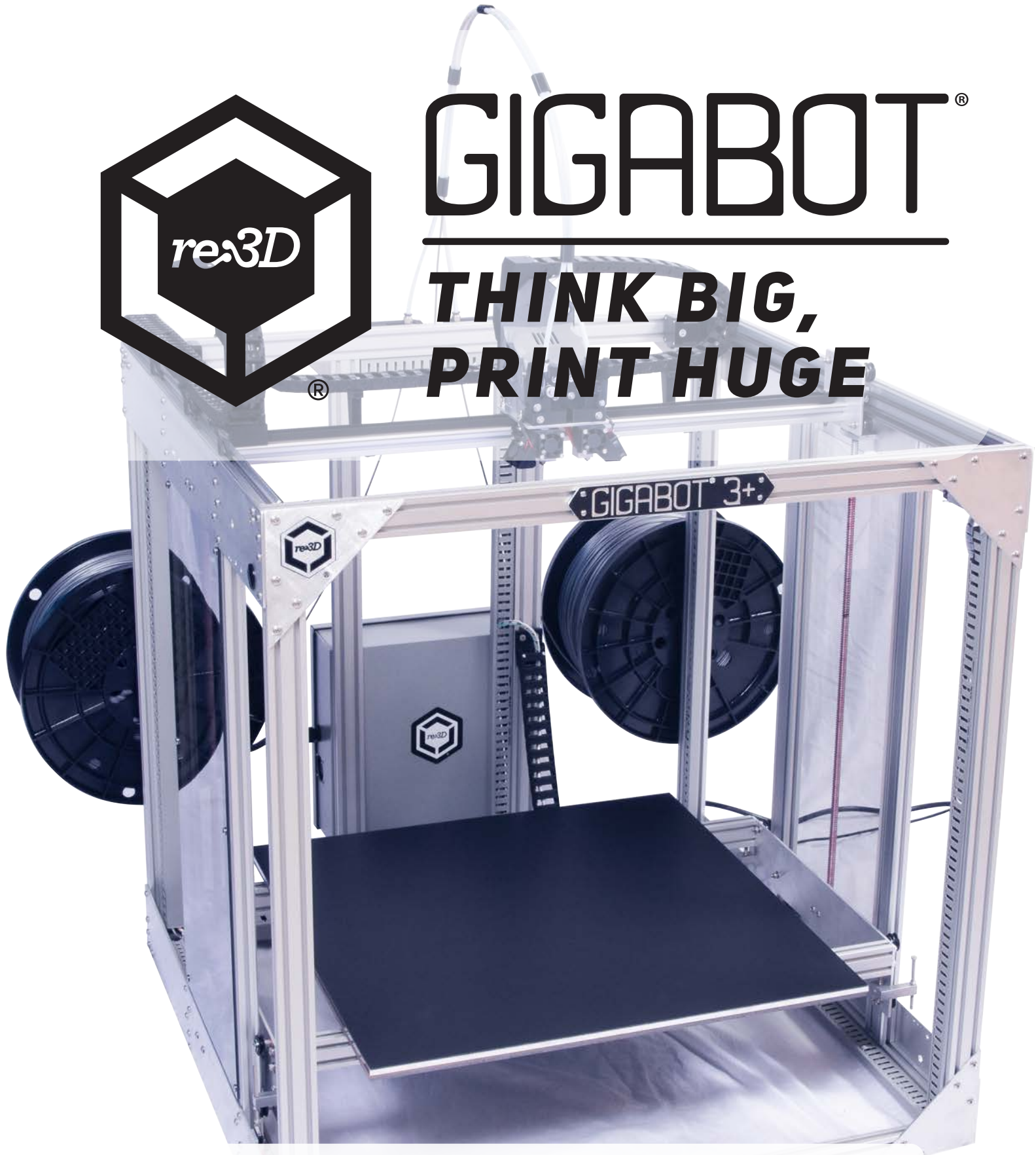




# GIGABOT<sup>®</sup>

***THINK BIG,  
PRINT HUGE***



— GIGABOT<sup>®</sup> : UNASSEMBLED —  
(COMPLETE DIY KIT)





# INTRODUCTION

---

## THANK YOU FOR PURCHASING THE GIGABOT®: UNASSEMBLED (COMPLETE DIY KIT)!

This kit contains all the parts necessary to construct a fully functioning Gigabot®. You will find that this is a high quality and very capable 3D printer that not only helps you develop your biggest ideas, but lets you do so at the human scale.

## REFERENCES & HELPFUL DOCUMENTS

Some external resources may be helpful during the assembly process. For example, knowing the correct names for different parts on the Gigabot®, or proper use of certain tools. Resources that we thought may be helpful have been linked to at the end of this guide.

## VIDEO INSTRUCTIONS

If you prefer a video guide, go to our YouTube channel at <https://www.youtube.com/user/GigaBot3D> and find our related Gigabot® 3 assembly instructions. Retrofits, tips & tricks, and other video content are available as well.

## COMMUNITY FORUM

See what other users are doing with their Gigabot® and share your experiences on our forum: <https://re3d.zendesk.com/hc/en-us/community/topics>



Rev. 10, October 6, 2021

# LEGALESE

---

## **READ INSTRUCTIONS**

All the safety and operating instructions must 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 any 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 a 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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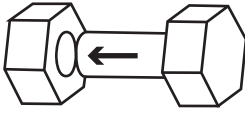
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|--|------------|
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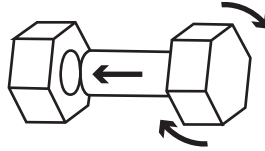


# LEGEND

## INSERT



## FASTEN



## MEASURE



## MARK



## ROUTE



## REMOVE



## PLACE



## ALIGN



## EVENLY SPACE



## CONNECT



## LOCATE



Objects of important are outlined with dotted lines, or highlighted.

# BEFORE YOU BUILD

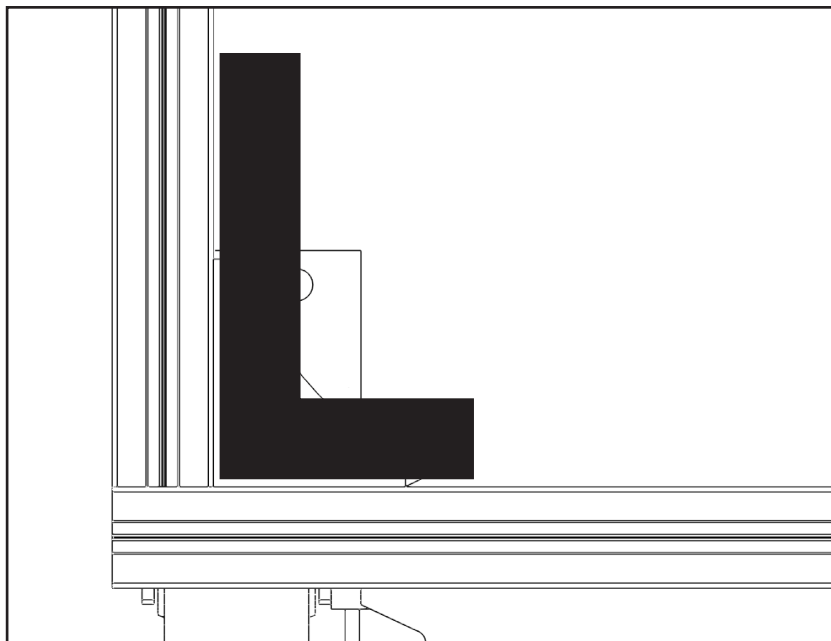
## FOR THE VISUAL LEARNERS

We have recorded instructional videos of our technicians assembling the Gigabot and posted them to our YouTube channel. These work as a great standalone resource, but can also help clarify the printed instructions. This manual references them quite often, so do not hesitate to cross reference this manual and the video content if needed.



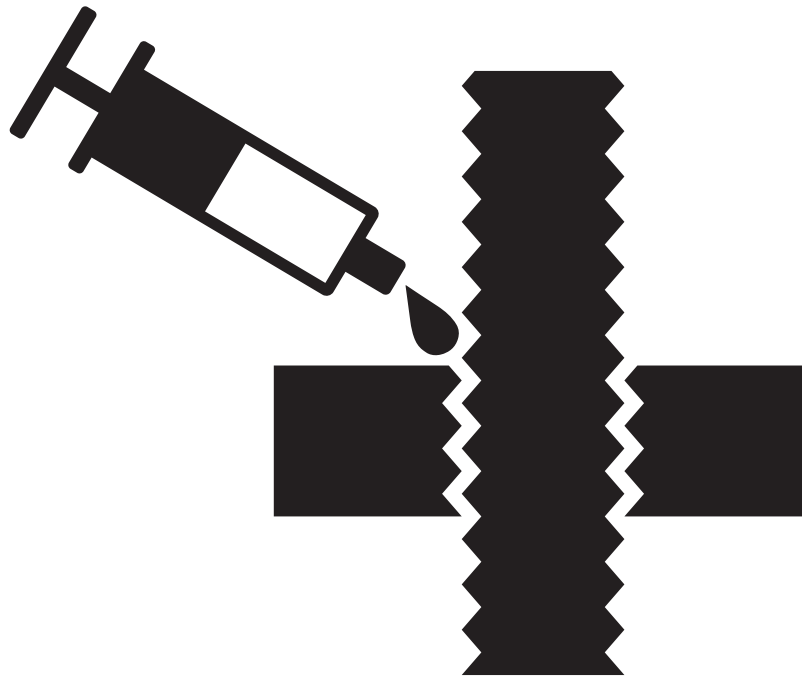
## IT'S HIP TO BE SQUARE

When assembling the Gigabot it is essential to work on a flat surface and to carefully square perpendicular parts as much as possible. This is apparent in section F of this manual, but also in other areas such as the bed frame construction. It is just as important to ensure that part surfaces are flush with each other and not misaligned.



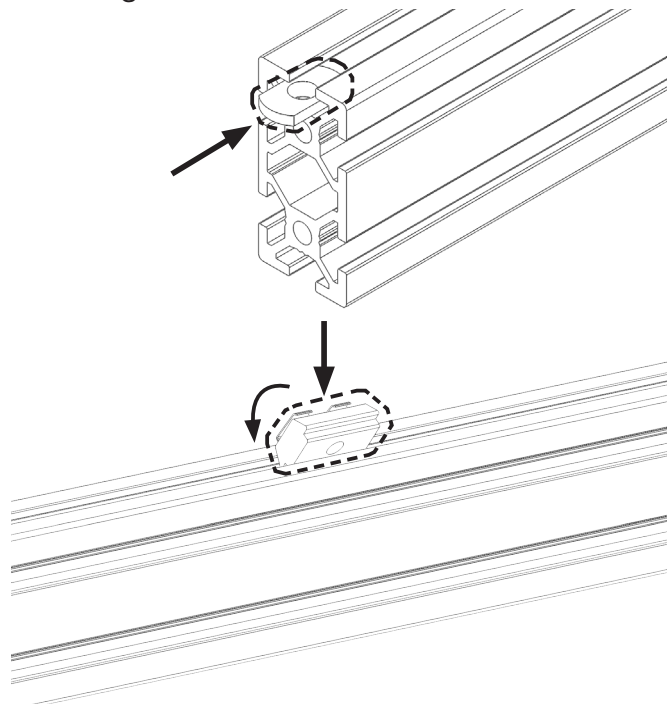
## THE USES OF [10175] GREASE

During Gigabot assembly, [10175] Grease is most important for the Z-axis ACME threaded rods as well as the assembly of wheels with [10116] Eccentric Spacers and to keep screw threads from galling. These situations are pointed out in this manual and will enable ease of assembly and smooth, quiet operation while printing.



## T-NUTS, HOW DO THEY WORK?

T-nuts are an essential part of assembling the Gigabot. These are inserted into the extrusion in order to fasten parts to the frame. Post-assembly T-nuts, or “[10362] M5 Magic T-nuts,” as we like to call them, are also used. These hold their positions without sliding around, and are useful especially when modifying or retrofitting Gigabot without having to disassemble the frame.



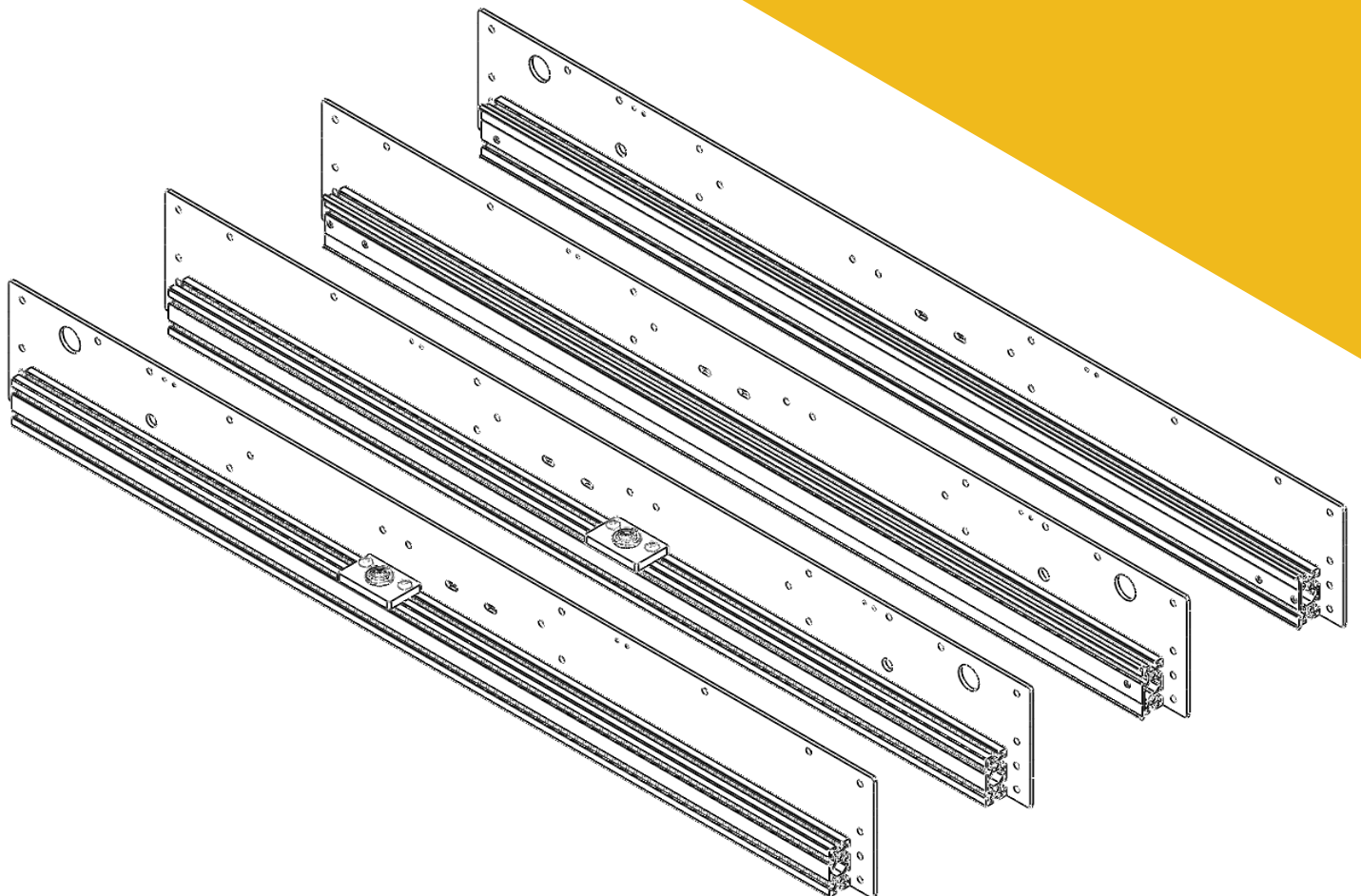
## MEASURING AND MARKING

Some steps in the instructions will prompt you to mark locations on Gigabot in order to correctly locate and place parts. When marking, be sure to only use a pencil—using a permanent marker will leave unsightly marks on the metal!





# ***SIDE PLATE ASSEMBLY***





# TOOLS & PARTS

*Refer to packing list to identify parts*

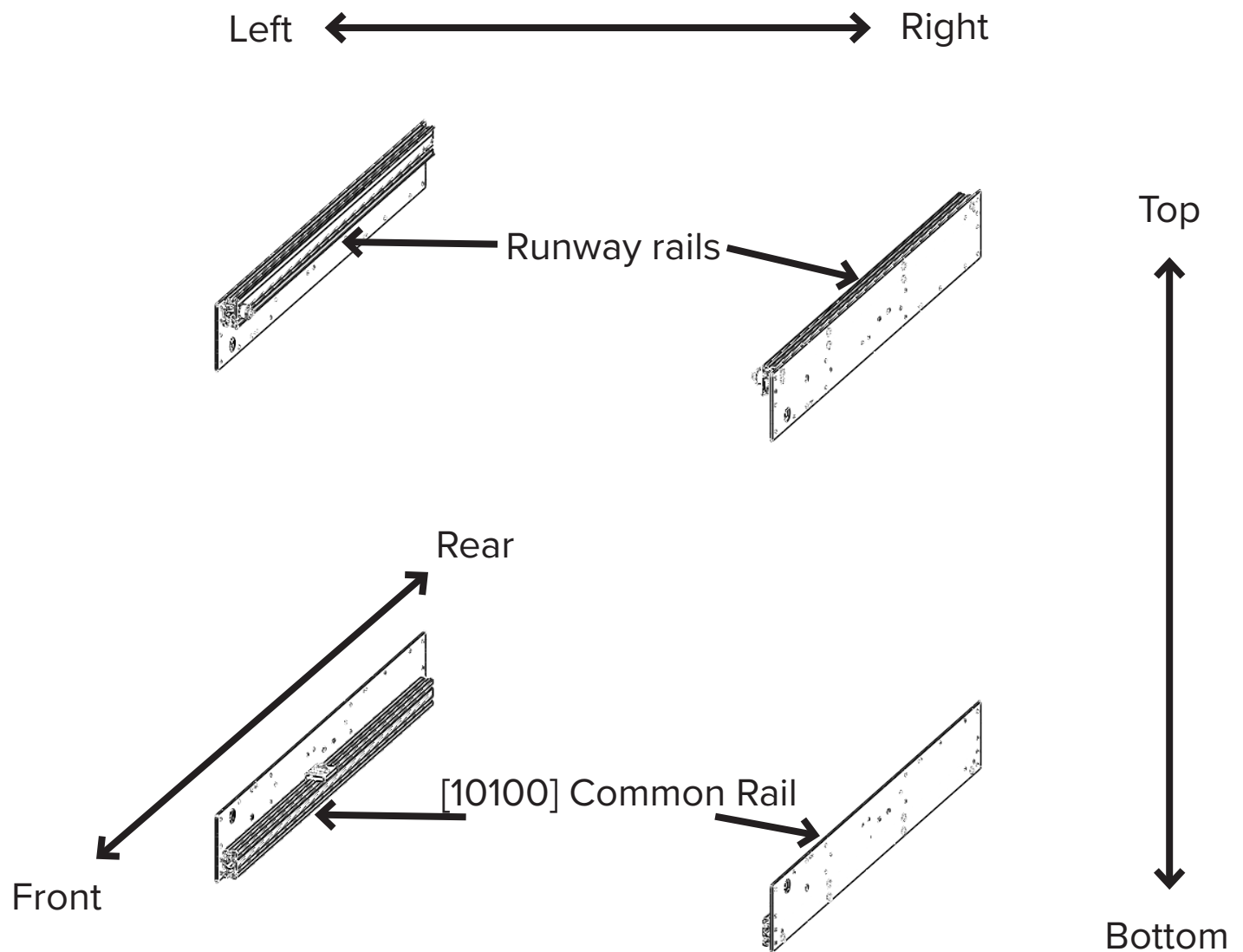
| BOX #            | PART                                 | QUANTITY |
|------------------|--------------------------------------|----------|
| 4                | [10313] GB3+ Runway Rail Left        | 1        |
| 4                | [10313A] GB3+ Runway Rail Right      | 1        |
| 4                | [10100] Common Rail                  | 2        |
| 1                | [10334] Straight Edge Steel Square   | 1        |
| 6                | [10046] Allen Wrench Set             | 1        |
| <b>Snappybox</b> | [10361] M5 T-nut                     | 24       |
| <b>Snappybox</b> | [11537] M5 x 8 SHCS                  | 24       |
| 6                | [10101] Regular Corner Plates        | 1        |
| 8                | [10620] Dual Extruder Leveling Block | 1        |
| <b>Snappybox</b> | [10244] M5x45mm BHCS                 | 2        |
| <b>Snappybox</b> | [10702] Idler Wheel                  | 2        |
| <b>Snappybox</b> | [10235] M5 Flat Washers              | 4        |
| <b>Snappybox</b> | [10234] M5 Nylock Nut                | 2        |
| 6                | [10175] [10175] Grease               | 1        |
| <b>Snappybox</b> | [10397] [10397] 8mm Combo Wrench     | 1        |

**WATCH THE  
ACCOMPANYING  
VIDEO:**

<https://youtu.be/BvHsYGNJj-0>

# OVERVIEW

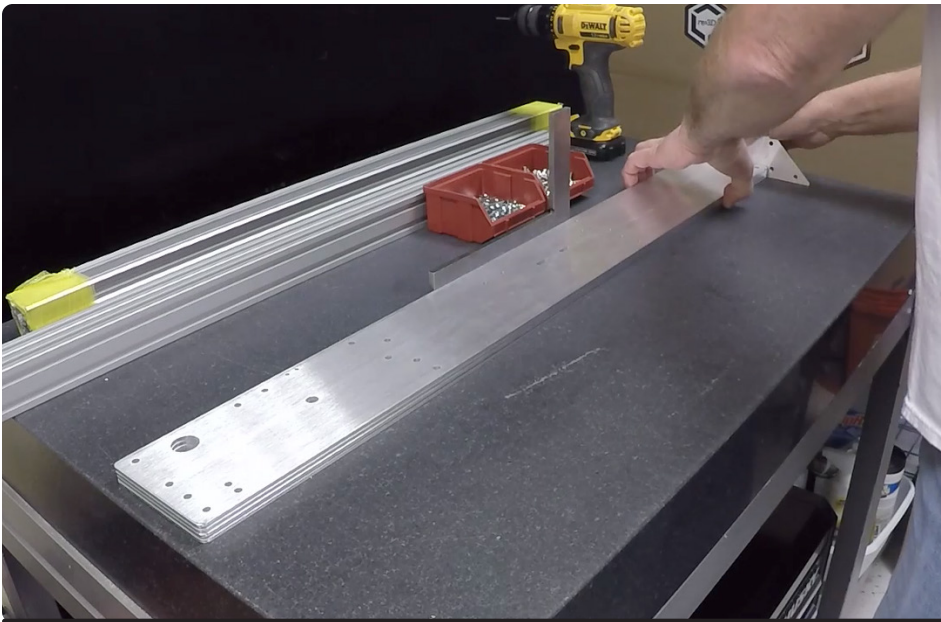
In the final assembly of Gigabot®, the side plate subassemblies will be oriented in the frame as shown.



# TIPS & TRICKS

---

- #1** Work on a flat surface.
- #2** Use a [10334] Straight Edge Steel Square and corner plate to check hole alignment and make the side plates flush with their rails.
- #3** Be mindful of the orientation of each side plate.



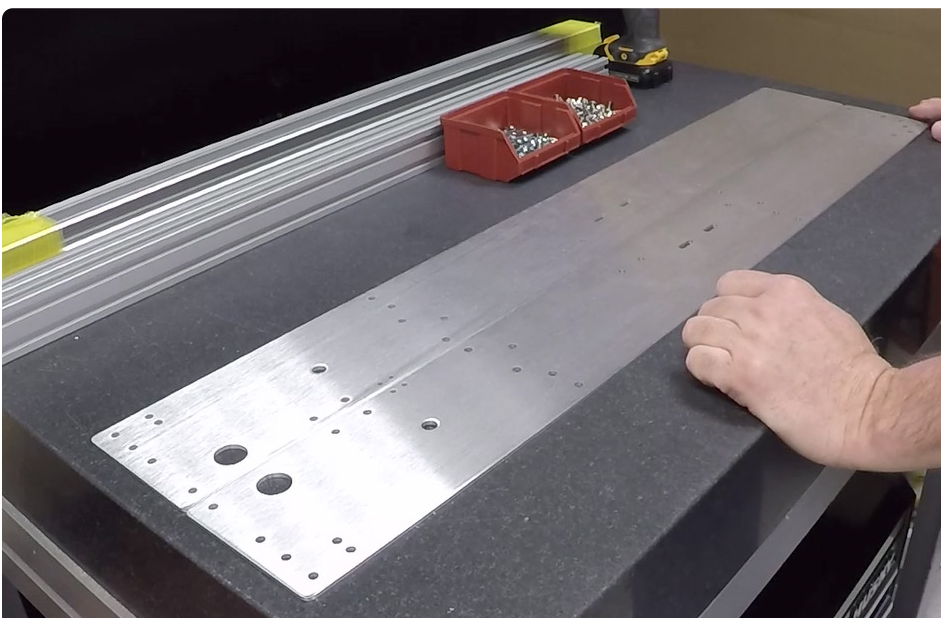
## A1

First, you will assemble the lower side plates. Do a quick visual check to make sure the holes are relatively aligned. Use a corner plate and the [10334] Straight Edge Steel Square to align the plates.



