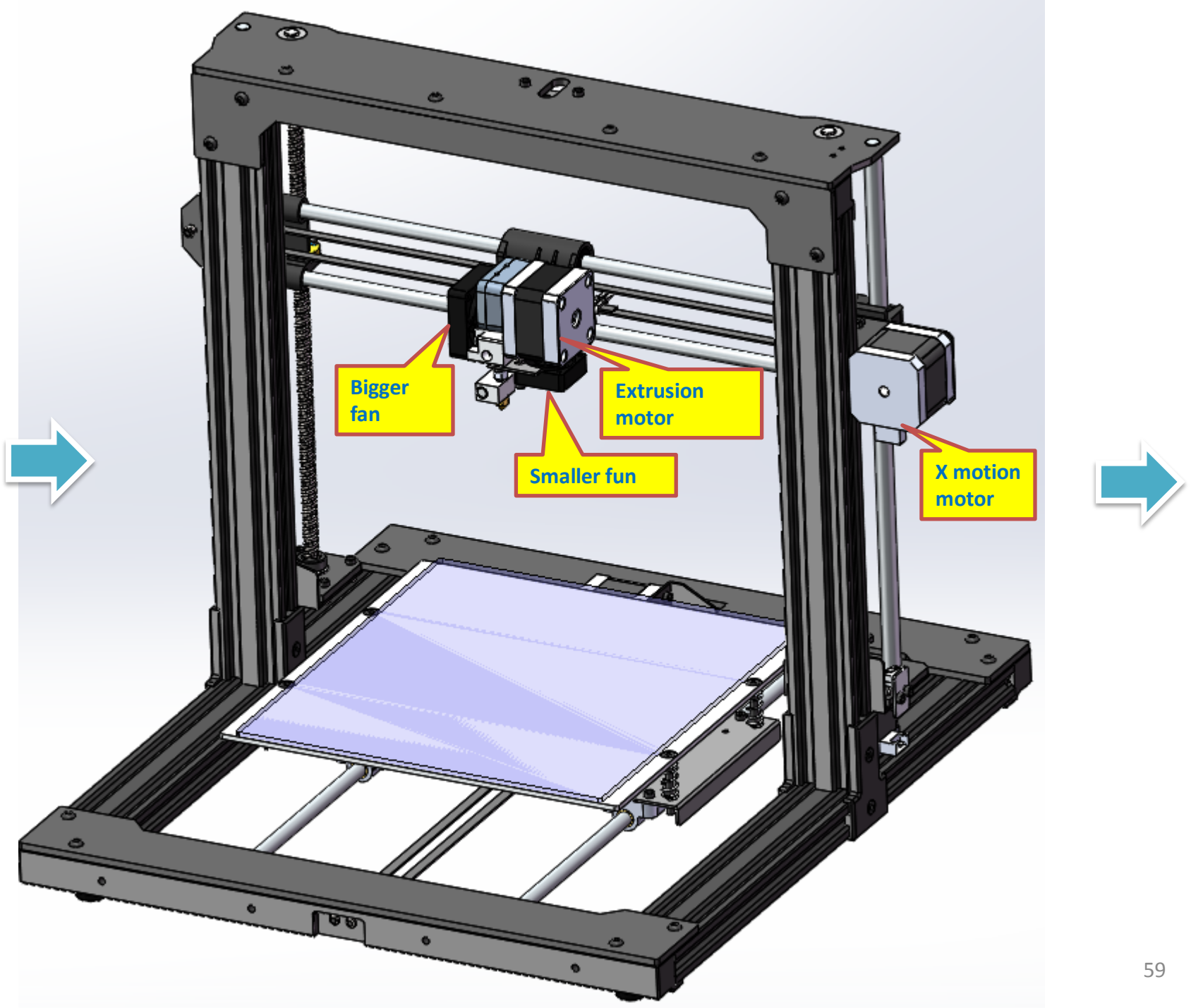
#	Descriptions	# of wires	Connector color	Position
1	Bigger fan	2P	Red	A
2	Smaller fan	2P	Yellow	B
3	X- Stroke switch	2P	Black	C
4	Y- Stroke switch	2P	Blue	D
5	Z- Stroke switch	2P	White	E
6	Heater	2P	Green	F
7	Heat sensor	2P	Green	G
8	Heating plate	4P	Red	H
9	Extrusion motor	4P	Yellow	I
10	X motion motor	4P	Black	J
11	Y motion motor	4P	Blue	K
12	Z motion motor	4P	White	L

