



## SIBOOR Trident [JUNE] ASSEMBLY

VERSION 2024/7/4

## Important Note:

This assembly manual is exclusively designed for the SIBOOR Trident JUNE kit. For the official VORON Trident assembly manual, please refer to the following link:

<https://github.com/VoronDesign/Voron-Trident/tree/main/Manual>

## Why the Change?

The SIBOOR Trident JUNE kit includes numerous modifications and significant electrical adjustments. Simply adding supplementary pages to the existing manual is no longer sufficient. You would have to navigate through many pages repeatedly.

To enhance user experience, SIBOOR has opted to create a new assembly guide from scratch, ensuring it closely matches the Trident JUNE kit. The assembly logic and the presentation of most steps in this manual are inspired by the original VORON manual.

Should you find an issue in the documentation or have a suggestion for an improvement please

consider opening an issue on GitHub

(<https://github.com/Lzhikai/SIBOOR-Voron-Trident-June/issues>).

When raising an issue please include the relevant page numbers and a short description; annotated

screenshots are also very welcome. We periodically update the manual based on the feed-

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WWW.SIBOOR.COM

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## HOW TO GET HELP

If you need assistance with your build, we're here to help. Head on over to our Discord group and post your questions. This is our primary medium to help VORON Users and we have a great community that can help you out if you get stuck.



**DISCORD**

Voron Discord: <https://discord.gg/voron>

Siboor Discord: <https://discord.gg/BMJD4puJf6>

Here are some portals for your convenience:

- VORON Design: [www.vorondesign.com](http://www.vorondesign.com)
- SIBOOR DOCS: <https://docs.siboor.com>
- SIBOOR Trident [JUNE] Github: <https://github.com/Lzhikai/SIBOOR-Voron-Trident-June>

If you want to learn more about the mods included in this kit:

- CNC AWD Drive: <https://github.com/GKD-Team/Voron-Trident-CNC-Gantry>
- Cartographer Probe: <https://docs.cartographer3d.com>
- Fume pack V2: [https://github.com/Exerqtor/Voron/tree/main/Mods/fume\\_pack](https://github.com/Exerqtor/Voron/tree/main/Mods/fume_pack)
- Clickyclacky door: [https://github.com/tanaes/whopping\\_Voron\\_mods/tree/main/-clickyclacky\\_door](https://github.com/tanaes/whopping_Voron_mods/tree/main/-clickyclacky_door)

Mods already included in the SIBOOR Trident [JUNE] GitHub are not listed separately.

## PART PRINTING GUIDELINES

The Voron Team has provided the following print guidelines for you to follow in order to have the best chance at success with your parts. There are often questions about substituting materials or changing printing standards, but we recommend you follow these:

### 3D PRINTING PROCESS

Fused Deposition Modeling (FDM)

### INFILL TYPE

Grid, Gyroid, Honeycomb, Triangle or Cubic

### MATERIAL

ABS

### INFILL PERCENTAGE

Recommended: 40%

### LAYER HEIGHT

Recommended: 0.2mm

### WALL COUNT

Recommended: 4

### EXTRUSION WIDTH

Recommended: Forced 0.4mm

### SOLID TOP/BOTTOM LAYERS

Recommended: 5

## FILE NAMING

By this time you should have already downloaded our STL files from the Voron GitHub. You might have noticed that we have used a unique naming convention for the files. This is how to use them.

### PRIMARY COLOR

**Example z\_joint\_lower\_x4.stl**

These files will have nothing at the start of the filename.

### ACCENT COLOR

**Example [a]\_tensioner\_left.stl**

We have added “[a]” to the front of any STL file that is intended to be printed with accent color.

### QUANTITY REQUIRED

**Example [a]\_z\_belt\_clip\_lower\_x4.stl**

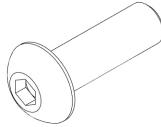
If any file ends with “\_x#”, that is telling you the quantity of that part required to build the machine.

\*The suffix "by\_SIBOOR" on some STL files indicates that these files differ from the original VORON design or the original MOD design and are specifically tailored for the SIBOOR Trident JUNE KIT.

\*The prefix "[Two-color]" indicates that the STL file requires printing with two different colors of ABS filament.



In this manual, parts marked with a red star indicate they are ACCENT COLOR.



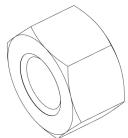
## BUTTON HEAD CAP BOLT (BHCS)

Metric fastener with a domed shape head and hex drive. Most commonly found in locations where M5 fasteners are used.



## FLAT HEAD COUNTERSUNK BOLT (FHCS)

Metric fastener with a cone shaped head and a flat top.



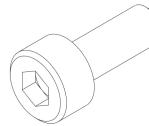
## HEX NUT

Hex nuts couple with bolts to create a tight, secure joint. You'll see these used in both M3 and M5 variants throughout this guide.



## POST INSTALL T-SLOT NUT (T-NUT)

Nut that can be inserted into the slot of an aluminium profile. Used in both M3 and M5 variants throughout this guide. Often also called "roll-in t-nut".



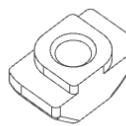
## SOCKET HEAD CAP BOLT (SHCS)

Metric fastener with a cylindrical head and hex drive. The most common fastener used on the Voron.



## HEAT SET INSERT

Heat inserts with a soldering tip so that they melt the plastic when installed. As the plastic cools, it solidifies around the knurls and ridges on the insert for excellent resistance to both torque and pull-out.



## HAMMERHEAD NUT

Nut that can be inserted into the slot of an aluminium profile. Used exclusively for panel mounting, all other components use T-Slot nuts.



## FLANGE NUT

A flange nut is a nut with a wide edge that increases contact area, distributes pressure, and prevents loosening.



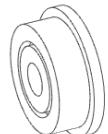
## F695 BEARING

A ball bearing with a flange used in various gantry locations.



## 695 BEARING

Bearings are used to support and reduce friction between rotating parts in mechanical devices.



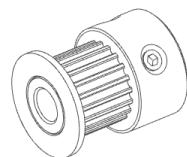
## F623 BEARING

A ball bearing with a flange used . Used for drag chain brackets.



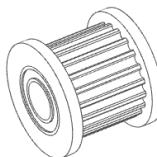
## SPHERICAL BEARING

A spherical bearing is a mechanical component enabling rotational movement and load transfer at various angles, comprising a spherical inner ring and a tilting outer ring.



## PULLEY

GT2 pulley used on the motion system of the Voron.



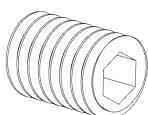
## IDLER

GT2 idler used in the motion system of the Voron.



## THUMB NUT

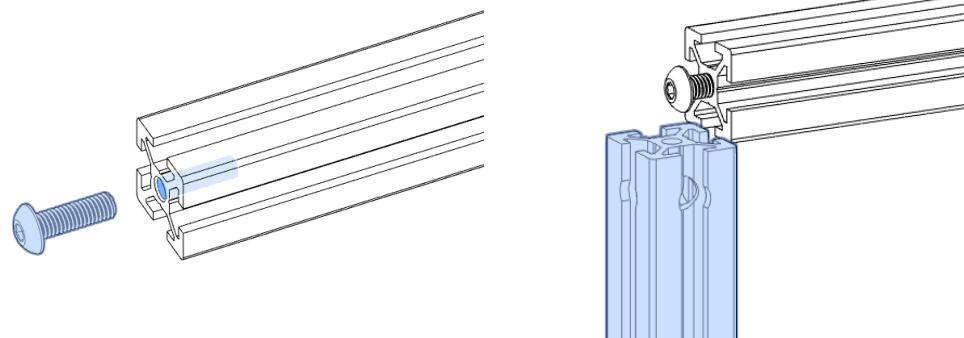
Used in the print bed as a spacer.



## SET SCREW

Small headless fastner with an internal drive. Used in pulleys and other gears. Also called a grub screw.

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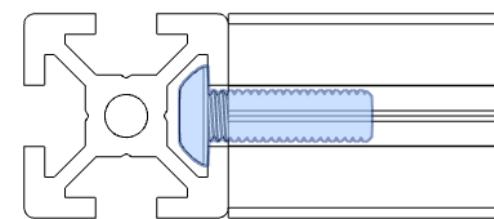
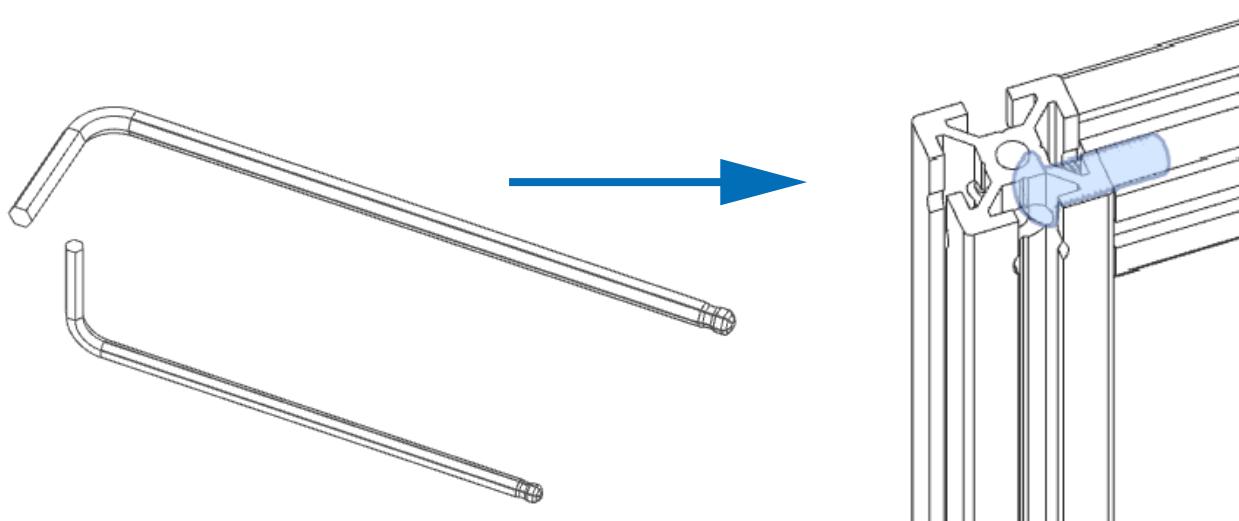


## BLIND JOINT BASICS

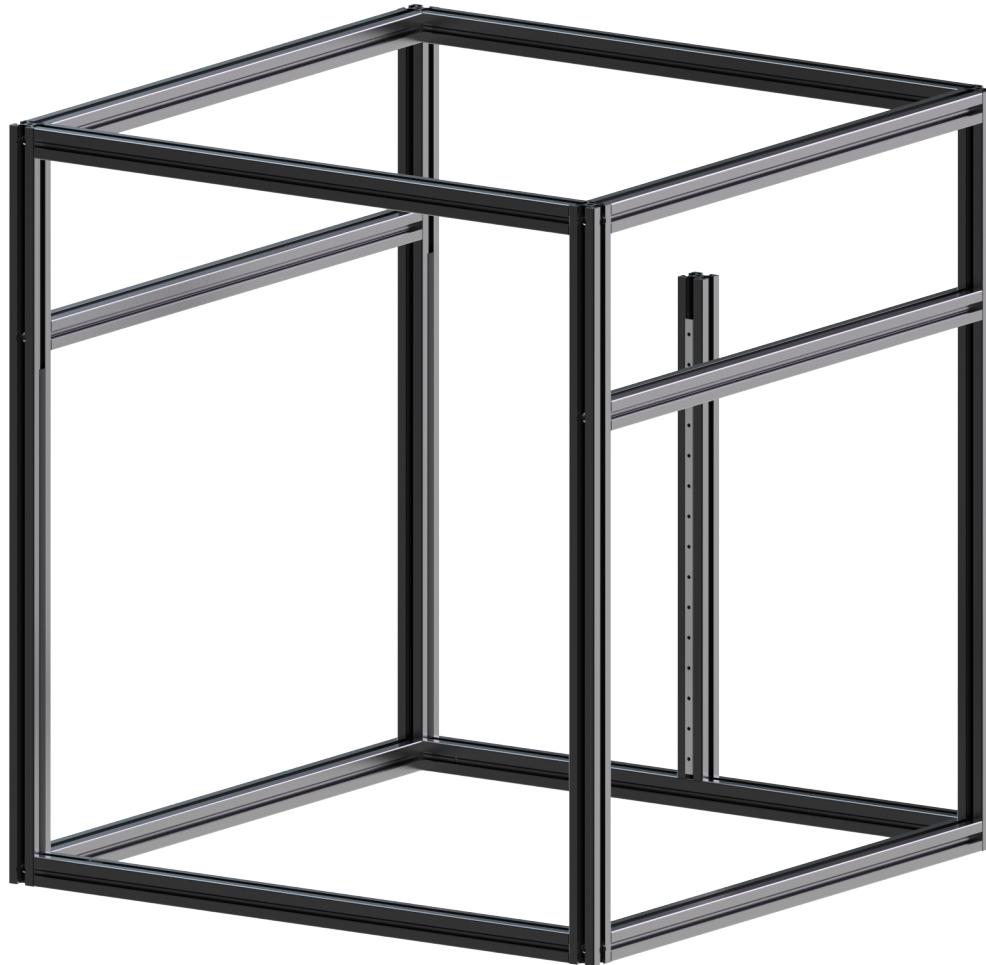
Blind Joints provide a cost effective and rigid assembly method

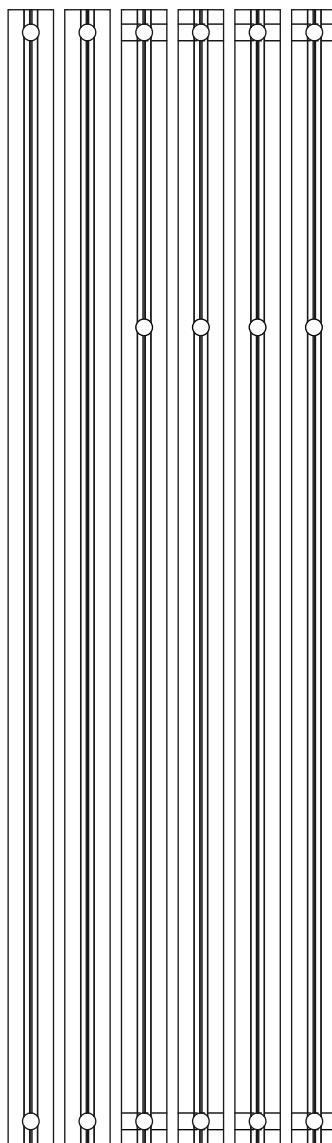
The head of the BHCS is slid into the channel of another extrusion and securely fastened through a small access hole in the extrusion.

If you've never assembled one before we recommend you watch the linked guide.



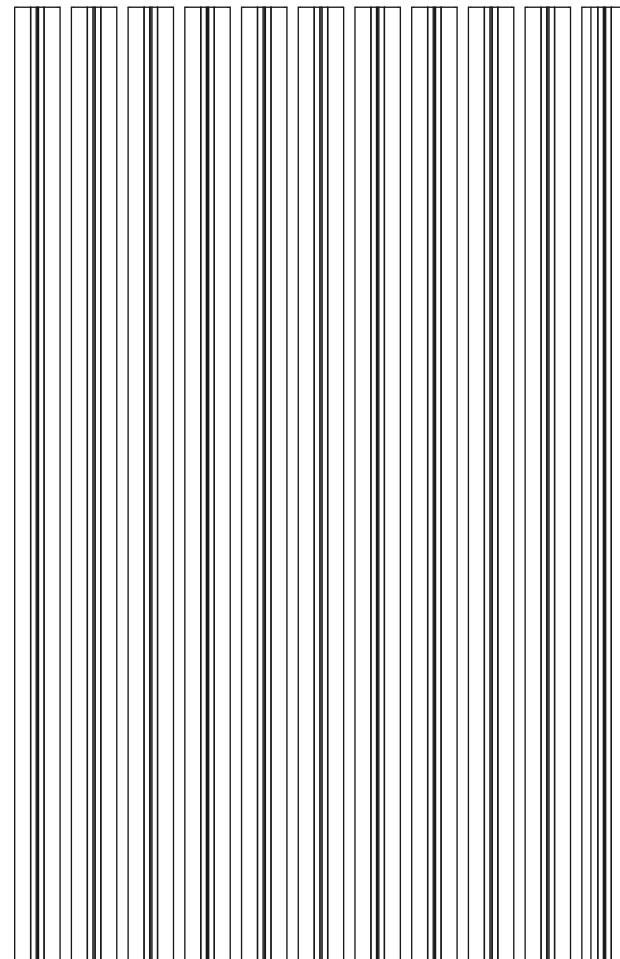
<https://voron.link/onjwmcd>





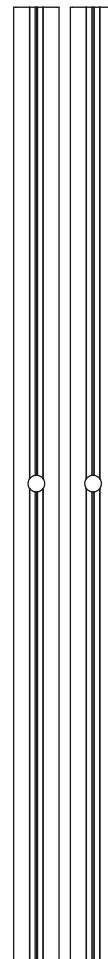
B Extrusion

500mm



A Extrusion

420mm / 470mm

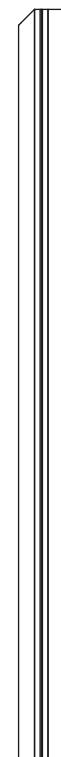


CF Extrusion

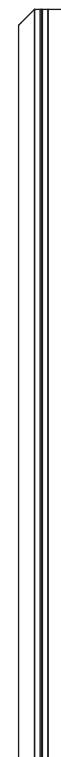
420mm / 470mm

## SORT EXTRUSIONS

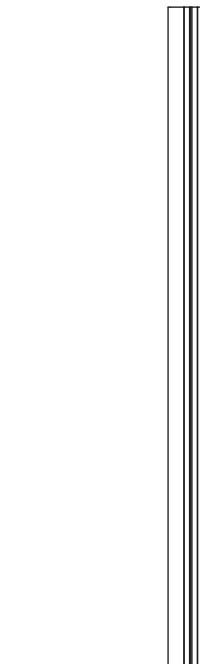
Collect your extrusions and sort them by length. We will highlight the extrusions used in each step and label them as shown on this page.



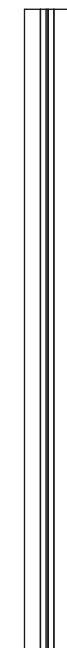
H Extrusion



E Extrusion



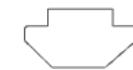
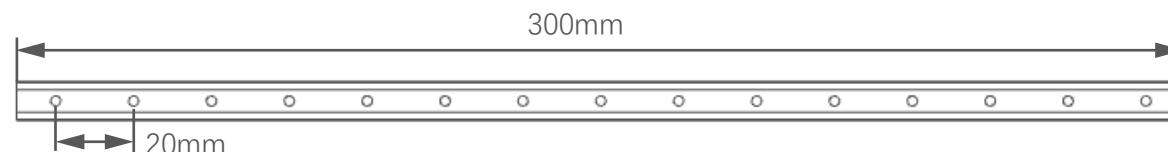
G Extrusion



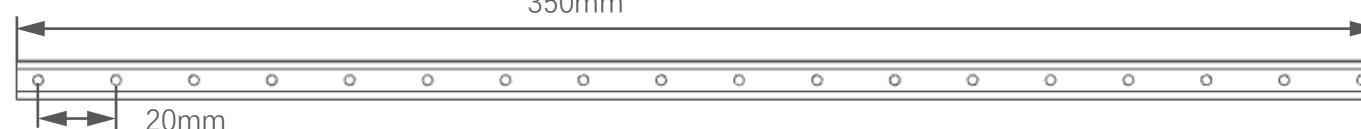
Please find these fixing strips and linear rails, and arrange them together. They will be needed soon.

### 300 Model

Z-axis  
Fixed strips  
**x3PCS**

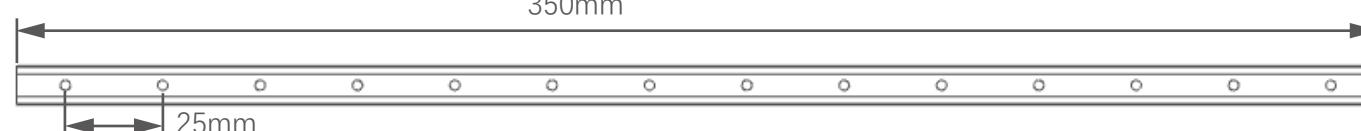


Y-axis  
Fixed strips  
**x2PCS**



350mm

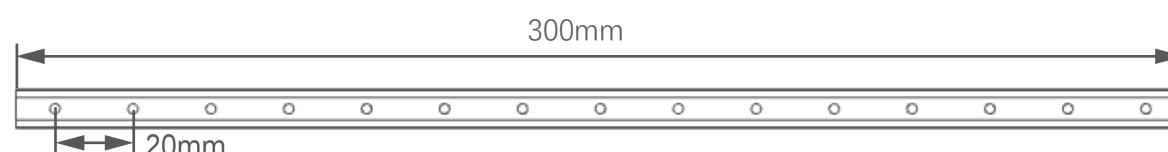
X-axis  
Fixed strips  
**x1PCS**



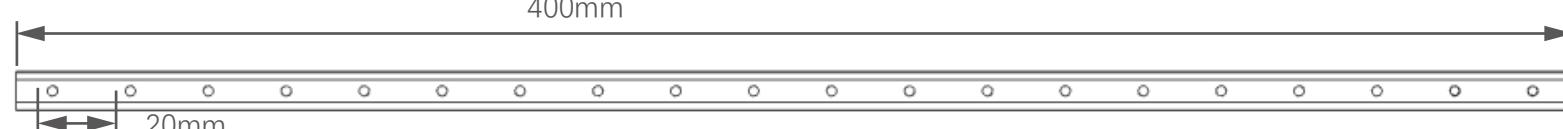
350mm

### 350 Model

Z-axis  
Fixed strips  
**x3PCS**

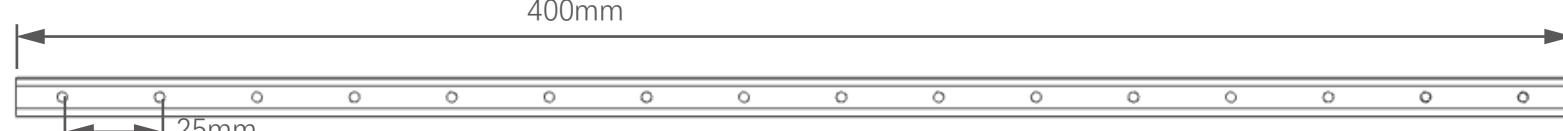


Y-axis  
Fixed strips  
**x2PCS**



400mm

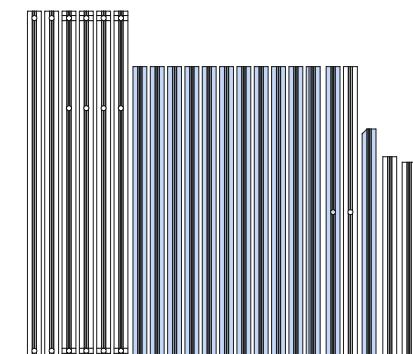
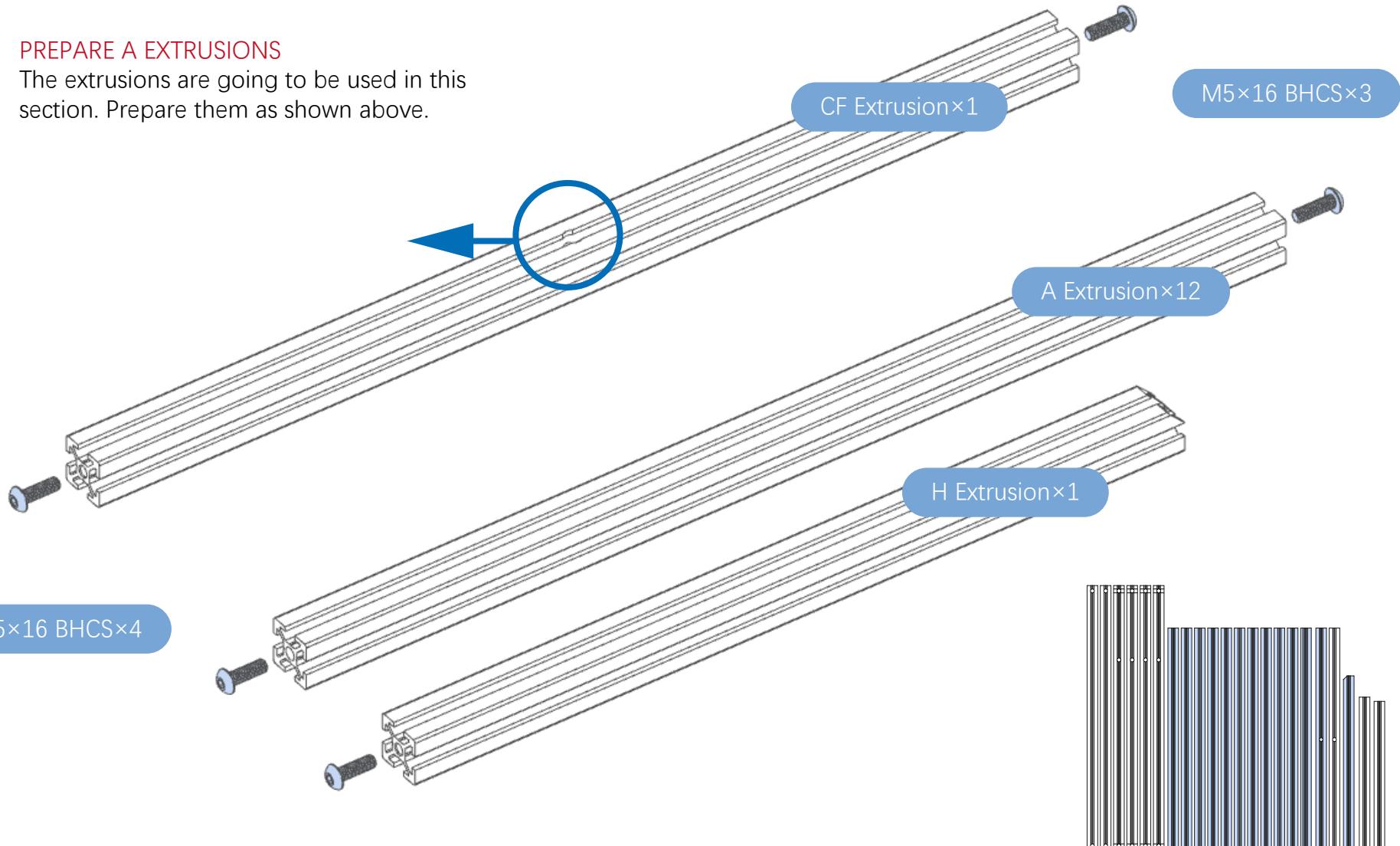
X-axis  
Fixed strips  
**x1PCS**

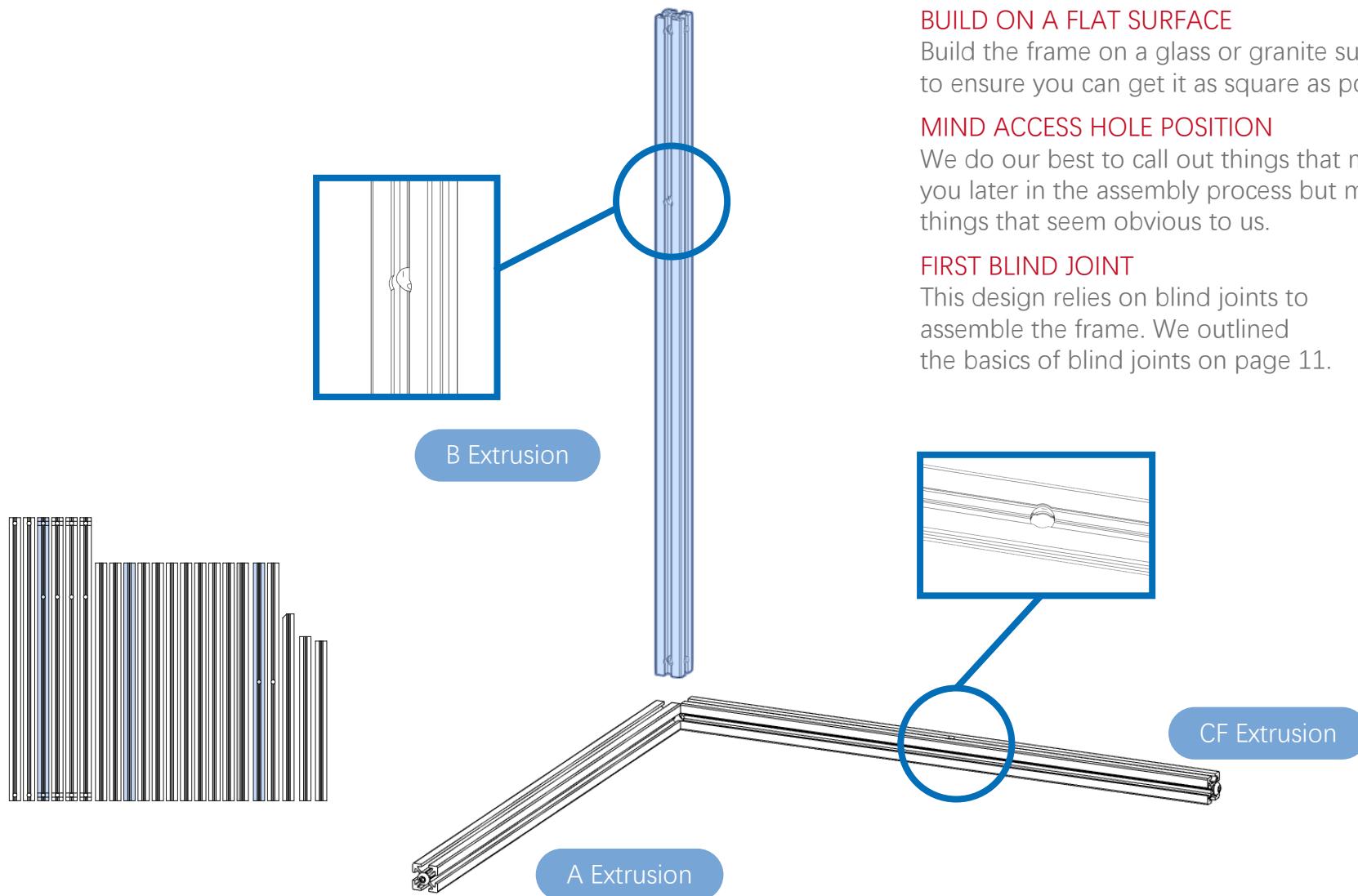


400mm

**PREPARE A EXTRUSIONS**

The extrusions are going to be used in this section. Prepare them as shown above.





#### BUILD ON A FLAT SURFACE

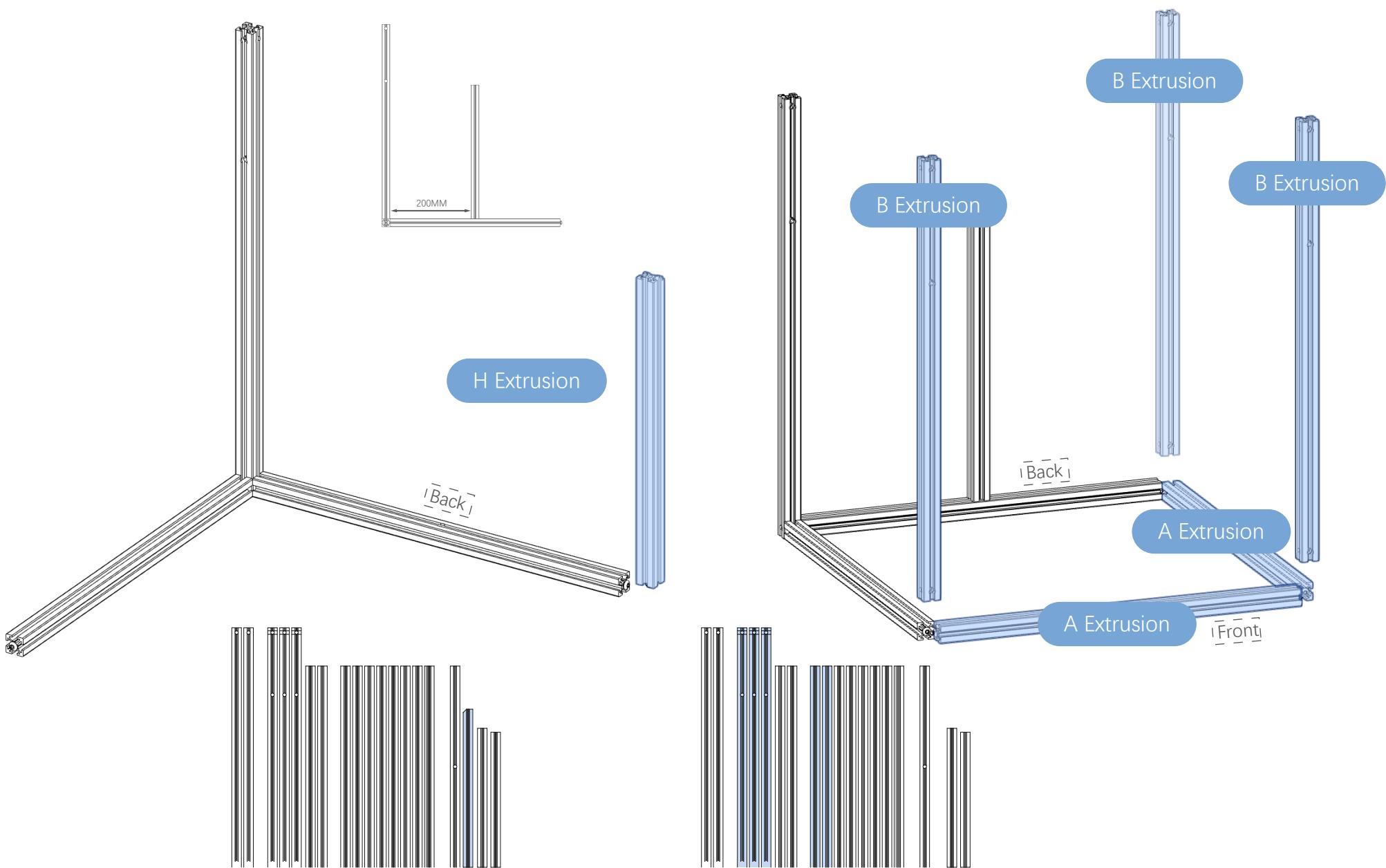
Build the frame on a glass or granite surface to ensure you can get it as square as possible.

#### MIND ACCESS HOLE POSITION

We do our best to call out things that may bite you later in the assembly process but may skip things that seem obvious to us.

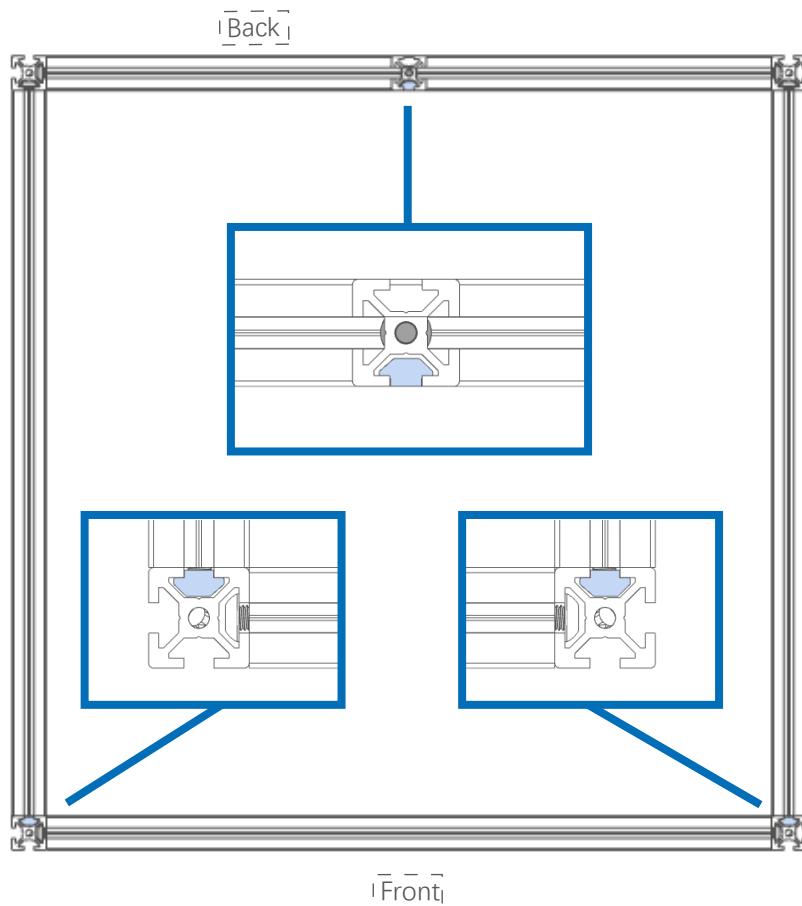
#### FIRST BLIND JOINT

This design relies on blind joints to assemble the frame. We outlined the basics of blind joints on page 11.

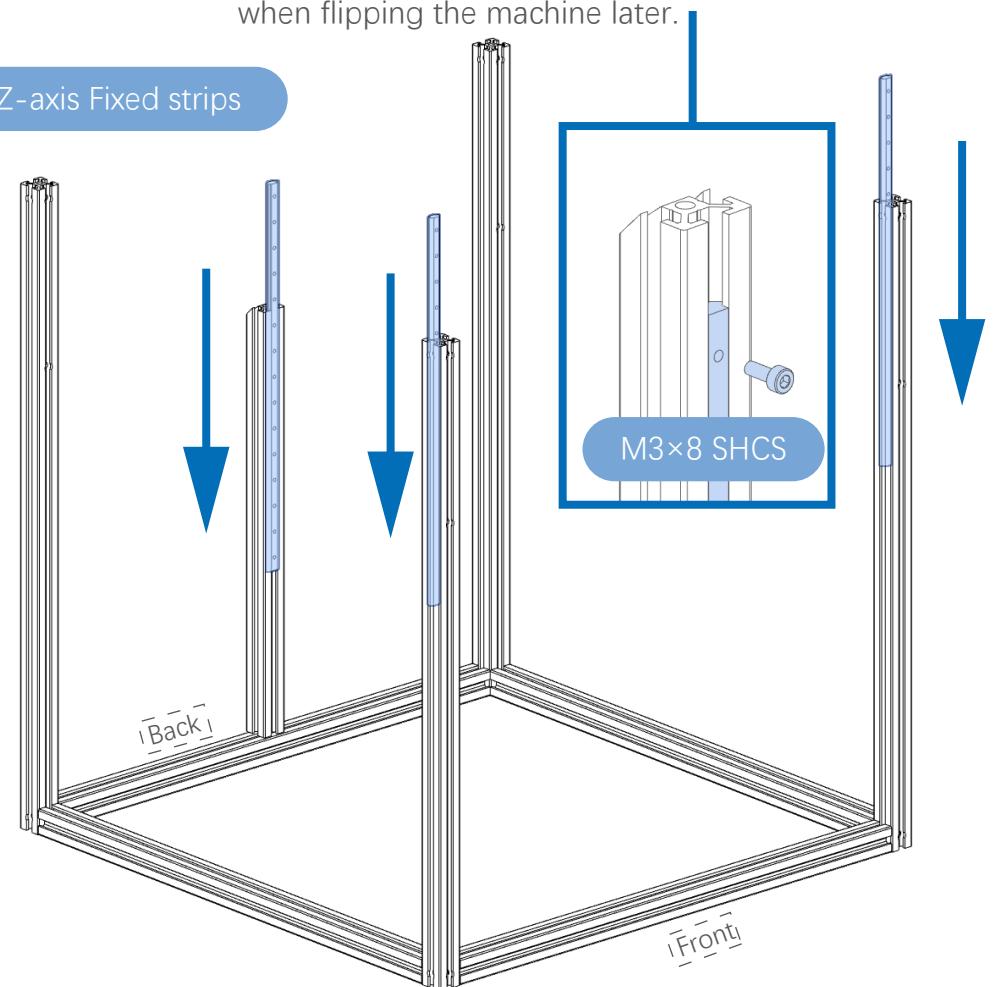


**Insertion direction**

Insert the fixing strips into the profile, paying attention to the insertion direction.

**Fixed strips**

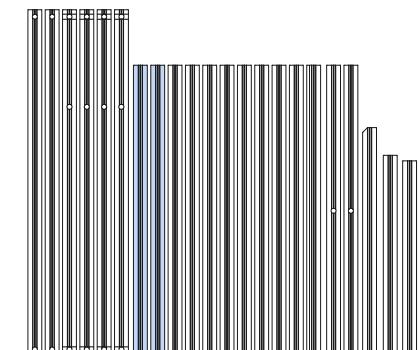
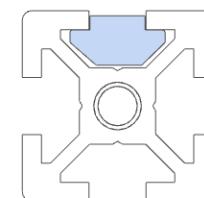
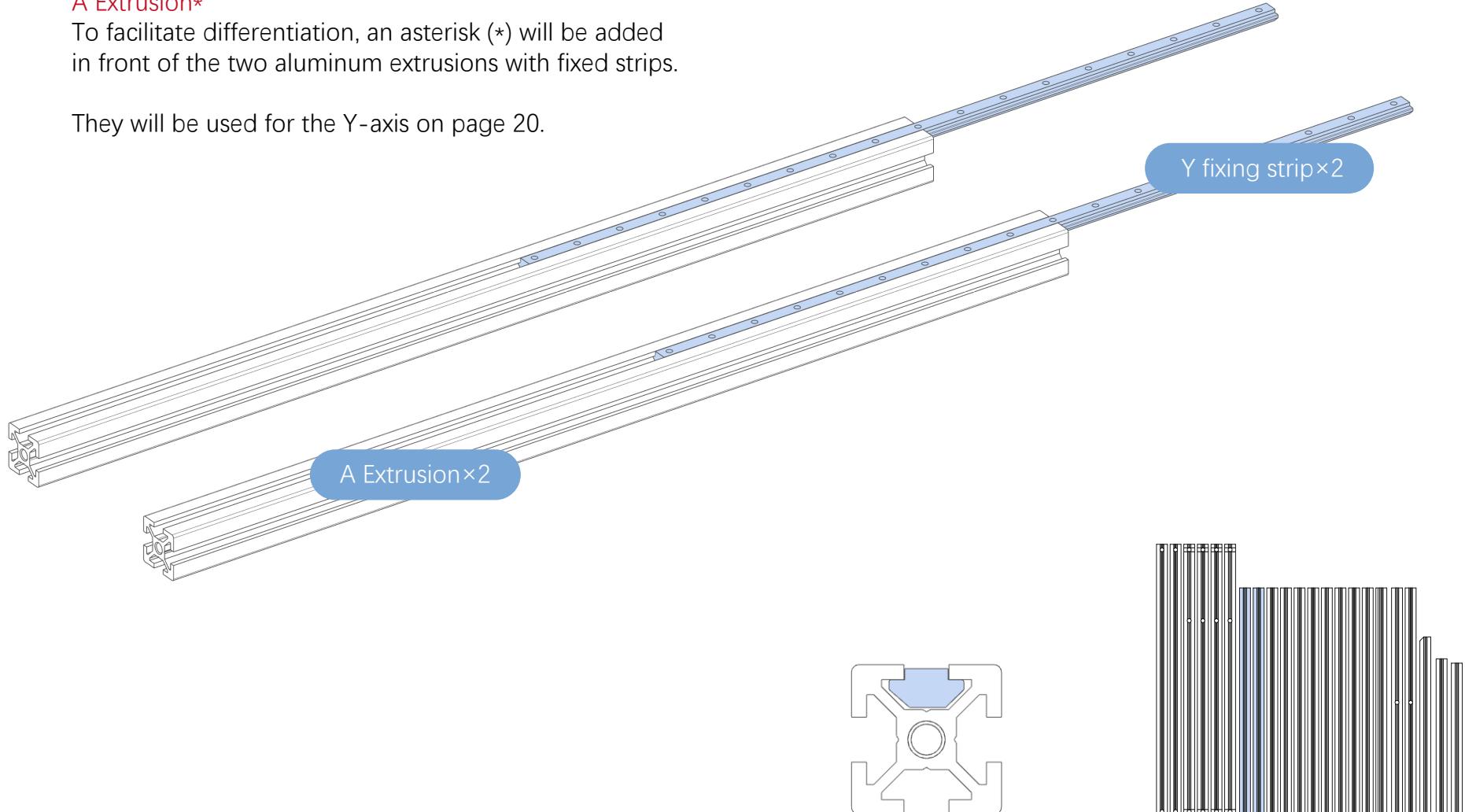
Push the three fixed strips into the deepest position and temporarily secure each with a screw to prevent the fixed strips from colliding with the aluminum extrusions when flipping the machine later.

