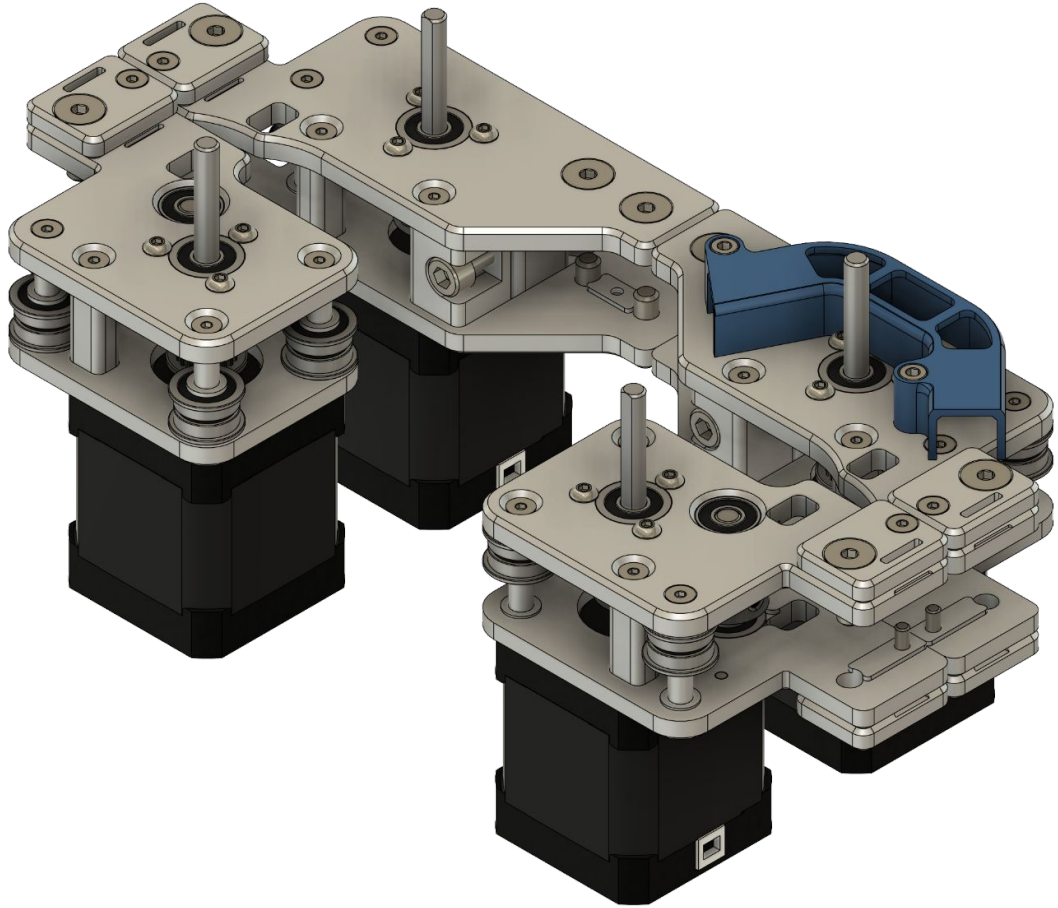
LDO MOTORS



Voron V2.4r2 AWD

Designed in collaboration with aTinyShellScript and Mastur_Mynd for your Voron V2.4r2

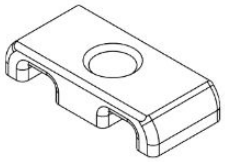
VERSION 2025-07-21

CNC AWD For Your Voron V2.4r4

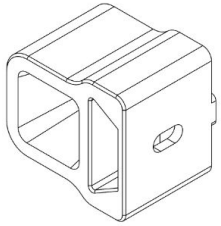
This manual will cover both versions of the kit as a significant portion of the design is similar between the two. Specific callouts will be made where assembly differs.

Cable tie points and routing should be printed using the settings below

These printed parts can be found at https://github.com/VCProjects/LDO_AWD/tree/main/Voron-V2.4r2/STL



[a]_cable_anchor x 6



z_chain_upper_mount

3D PRINTING PROCESS
Fused Deposition Modeling (FDM)

MATERIAL
ABS/ASA

LAYER HEIGHT
Recommended: 0.2mm

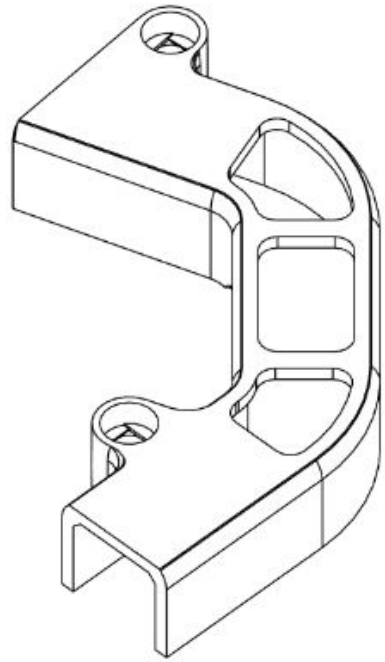
EXTRUSION WIDTH
Recommended: Forced 0.4mm

INFILL TYPE
Grid, Gyroid, Honeycomb, Triangle or Cubic

INFILL PERCENTAGE
Recommended: 40%

WALL COUNT
Recommended: 4

SOLID TOP/BOTTOM LAYERS
Recommended: 5



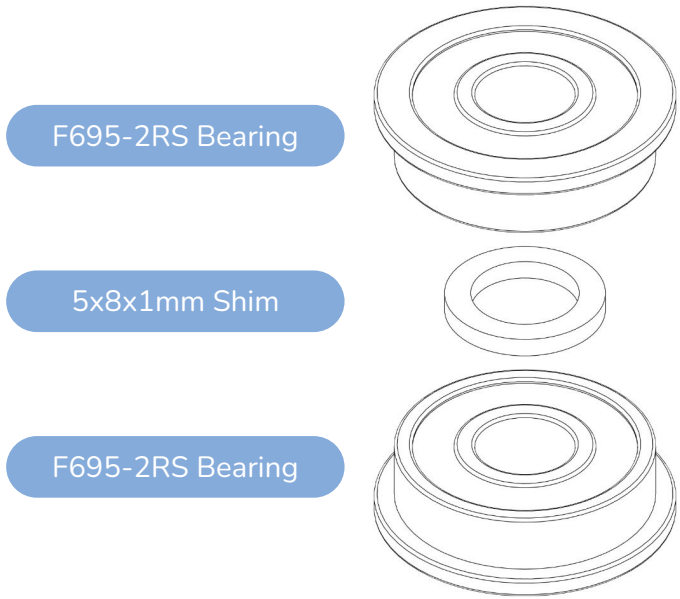
[a]_cable_cover

Common Callouts

Throughout this manual a few key references are made multiple times. This page illustrates their use.

Spaced Bearing Stack

This design uses bearing stacks with a 1mm shim between the bearings. This separates the flanges by 7mm rather than the more common 6mm. The intention is to reduce wear at the edges of the belt. When belts are made there is a tolerance window which could make them thicker than 6mm in some areas.



Kit Parts

Parts called out with a blue background as pictured below are included with this kit. The next pages will have further details about these parts and should be reviewed to make sure all parts are accounted for.

M5x10 FHCS

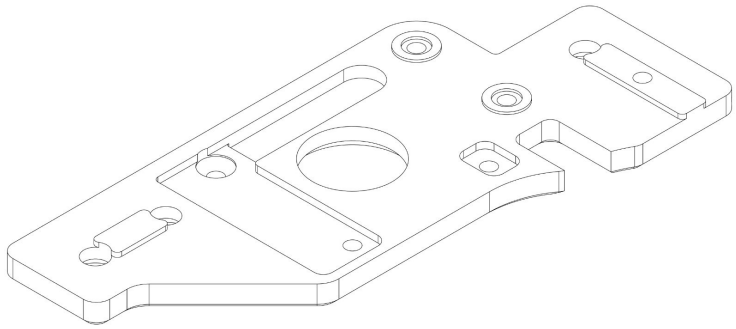
Not Included

Parts called out with a red background as pictured below are not included with this kit. These will be parts that came in your printer kit or would have been sourced while gathering components for your printer.

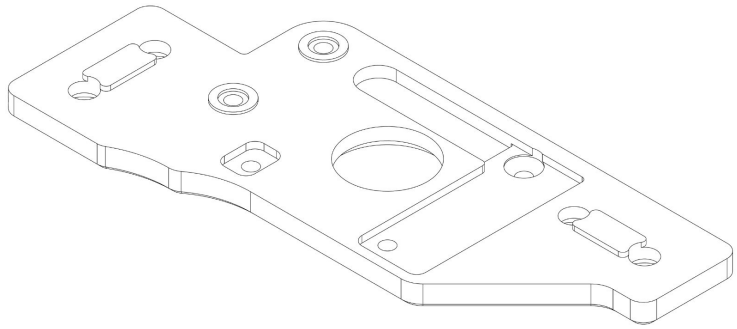
M5 T-Nut

Contents

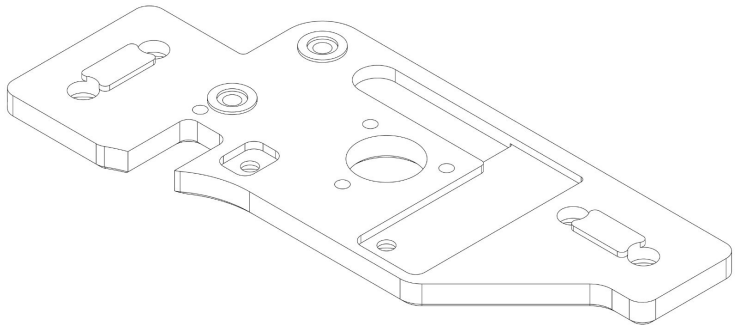
A Drive Frame Rear Lower



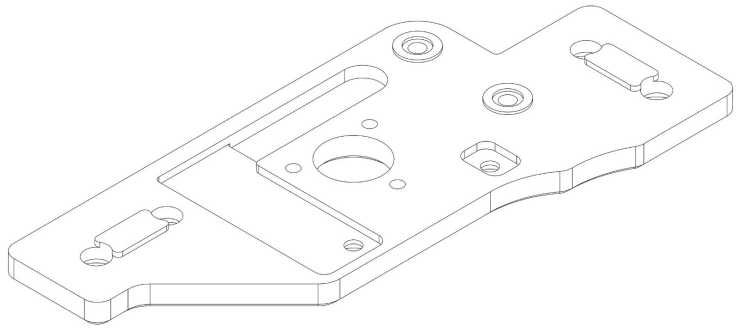
B Drive Frame Rear Lower



A Drive Frame Rear Upper

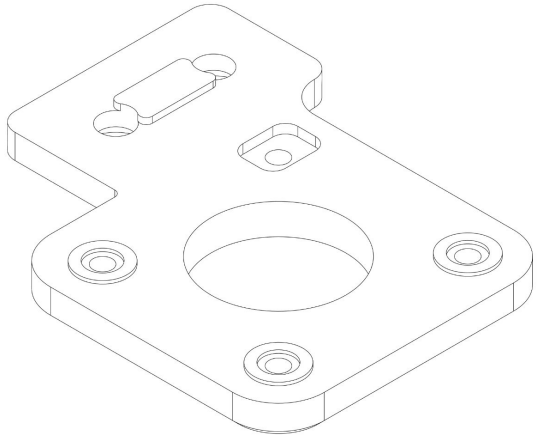


B Drive Frame Rear Upper

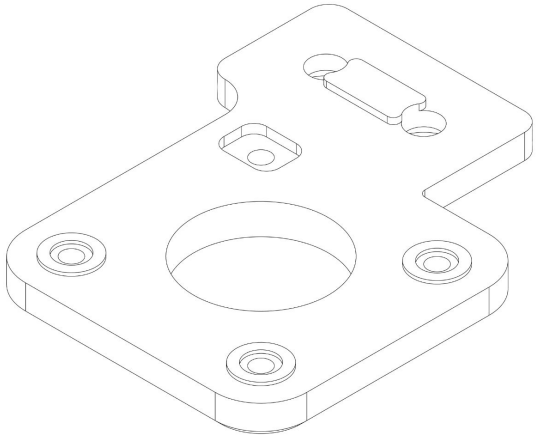


Contents Cont.

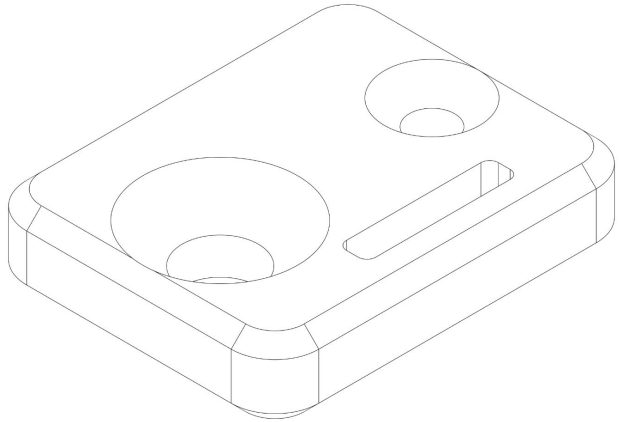
A Drive Frame Front Lower



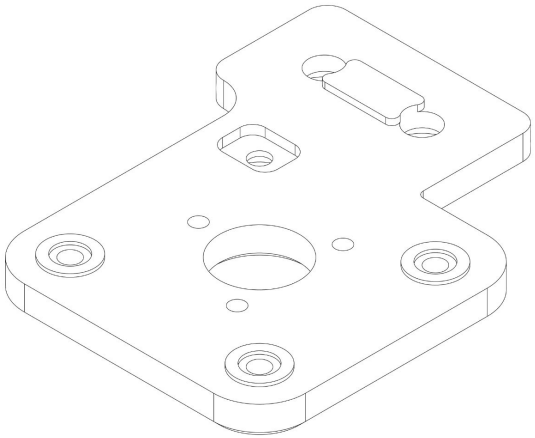
B Drive Frame Front Lower



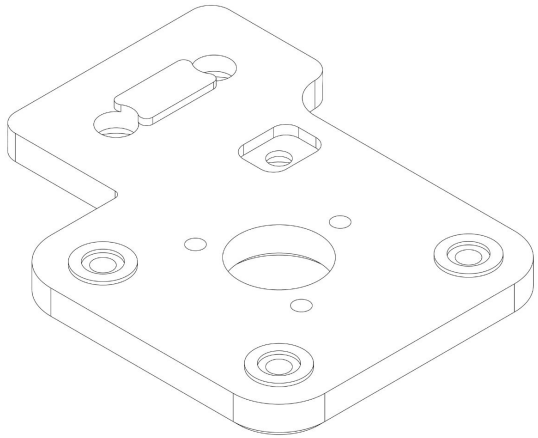
Belt Clamp A x 4



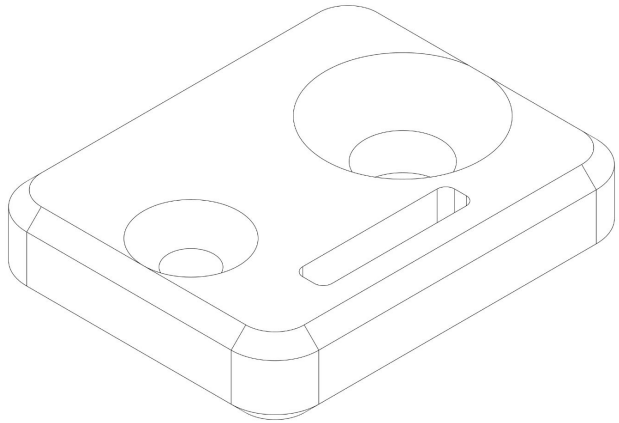
A Drive Frame Front Upper



B Drive Frame Front Upper

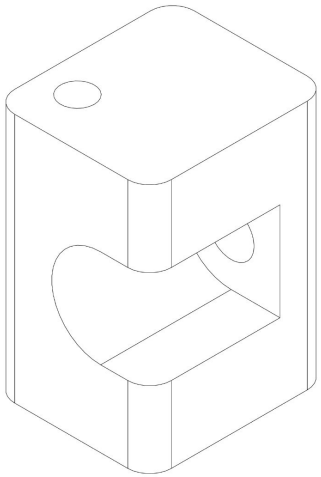


Belt Clamp B x 4

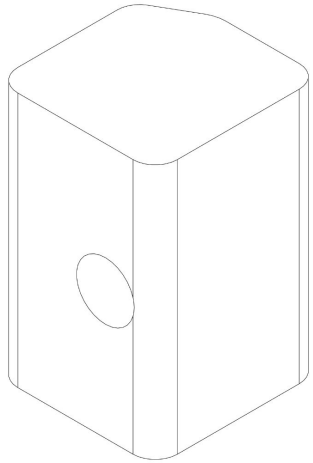


Contents Cont.

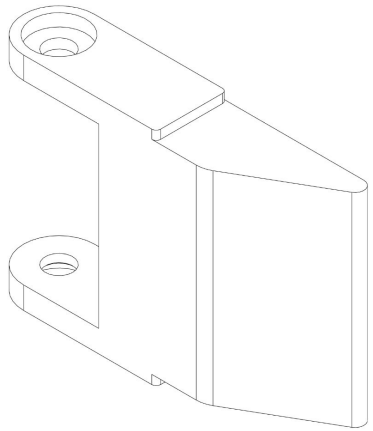
Tensioner Block x 2



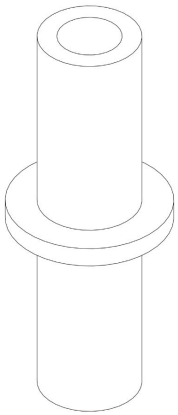
Tensioner Wedge x 2



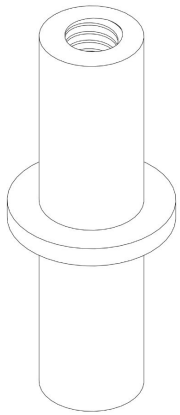
Tensioner Slide x 2



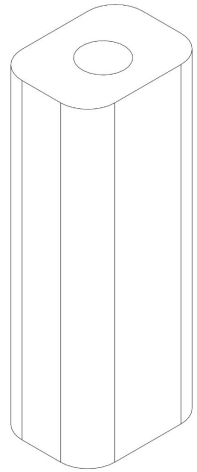
Shim Pin - Unthreaded x 4



Shim Pin - Threaded x 8

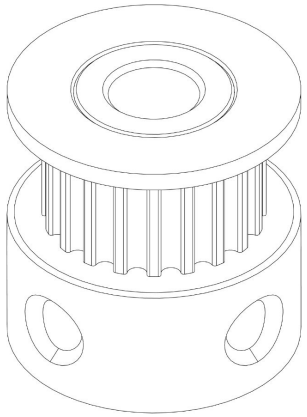


Standoff x 4

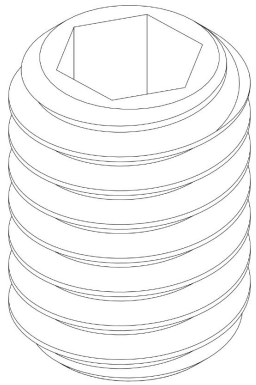


Contents Cont.

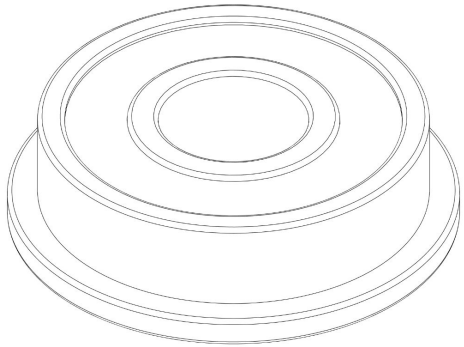
GT2 20T Pulley x 6



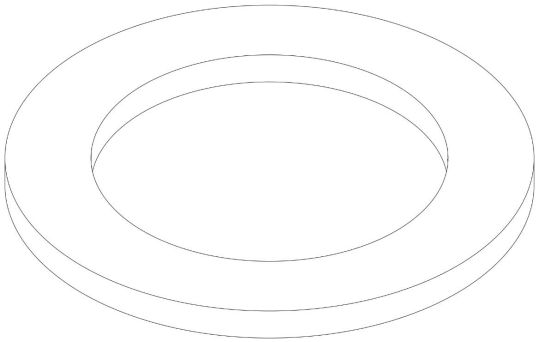
M3x4 Grub Screw x 12



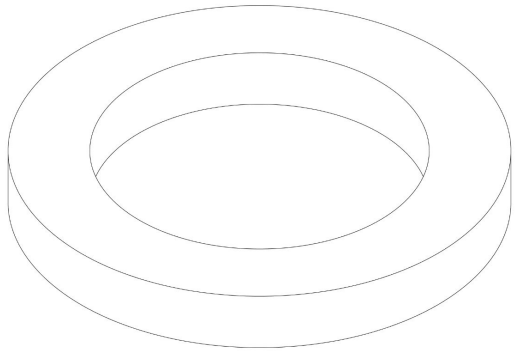
F695-2RS Bearing x 32



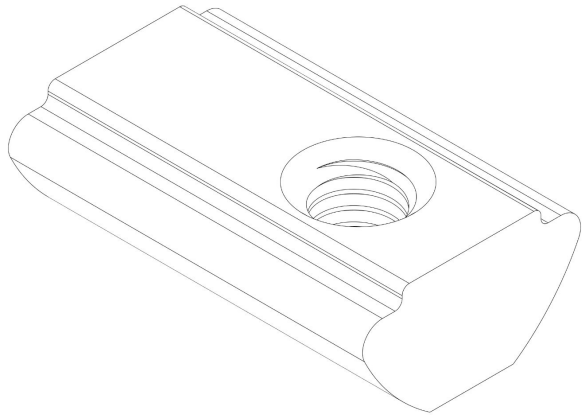
5x8x0.5mm Shim x 4



5x8x1mm Shim x 18

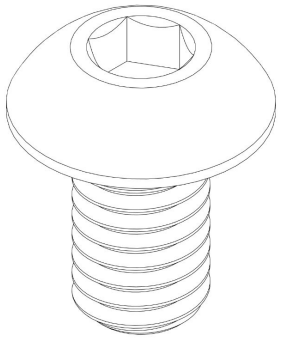


M3 T-Nut x 4

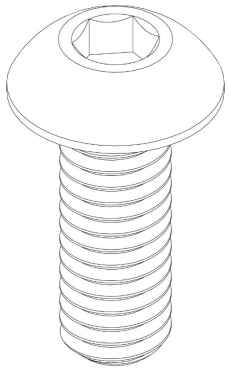


Contents Cont.

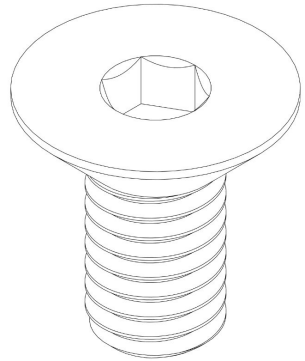
M3x5 BHCS x 12



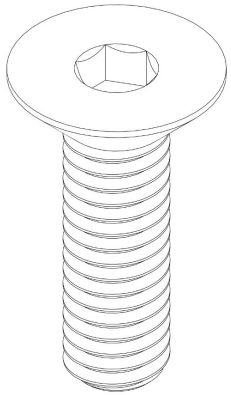
M3x8 BHCS x 6



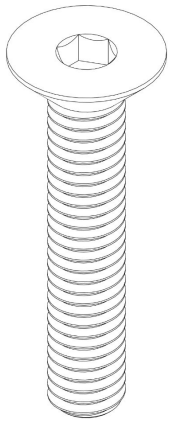
M3x6 FHCS x 2



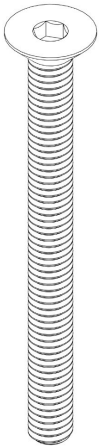
M3x10 FHCS x 12



M3x16 FHCS x 8

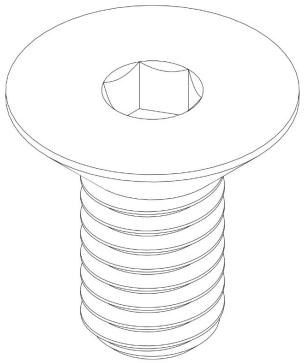


M3x32 FHCS x 10

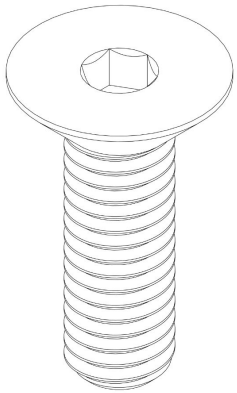


Contents Cont.

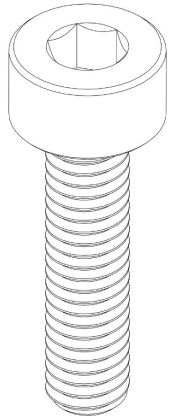
M5x10 FHCS x 8



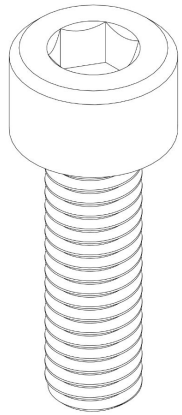
M5x16 FHCS x 4



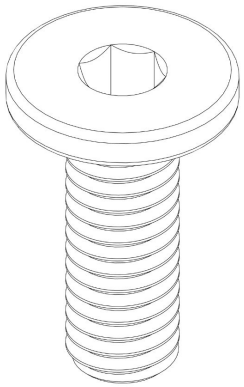
M3x12 SHCS x 2



M5x16 SHCS x 2

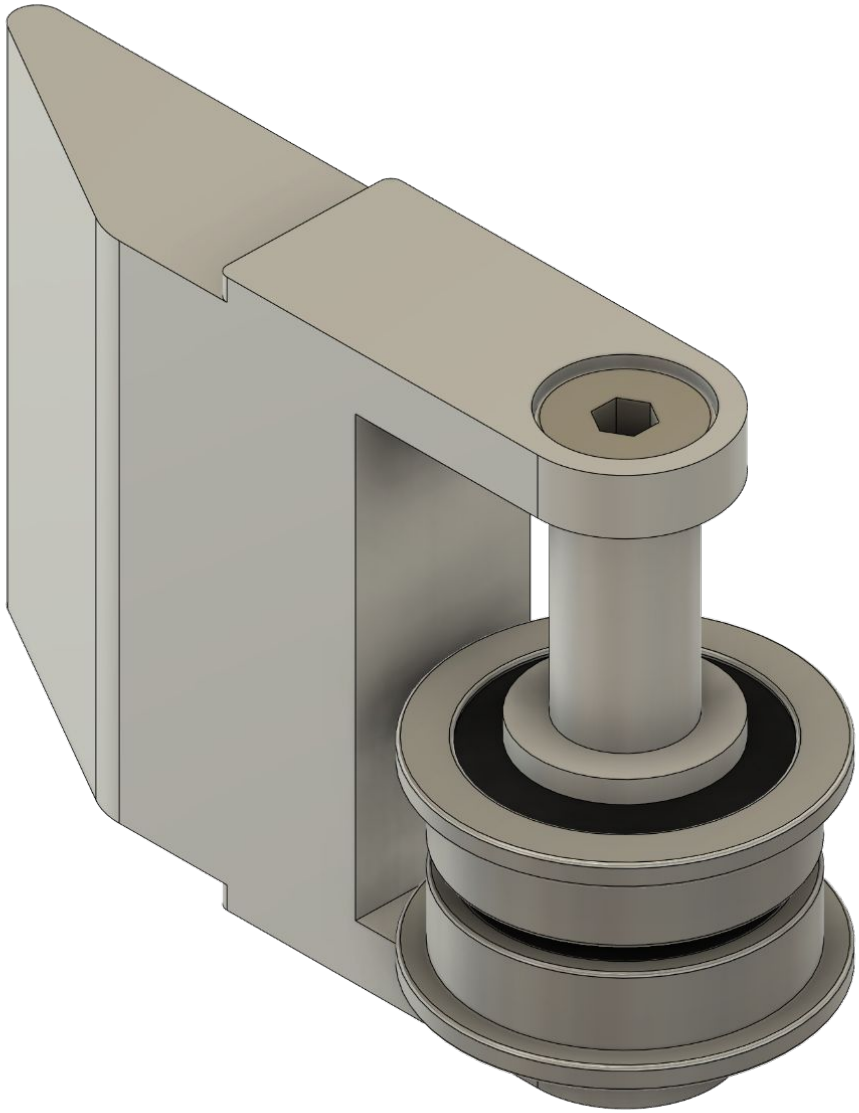


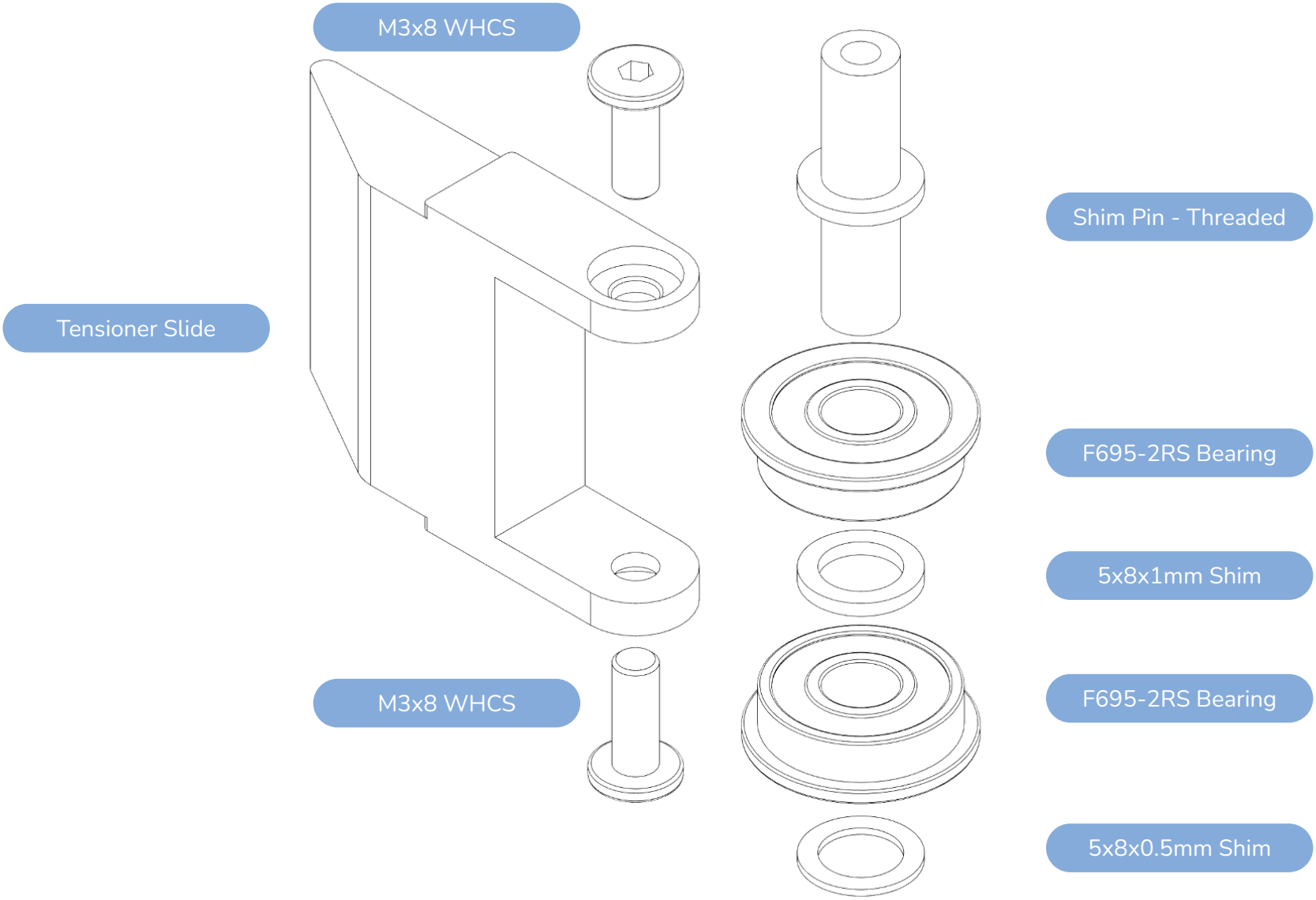
M3x8 WHCS x 4

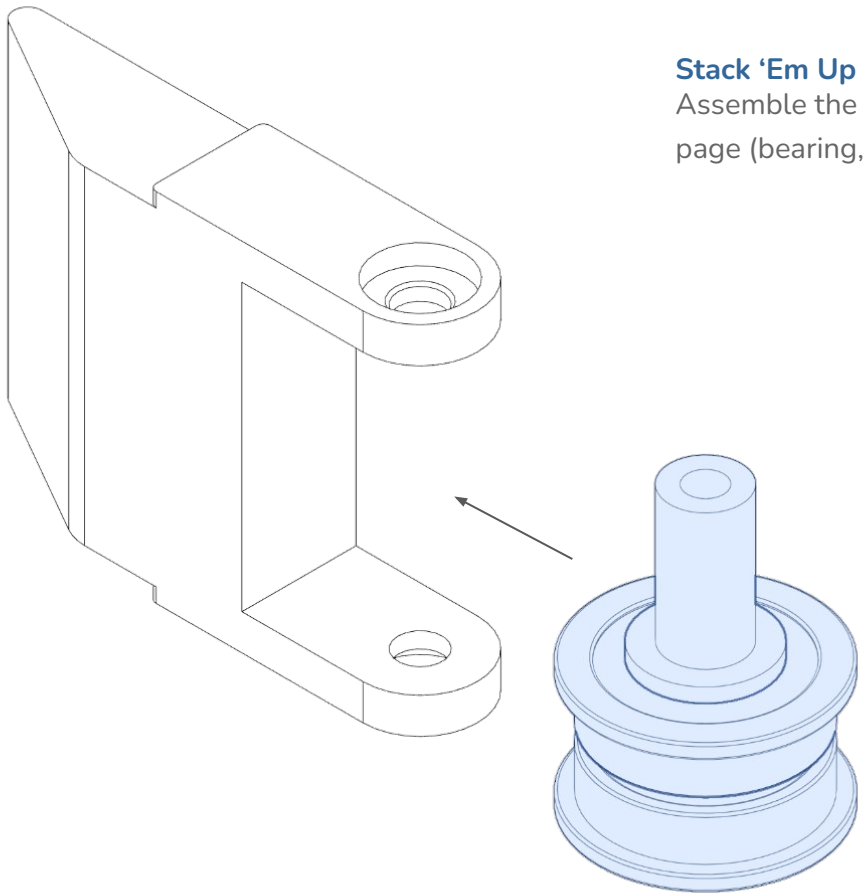


GT2 Open Belt 6mm x 6m

5x28mm Pin x 2




M3x8 WHCS
Tensioner Slide
M3x8 WHCS
Shim Pin - Threaded
F695-2RS Bearing
5x8x1mm Shim
F695-2RS Bearing
5x8x0.5mm Shim

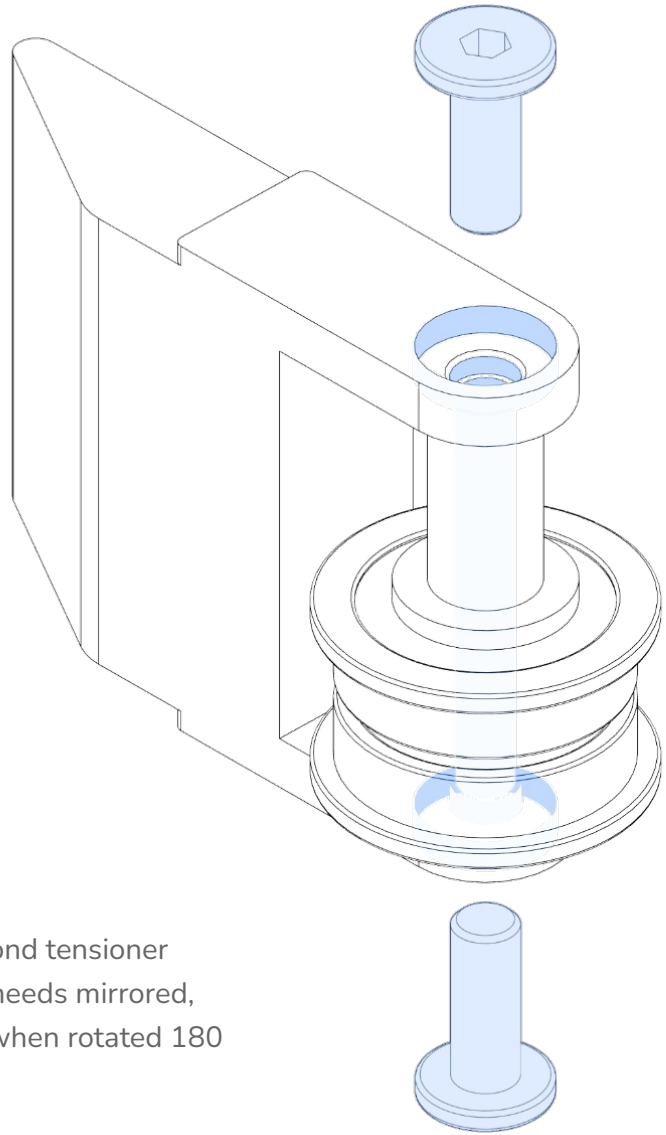


Stack ‘Em Up

Assemble the bearing stack as outlined in the previous page (bearing, 1mm shim, bearing, 0.5mm shim).

Tight Fit

There may be some resistance when inserting the bearing assembly into the tensioner slide.

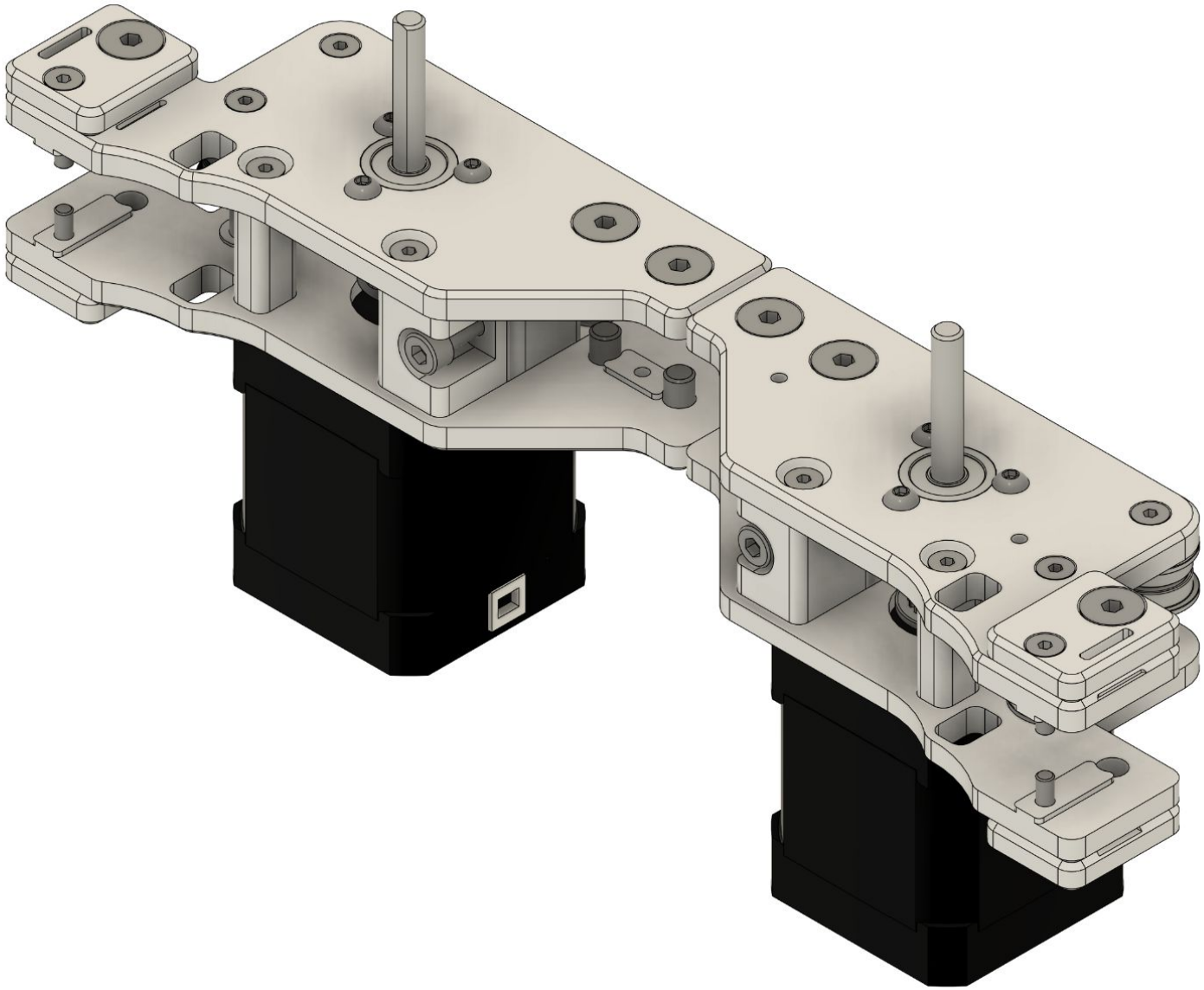


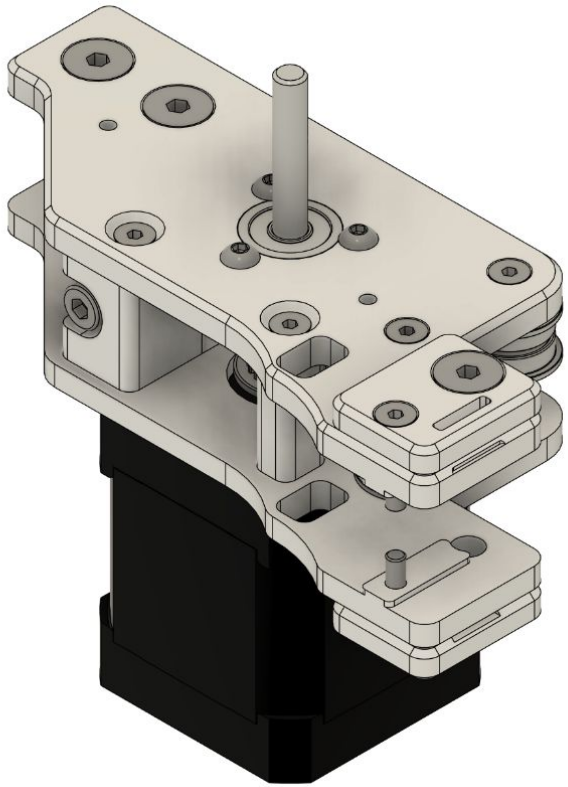
Lock In

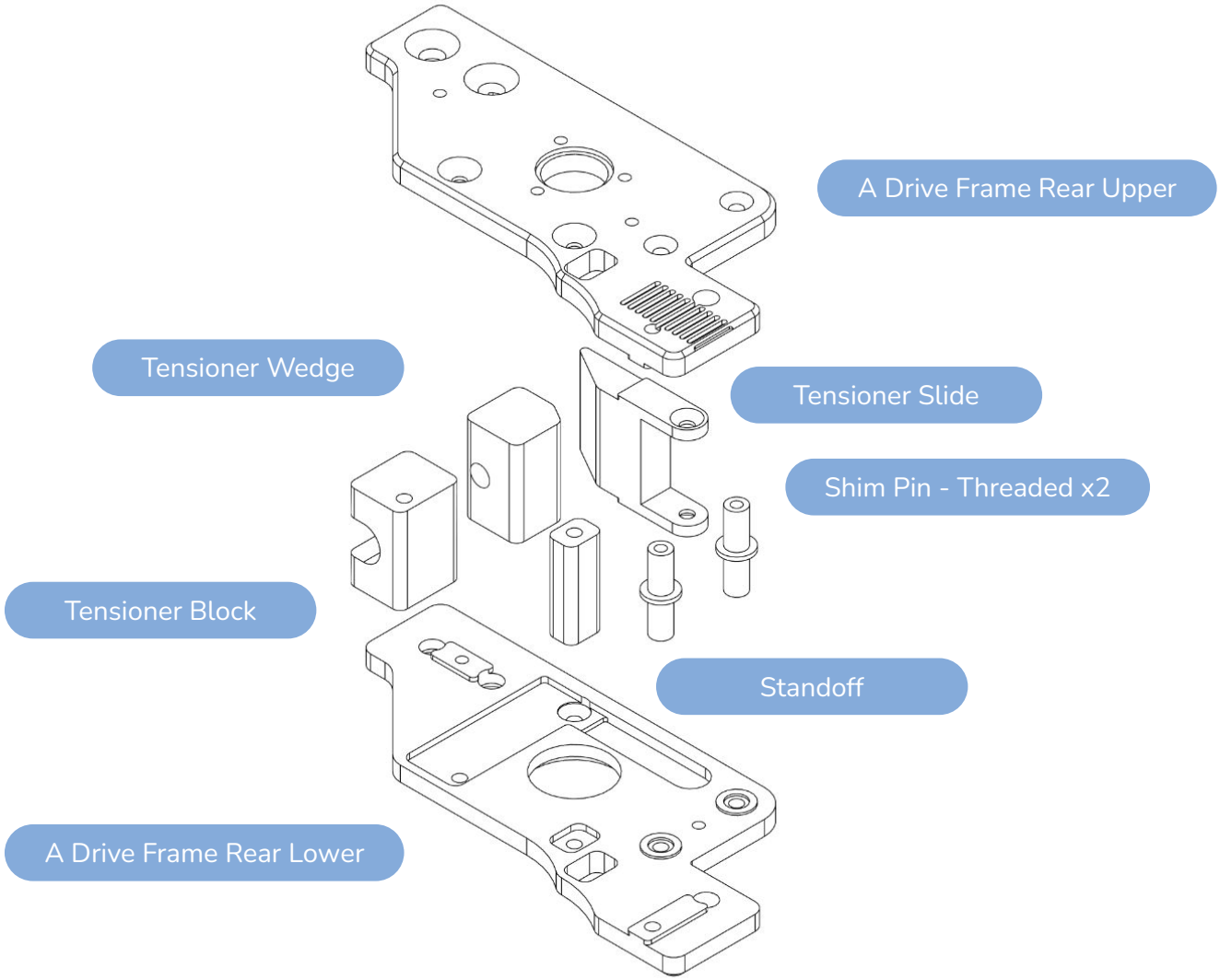
It may be difficult to line up both ends of the shim pin to the through holes in the tensioner slide due to tight tolerances and anodizing. It's recommended to line up the bottom (where the bearing stack is) and insert the fastener first, then apply light pressure to line up the top.