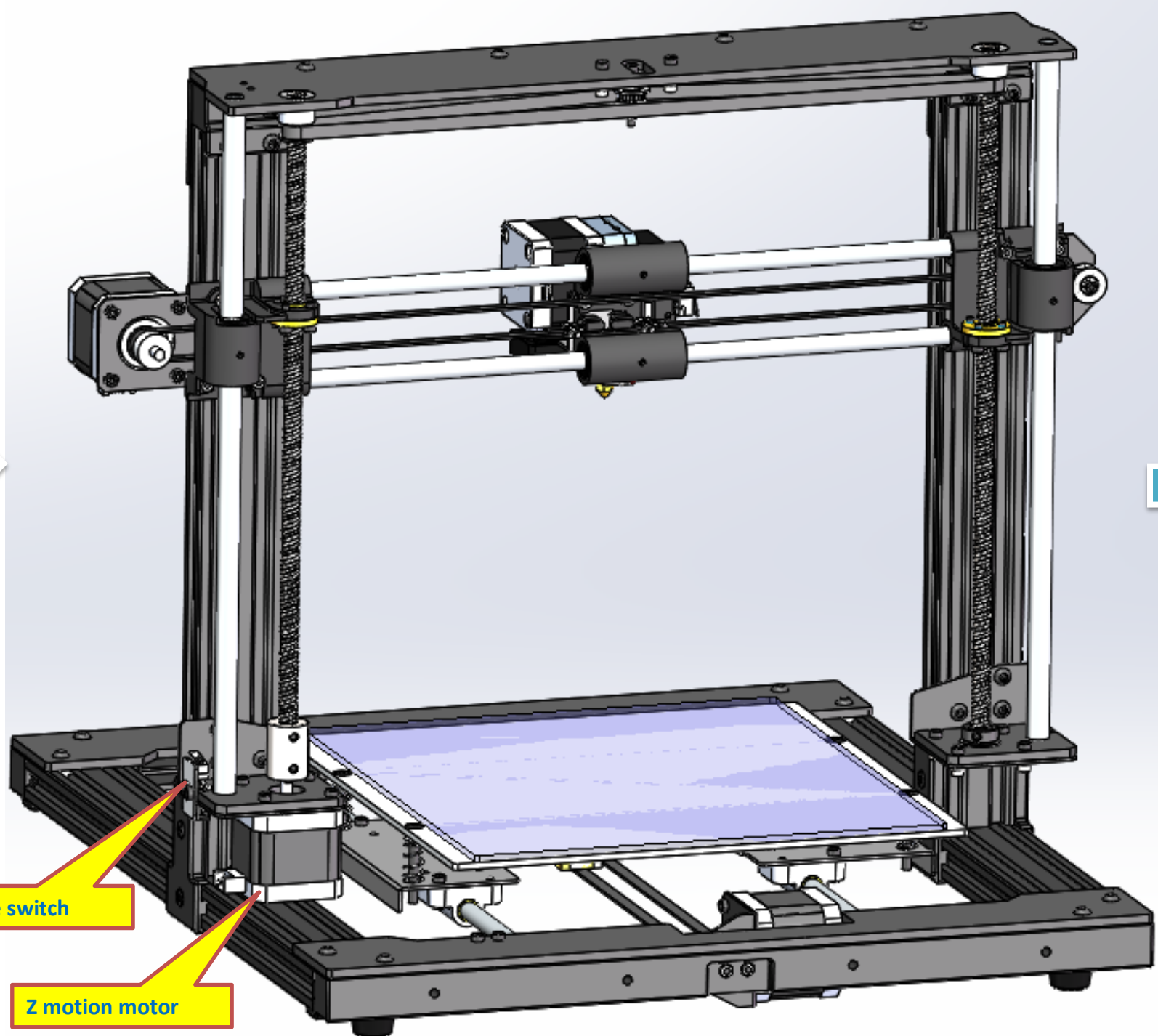


Where to fine the wires in the foam tray

7.1 Where to connect the wires --- 3d printer side