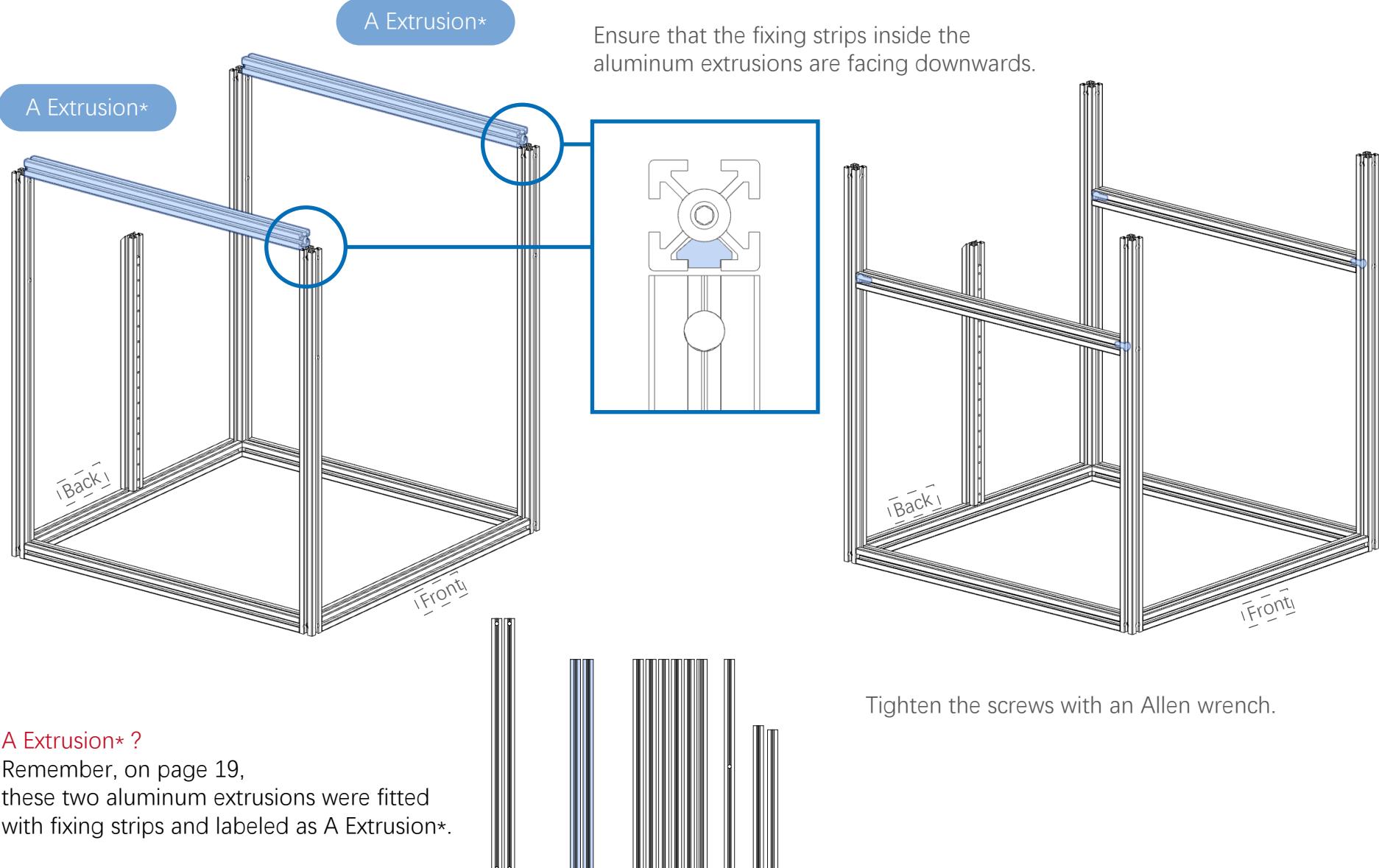


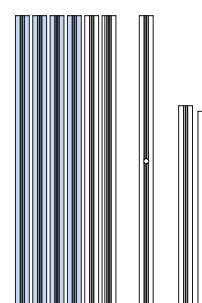
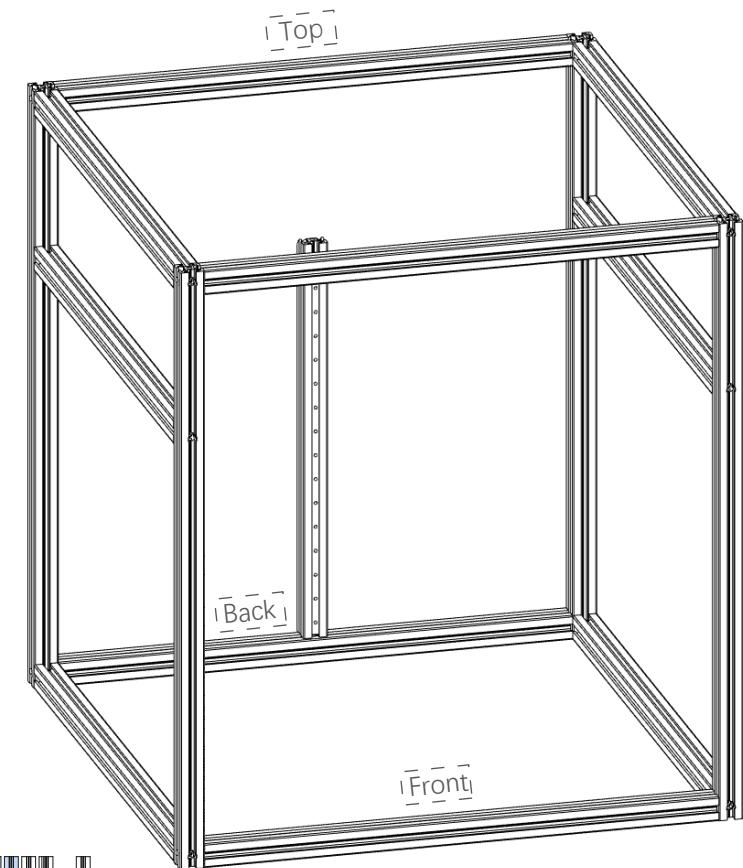
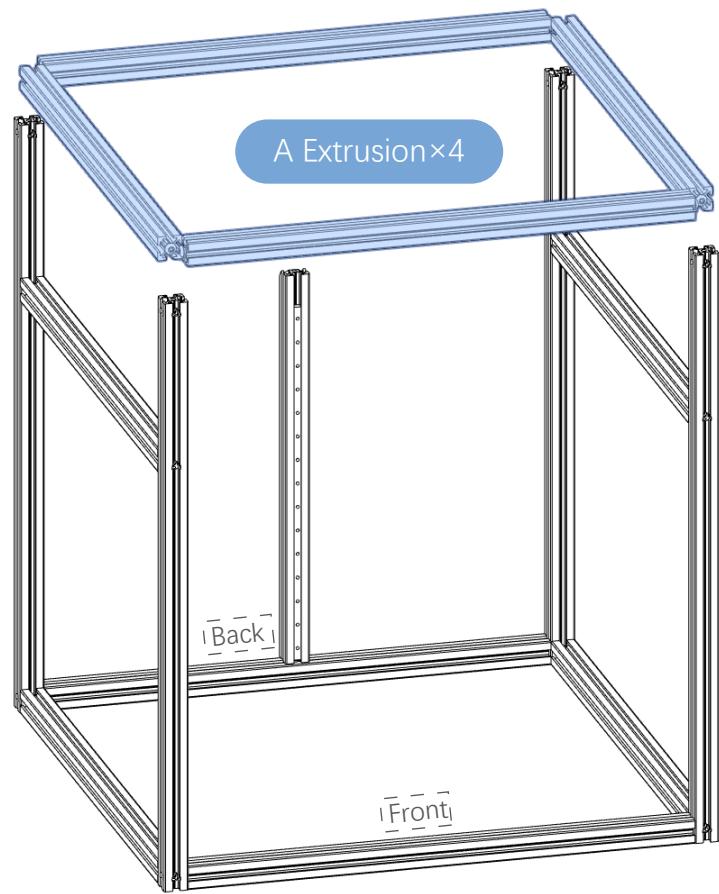
**A Extrusion\***

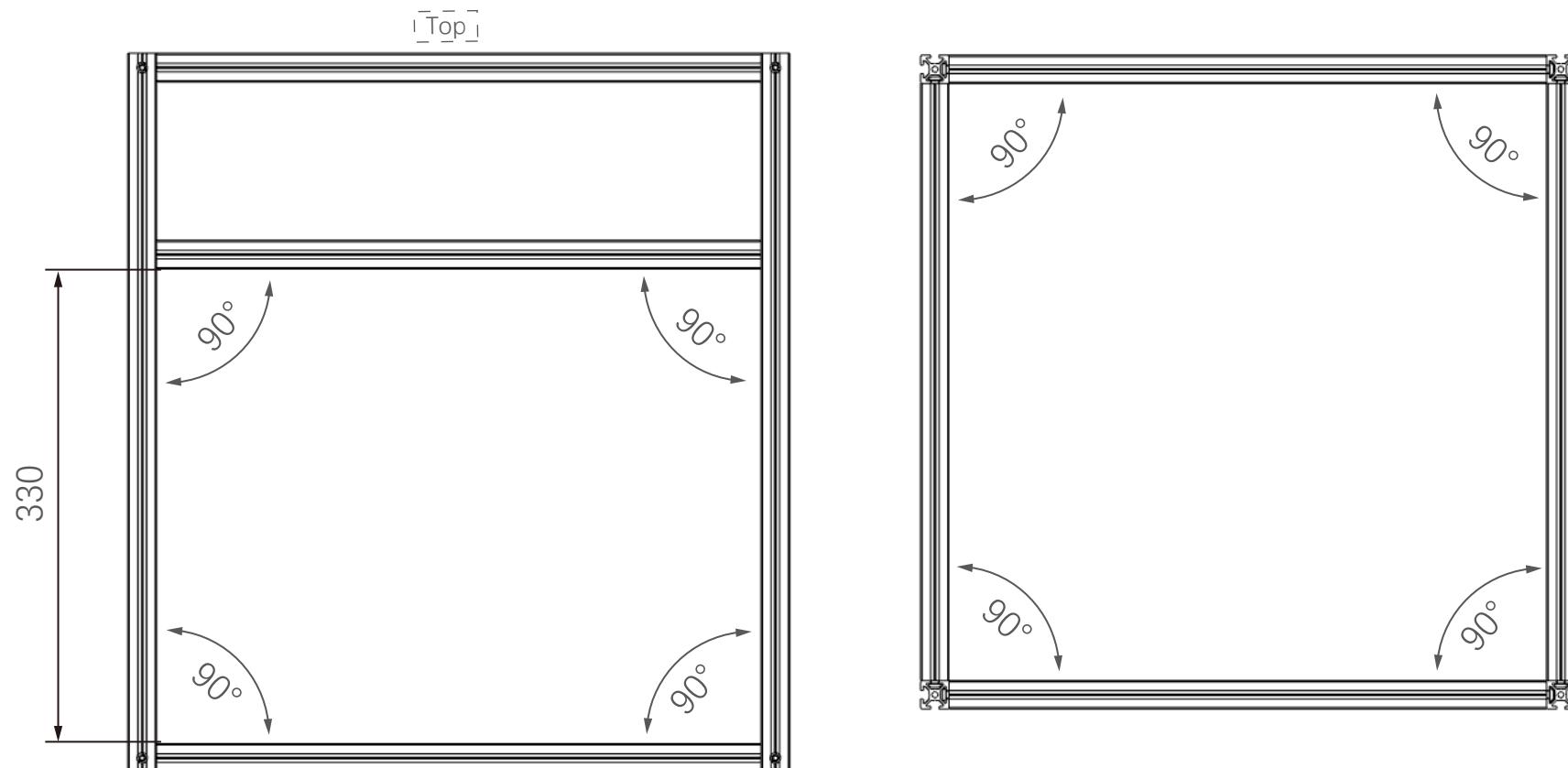
To facilitate differentiation, an asterisk (\*) will be added in front of the two aluminum extrusions with fixed strips.

They will be used for the Y-axis on page 20.





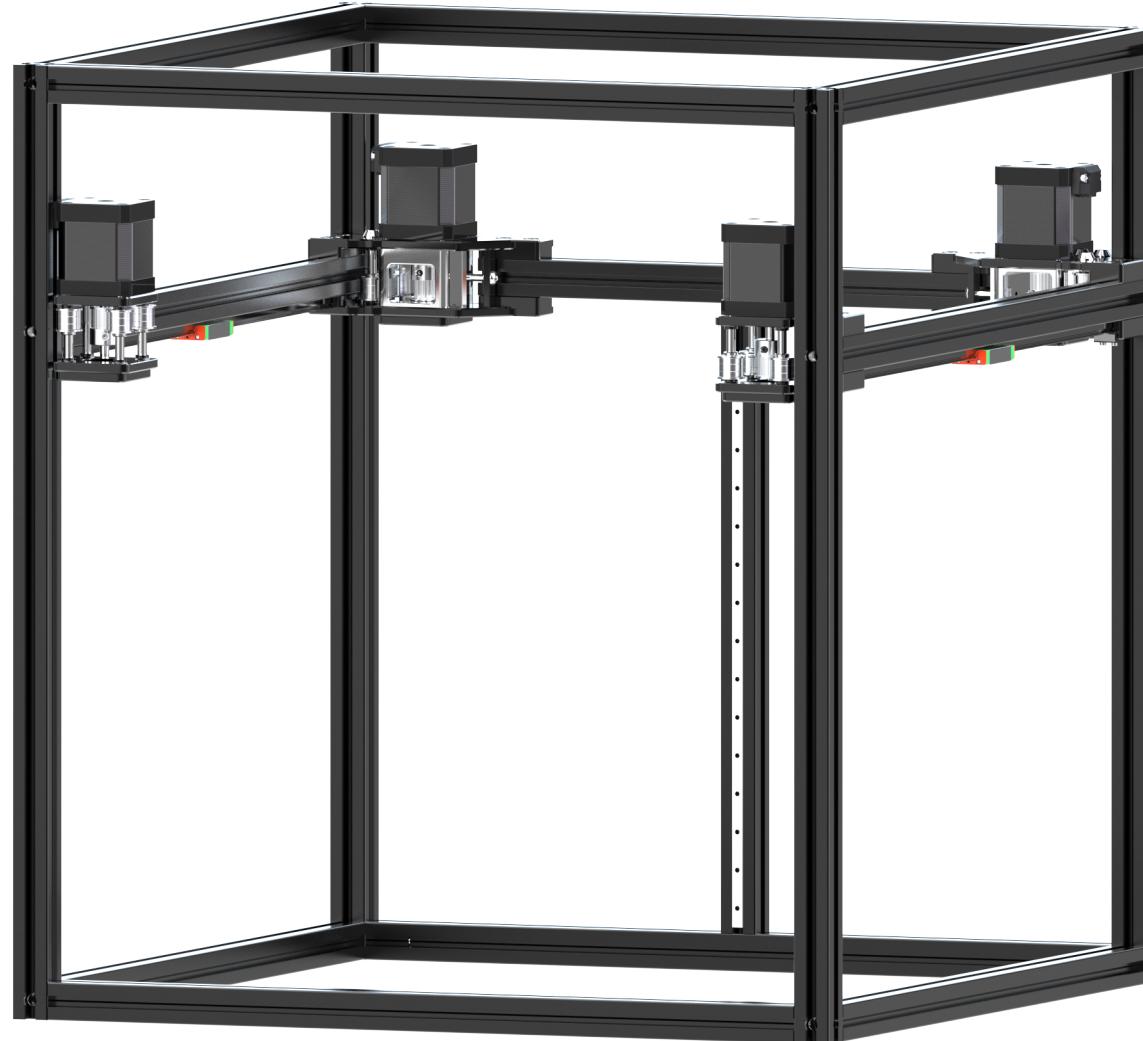


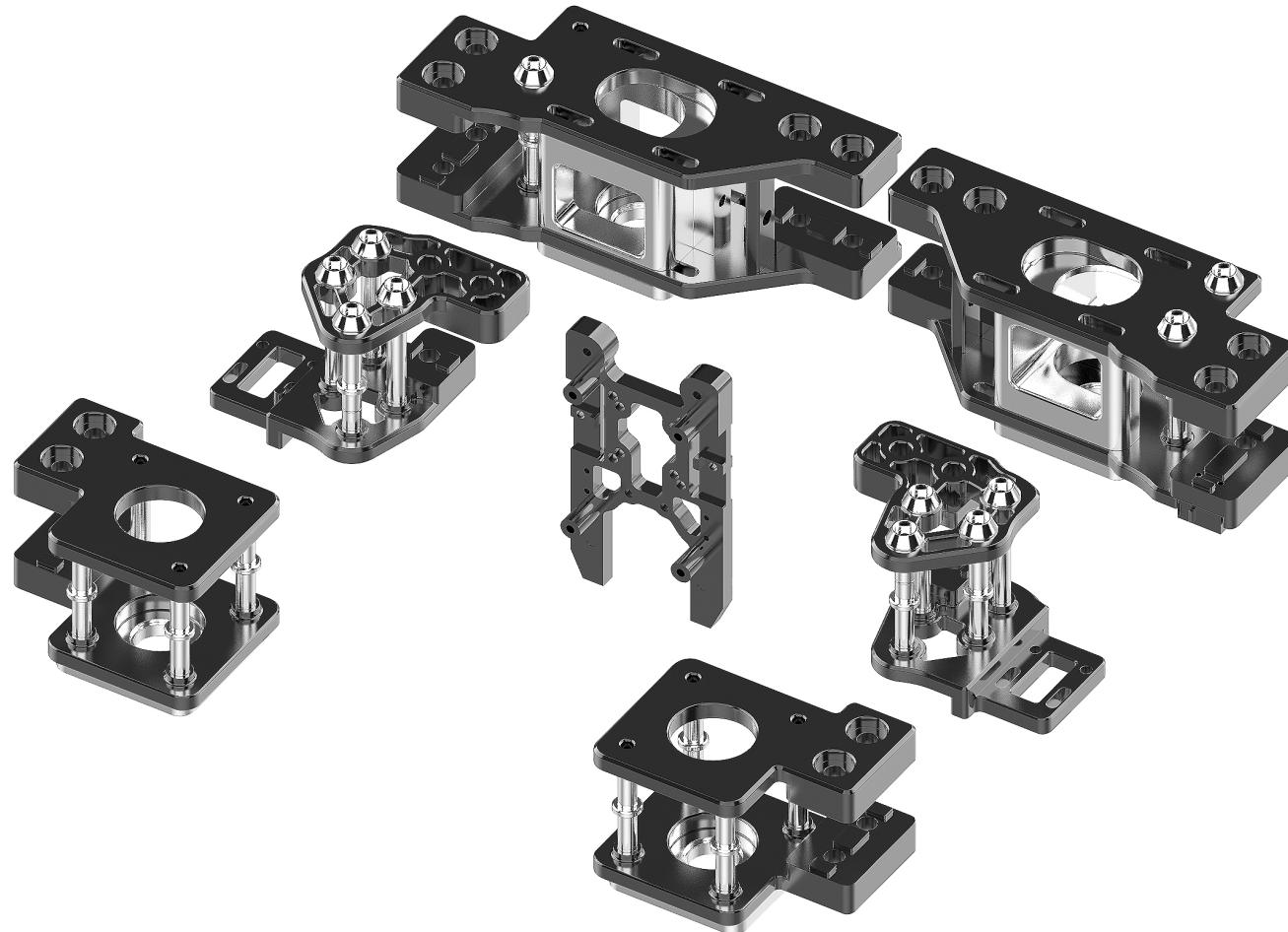


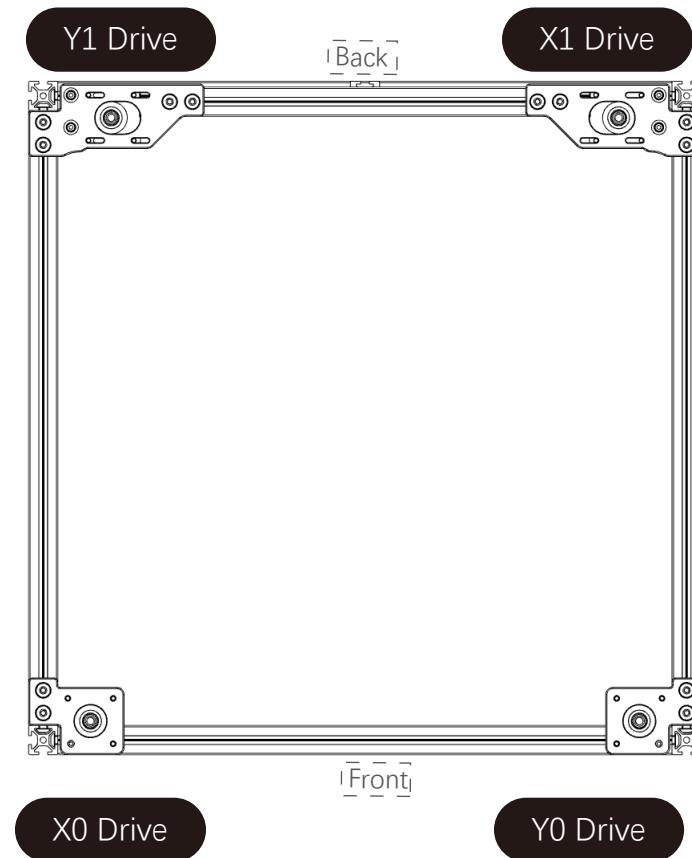
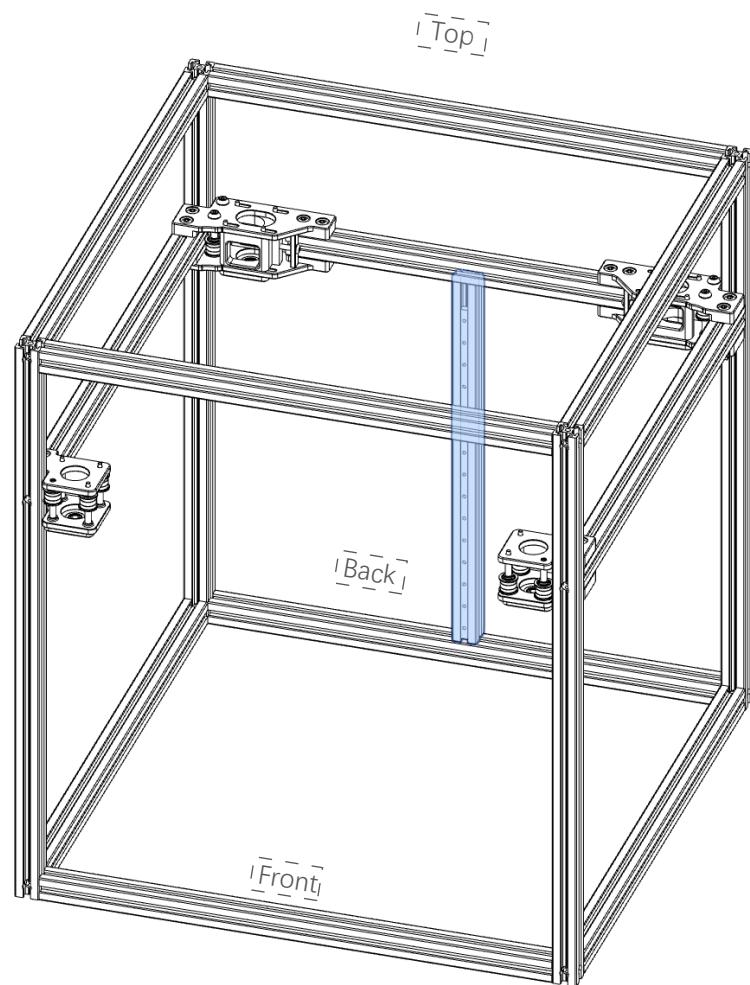
<https://voron.link/kdtpzam>

#### CHECK FOR SQUARENESS

Verify the angle of all corners and the overall squareness by measuring the diagonals. Refer to the second half of the linked video for additional information.





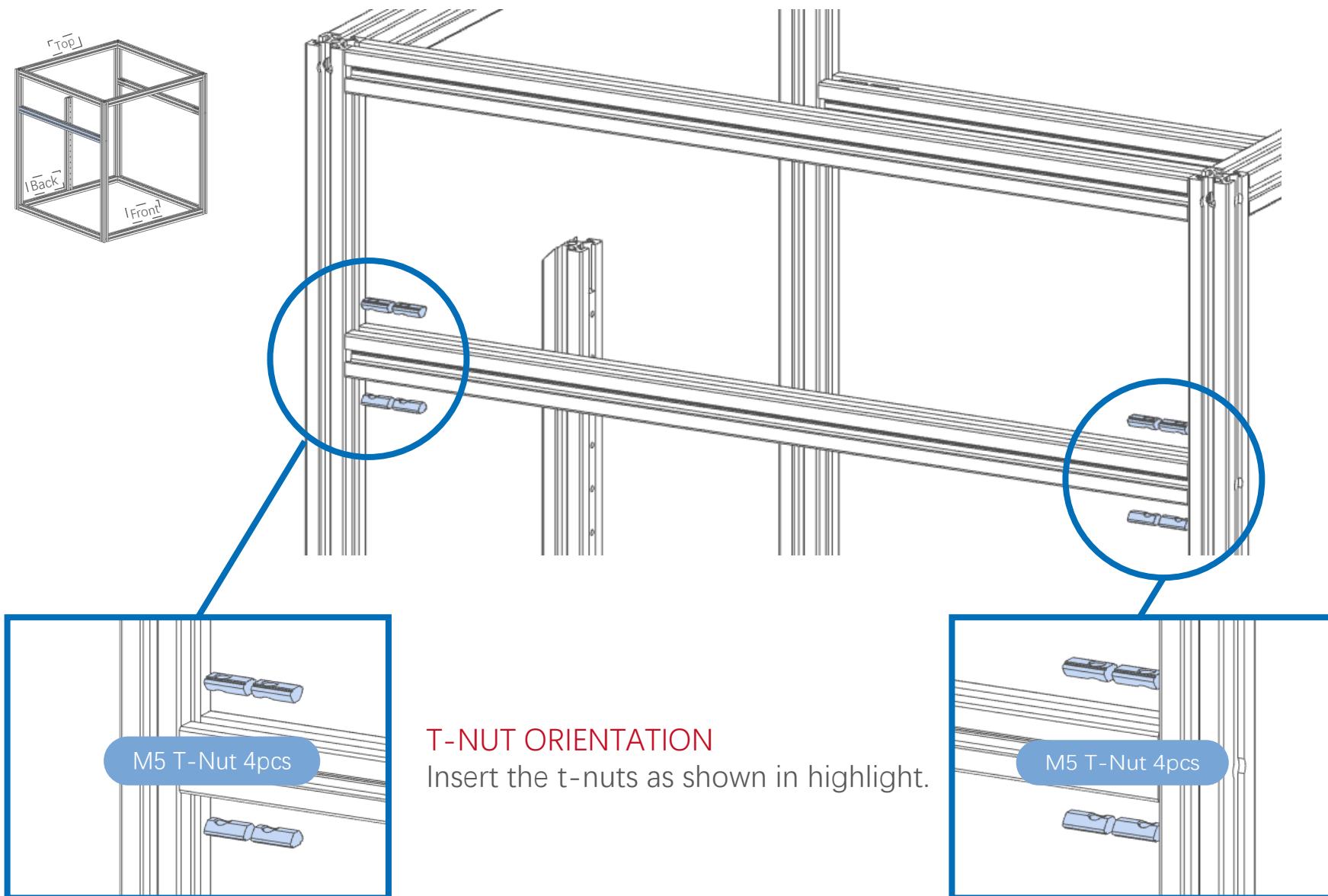


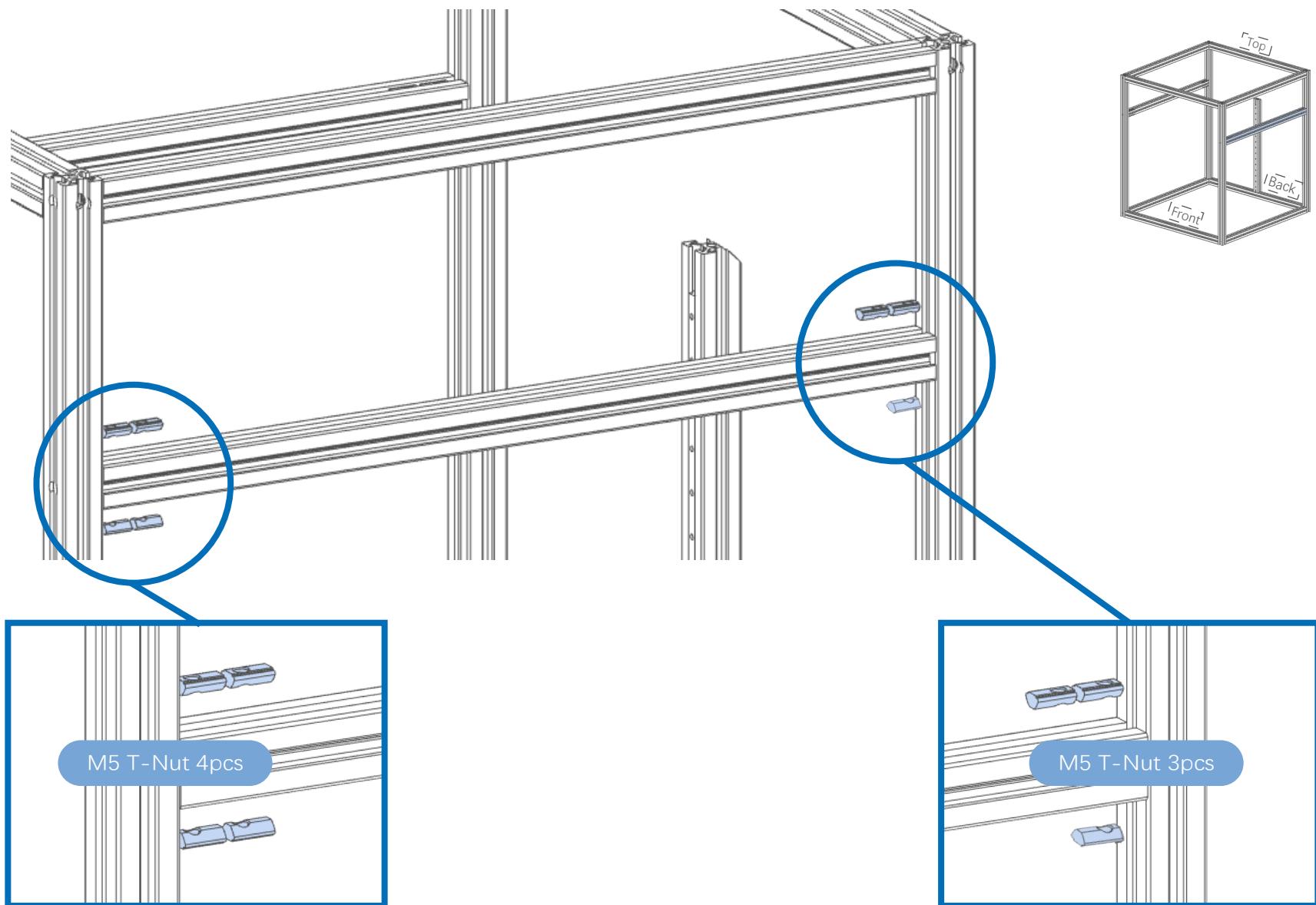
## WHY IS THIS HERE?

As you likely skipped over the advice to flip through the entire manual we added graphics like these to assist you with the orientation of the part before you actually put them on the printer.

## OVERVIEW

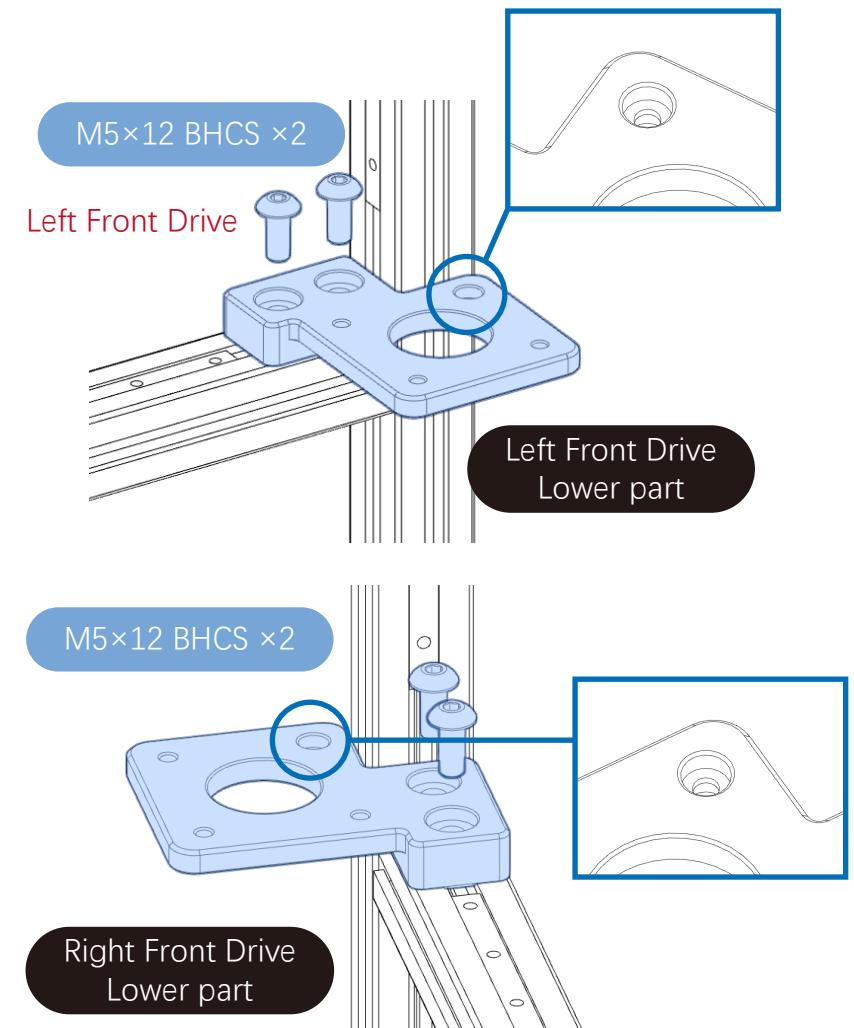
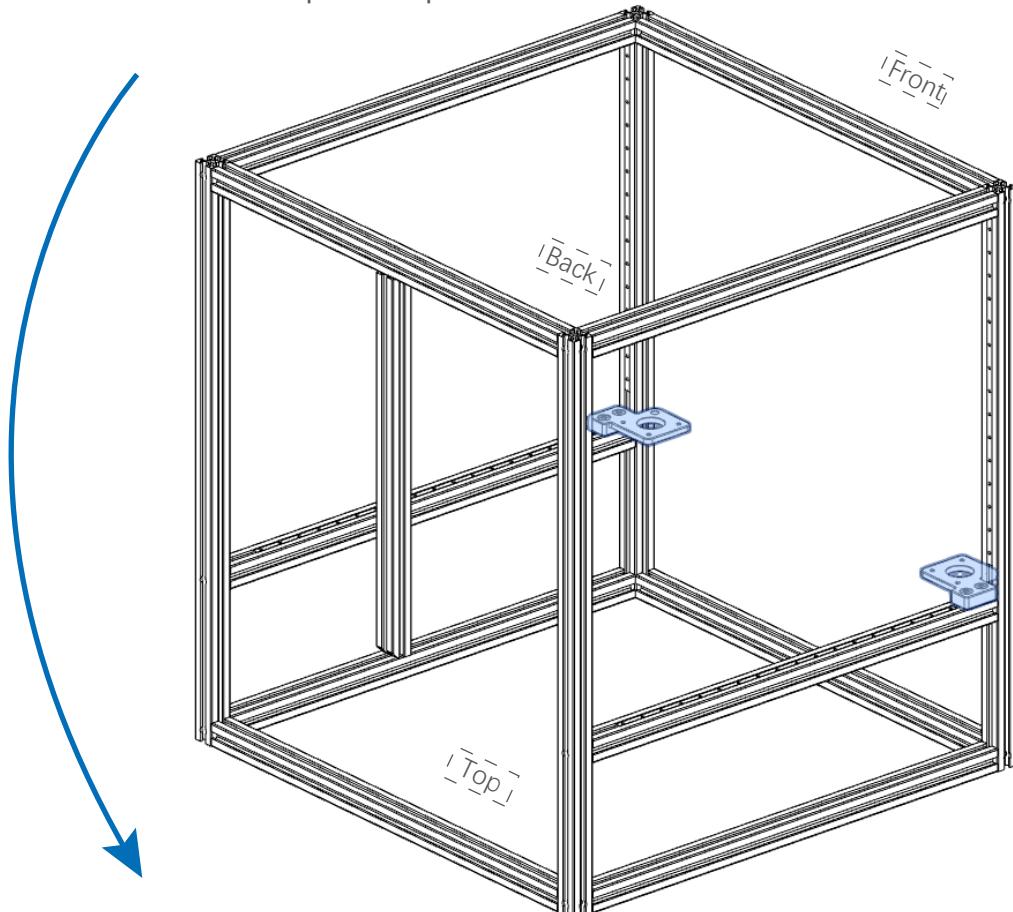
Individual chapters start with an overview of the components that will be built/added to the printer in the chapter.



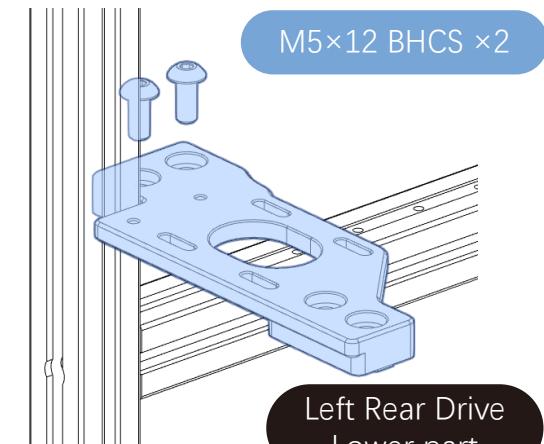
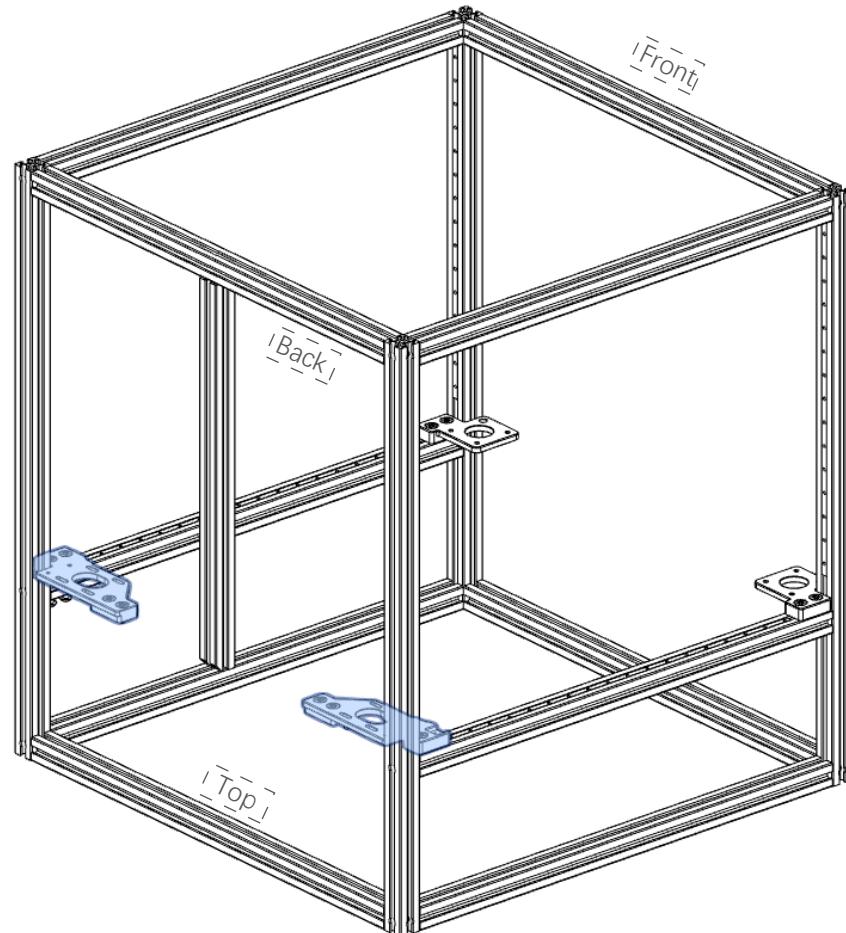


### UPSIDE DOWN ASSEMBLY

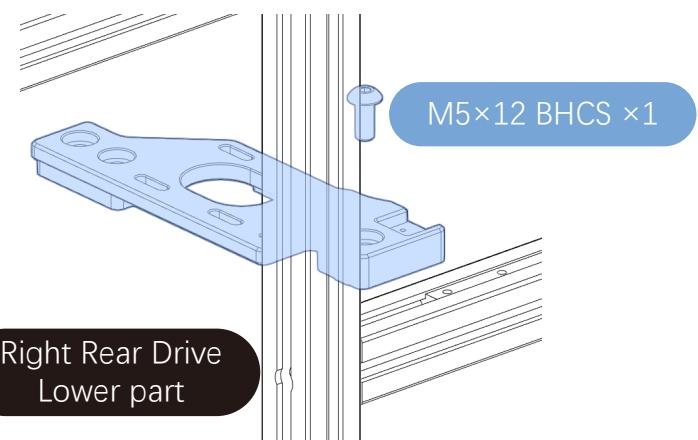
For ease of assembly, it is recommended that the printer be turned upside down for ease of subsequent operation.