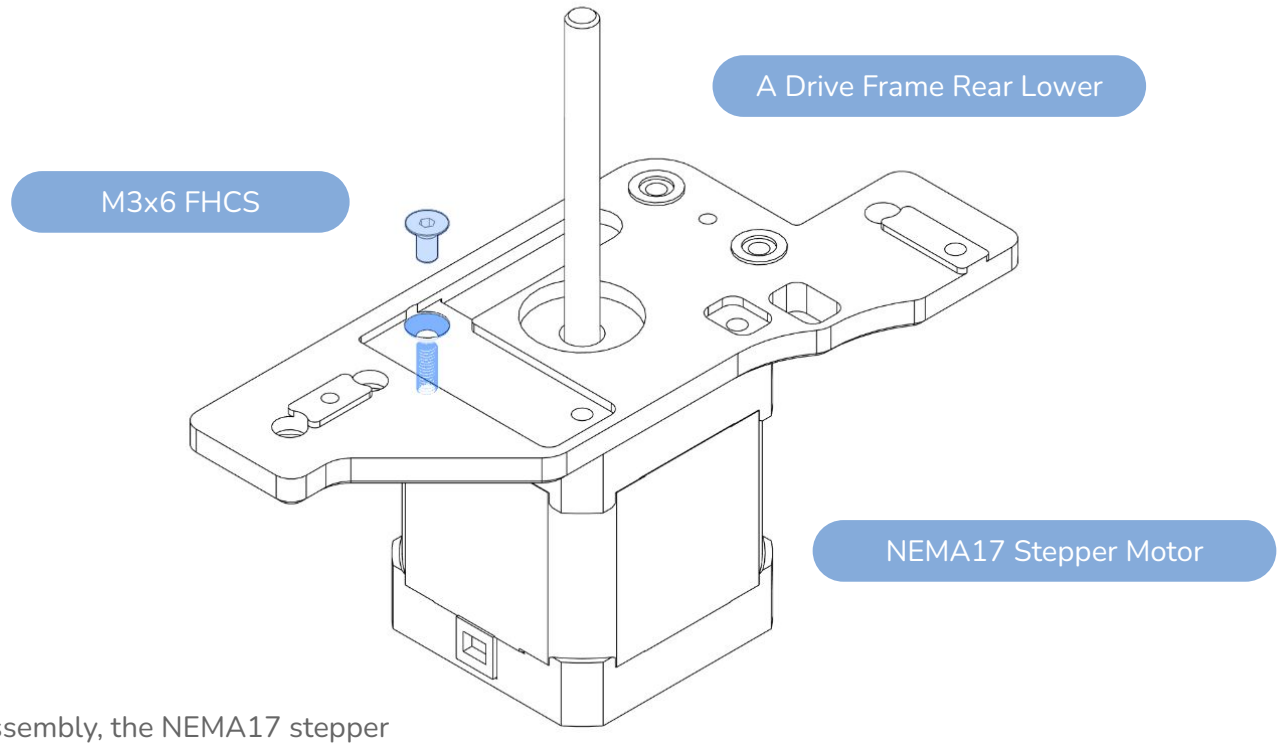
Mirror, Mirror?

Repeat these steps **EXACTLY** for the second tensioner slide. Although the slide may look like it needs mirrored, the bearing stack will end up on the top when rotated 180 degrees to fit the other drive frame.






A Drive Frame Rear Upper
Tensioner Wedge
Tensioner Slide
Shim Pin - Threaded x2
Tensioner Block
Standoff
A Drive Frame Rear Lower

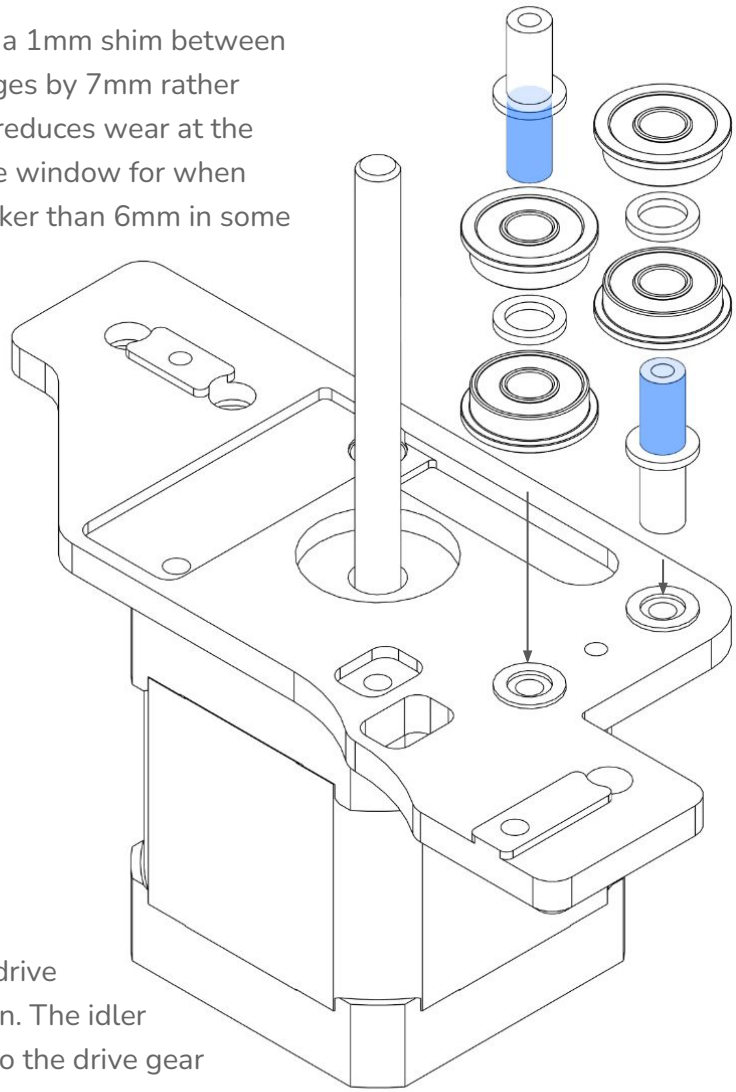


Heavy Metal

During early stages of assembly, the NEMA17 stepper motor will act as a lever against the lower drive frame plate. The pocket for the motor and countersunk screw should keep it relatively secure, but we don't recommend letting your inner Hulk out.

Spaced Bearing Stacks

This design uses bearing stacks with a 1mm shim between the bearings. This separates the flanges by 7mm rather than the more common 6mm, which reduces wear at the edges of the belt. There is a tolerance window for when belts are cut which could make it thicker than 6mm in some areas.

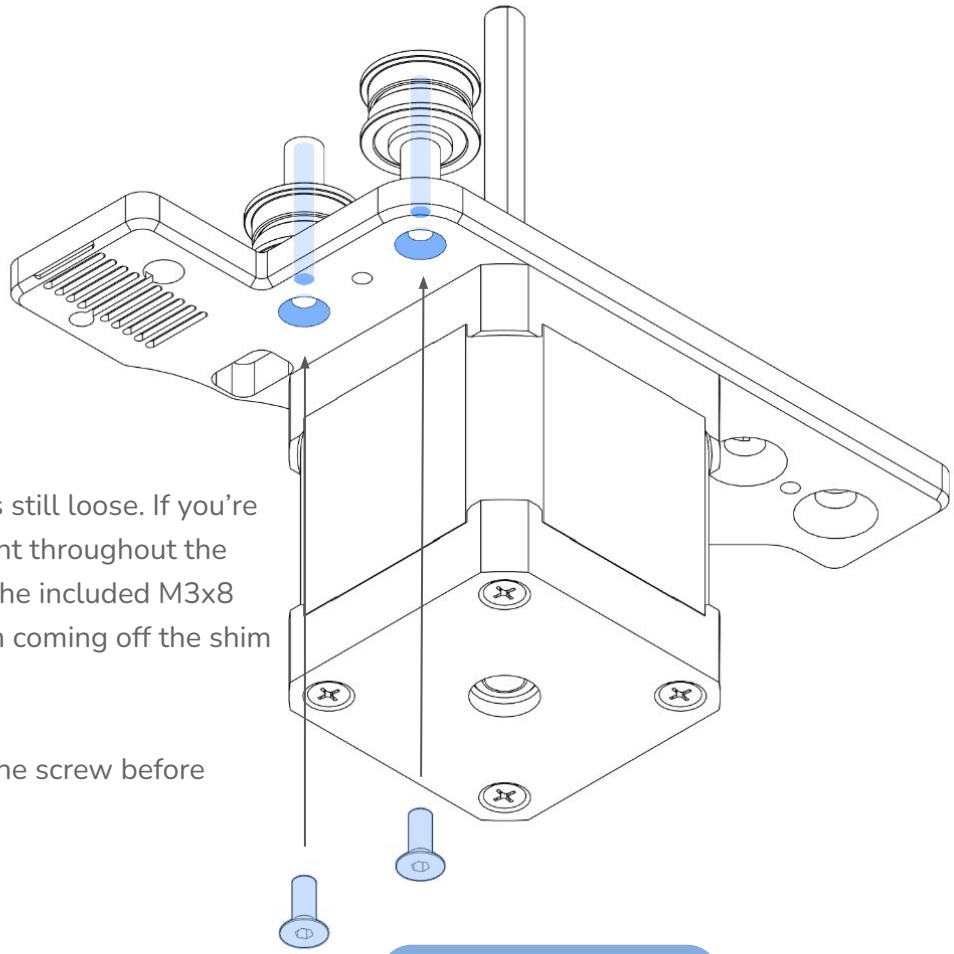


Spaced Bearing Stack x2

Shim Pin - Threaded x2

Idle(r) Hands

While assembling the idlers for the rear drive frames pay special attention to orientation. The idler nearest the front of the printer will feed to the drive gear and the rear will feed directly to the rear B drive frame.

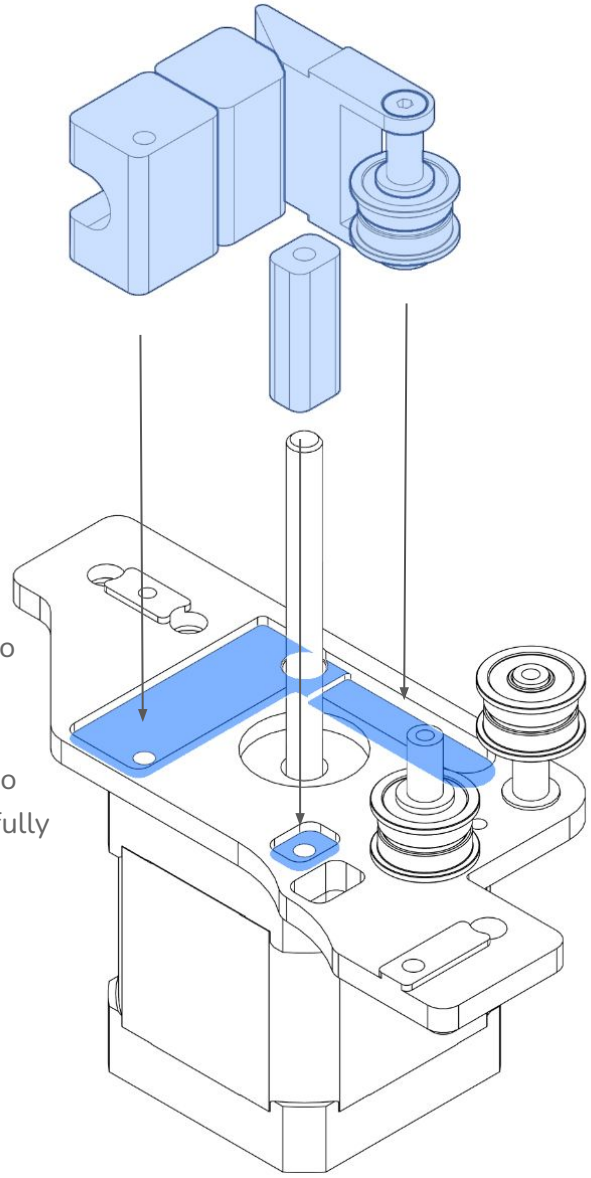


M3x10 FHCS x2

Unstable Footing?

Be mindful that the rear idler stack is still loose. If you're not able to keep this assembly upright throughout the following steps, you can use one of the included M3x8 BHCS to keep the bearing stack from coming off the shim pin.

If you do so, don't forget to remove the screw before installing the top plate!

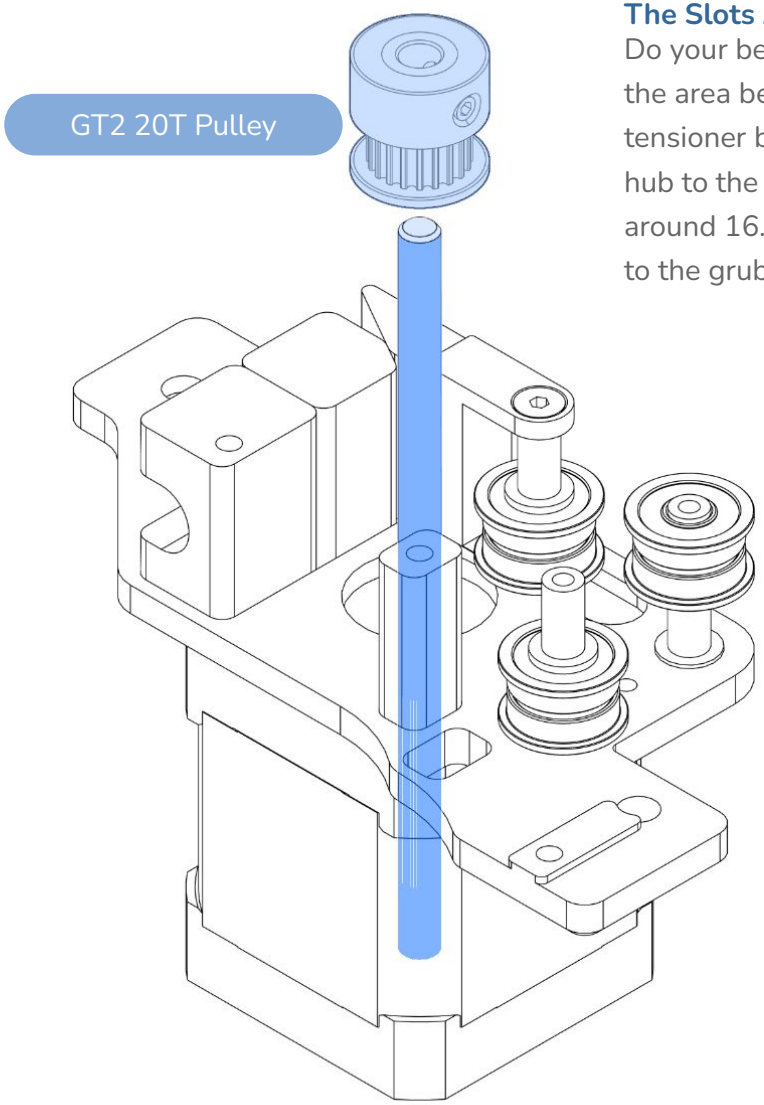


Building Tension

Before installing the tensioner assembly and standoff, make sure that the M3x6 FHCS, used to secure the motor to the bottom plate, is below the surface that the Tensioner Wedge and Tensioner Block rest on. Also ensure that the two M3x8 WHCS screws in the Tensioner Slide are fully tightened.

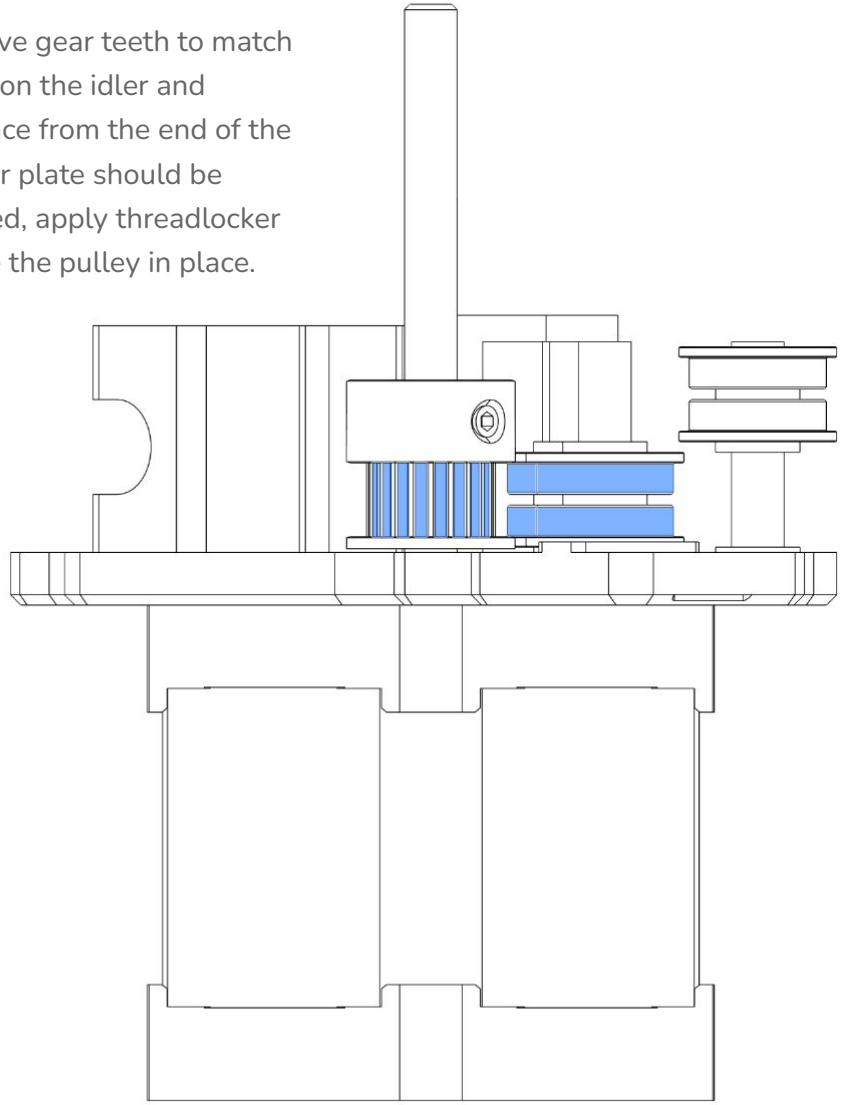
Proper Attention

The hole in the standoff is barely off center. This is to ensure belts are able to pass around it without rubbing. If there's resistance putting the standoff in its pocket or the screw is no longer vertical after placing, turn the standoff 180 degrees and try again.



The Slots Align

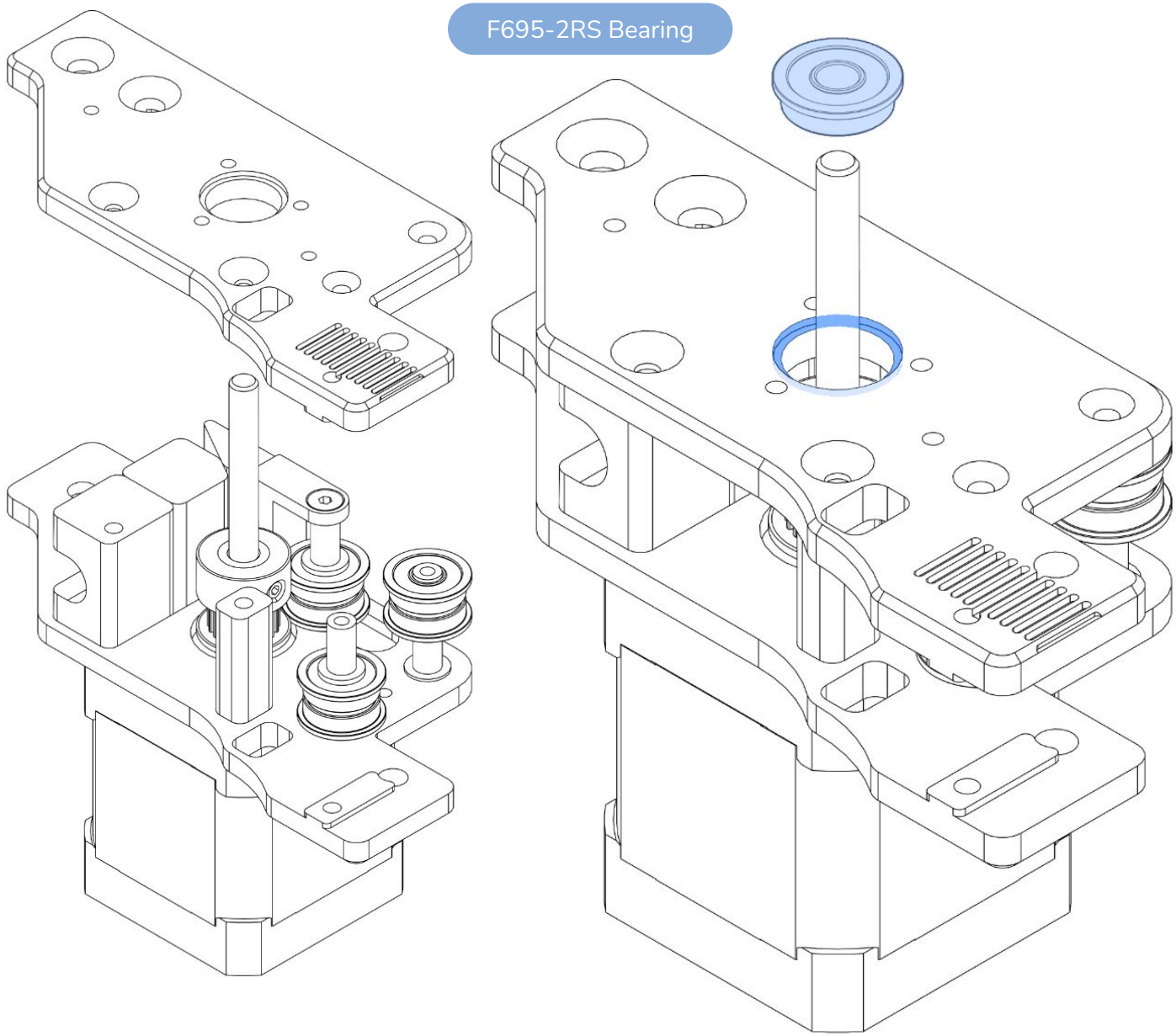
Do your best to line up the drive gear teeth to match the area between the flanges on the idler and tensioner bearings. The distance from the end of the hub to the surface of the lower plate should be around 16.35mm. Once aligned, apply threadlocker to the grub screws and secure the pulley in place.

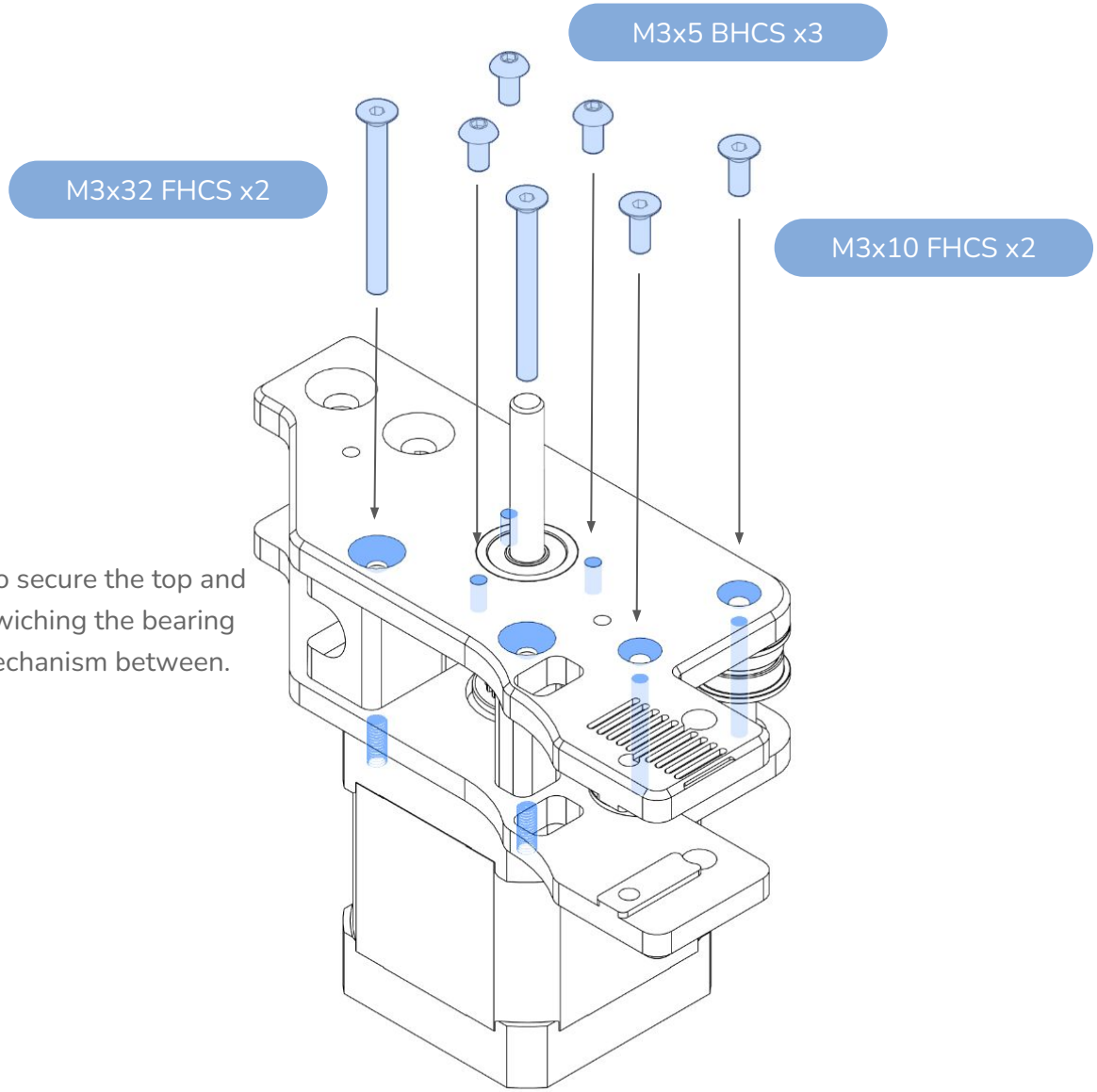


Topping it Off! Or is it On?
Placing the top plate may be easier if you loosen the screws holding the Shim Pins in place so they have a little play.

All components that sit proud of the surface on the bottom plate will have mating features on the top plate aside from the shaft of the NEMA17 stepper motor and the indexing features for extrusion mounting.

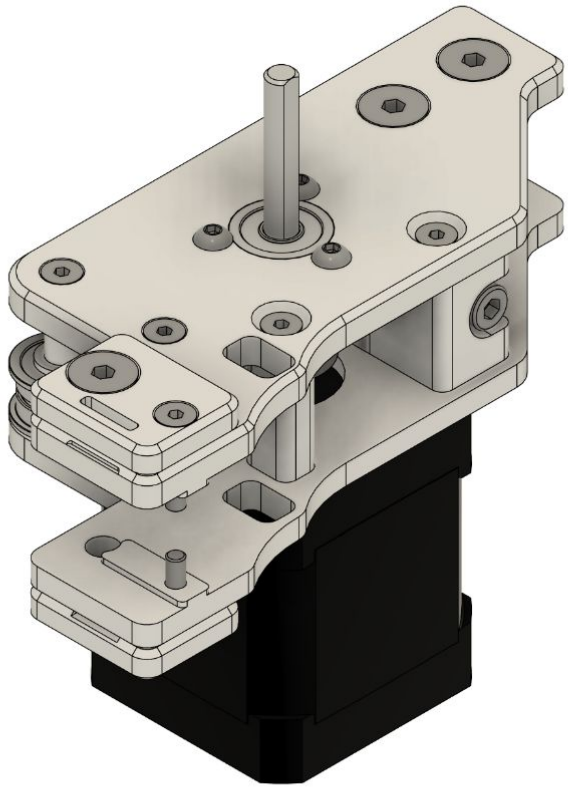
Skip Ahead?
LDO kits have the F695-2RS bearing preinstalled using three M3x5 BHCS along with 3 washers for added surface contact to the top of the bearing flange.

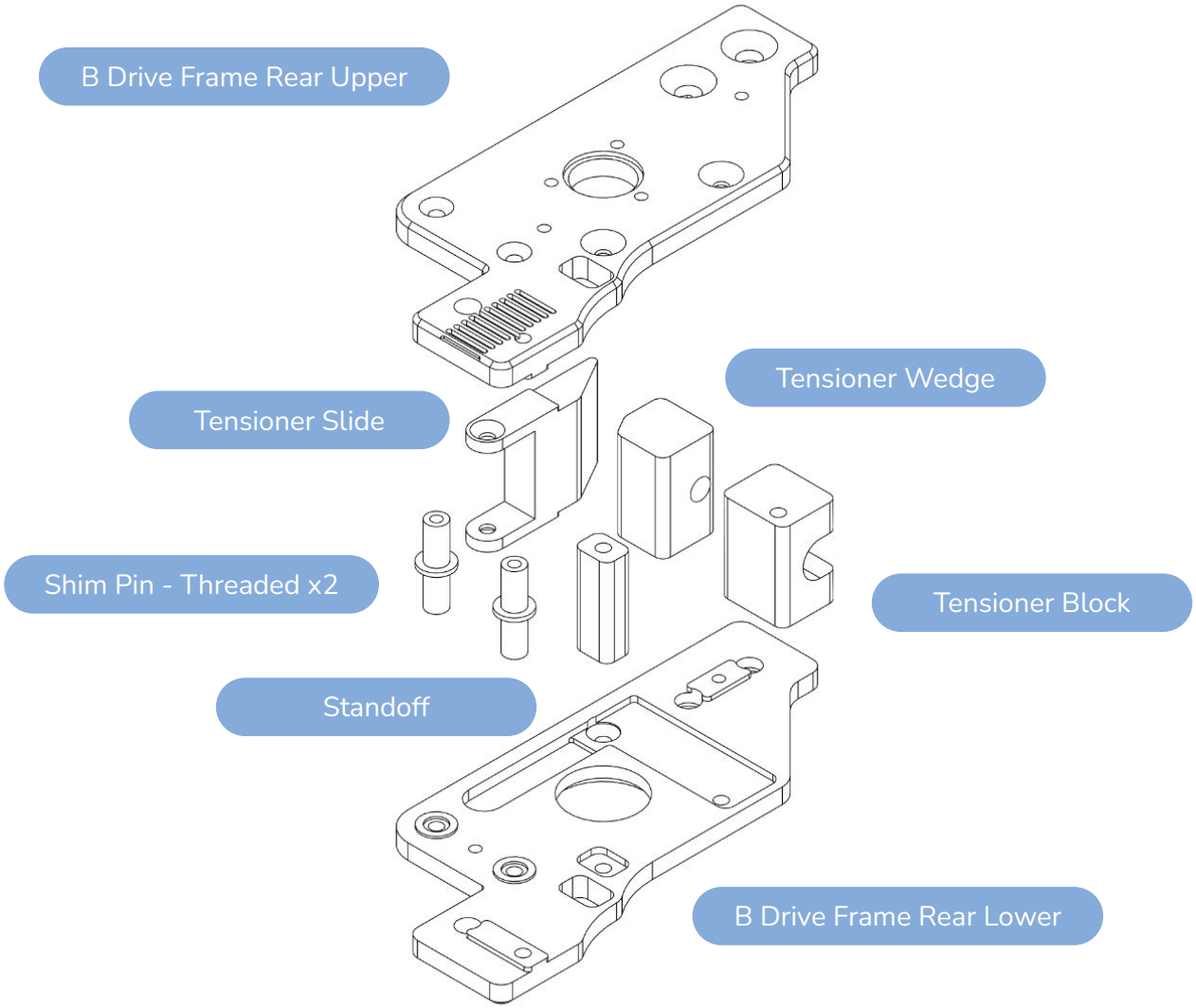


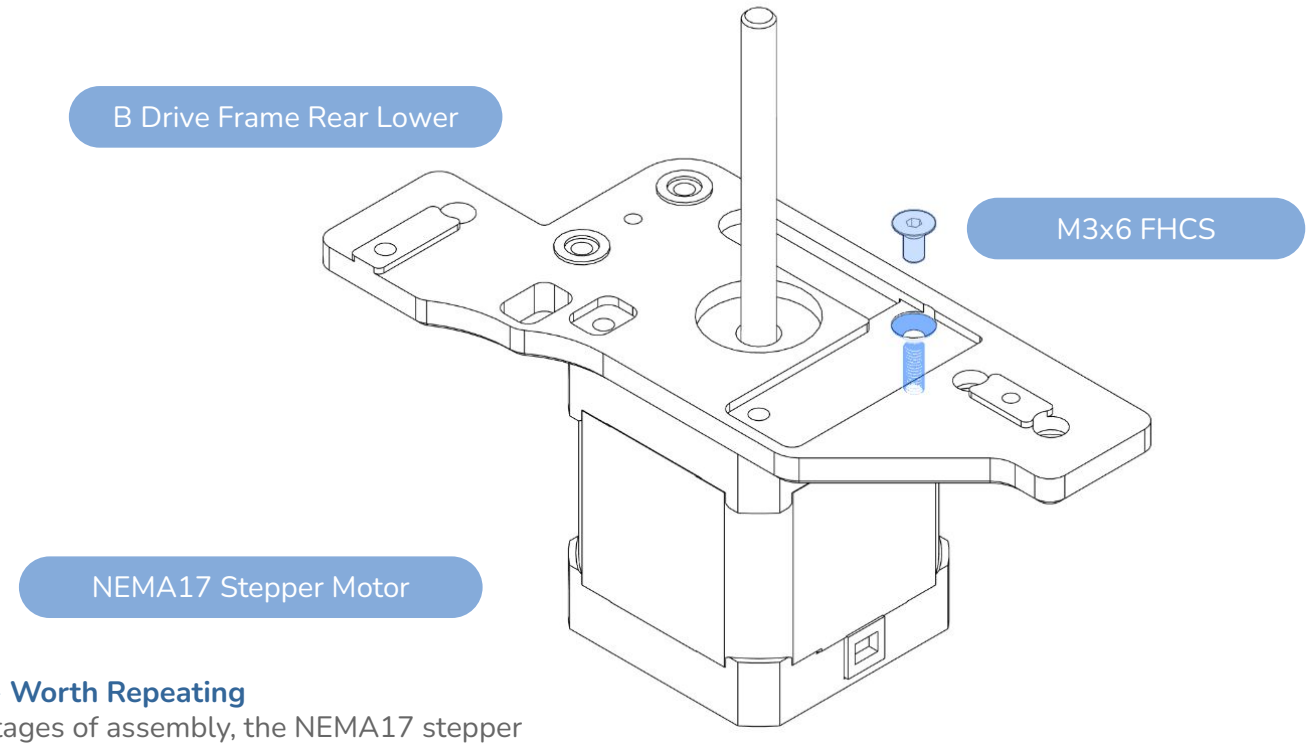


Complex Sandwich

Use the following hardware to secure the top and bottom plates together, sandwiching the bearing assemblies and tensioning mechanism between.




B Drive Frame Rear Upper
Tensioner Wedge
Tensioner Slide
Shim Pin - Threaded x2
Tensioner Block
Standoff
B Drive Frame Rear Lower

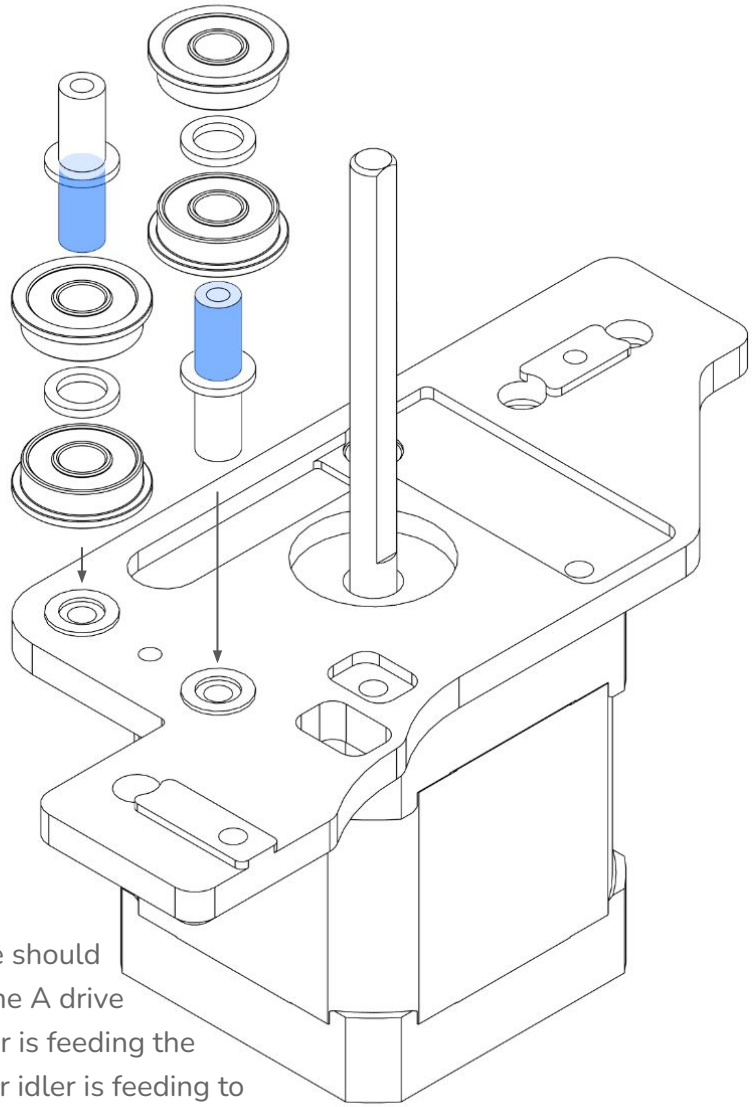


Heavy Metal - Worth Repeating

During early stages of assembly, the NEMA17 stepper motor will act as a lever against the lower drive frame plate. The pocket for the motor and countersunk screw should keep it relatively secure, but we don't recommend letting your inner Hulk out.

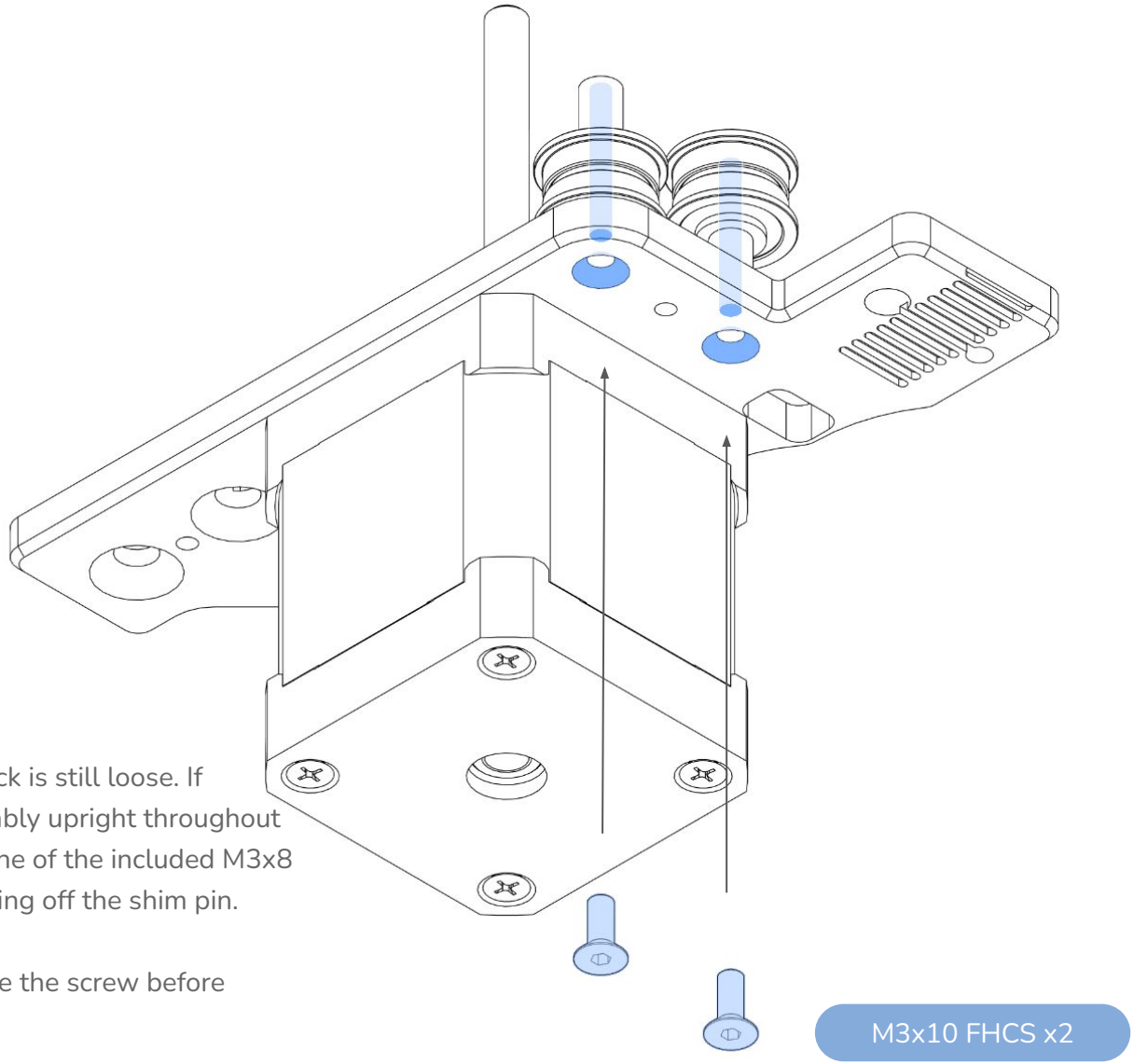
Shim Pin - Threaded x2

Spaced Bearing Stack x2



Inverse Operations

The idler stacks on the rear B drive frame should be assembled opposite of the idlers on the A drive frame. This will ensure that the front idler is feeding the belt directly to the drive gear and the rear idler is feeding to the rear A drive frame.



M3x10 FHCS x2

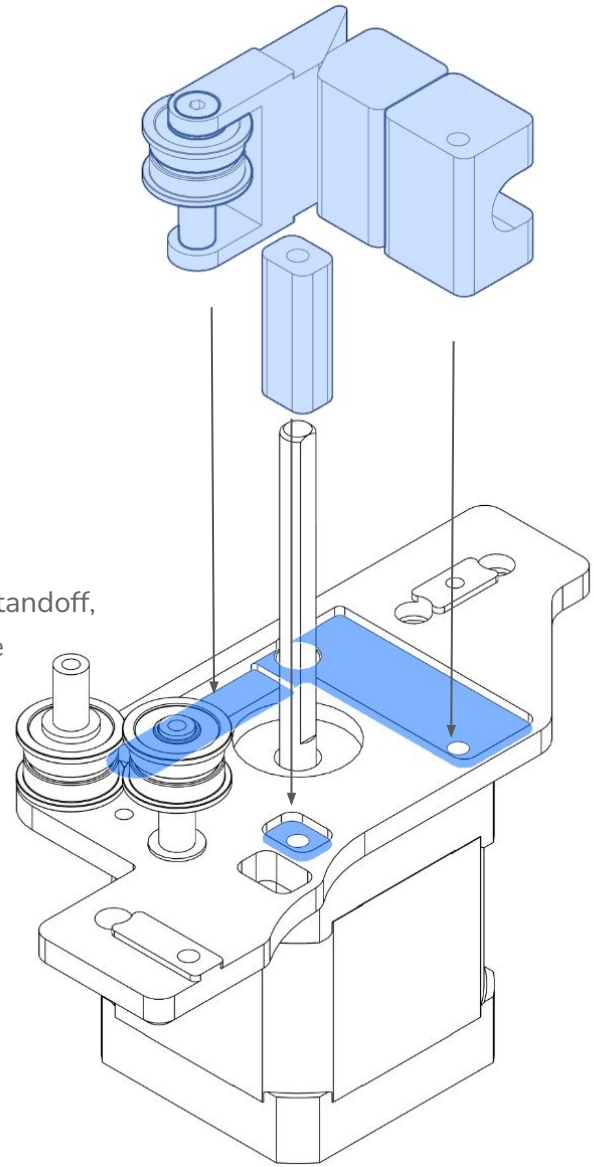
Unstable Footing? (Again)

Be mindful that the front idler stack is still loose. If you're not able to keep this assembly upright throughout the following steps you can use one of the included M3x8 BHCS to keep the stack from coming off the shim pin.

If you do so, don't forget to remove the screw before installing the top plate!

Second Verse, Same as the First!

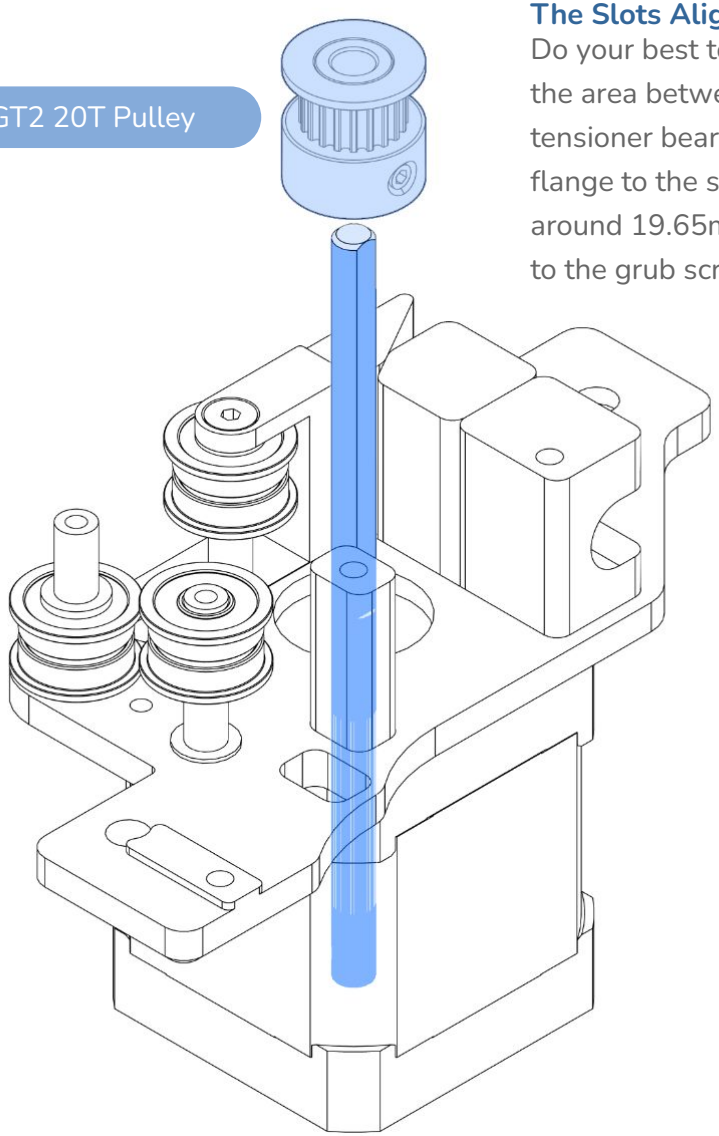
Before installing the tensioner assembly and standoff, make sure that the M3x6 FHCS, used to secure the motor to the lower plate, is below the surface that the Tensioner Wedge and tensioner block rest on.



