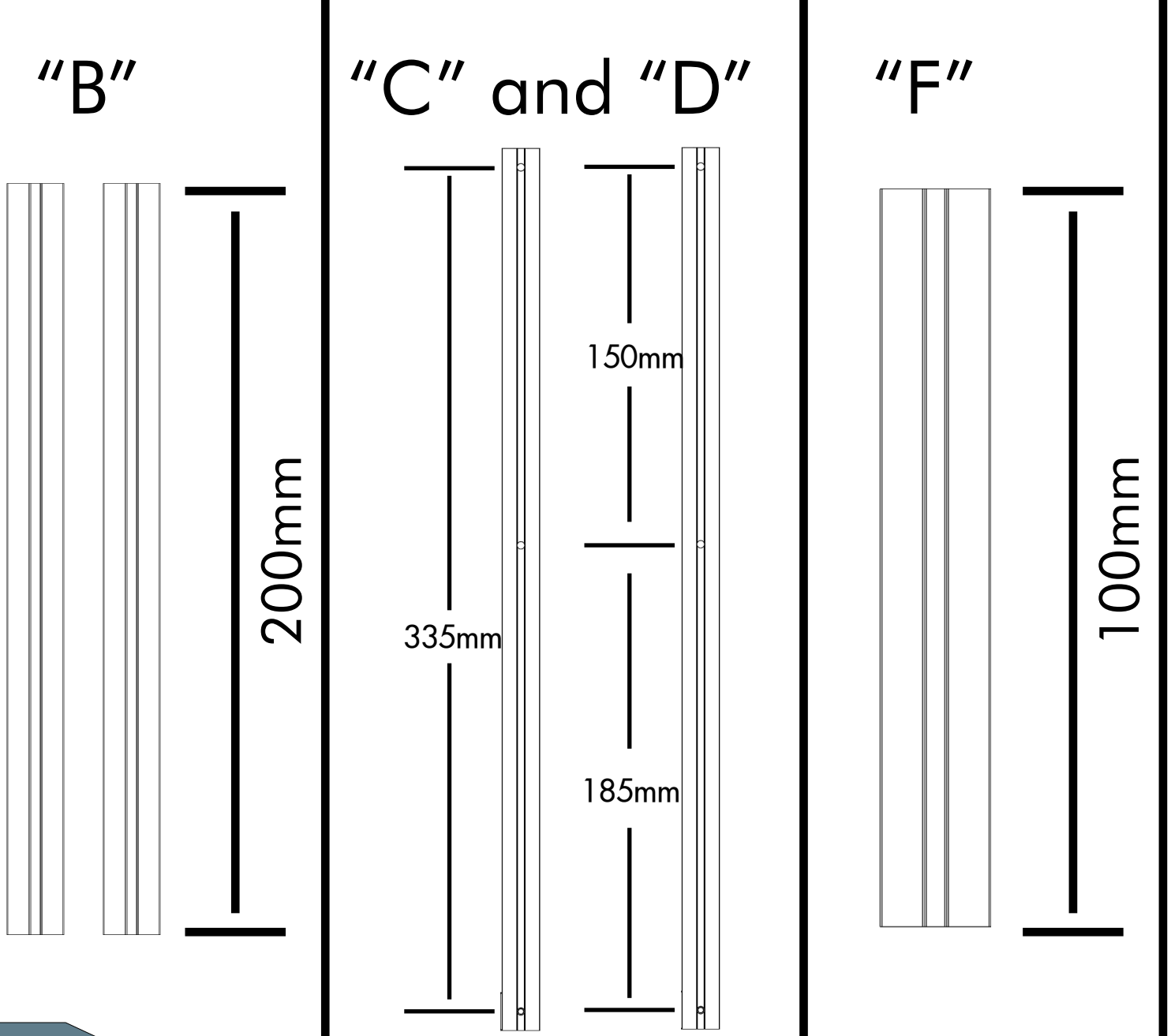
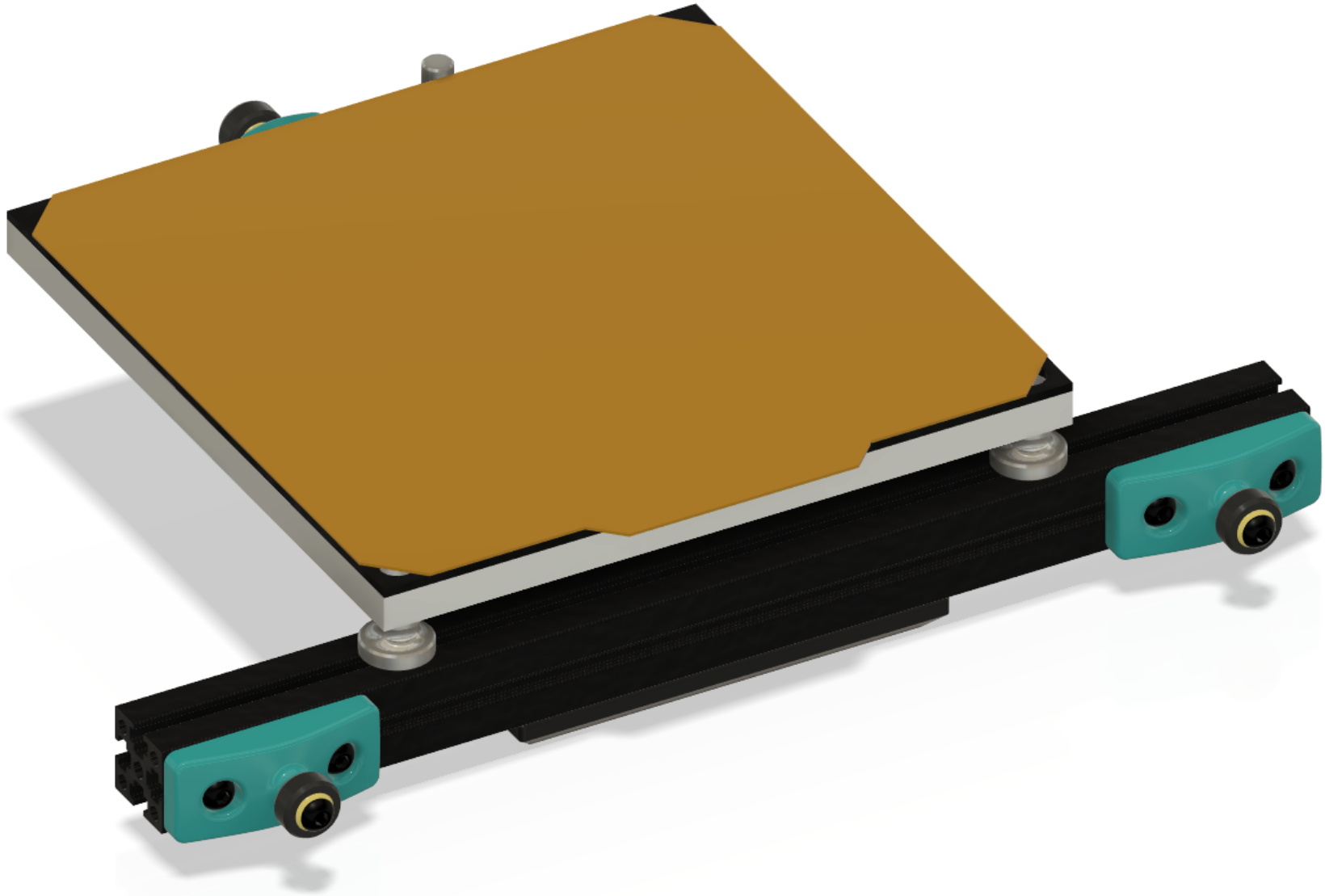


Mastur Mods

Extrusions

P1

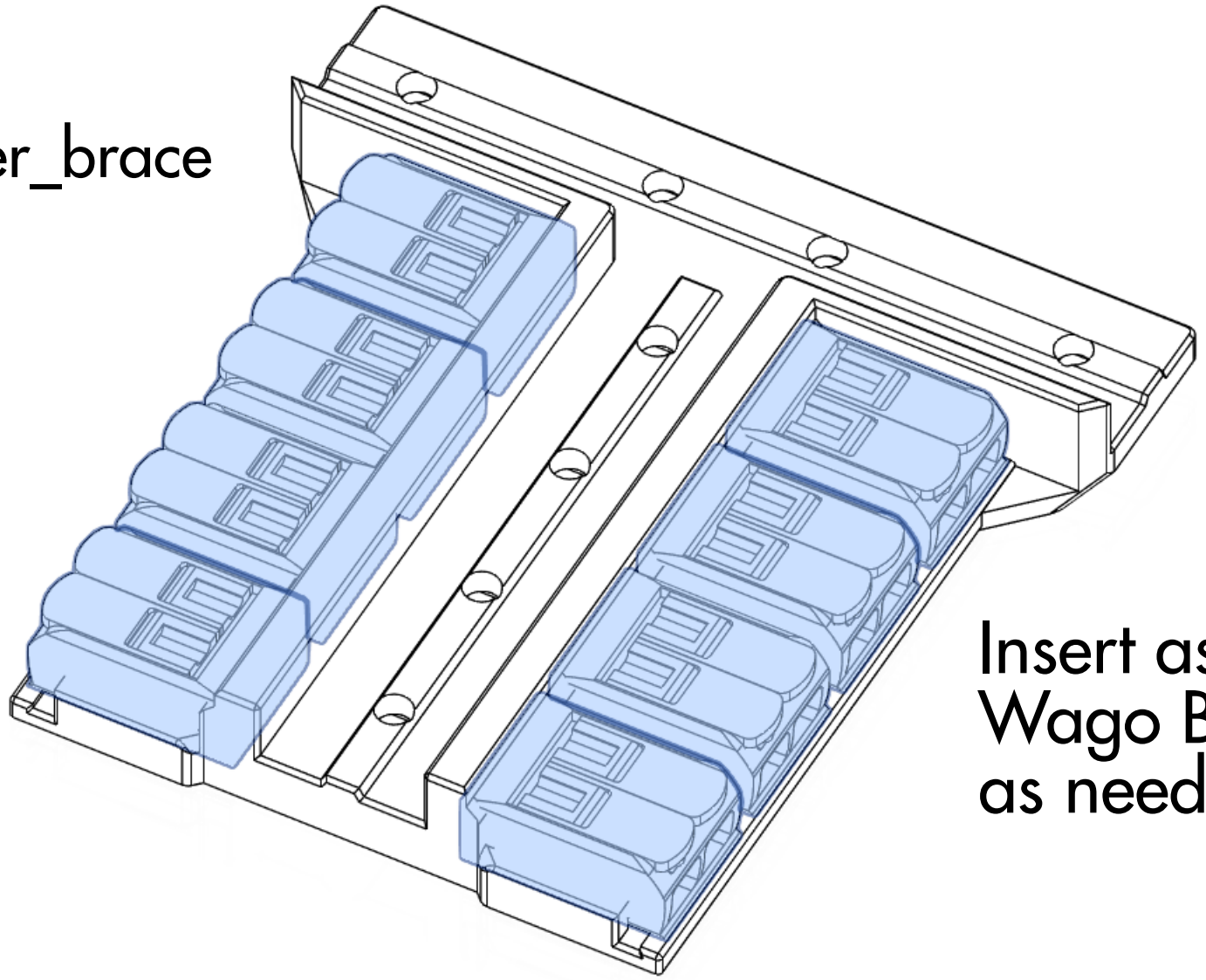


Mastur Mods

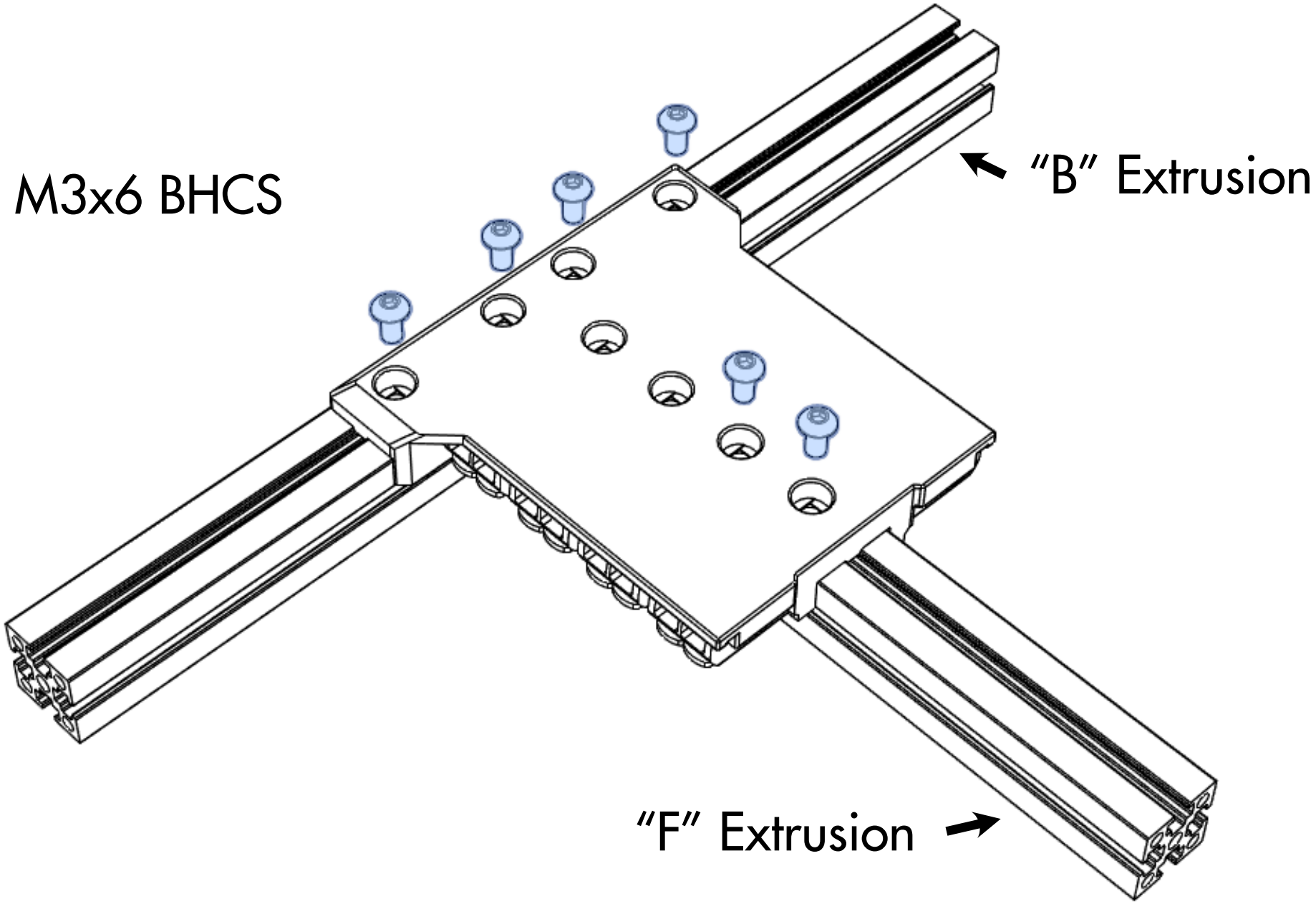
Bed Assembly

P2

bed_center_brace



Insert as many Wago Blocks as needed.



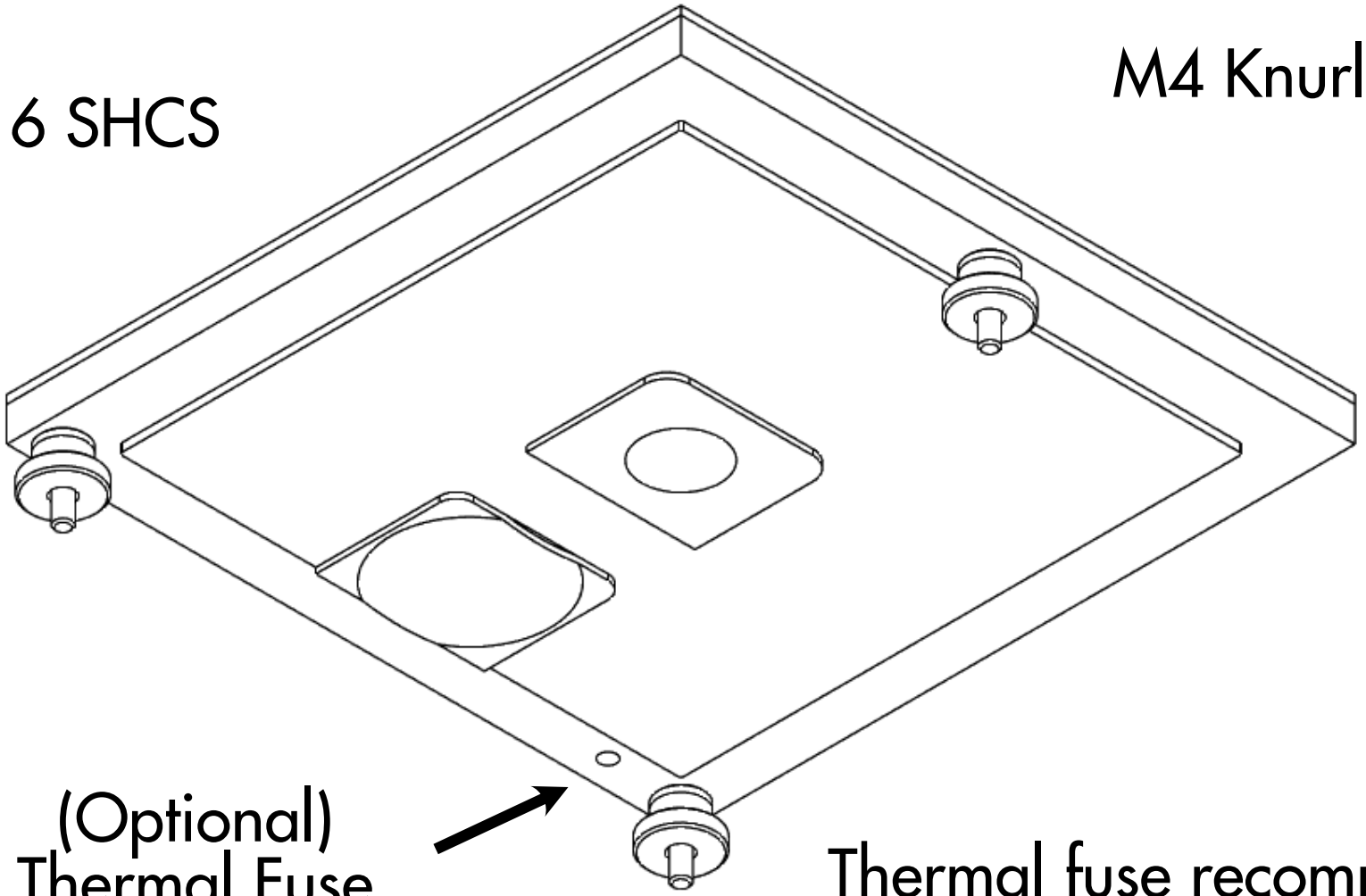
Mastur Mods

Bed Assembly

P4

M3x16 SHCS

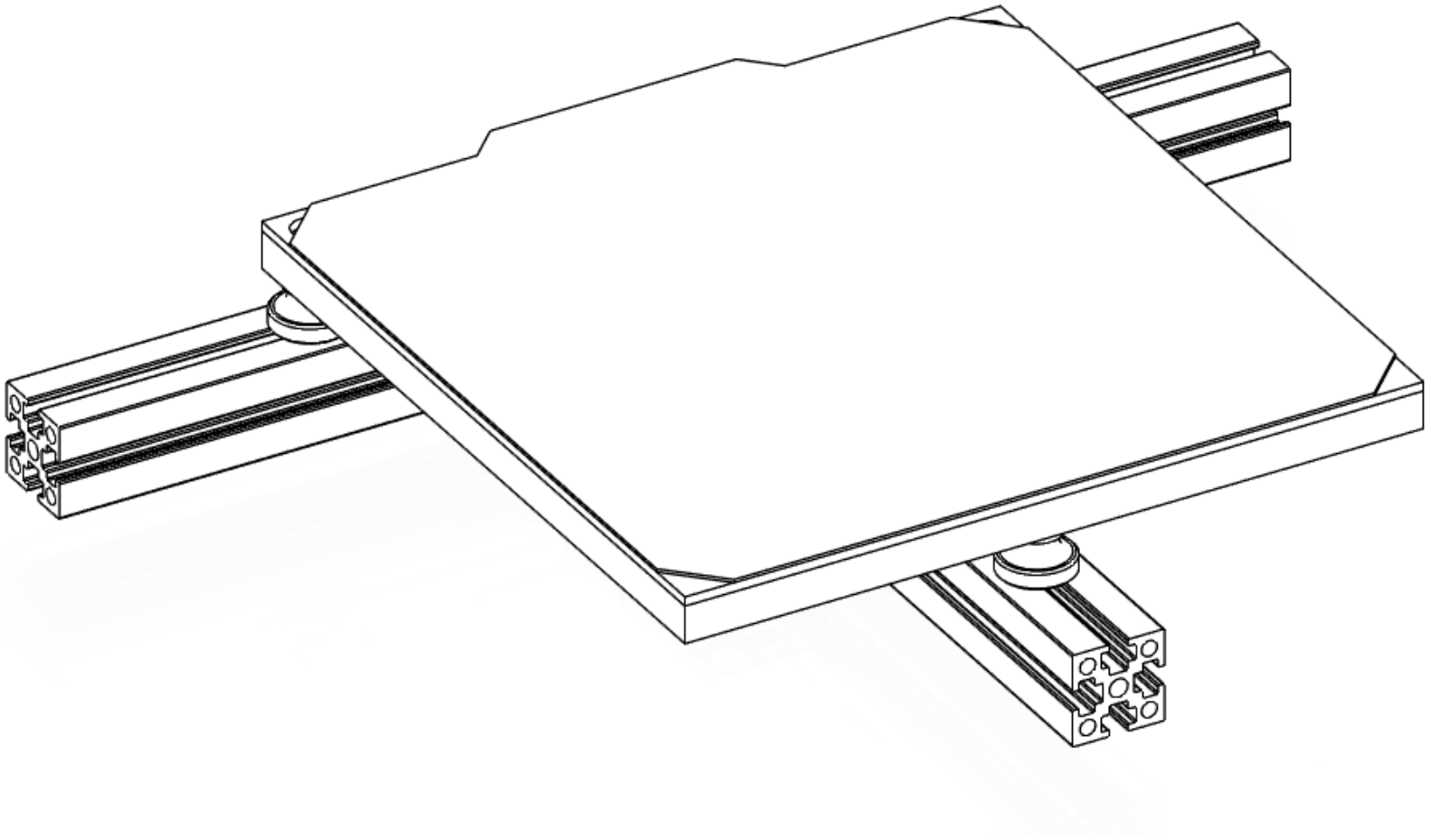
M4 Knurled Nut

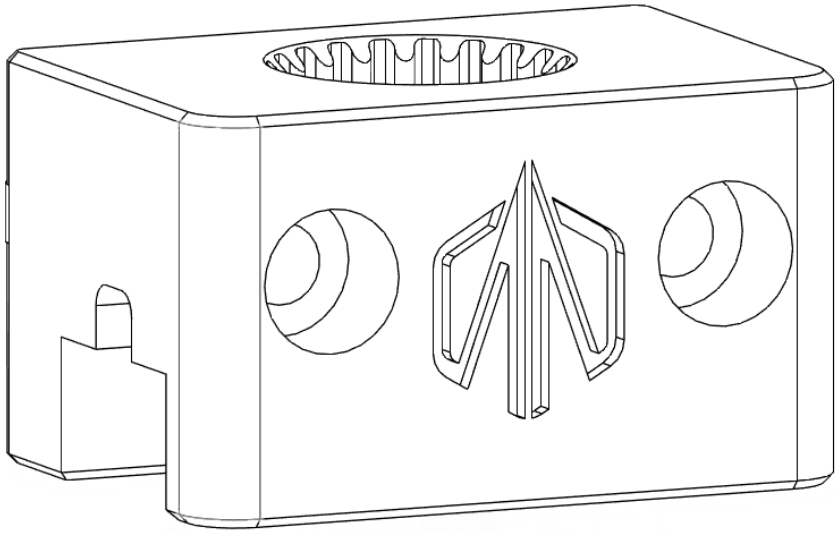


(Optional)
Thermal Fuse

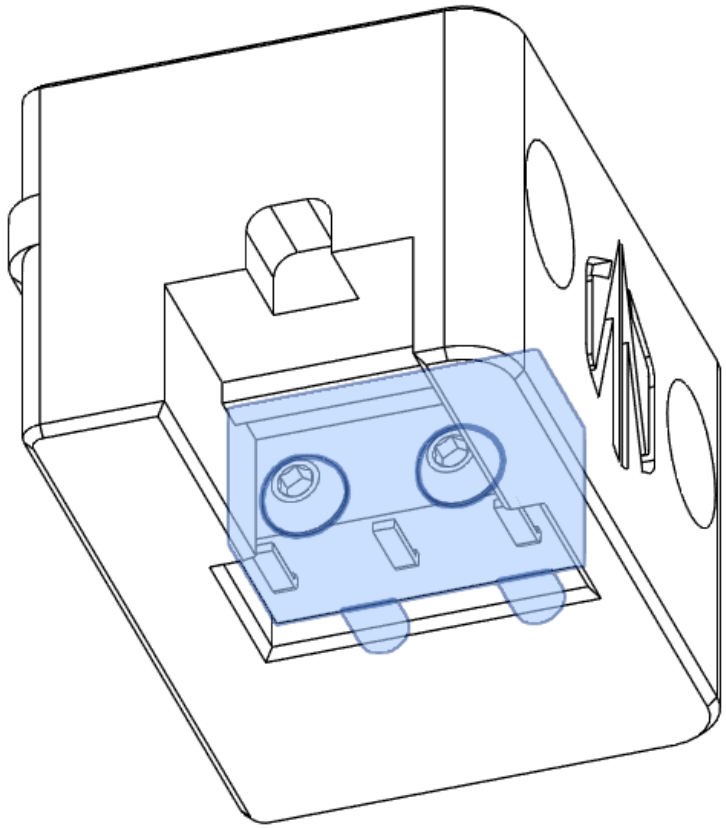
Thermal fuse recommended
for mains heater pads.

Affix to extrusions.

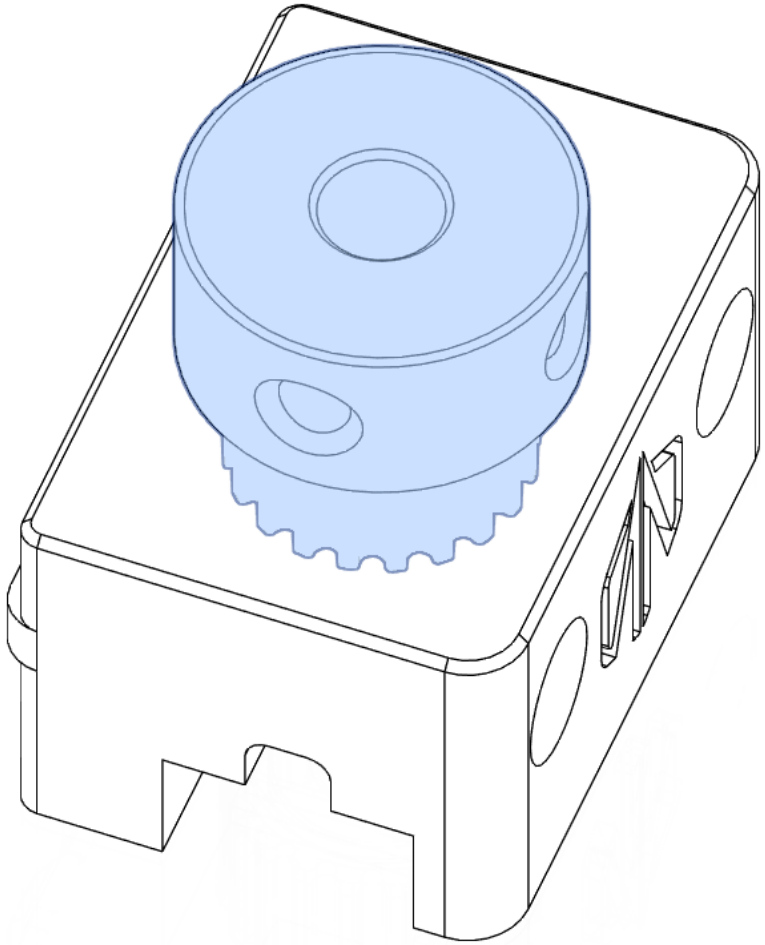




z_endstop_housing

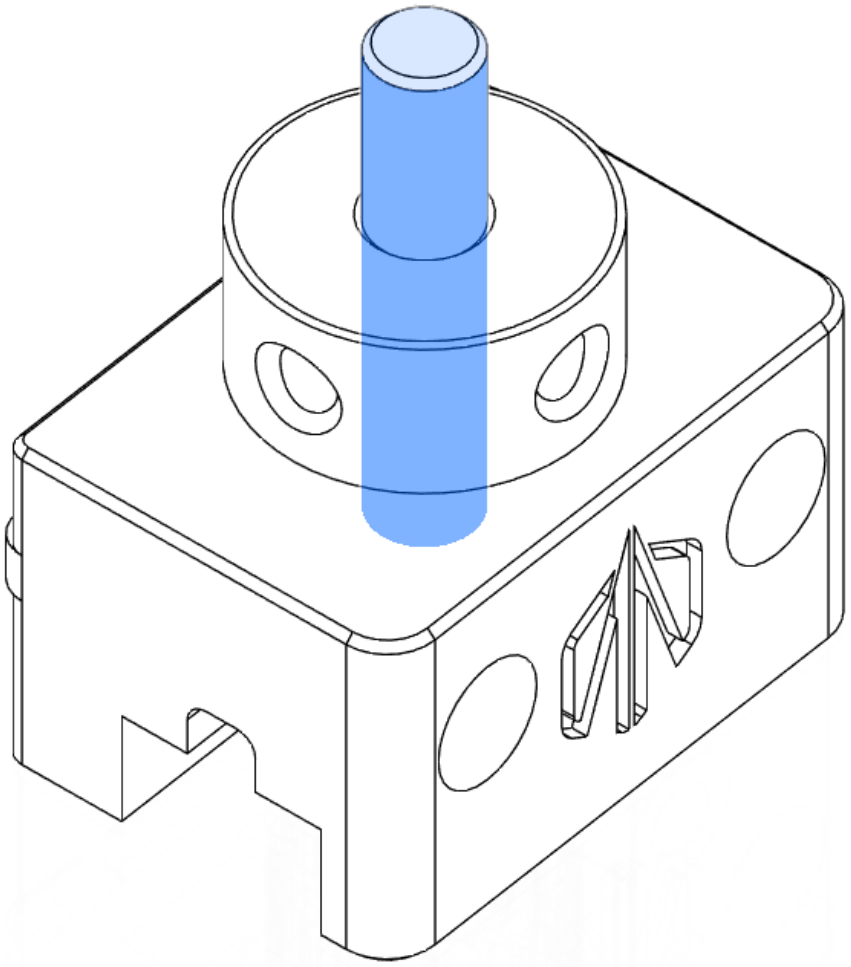


Omron D2F M2x10 Self Tapping

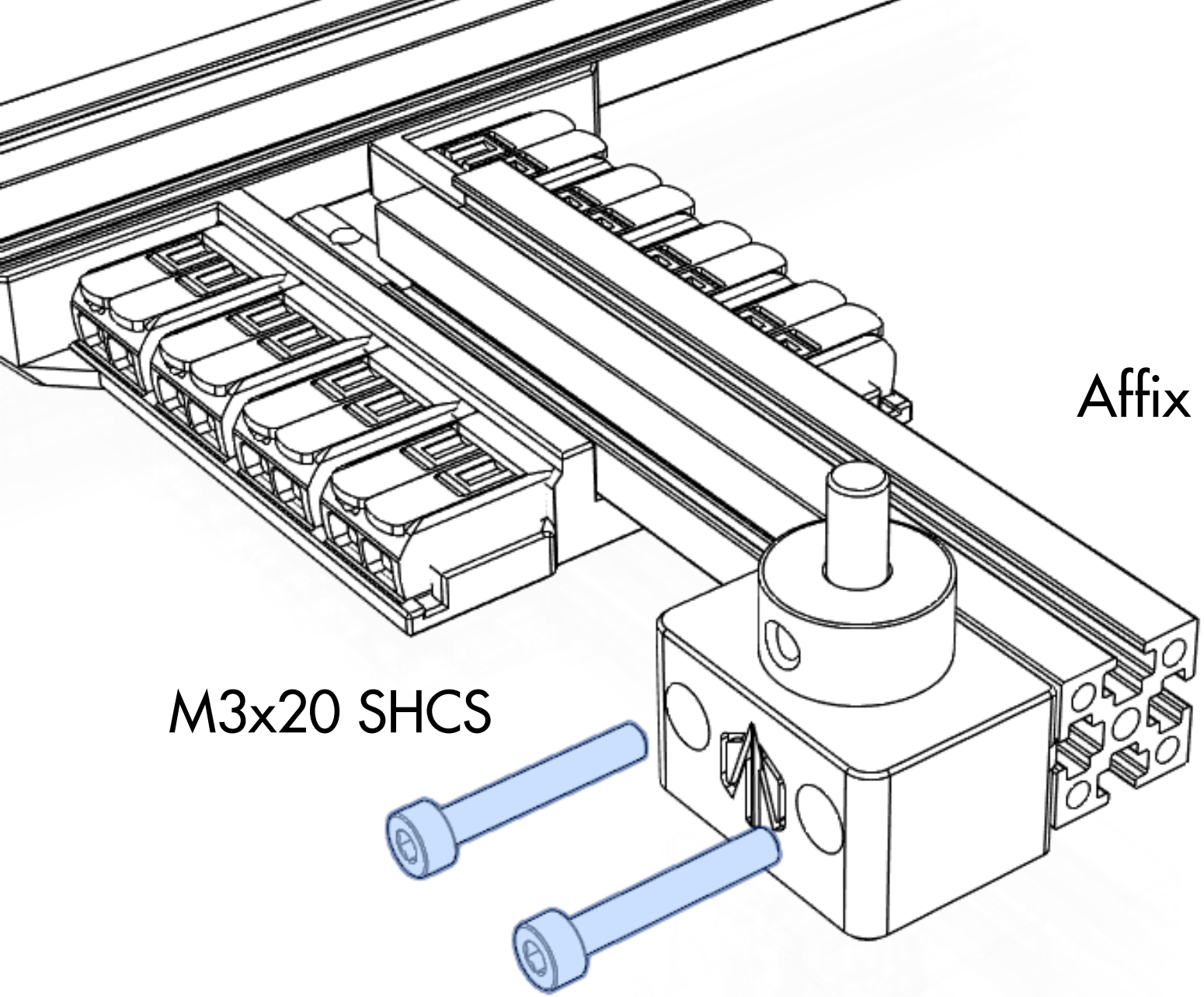


Deflanged 20T Pulley

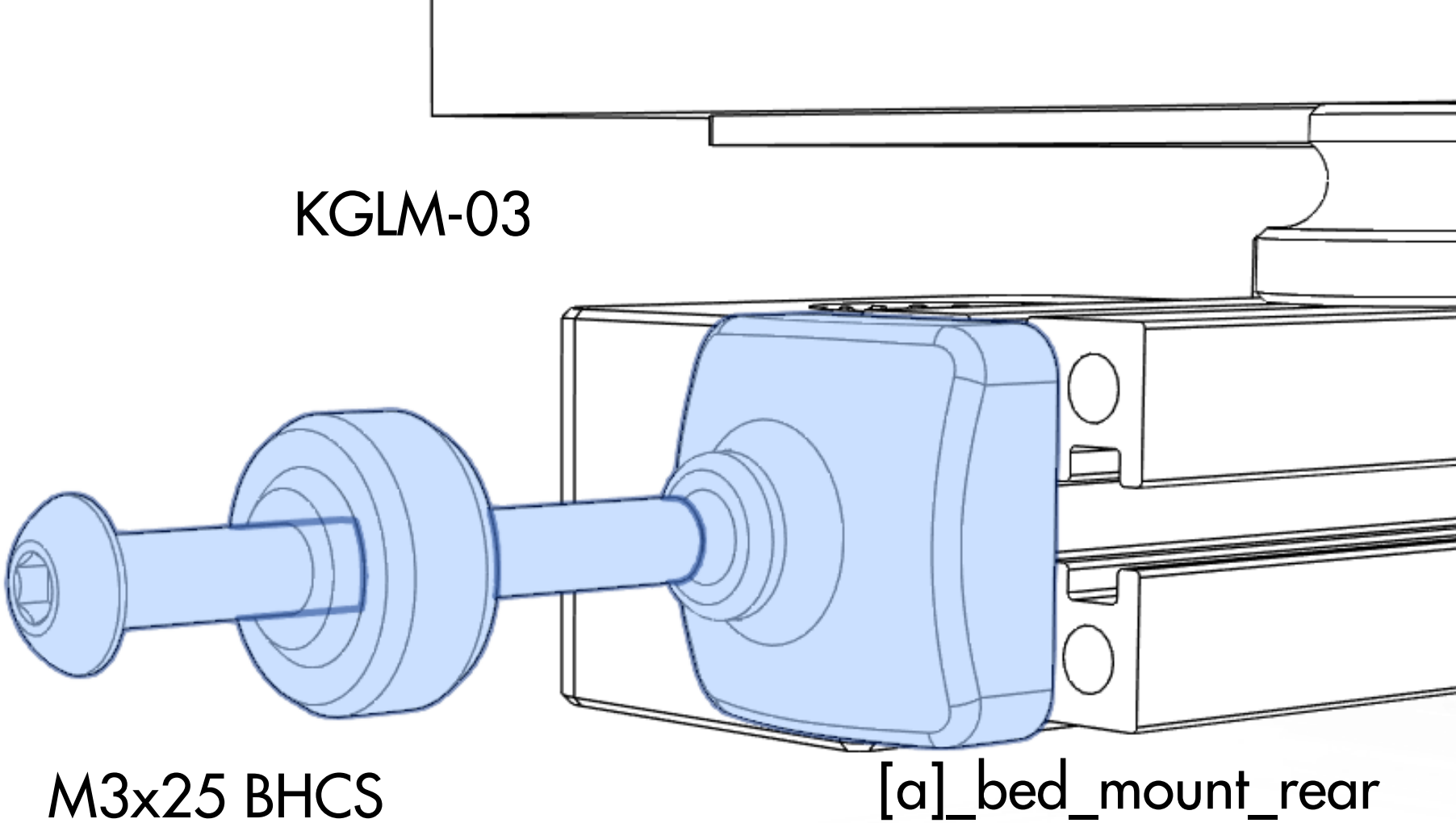
5x25mm Pin

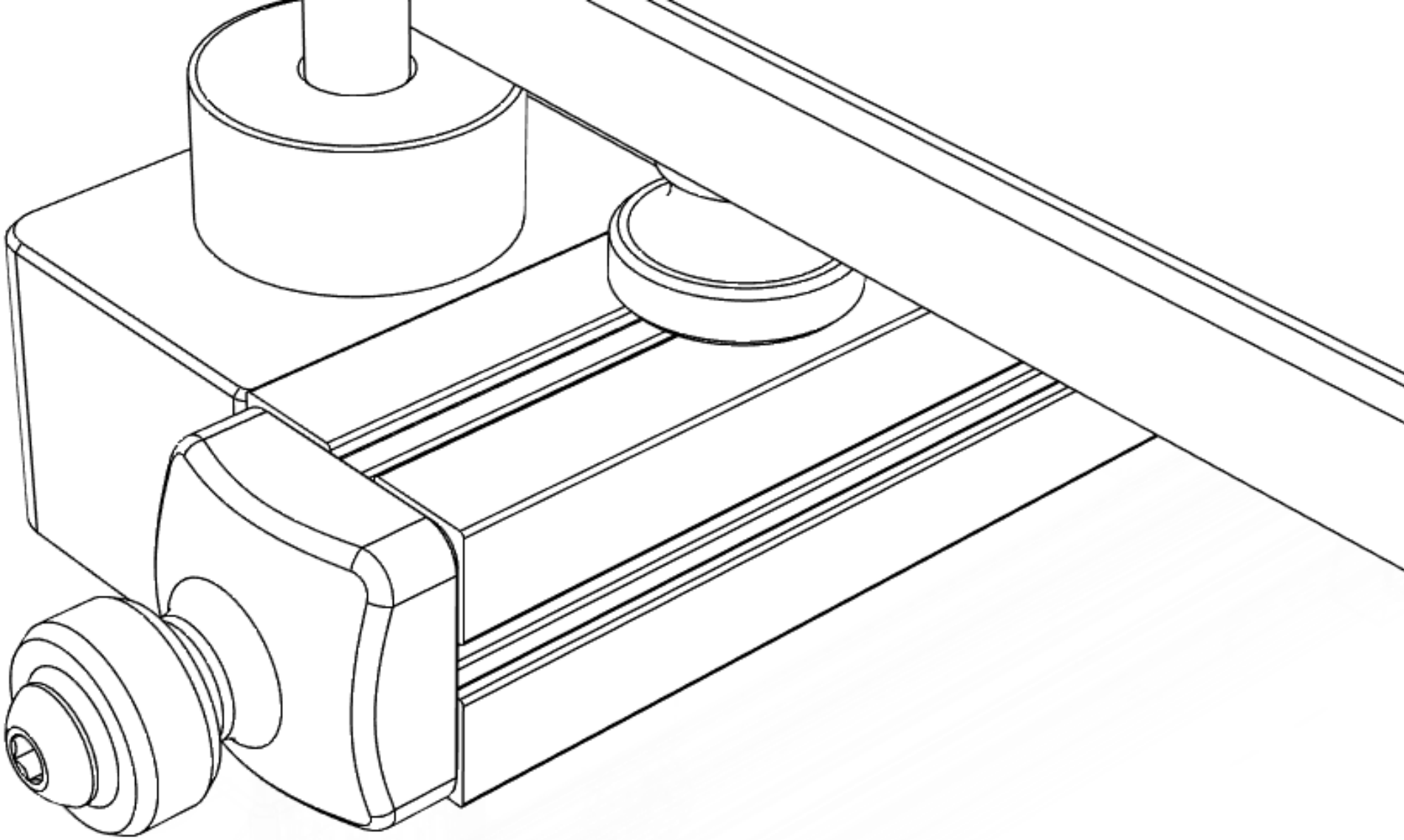


You can use a grub screw to keep the pin captive if you put a notch in the 5mm pin. But the grub screw should have thread locker and should only be inserted just enough to prevent the pin from falling out and rubbing against the pin during travel.



Mastur Mods

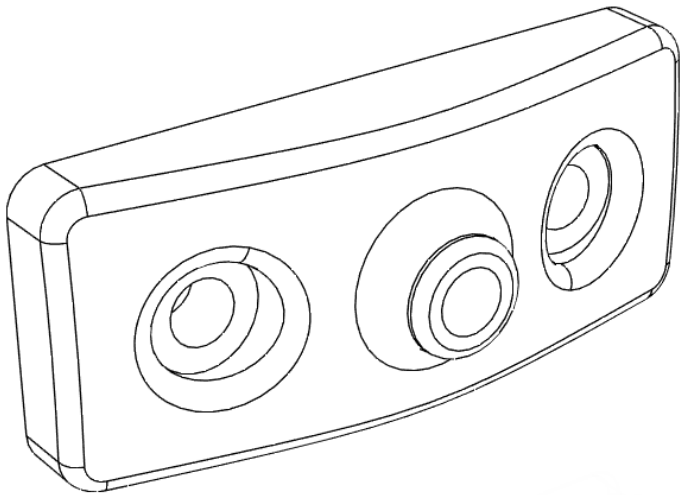

KGLM-03
M3x25 BHCS
[a]_bed_mount_rear



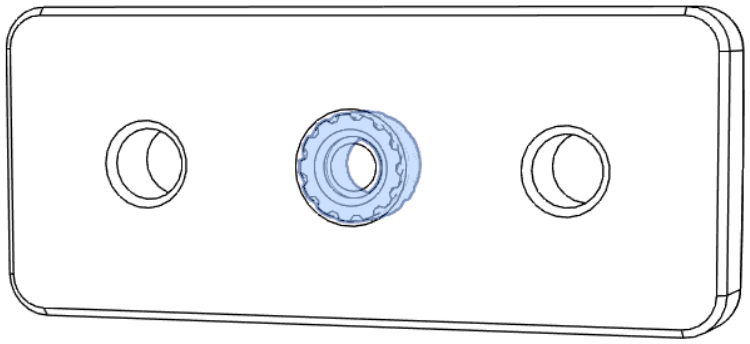
Mastur Mods

Bed Assembly

P12

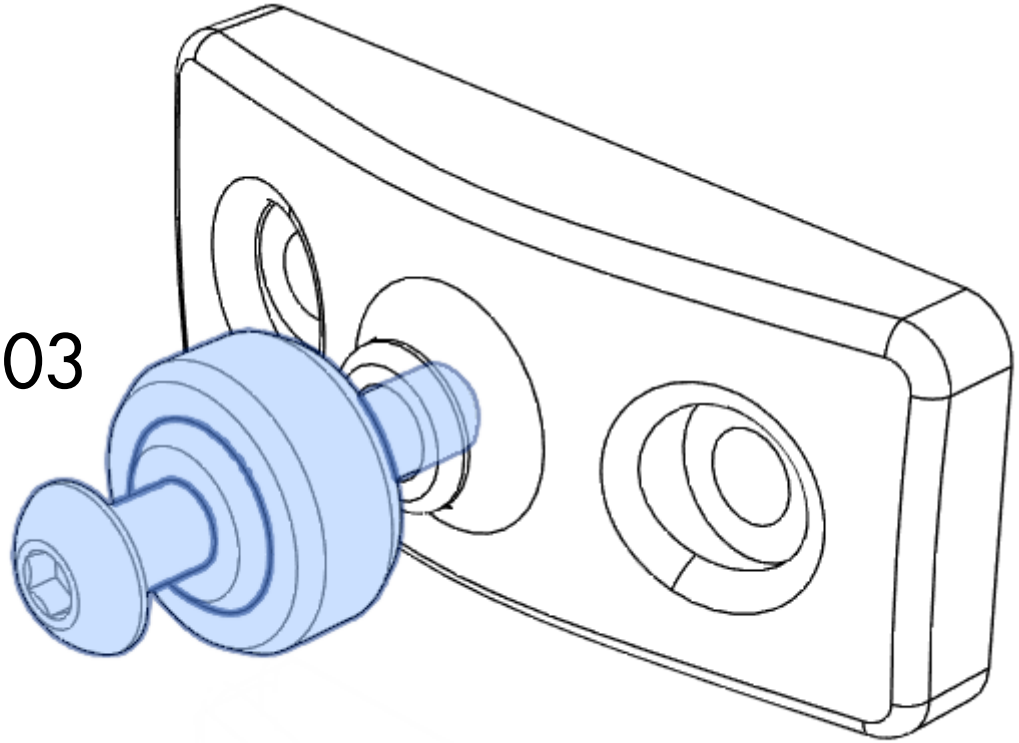


bed_mount_front_x2

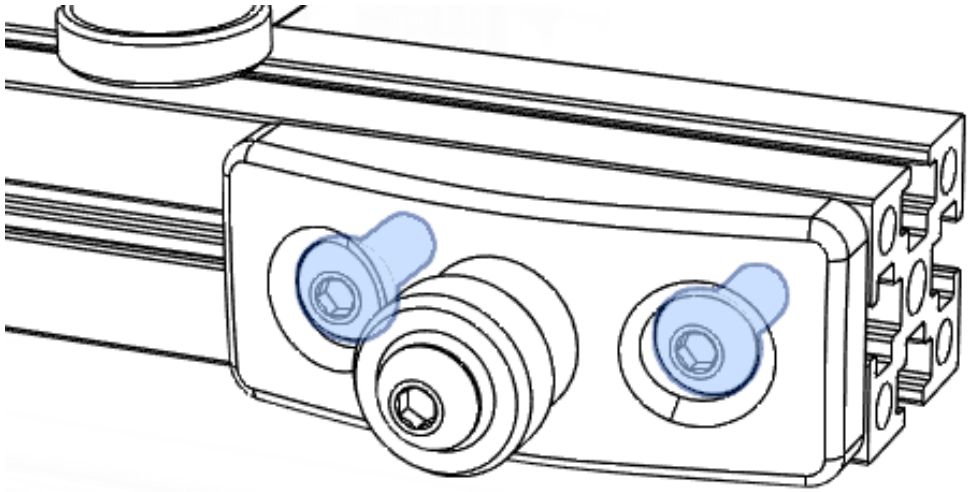


M3 Heatset Insert

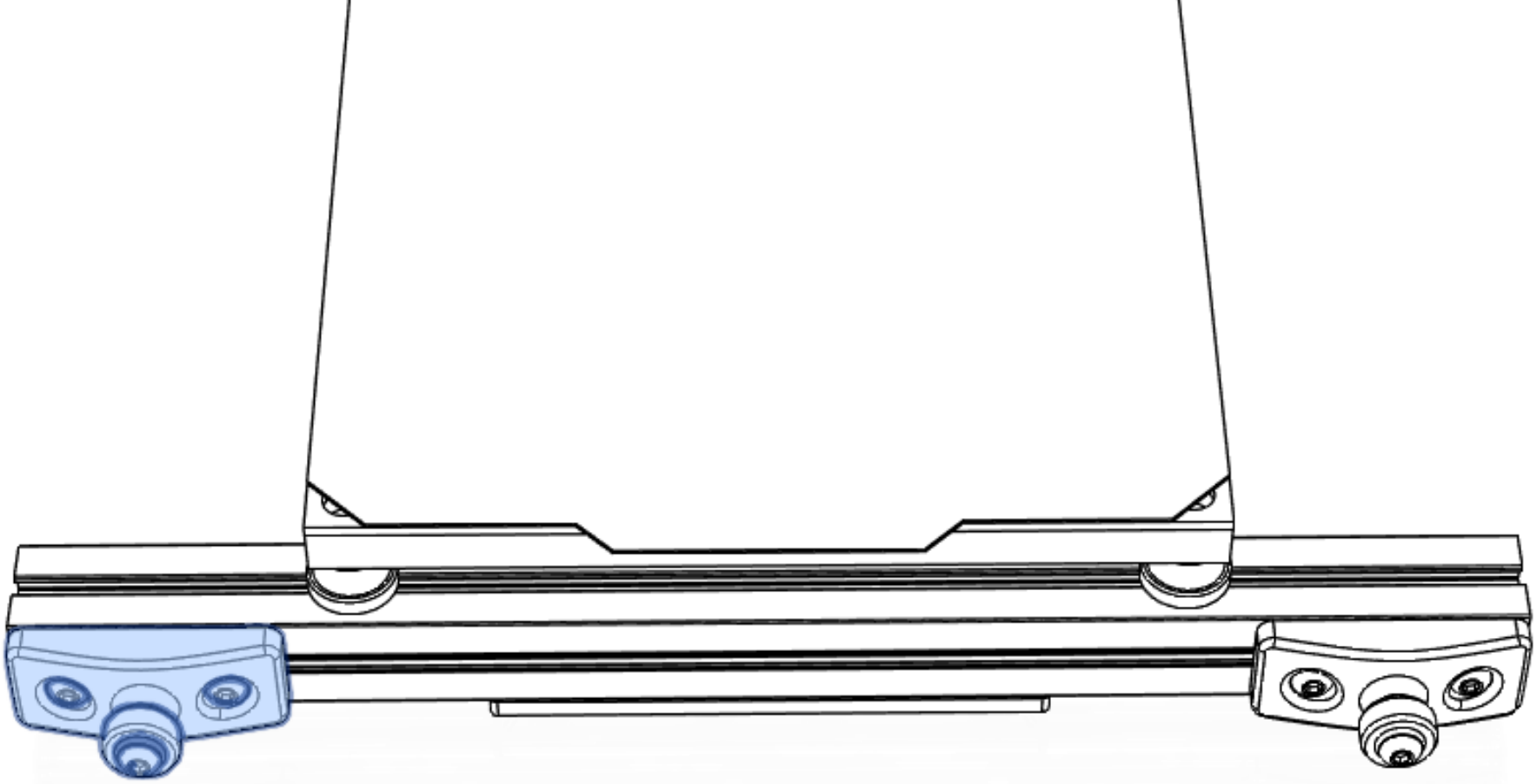
KGLM-03



M3x16



M3x8



Repeat pages 11-13 for the front left joint.