## A2

Work on a flat surface



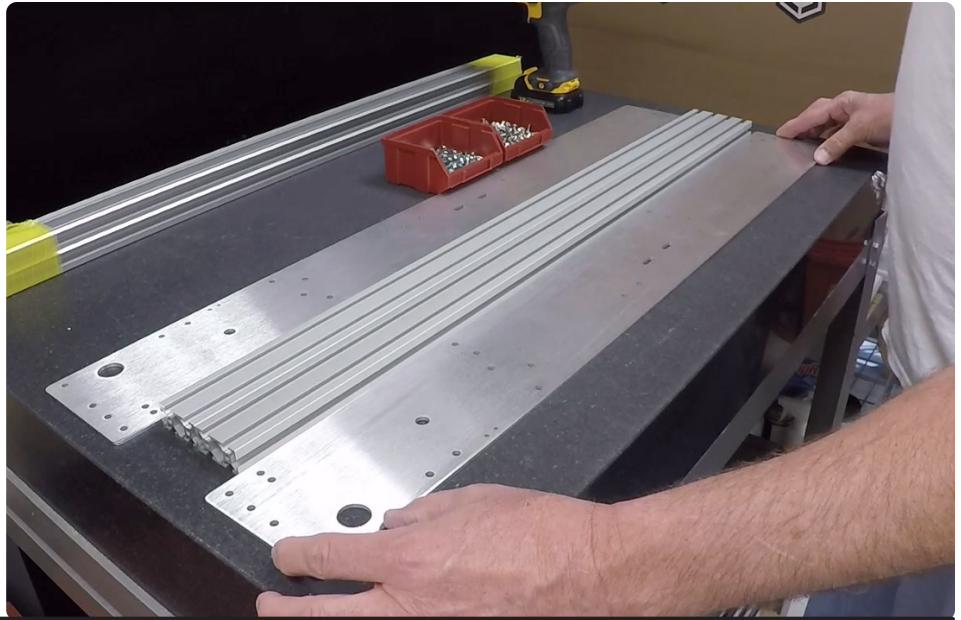
## A3

Place side plates alongside each other, mirrored from each other as shown



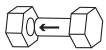
## A4

Place the common rail between the side plates, as shown



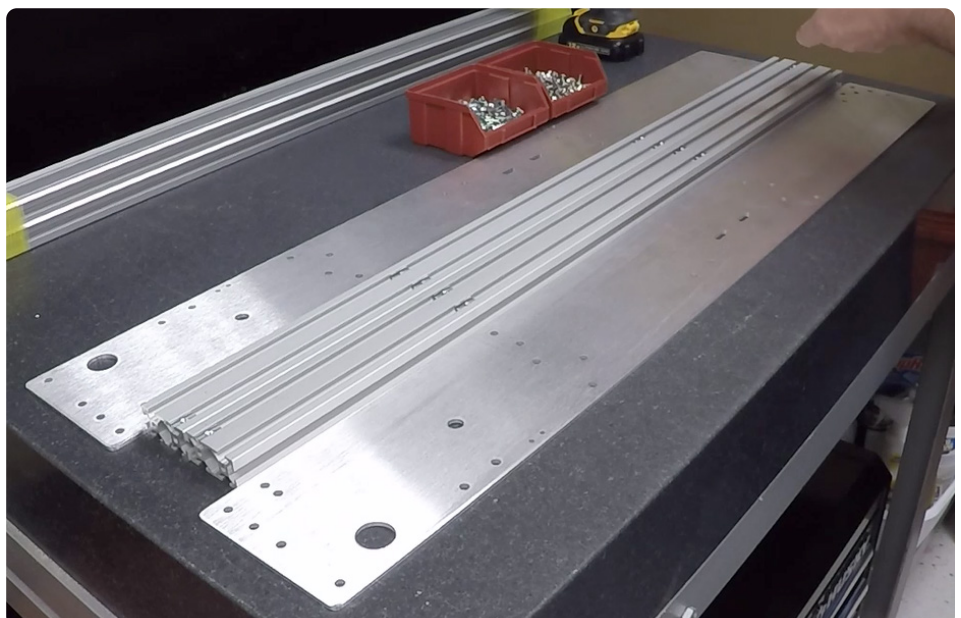
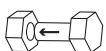
## A5

6 T-nuts need to be placed in each rail as marked in yellow. See the diagram, or [see this section in the video at 2:53](#).



## A6

Insert the T-nuts and line them up to the side plate holes. This doesn't have to be perfect, but get them fairly close.

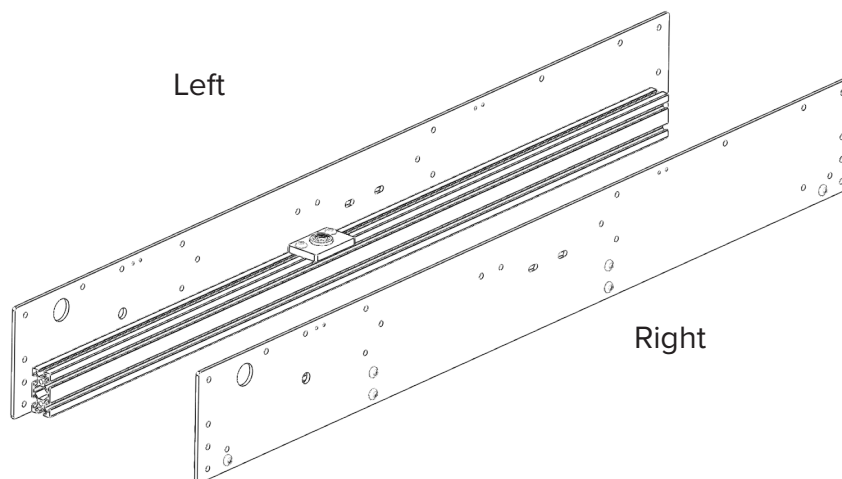
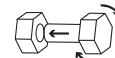






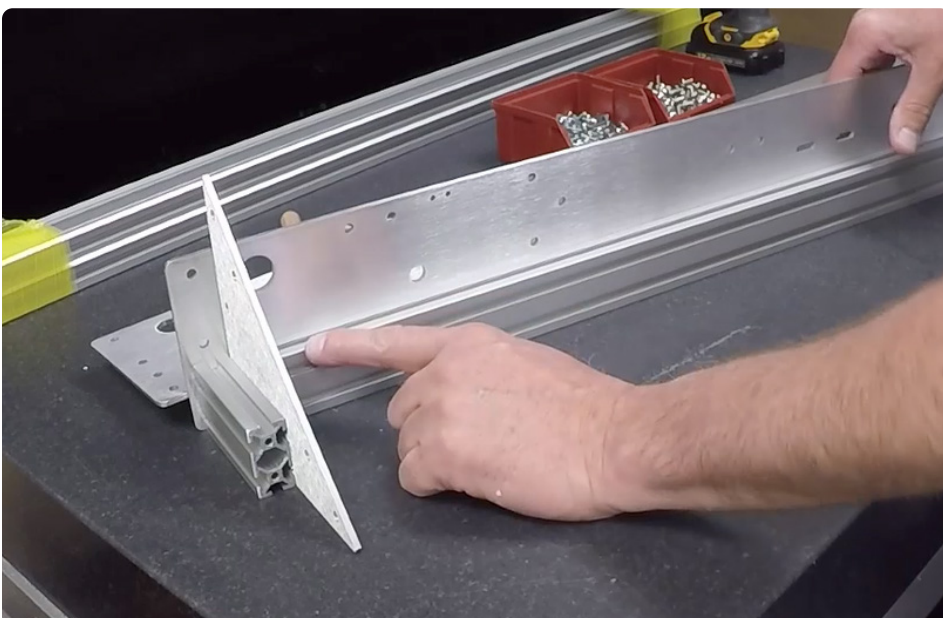
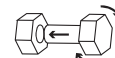
## A7

Place the side plate onto the rail and use 6 M5 x 8 SHCSs and 3mm Allen Key to loosely fasten the plate to the rail. You can move the plate along the common rail to align the T-nuts to the holes if needed.



## A8

Repeat this for the other side plate and rail. Make sure that they are still mirrored. See the diagram to distinguish which belongs on the left and right sides of the frame.



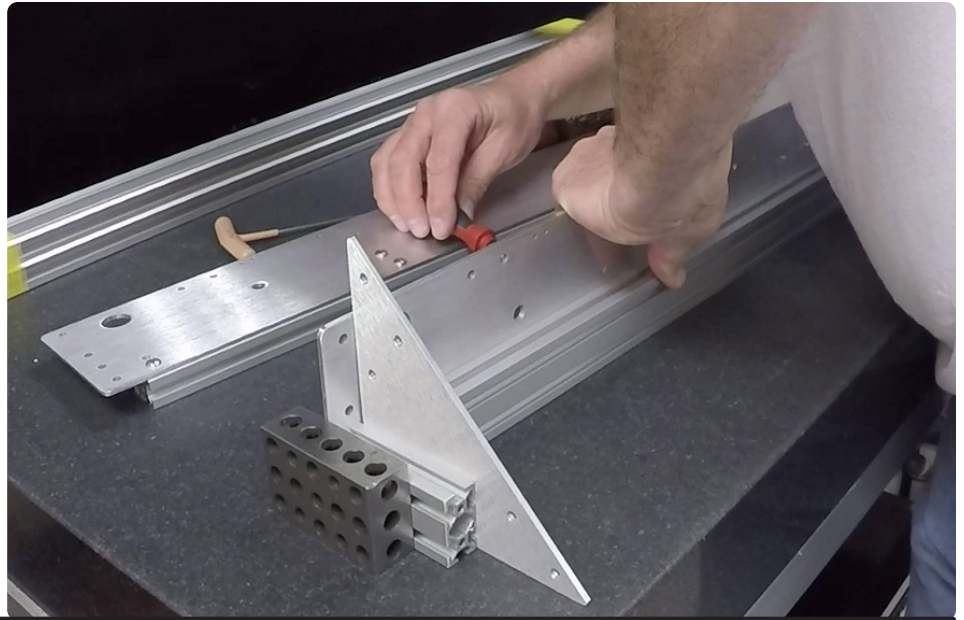
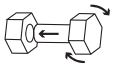
## A9

Use a bed frame cross rail, or the dual extruder leveling block along with the corner plate and the [10334] Straight Edge Steel Square to correctly space the rail from the ends of the side plate. [See the video at 5:42 for more.](#)



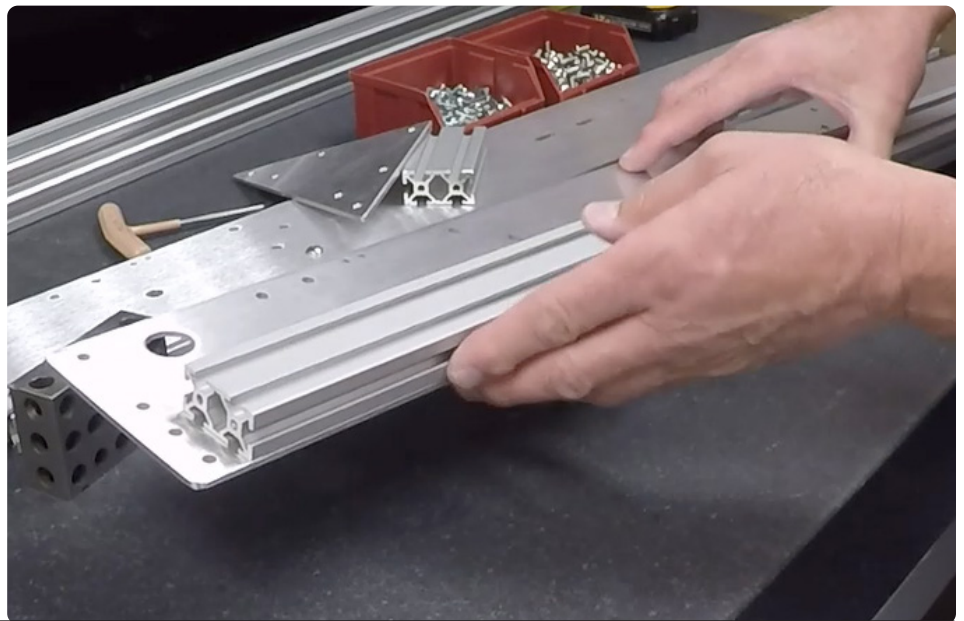
## A10

Press the rail and plate down and snug up the M5 x 8 SHCSs.



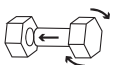
## A11

Check that the rail and plate are flush on the bottom surfaces.



## A12

Once flushed and spaced correctly, fully tighten the 6 M5 x 8 SHCSs







## A13

Repeat the spacing and flushing process for the other lower side plate assembly. [Refer to the video for other useful tips.](#)



## A14

Next, you will assemble the upper side plate assemblies. Similar to before, place the side plates mirrored alongside each other, with the power switch holes facing out.



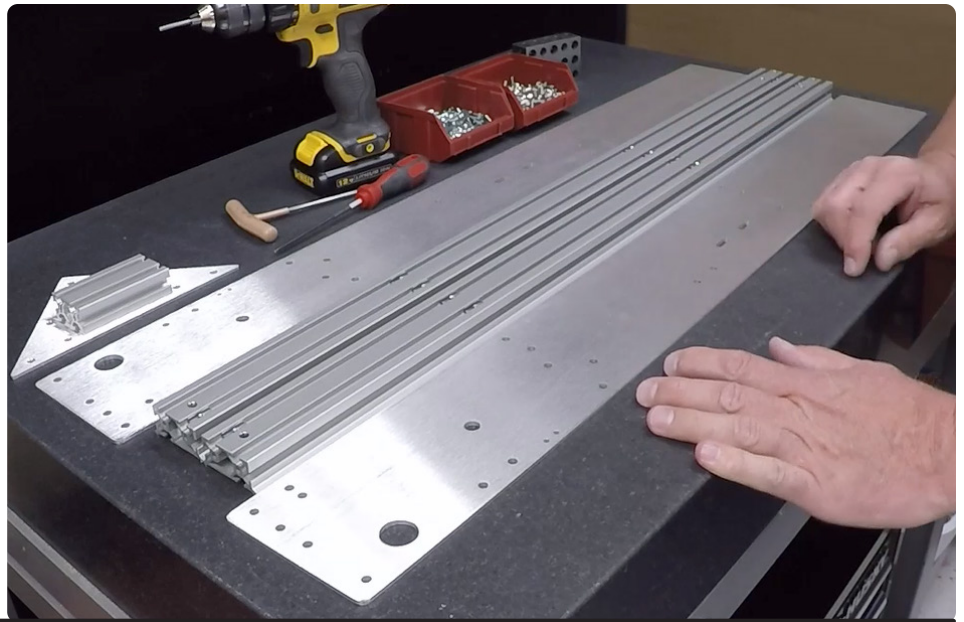
## A15

Place the runway rails between the side plates with the single slot side down as shown. Note that the side with the single slot should also be facing outward.



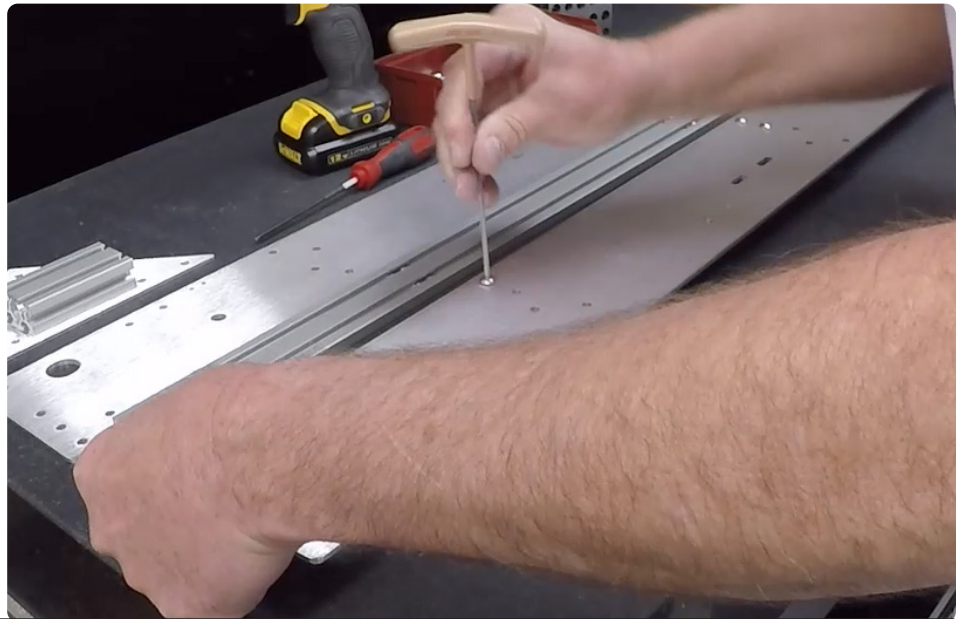
## A16

Insert 6 T-nuts each and line them up to the holes as before. Again, alignment does not have to be perfect, but get them close.



## A17

Place the side plate onto the runway rail and loosely fasten it with 6 [11537] M5 x 8 SHCS.

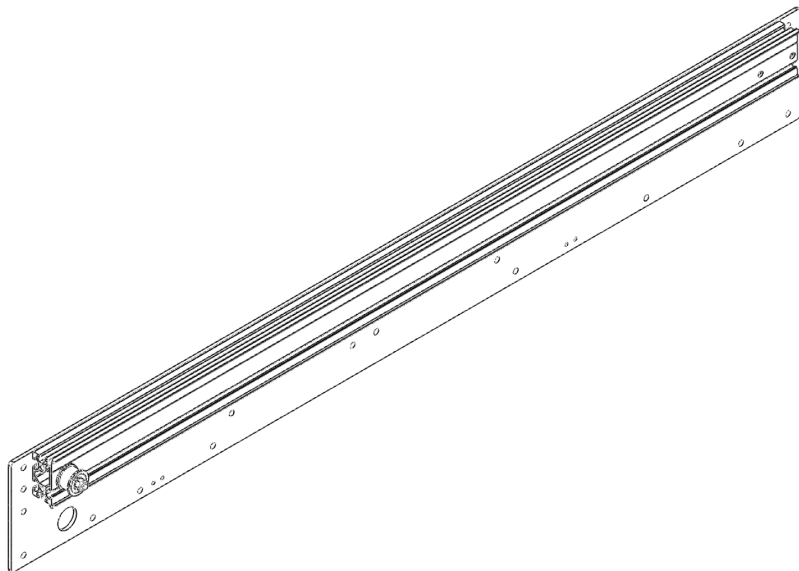


## A18

Repeat with the other upper side plate







## A19

Double check the orientation of the single slot side of the runway rails. When assembled into the frame, it should be facing down.



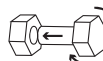
## A20

Insert [10244] M5x45mm BHCS into the side plate holes (for idler pulley and Y motors) to line the plate up with the rail.



## A21

Snug up the M5 x 8 SHCSs and remove the M5x45s.





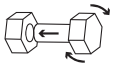
## A22

Use the corner plate spacing method from before to check the proper spacing at each end of the side plate assembly.

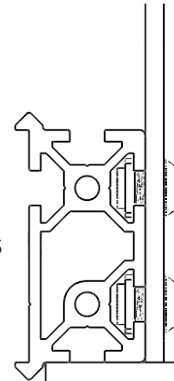


## A23

Press down on the plate and rail and further snug the M5 x 8 SHCSs. Note that to get the rail and plate surfaces flush, you will need to hang the protruding edge for the [10608] V-Groove Wheels off of your workspace.



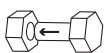
Edge of Makerslide hangs off of the work surface.



Work surface

## A24

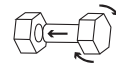
You can double check the hole alignment with the M5x45s. Remove them afterwards.





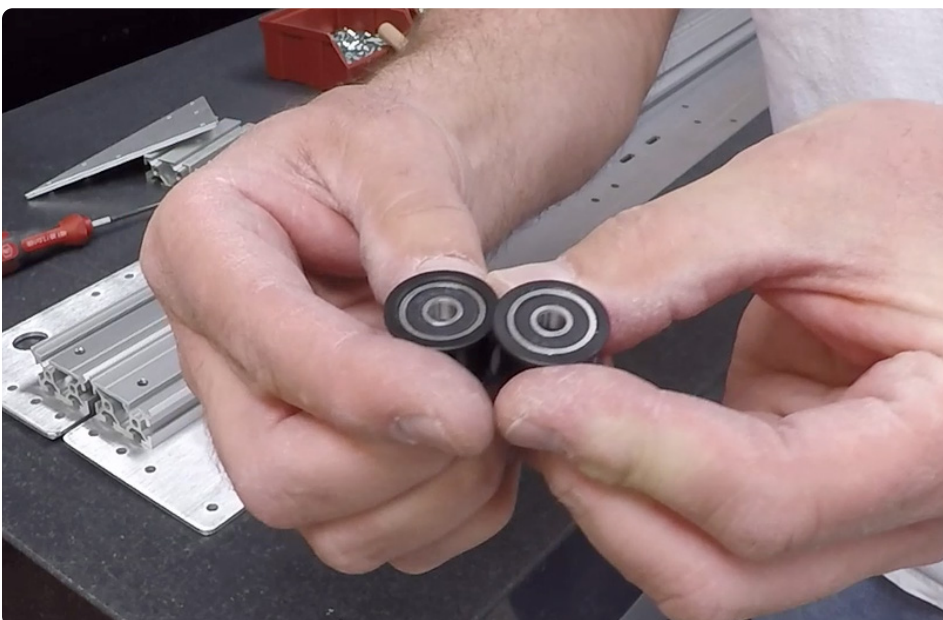
## A25

Fully tighten the M5 x 8 SHCSs.



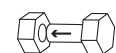
## A26

Repeat this process for the other side plate assembly.



## A27

Next, you will install the idler pulleys for the Y axis belts. Press the bearings into the idler pulleys to make sure they're fully seated.





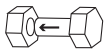
## A28

Note that the recessed side should be against the rail when assembled.



## A29

Insert 1 M5x45 into each rail for the pulleys, as shown.



## A30

Each washer has a flat, dull side and a round, shiny side. Always place the round, shiny side towards the bearings.





### **A31**

Place 3 M5 washers on the M5x45 (round, shiny side towards where the bearing will be).



### **A32**

Place the idler pulley on the M5x45, with the recessed face towards the rail.



### **A33**

Add 1 M5 washer to the M5x45, shiny side toward the bearing.





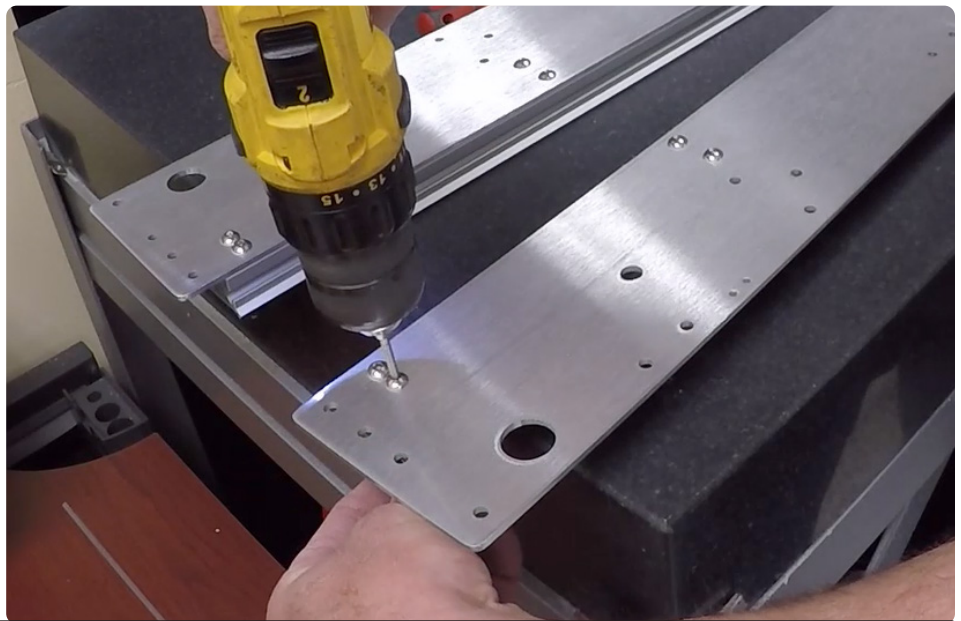
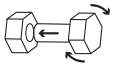
## A34

Place a small amount of [10175] Grease on the end of the screw. This keeps the hardware from galling. [You can read an informative article on thread galling here.](#)



## A35

Fasten 1 [10234] M5 Nylock Nut onto the M5x45, using the [10397] 8mm Combo Wrench and 3mm Allen Key to fully tighten. Do not tighten so much that the pulley cannot turn. It should always be able to turn smoothly.

