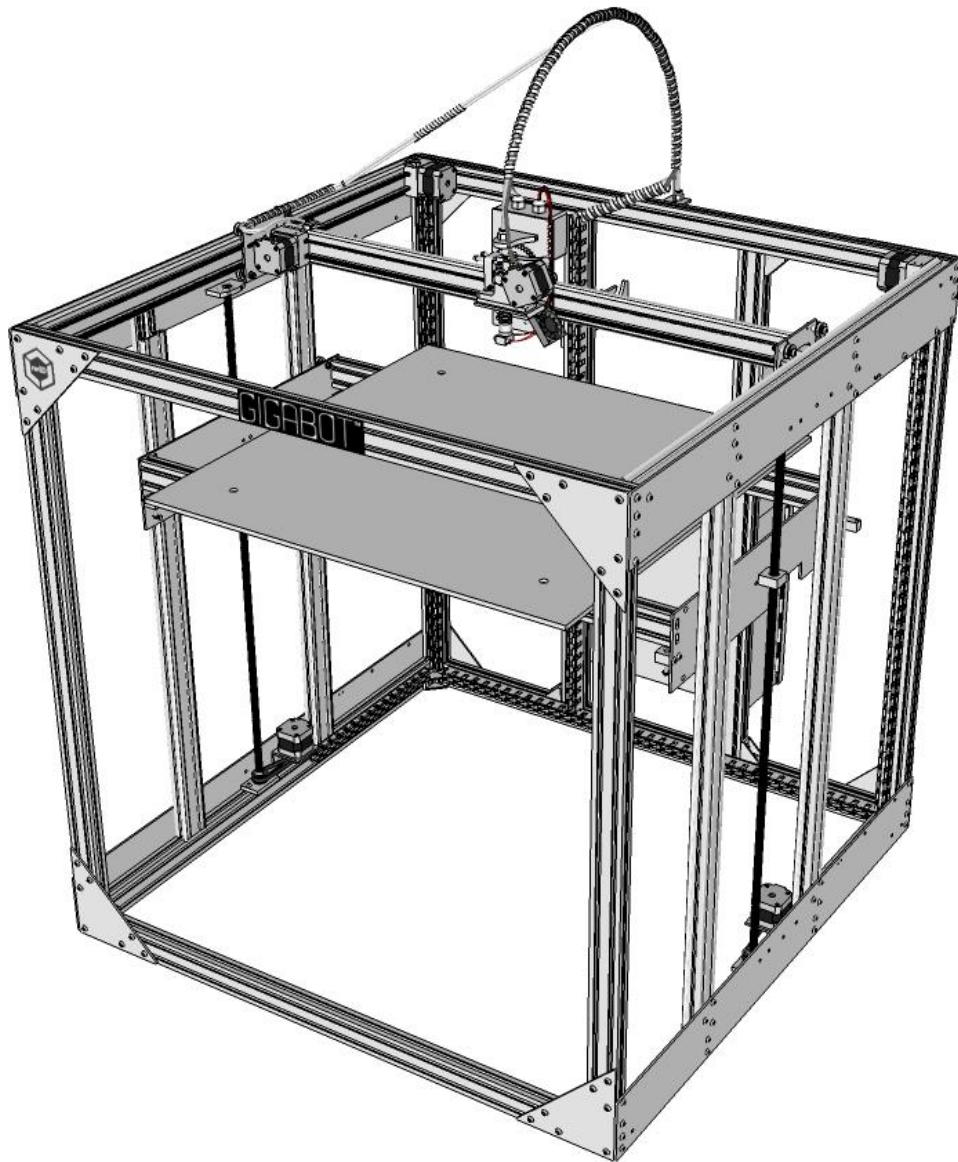


# GIGABOT™

Parts Kit Box Opening Guide



Gigabot 2.0

Valued Gigabot Owner,

We very much appreciate your order and are proud to deliver your advanced and extremely capable Gigabot 3D printer.

A little about your Gigabot:

Assembly, calibration & operation instructions can be found at <http://re3d.dozuki.com> with additional detail at <http://wiki.re3d.org>. Prior to seeing the instruction sets on Dozuki, you will need to create an account. Fitting with our start-up theme, the online instructions both on Dozuki and the Wiki allow for complete editing, comments and suggestions, which we highly encourage as assistance for others in the Gigabot community. If you wish, you can print a copy of the instructions from the website or access the instructions on your smartphone via the Dozuki app, found in app stores free of charge.

In the coming months we will also be adding instructions on how to disassemble Gigabot should you ever need to take apart your Gigabot, move Gigabot through a doorway or want to hack your Gigabot.

We at re:3D would like to maintain a close two-way communication as you begin to use this printer. This helps us to both enhance our knowledge about any potential issues and also ensure your satisfaction. If you have any issues or questions about assembly and/or operation of your Gigabot, please use the following contact information:

<http://forum.re3d.org>

Email: [support@re3d.org](mailto:support@re3d.org)

Phone Contact: 512-730-0033

Skype: re3D HoustonHQ

We also encourage you to connect with the other Gigabot users and see product & community updates by signing up for our community newsletter at [re3d.org](http://re3d.org), following us on Twitter (@re\_3D) and liking us on Facebook.

Have an awesome Gigabot inspired 3D print? Email your picture to [info@re3d.org](mailto:info@re3d.org), tweet @RE\_3D or post it to re:3D on Facebook to be entered in our monthly drawing for a free 5lb spool of filament.

Want to tell the story behind your print? Share your blog about your large-format 3D printing adventures with re:3D for a free 5lb spool of filament.

We're excited that you are part of the ever-expanding capabilities and reach of 3D printing and we sincerely hope you enjoy your new Gigabot. We maintain a Google+ community for Large-Scale 3D Printing that reaches beyond the Gigabot, and we're sure the community would love to hear from you there!

Thanks again from the team here at re:3D!

## LEGALIZE

*Below are a few things our lawyer said we should share to ensure a safe printing experience:*

### Read Instructions

- All the safety and operating instructions should be read before the printer is operated.

### Retain Instructions

- The safety and operating instructions should be retained for future reference.

### Heed Warnings

- All warnings on the product and in the operating instructions should be adhered to.

### Follow Instructions

- All operating and use instructions should be followed.

### Cleaning

- Unplug this product from the wall outlet before cleaning. Do not use liquid or aerosol cleaners.

### Attachments

- Do not use attachments or enhancements not recommended by the product manufacturer as they may cause hazards.

### Water and Moisture

- Do not use Gigabot near water - for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, and the like.

### Placement

- Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

### Ventilation

- Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The

openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

#### Power Sources

- This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home consult your appliance dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.

#### Grounding or Polarization

- This product may be equipped with either a polarized 2-wire AC line plug (a plug having one blade wider than the other) or a 3-wire grounding type plug, a plug having a third (grounding) pin. The 2-wire polarized plug will outlet, try reversing the plug. If the plug still fails to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug. The 3-wire grounding type plug will fit into a grounding type power outlet. This is 4a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding type plug.

#### Power-Cord Protection

- Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.

#### Lightning

For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.

#### Overloading

- Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock. A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

#### Object and Liquid Entry

- Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

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# 1 Where to Get Help

## One the web

General Information:  
[www.re3d.org](http://www.re3d.org)

Alternative Assembly Instructions:  
[re3d.dozuki.com/](http://re3d.dozuki.com/)

Getting Start Guide:  
[wiki.re3d.org](http://wiki.re3d.org)

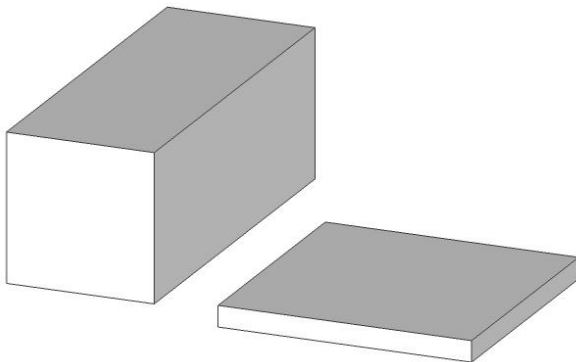
Contact Us:  
[support@re3d.org](mailto:support@re3d.org)

# 2 Tools Required

Straight Screwdriver  
Precision Square

# 3 Boxes

Large Box (36" x 14" x 14") and Bed Plate Box (24" x 24" x 2")

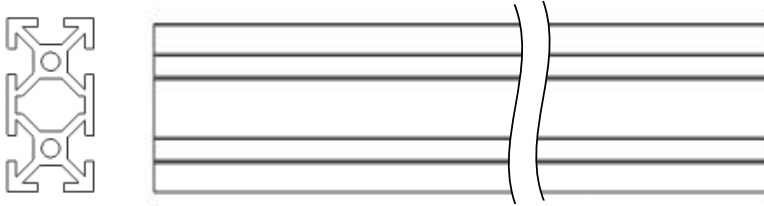


Inside the big box are the frame assembly box and the electrical box enclosure.

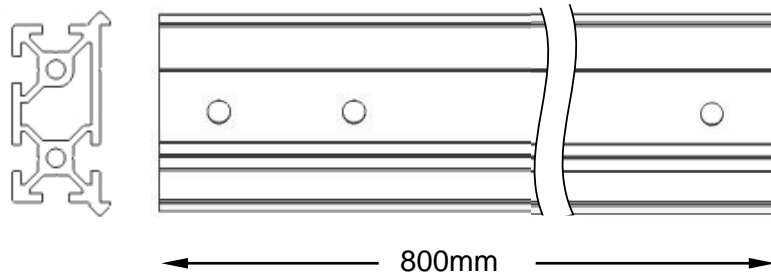
## 4 Inventory

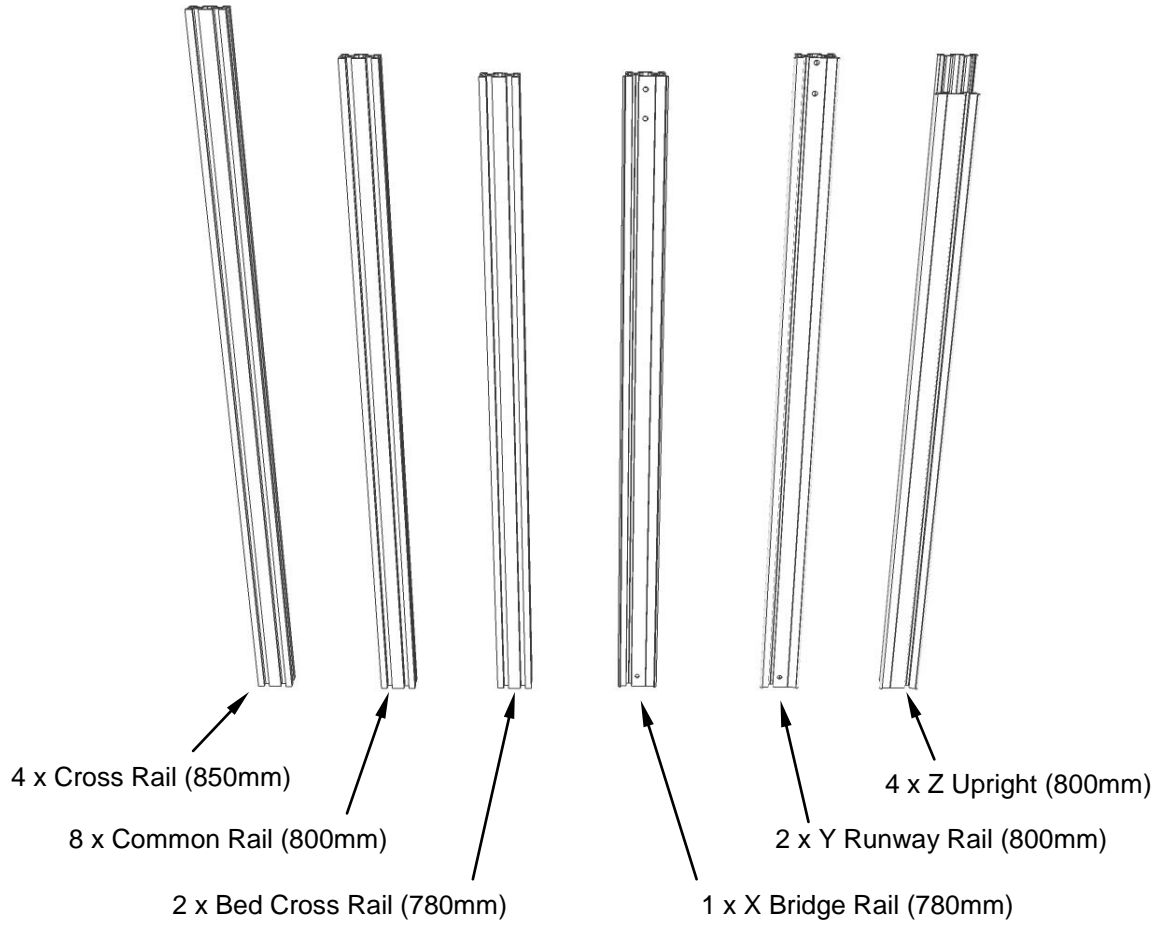
### 4.1 Rails

8 x Common rail (800 mm)



2 x Y Runway Rail (800 mm)



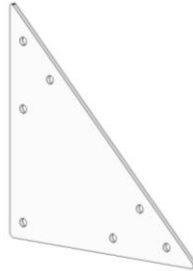


## 4.2 Plates (not to scale)

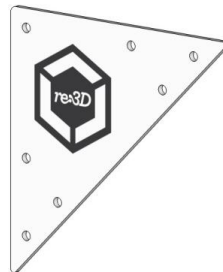
1 x Gigabot Name Plate



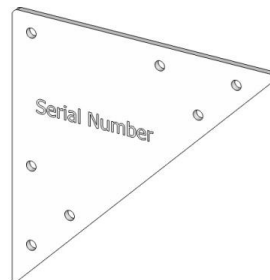
6 x Corner Plates



1 x Logo Plate



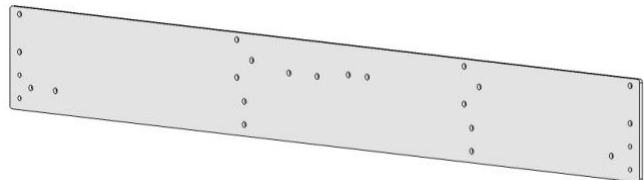
1 x Serial Plate



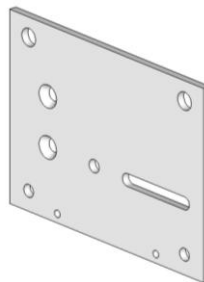
2 x Bed Side Plates



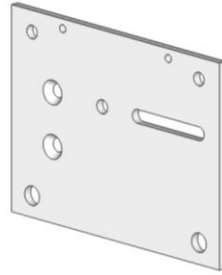
4 x Side Plates



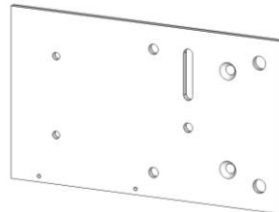
1 x Right End Truck



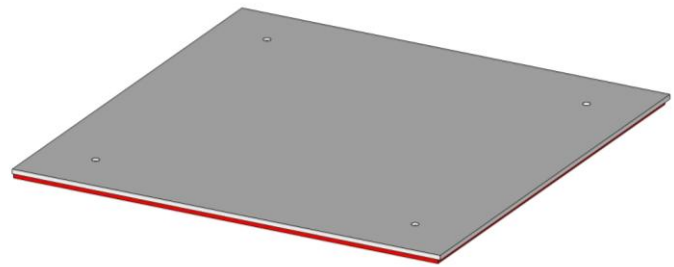
1 x Left End Truck



1 x Trolley Plate

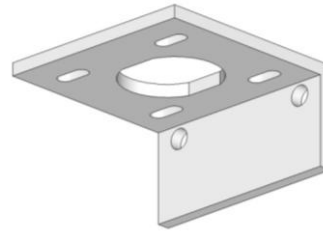


1 x Bed Plate

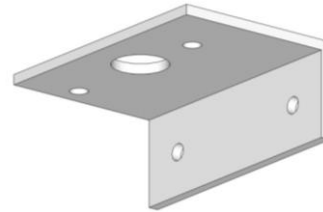


### 4.3 Brackets (aka Shelves) (not to scale)

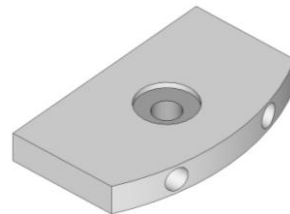
2 x Z Motor Mount



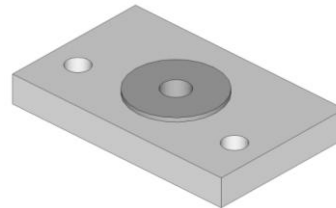
1 x Extruder Shelf



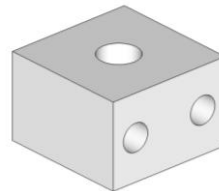
2 x Upper Bearing Block



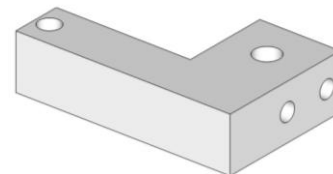
2 x Lower Bearing Block



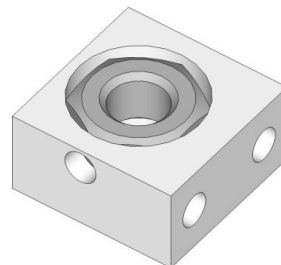
3 x Leveling Block



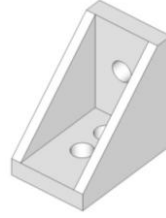
1 x Leveling Block for Z limit switch



2 x Nut Cup



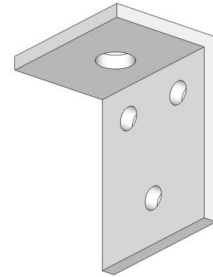
8 x Triangle Corner



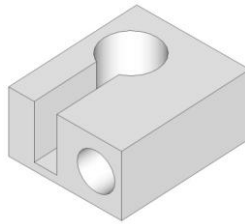
1 x Extruder Filament Guide



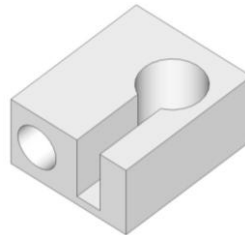
1 x Rear Filament Shelf



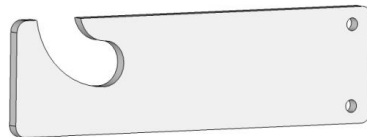
3 x Threaded Tensioner  
(threads are not shown in model)



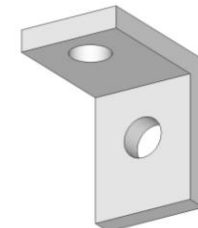
3 x Unthreaded Tensioner



2 x Filament Spool rod shelf

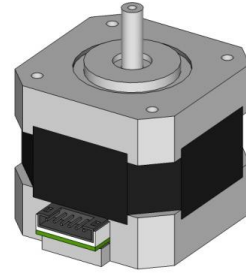


4 x Bed Bracket

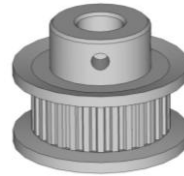


## 4.4 Motors, Wheels and Belts

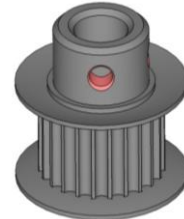
6 x Stepper Motor



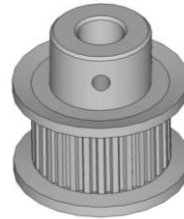
2 x Acme Pulley (36 tooth MXL)



2 x Z motor Pulley (18 tooth MXL)



3 x X and Y Pulley (Black GT2) Plastic



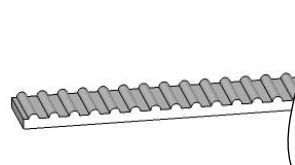
20 x V-Groove Wheel (includes bearings)



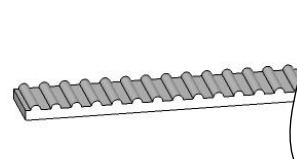
3 x Idler Wheel (includes bearings)



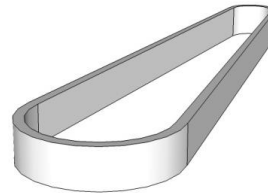
2 x GT2 Timing Runway Belt (Y-axis, 64")



1 x GT2 Timing Bridge Belt (X-axis, 61.75")



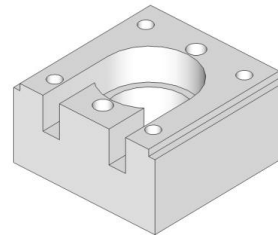
2 x MXL Belt (Circle)



2 x ACME Screws



3 x Motor Mount



10 x Eccentric Spacer

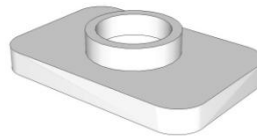


10 x Round Spacer



## 4.5 Hardware

176 x T-Nut



2 x M2 Lock Washer





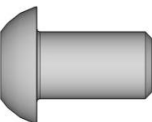
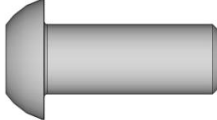



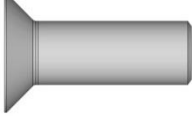


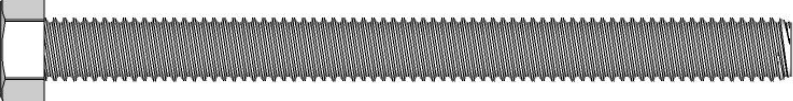





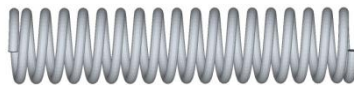
2 x M2 Hex Nut



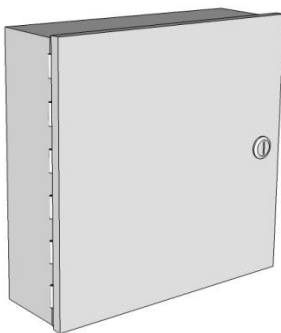
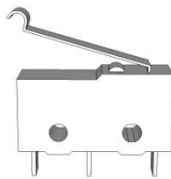
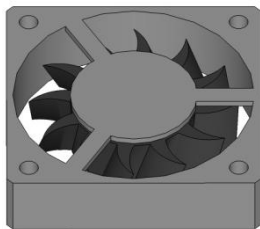

8 x M3 Washer



4 x	M2 x 14mm Socket Head	
2 x	M2 x 16mm Socket Head	
24 x	M3 x 8mm Socket Head	
6 x	M3 x 18mm Socket Head	
158 x	M5 x 8mm Button Head	
70 x	M5 x 12mm Button Head	
22 x	M5 x 25mm Button Head	
14 x	M5 x 45mm Button Head	
3 x	M6 x 60mm Button Head	
10 x	M5 x 12mm Flat Head	
6 x	M5 x 20mm Flat Head	
4 x	M5 x 35mm Flat Head	
1 x	M5 x 70mm Hex Head	

34 x	M5 Lock Washer	
60 x	M5 Washer	
47 x	M5 Hex Nut	
4 x	Leveling Spring	

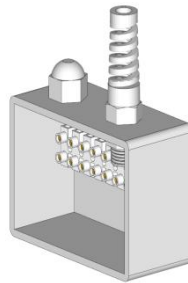
#### 4.6 Wiring and Electrical

1 x	Electrical Enclosure (12" x 12" x 4")	
3 x	Limit Switch	
2 x	Fan	
1 x	Spiralite (53" wire wrap)	

1 x Spiralite (20" wire wrap)



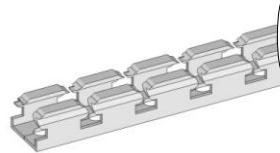
1 x Terminal Box with Cable Gland



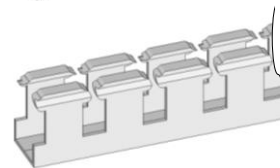
8 x Ferrule (wire end cover)



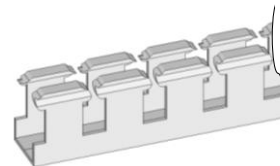
1 x 7" Shallow Panduit



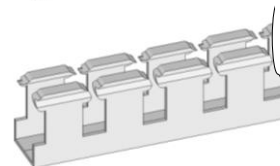
1 x 9.75" Deep Panduit



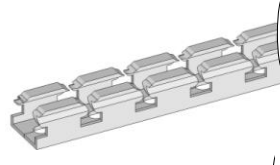
2 x 12" Shallow Panduit



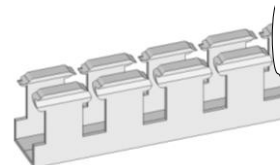
1 x 30.5" Deep Panduit



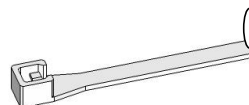
2 x 31.5" Shallow Panduit



1 x 31.5" Deep Panduit



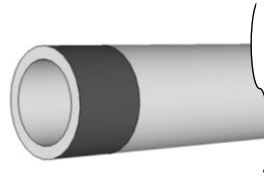
4 x Small zip tie



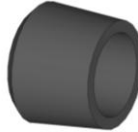


## 4.7 Random Stuff and Tools

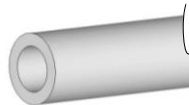
1 x Filament Spool Rod



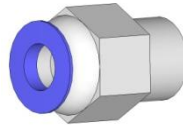
2 x Filament Spool Rod Cap



1 x Filament Tubing (43")



1 x Push Fit Connector



1 x Dial Indicator

1 x Dial Indicator Holder

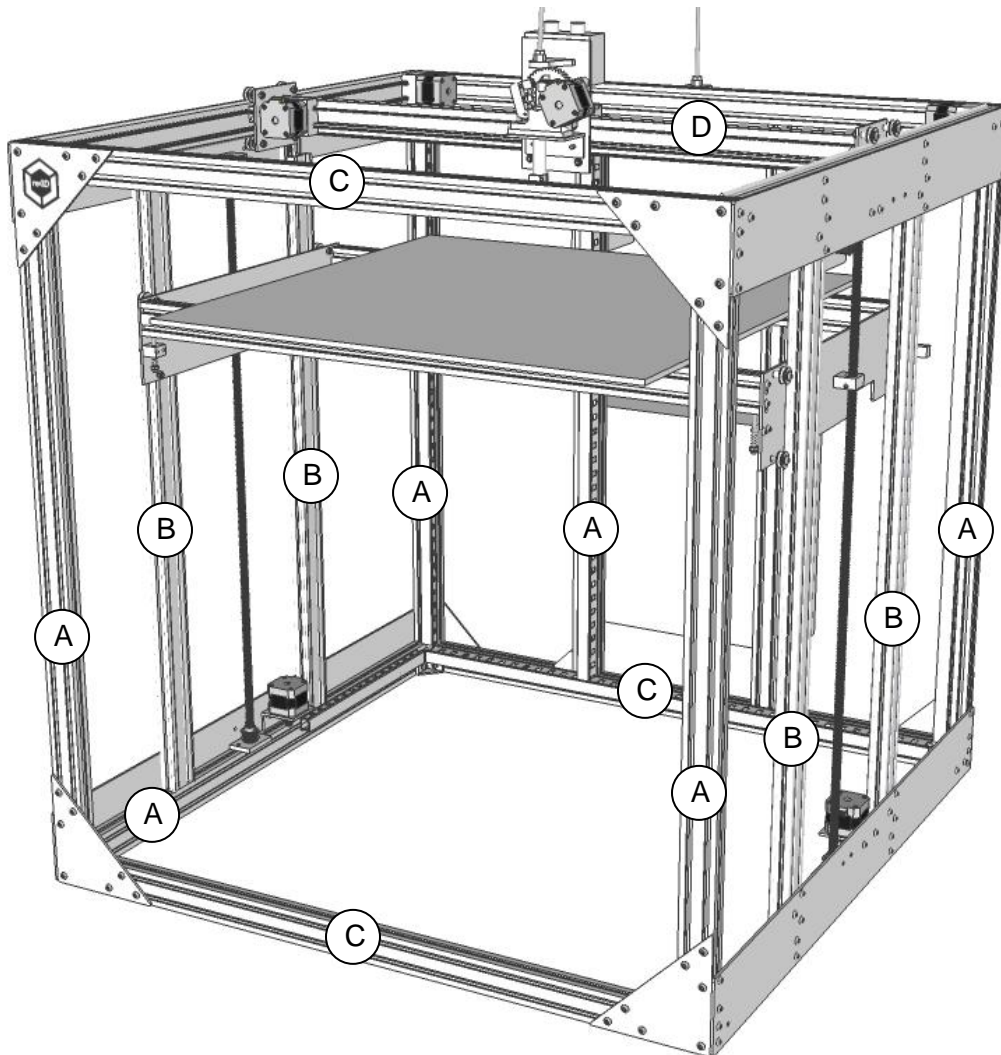
1 x 8mm Combination wrench

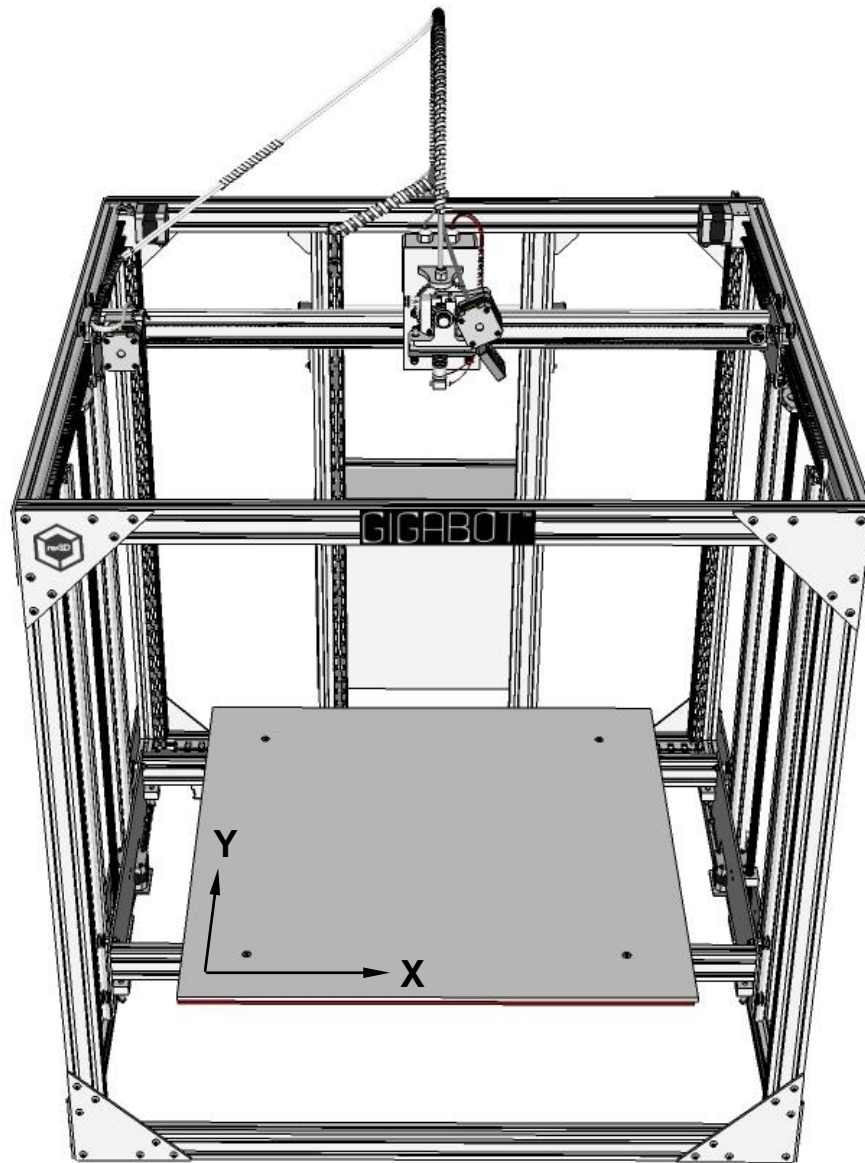
1 x Allen Wrench Set

1 x 2GB SD Card

## 5 Placement Overview

- A: Common Rail
- B: Z upright Rail
- C: Cross Rail
- D: X Bridge Rail





Gigabot Coordinate System

The Gigabot home position is at  $X = 0\text{mm}$ ,  $Y = 615\text{ (mm)}$  and  $Z = 0\text{mm}$ .

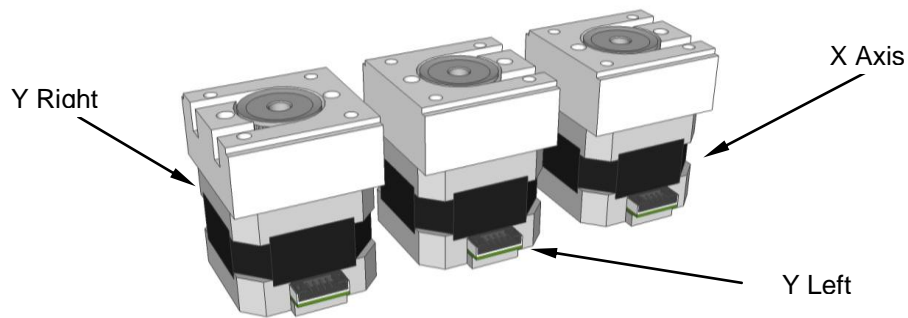
## 6 Assembly Instructions

### 6.1 Motor Assembly

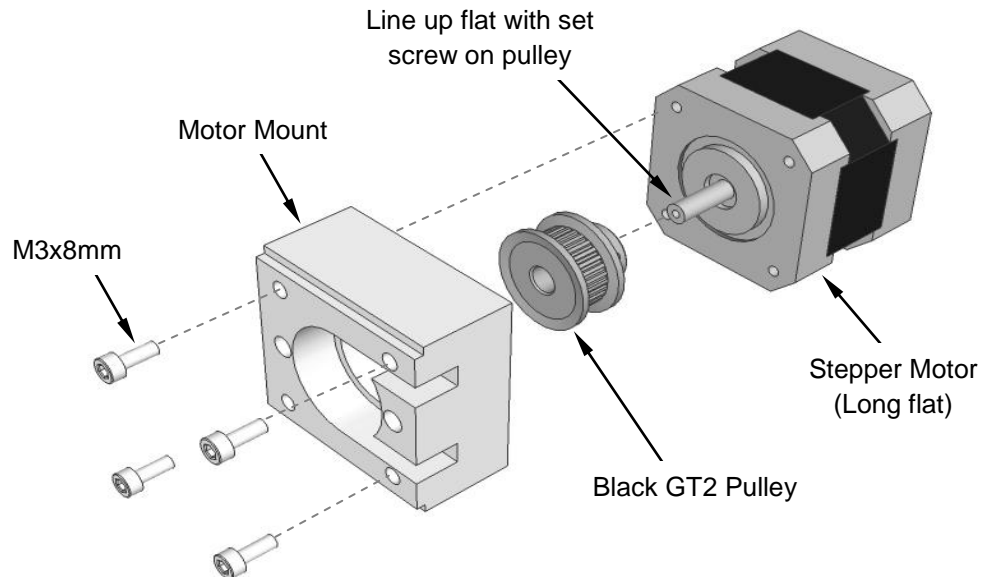
Assemble three (3) motor assemblies. **(NOTE this step may be already done in your kit)**

#### Parts (per motor assembly):

- 1 x Stepper Motor (long flat)
- 1 x Motor Mount
- 1 x Pulley (black)
- 4 x M3 x 8mm Socket Head Screws



Note the motor mount direction. The pulley is mounted with a 2mm gap between the pulley and the motor. The 2<sup>nd</sup> smallest allen wrench (2mm) can be used as a guide.