Mastur Mods

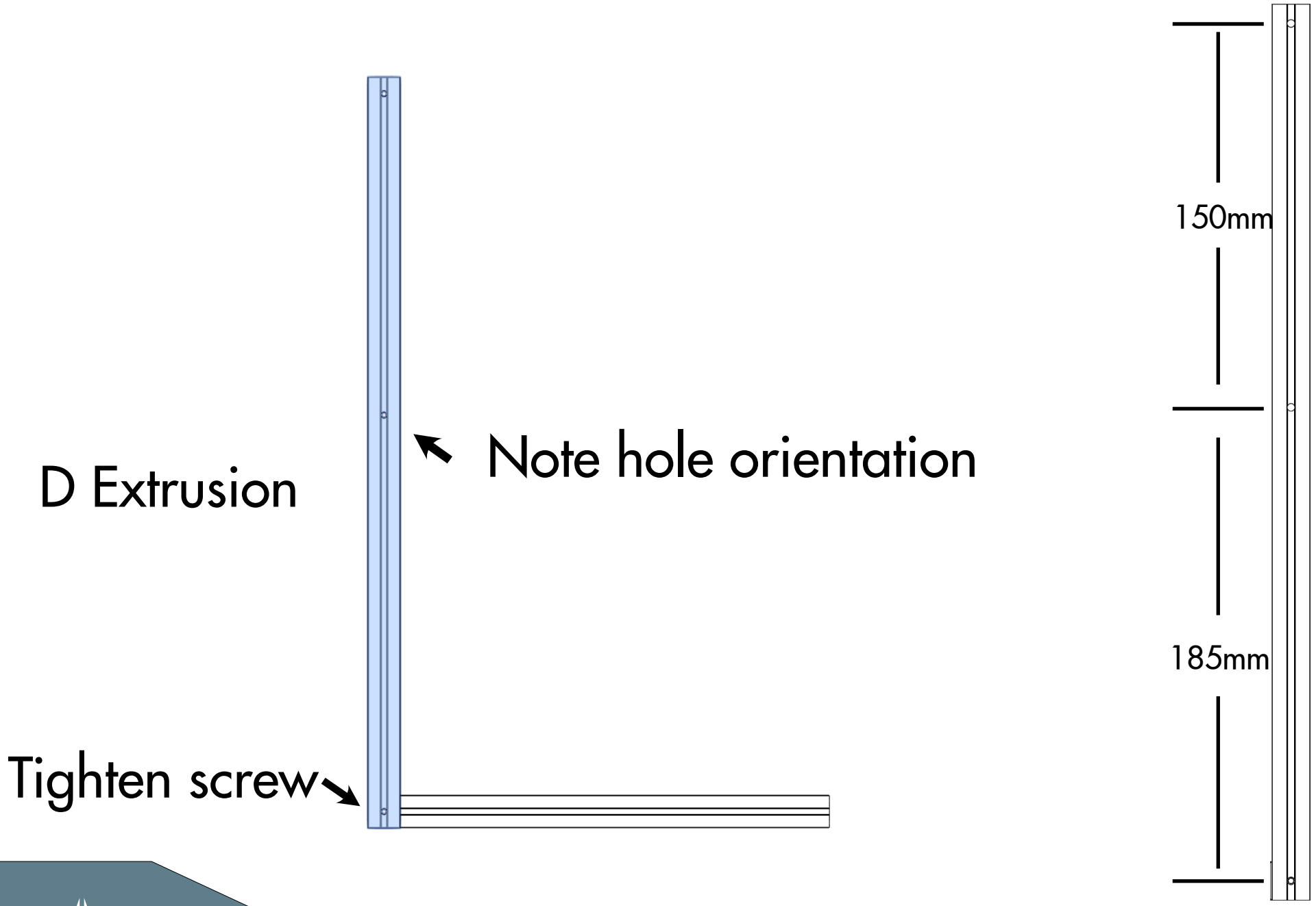
Frame Assembly

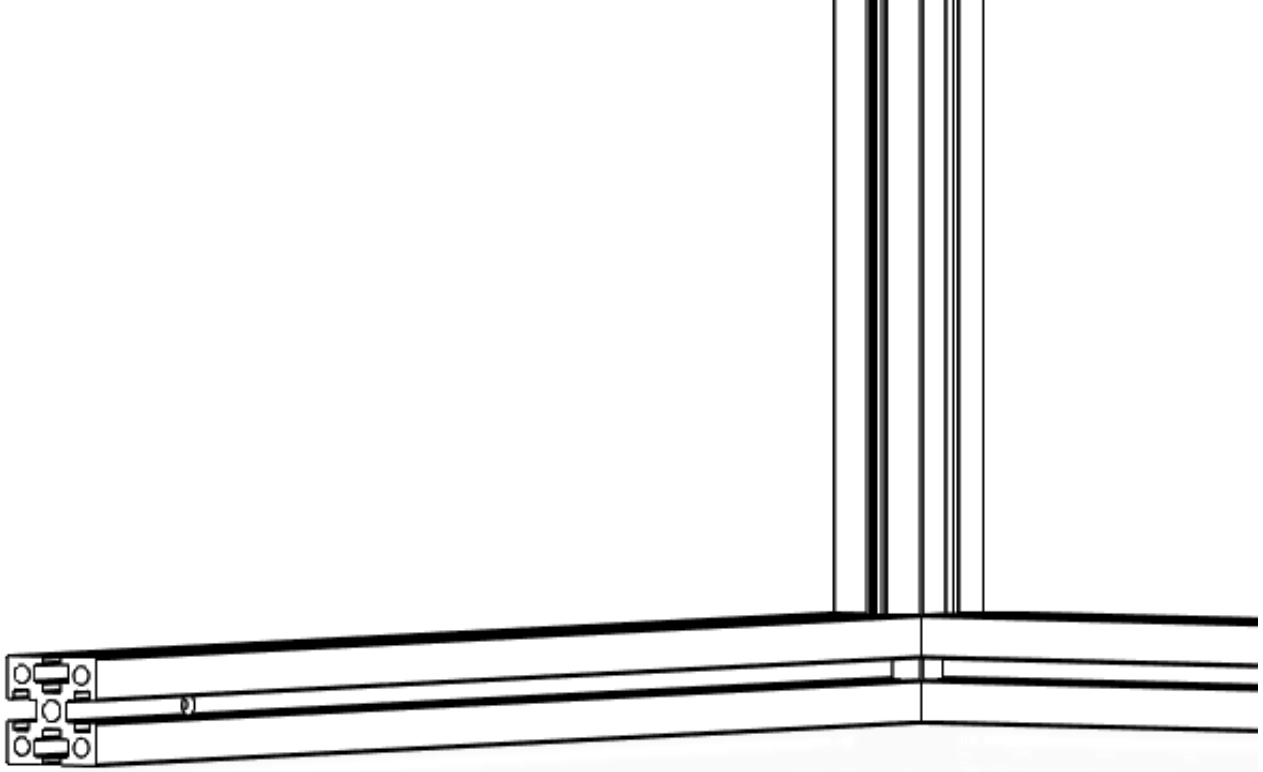
P17

Don’t fully tighten screw
It will be used for blind joints!

B Extrusion

M3x8 BHCS

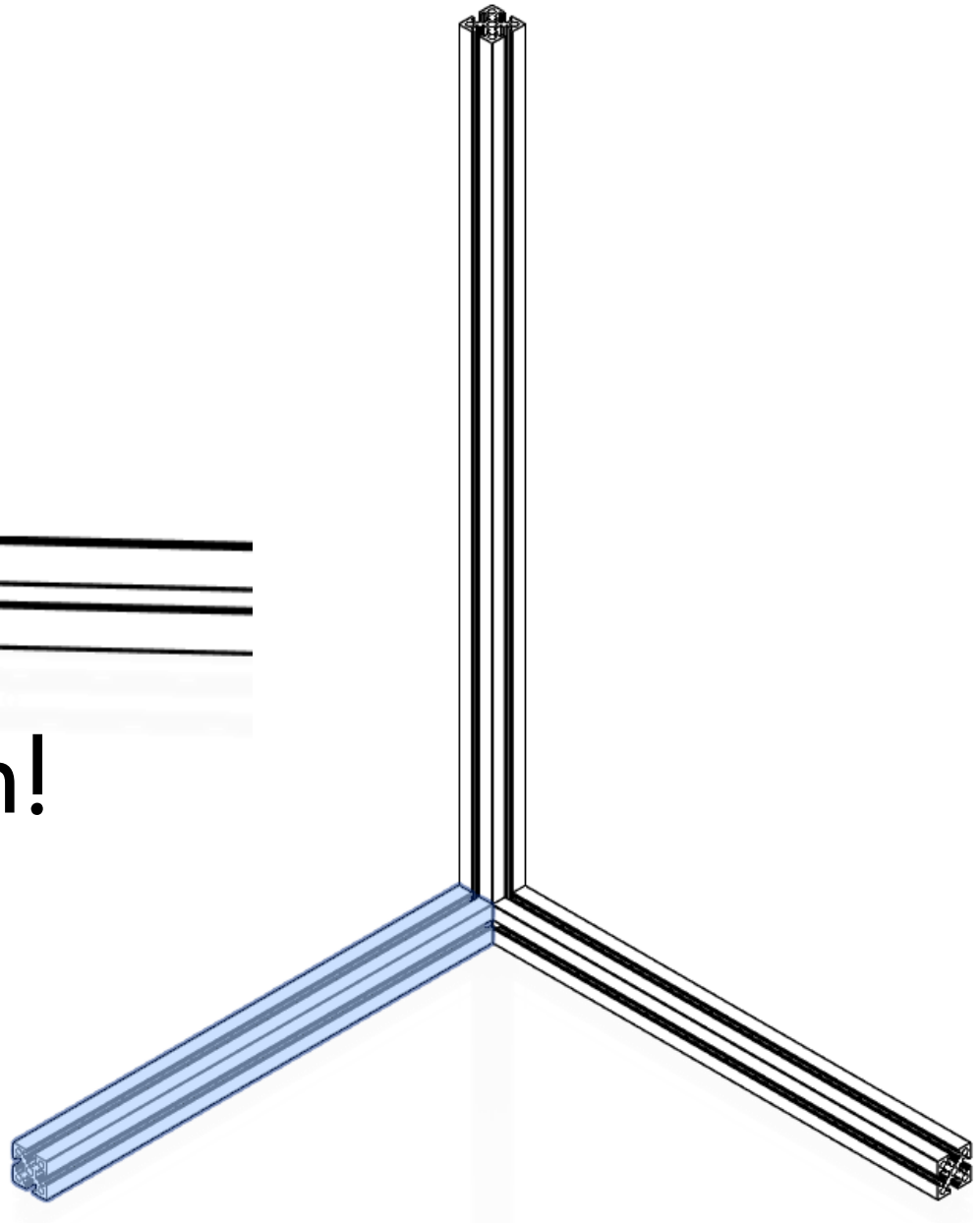

D Extrusion
Note hole orientation
Tighten screw
150mm
185mm



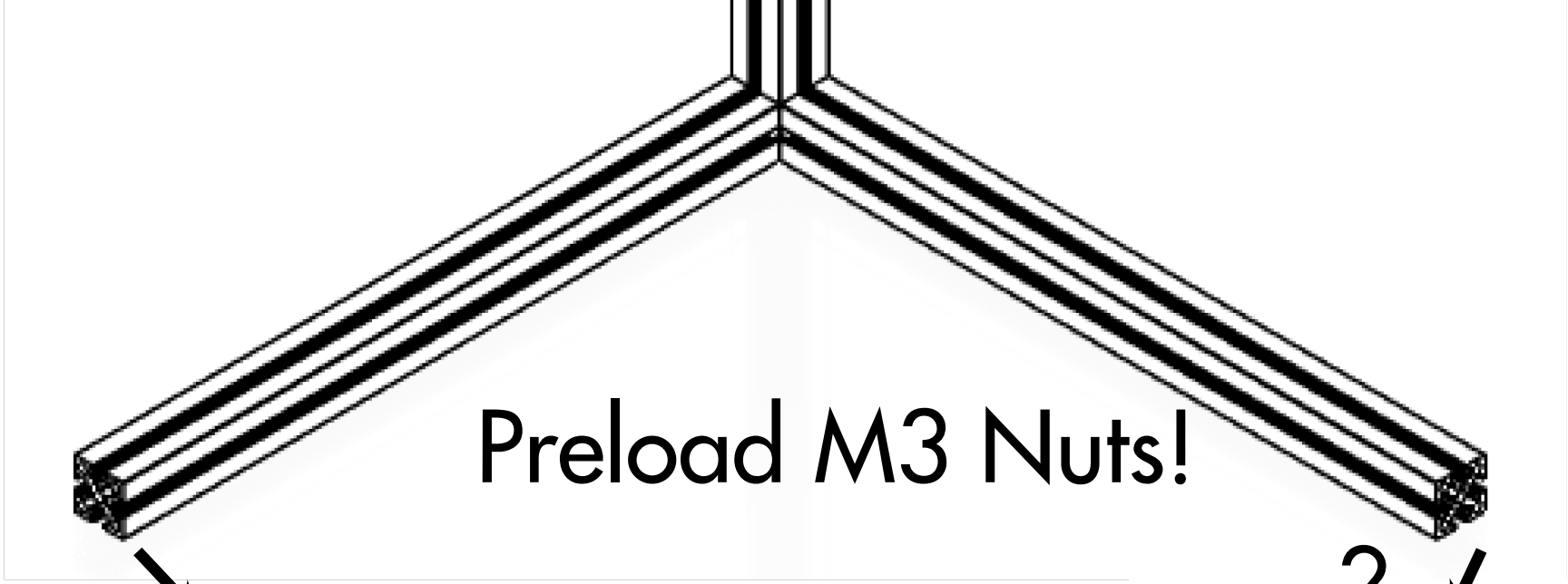
Note hole orientation!

E Extrusion

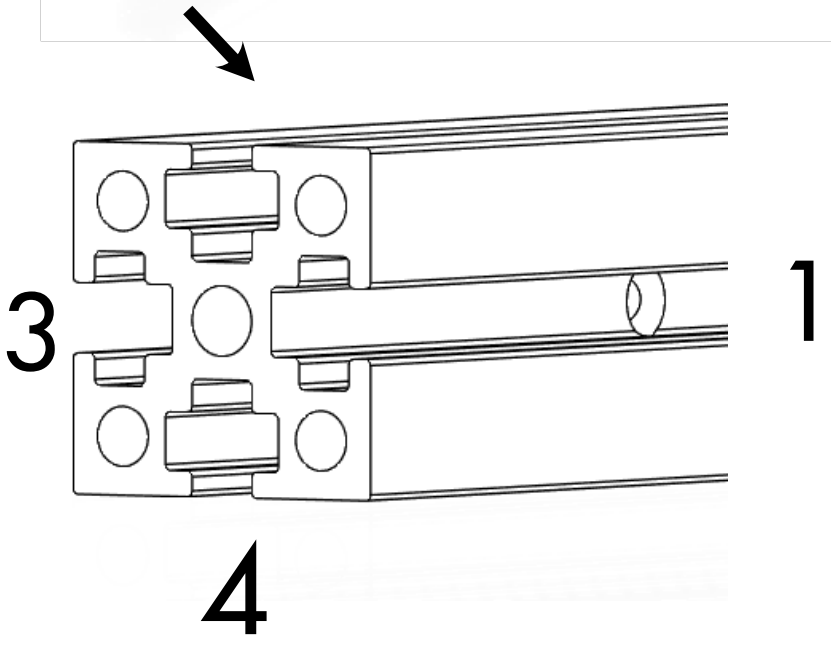
M3x8 BHCS

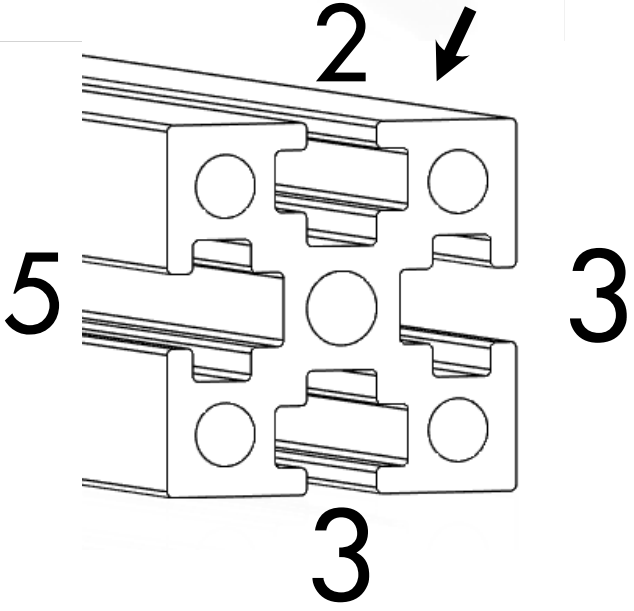


Mastur Mods

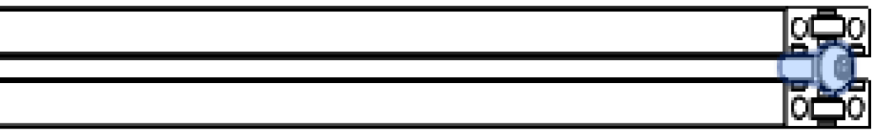


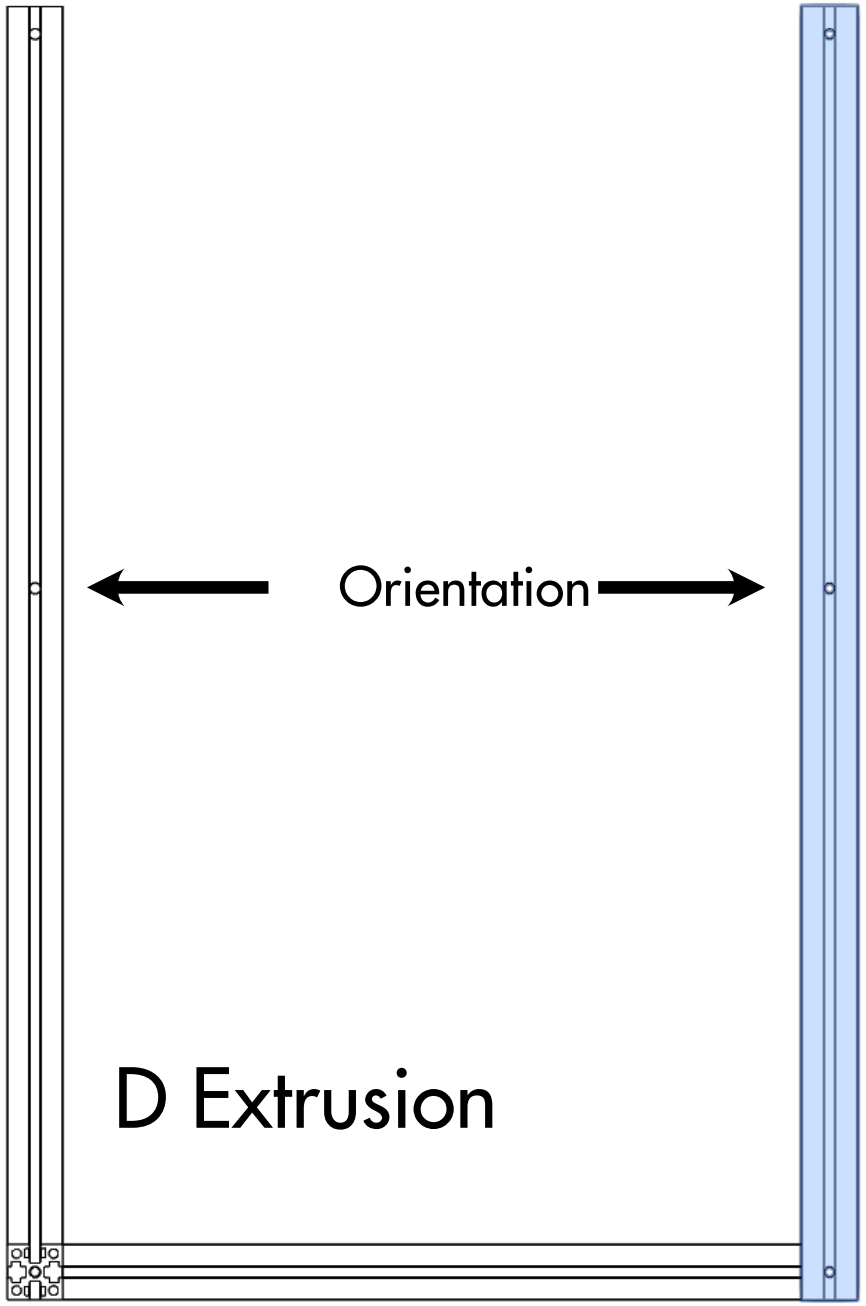
Preload M3 Nuts!



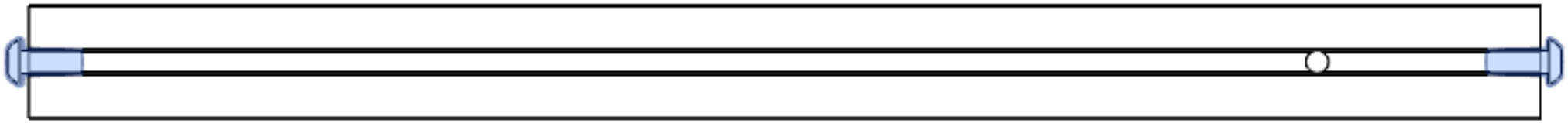


M3x8 BHCS
For Blind Joints!





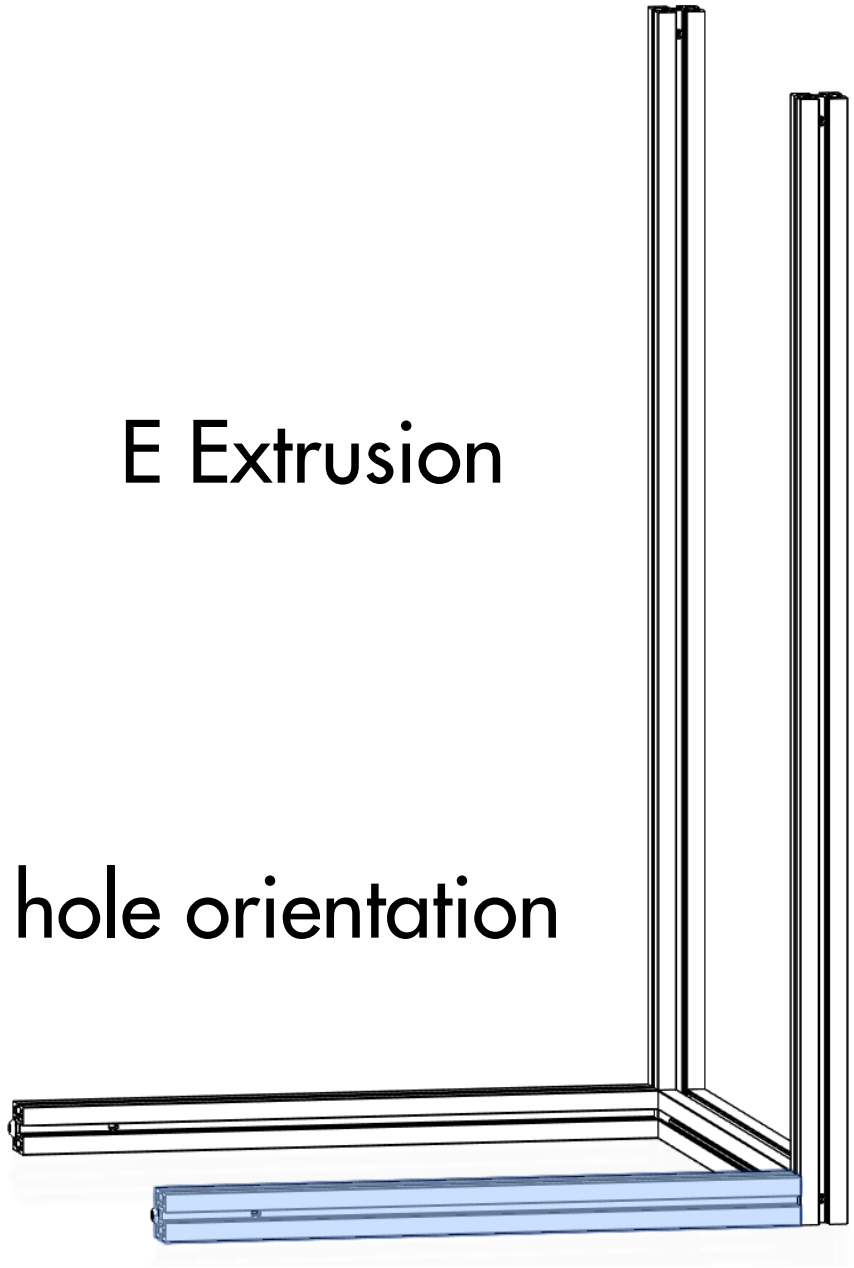
M3x8 BHCS - For Blind Joints!



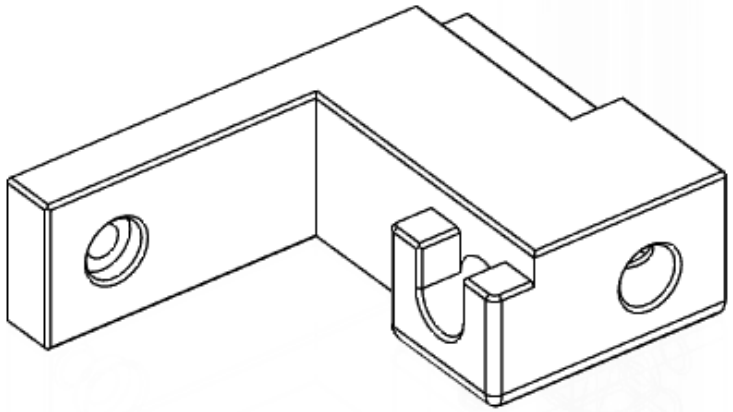
E Extrusion

E Extrusion

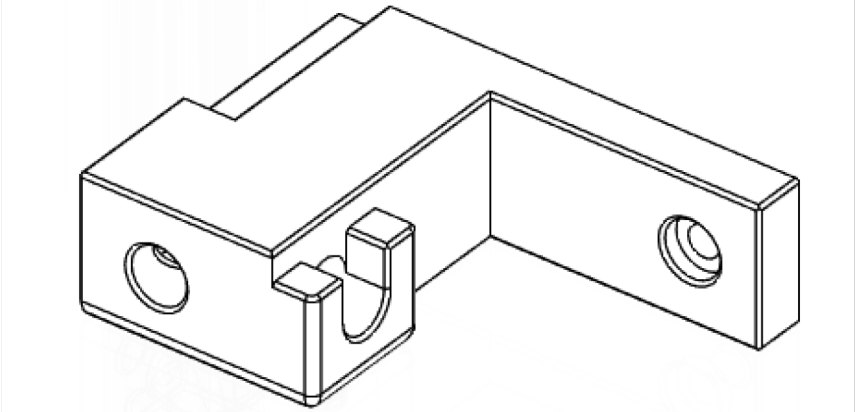
Note hole orientation

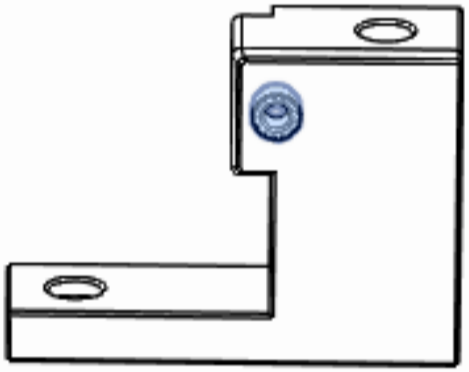


frame_brace_front

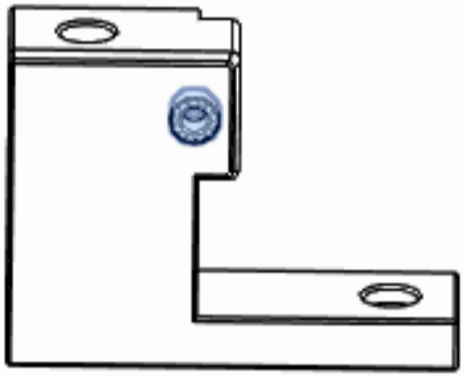


frame_brace_front_mirror



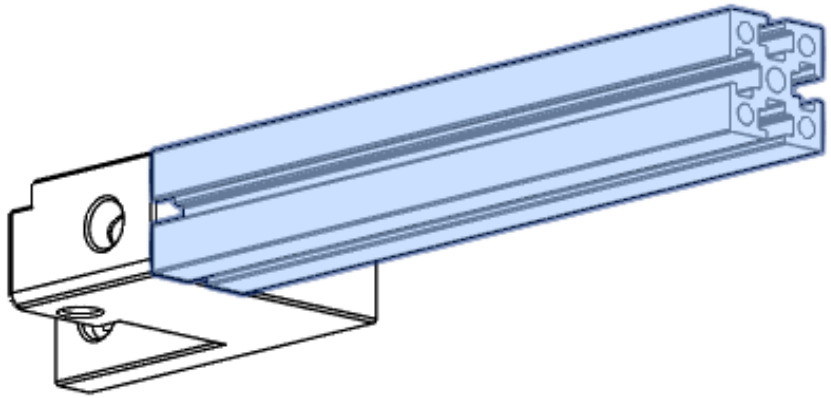


M3 Heatset Inserts



M3x10 BHCS

F Extrusion



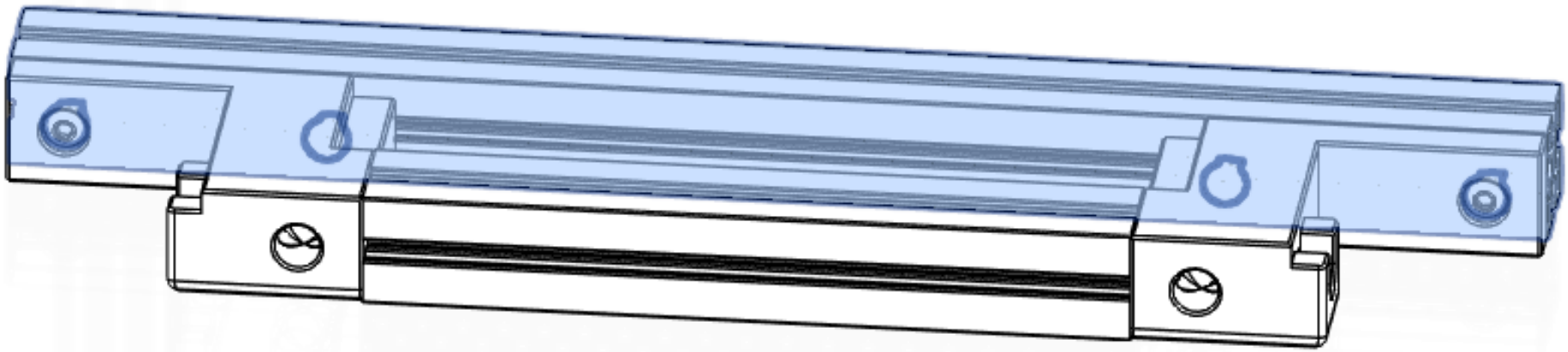
Preload 4 M3 Hex Nuts into the bottom extrusion channel

Mastur Mods

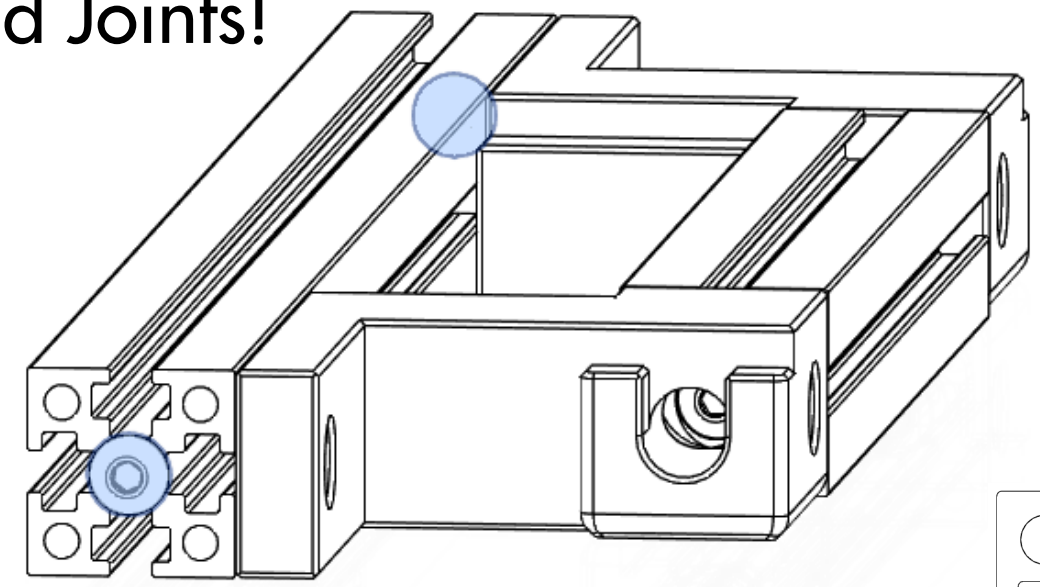
Frame Assembly

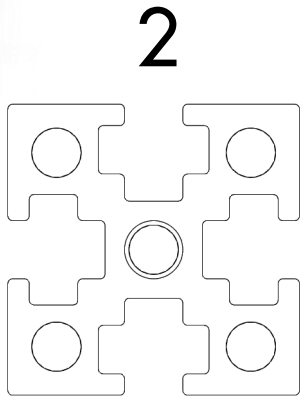
4x M3x8 BHCS

B Extrusion



M3x8 BHCS
For Blind Joints!

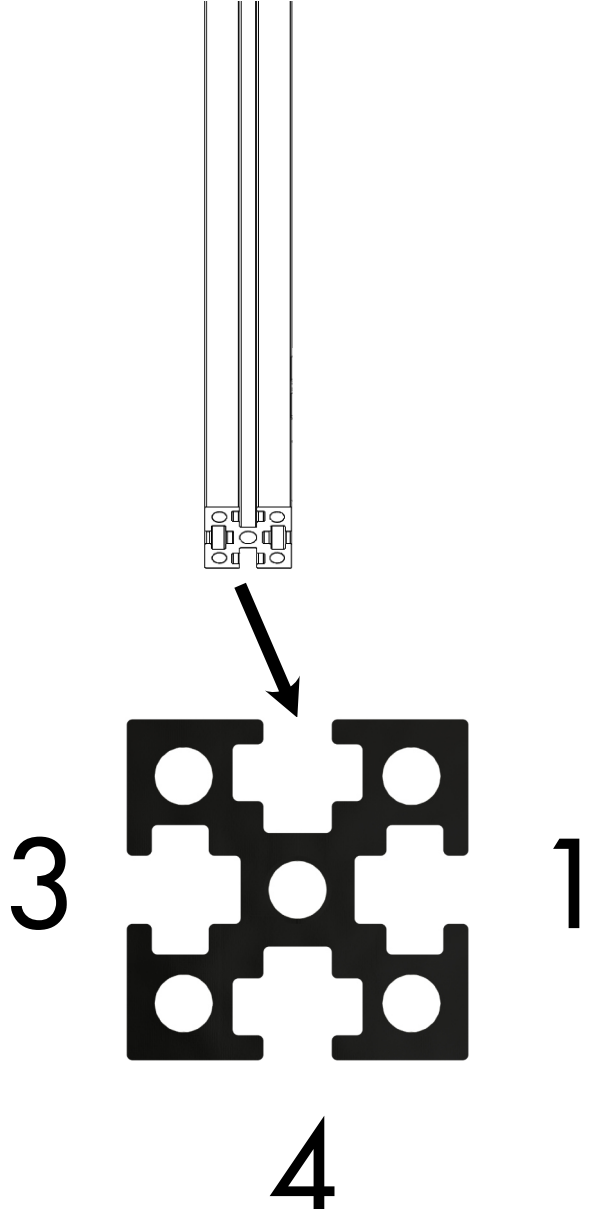


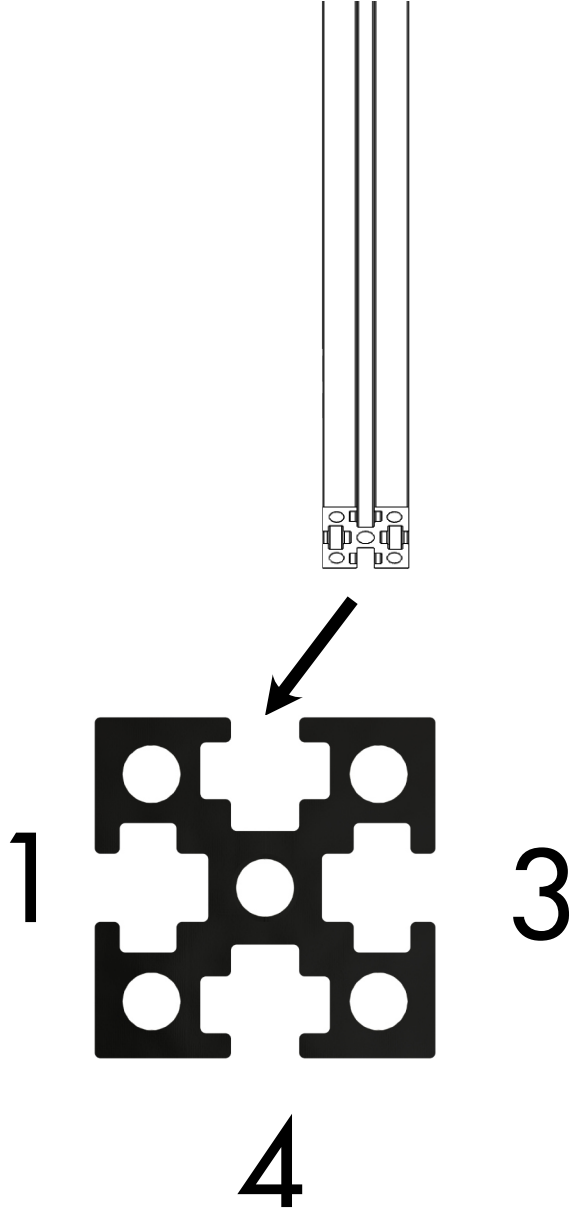


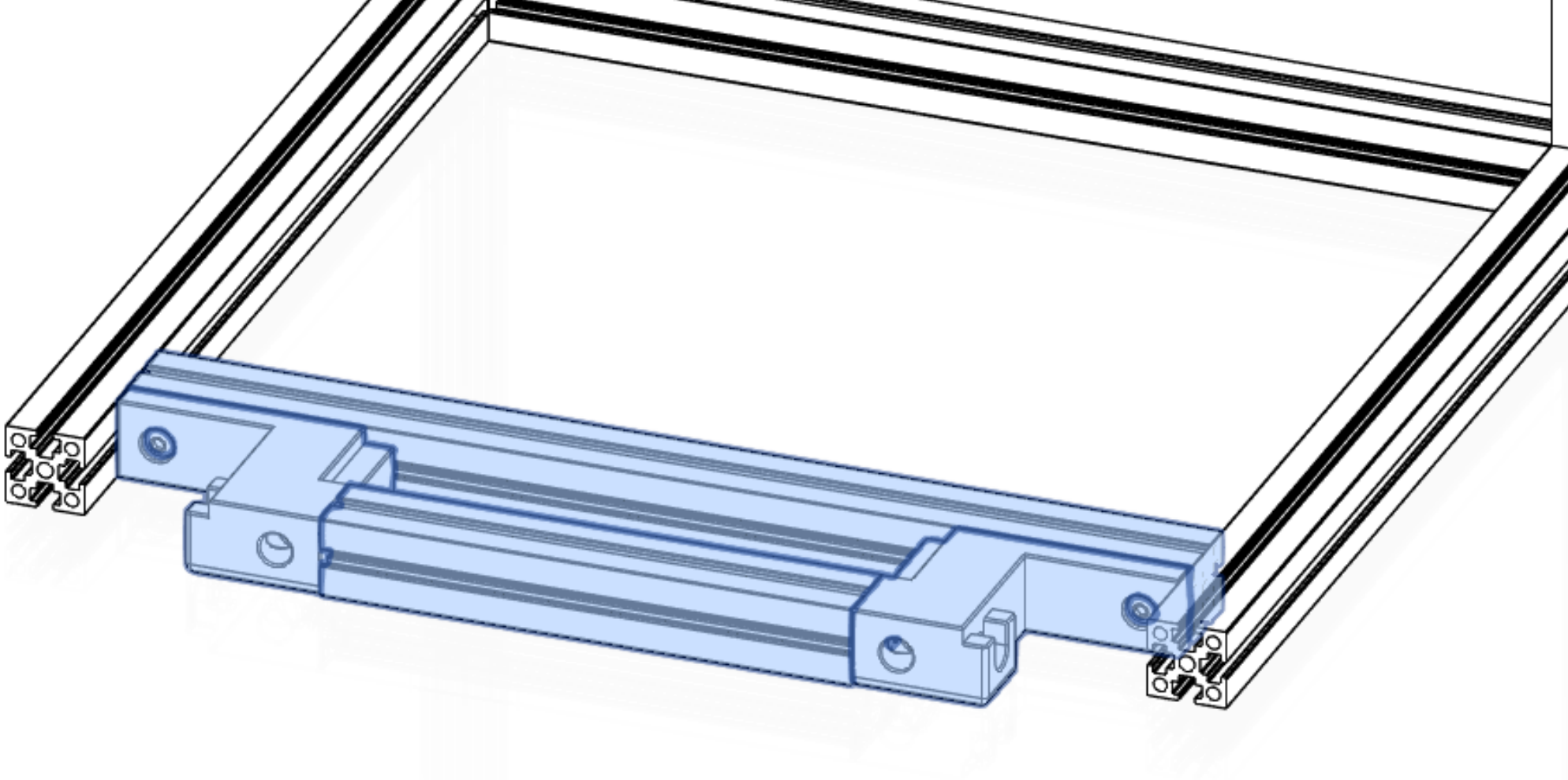
Mastur Mods

Frame Assembly

P30


3
1
4


1
3
4

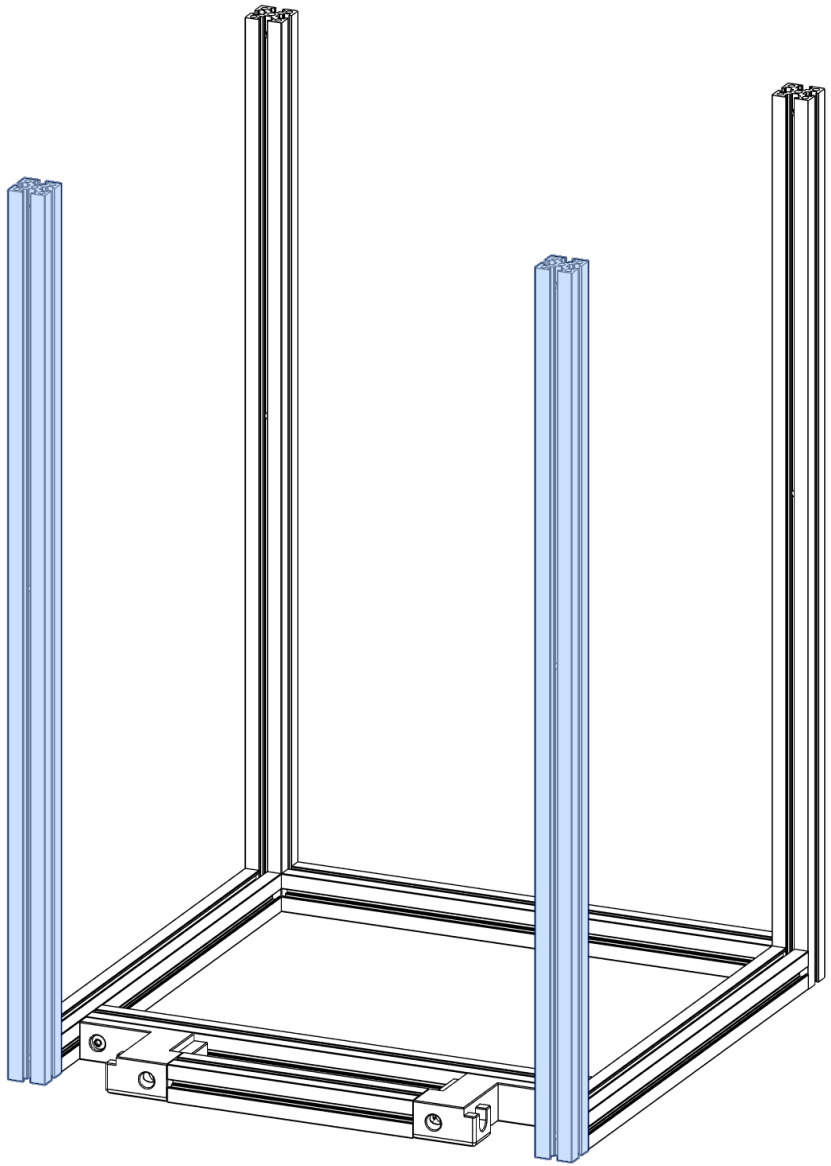


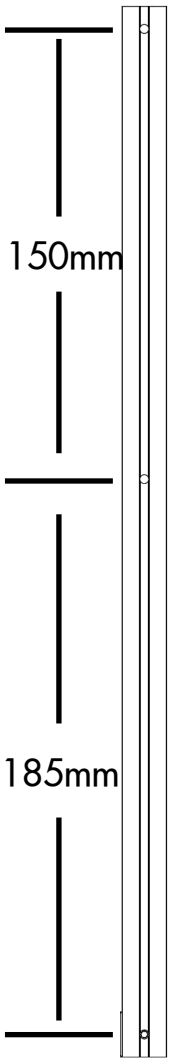
Tighten using blind joints.

Ensure your preloads are correct as of the previous step!

M3x8 for blind joints

2x “C” Extrusions

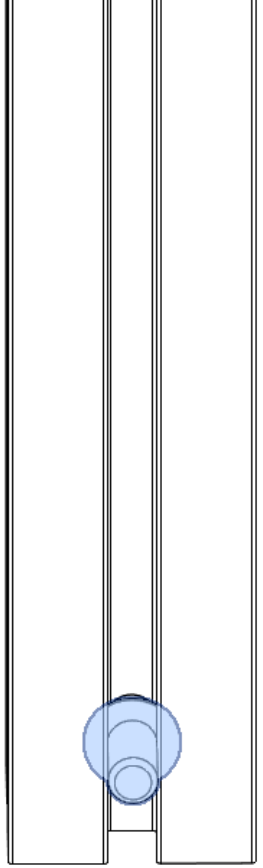




Tighten Blind Joints!

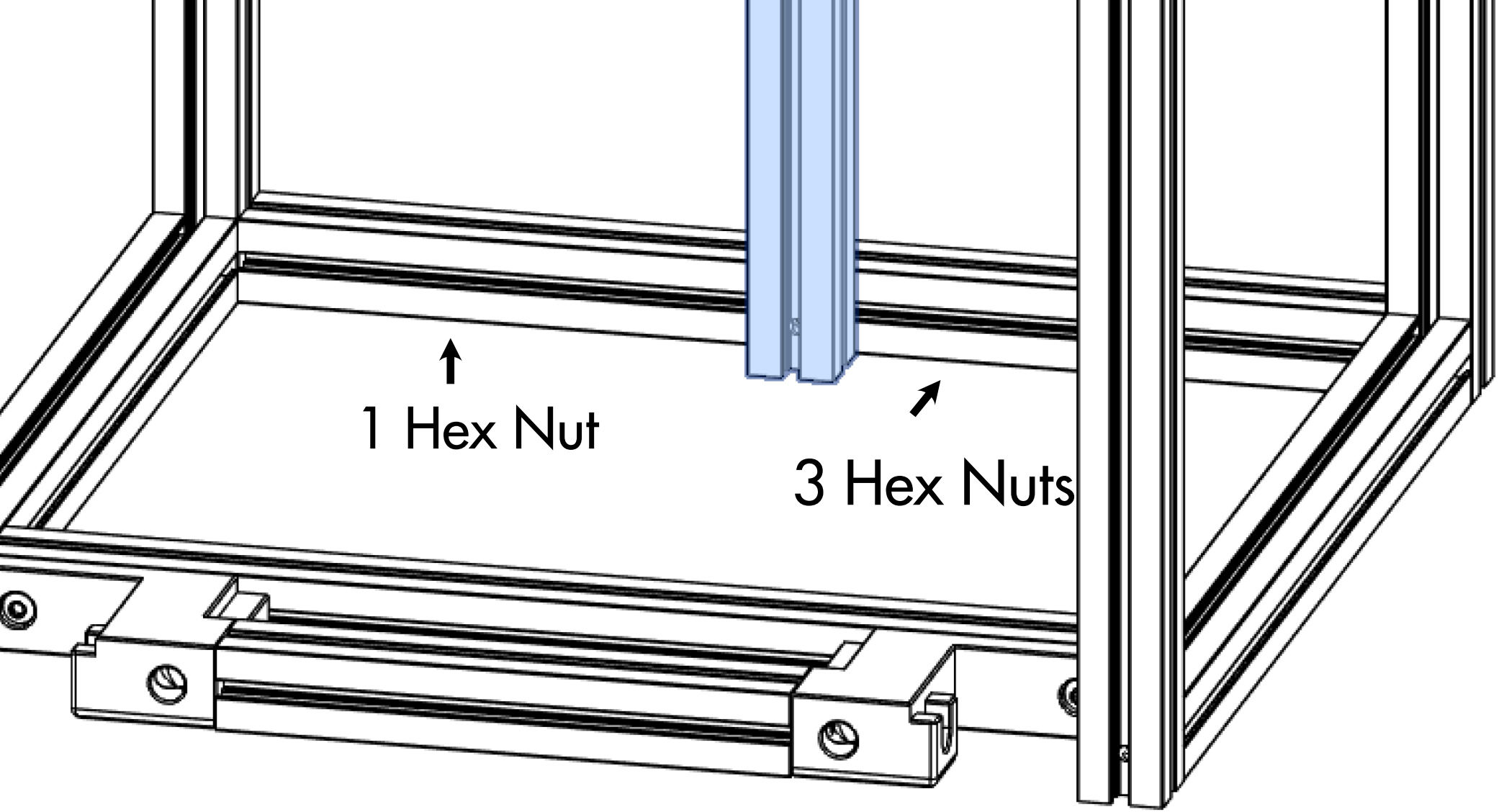
Mastur Mods

G Extrusion

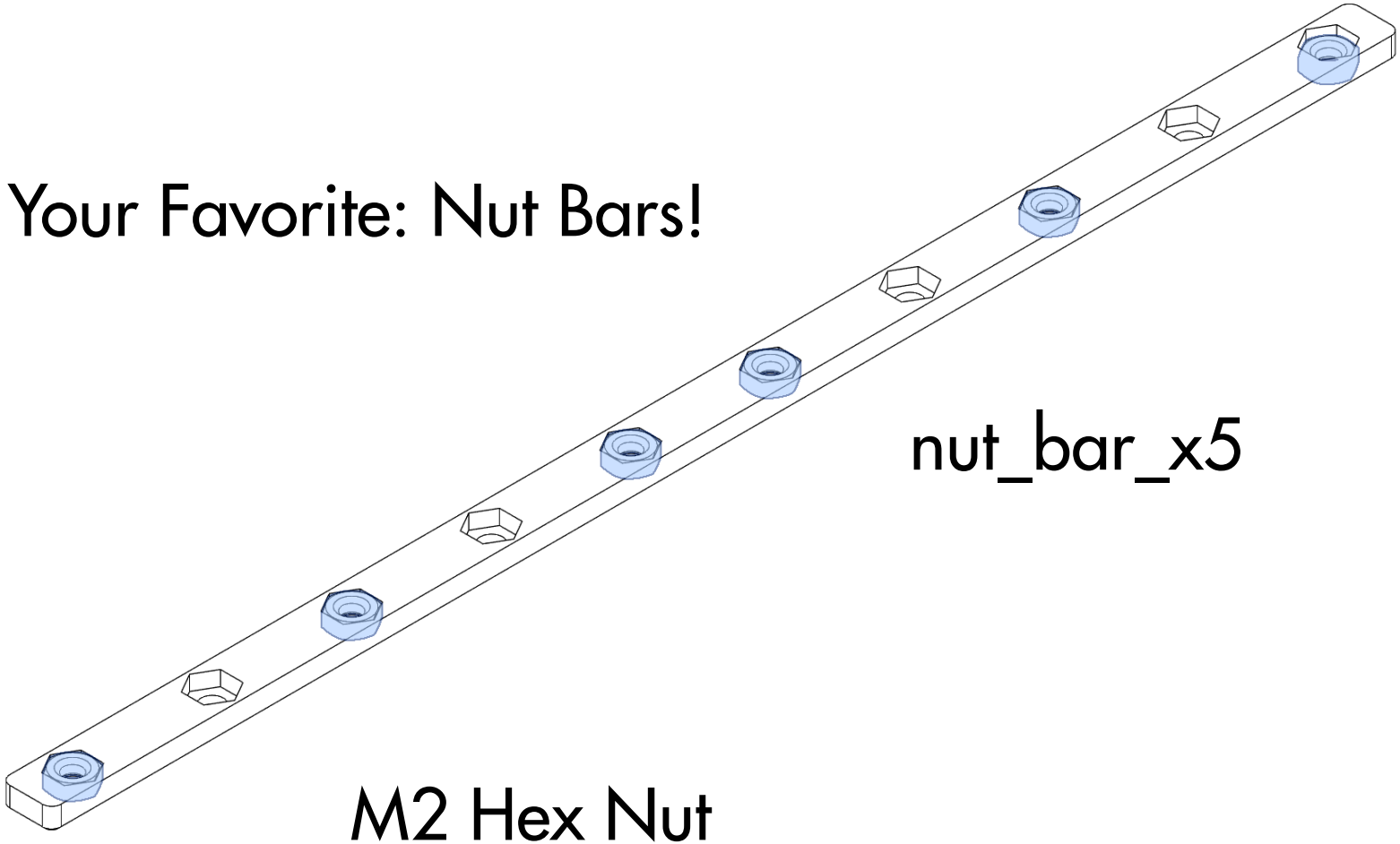


M3x6 BHCS
Blind joint access behind

It's easier to thread the M3x6 into the nut and then slide th
extrusion over the top. See next page for proper orientatio