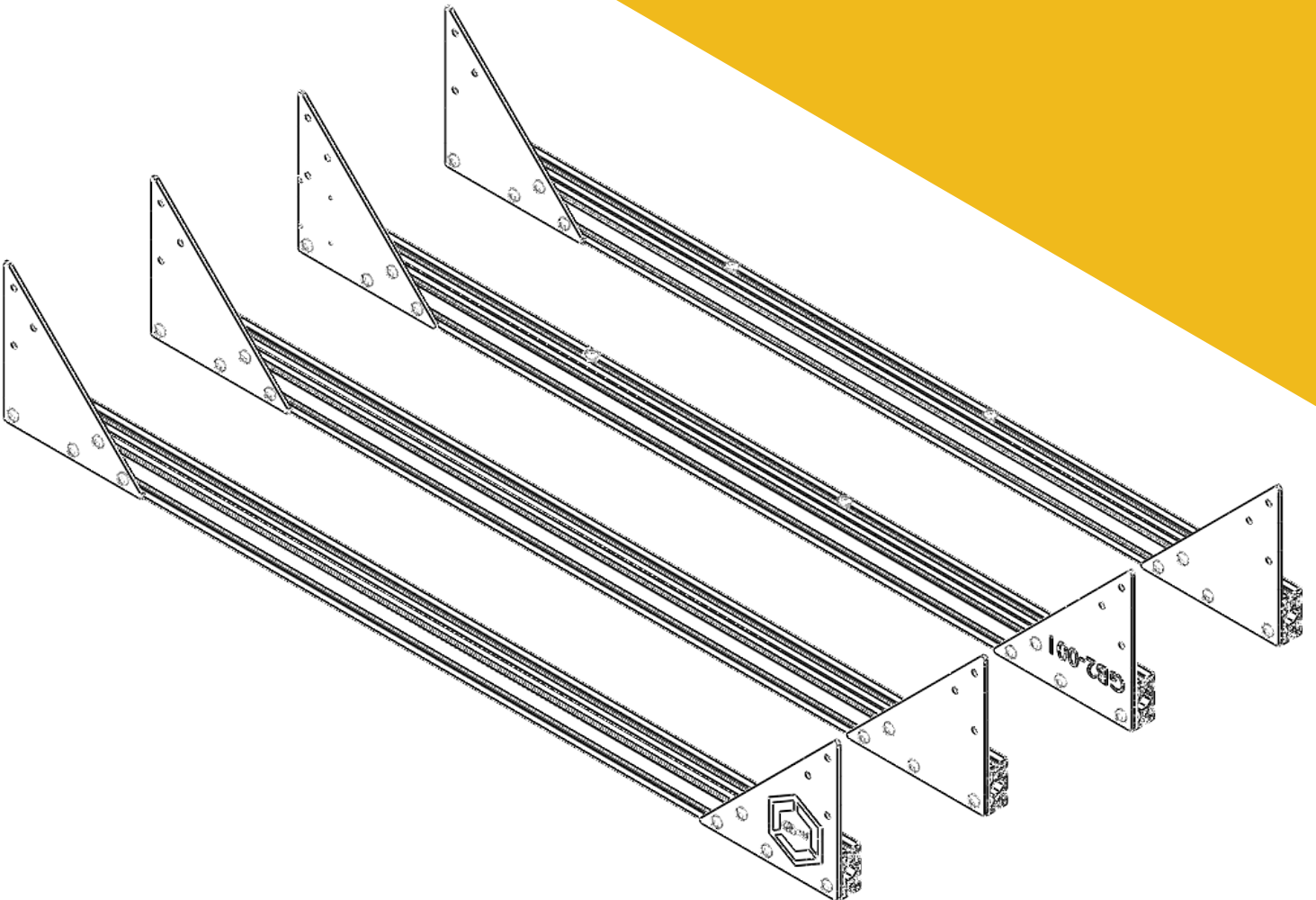


## A36

[Again, please watch our assembly video as an overview, or for further details.](#)



# **HEADER & FOOTER ASSEMBLY**



# TOOLS & PARTS

*Refer to packing list to identify parts*

| BOX #            | PART                                  | QUANTITY |
|------------------|---------------------------------------|----------|
| 4                | [10103] Cross Rail                    | 4        |
| 6                | [10929] Logo Corner Plate             | 1        |
| 6                | [10101] Regular Corner Plates         | 5        |
| <b>Snappybox</b> | [10361] M5 T-nut                      | 43       |
| <b>Snappybox</b> | [10579] M3 T-nut                      | 6        |
| <b>Snappybox</b> | [11537] M5 x 8 SHCS                   | 33       |
| <b>Snappybox</b> | [11005] M3 x 8mm BHCS                 | 2        |
| 4                | [10334] Straight Edge Steel Square    | 1        |
| 6                | [10046] Allen Wrench Set              | 1        |
| 6                | [10932] Serialized Corner Plate       | 1        |
| 8                | [10711] Assembled Tapped Corner Plate | 1        |
| <b>Snappybox</b> | [11538] M5 x 10 SHCS                  | 4        |
| 1                | [10634] #1 x 5.25"                    | 1        |
| 1                | [10636] #2 x 7.25"                    | 1        |
| <b>Snappybox</b> | [10224] M3 x 8mm SHCS                 | 4        |
| 8                | [10174] Gigabot 3+ Nameplate          | 4        |
| 1                | [10910] LED Light Strip Kit           | 1        |

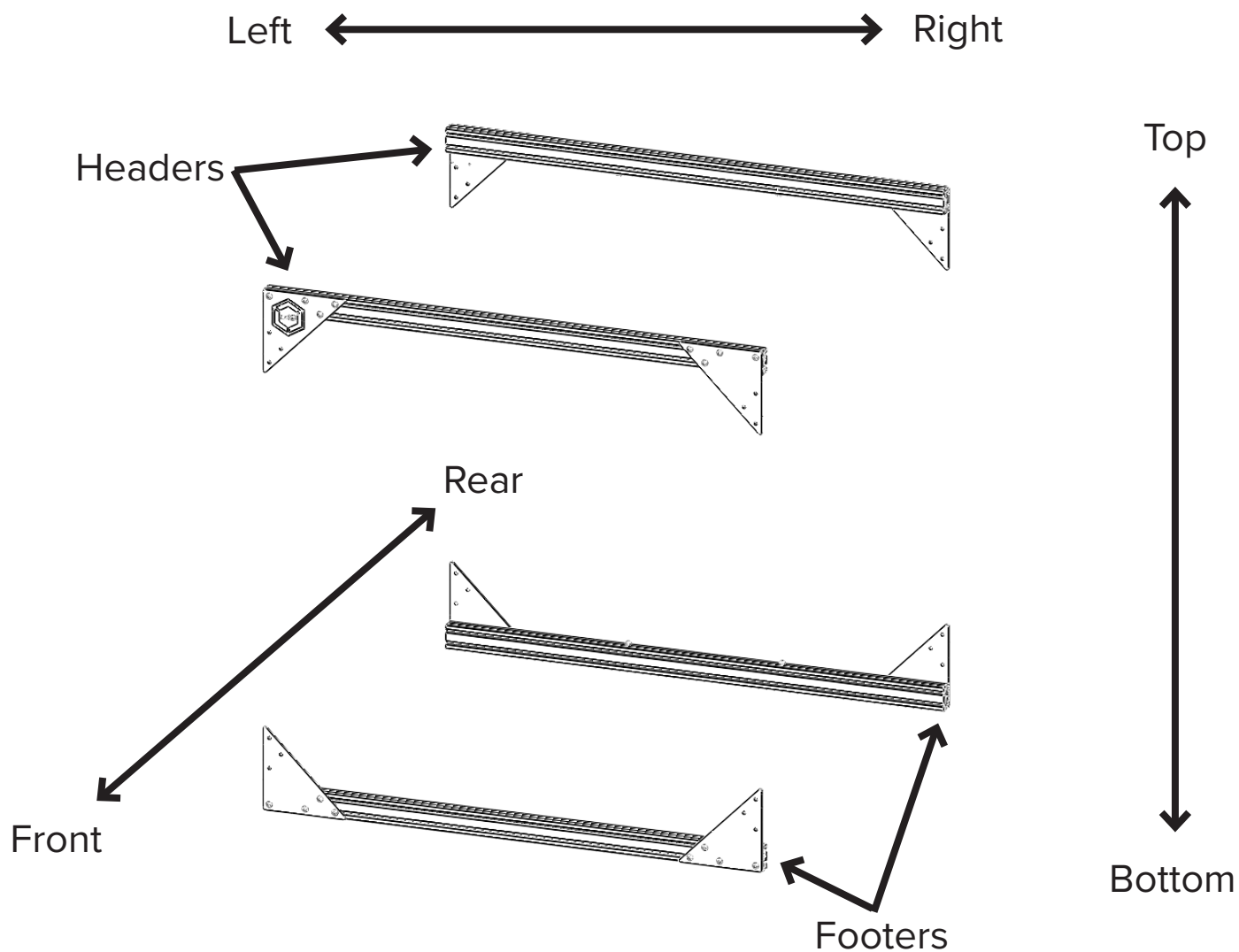
**WATCH THE  
ACCOMPANYING  
VIDEOS:**

<https://youtu.be/matY5suJLd4>

<https://youtu.be/MTFvHk73lvU>

# OVERVIEW

In the final assembly of Gigabot®, the header and footer subassemblies will be oriented in the frame as shown.

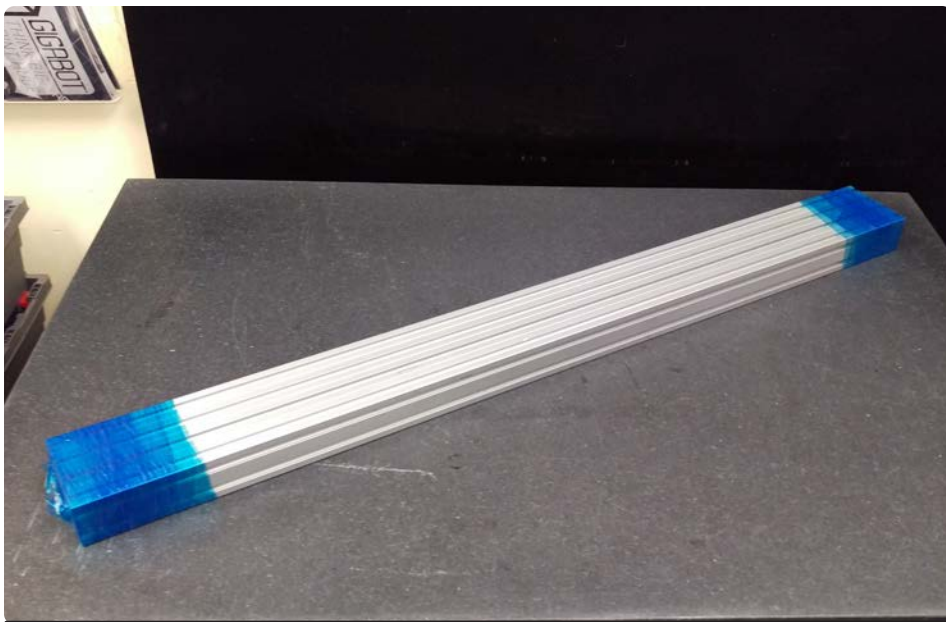




# TIPS & TRICKS

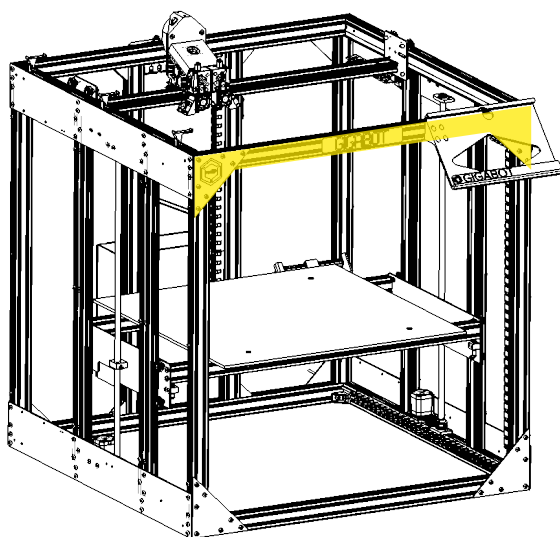
---

- #1** Work on a flat surface.
- #2** Use a [10334] Straight Edge Steel Square and corner plate to make the corner plates flush with their rails.
- #3** Rear header has many extra parts relative to the other headers and footers--be mindful of what parts the rear header needs.



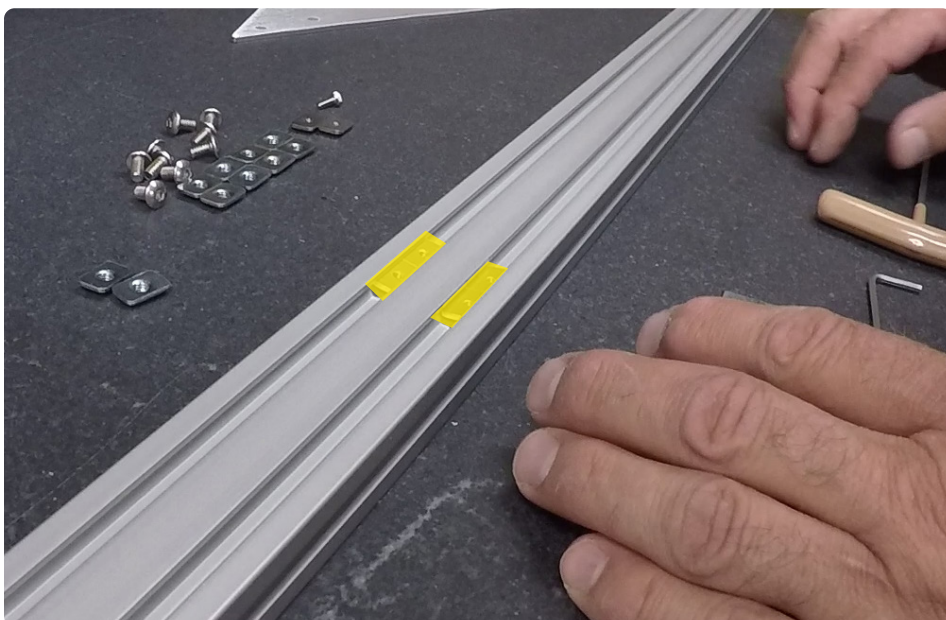
## B1

Unpack the cross rails wrapped in blue tape.



## B2

Begin assembling the front header, which will be placed as shown in yellow on the diagram.



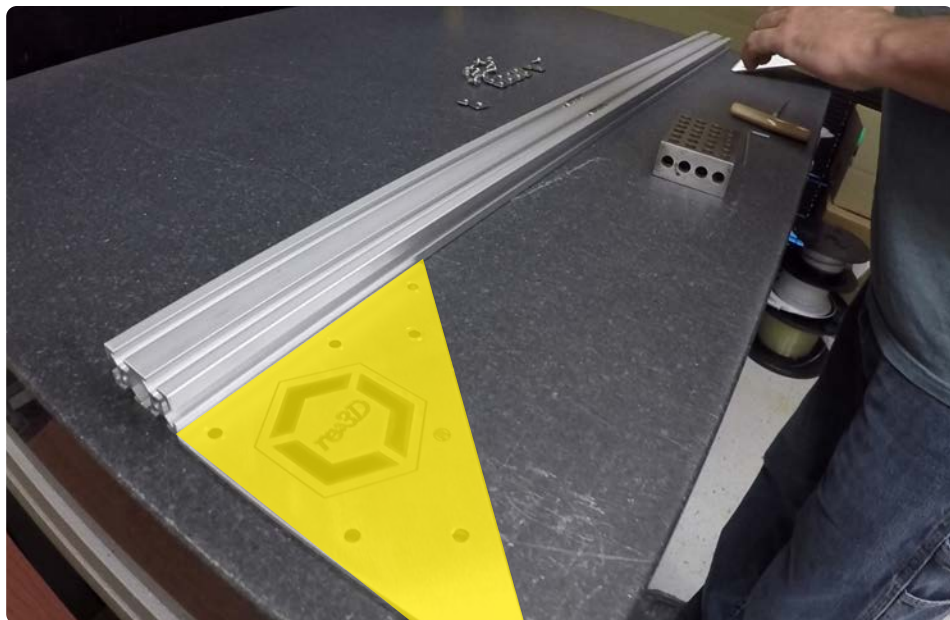
## B3

Lay one cross rail on a flat surface. Insert 2 M3 T-nuts into each of the top surface slots (total of 4).



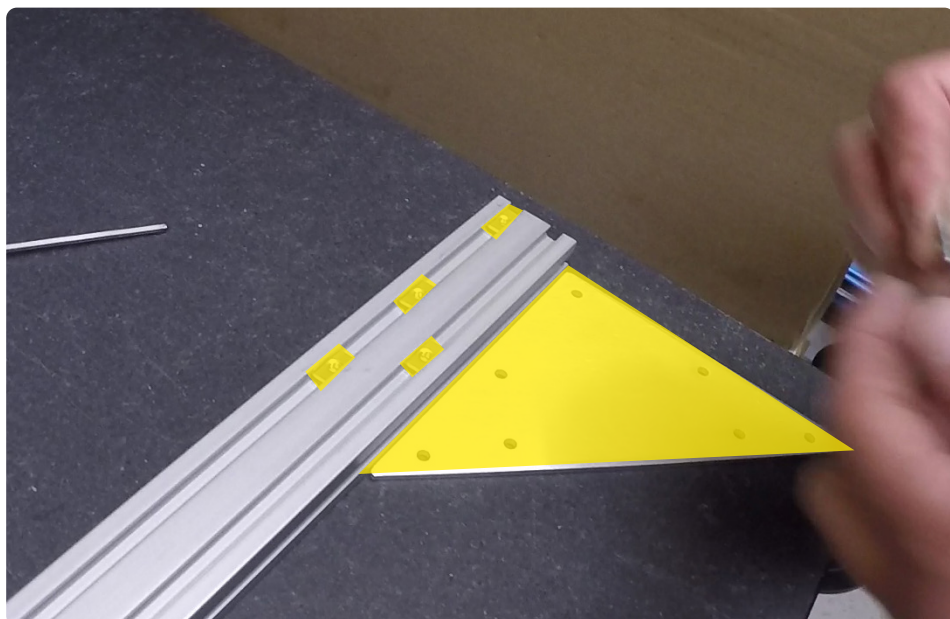
## B4

Place the re:3D logo corner plate below the left side of the cross rail. On the right side, place a regular corner plate.



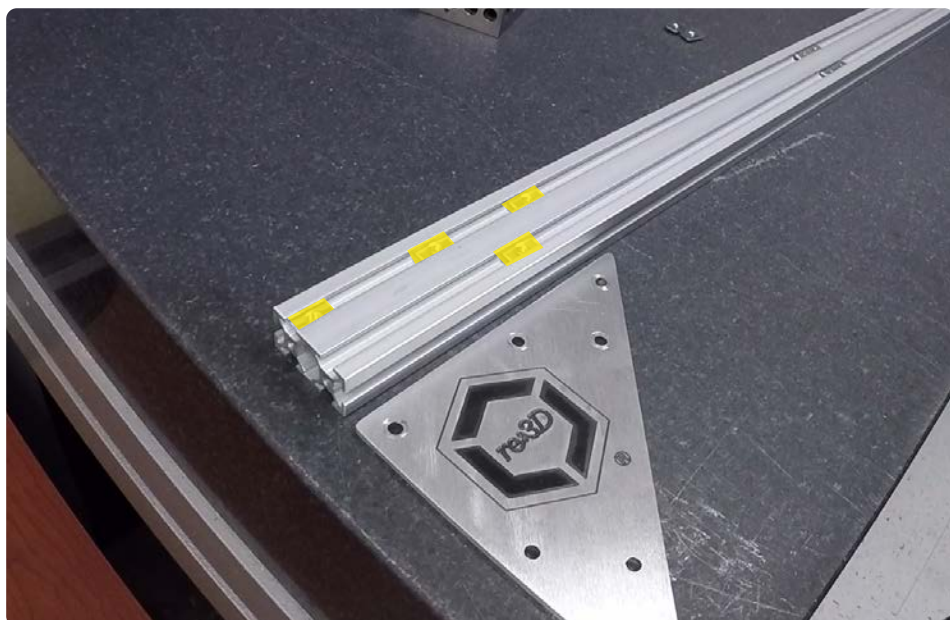
## B5

Insert 4 M5 T-nuts into the right side of the cross rail as shown. The placement of these T-nuts should follow the hole positioning on the corner plate.

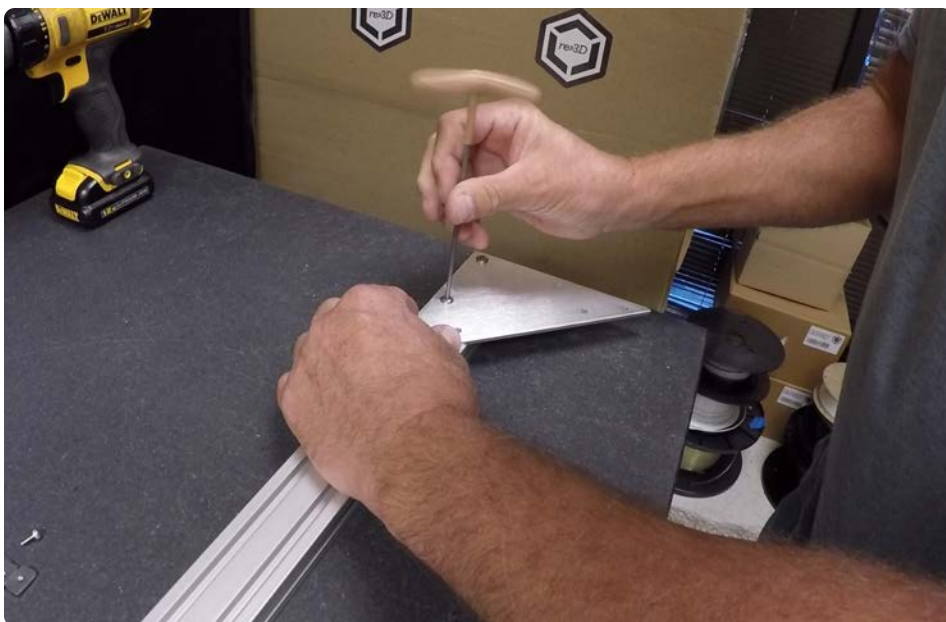


## B6

Repeat for the left side. Again, position T-nuts according to the hole placement on the corner plate.