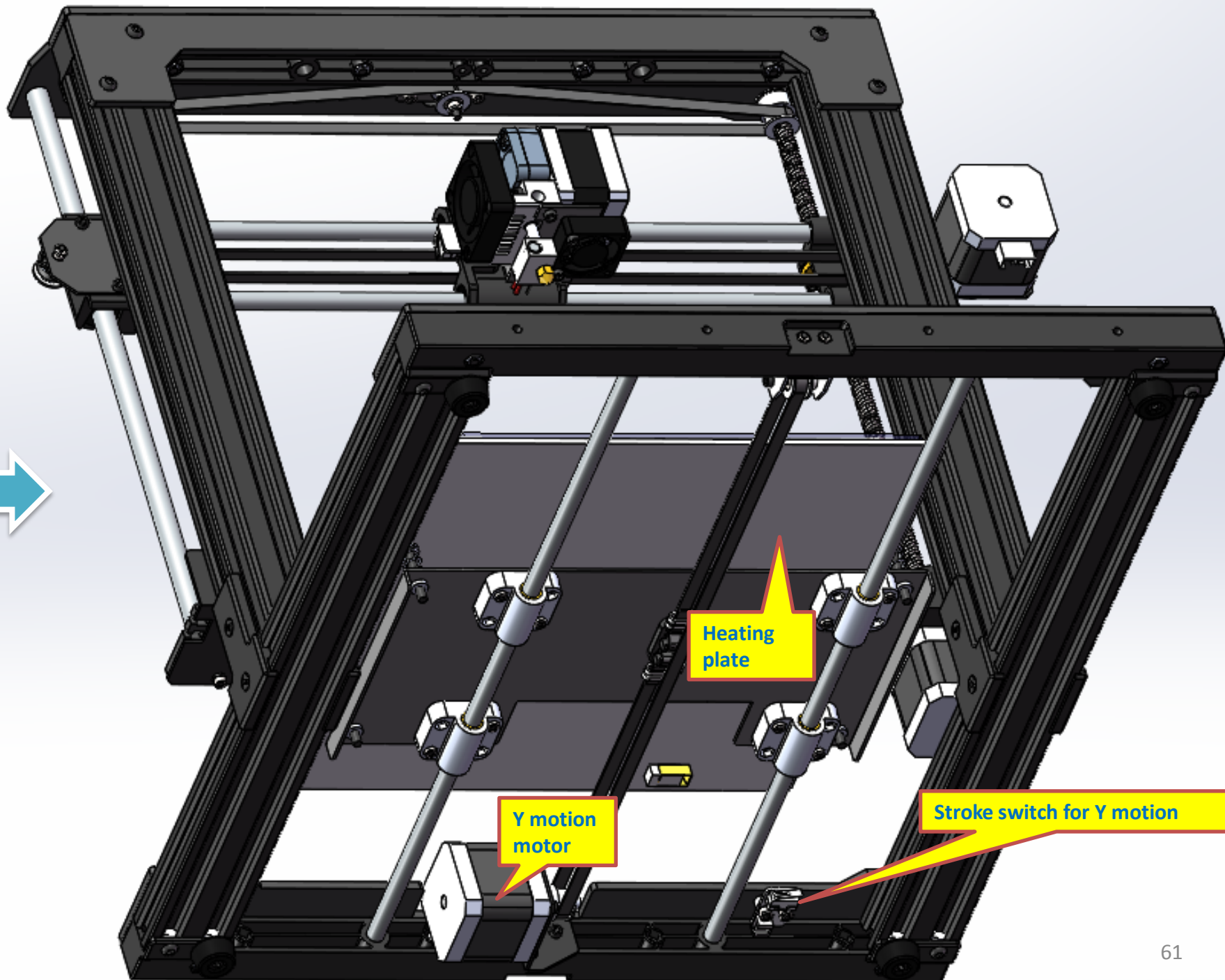






Z-Stroke switch

Z motion motor



Heating
plate

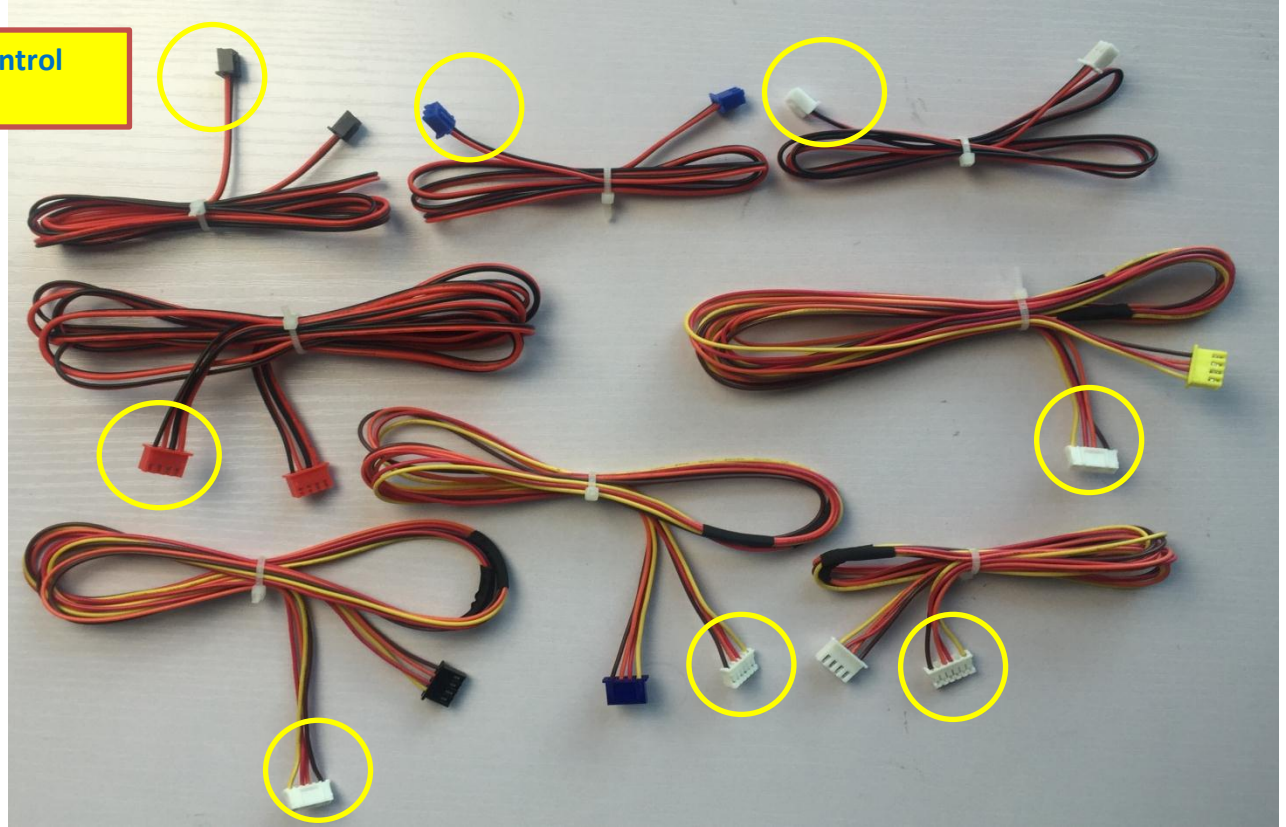