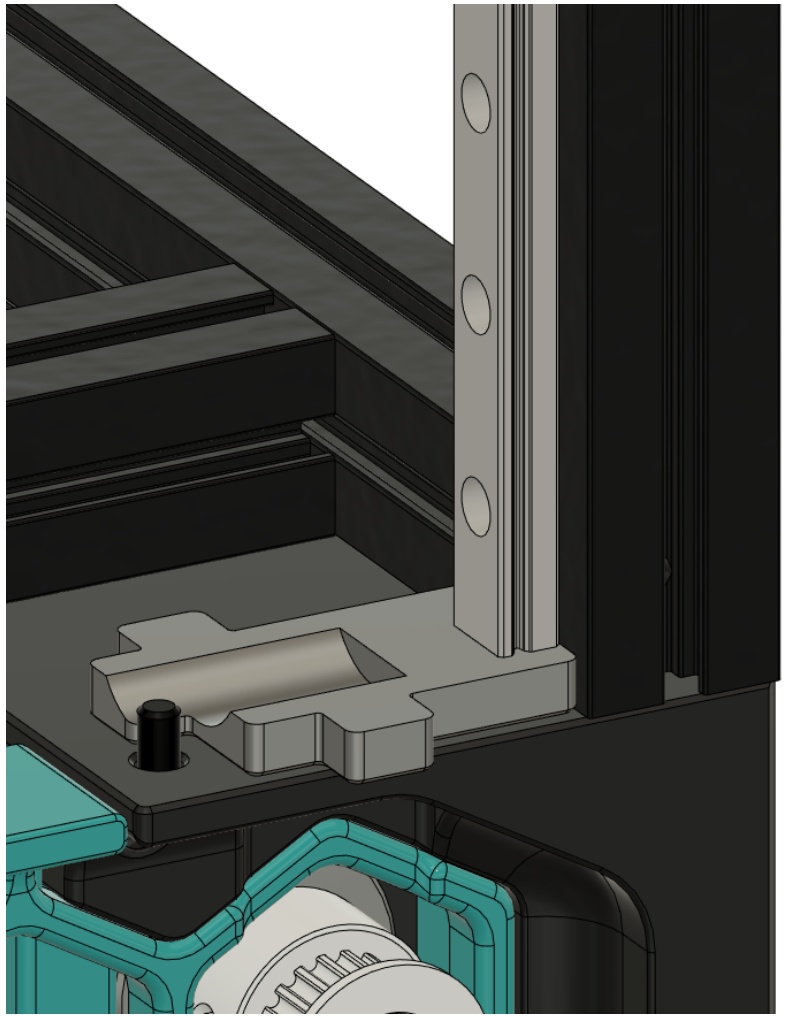

1 Hex Nut
3 Hex Nuts

Your Favorite: Nut Bars!



nut_bar_x5

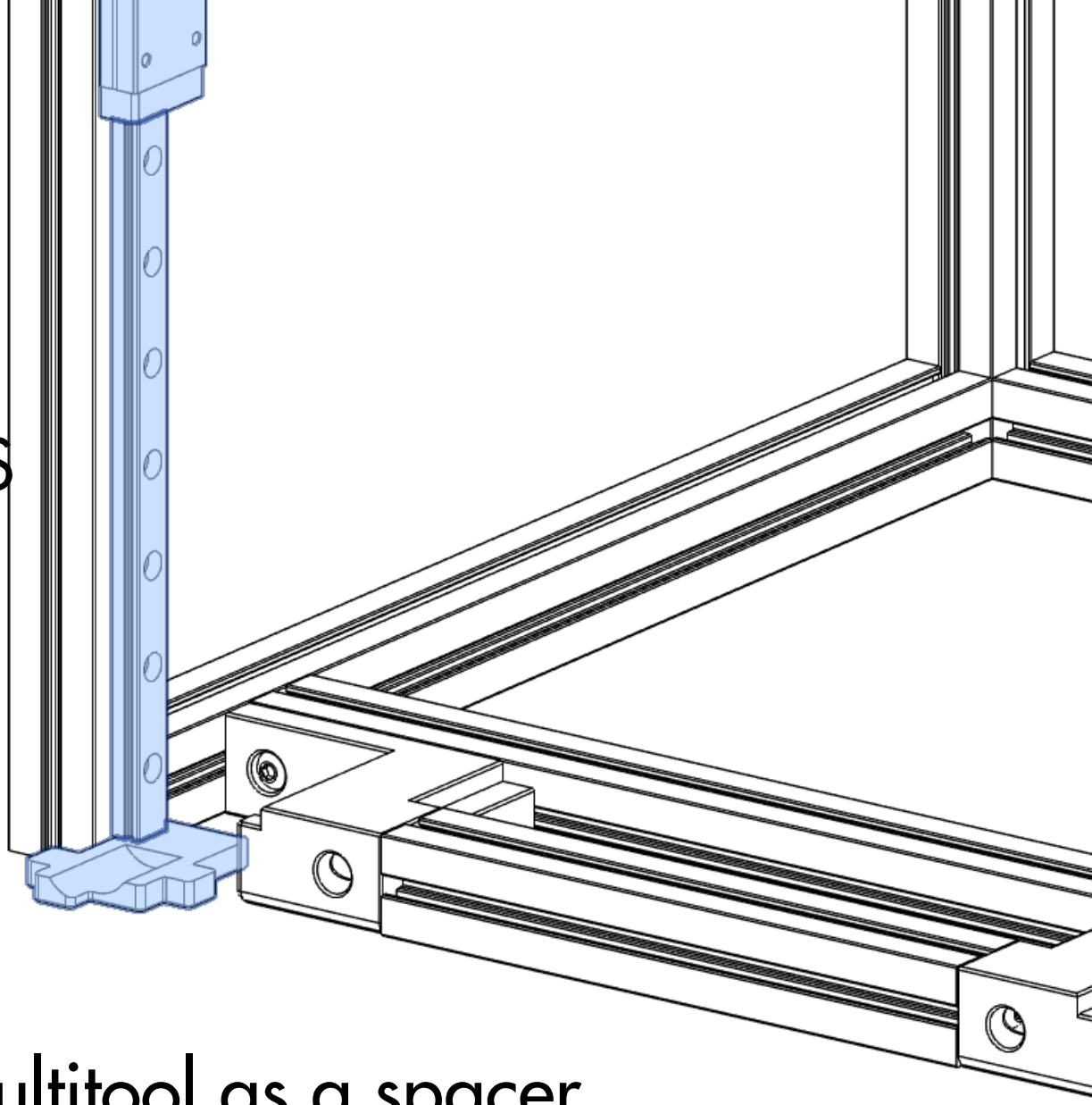
M2 Hex Nut



A Helpful Tool:
Pandoras_Box_Multitool

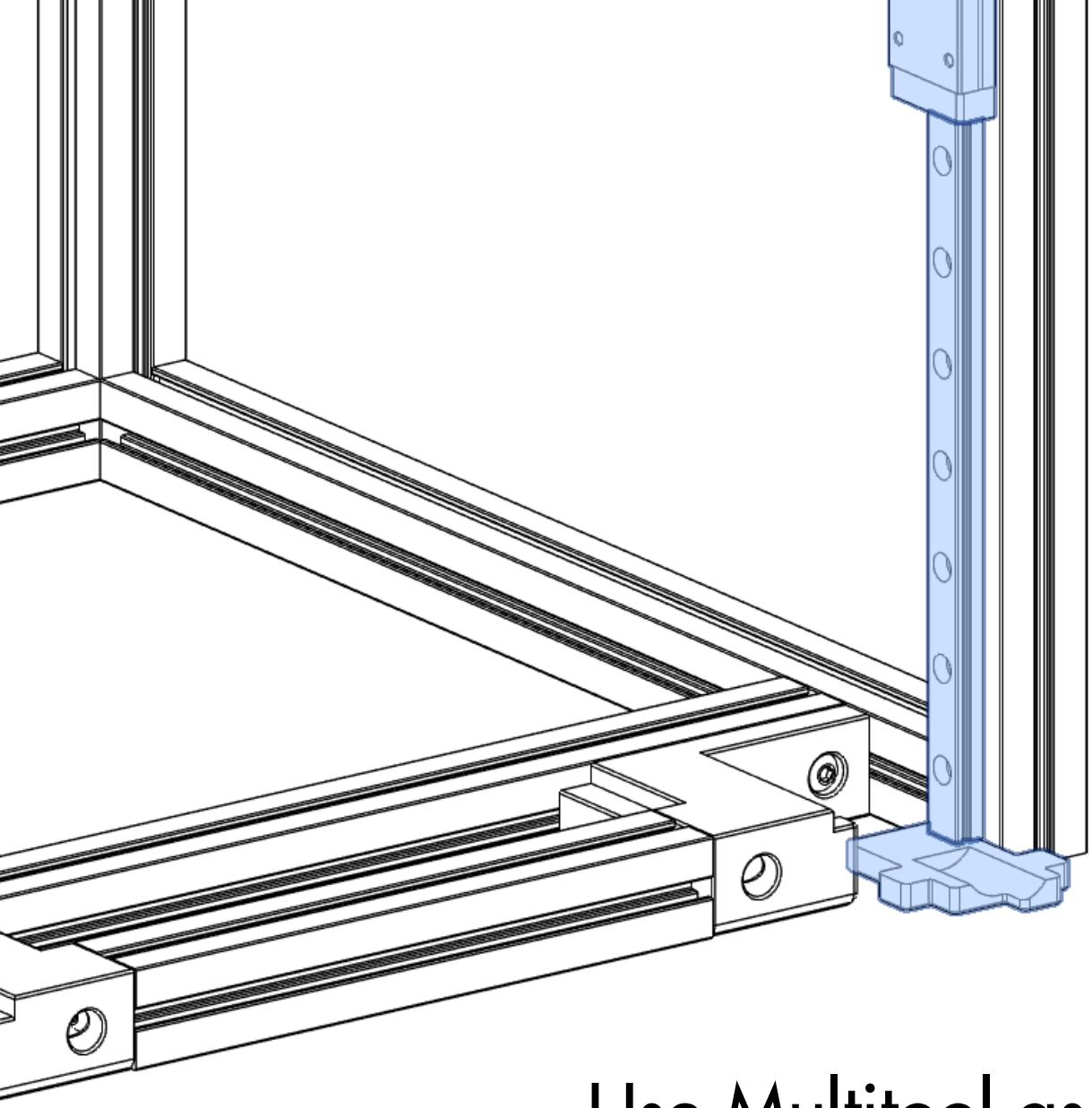
150mm MGN7H
& Nut Bar

Secure with M2x8 SHCS



Place on flat surface!

Use Multitool as a spacer

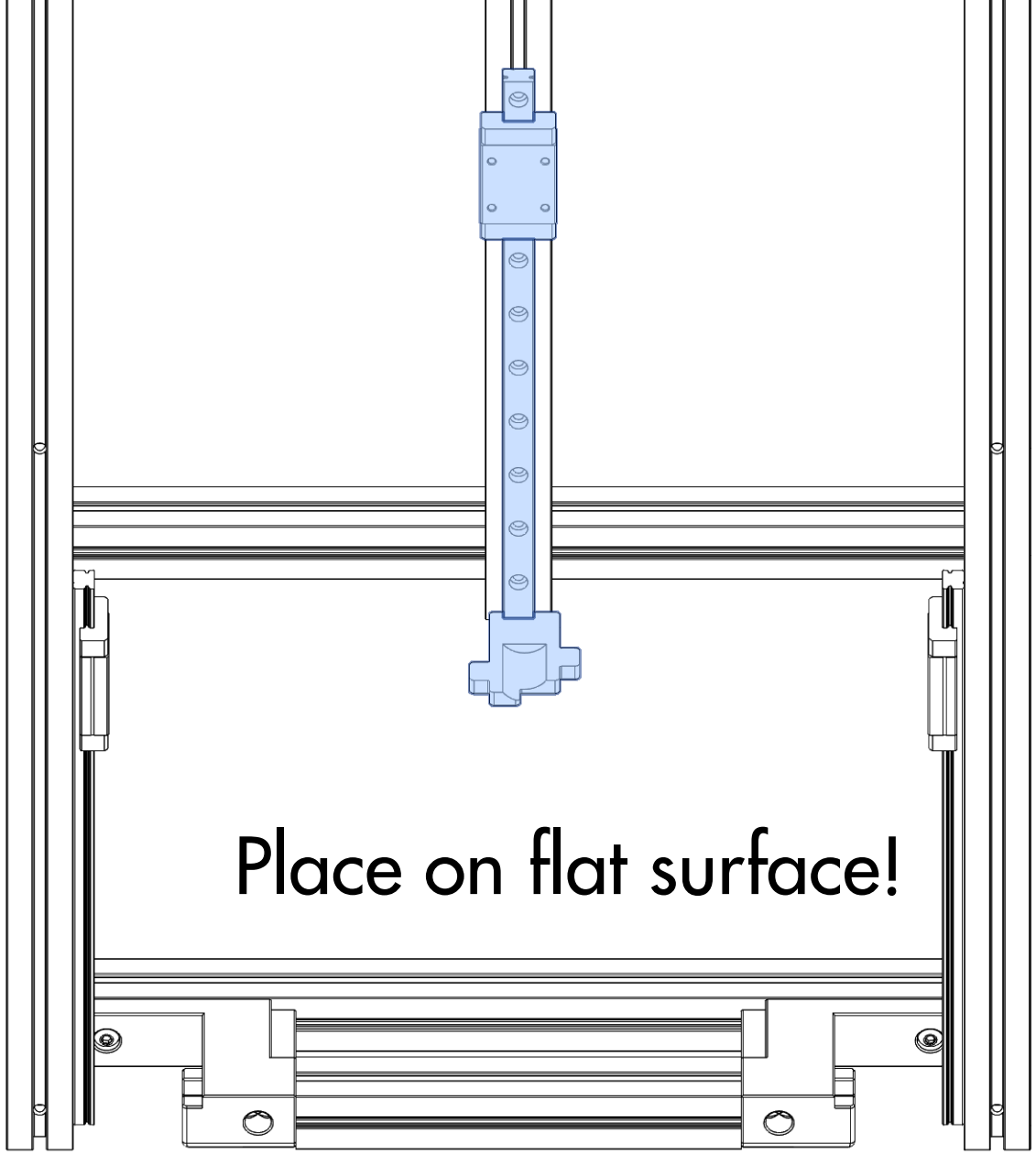


150mm MGN7H
& Nut Bar

Secure with M2x8 SHC

Place on flat surface!

Use Multitool as a spacer

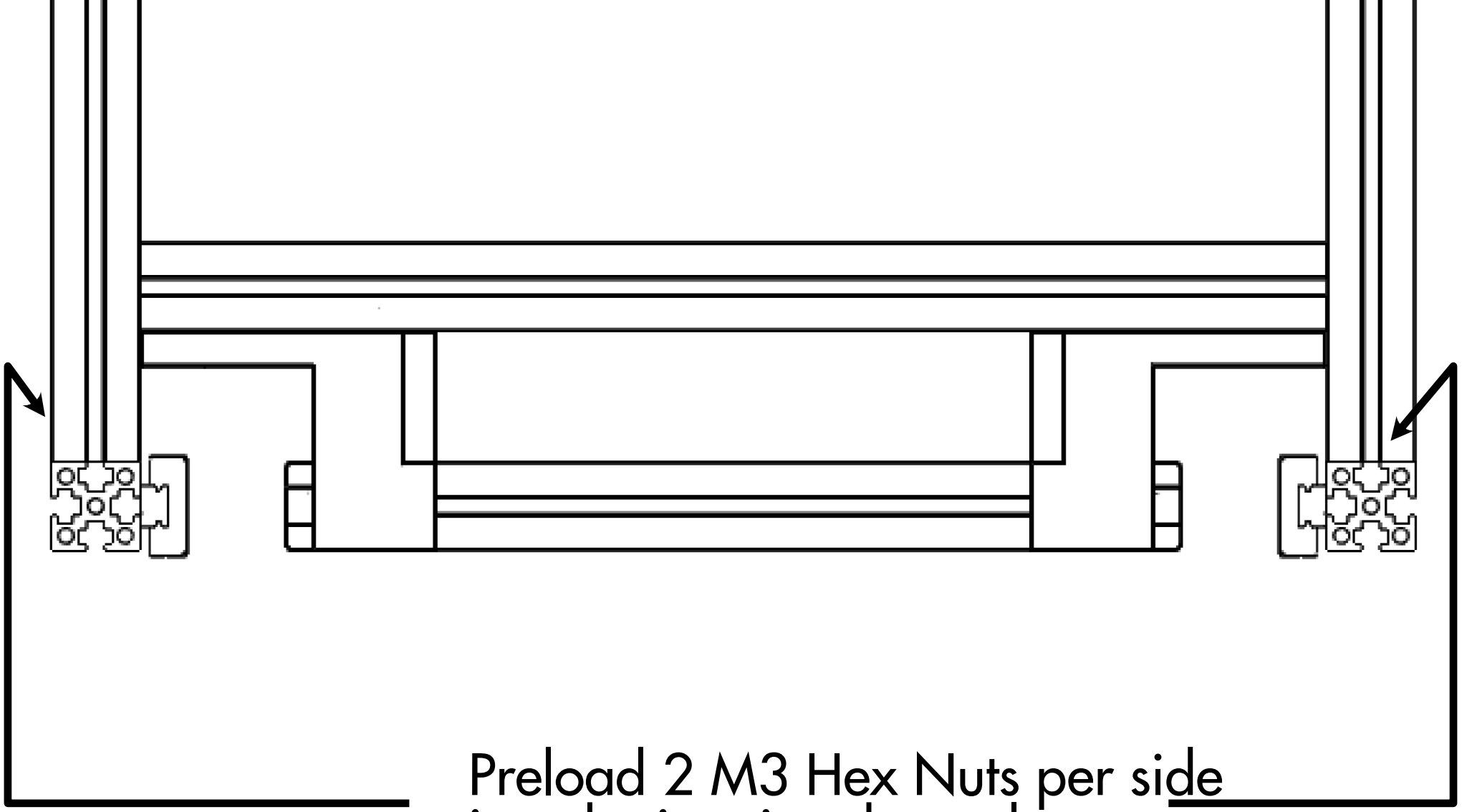


150mm MGN7H
& Nut Bar

Secure with M2x8 SHCS

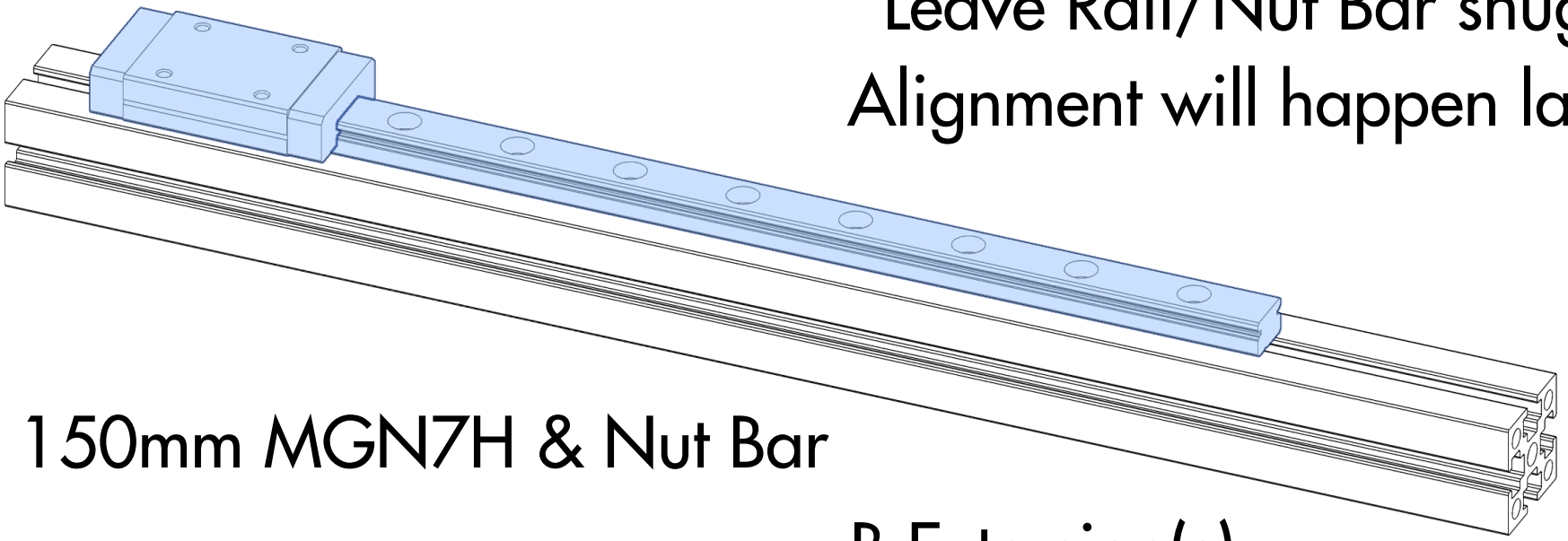
Use Multitool as
a spacer

Place on flat surface!



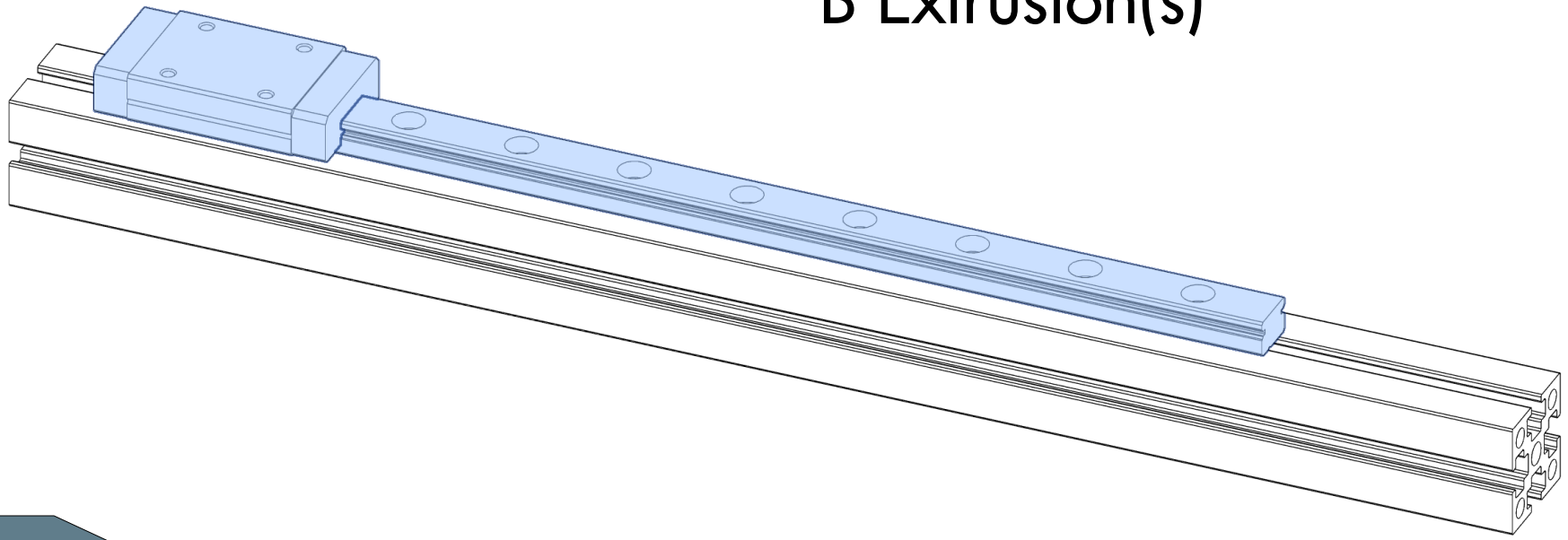
Preload 2 M3 Hex Nuts per side into the interior channel.

Leave Rail/Nut Bar snug,
Alignment will happen later



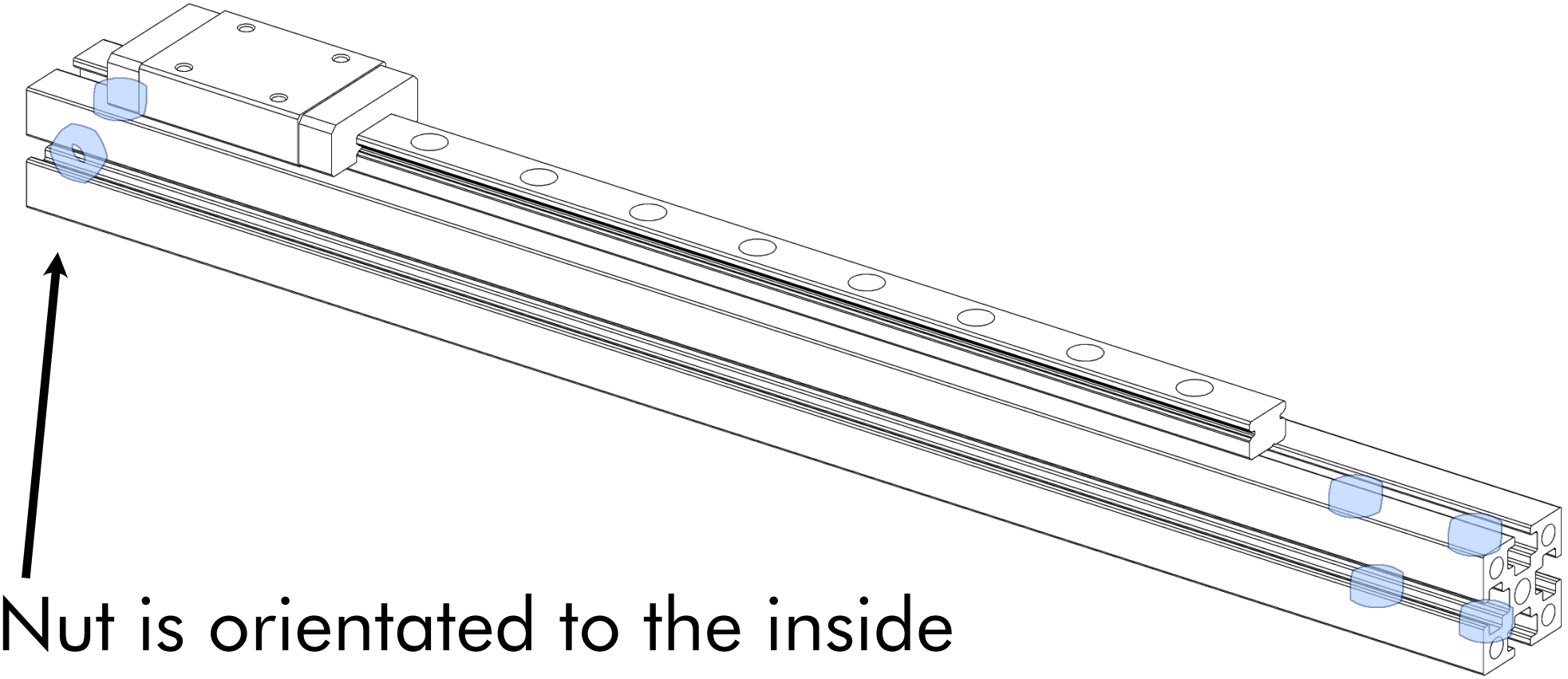
150mm MGN7H & Nut Bar

B Extrusion(s)



Right Gantry

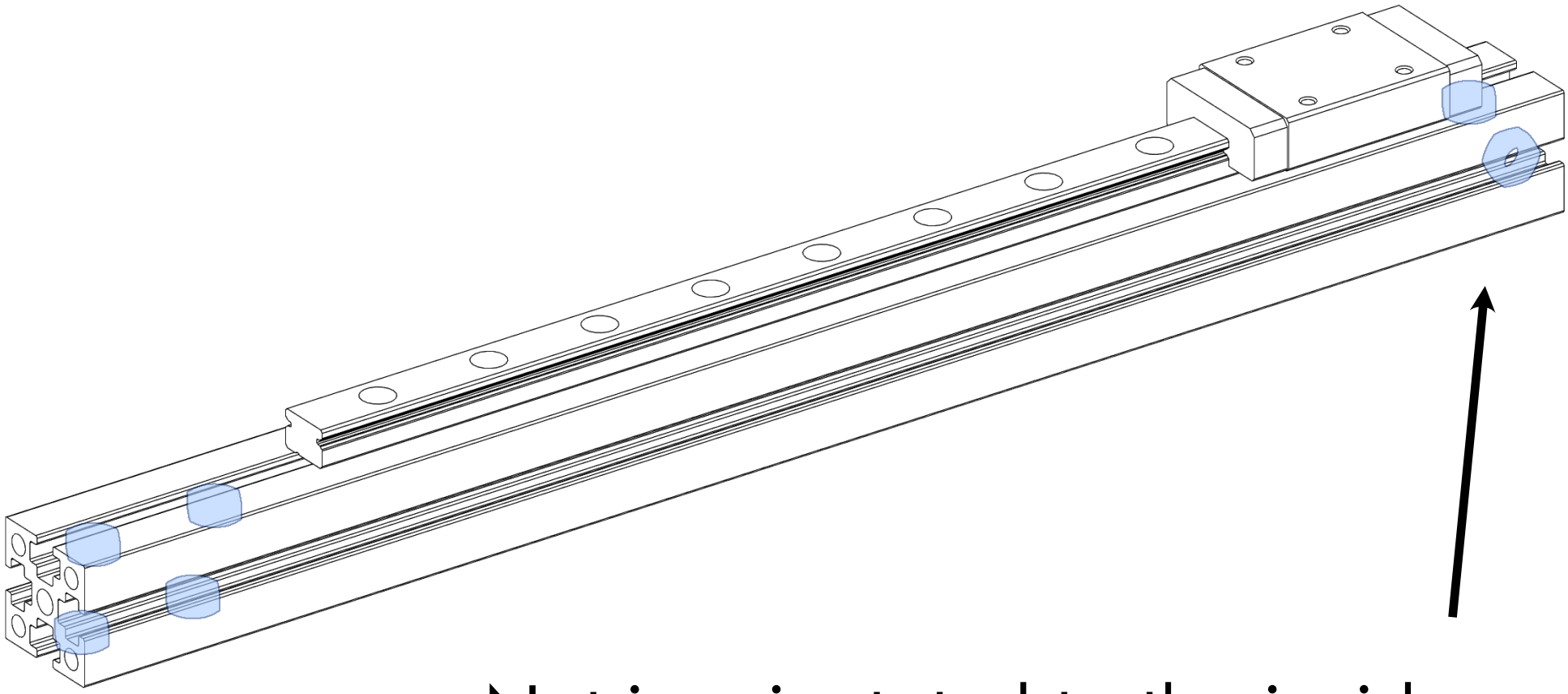
Preload M3 Hex Nuts as shown



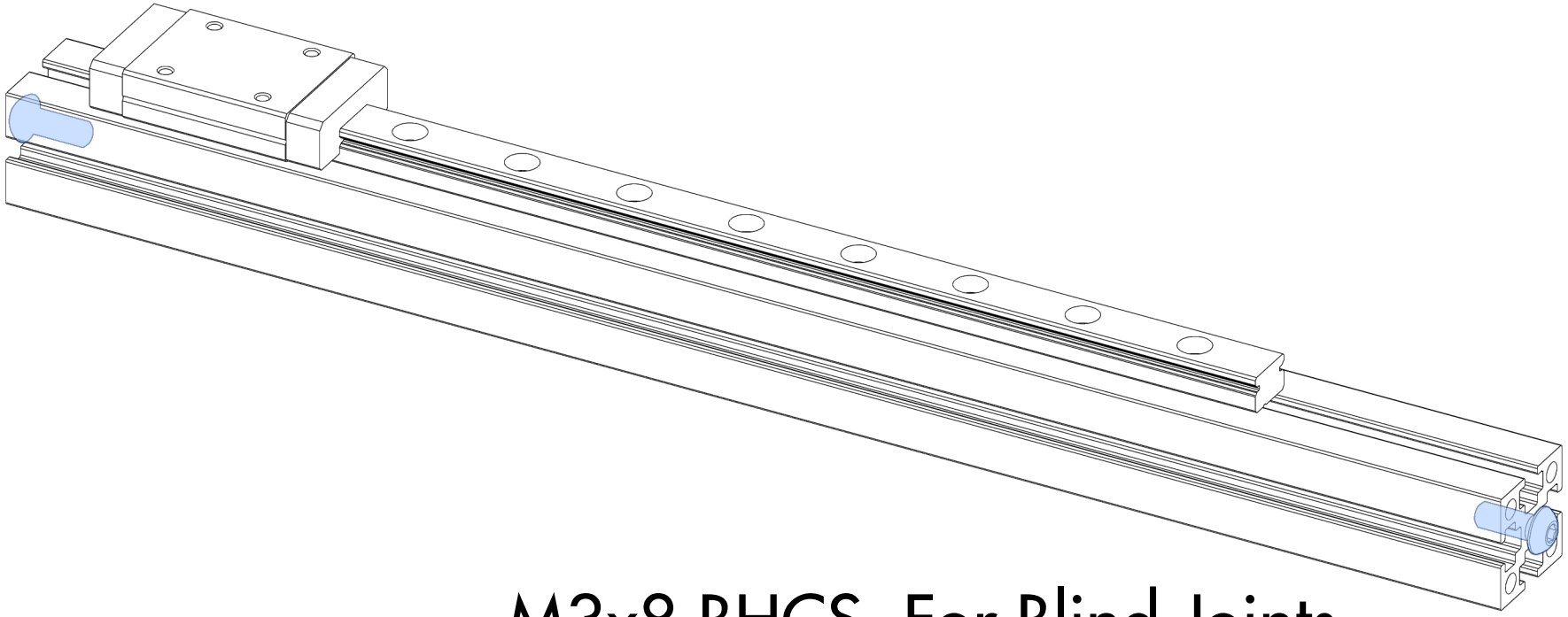
Nut is orientated to the inside

Left Gantry

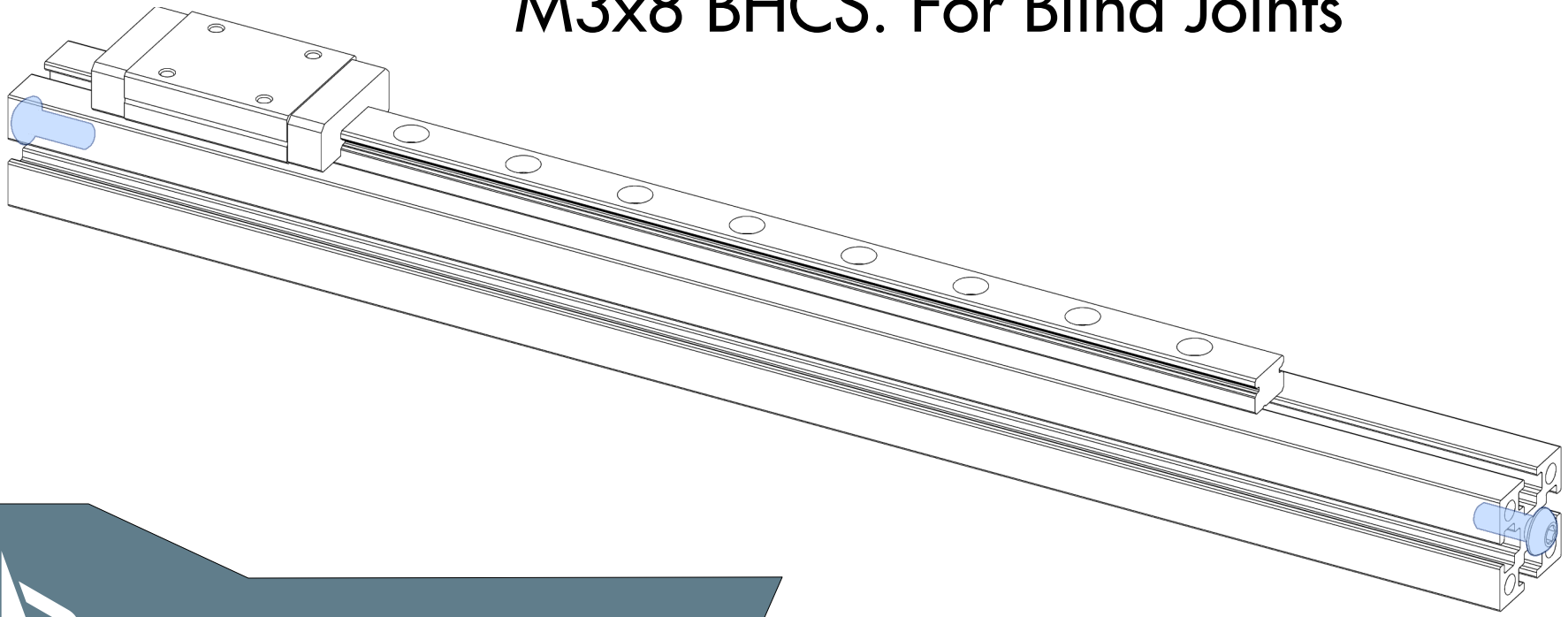
Preload M3 Hex Nuts as shown



Nut is orientated to the inside

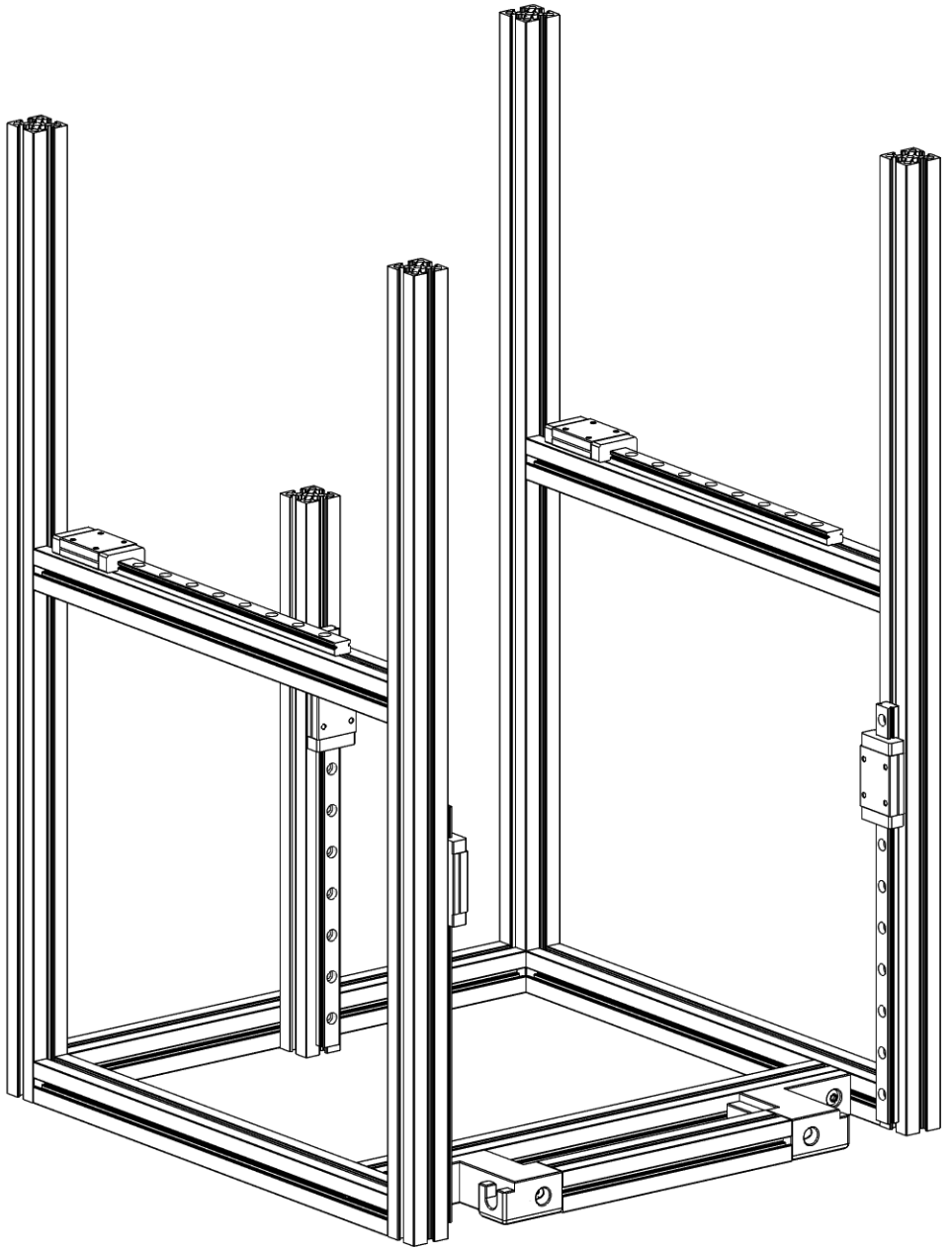


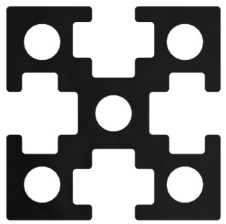
M3x8 BHCS. For Blind Joints



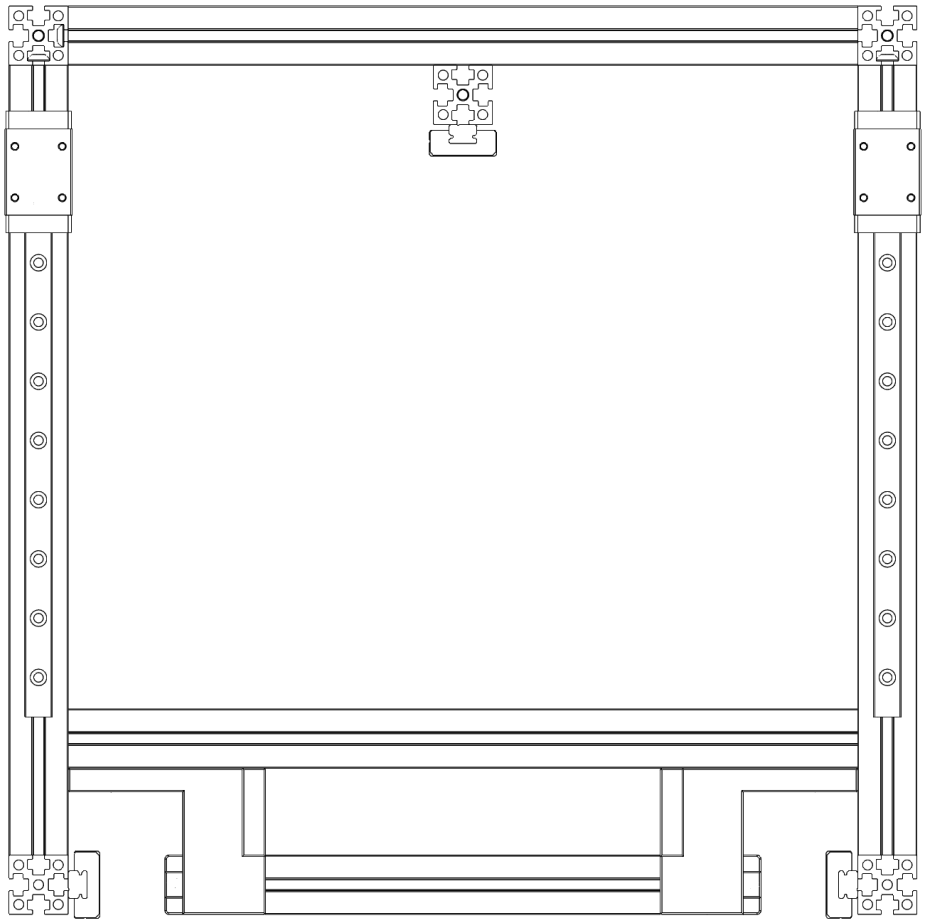
Mastur Mods

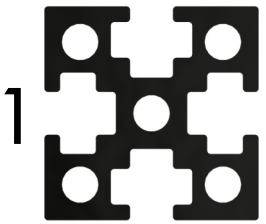
Tighten Blind Joints





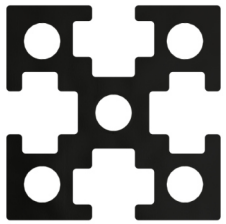
1





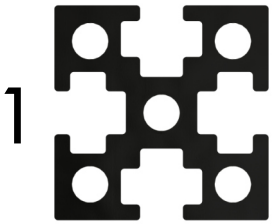
1

1



1

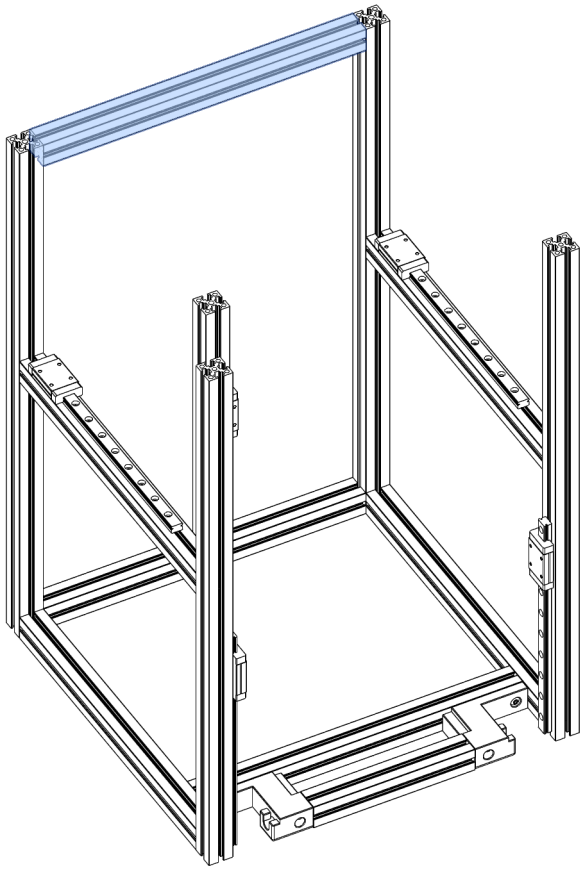
1



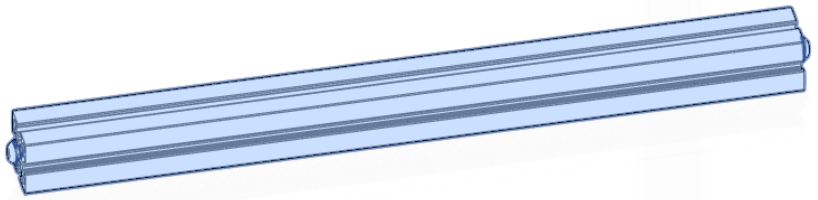
Mastur Mods

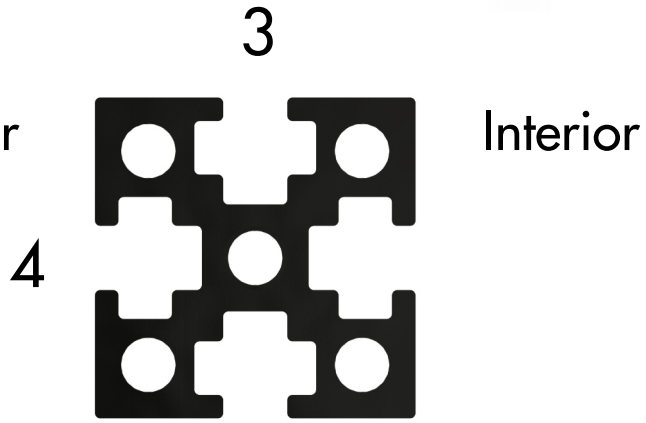
Frame Assembly

P48

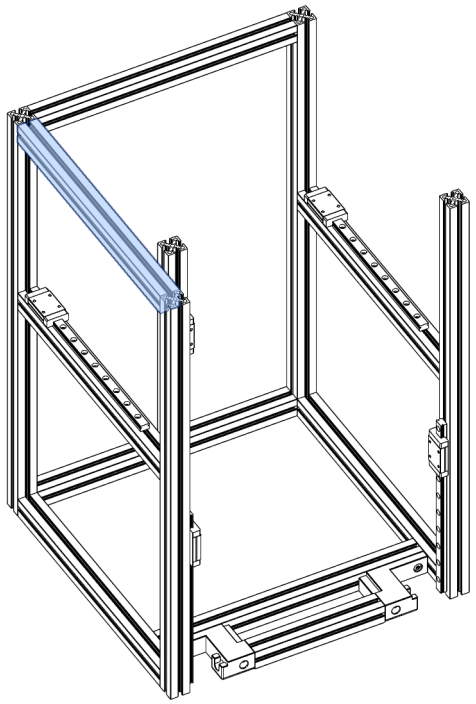


"B" Extrusion

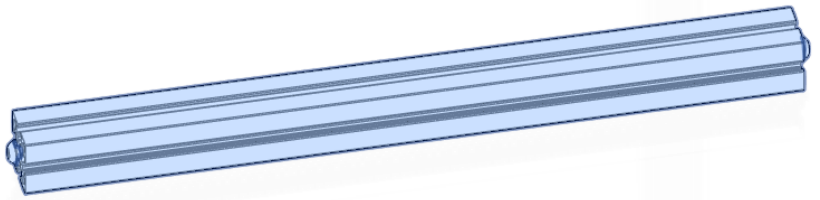


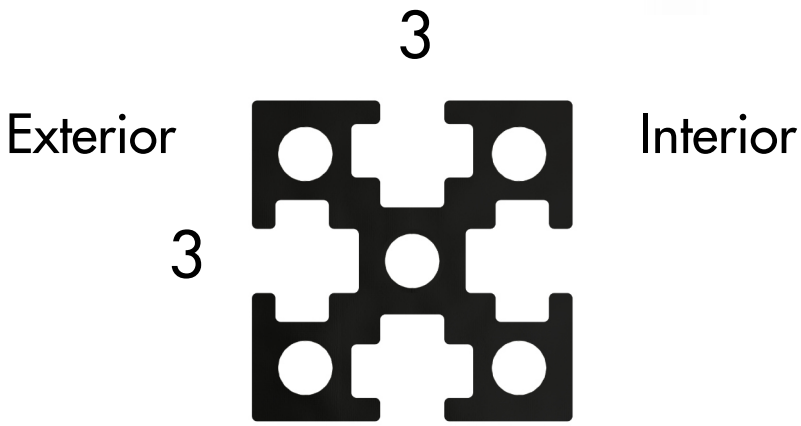


2x M3x8 BHCS for the ends for blind joints.

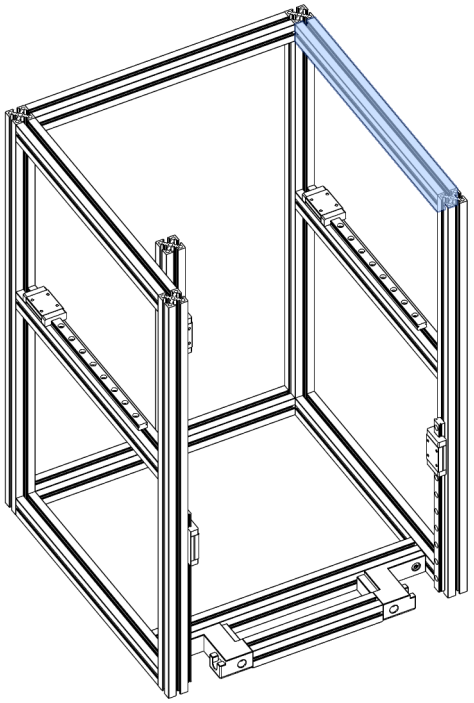


"B" Extrusion

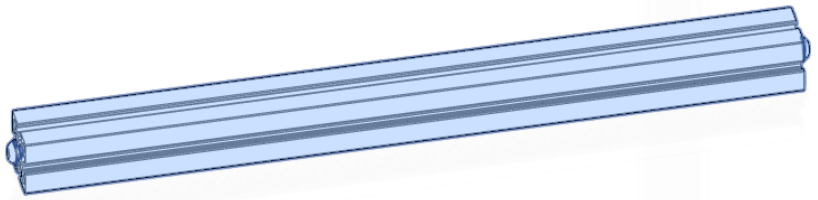


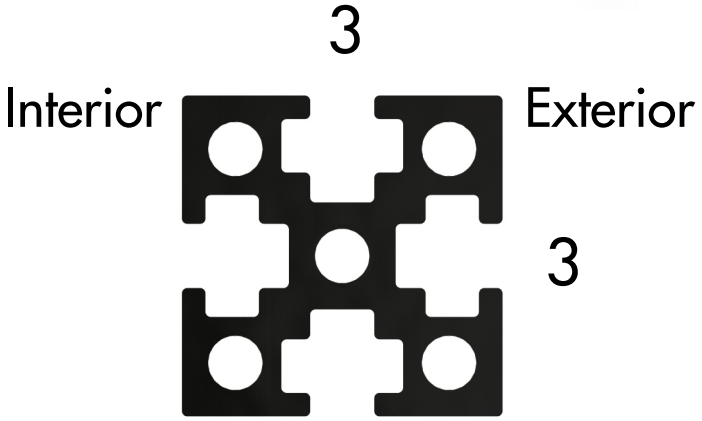


2x M3x8 BHCS for the ends for blind joints.

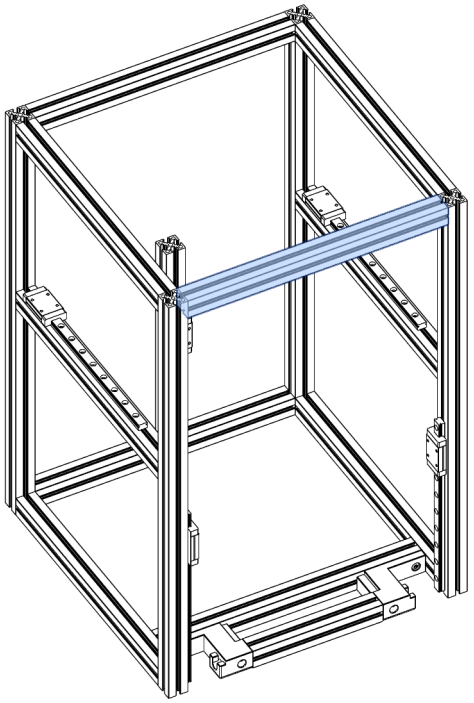


"B" Extrusion

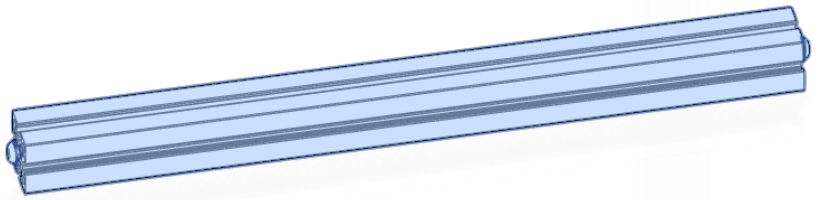




2x M3x8 BHCS for the ends for blind joints.