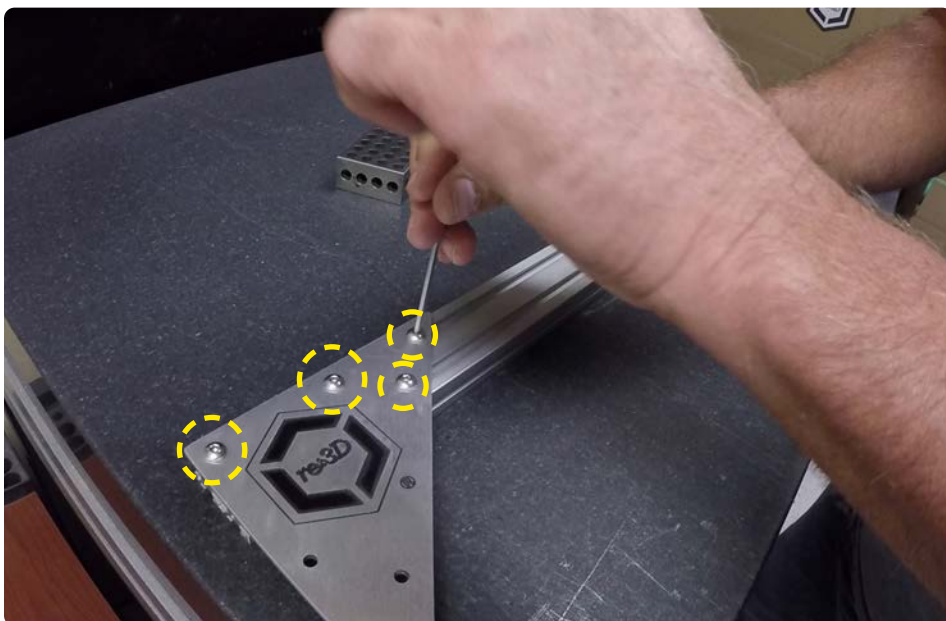
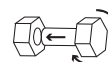






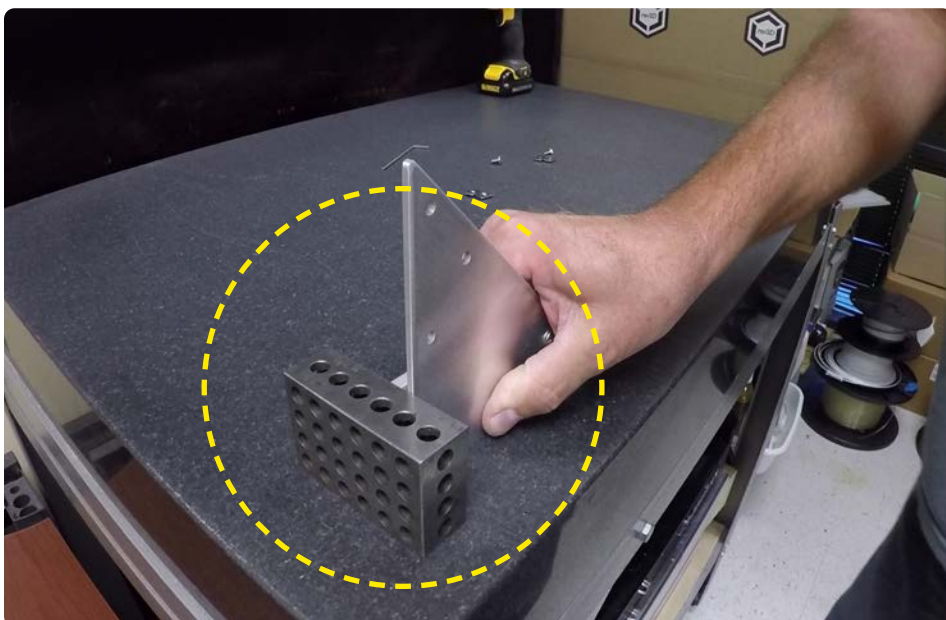
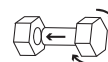
## B7

Use 4 M5 x 8 SHCS and the 3mm Allen Key to loosely fasten the corner plate to the T-nuts in the cross rail.



## B8

Repeat this for the other corner plate.



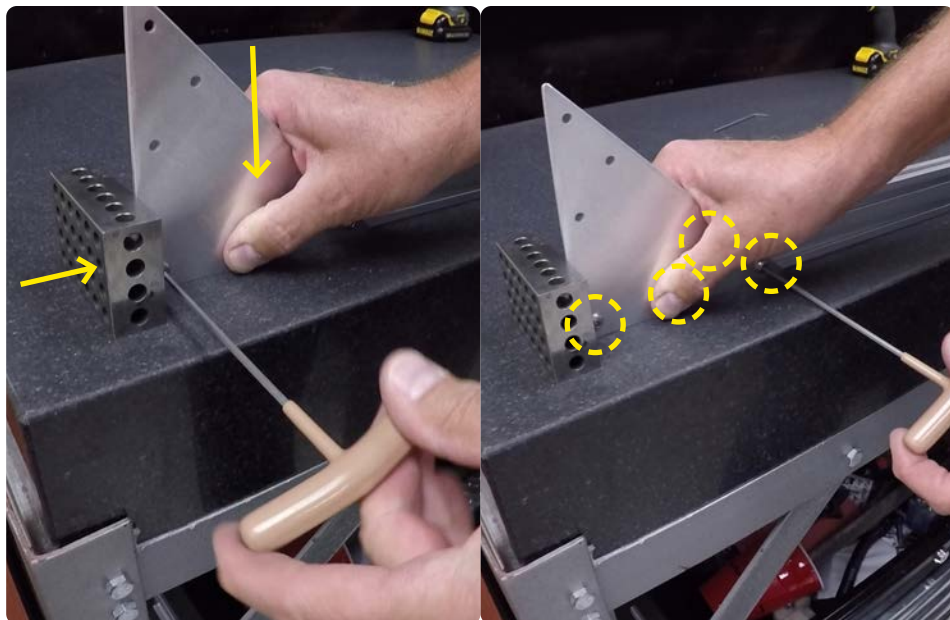
## B9

Use your [10334] Straight Edge Steel Square in combination with an unused corner plate/rail (here, only a 1-2-3 block is shown) to square and flush the edge of the corner plate with the end of the cross rail.



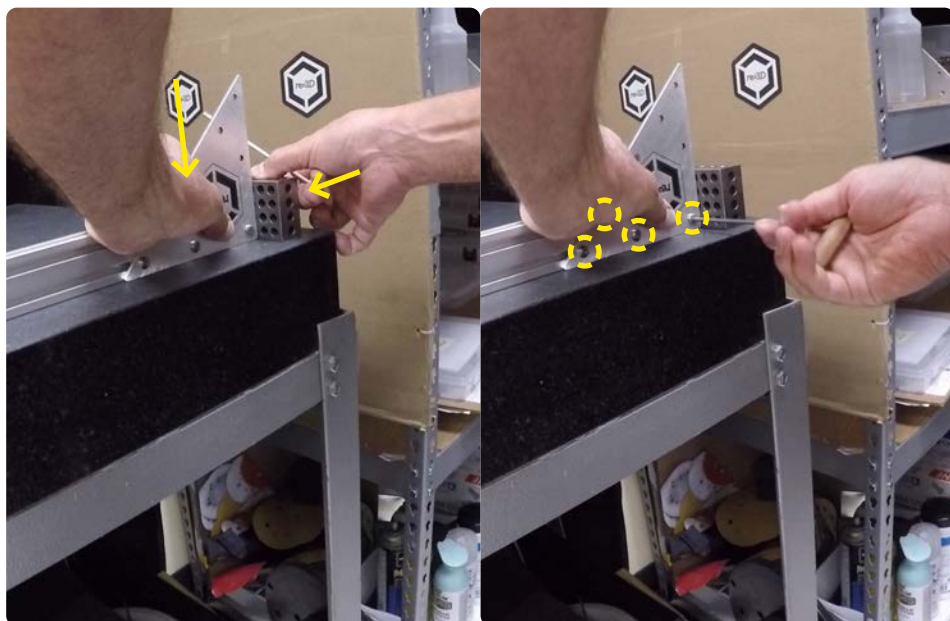
## B10

Using one hand to press down from above, use the 3mm Allen Key to snug the M5 x 8 SHCS attaching the corner plate to the rail. This will make the bottom surface of the rail flush with the bottom surface of the corner plate.



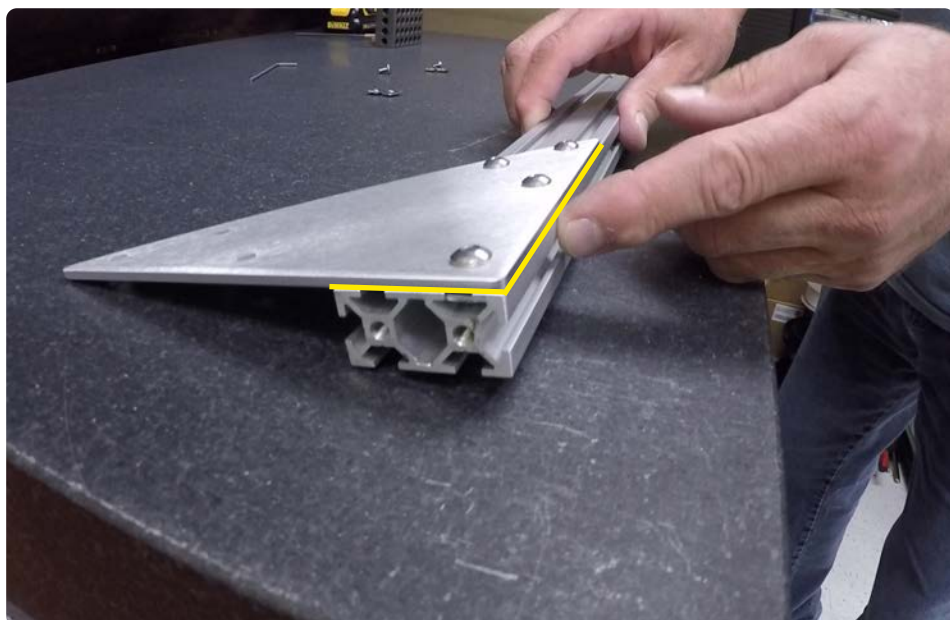
## B11

Repeat the squaring/flushing and snugging steps for the other corner plate.



## B12

Check the bottom and side of each corner plate for flushness and squareness against the surfaces of the cross rail.

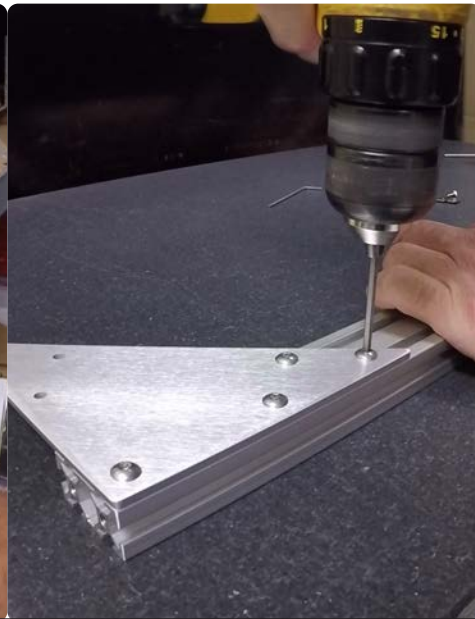






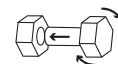
### **B13**

If the surfaces are not flush or square, loosen the M5 x 8 SHCS and repeat steps B9-B11 until they are.



### **B14**

Once both corner plates are flush and square, fully tighten all M5 x 8 SHCS to fasten them to the rail.



### **B15**

Using the logo plate as a reference, flip the assembly over so that the logo is on the right side and facing down.

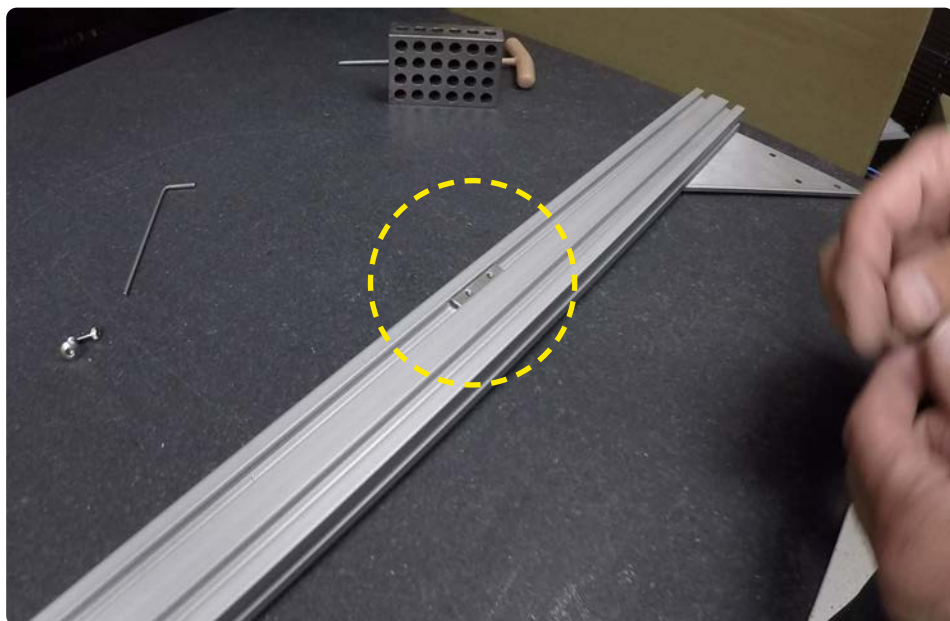
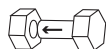
## B16

Here, the assembly has been flipped. Again, note that the logo corner plate (highlighted in yellow) is now on the right side and facing down.



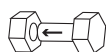
## B17

Insert 2 M3 T-nuts into the upper slot.

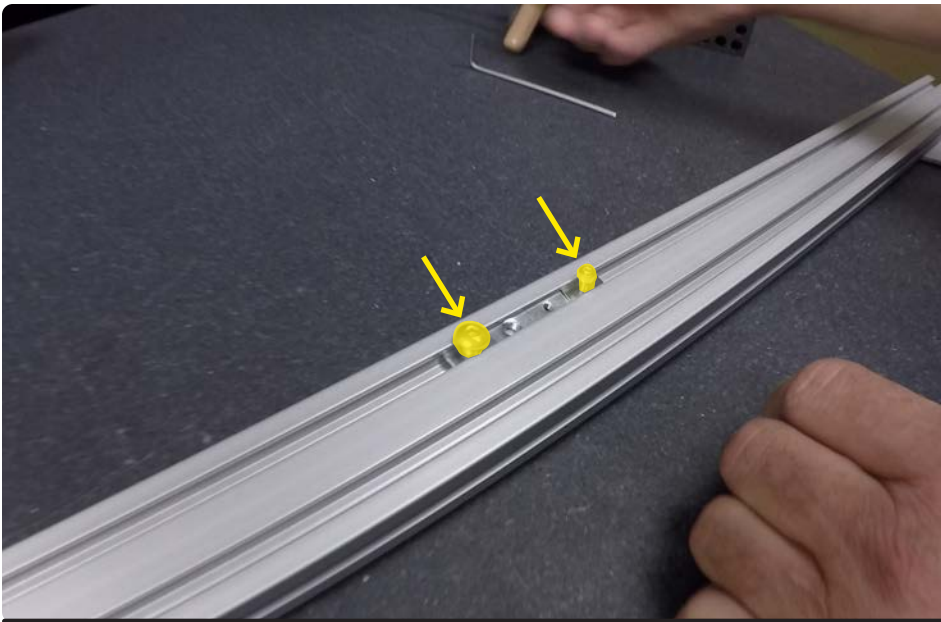


## B18

To the left of the M3 T-nuts, insert 2 M5 T-nuts.

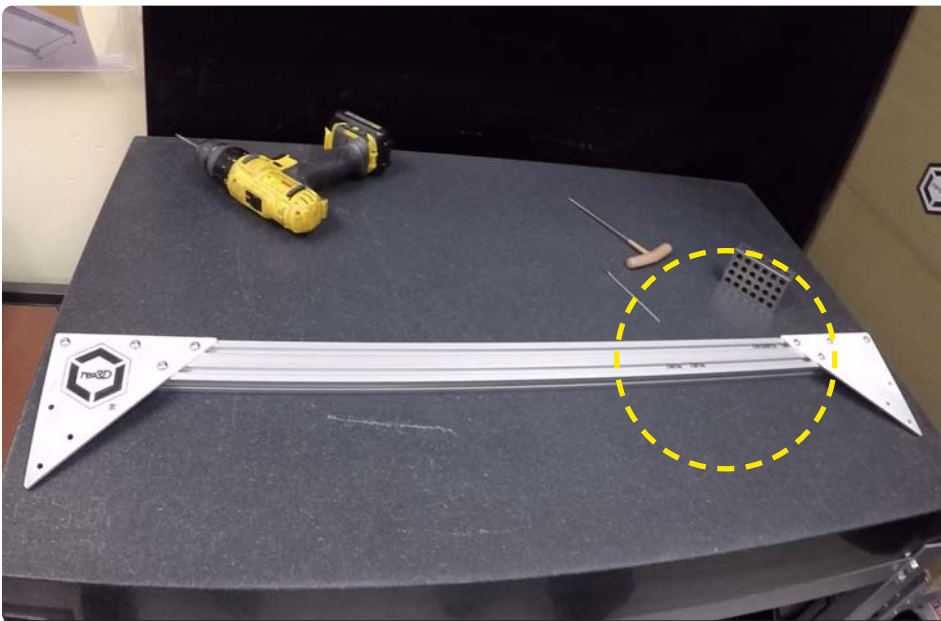
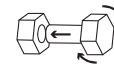






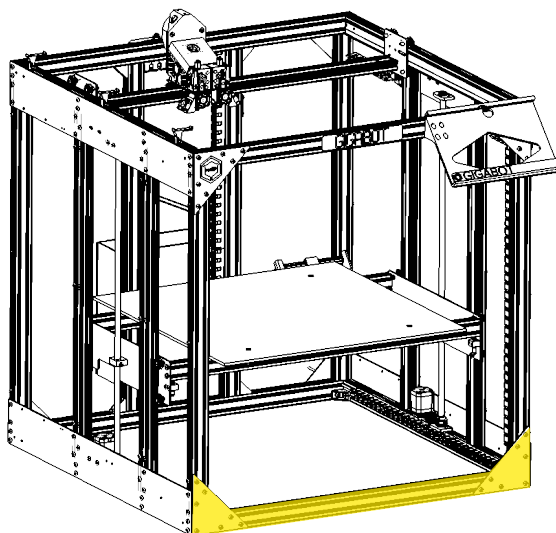
## B19

Fasten 1 M5 x 8 SHCS onto the leftmost T-nut until it drives into the rail. Likewise, fasten 1 M3x8mm SHCS into the rightmost T-nut. This will keep the hardware in place while moving the front header assembly.



## B20

Once finished, the front header should look as shown. Note that the 4 M3 T-nuts in the front facing slots are captured in place by the corner plate hardware.



## B21

Next will be the front footer, which will be placed as shown.

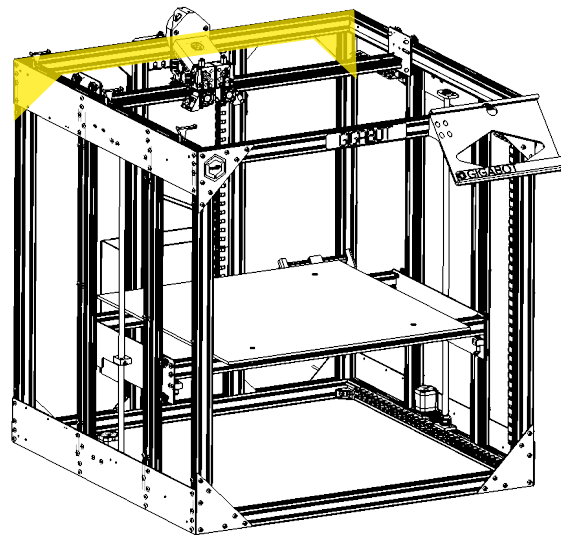
## B22

Use the same process as before (steps B4-B14) to assemble the front footer, except use 2 regular corner plates and ONLY use enough T-nuts to install the corner plates.



## B23

Next will be the rear header, which will be placed as shown.

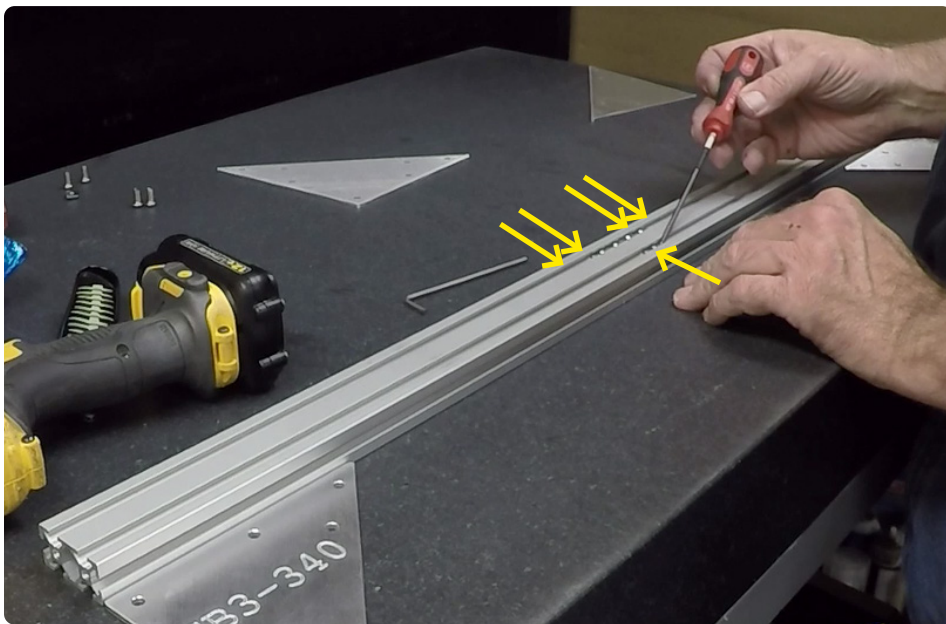


## B24

This is almost the same as before in terms of corner plate assembly. The left corner plate uses a serialized corner plate (GB3-###), while the right uses the machined corner plate with 4 tapped holes for the Y axis cable carrier.

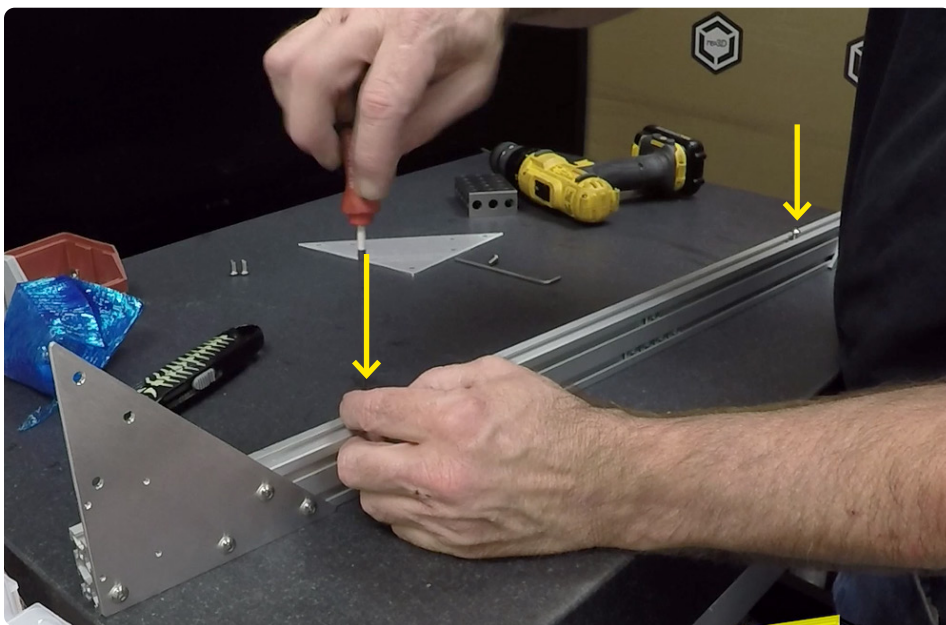
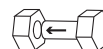






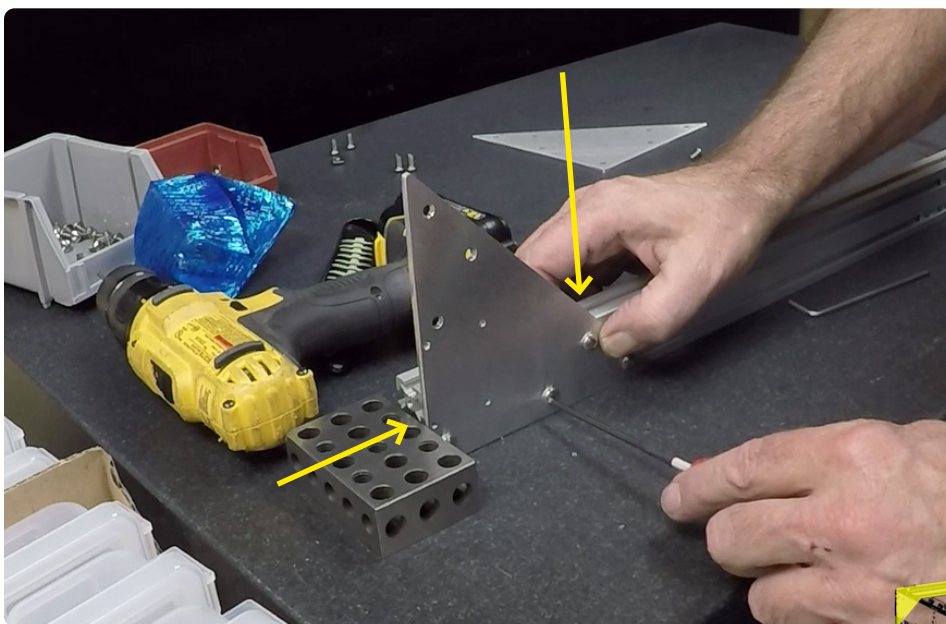
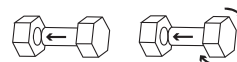
## B25

Include 5 extra T-nuts in the middle (4 in the upper slot and 1 in the lower slot) as shown.