The front drive lower pieces each have a stepped hole, distinguishing them from the upper pieces.



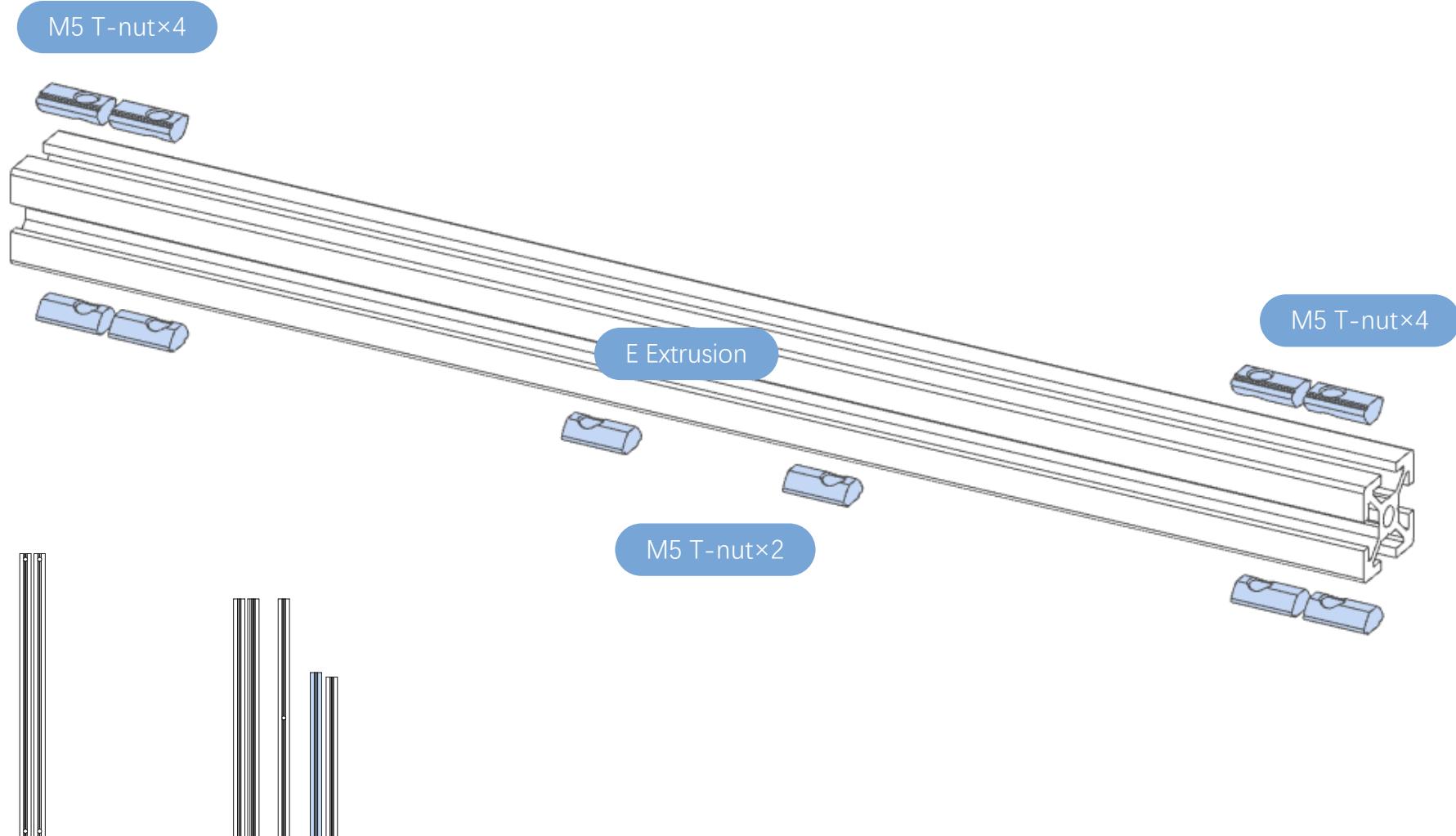
Left Rear Drive  
Lower part

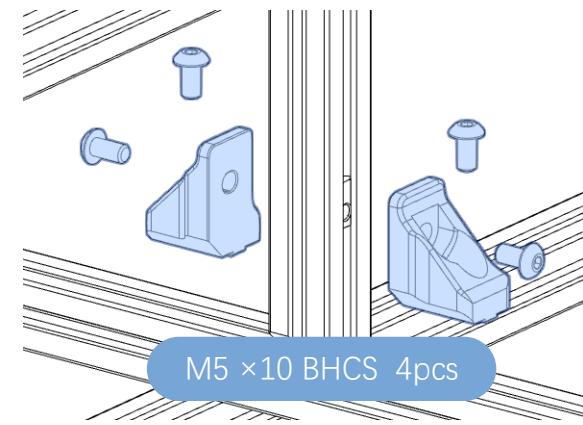
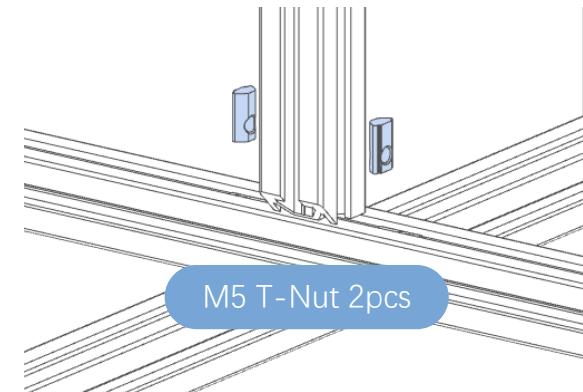
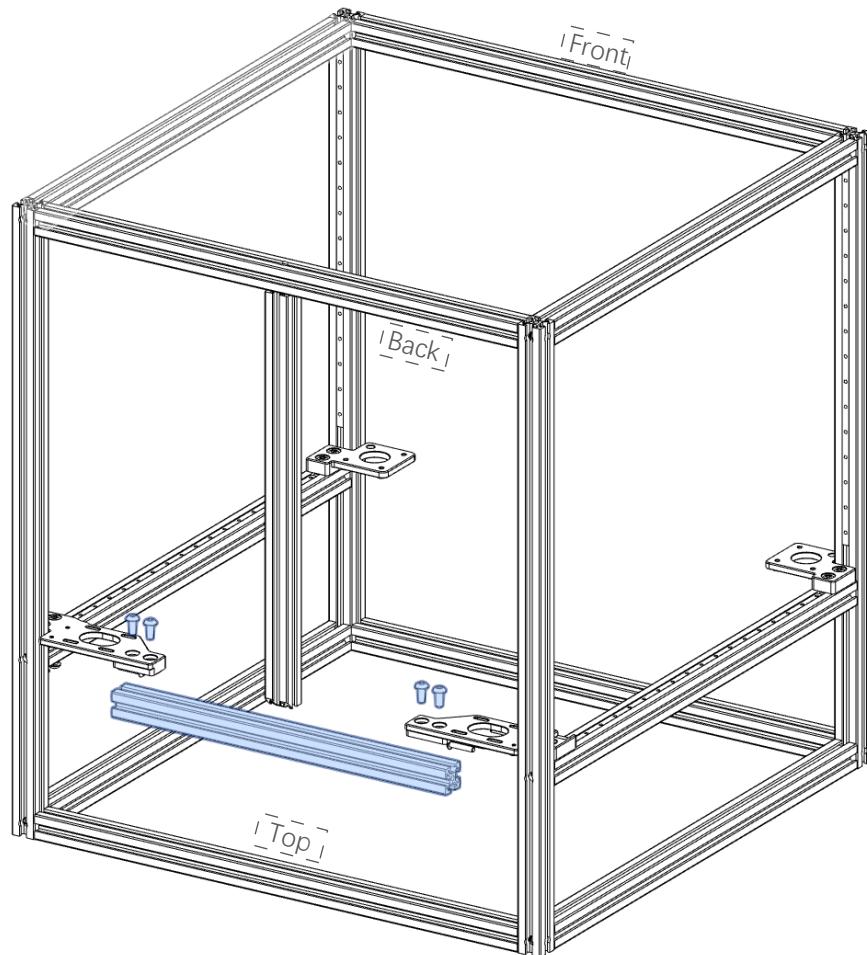


Right Rear Drive  
Lower part

#### T-NUT ORIENTATION

Insert the t-nuts as shown in highlight.

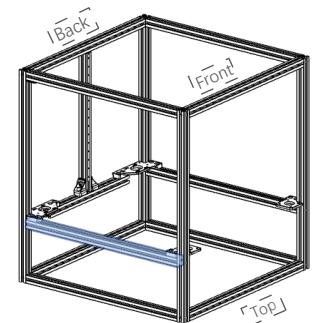
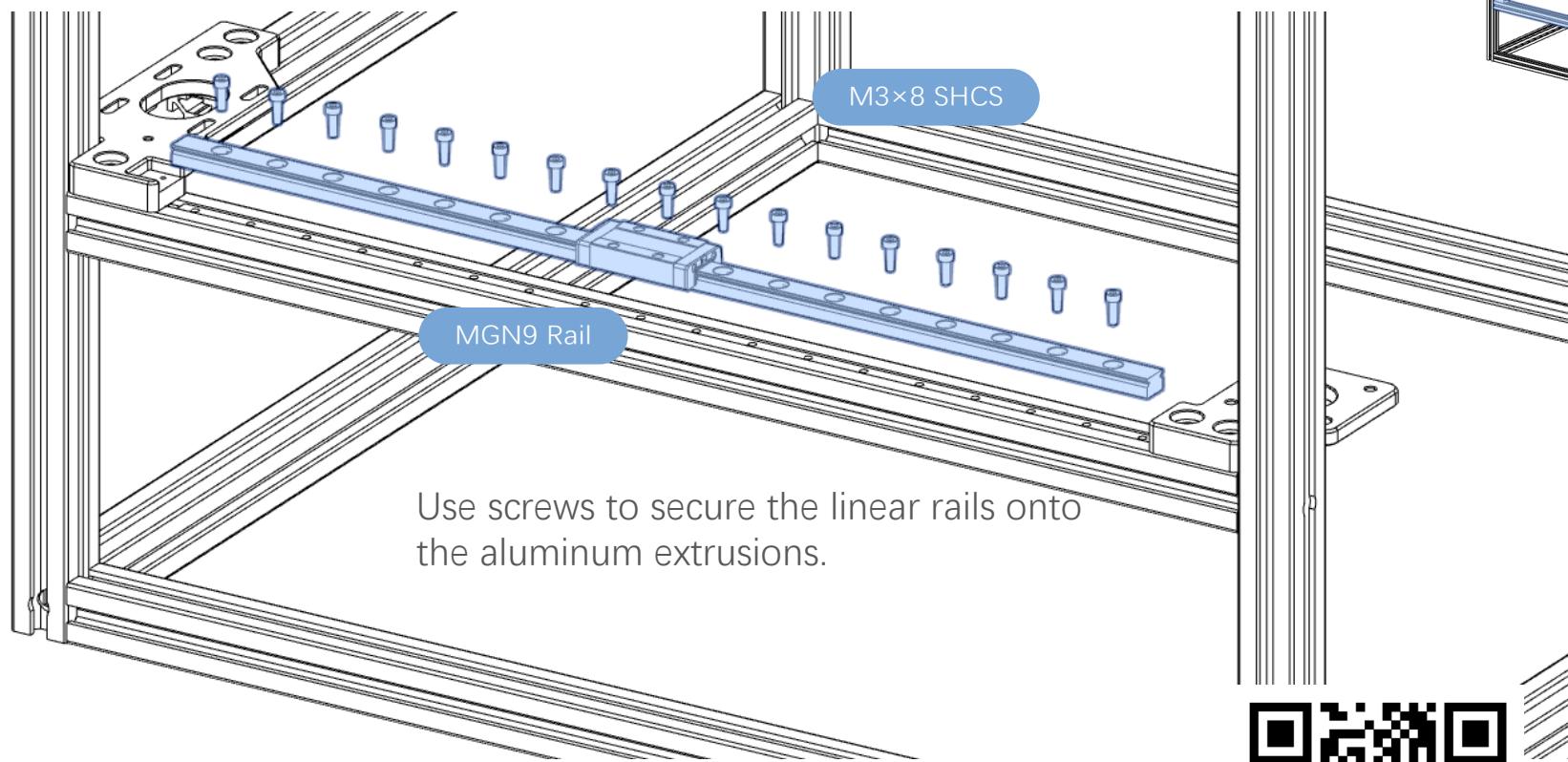




Note that ABS prints are used here

### Rubber Plugs on Slider

You may notice rubber plugs on both sides of the slider. These effectively prevent the slider from accidentally dislodging, so do not attempt to remove them before installing the screws.



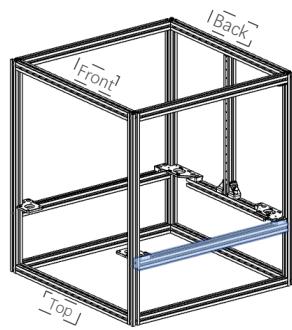
### LINEAR RAILS - PREPARATION AND MOUNTING

Most linear rails arrive with shipping oil. To ensure a smooth gliding motion and long service life, this oil needs to be removed and its rail carriage greased.

See the Voron sourcing guide for a recommended list of lubricants. We attached a link to a video guide to get you started.

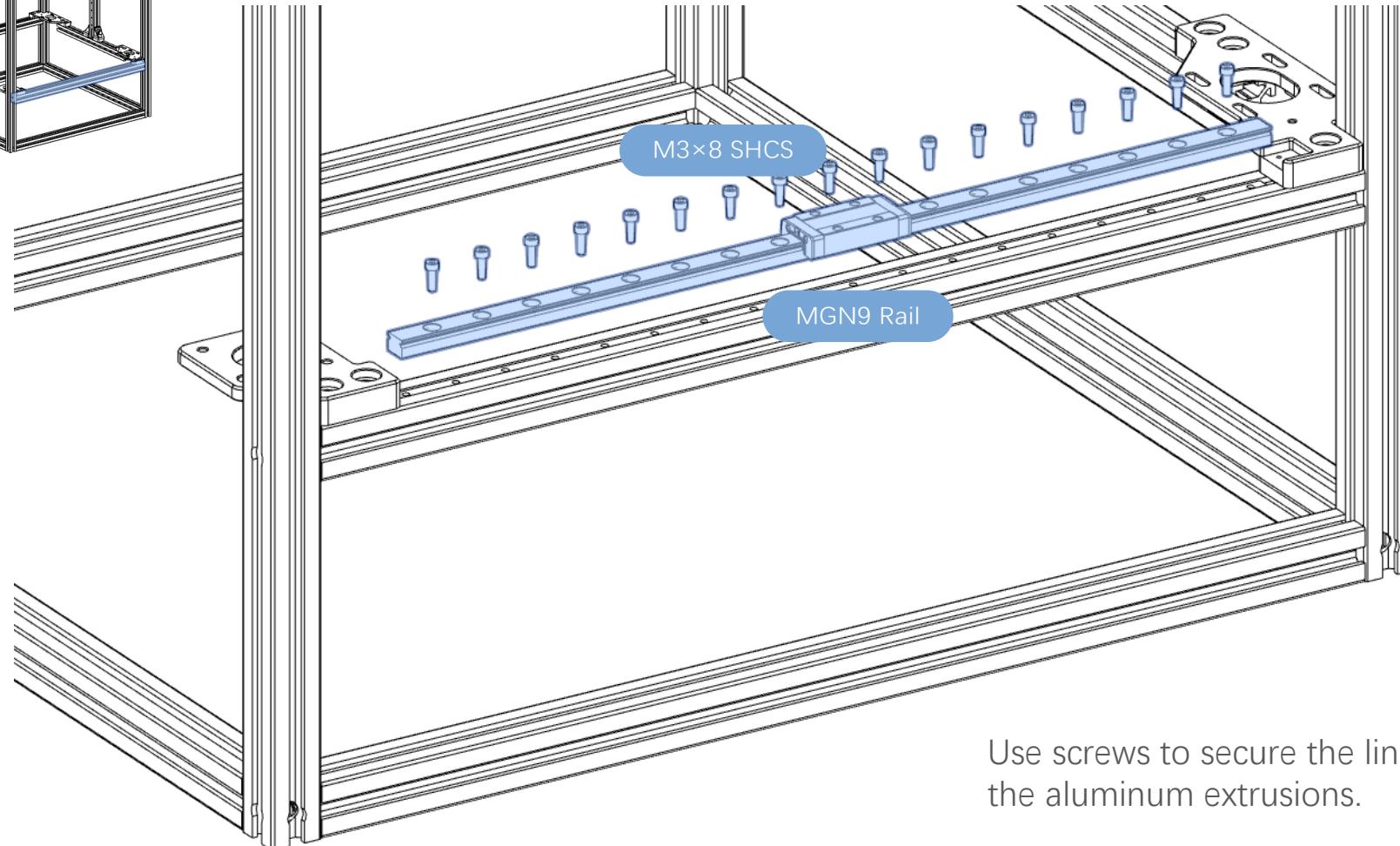


<https://voron.link/agu0nes>

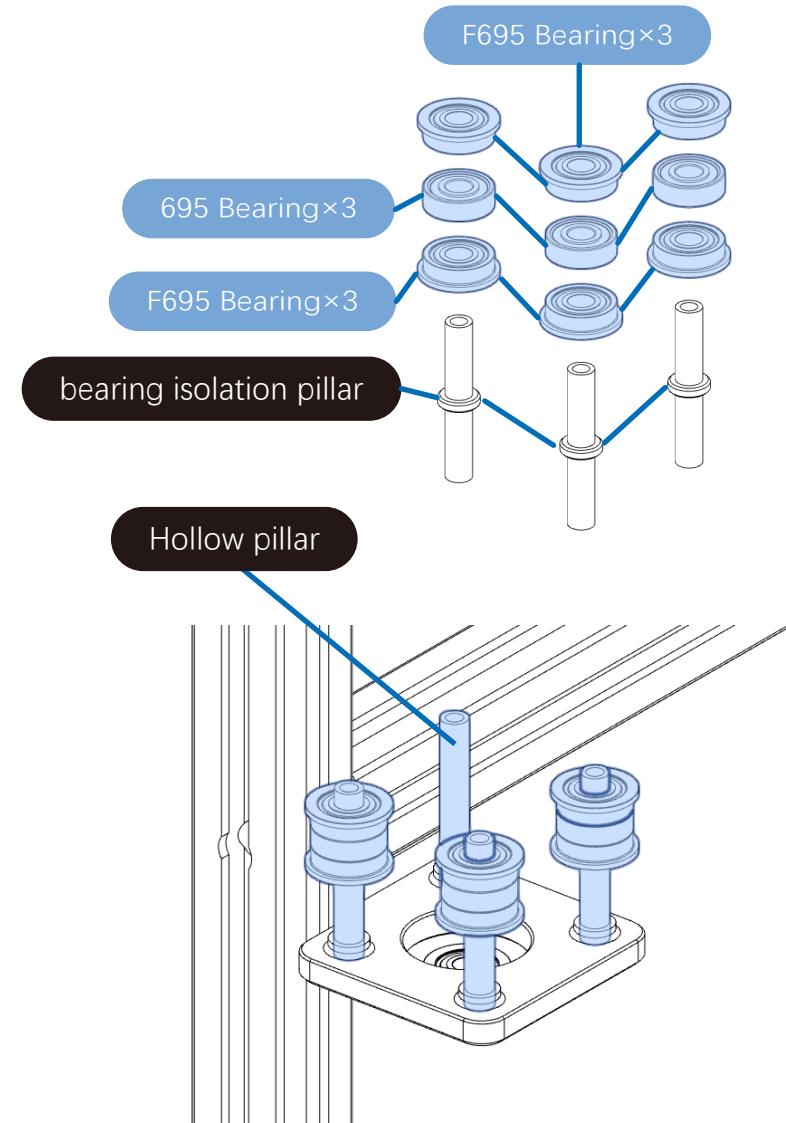
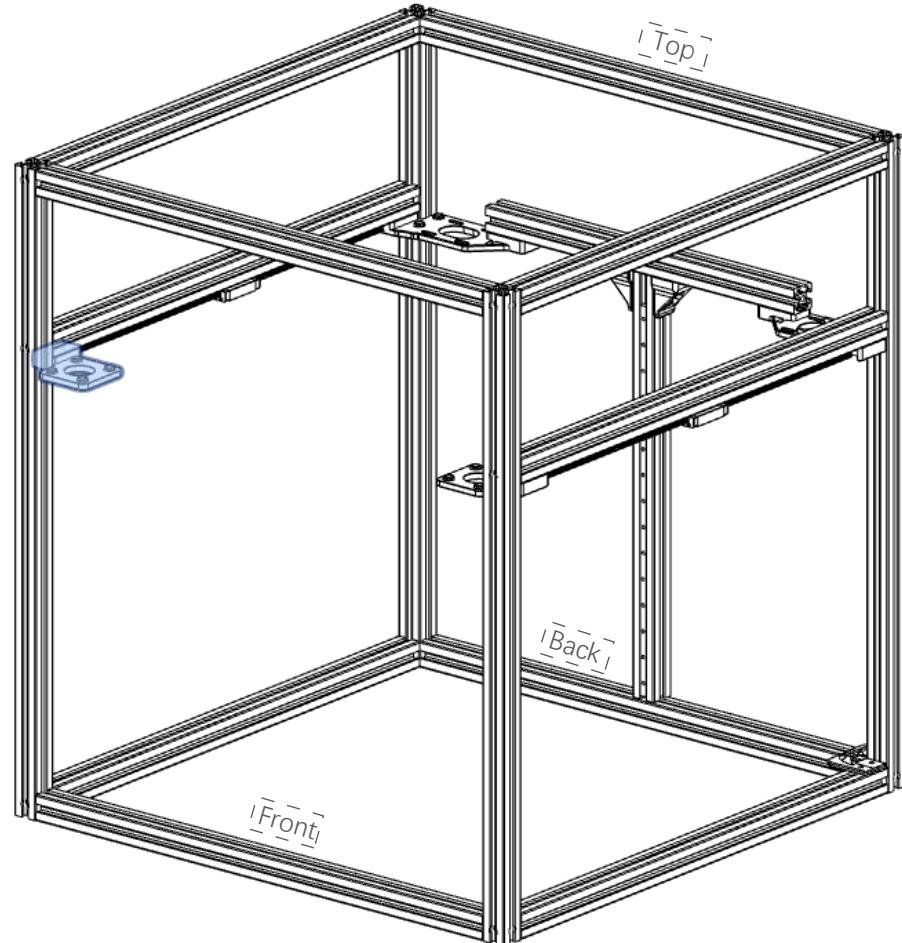


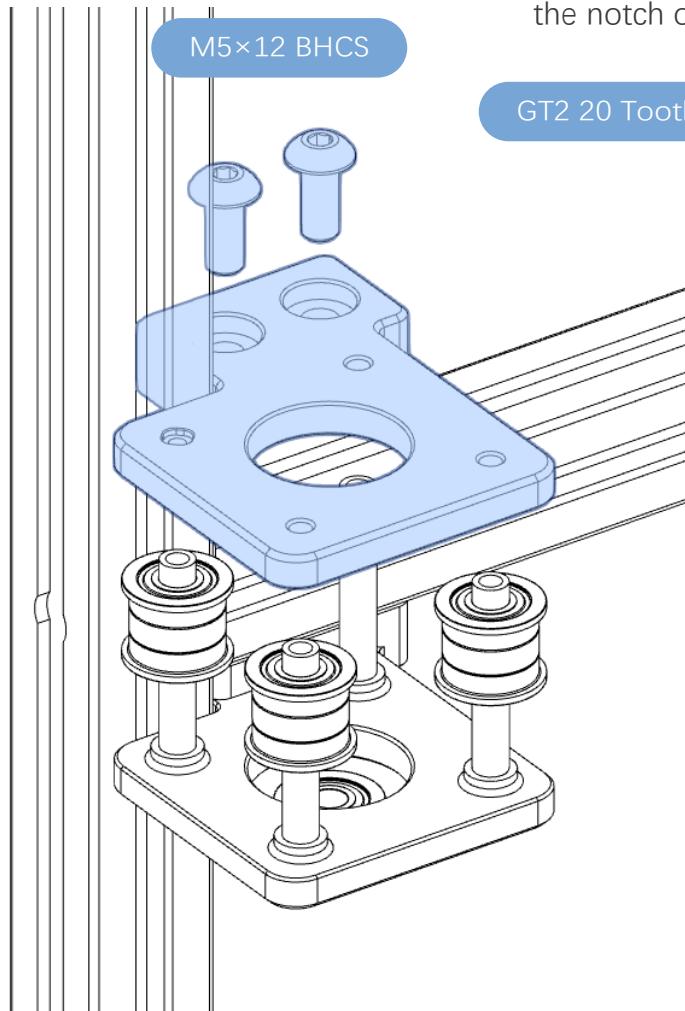
## Rubber Plugs on Slider

You may notice rubber plugs on both sides of the slider. These effectively prevent the slider from accidentally dislodging, so do not attempt to remove them before installing the screws.



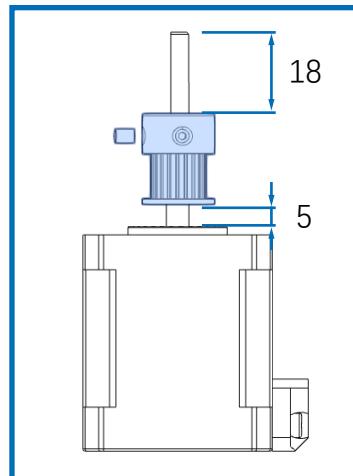
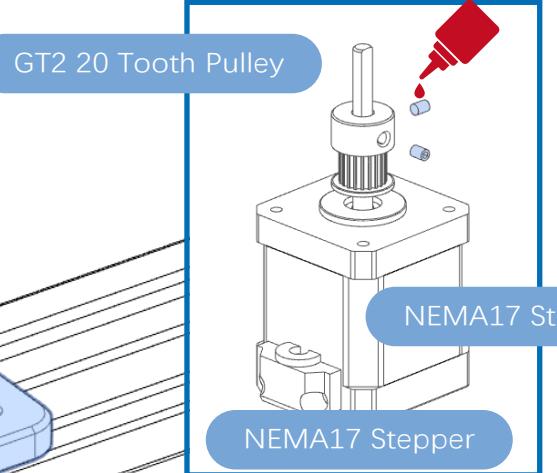
Use screws to secure the linear rails onto the aluminum extrusions.





### Direction

The machine screws should align with the notch on the motor shaft.

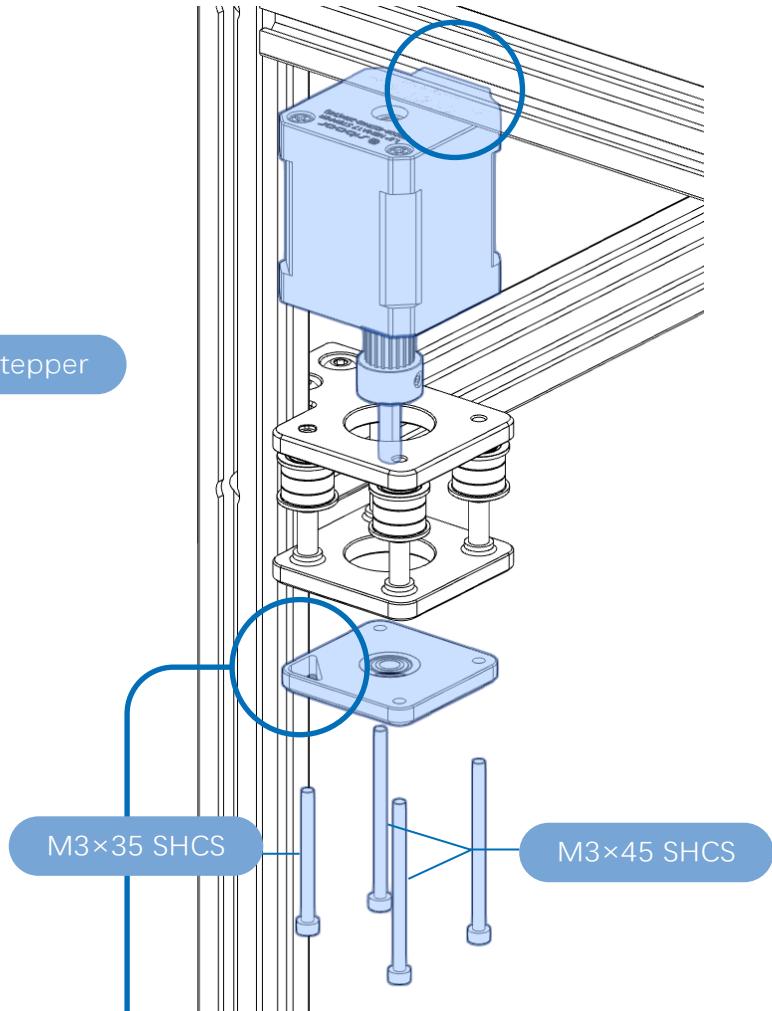


Using thread sealant on timing pulley set screws prevents them from loosening during use, ensuring secure fastening and operational stability.

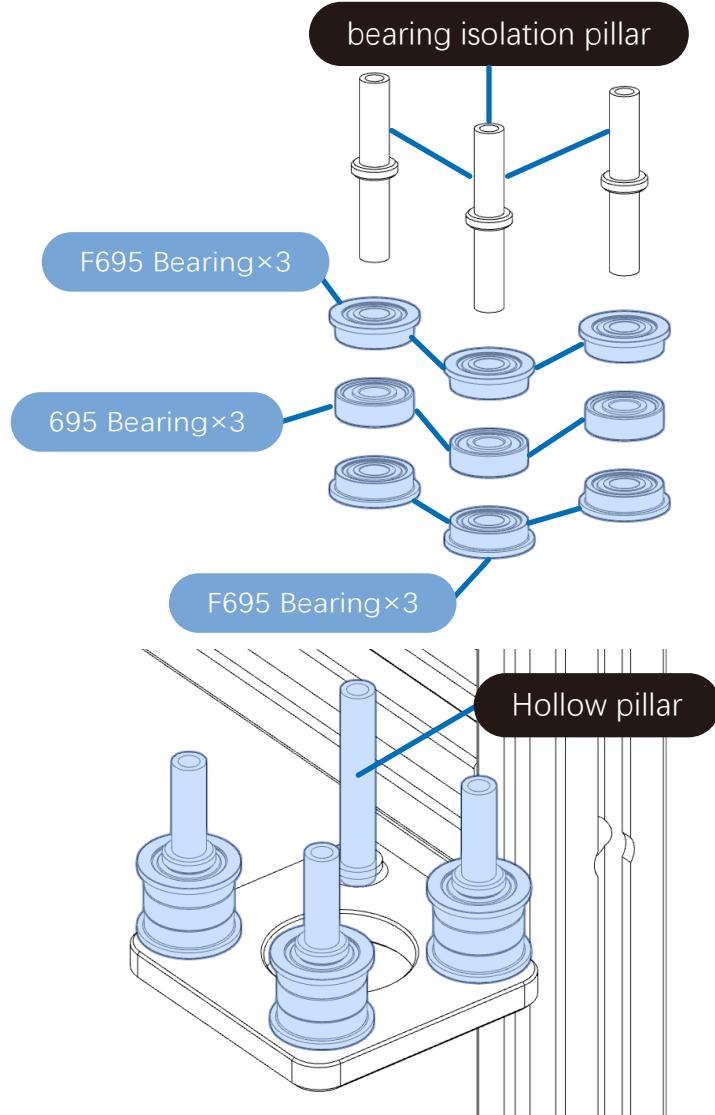
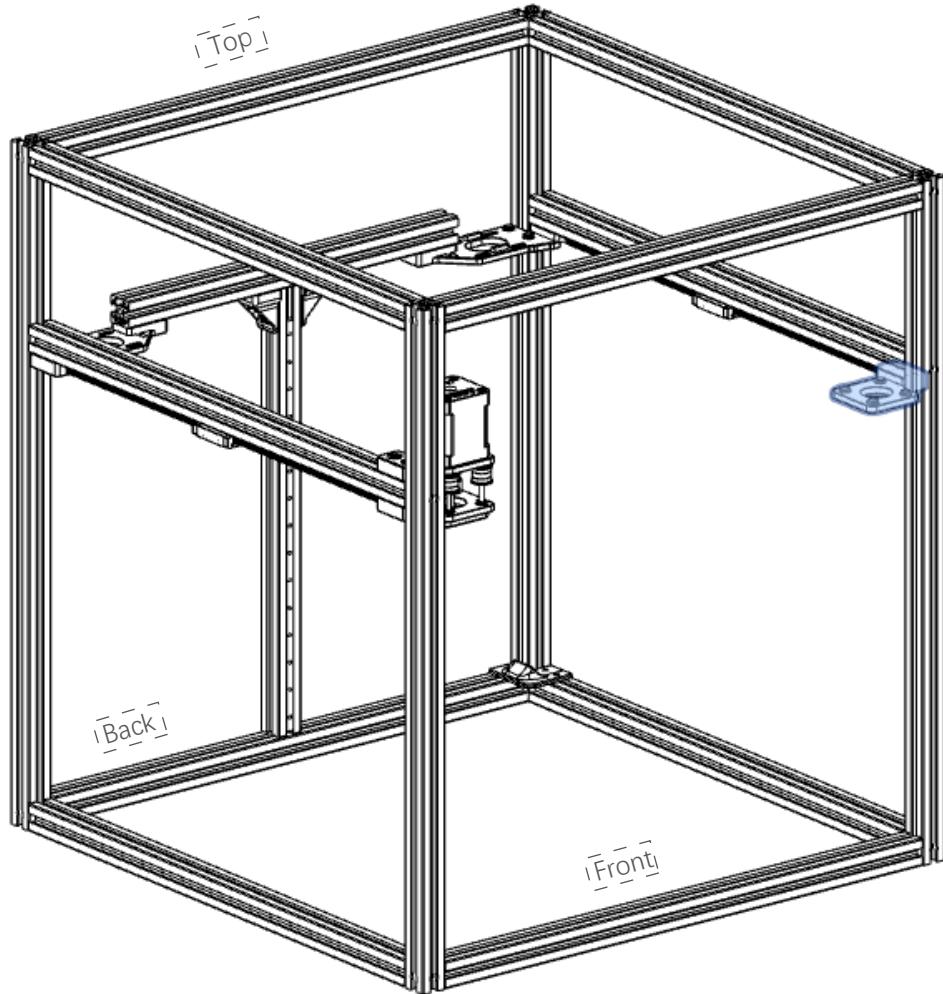
If thread sealant is unavailable, you can temporarily skip this step.

### MOTOR ORIENTATION

Pay attention to the orientation of the cable exit.

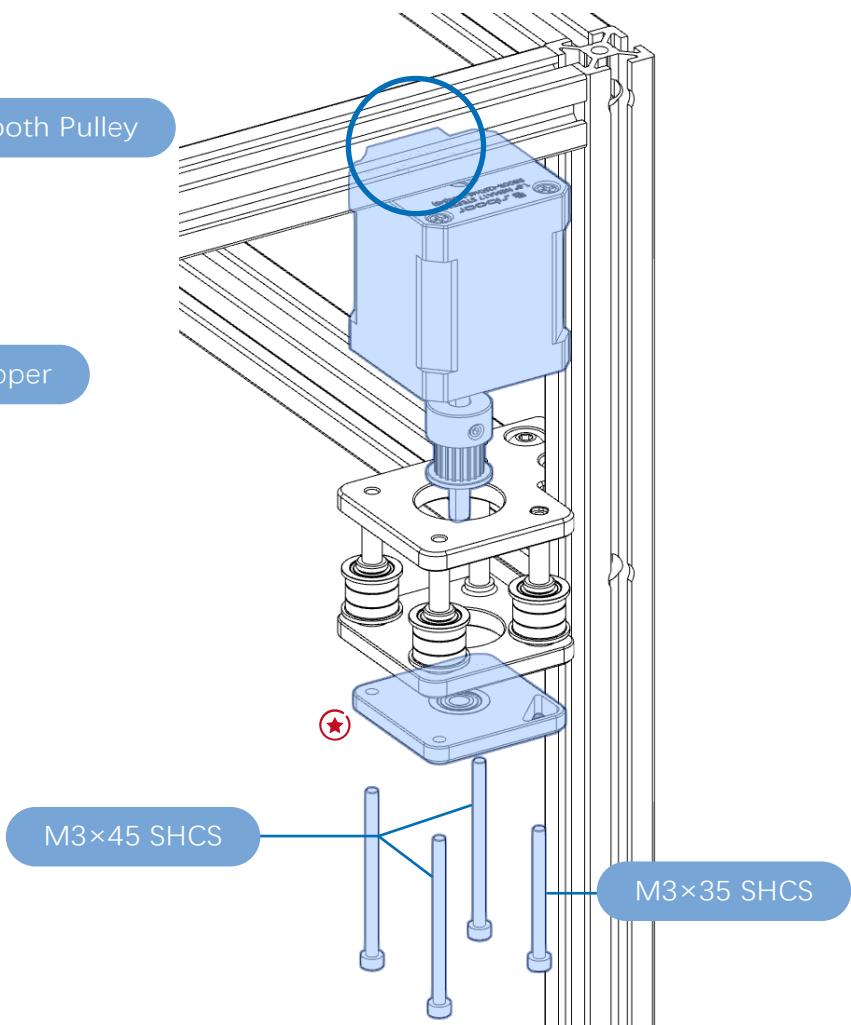
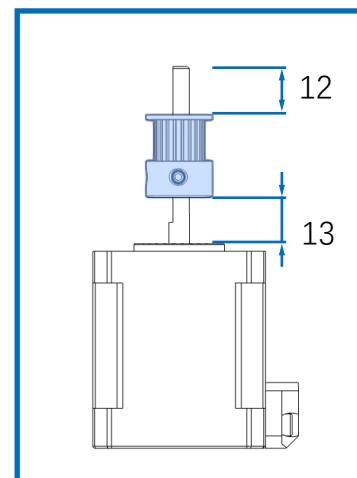
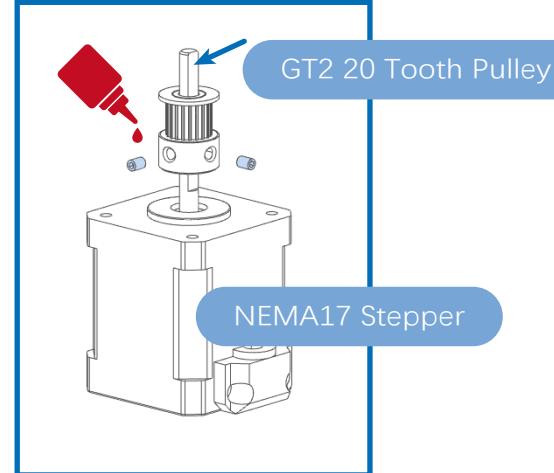
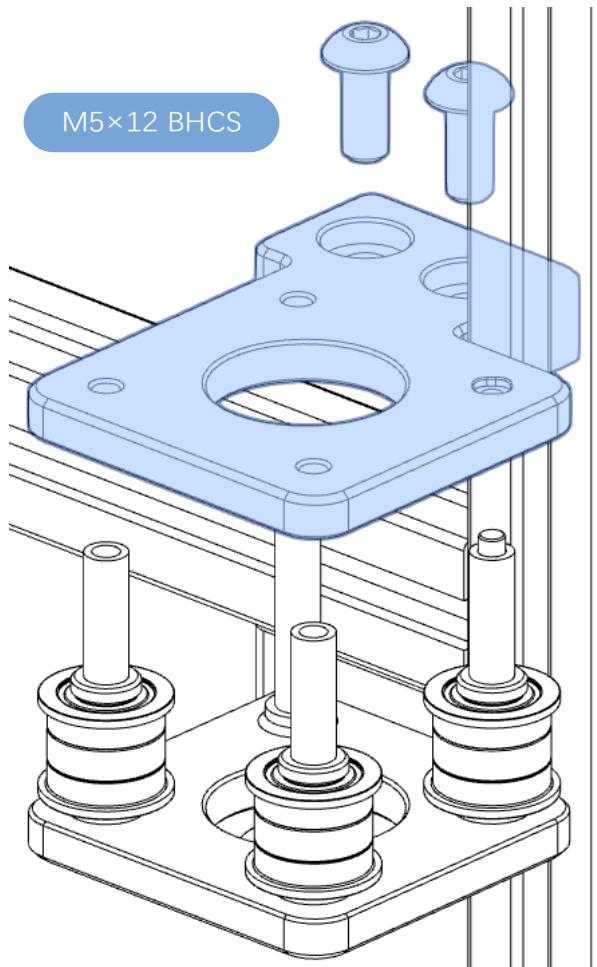


A bearing cap with a triangular notch is used in this instance.