**Figure 6-1 Assemble Motors, Pulleys and Motor Mounts**

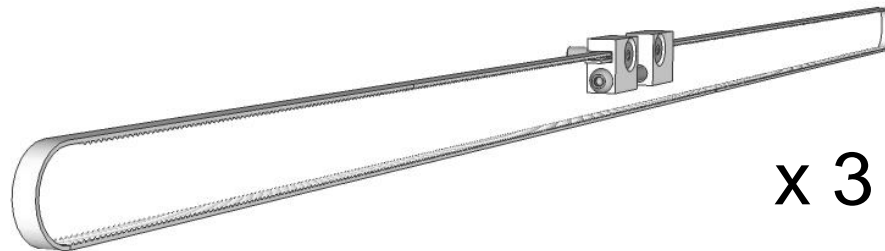
## 6.2 Belts Assembly (x3)

### Parts (per belt assembly):

3 x Threaded Tensioner  
3 x Unthreaded Tensioner  
3 x M6 x 60mm  
6 x M5 x 20mm Flat Head

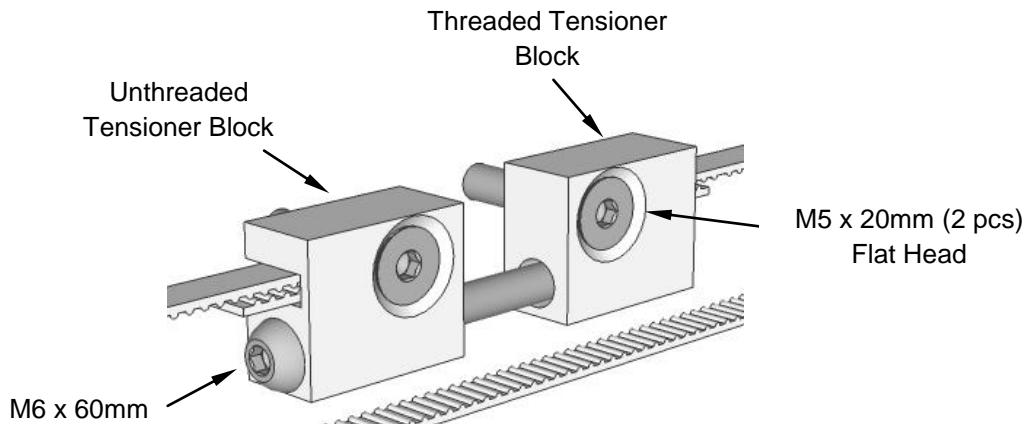
2 x GT2 Timing Runway Belt (Y-axis, 64")  
1 x GT2 Timing Bridge Belt (X-axis, 61.75")

Repeat this assembly for all three of the belt assemblies, two 64" belts for the Y axis and one 61.75" for the X axis.

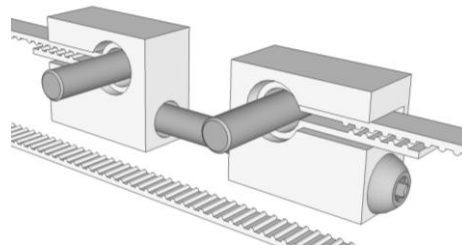


**6-2 Complete Belt Assembly**

Note the direction of the belt. The teeth must face the larger section of block. Leave  $\frac{1}{4}$ " of the end of the belt out of the block.



**Figure 6-3 Front of Belt Assembly**



**Figure 6-4 Back of Belt Assembly**

## 6.3 Trolley Plate Assembly

### Parts:

1 x Trolley Plate  
1 x Extruder Shelf  
1 x Front filament guide  
1 x Terminal box (includes terminal)  
1 x Short belt assembly  
4 x V-Groove Wheel  
2 x Round Spacer  
2 x Eccentric Spacer

6 x M5 Hex Nut  
1 x M5 Washer  
6 x M5 Lock Washer  
4 x M5 x 25mm Button Head (BHCS)  
2 x M5 x 12mm Flat Head (FH)

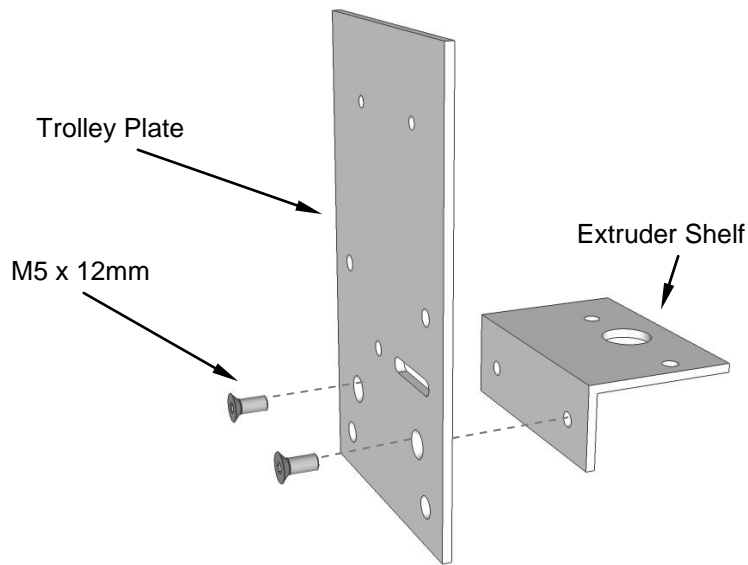
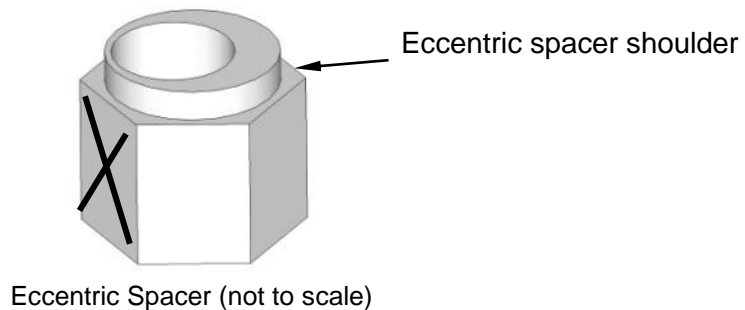
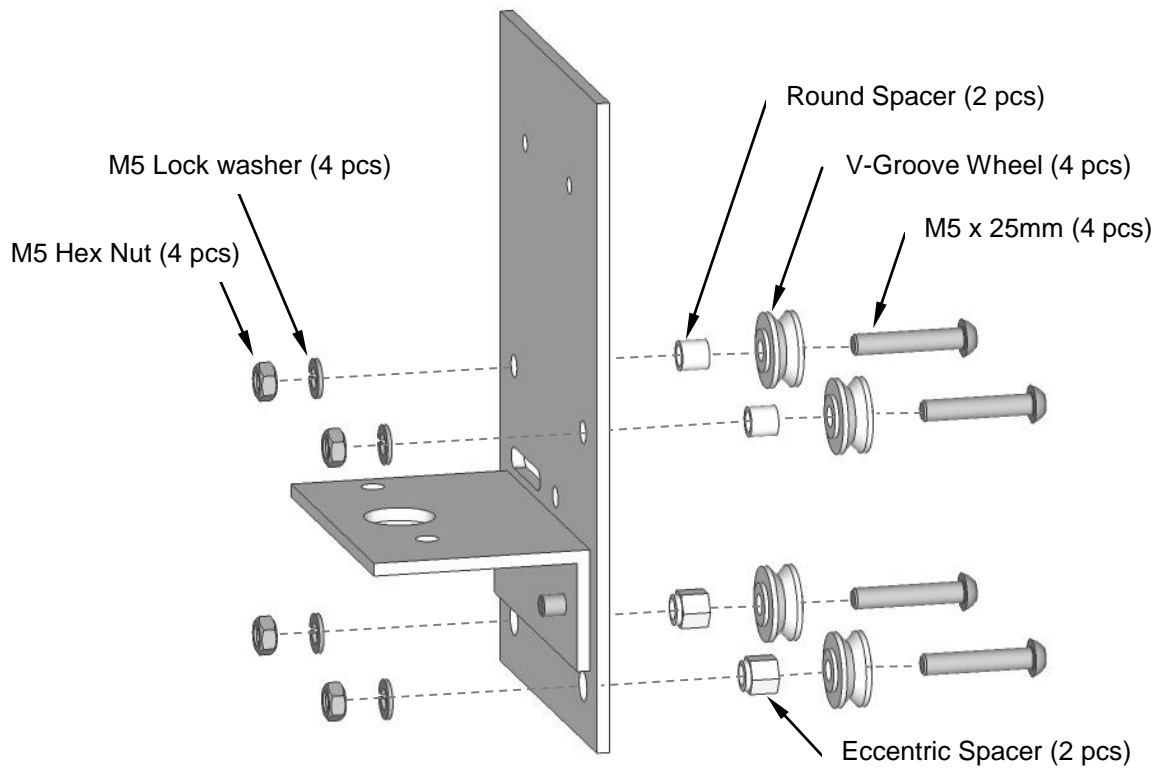


Figure 6-5 Add Extruder Shelf

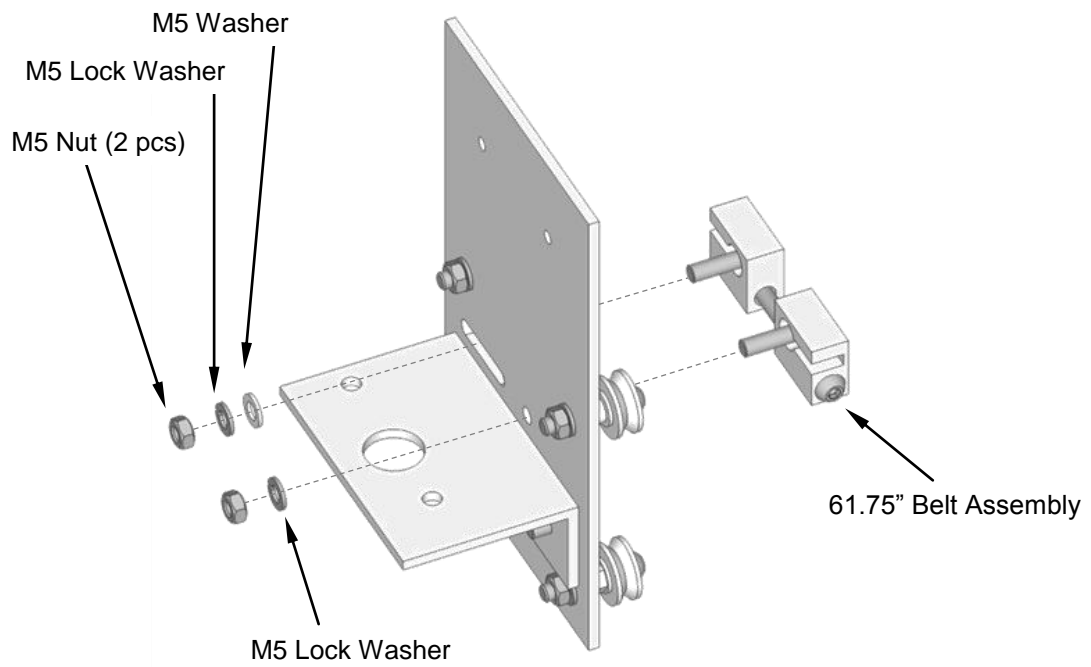
(Optional) Mark the flat of the eccentric spacer with a permanent marker closest to the offset in the center hole, as shown below. This will help with assembly and wheel tiring later.

Add a small drip of included grease on eccentric spacer shoulder. This will stick to the plate during assembly.

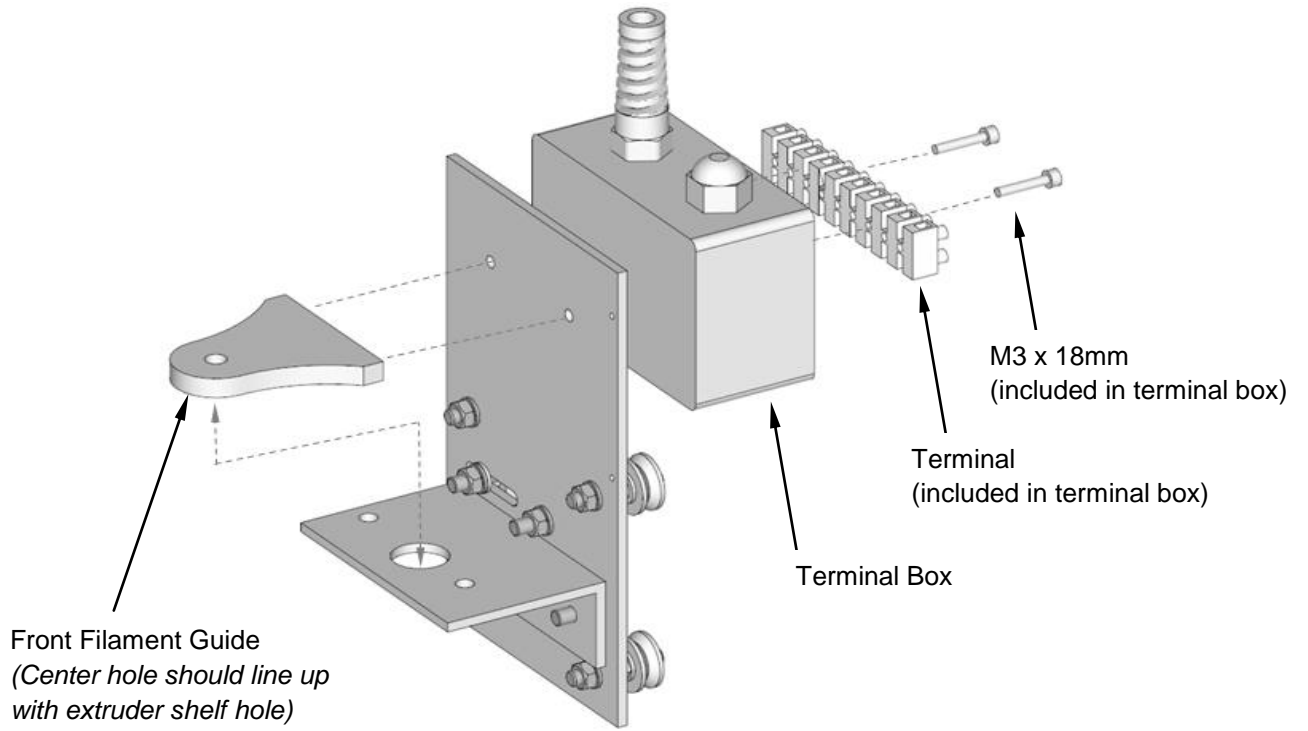




**Figure 6-6 Add wheels to trolley plate**



**Figure 6-7 Add belt to trolley plate**



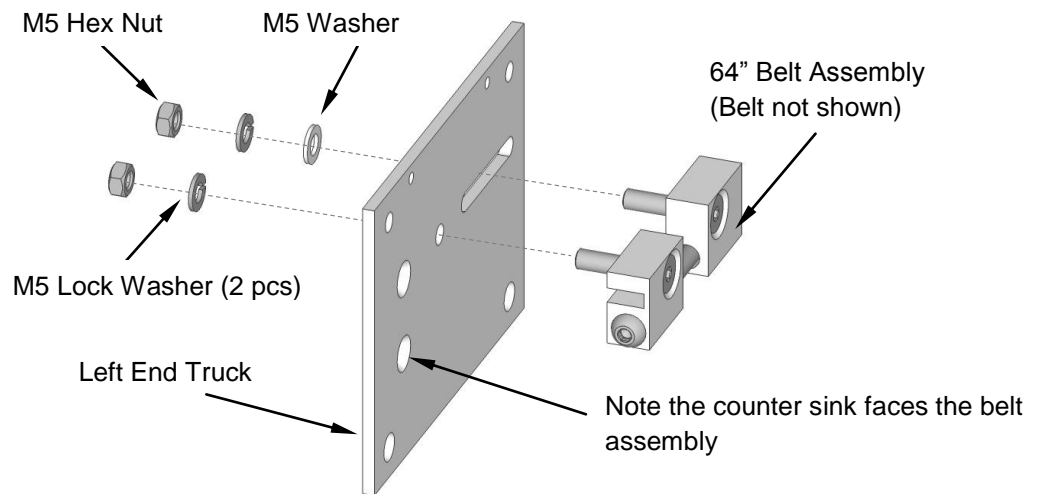
**Figure 6-8 Add Terminal box**

## 6.4 Complete X Bridge Rail

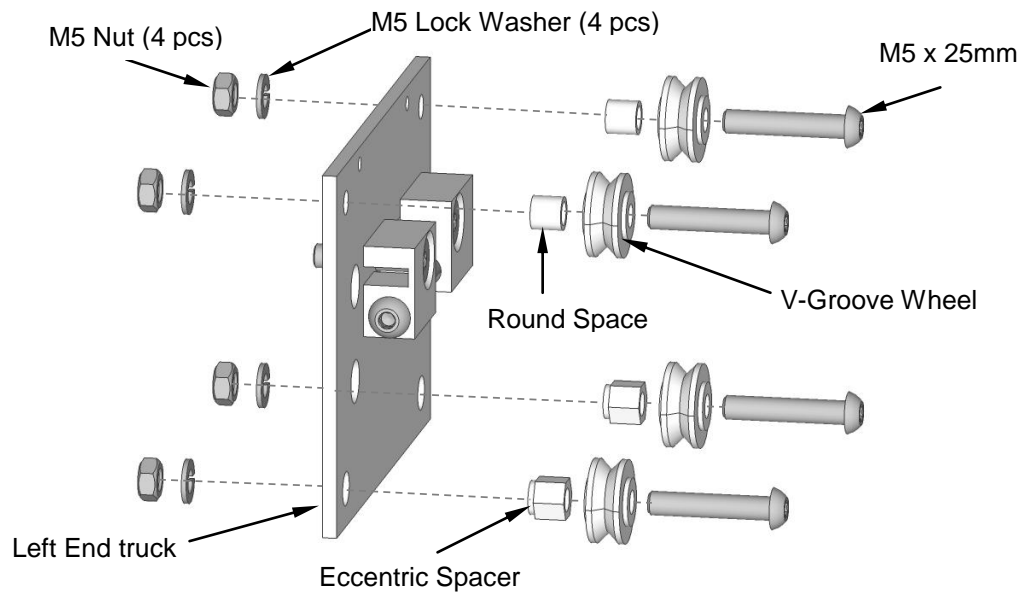
### Parts:

1 x Left End Truck Plate  
 1 x Right End Truck Plate  
 1 x X Bridge Rail  
 2 x 64" Belt Assembly  
 8 x V-Groove Wheel  
 1 x Stepper Motor  
 1 x Motor Mount  
 1 x Trolley Plate Assembly

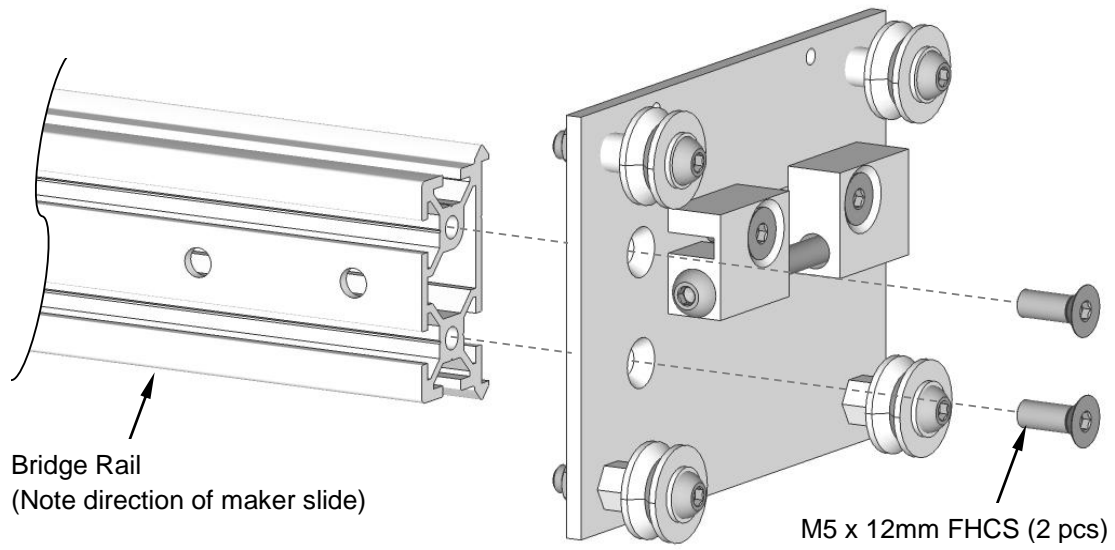
13 x M5 Hex Nut  
 6 x M5 Lock Washer  
 5 x M5 Washer  
 8 x M5 x 25mm  
 4 x M5 x 12mm (flat head)  
 3 x M5 x 45mm  
 4 x Round Spacer  
 4 x Eccentric Spacer



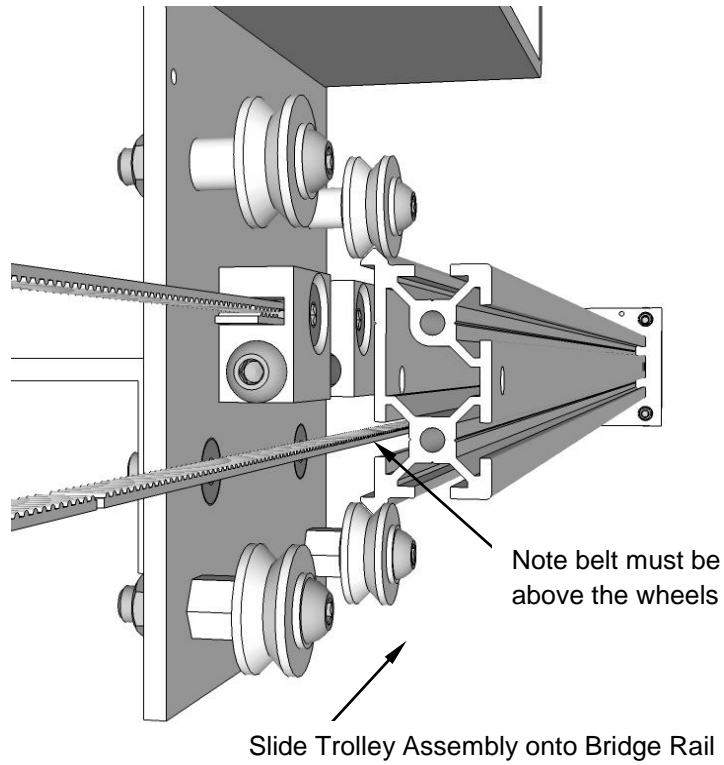
**Figure 6-9 Add 64" Belt to Left End Truck Assembly (MAKE SURE BELT ISN'T TWISTED)**



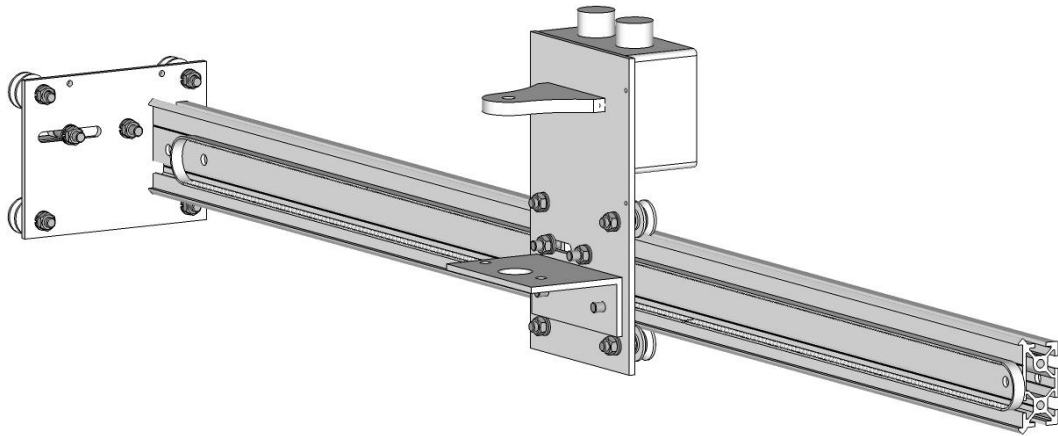
**Figure 6-10 Add Wheels to Left End Truck Assembly**



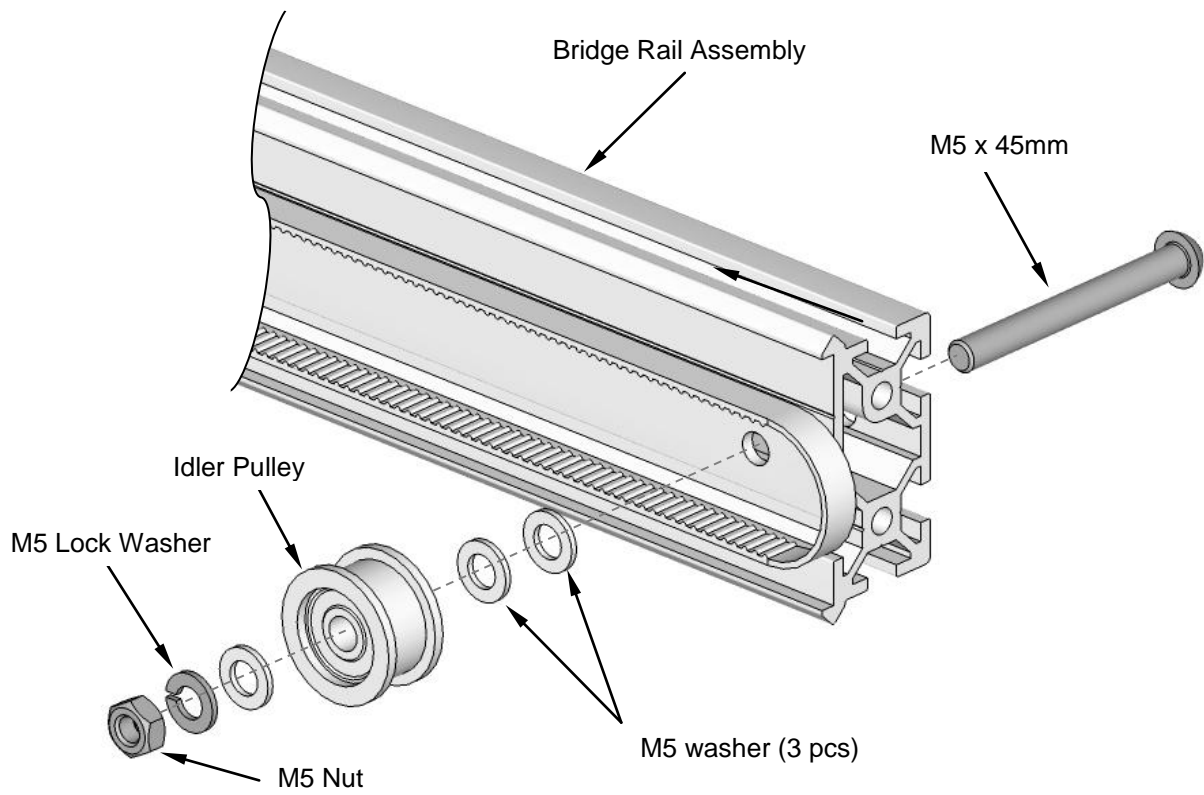
**Figure 6-11**



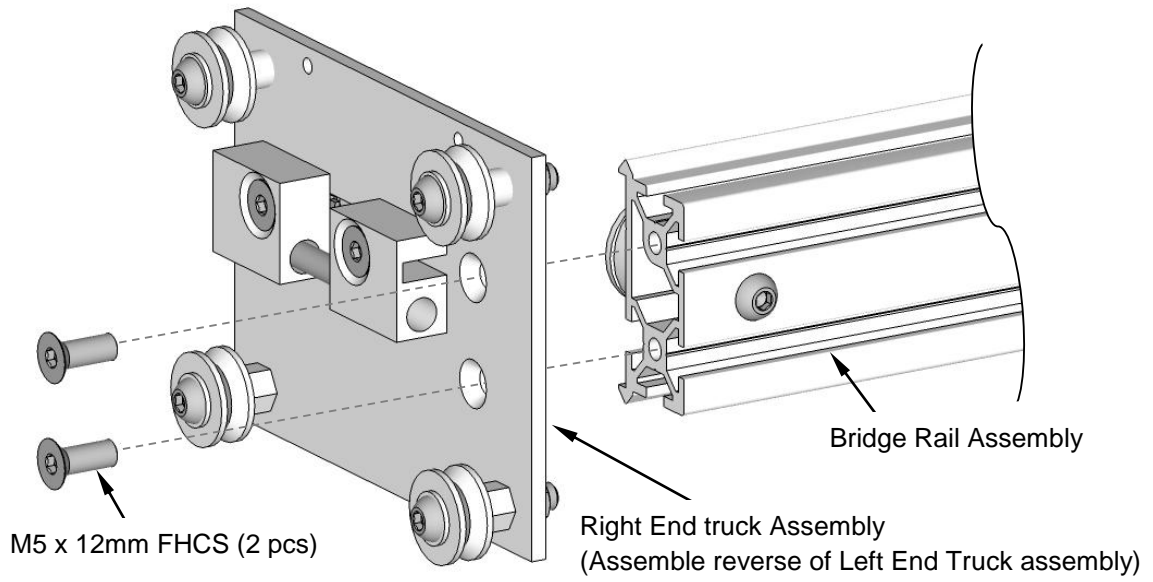
**Figure 6-12**



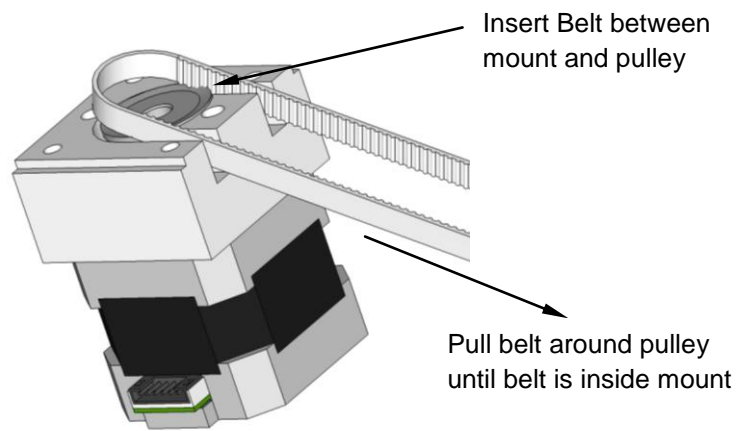
**Figure 6-13**



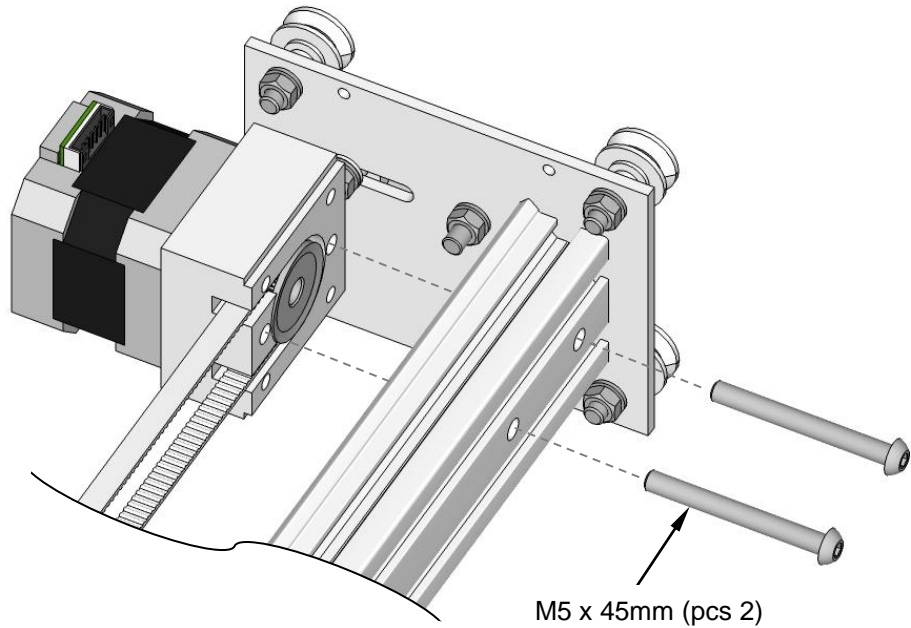
**Figure 6-14 X Bridge Idle Pulley**



**Figure 6-15 Add Right Endtruck Plate to X Bridge**

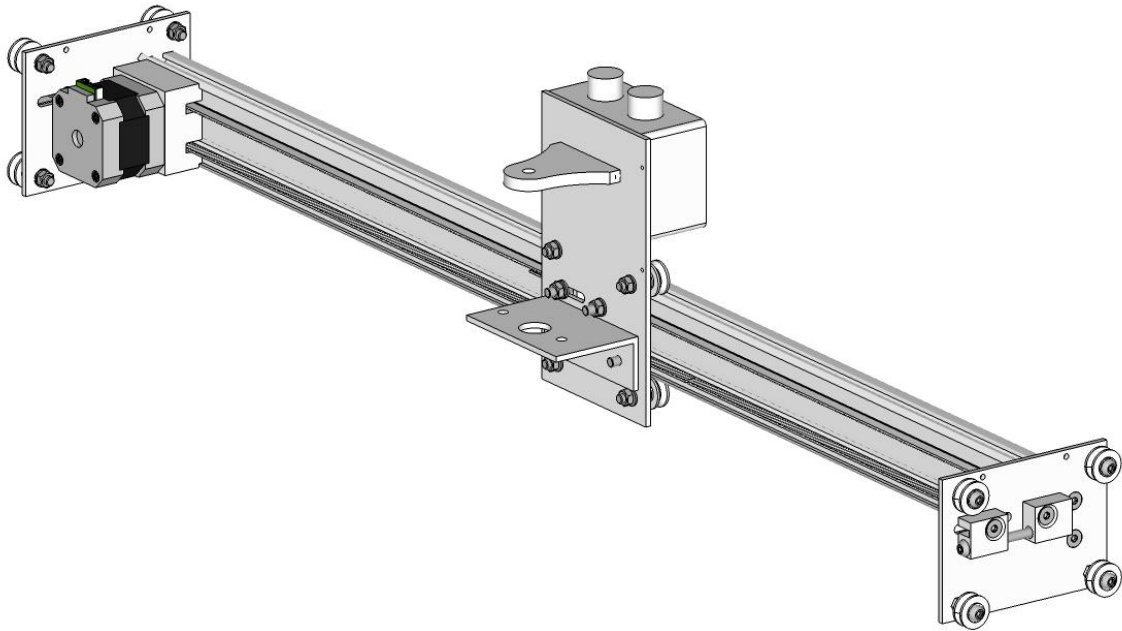


**Figure 6-16 Add Motor to Belt**



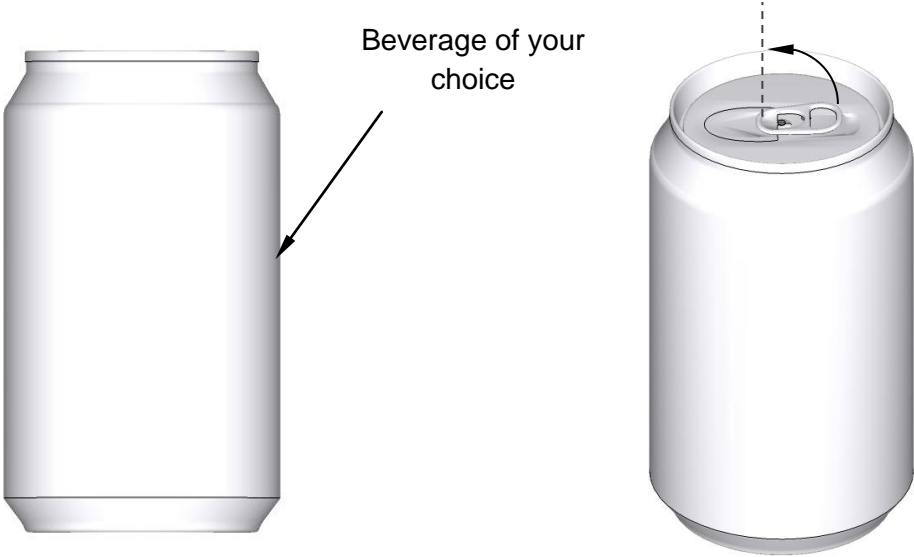
M5 x 45mm (pcs 2)