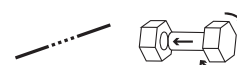
## B26

Also include 2 T-nuts in the very bottom slot (you may need to flip the assembly over) with [11538] M5 x 10 SHCS fastened down to hold them in place (make sure these cannot slide out).



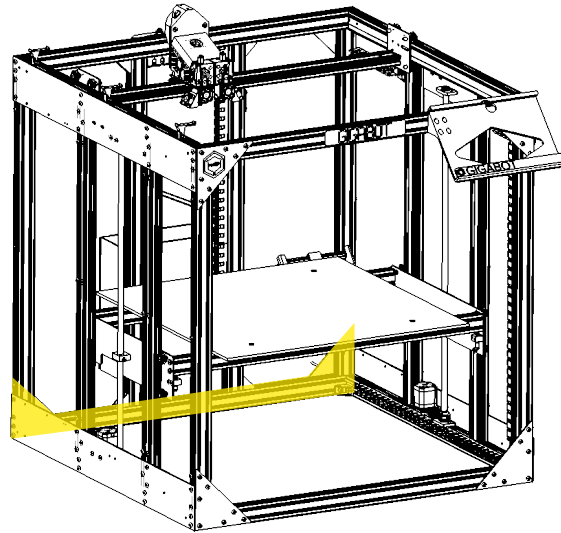
## B27

Make the plates flush with the rail in the same way as before and fully tighten them down with the [11537] M5 x 8 SHCS and 3mm Allen Key.



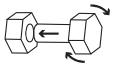
## B28

Next, you will assemble the rear footer, which will be placed as shown.



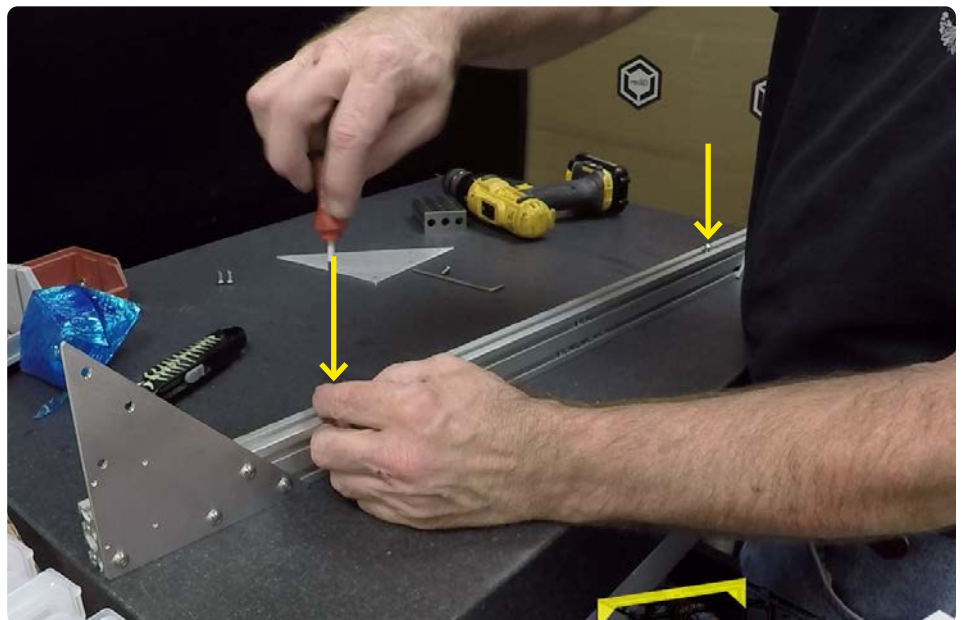
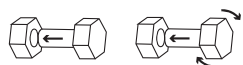
## B29

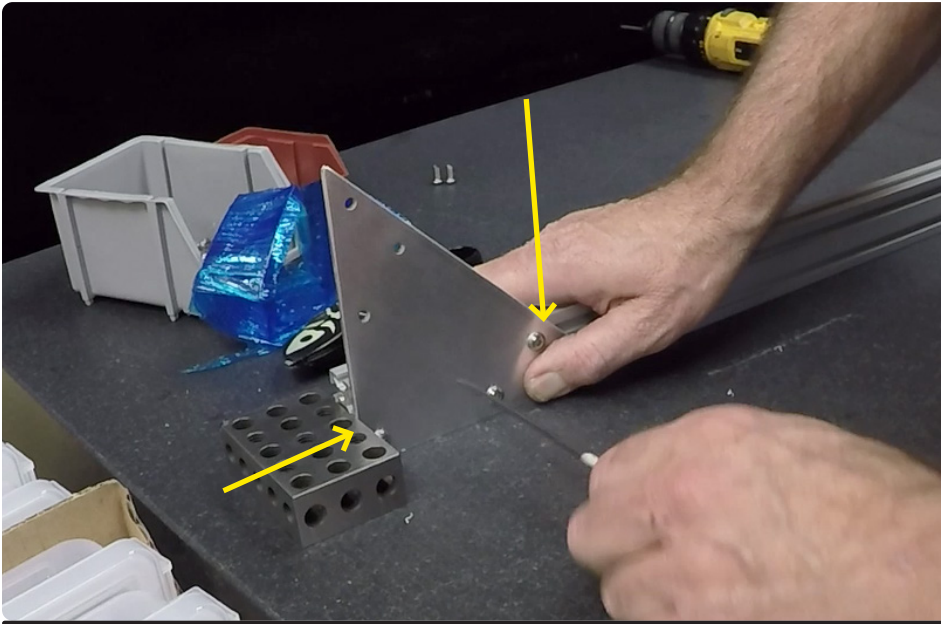
Assemble 2 normal corner plates on the rear footer in the same way as before.



## B30

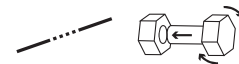
In the top slot, include 2 T-nuts with [11538] M5 x 10 SHCS fastened down to hold them in place (make sure these cannot slide out).





### **B31**

Make the plates flush with the rail in the same manner as before and fully tighten them down with M5 x 8 SHCSs and 3mm Allen Key.



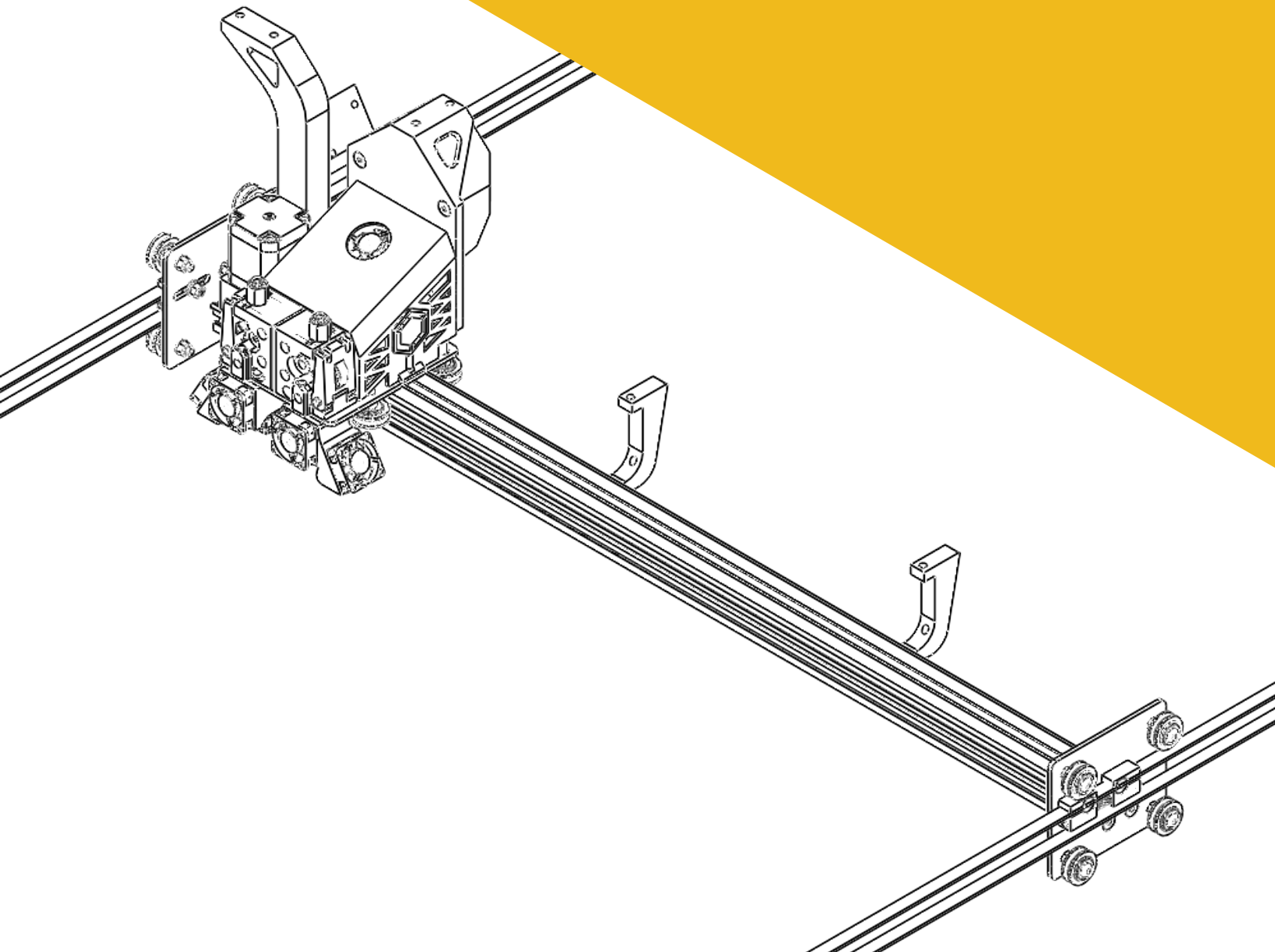
### **B32**

[For step-by-step guidance and overviews, please check out our video.](#) Note that there are updated instructions for the [GB3+ front header assembly, demonstrated in this video.](#)





# **BRIDGE** **ASSEMBLY**



# TOOLS & PARTS

Refer to packing list to identify parts

| BOX #     | PART  | QUANTITY |
|-----------|---|----------|
| 6         | [10066] 64" Y Axis Belts                    | 2        |
| Snappybox | [10342] Unthreaded Tensioner                | 2        |
| Snappybox | [10341] Threaded Tensioner                  | 2        |
| Snappybox | [10239] M5x20mm FHS                         | 4        |
| 6         | [10046] Allen Wrench Set                    | 1        |
| Snappybox | [10247] M6x60mm BHCS                        | 2        |
| 6         | [10121 + 10123] End Truck Plates            | 2        |
| Snappybox | [10238] M5x12mm FHS                         | 4        |
| Snappybox | [10361] M5 T-nut                            | 8        |
| Snappybox | [10235] M5 Flat Washers                     | 18       |
| Snappybox | [10233] M5 Lock Washer                      | 2        |
| Snappybox | [10232] M5 Hex Nut                          | 2        |
| Snappybox | [10234] M5 Nylock Nut                       | 11       |
| Snappybox | [10397] 8mm Combo Wrench                    | 1        |
| Snappybox | [10116] Eccentric Spacers                   | 4        |
| 6         | [10175] Grease                              | 1        |
| Snappybox | [10241] M5x30mm BHCS                        | 8        |
| Snappybox | [10608] V-Groove Wheels                     | 8        |
| Snappybox | [10310] Round Spacer                        | 4        |
| Snappybox | [10244] M5x45mm BHCS                        | 3        |
| 7         | [10710] GB3+ Trolley DE                     | 1        |
| 5         | [11089] GB3+ Motors X, Y, Z PRO (Assembled) | 1        |
| Snappybox | [10724] X-Axis Carrier Support              | 3        |
| Snappybox | [11313] M5 x 12 SHCS                        | 3        |

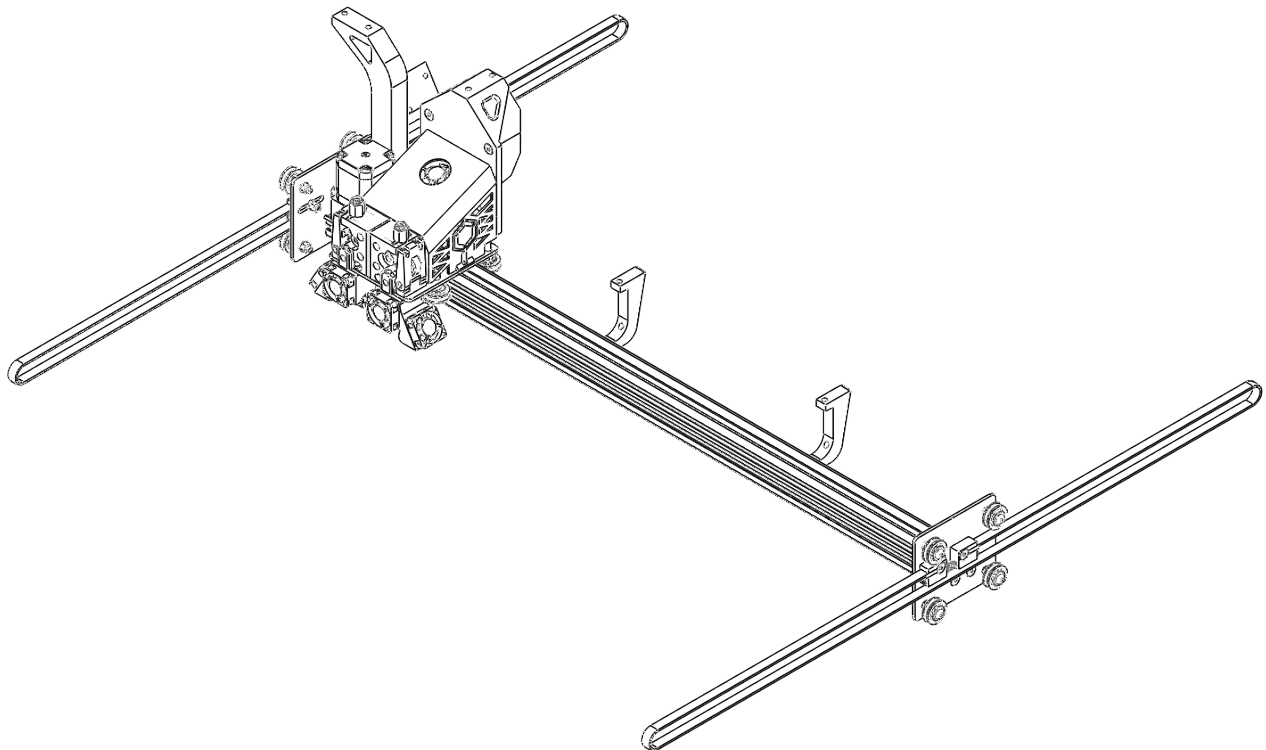


**WATCH THE  
ACCOMPANYING  
VIDEO:**

<https://youtu.be/7If3sqUJ-g8>

## OVERVIEW

In the final assembly of Gigabot®, the bridge subassembly will be oriented in the frame as shown.



# TIPS & TRICKS

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- #1** Work on a flat surface.
- #2** Carefully assemble the belts. Verify that there are no twists in the belts as they connect to the tensioner blocks.
- #3** Verify that there are enough T-nuts in the bridge rail, and at the proper locations.

## C1

Locate the 2 64" belts from Box #6. These are for the Y axis. Also locate the 2 unthreaded tensioners and 2 threaded tensioners from the Snappy Box.



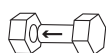
## C2

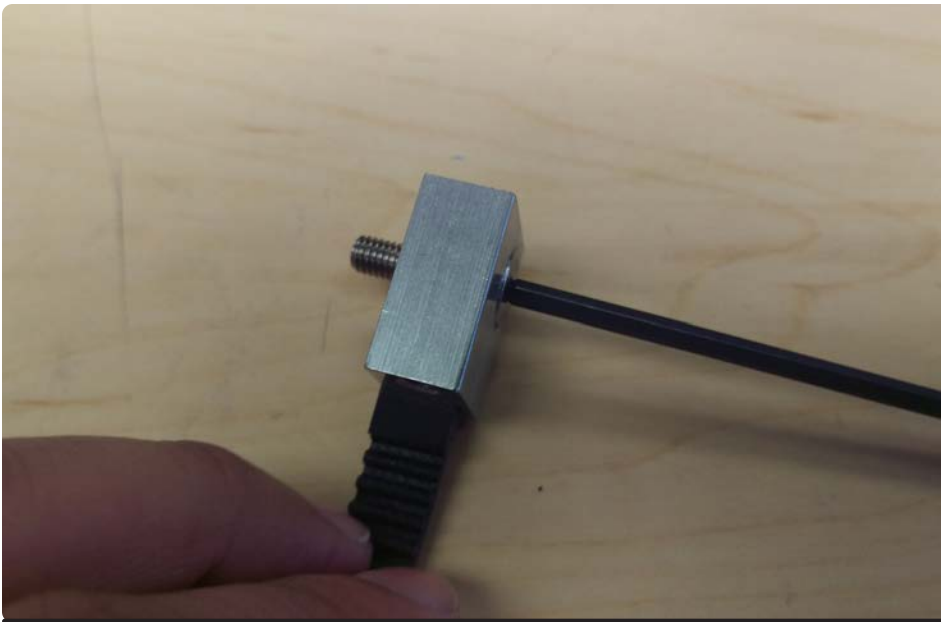
[Please watch our "Installing Belts onto Tensioners" video for a demonstration of this process.](#) Pinch one end of the belt together as shown.



## C3

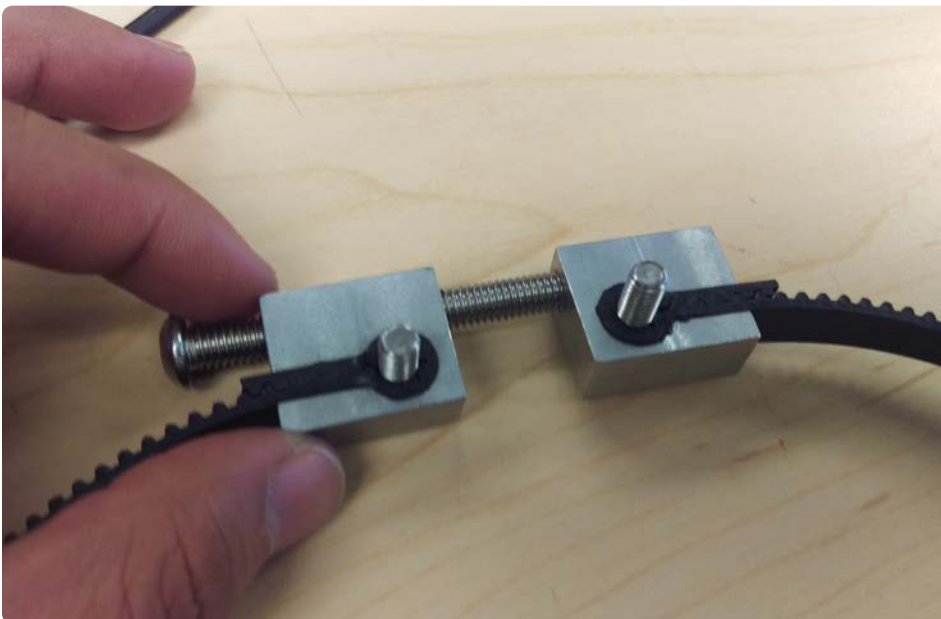
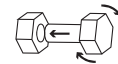
Loop the belt around a M5x20 FHS and press the belt with the screw into one of the tensioning blocks. Be sure to leave 2 teeth hanging out of the block on the end of the belt.





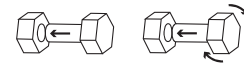
## C4

Use the 3mm Allen Key to screw the M5x20 FHS all the way through.



## C5

Repeat this on the other end of the belt with the opposite tensioning block (they are paired, threaded with unthreaded). Orient the belts as shown. Insert an M6x60 BHCS through the unthreaded block and into the threaded block to connect them together.



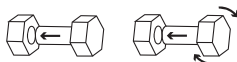
## C6

Repeat this process for the other belt. You have now completely assembled the Y axis belts with their tensioning blocks. Set these aside for now.



## C7

Install the left end truck to the bridge rail with 2 [10238] M5x12mm FHS. This attaches to the rail on the side with 2 holes for the X motor. Note the orientation of the plate and the use of the countersunk holes for the [10238] M5x12mm FHS. Make this snug but not fully tight.



## C8

Insert T-nuts for the [10724] X-Axis Carrier Support and also the X/Y upright. There will be 5 T-nuts in the rear slot and 3 T-nuts in the bottom rear slot, as shown.



Top View



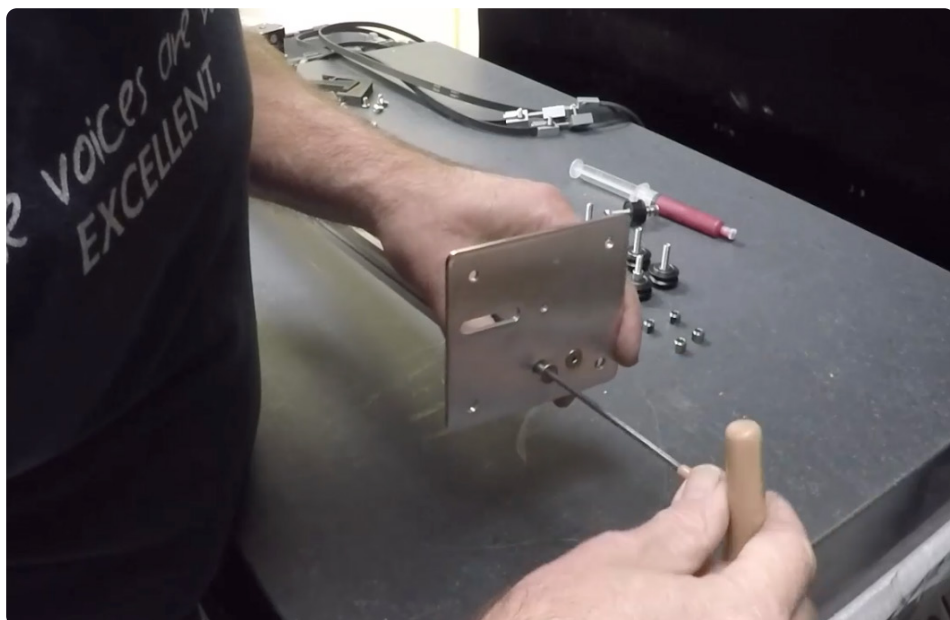
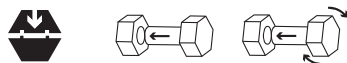
Rear View



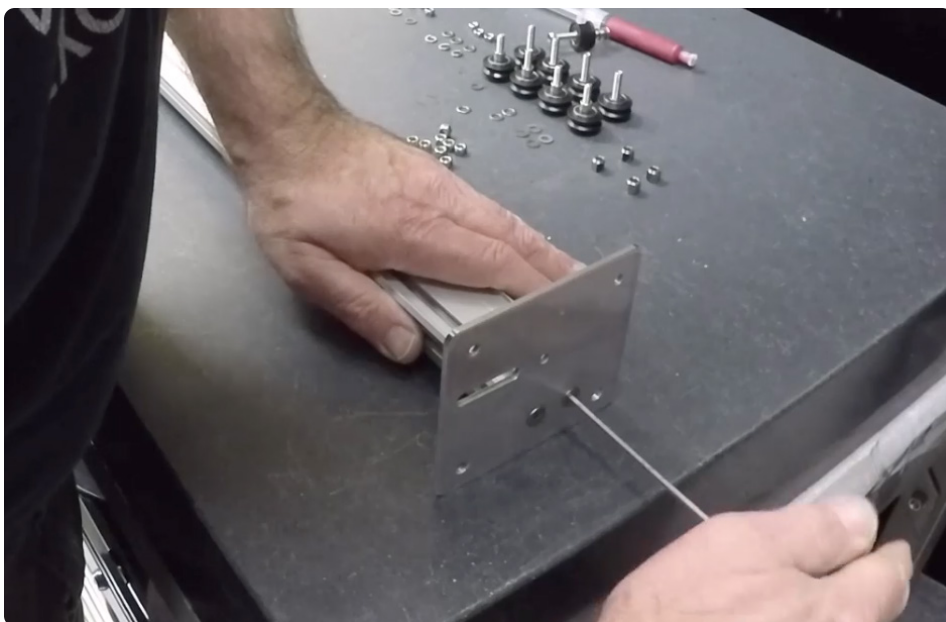
Bottom View

## C9

Install the right end truck to the bridge rail in the same fashion as the left end truck using 2 [10238] M5x12mm FHS. Make the screws snug, but not fully tight.