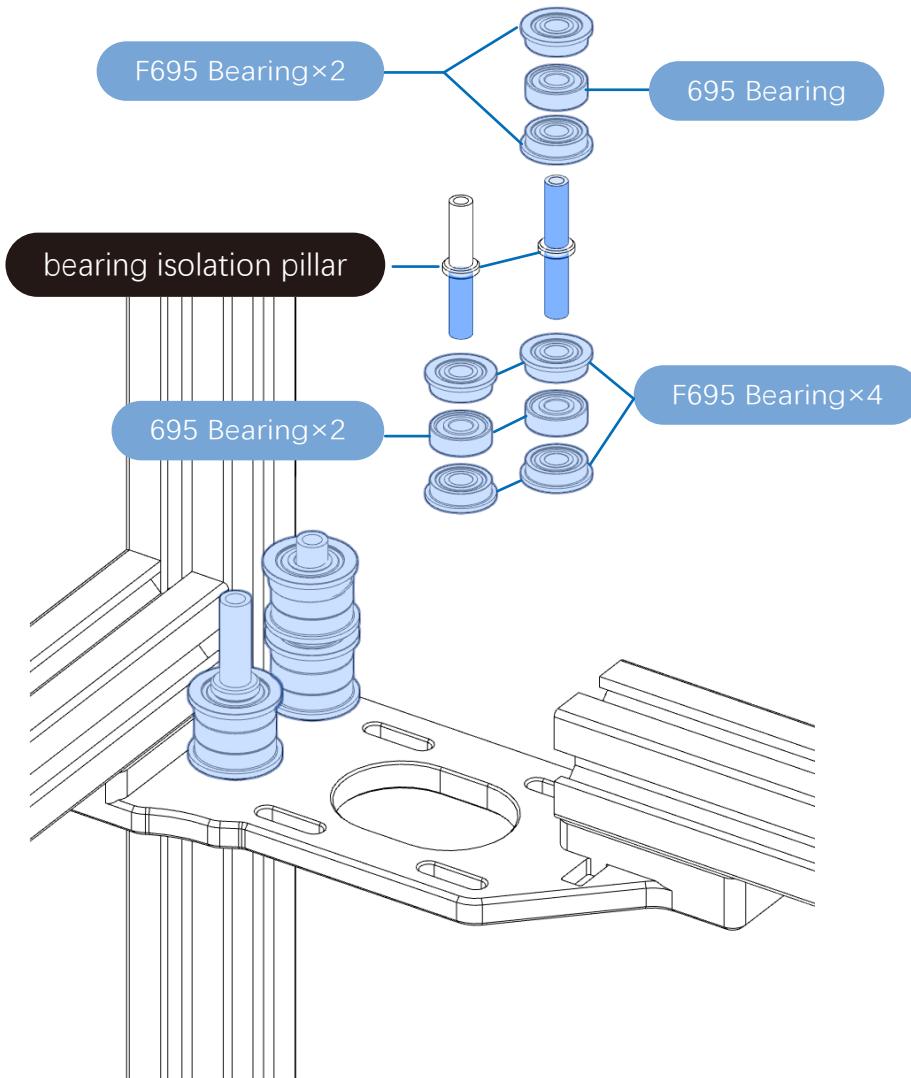
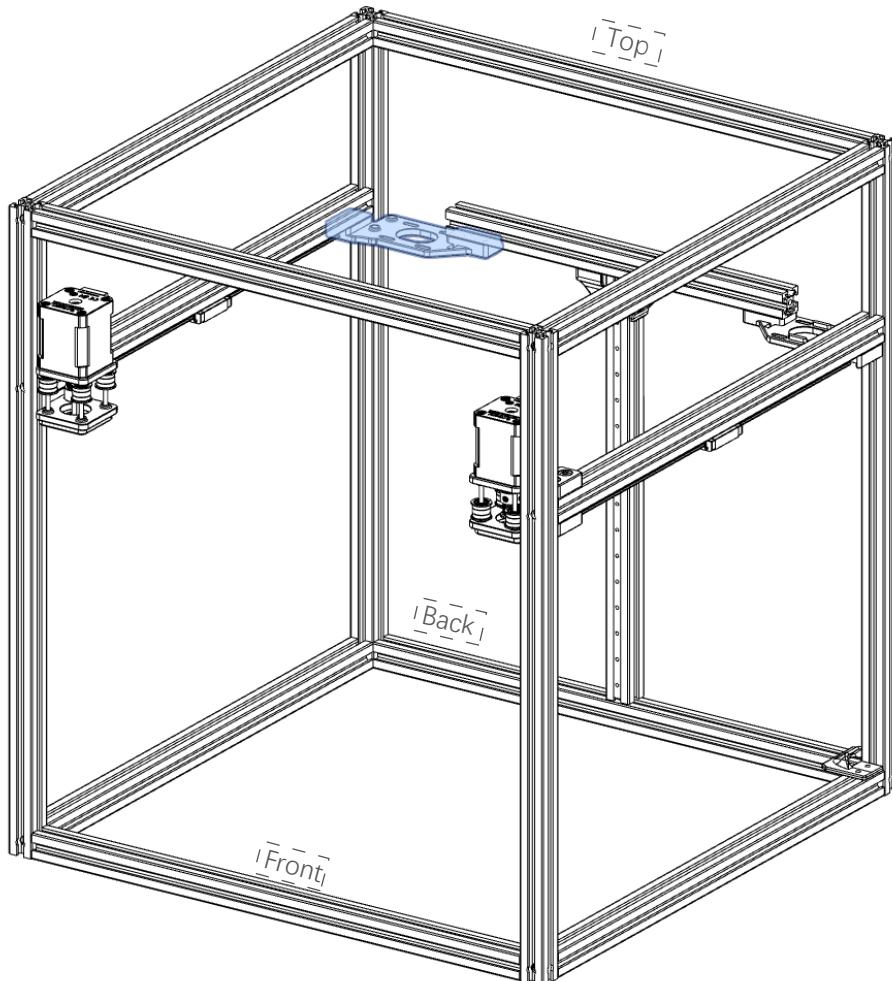


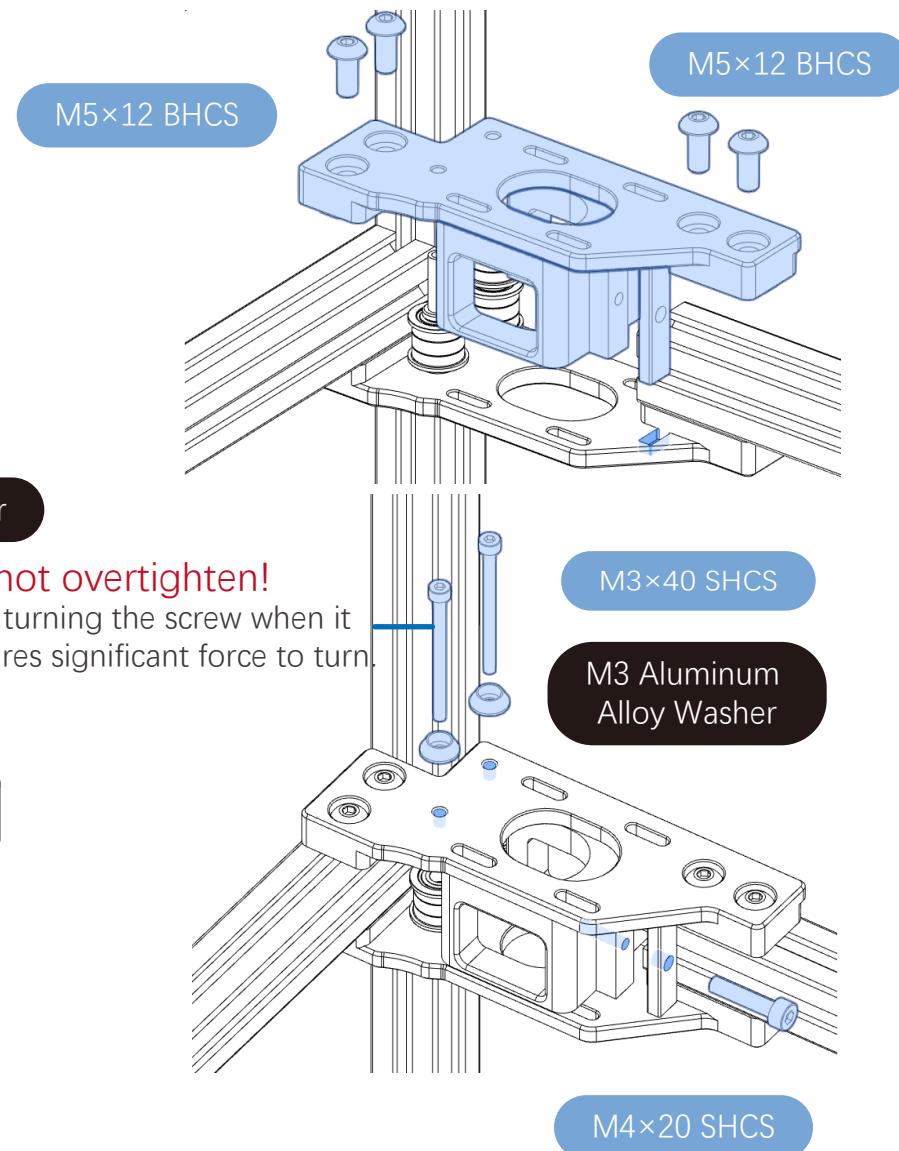
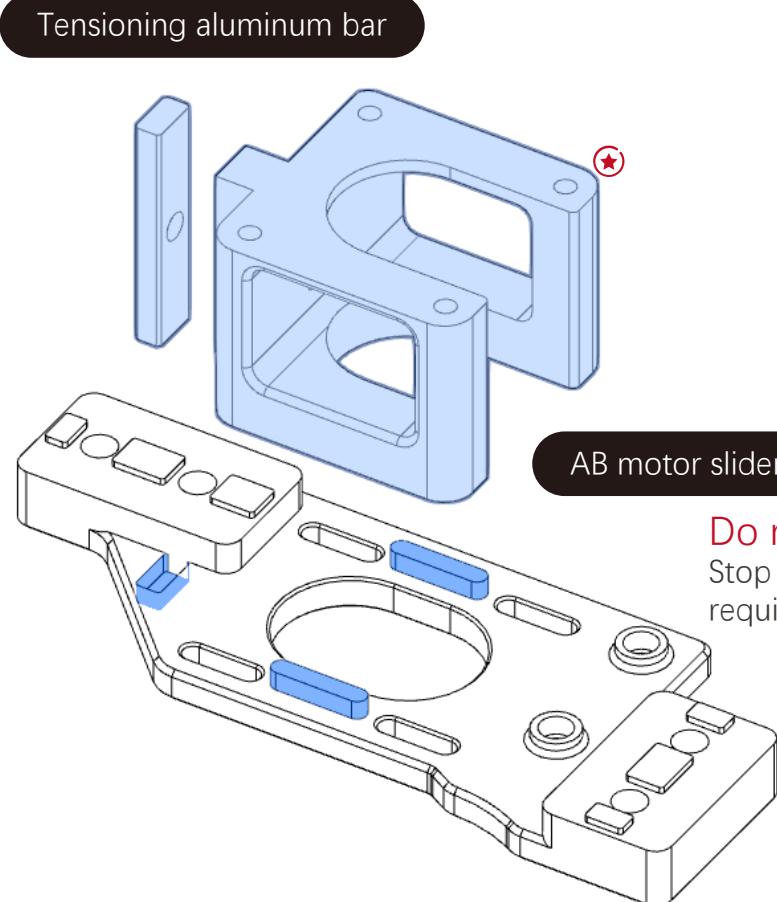
**Direction**

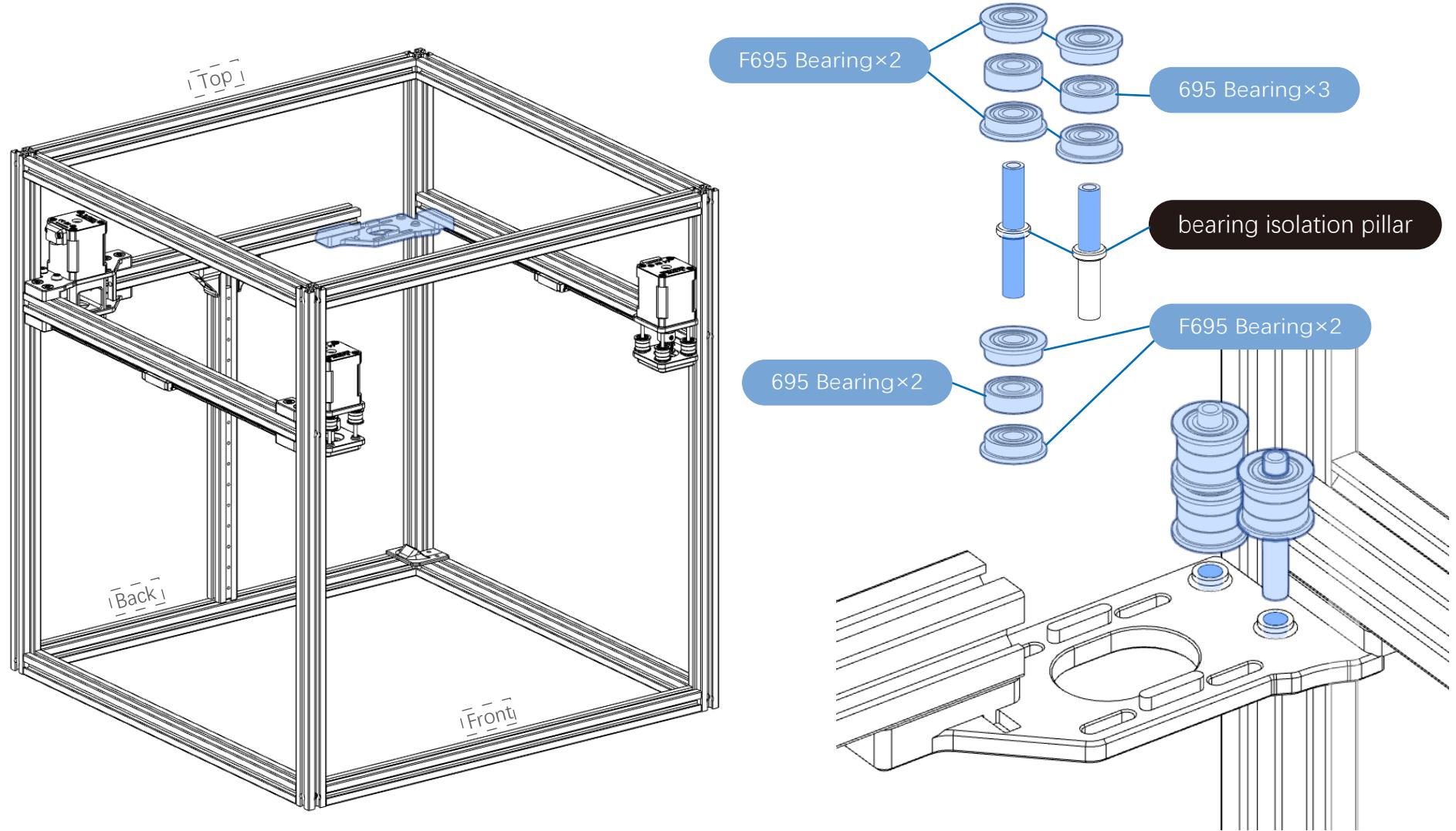
The machine screws should align with the notch on the motor shaft.

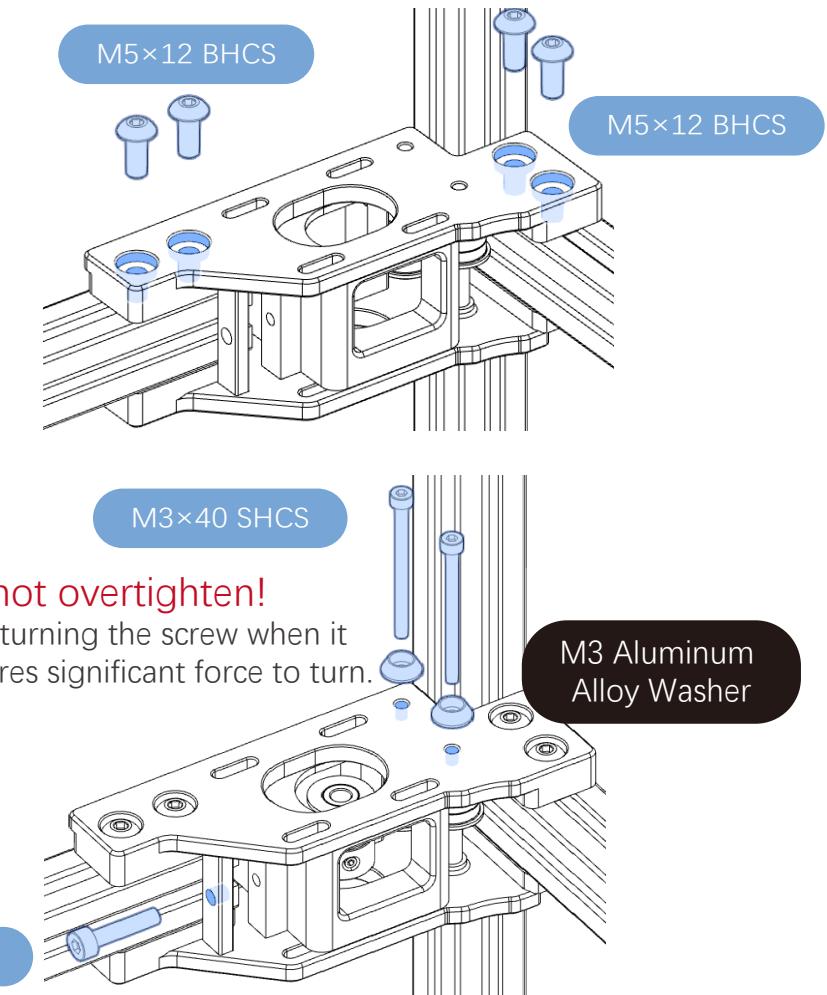
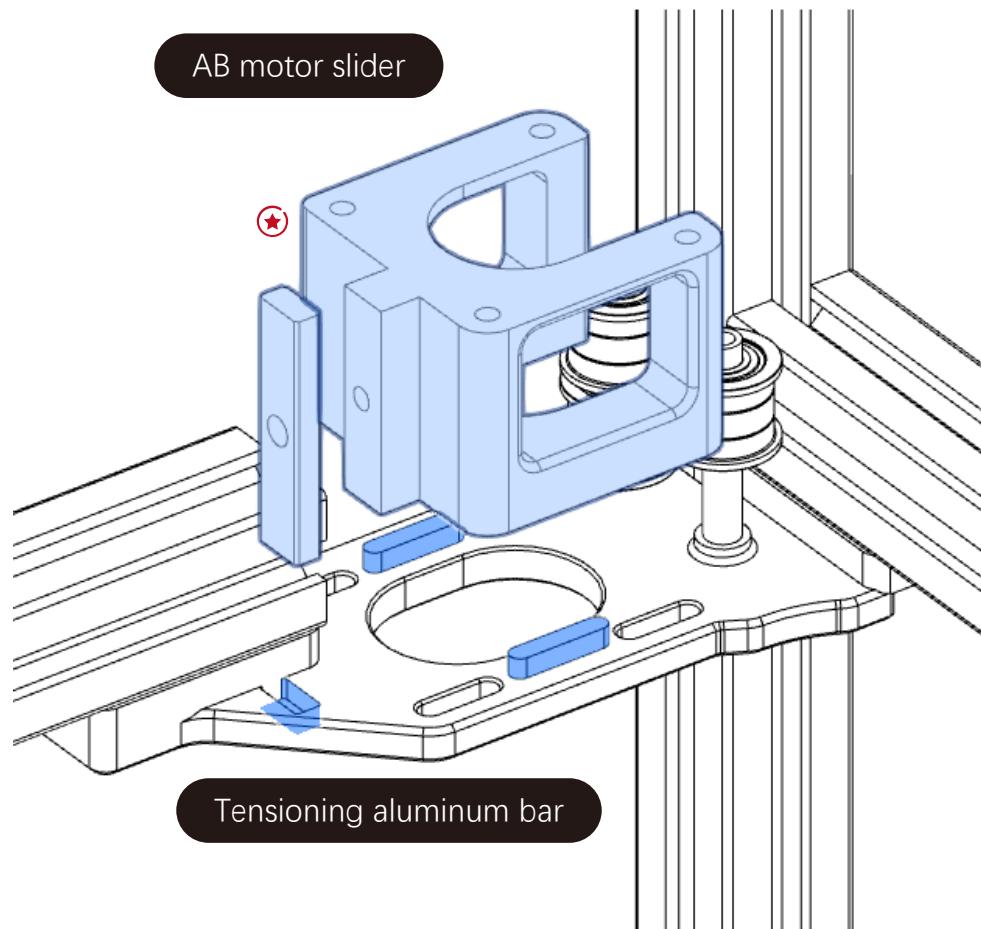


Using thread sealant on timing pulley set screws prevents them from loosening during use, ensuring secure fastening and operational stability. If thread sealant is unavailable, you can temporarily skip this step.







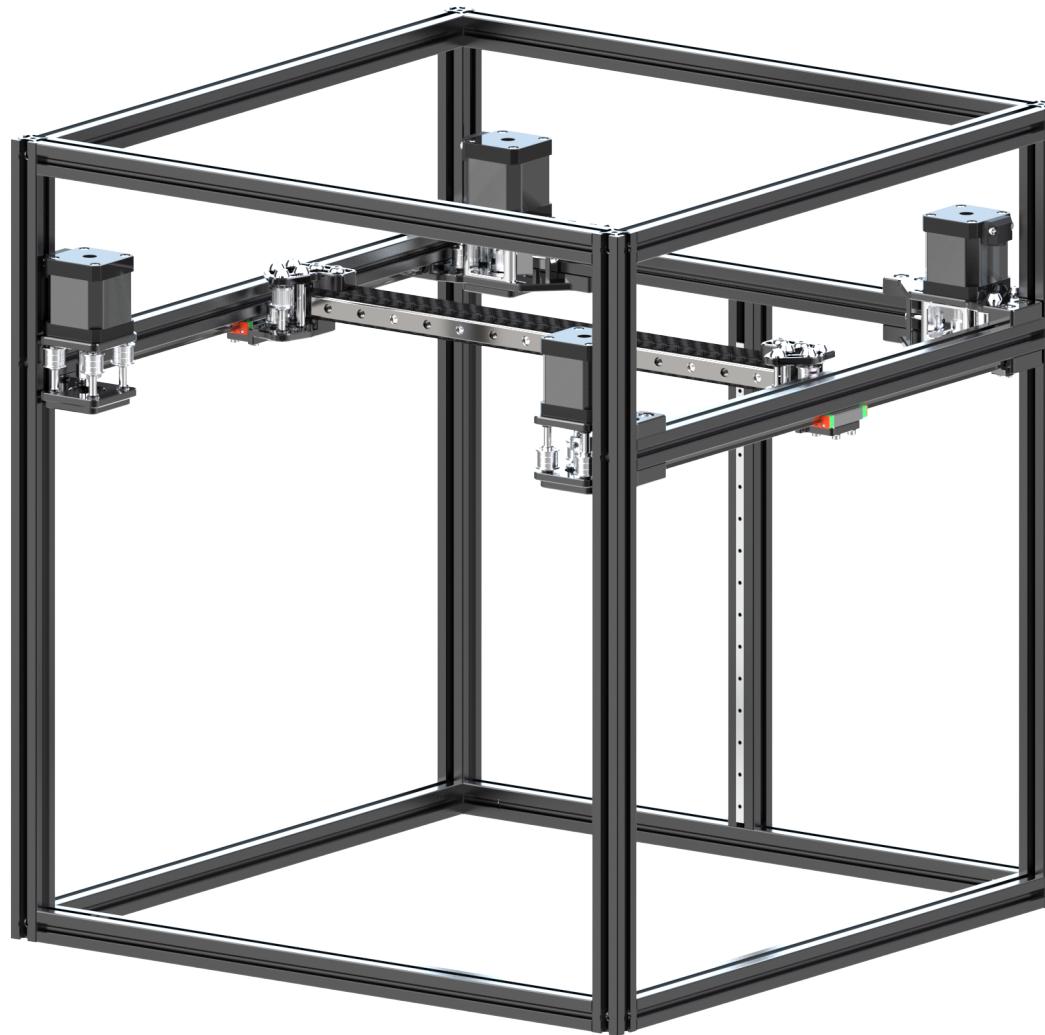


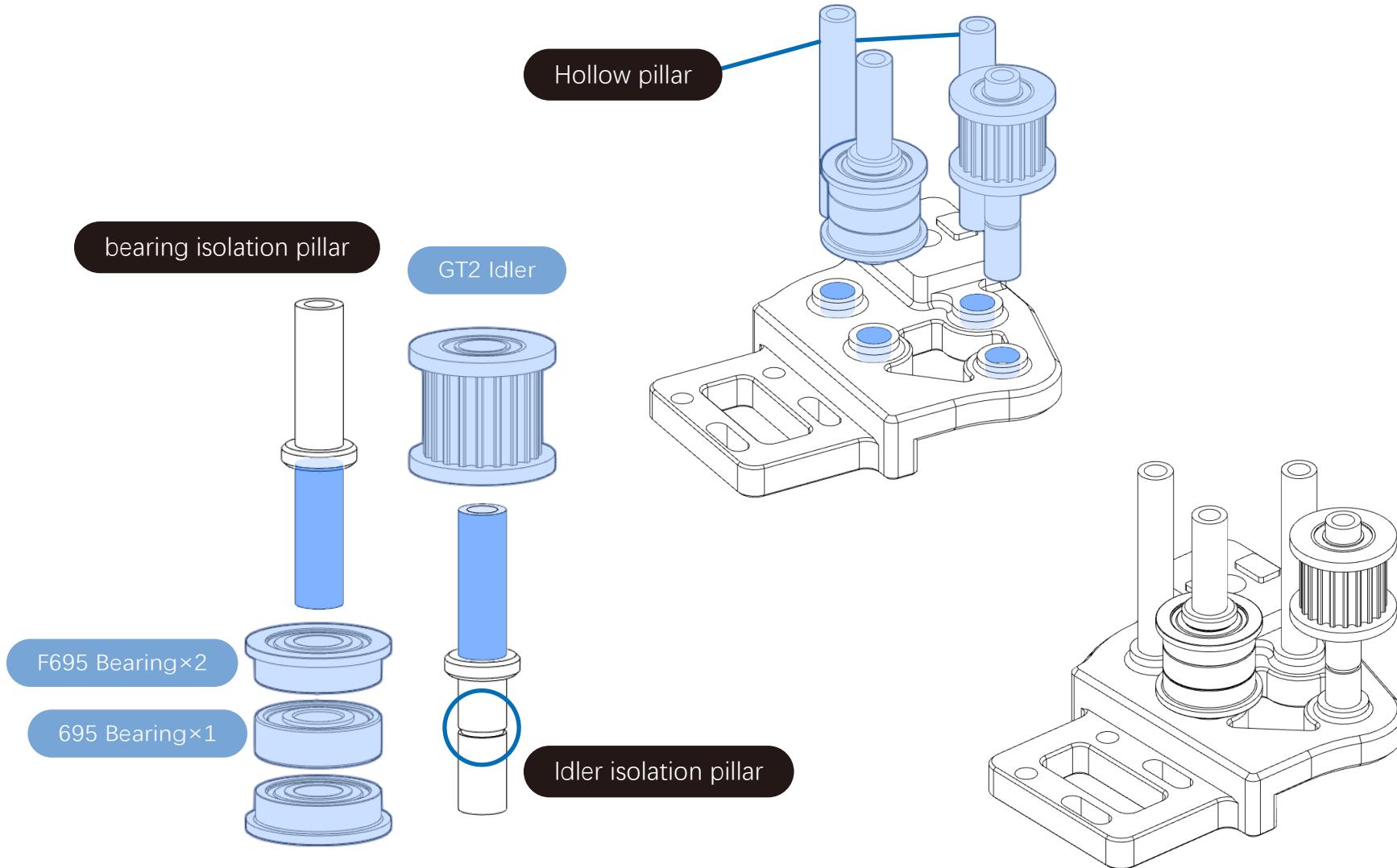
**Do not overtighten!**

Stop turning the screw when it requires significant force to turn.

M4×20 SHCS only need to be threaded in 2-3 turns to facilitate subsequent belt tensioning.

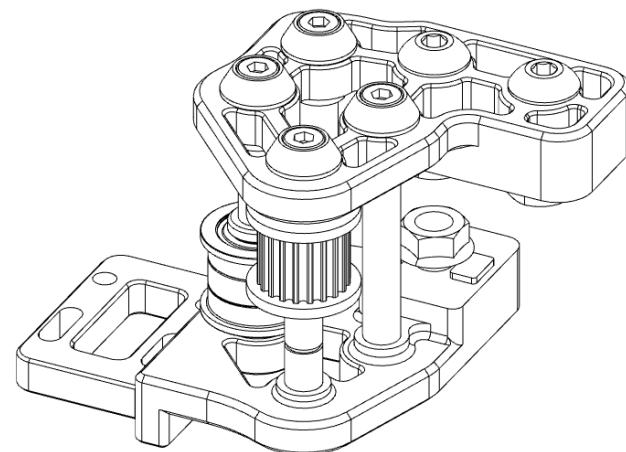
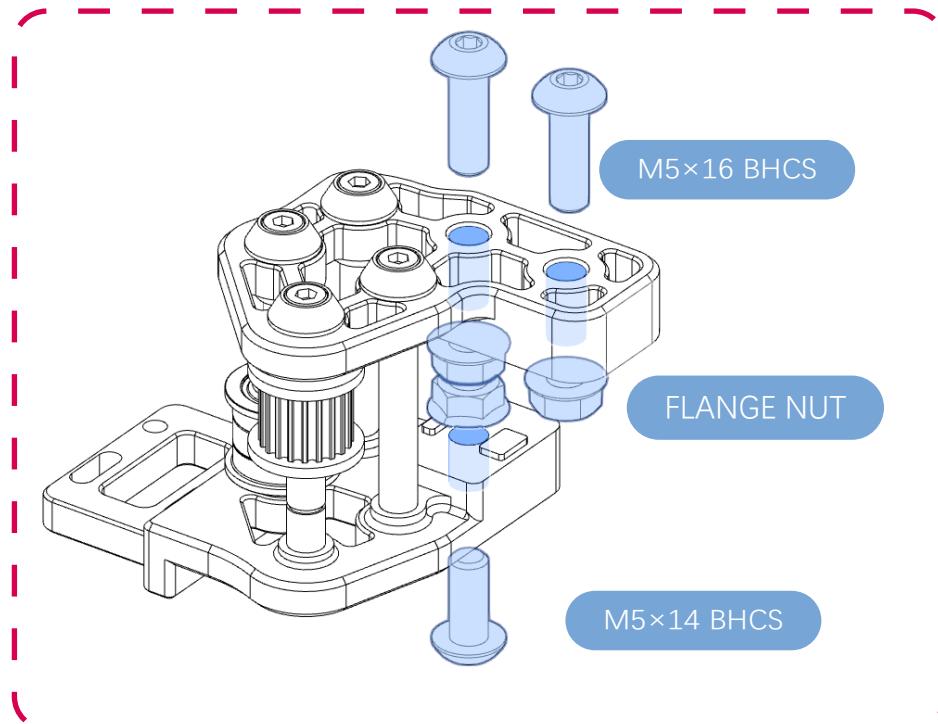
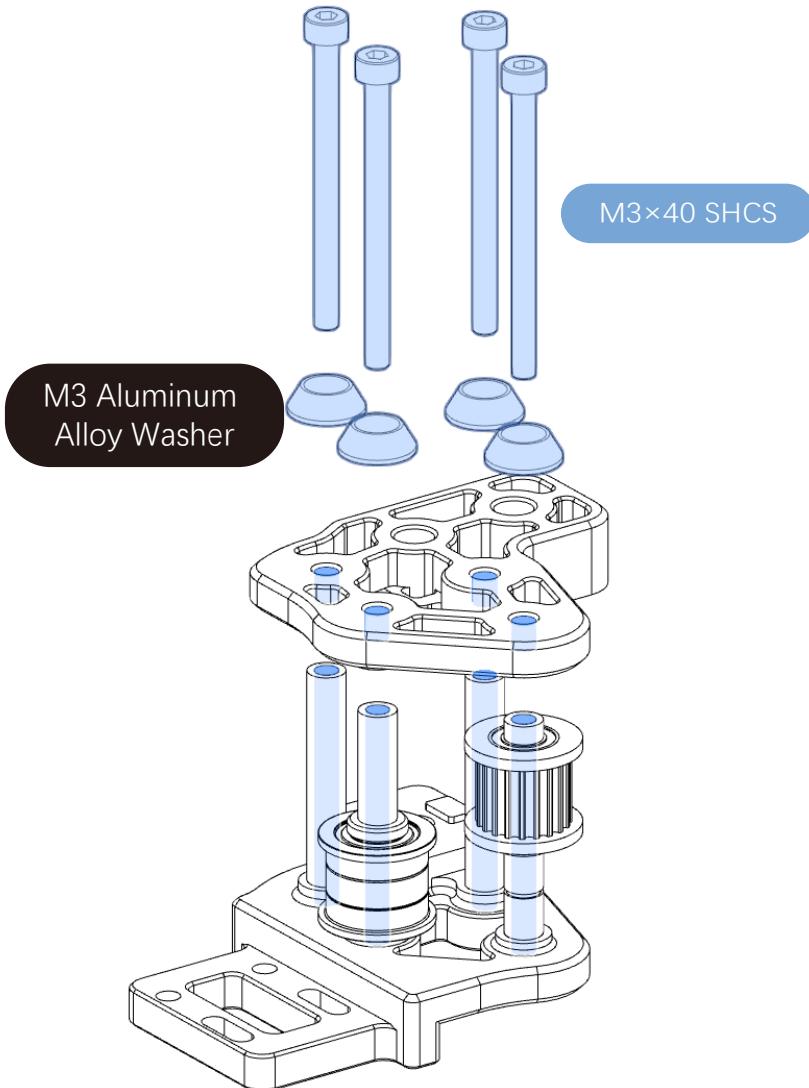
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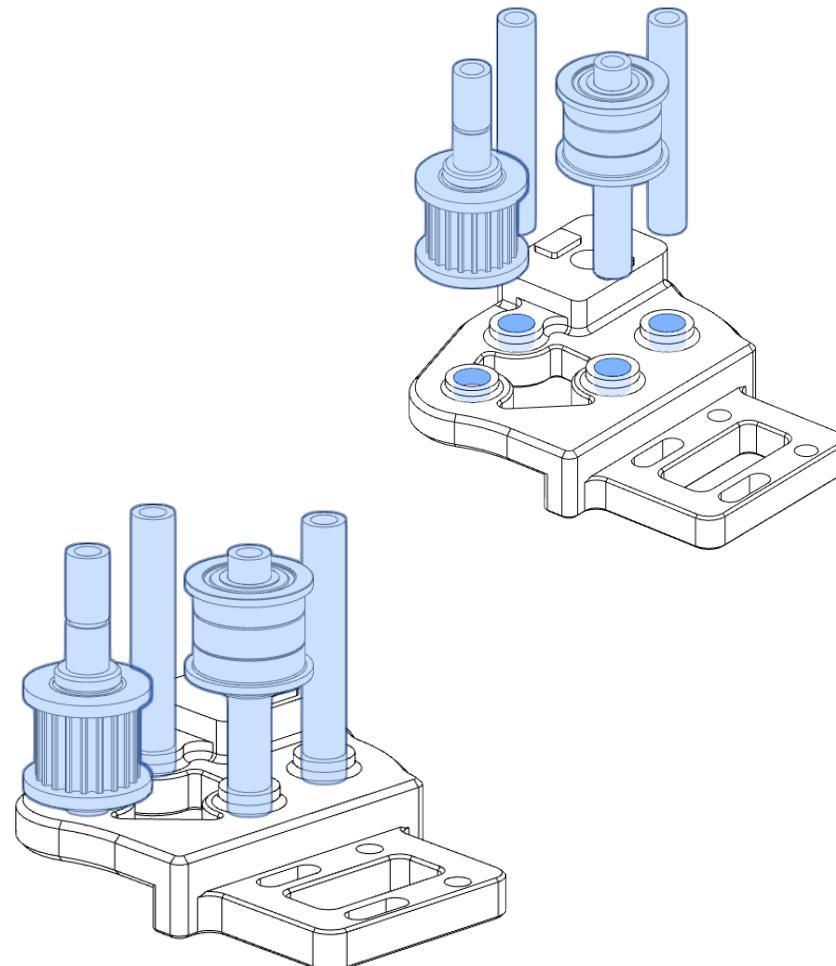
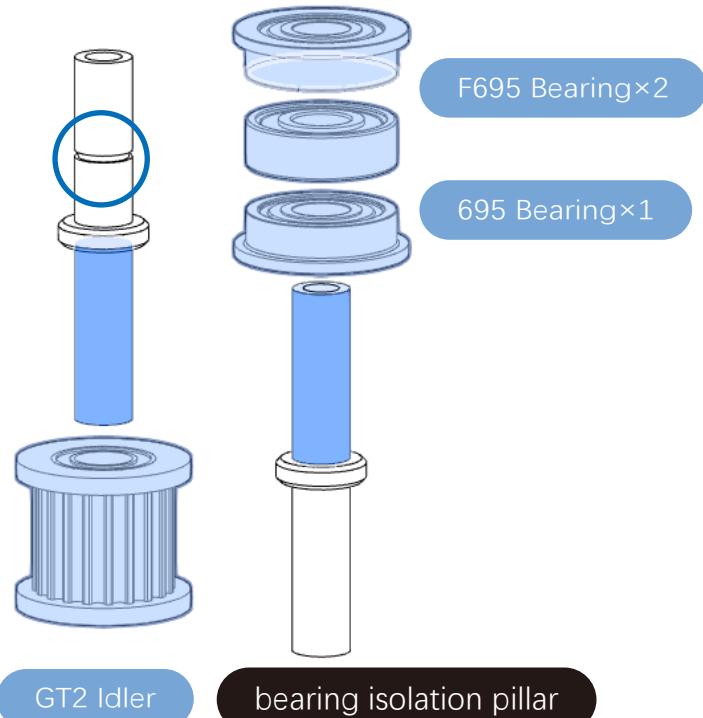


Don't tighten the screws too much

the next step needs to be to install the X carbon tube

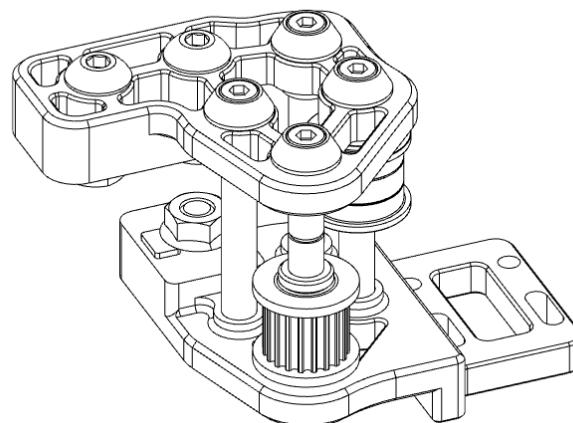
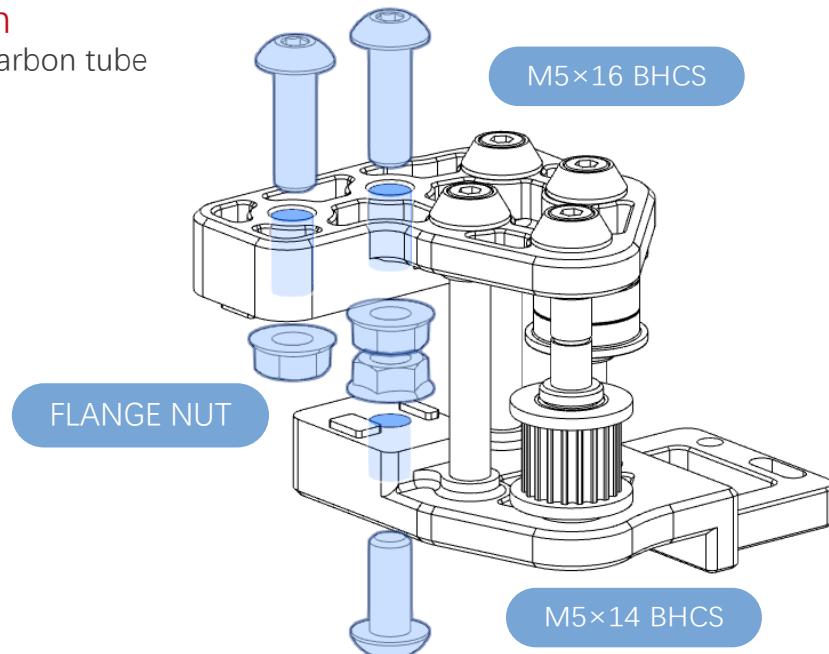
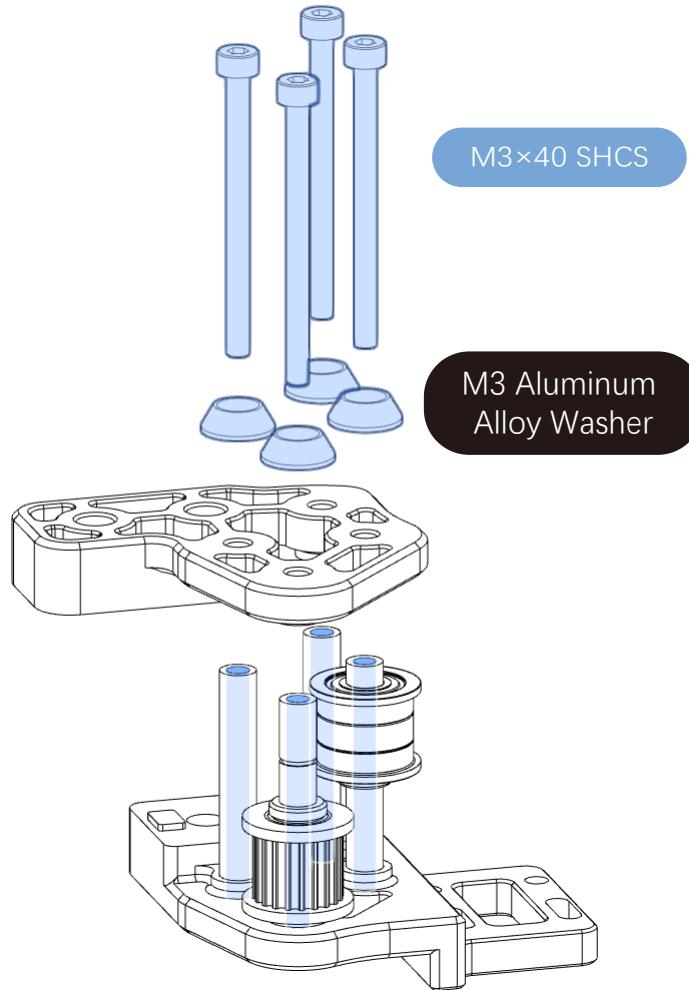