**Figure 6-17 Bolt Motor to X Bridge**



**Figure 6-18 Complete X Bridge Assembly**

**Good Stopping Point**



## 6.5 Bed Assembly

### Parts:

2 x Side Plates	4 x Hex nuts
2 x Bed Cross Rails	4 x M5 x 45mm
3 x Bed level blocks	4 x M5 x 25mm
1 x Z-switch level block	8 x M5 x 12mm
4 x Bed bracket	4 x M5 Lock Washer
4 x Leveling spring	5 x M5 Washer
8 x T-nuts	
4 x V-Groove Wheel	
2 x Round Spacer	
2 x Eccentric Spacer	

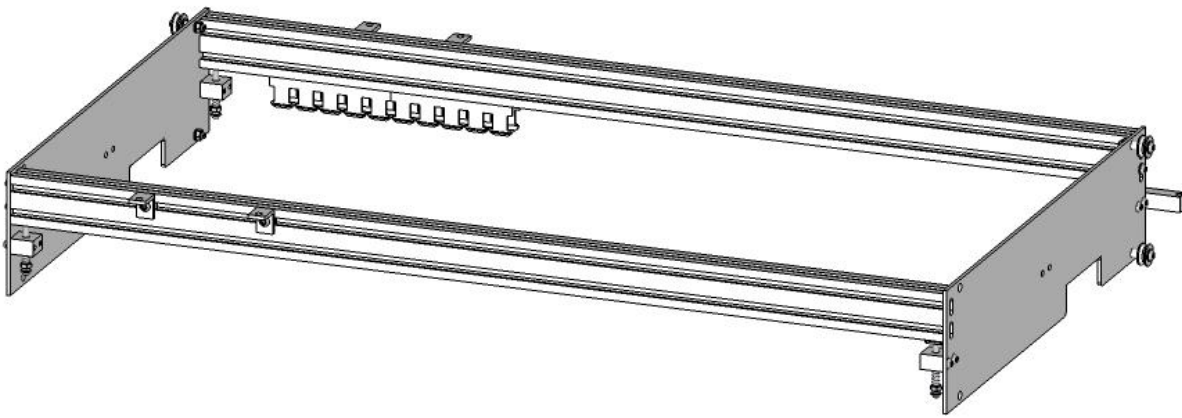


Figure 6-19 Finished Bed Frame

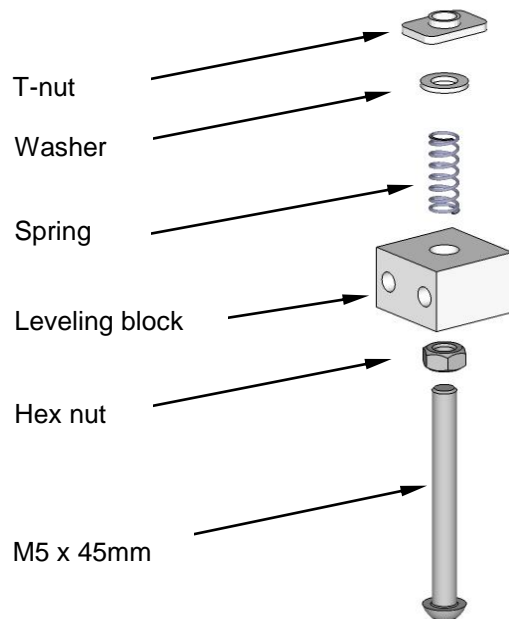
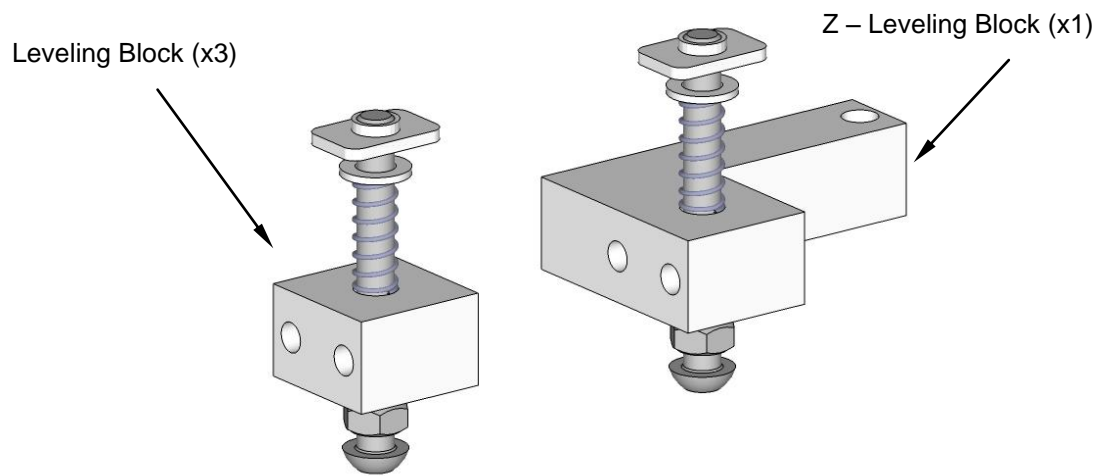
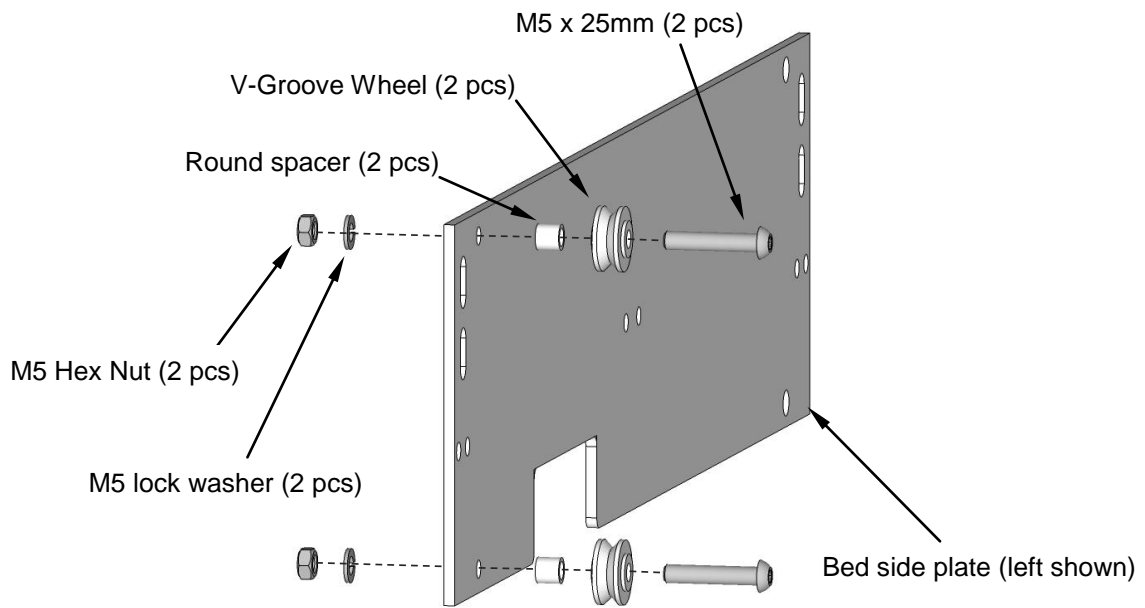


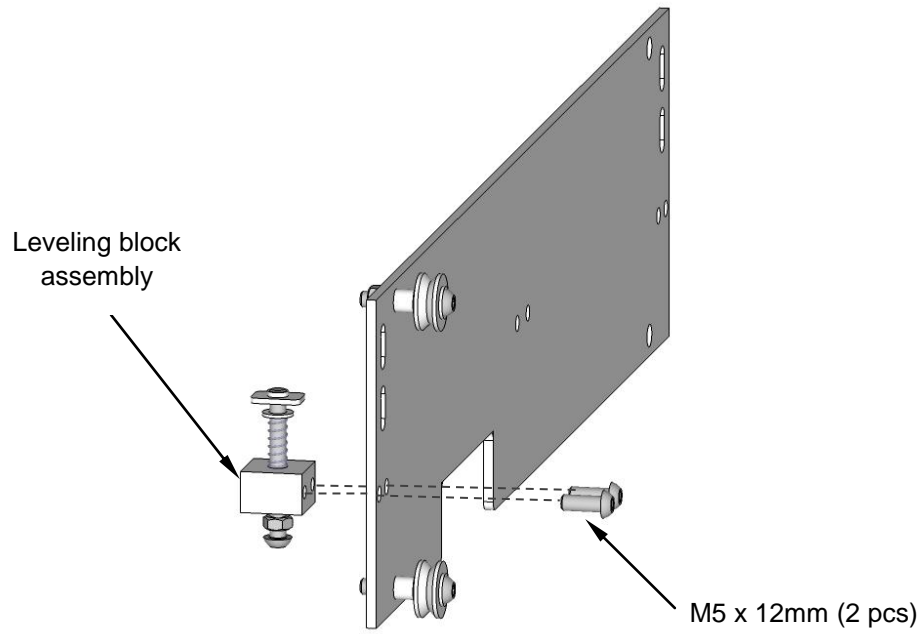
Figure 6-20 Leveling Block Assembly



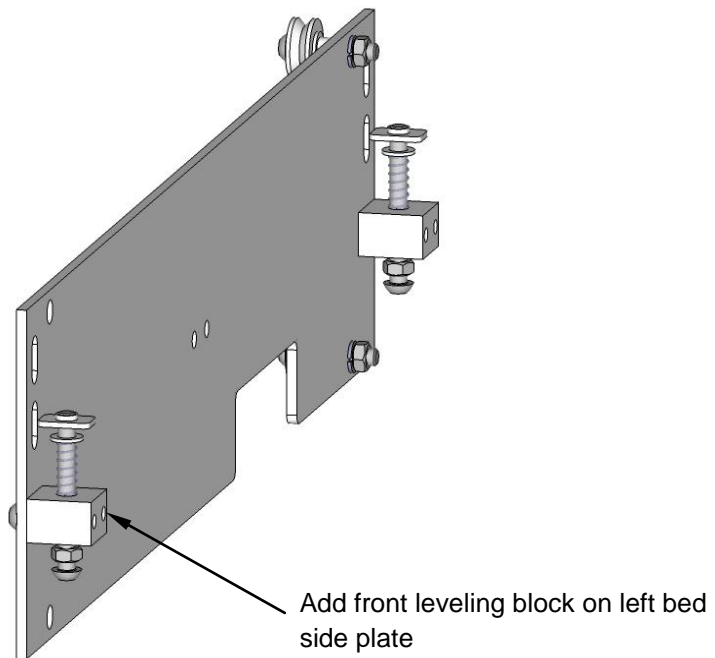
**Figure 6-21 Assembly Leveling Blocks**

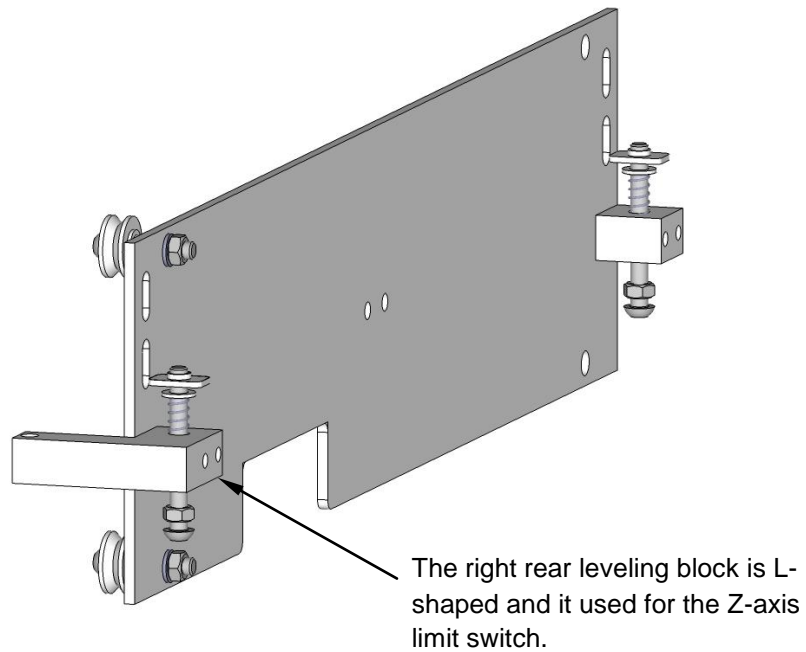


**Figure 6-22 Add Wheels to Left Bed Side Plate**



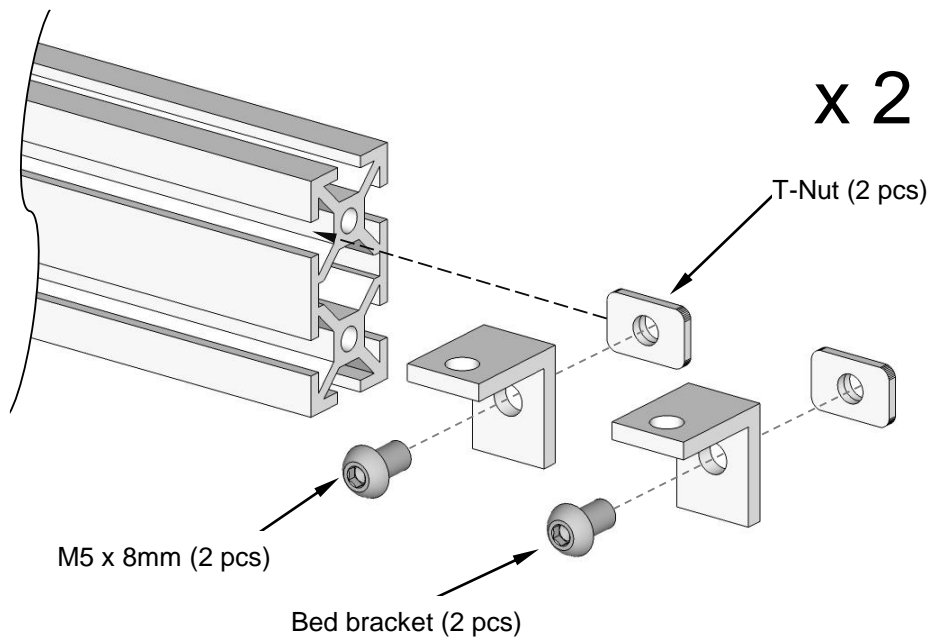
**Figure 6-23 Add leveling block assembly to rear of left bed side plate**



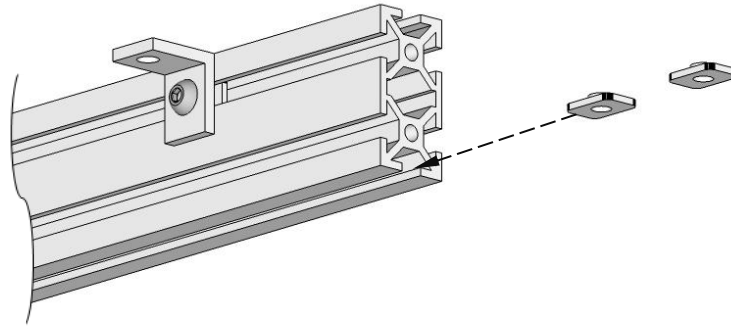


**Figure 6-24 Note Location of Z-Limit Switch Leveling Block**

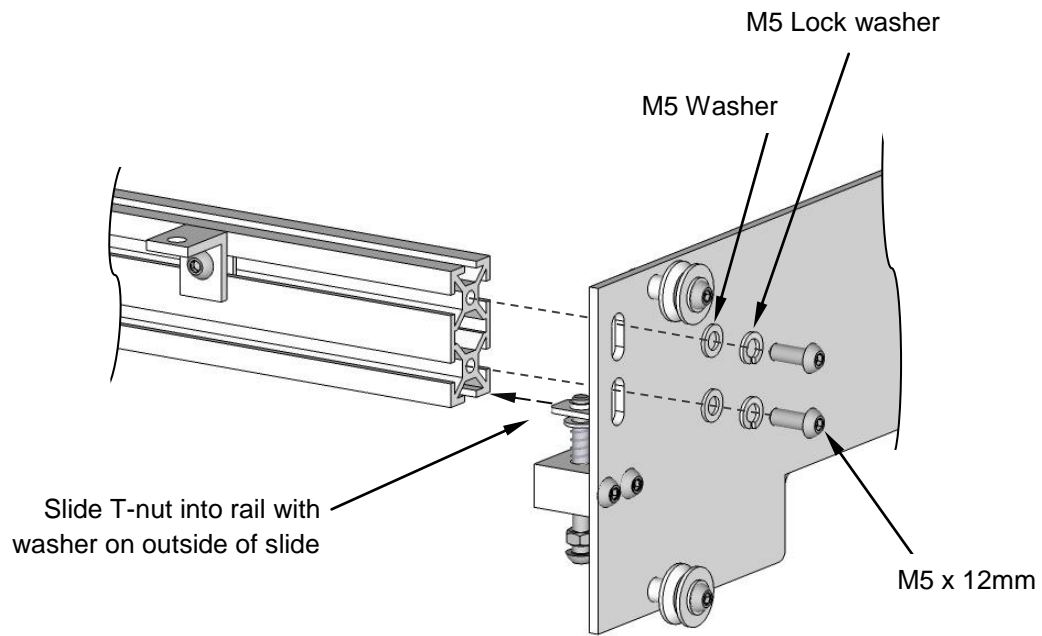
Add the bed mounting brackets to both bed cross rails (only one shown below). Note that the bed mounting bracket are on the outside faces of the bed cross rails and can be seen in Figure 6-19 for reference.



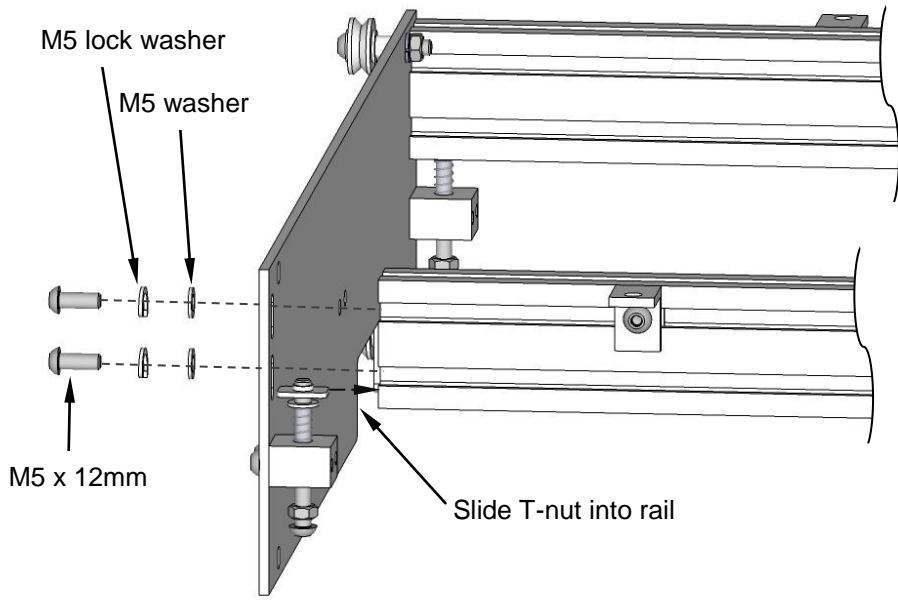
**Figure 6-25 Install Bed Brackets (Repeat for front rail)**



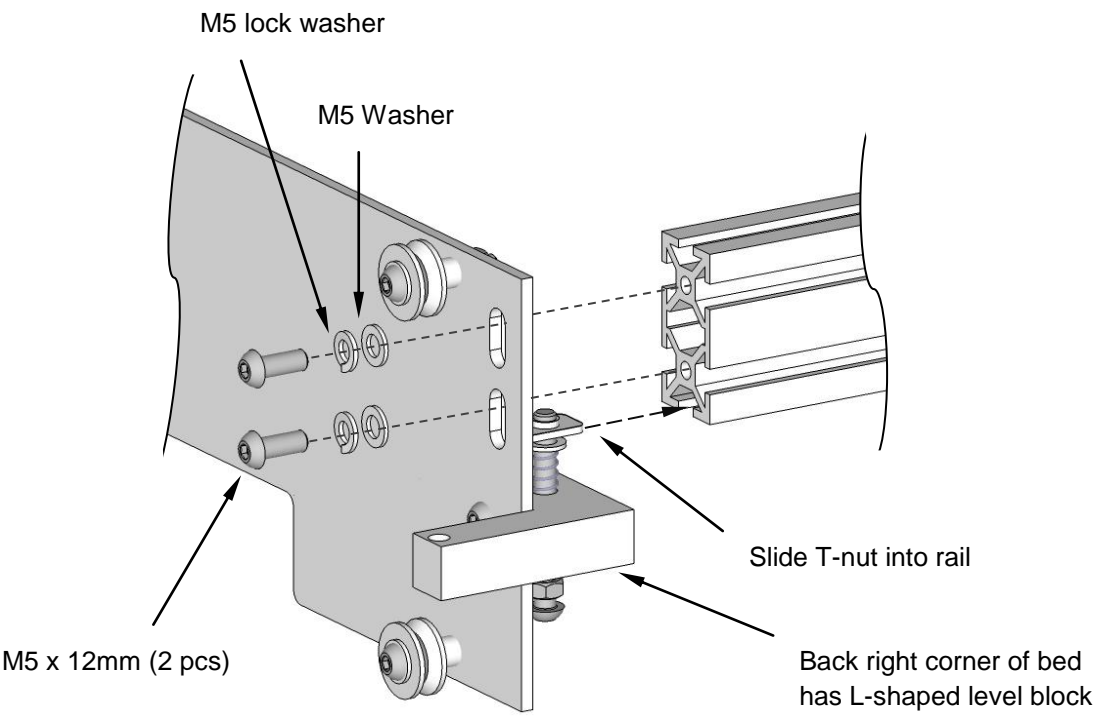
**Figure 6-26 Add T-Nuts to Rear Bed Frame Rail (Used later)**



**Figure 6-27 Connect Side Plate to Back Rails**

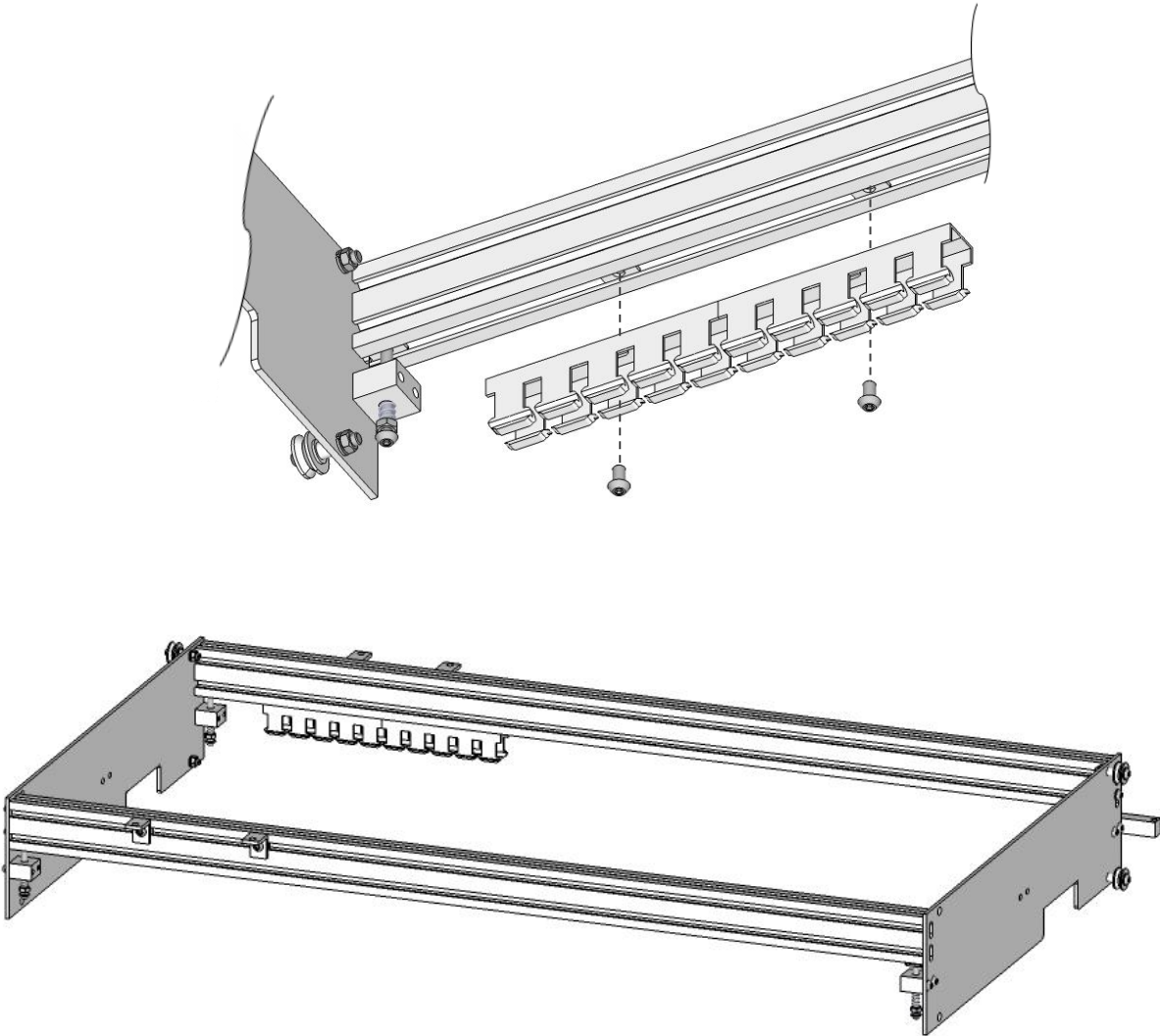


**Figure 6-28 Add Forward Rail to Assembly (Note direction of bed mounting bracket)**



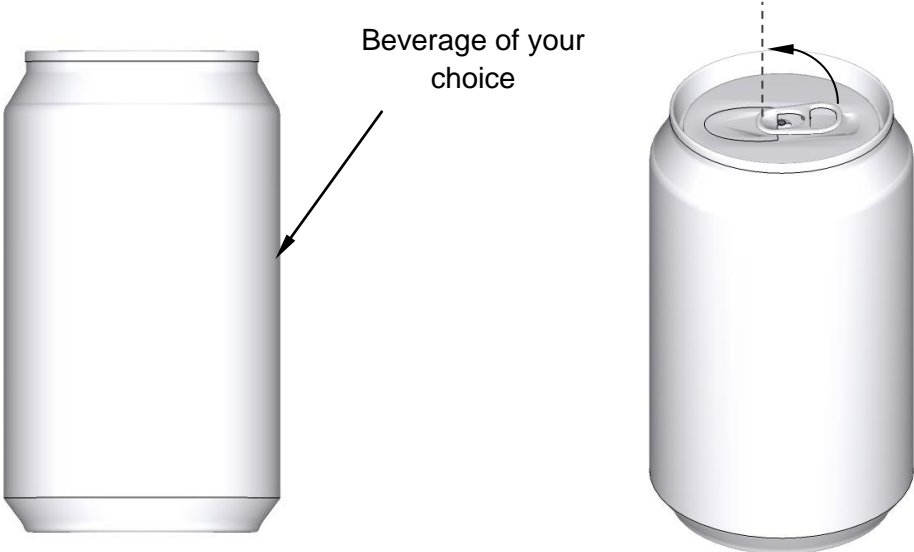
**Figure 6-29 Connect Back Rail to Right Side Plate**

(t-nut may be pre



**Figure 6-30 Complete Bed Frame Assembly**

**Good Stopping Point**



## 6.6 Mount Electrical Enclosure on Rails

### Parts:

1 x Electrical Box	4 x M5 x 8mm
2 x Common Rail	8 x M5 x 12mm
2 x Filament Spool rod shelf	16 x M5 Washer
4 x Triangle Brackets	12 x T-nut

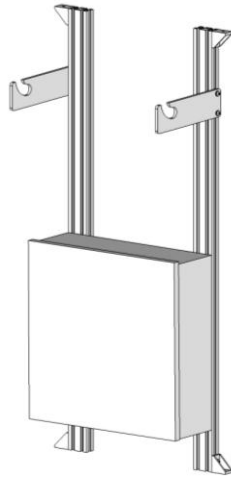


Figure 6-31 Finished Electrical Box Assembly

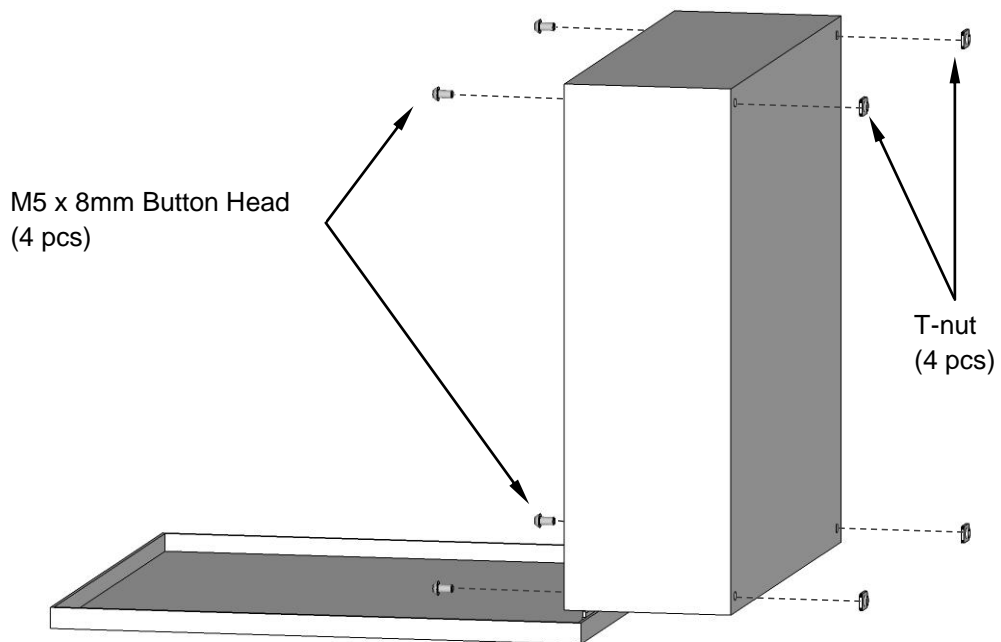
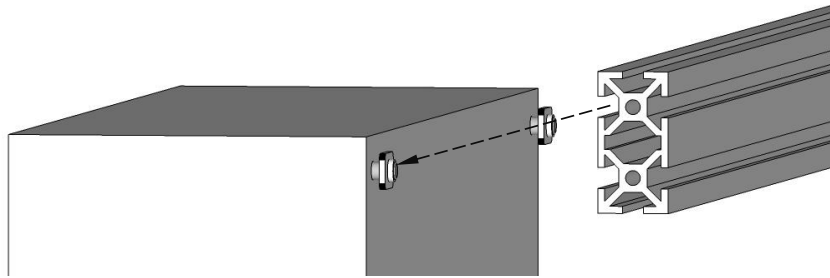
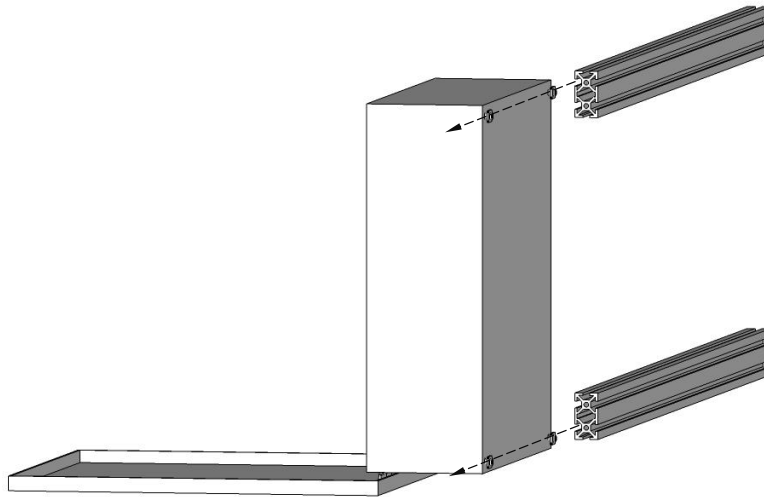