Proper Attention

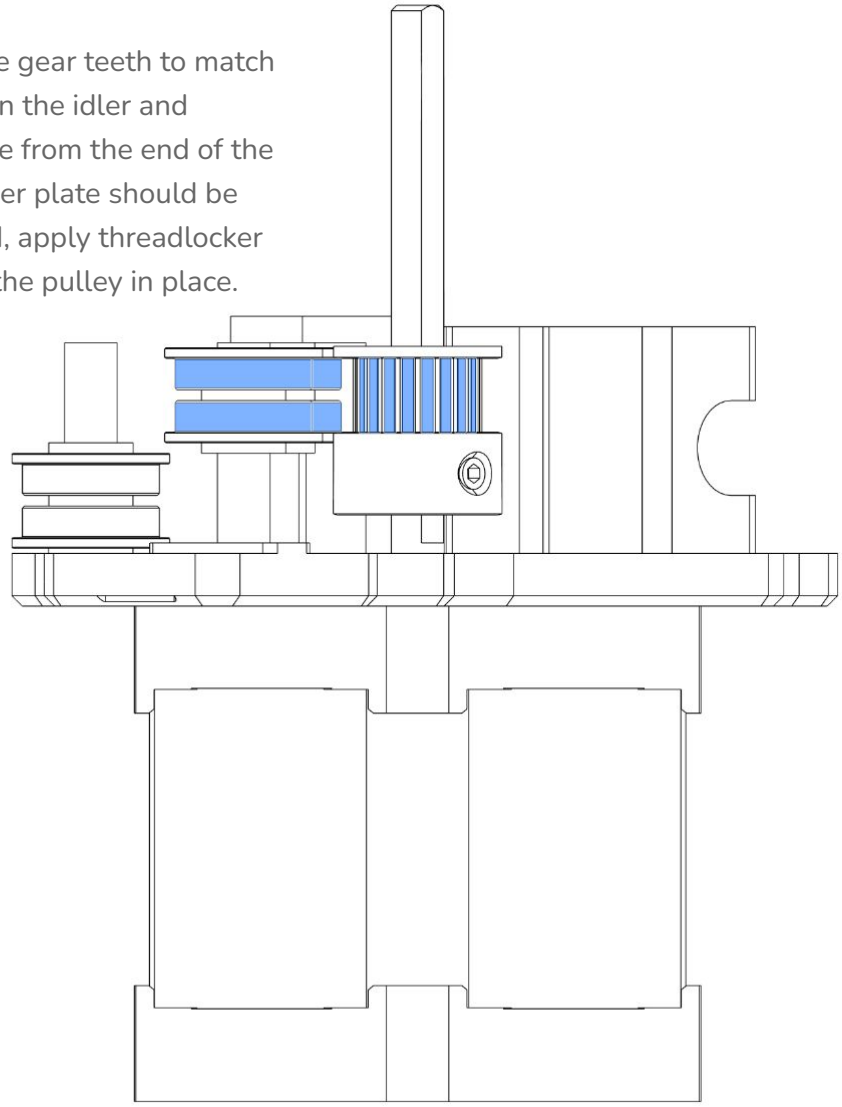
The hole in the standoff is barely off center. This is to ensure belts are able to pass around it without rubbing. If there's resistance putting the standoff in its pocket or the screw is no longer vertical after placing, turn the standoff 180 degrees and try again.

GT2 20T Pulley



The Slots Align

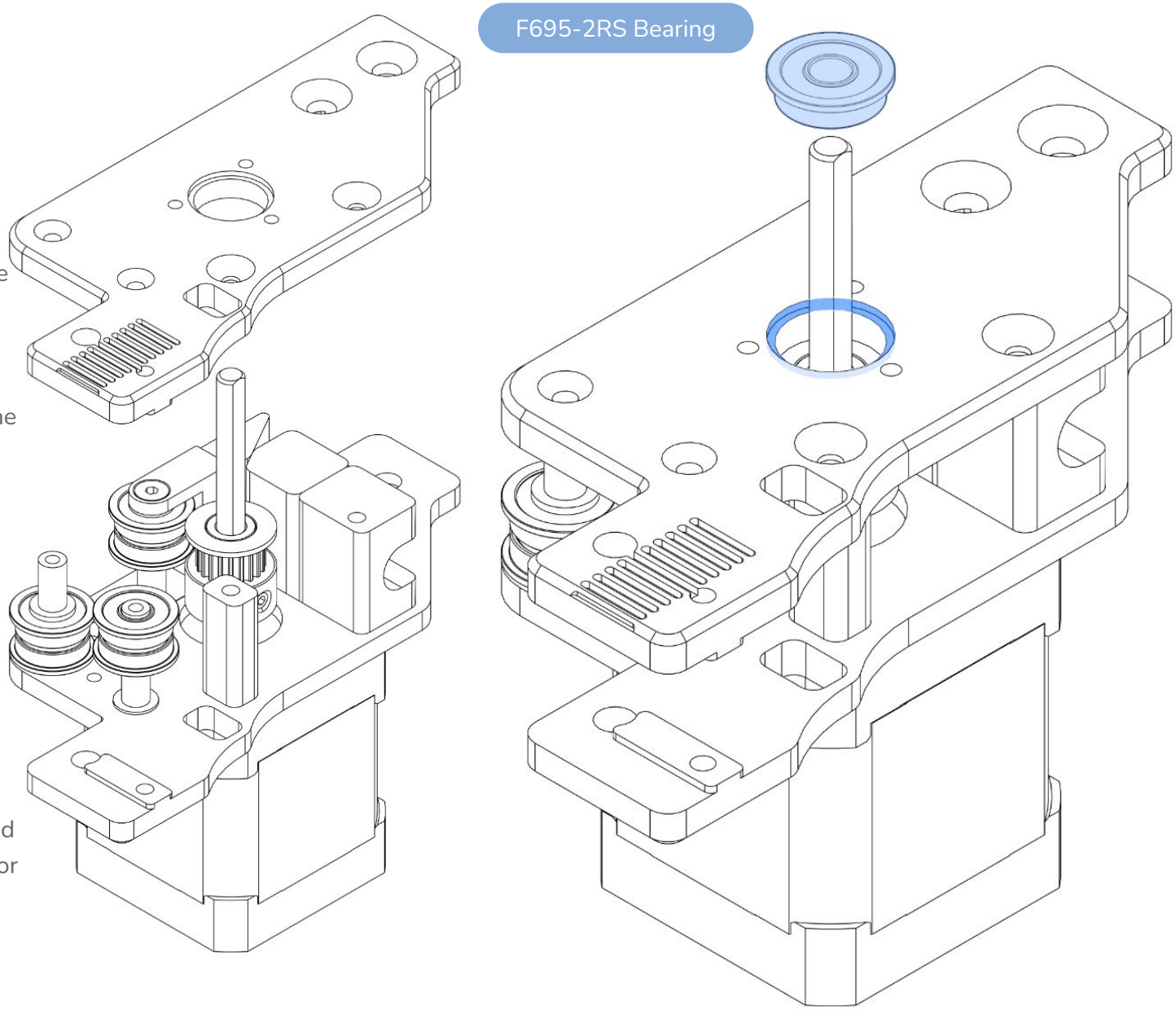
Do your best to line up the drive gear teeth to match the area between the flanges on the idler and tensioner bearings. The distance from the end of the flange to the surface of the lower plate should be around 19.65mm. Once aligned, apply threadlocker to the grub screws and secure the pulley in place.

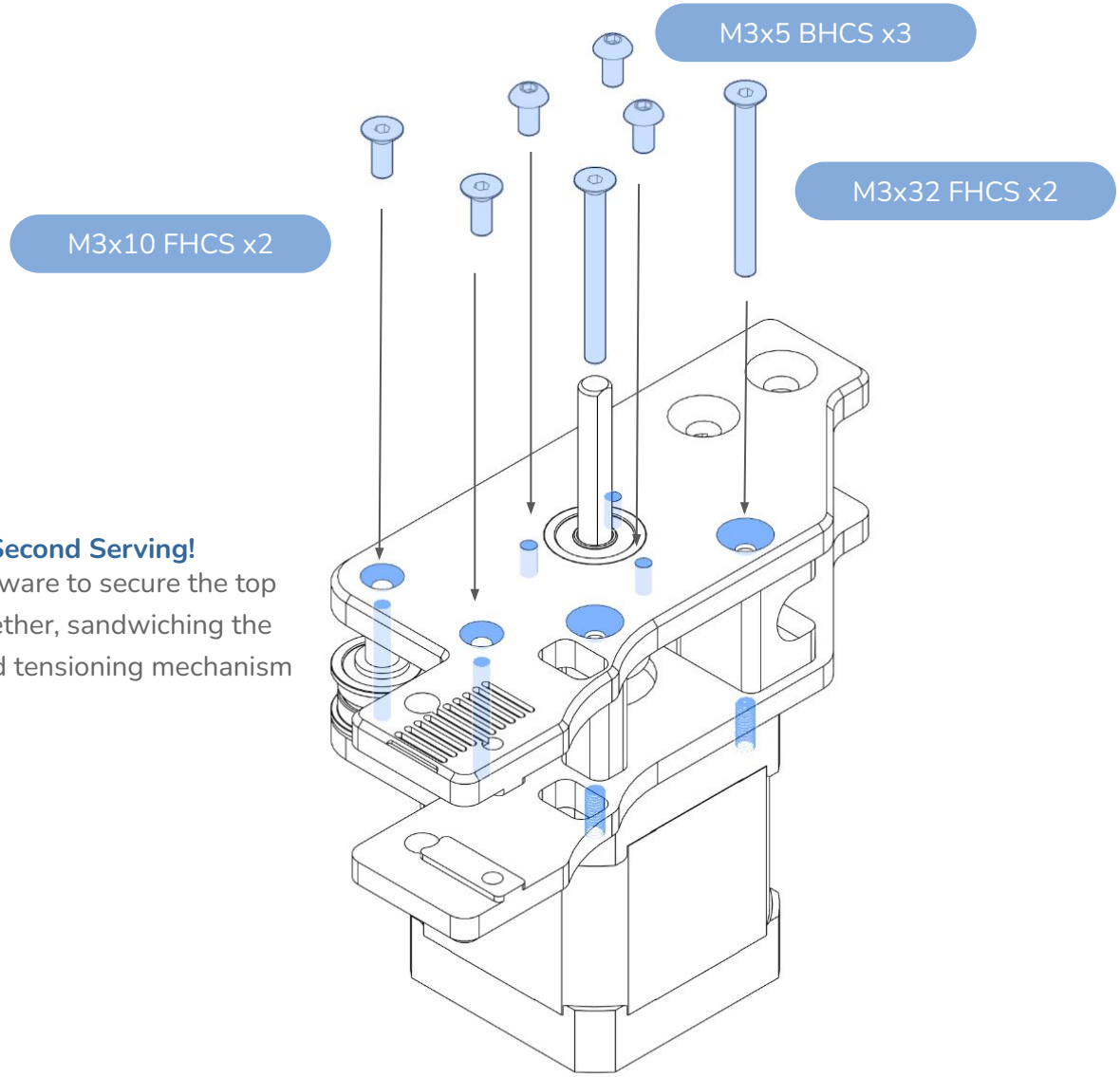


Déjà Vu
Placing the top plate may be easier if you loosen the screws holding the Shim Pins in place so they have a little play.

All components that sit proud of the surface on the bottom plate will have mating features on the top plate aside from the shaft of the NEMA17 stepper motor and the indexing features for extrusion mounting.

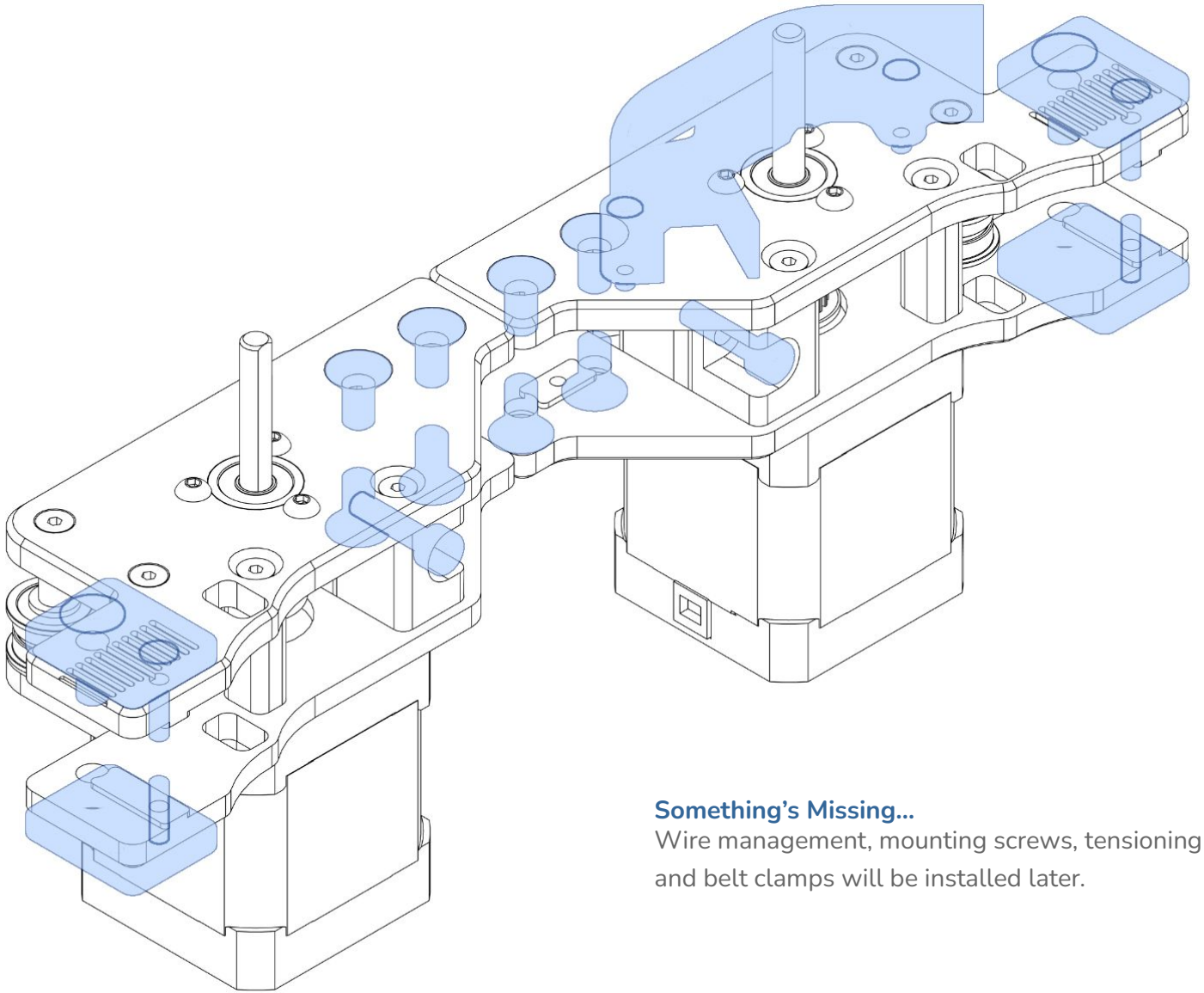
Skip Ahead?
LDO kits have the F695-2RS bearing preinstalled using three M3x5 BHCS along with 3 washers for added surface contact to the top of the bearing flange.



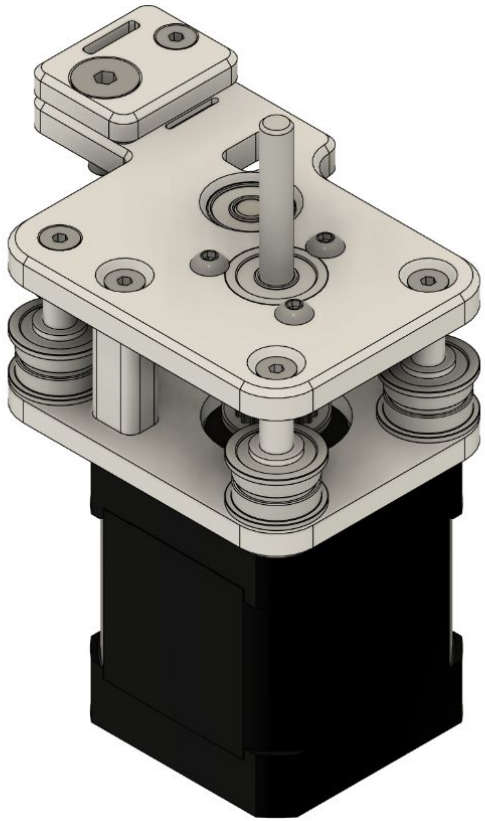


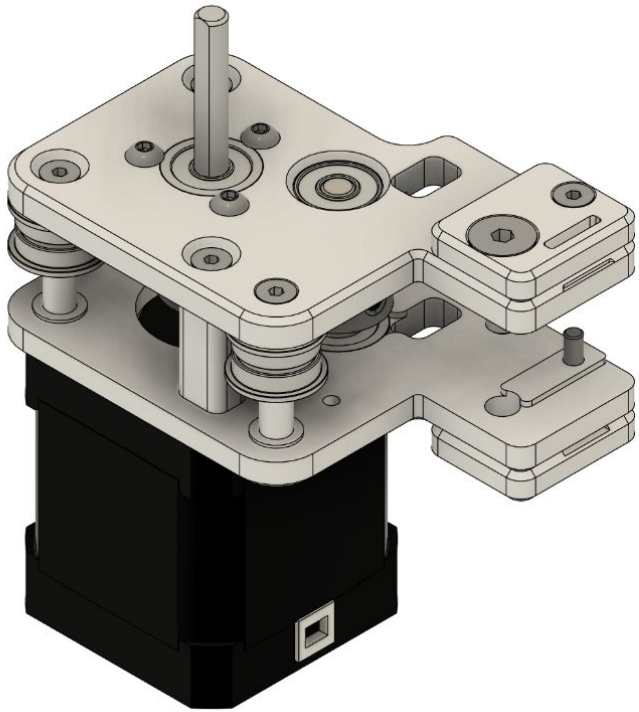
Complex Sandwich - Second Serving!

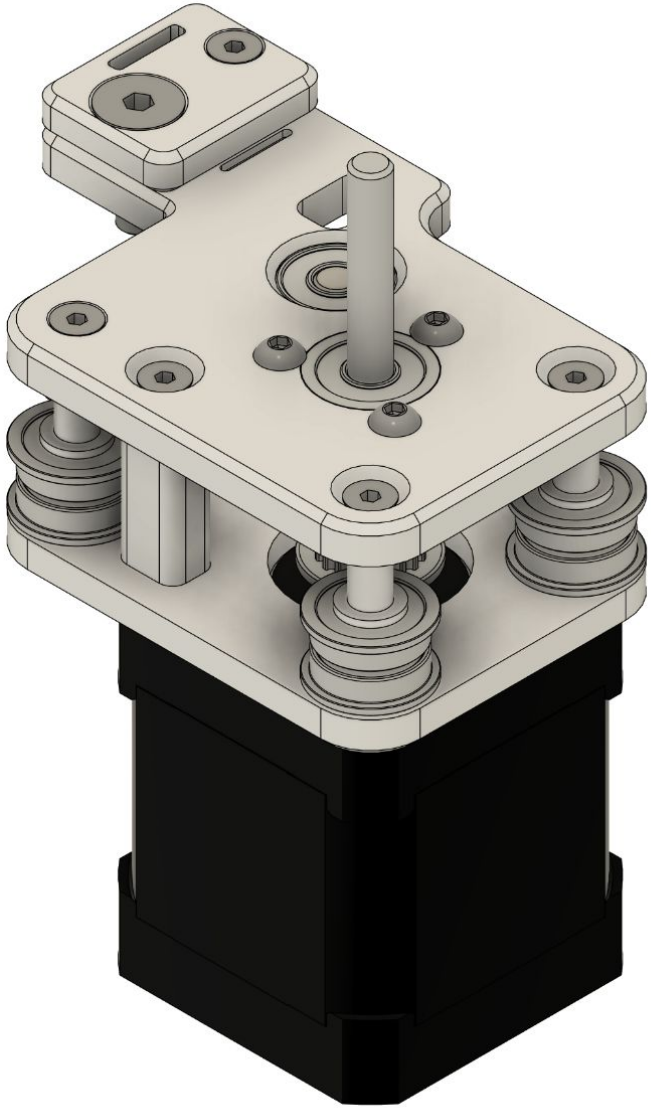
Use the following hardware to secure the top and bottom plates together, sandwiching the bearing assemblies and tensioning mechanism between.

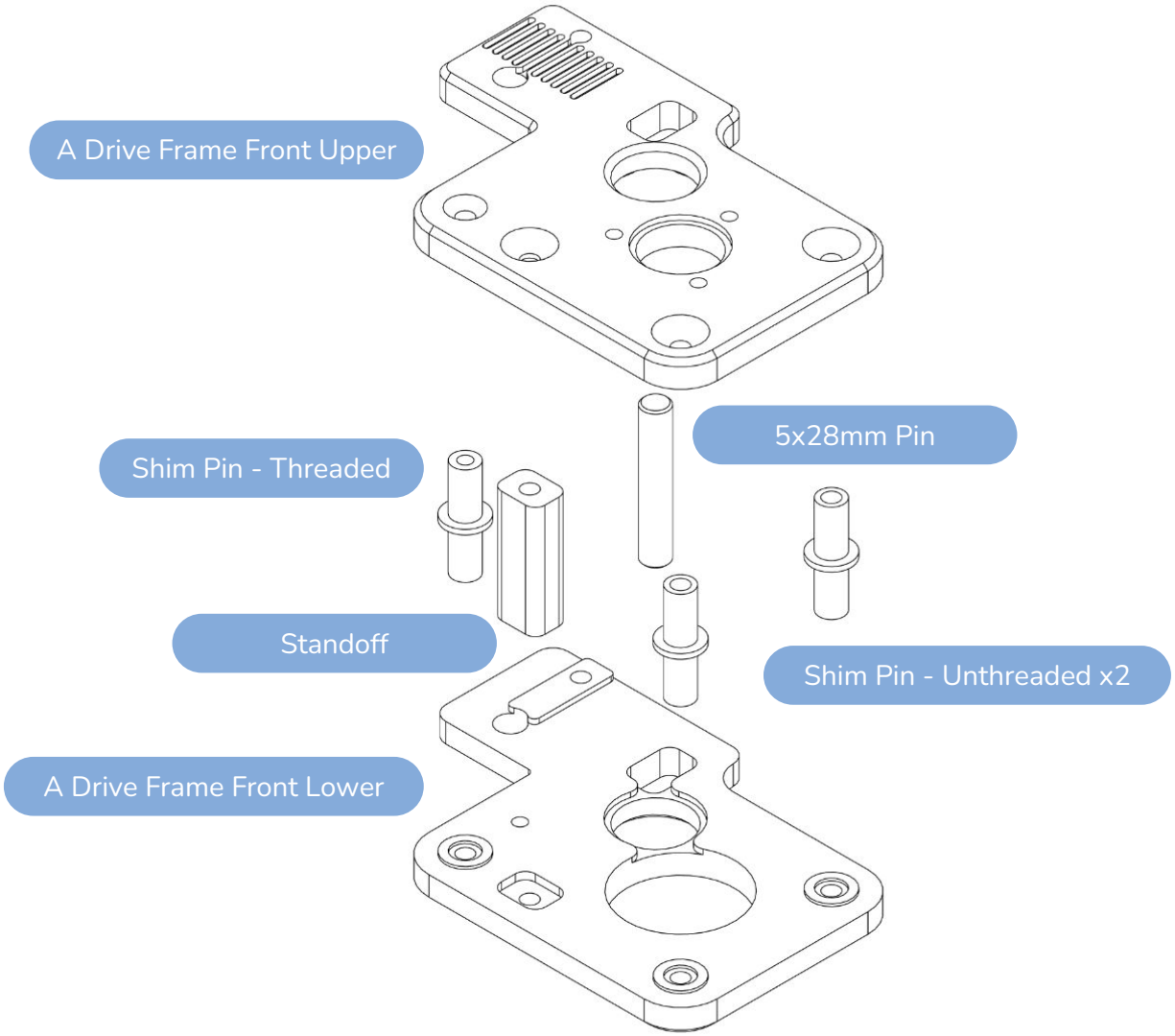


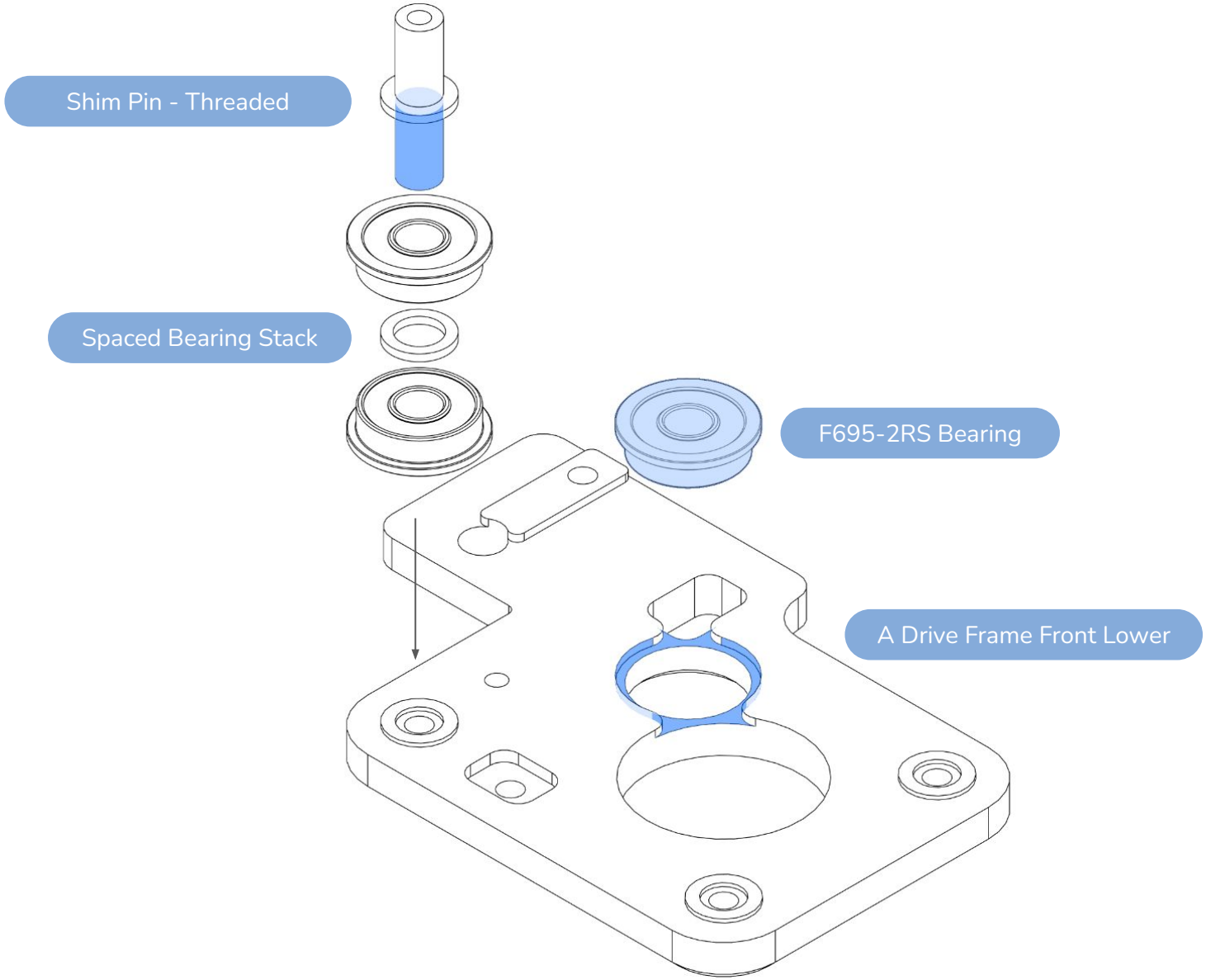
Something's Missing...
Wire management, mounting screws, tensioning screws, and belt clamps will be installed later.





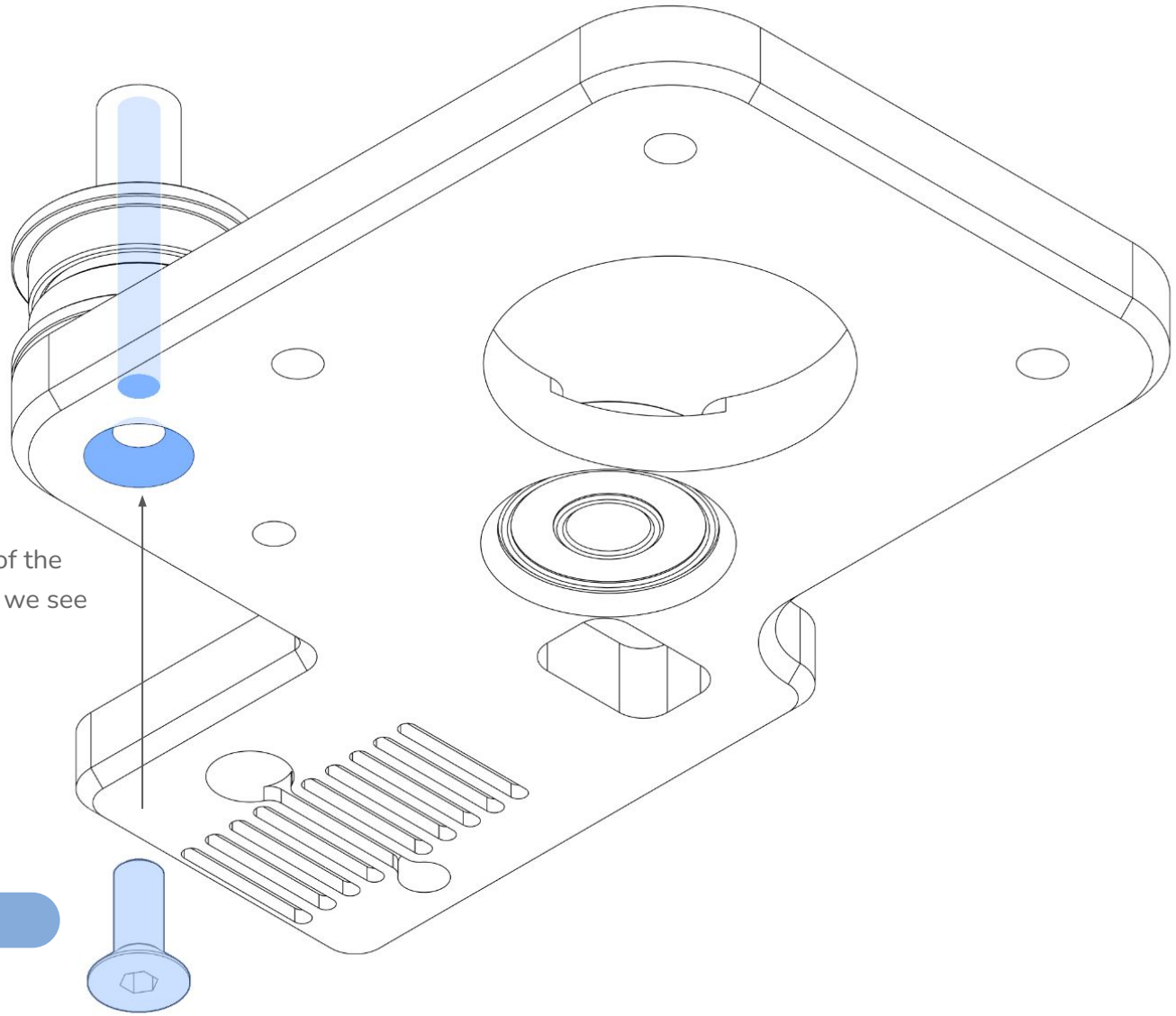


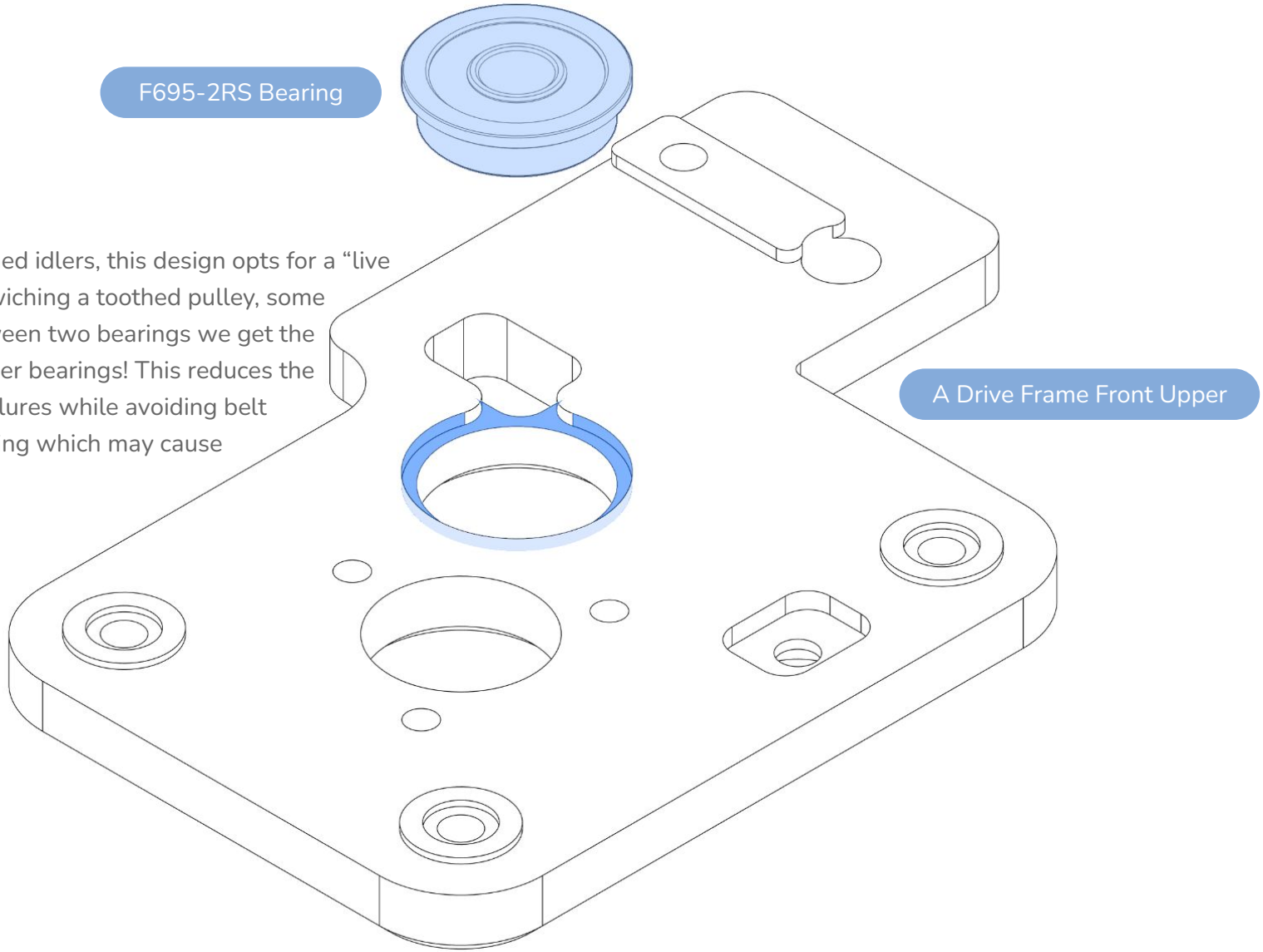

A Drive Frame Front Upper
5x28mm Pin
Shim Pin - Threaded
Standoff
Shim Pin - Unthreaded x2
A Drive Frame Front Lower


Shim Pin - Threaded
Spaced Bearing Stack
F695-2RS Bearing
A Drive Frame Front Lower

Leaving So Soon?

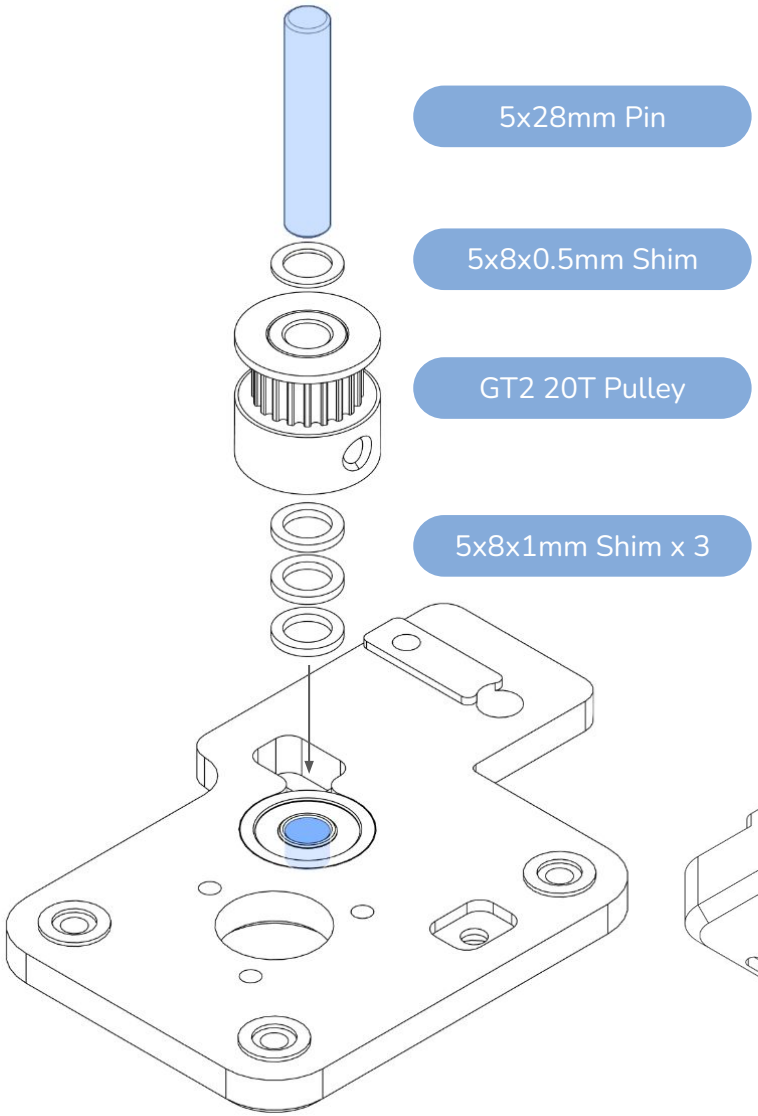
This is all we can do with the lower plate of the front A drive frame for now. The next time we see it, we'll be almost done!





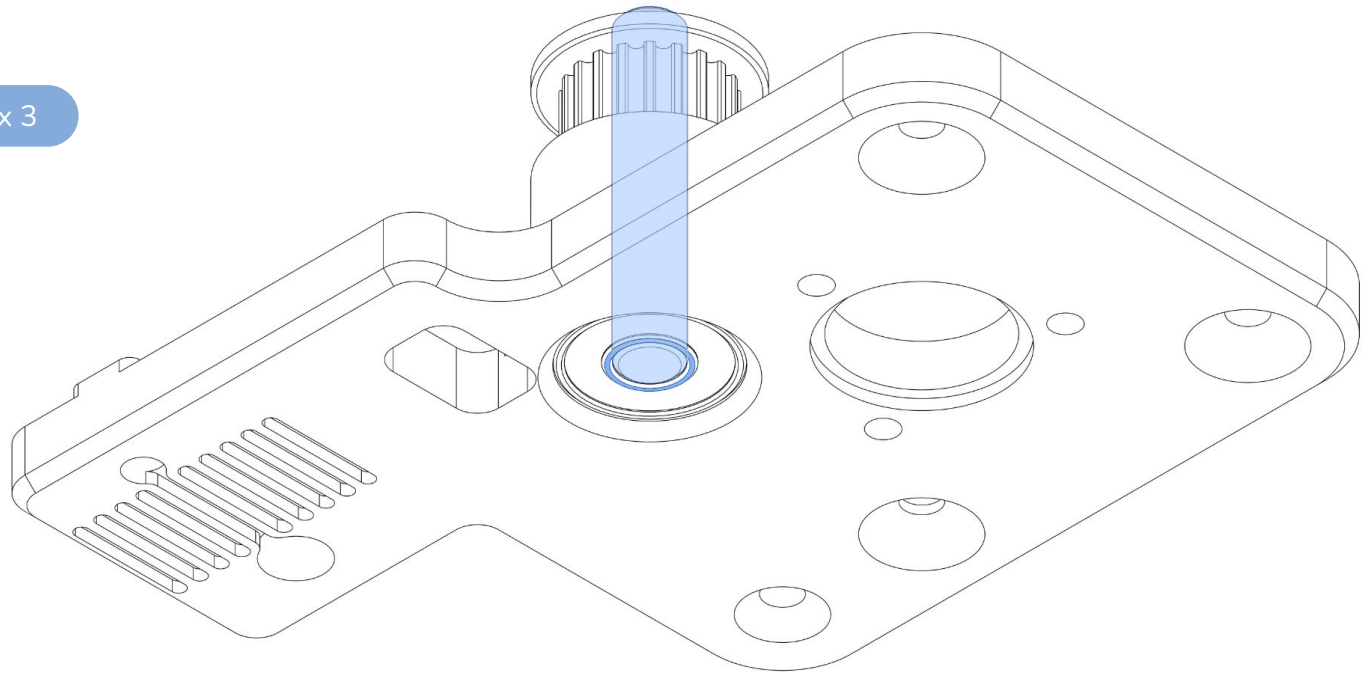
Getting Lively

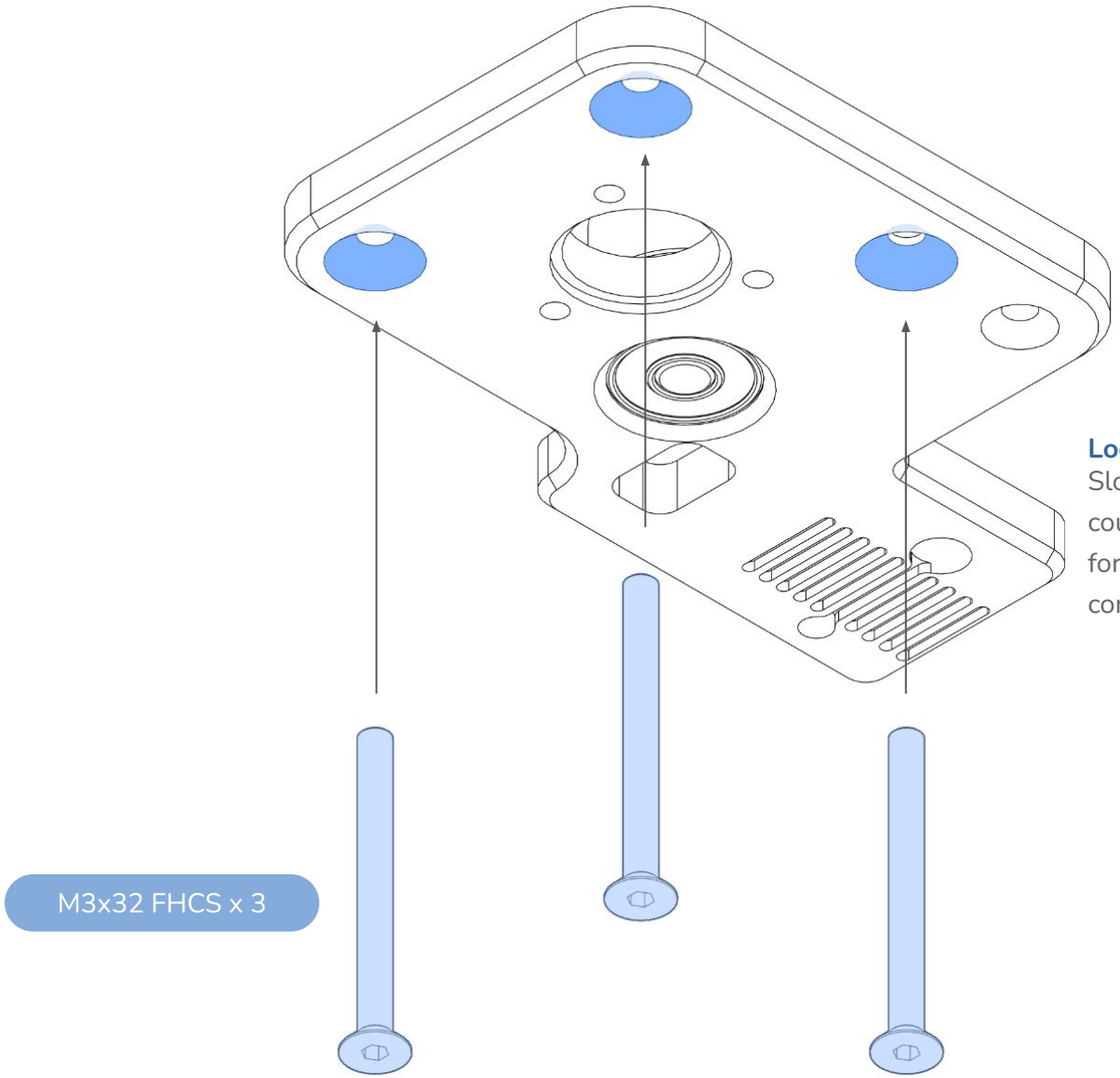
Rather than using toothed idlers, this design opts for a “live shaft” design. By sandwiching a toothed pulley, some shims, and a shaft between two bearings we get the same function with larger bearings! This reduces the likelihood of bearing failures while avoiding belt teeth on a smooth bearing which may cause print artifacts.