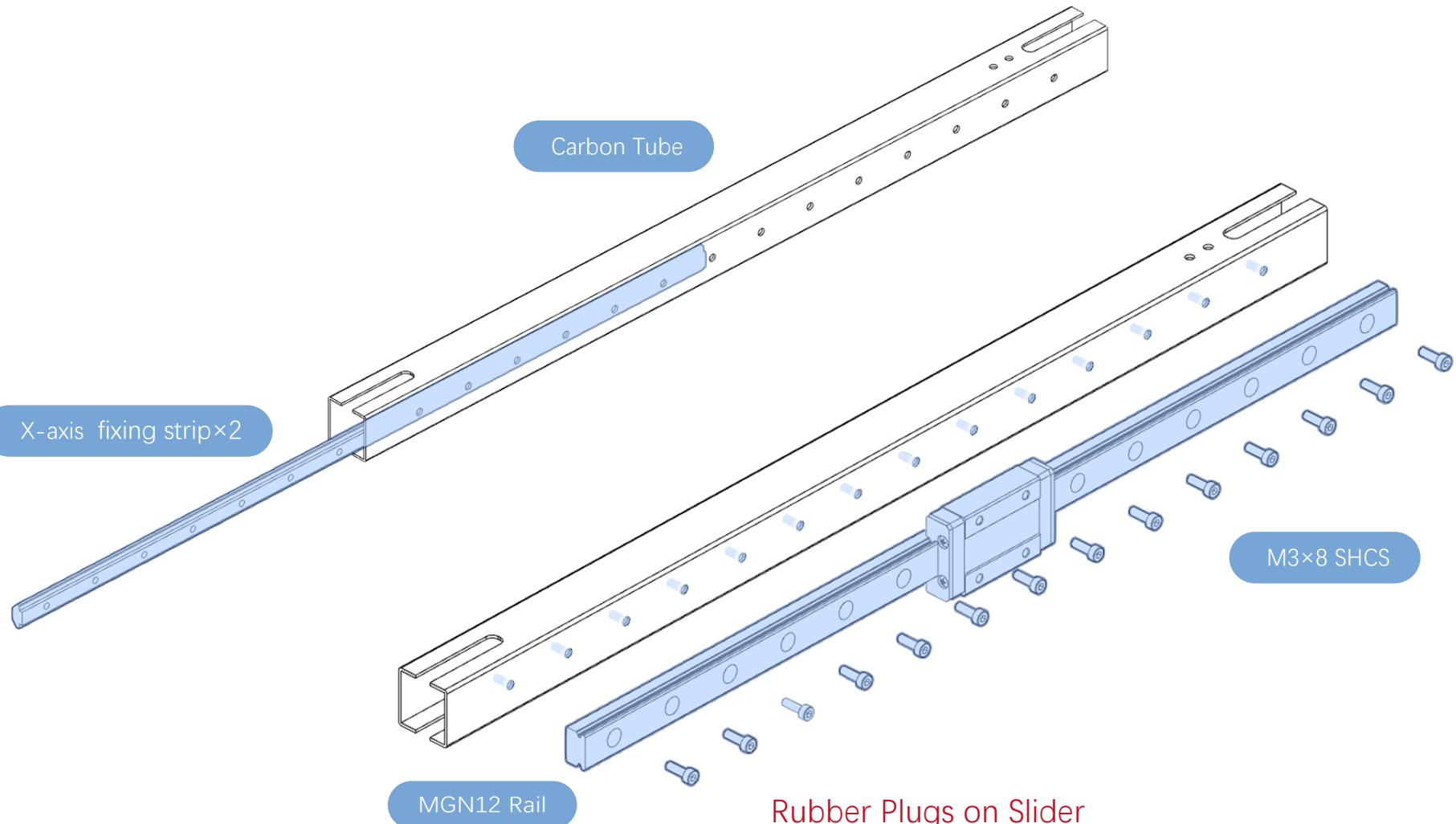
Idler isolation pillar



Don't tighten the screws too much

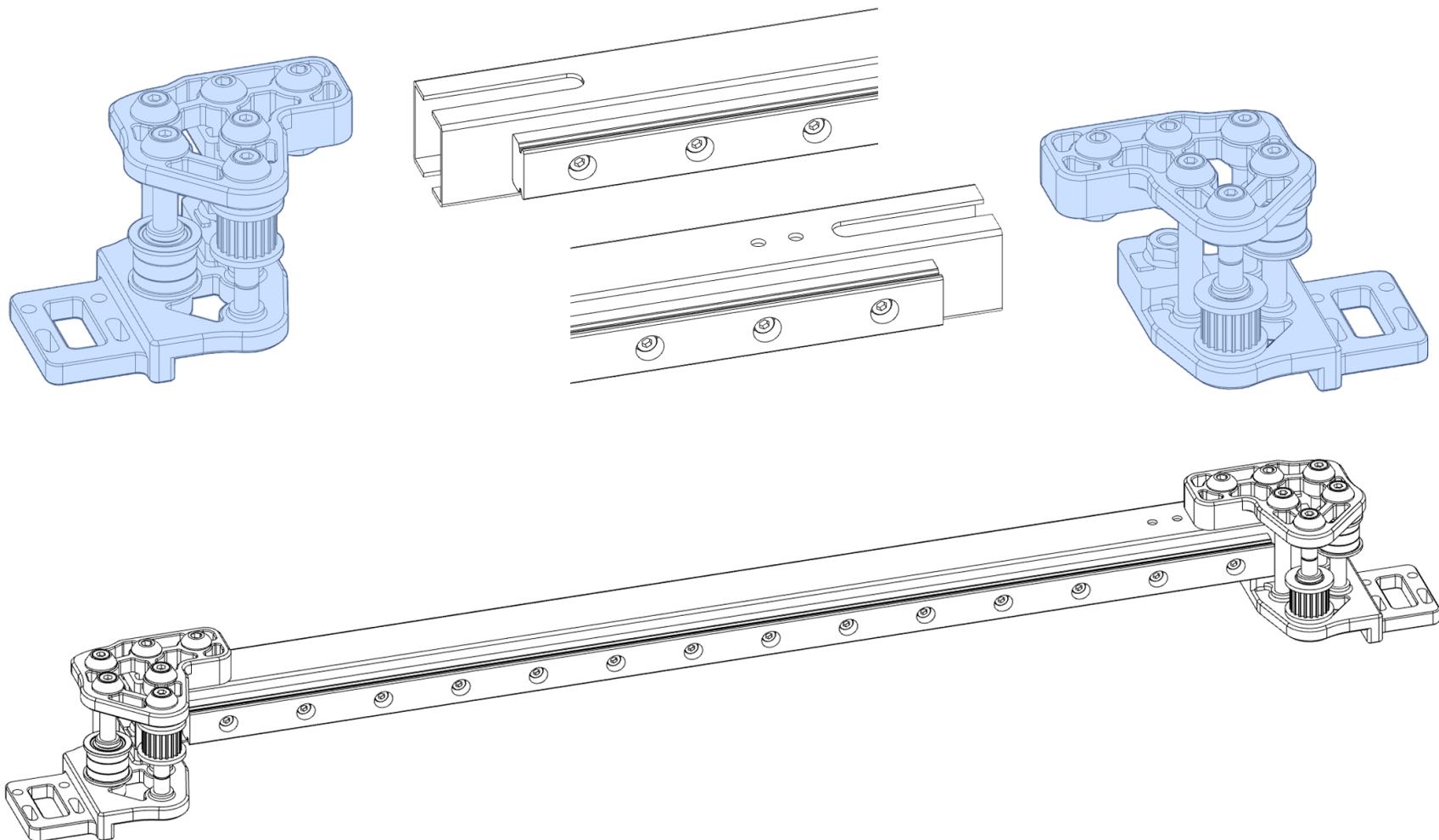
the next step needs to be to install the X carbon tube

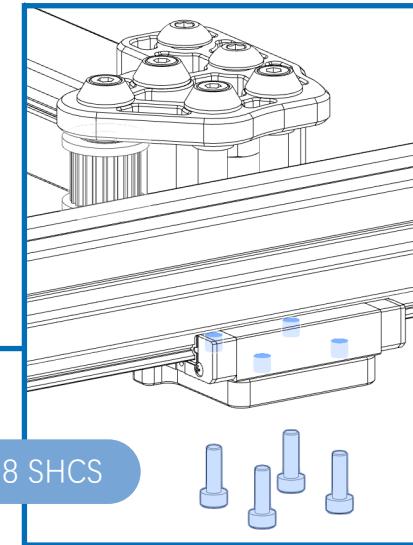
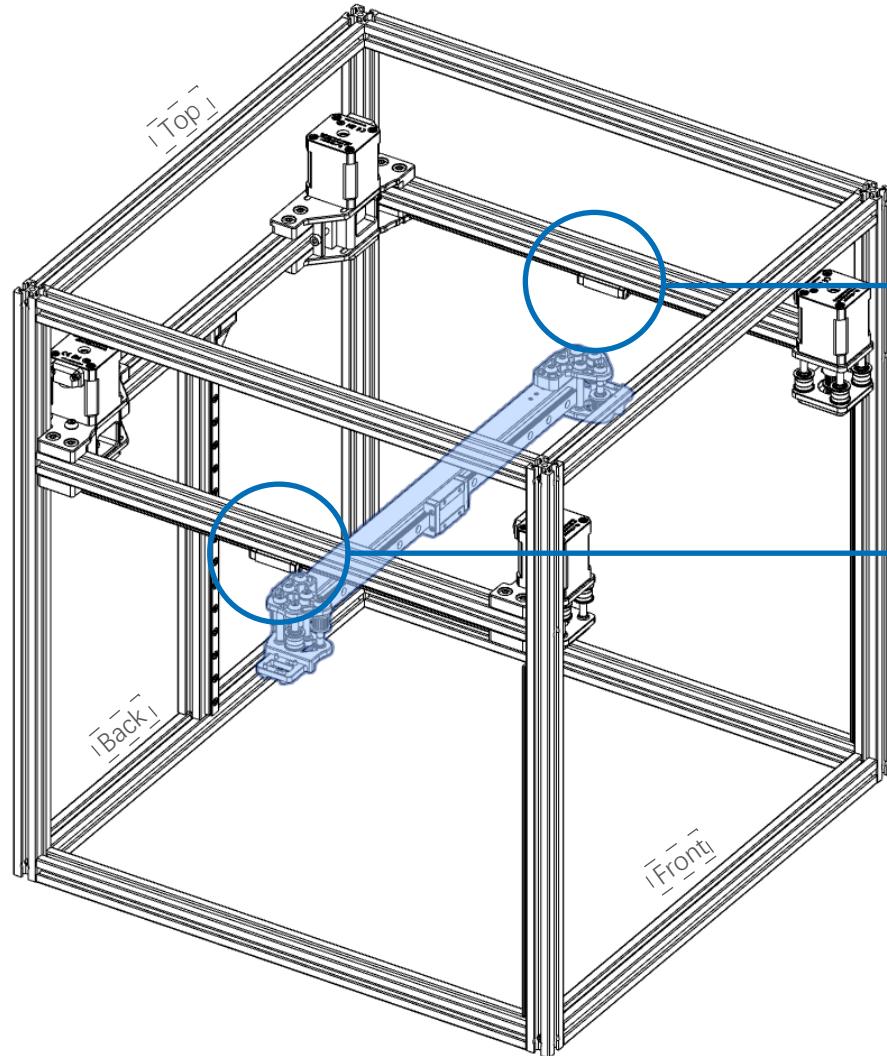




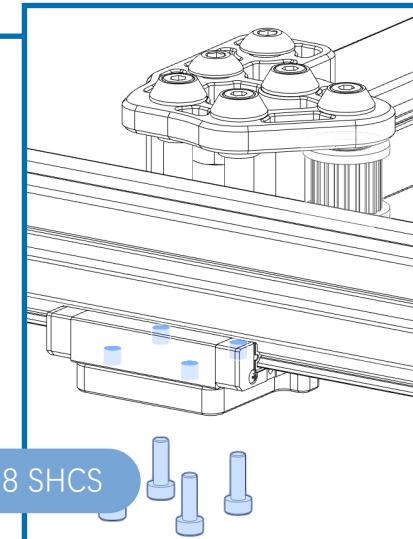
### Rubber Plugs on Slider

You may notice rubber plugs on both sides of the slider. These effectively prevent the slider from accidentally dislodging, so do not attempt to remove them before installing the screws.





M3×8 SHCS



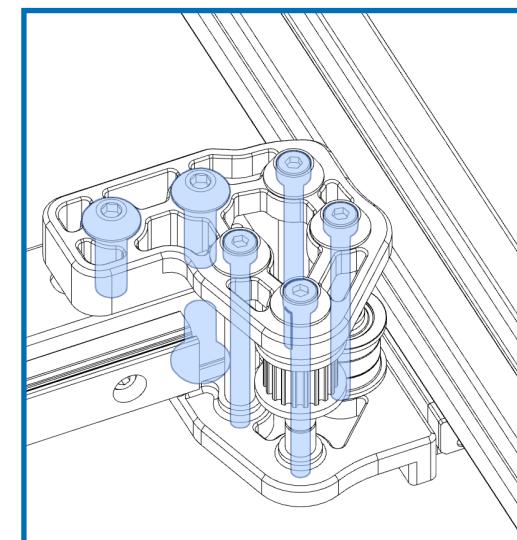
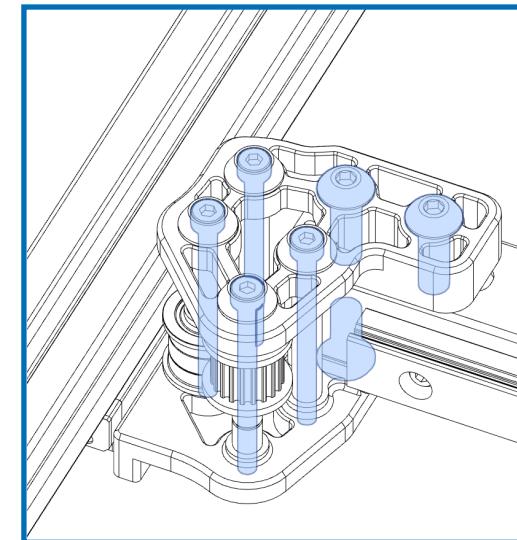
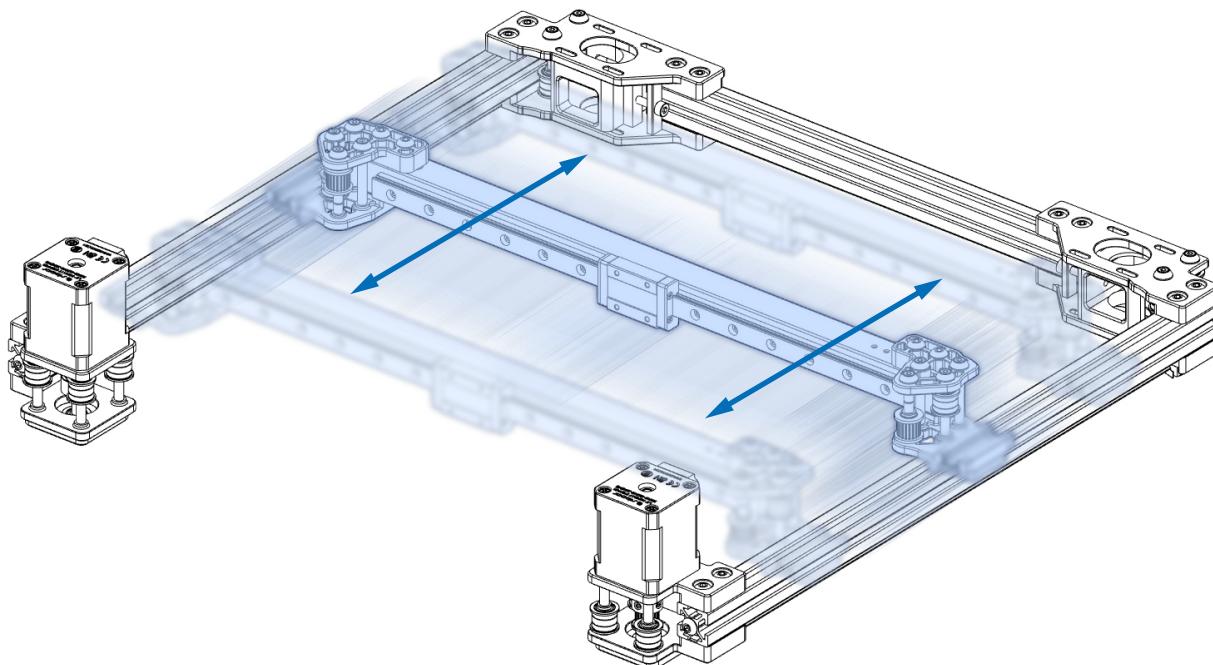
M3×8 SHCS

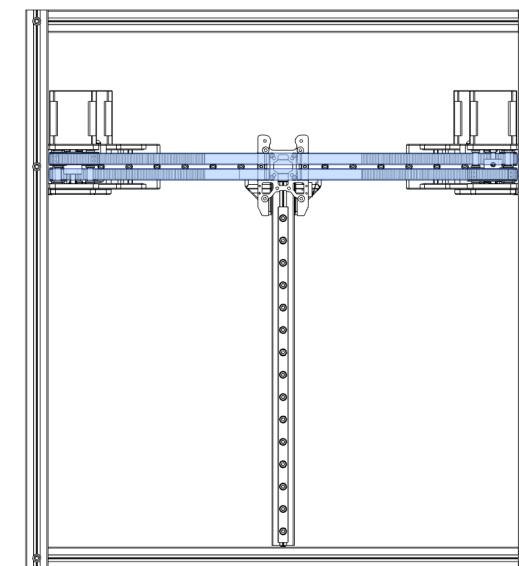
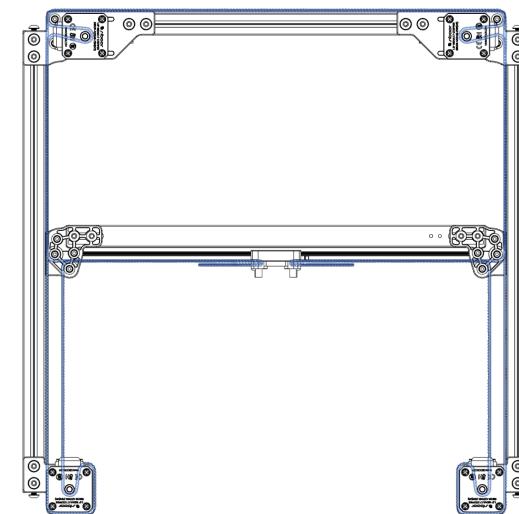
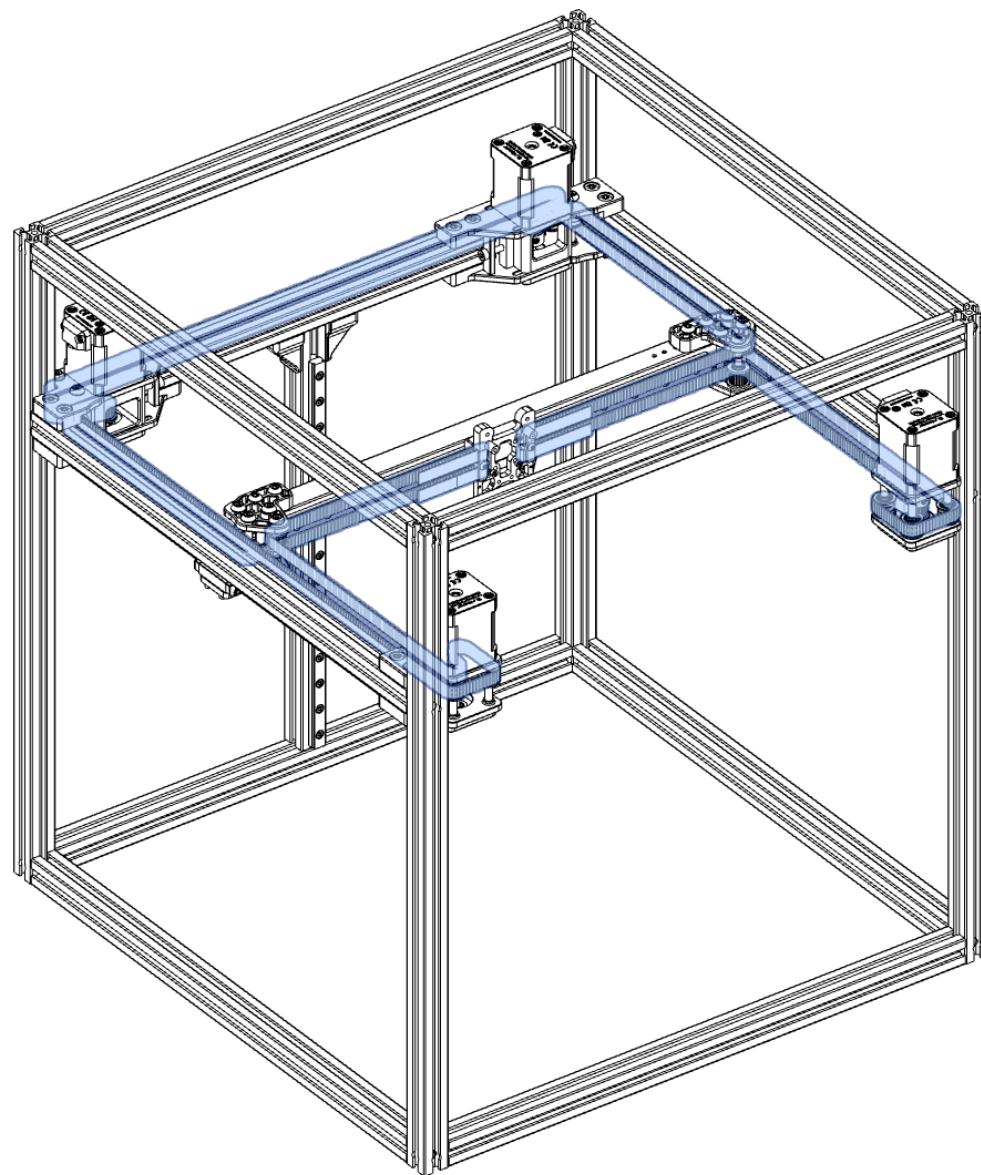
### Adjusting the X-Axis Joints

Slide the X-axis part quickly along the Y-axis. Since the screws on both sides of the X-axis joints are not fully tightened, the joints will automatically adjust their positions on the carbon tubes during the sliding process.

Once you feel the movement is very smooth and without any resistance, you can fully tighten the screws on both sides of the X-axis joints.

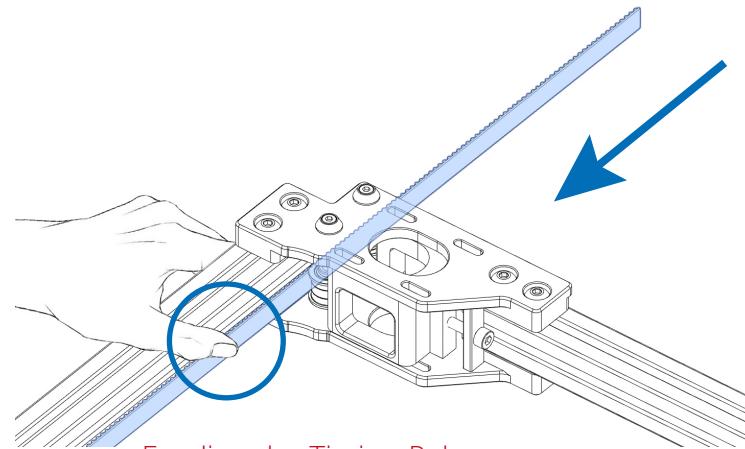
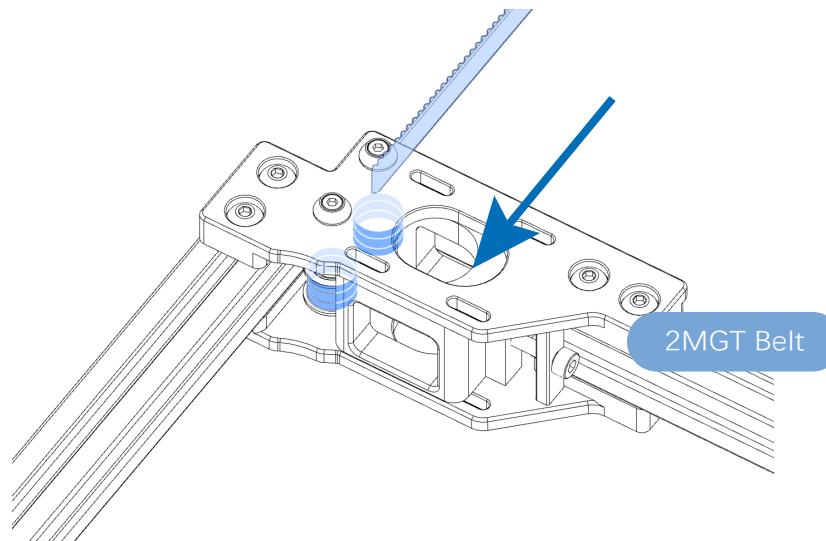
Don't forget to tighten the M5×12 BHCS screws at the bottom; otherwise, they may become loose and fall off during high-speed machine operation.





**Instruction**

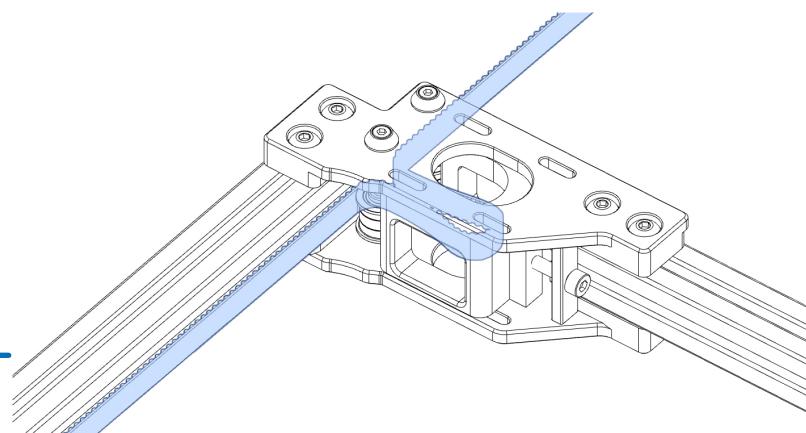
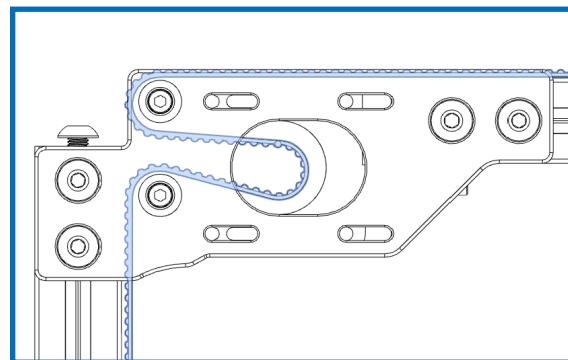
Cut the timing belt in the kit into two equal parts.

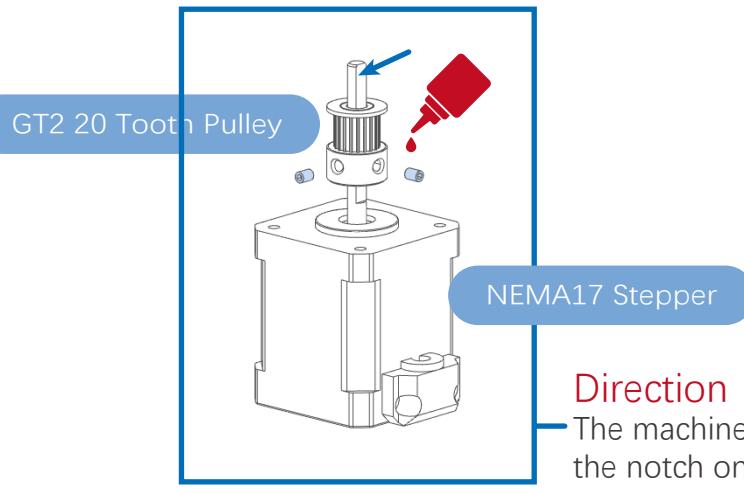
**Feeding the Timing Belt**

Hold the timing belt at the exit point and continue feeding it until the belt is forced into place between the two sets of bearings under pressure.

**Temporarily Hiding the Frame Extrusion**

To provide a clear demonstration of the timing belt installation steps, we will temporarily hide the frame extrusion in the subsequent sections.





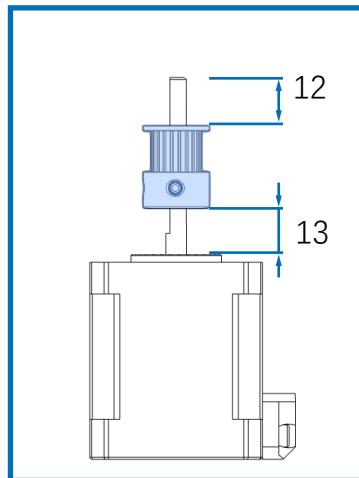
### MOTOR ORIENTATION

Pay attention to the orientation of the cable exit.

GT2 20 Tooth Pulley

### Direction

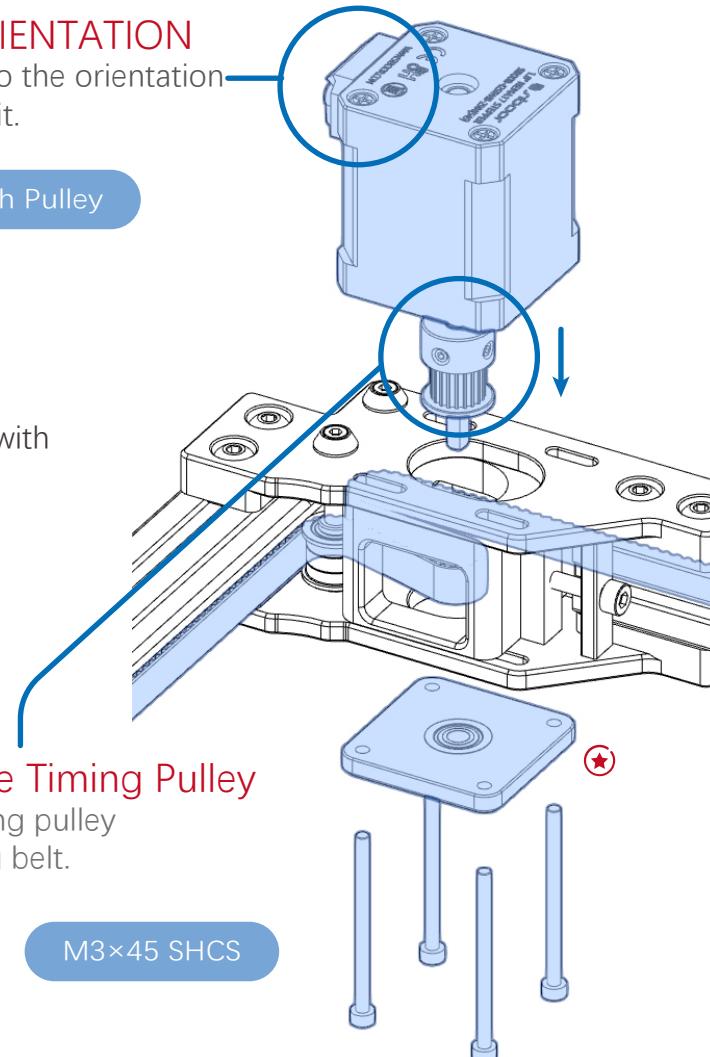
The machine screws should align with the notch on the motor shaft.



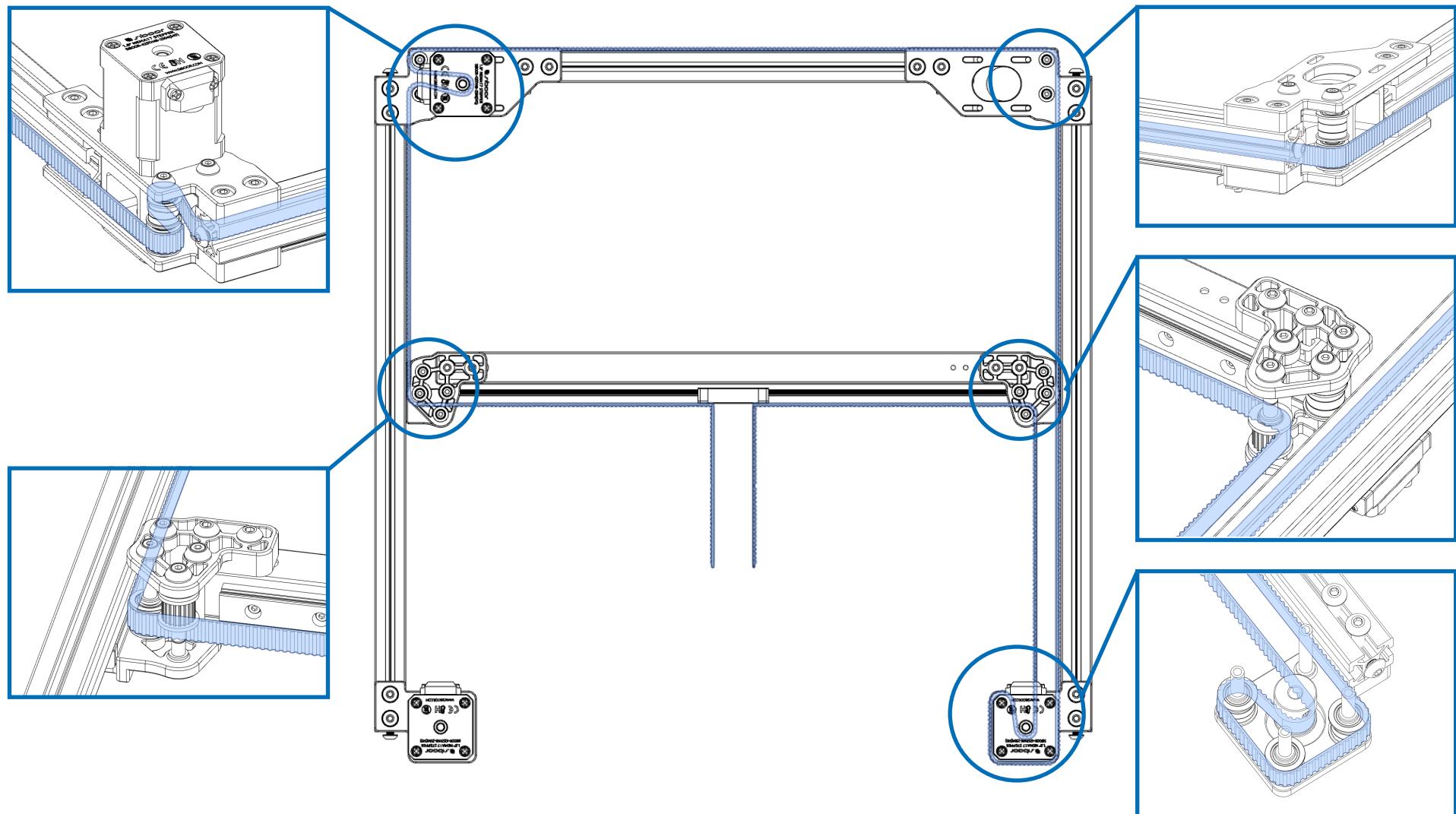
### Inserting the Timing Pulley

Insert the timing pulley into the timing belt.

M3×45 SHCS

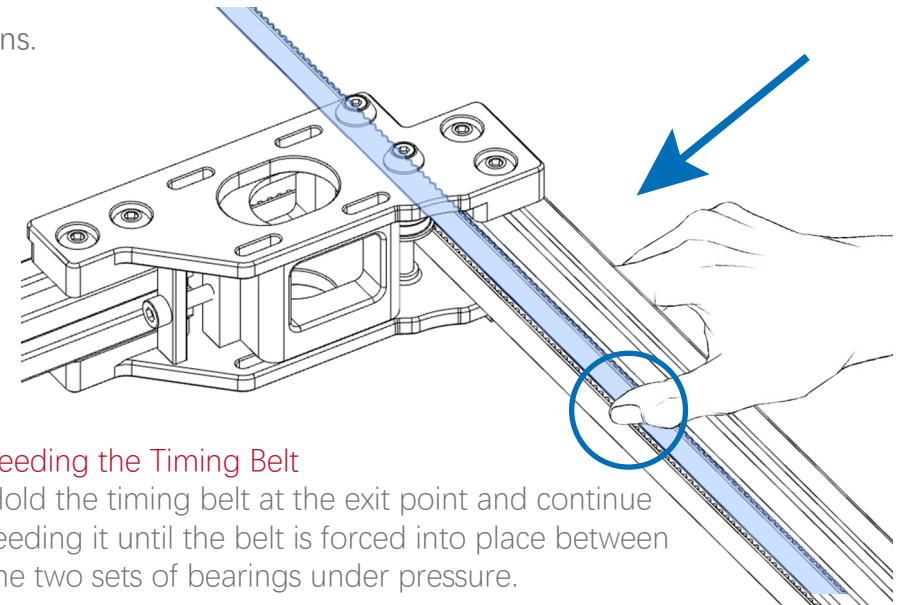
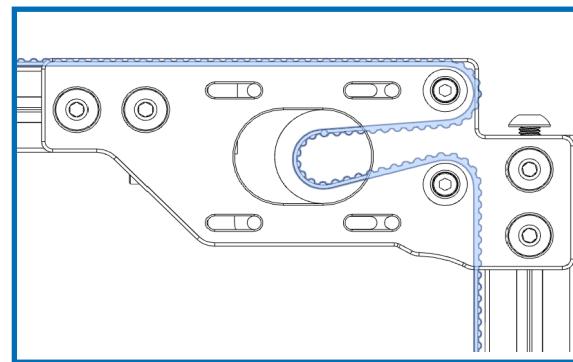
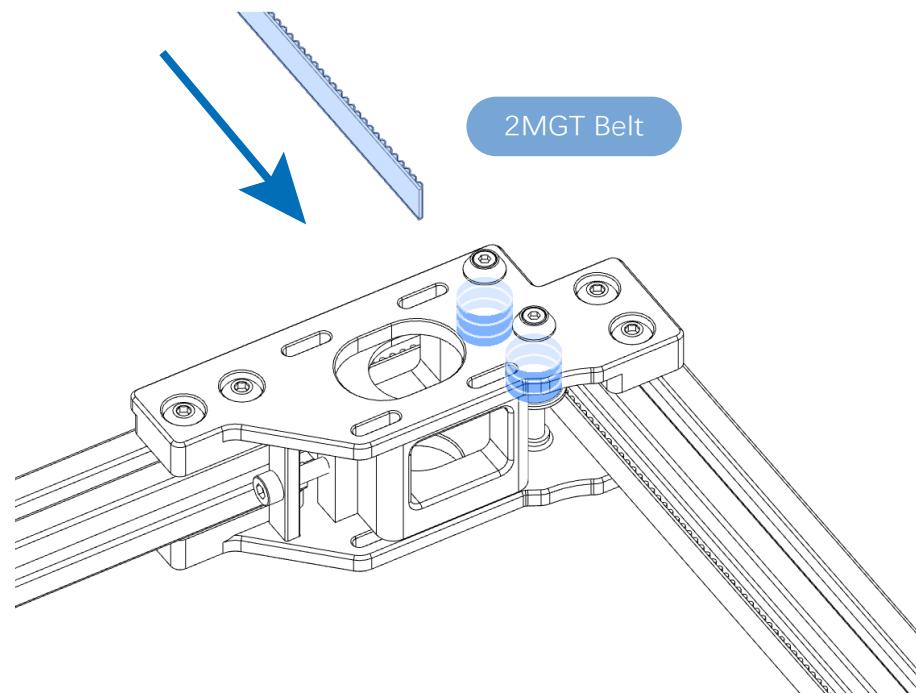


Using thread sealant on timing pulley set screws prevents them from loosening during use, ensuring secure fastening and operational stability. If thread sealant is unavailable, you can temporarily skip this step.



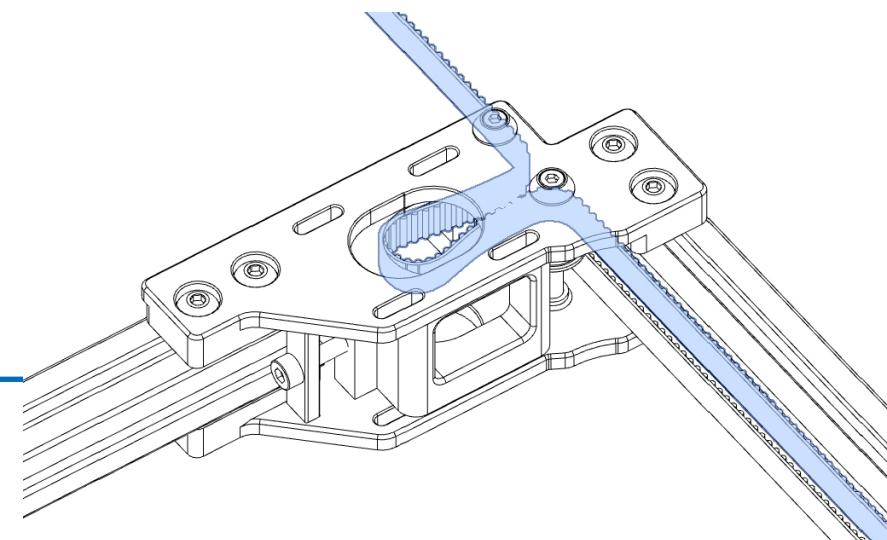
## Temporarily Hiding the Frame Extrusion

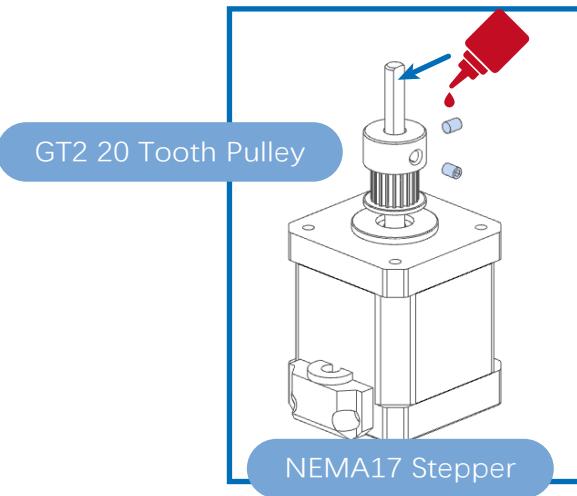
To provide a clear demonstration of the timing belt installation steps, we will temporarily hide the frame extrusion in the subsequent sections.



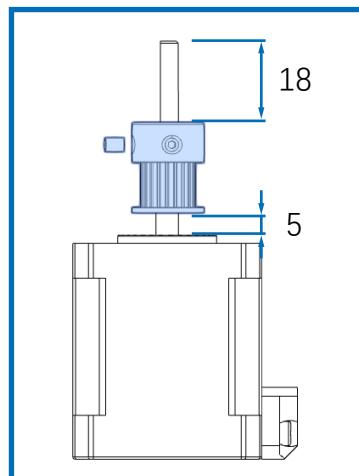
## Feeding the Timing Belt

Hold the timing belt at the exit point and continue feeding it until the belt is forced into place between the two sets of bearings under pressure.