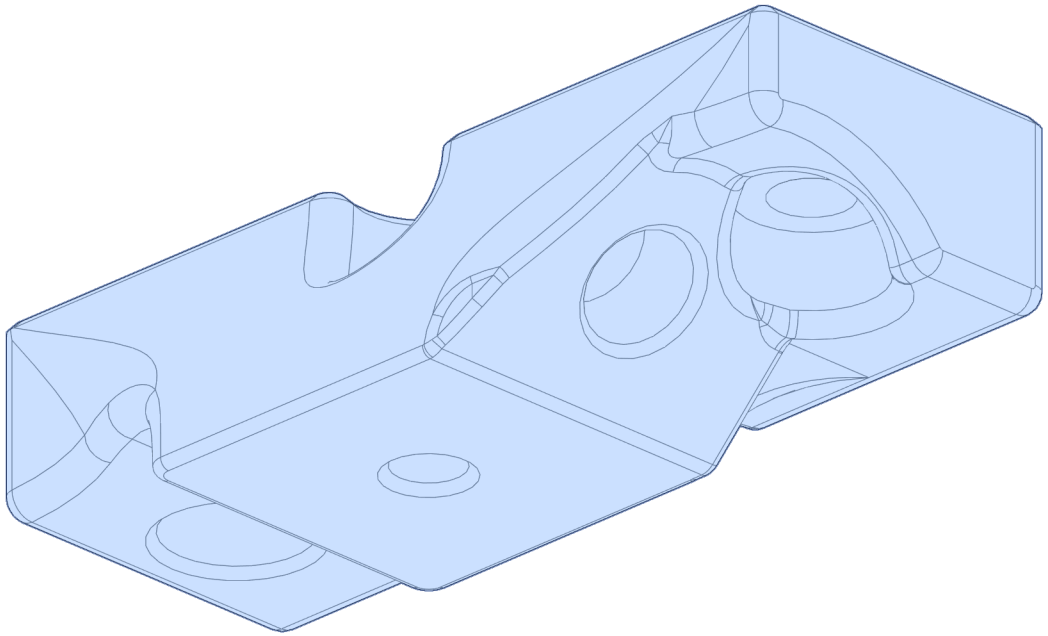


"B" Extrusion

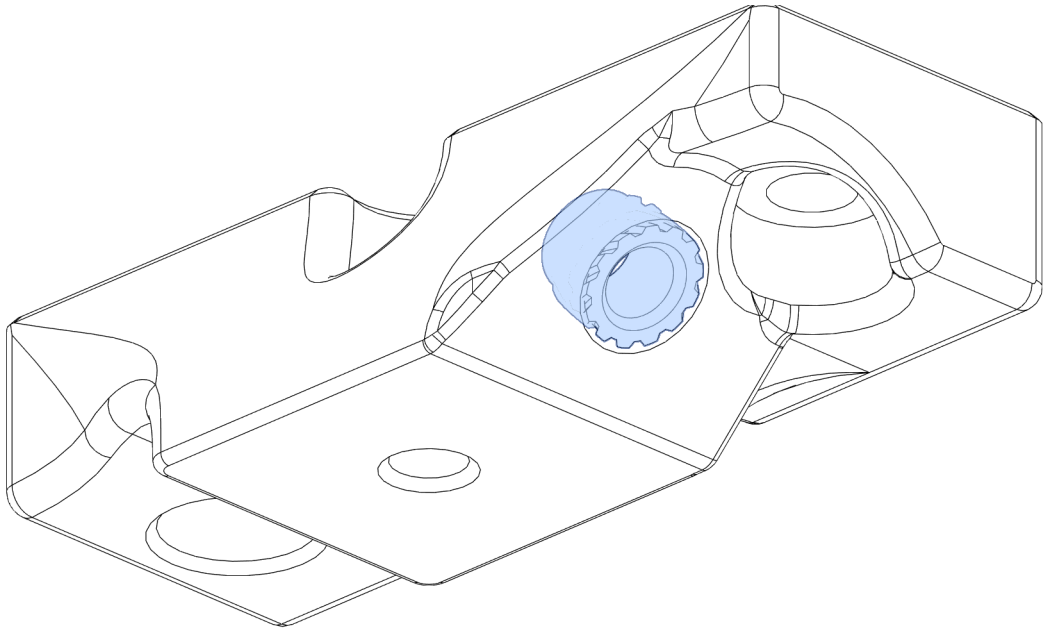


3

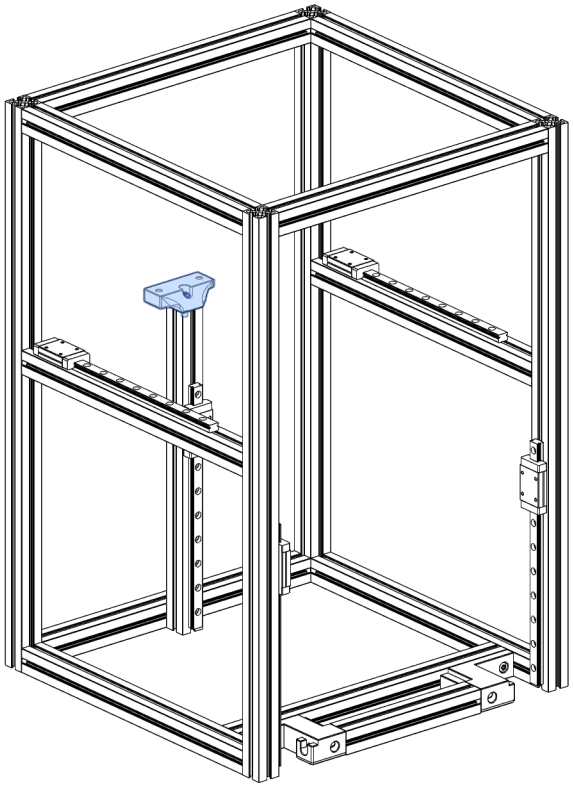
2x M3x8 BHCS for the ends for blind joints.

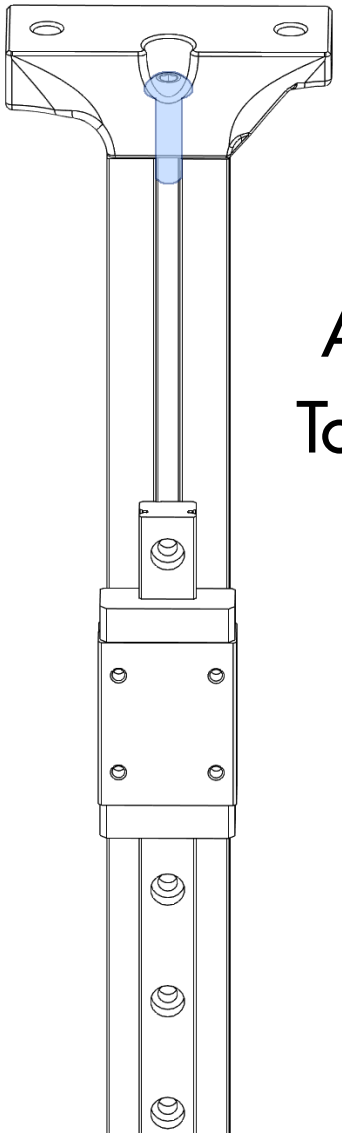


M3 Heatset Insert



frame_brace_gantry

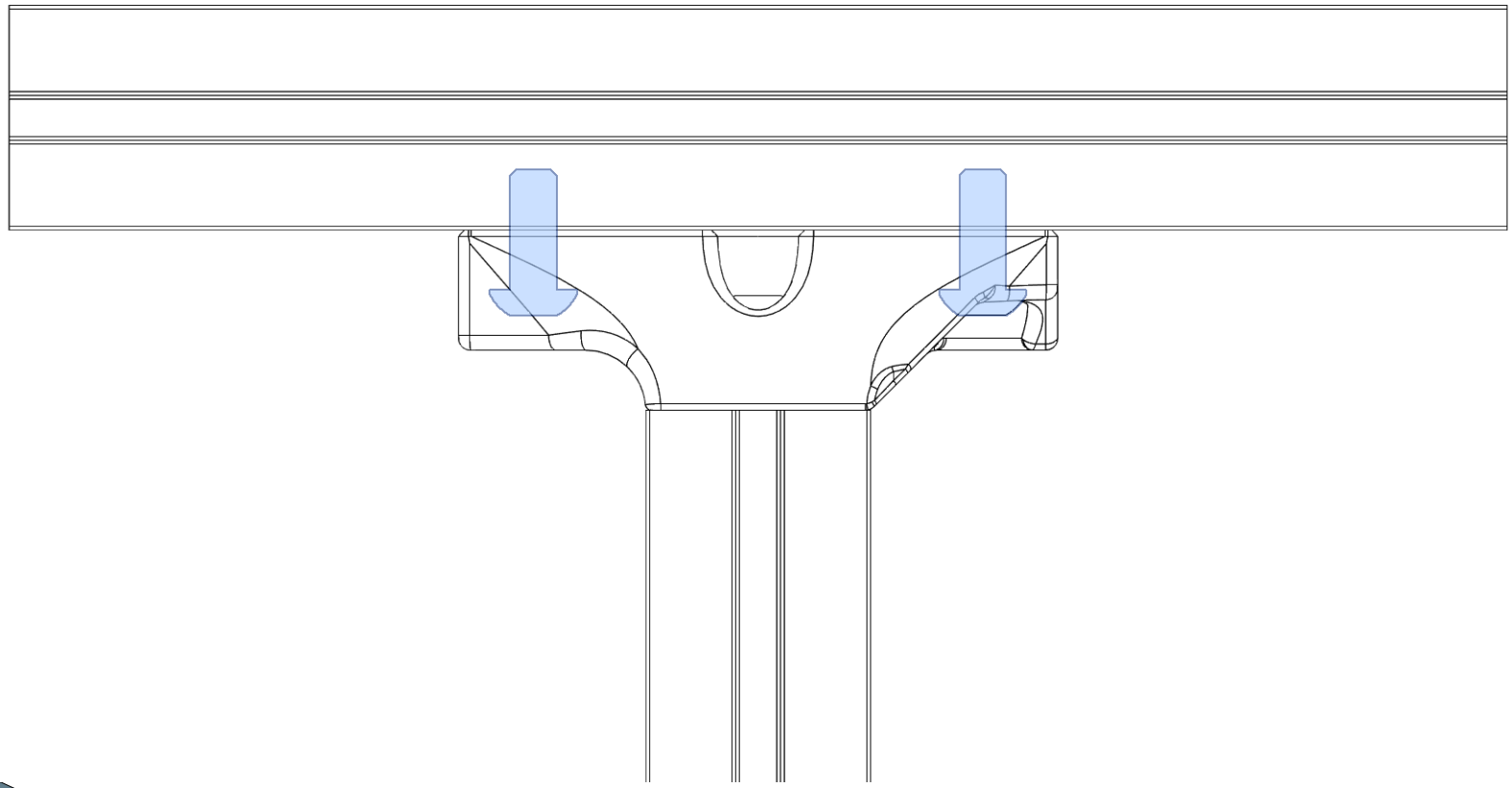




Affix with a M3x12 BHCS
To the middle rear extrusion

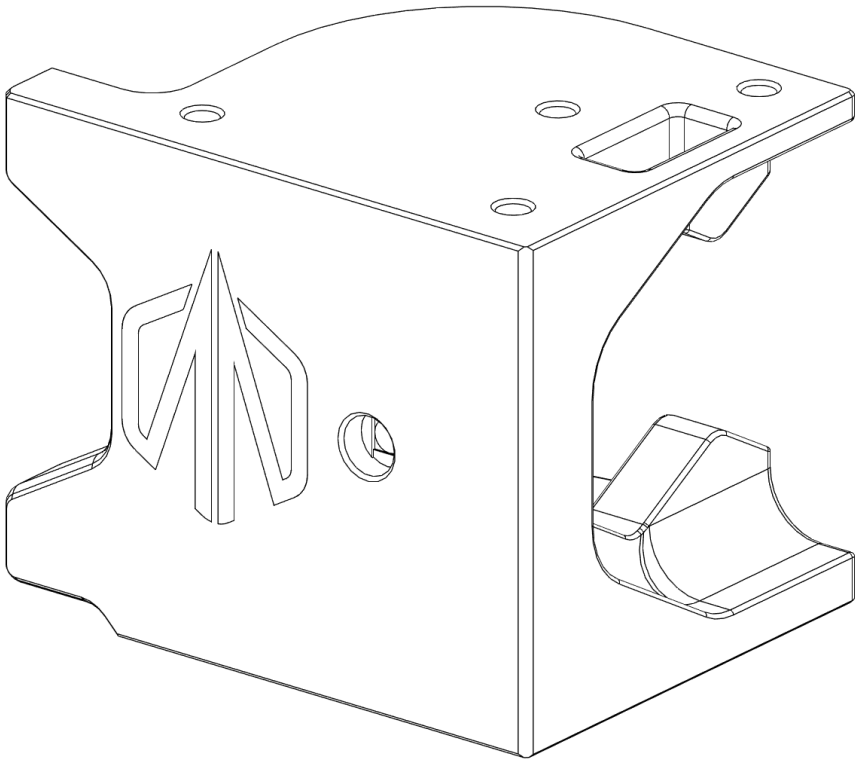
Mastur Mods

Affix “G” Extrusion using M3x8 BHCS

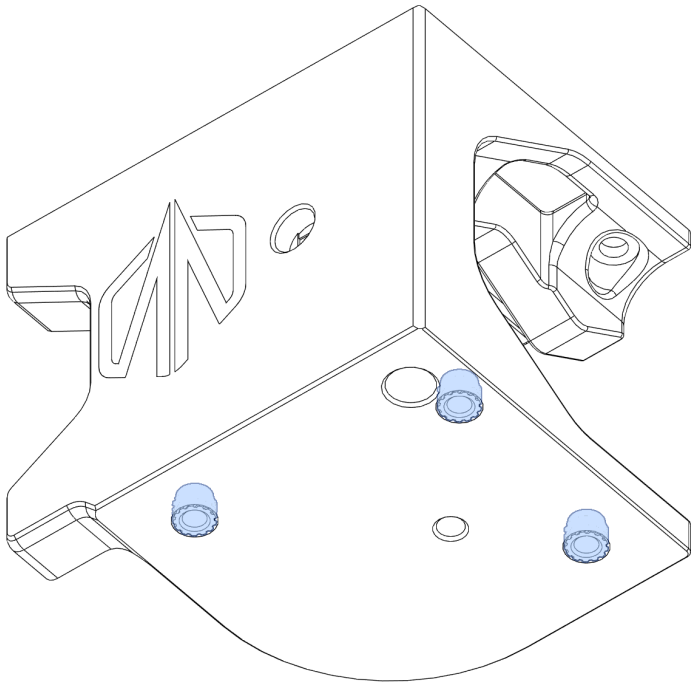


Mastur Mods

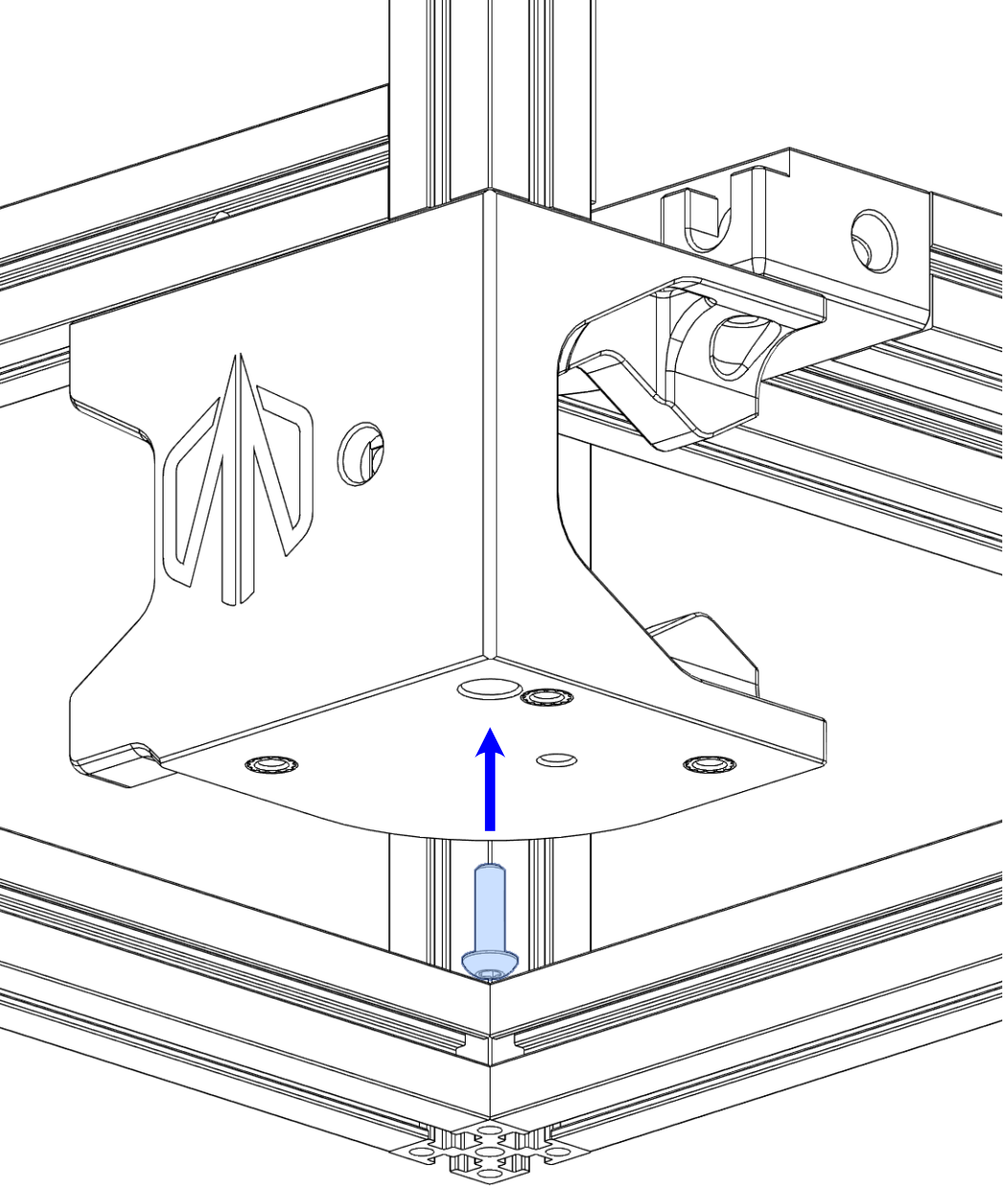
Corner Post Assembly P56

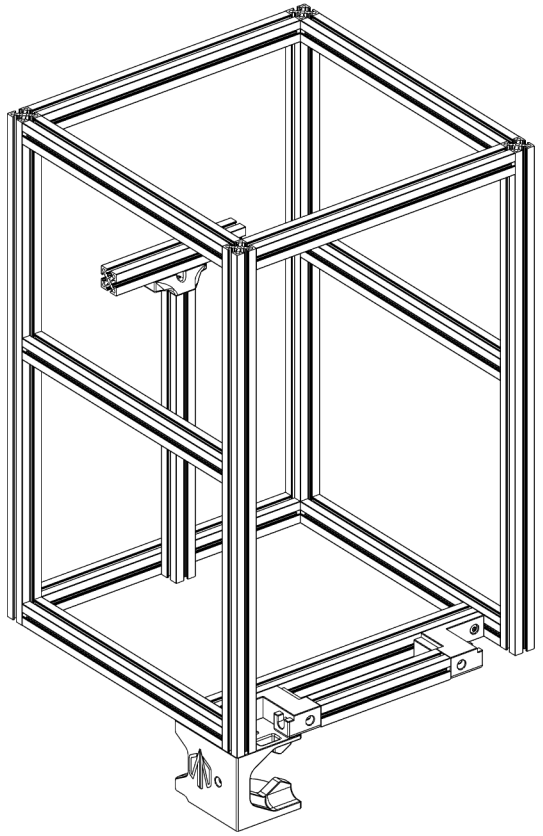


leg_front_left



Insert M3 Heatset Inserts as shown.





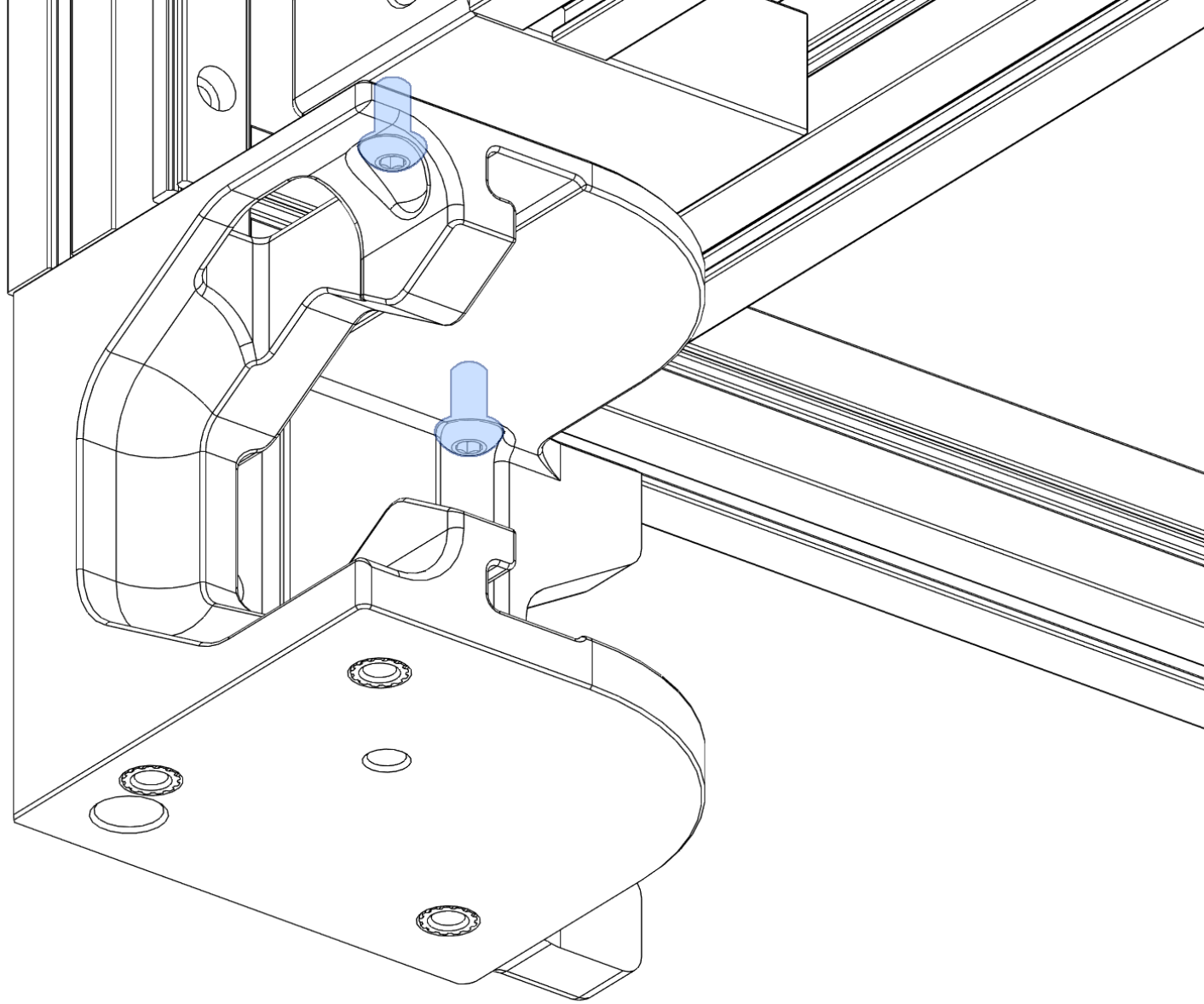
Insert M3x10 BHCS into channel

Screw into front left extrusion

Mastur Mods

Corner Post Assembly P58

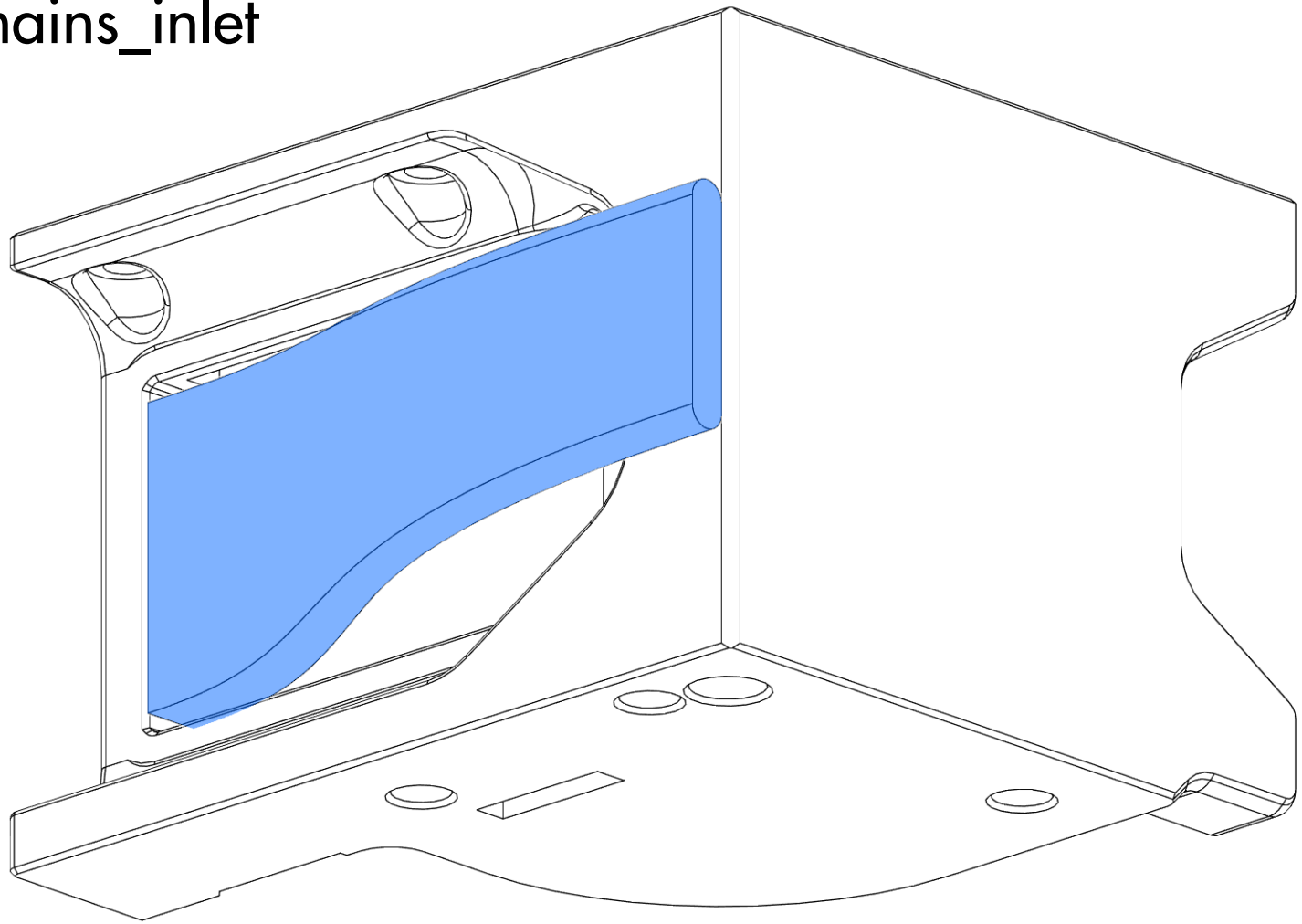
M3x6 BHCS x2



Mastur Mods

Corner Post Assembly P59

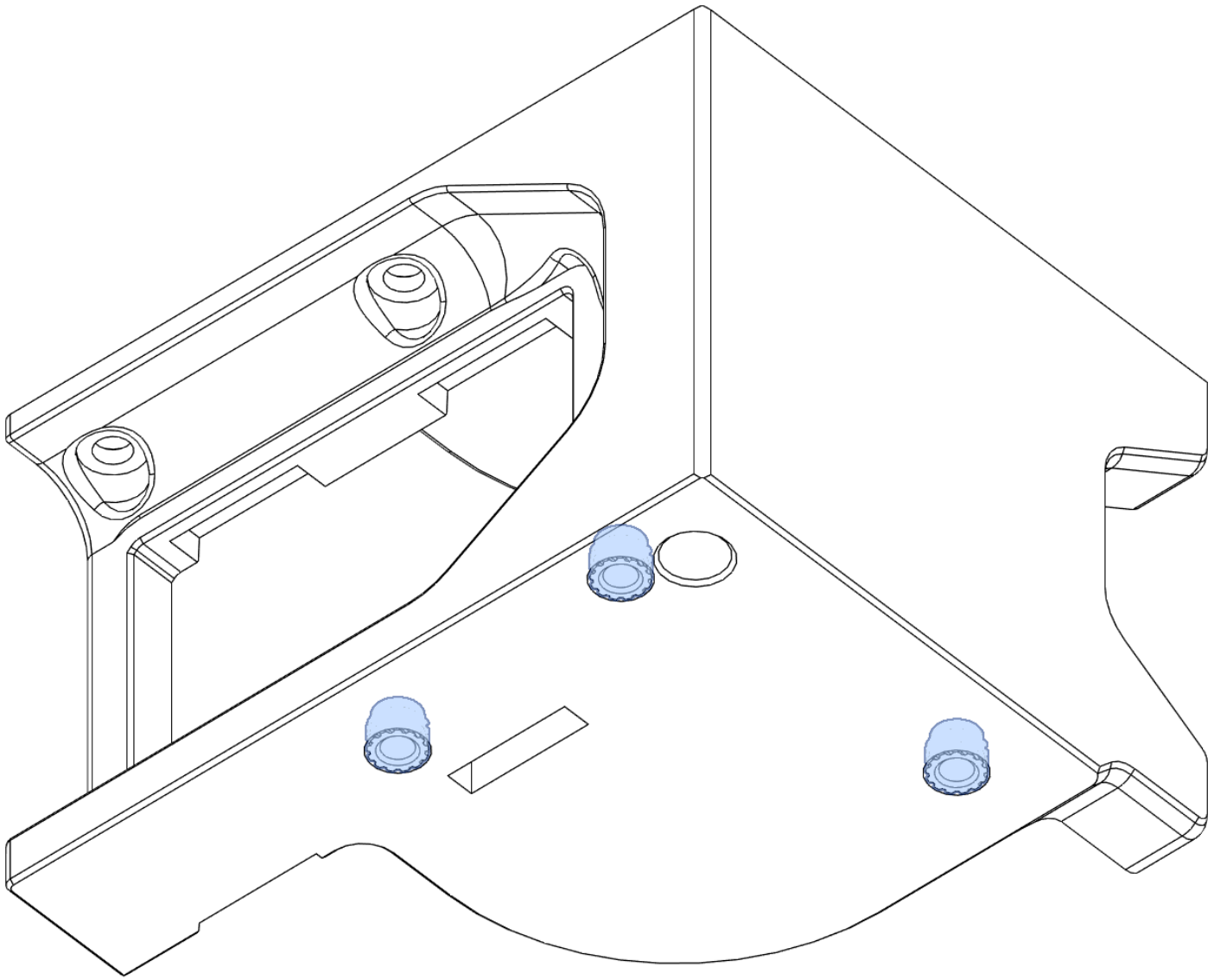
leg_mains_inlet



Remove highlighted support structure

Mastur Mods

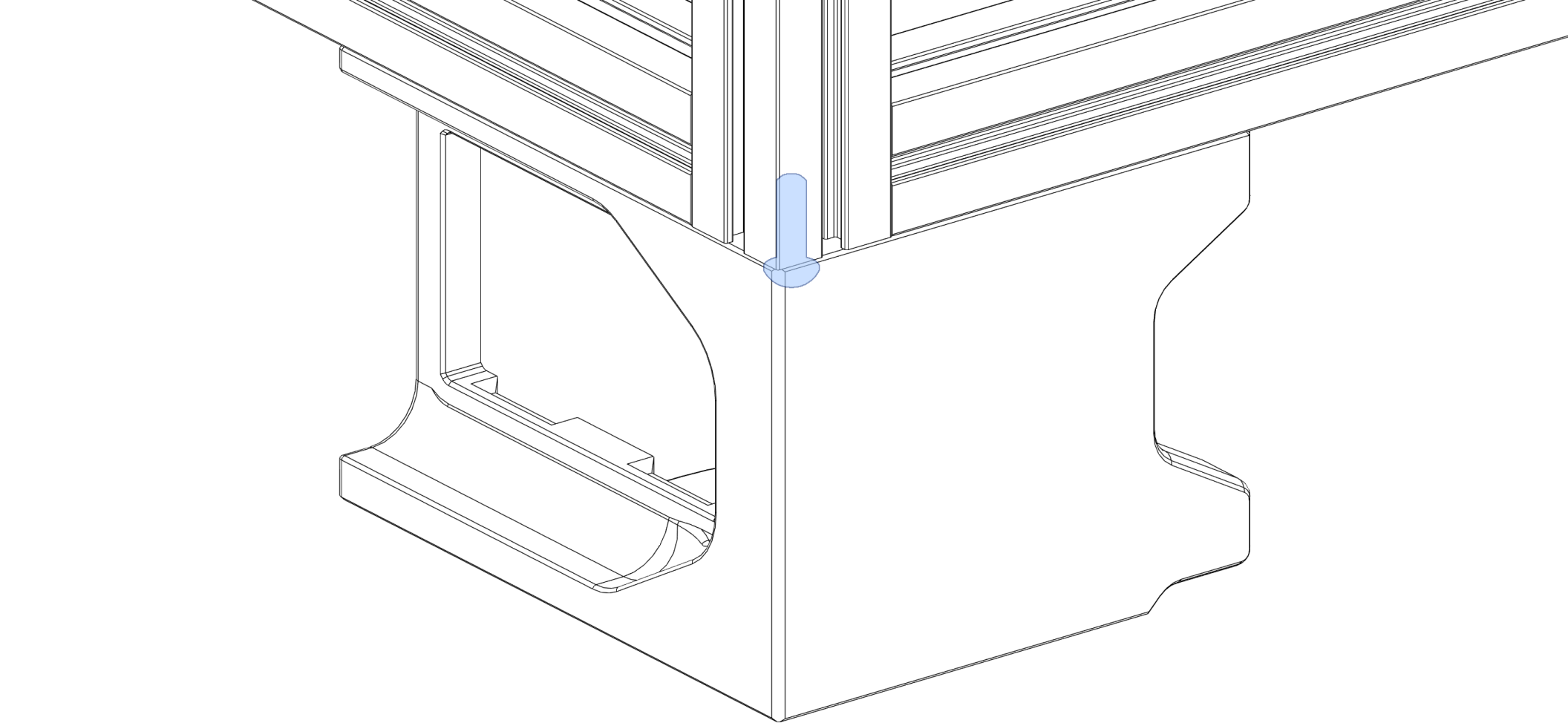
Corner Post Assembly P60



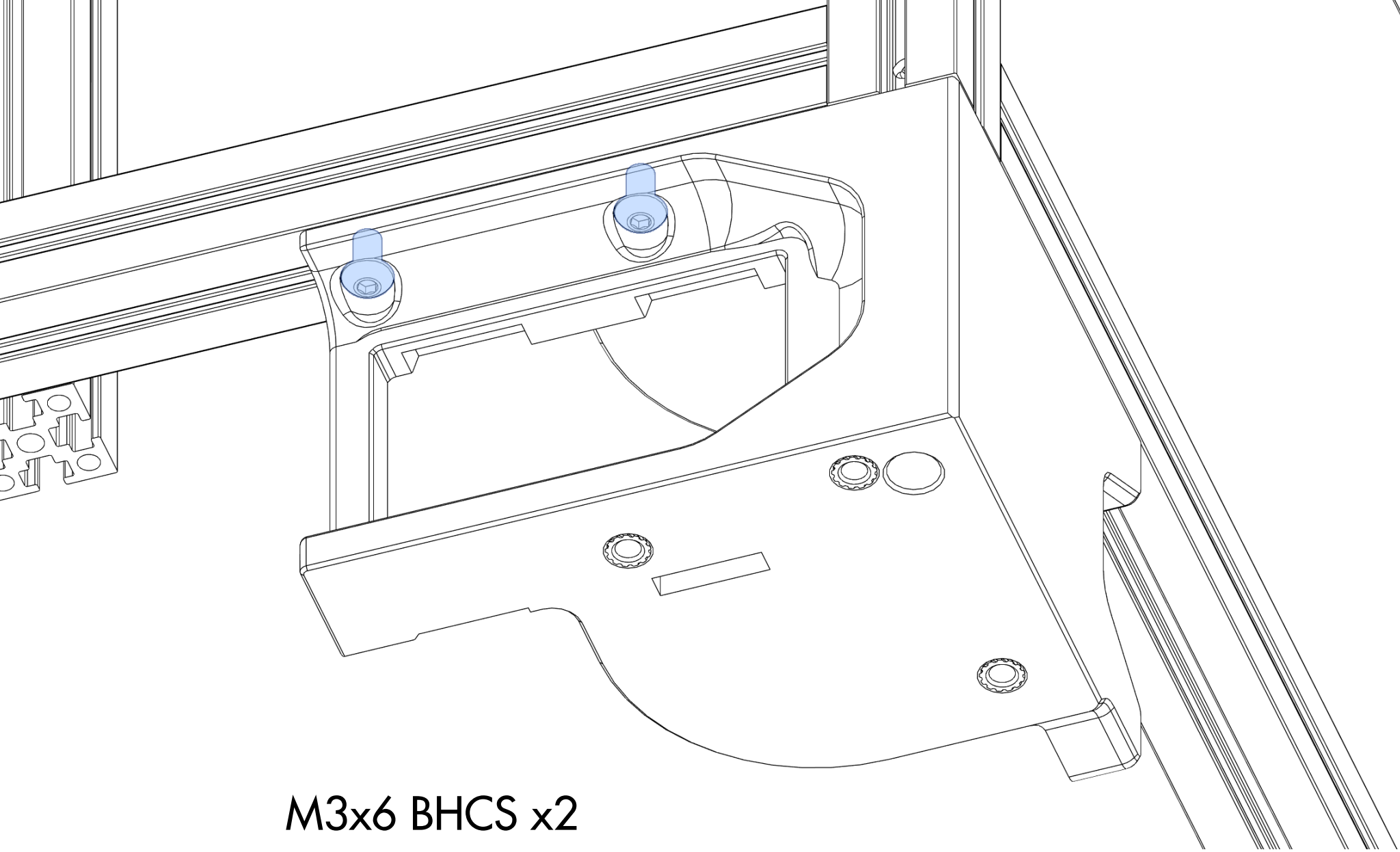
Insert M3 Heatsets

Mastur Mods

Corner Post Assembly P61



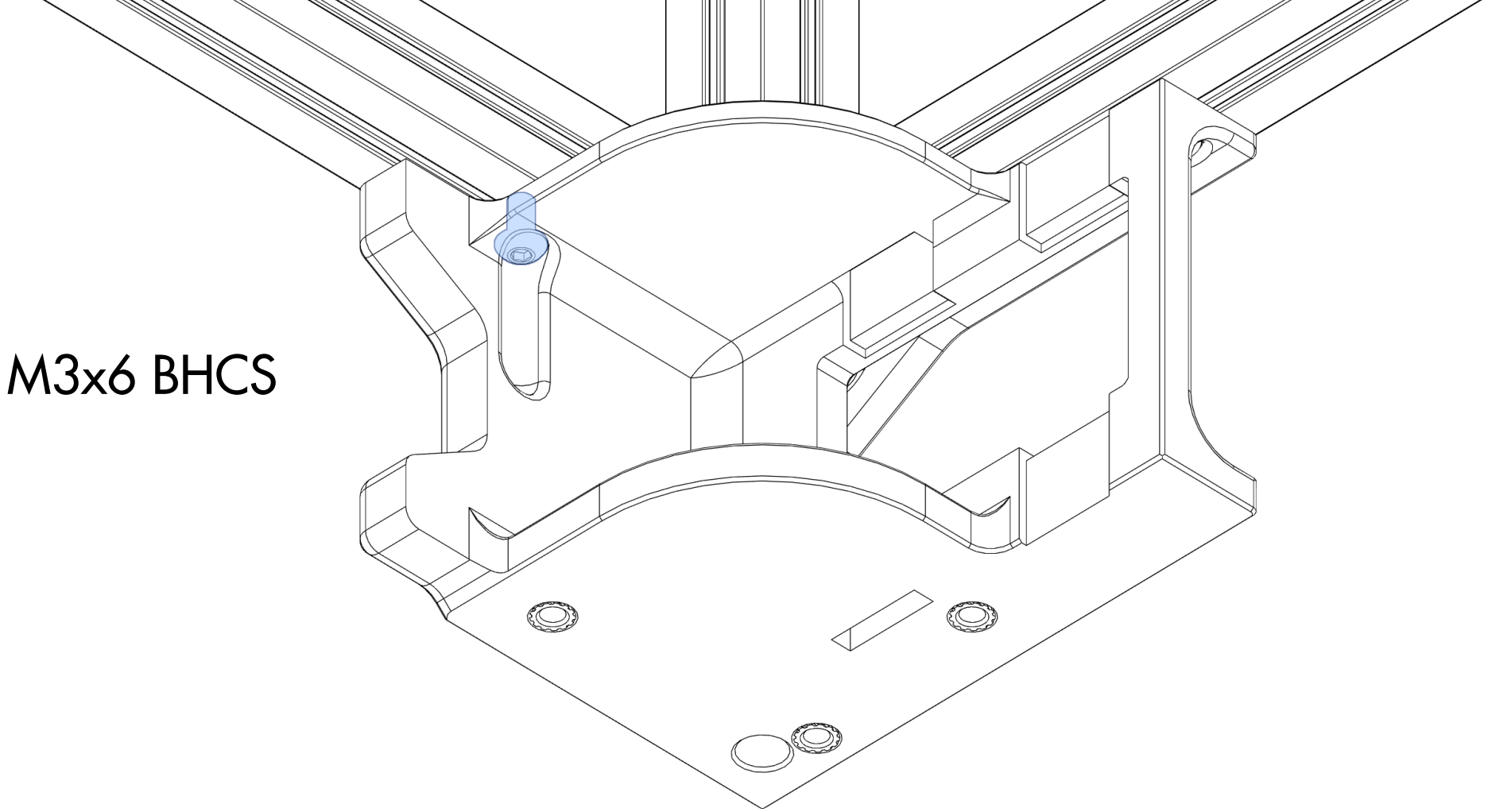
Like the other corner, insert a M3x10.



M3x6 BHCS x2

Mastur Mods

Corner Post Assembly P63



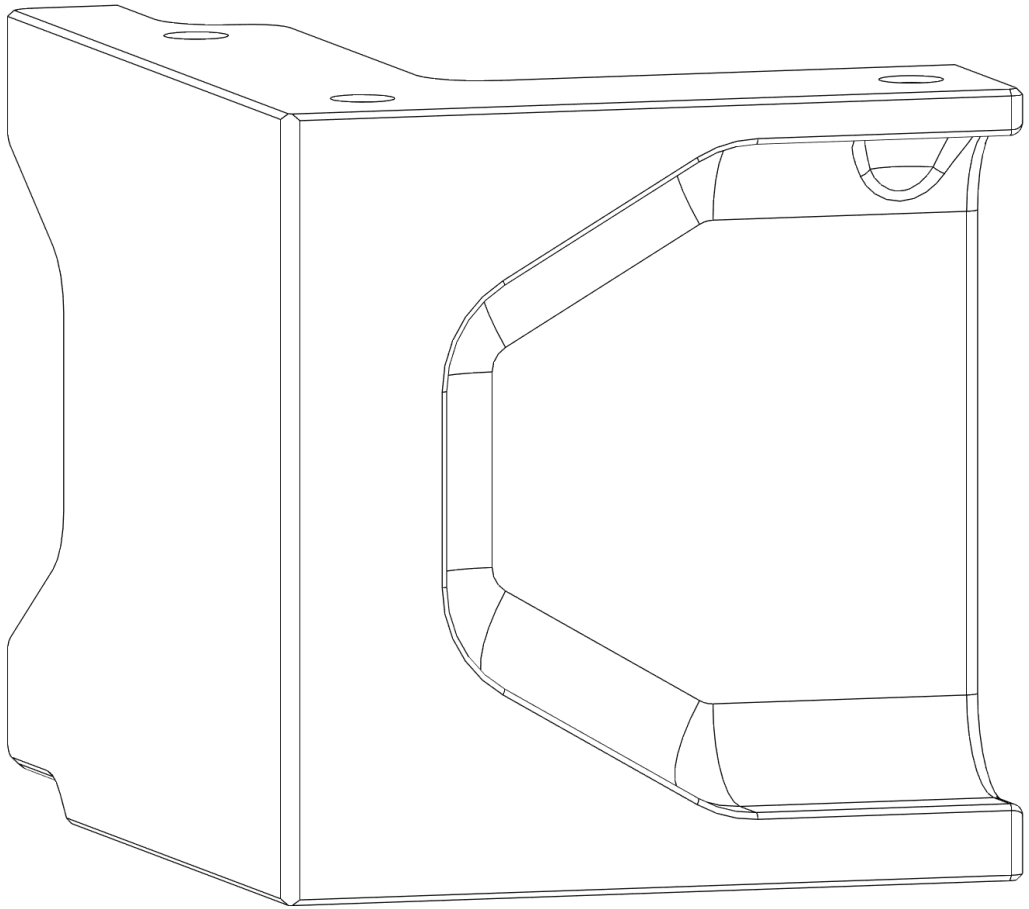
M3x6 BHCS

Mastur Mods

Corner Post Assembly P64

leg_rear

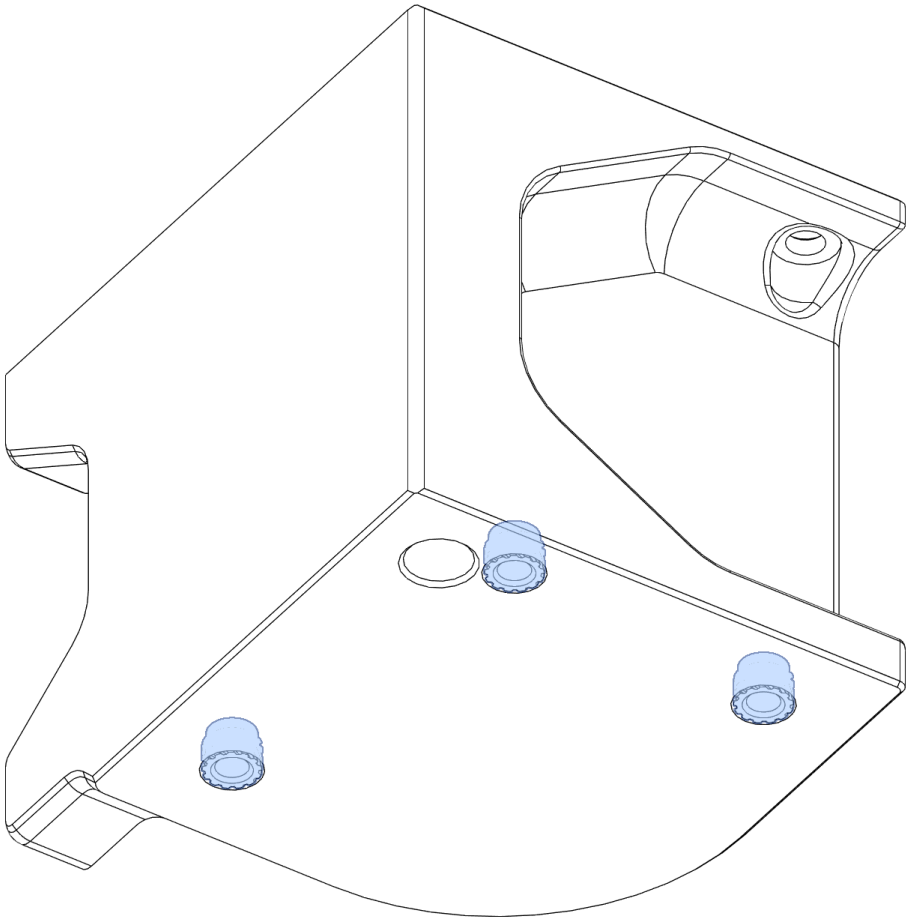
(Back right leg)

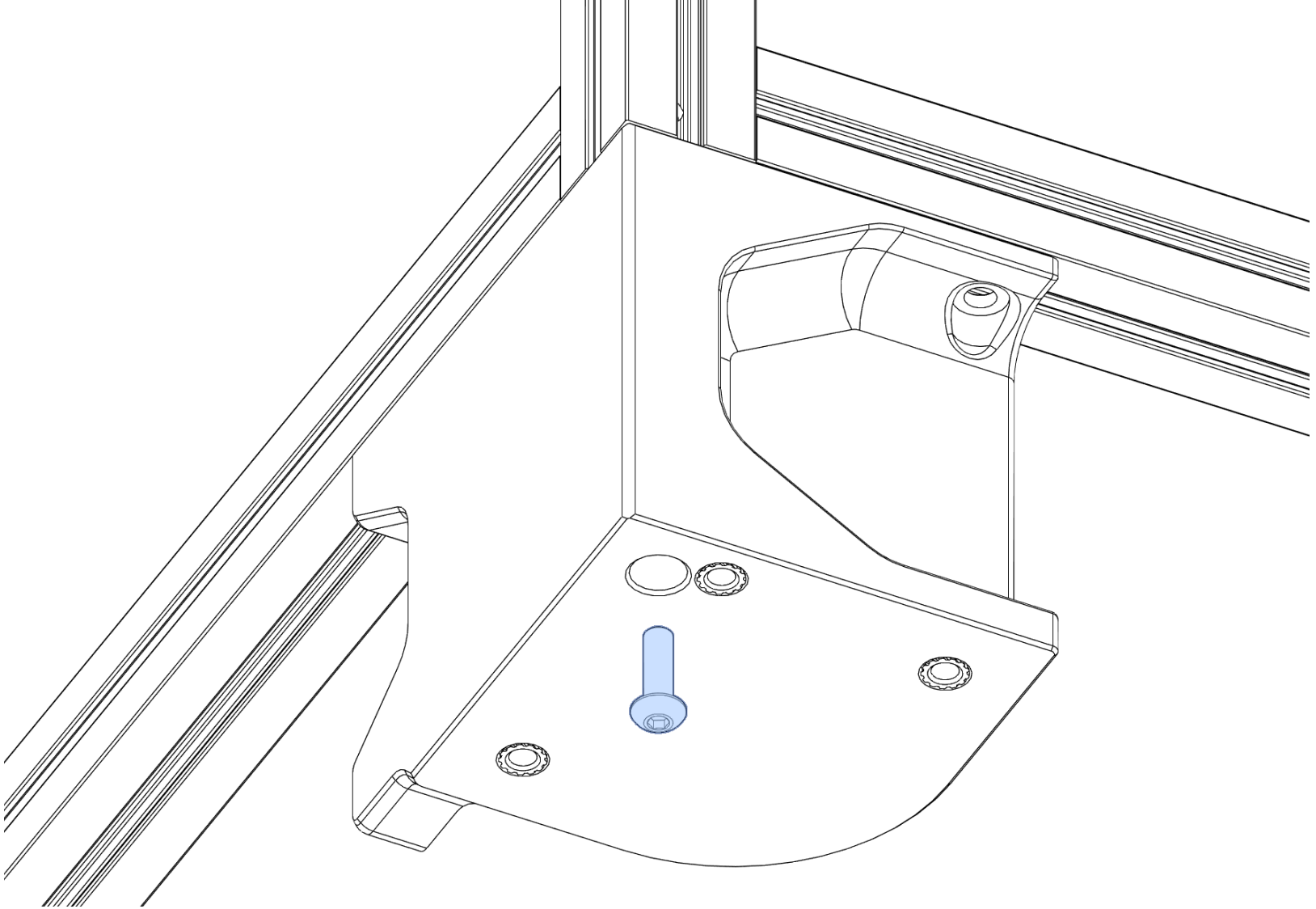


Mastur Mods

Corner Post Assembly P65

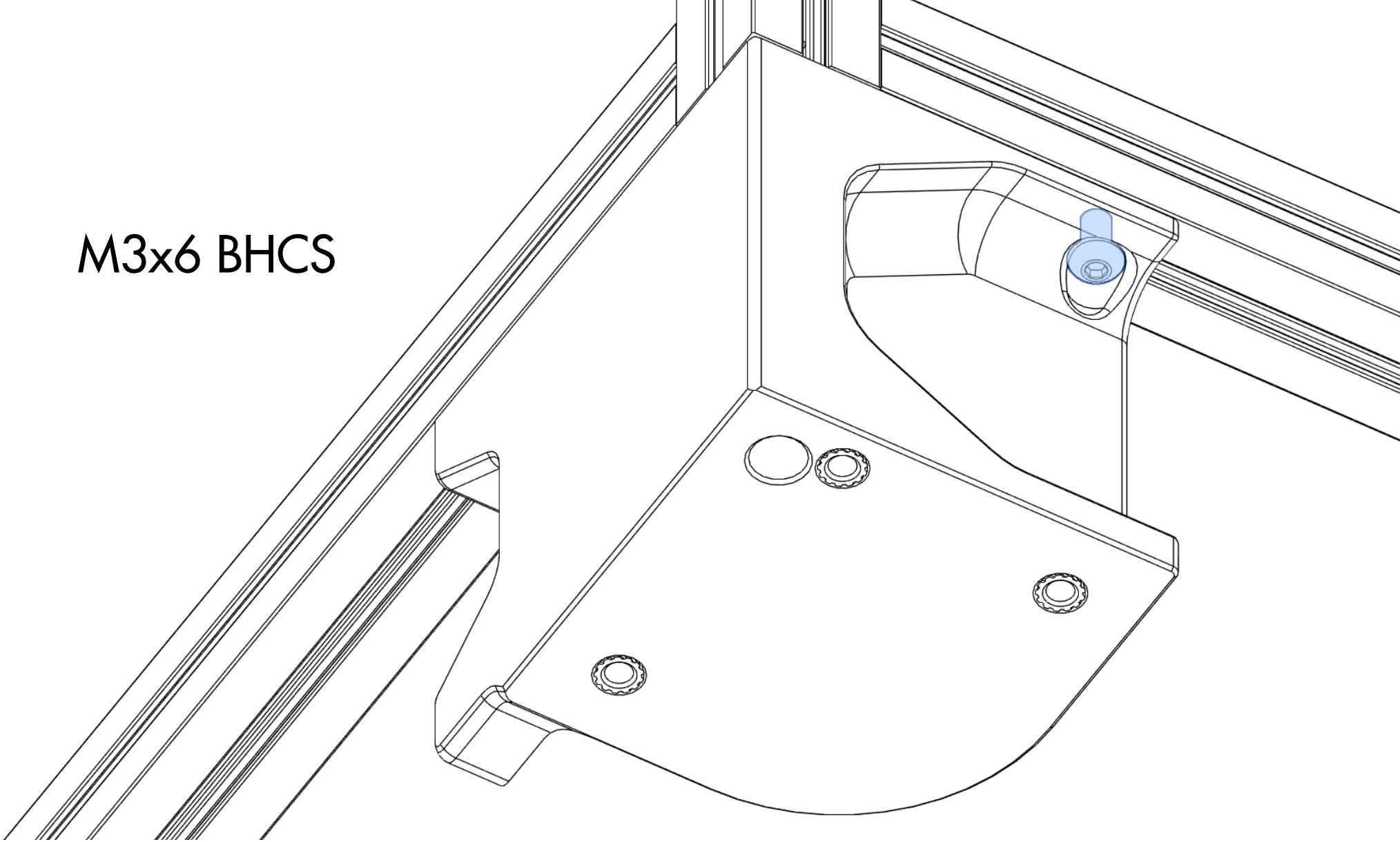
Insert M3 Heatsets





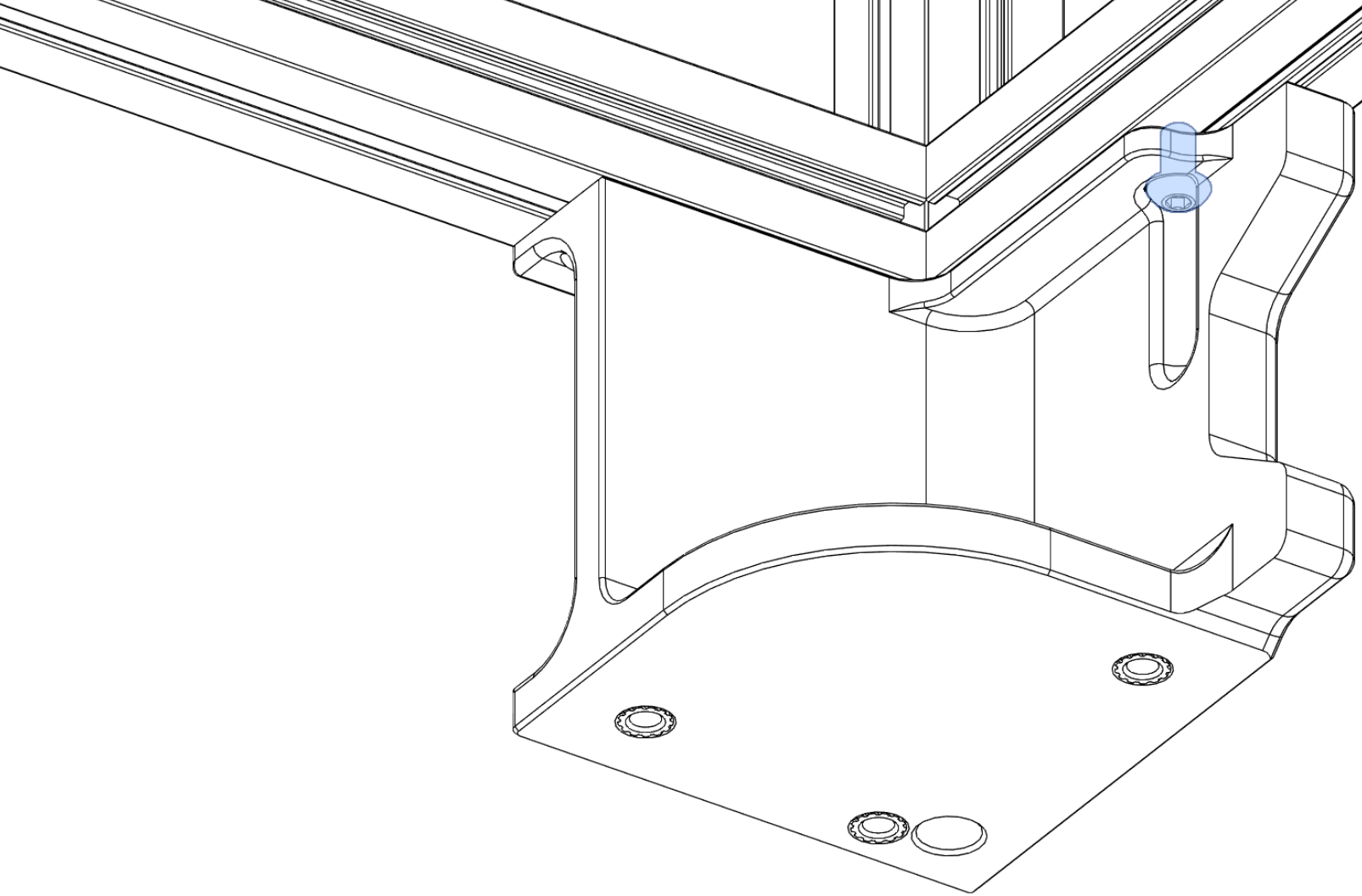
Akin to previous legs, insert a M3x10 BHCS & bolt to the extrusion.