Pins and Bearings

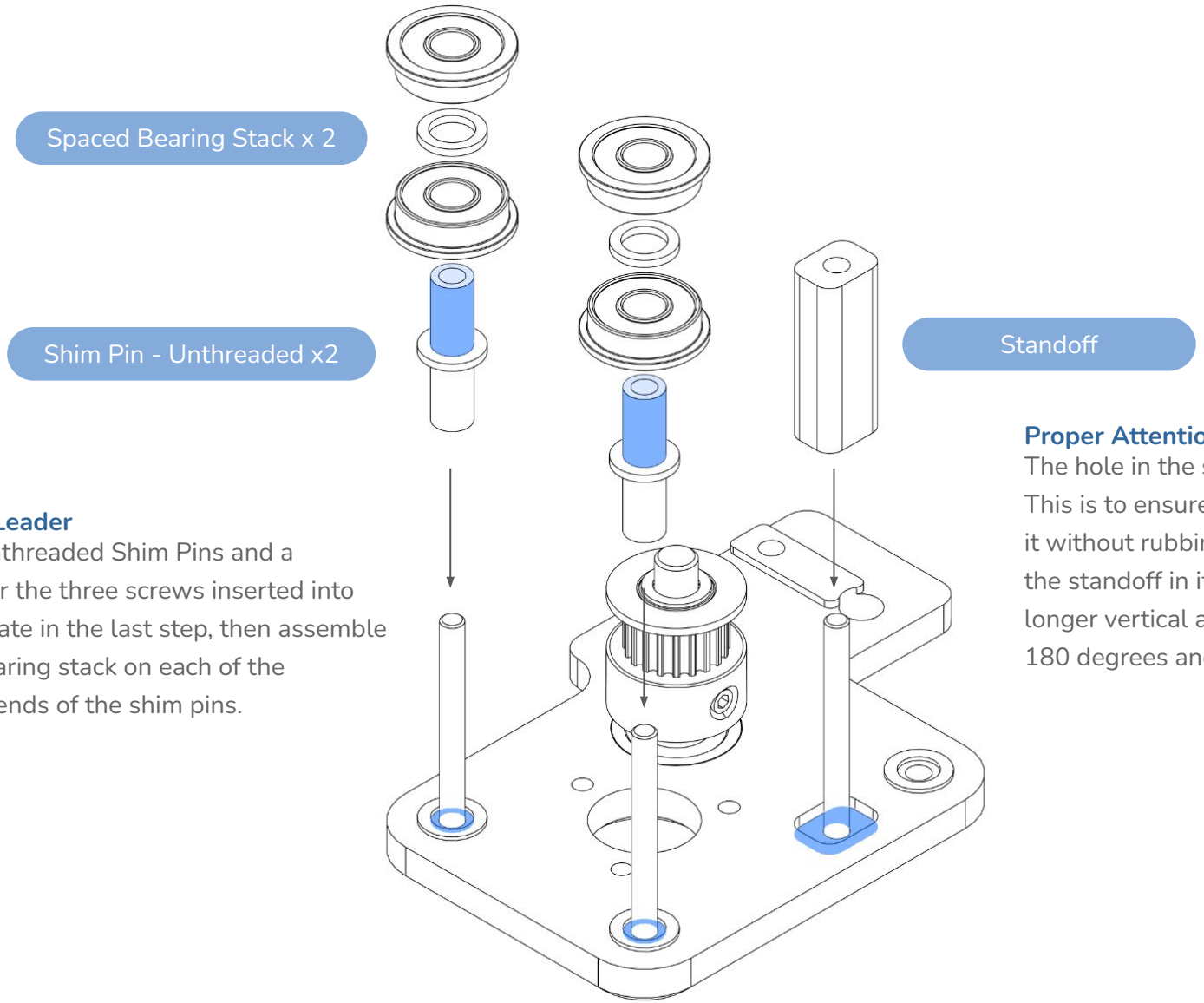
The end of the 5x28mm Pin should be flush with the opposing face of the bearing. Once aligned, tighten both grub screws to lock the pulley in place (don't forget thread locker).





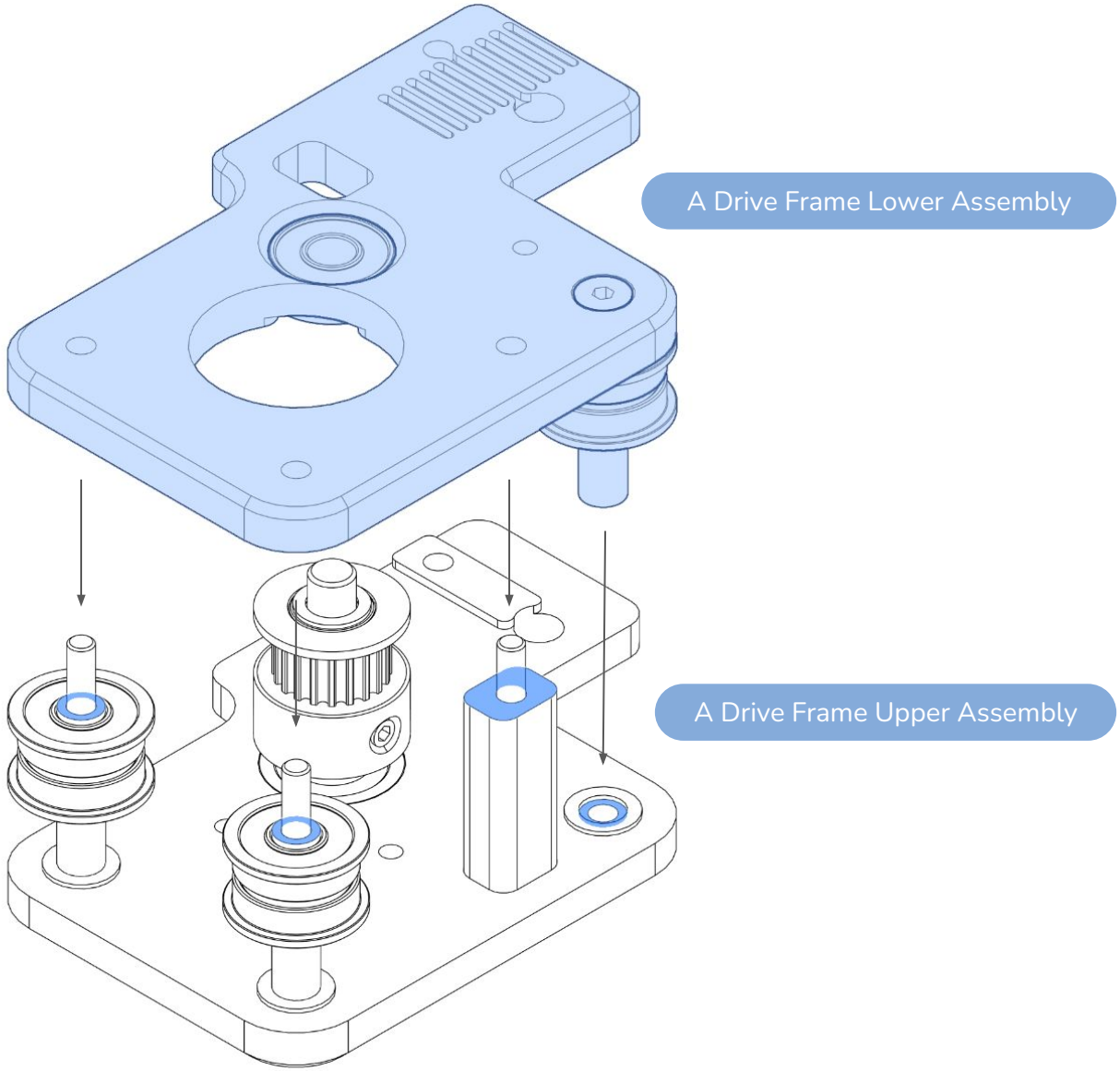
Loose Guide

Slot three M3x32 FHCS into the highlighted countersunk holes. These screws will be loose for now, but will act as a stabilizing guide for components in following steps.



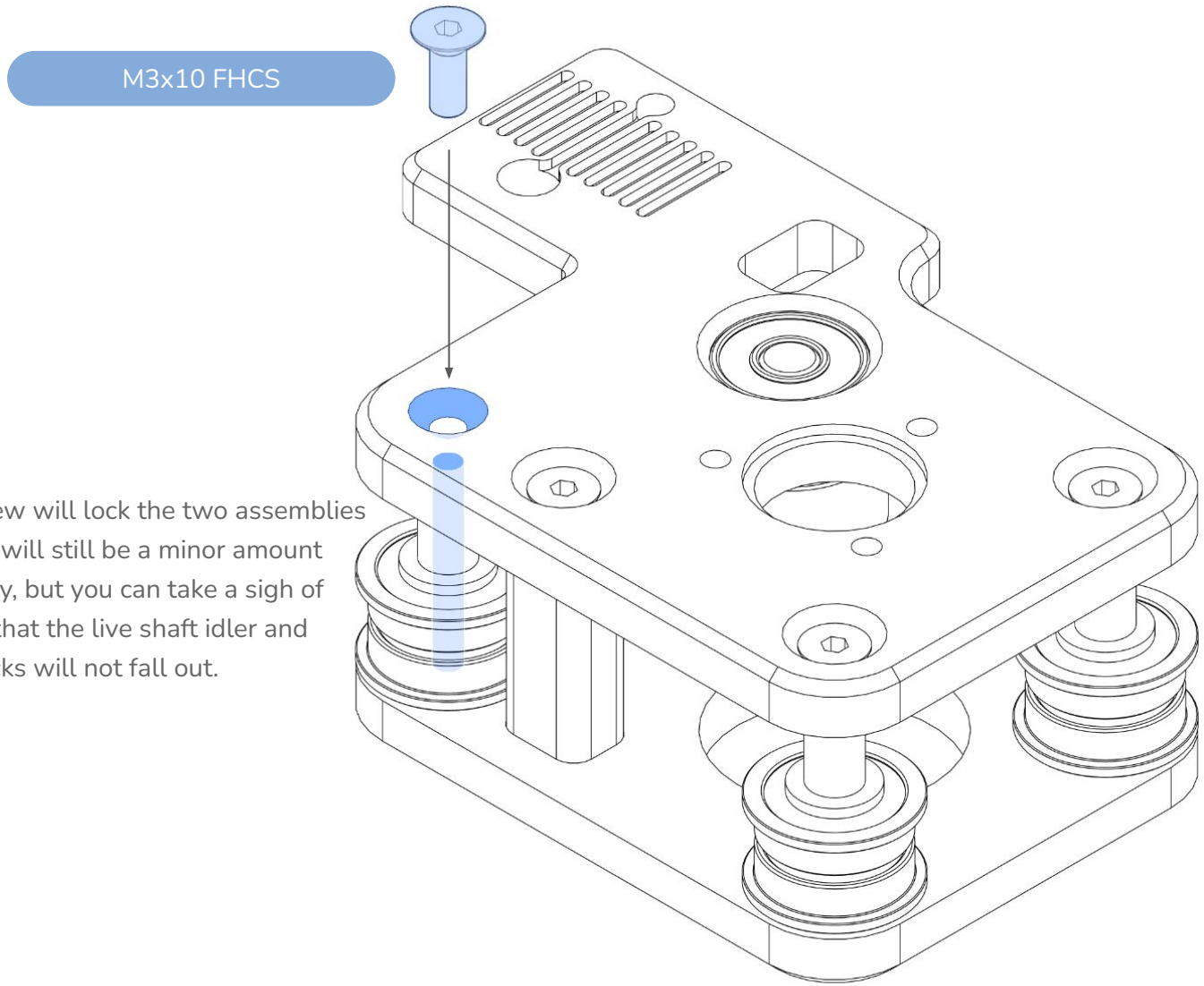
Follow the Leader
Slide two unthreaded Shim Pins and a standoff over the three screws inserted into the upper plate in the last step, then assemble a spaced bearing stack on each of the highlighted ends of the shim pins.

Proper Attention
The hole in the standoff is barely off center. This is to ensure belts are able to pass around it without rubbing. If there's resistance putting the standoff in its pocket or the screw is no longer vertical after placing, turn the standoff 180 degrees and try again.



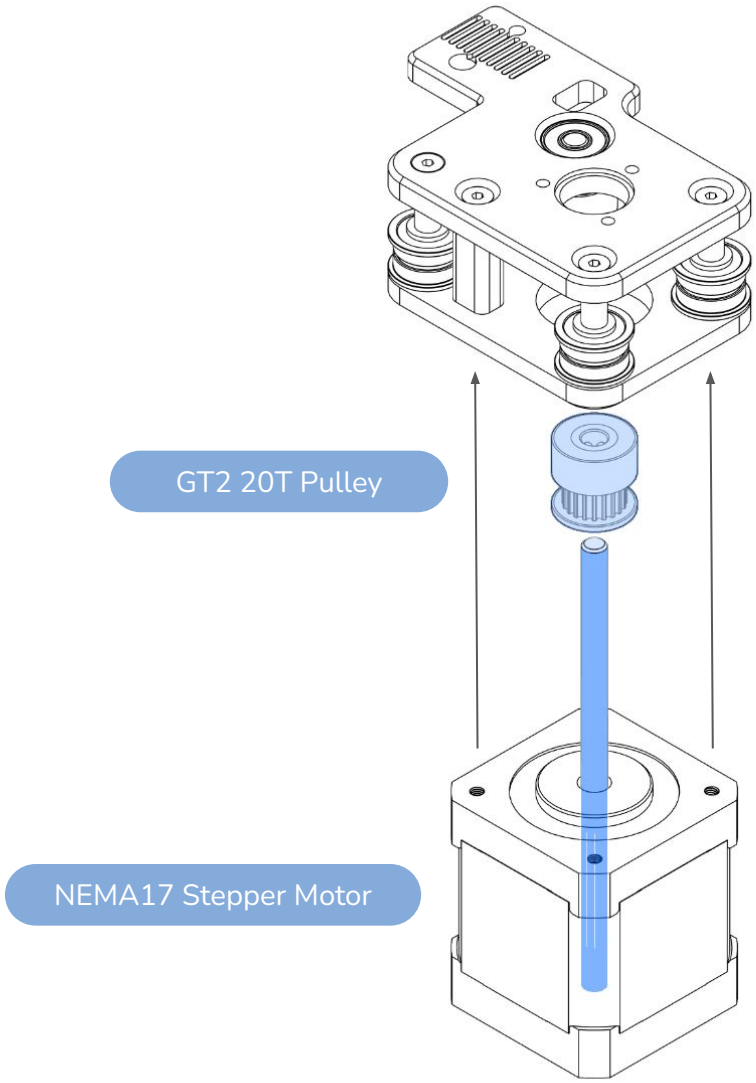
Inverted Expectations

Flip the lower A drive frame assembly over the upper A drive frame assembly and lower it in place, making sure that each shim pin, the standoff, and the 5x28mm pin slot into their respective features.



Soft Lock

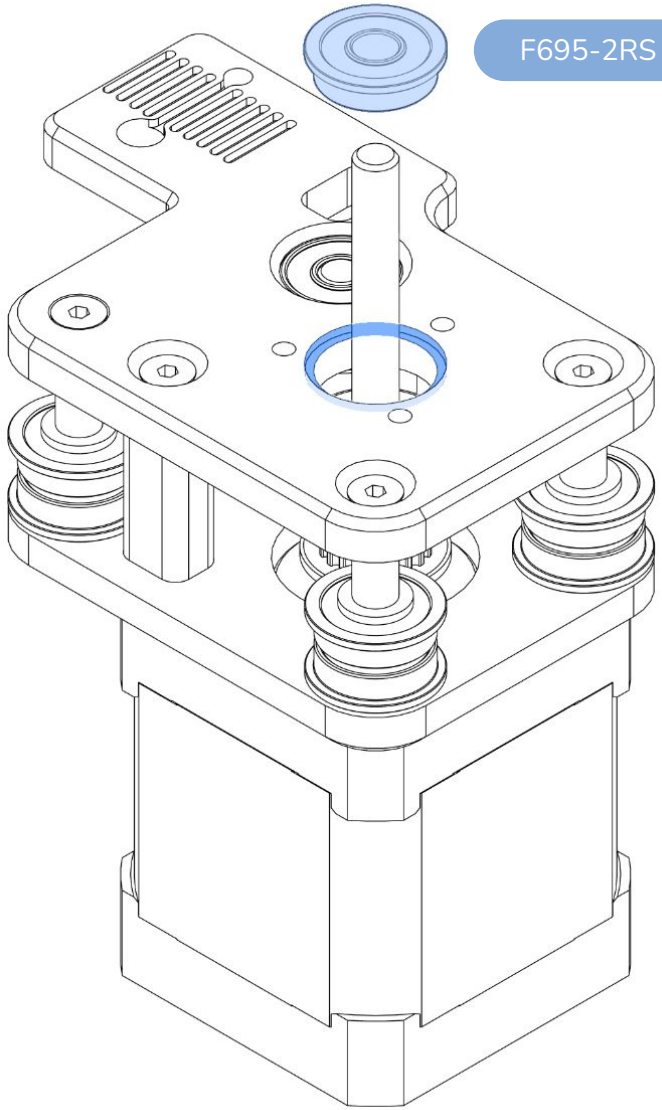
Placing this screw will lock the two assemblies together. There will still be a minor amount of rotational play, but you can take a sigh of relief, knowing that the live shaft idler and the bearing stacks will not fall out.



Almost There!

Slide the pulley onto the NEMA17 stepper motor's drive shaft before slotting the motor into the lower plate of the A drive frame. Once the motor is in your desired orientation, tighten the three M3x32 FHCS to secure it in place.

We'll be leaving the front pulleys loose for the time being. It's best not to secure them to the shaft until the belts have been run and tightened.

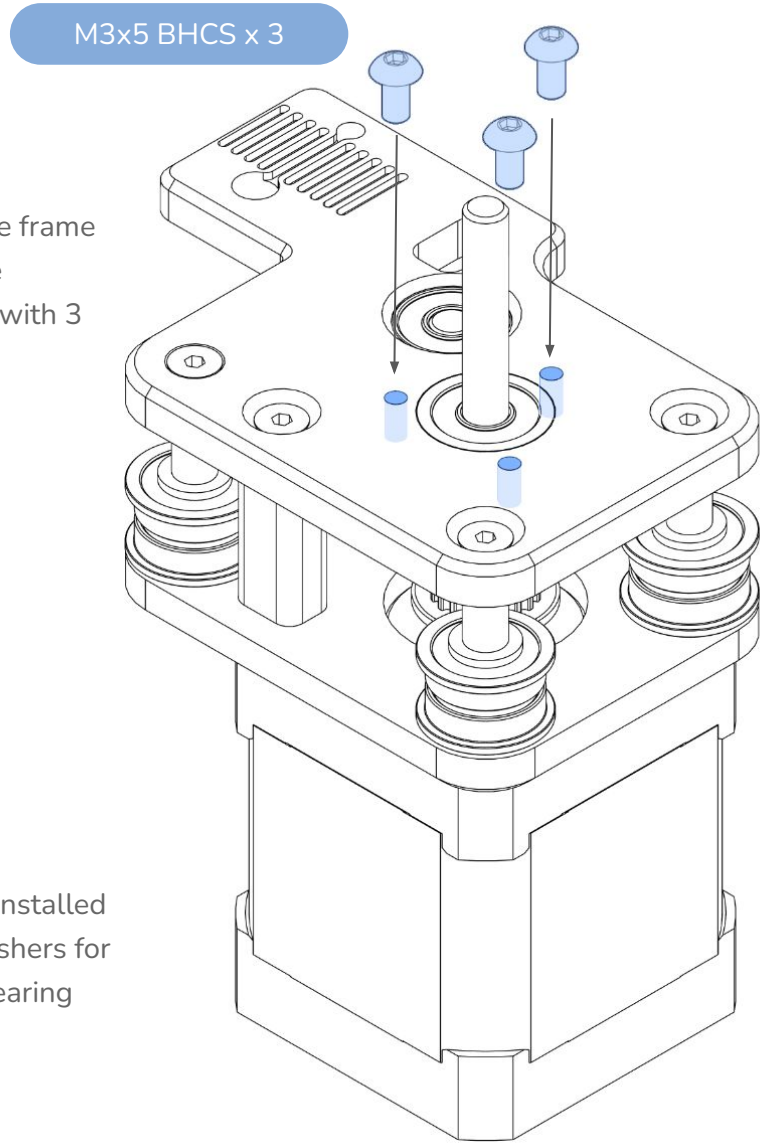


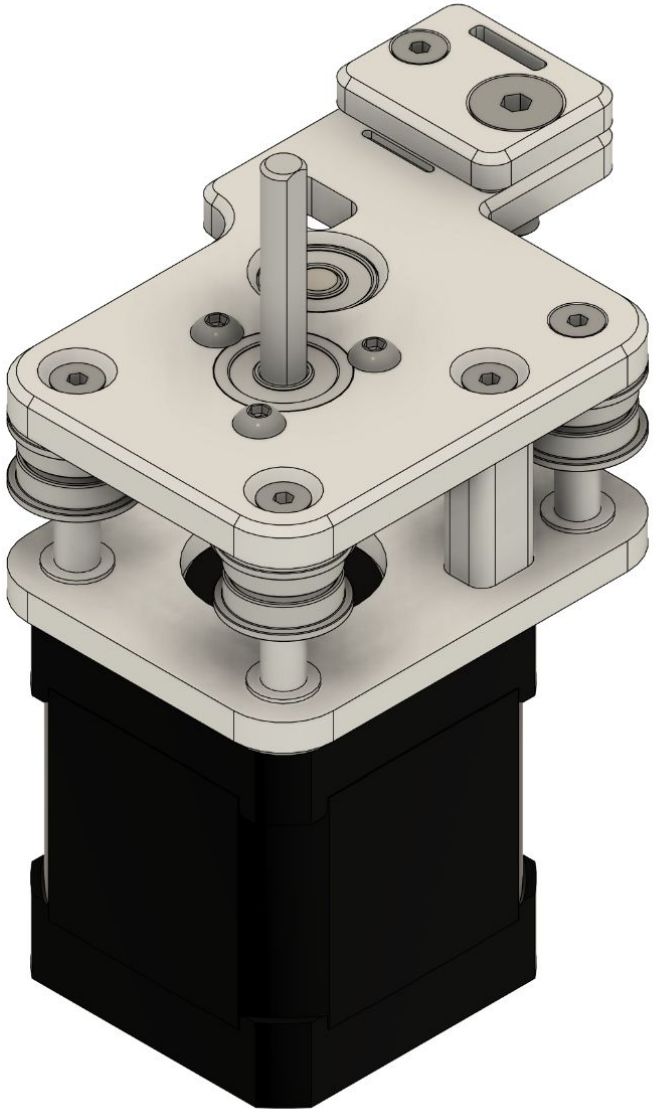
Shear Power

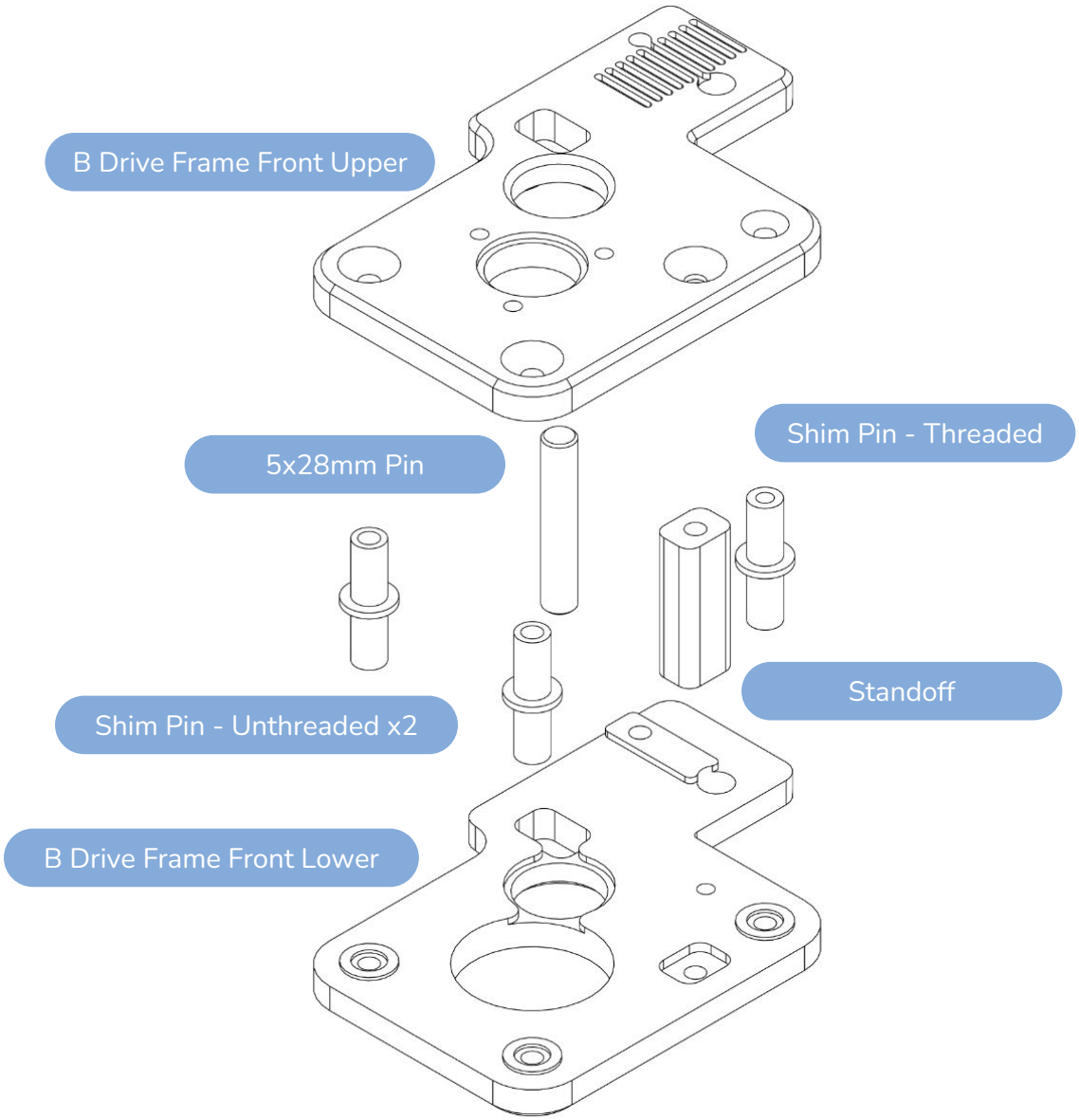
Finish the preliminary assembly of the drive frame by inserting the F695-2RS bearing into the highlighted pocket and securing it in place with 3 M3x5 BHCS.

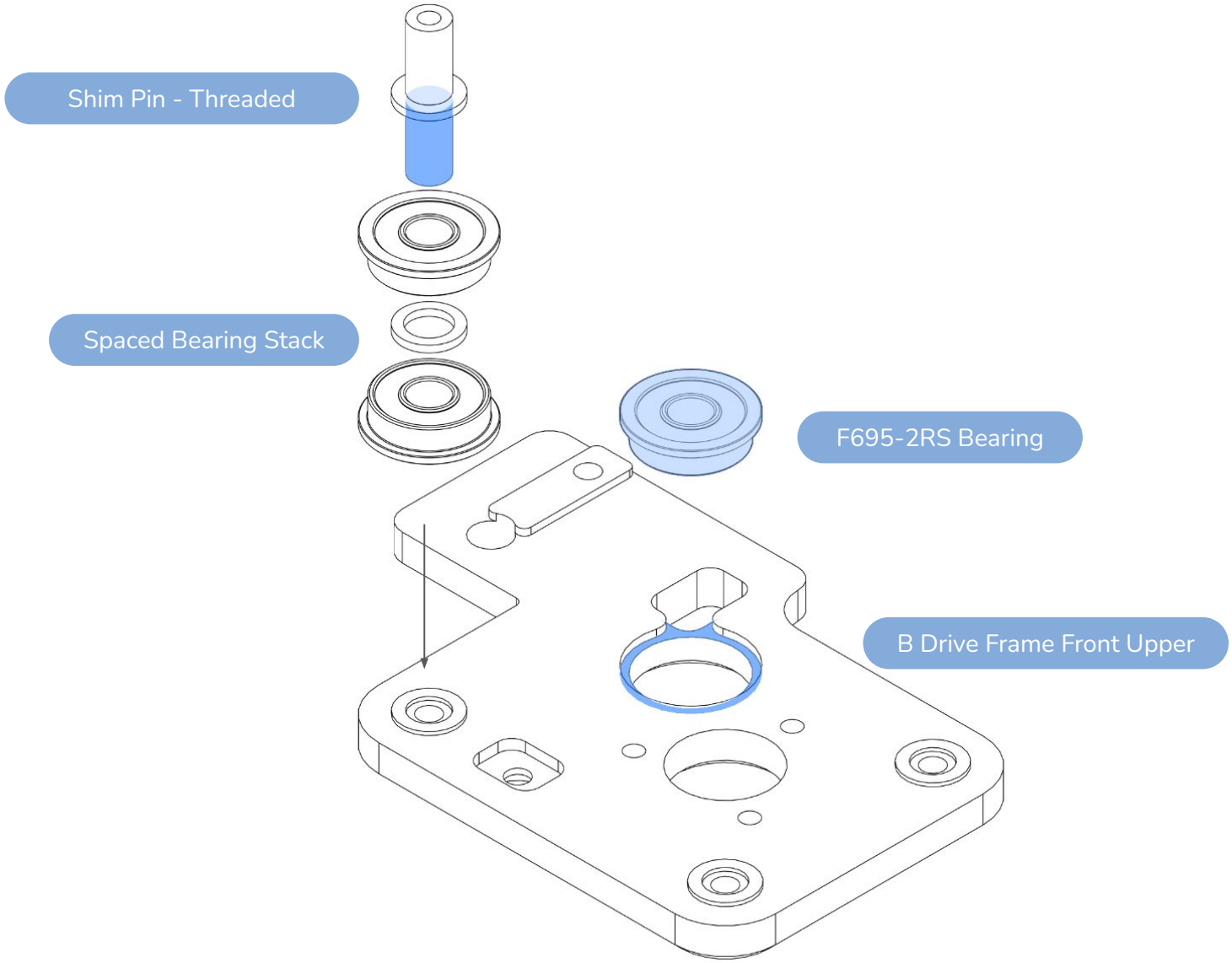
Skip Ahead?

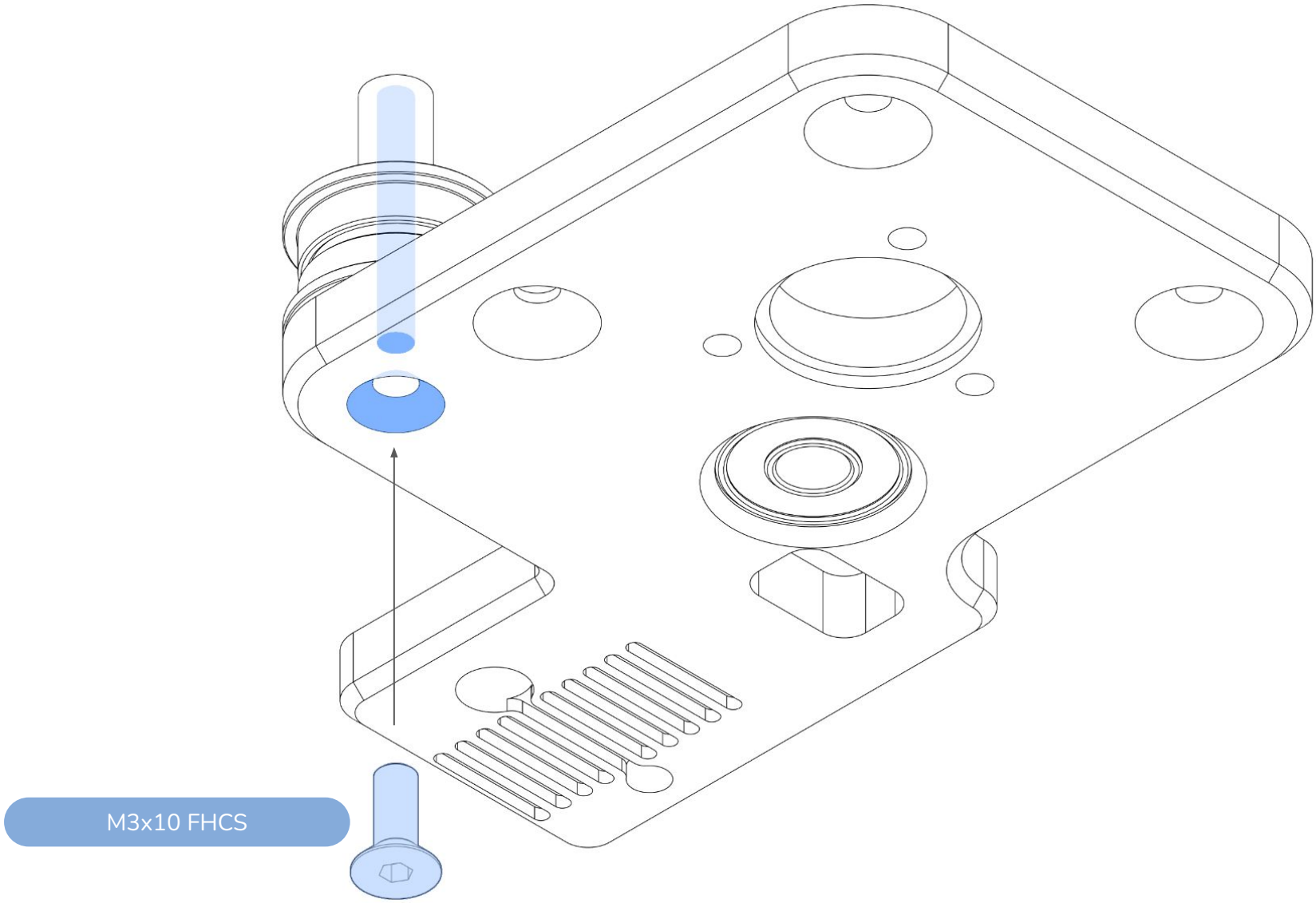
LDO kits have the F695-2RS bearing preinstalled using three M3x5 BHCS along with 3 washers for added surface contact to the top of the bearing flange.

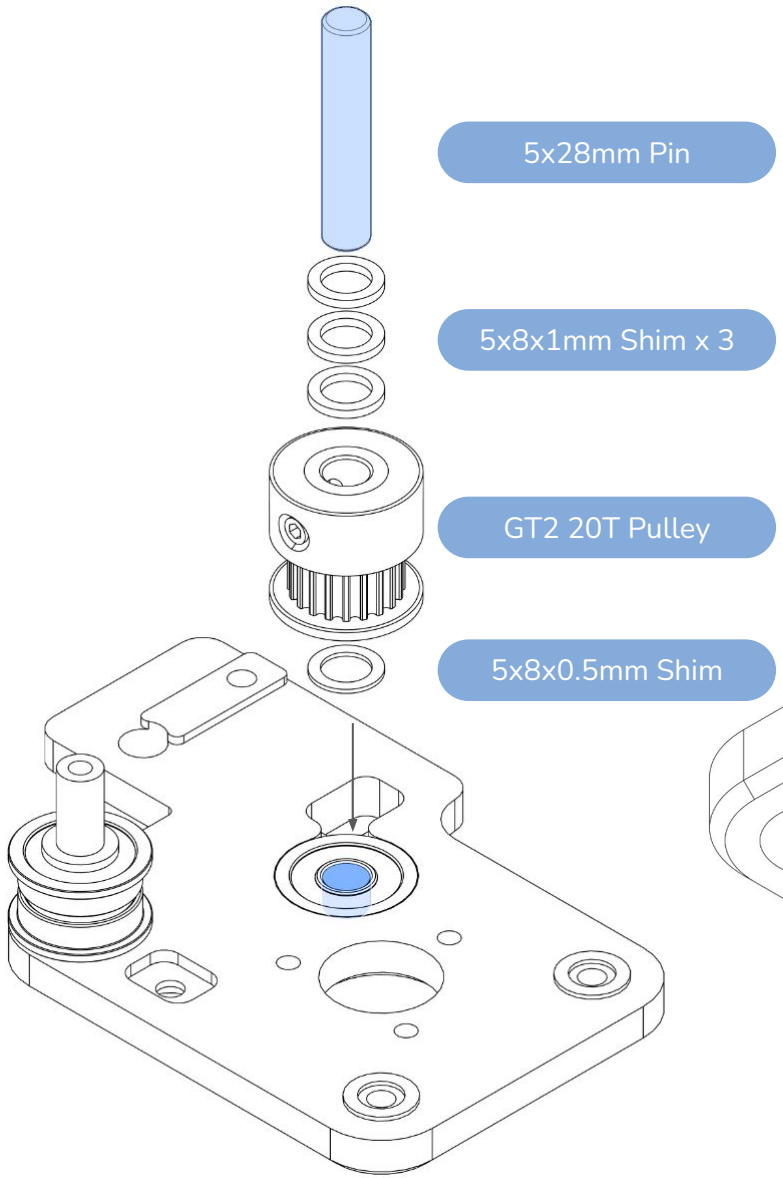





B Drive Frame Front Upper
5x28mm Pin
Shim Pin - Threaded
Shim Pin - Unthreaded x2
Standoff
B Drive Frame Front Lower

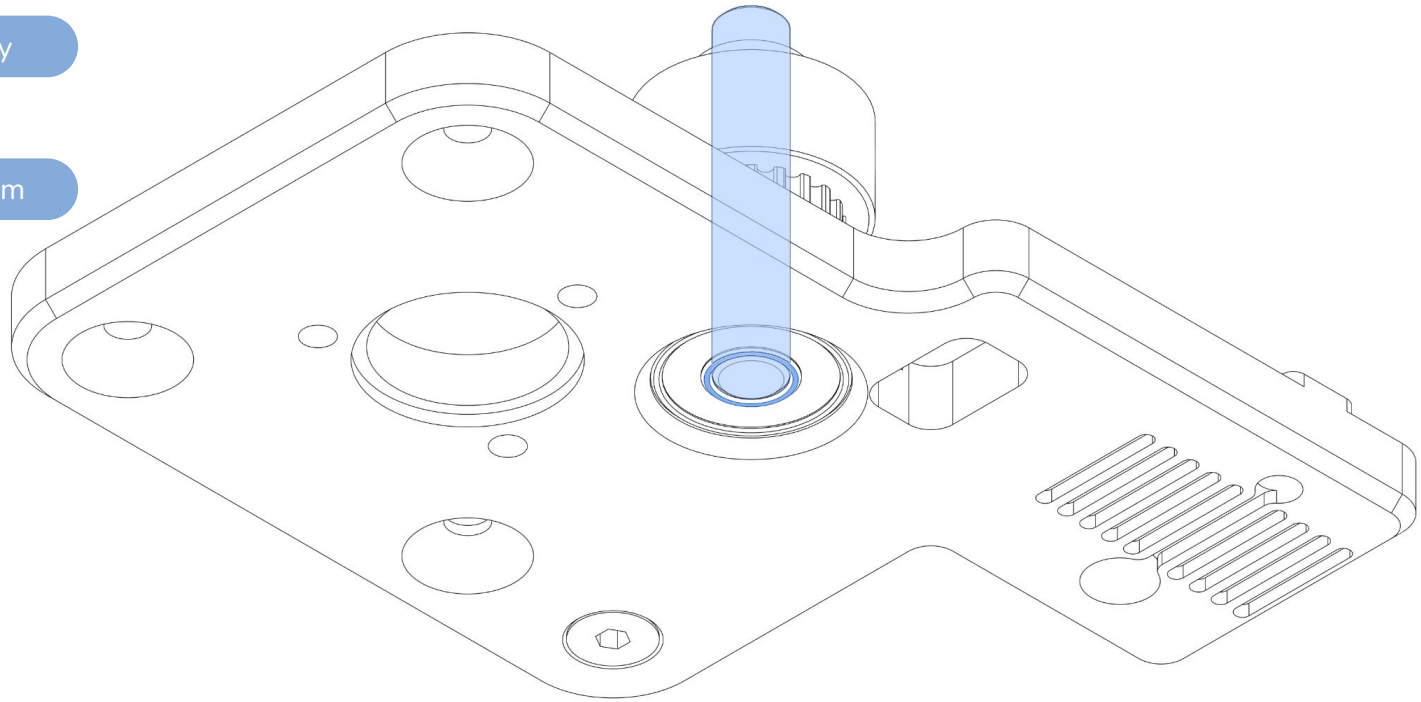

Shim Pin - Threaded
Spaced Bearing Stack
F695-2RS Bearing
B Drive Frame Front Upper

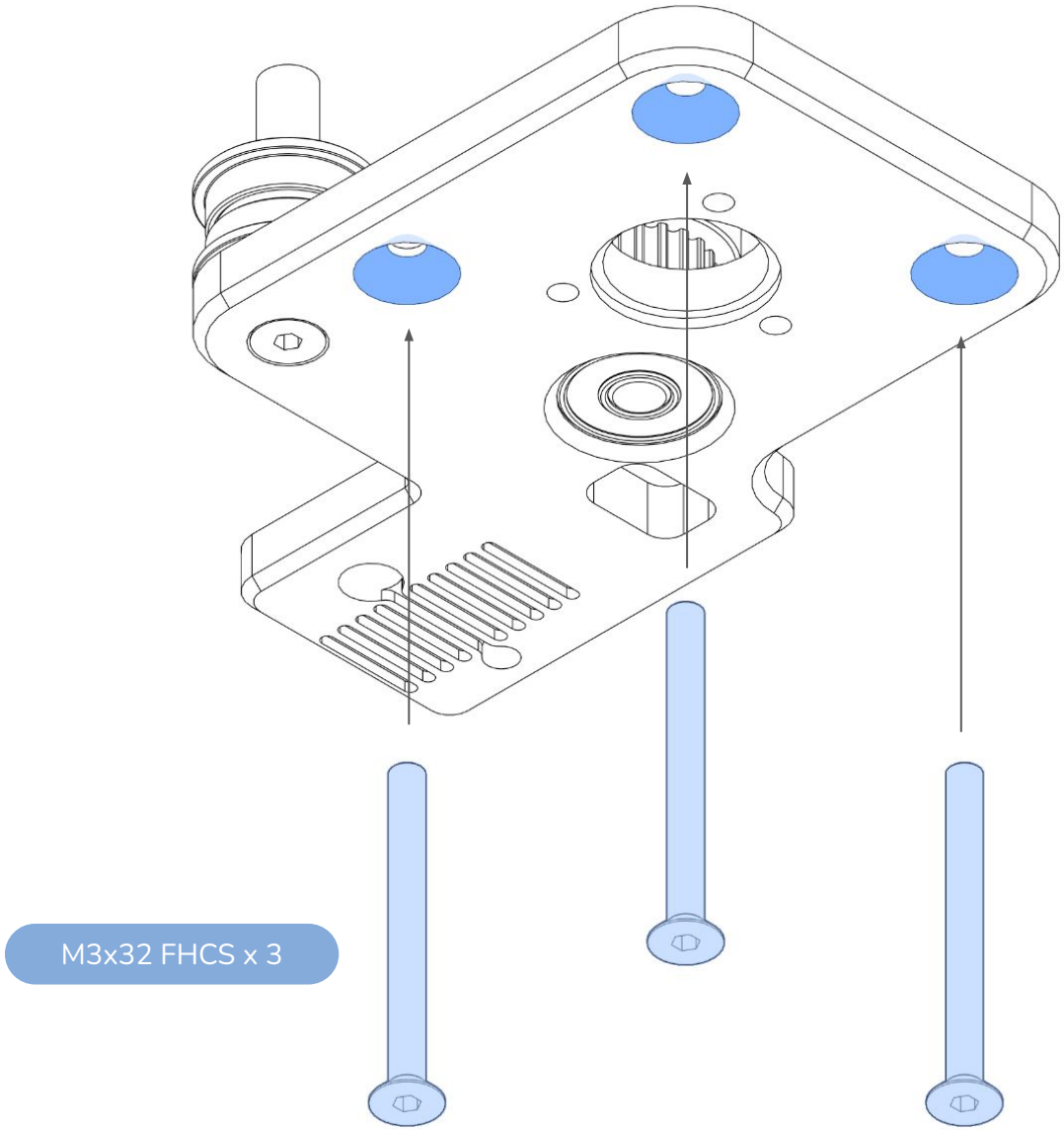

M3x10 FHCS



Pins and Bearings - Round 2

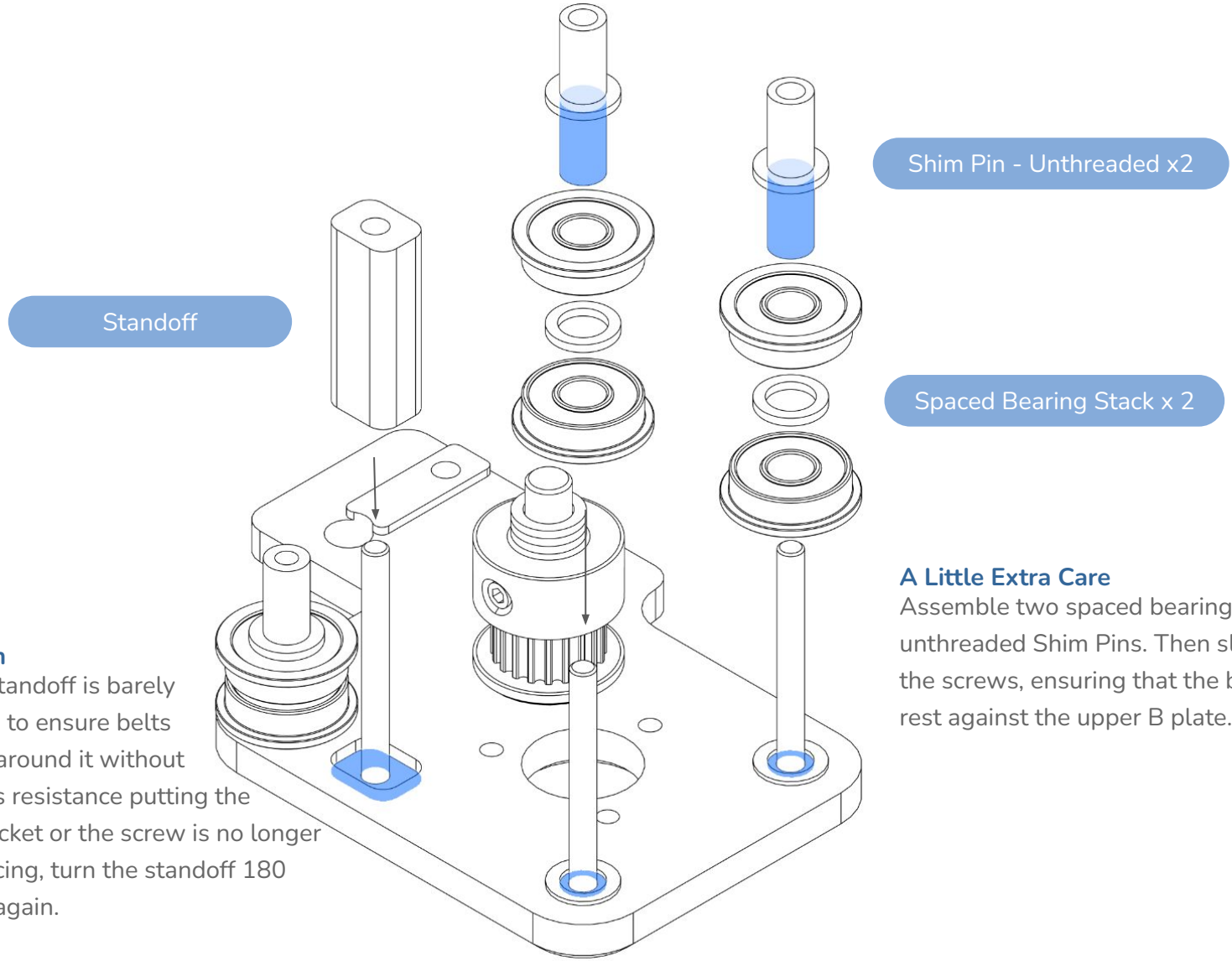
The end of the 5x28mm Pin should be flush with the opposing face of the bearing. Once aligned, tighten both grub screws to lock the pulley in place (don't forget thread locker).





Loose Guide

Slot three M3x32 FHCS into the highlighted countersunk holes. These screws will be loose for now, but will act as a stabilizing guide for components in following steps.