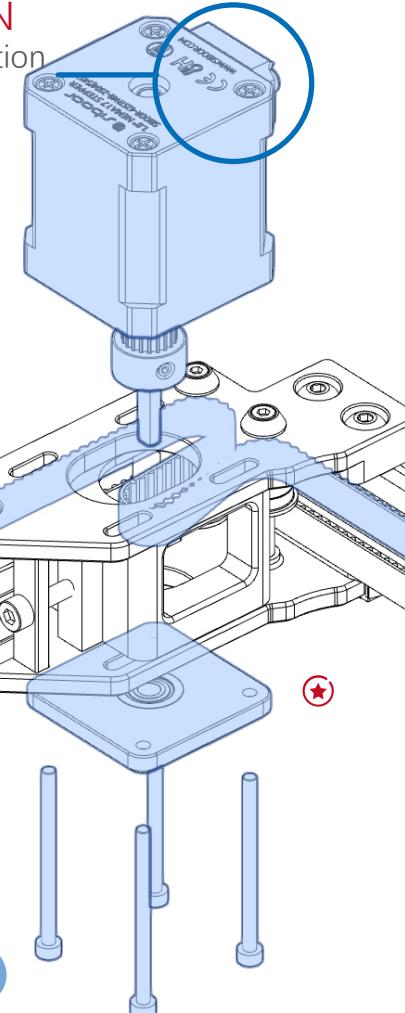


**Direction**  
The machine screws should align with the notch on the motor shaft.



## MOTOR ORIENTATION

Pay attention to the orientation of the cable exit.



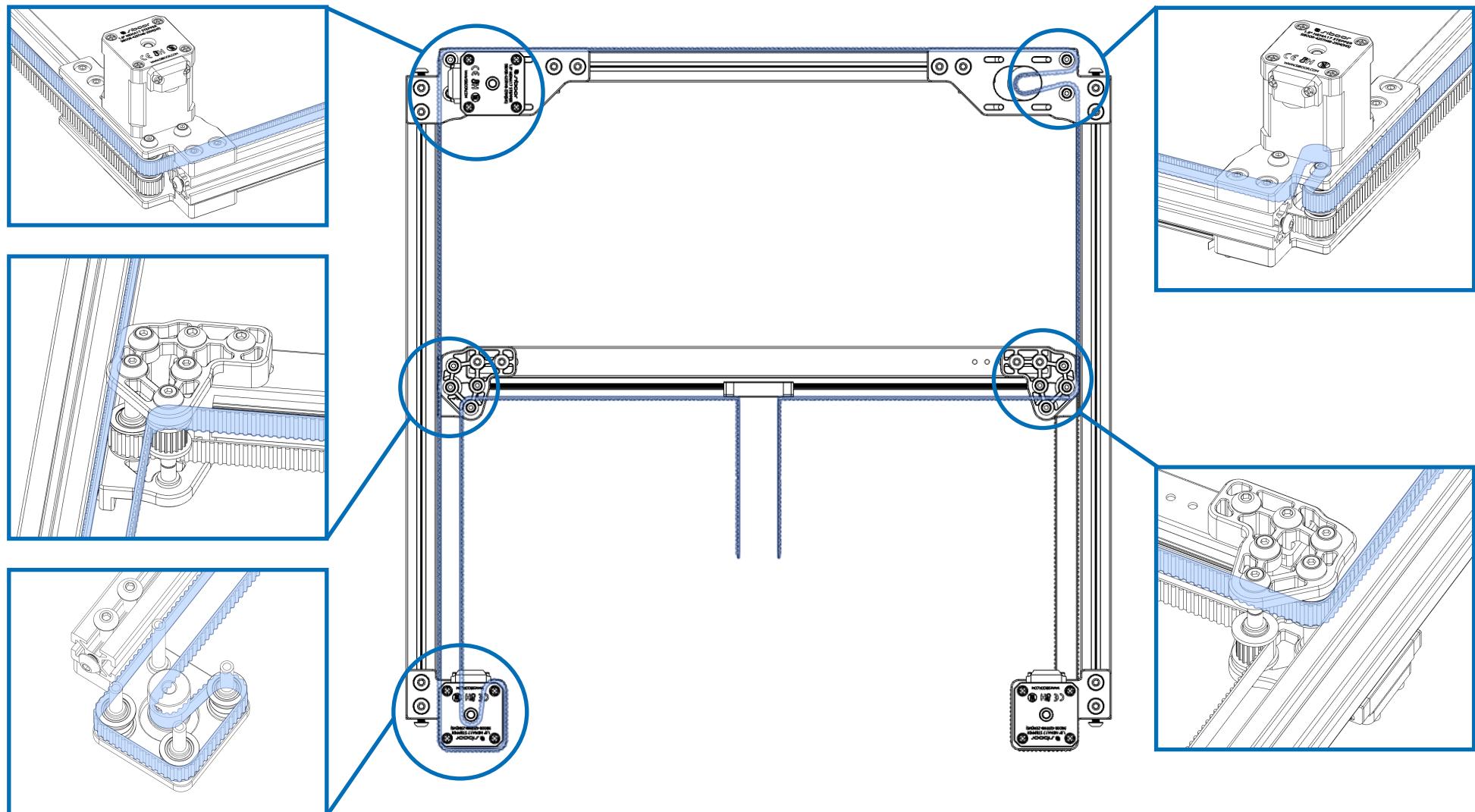
## Inserting the Timing Pulley

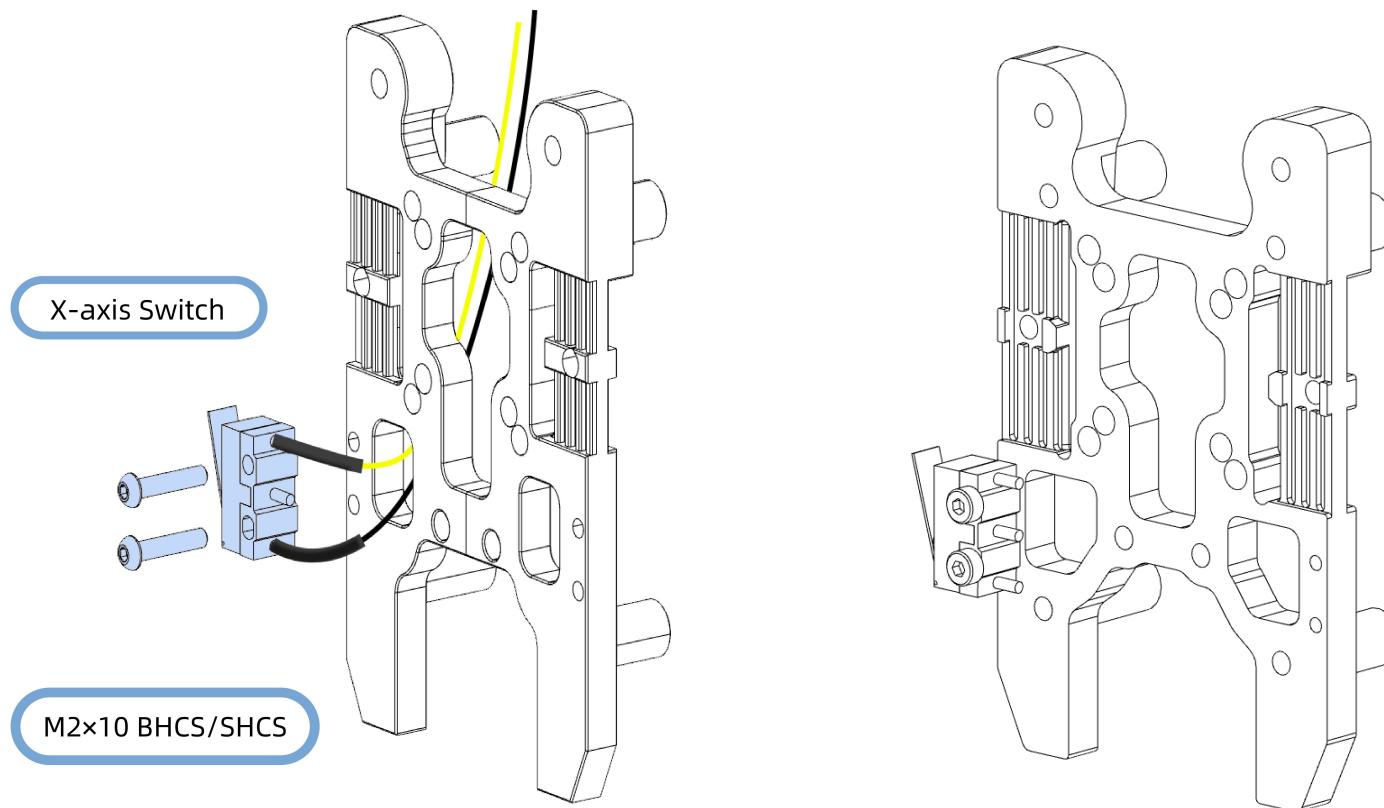
Insert the timing pulley into the timing belt.

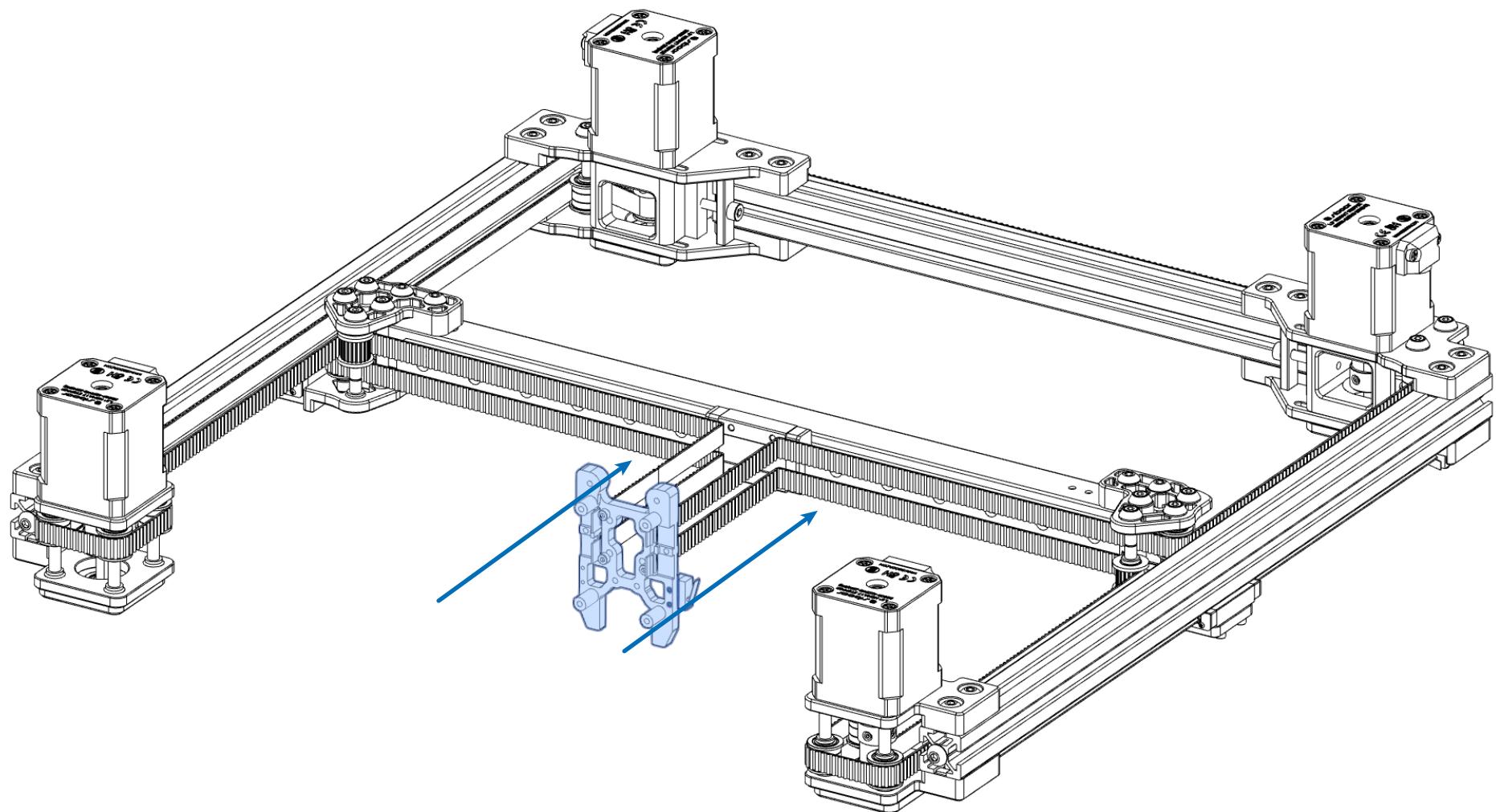
M3×45 SHCS



Using thread sealant on timing pulley set screws prevents them from loosening during use, ensuring secure fastening and operational stability. If thread sealant is unavailable, you can temporarily skip this step.

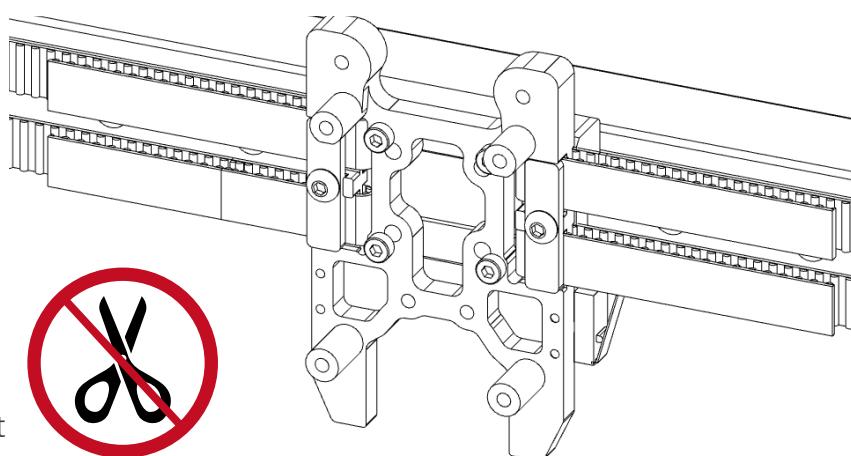
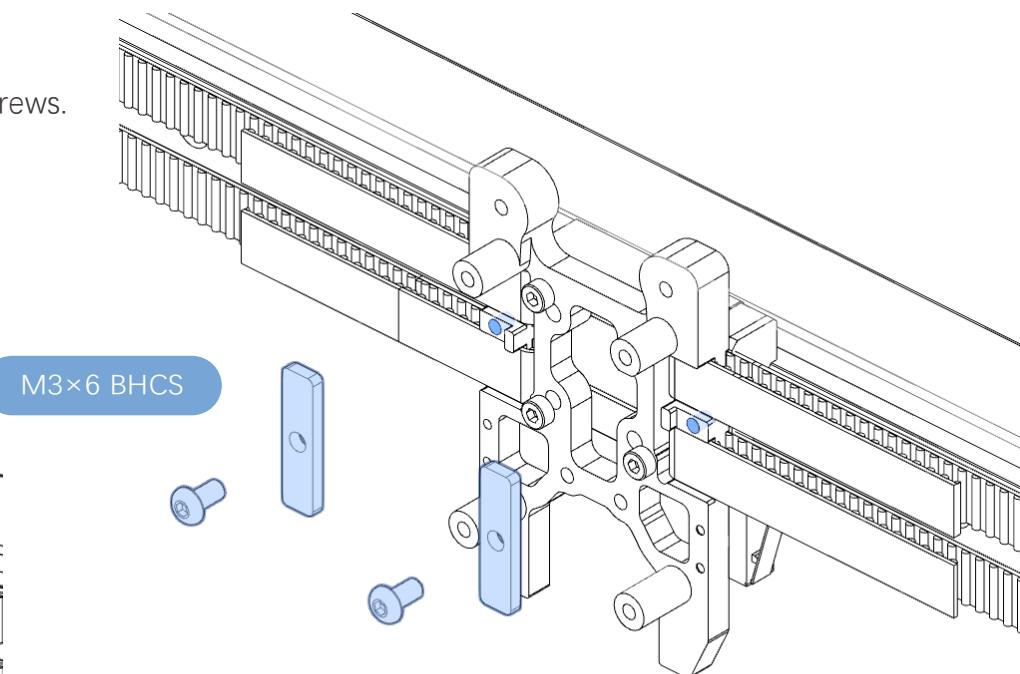
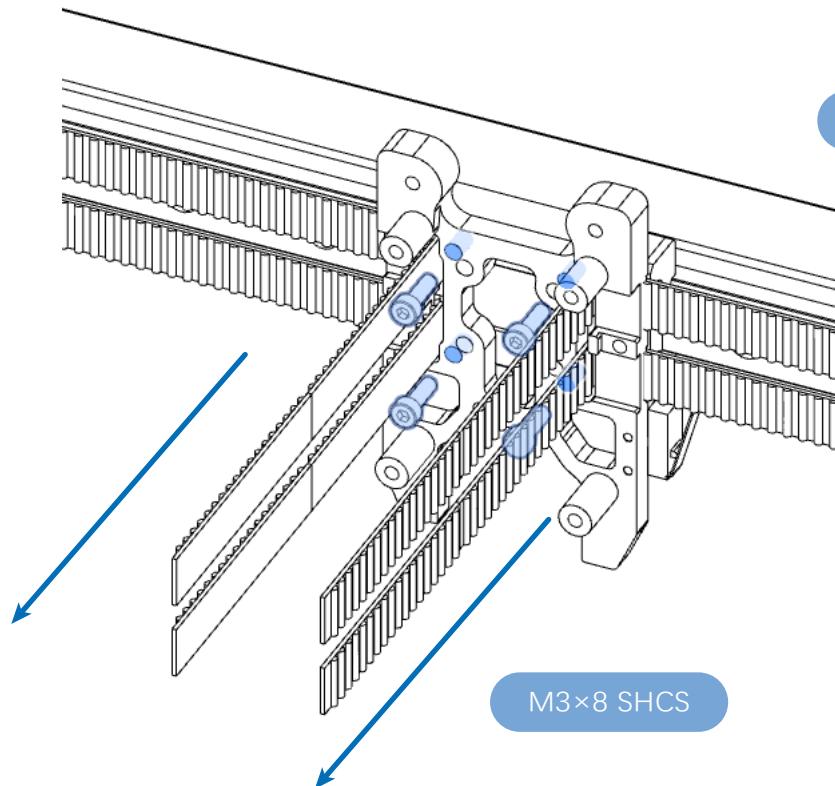






**Instruction**

After tightening the timing belt, secure the M3×8 SHCS screws.



**Do Not Cut the Timing Belt at This Time**

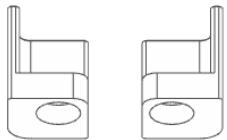
Wait for 24 Hours, Retighten the Timing Belt, Then Cut the Timing Belt

Before sitting down for a cup of coffee,  
check what's left in the CNC KIT to prevent it from disappearing as scrap.



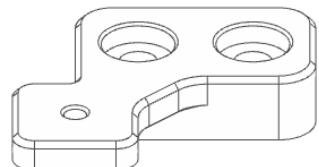
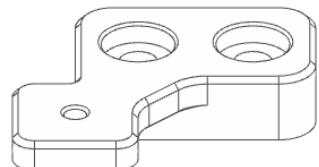
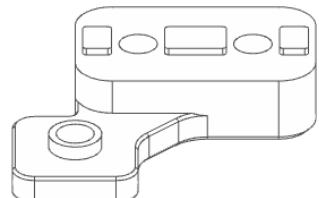
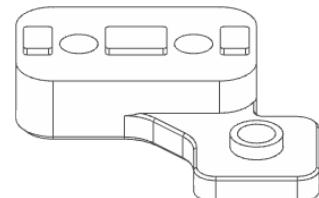
### X-Carriage Extension Block

This is the X-carriage extension block,  
an essential component required when using the Rapido V2.0 hotend.



### PEI Print Bed Locator

This is installed on the heated bed's aluminum  
plate and is used to position the PEI print bed.



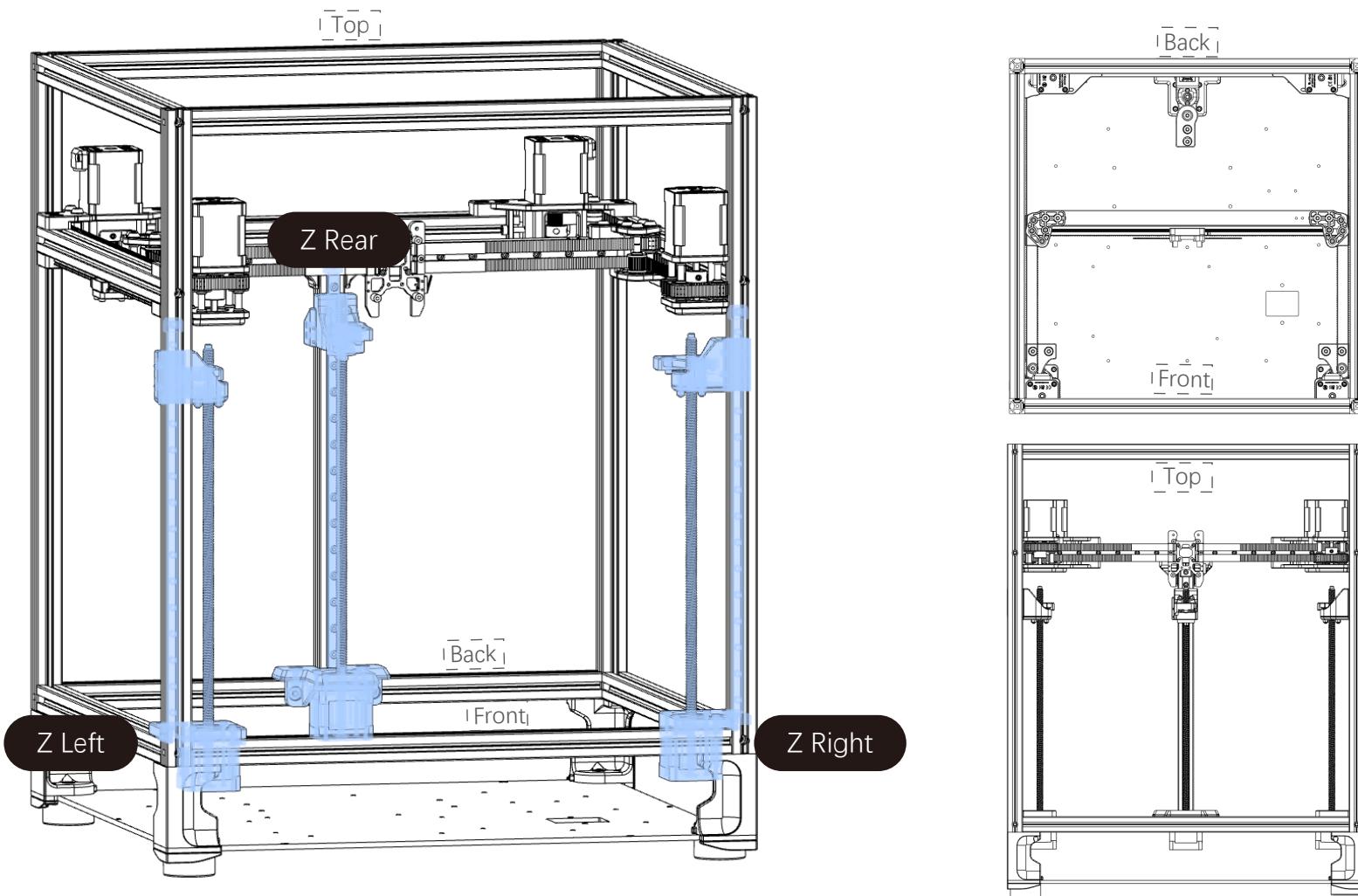
### Front Idler Bracket for 2WD

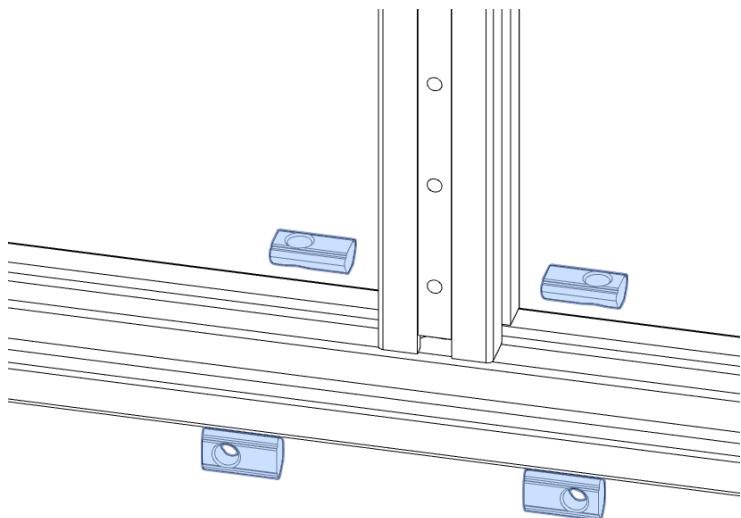
This is the front idler bracket for the 2WD system.  
Once we assemble the AWD, these parts will be idle.

### Take a Break

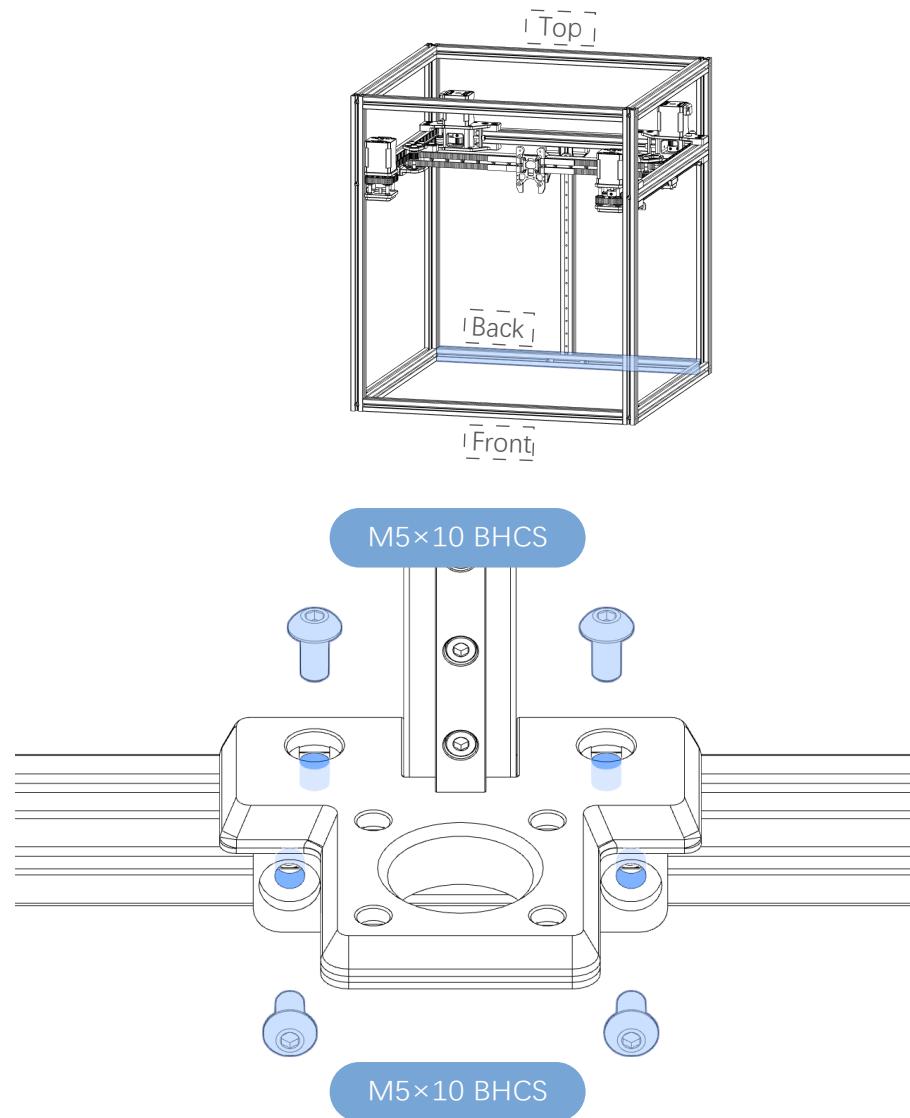
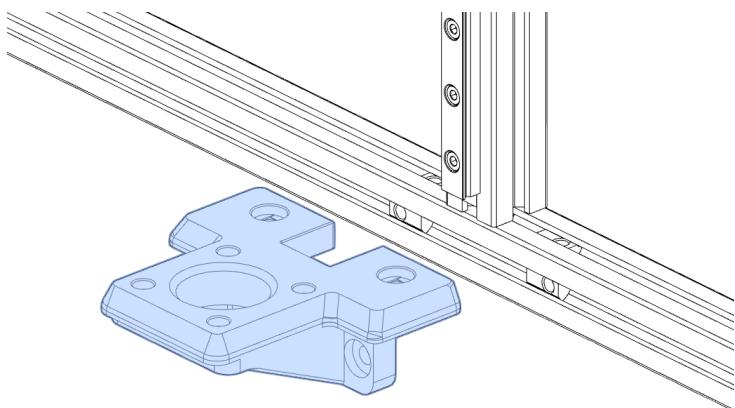
Stop and listen to a song, have a cup of coffee.  
Alternatively, organize the remaining parts and  
tidy up your workspace. Then start fresh.

Waiting for the rendered image to fill...



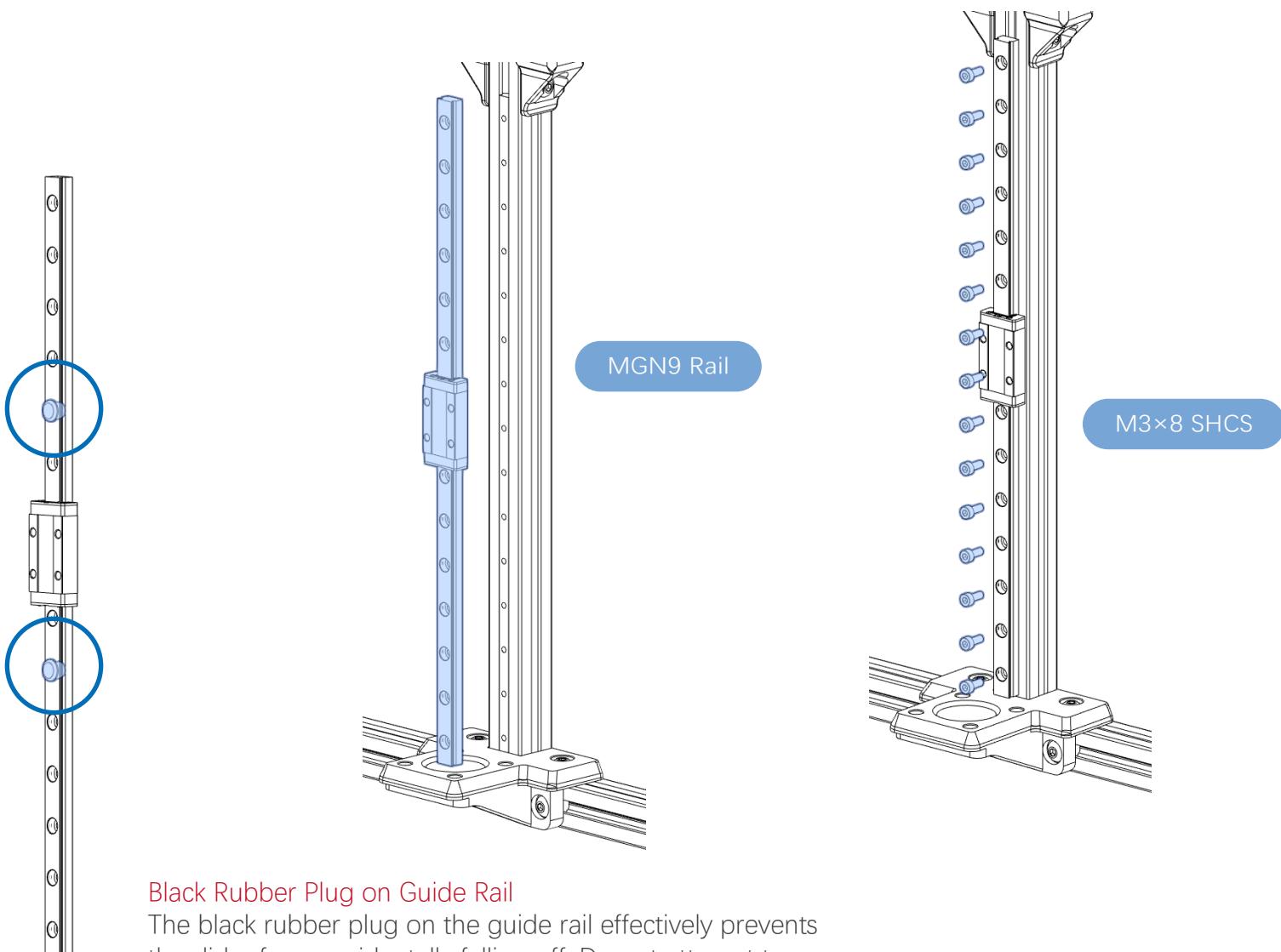


M5 T-Nut



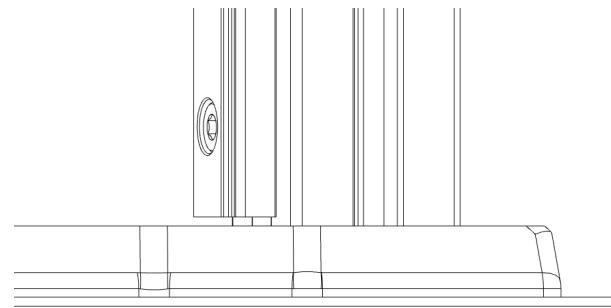
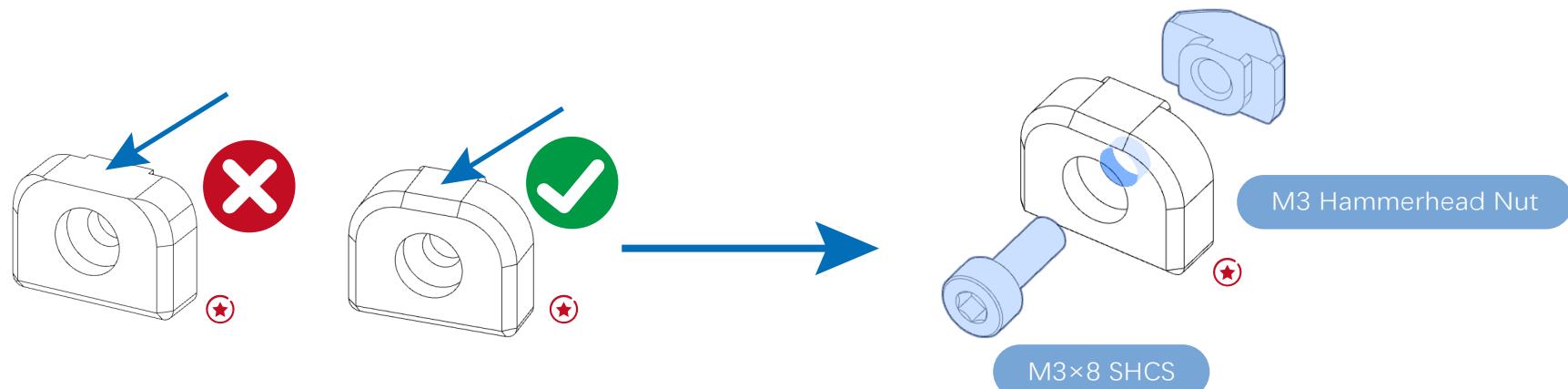
M5×10 BHCS

M5×10 BHCS



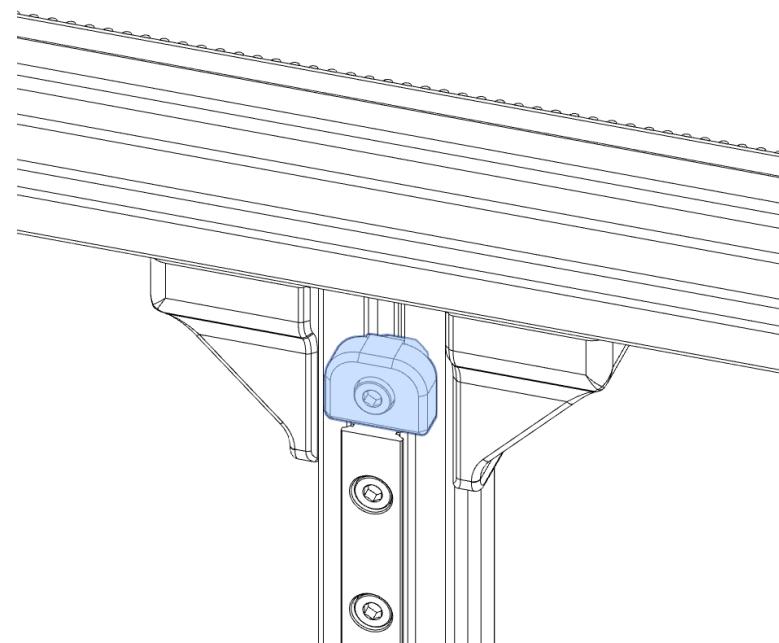
#### Black Rubber Plug on Guide Rail

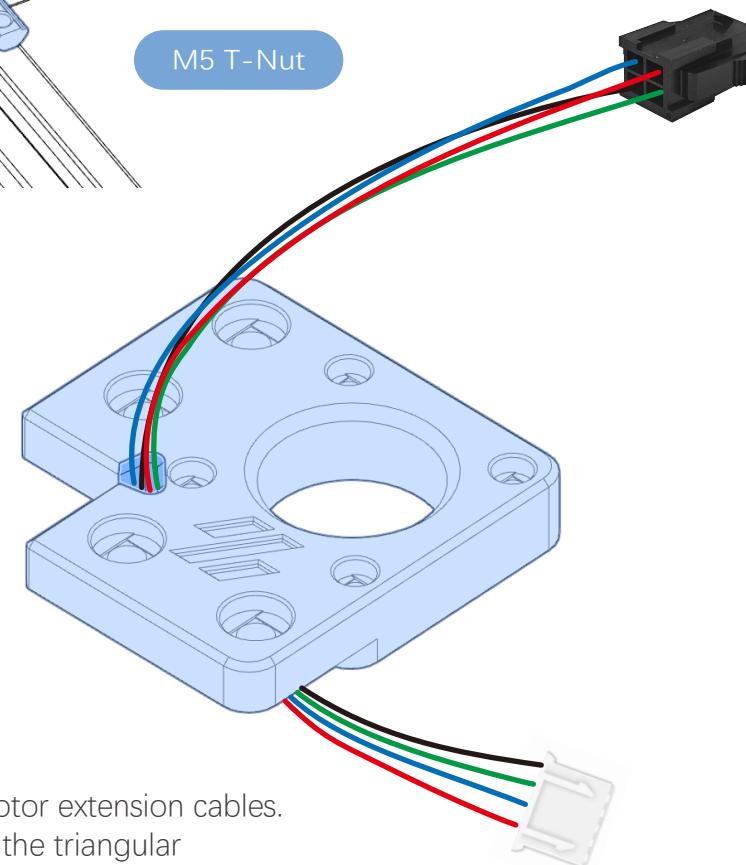
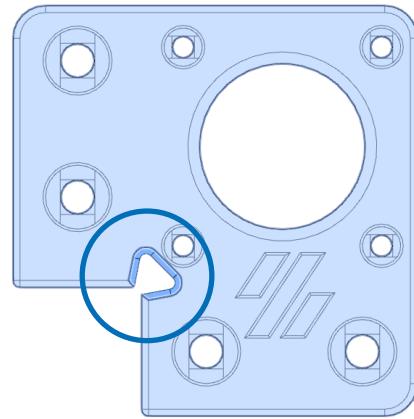
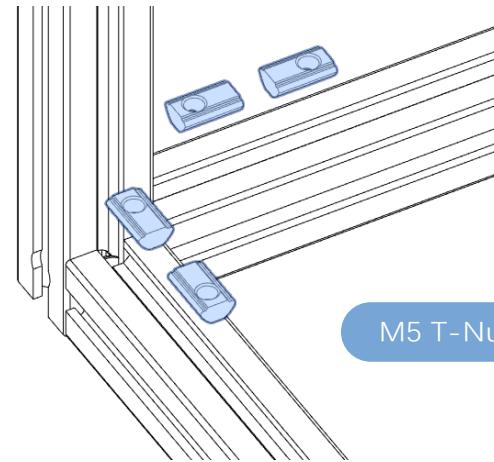
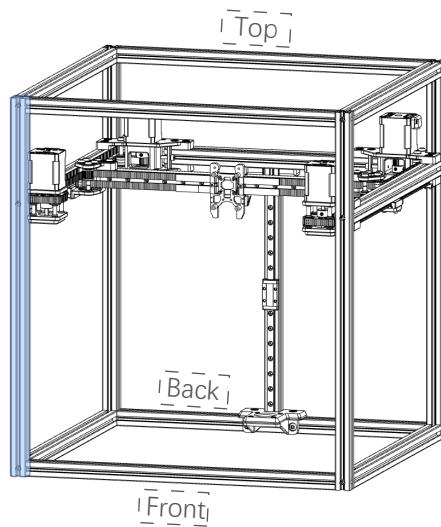
The black rubber plug on the guide rail effectively prevents the slider from accidentally falling off. Do not attempt to remove it before installing the screws. This will help you succeed.