M3x6 BHCS



Mastur Mods

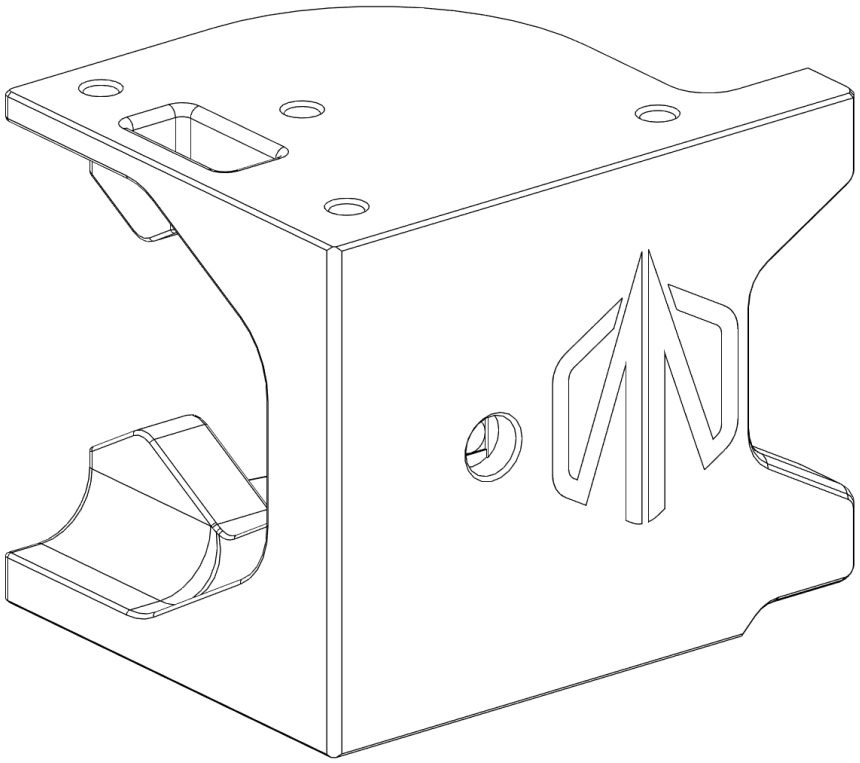
Corner Post Assembly P68



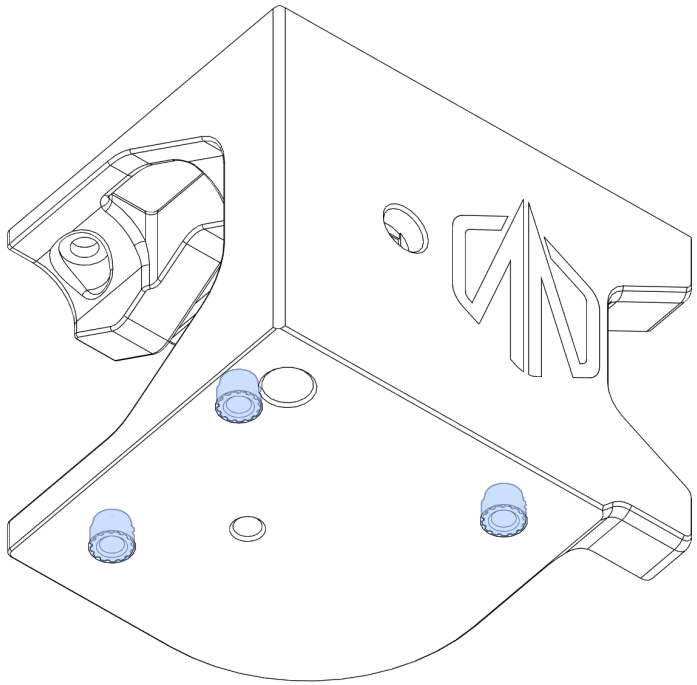
M3x6 BHCS

Mastur Mods

Corner Post Assembly P69



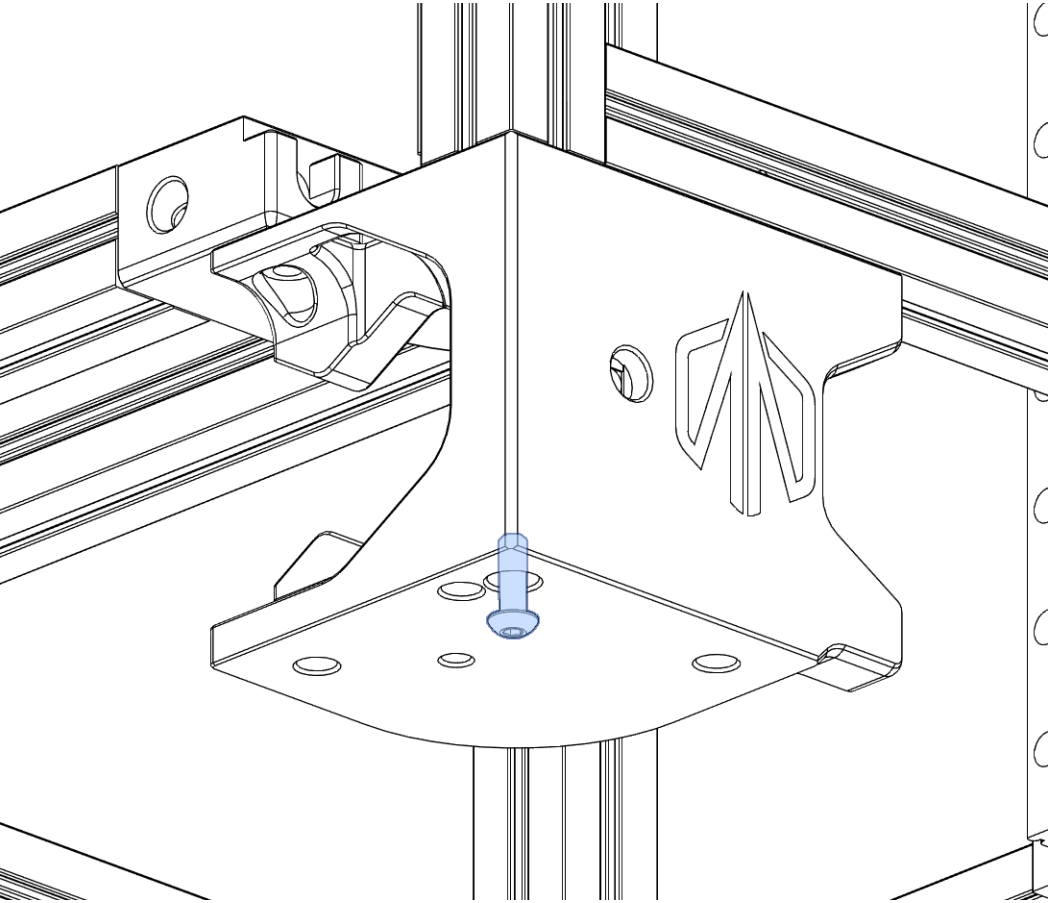
leg_front_right

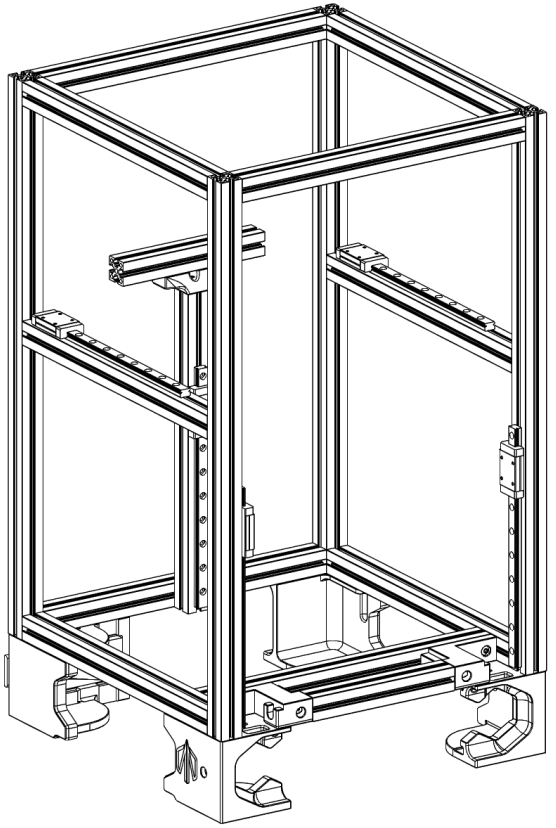


Insert M3 Heatset Inserts as shown.

Mastur Mods

Corner Post Assembly P70

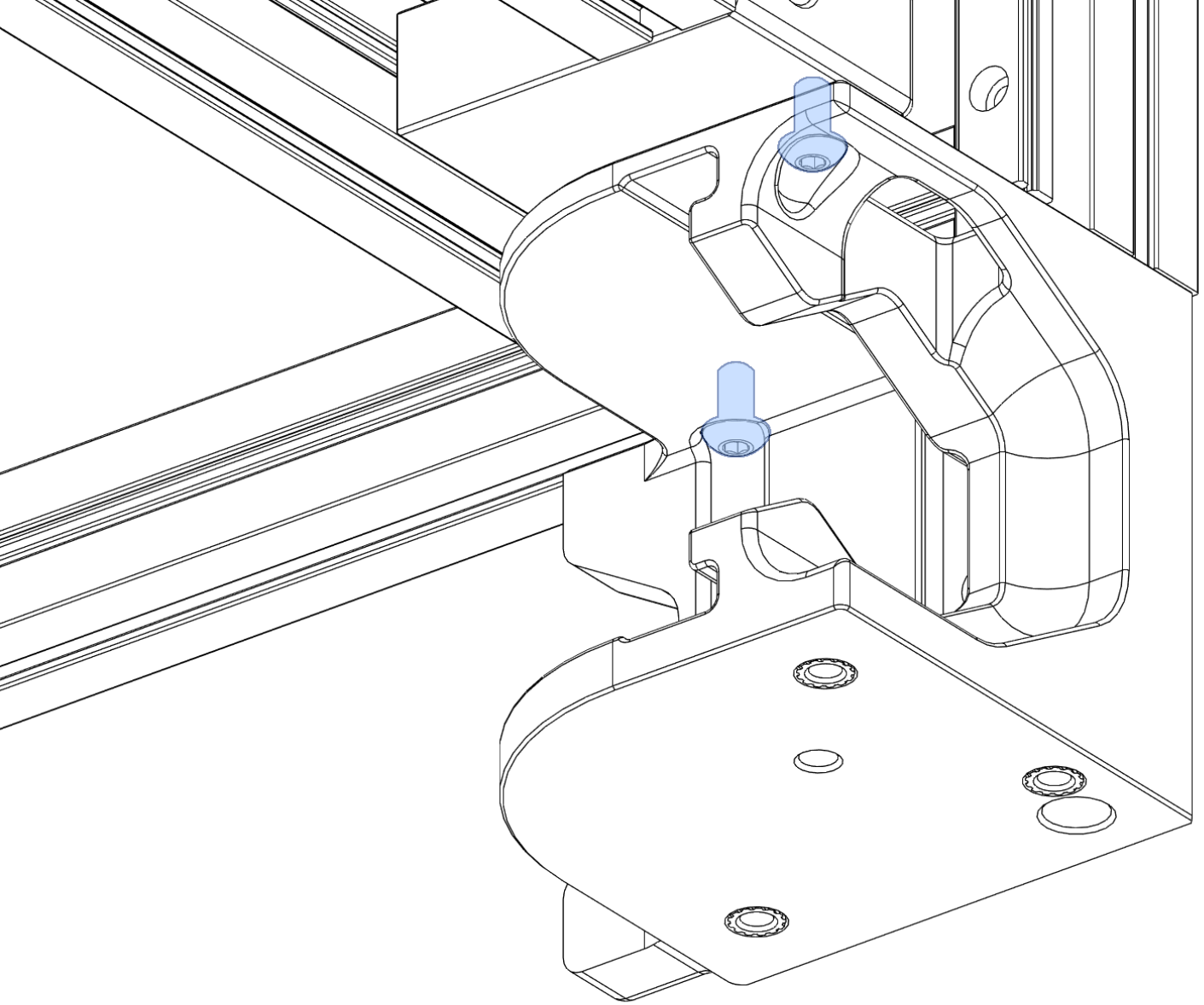




Insert M3x10 BHCS into channel

Screw into front right extrusion

Mastur Mods



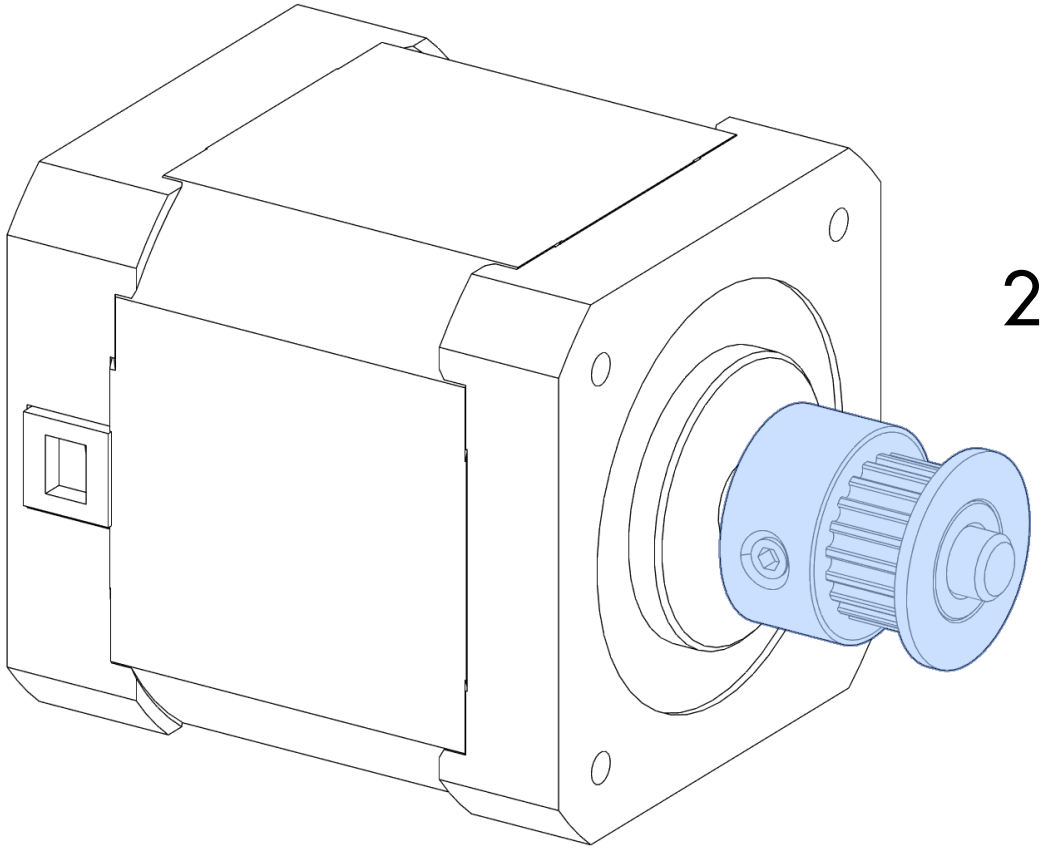
M3x6 BHCS x2

Mastur Mods

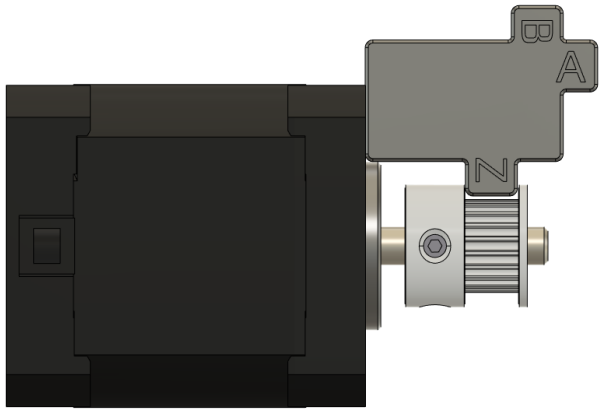
Corner Post Assembly P72

Mastur Mods

Z Axis Motion



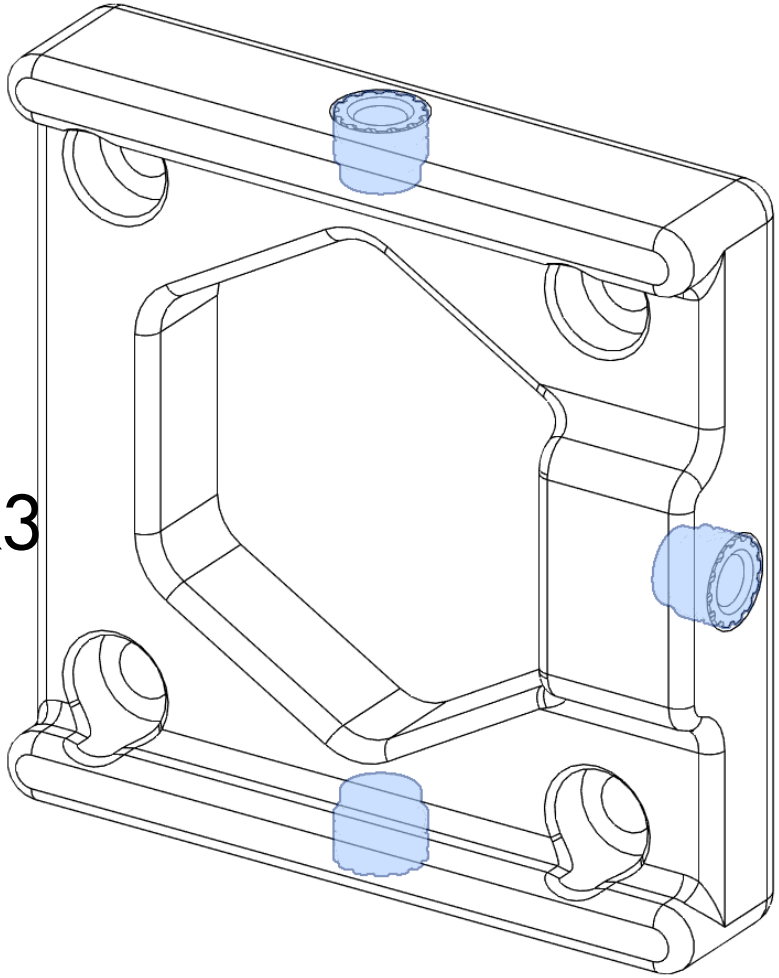
20t Pulley



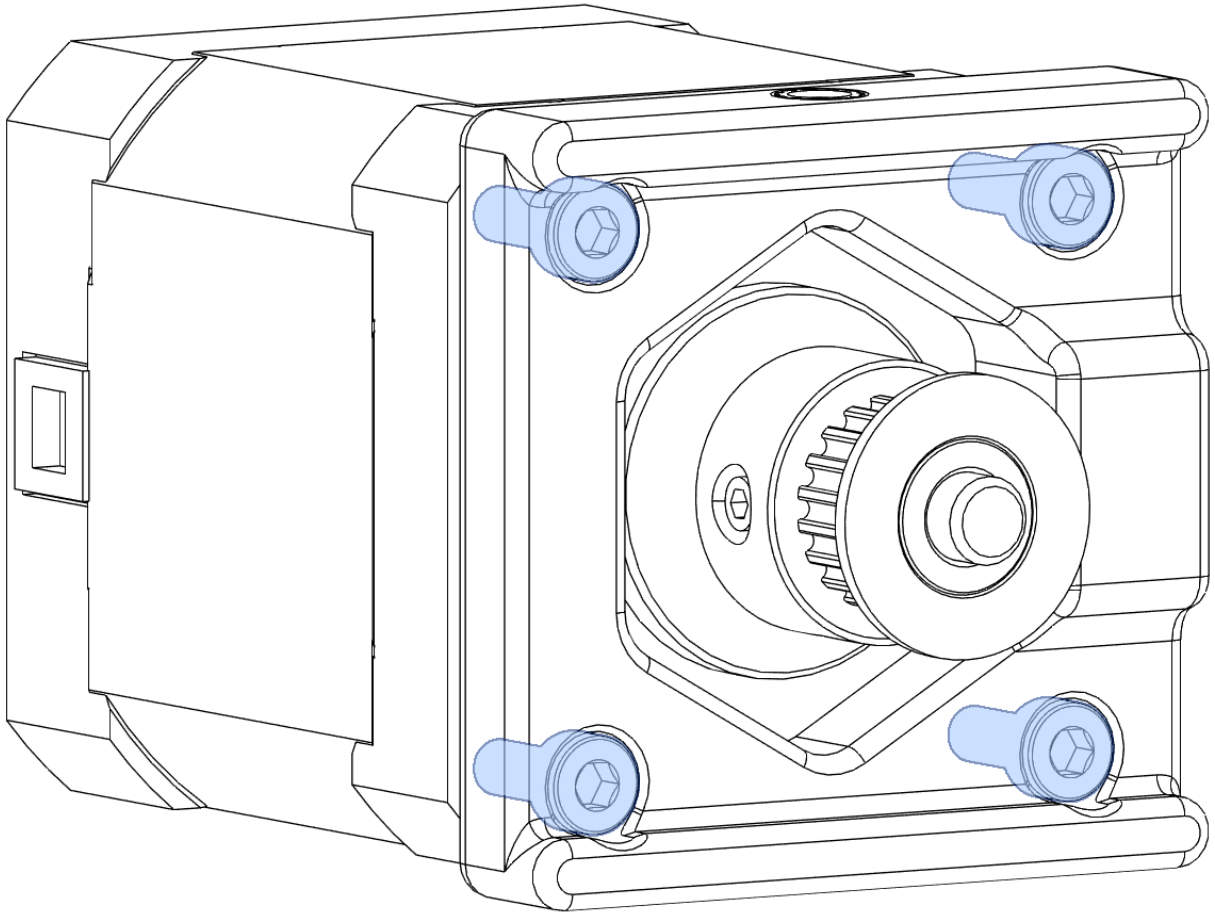
NEMA 17 Stepper Motor

Utilize the multitool for pulley alignmer

M3 Heatset Inserts x3

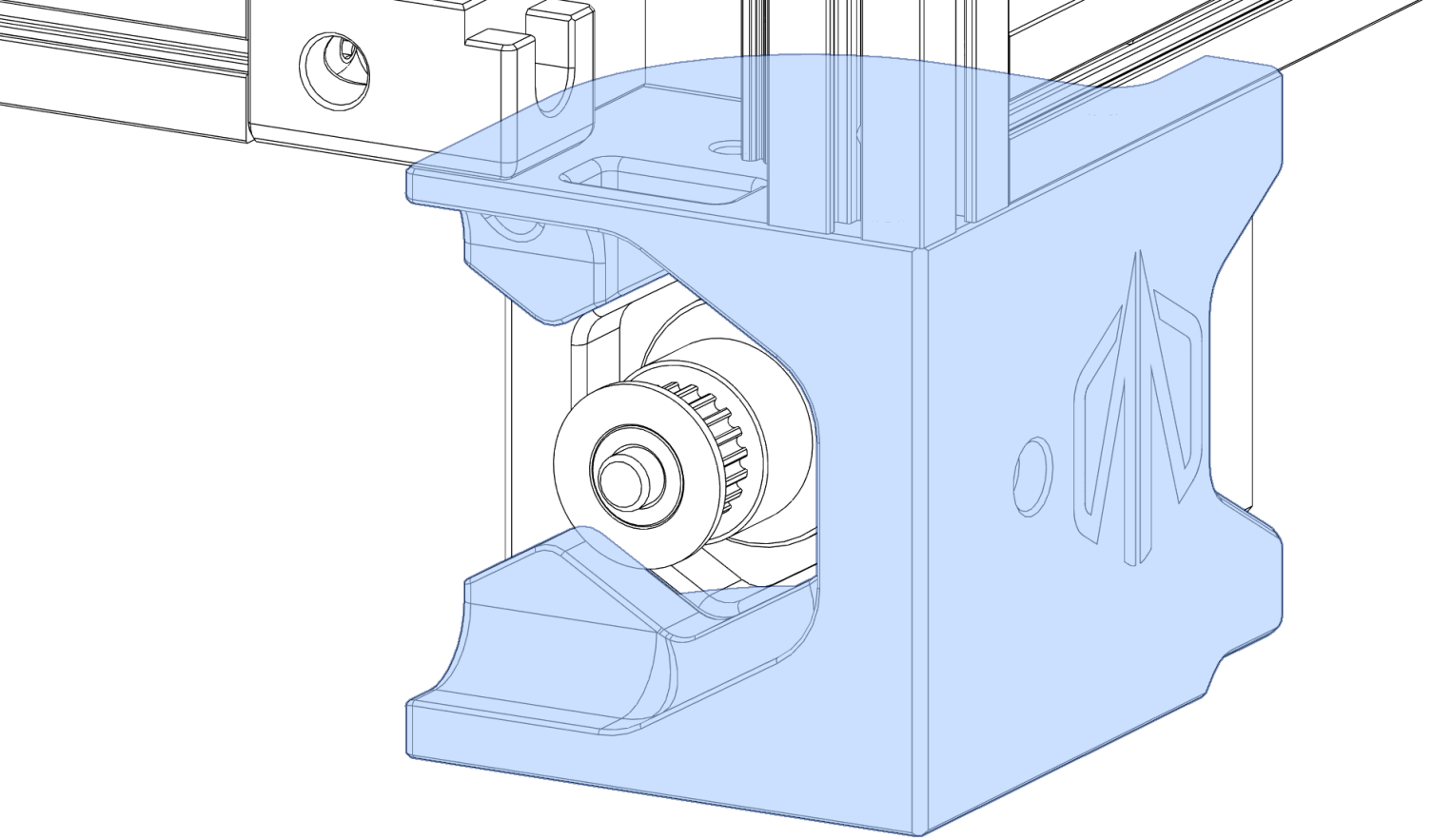


a_drive_frame_front_nema17_x2

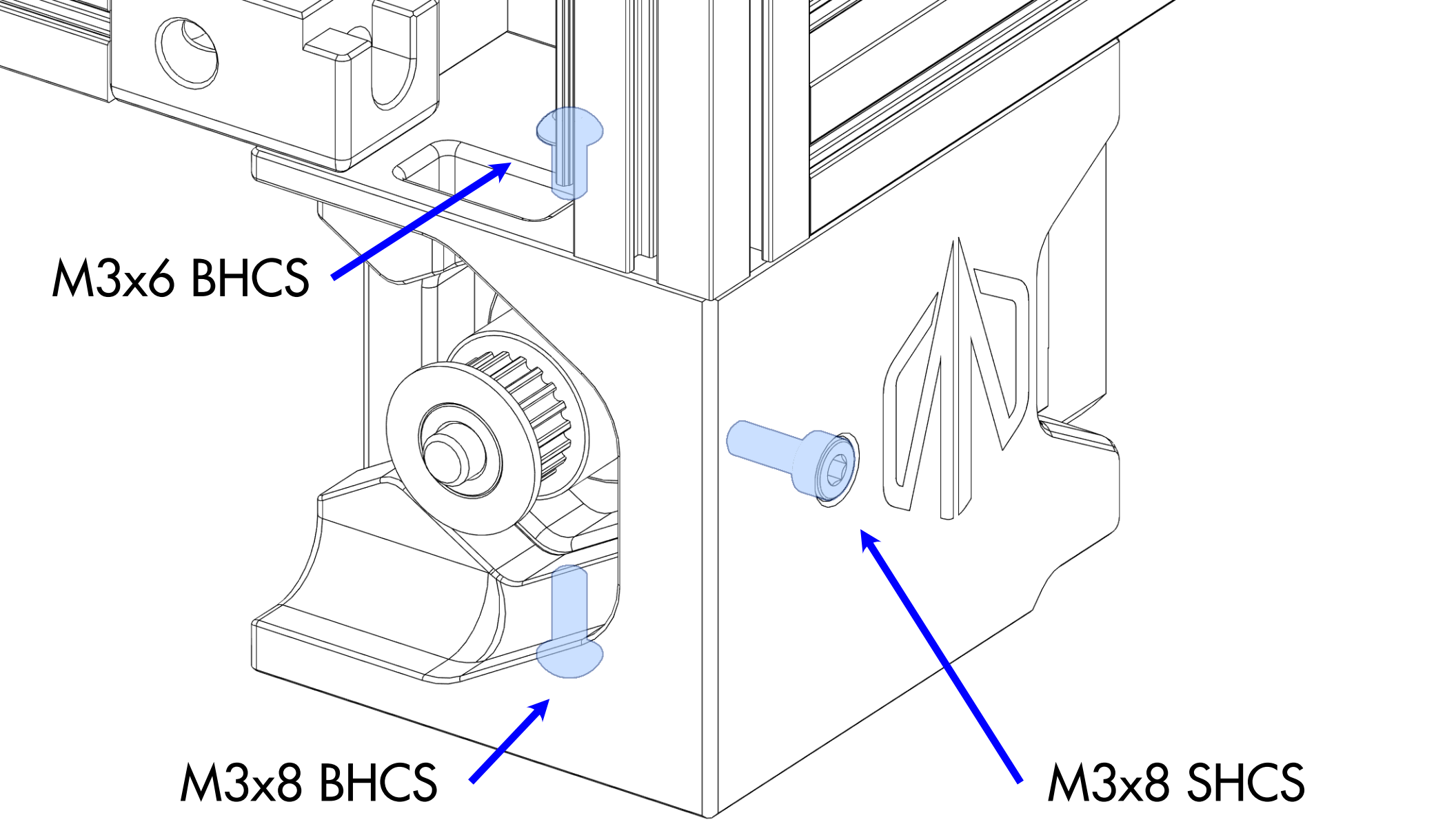


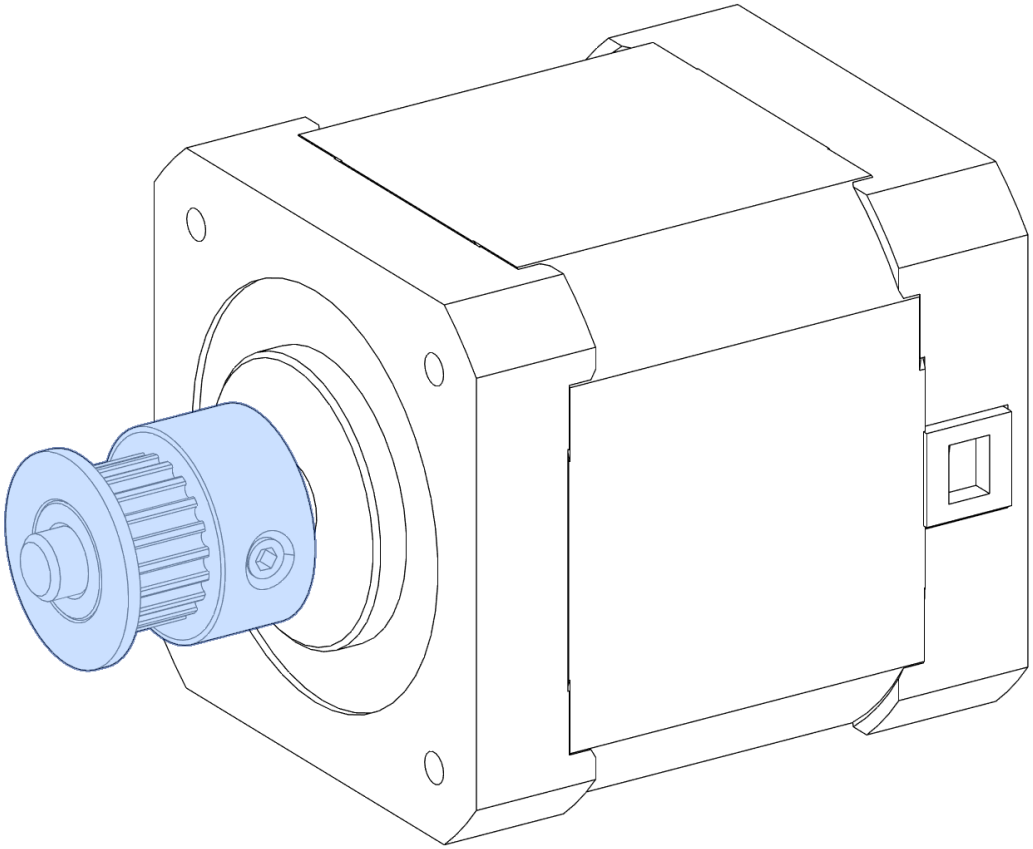
M3x8 SHCS x4

Affix stepper to the drive frame.



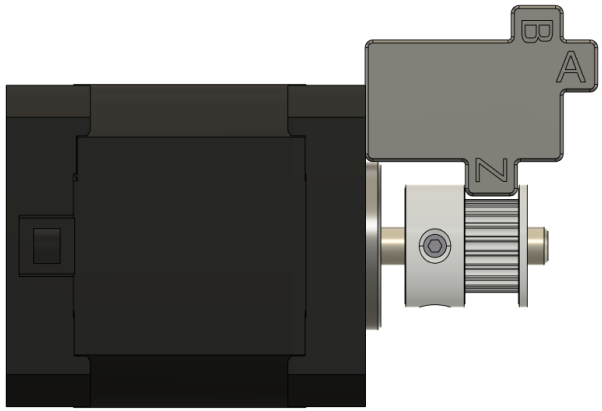
Insert drive frame into front leg.


M3x6 BHCS
M3x8 BHCS
M3x8 SHCS



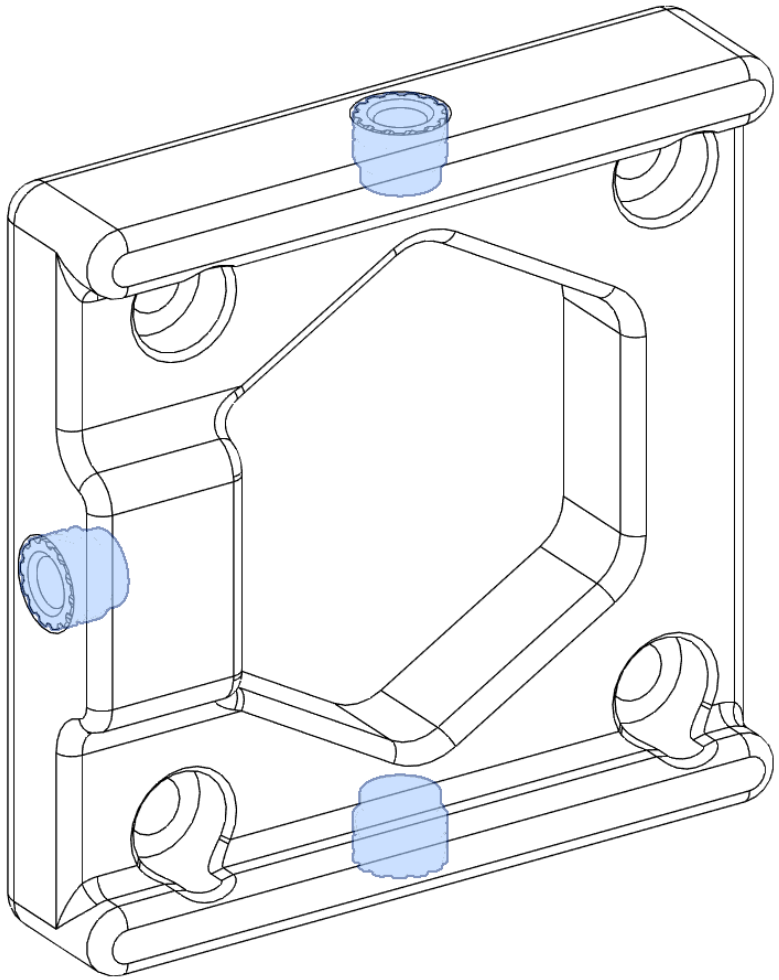
20t Pulley

NEMA 17 Stepper Motor

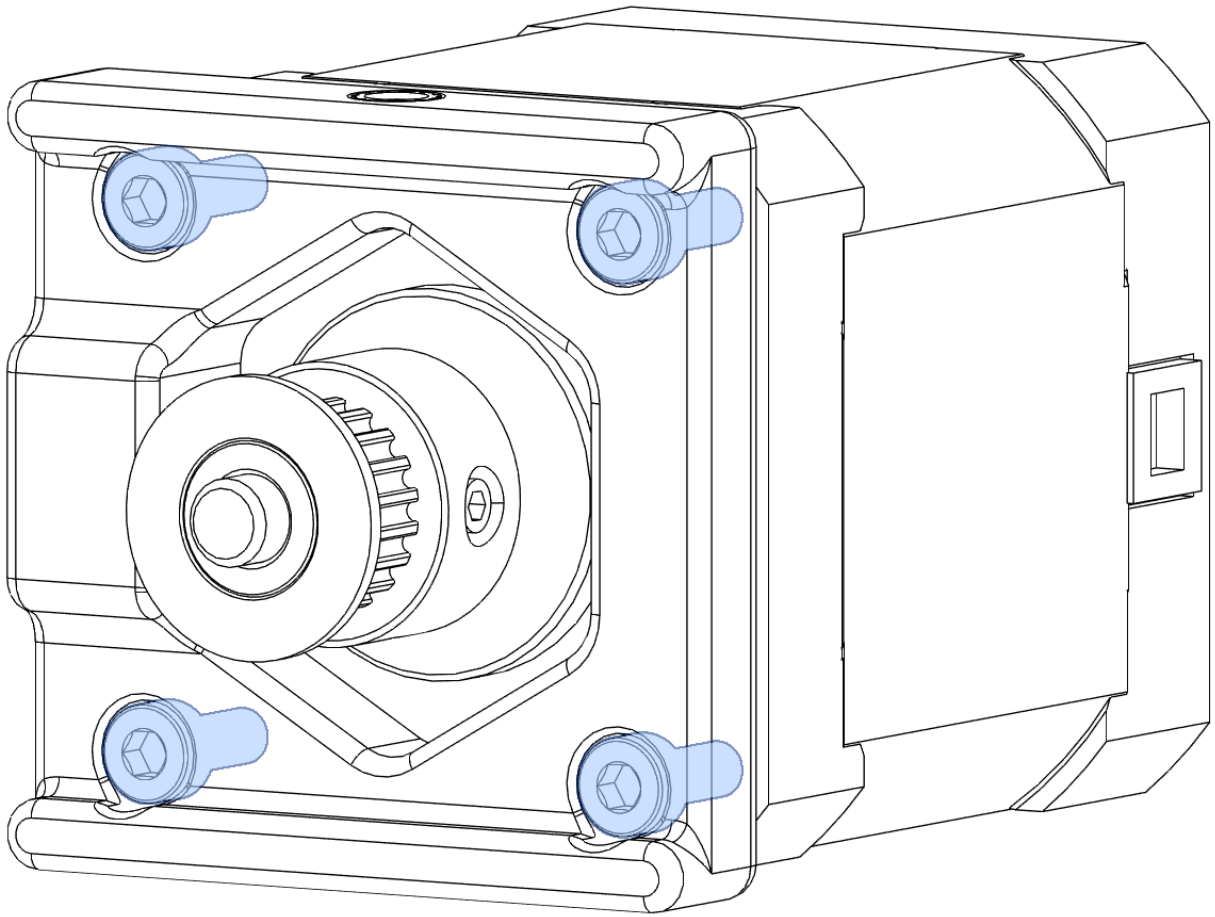


Utilize the multitool for pulley alignmer

M3 Heatset Inserts x3

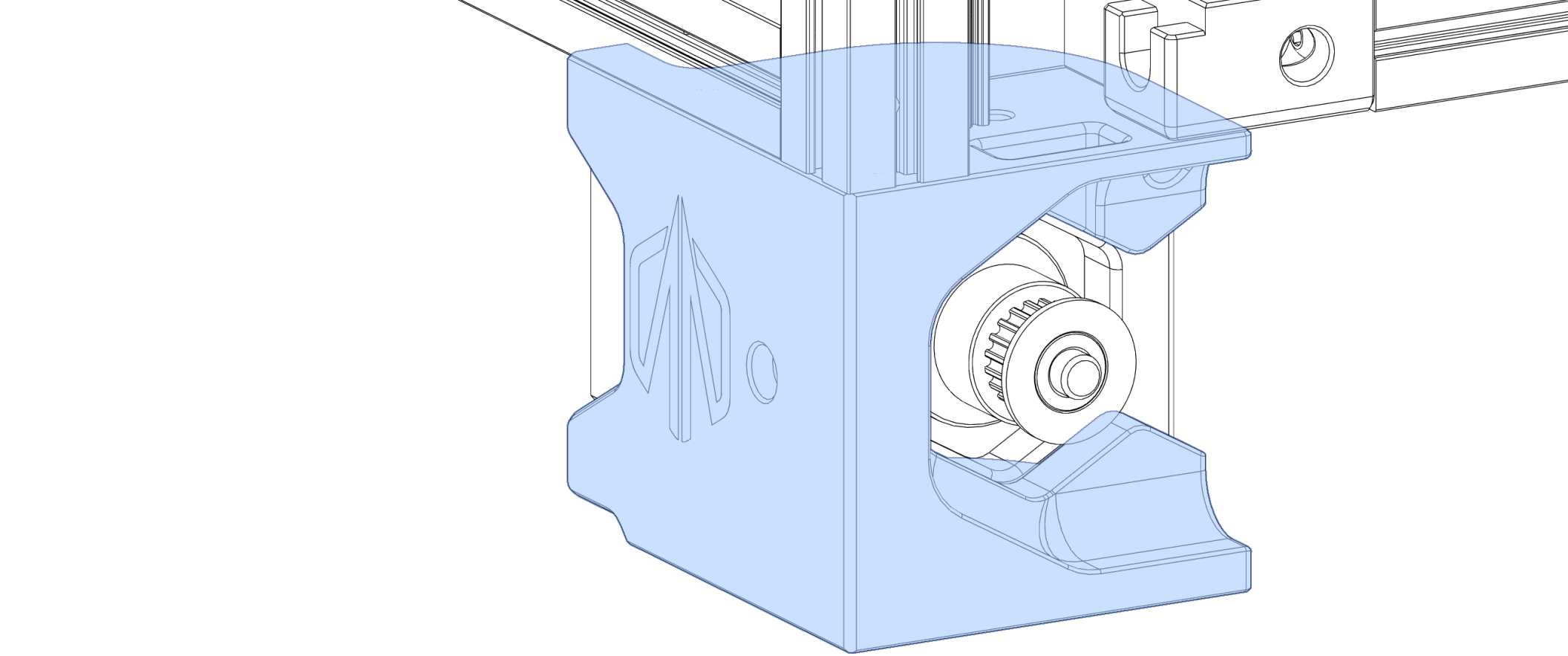


a_drive_frame_front_nema17_x2

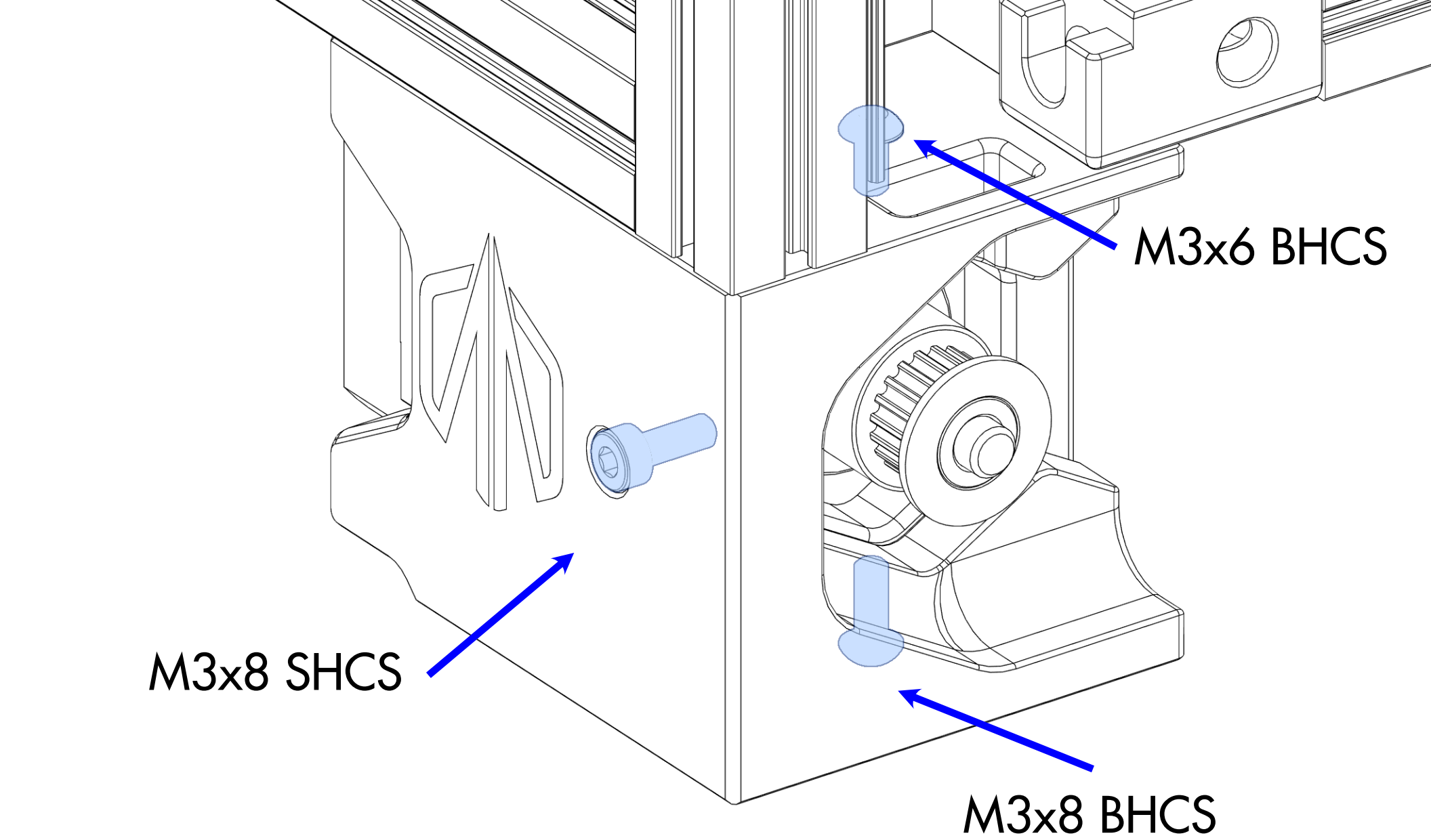


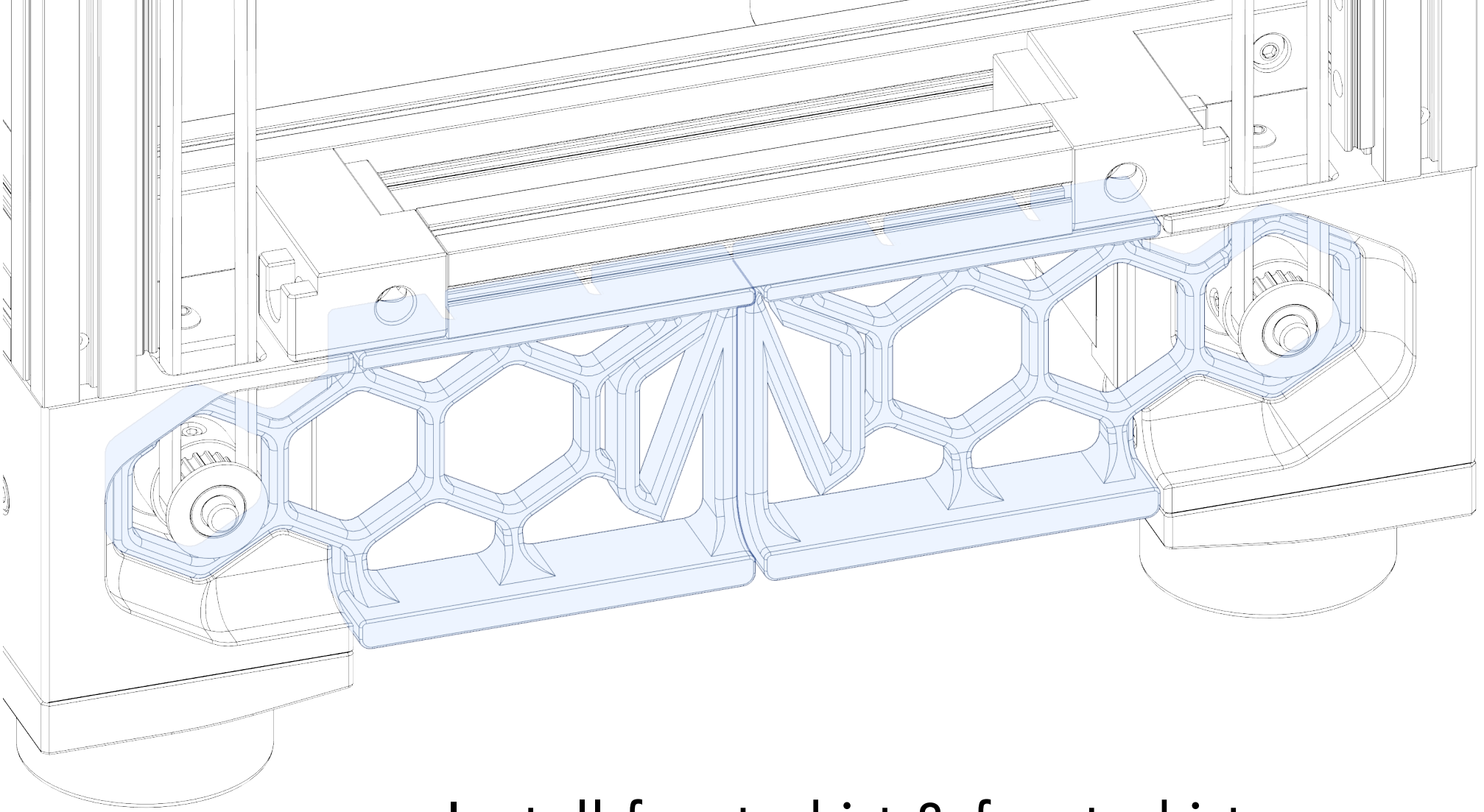
M3x8 SHCS x4

Affix stepper to the drive frame.