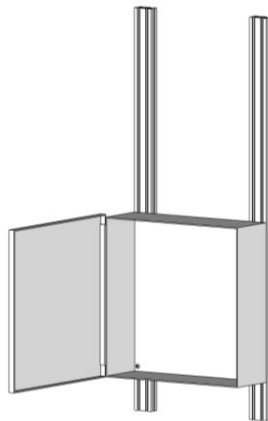
Figure 6-32 Add T-nuts to Electrical Box



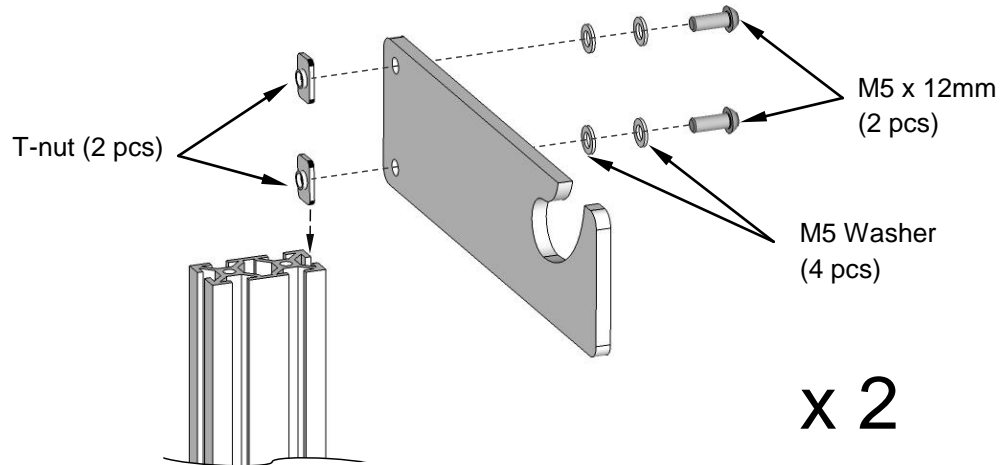
**Figure 6-33 Slide Common Rail onto Electrical Box (Detail)**



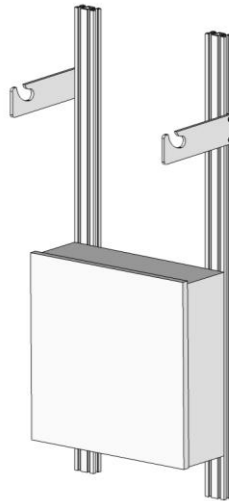
**Figure 6-34 Slide Common Rail onto Electrical Box**



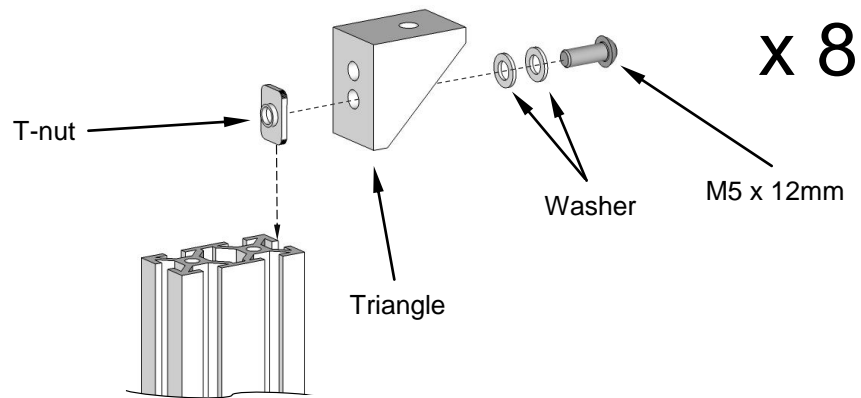
**Figure 6-35 Electrical Box on Common Rail (3" from bottom)**



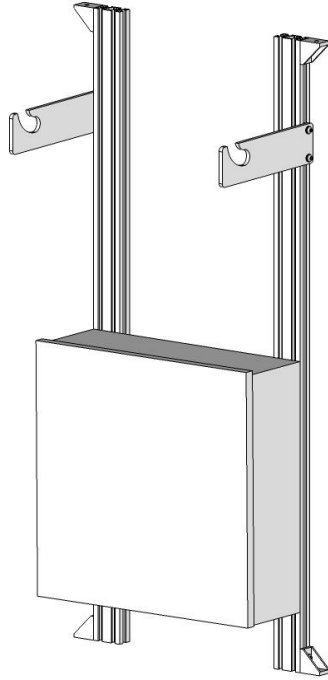
**Figure 6-36 Add Filament Rod Shelf to Electrical Box Assembly (Repeat for other side)**



**Figure 6-37 Electrical Box Assembly with Filament Rod Shelf**



**Figure 6-38 Add Triangle Bracket to Electrical Box Assembly (Repeat for all 4 ends)**



**Figure 6-39 Complete Electrical Box Assembly**

**Good Stopping Point**



## 6.7 Frame Assembly

### 6.7.1 Frame Cross Rails

#### Parts:

4 x Cross Rails	58 x M5 x 8mm
6 x Corner Plates	58 x T-nuts
1 x Logo Plate	1 x M5 x 12mm
1 x Serial Plate	2 x M5 Washers
1 x Rear filament guide shelf	

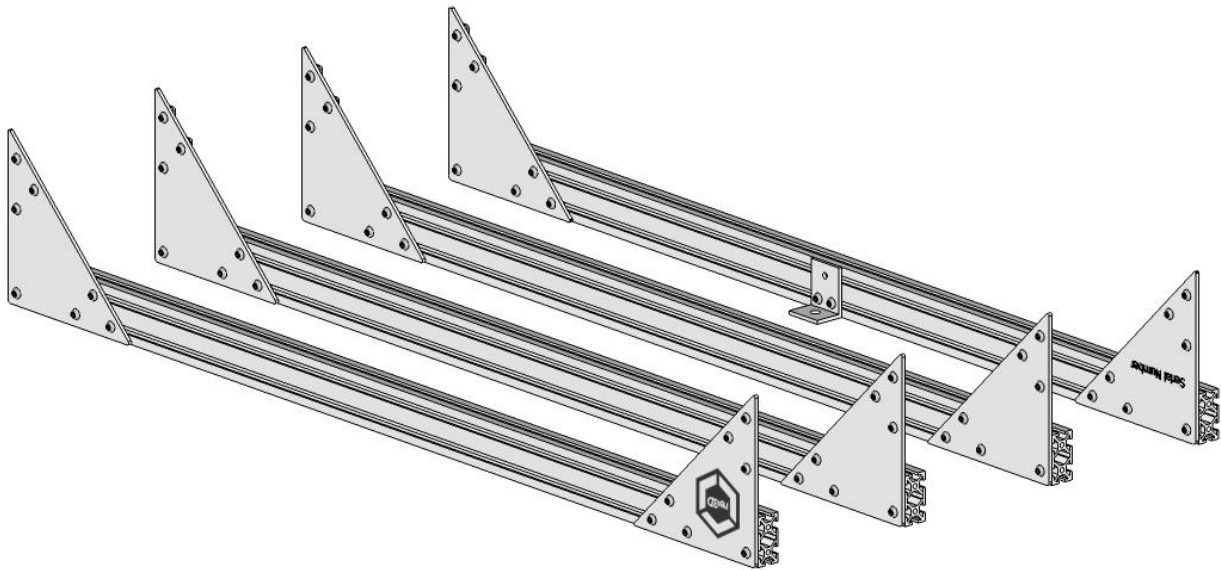


Figure 6-40 Four Cross Rail Assemblies

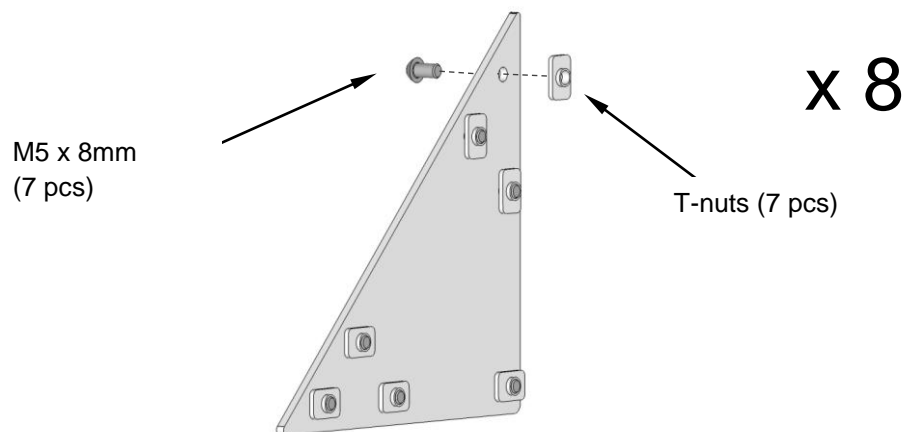
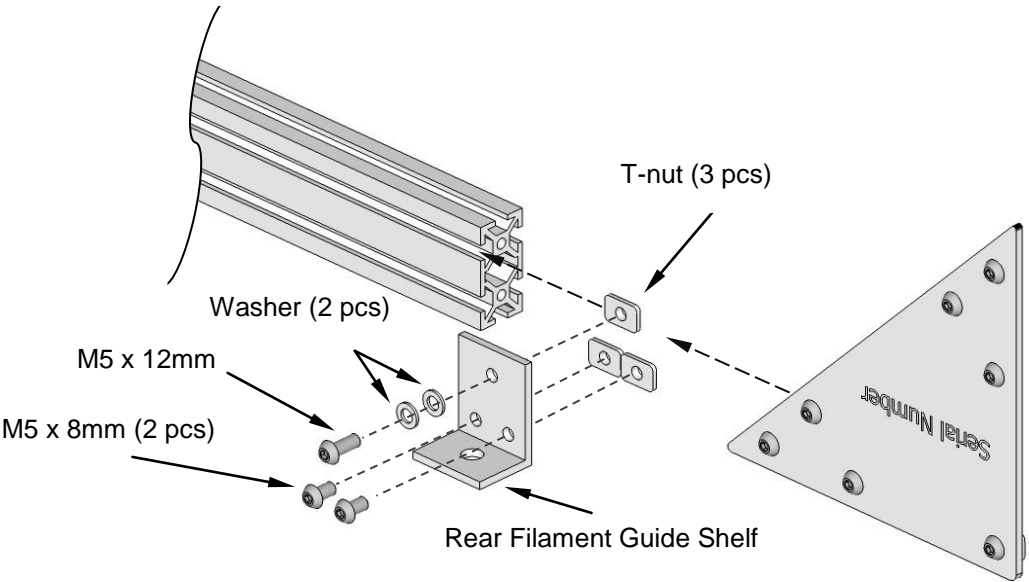
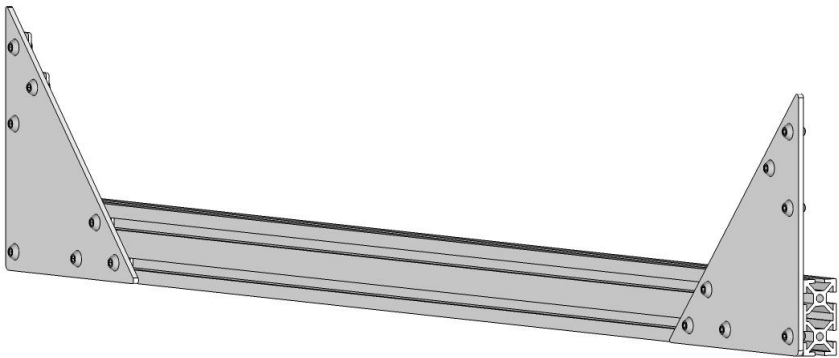
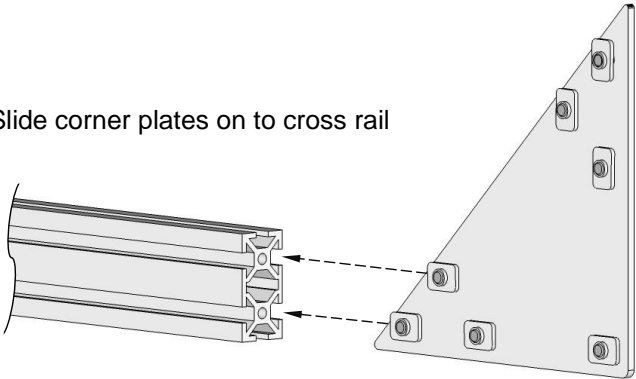
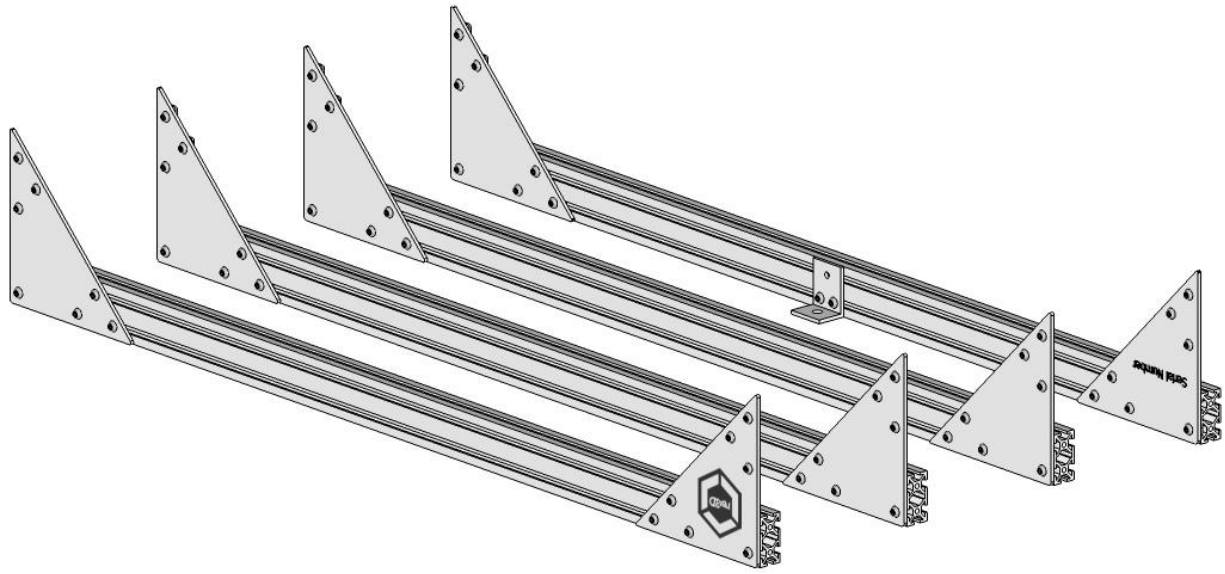


Figure 6-41 Add T-nuts and M5 x 8mm to Corner Plates

Slide corner plates on to cross rail





## 6.7.2 Frame Side Plates

### Parts:

4 x Side Plates	112 x M5 x 8mm
2 x Common Rail	112 x T-nuts
2 x Y-Runway Rail	
2 x Lower bearing block	

The two bottom side plate assemblies include a side plate, common rail, and lower bearing block, and are mirrors of each other. The two upper side plate assemblies include a side plate, and Y-axis maker side, and are mirrors of each other.

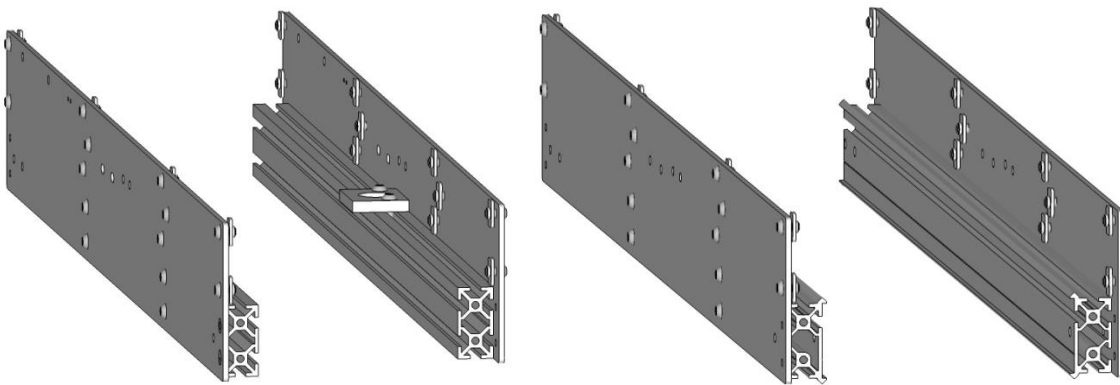


Figure 6-42 Four Side Plate Assemblies (Note that no two are identical)

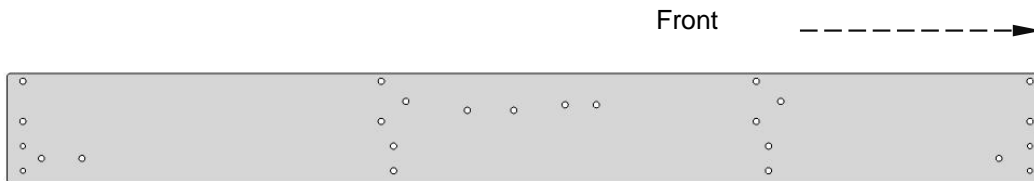
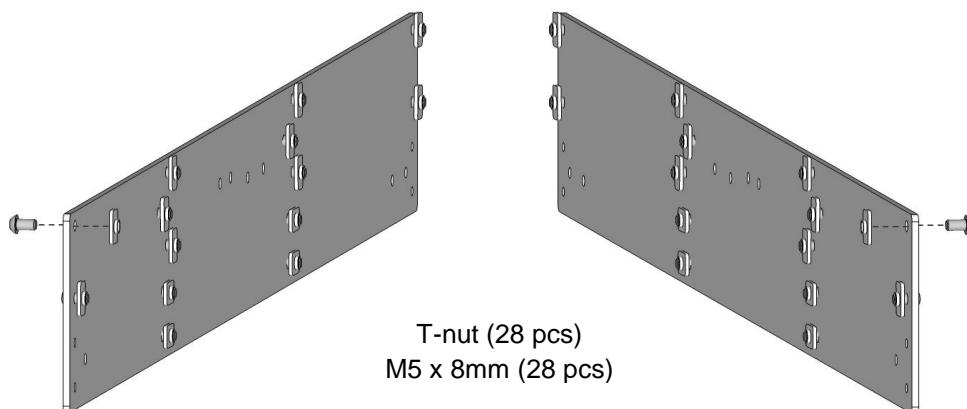
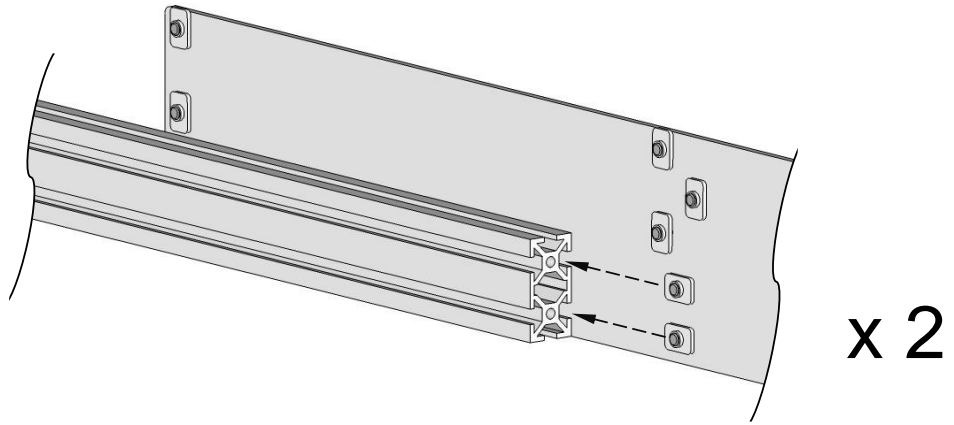


Figure 6-43 Side Plate (None it isn't symmetric front to back)

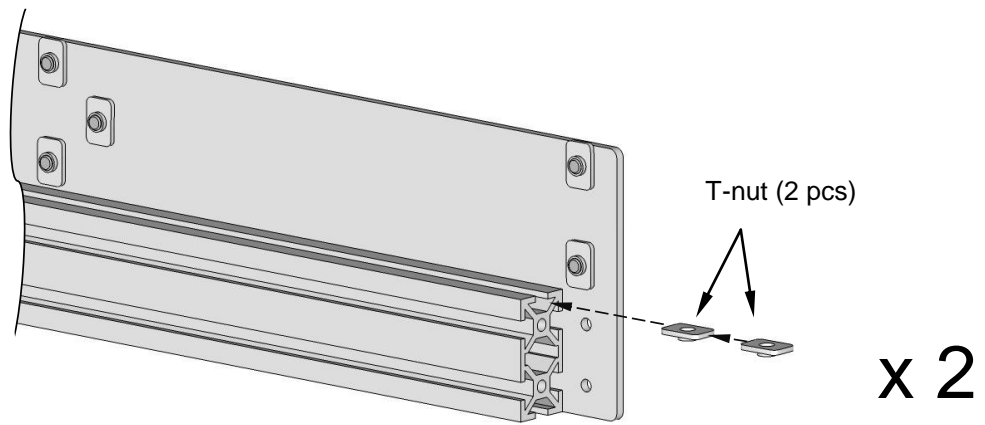


T-nut (28 pcs)  
M5 x 8mm (28 pcs)

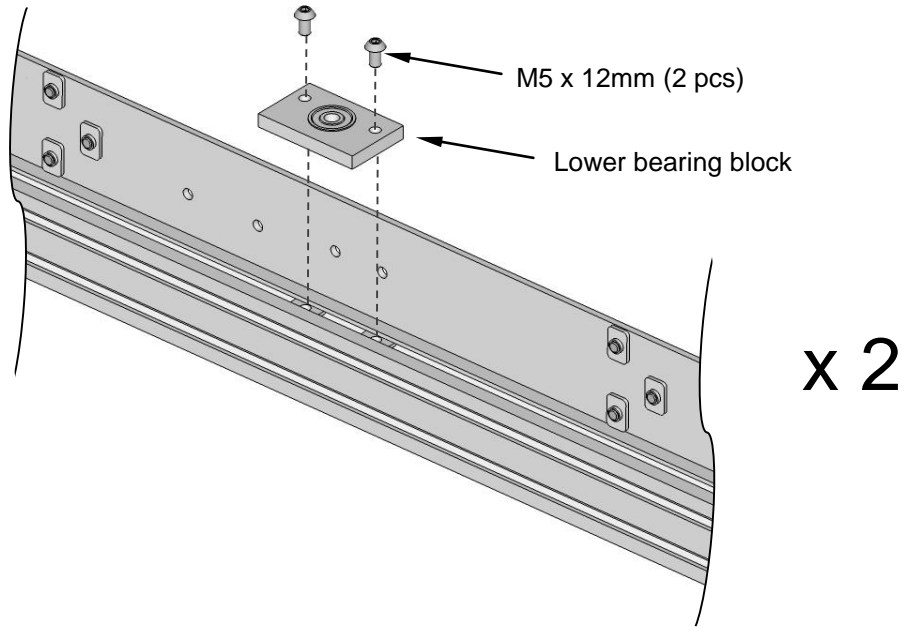
Figure 6-44 Add T-Nuts and M5 x 8mm SHCS (Note they are mirrored)



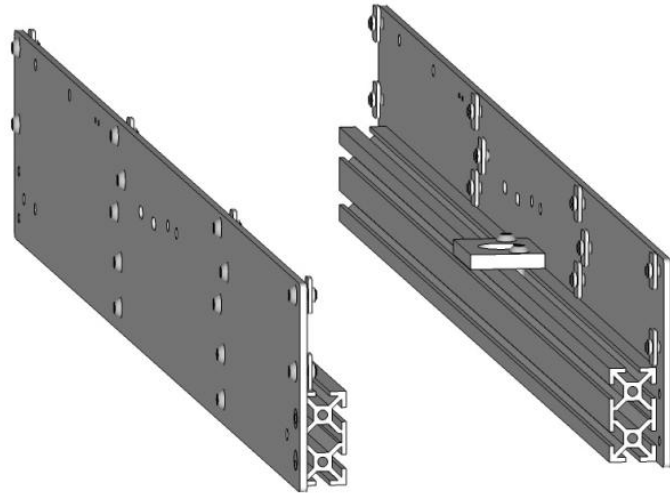
**Figure 6-45 Slide Common Rail onto Side Plate (Repeat for both sides)**



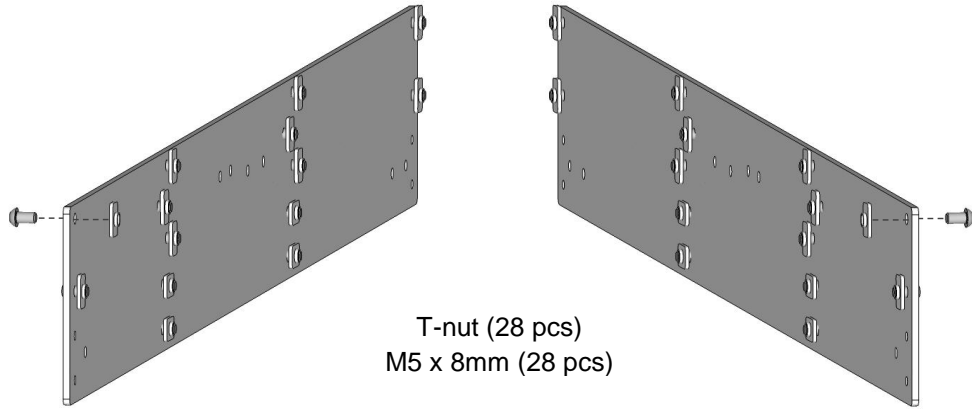
**Figure 6-46 Add T-nuts to both Common Rail**



**Figure 6-47 Add Bearing Block to Both Common Rail**

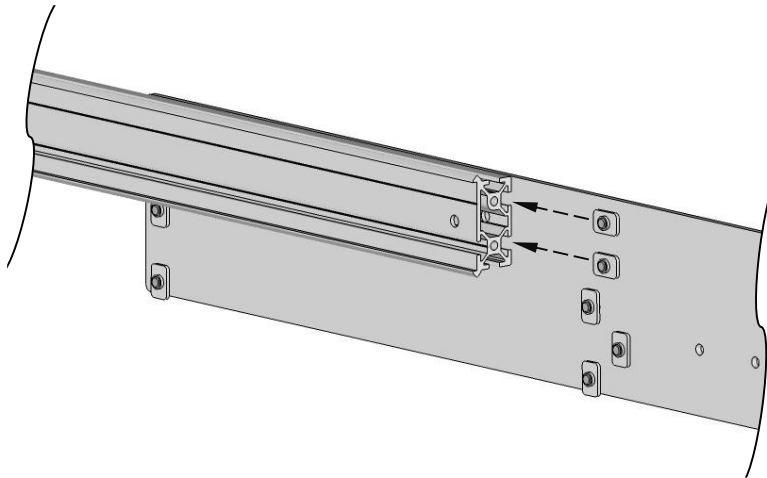


**Figure 6-48 Lower Side panel assembly**

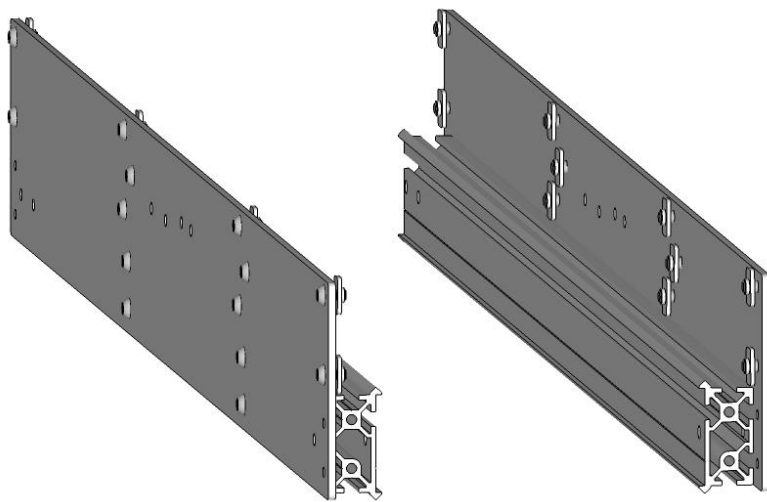


T-nut (28 pcs)  
M5 x 8mm (28 pcs)

**Figure 6-49 Add T-Nuts and M5 x 8mm SHCS (Note that they are mirrored)**



**Figure 6-50 Add Maker Slide to Side Panels**



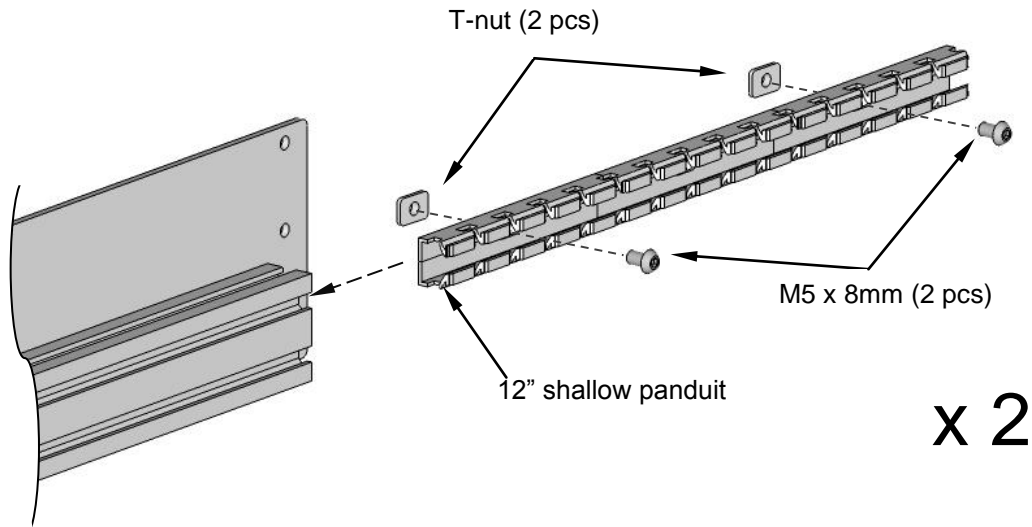
**Figure 6-51 Upper Side Plate assembly**

### 6.7.3 Lower Frame

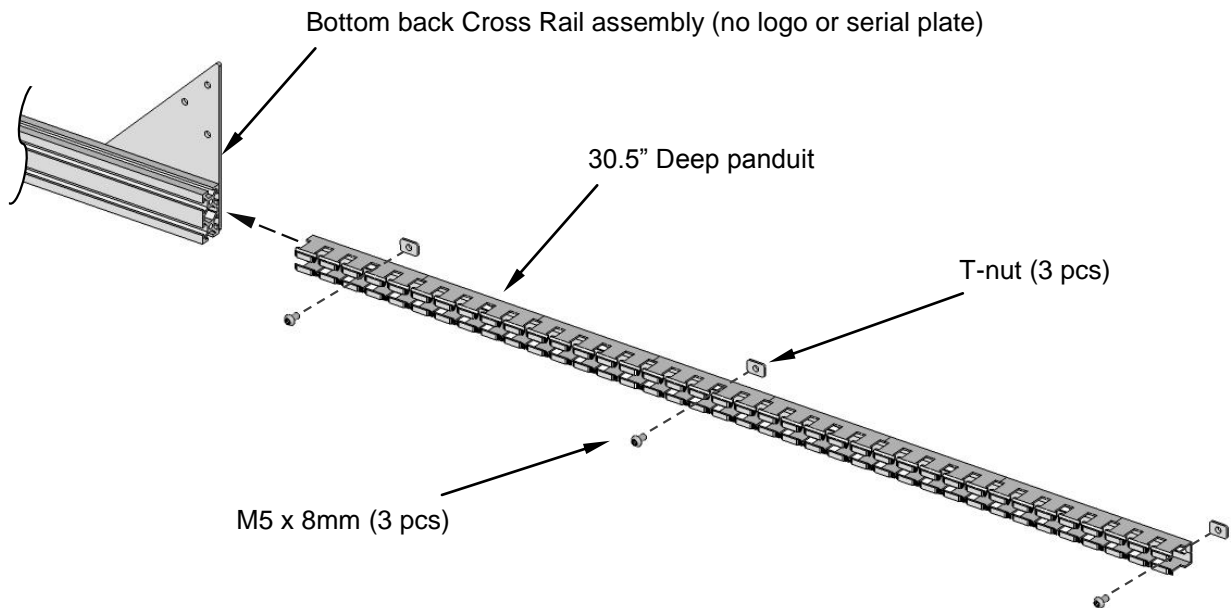
#### Parts:

- 2 x Lower Side Panel assembly
- 2 x Lower Cross Rails (No logo, Serial number)
- 2 x 12" Shallow Panduit
- 1 x 30.5" Deep Panduit
- 4 x Corner Triangle bracket

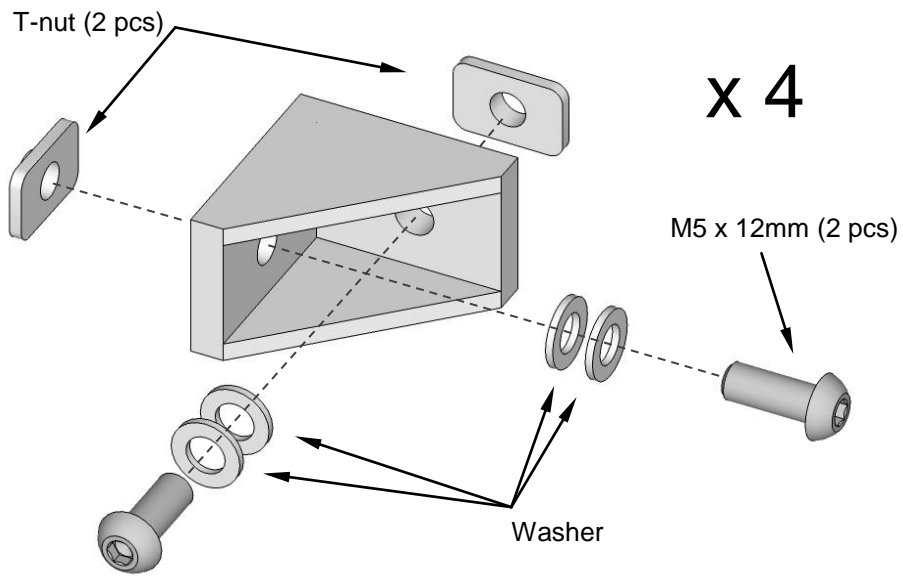
- 11 x T-nuts
- 11 x M5 x 8mm SHCS



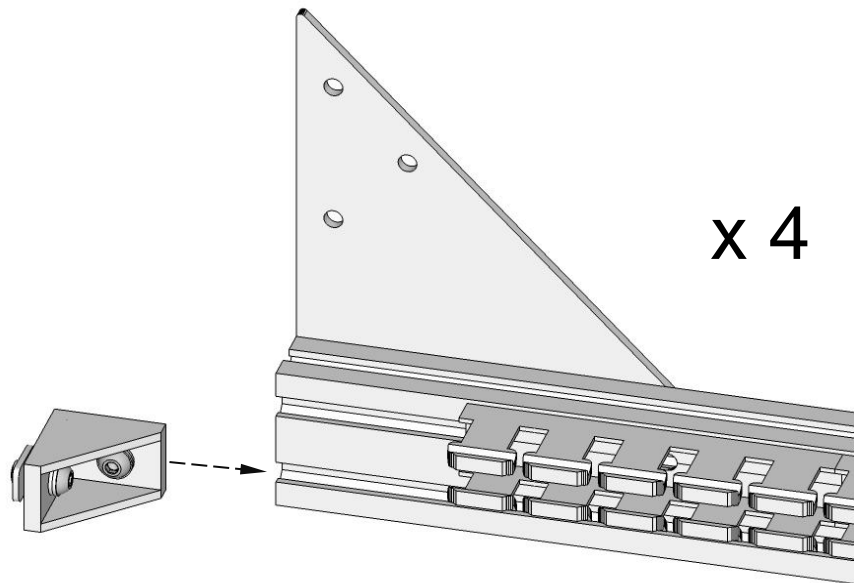
**Figure 6-52 Add 12" Shallow Panduit to both Lower Side Panel**



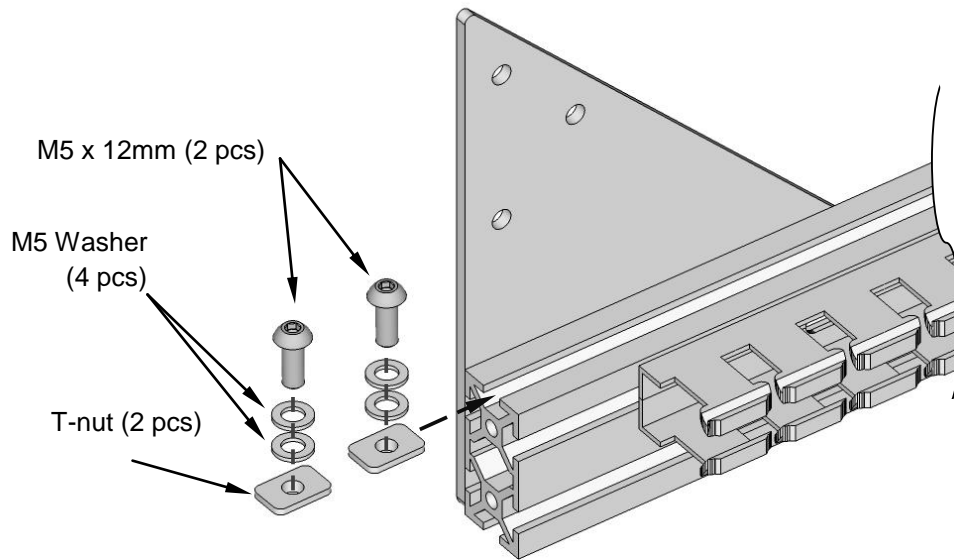
**Figure 6-53 Add 30.5" Deep Panduit to Bottom Back Cross panel**



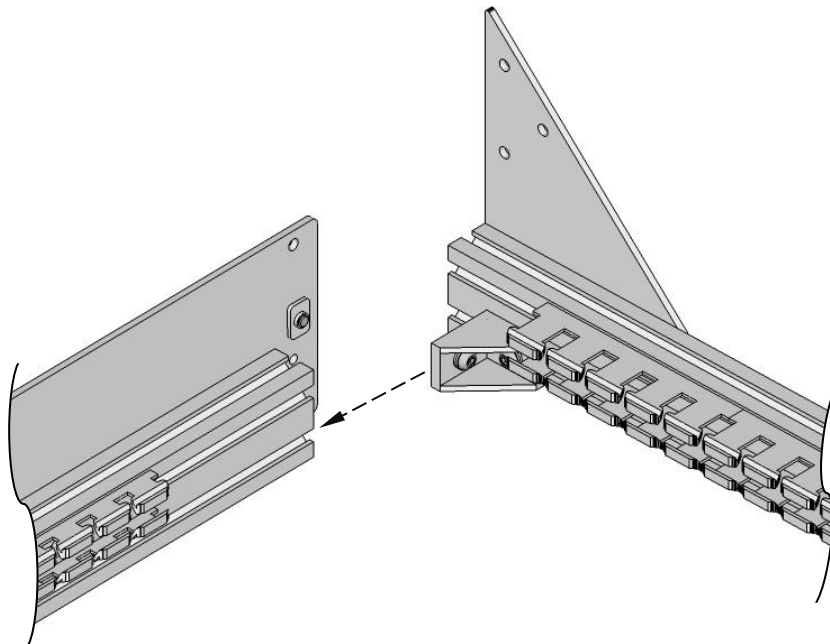
**Figure 6-54 Corner Triangles (Repeat four times)**



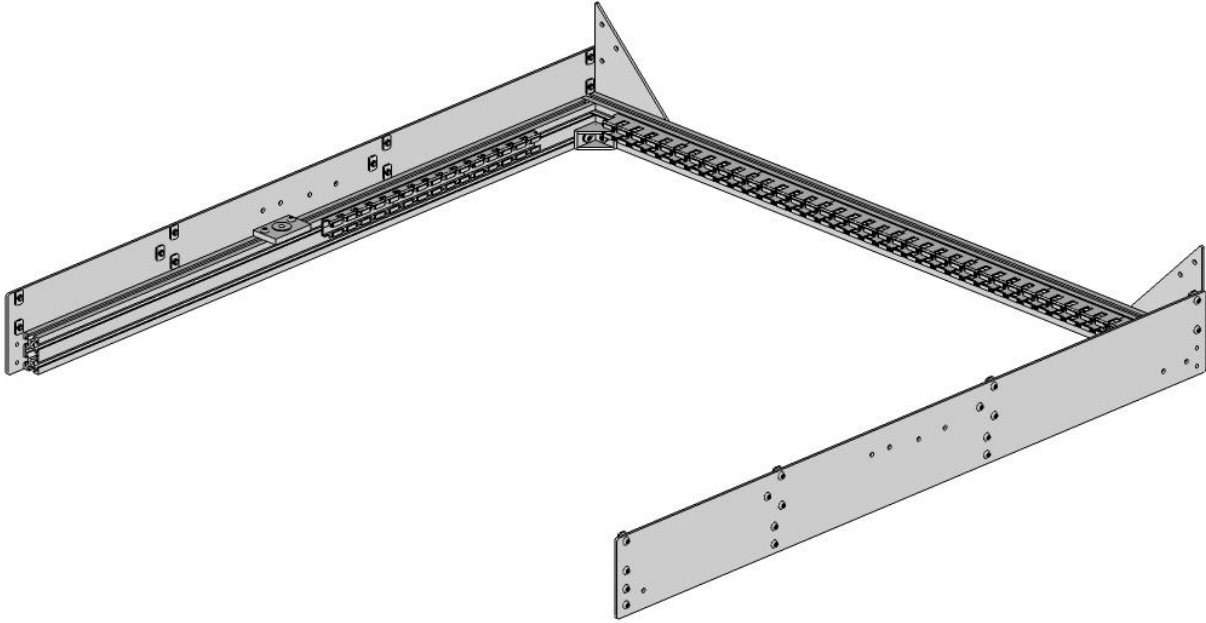
**Figure 6-55 Add a Triangle to Each End of both Cross Rails**



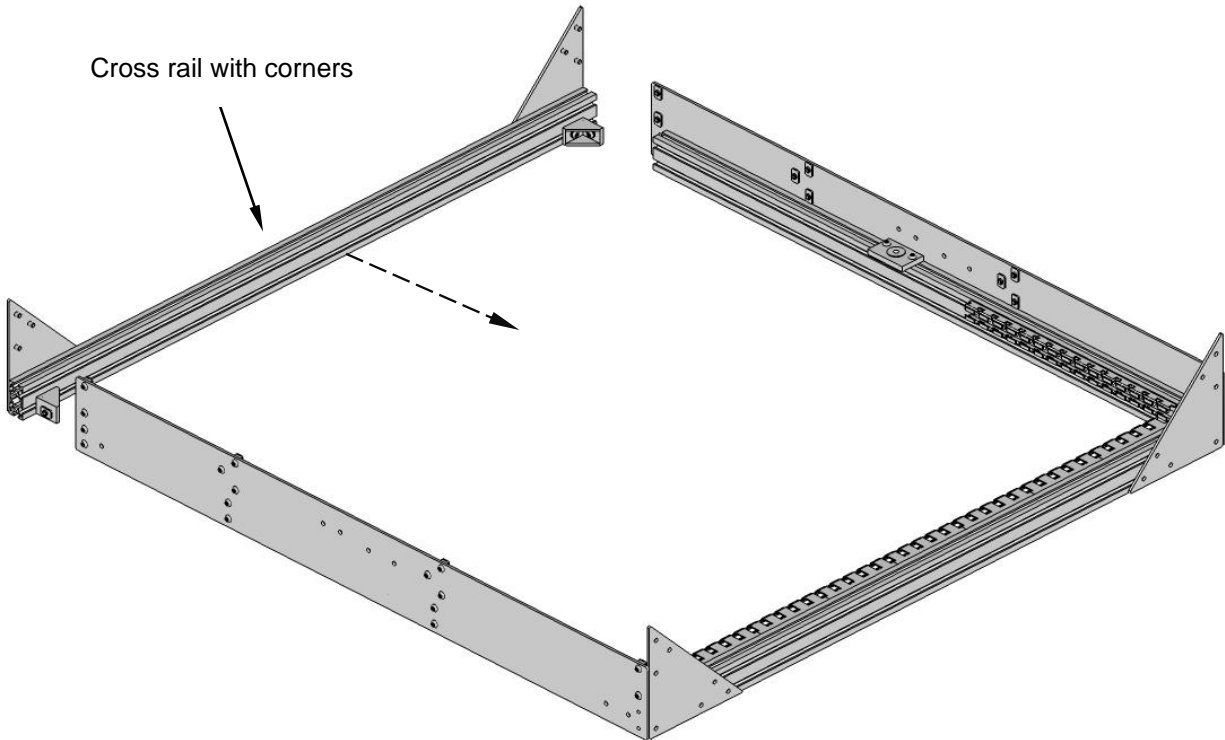
**Figure 6-56 Add T-nuts to Bottom Back Cross Rail Assembly (to be used later)**



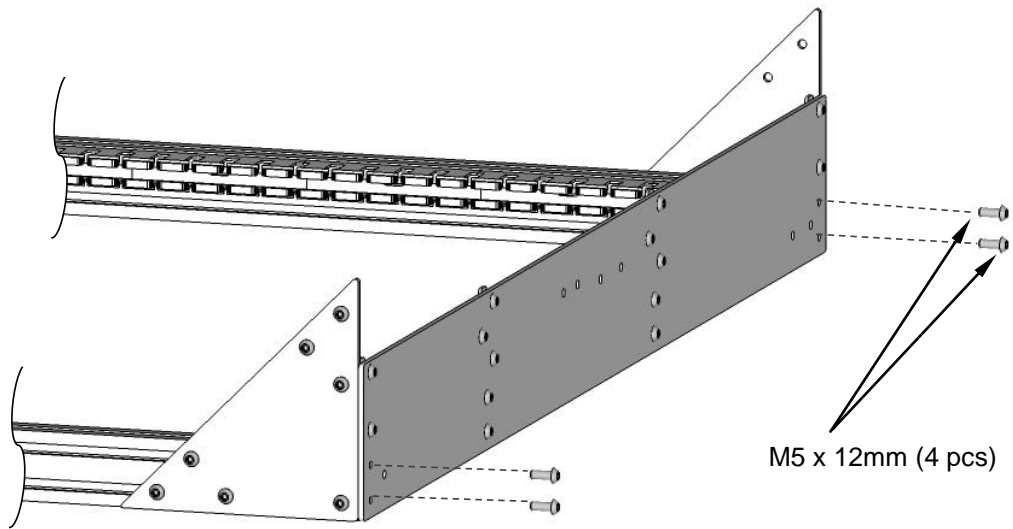
**Figure 6-57 Install Cross Rail Assembly**



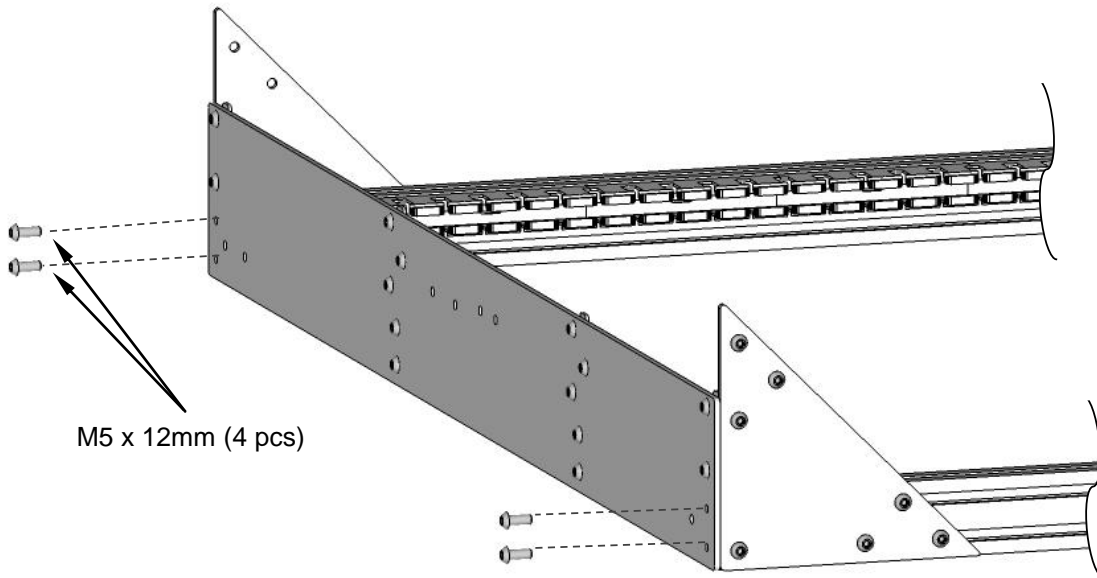
**Figure 6-58 Lower Frame Assembly with Rear Cross Rail**



**Figure 6-59 Install Front Cross Rail Assembly**

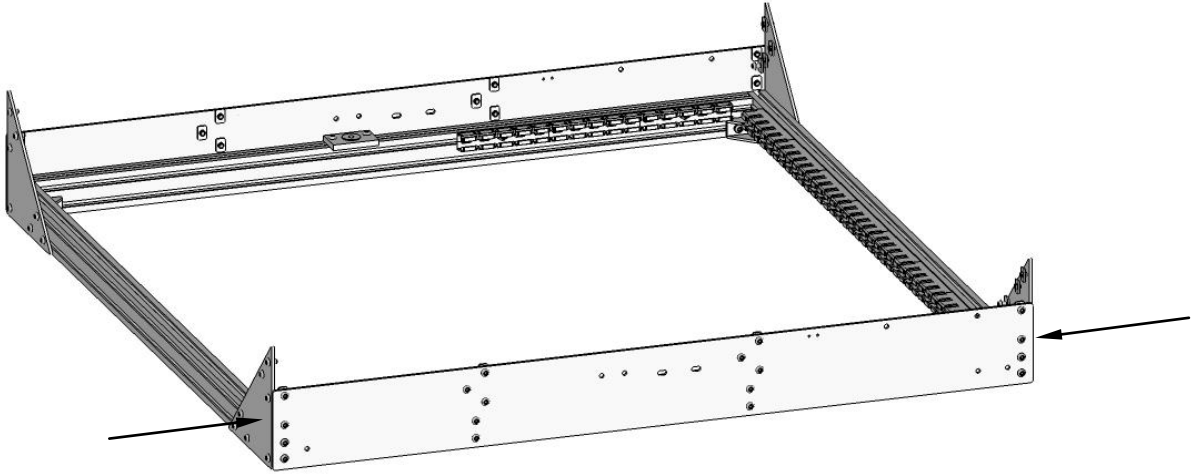


**Figure 6-60 Secure Cross Rails with M5 x 12mm BHCS**



**Figure 6-61 Secure Cross Rails with M5 x 12mm BHCS**

This is an important time to square up the frame. Push in on the cross rails and tighten the M5 x 12mm BHCS. Make sure there are not gaps between the four bottom rails.



**Figure 6-62 Square up frame**

## 6.7.4 Frame Uprights

### Parts:

1 x Lower Frame Assembly	2 x 31.5" Shallow Panduit
2 x Upper Side Plate Assembly	6 x T-nuts
1 x Completed X Bridge Rail Assembly	6 x M5 x 8mm
4 x Common Rail	4 x M5 x 12mm
4 x Z-Rail	

Any Z-rail can be used in any of the four locations.

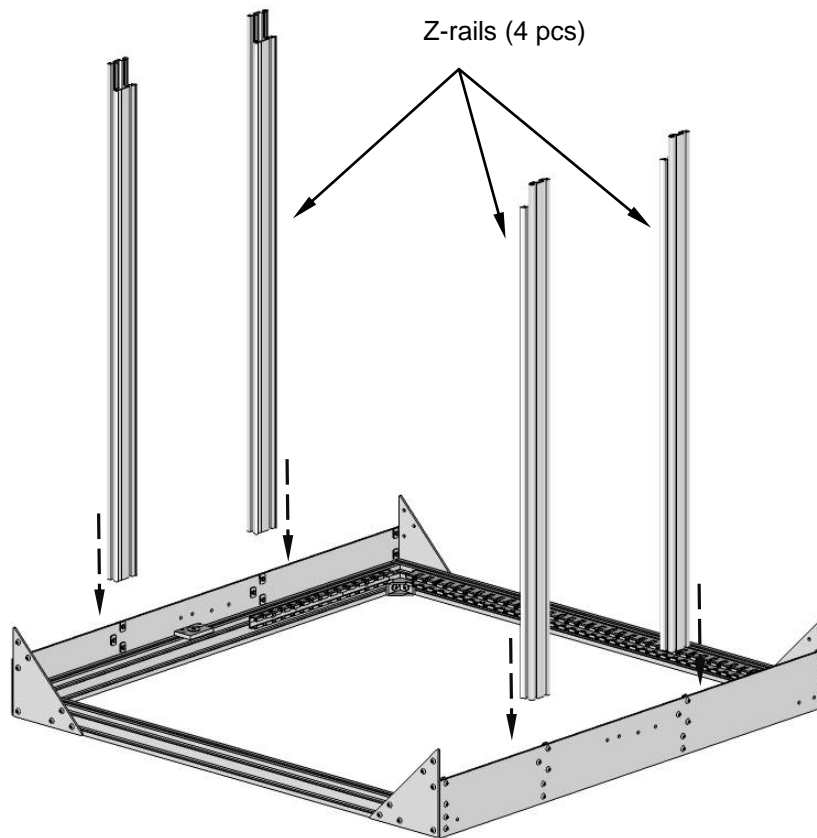
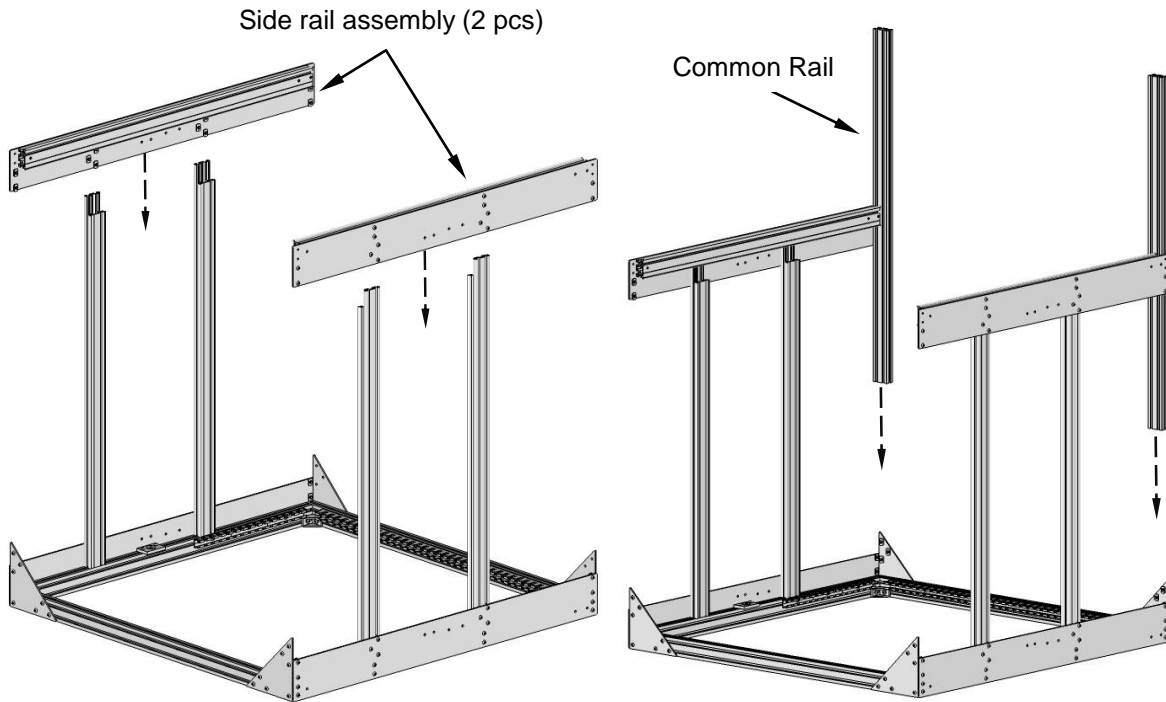
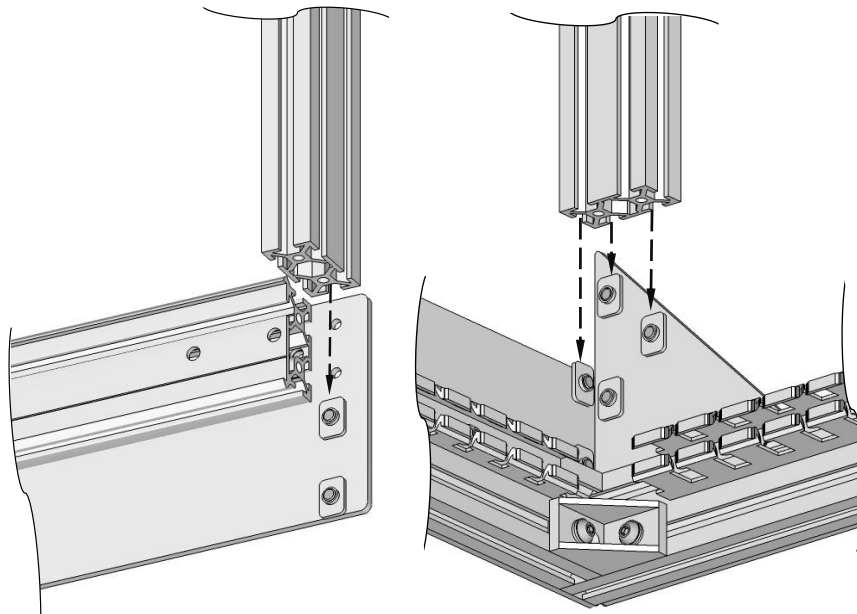


Figure 6-63 Install Z-rails

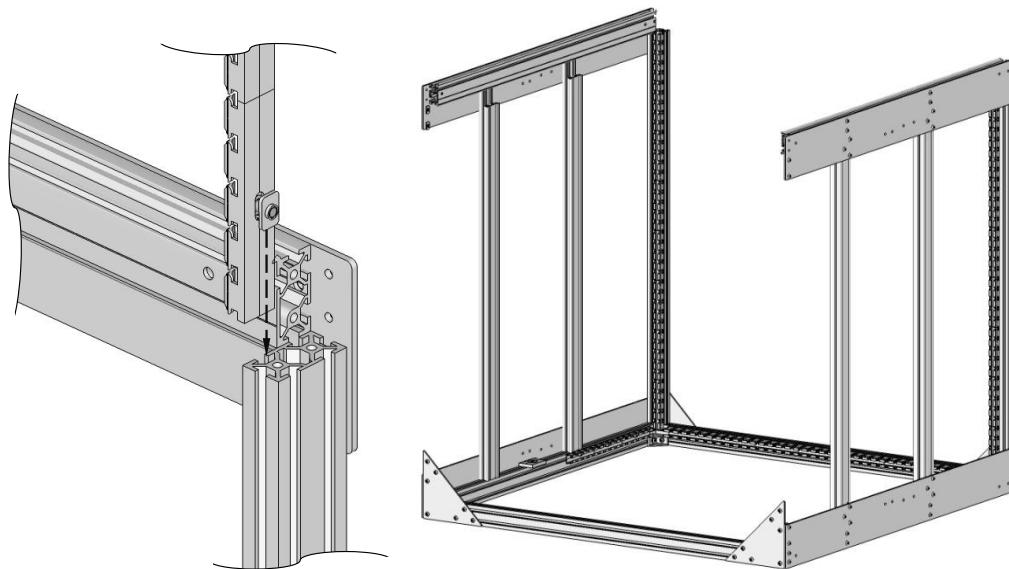
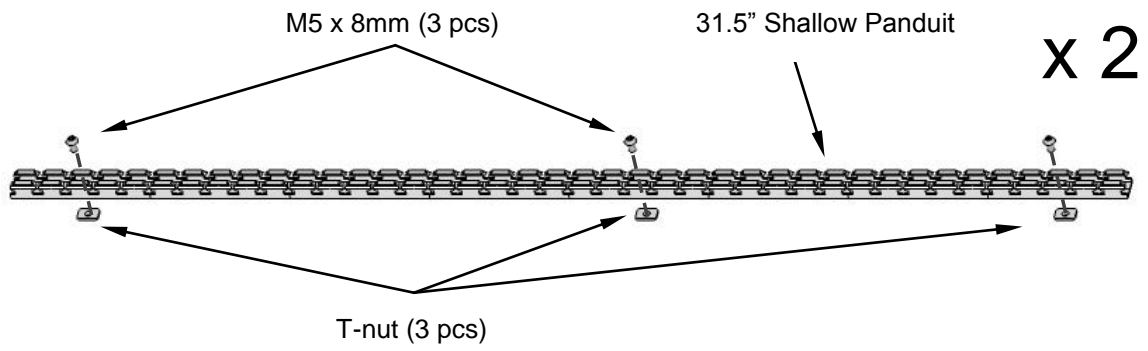
Use a square to insure the Z-upright are at a right angle to the bottom common rails before tightening the bolts.



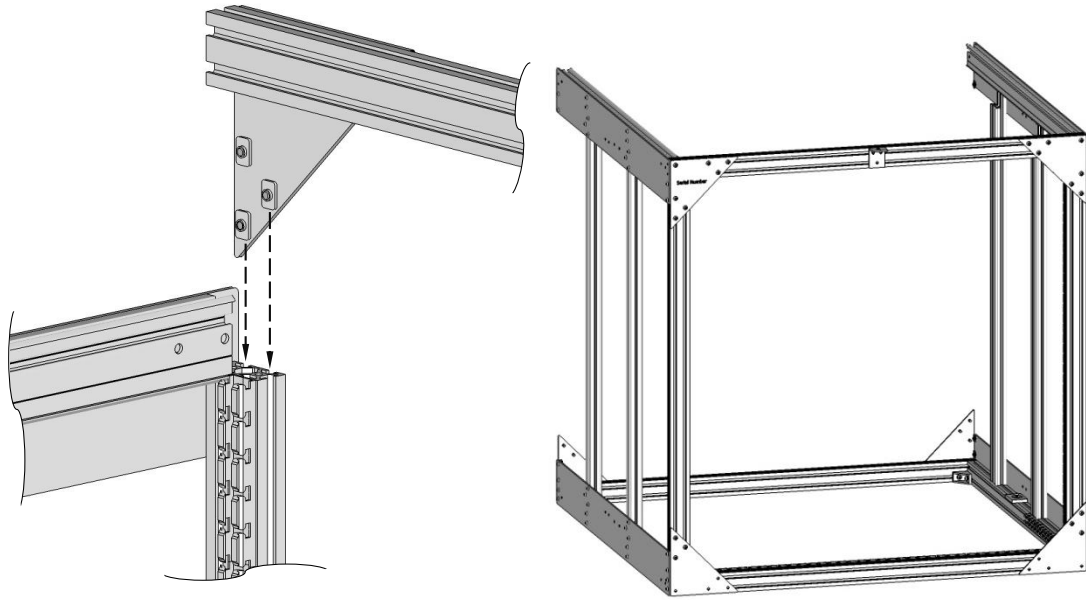
**Figure 6-64 Install Upper Side Plate and Rear Common Rail**



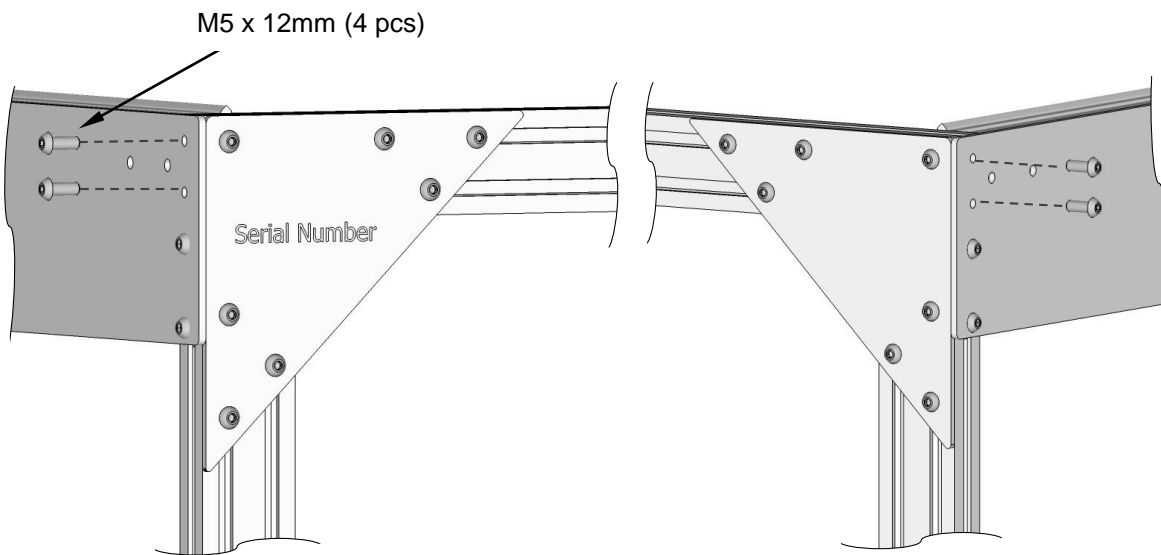
**Figure 6-65 Common Rail Install Detail**



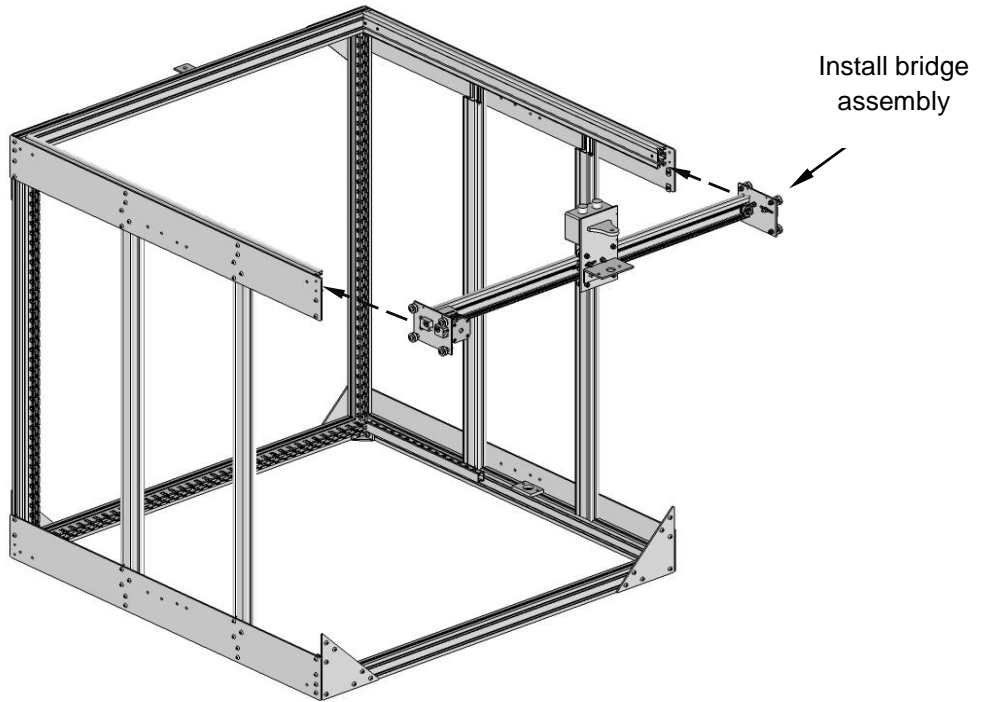
**Figure 6-66 Add Panduit to both Rear Common Rails**