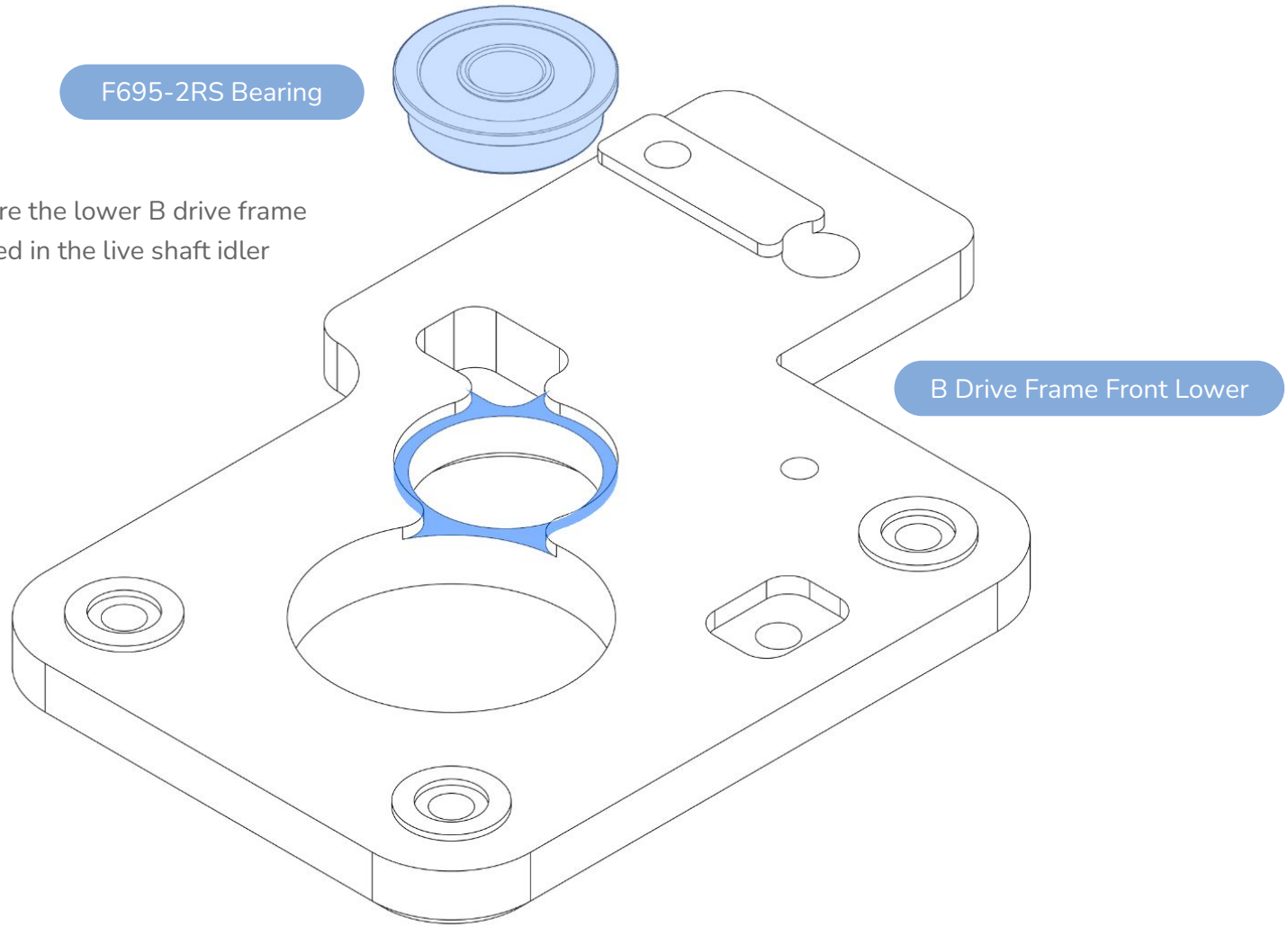


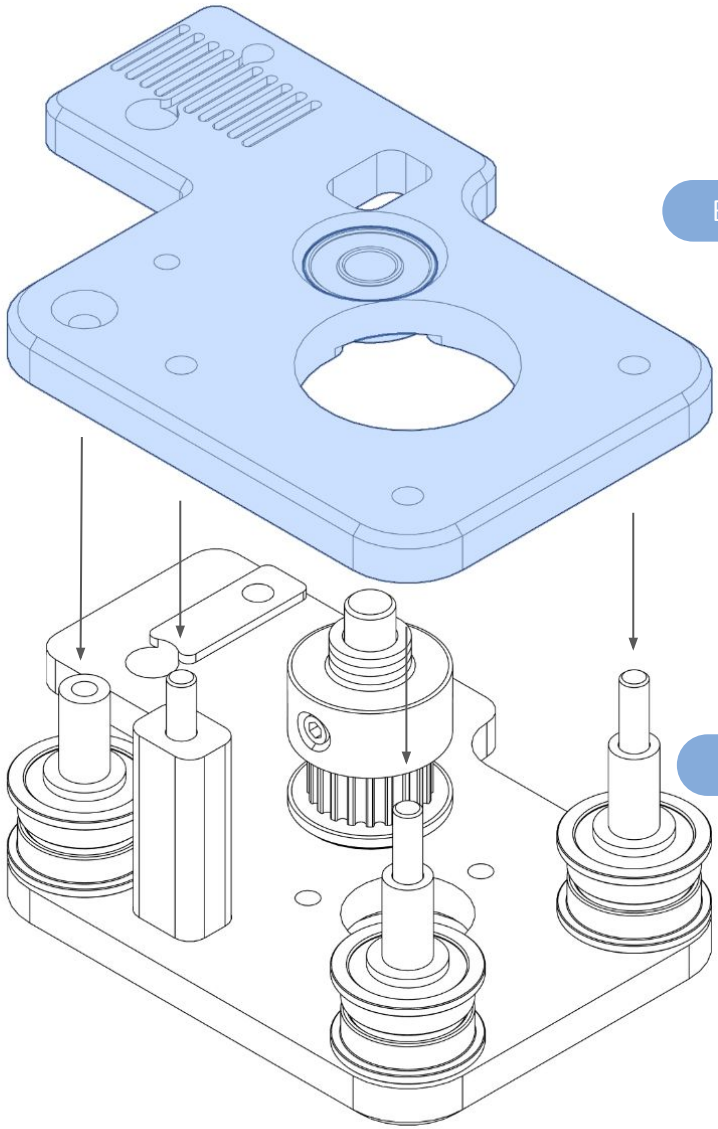
Proper Attention
The hole in the standoff is barely off center. This is to ensure belts are able to pass around it without rubbing. If there's resistance putting the standoff in its pocket or the screw is no longer vertical after placing, turn the standoff 180 degrees and try again.

A Little Extra Care
Assemble two spaced bearing stacks into the unthreaded Shim Pins. Then slide them over the screws, ensuring that the bearing stacks rest against the upper B plate.

Short Detour

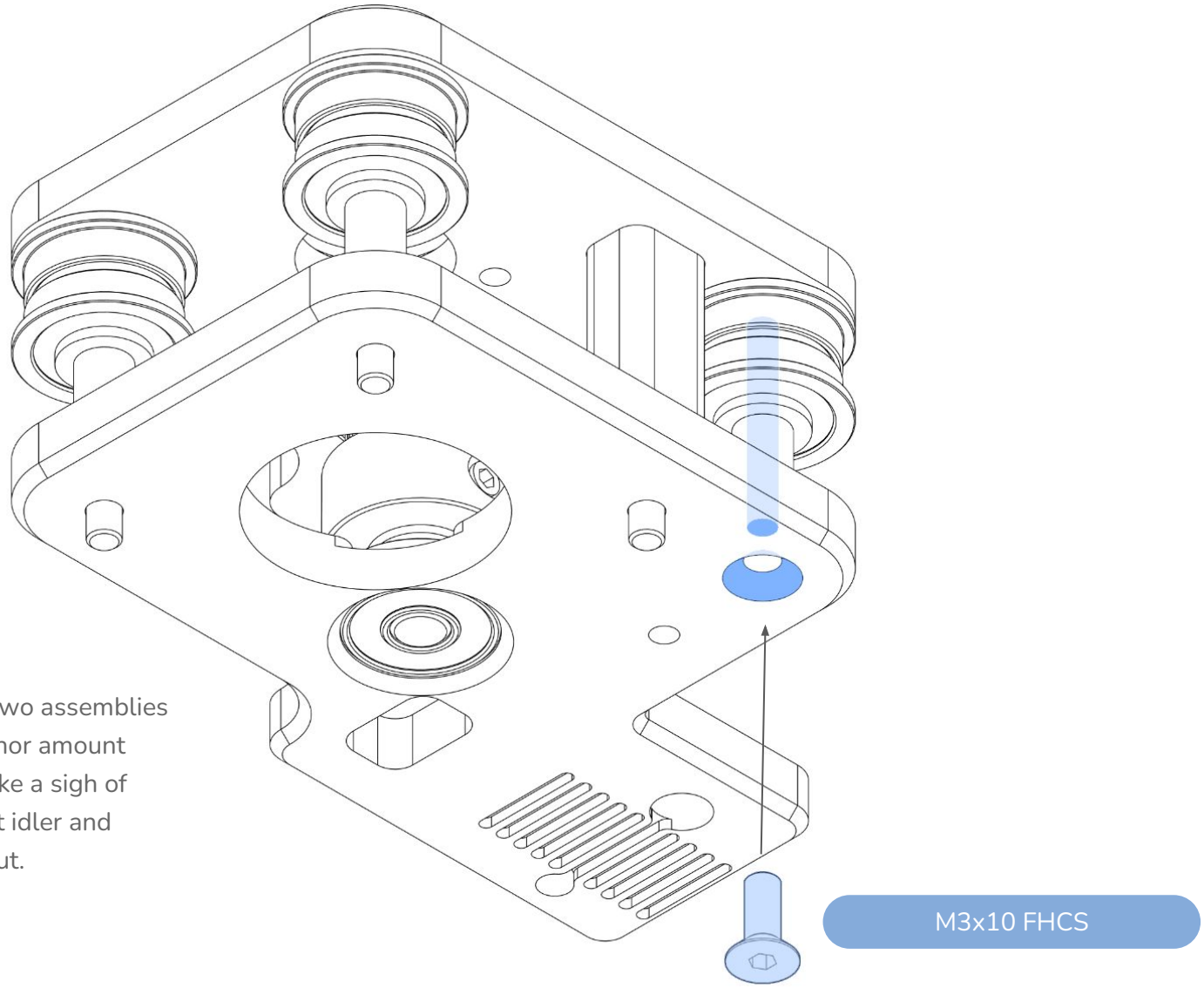
The only thing needed to prepare the lower B drive frame plate is to insert the bearing used in the live shaft idler assembly.





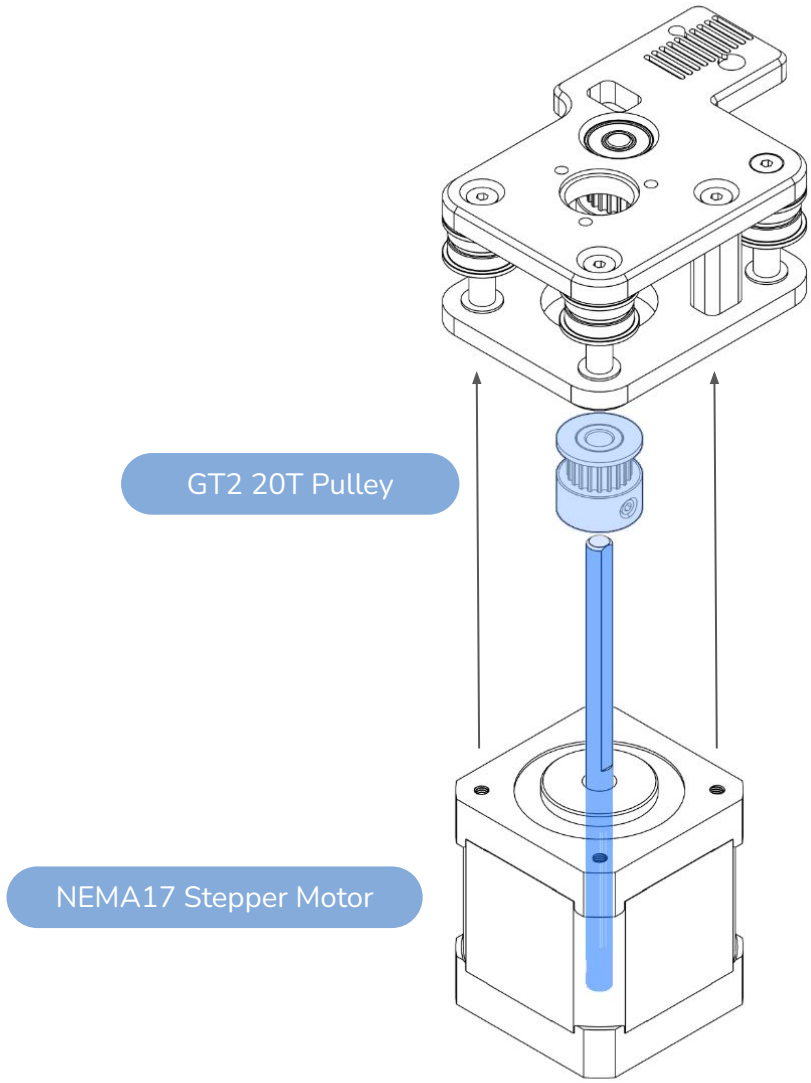
Inverted Expectations

Flip the lower B drive frame assembly over the upper B drive frame assembly and lower it in place, making sure that each shim pin, the standoff, and the 5x28mm pin slot into their respective features.



Soft Lock

Placing this screw will lock the two assemblies together. There will still be a minor amount of rotational play, but you can take a sigh of relief, knowing that the live shaft idler and the bearing stacks will not fall out.

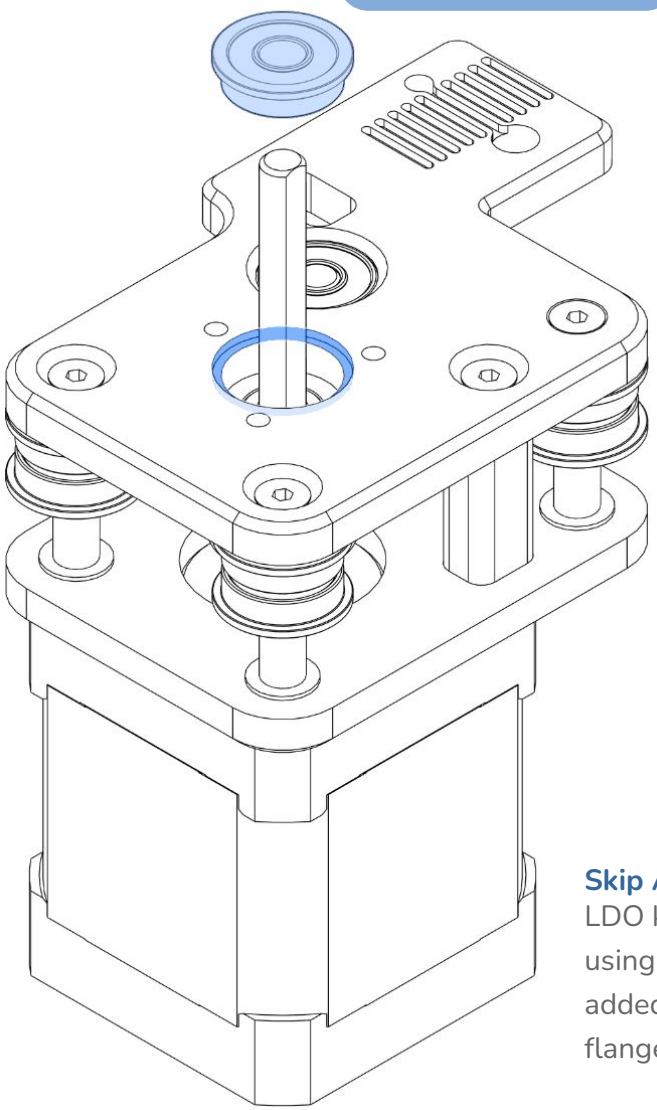


Almost There!

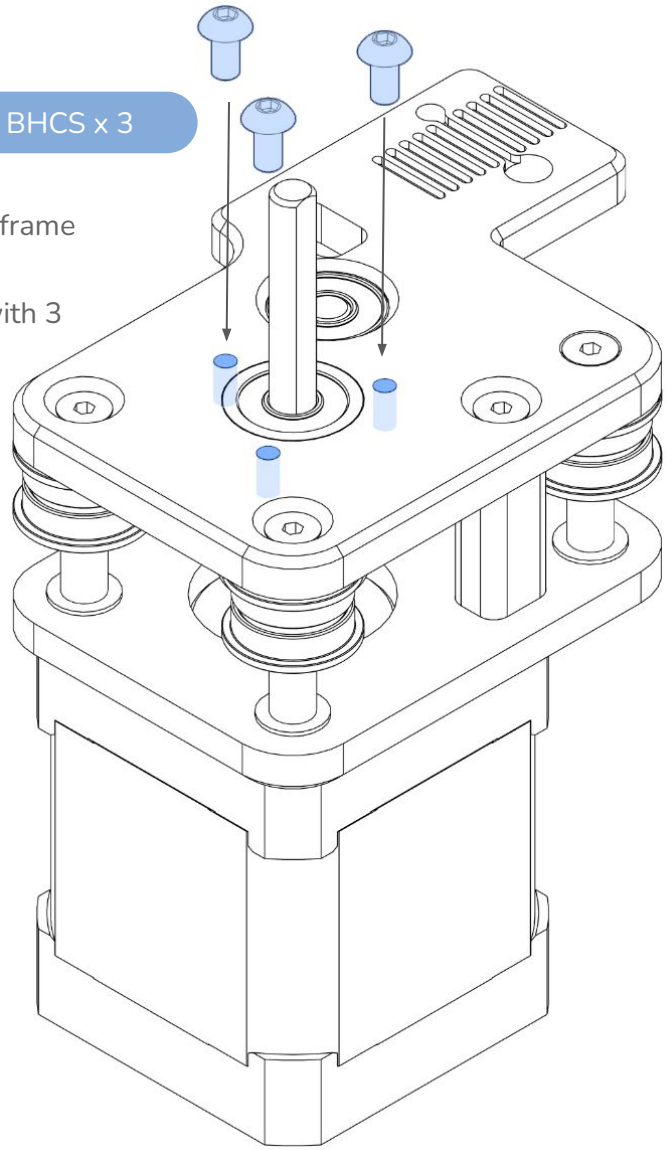
Slide the pulley onto the NEMA17 stepper motor's drive shaft before slotting the motor into the lower plate of the A drive frame. Once the motor is in your desired orientation, tighten the three M3x32 FHCS to secure it in place.

We'll be leaving the front pulleys loose for the time being. It's best not to secure them to the shaft until the belts have been run and tightened.

F695-2RS Bearing



M3x5 BHCS x 3

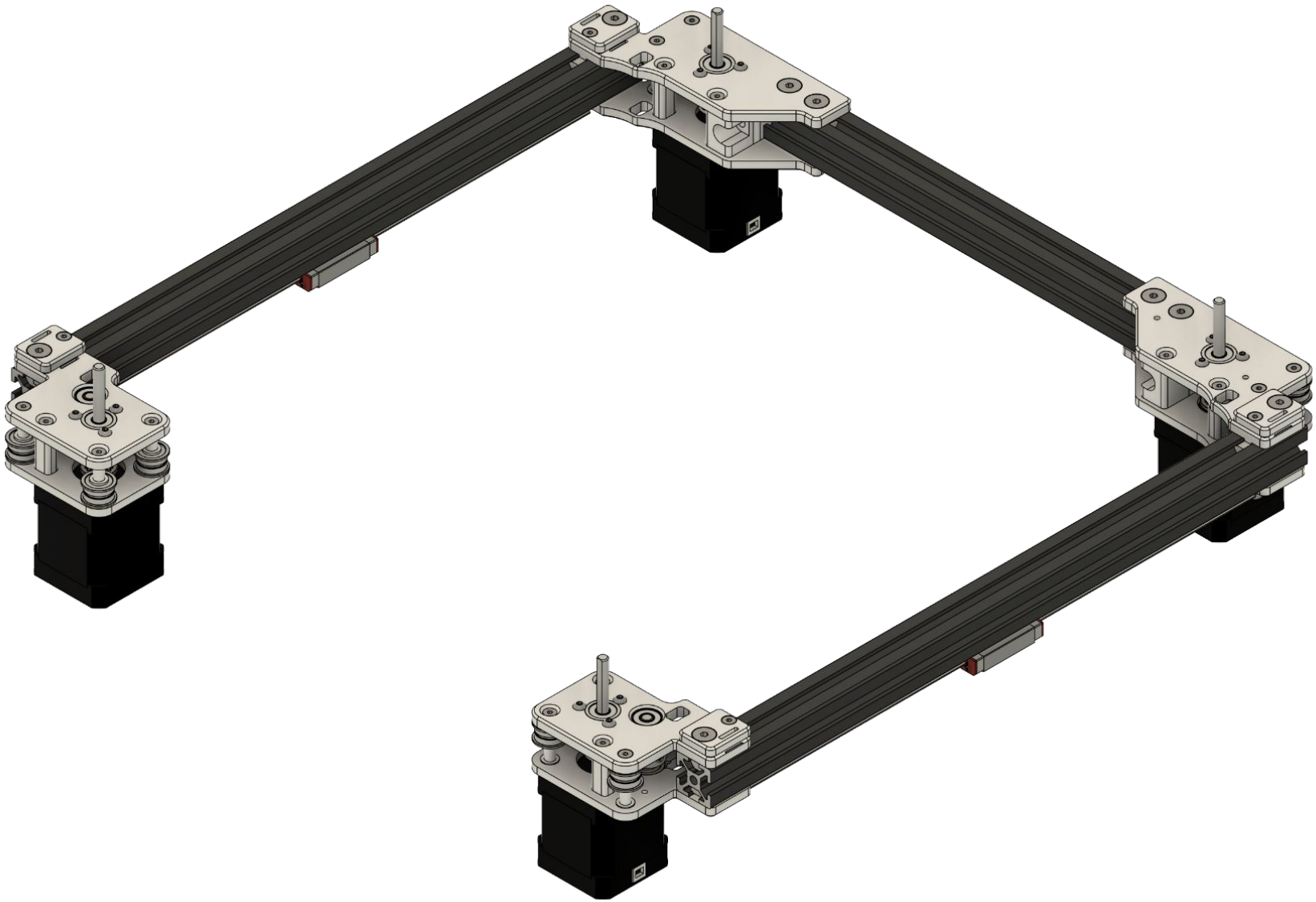


Shear Power

Finish the preliminary assembly of the drive frame by inserting the F695-2RS bearing into the highlighted pocket and securing it in place with 3 M3x5 BHCS.

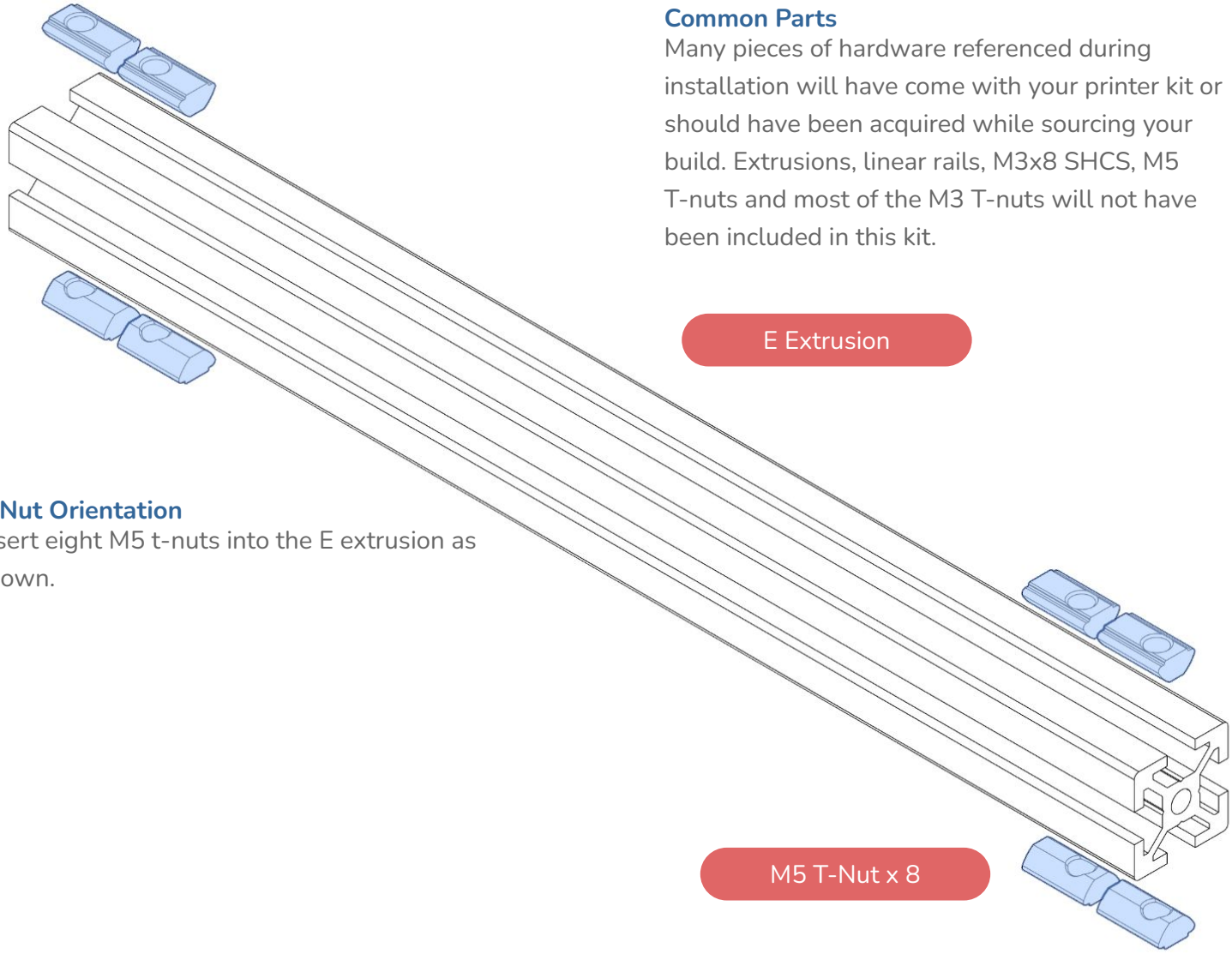
Skip Ahead?

LDO kits have the F695-2RS bearing preinstalled using three M3x5 BHCS along with 3 washers for added surface contact to the top of the bearing flange.



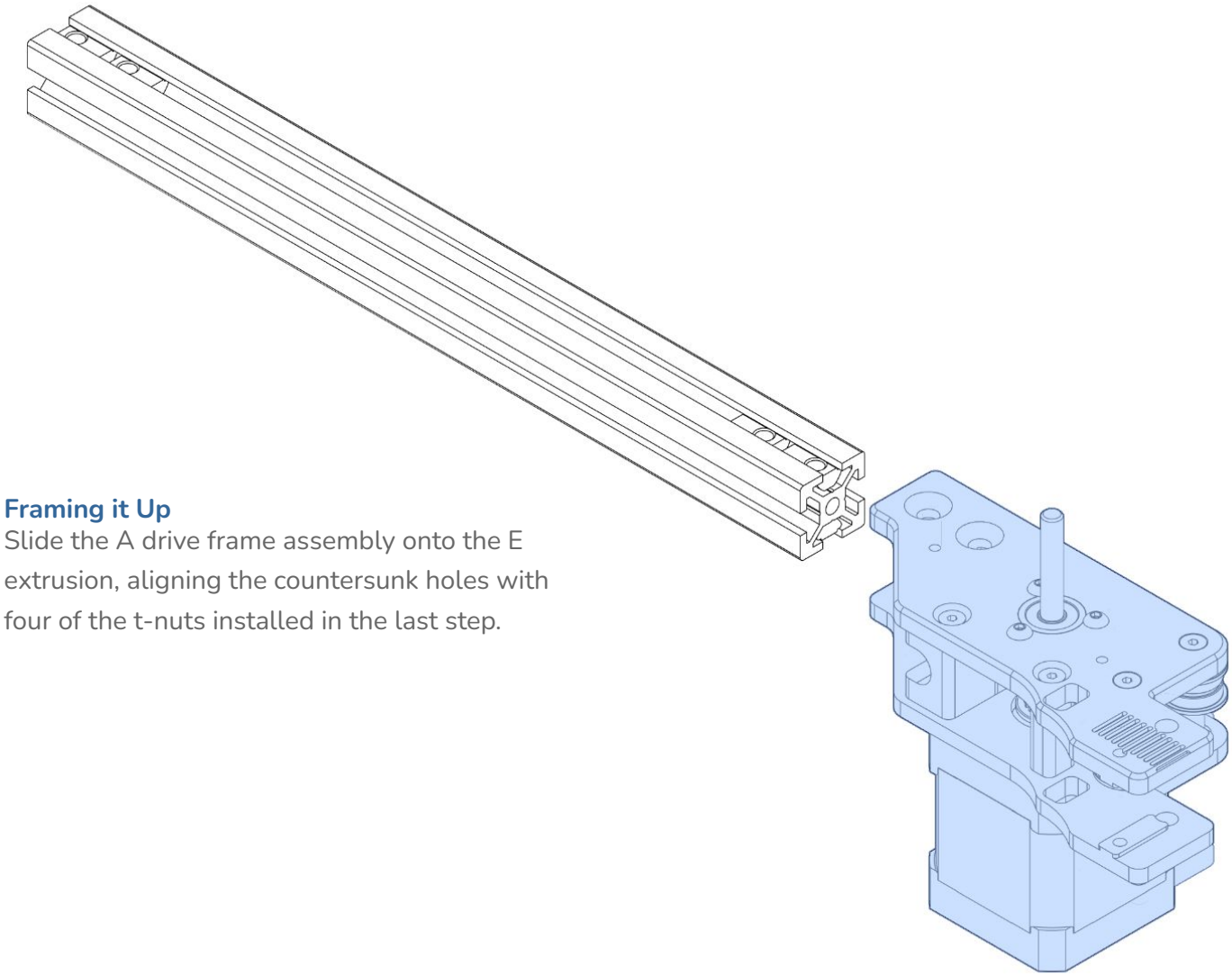
Common Parts

Many pieces of hardware referenced during installation will have come with your printer kit or should have been acquired while sourcing your build. Extrusions, linear rails, M3x8 SHCS, M5 T-nuts and most of the M3 T-nuts will not have been included in this kit.



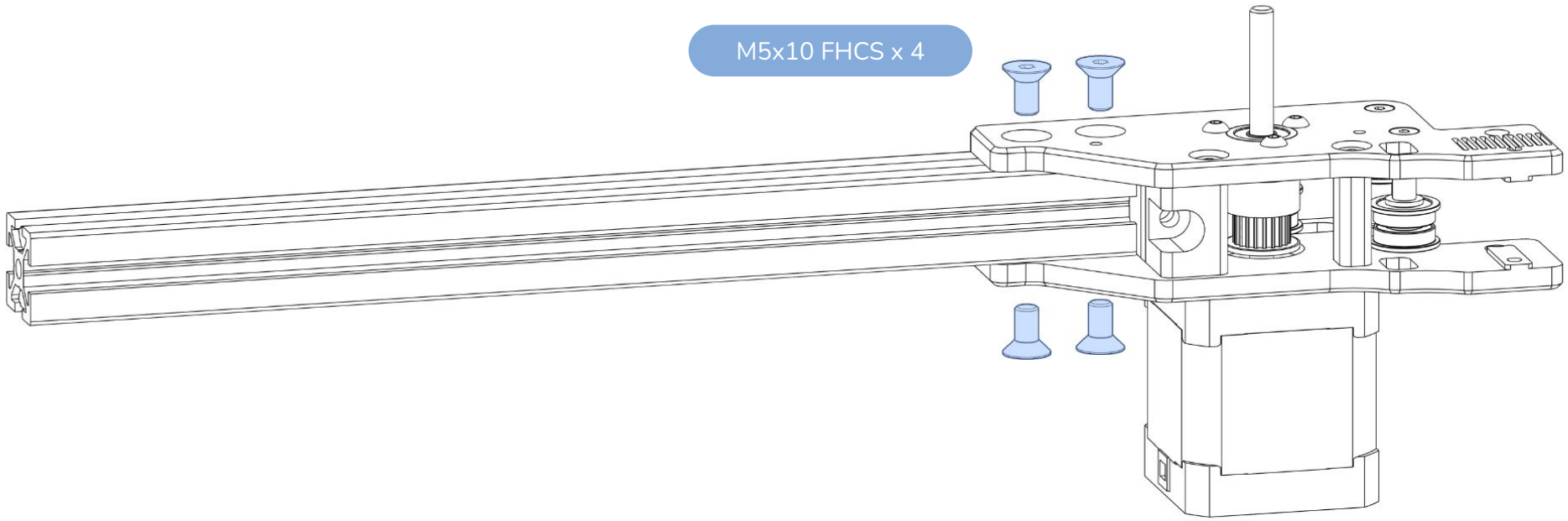
T-Nut Orientation

Insert eight M5 t-nuts into the E extrusion as shown.



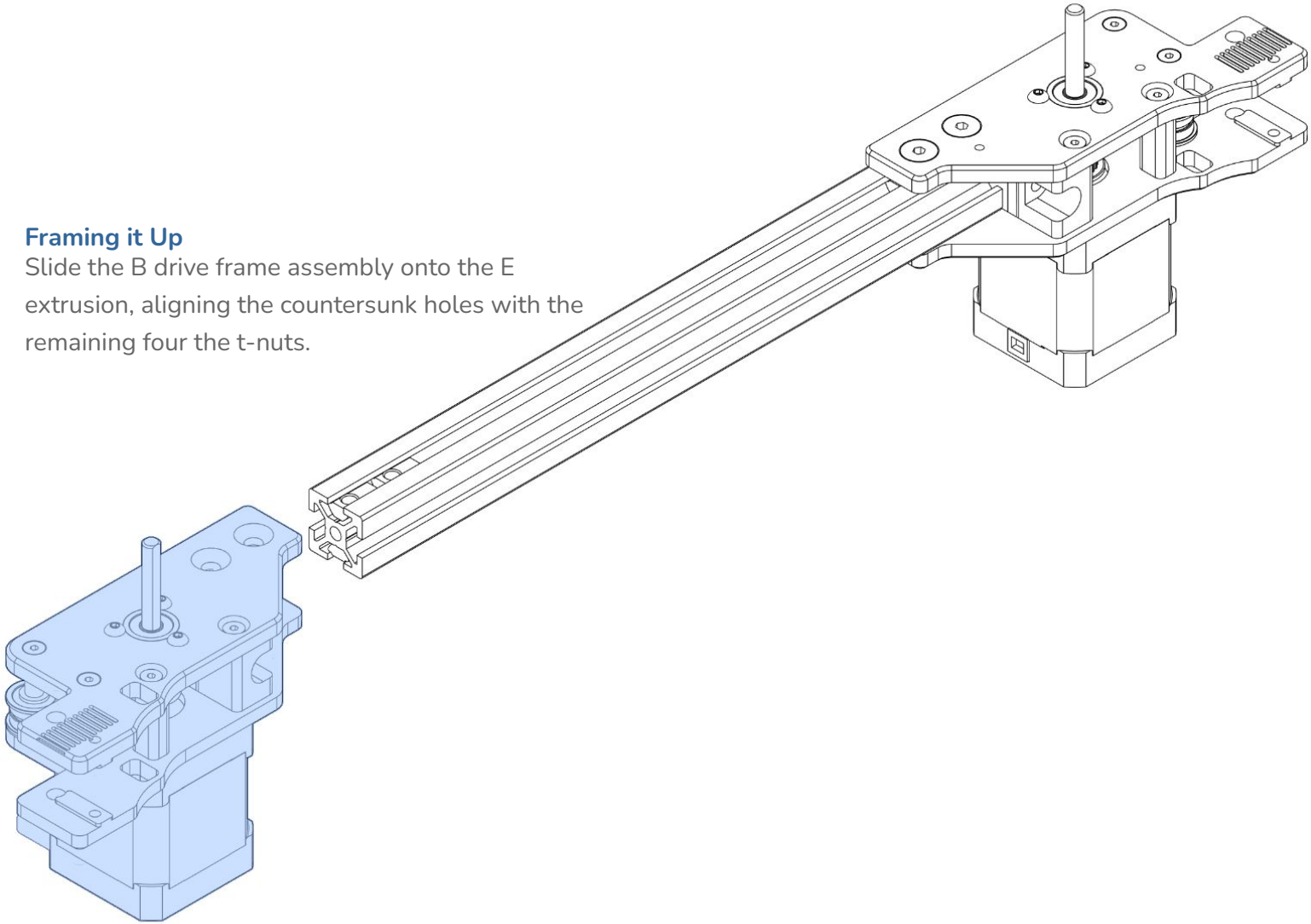
Framing it Up

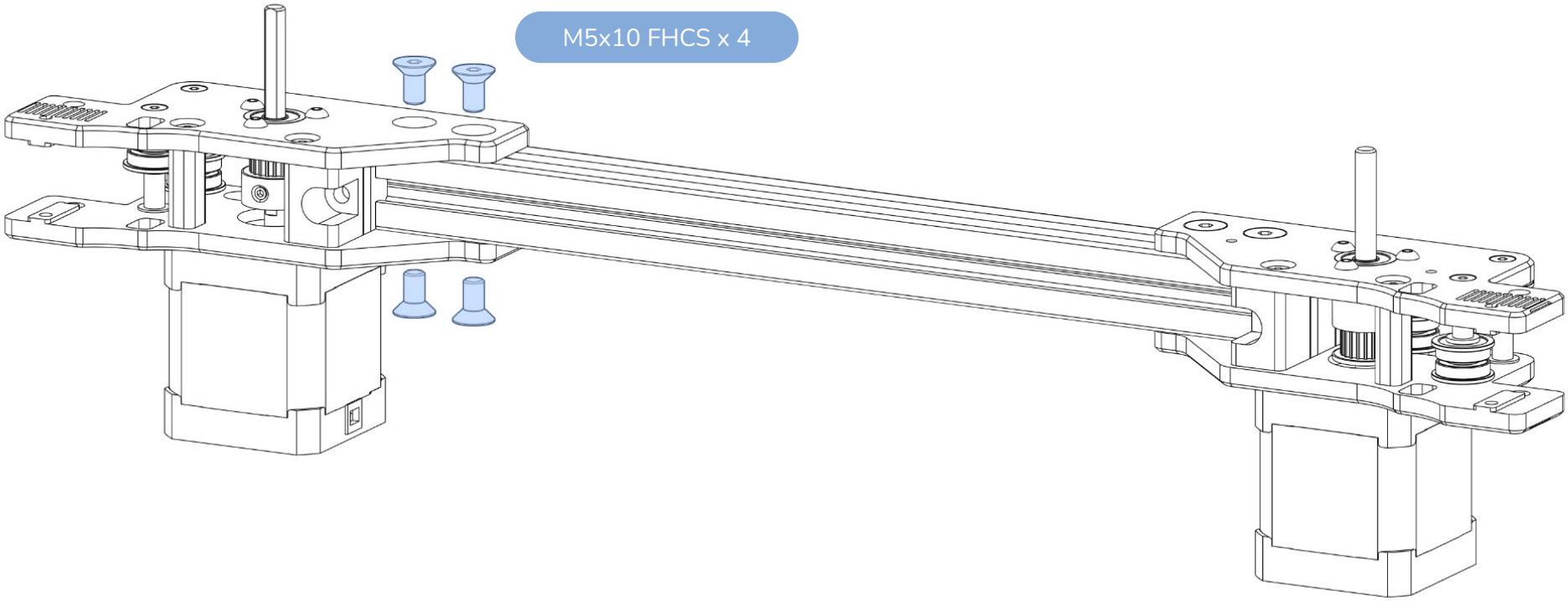
Slide the A drive frame assembly onto the E extrusion, aligning the countersunk holes with four of the t-nuts installed in the last step.


M5x10 FHCS x 4

Framing it Up

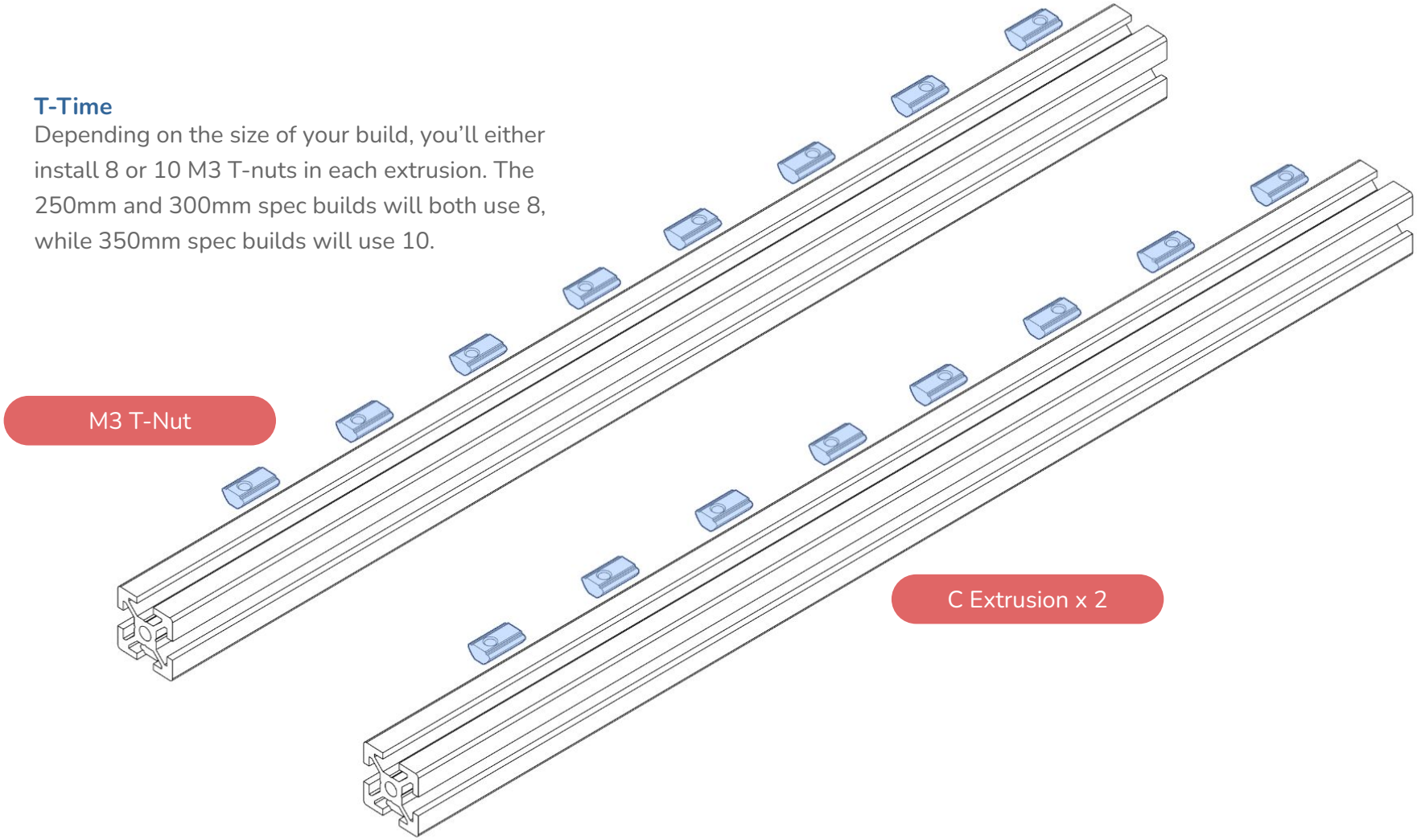
Slide the B drive frame assembly onto the E extrusion, aligning the countersunk holes with the remaining four the t-nuts.




M5x10 FHCS x 4

T-Time

Depending on the size of your build, you'll either install 8 or 10 M3 T-nuts in each extrusion. The 250mm and 300mm spec builds will both use 8, while 350mm spec builds will use 10.

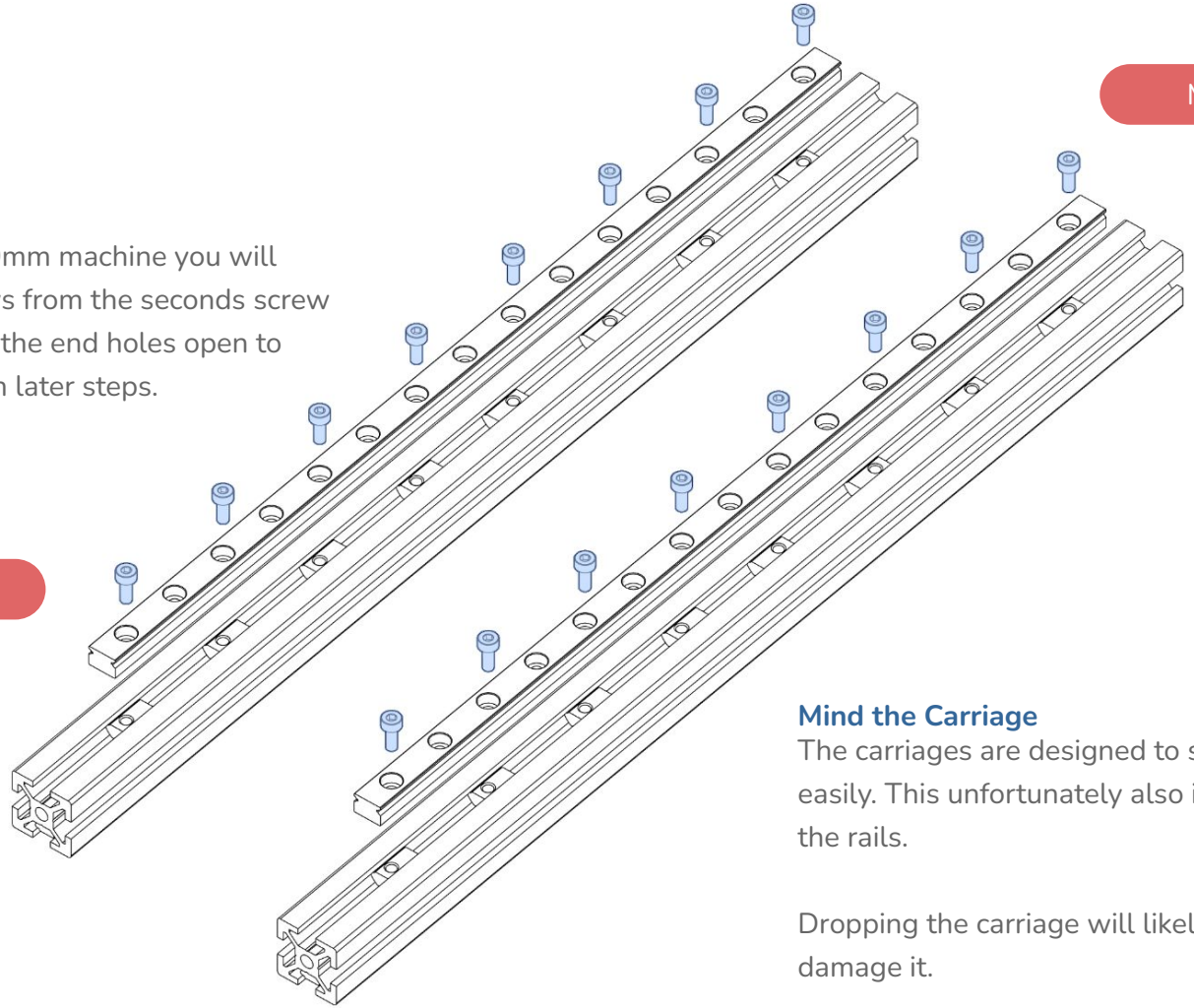


M3x8 SHCS

300mm Builds

If you are building a 300mm machine you will need to start your screws from the seconds screw hole in the rails, leaving the end holes open to allow space for T-nuts in later steps.