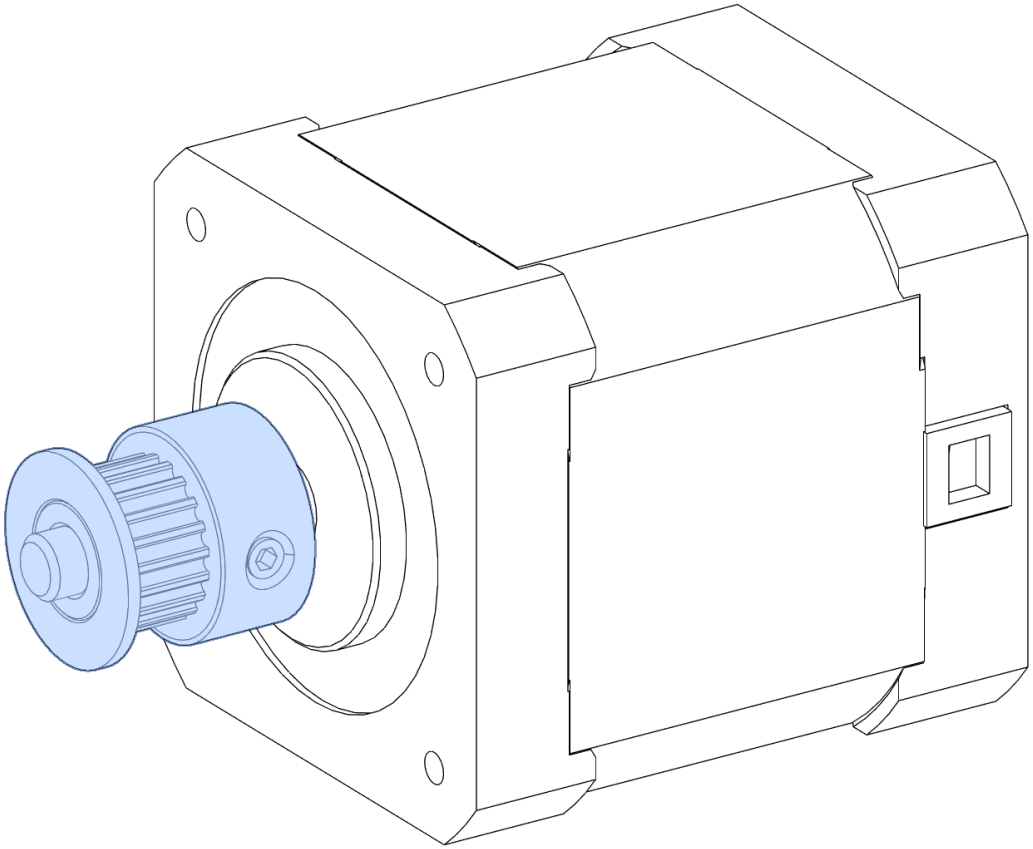
Insert drive frame into front leg.


M3x6 BHCS
M3x8 SHCS
M3x8 BHCS

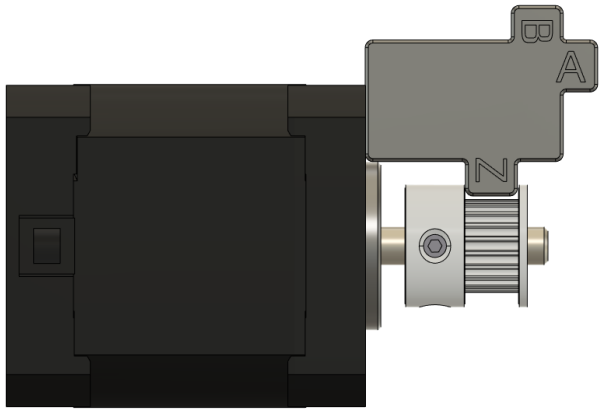


Install front_skirt & front_skirt

Installation of the skirts are easiest right now, due to the belts being out of the way.

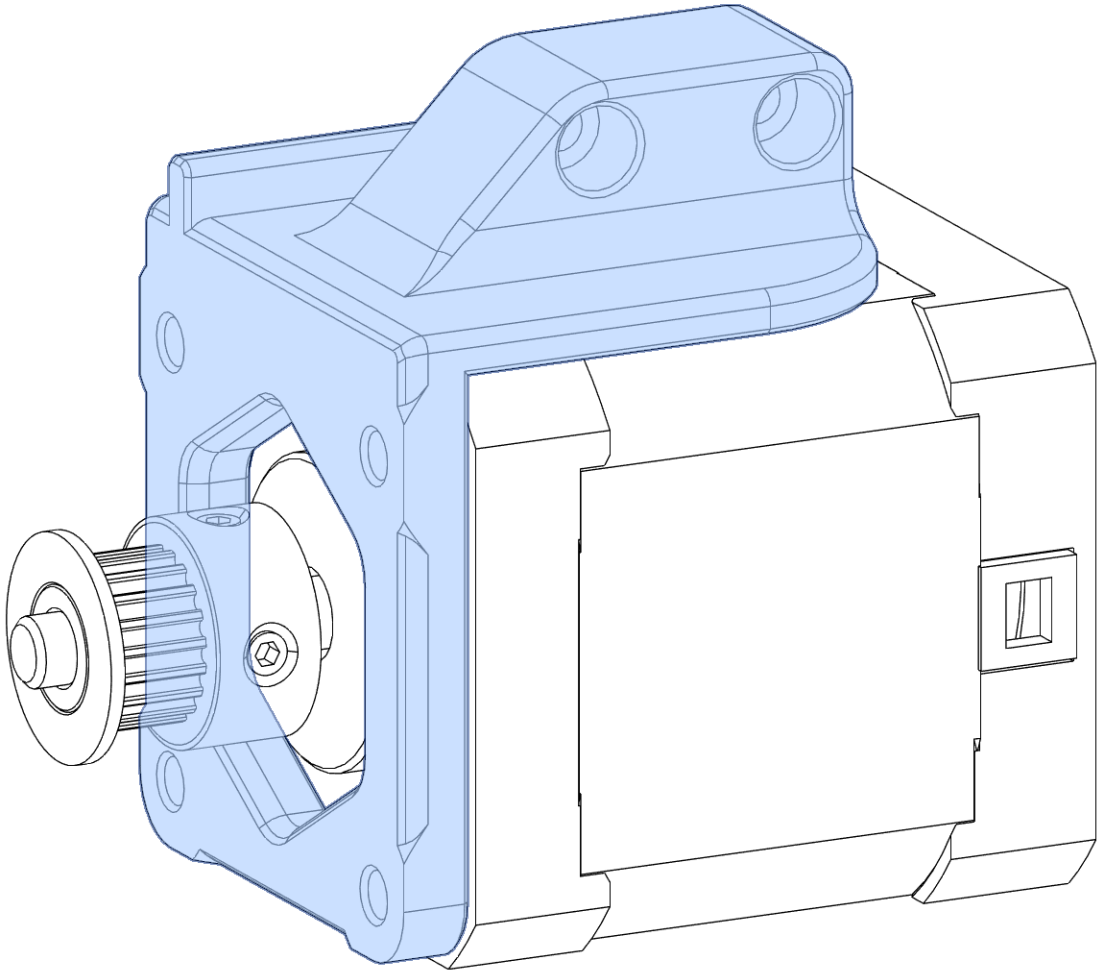


20t Pulley

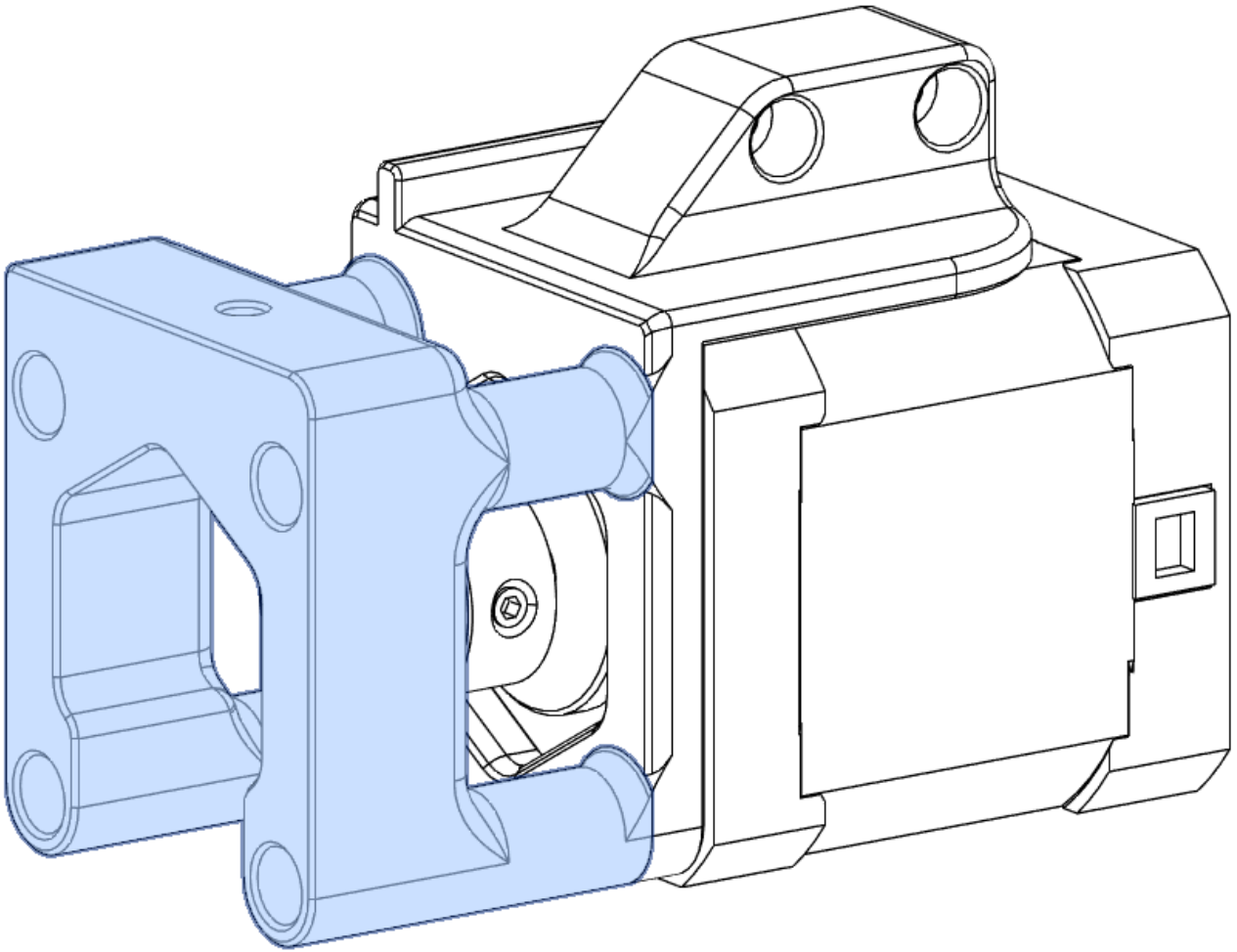


NEMA 17 Stepper Motor

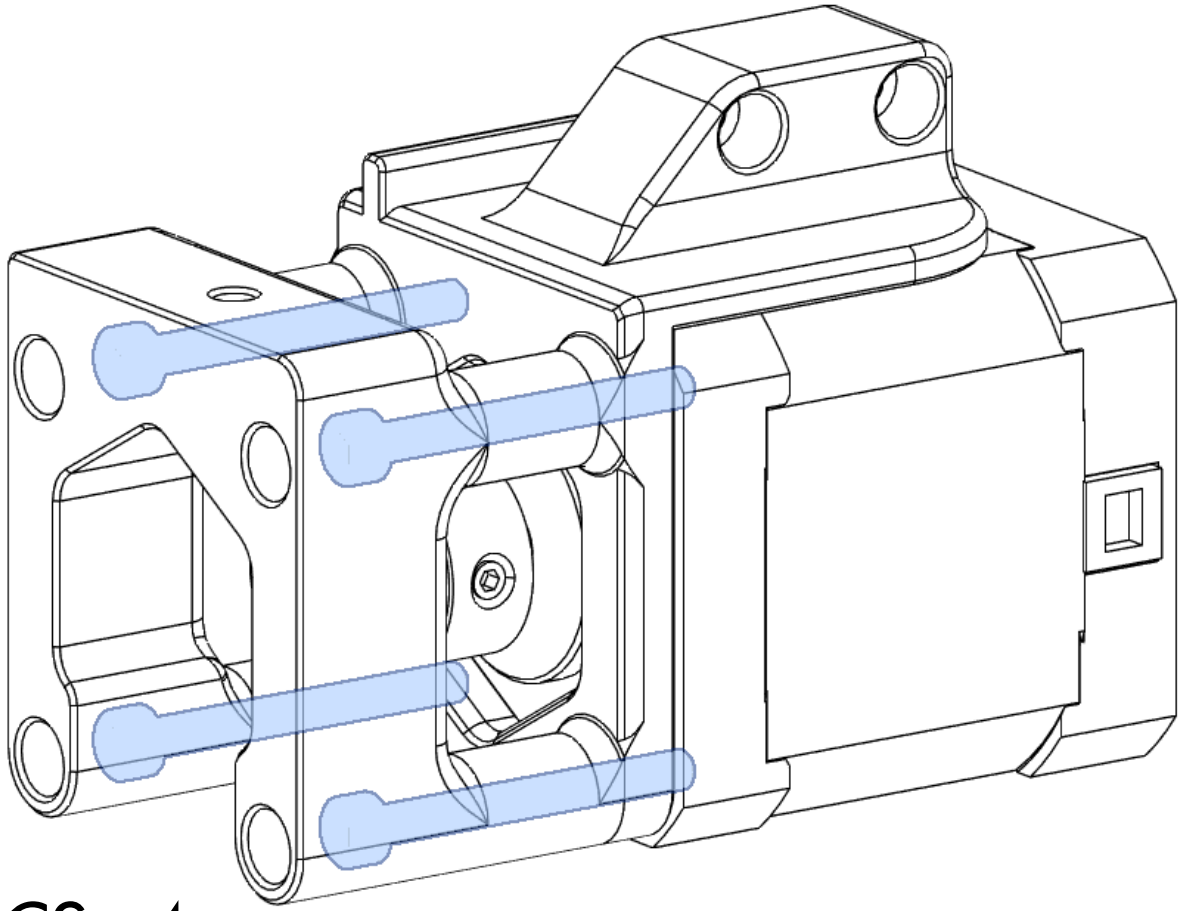
Utilize the multitool for pulley alignmer



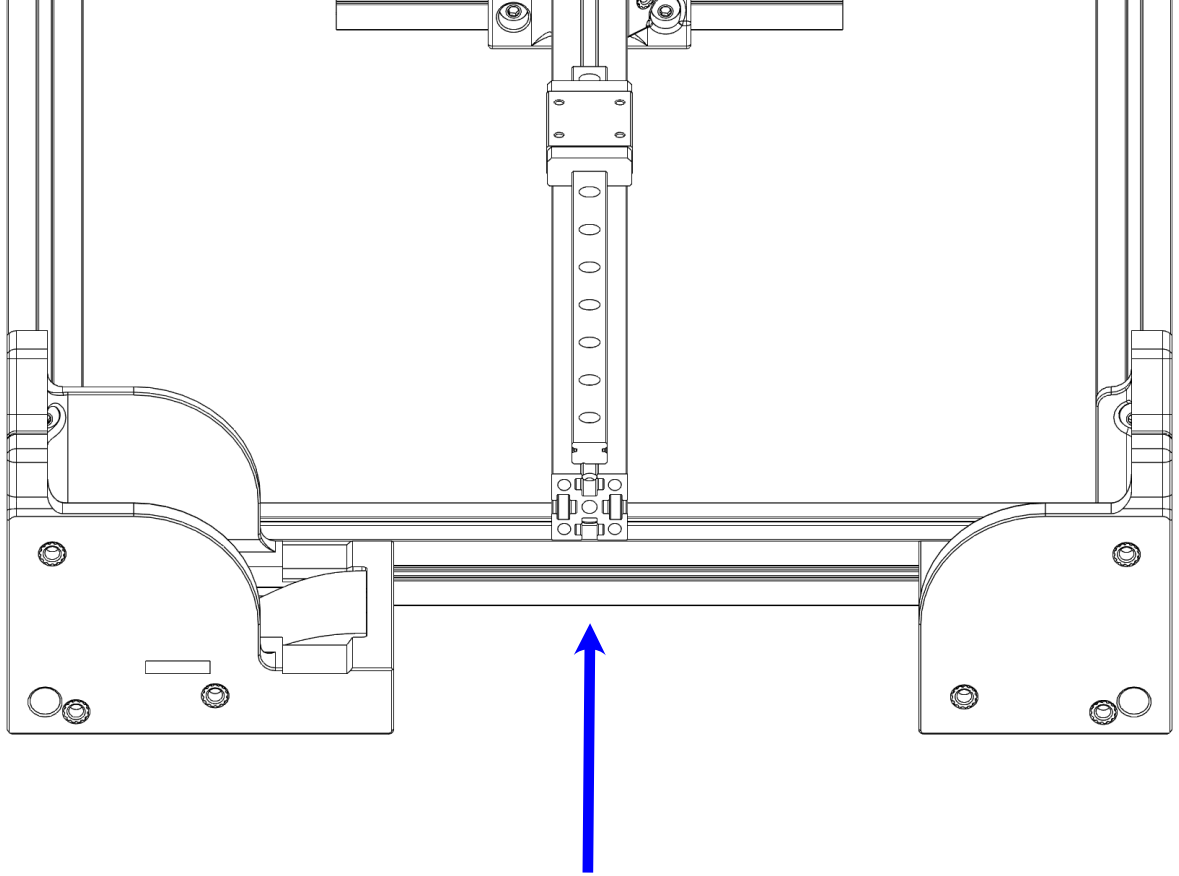
z_drive_frame_rear_nema17_a



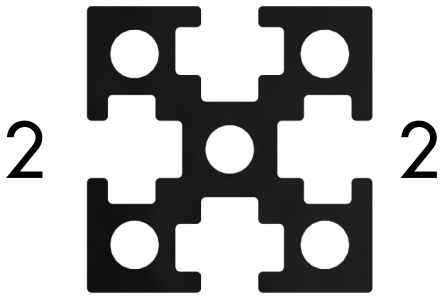
z_drive_frame_rear_nema17_b

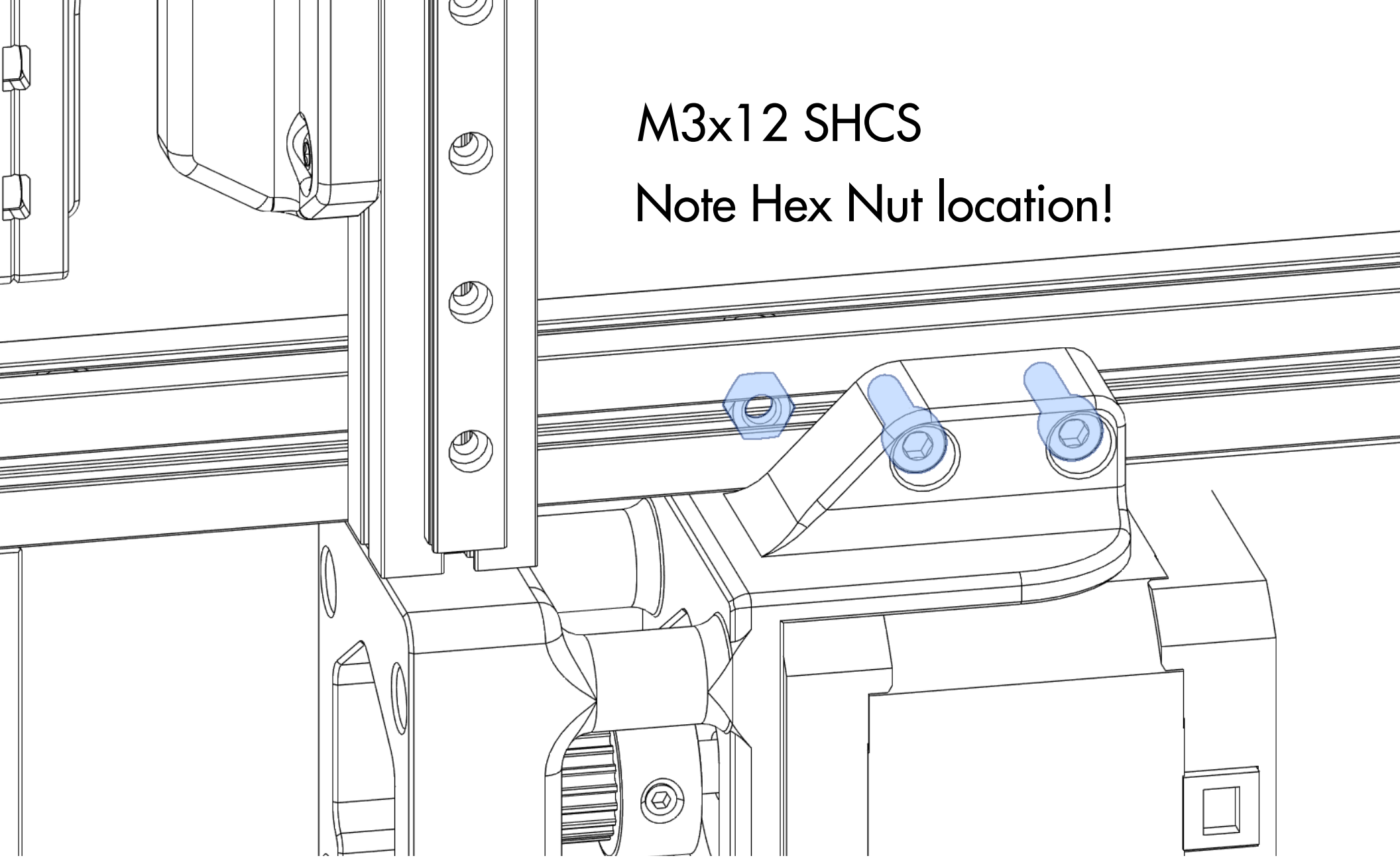


M3x30 SHCS x4



Insert 2 M3 Hex Nuts per side.

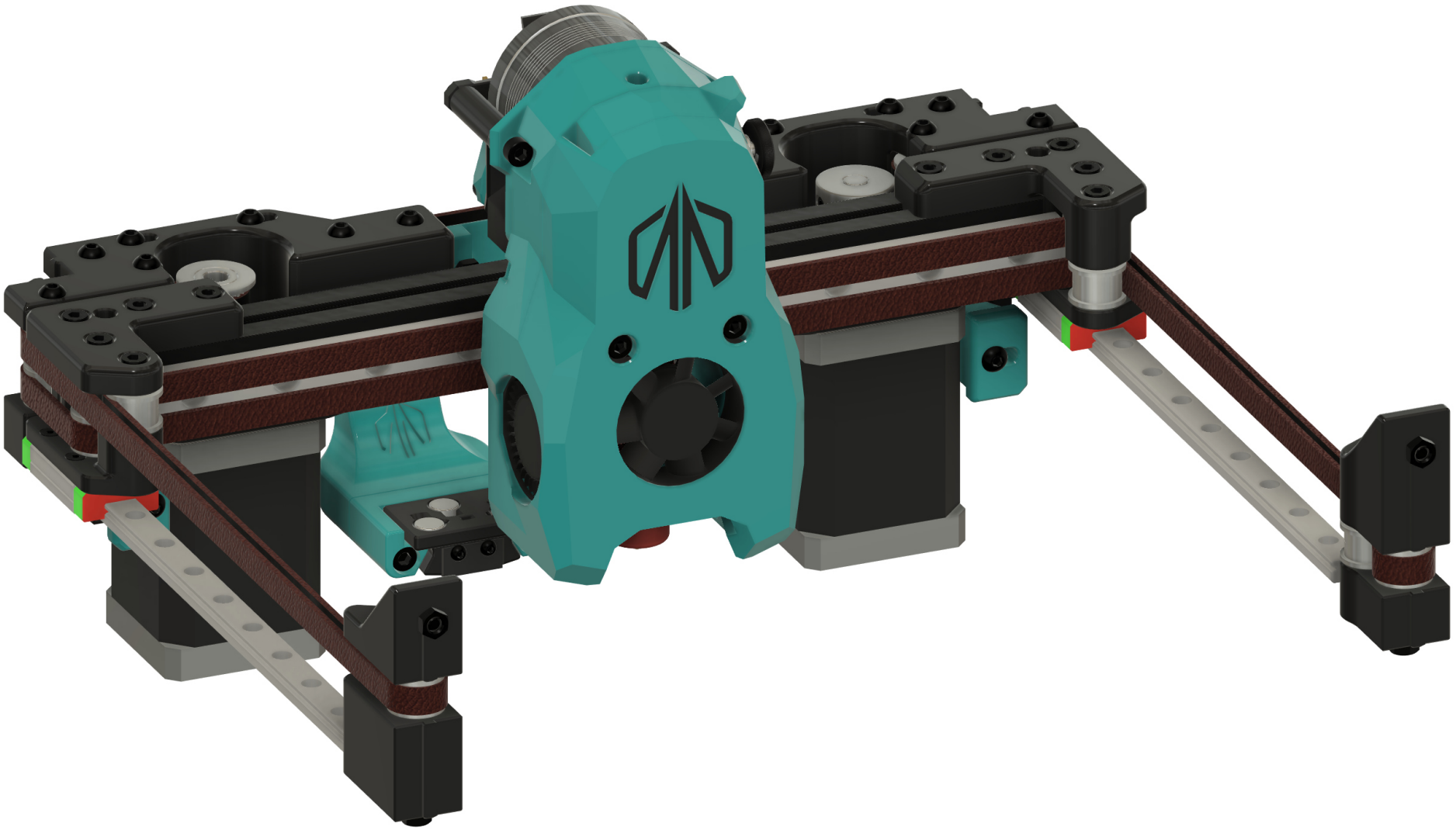




Mastur Mods

Z Axis Motion

P90

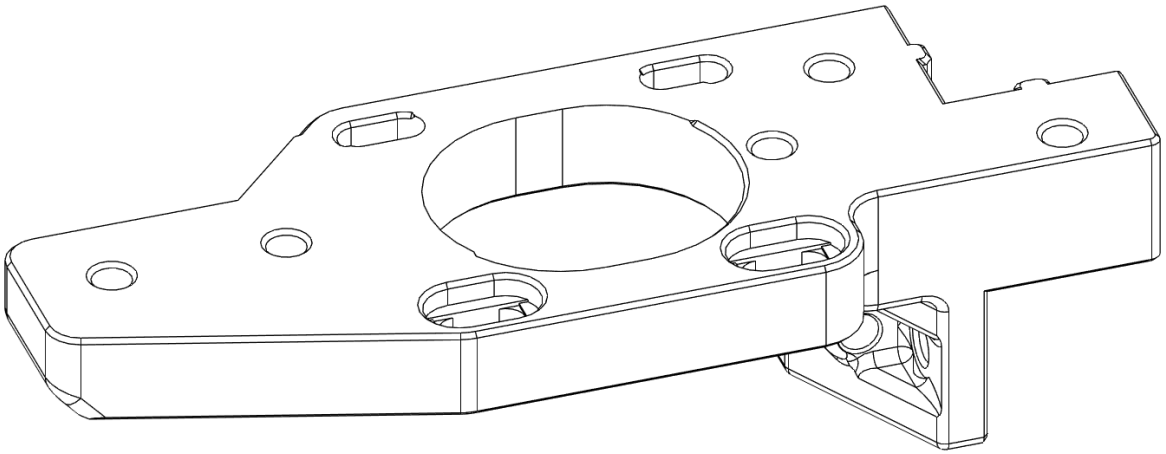


Mastur Mods

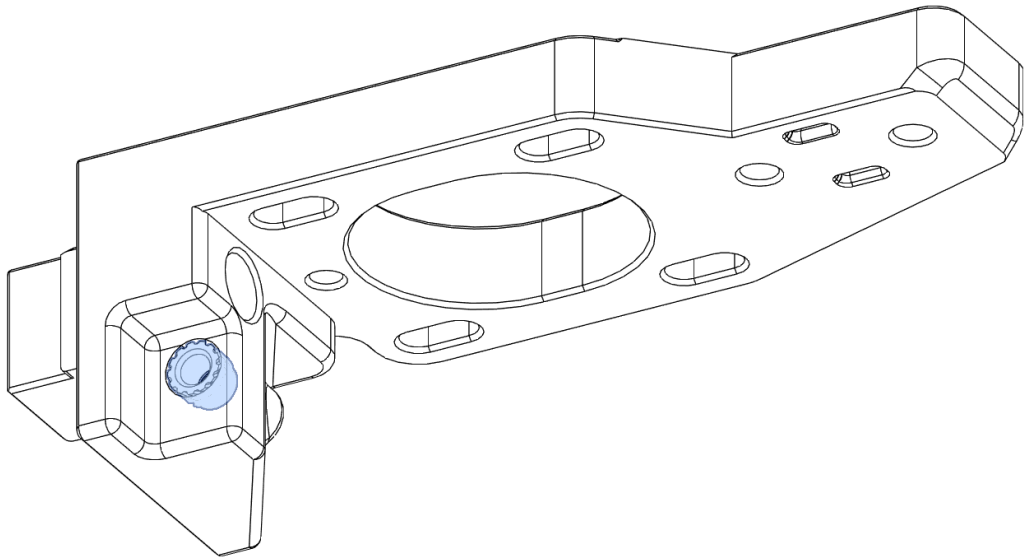
Gantry

P91

a_drive_frame_lower

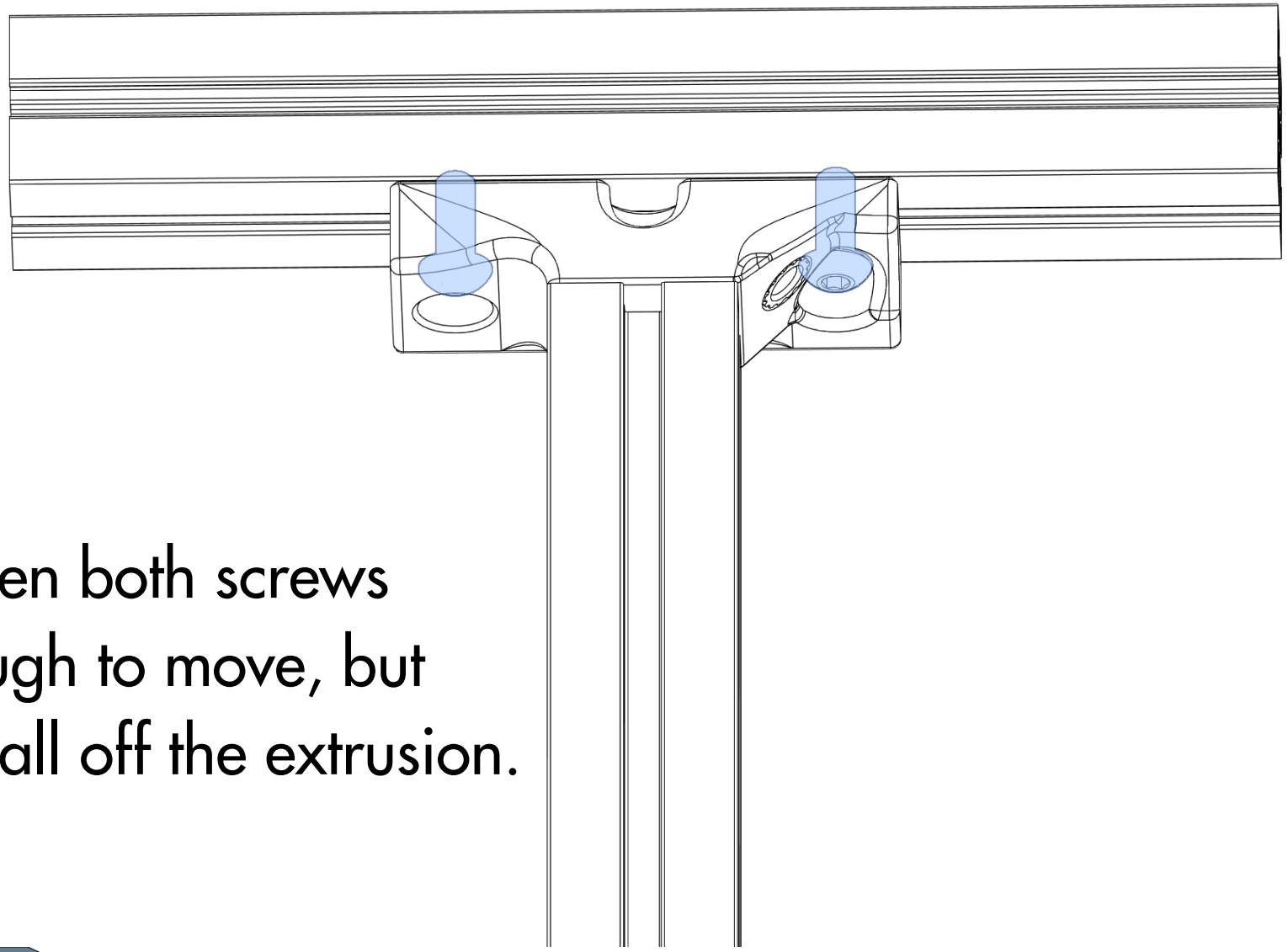


M3 Heatset Insert

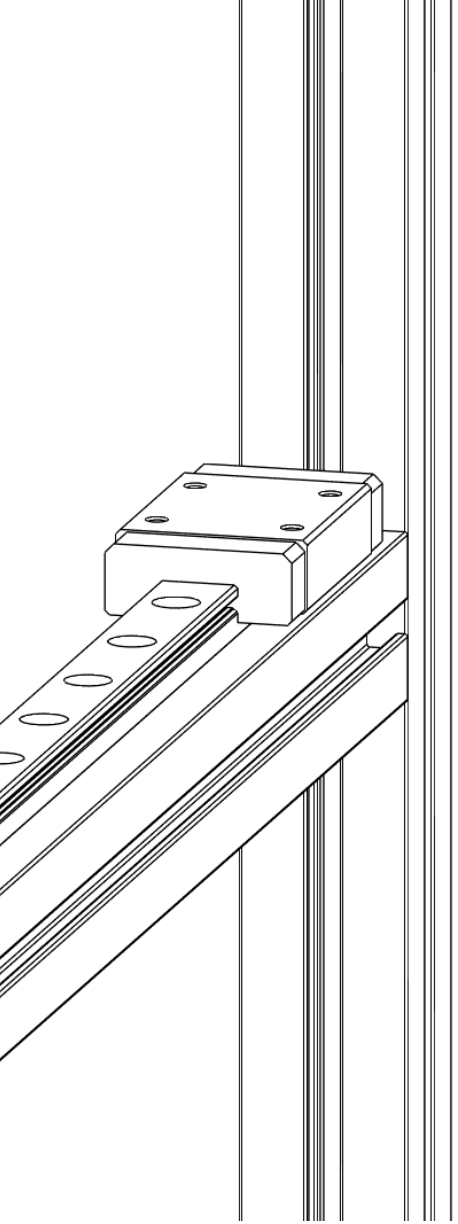


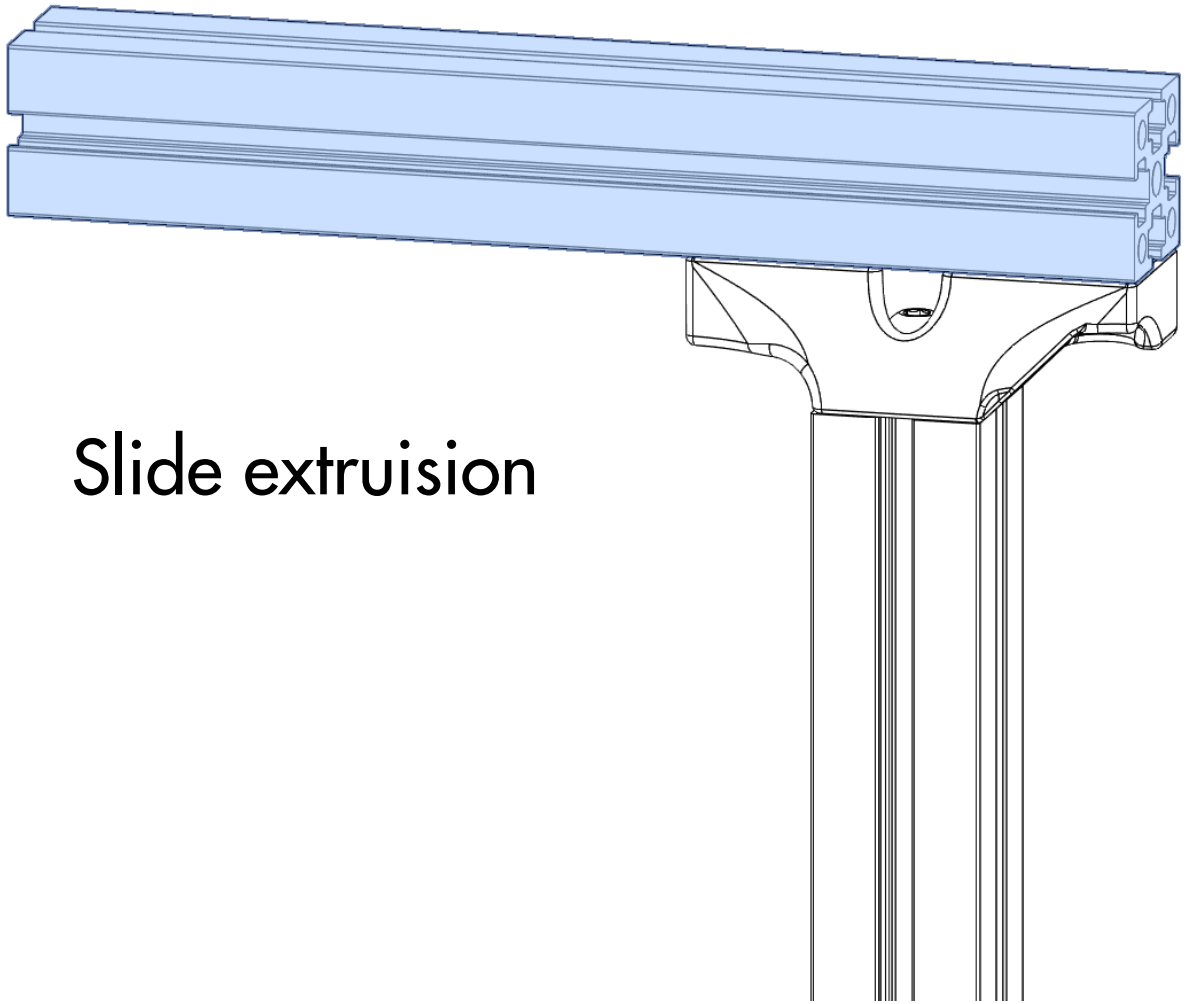
b_drive_frame_lower

M3 Heatset Insert

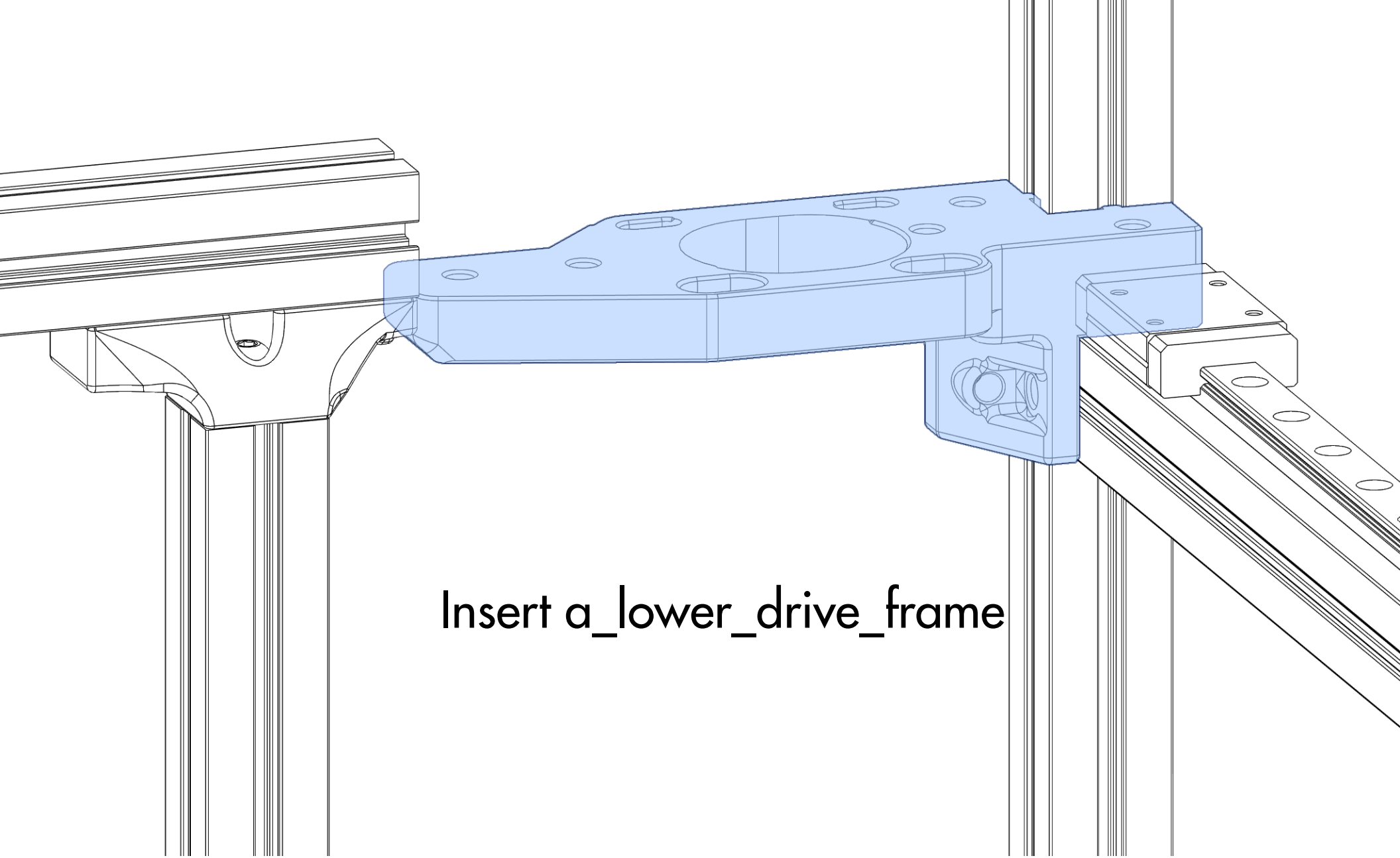


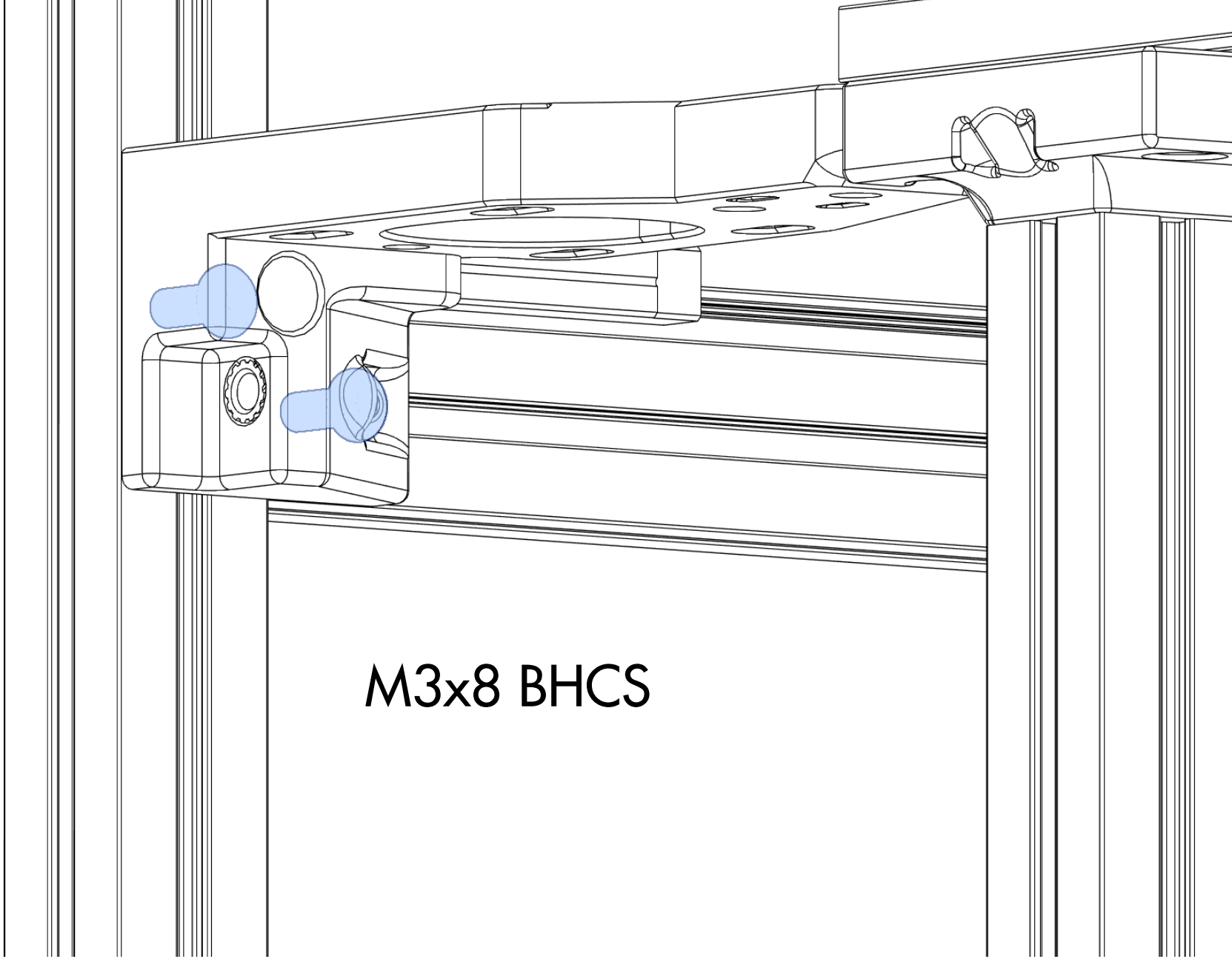
Loosen both screws enough to move, but not fall off the extrusion.