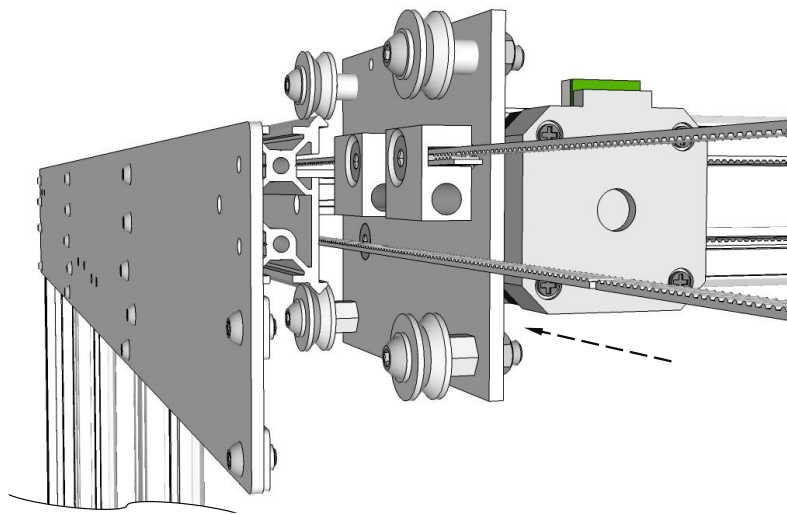
**Figure 6-67 Install Rear Cross Rail**



**Figure 6-68 Secure Cross Rail with M5 x 12mm SHCS**

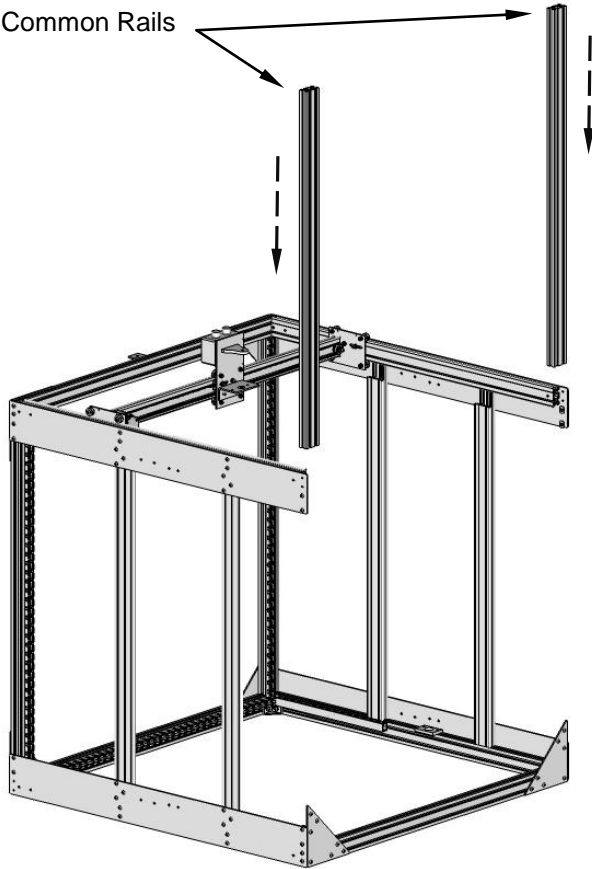


**Figure 6-69 Install X Bridge Rail**

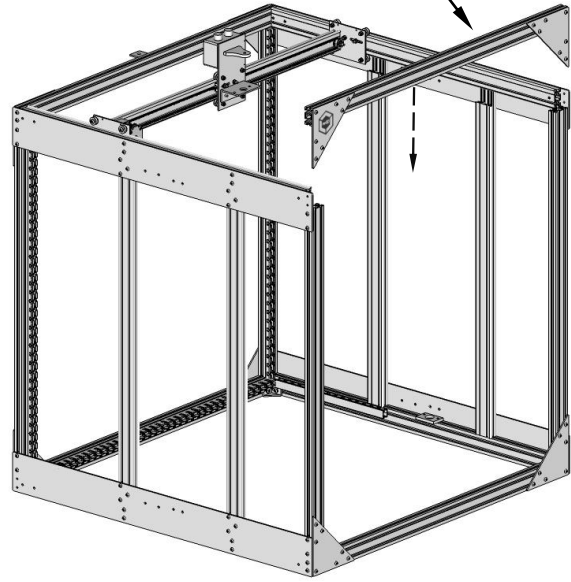


**Figure 6-70 X Bridge Rail Belt Detail (Check belts on both side)**

Common Rails

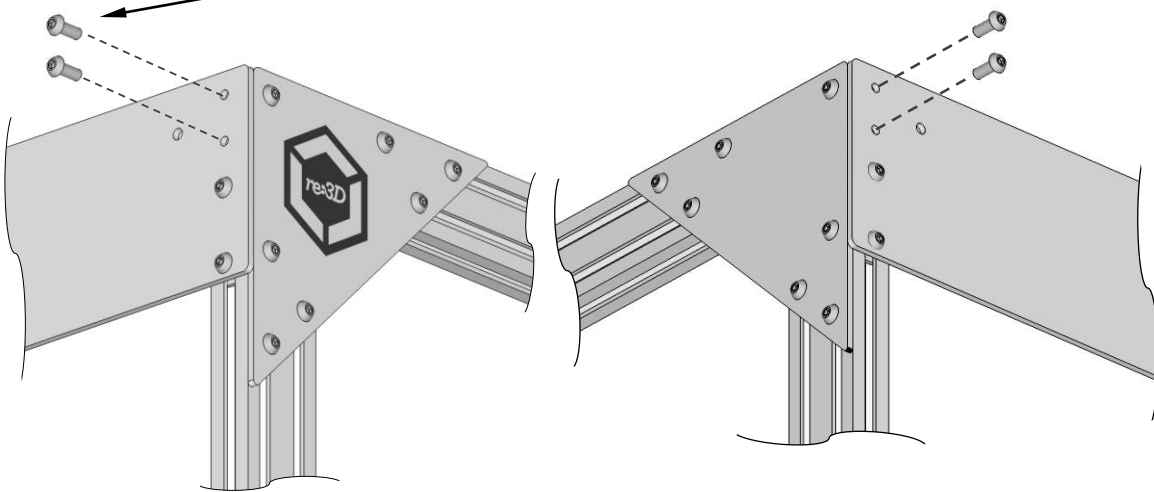


Cross rail, with corners

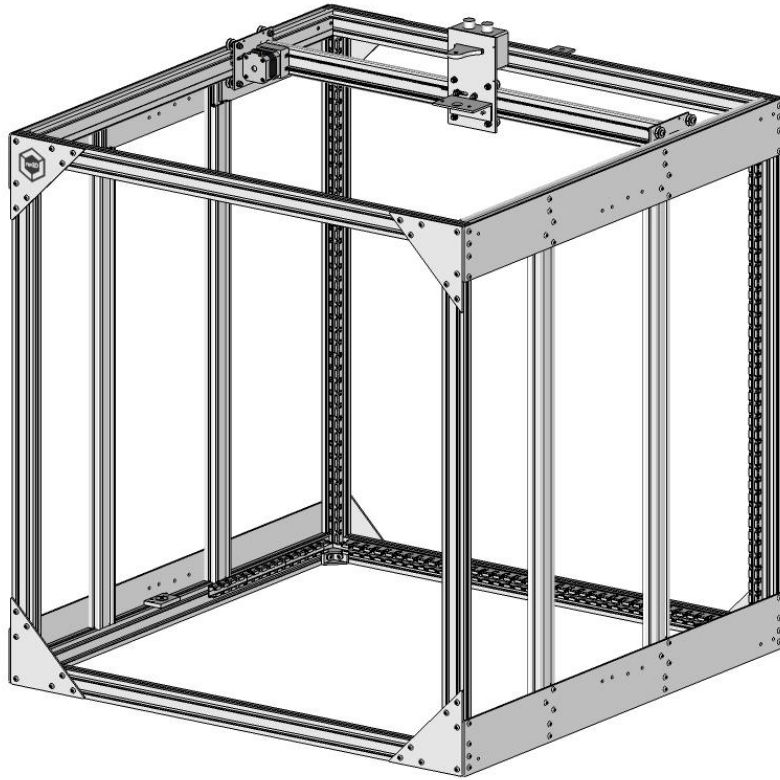


**Figure 6-71 Install Front Common Rails and Cross Rail**

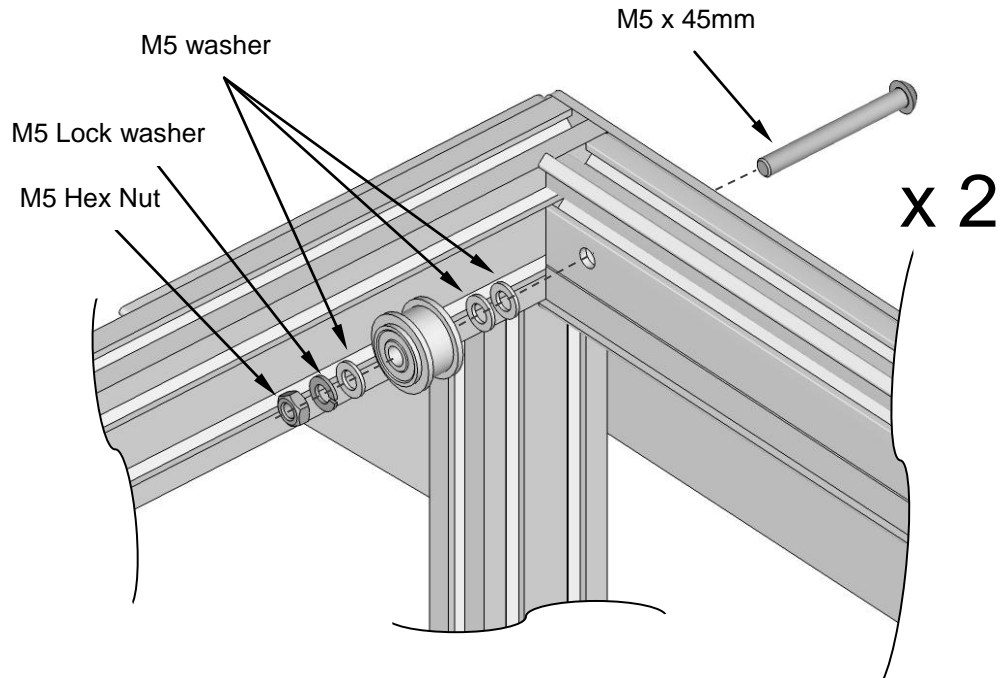
M5 x 12 (4 pcs)



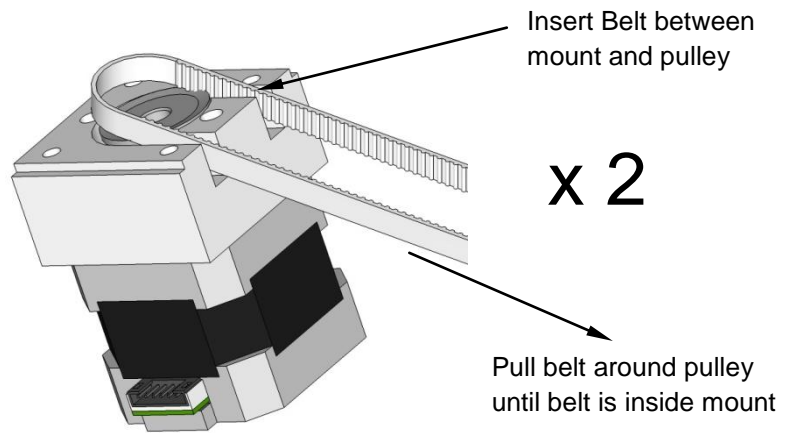
**Figure 6-72 Secure Cross Rails with M5 x 12mm SHCS**



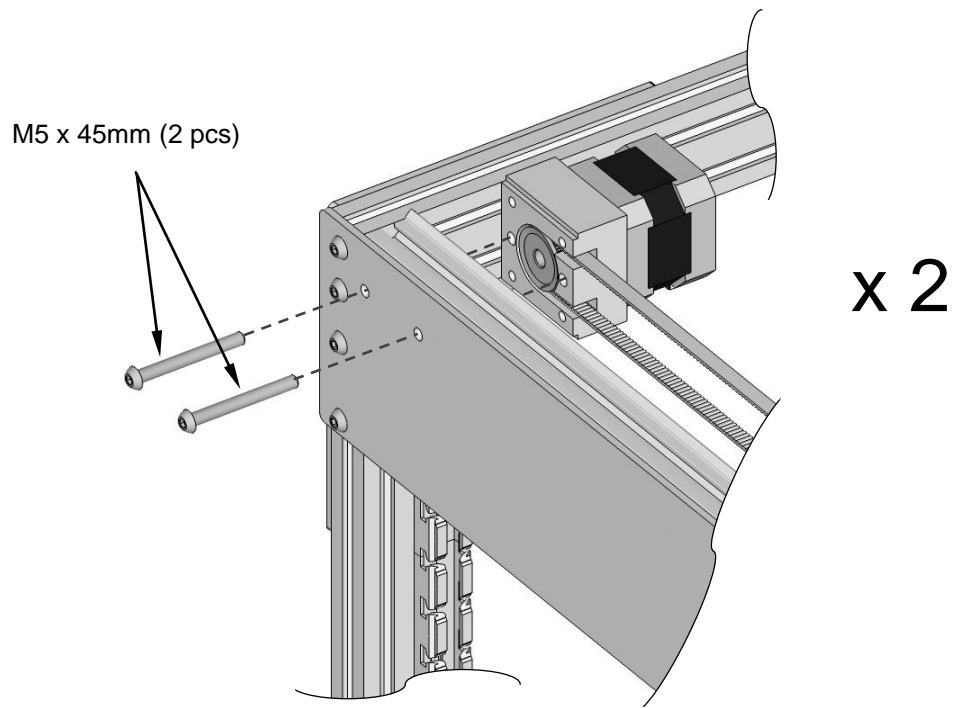
**Figure 6-73 Frame Assembly**



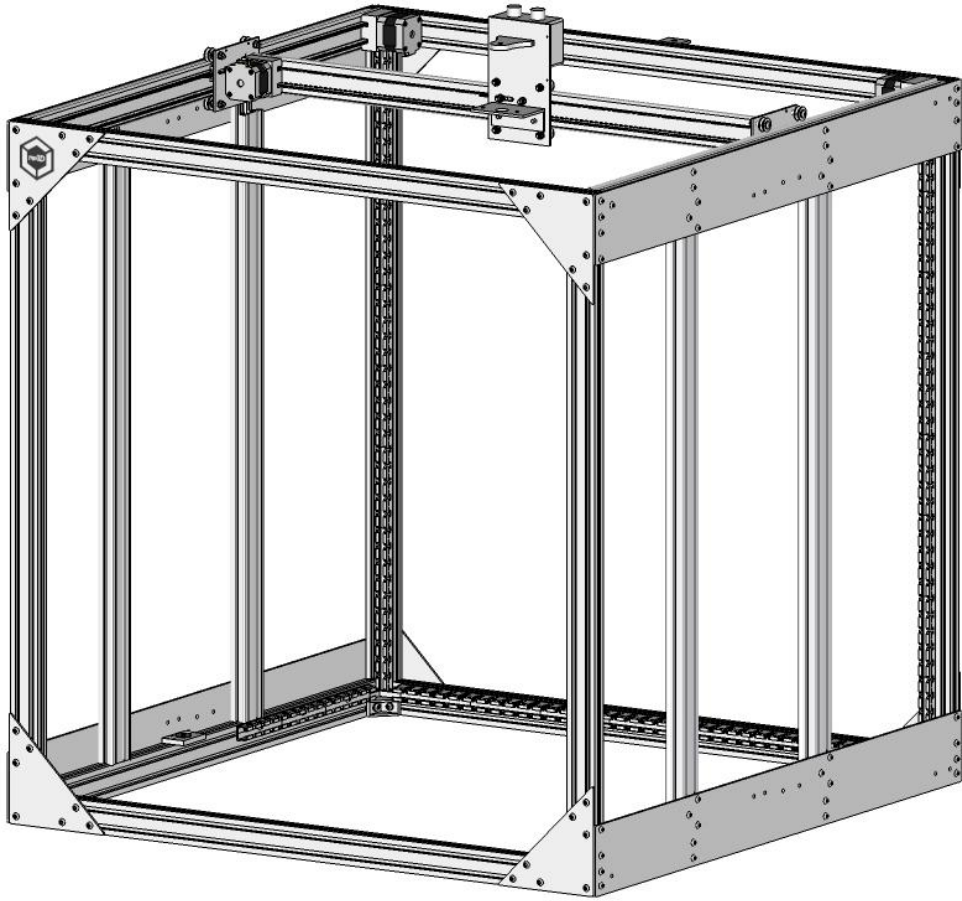
**Figure 6-74 Install Idle Wheel (Repeat on other side)**



**Figure 6-75 Install Belt on Motor**



**Figure 6-76 Install Y-Motor (Repeat on other side)**



**Good Stopping Point**



## 6.8 Z Axis and Bed Assembly

### Parts:

2 x Acme Rods  
2 x Pulley 36 tooth MXL  
2 x Pulley 18 tooth MXL  
2 x Stepper Motors  
2 x Z-mounting brackets  
2 x MXL Belt

2 x 31.5" Shallow Panduit  
8 x M3 x 8mm SHCS  
8 x M3 Washer  
4 x M5 x 12mm SHCS  
2 x Nut Cup Assembly  
2 x Upper Bearing Block

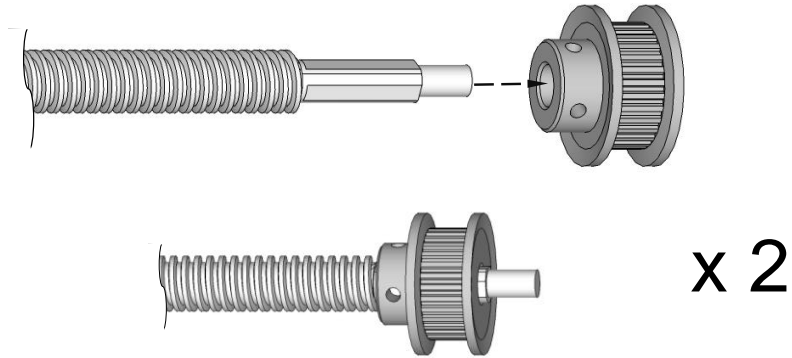


Figure 6-77 Add pulley to ACME Screws

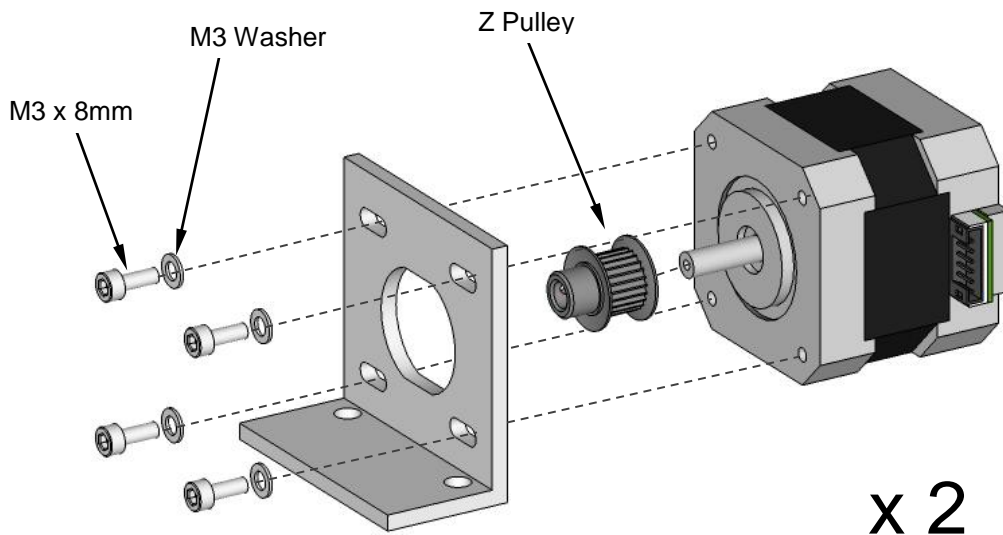
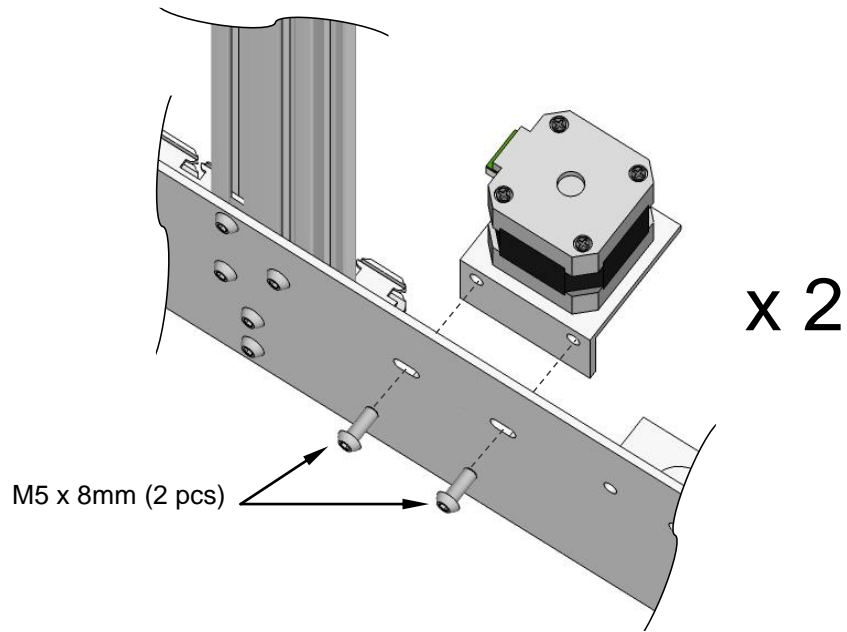
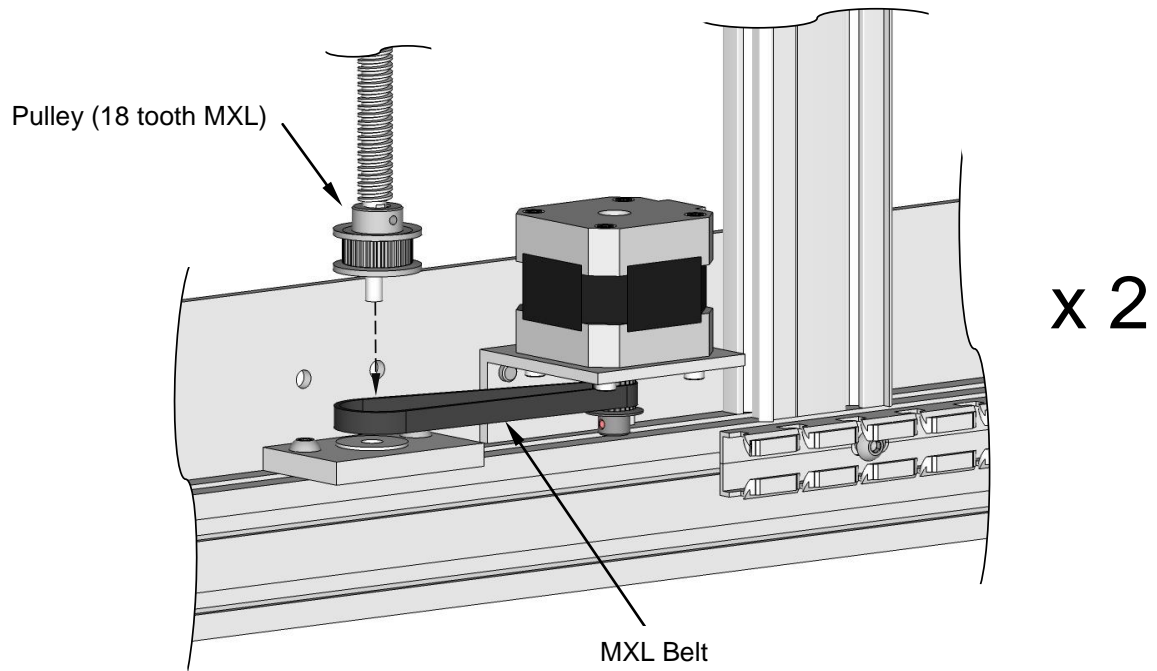


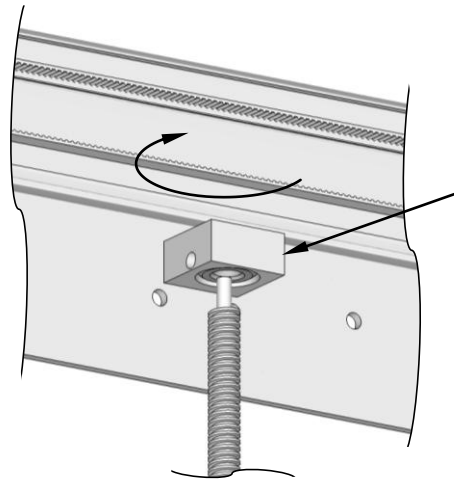
Figure 6-78 Mount Z-Motor on Mounts



**Figure 6-79 Add Motor to Side Panel (Repeat on other side)**



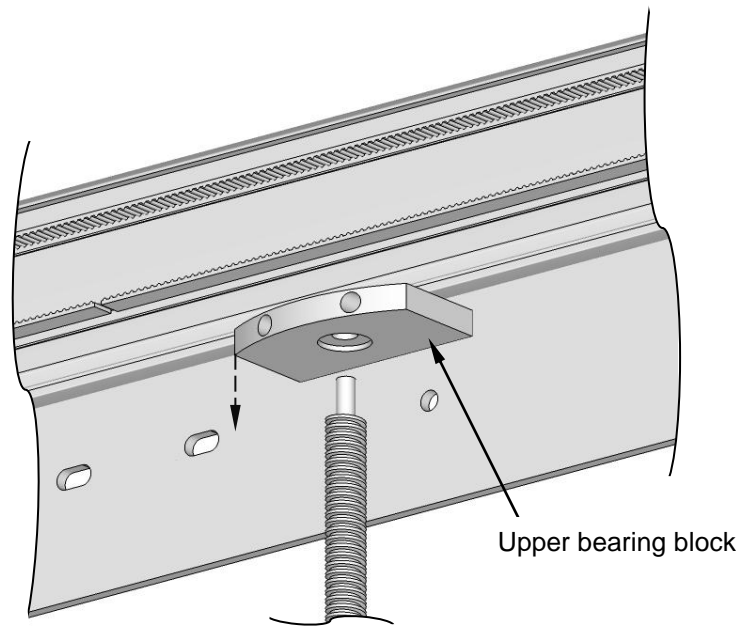
**Figure 6-80 Add Z-Axis Acme Screw (Repeat on other side)**



Screw on nut cup assembly with the opening for the nut facing down (All the way down to about 2" about the bottom side plate)

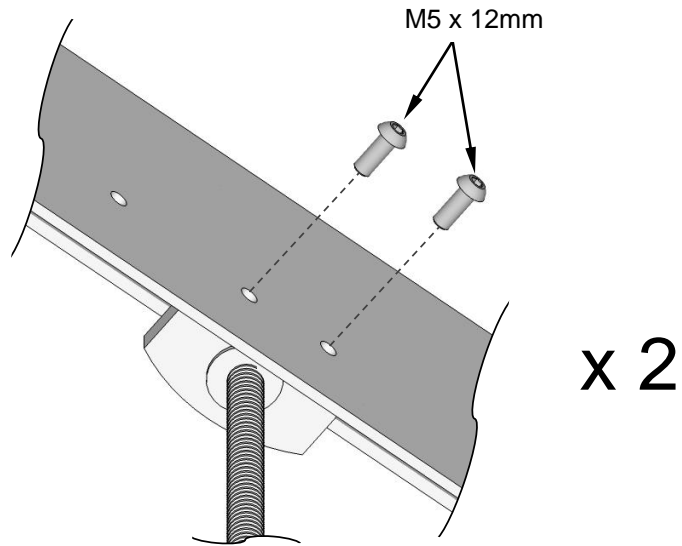
x 2

Figure 6-81 Screw on Nut Cup Assembly (repeat on other side)



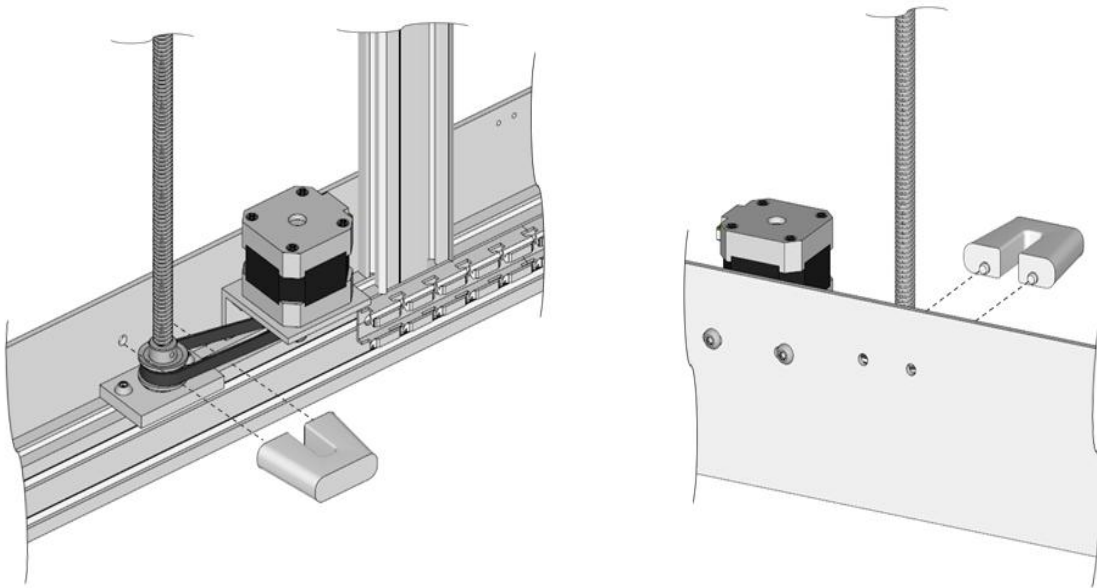
x 2

Figure 6-82 Mount Upper Bearing Block (repeat on other side)

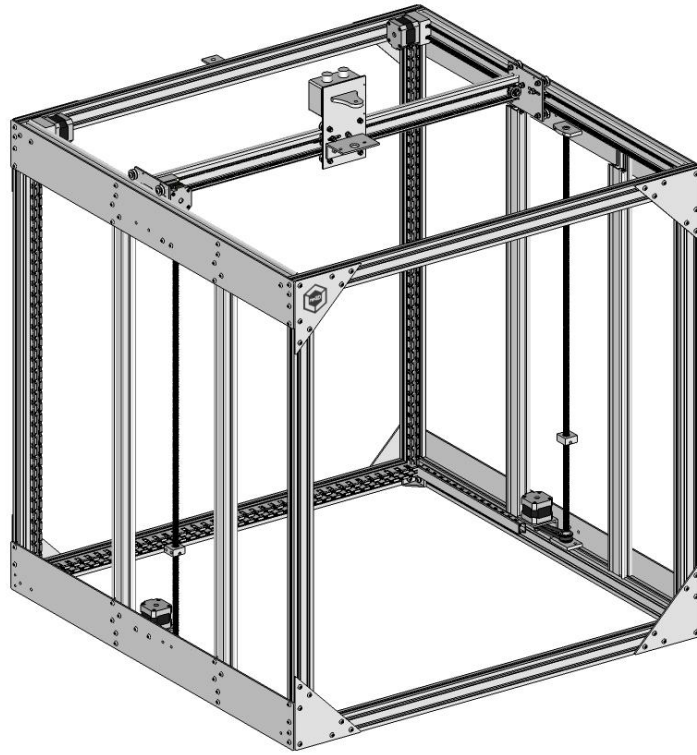


**Figure 6-83 Upper Bearing Block**

Used the Z-alignment tool, center both ACME screws between the two guide holes on the side plates. Tighten the lower bearing screws to hold the ACME screws in place.