Y motion
motor

Stroke switch for Y motion

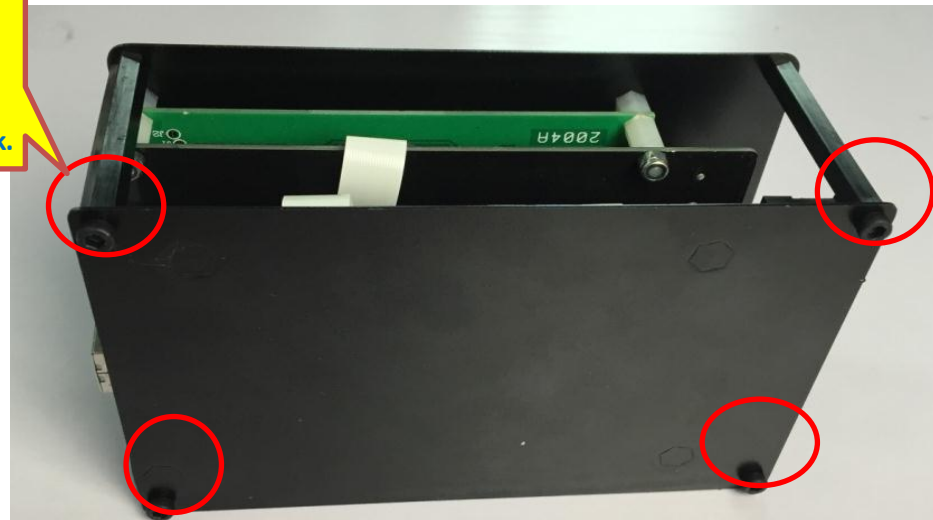
7.2 How to connect wires to the control box