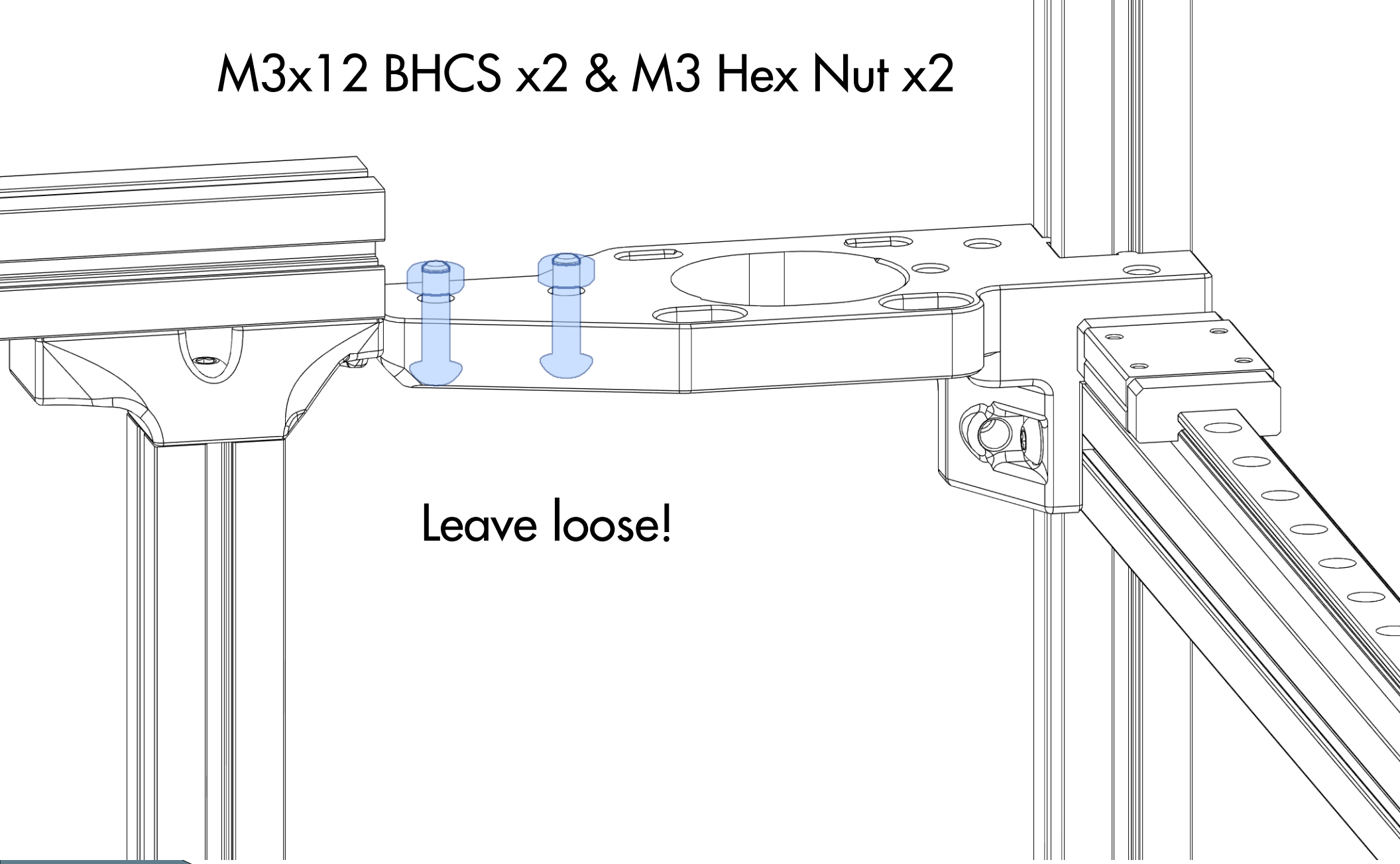


Slide extruision

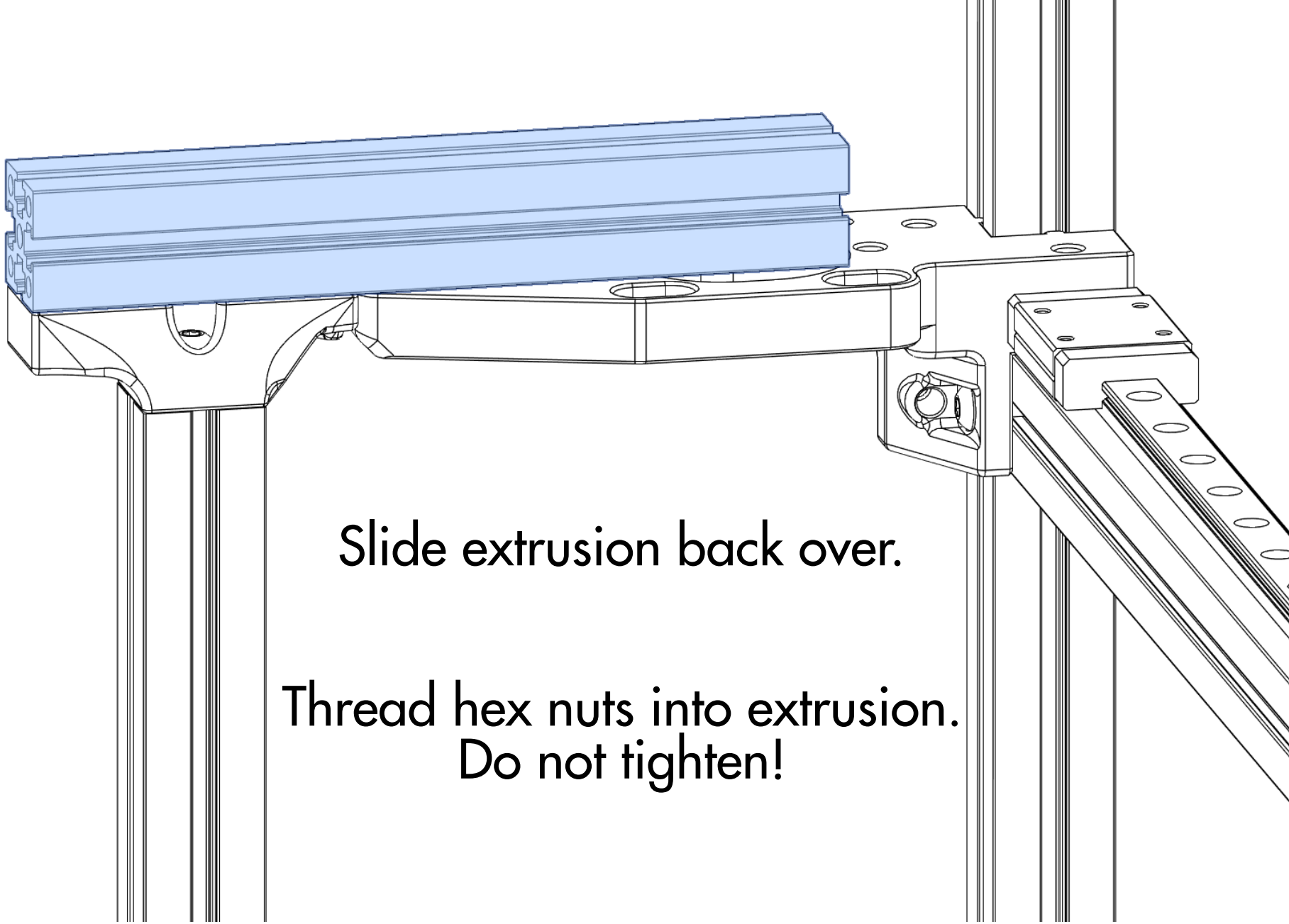

Insert a_lower_drive_frame


M3x8 BHCS

M3x12 BHCS x2 & M3 Hex Nut x2



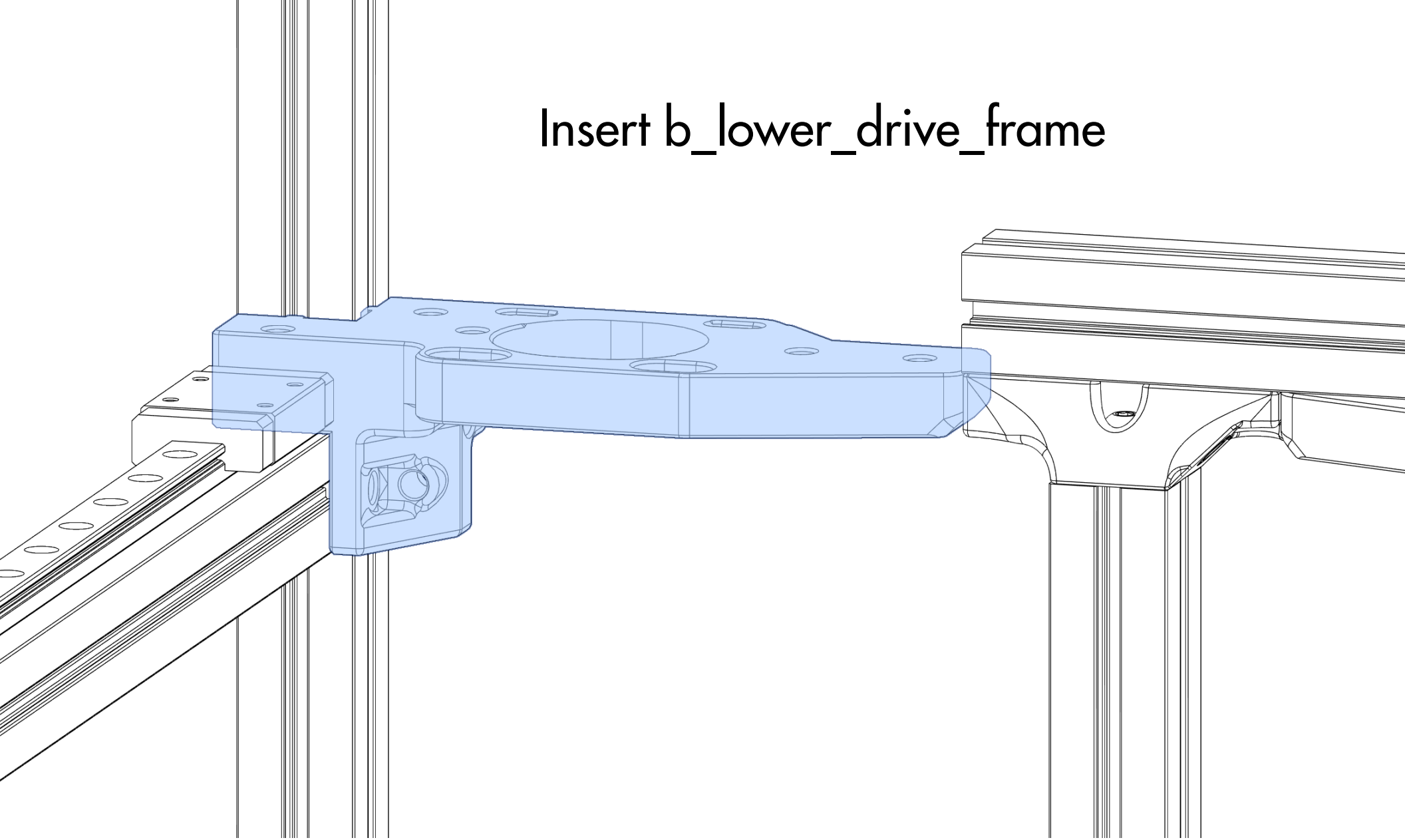
Leave loose!



Slide extrusion back over.

Thread hex nuts into extrusion.
Do not tighten!

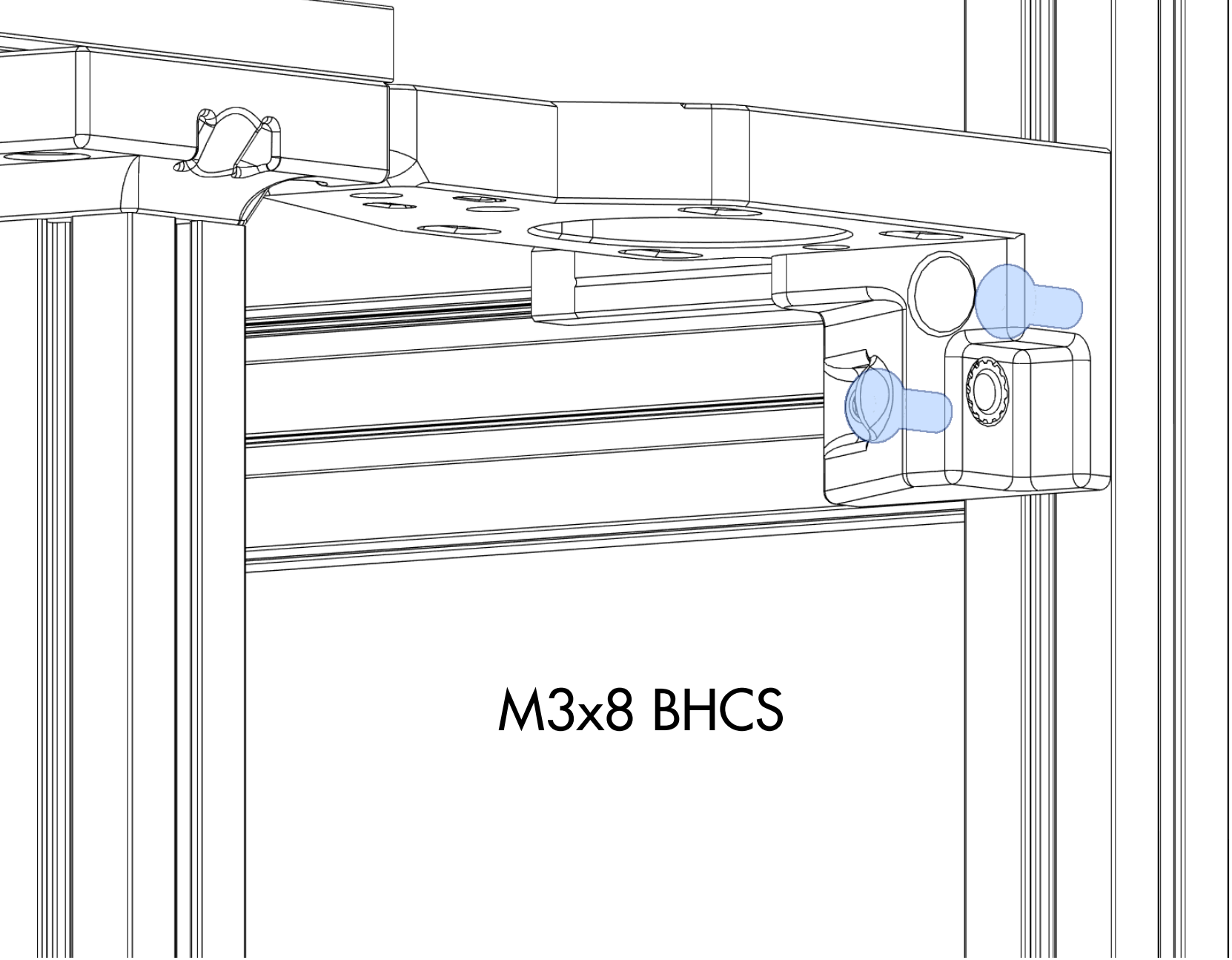
Insert b_lower_drive_frame



Mastur Mods

Gantry

P100

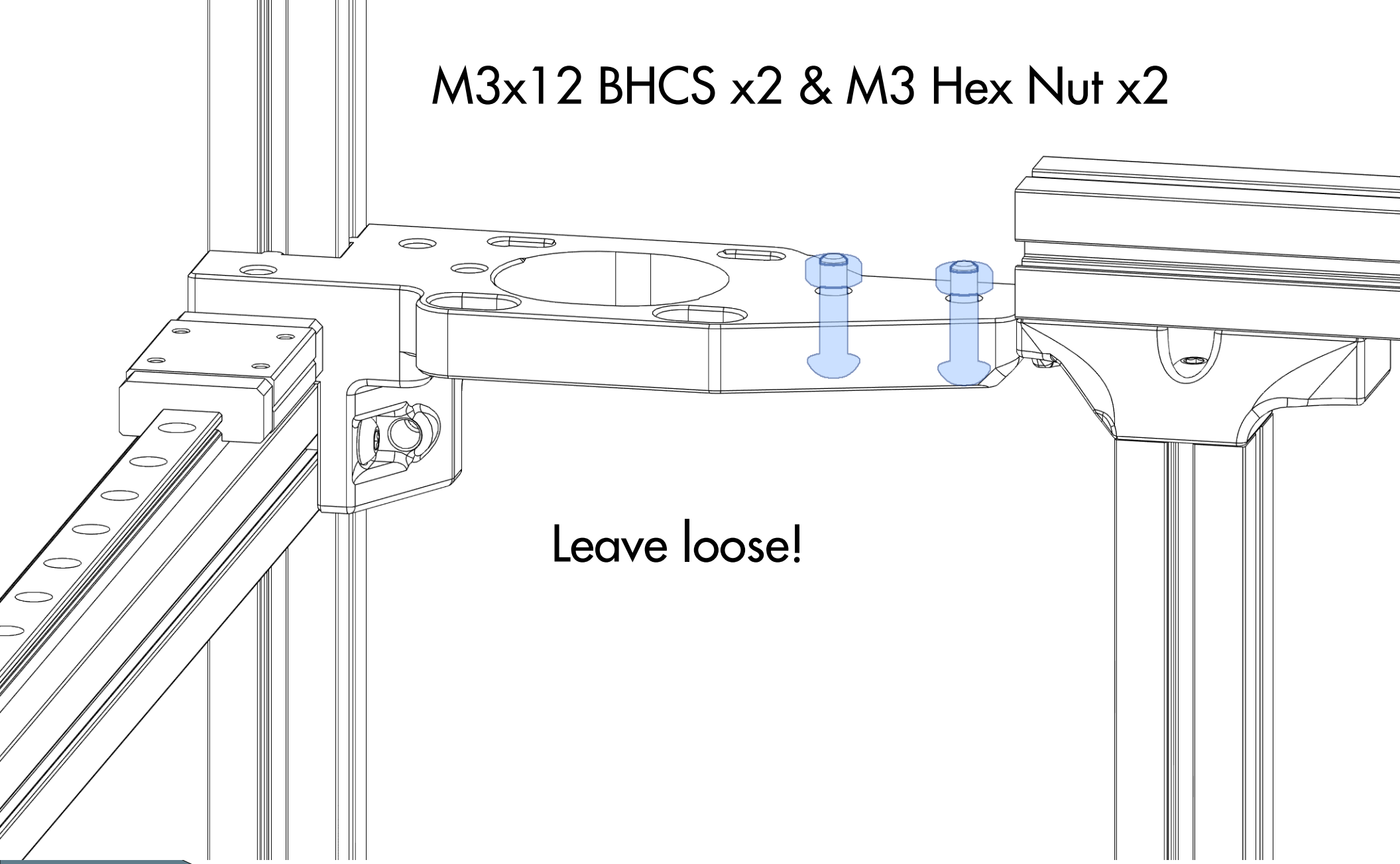


Mastur Mods

Gantry

P101

M3x12 BHCS x2 & M3 Hex Nut x2



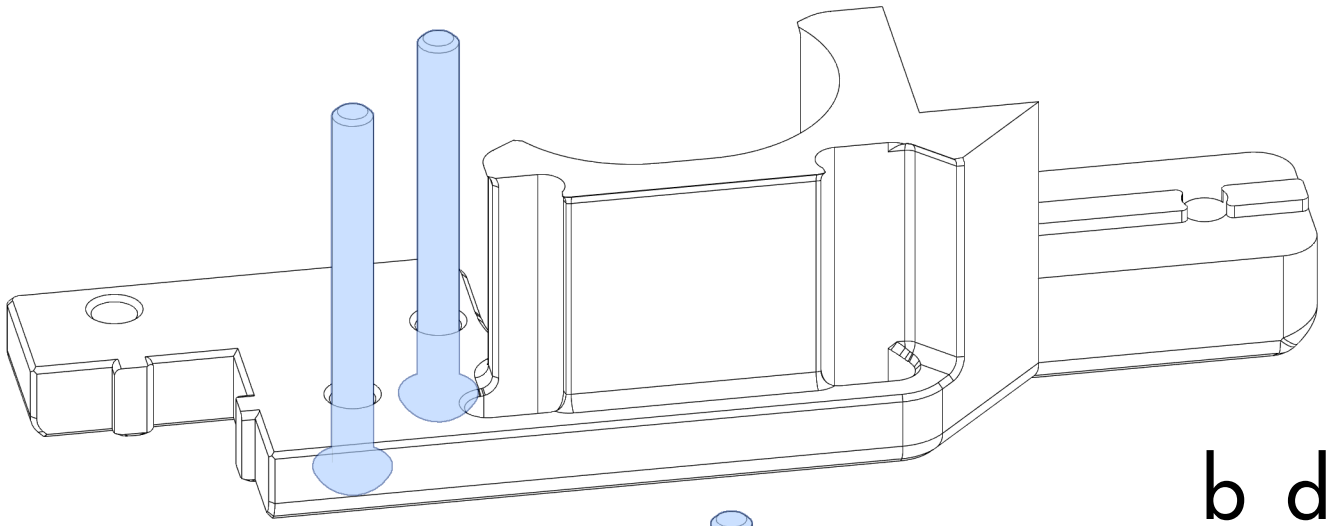
Leave loose!

Mastur Mods

Gantry

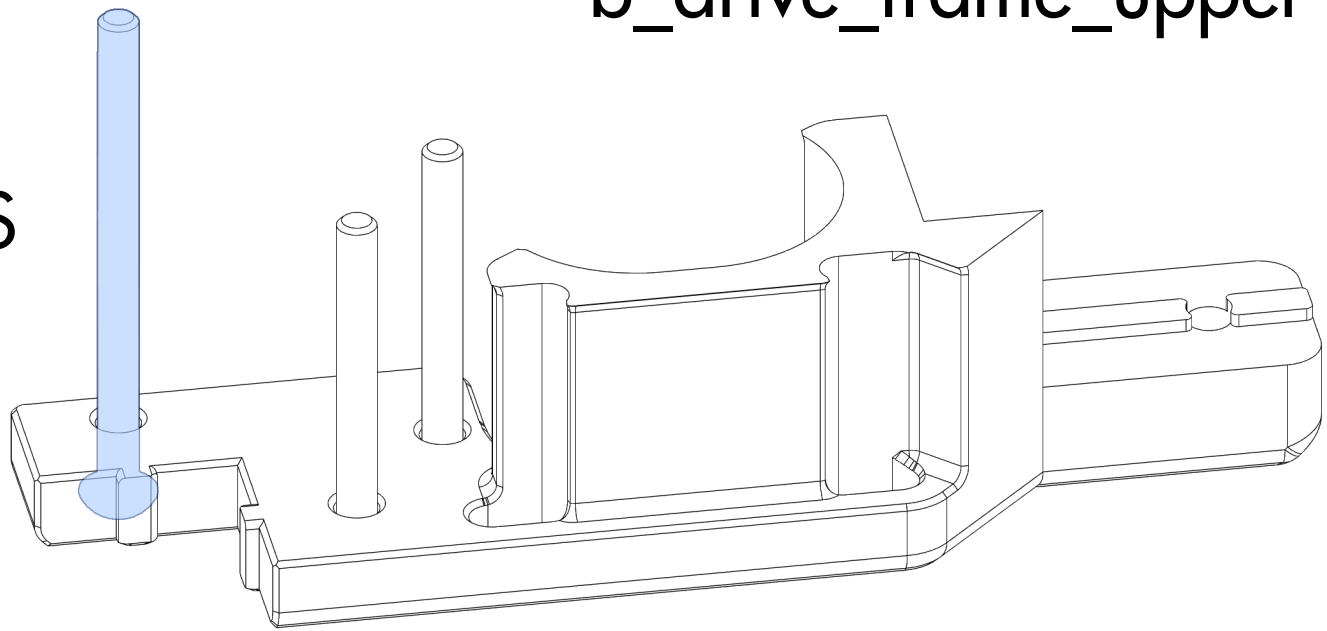
P102

M3x30 BHCS x2



b_drive_frame_upper

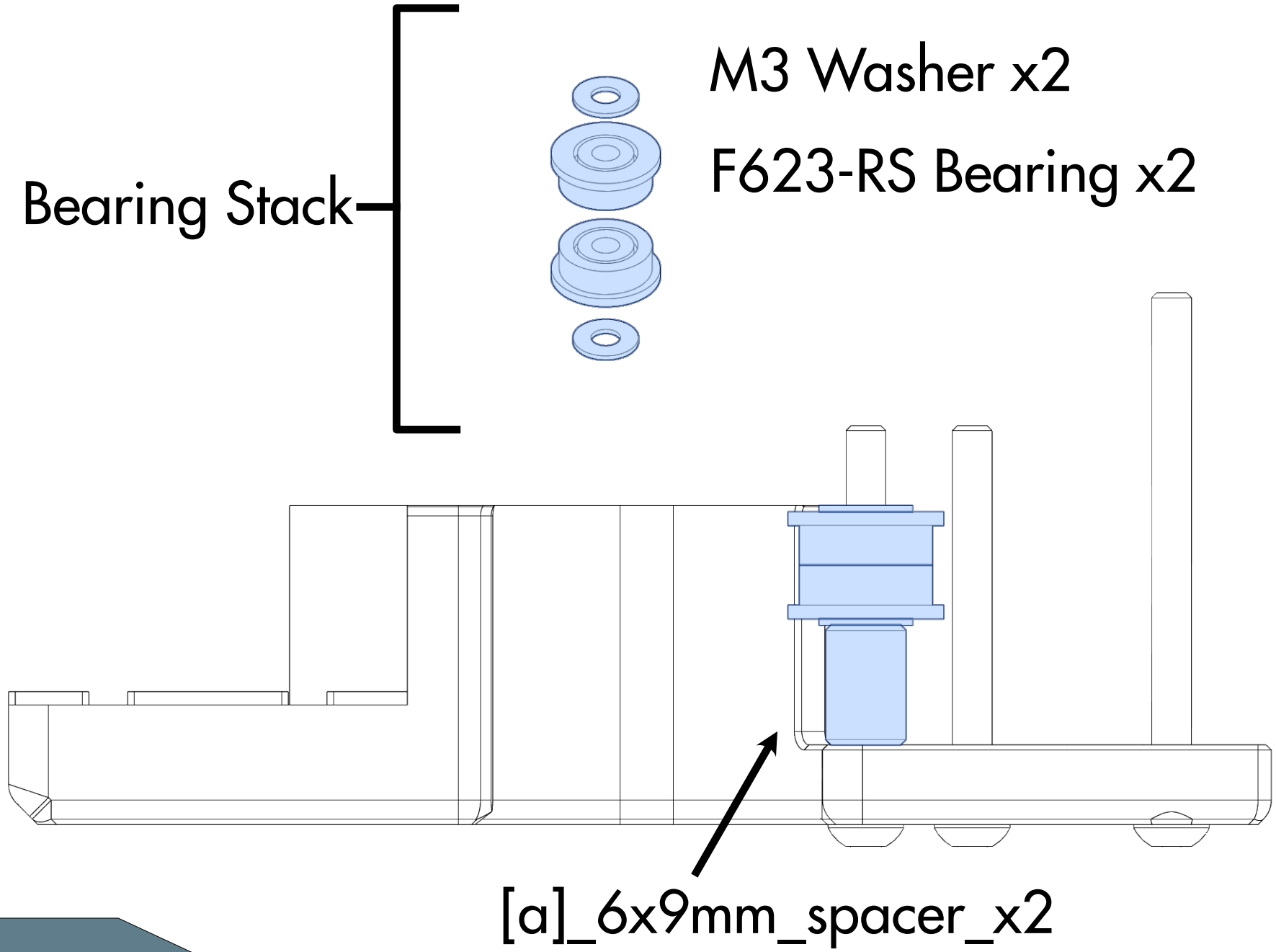
M3x40 BHCS



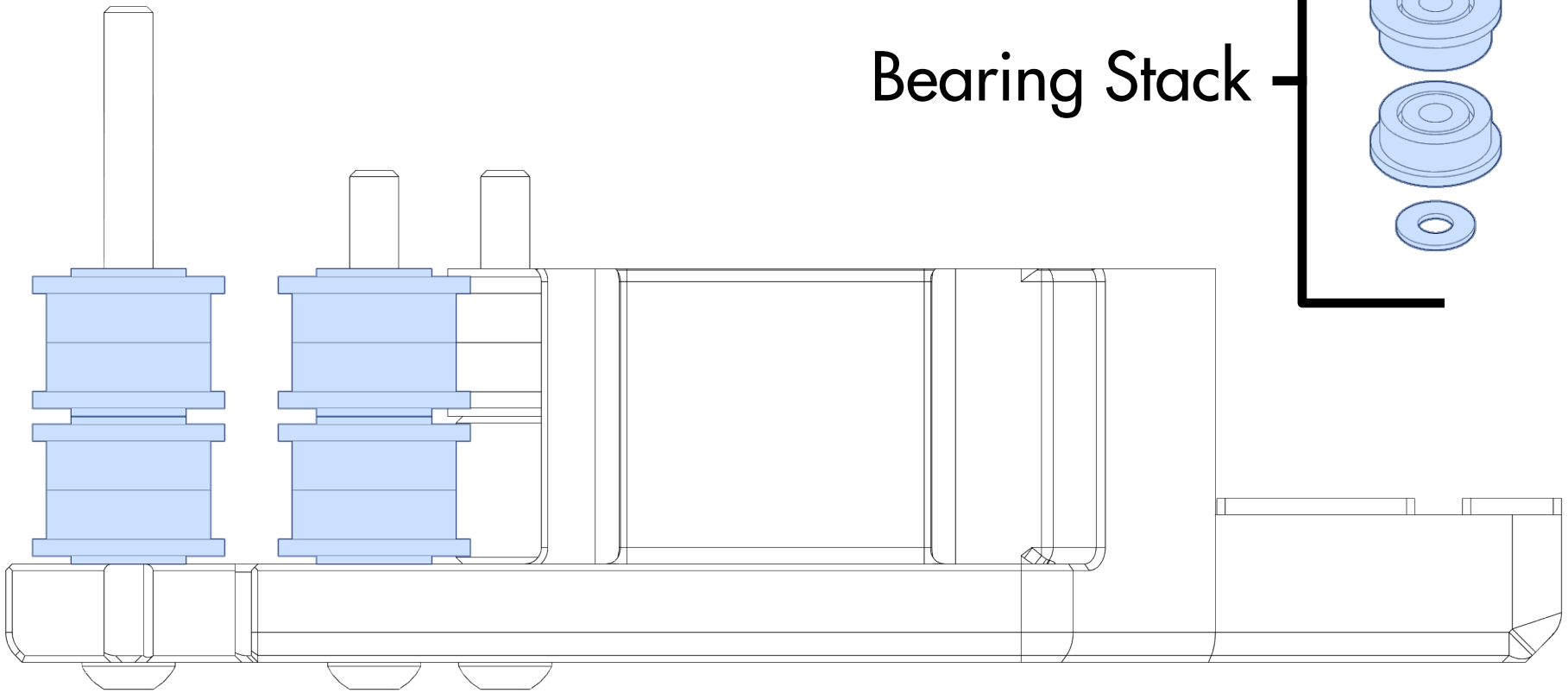
Mastur Mods

Gantry

P103

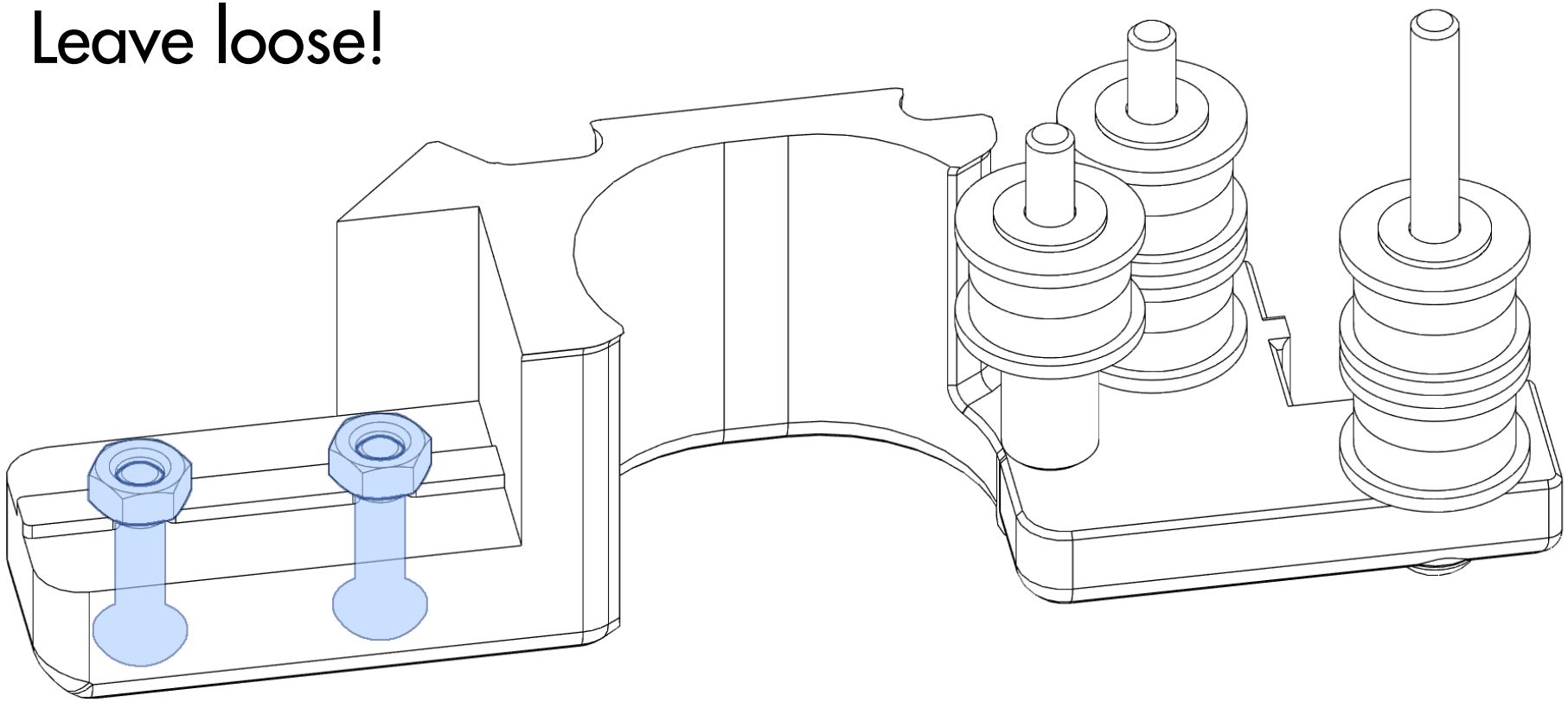

Bearing Stack
M3 Washer x2
F623-RS Bearing x2
[a]_6x9mm_spacer_x2

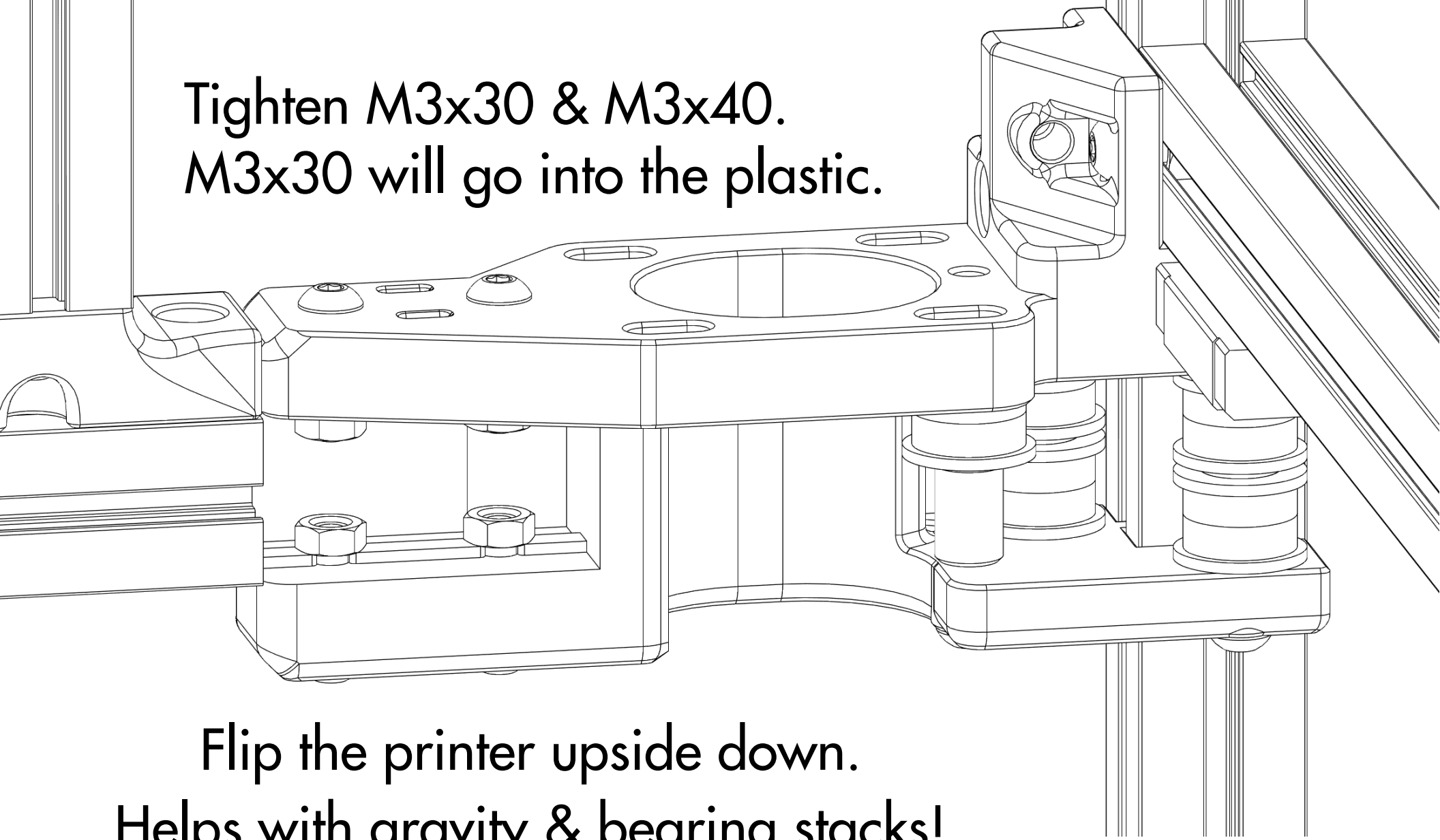
Stack Bearing Stacks as shown



M3x12 BHCS x2 & M3 Hex Nut x2

Leave loose!





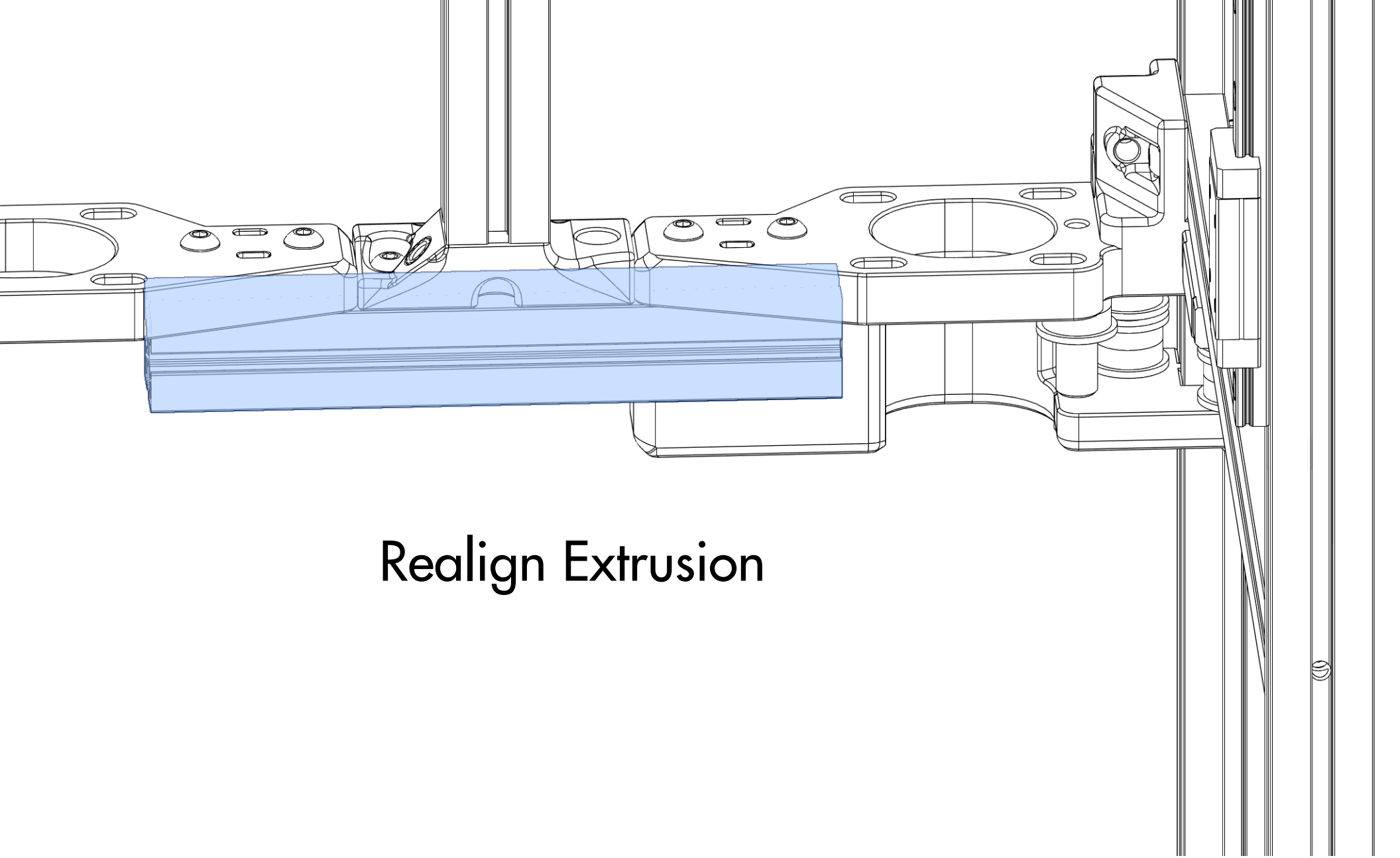
Tighten M3x30 & M3x40.
M3x30 will go into the plastic.

Flip the printer upside down.
Helps with gravity & bearing stacks!

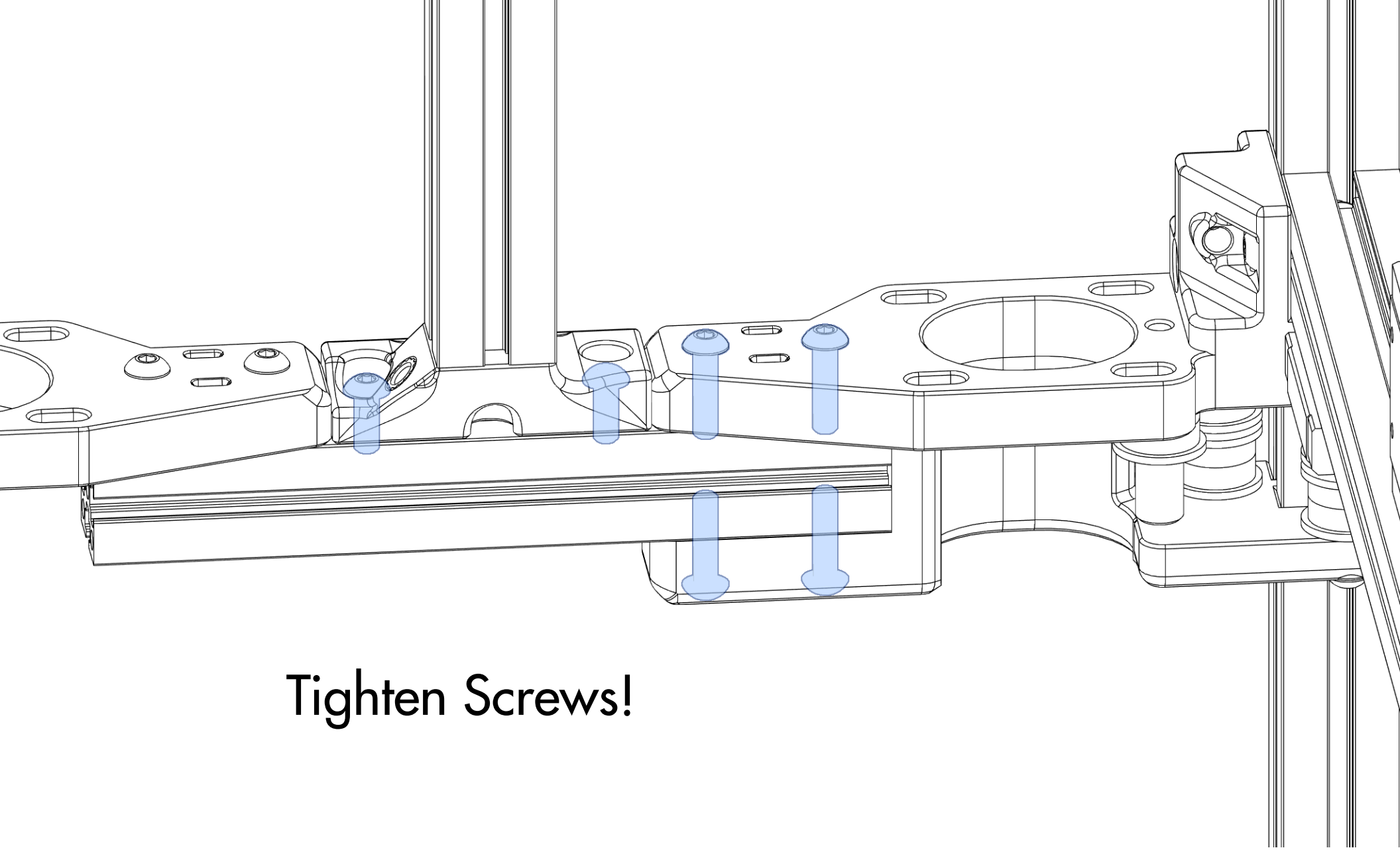
Mastur Mods

Gantry

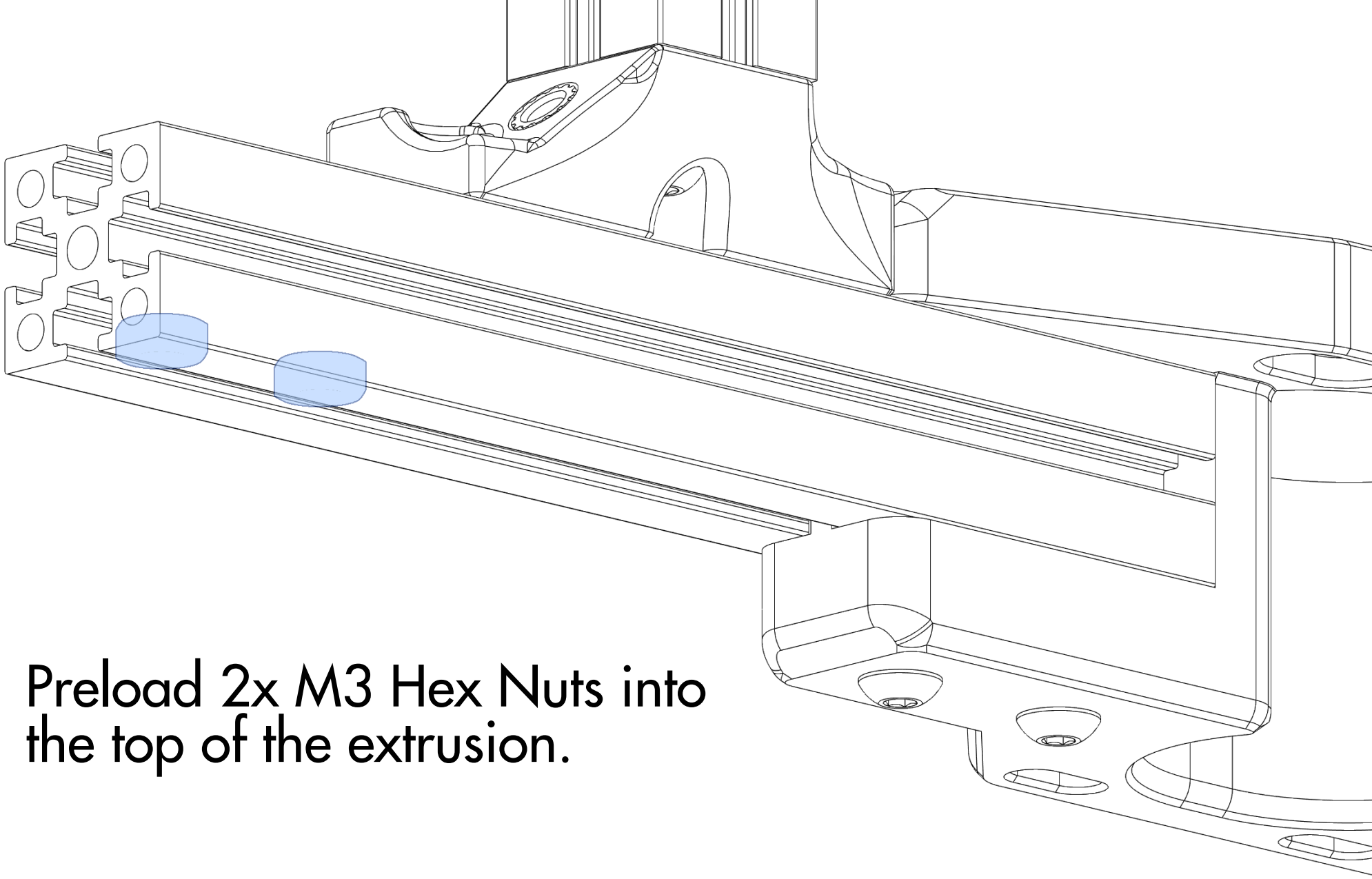
P107



Realign Extrusion



Tighten Screws!



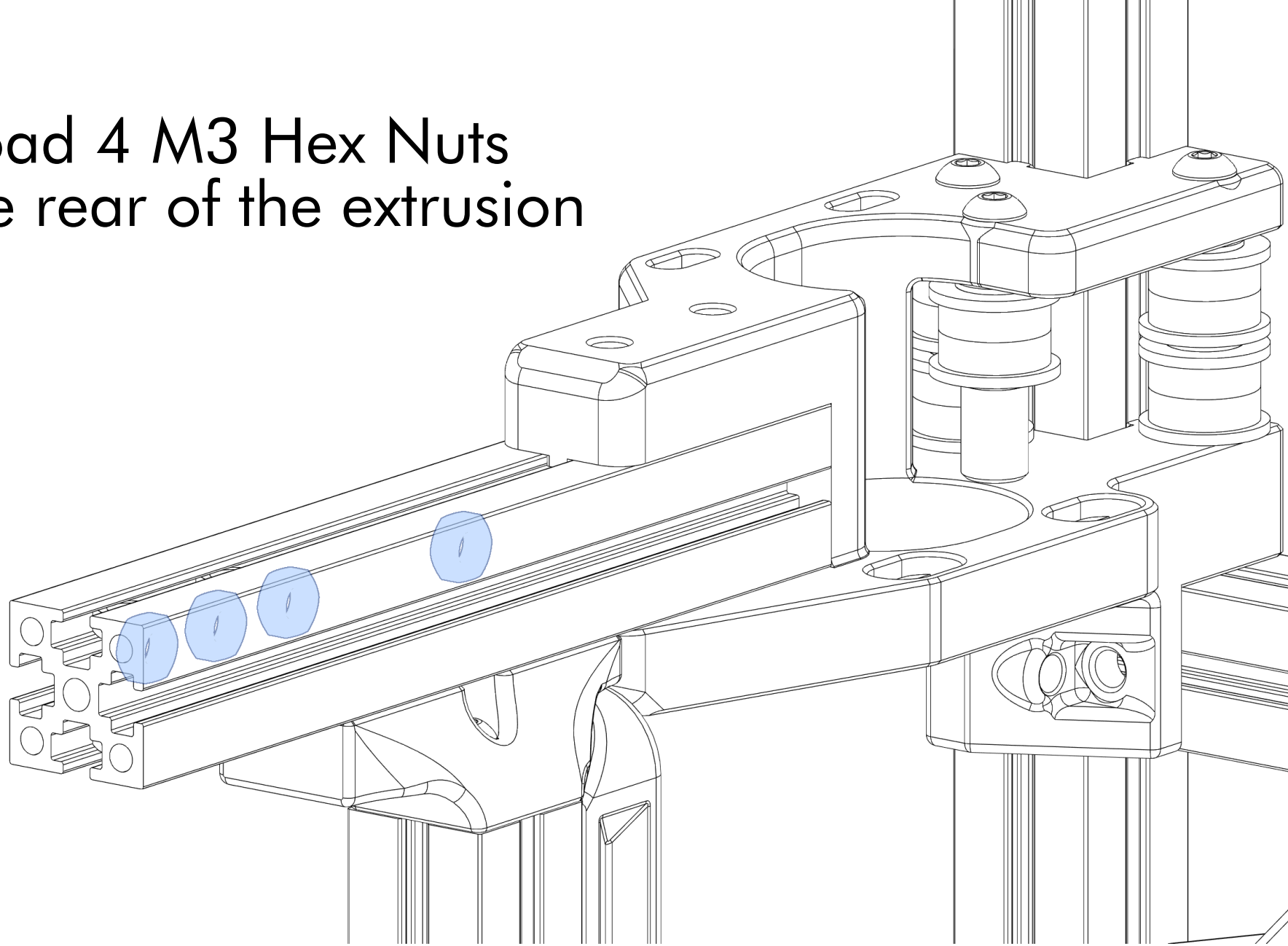
Preload 2x M3 Hex Nuts into the top of the extrusion.