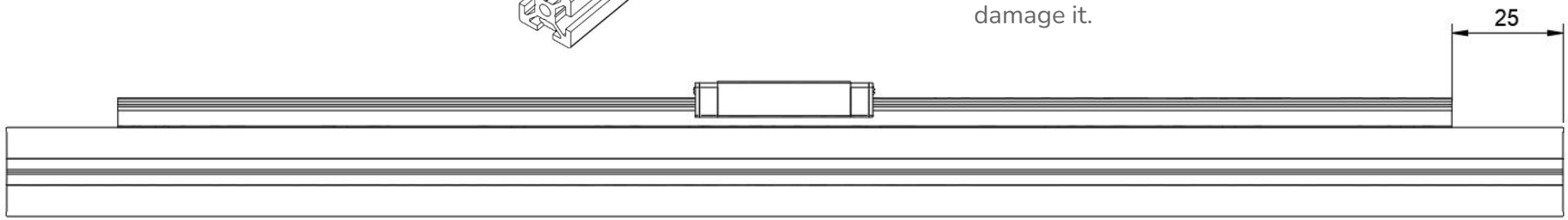
MGN9 Rail x 2



Mind the Carriage

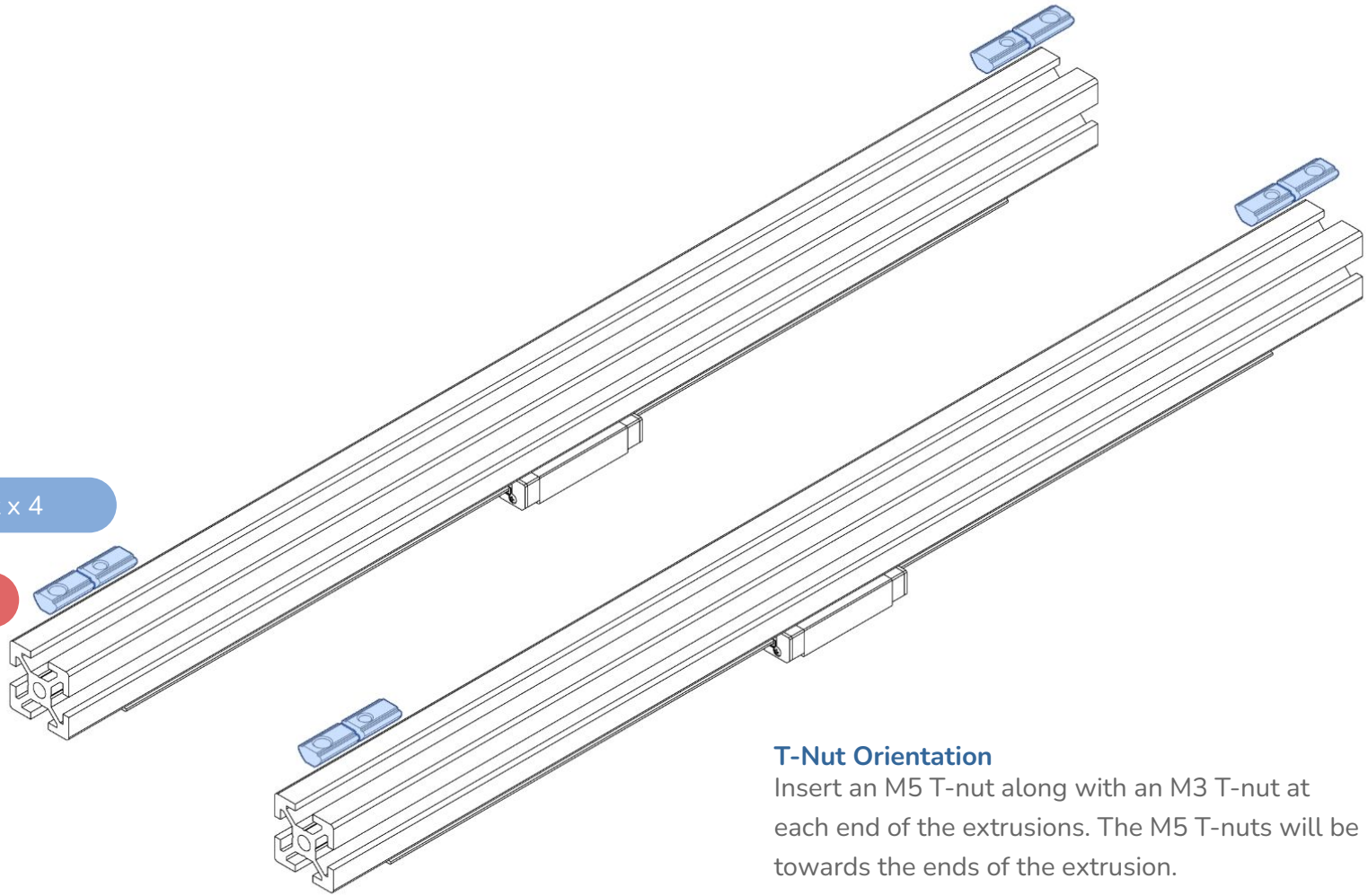
The carriages are designed to slide along the rail easily. This unfortunately also includes sliding off the rails.

Dropping the carriage will likely irreparably damage it.



M3 T-Nut x 4

M5 T-Nut x 4

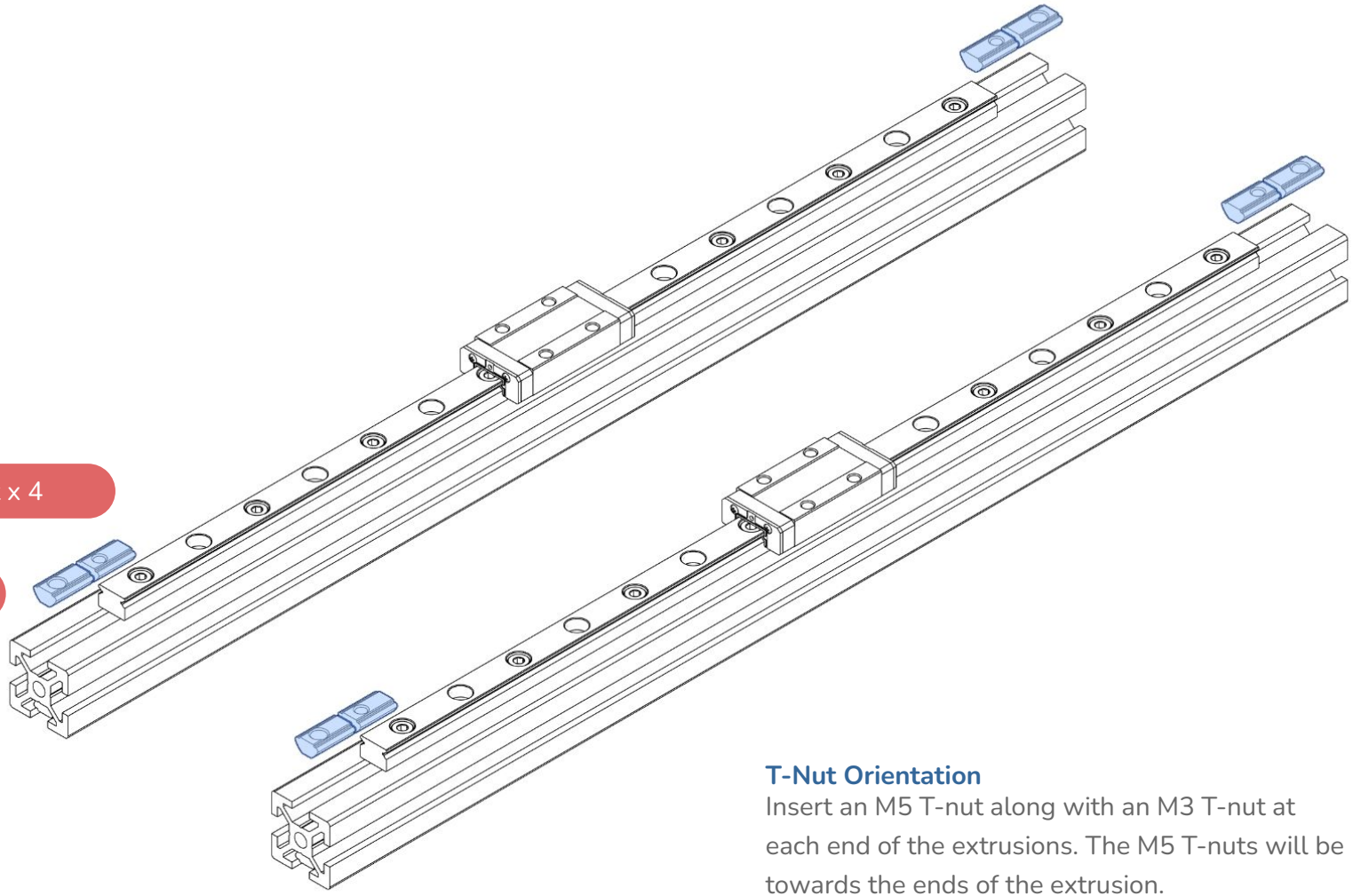


T-Nut Orientation

Insert an M5 T-nut along with an M3 T-nut at each end of the extrusions. The M5 T-nuts will be towards the ends of the extrusion.

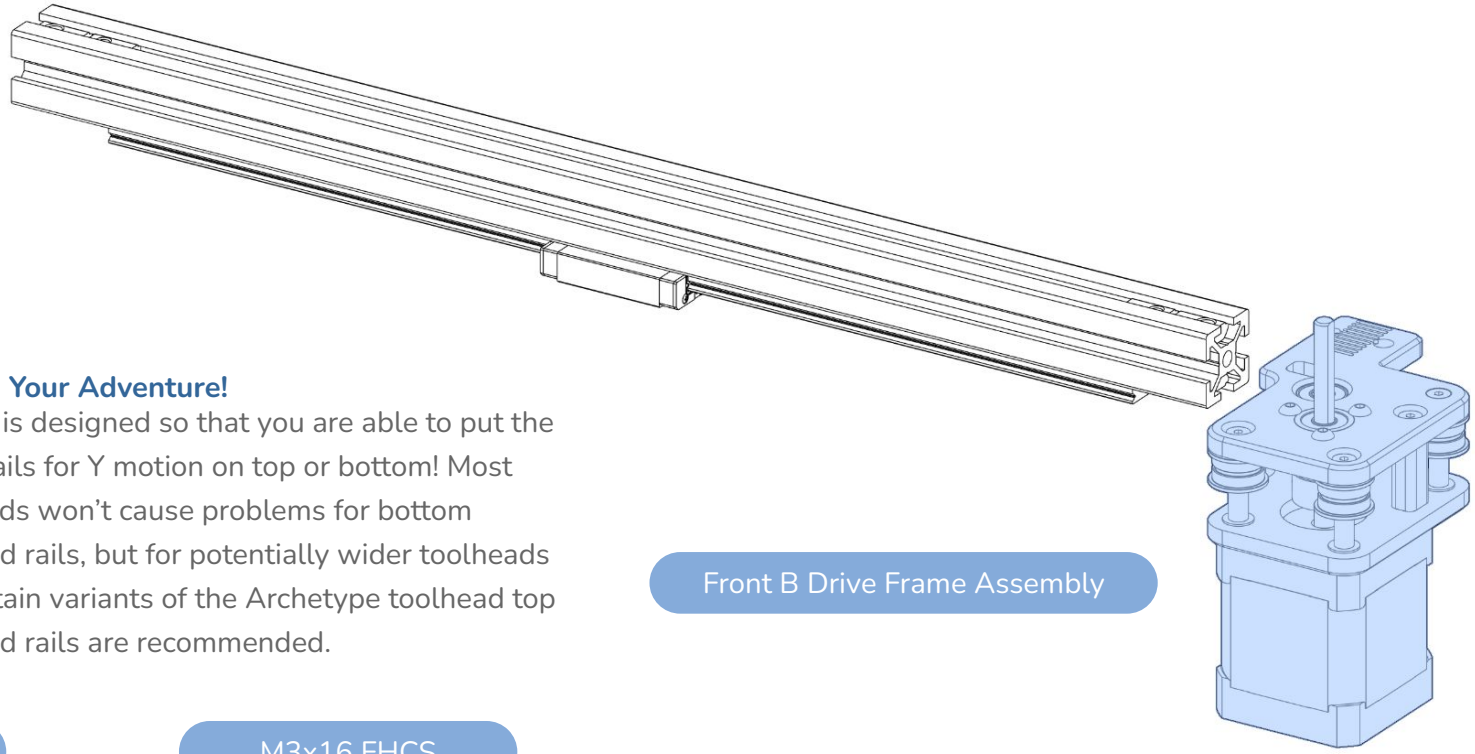
M3 T-Nut x 4

M5 T-Nut x 4



T-Nut Orientation

Insert an M5 T-nut along with an M3 T-nut at each end of the extrusions. The M5 T-nuts will be towards the ends of the extrusion.



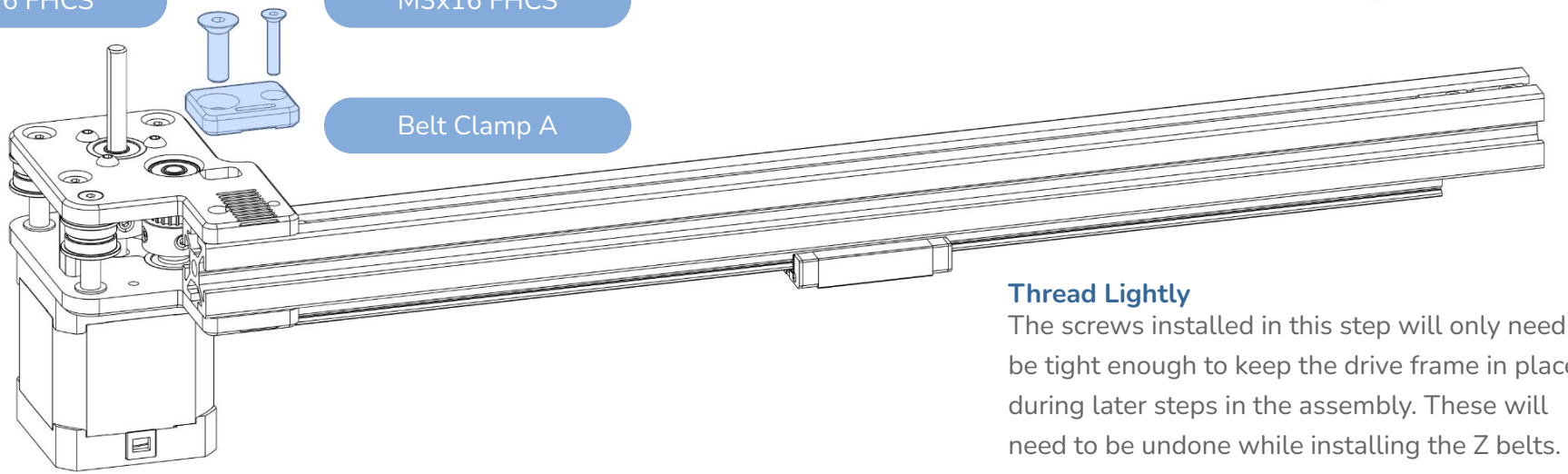
Choose Your Adventure!
This kit is designed so that you are able to put the linear rails for Y motion on top or bottom! Most toolheads won't cause problems for bottom mounted rails, but for potentially wider toolheads like certain variants of the Archetype toolhead top mounted rails are recommended.

Front B Drive Frame Assembly

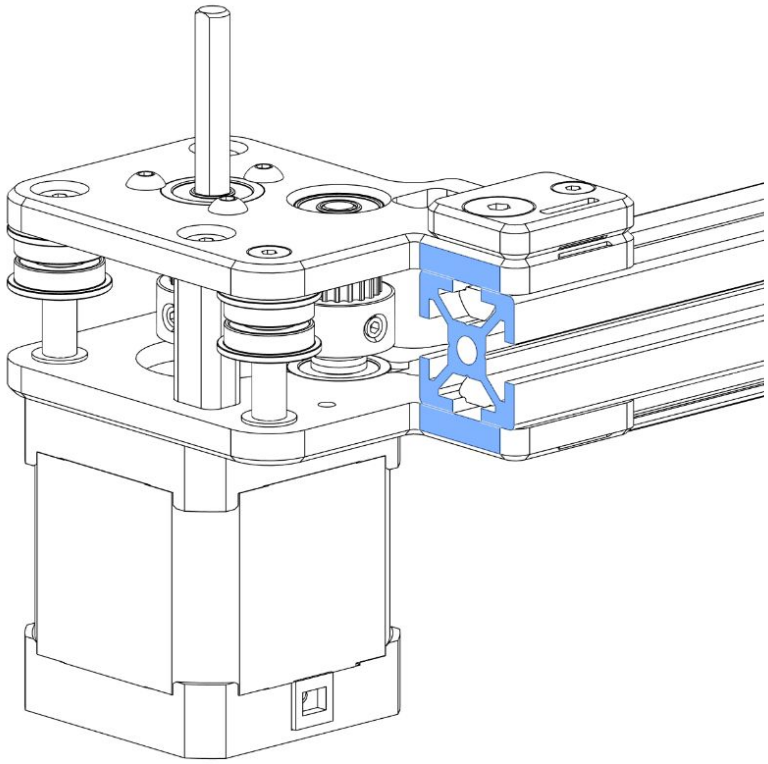
M5x16 FHCS

M3x16 FHCS

Belt Clamp A



Thread Lightly
The screws installed in this step will only need to be tight enough to keep the drive frame in place during later steps in the assembly. These will need to be undone while installing the Z belts.

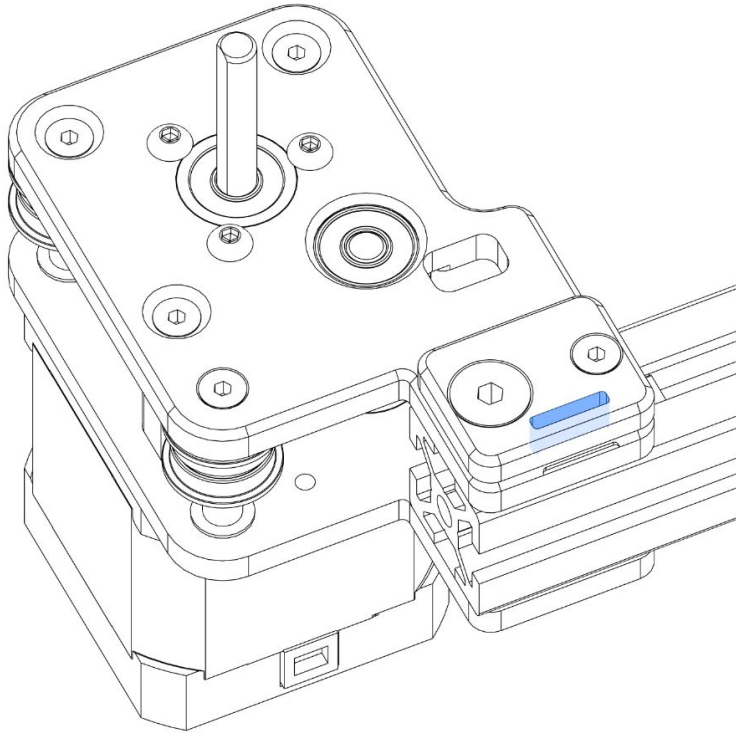


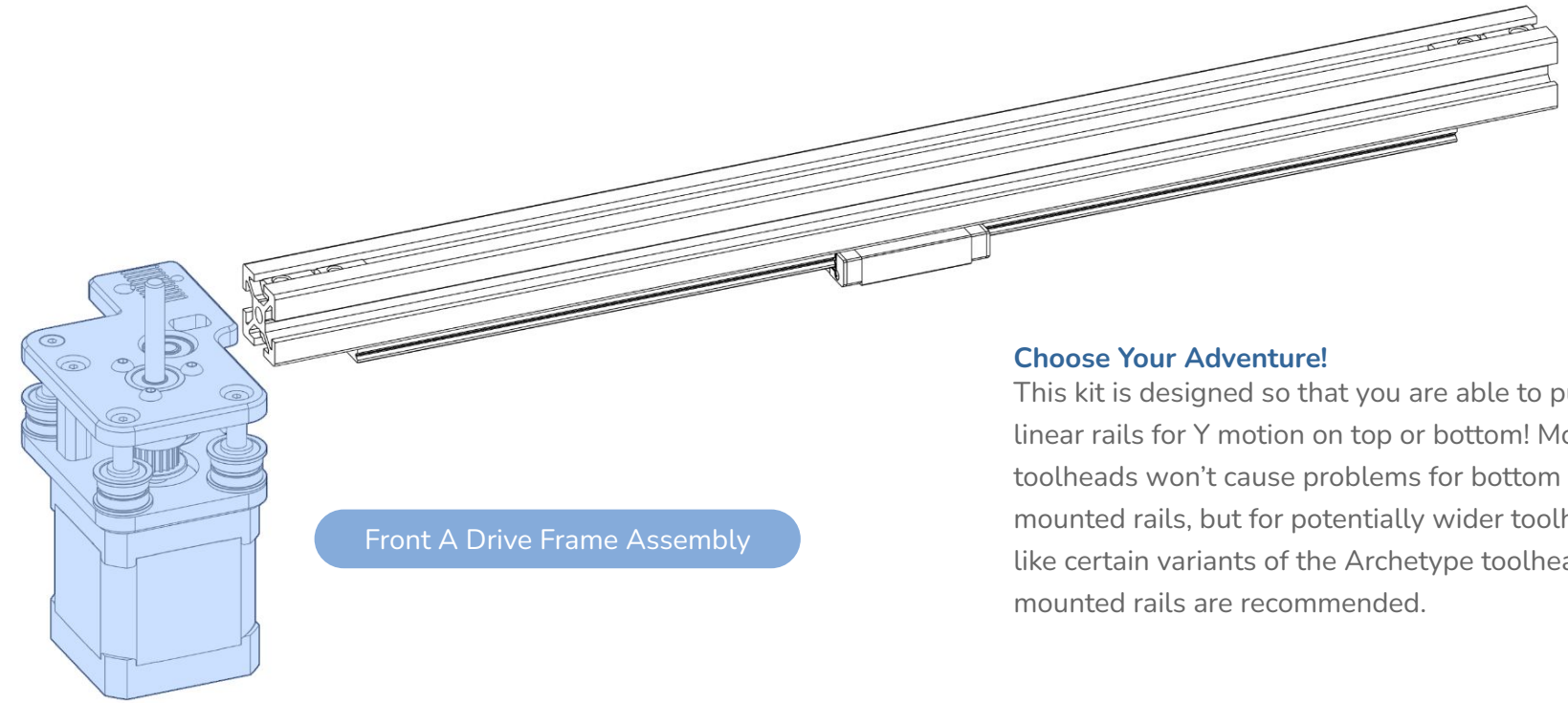
Flush Install

Make sure the forward face of the mounting tabs sit flush with the end of the extrusion. If not flush, loosen the screws holding the linear rail in place and slide further back until flush.

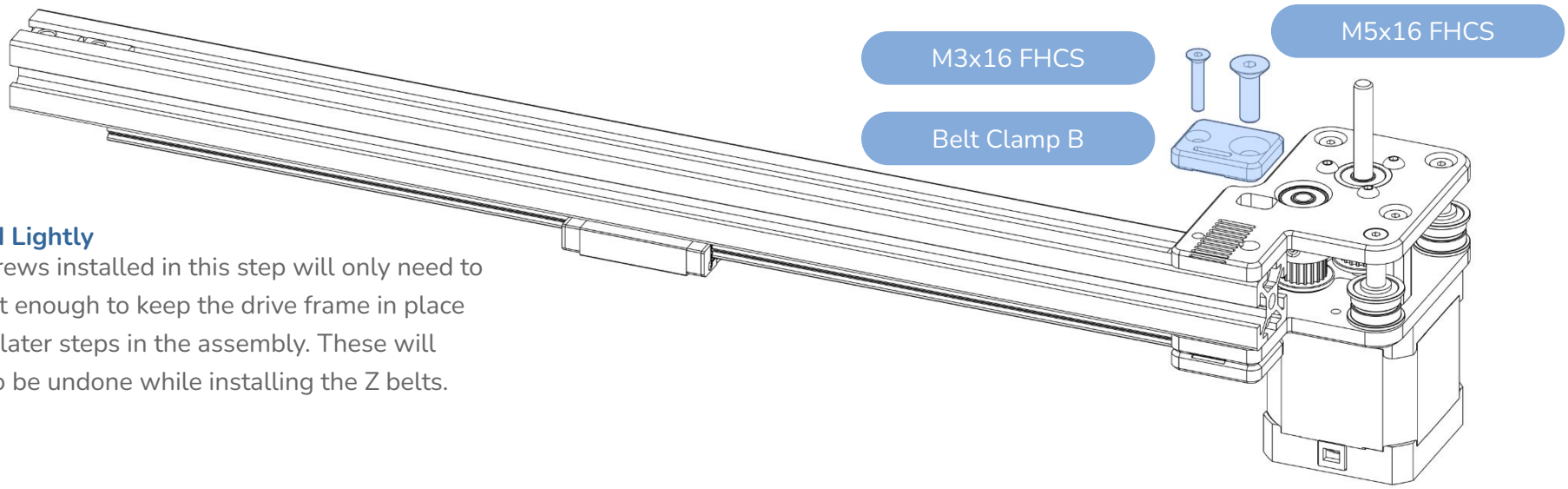
Feed Me Seymour

What looks like the mouth on a very surprised face is a passthrough for excess belt. This passthrough should be on the outer side of the extrusion, opposite of the drive frame's main body.

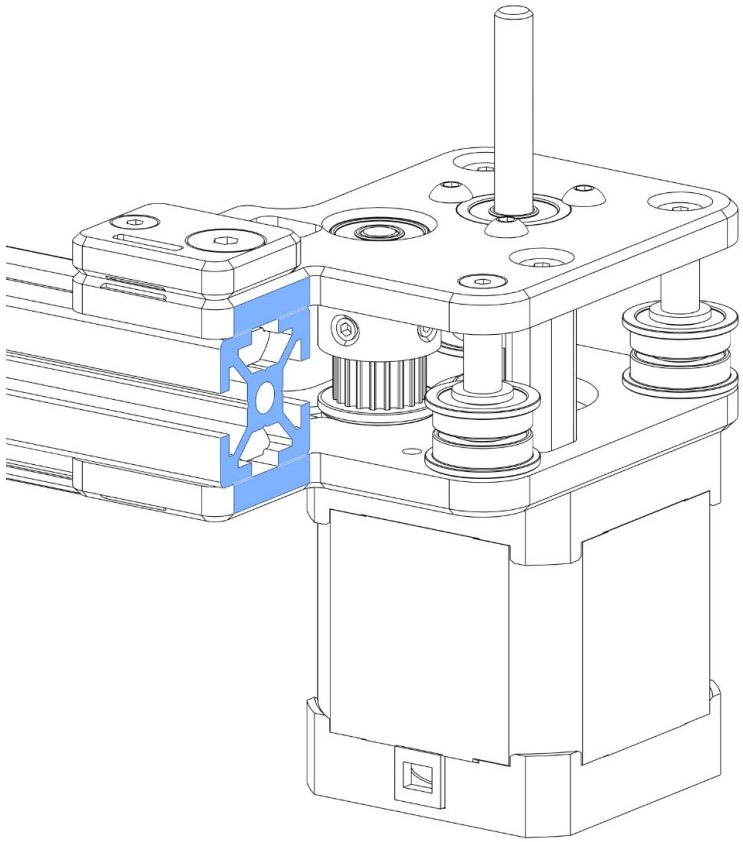




Choose Your Adventure!
This kit is designed so that you are able to put the linear rails for Y motion on top or bottom! Most toolheads won't cause problems for bottom mounted rails, but for potentially wider toolheads like certain variants of the Archetype toolhead top mounted rails are recommended.



Thread Lightly
The screws installed in this step will only need to be tight enough to keep the drive frame in place during later steps in the assembly. These will need to be undone while installing the Z belts.

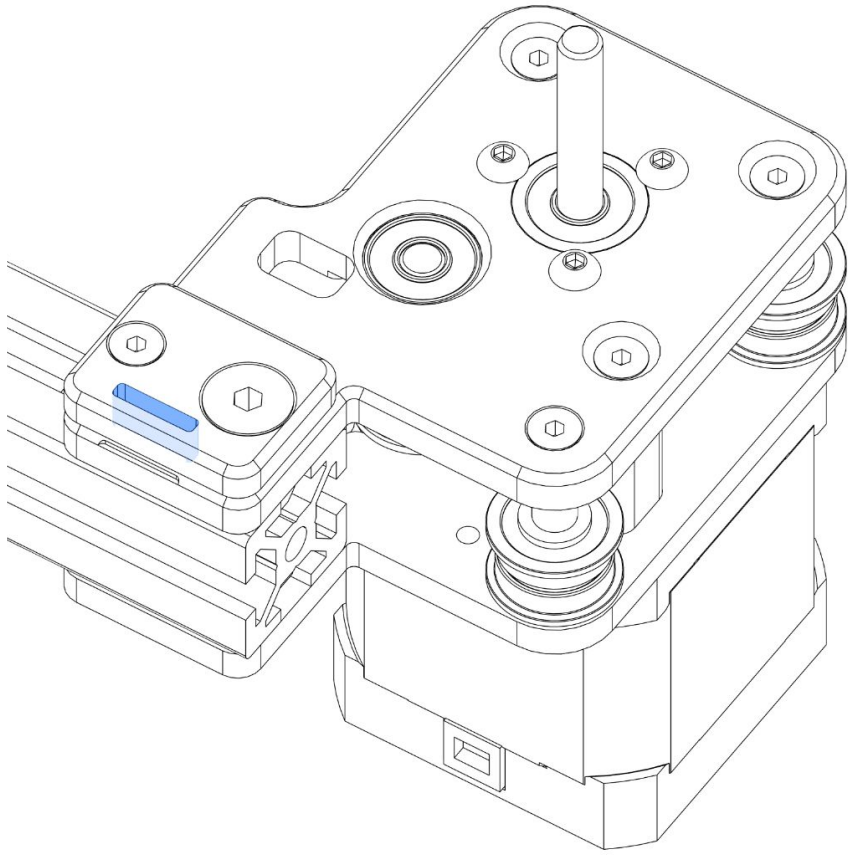


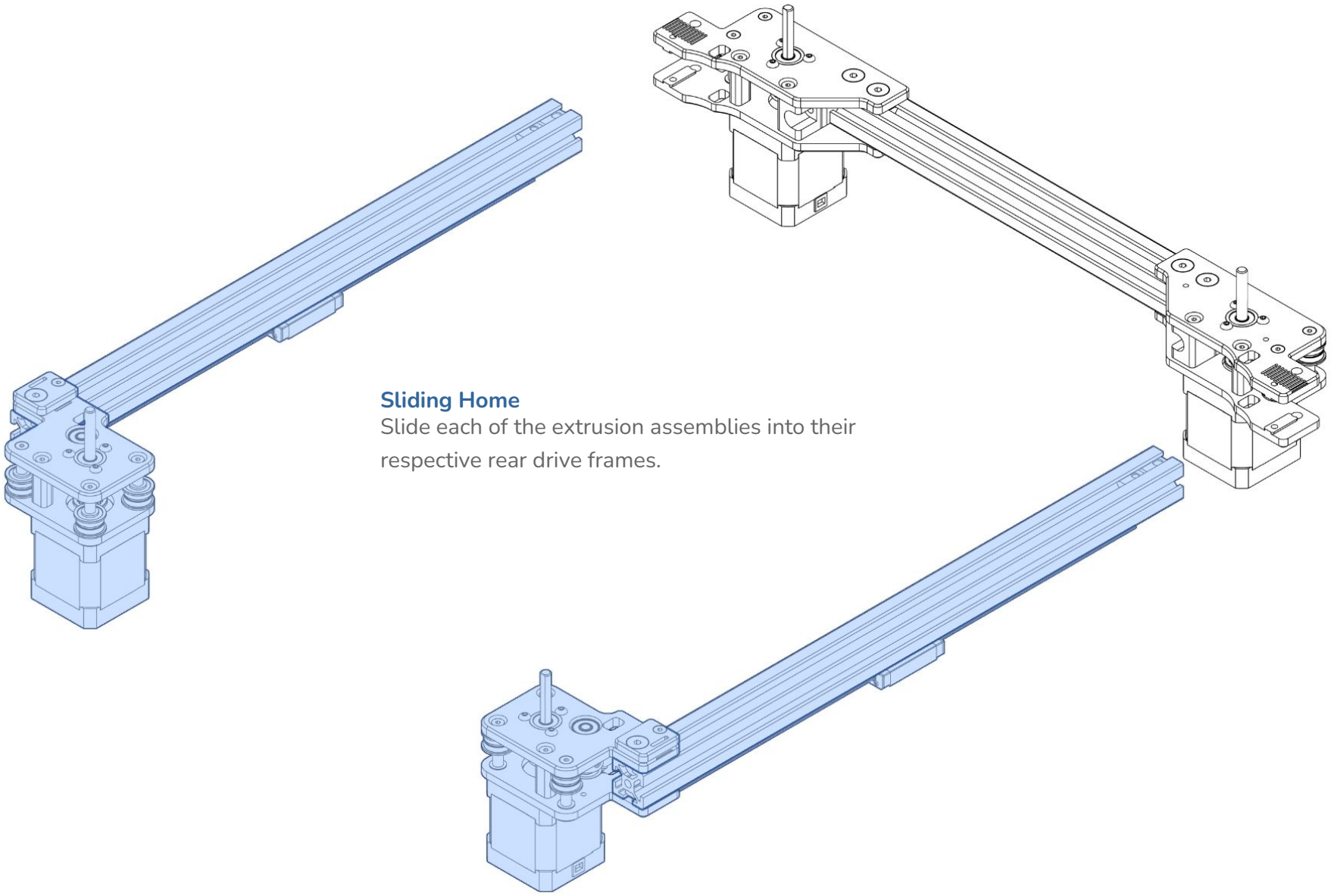
Flush Install

Make sure the forward face of the mounting tabs sit flush with the end of the extrusion. If not flush, loosen the screws holding the linear rail in place and slide further back until flush.

Feed Me Seymour

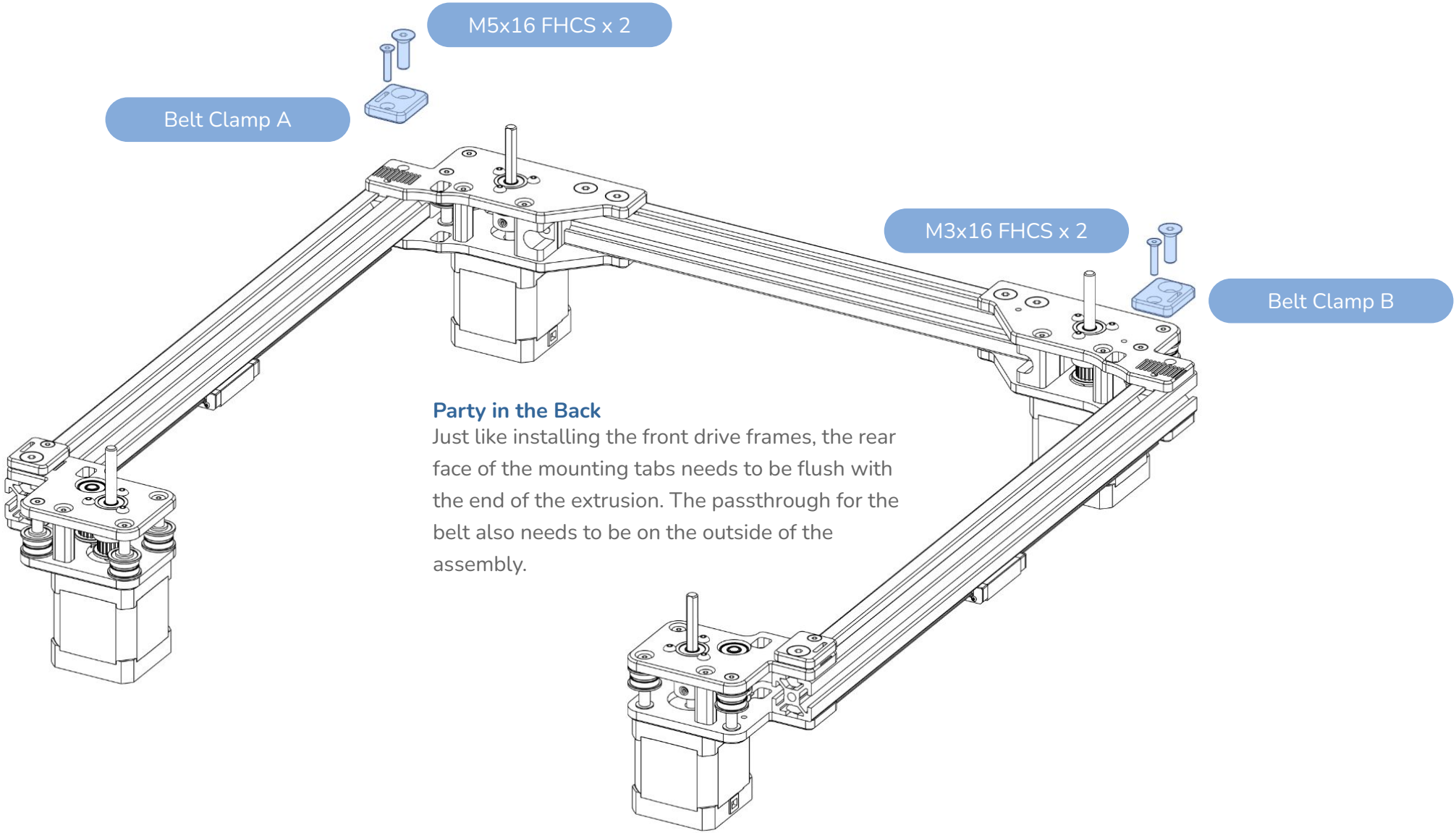
What looks like the mouth on a very surprised face is a passthrough for excess belt. This passthrough should be on the outer side of the extrusion, opposite of the drive frame's main body.





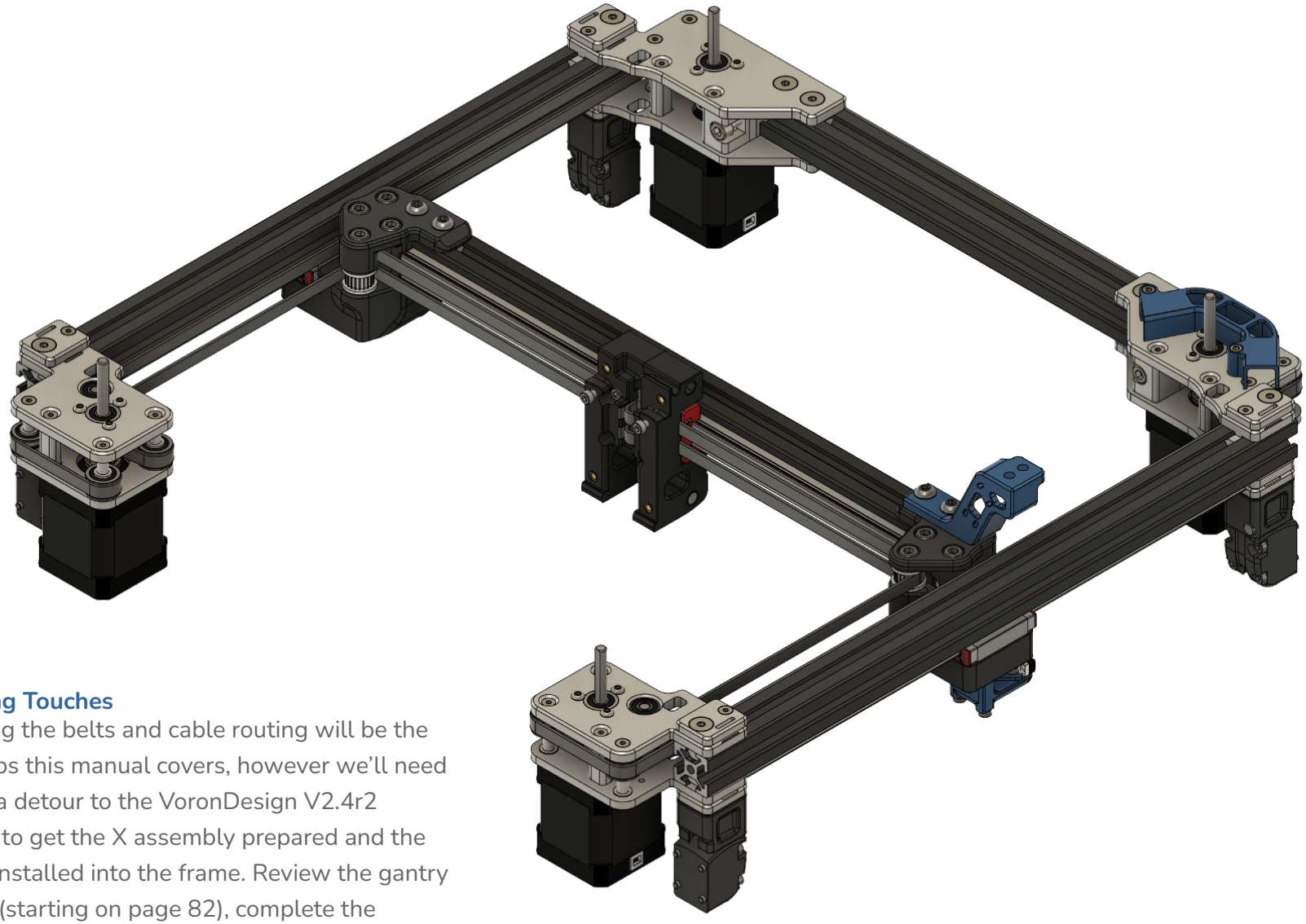
Sliding Home

Slide each of the extrusion assemblies into their respective rear drive frames.



Party in the Back

Just like installing the front drive frames, the rear face of the mounting tabs needs to be flush with the end of the extrusion. The passthrough for the belt also needs to be on the outside of the assembly.

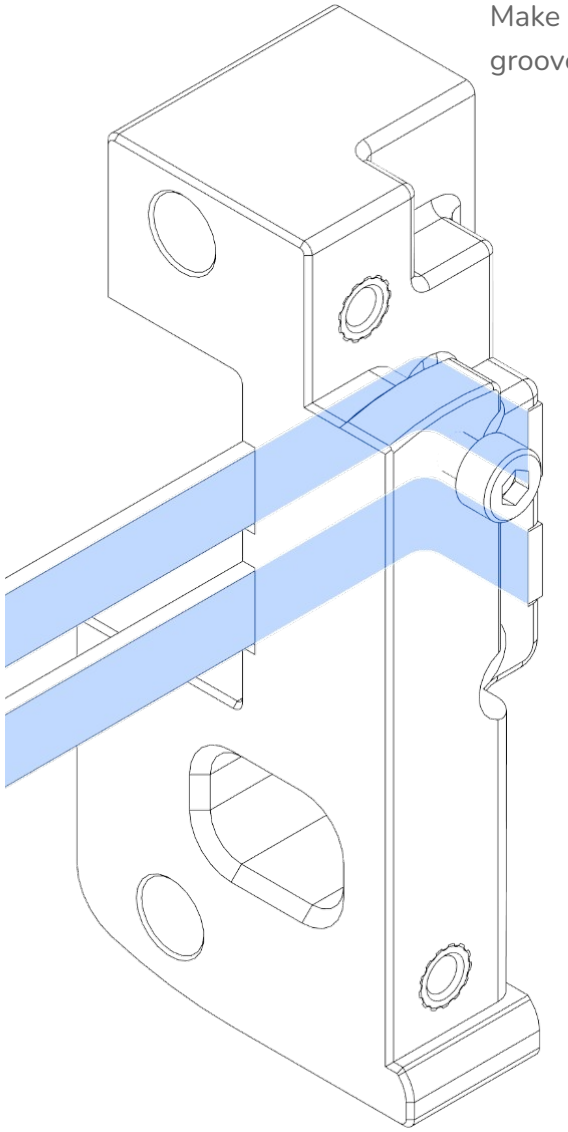


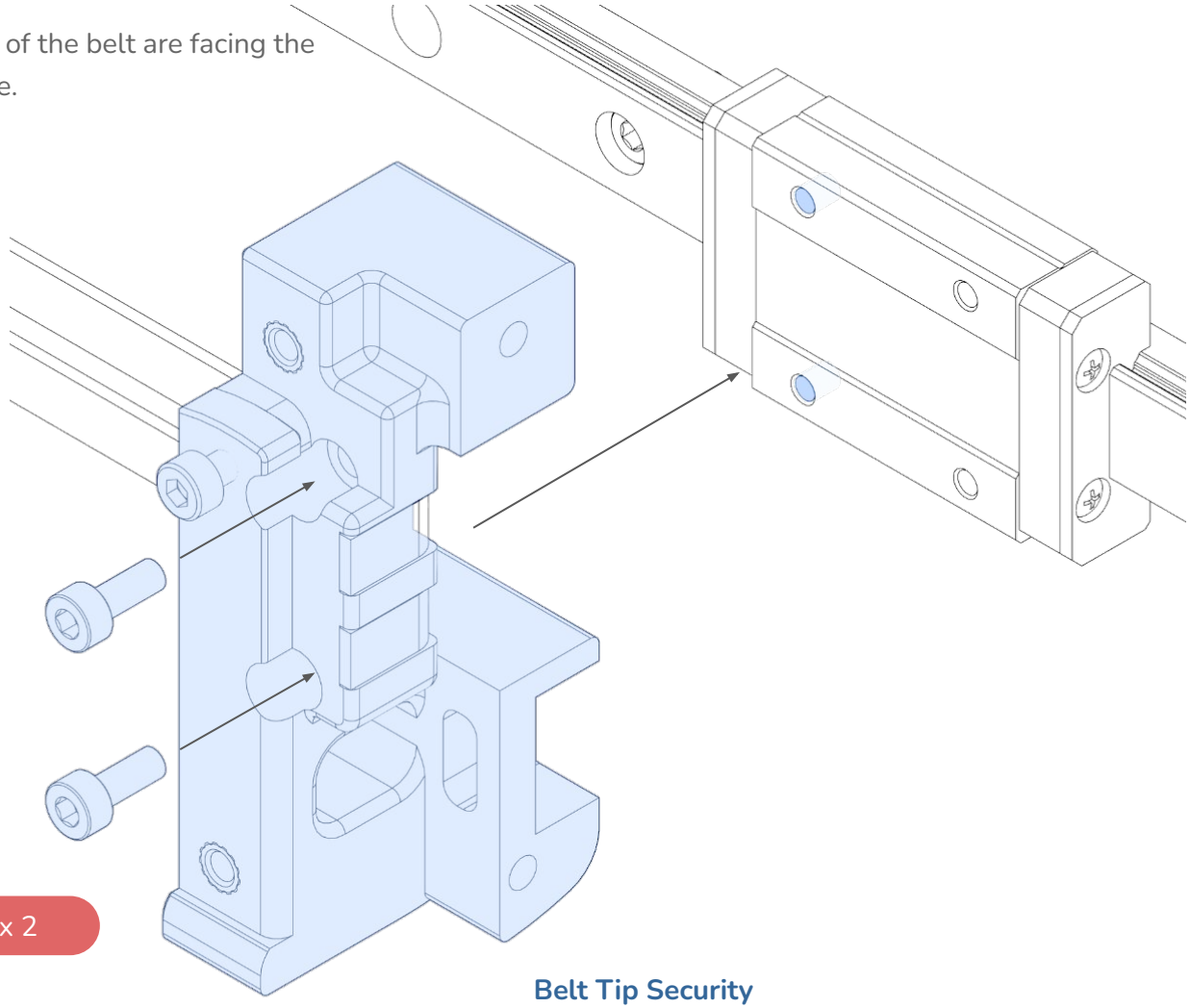
Finishing Touches

Installing the belts and cable routing will be the last steps this manual covers, however we'll need to take a detour to the VoronDesign V2.4r2 manual to get the X assembly prepared and the gantry installed into the frame. Review the gantry section (starting on page 82), complete the necessary steps and come back for belt routing!.