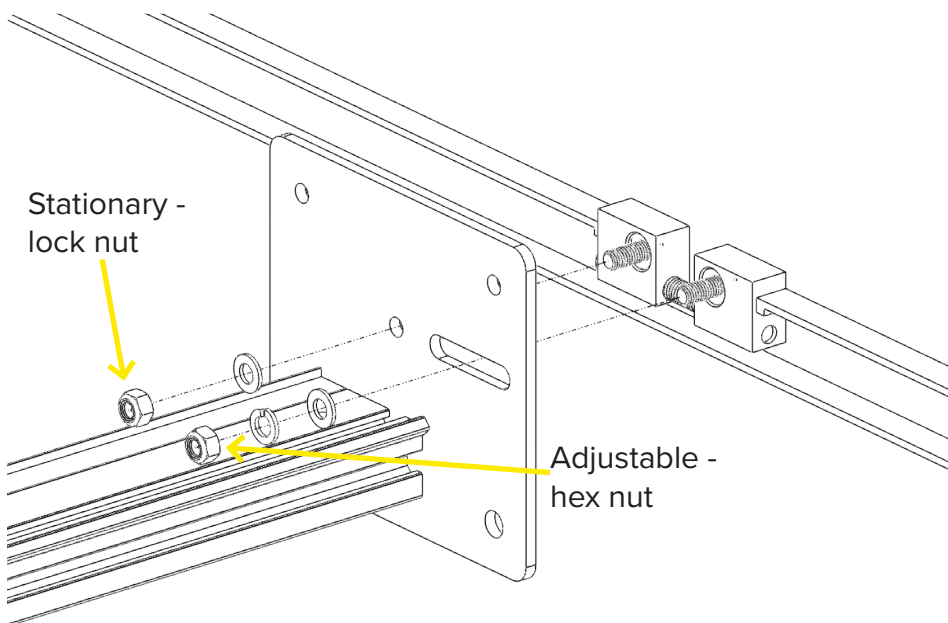
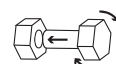






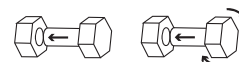
## C10

Assure that the end trucks are square to each other by placing the bridge assembly on a level surface. Press down on the bridge rail while fully tightening the end trucks to make sure it does not go out of square.



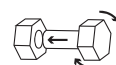
## C11

With no twists in the belt, install them to the end trucks as shown in the diagram. The stationary block is fastened with a flat washer and lock nut. The moving block gets fastened with a flat washer, lock washer, and hex nut.



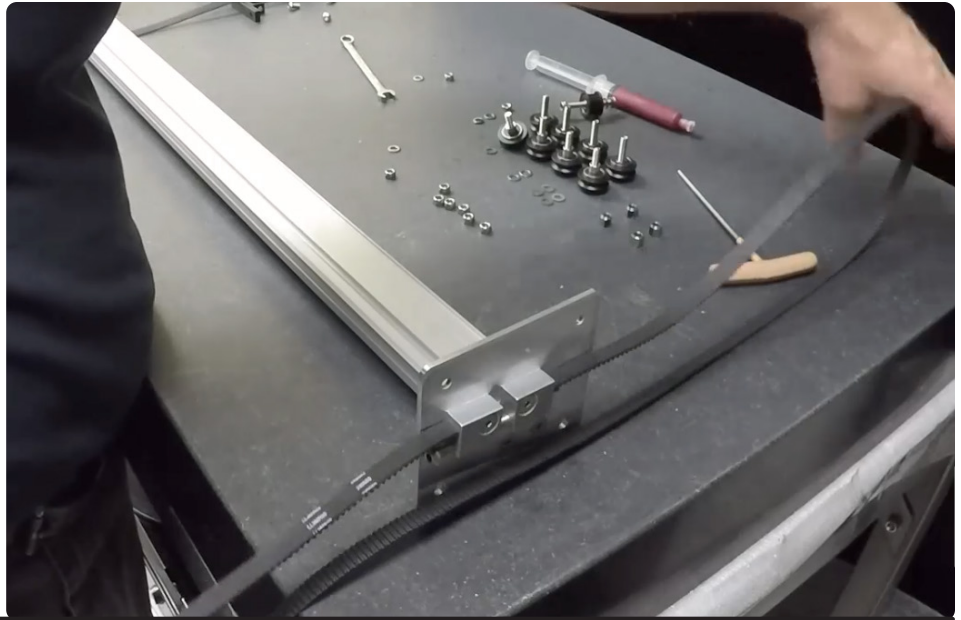
## C12

Using the [10397] 8mm Combo Wrench and 3mm Allen Key, tighten them as much as possible. This helps seat both the belt and screw into the tensioning block so that the adjustable side may be loosened with the 8mm wrench later.



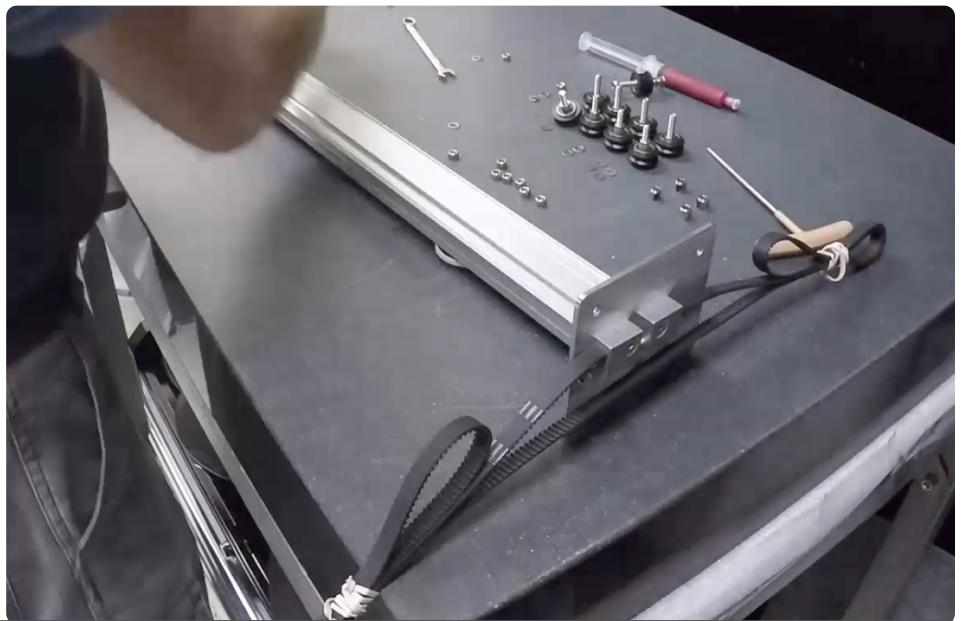
### C13

Repeat this for the other end truck plate.



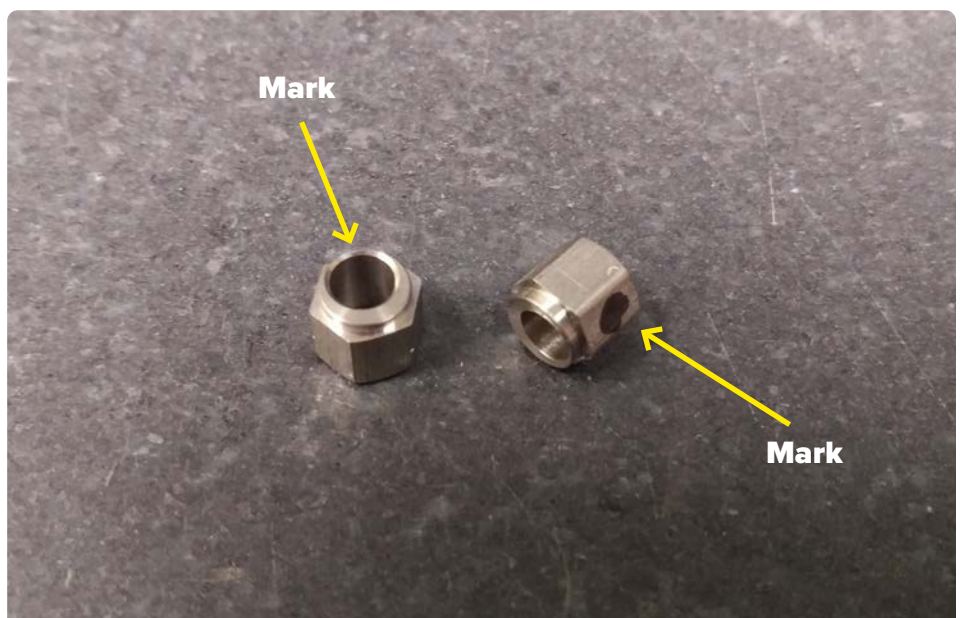
### C14

Tie the belt ends together with rubber bands, twist ties, etc. to hold them in place prior to mounting the bridge assembly to the rest of the frame. This keeps them out of the way during future assembly steps.



### C15

You will now mount the wheels to the bridge assembly. Locate the [10116] Eccentric Spacers in the Snappy Box and mark each of them with a Sharpie on the “narrow” side.

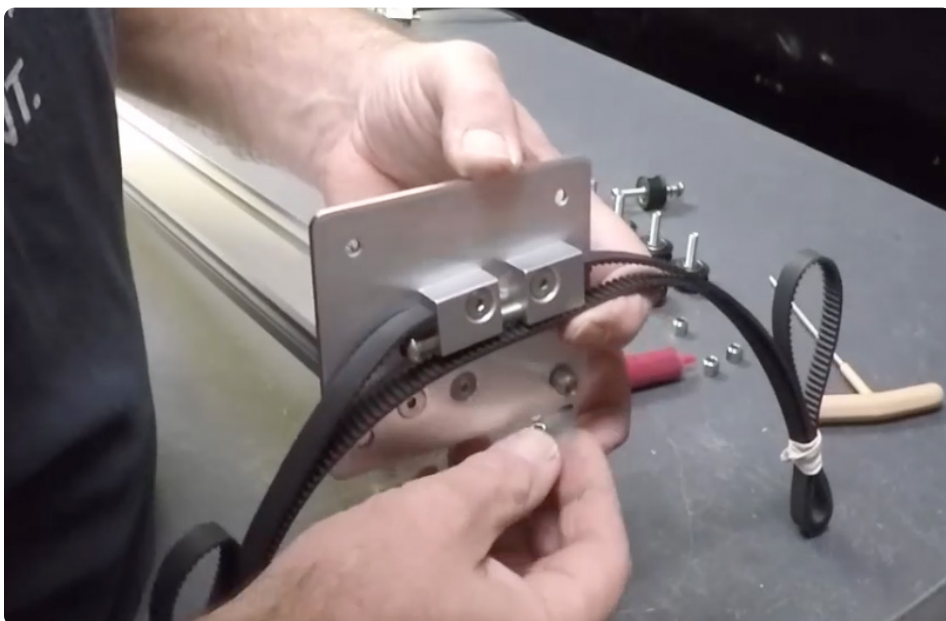






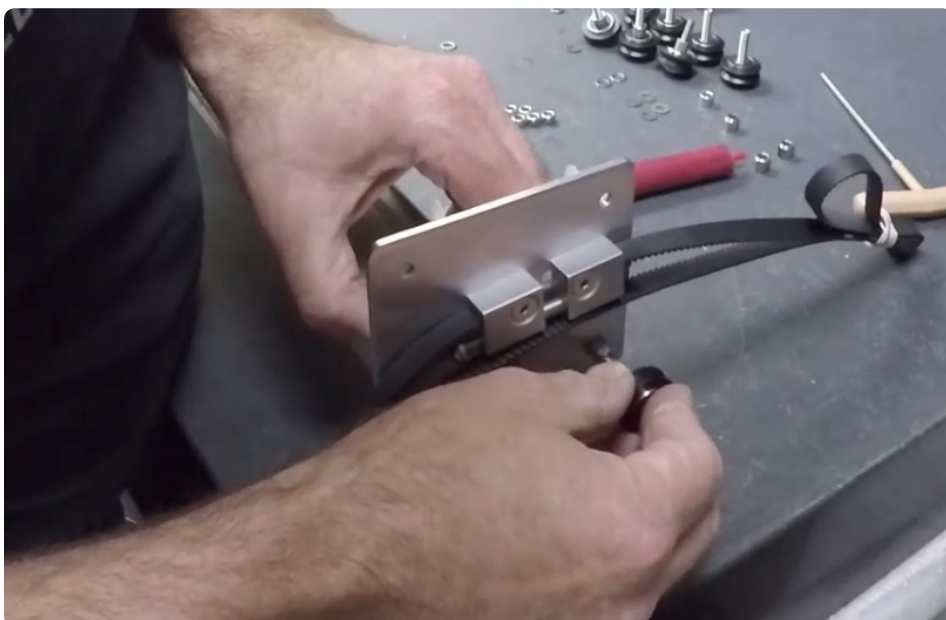
## C16

Place a small amount of [10175] Grease around the edge of the [10116] Eccentric Spacer that fits into the lower end truck plate holes.



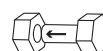
## C17

Insert the [10116] Eccentric Spacer into one of the bottom holes on the end truck plate and the [10175] Grease should hold it in place. Rotate the spacer such that the mark from C15 is facing down (this is the most open position for the wheel adjustment).



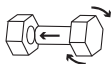
## C18

Insert 1 [10241] M5x30mm BHCS into a V-groove wheel and insert those into the [10116] Eccentric Spacer. Apply [10175] Grease to the end of the threads on the screw to prevent them from galling later.



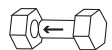
## C19

On the other side, fasten a flat washer and [10234] M5 Nylock Nut onto the M5x30.



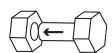
## C20

Insert another M5x30 into a V-groove wheel.



## C21

Insert a round spacer on the other side of the wheel. Note that this spacer does not need any [10175] Grease.

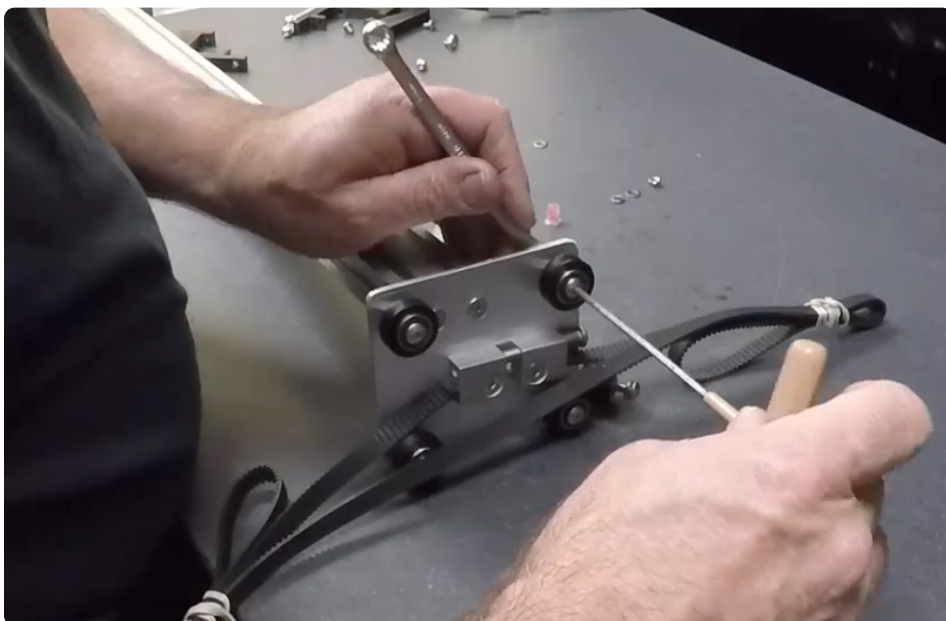






## C22

Insert this wheel subassembly into one of the top holes on the end truck plate. Apply [10175] Grease to the end of the threads on the screw to prevent them from galling later.



## C23

Again, fasten this to the endtruck using a flat M5 washer and [10234] M5 Nylock Nut. Fully tighten the upper wheels using [10310] Round Spacer. The lower wheels using [10116] Eccentric Spacers can be loosely fastened for now and fully tightened later after final adjustments.



## C24

Repeat this process for all other wheels on the endtrucks. There are 2 wheels on the top of each endtruck with [10310] Round Spacer and 2 wheels on the bottom of each endtruck with [10116] Eccentric Spacers.

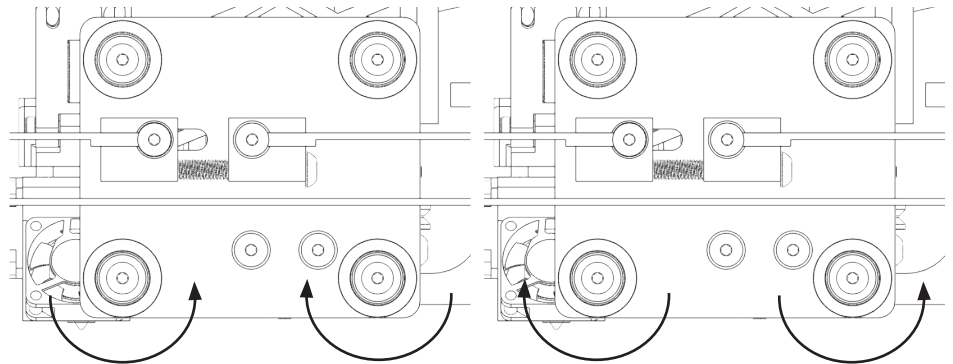
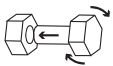
## C25

Make sure that the marks on the [10116] Eccentric Spacers are pointing down towards the bottom of the endtruck plate. This spaces the wheels as far apart as possible. Use the [10397] 8mm Combo Wrench to rotate the spacer if needed.



## C26

Fully tighten the wheels using the [10397] 8mm Combo Wrench and a 3mm Allen Key. Wheels should still spin freely (if using a drill driver, be careful not to strip out the head on the screw). Tighten till it's snug, and then give it another 1/8 turn.

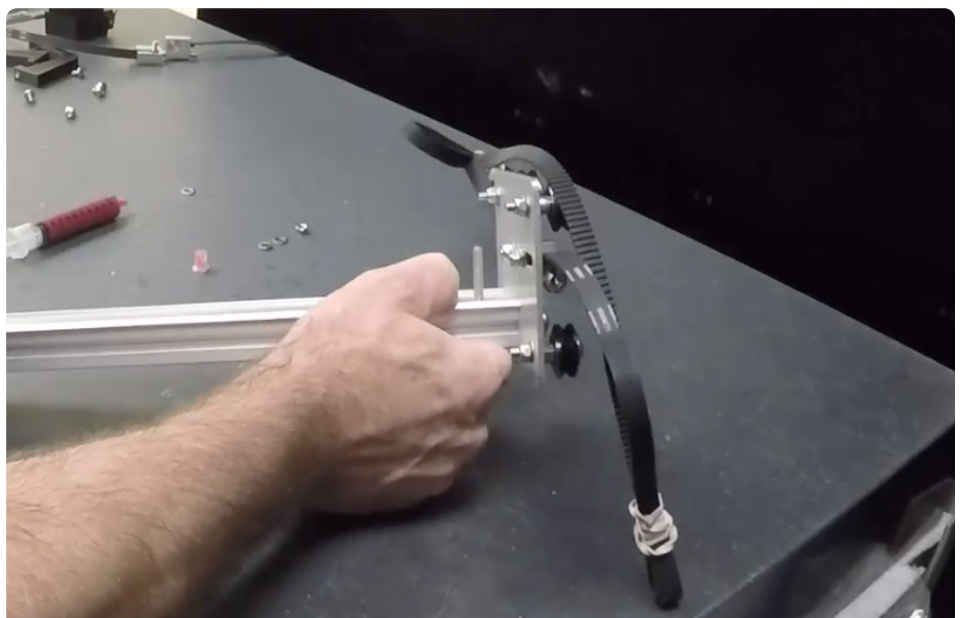
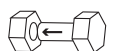


Inward:  
tighten

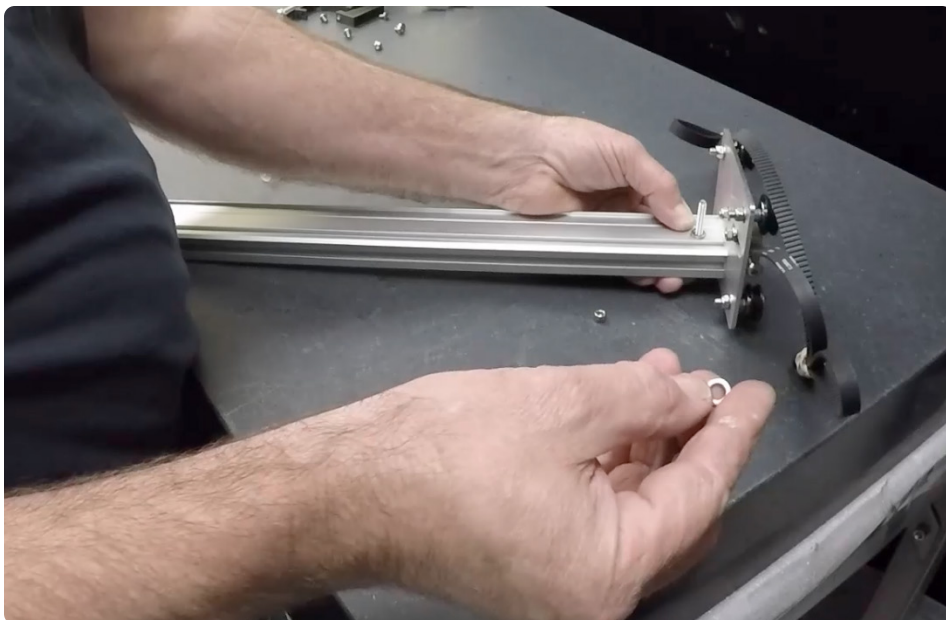
Outward:  
loosen

## C27

Insert an [10244] M5x45mm BHCS into the single hole on the right side of the bridge rail from the bottom.







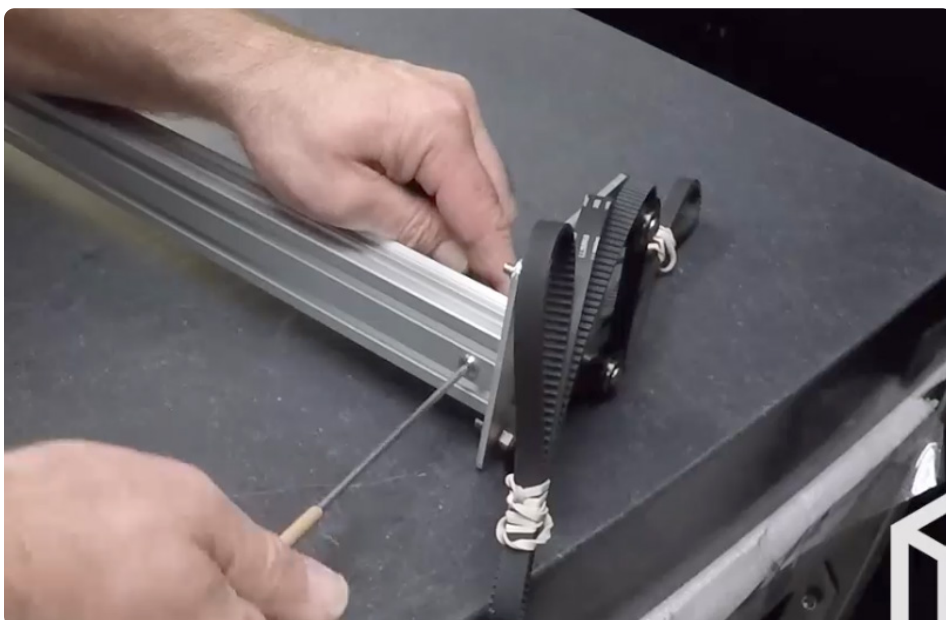
## C28

Above the rail, insert 3 M5 washers (round/shiny side up) onto the [10244] M5x45mm BHCS.



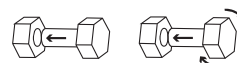
## C29

Place the idler pulley onto the [10244] M5x45mm BHCS, with the indented side facing down (you may need to realign the precision washer inside the pulley using a small Allen Key).



## C30

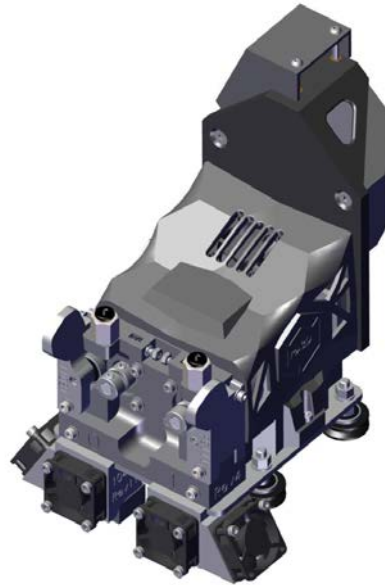
Insert another M5 washer (shiny side towards the bearing) above the pulley and fasten it with 1 [10234] M5 Nylock Nut. Fully tighten using the [10397] 8mm Combo Wrench and 3mm Allen Key. Again, tighten to snug and then an extra 1/8 turn. The pulley should still freely spin.