#### BOTTOM GAP

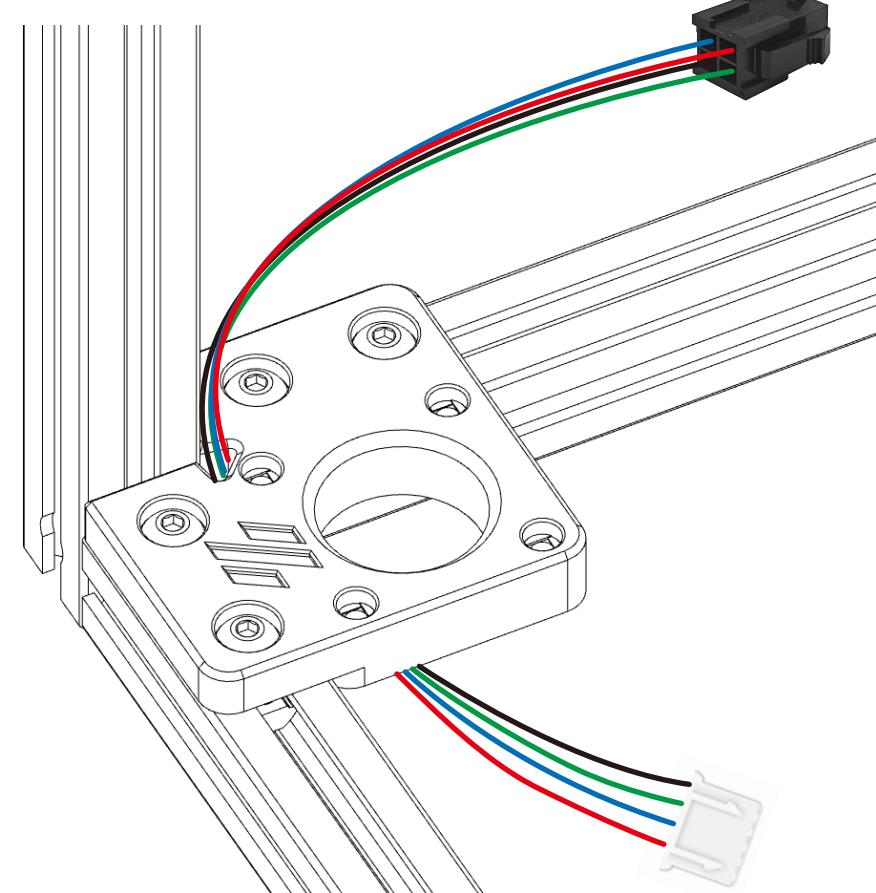
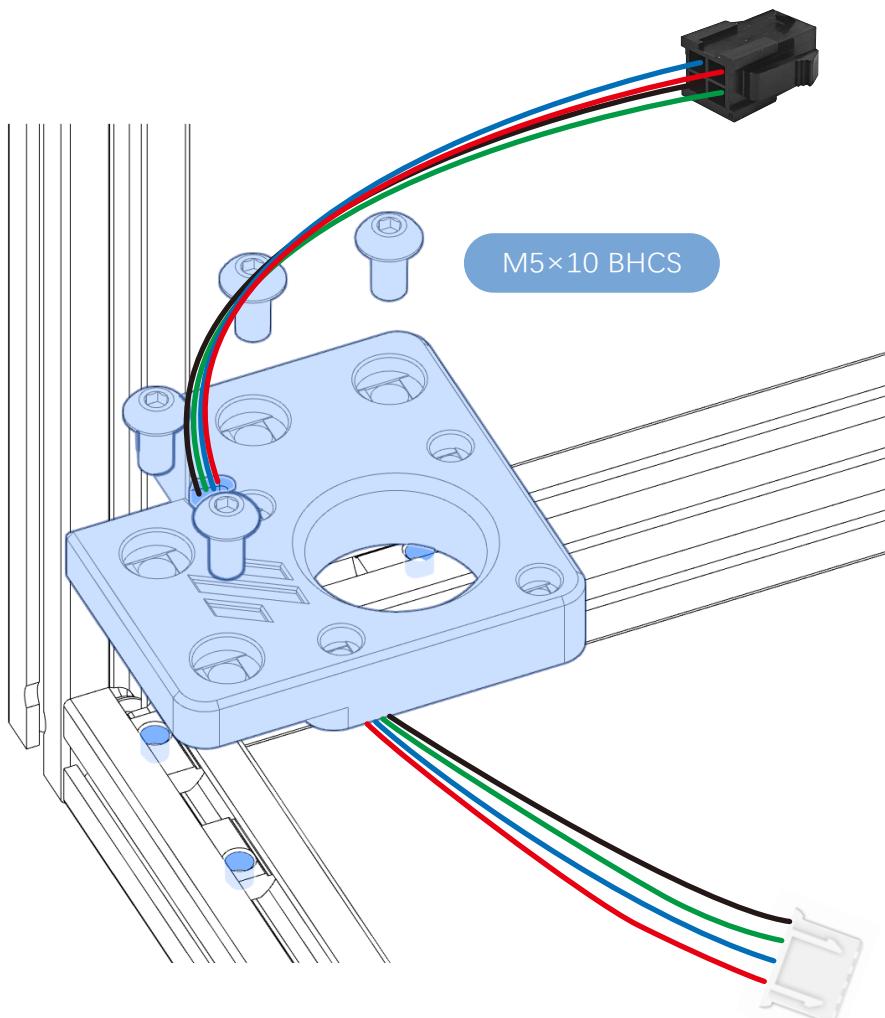
Leave a small gap between the printed part and the rail. 1-2mm is fine.

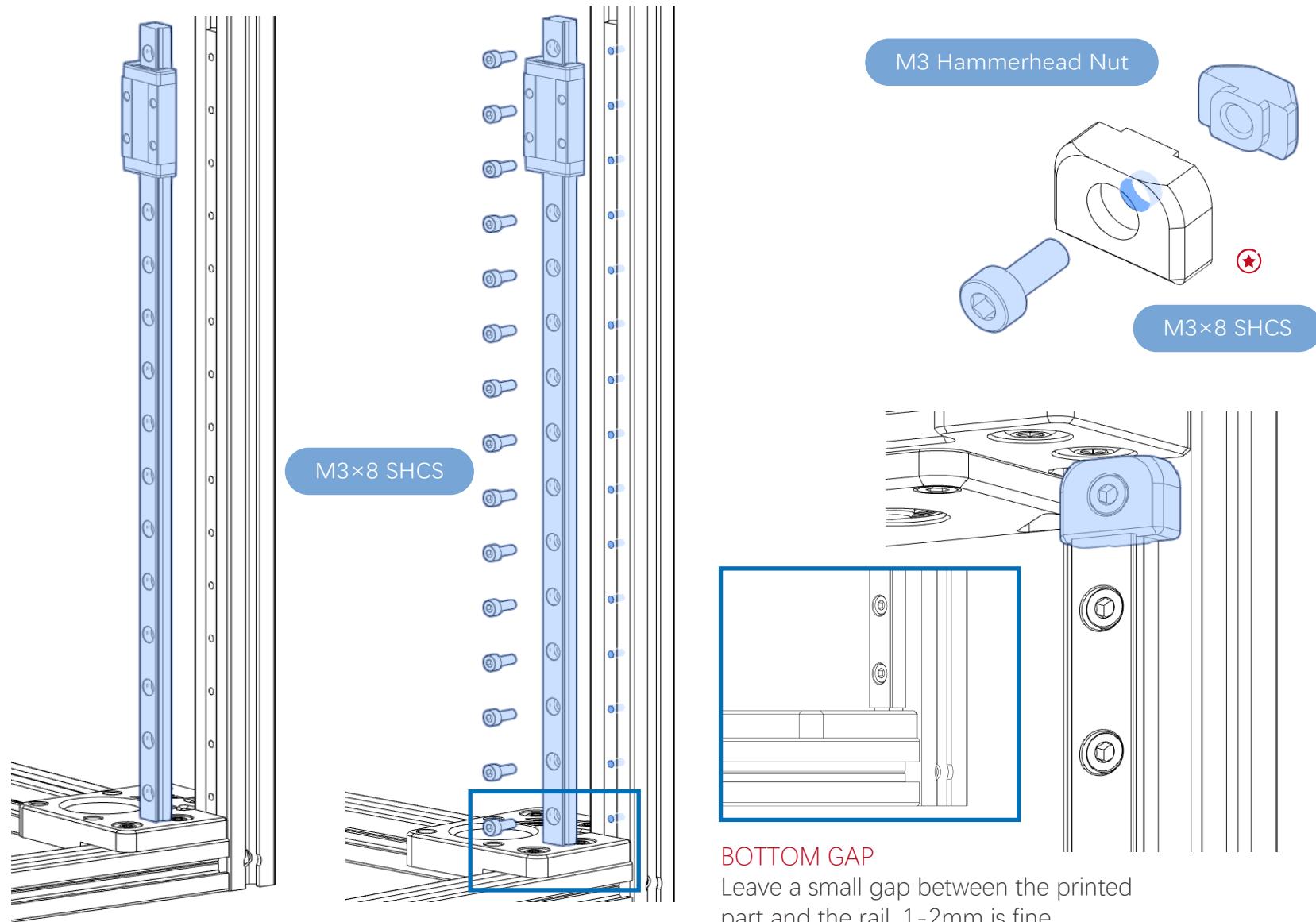


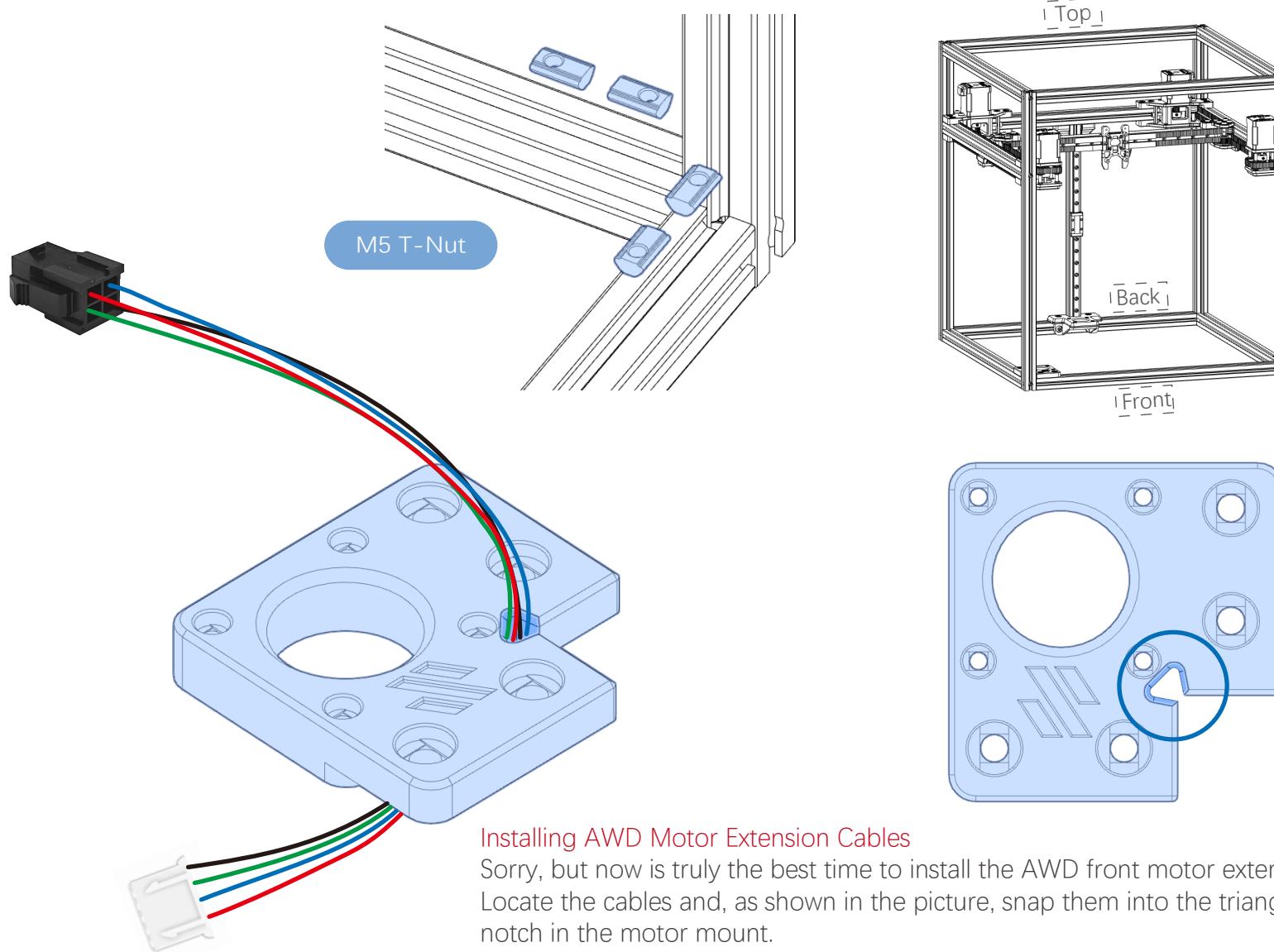


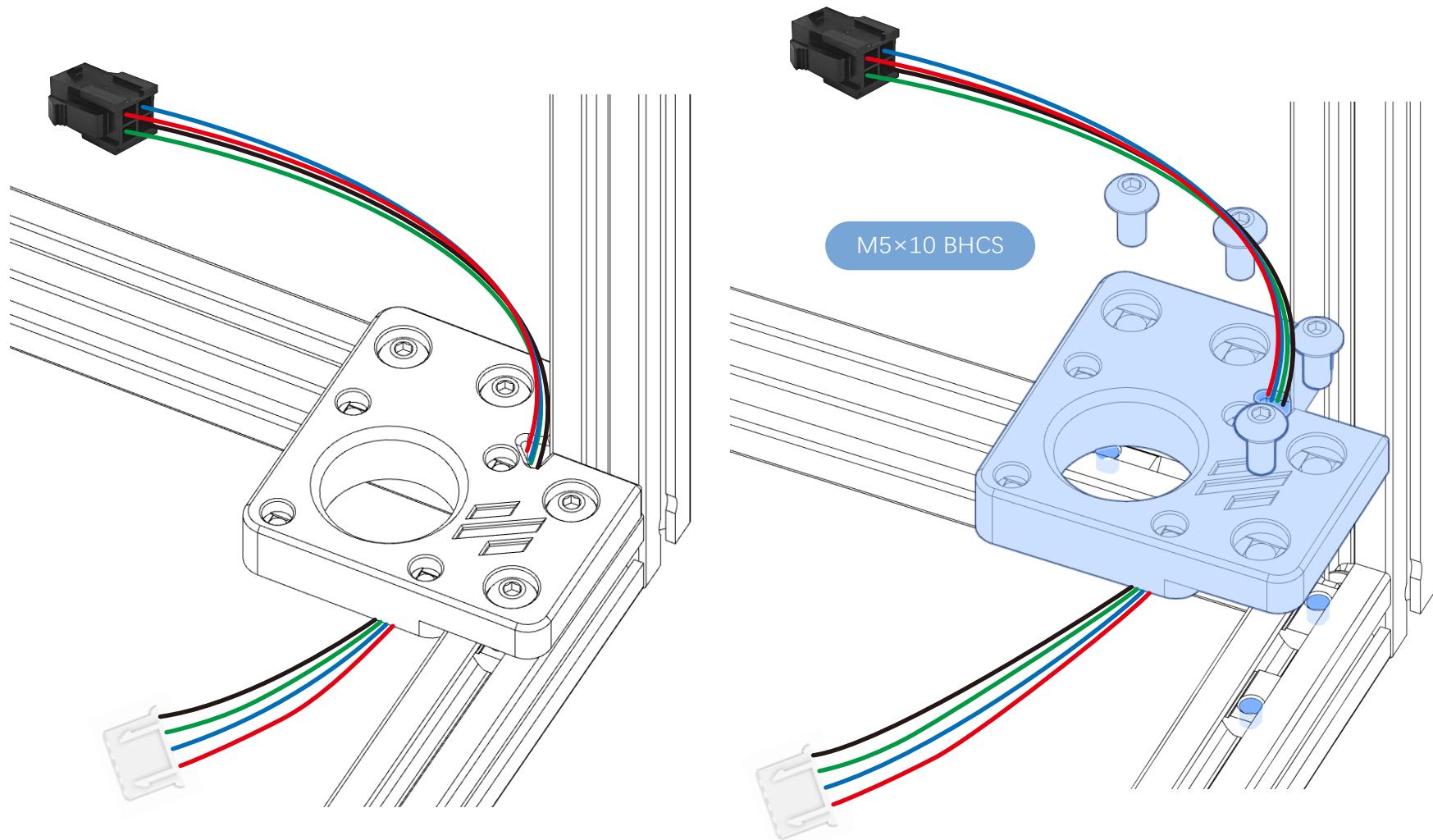
### Installing AWD Motor Extension Cables

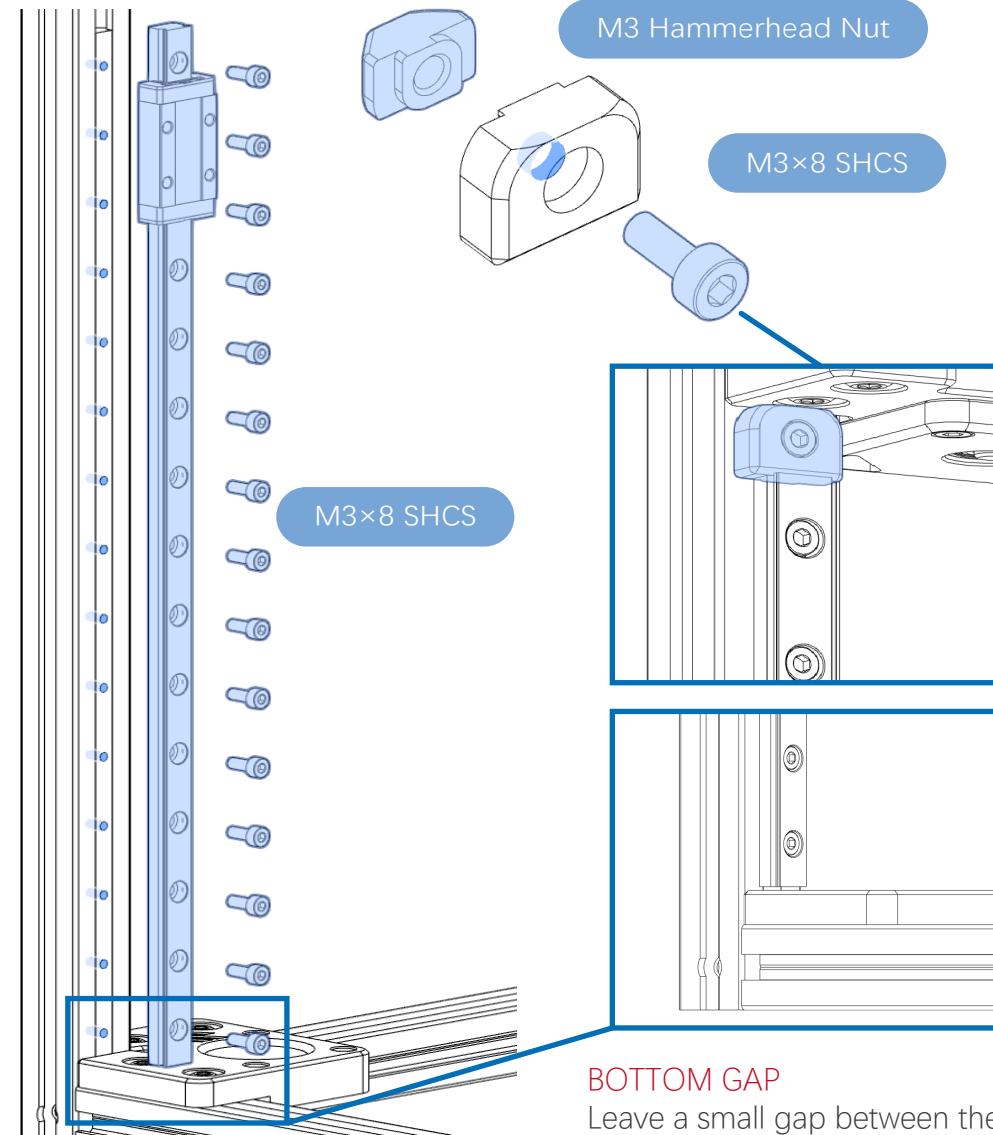
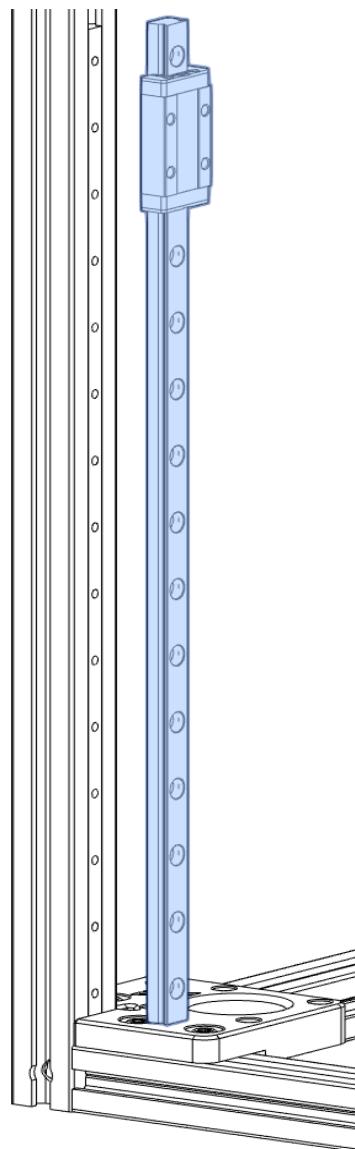
Sorry, but now is truly the best time to install the AWD front motor extension cables. Locate the cables and, as shown in the picture, snap them into the triangular notch in the motor mount.



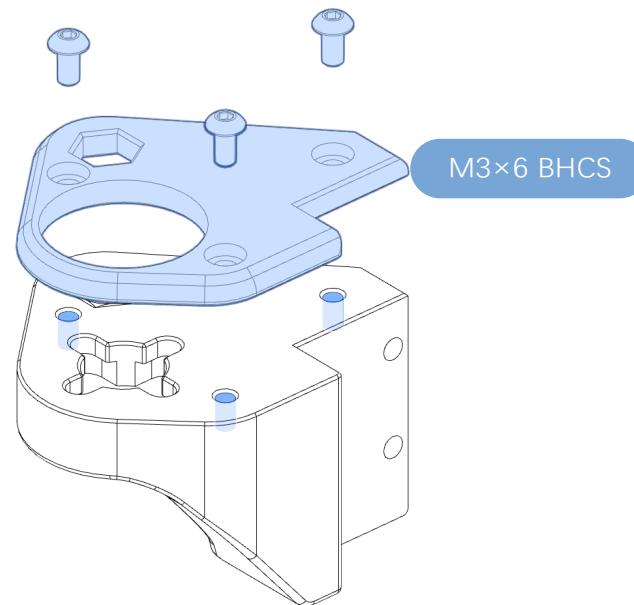
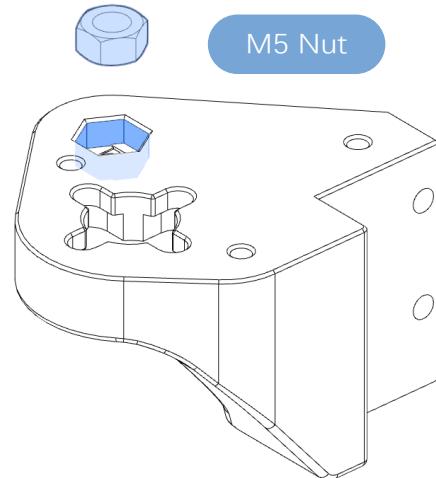






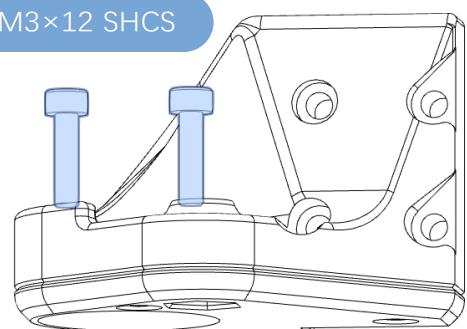
**BOTTOM GAP**

Leave a small gap between the printed part and the rail. 1-2mm is fine.

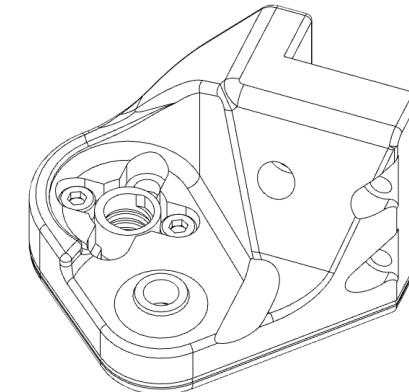
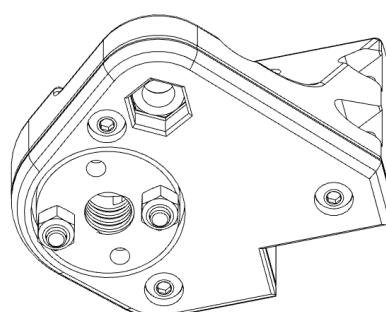
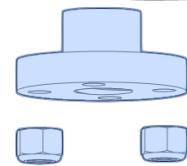


### DON'T FULLY TIGHTEN

For best results do not tighten fully.

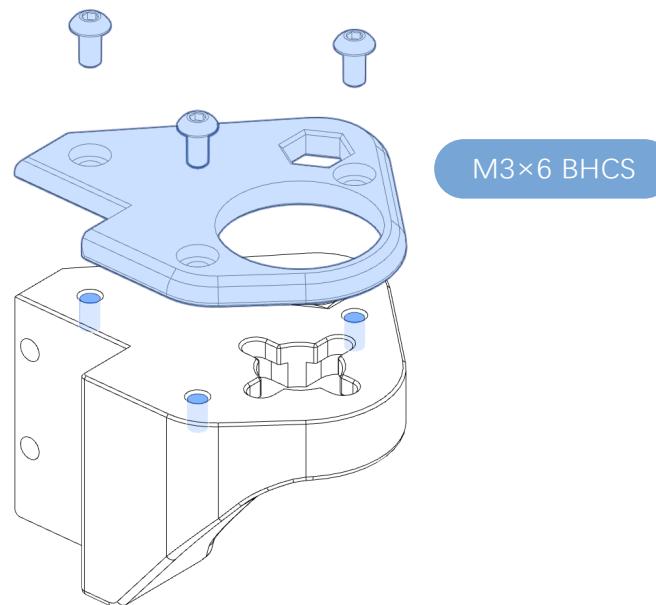


Leadbolt Nut



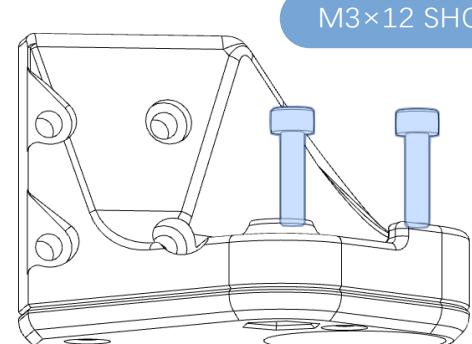
### Leadbolt Nut?

Where is the leadbolt nut? It is installed on the leadscrew motor and can be removed from the leadscrew.



### DON'T FULLY TIGHTEN

For best results do not tighten fully.



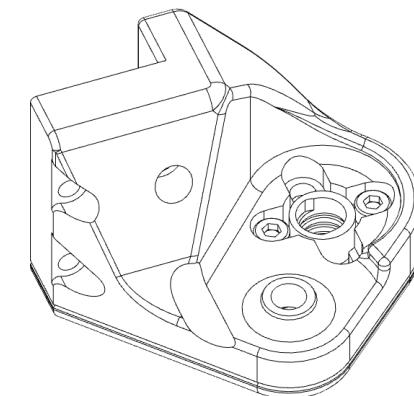
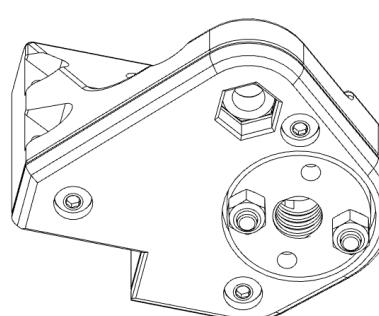
Leadbolt Nut

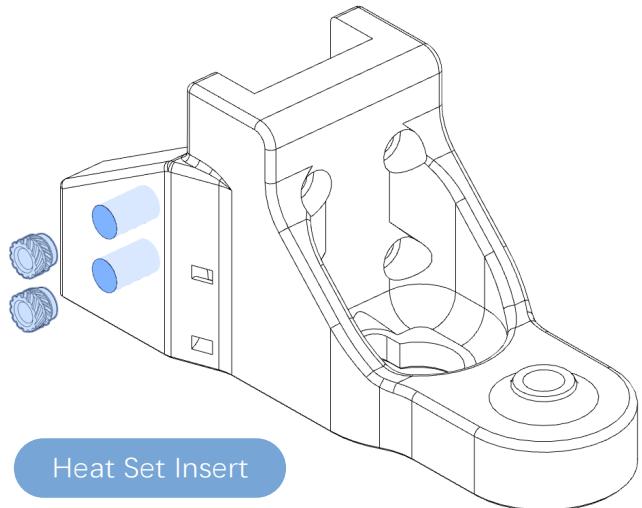
M3 Lock Nut



### Leadbolt Nut?

Where is the leadbolt nut? It is installed on the leadscrew motor and can be removed from the leadscrew.

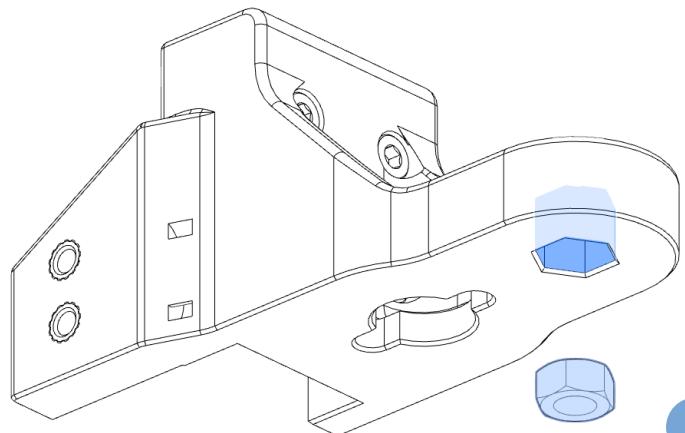




### HEAT SET INSERTS

This design relies heavily on heat set inserts. If you've never worked with heat set inserts before we recommend you watch the linked guide.

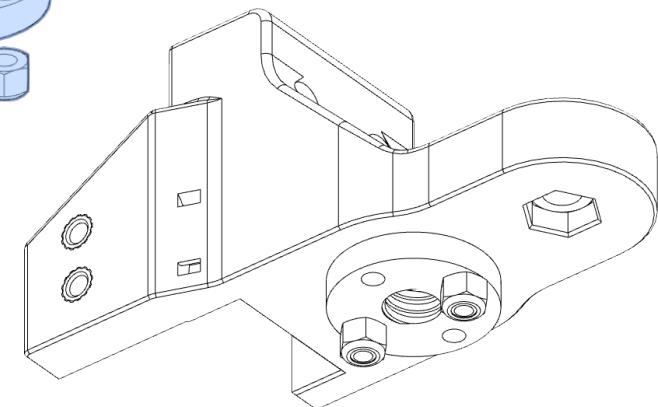
<https://voron.link/m5ybt4d>



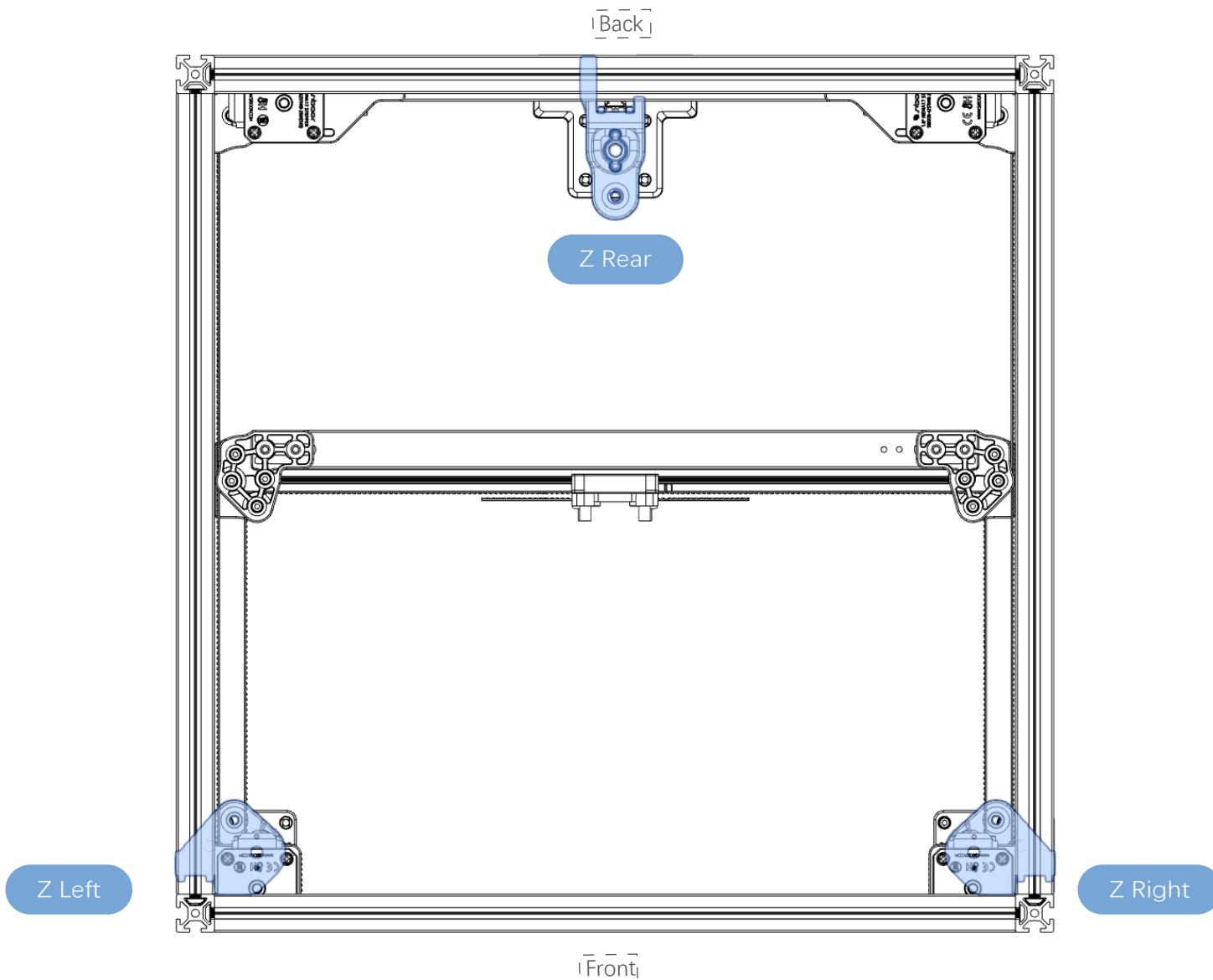
Leadbolt Nut

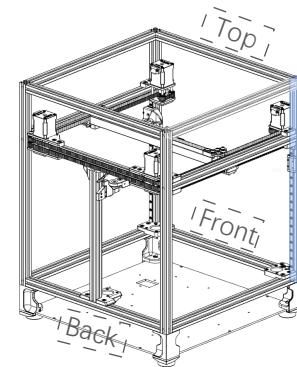
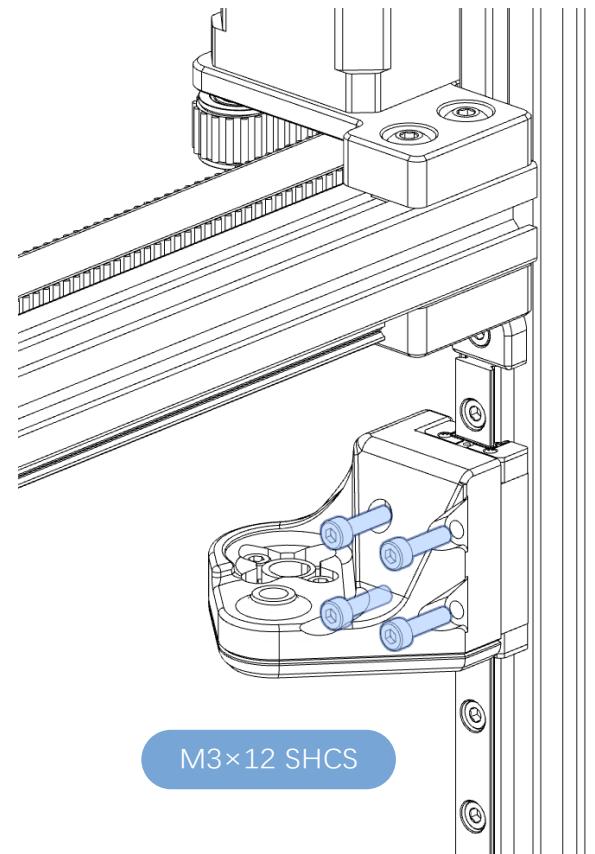
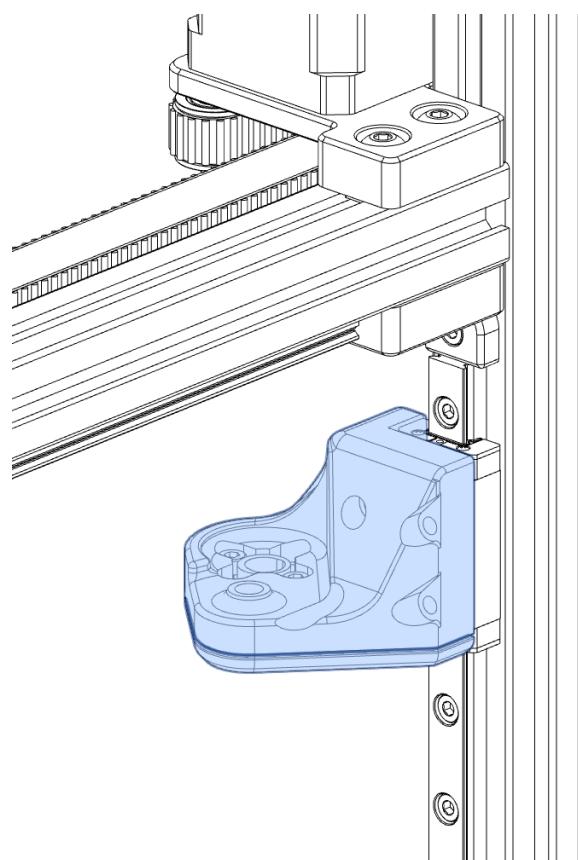


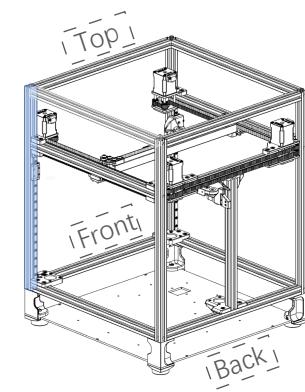
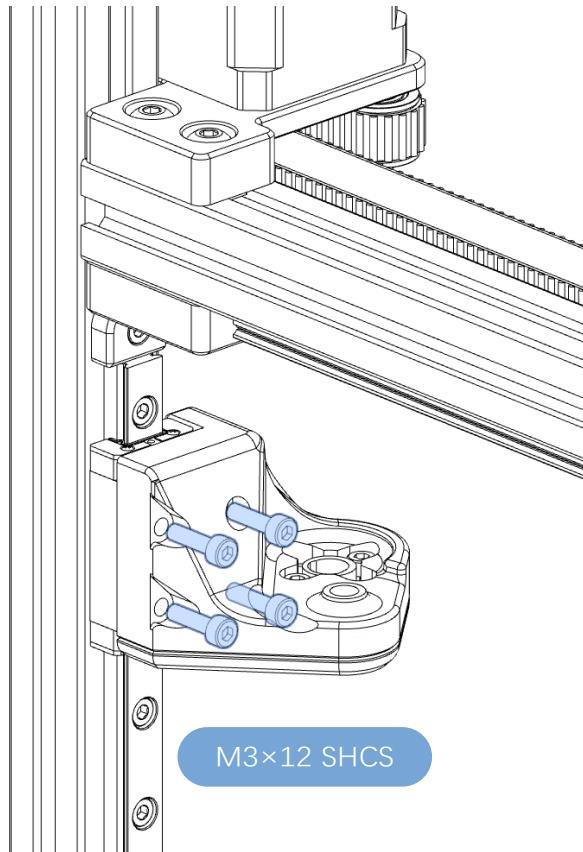
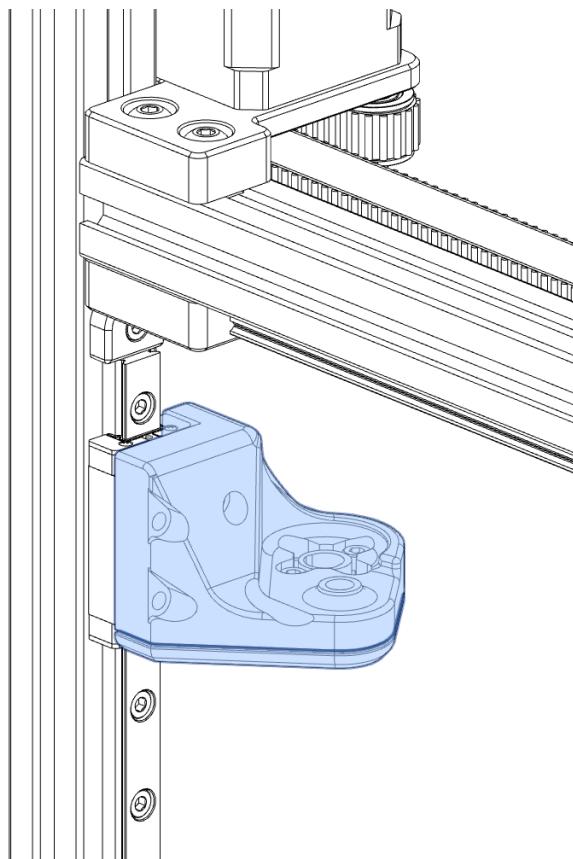
M3 Lock Nut

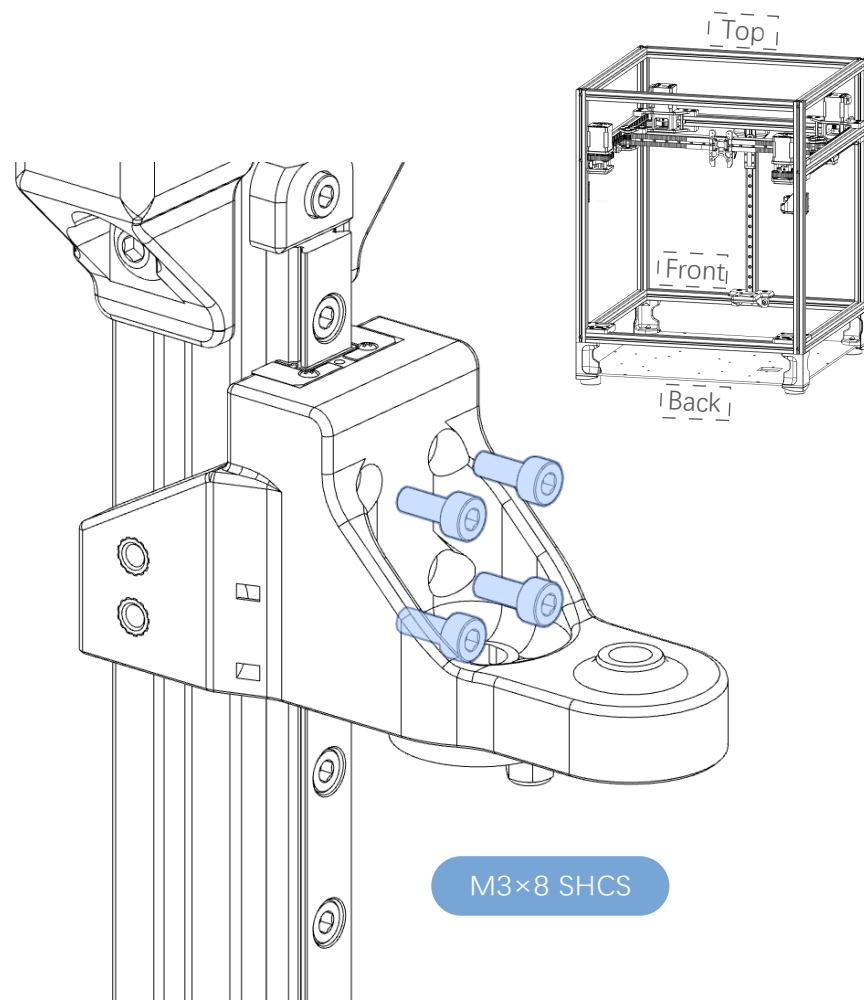
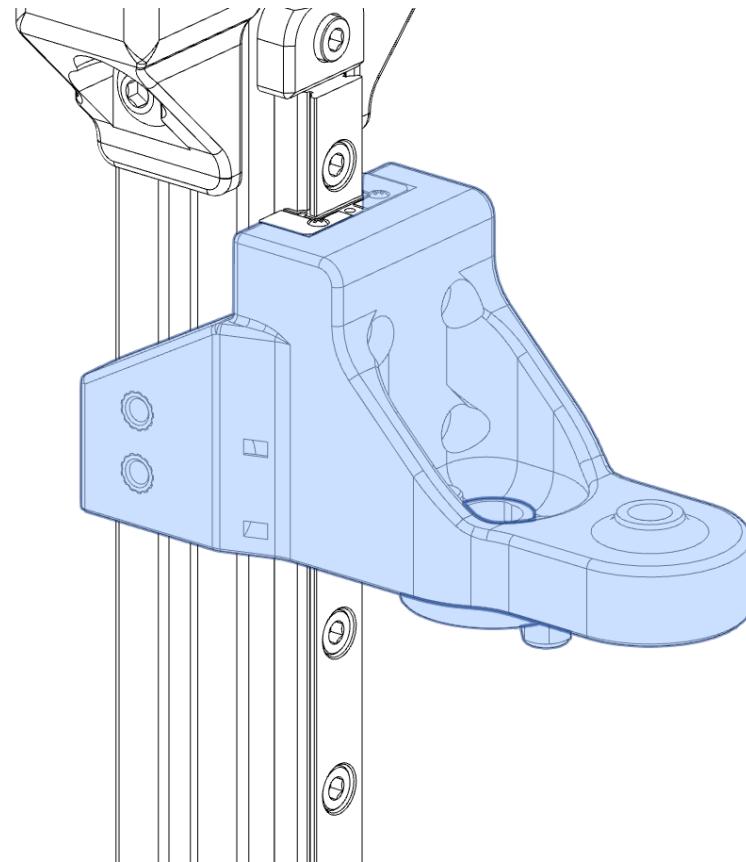


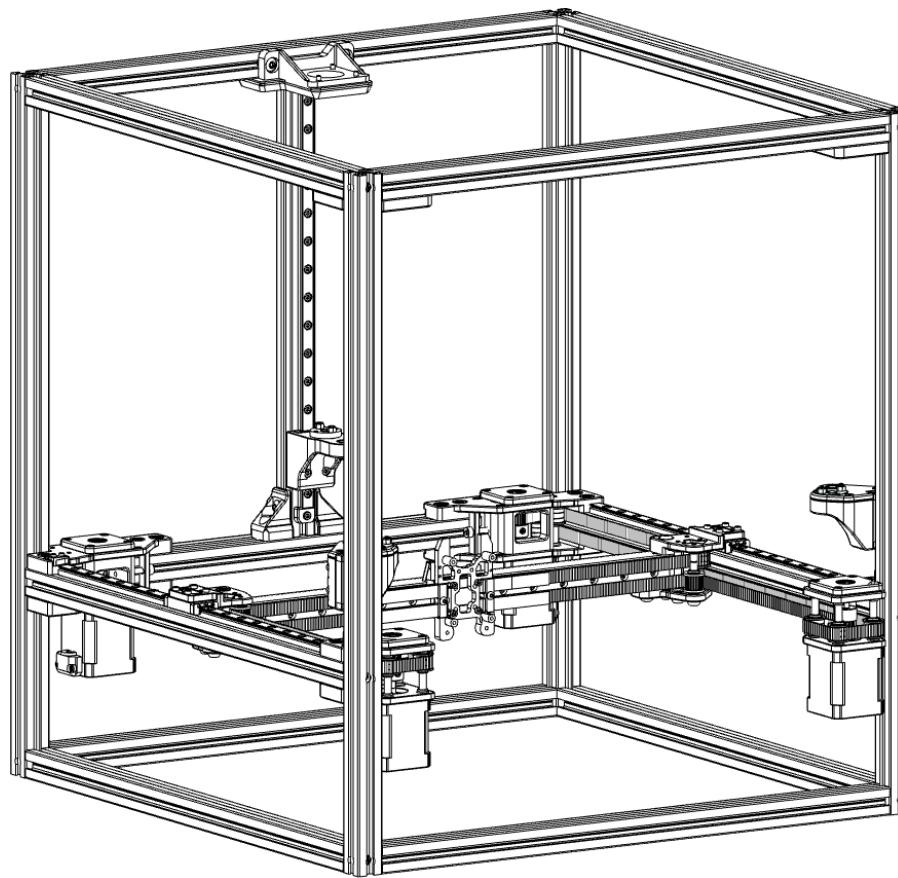
M5 Nut



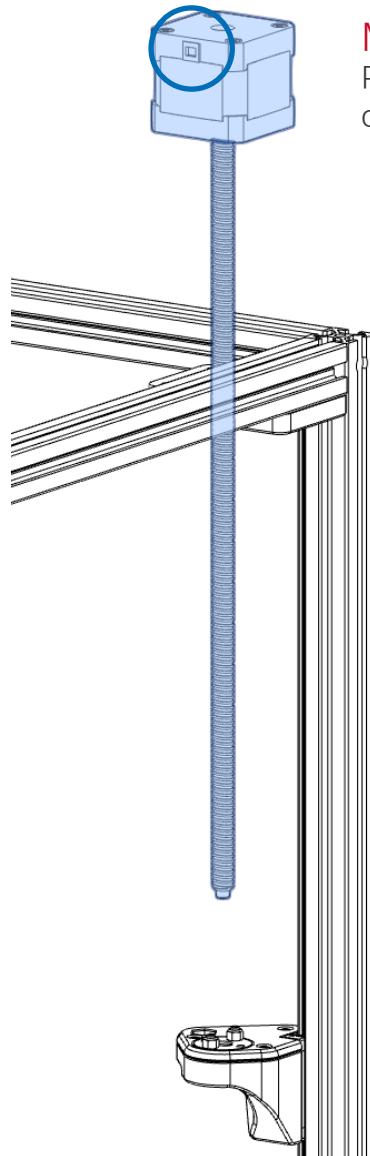






**FLIP UPSIDE DOWN**

Turn the printer upside down for the next assembly steps.