Belt Orientation

Make sure that the teeth of the belt are facing the grooves on the X carriage.

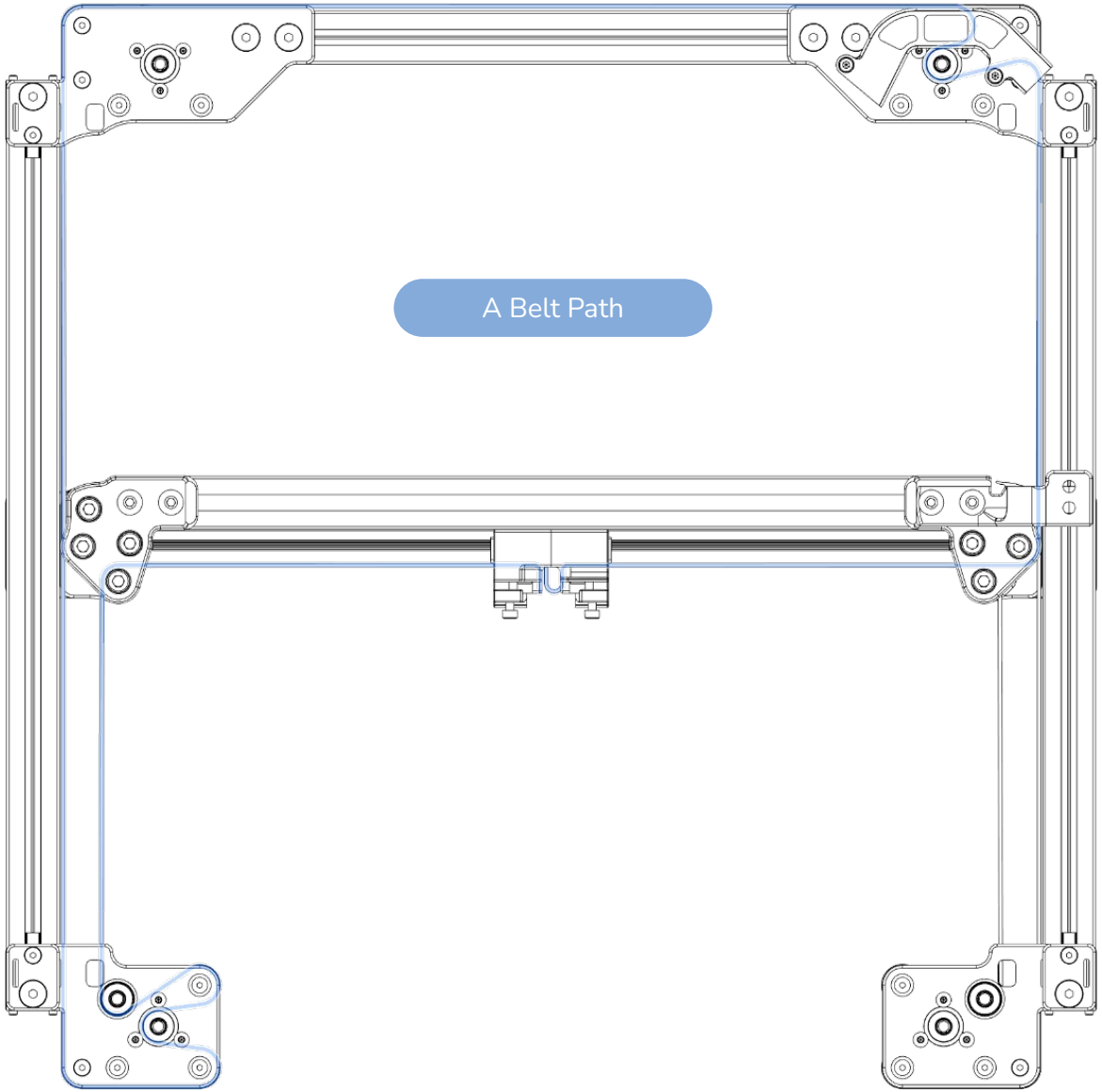


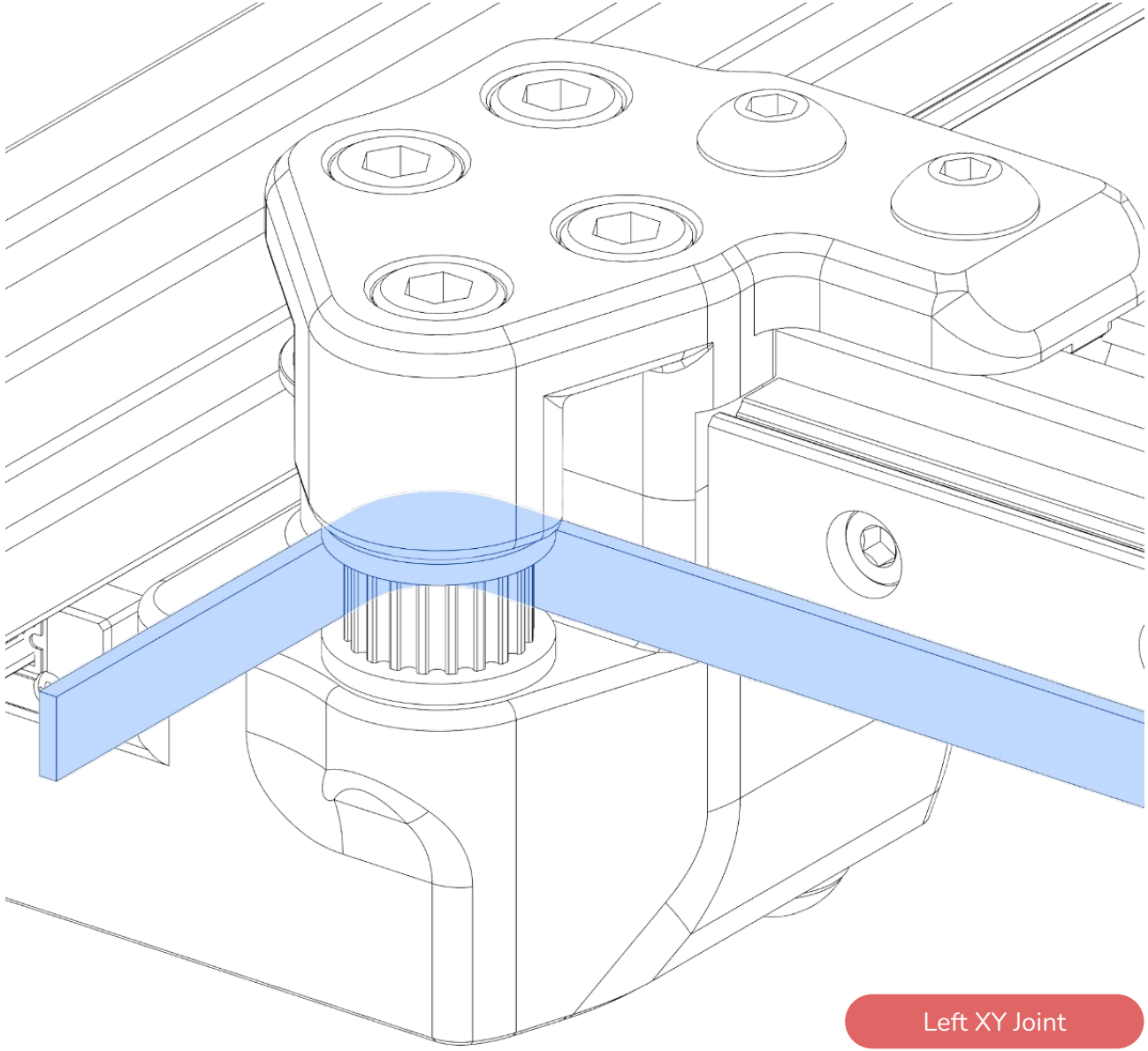


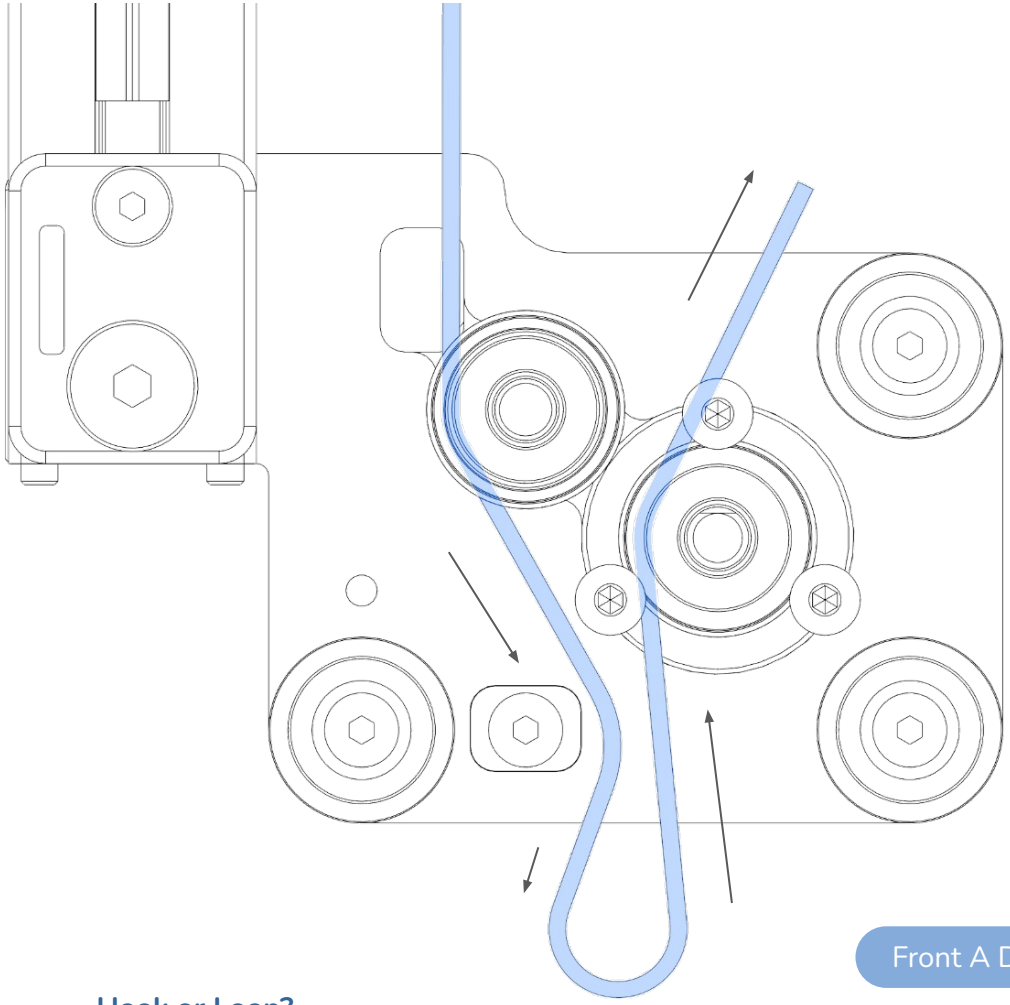
M3x8 SHCS x 2

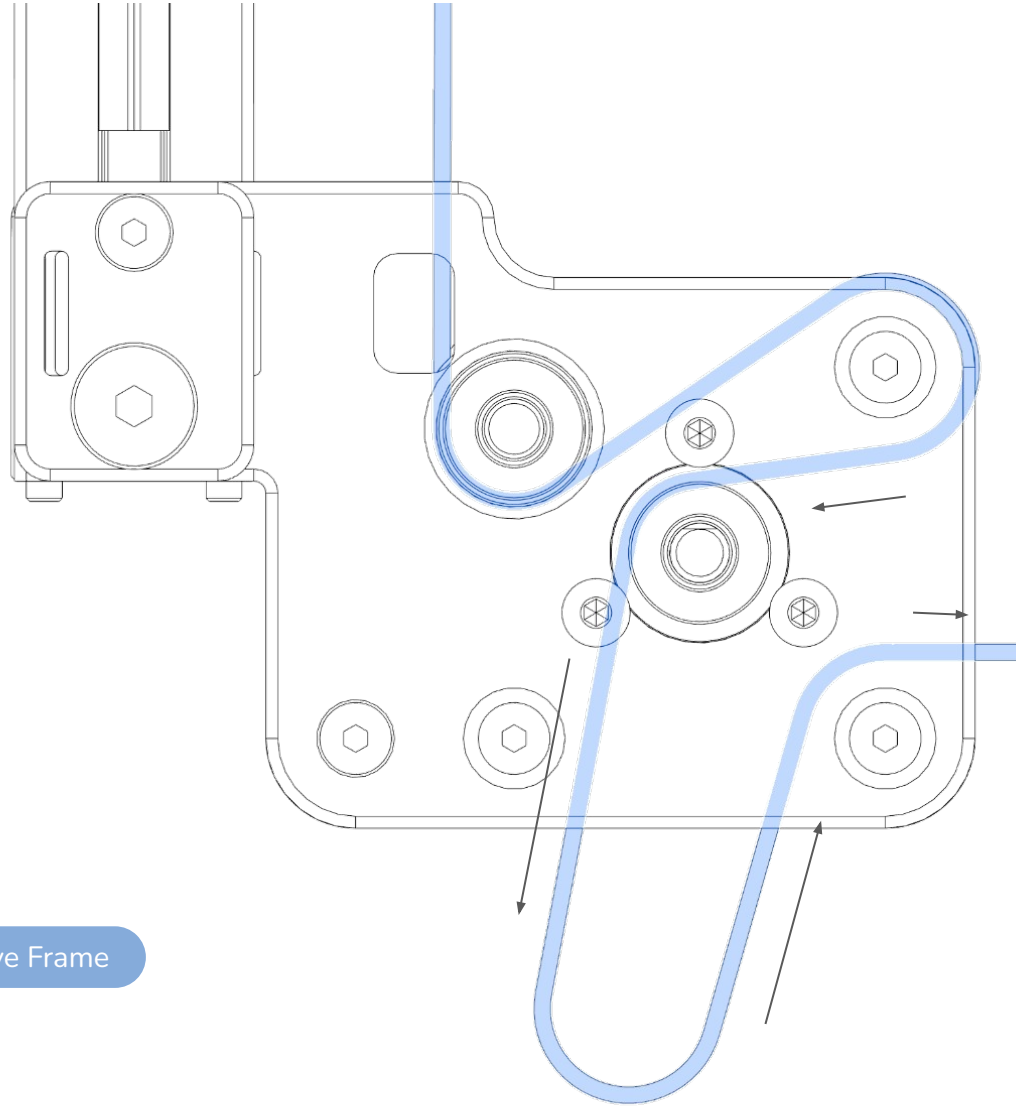
Belt Tip Security

Use two M3x8 SHCS from your printer's fasteners to secure the X carriage and belt to the X rail's carriage block.


A Belt Path


Left XY Joint

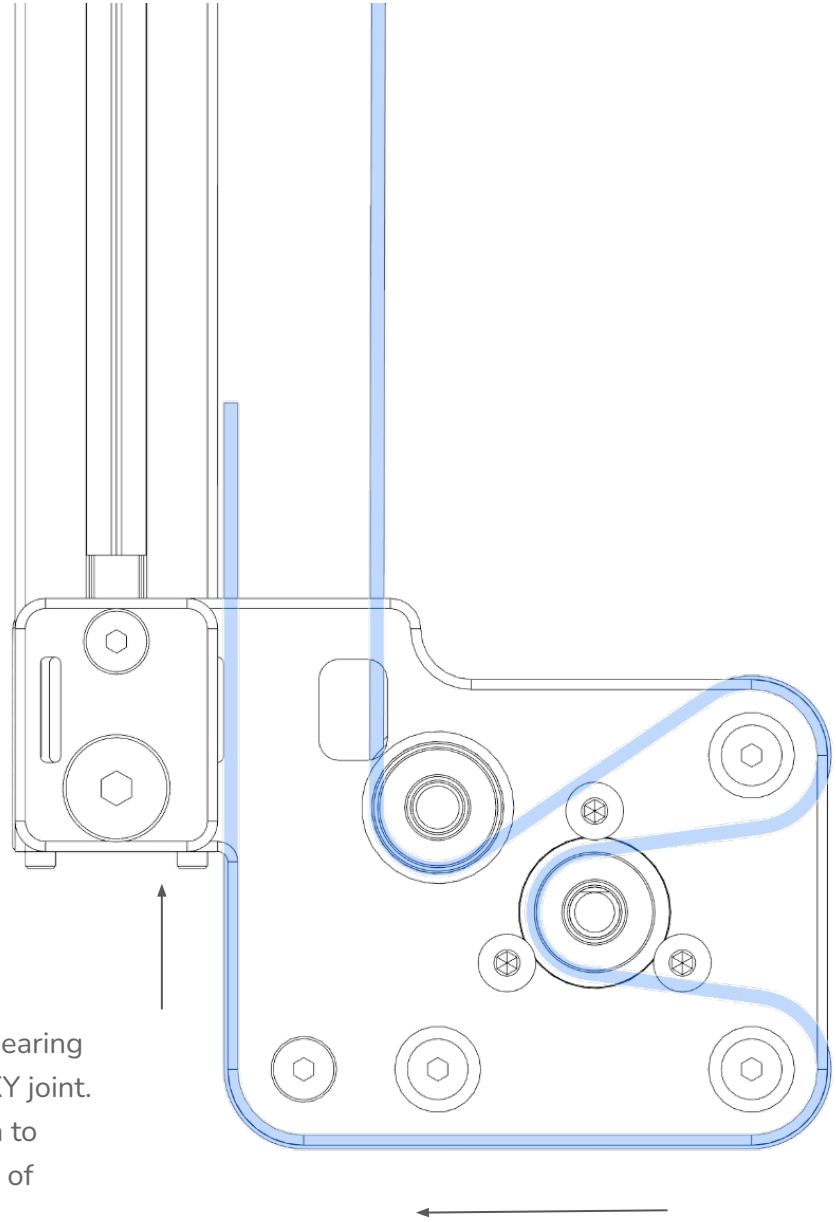




Front A Drive Frame

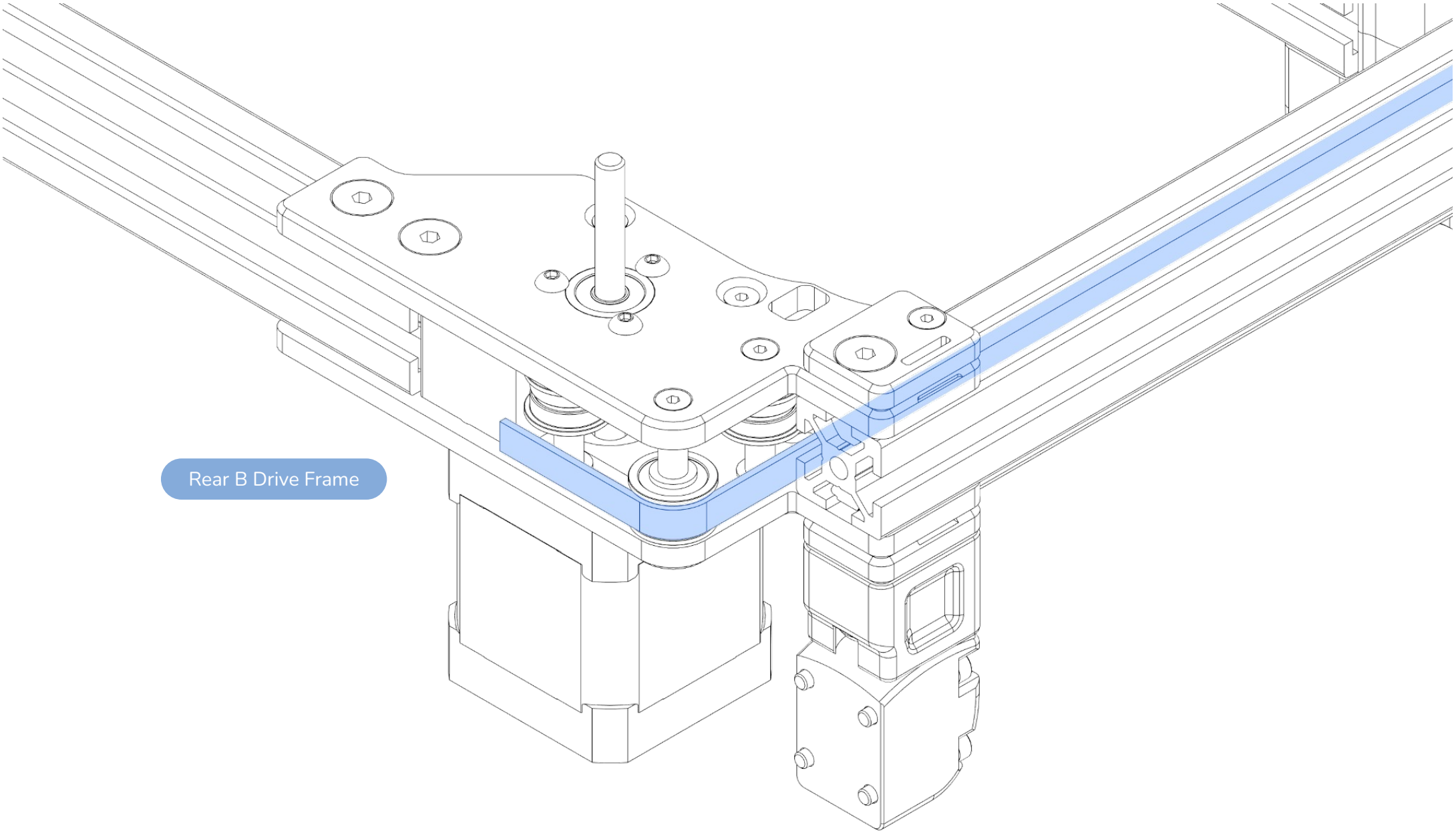
Hook or Loop?

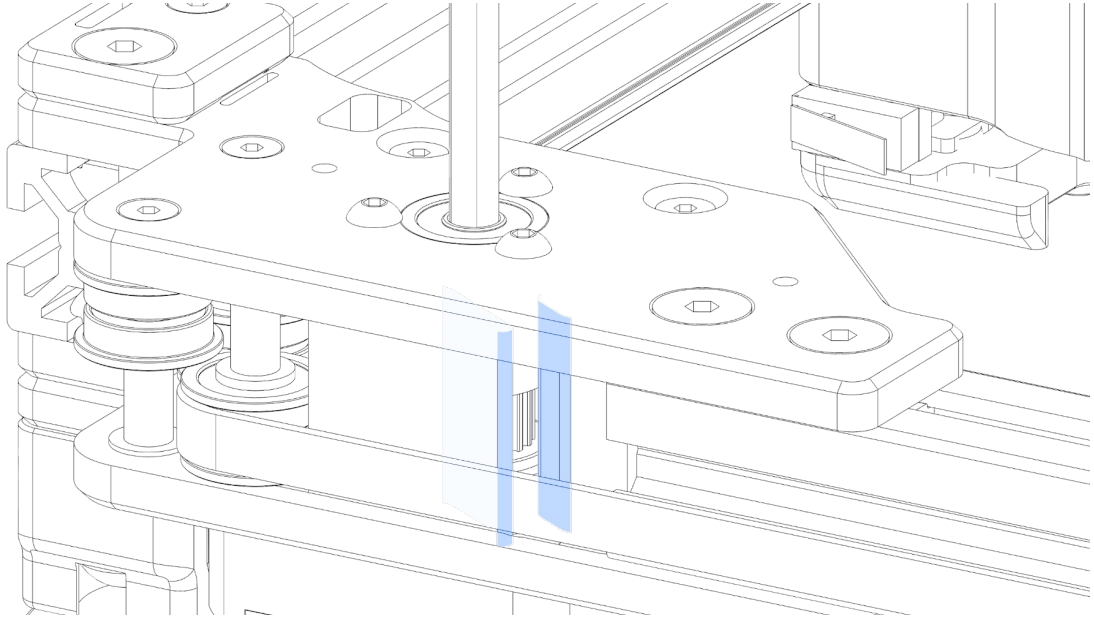
Routing the belts through the front drive frames is easiest when passing the belt all the way through and then looping it back.



No Slacking

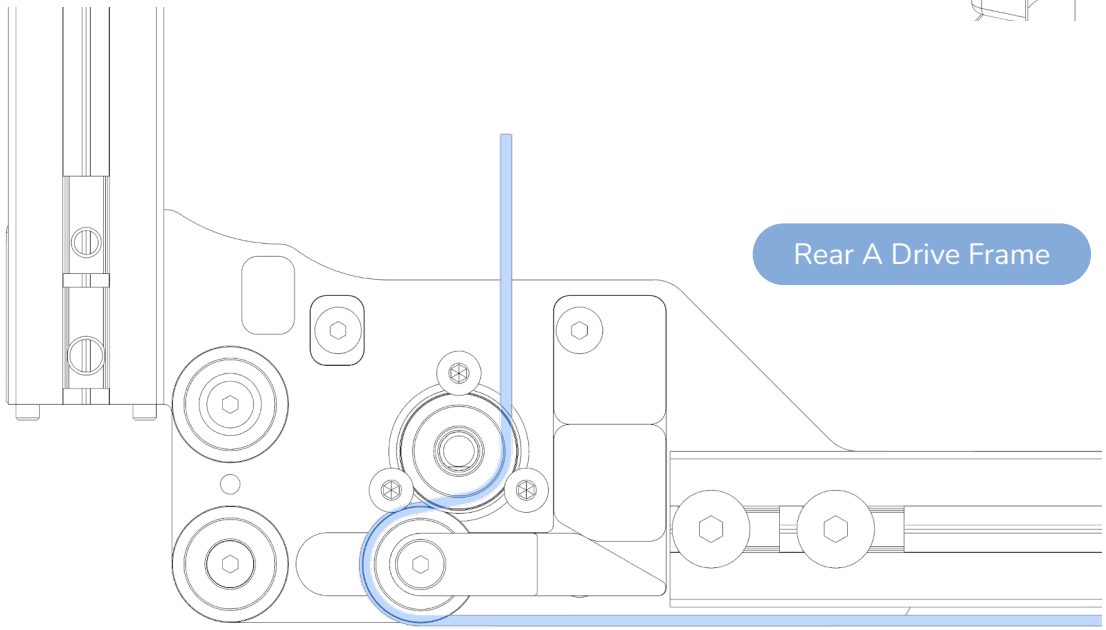
Pull the belt around the front two spaced bearing stacks before passing it back towards the XY joint. Pull as much of the belt through as you can to ensure that the belt is between the flanges of each bearing and drive gear.


Rear B Drive Frame



Mind the Gap

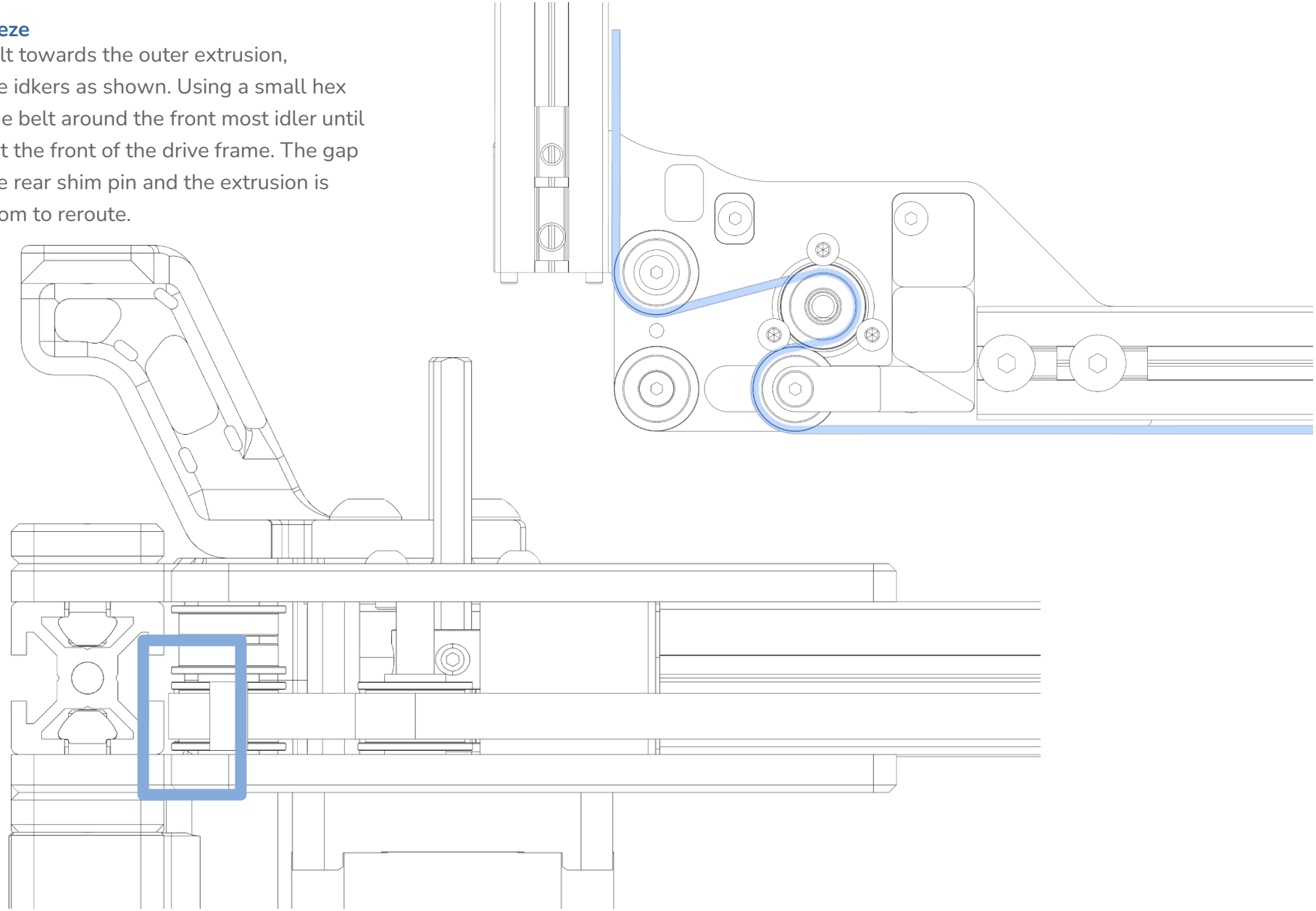
Use this gap between the Tensioner Wedge and Tensioner Slide along with a small hex key to route the belt around the drive pulley.

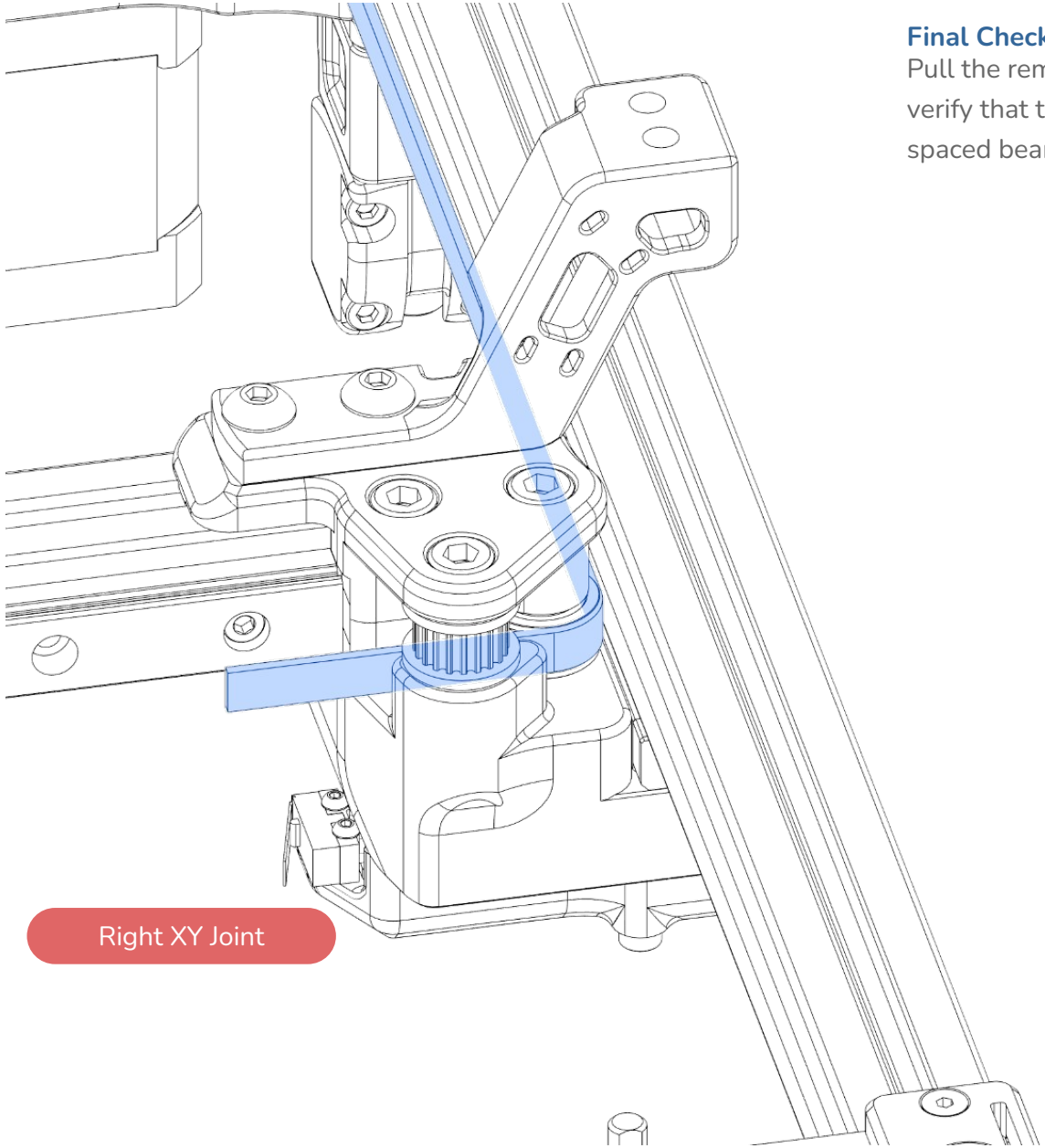


Rear A Drive Frame

Tight Squeeze

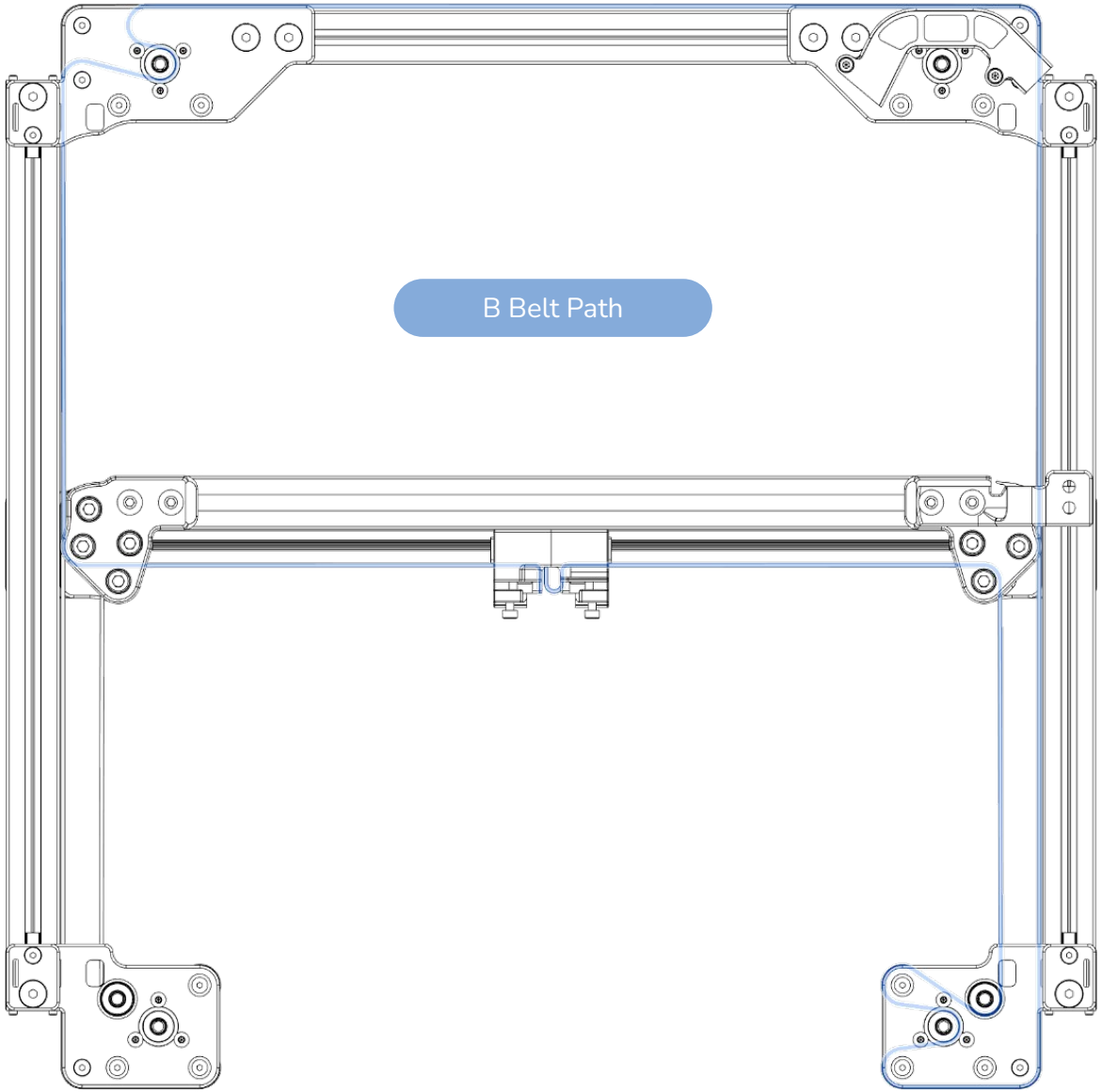
Feed the belt towards the outer extrusion, between the idkers as shown. Using a small hex key, push the belt around the front most idler until it passes out the front of the drive frame. The gap between the rear shim pin and the extrusion is plenty of room to reroute.

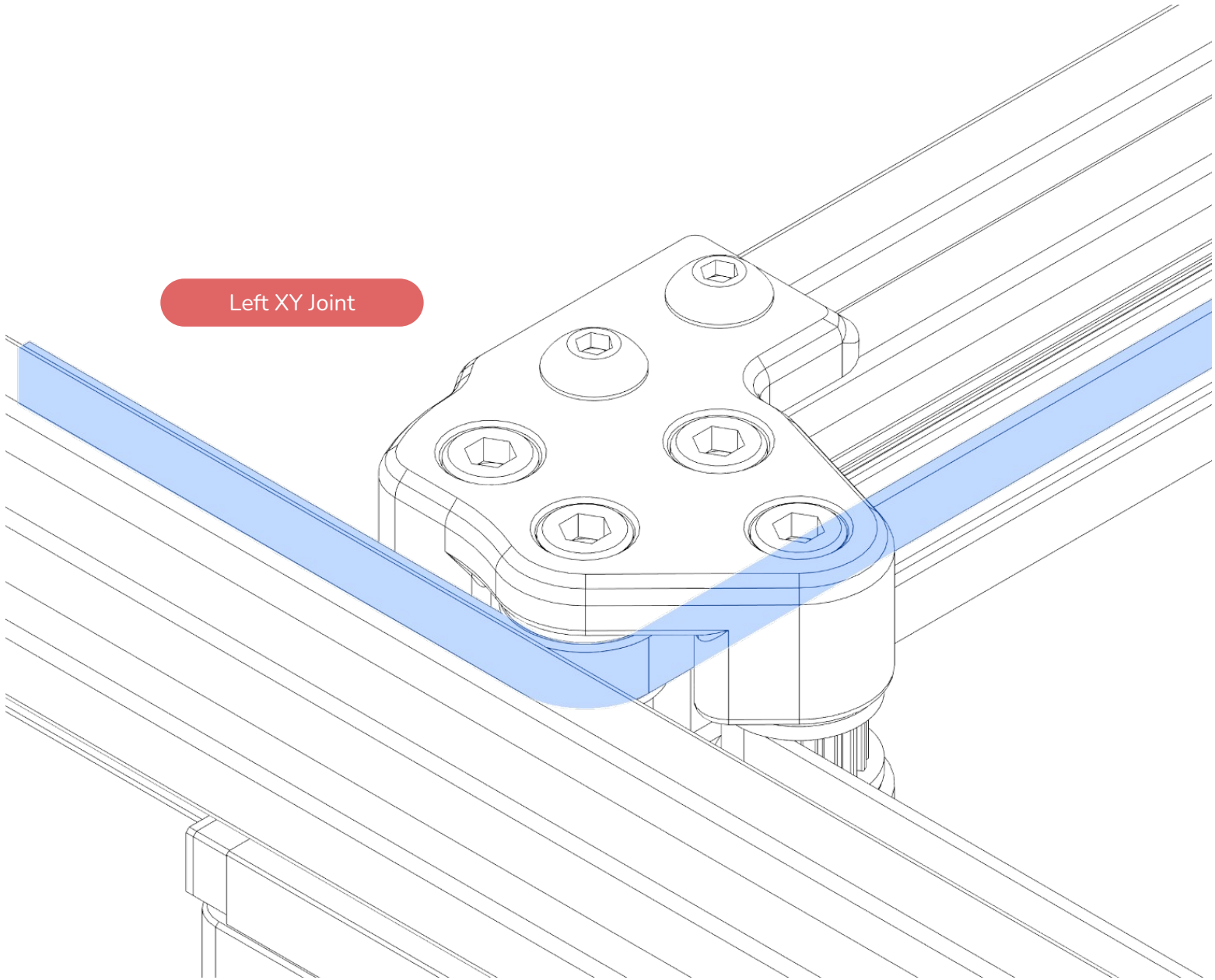


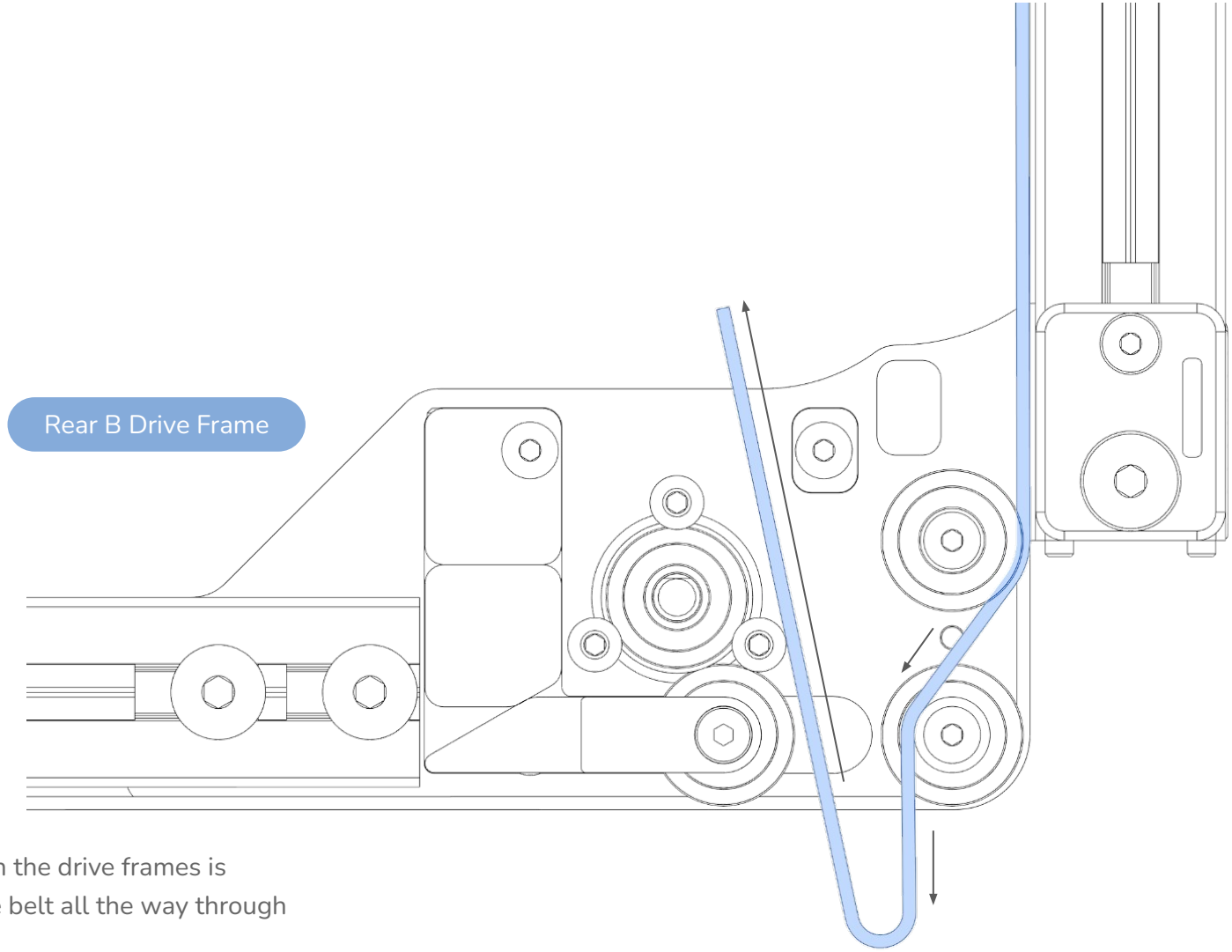


Final Checks

Pull the remaining belt past the XY joint and verify that the belt is within the flanges of each spaced bearing stack and pulley.