As shown at right side, the yellow circled connectors will be plugged into related hardware (such as motors, fans, heater, etc.)

The connector at the other end will be connected to the motherboard, where has matching connectors in the same colors.



- ① Remove these 4 screws to open the box.
- ② Mate connectors according to their colors.
- ③ Assemble the box back.



Mother board connector map

X motion motor
marking: X-MOT
socket: XH-4P black

Y motion motor
marking: Y-MOT
socket: XH-4P blue

Z motion motor
marking: Z-MOT
socket: XH-4P white

Extrusion motor
marking: E-MOT
socket: XH-4P yellow

Nozzle thermistor
marking: NOZ-TEMP
socket: XH-2P green

Nozzle heater
marking: NOZZLE
socket: EDG-2P green

Nozzle cooler fan
marking: NOZ-FAN
socket: XH-2P red

Extruder cooling fan
marking: E-FAN
socket: XH-2P yellow

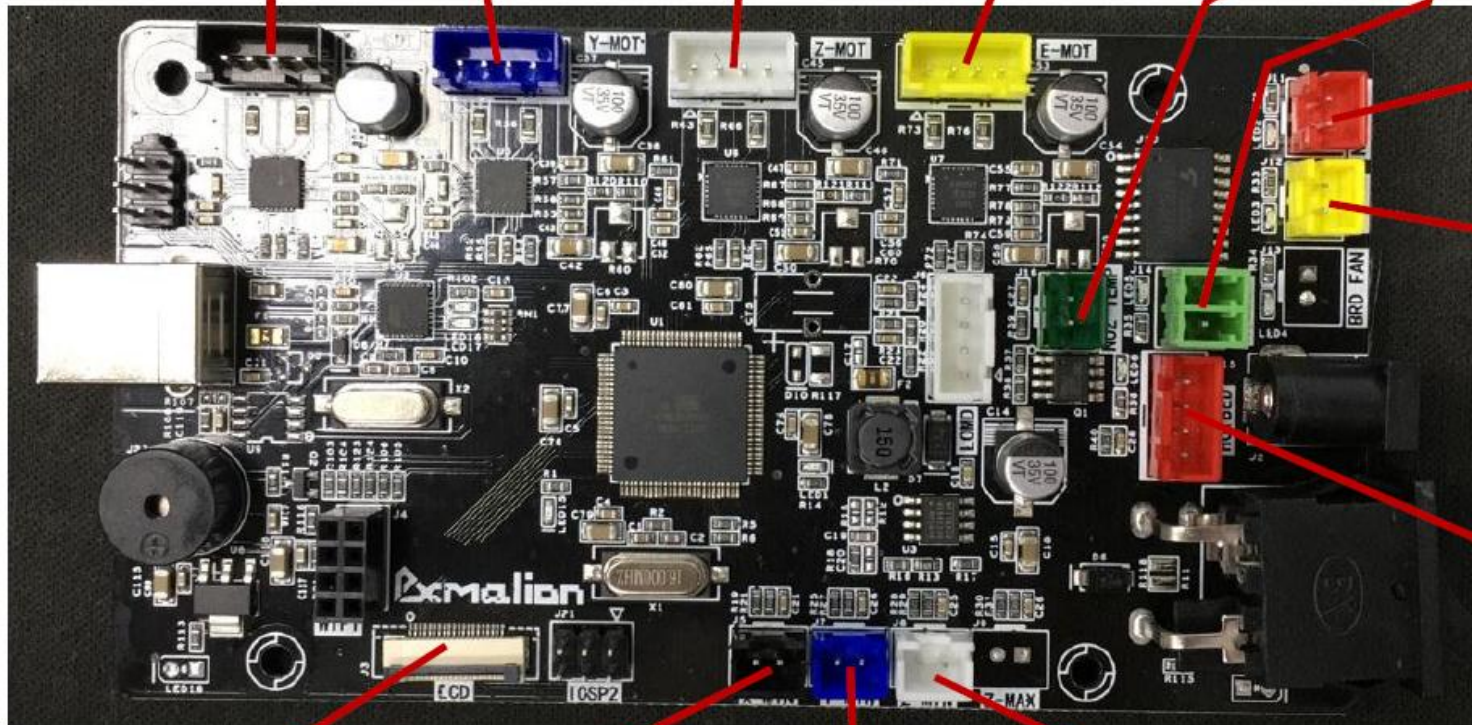
Heating bed
marking: HOTBED
socket: XH-4P red