Mastur Mods

Gantry

P110

Preload 4 M3 Hex Nuts
into the rear of the extrusion



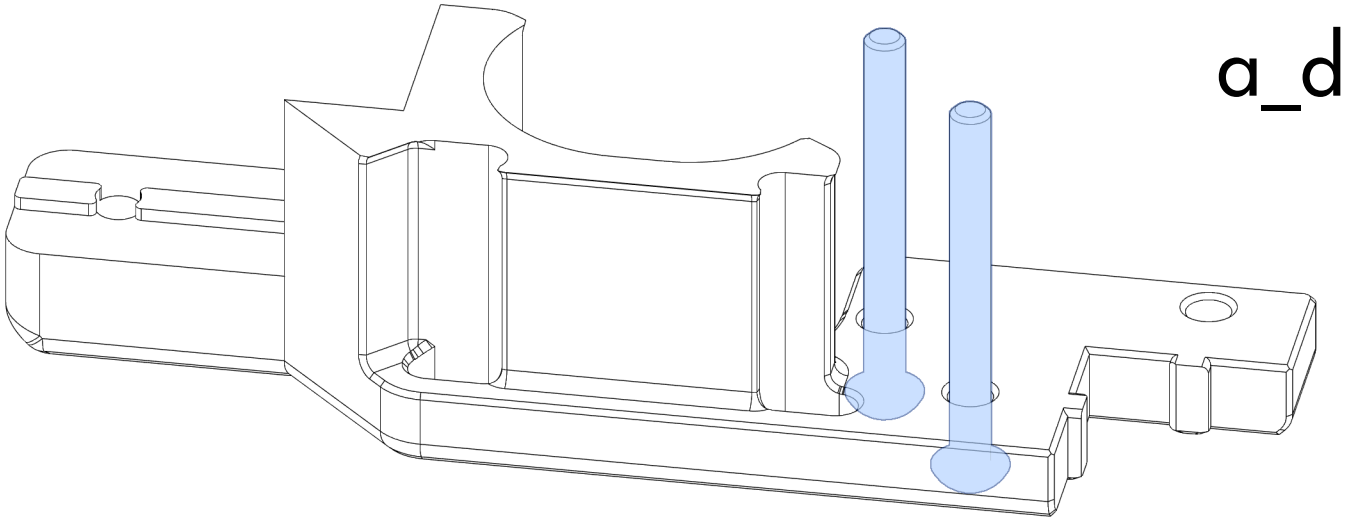
Mastur Mods

Gantry

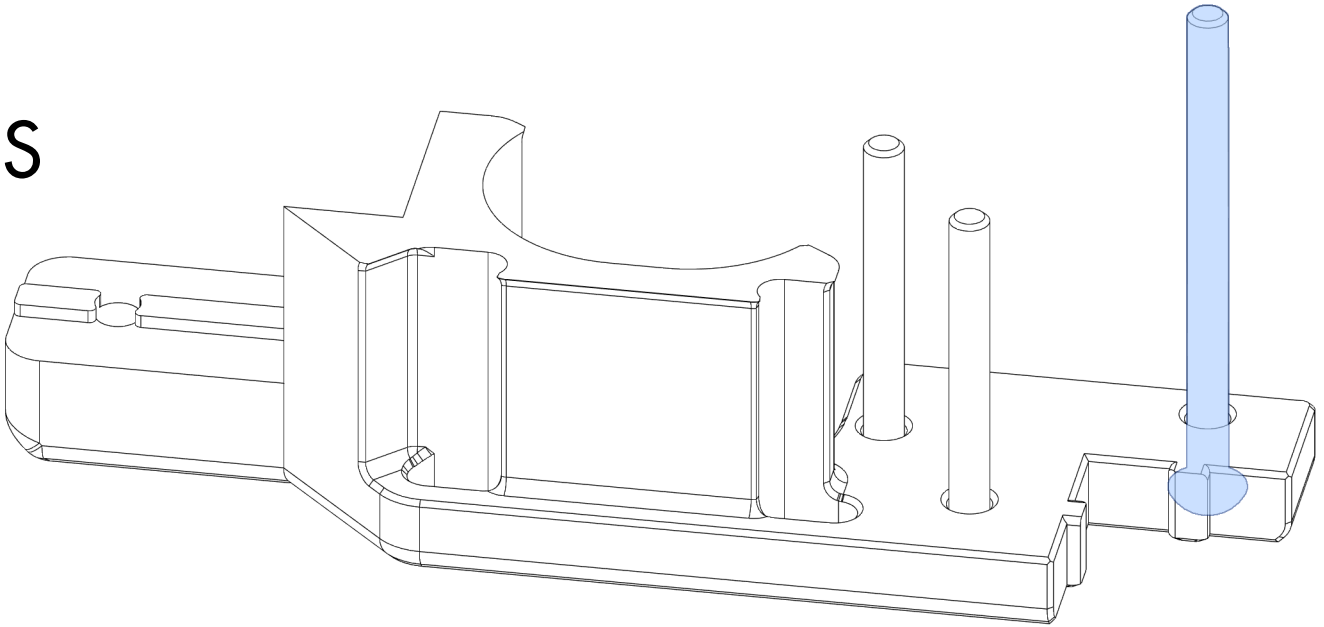
P111

M3x30 BHCS x2

a_drive_frame_upper



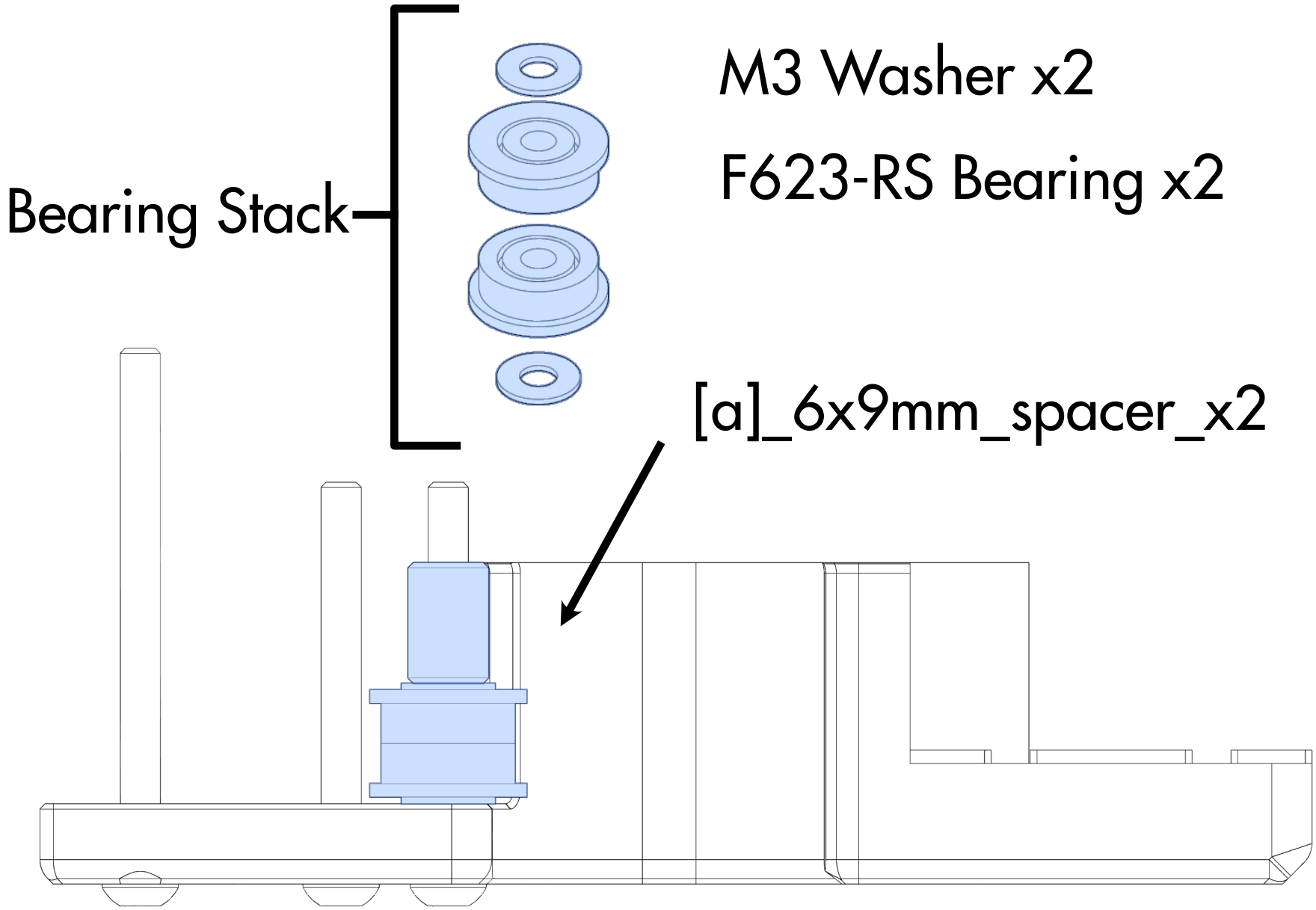
M3x40 BHCS

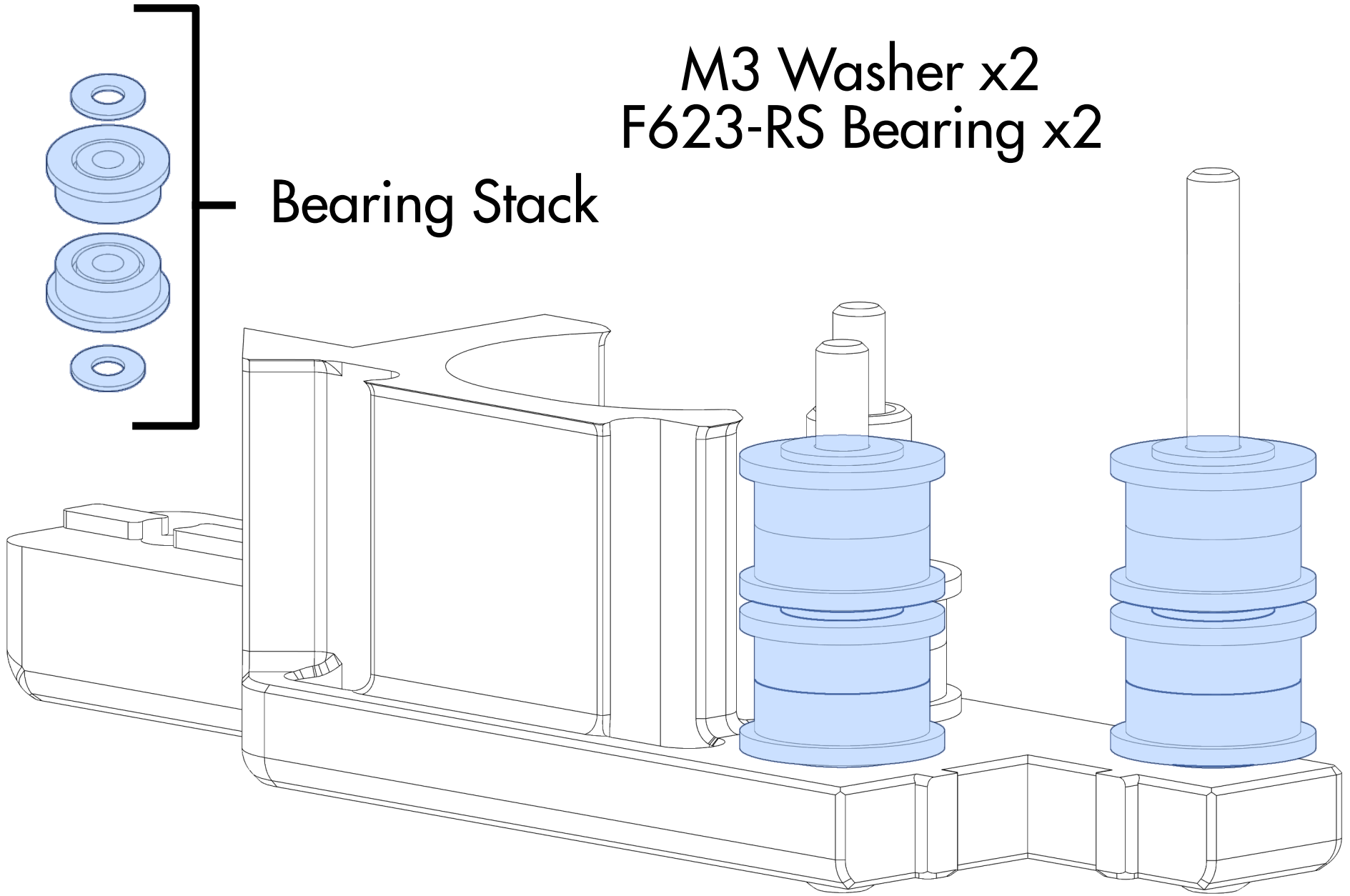


Mastur Mods

Gantry

P112

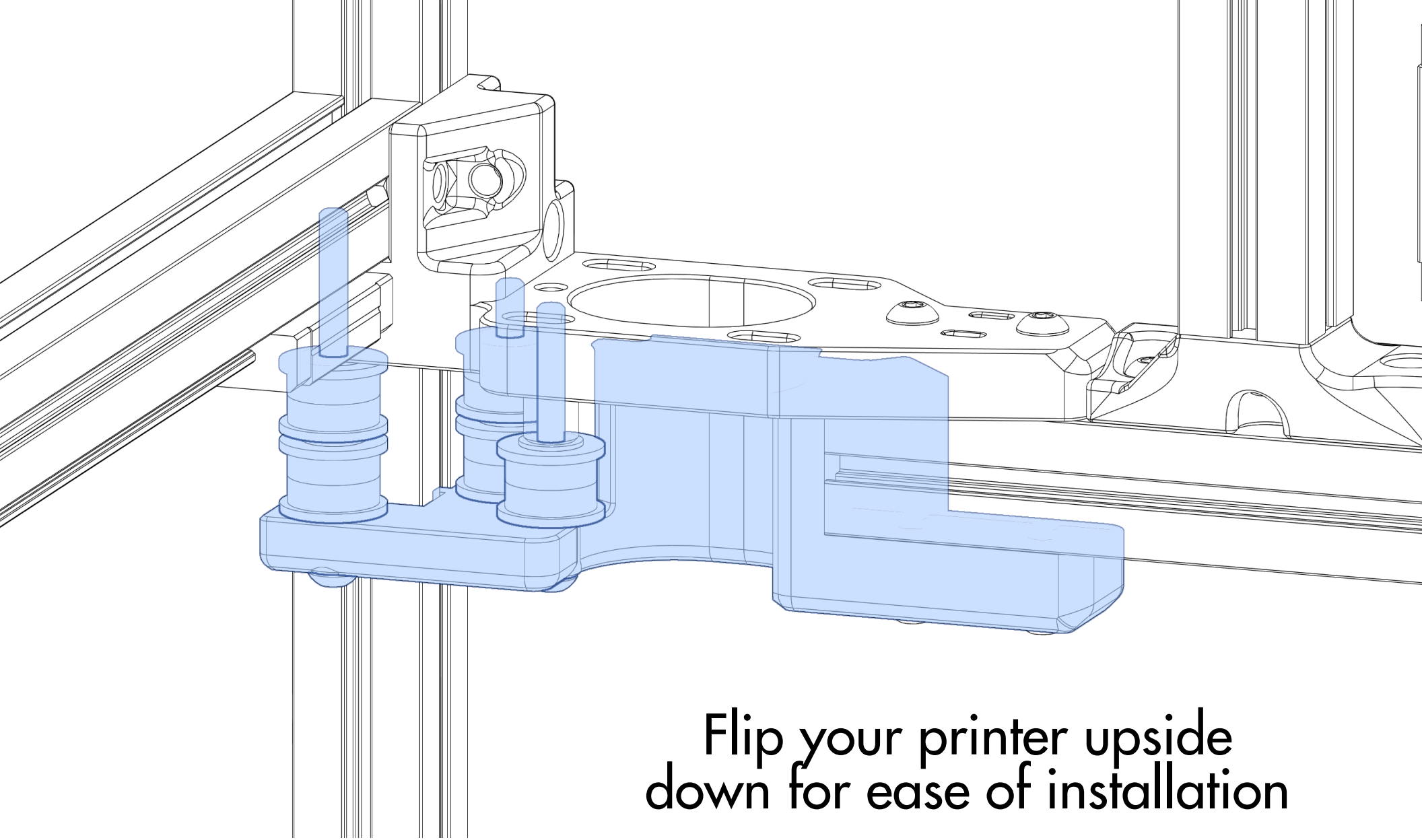

Bearing Stack
M3 Washer x2
F623-RS Bearing x2
[a]_6x9mm_spacer_x2



Mastur Mods

Gantry

P114

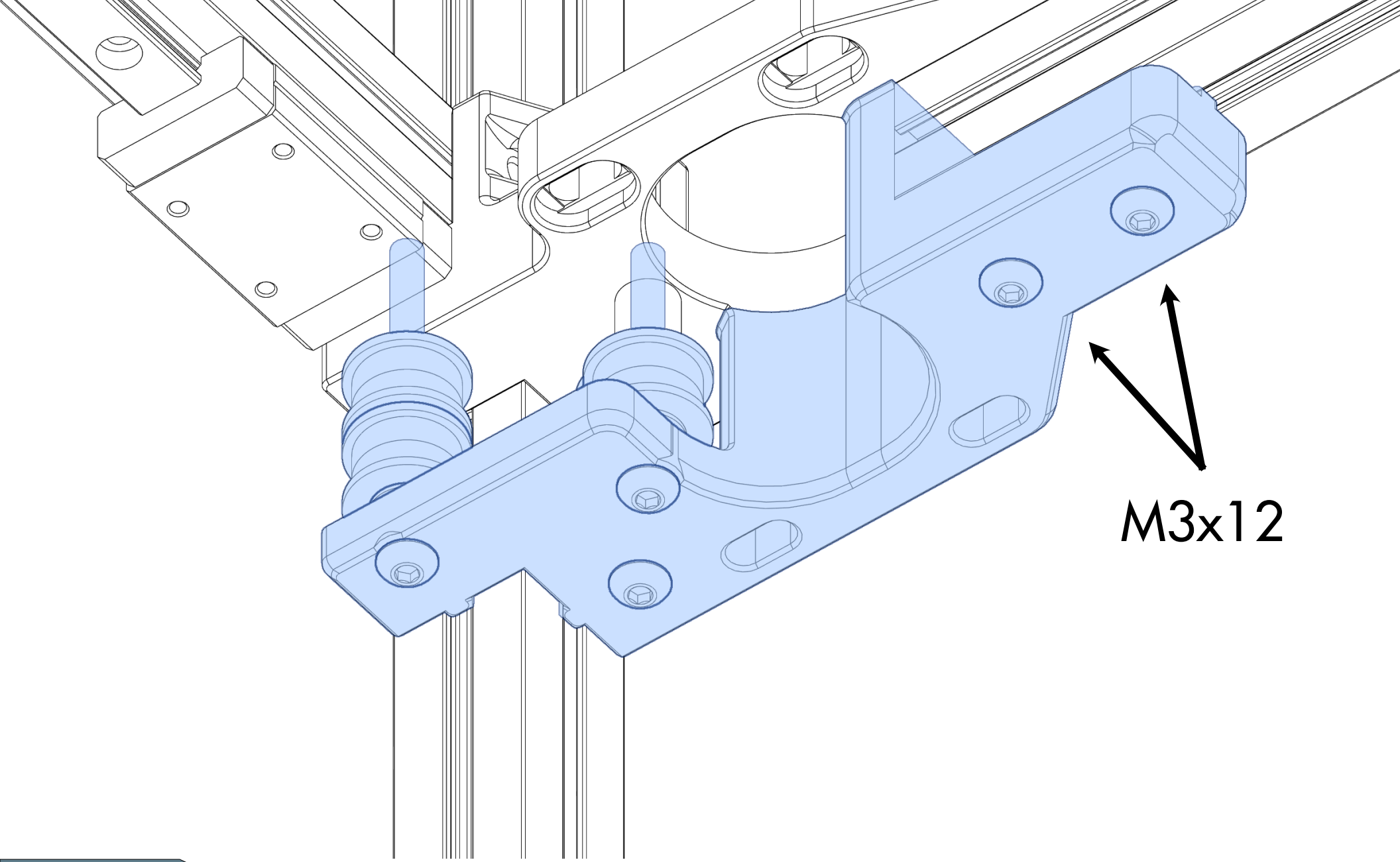


Flip your printer upside down for ease of installation

Mastur Mods

Gantry

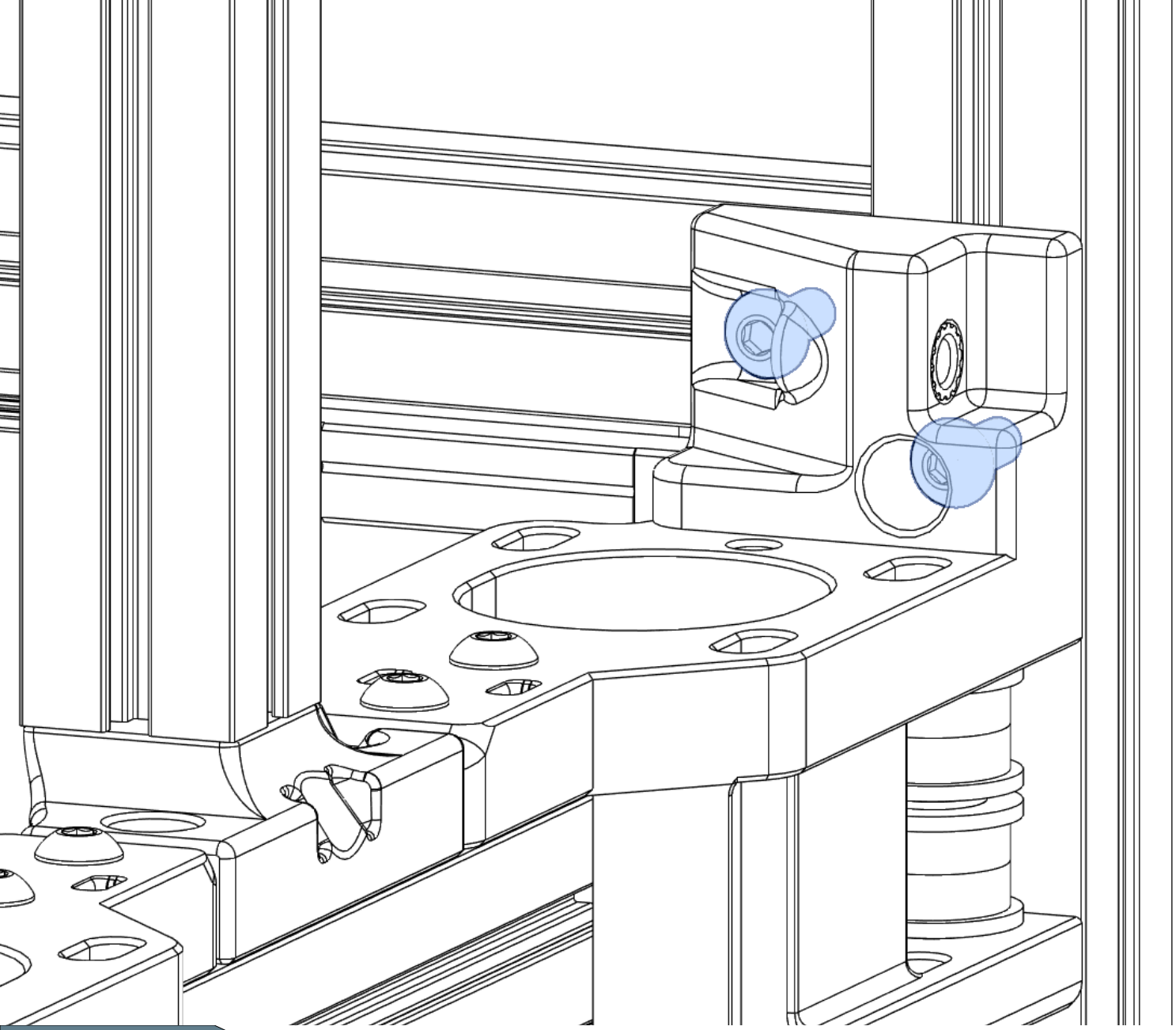
P115



Mastur Mods

Gantry

P116



M3x8 BHCS

Mastur Mods

Gantry

P117

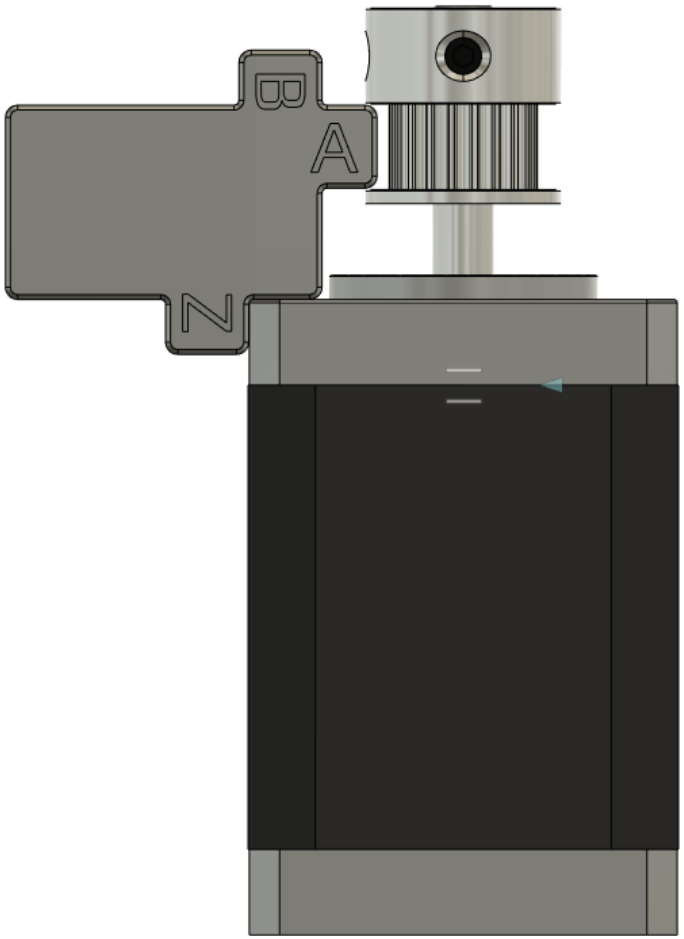
M3x8 BHCS

Mastur Mods

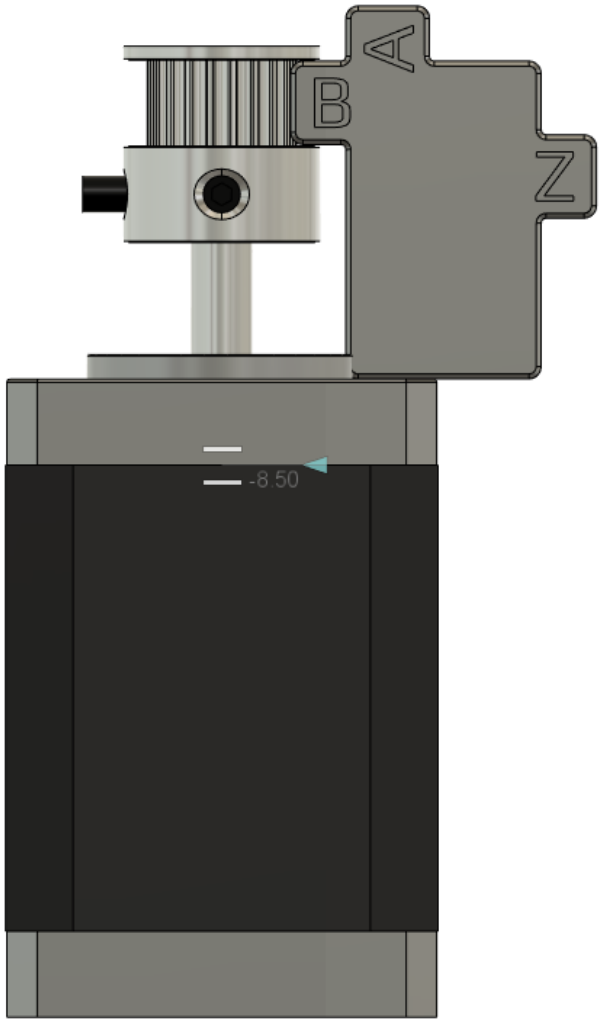
Gantry

P118

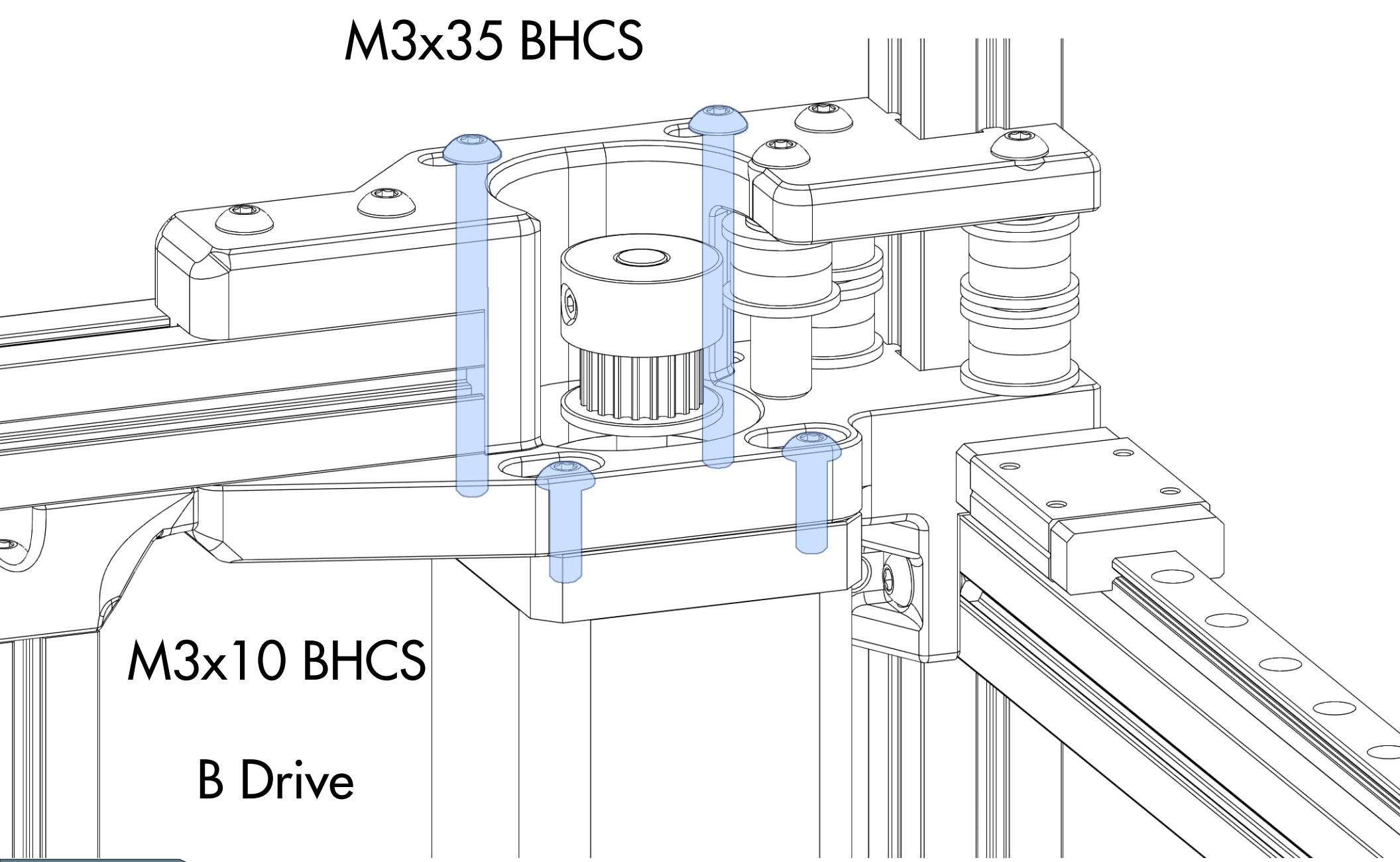
Prep your steppers.



A Drive - Nema 14



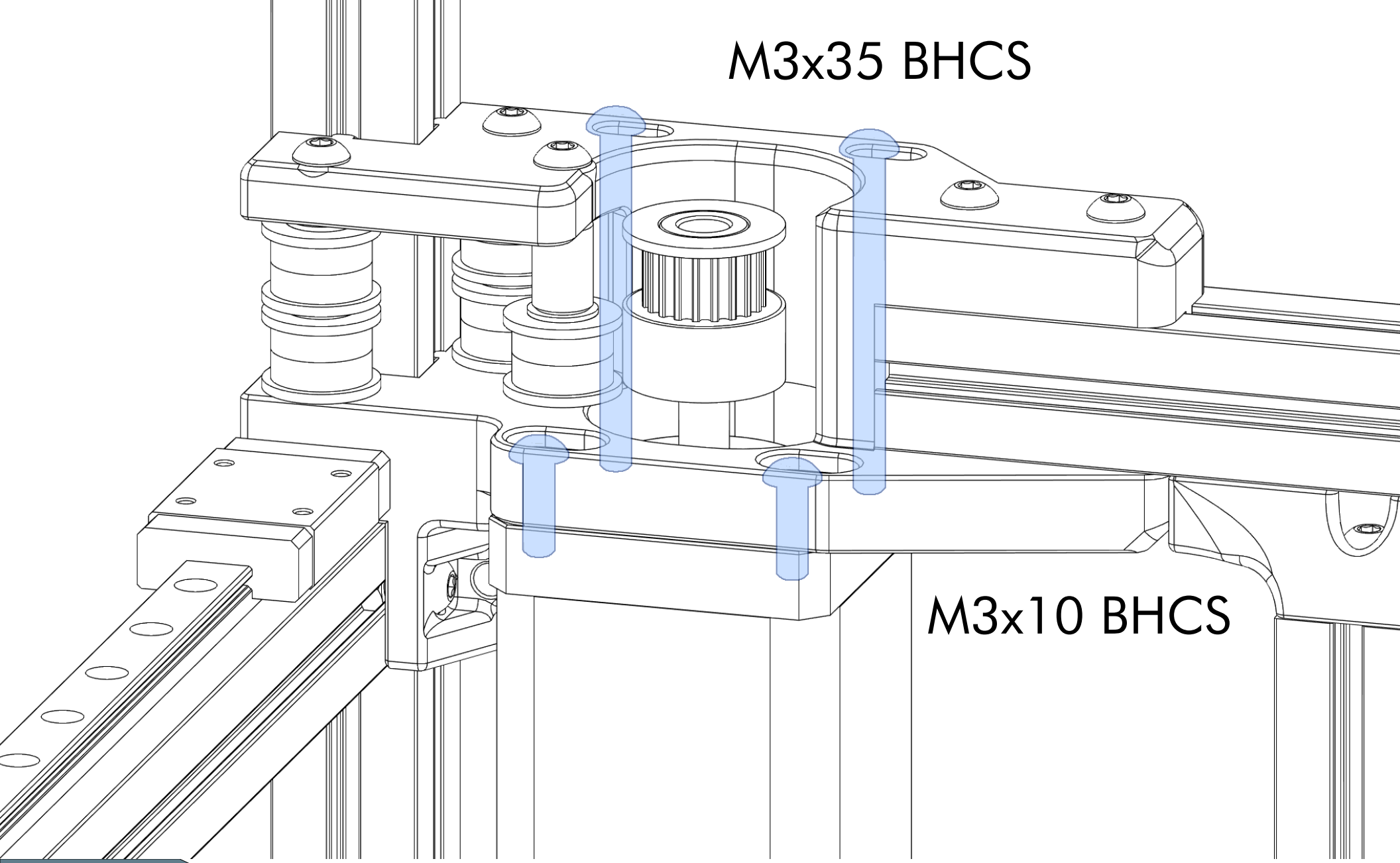
B Drive - Nema 14



Mastur Mods

Gantry

P120

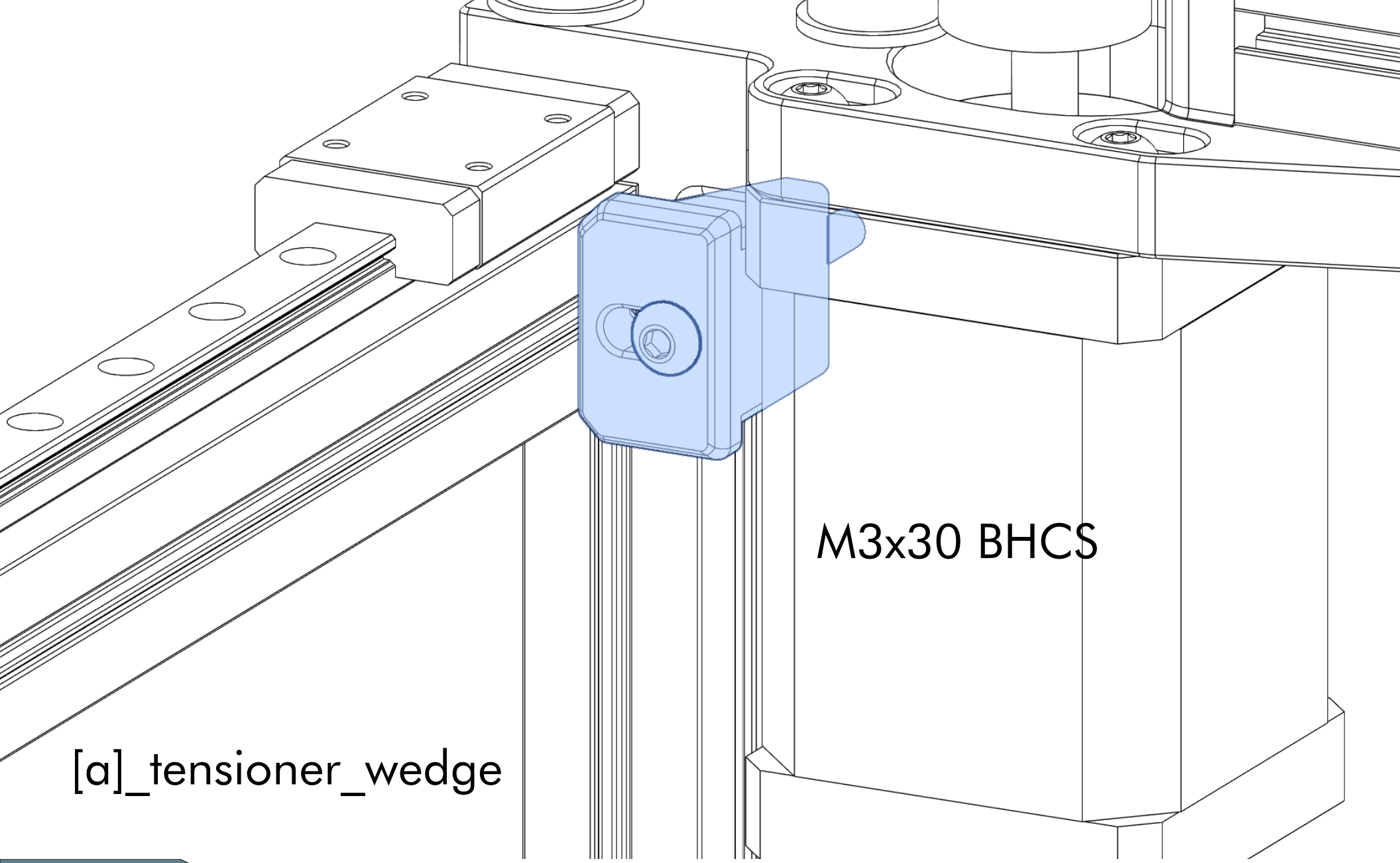


A Drive

Mastur Mods

Gantry

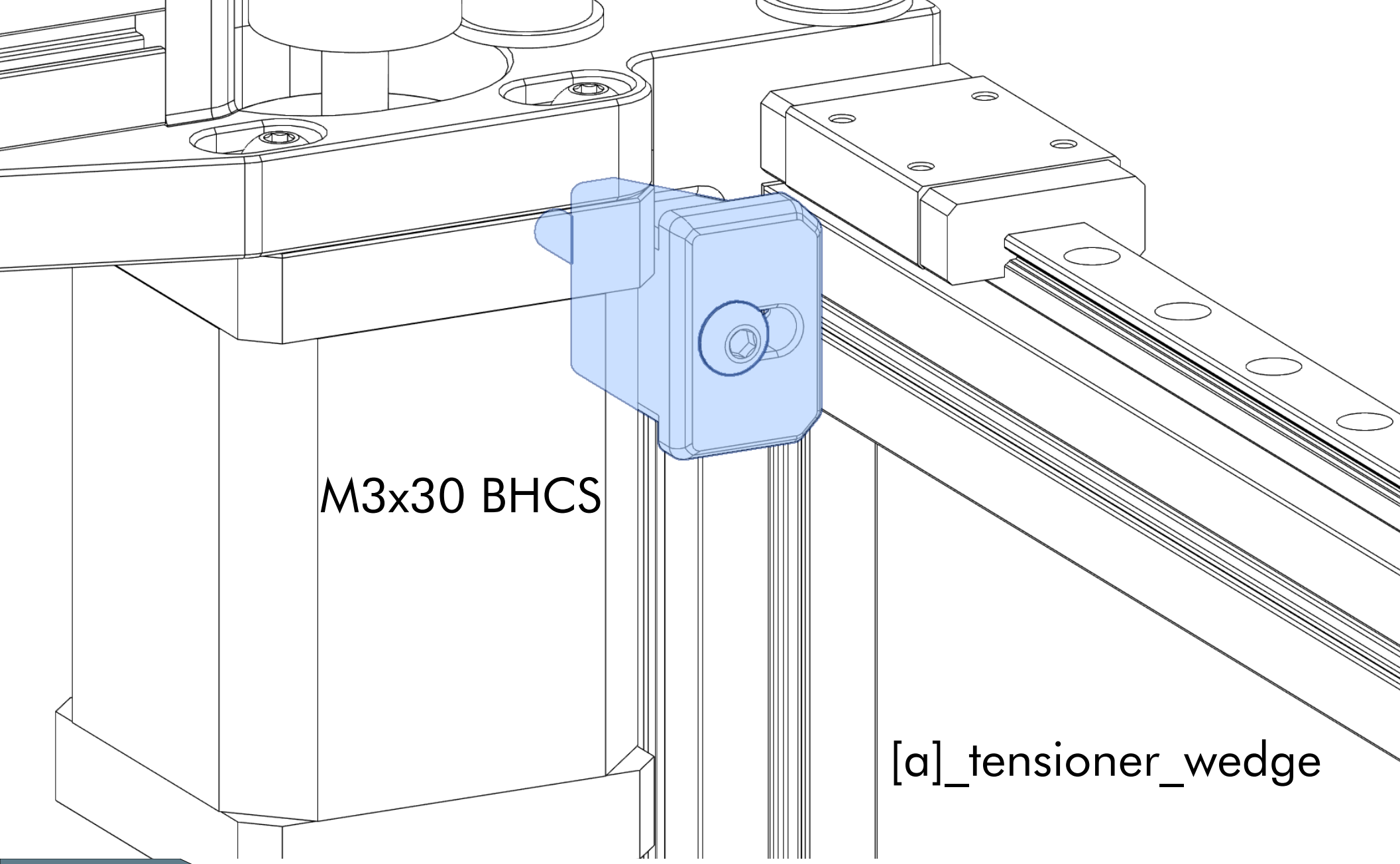
P121



Mastur Mods

Gantry

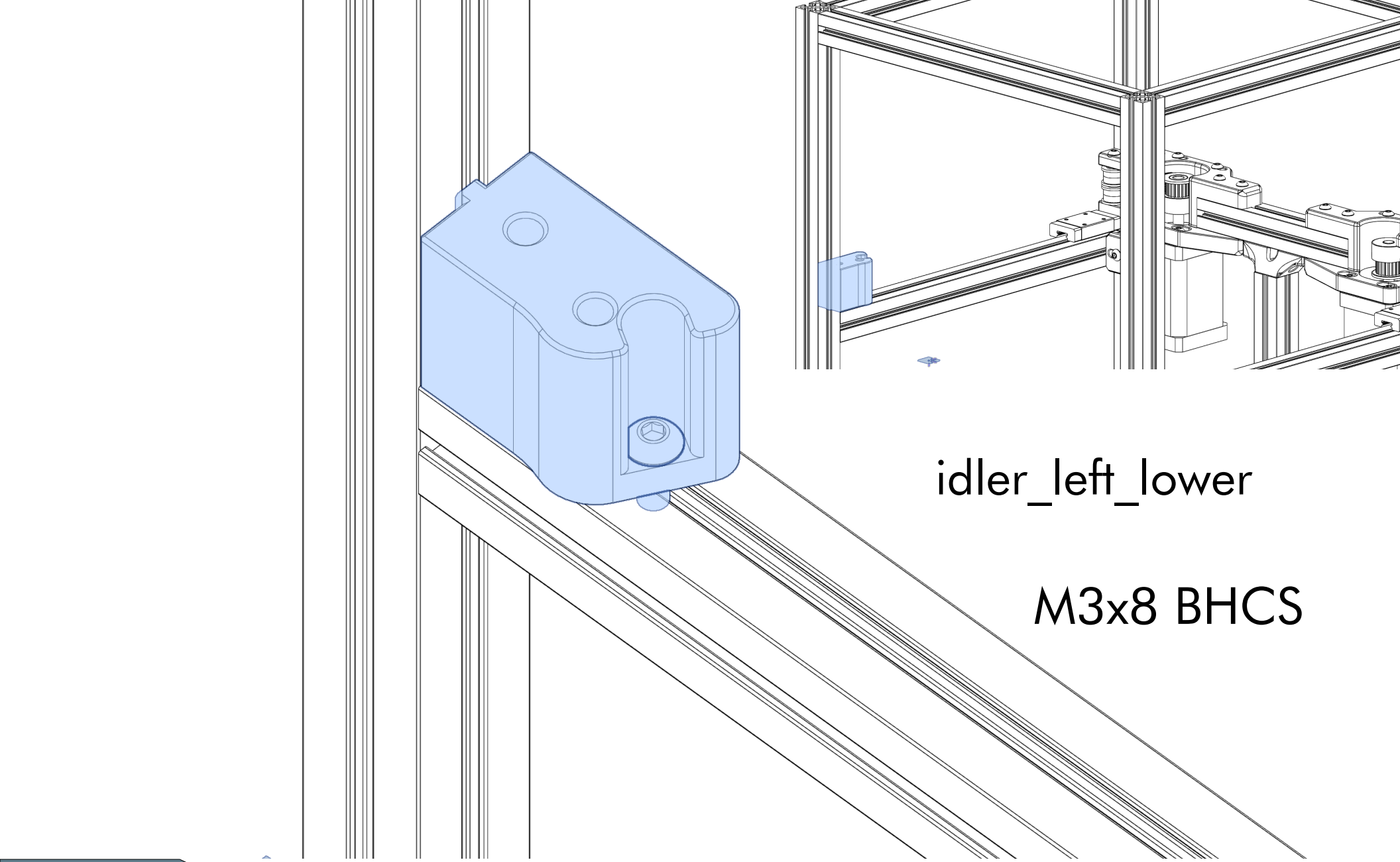
P122



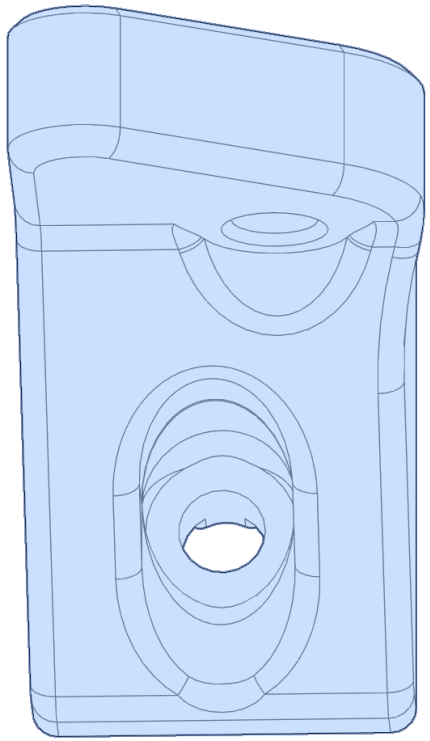
Mastur Mods

Gantry

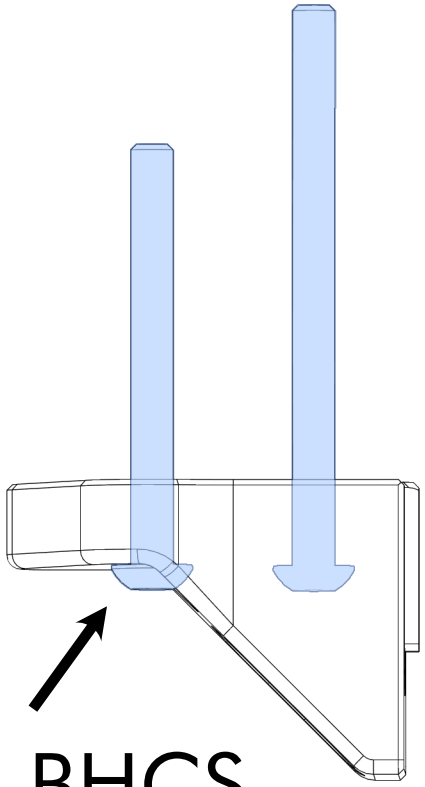
P123


idler_left_lower
M3x8 BHCS

idler_left_upper

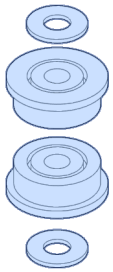


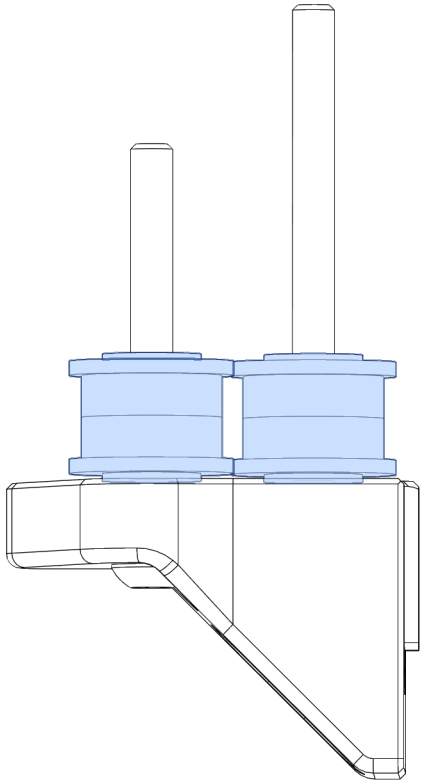
M3x40 BHCS

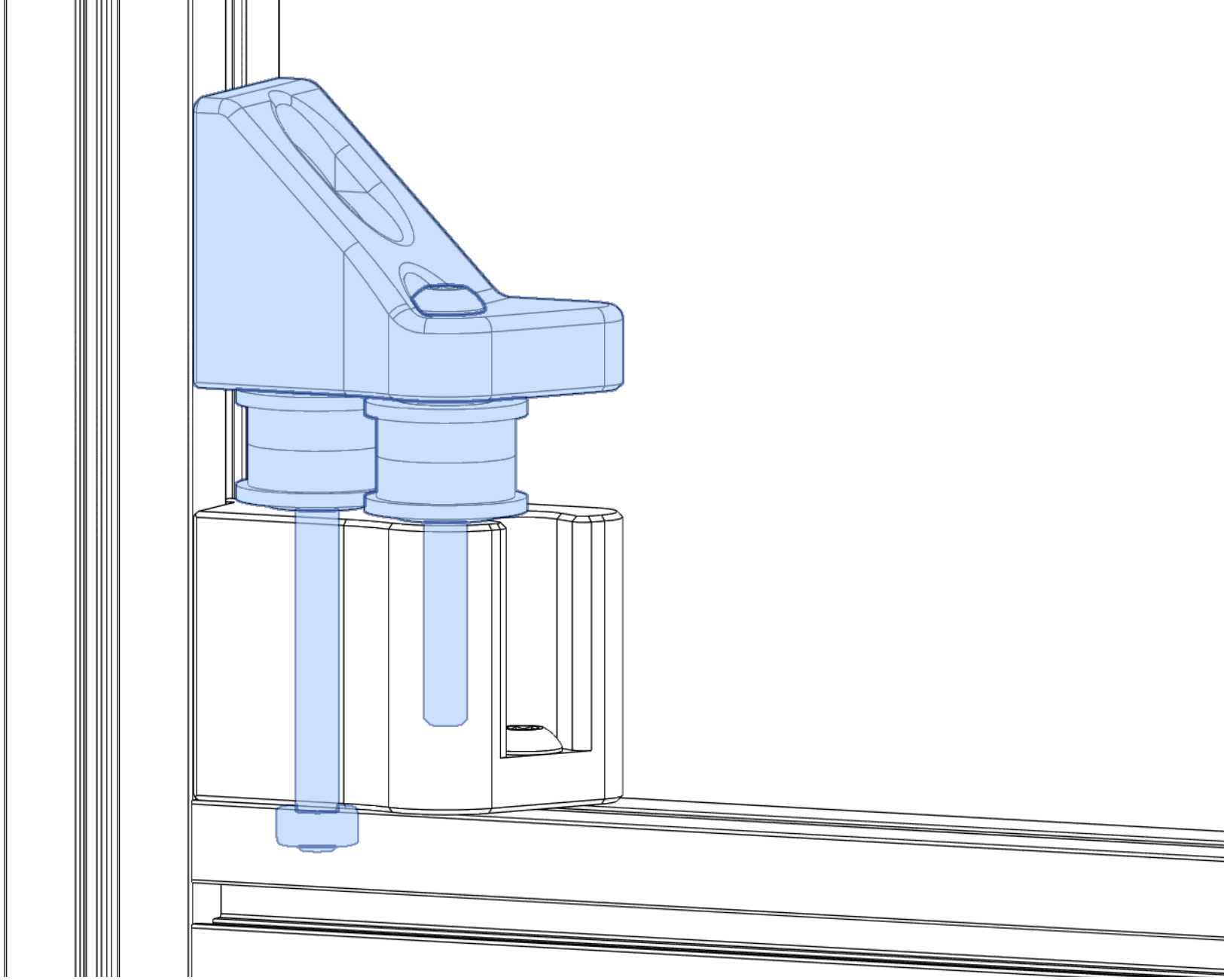


M3x30 BHCS

Bearing Stack





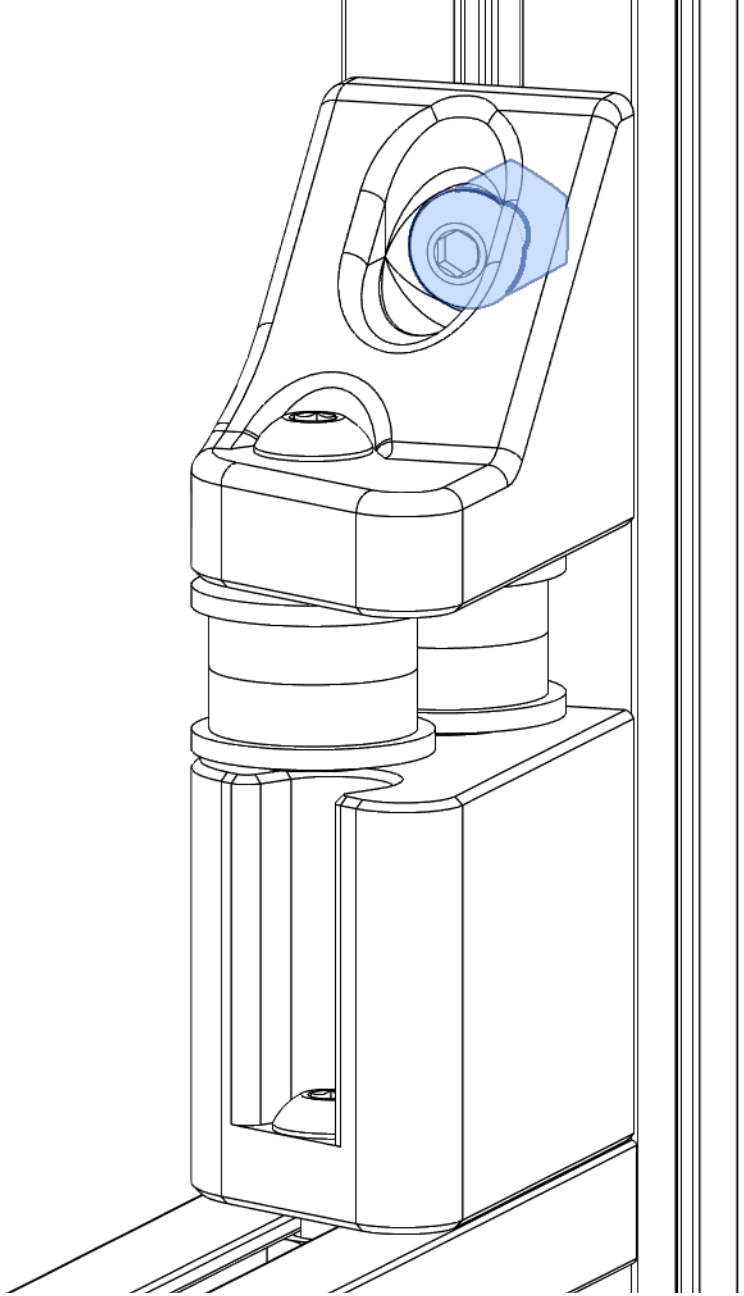


Mastur Mods

Gantry

P126

M3x6 BHCS



M3 Hex Nut