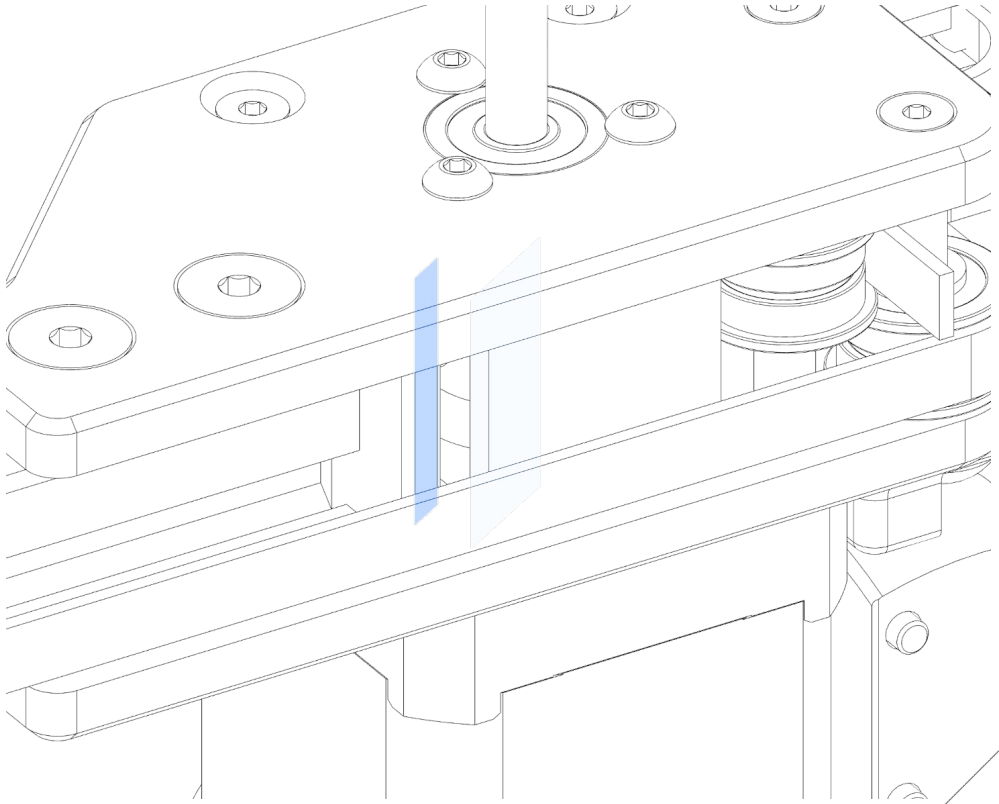

B Belt Path


Left XY Joint



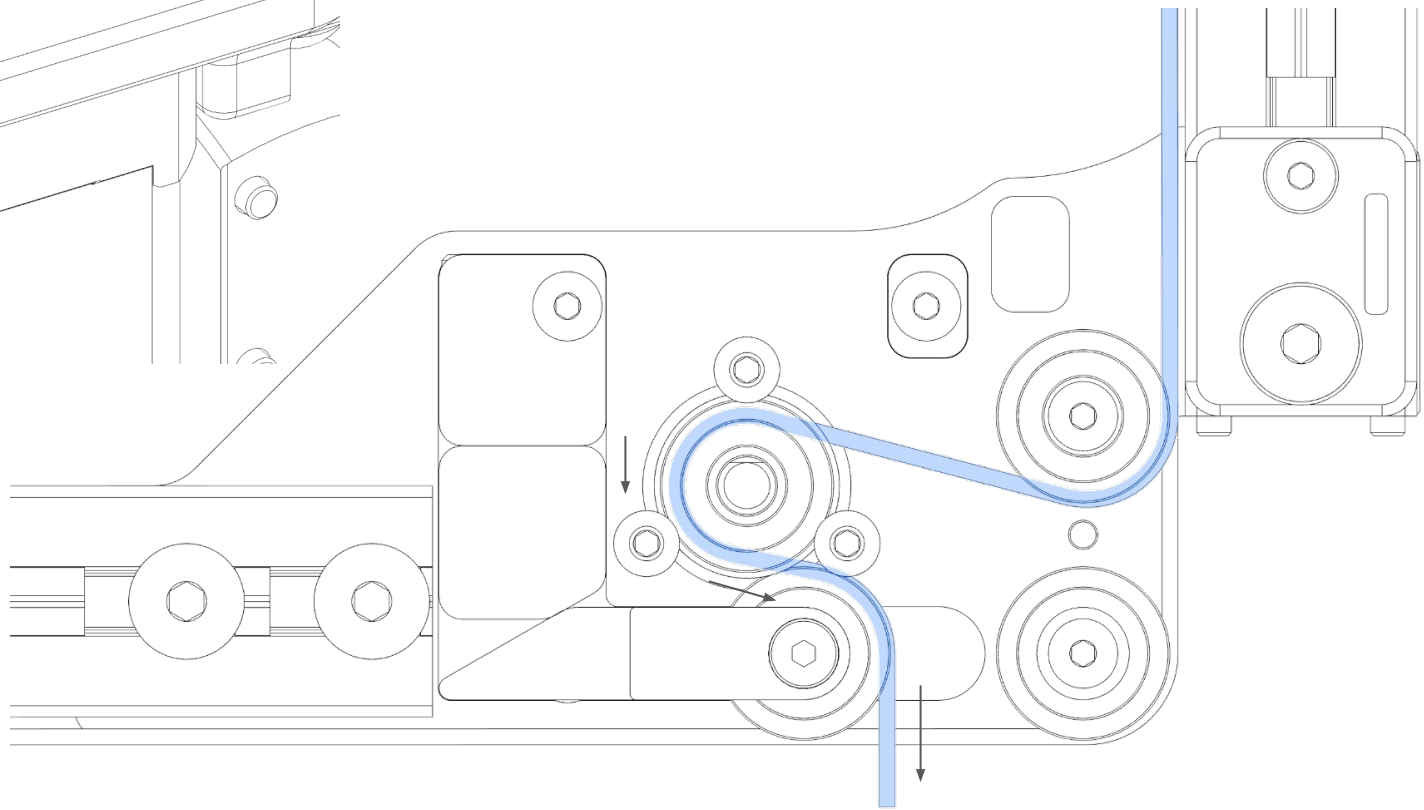
Hook or Loop?

Routing the belts through the drive frames is easiest when passing the belt all the way through and then looping it back.



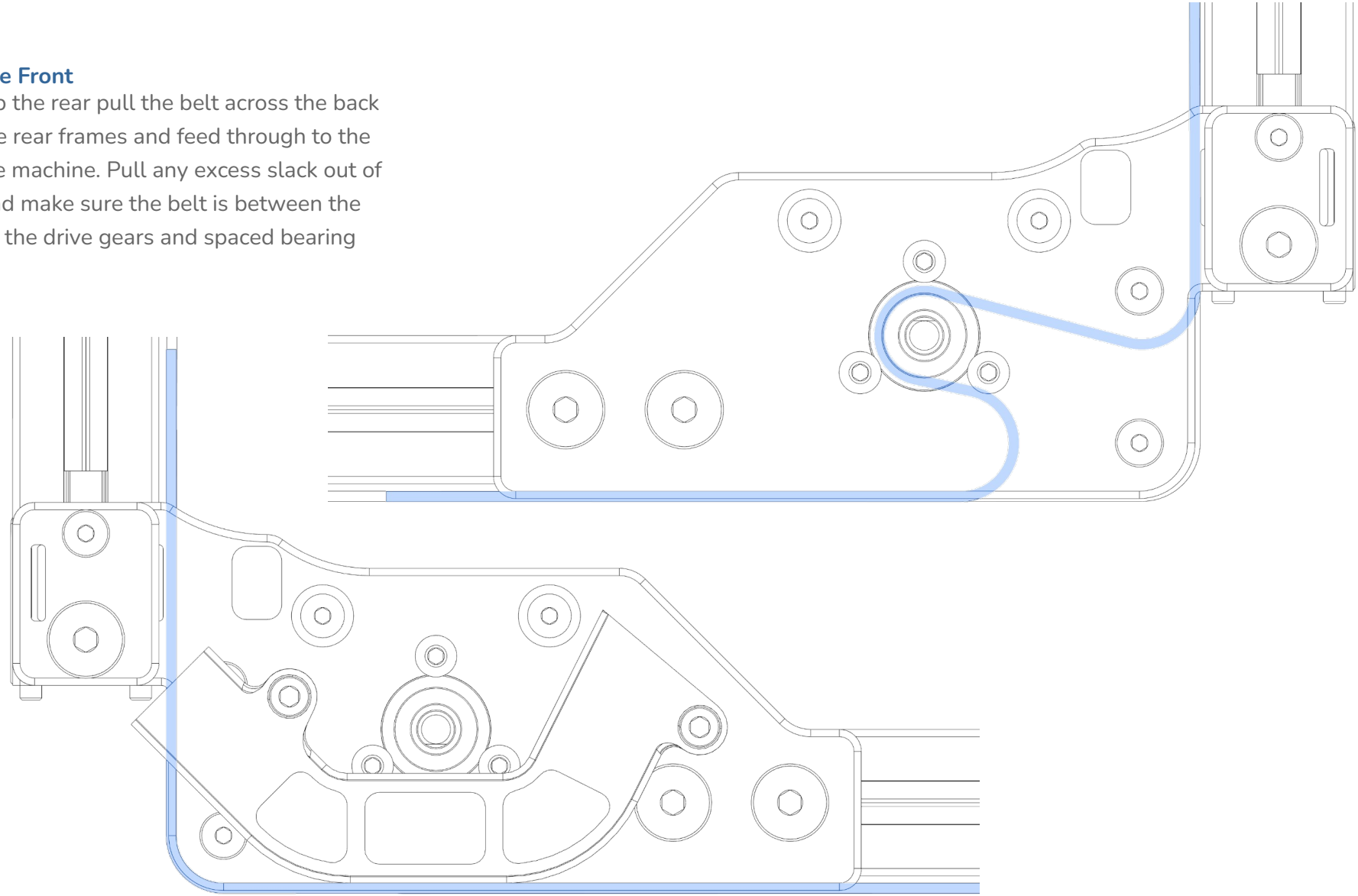
Thread the Needle

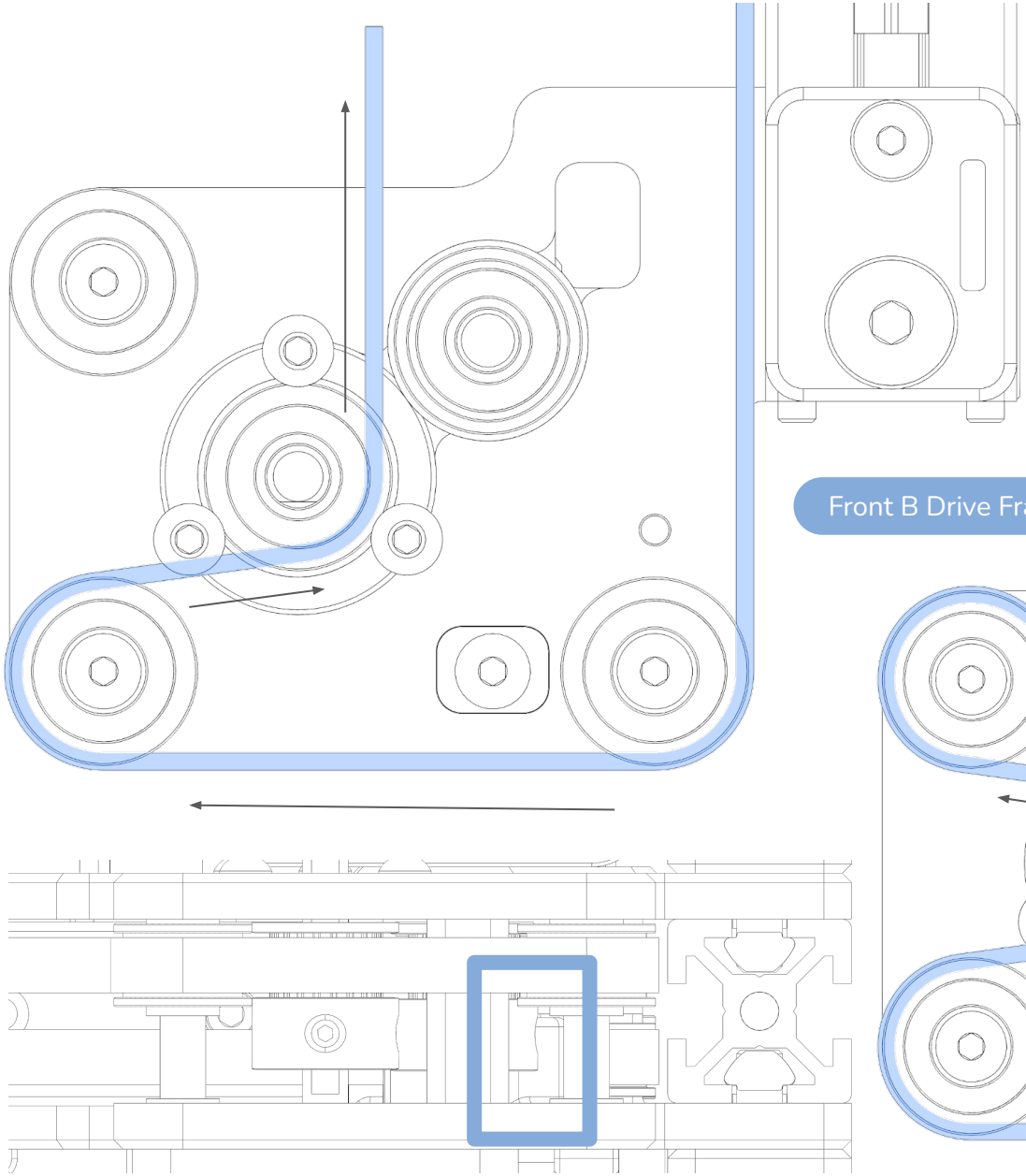
Slide a tool through the highlighted gap when feeding the belt around the drive gear to route the belt towards the tensioner idler. Then use a tool through the wide gap at the front of the drive frame to push the belt out the back of the drive frame.



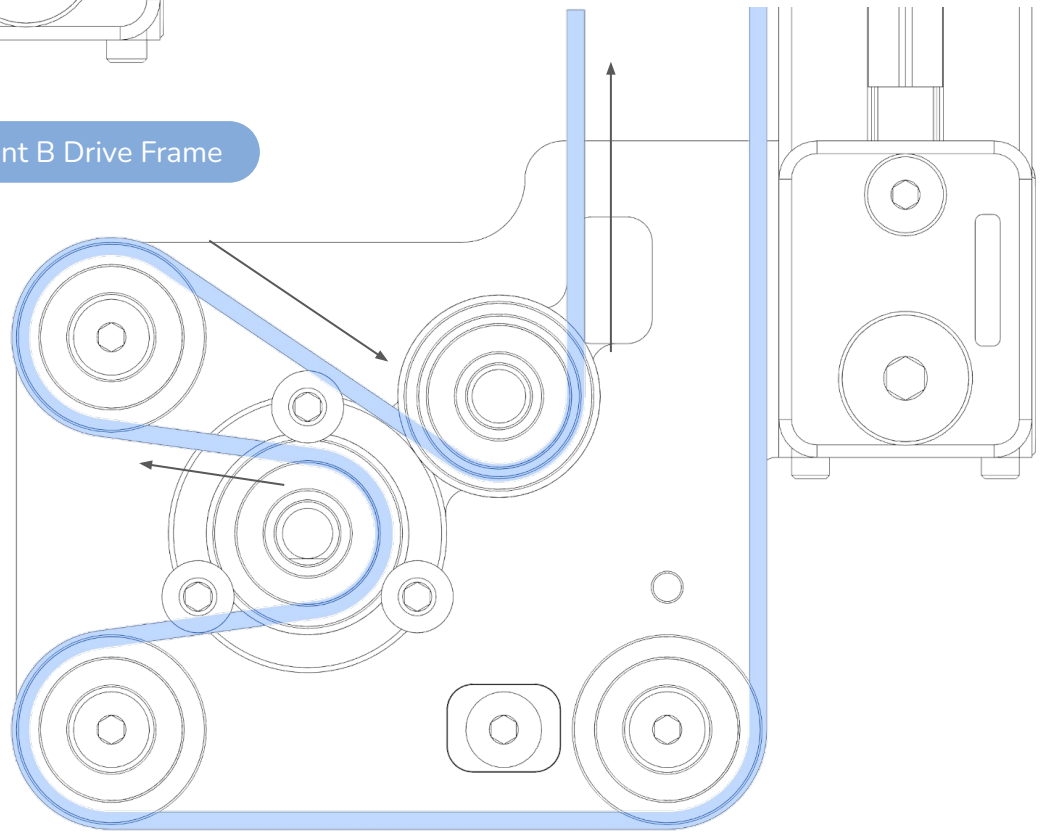
Back to the Front

To wrap up the rear pull the belt across the back of the drive rear frames and feed through to the front of the machine. Pull any excess slack out of the belt and make sure the belt is between the flanges on the drive gears and spaced bearing stacks.



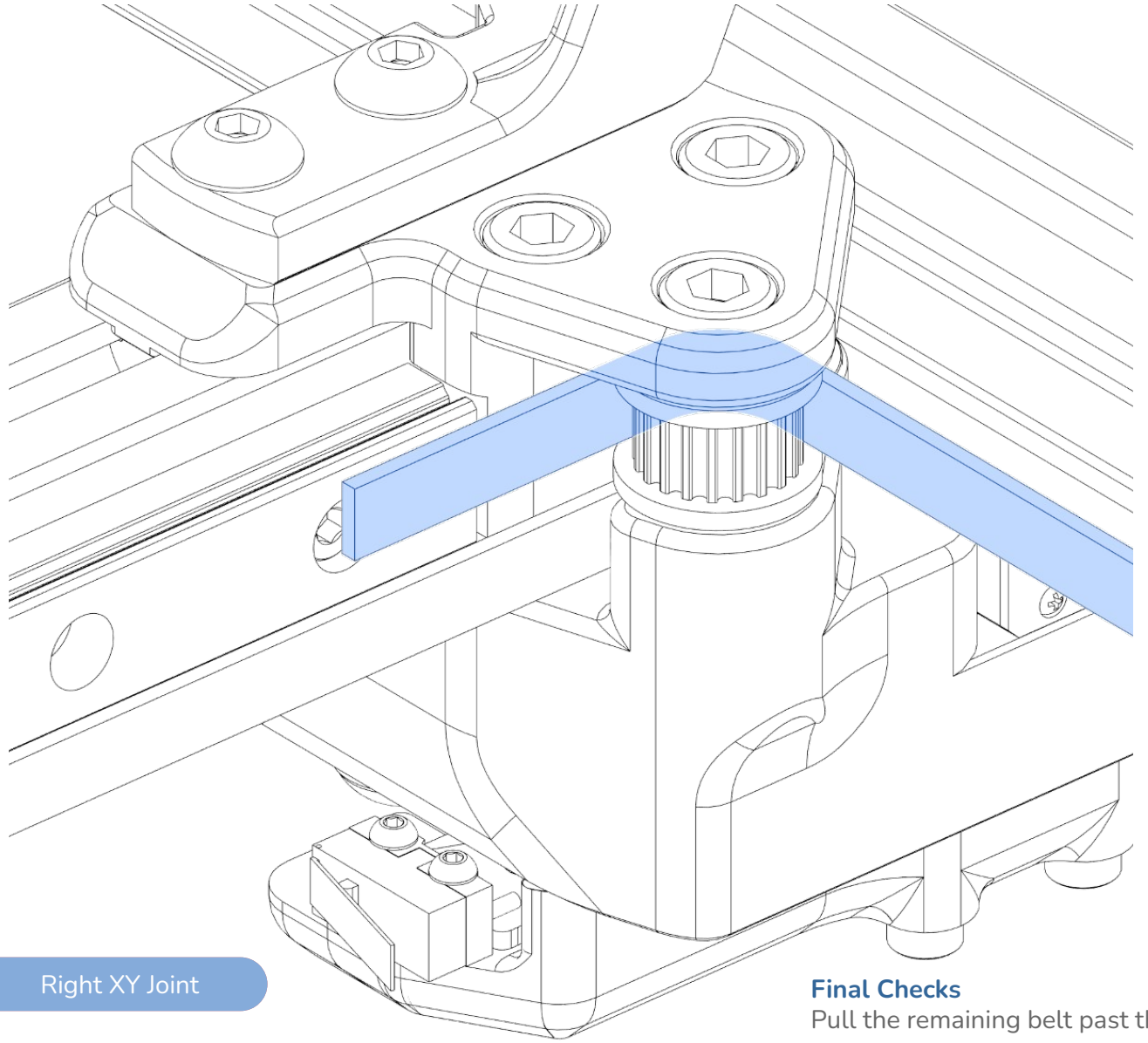


Front B Drive Frame



Last Stretch

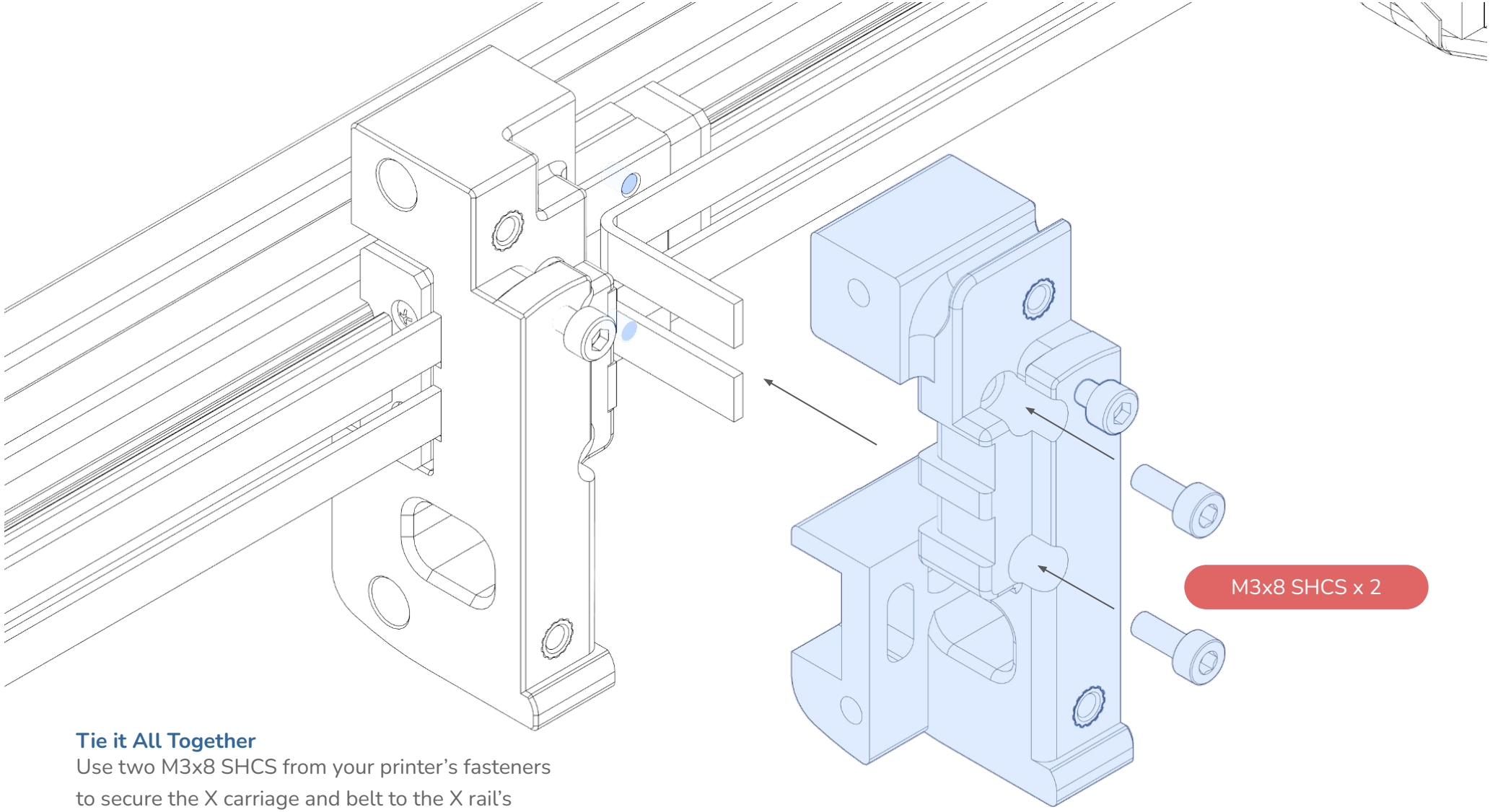
Route the belts across the front spaced bearing stacks, around the drive gear, then out the back. Next we'll wrap around the final spaced bearing stack and around the live shaft idler. Use a small hex key through the highlighted gap to push the belt out of the drive frame.



Right XY Joint

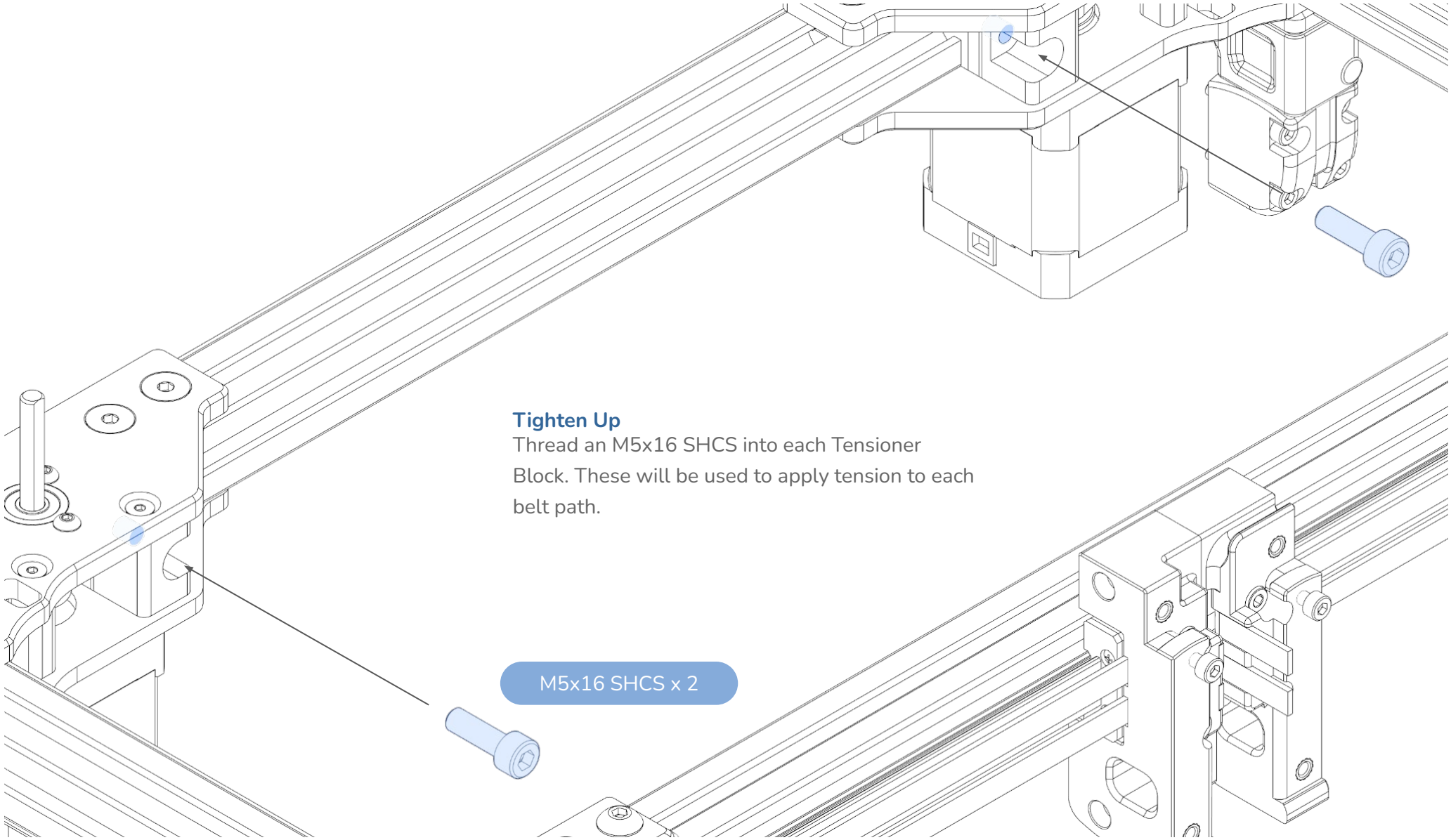
Final Checks

Pull the remaining belt past the XY joint and verify that the belt is within the flanges of each spaced bearing stack and pulley.



Tie it All Together

Use two M3x8 SHCS from your printer's fasteners to secure the X carriage and belt to the X rail's carriage block. Pull the belts tight before fully tightening the X carriage.



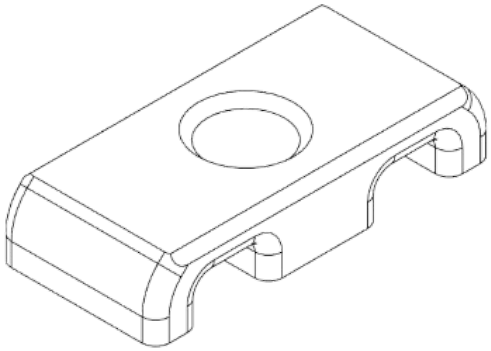
Tighten Up

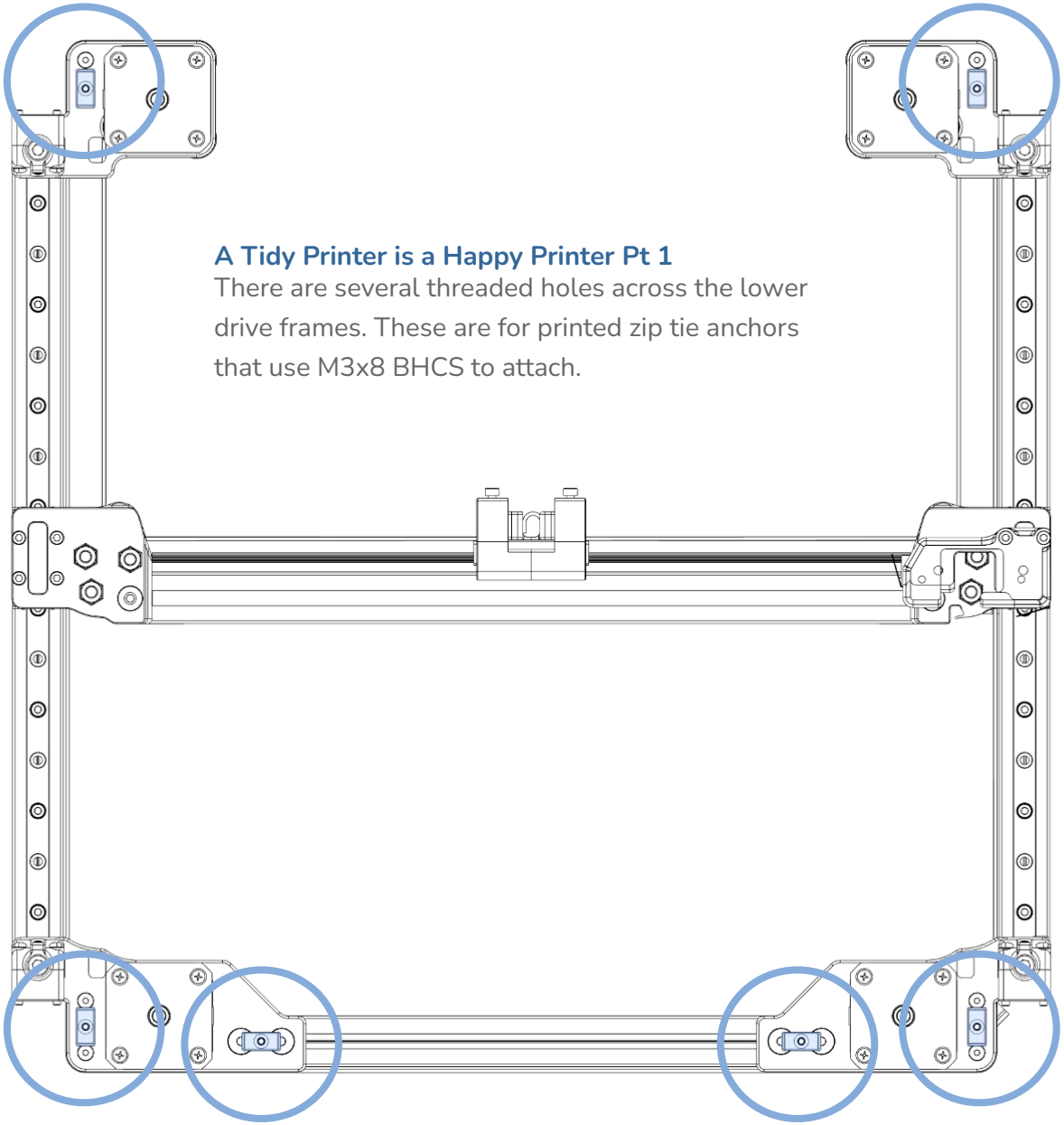
Thread an M5x16 SHCS into each Tensioner Block. These will be used to apply tension to each belt path.

M5x16 SHCS x 2

Final Stretch

The last few step should be completed as needed during wiring and after boot up and initial checks.





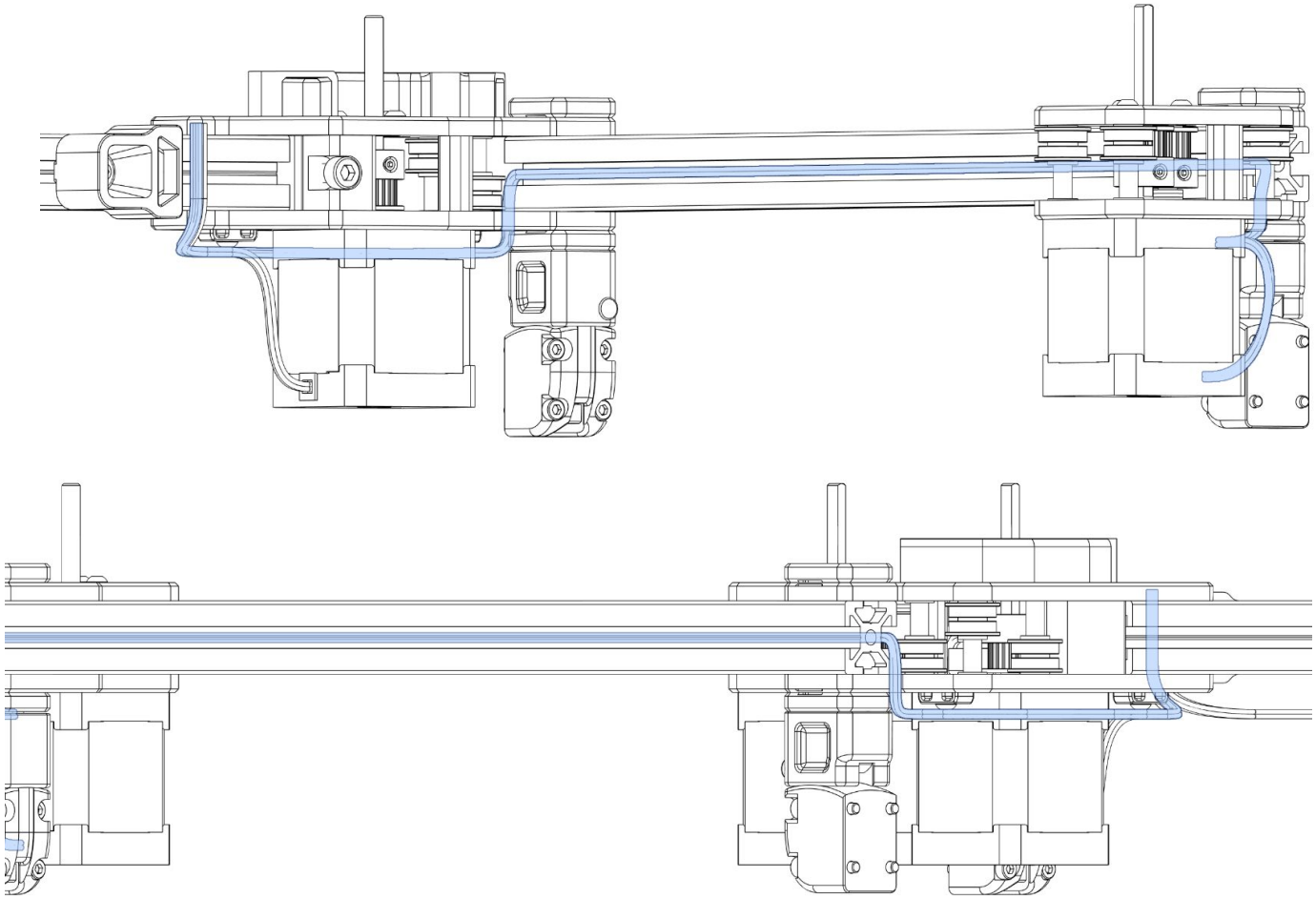
A Tidy Printer is a Happy Printer Pt 1

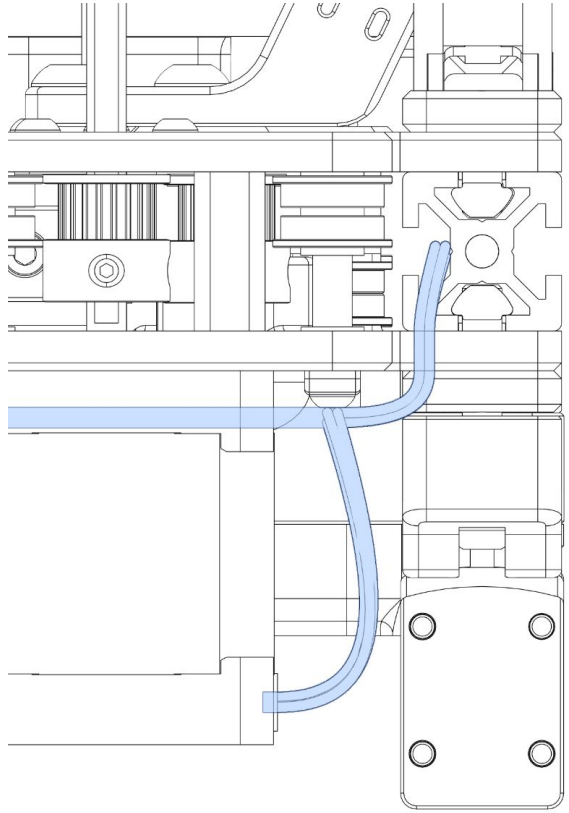
There are several threaded holes across the lower drive frames. These are for printed zip tie anchors that use M3x8 BHCS to attach.

A Tidy Printer is a Happy Printer, Pt 2

Route the front motor wires up to the zip tie anchor, then to the inner extrusion channel. It is recommended to use channel covers to prevent the wires from reaching out to touch the belts.

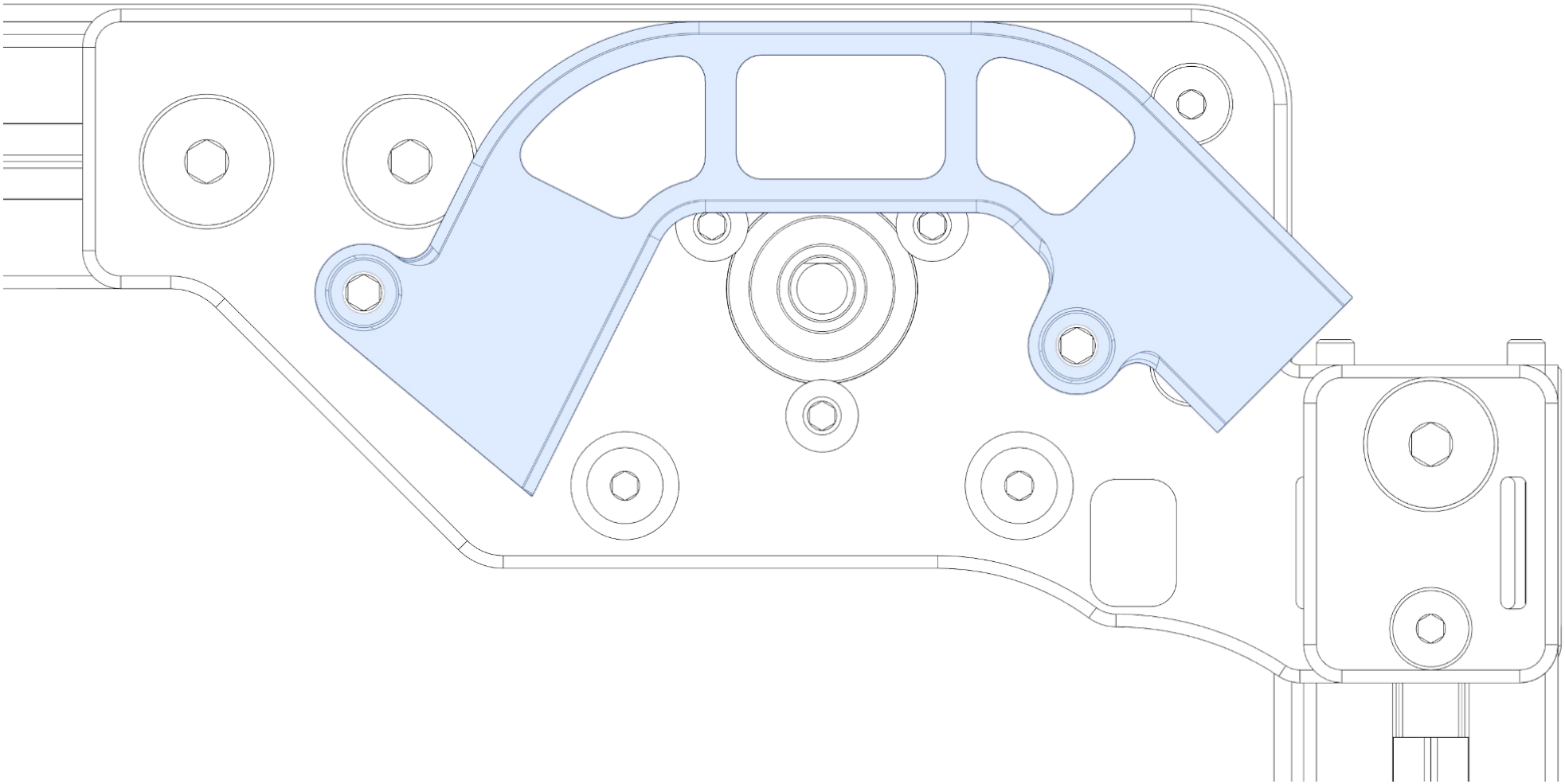
At the rear of the extrusion, route the wires mirrored to the front, then behind the rear motors. After passing the motors, use another zip tie anchor before passing the wires into the Z chain.

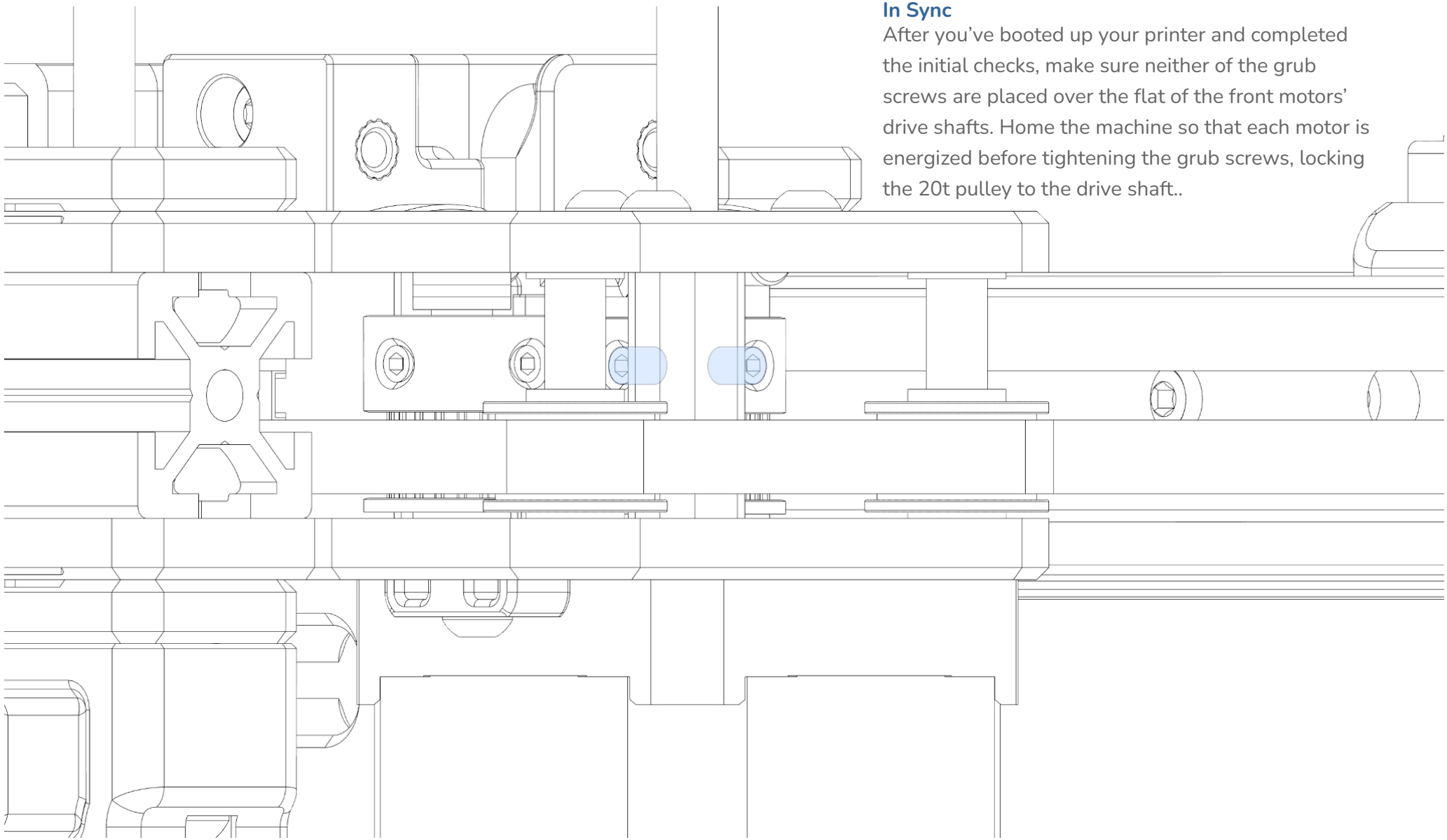




A Tidy Printer is a Happy Printer, Pt 3

The top of the rear A drive frame has mounting holes matching the Voron V2.4r2 printed parts. A modified cable cover has been designed for use with this kit. Use two M3x12 SHCS to mount the printed part to the drive frame.





In Sync

After you've booted up your printer and completed the initial checks, make sure neither of the grub screws are placed over the flat of the front motors' drive shafts. Home the machine so that each motor is energized before tightening the grub screws, locking the 20t pulley to the drive shaft..