LCD display
marking: LCD
socket: FPC-20P white

X motion stroke switch
marking: X-MIN
socket: XH-2P black

Y motion stroke switch
marking: Y-MIN
socket: XH-2P blue

Z motion stroke switch
marking: Z-MIN
socket: XH-2P white

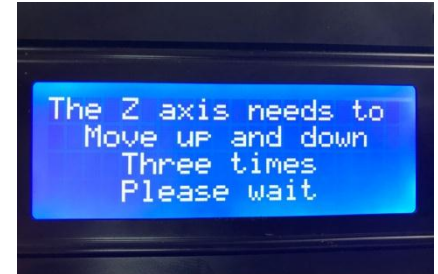
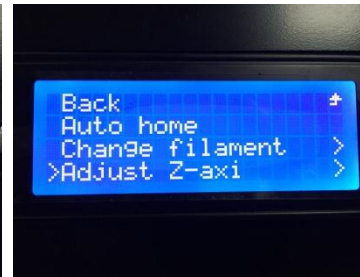
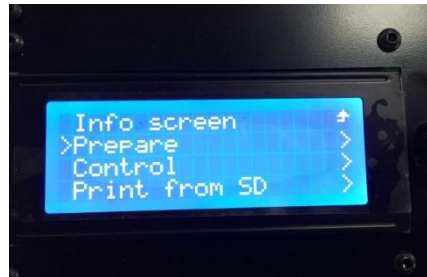
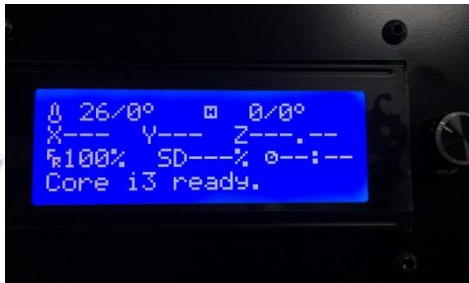


8.1 Adjust smoothness of Z axis motion

Power on the unit



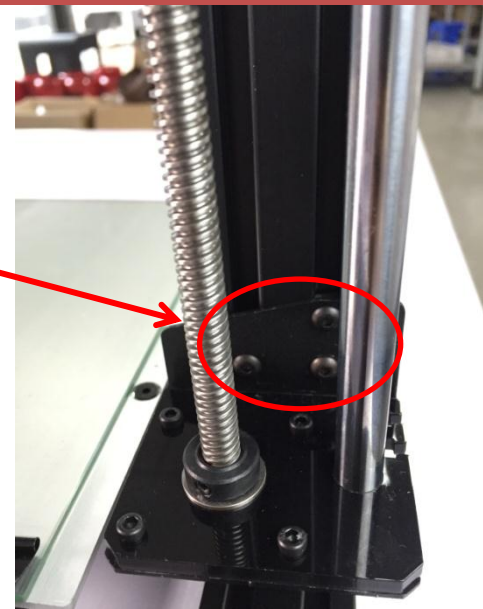
Operation: Enter Info screen, click then turn the knob, click Prepare then Adjust Z axis. Nozzle assembly will start to move up and down, and repeat for 3 full cycles.



8.2 Please loosen those screws in red circle before making nozzle moving up and down. While the nozzle assembly is moving, tighten those screws little by little. The parallelism of the 2 screw rod and guiding pins for Z motion can be adjusted effectively by repeating the action. You can hence repeat it for a desired result.



- ① Please loosen these 6 screws first.
- ② While nozzle assembly is moving up and down, tighten them gradually.



Finished