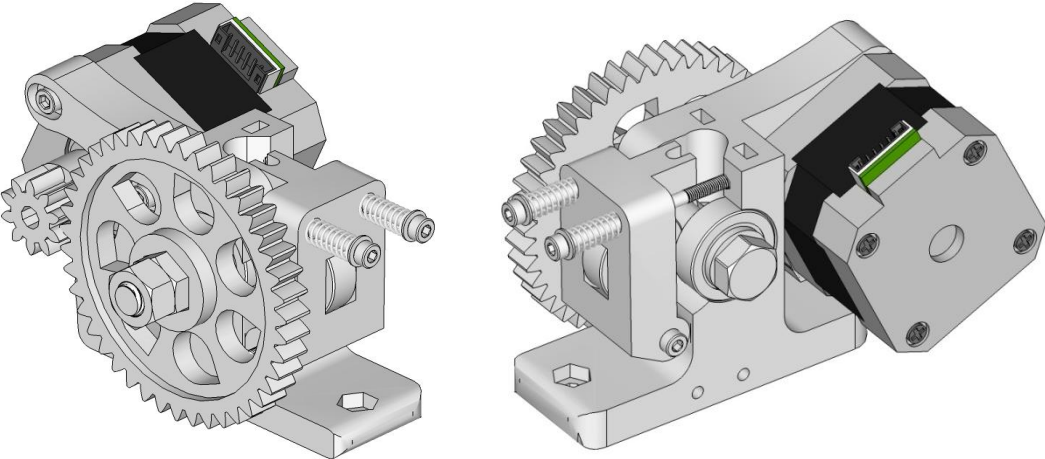
**Figure 6-84 Z-Alignment Tool**



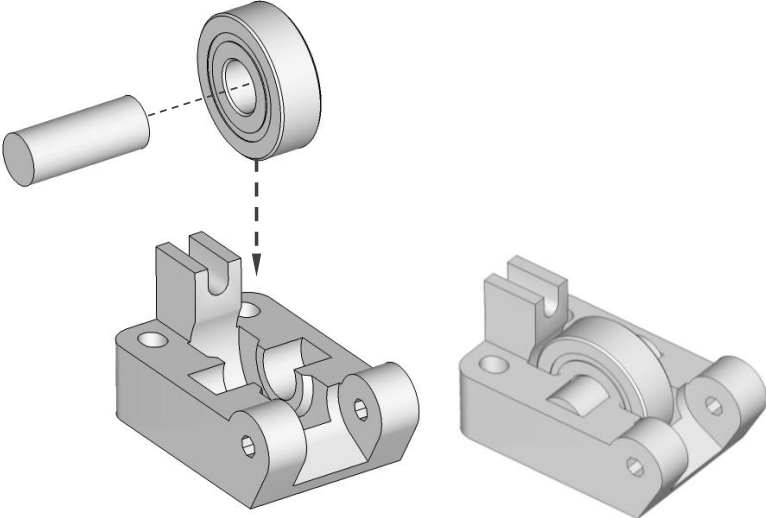
**Figure 6-85 Complete Frame Assembly**

**6.9 Assembly an install extruder**

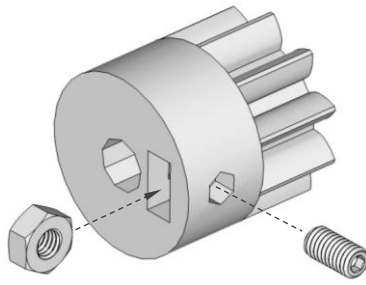
**6.9.1 Cold end of Extruder**



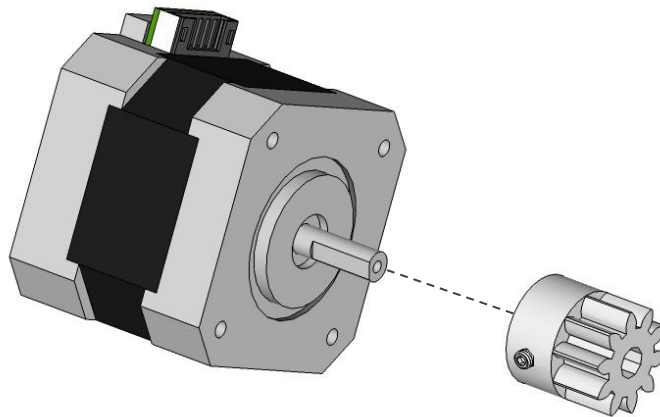
**Figure 6-86 Cold End of Extruder**



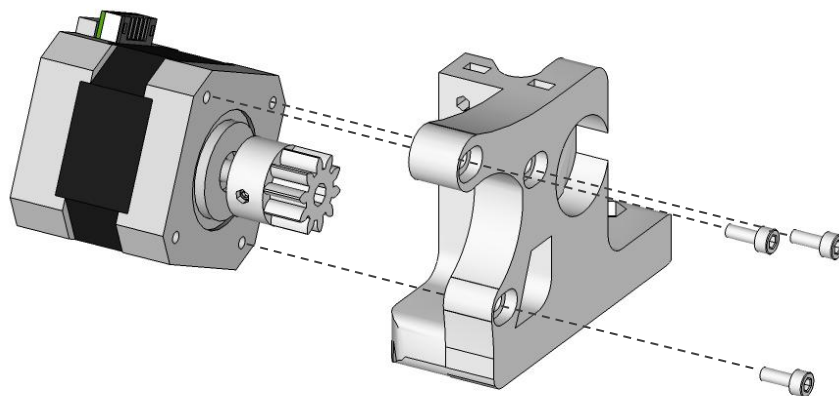
**Figure 6-87**



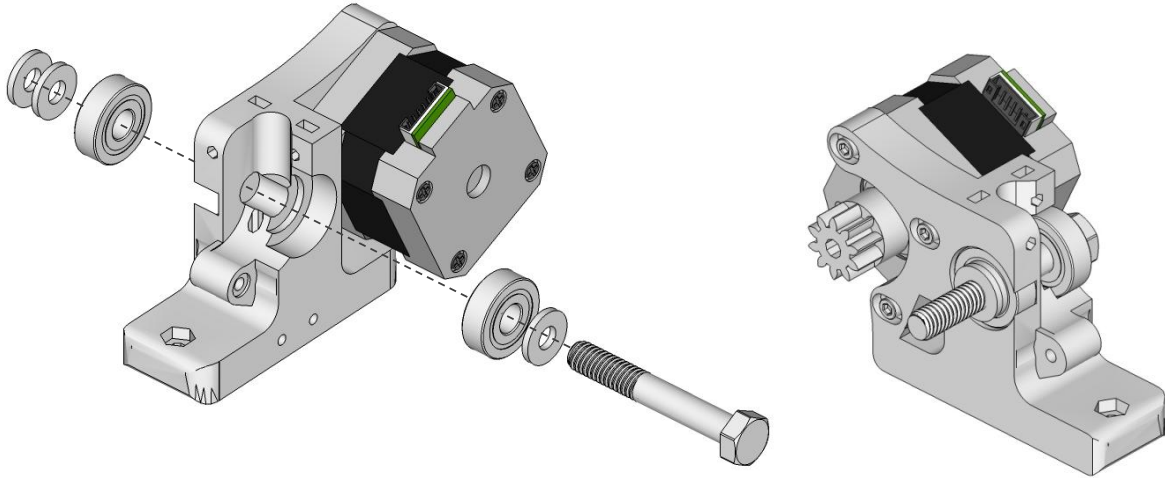
**Figure 6-88**



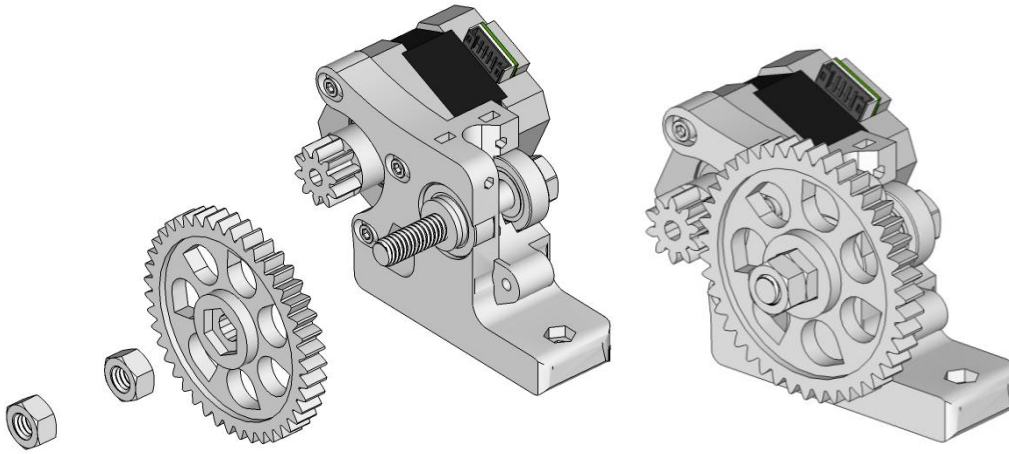
**Figure 6-89**



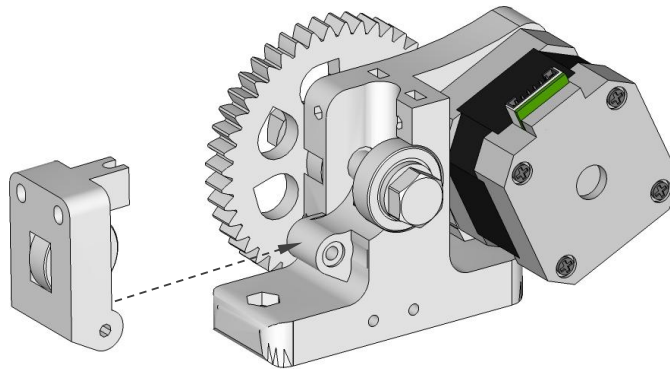
**Figure 6-90**



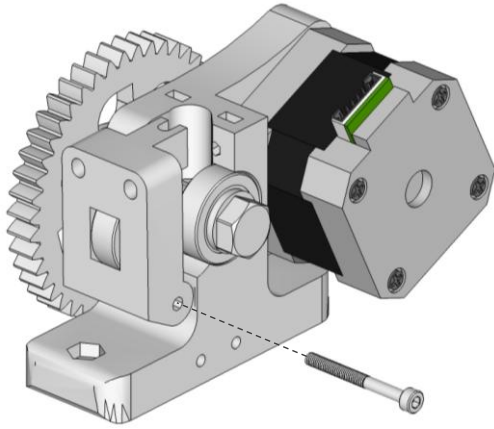
**Figure 6-91**



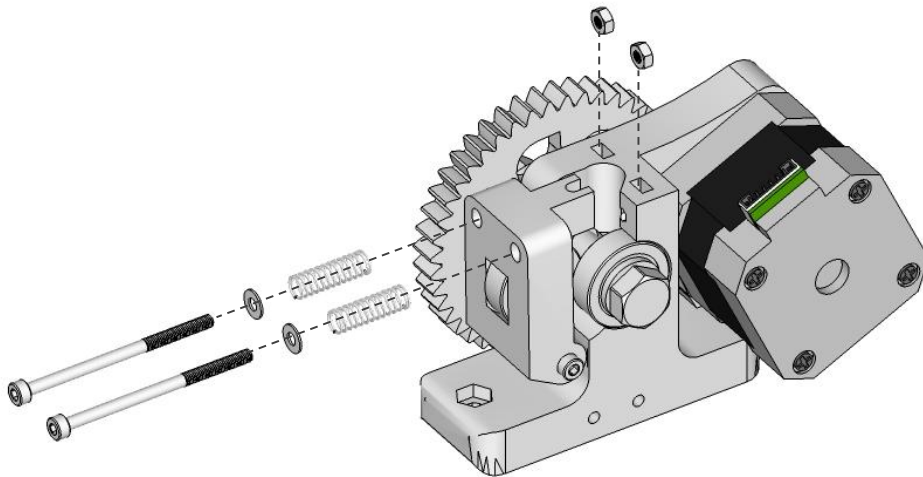
**Figure 6-92**



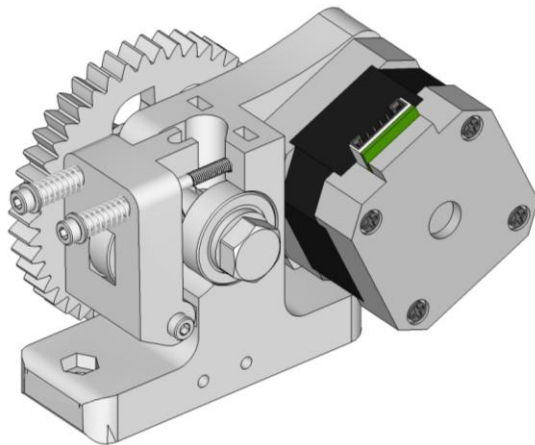
**Figure 6-93**



**Figure 6-94**



**Figure 6-95**



**Figure 6-96**

# 6.10 Electrical Enclosure Install

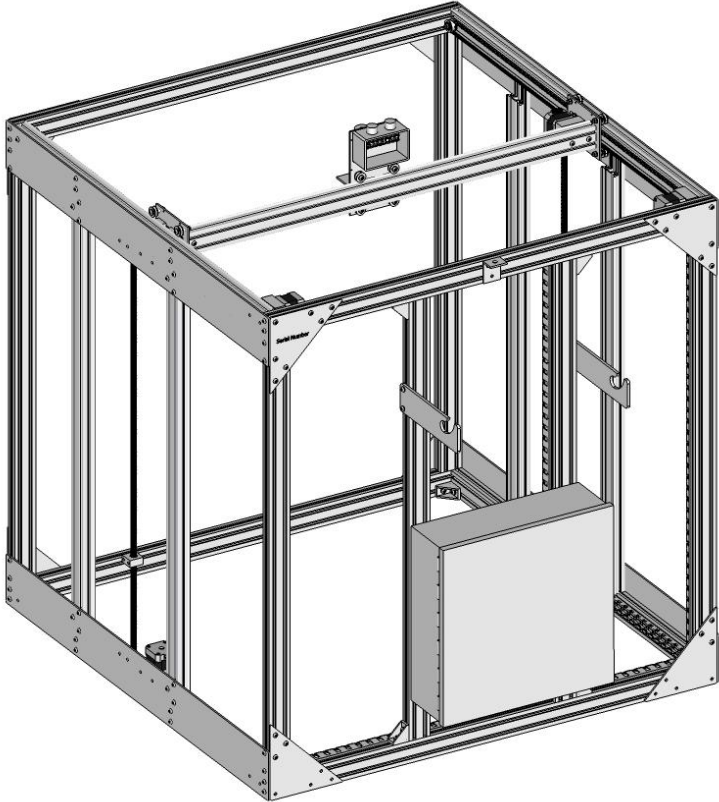


Figure 6-97 Completed Electrical Enclosure Install

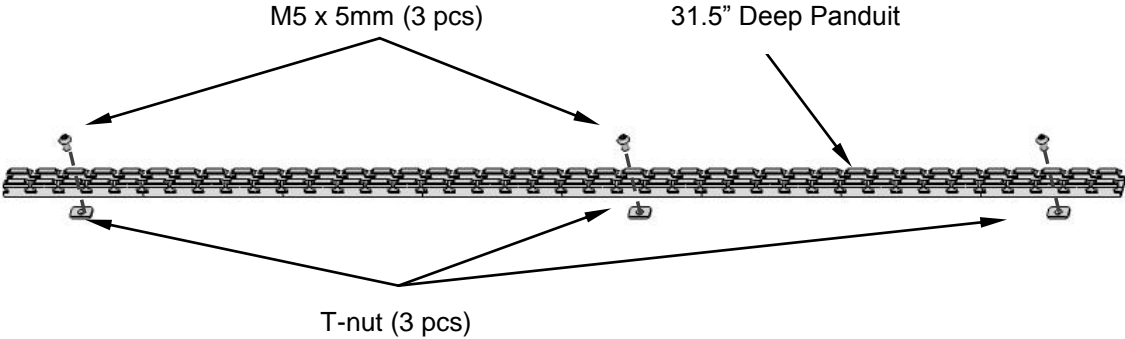
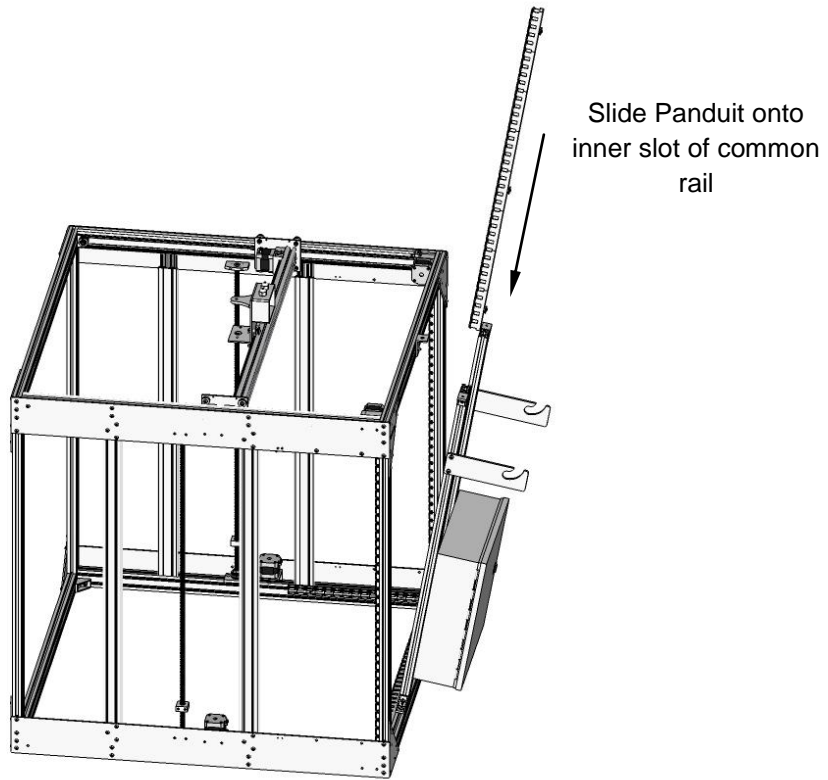
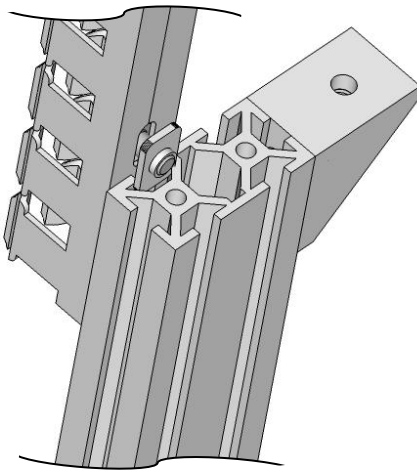


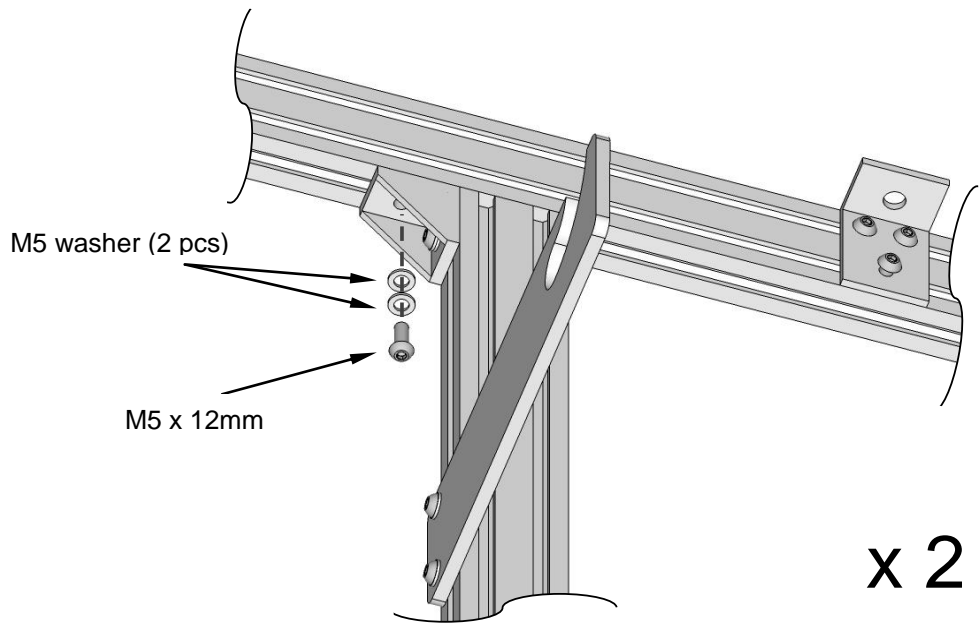
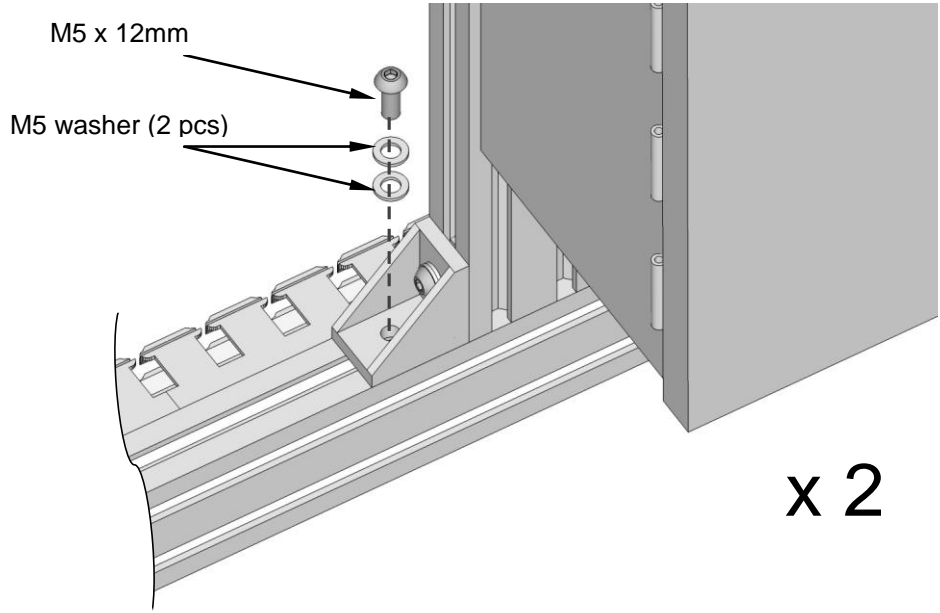
Figure 6-98 Install 31.5" Deep Panduit



**Figure 6-99 Install Panduit on Electrical Enclosure Assembly**



**Figure 6-100 Panduit Install Detail**



## 6.10.1 Limit Switches

### Parts:

3 x Limit Switch  
7" Shallow Panduit  
1 x Z-limit switch spacer  
2 x M5 x 8mm  
2 x M5 hex nut

4 x M2 x 10mm  
2 x M2 x 16mm  
2 x M2 Hex Nut  
2 x M2 Lock washer

The Gigabot has three (3) limit switches, X-axis minimum, Y-axis maximum, and Z axis minimum. The X and Y axis switches are mounted on the bottom of the motor mounts. Note that the motor mounts have screw holes on both the top and bottom.

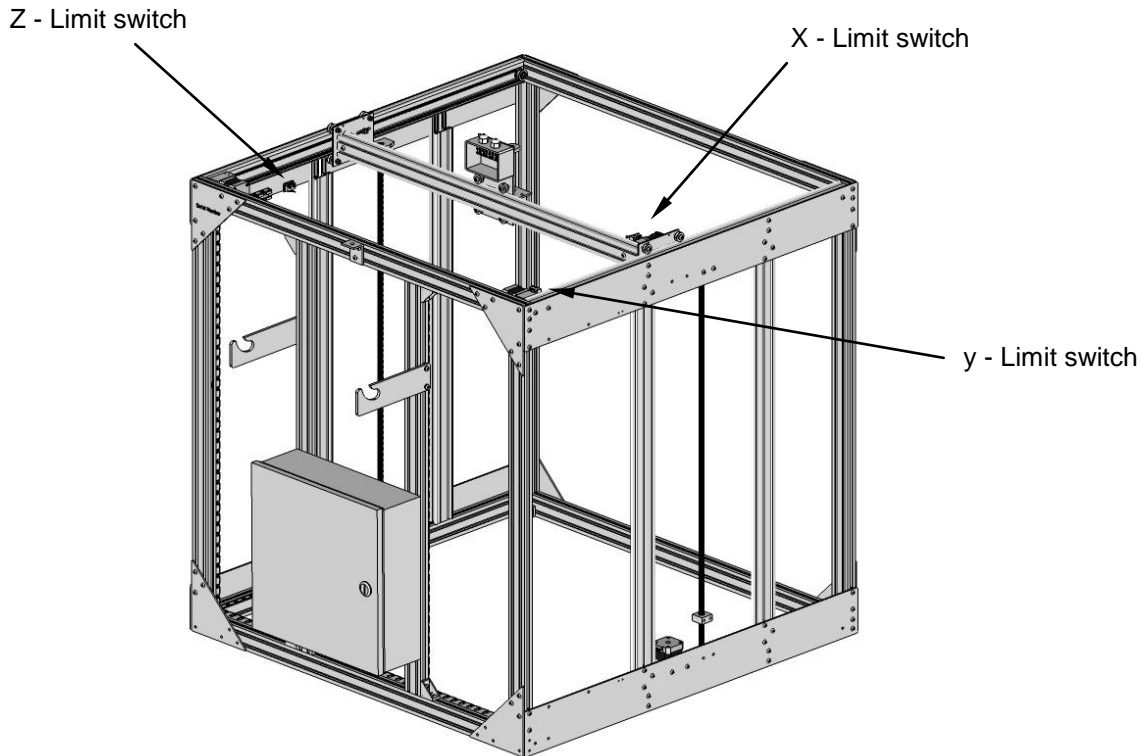
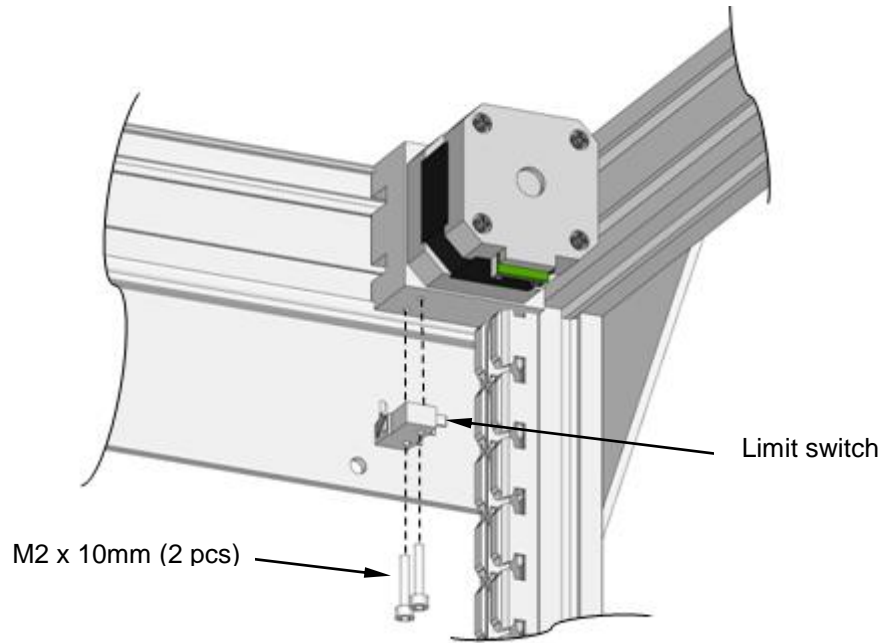
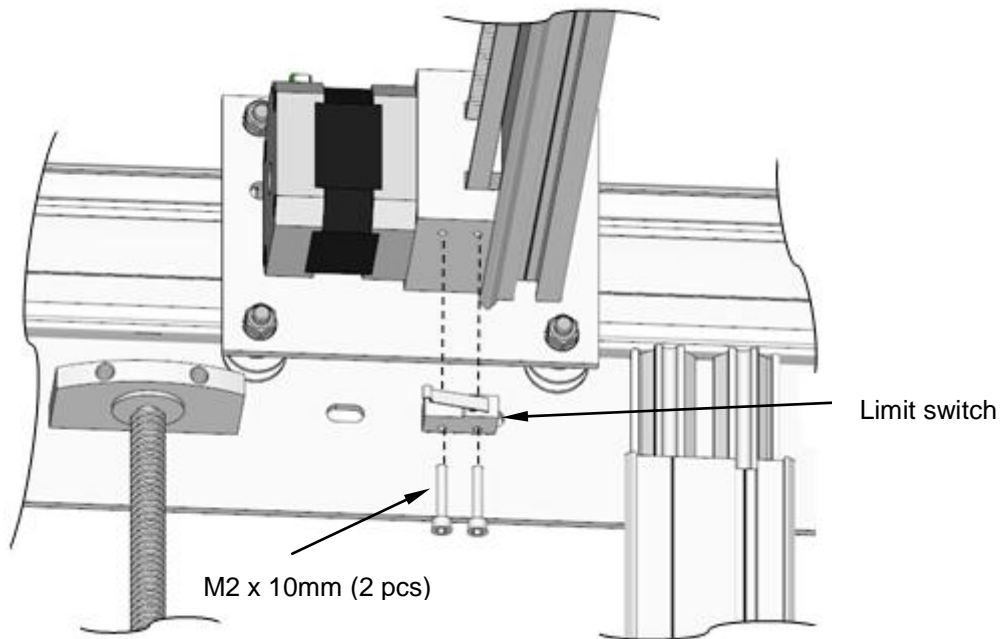


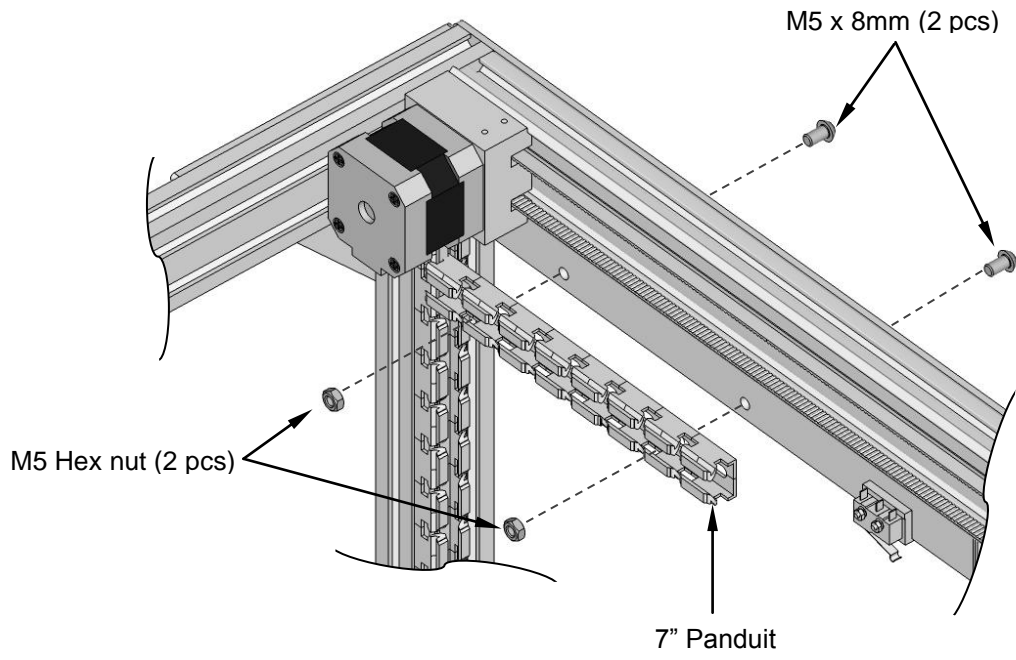
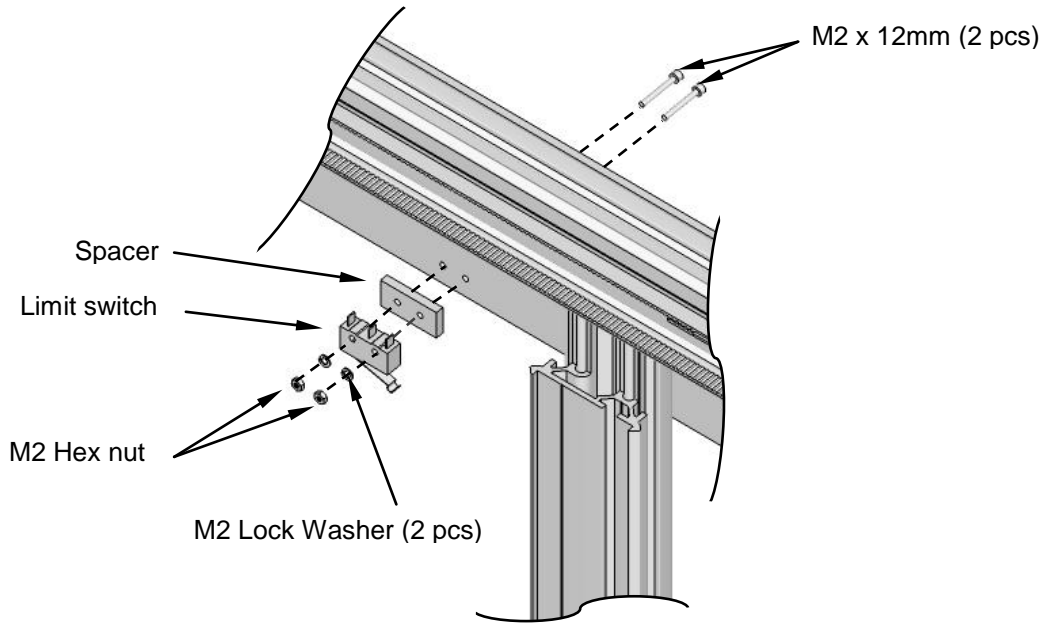
Figure 6-101 Limit Switch Locations