### C31

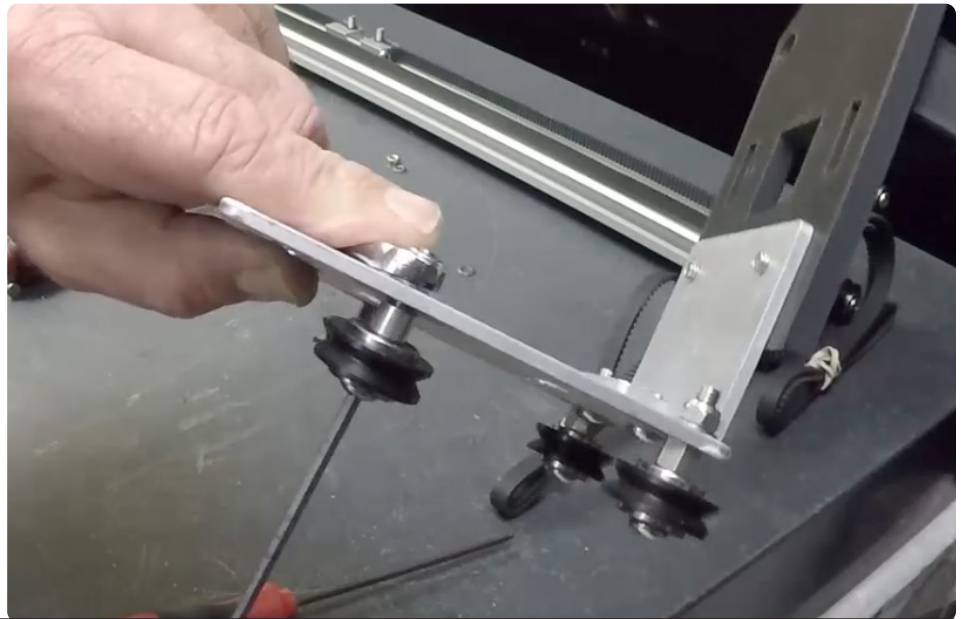
Locate your [10710] GB3+ Trolley DE in box #5. You will now install this to the bridge rail.

**Note: Steps C32-C41 show an unassembled trolley, but the trolley in your kit will be fully assembled. The installation steps are the same.**



### C32

Use the 8mm wrench and 3mm Allen Key to loosen the front wheels such that they hang very loosely. This will give you enough clearance to mount the trolley to the rail.



### C33

Loop one end of the belt over the idler pulley.

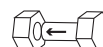






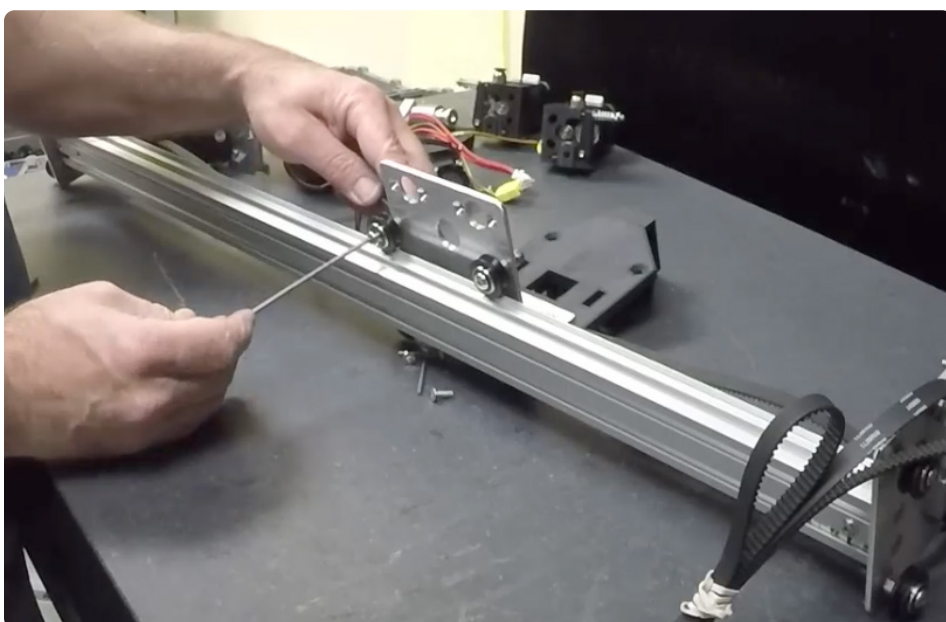
### C34

Loop the other end of the belt into the X motor pulley: Insert the belt at an angle and pull it around and the belt will seat itself. Be gentle, or you may snap the flange off of the pulley. [This is referenced in other videos, such as this.](#)



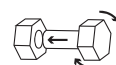
### C35

Pressing the rear [10608] V-Groove Wheels against the Makerslide, maneuver the trolley onto the bridge rail. Since the front wheels are loose, it is possible to fit them onto the rail while still being attached to the trolley.



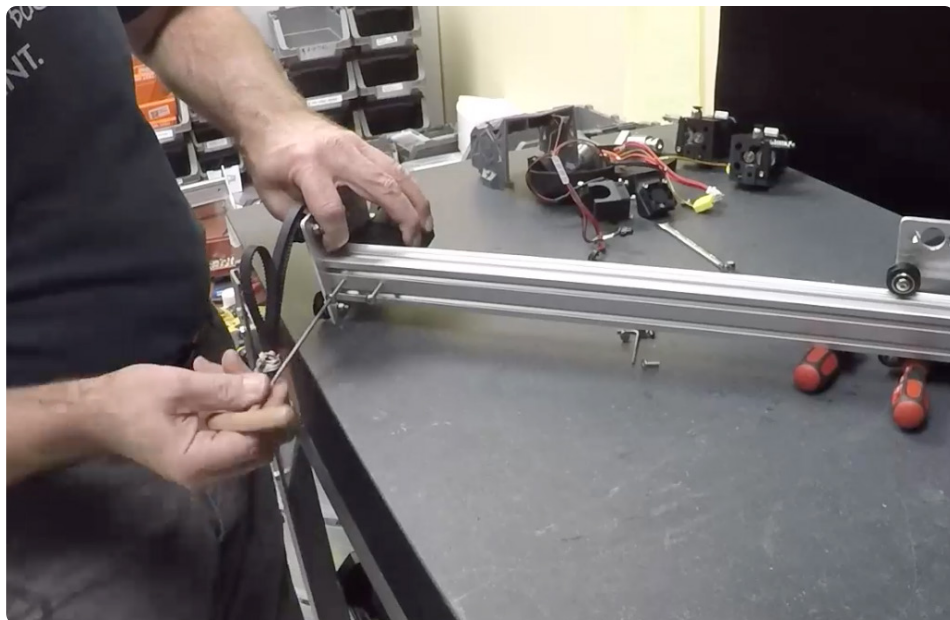
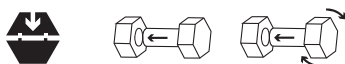
### C36

Once all of the trolley wheels are seated on the bridge rail, use the [10397] 8mm Combo Wrench and 3mm Allen Key to tighten them down, similar to before (snug, 1/8 turn extra).



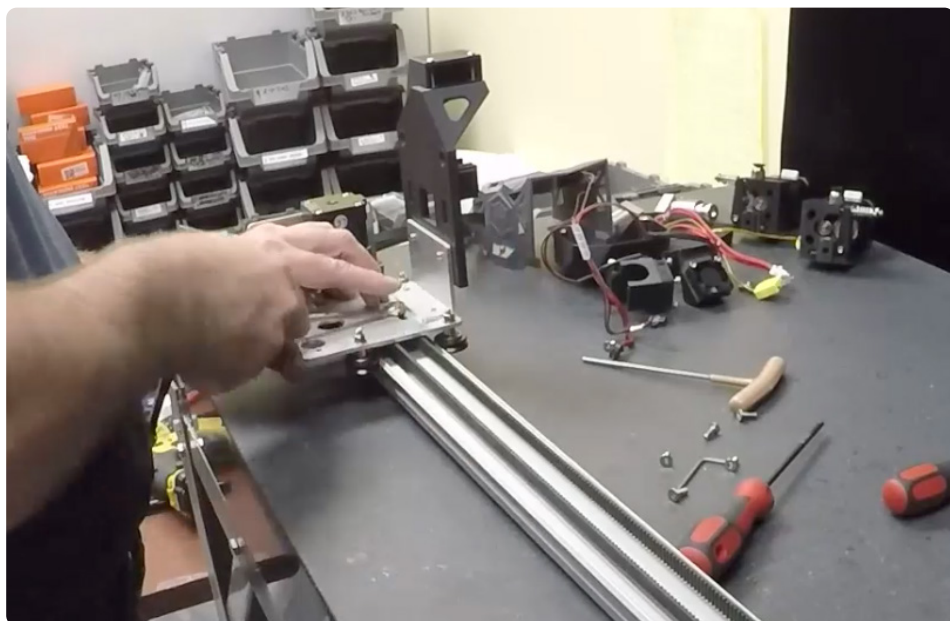
### C37

Install the X motor to the bridge rail using 2 x [10244] M5x45mm BHCS and 2 x M5 washers. Place 1 washer between the head of the screw and the rail. This keeps the screw from bottoming out in the motor mount. Tighten with a 3mm Allen Key. The motor mount is a plastic part, so do not overtighten it, or you may strip out the threads.



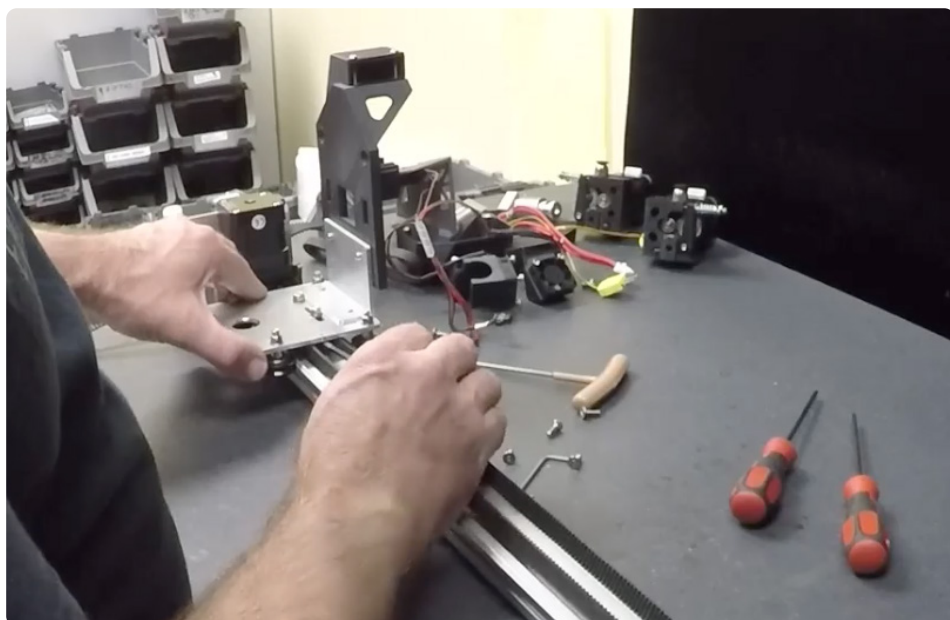
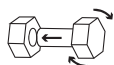
### C38

Use the [10397] 8mm Combo Wrench to loosen the hex nut for the tensioner in the slotted hole of the trolley plate. This will allow that tensioner to move back and forth in the slot.

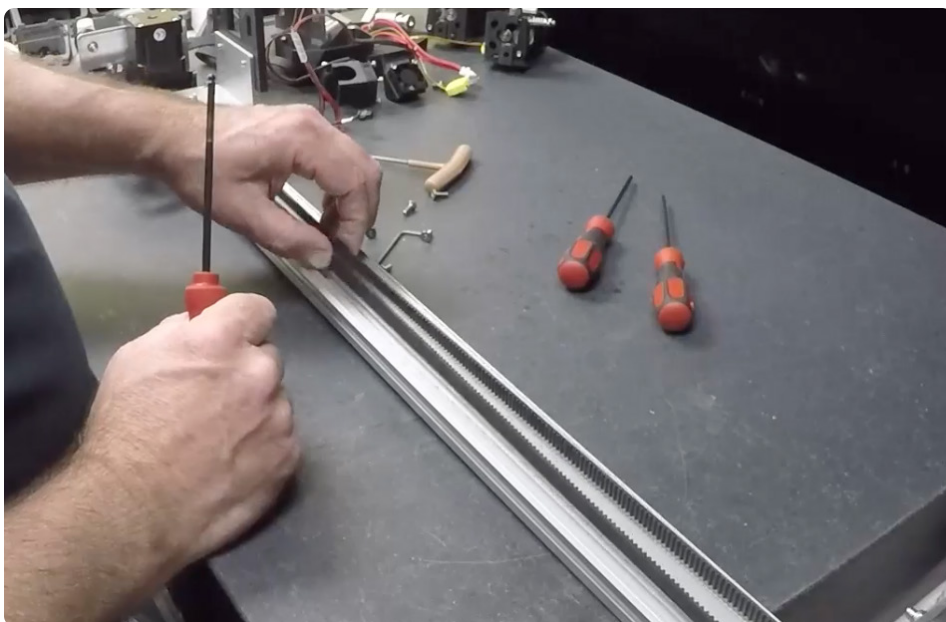


### C39

Use a 4mm ball end Allen Key to tighten the M6x60 BHCS. This will bring the tensioner blocks together and put more tension on the belt. Likewise, loosen the M6x60 BHCS to loosen the belt. The moving block should end up close to the middle of the slot when properly tensioned.

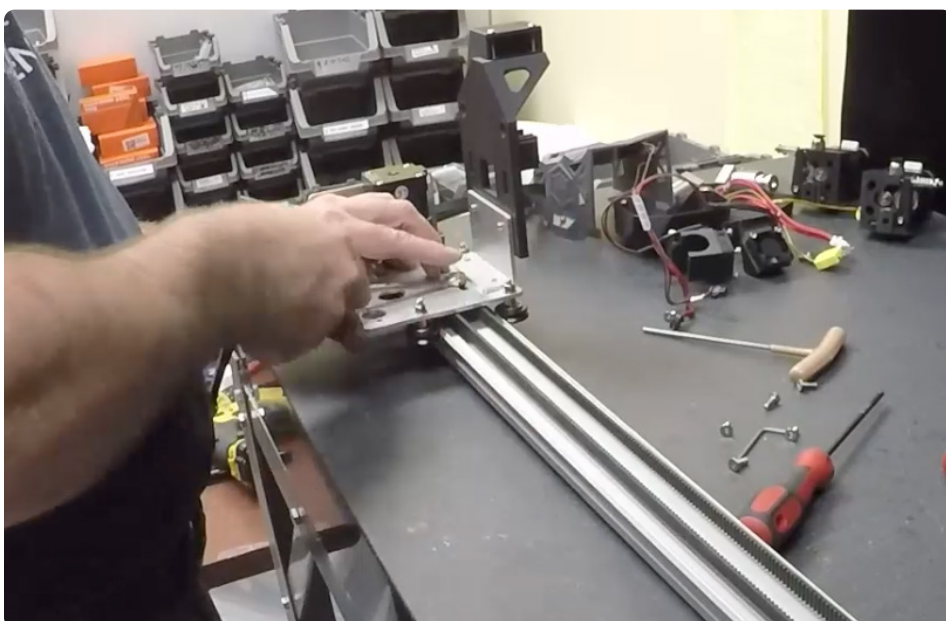






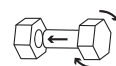
## C40

Test belt tension by moving the trolley all the way over to one side and pinching the belt together near the middle of the bridge rail. There should be resistance to pinching the belt together, but you should also still be able to make the two sides touch without too much effort. Be careful not to overtighten the belt.



## C41

When the belt is properly tensioned, tighten the hex nut on the tensioner to hold it in place. Make sure that this is tight, so it does not accidentally come loose over time.

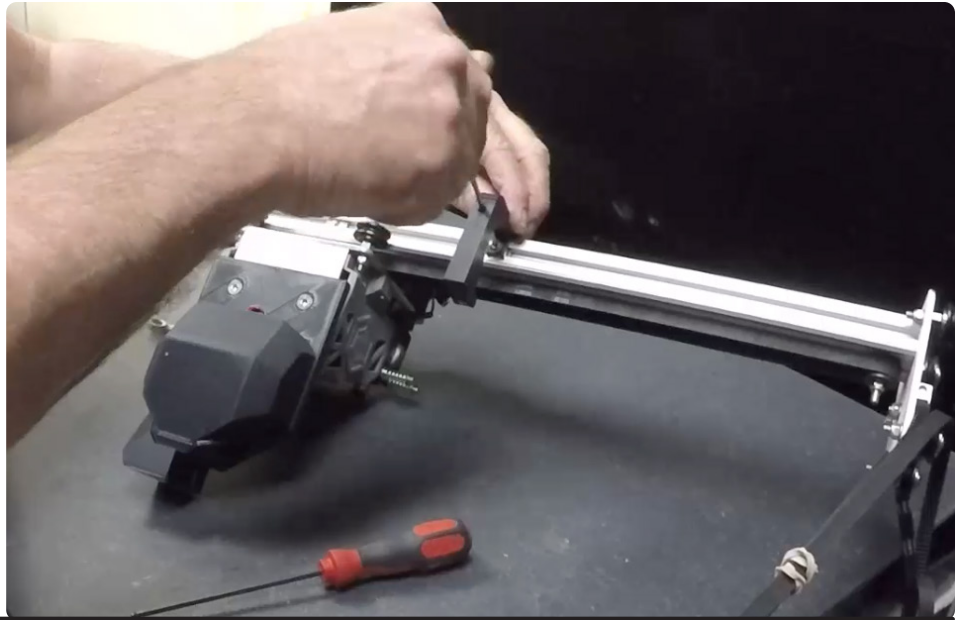
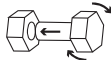
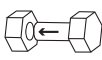


## C42

In the rear slot of the bridge rail, set aside the 2 T-nuts closest to the X motor. These will be for the X/Y Upright bracket. The remaining T-nuts will be used for the [10724] X-Axis Carrier Support.

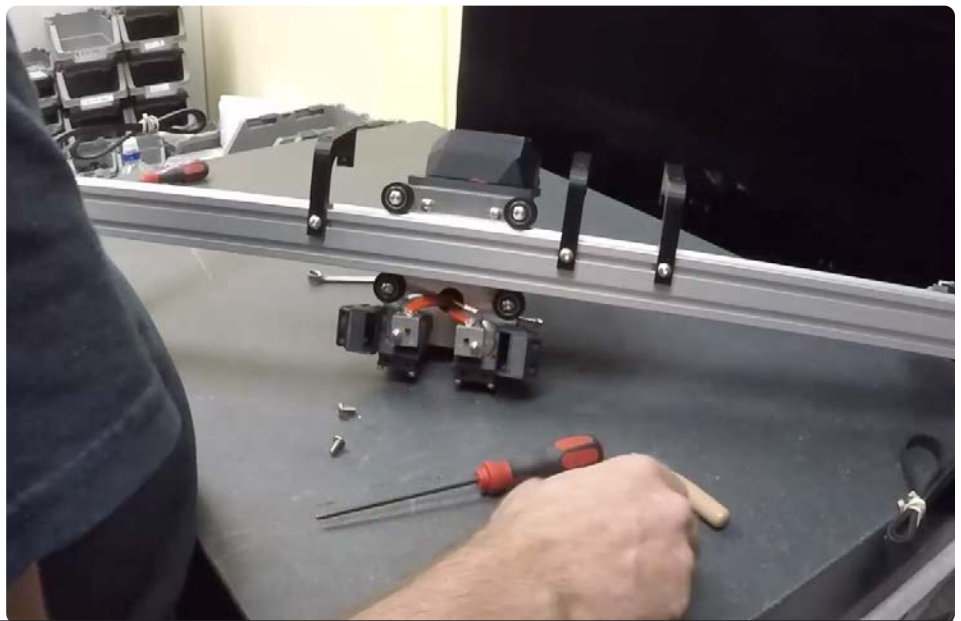
## C43

Install the [10724] X-Axis Carrier Support to the bridge rail by fastening 1 [11537] M5 x 8 SHCS on the rear of the support and 1 [11313] M5 x 12 SHCS on the bottom of the support. Loosely fasten these for now—they can be put in their final locations and fully fastened when installing the cable carriers.



## C44

Repeat this until all 3 supports have been installed.



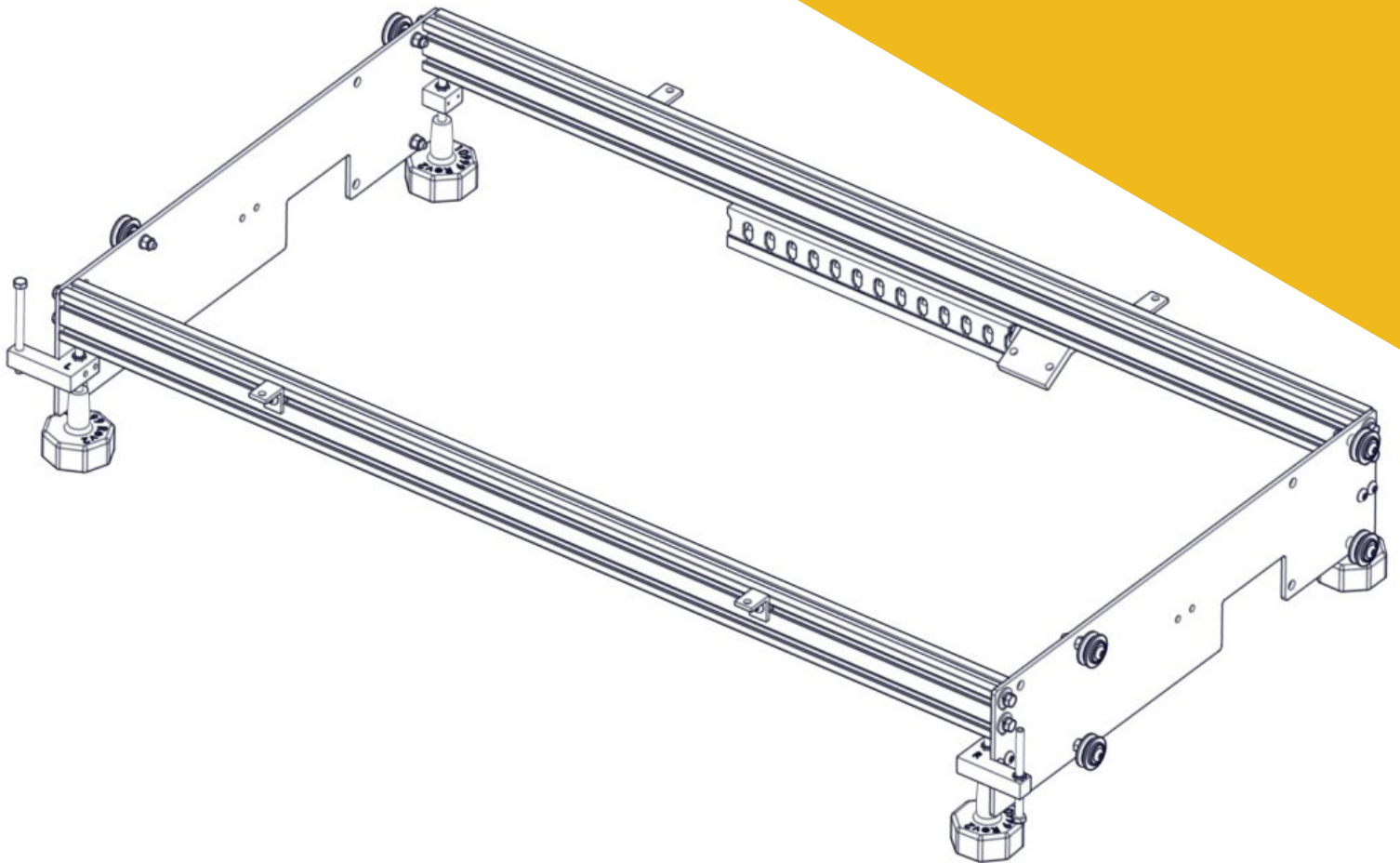
## C45

[For step by step instructions, please see our video.](#)