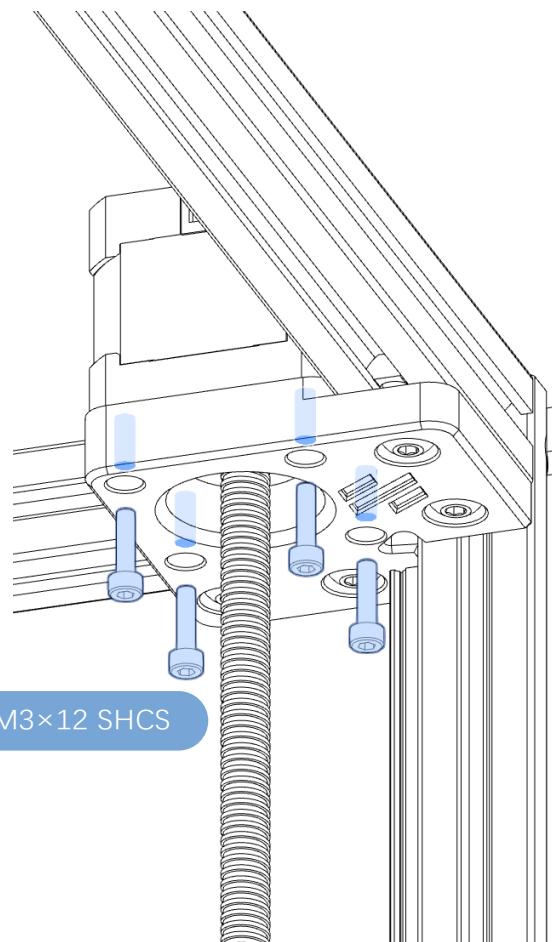


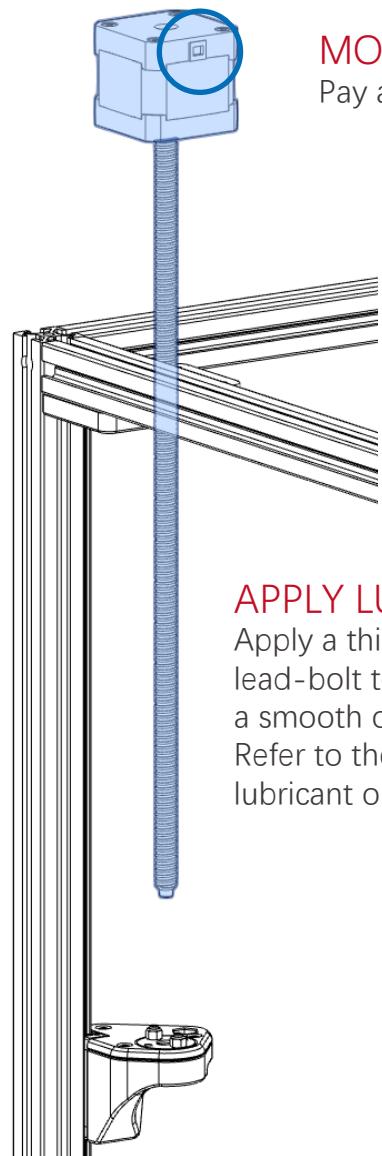
### MOTOR ORIENTATION

Pay attention to the orientation of the cable exit.

### APPLY LUBRICATION

Apply a thin layer of grease to the lead-bolt to prevent rust and ensure a smooth operation.  
Refer to the sourcing guide for lubricant options.



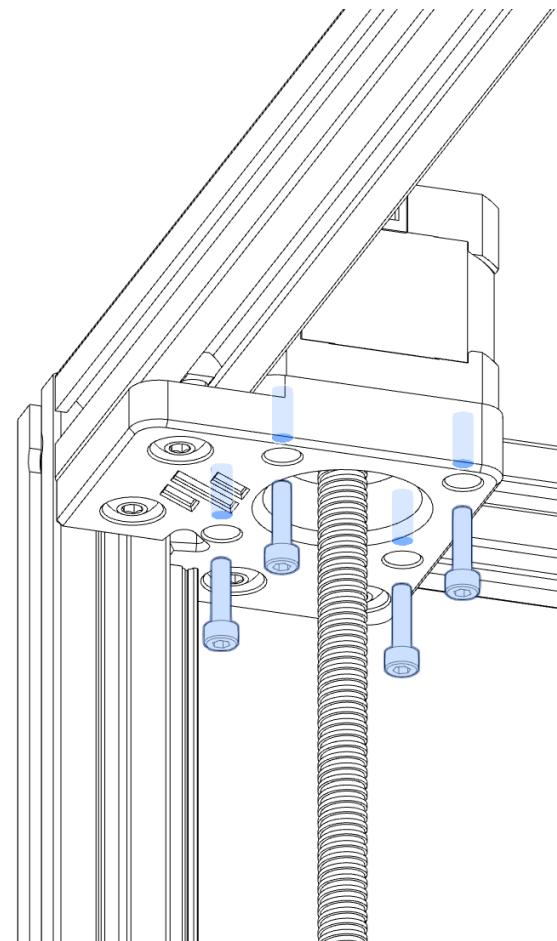


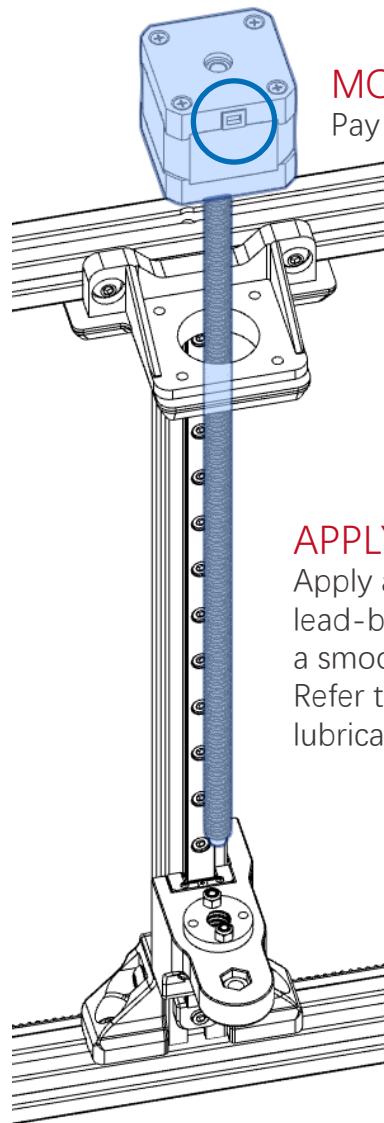
### MOTOR ORIENTATION

Pay attention to the orientation of the cable exit.

### APPLY LUBRICATION

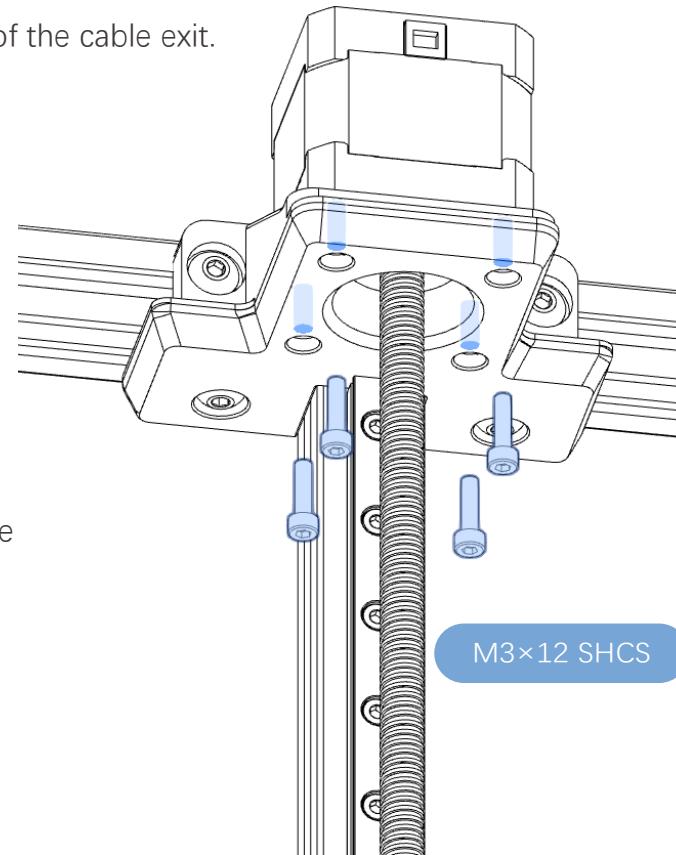
Apply a thin layer of grease to the lead-bolt to prevent rust and ensure a smooth operation.  
Refer to the sourcing guide for lubricant options.





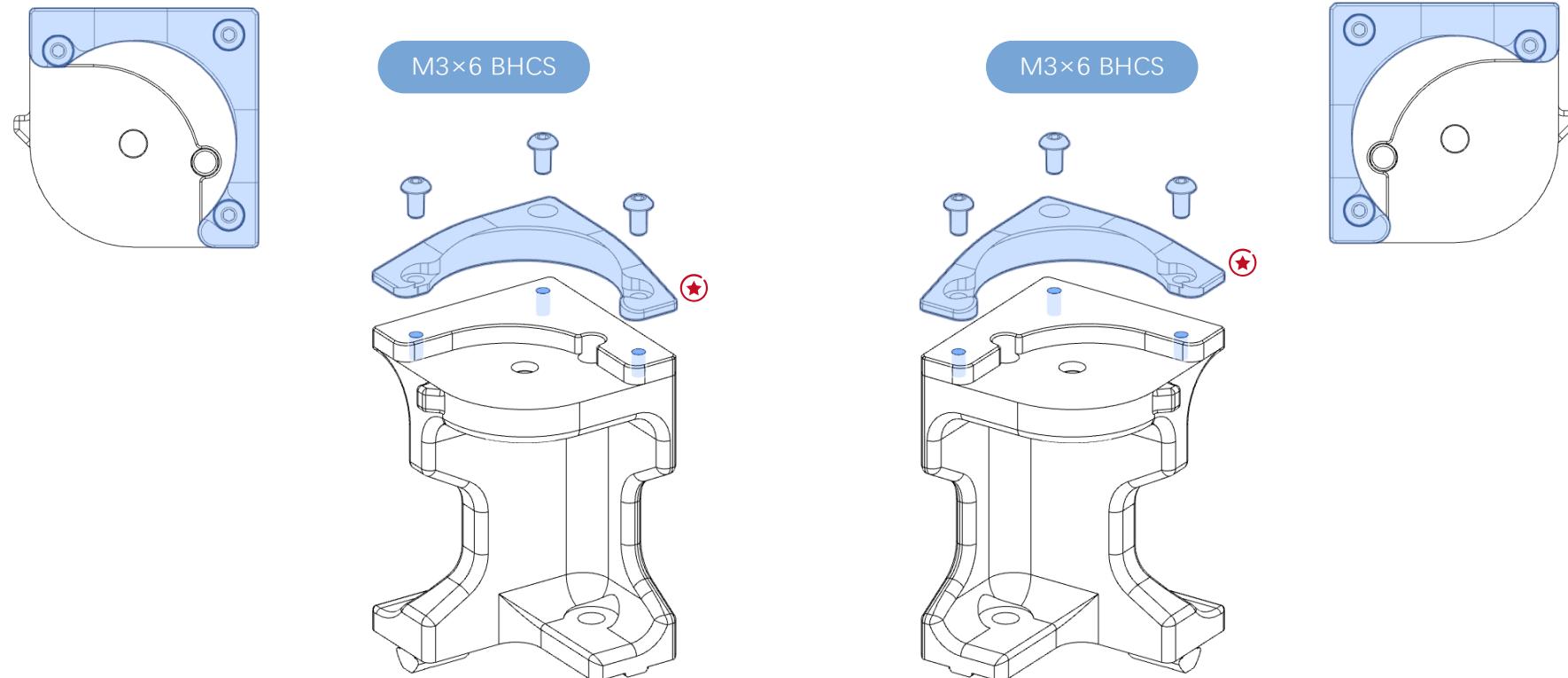
### MOTOR ORIENTATION

Pay attention to the orientation of the cable exit.



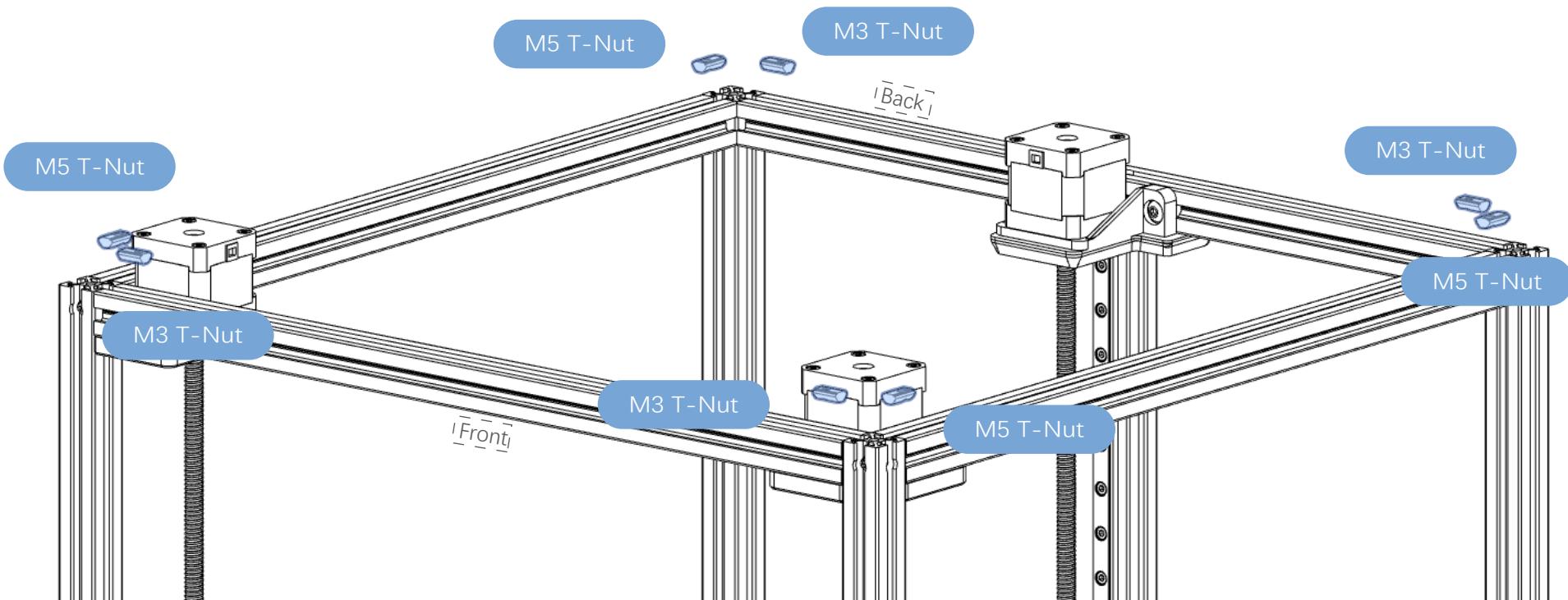
### APPLY LUBRICATION

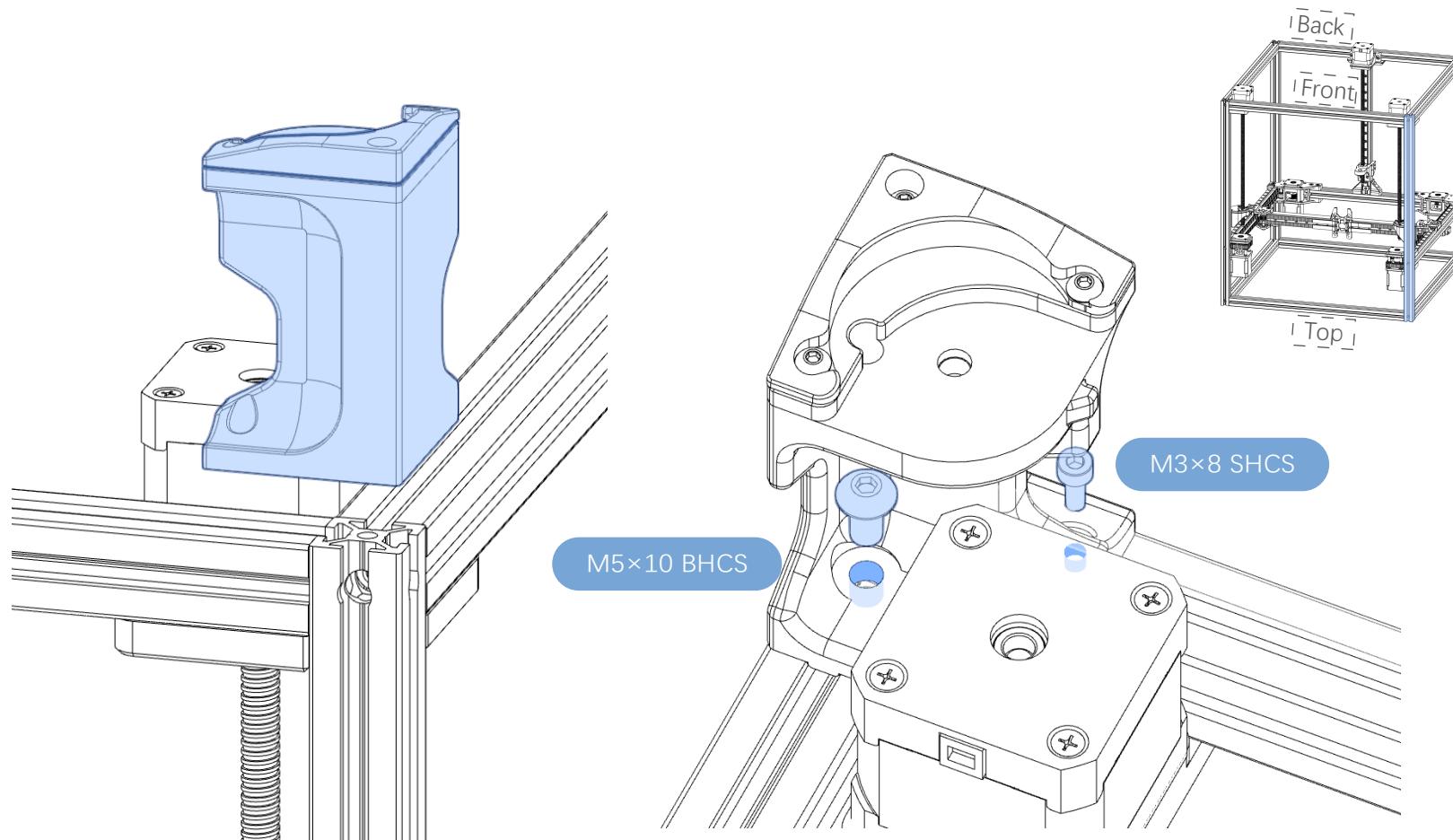
Apply a thin layer of grease to the lead-bolt to prevent rust and ensure a smooth operation.  
Refer to the sourcing guide for lubricant options.

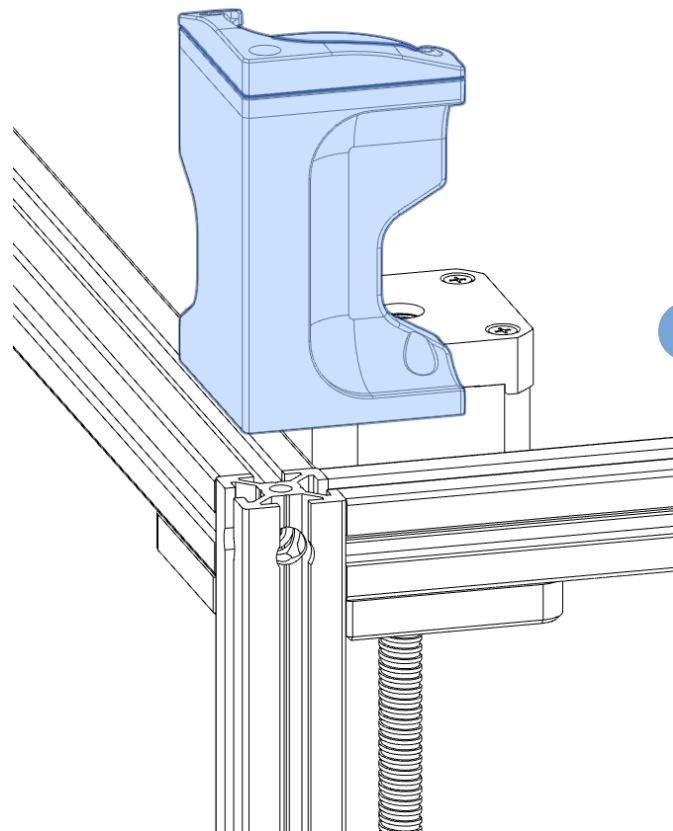


### ASSEMBLE FOUR FEET

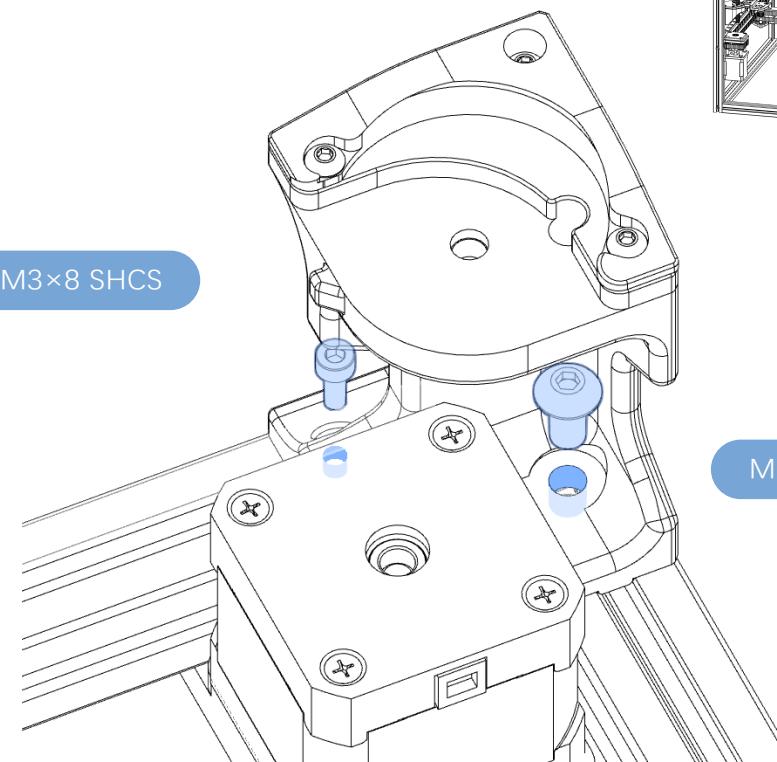
Repeat the instructions and assemble all four feet.



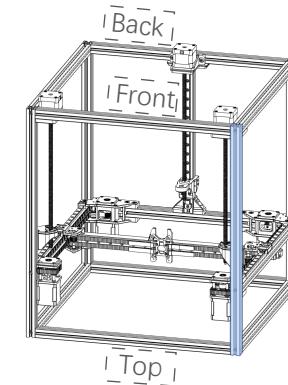


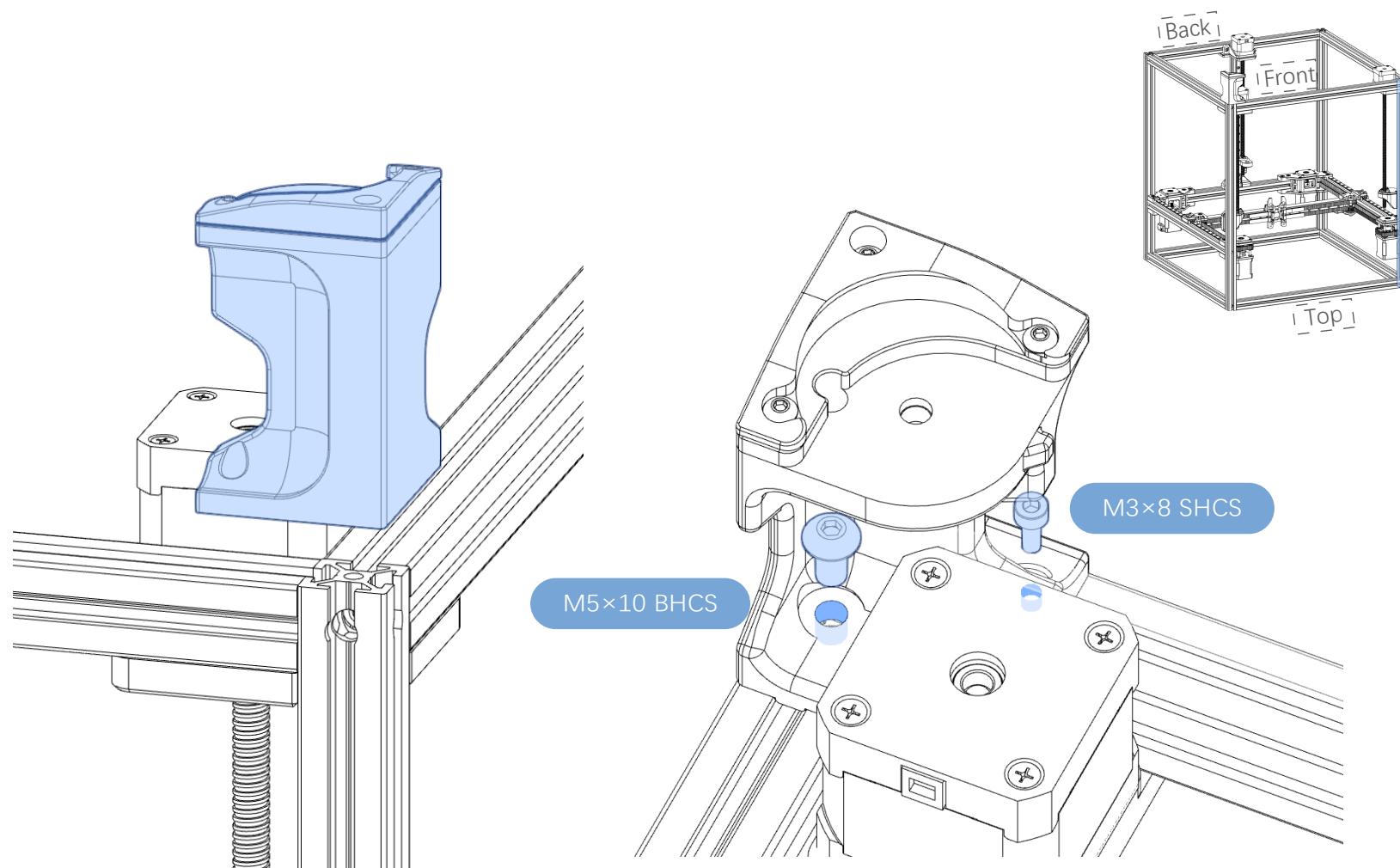


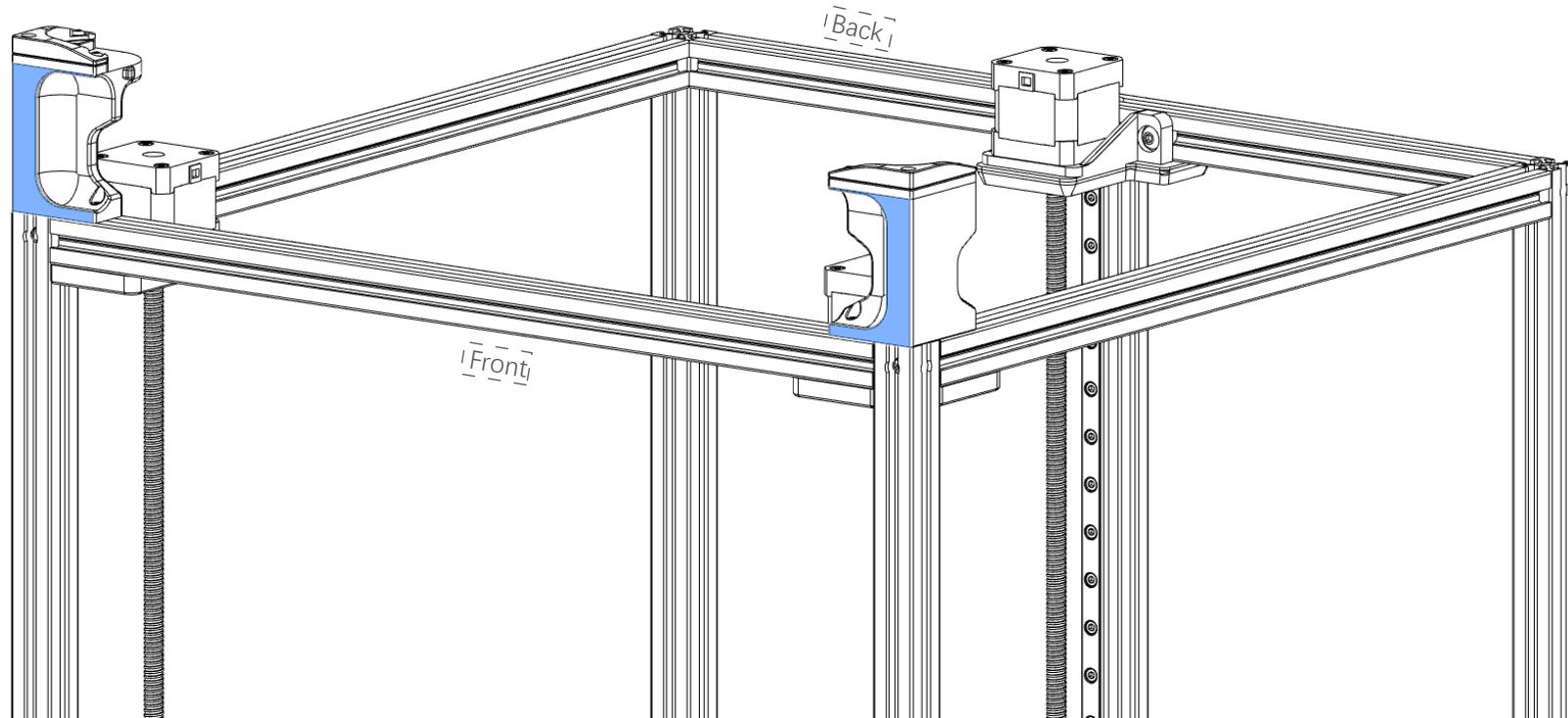
M3×8 SHCS



M5×10 BHCS

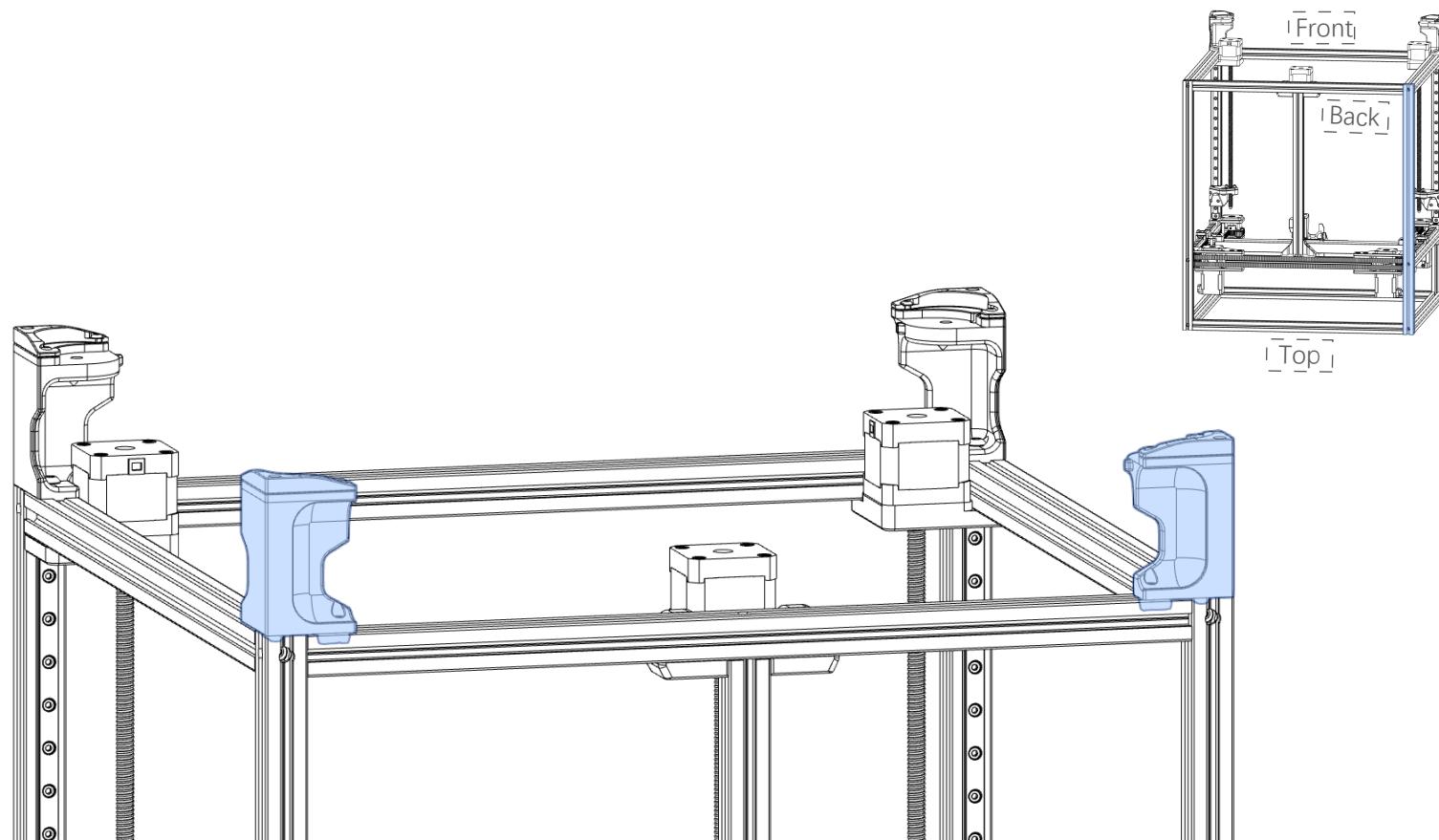






### MIND THE PART ORIENTATION

The profile shown above are towards the front and rear of the printer.

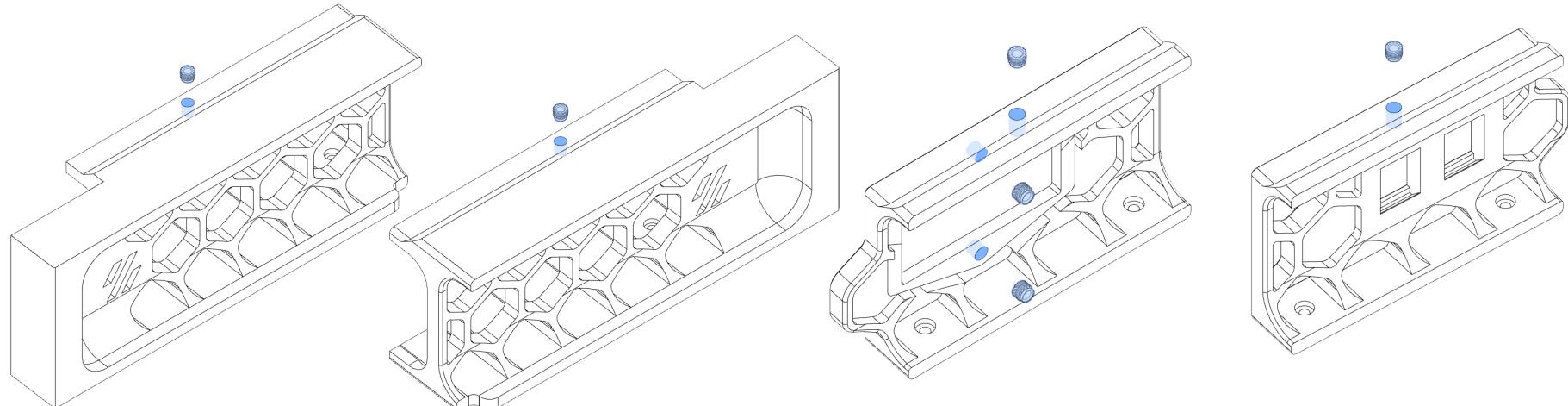


### MIND THE PART ORIENTATION

The profile shown above are towards the front and rear of the printer.

Waiting for the rendered image to fill...

Report, Commander,  
we have discovered a batch of ABS printed parts that require heat set inserts...



Heat Set Insert