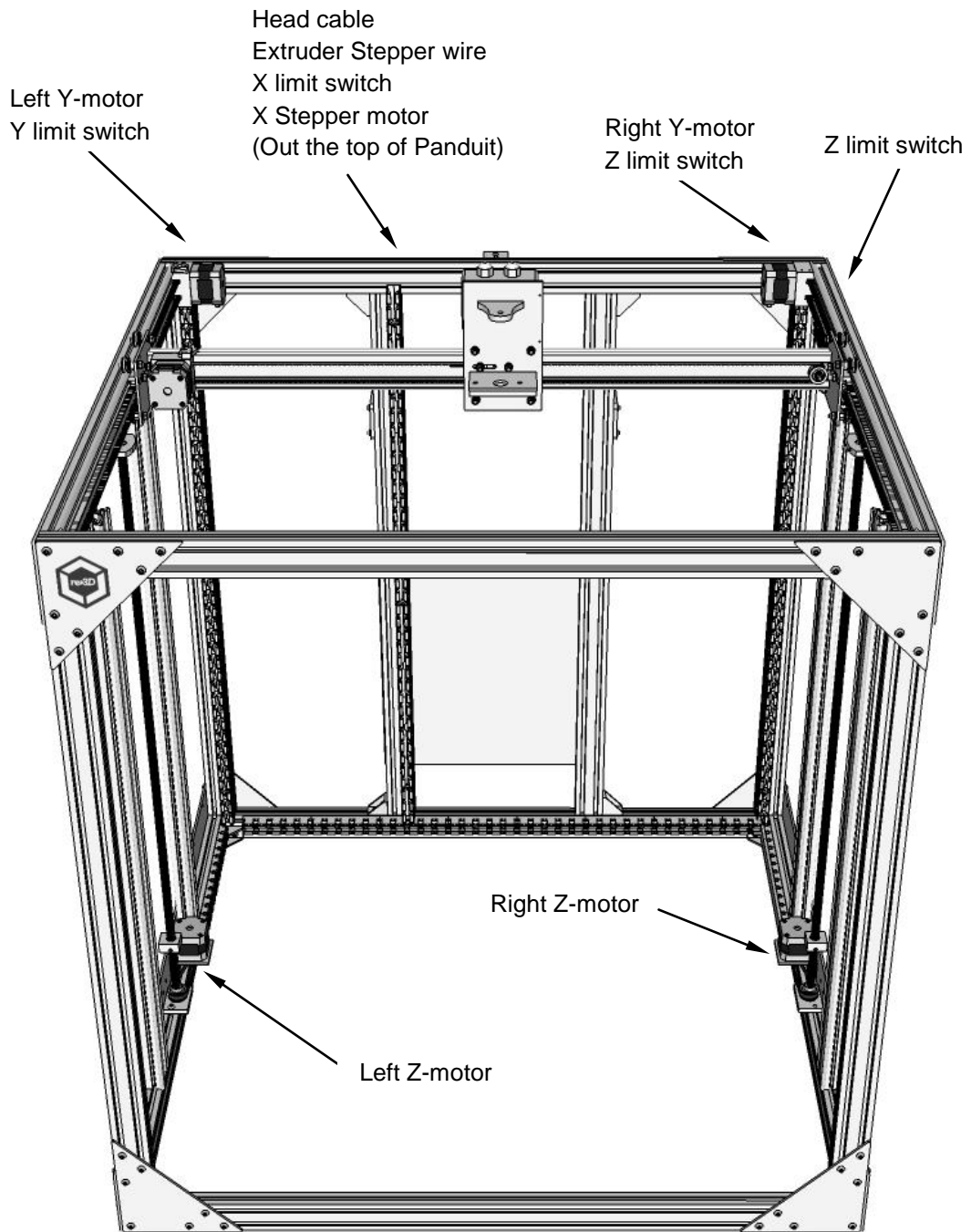
**Figure 6-102 Install Y-axis Limit switch (note the direction)**



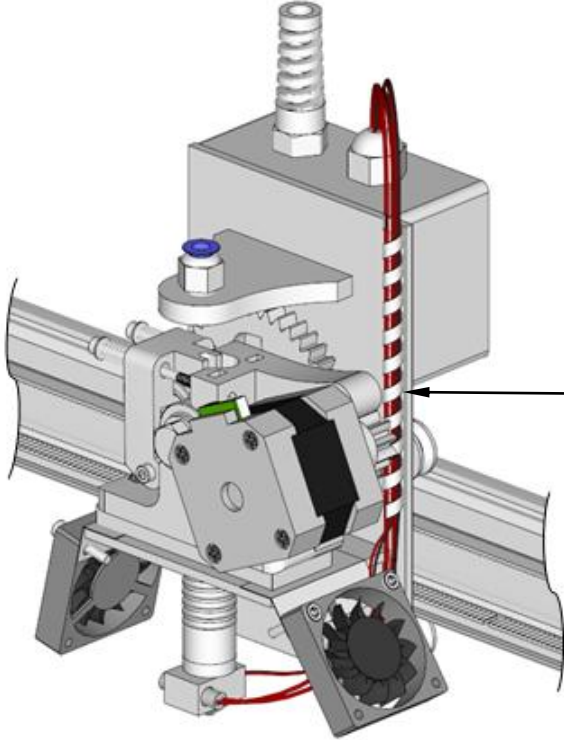
**Figure 6-103 Install X-axis Limit switch (note the direction)**



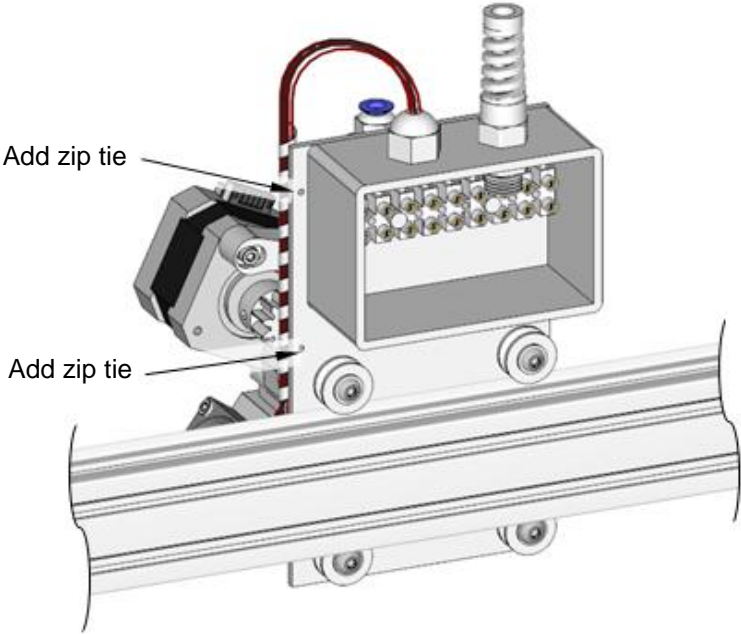
## 6.11 Running the wiring



**6.11.1 Running the Extruder wiring**



Add wire wrap to  
Heater Cartridge  
Fan wire and  
thermistor wire



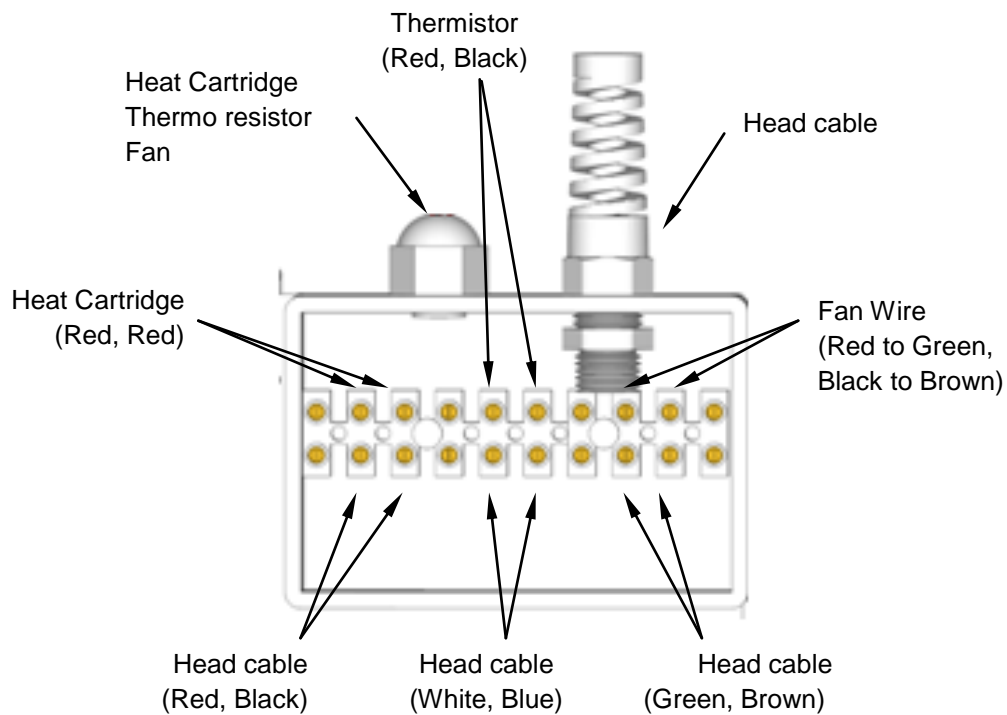
Add zip tie

Add zip tie

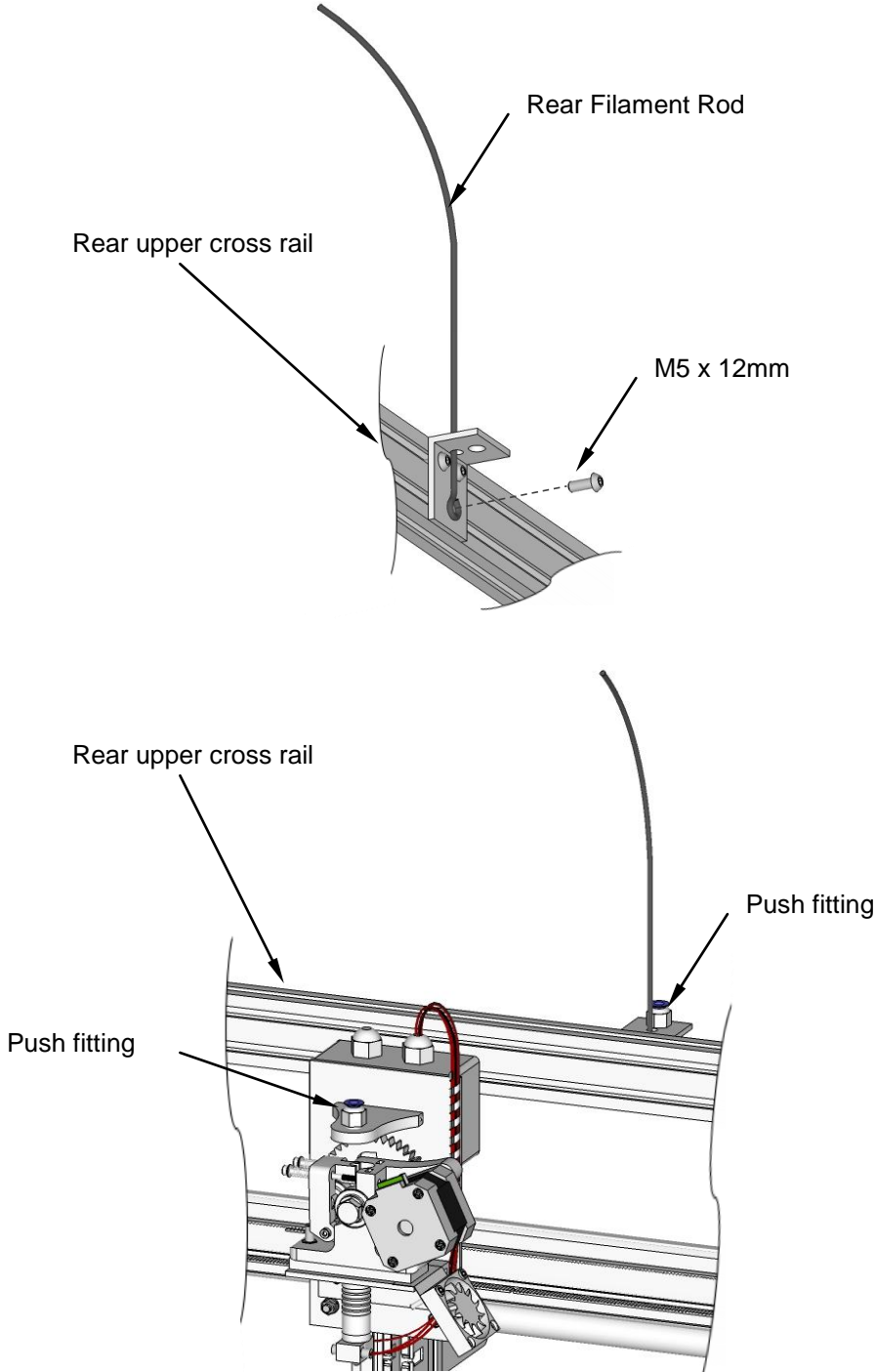
In this step connect the head cable wires to the extruder and fan. The extruder has a heat cartridge (two red wires), and a thermistor (one red and one black wire). Neither the heat cartridge nor the thermistor are polarized, so the wires can be connected either way.

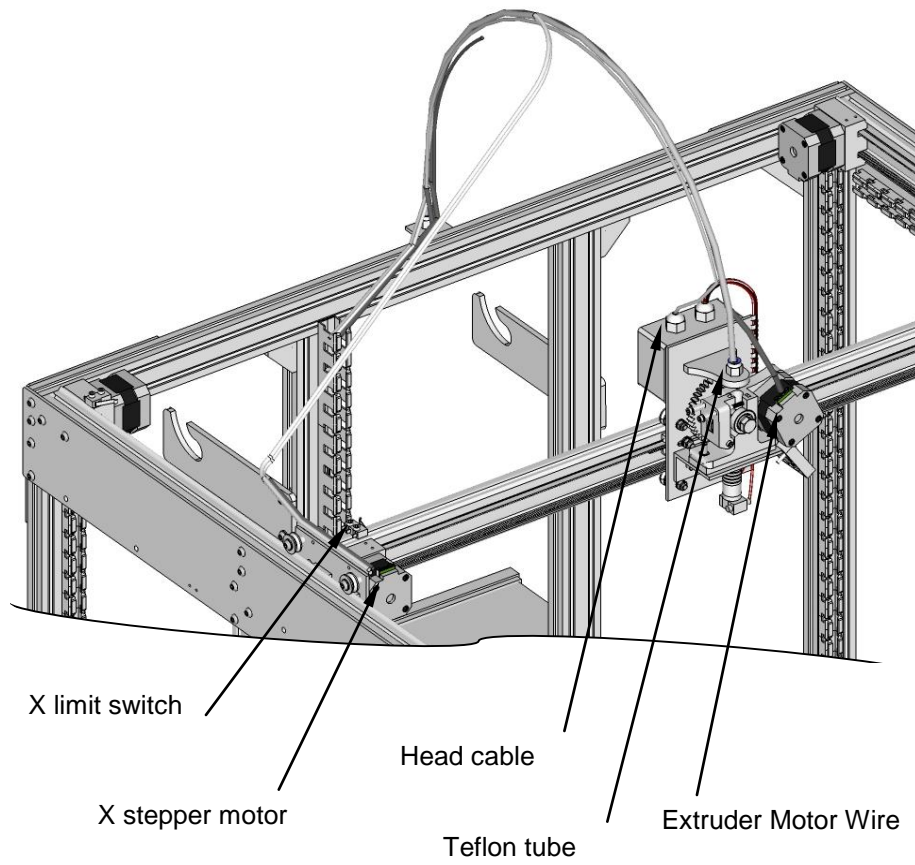
The fan (one black and one red) is polarized and must have the red wire connected to the green head cable wire, and the black wire connected to the brown head cable wire.

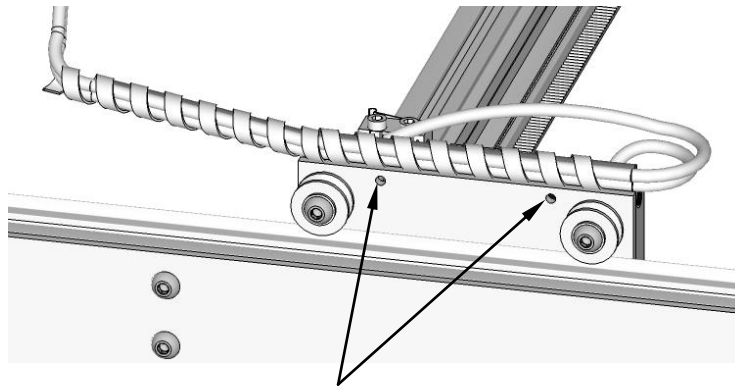
The terminal block works by connecting the upper terminals to the lower terminals. It is important to check that the wire is securely fastened in the terminal.



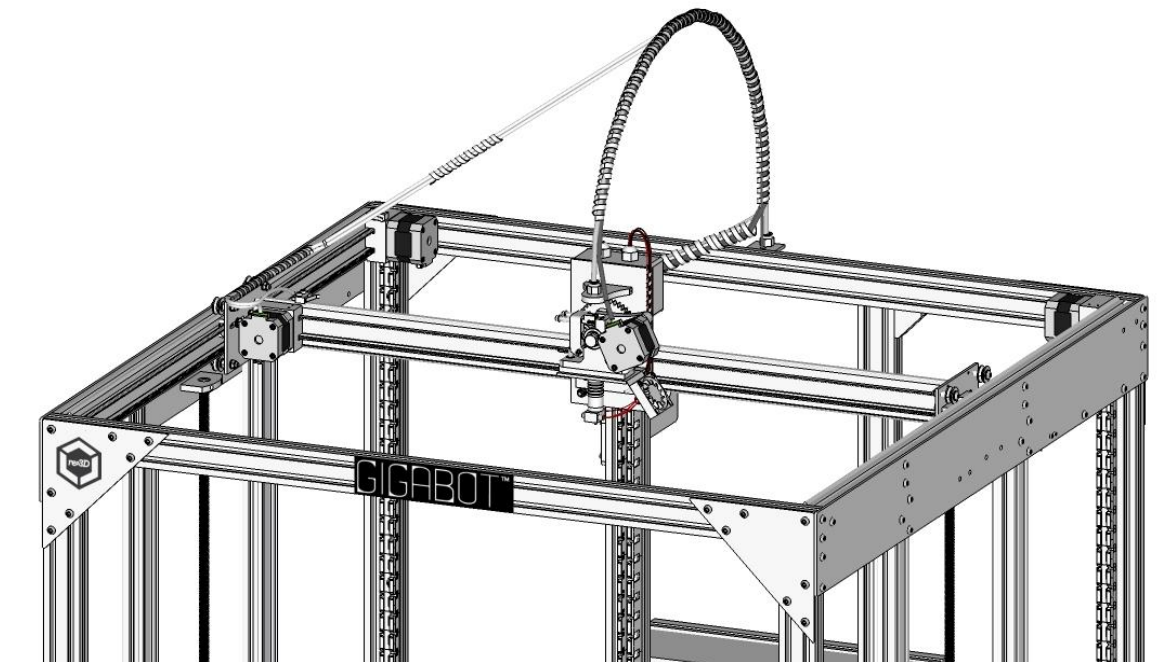
6.11.2 Head bundle







Add wire wrap and secure bridge cable rod, X-axis stepper motor wire, and X-axis limit switch wire to left end truck using small holes and small zip-ties

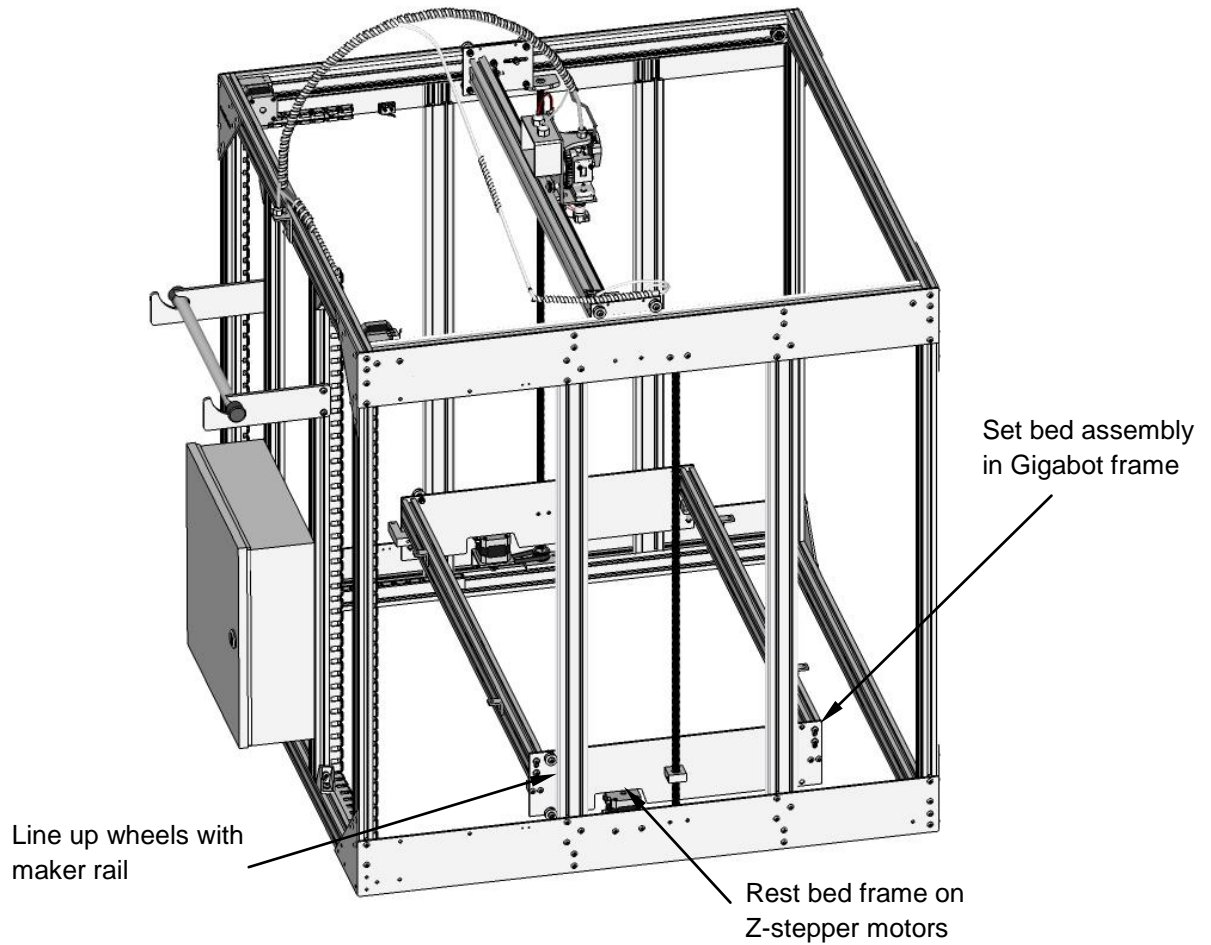


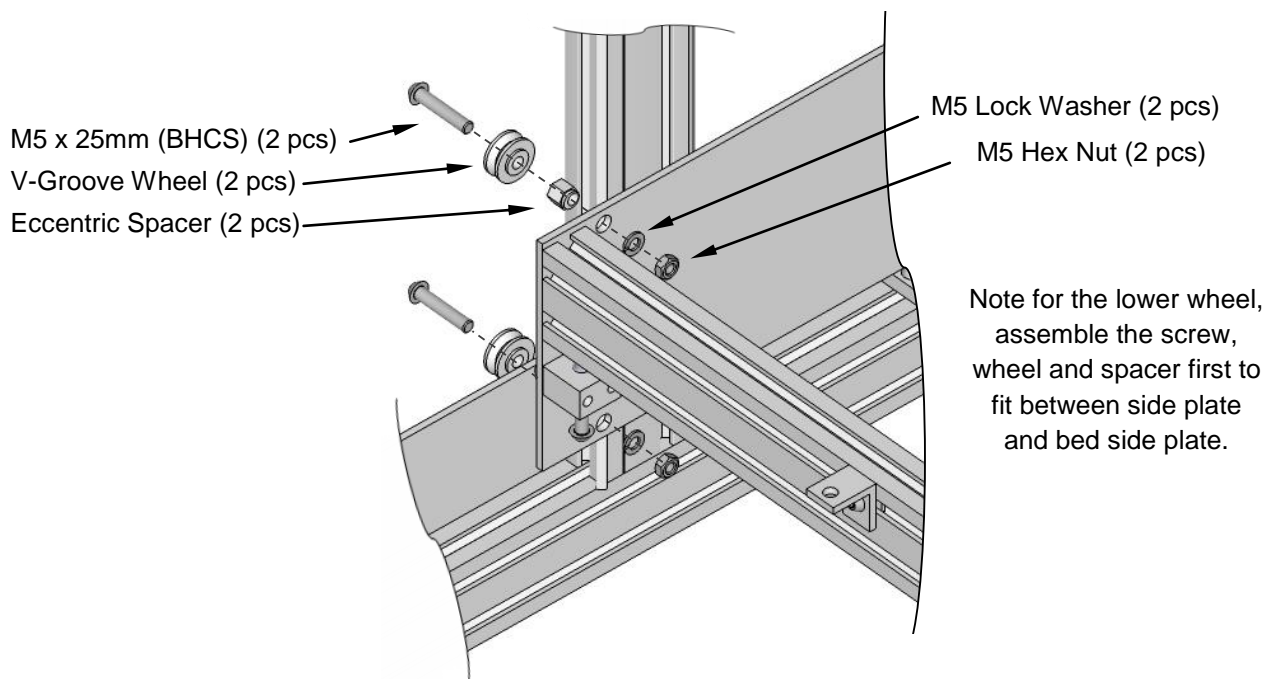
## 6.12 Installing the Plate Bed

### Parts:

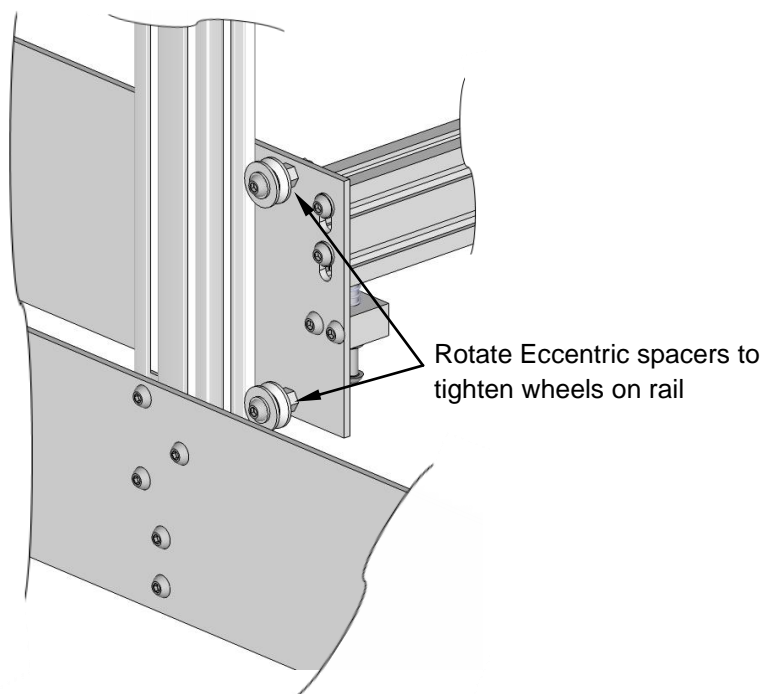
1 x Bed Assembly  
2 x V-Groove Wheel  
2 x Eccentric Spacer

6 x M5 Hex Nut  
2 x M5 Washer  
2 x M5 Lock Washer  
2 x M5 x 25mm (button head)  
2 x M5 x 25mm (flathead)

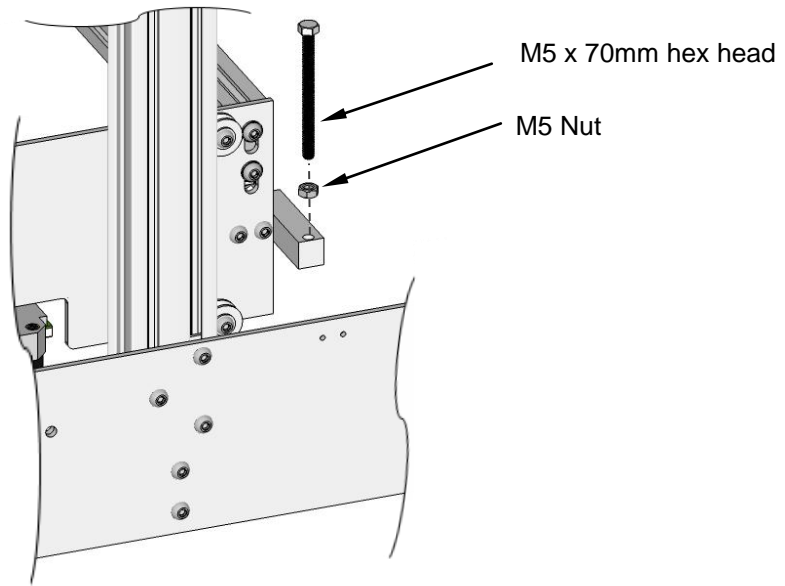




**Figure 6-104 Add Wheels and Eccentric Spacers to Bed Frame Assembly**



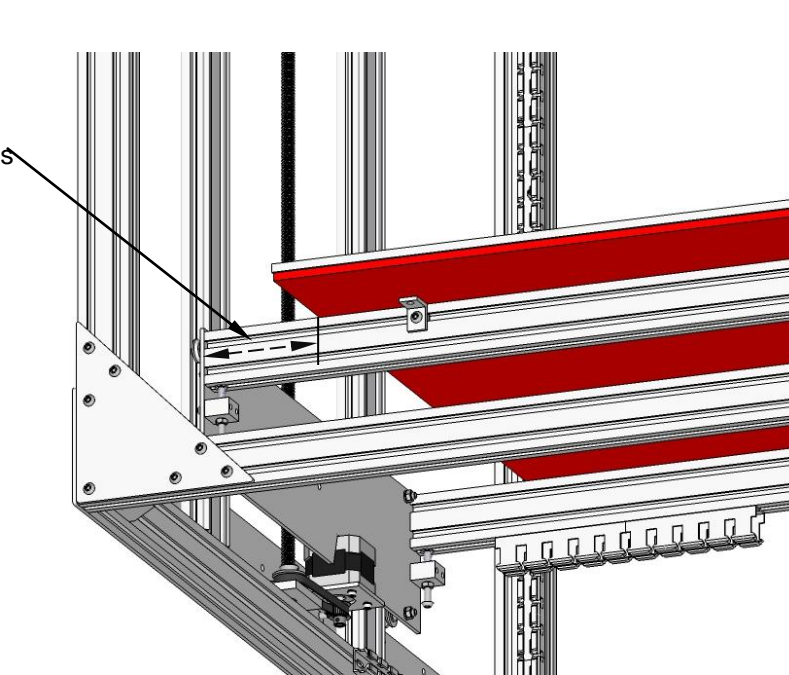
**Figure 6-105 Tighten wheels**



**Figure 6-106 Z-Limit Switch Bolt**

Install the bed plate with the wires on the left side, towards the Panduit on the bed frame.

Mount bed plate 3"  
from bed side plate  
(heater wires on this  
side, too)



**Figure 6-107**

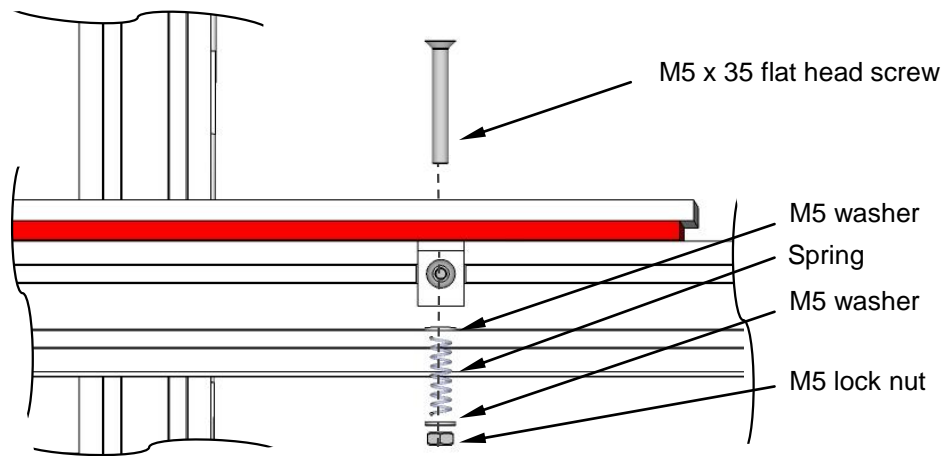


Figure 6-108

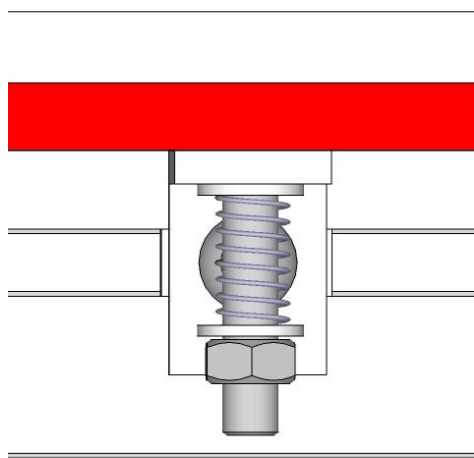
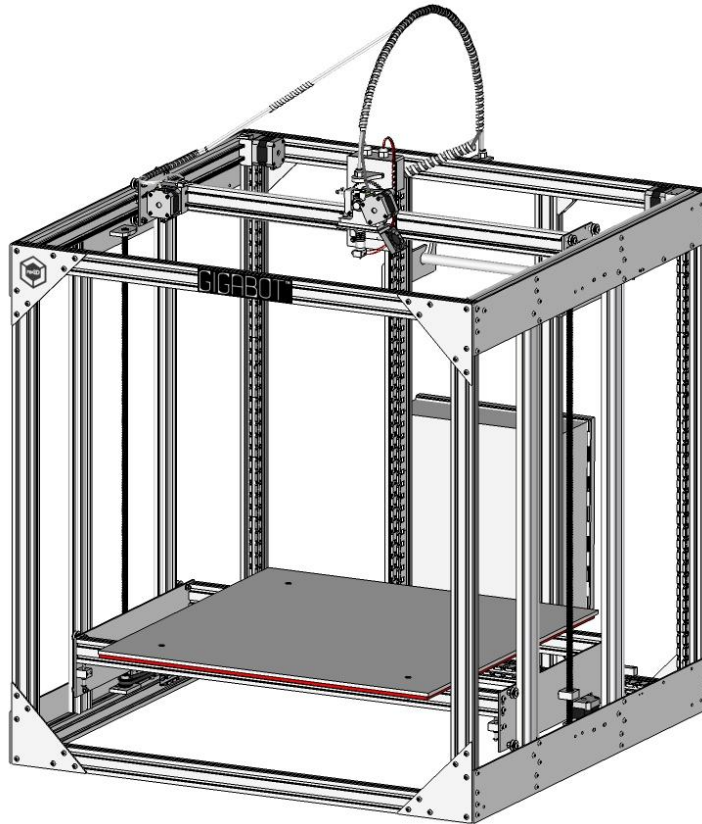


Figure 6-109 Heated Bed mount Detail



**Figure 6-110 Completed Gigabot**



**Back Page...**