# ***BED FRAME ASSEMBLY***



# TOOLS & PARTS

*Refer to packing list to identify parts*

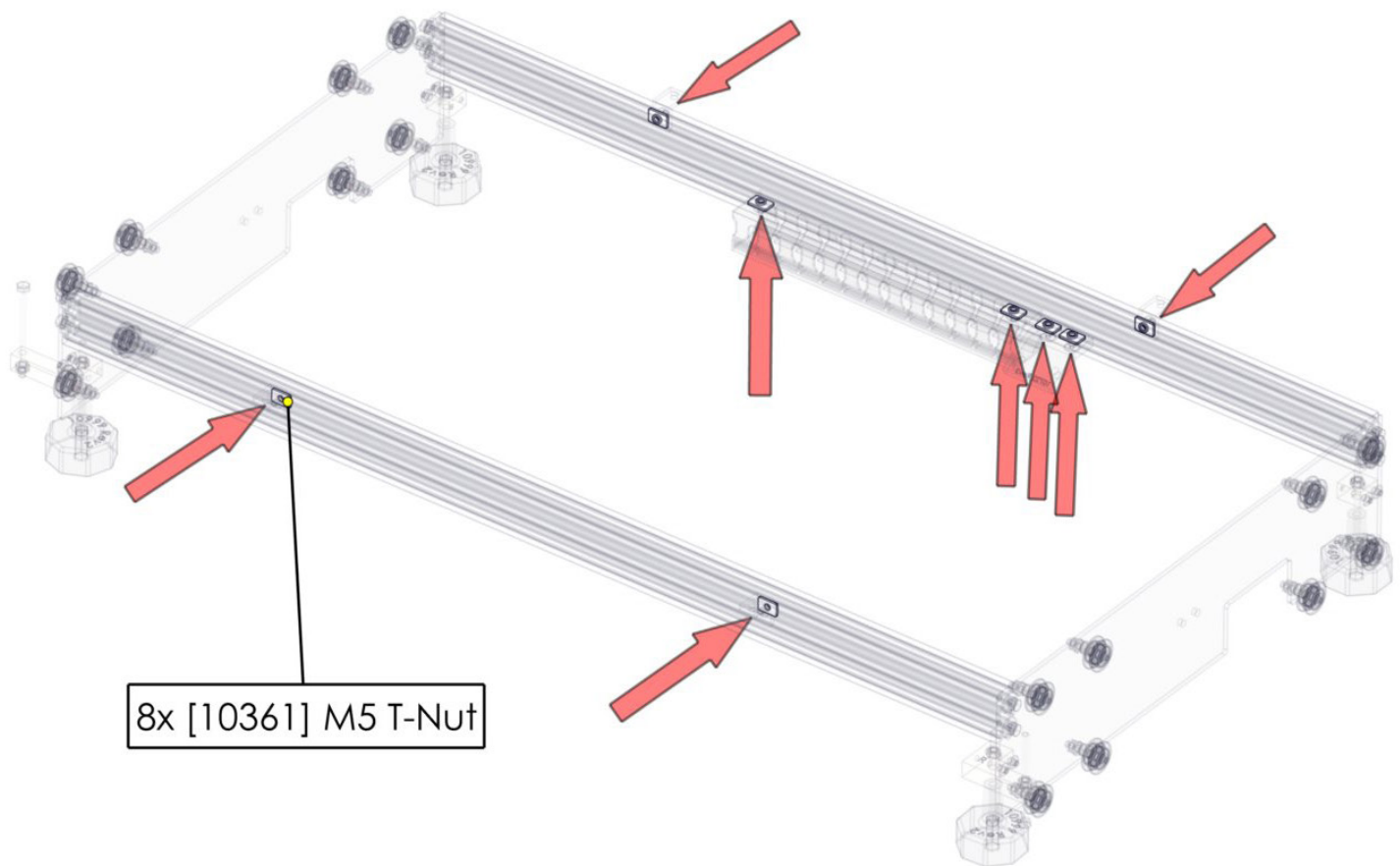
| BOX #            | PART  | QUANTITY |
|------------------|---|----------|
| <b>Snappybox</b> | [10361] M5 T-Nuts                                 | 8        |
| <b>4</b>         | [10059] Bed Cross Rails                           | 2        |
| <b>Snappybox</b> | [10540] M5x12 HHCS                                | 8        |
| <b>Snappybox</b> | [10233] M5 Split Lock Washers                     | 8        |
| <b>Snappybox</b> | [10235] M5 Flat Washers                           | 8        |
| <b>4</b>         | [10063] Bed Side Plates                           | 2        |
| <b>1</b>         | [10334] Straight Edge Steel Square                | 1        |
| <b>Snappybox</b> | [10397] 8mm Combination Wrench                    | 1        |
| <b>Snappybox</b> | [10062] Bed Plate Angles                          | 4        |
| <b>Snappybox</b> | [11537] M5 x 8 SHCS                               | 6        |
| <b>6</b>         | [10046] Allen Wrench Set                          | 1        |
| <b>Snappybox</b> | [11313] M5 x 12 SHCS                              | 8        |
| <b>1</b>         | [10637] #5 9.25" Panduit                          | 1        |
| <b>Snappybox</b> | [10608] [10608] V-Groove Wheels                   | 8        |
| <b>Snappybox</b> | [10310] Wheel Spacer [Round]                      | 4        |
| <b>Snappybox</b> | [10241] M5x30mm BHCS                              | 8        |
| <b>Snappybox</b> | [10234] M5 Nylock Nut                             | 8        |
| <b>8</b>         | [10961] Bed Leveling Knob Kit [Assembled]         | 1        |
| <b>Snappybox</b> | [10116] Wheel Spacer [Eccentric]                  | 4        |
| <b>1</b>         | [10175] Grease Syringe                            | 1        |
| <b>SnappyBox</b> | [10722] GB3+ Z Axis Bed Side Bracket [ Assembled] | 1        |
| <b>SnappyBox</b> | [10640] M5 Fender Washer                          | 8        |
| <b>SnappyBox</b> | [10238] M5x12 FHCS                                | 2        |

**WATCH THE  
ACCOMPANYING  
VIDEO:**

<https://www.youtube.com/watch?v=5eKVEPtmlp8>

## OVERVIEW

Bed frame T-nut placement shown below. There are 8 in total.

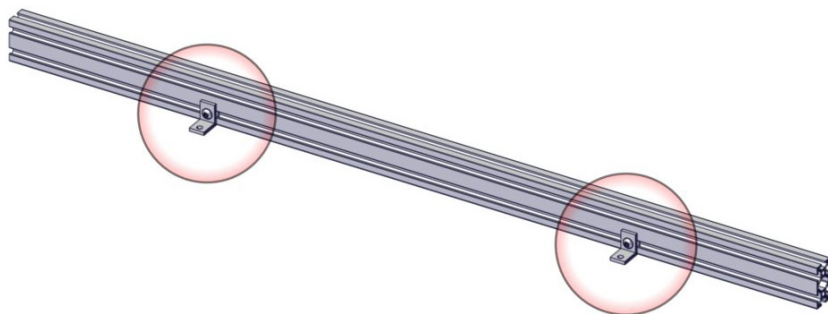


# TIPS & TRICKS

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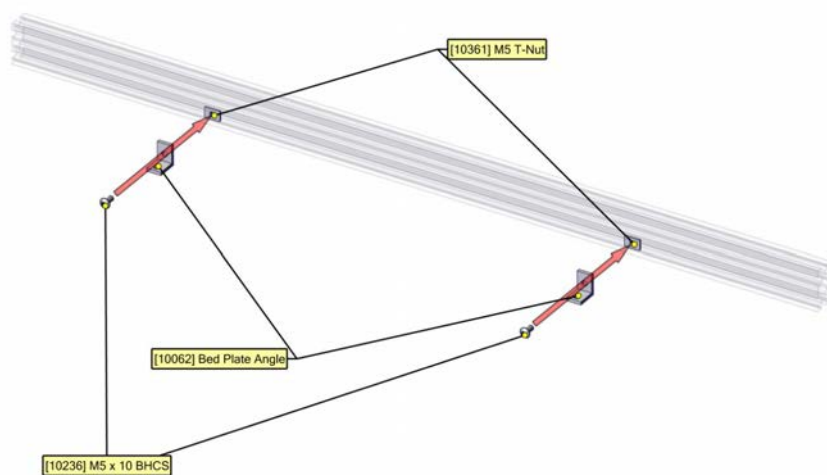
- #1** Work on a flat surface.
- #2** Regularly use the [10334] Straight Edge Steel Square to ensure that the side plates are mounted square to the bed cross rails.
- #3** Verify that there are enough T-nuts in the bed frame, and at the proper locations.





## D1

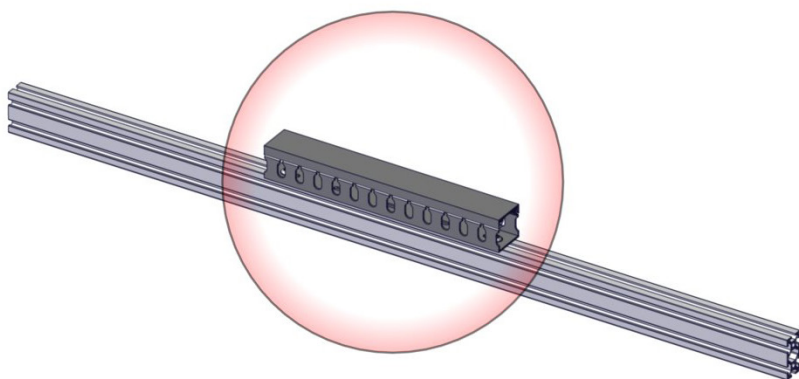
On one of the [10059] GB3+ Bed Cross Rails, you will install 2 [10062] Bed Plate Angles, as shown here.



## D2

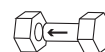
Insert 2 [10361] M5 T-nuts into the slot in the bed cross rail. Use a 3mm Allen Wrench and 2 [11537] M5 x 8 SHCS to attach the 2 [10062] Bed Plate Angles.

**Note: On the Bed Plate Angles, use the hole that is more centered on its face, and NOT the hole that is off-center on its face.**



## D3

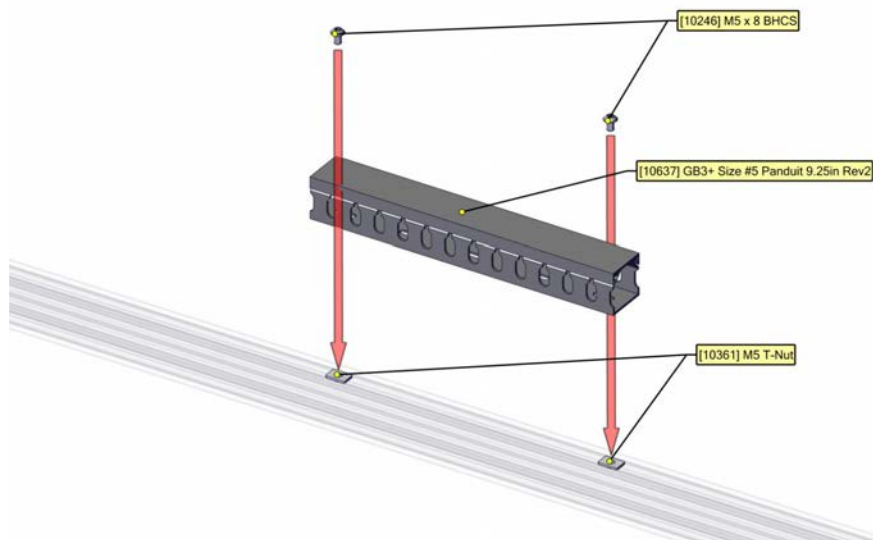
Next, using the other [10059] Bed Cross Rail, you will attach the [10637] GB3+ Size #5 Panduit 9.25", as shown here.



## D4

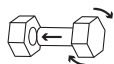
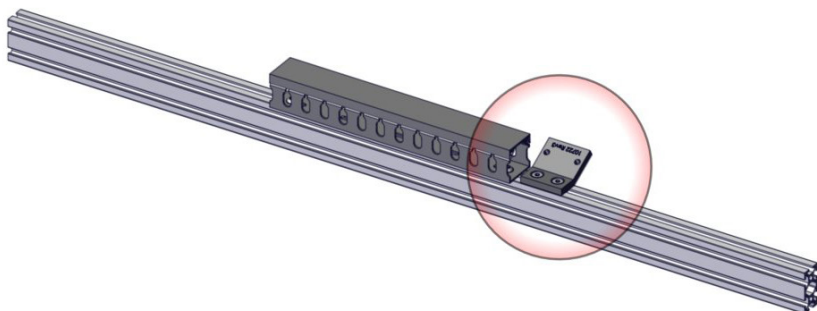
In the top slot, insert 2 [10361] M5 T-Nuts. Next, use the 3mm Allen Wrench and 2 [11537] M5 x 8 SHCS to attach the [10637] GB3+ Size #5 Panduit 9.25" to the T-Nuts.

**Note:** You will need to remove the Panduit cover to attach it.



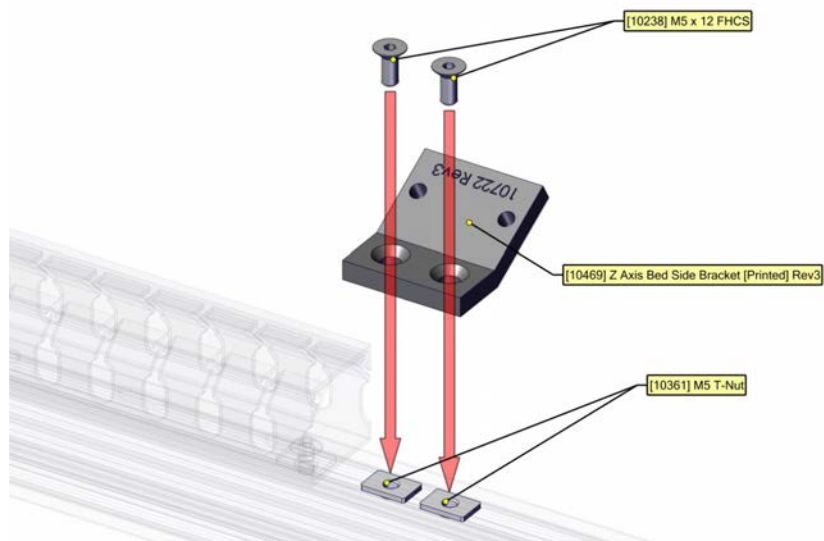
## D5

Next, you will install the [10722] GB3+ Z Axis Bed Side Bracket next to the Panduit, as shown here.



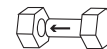
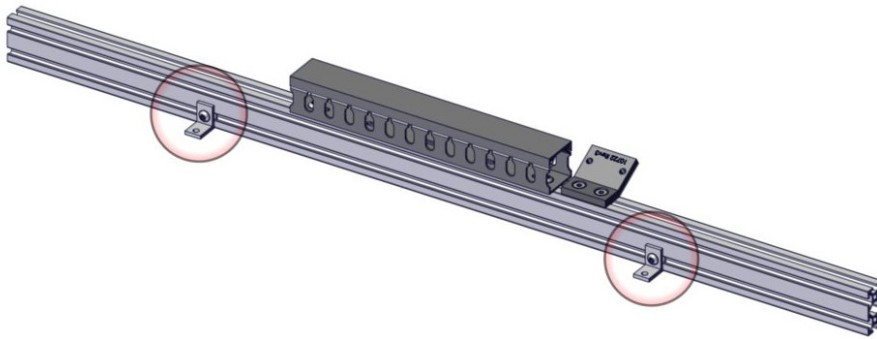
## D6

Insert 2 more [10361] M5 T-Nuts into the same slot as the Panduit. Then, use the 2.5mm Allen Wrench attach the [10722] Z Axis Bed Side Bracket to the T-Nuts using 2 [10238] M5x12 FHCS.



## D7

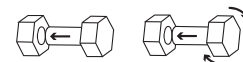
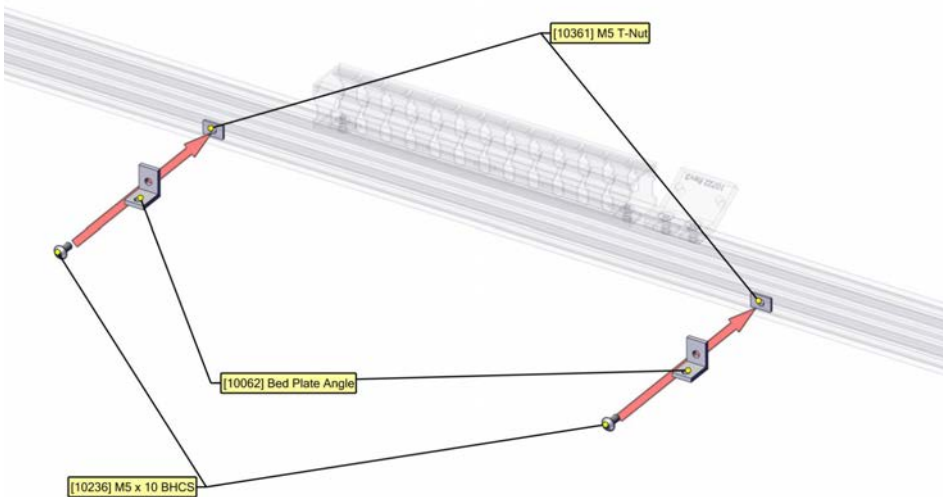
After installing the Panduit and the Bed Side Bracket, you will install the remaining Bed Plate Angles, as shown here.



## D8

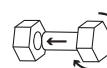
Insert 2 [10361] M5 T-nuts into the slot in the bed cross rail. Use a 3mm Allen Wrench and 2 [11537] M5 x 8 SHCS to attach the 2 [10062] Bed Plate Angles.

**Note: On the Bed Plate Angles, use the hole that is more centered on its face, and NOT the hole that is off-center on its face.**



## D9

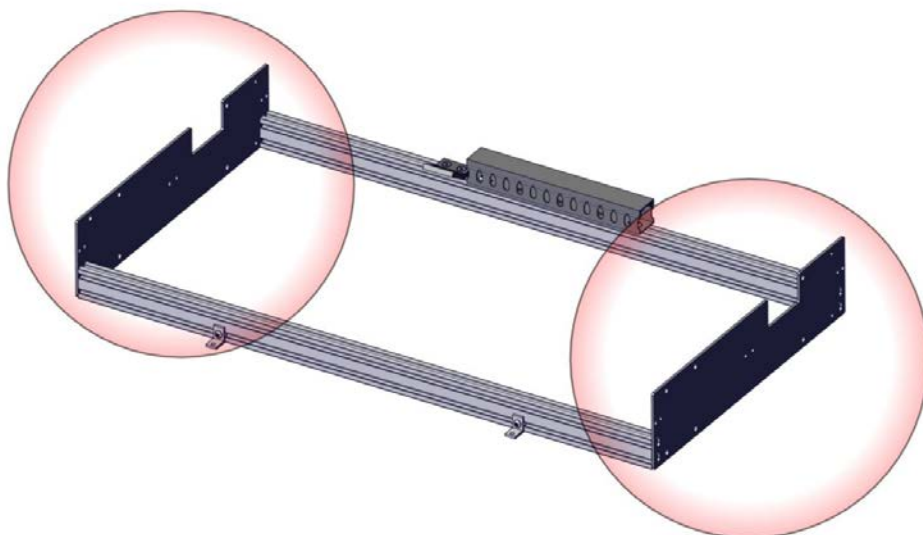
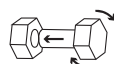
The completed sets of bed cross rails should look like this. Arrange them as shown here. From now on, the bed cross rail with the Panduit will be the rear of the bed frame assembly.





## D10

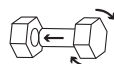
Next, you will need to install the [10063] Bed Side Plates, as shown here.



## D11

Arrange the [10063] GB3+ Bed Side Plates against the bed cross rails as shown. The notched side should go towards the rear bed cross rail.

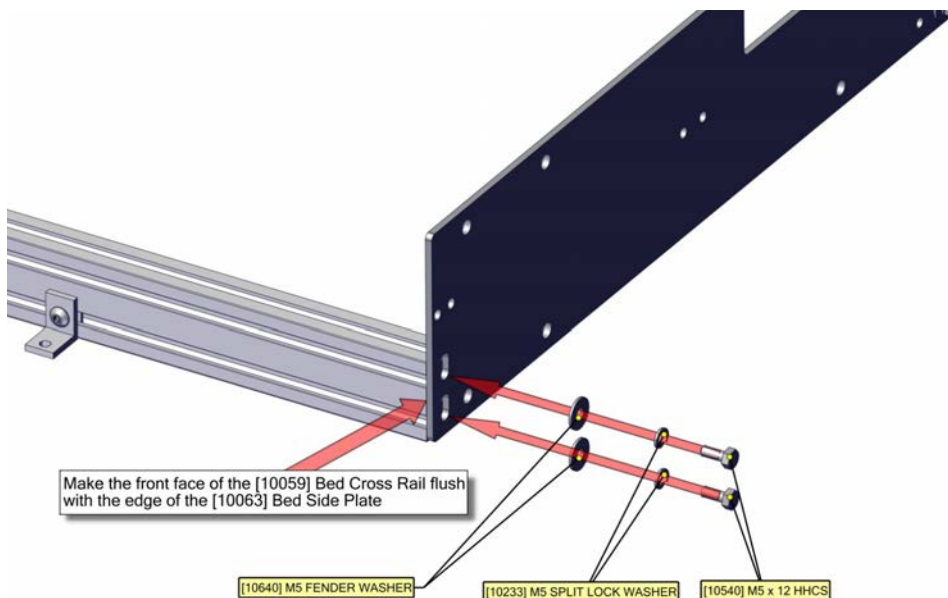
**Note: It may be easier to fasten each bed side plate one at a time.**



## D12

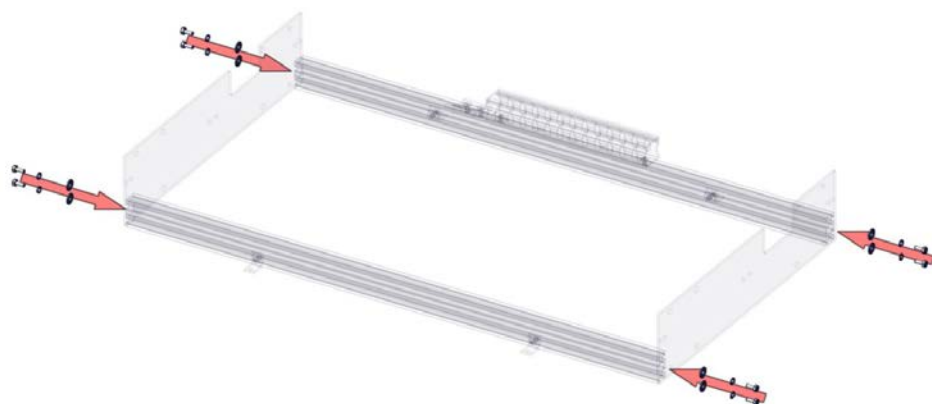
Next, you will need to attach the bed side plates to the bed cross rails at each corner, as shown here.





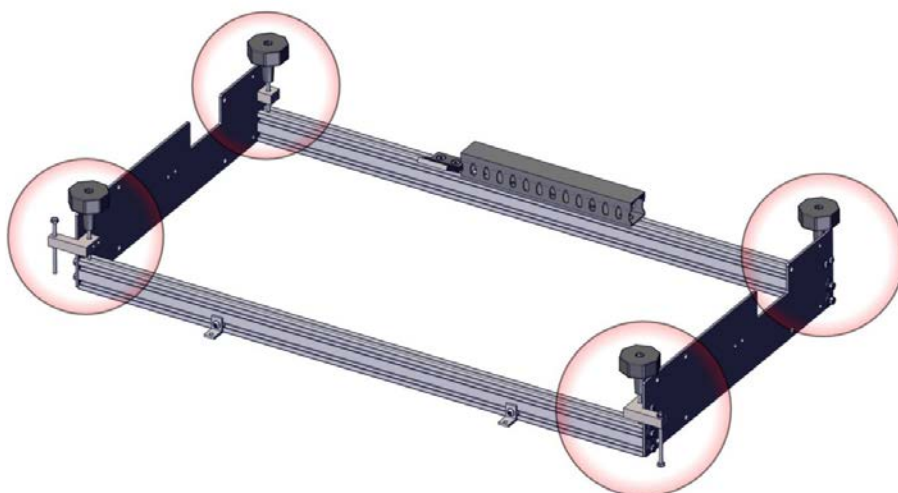
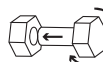
## D13

Using an 8mm wrench, fasten 2 [10640] M5 Fender Washer, 2 [10233] M5 Split Lock Washer, and 2 [10540] M5x12 HHCS to attach each corner of the bed side plates to the bed cross rails.



## D14

Repeat this step at each corner to fully attach the bed side plates to the bed cross rails.

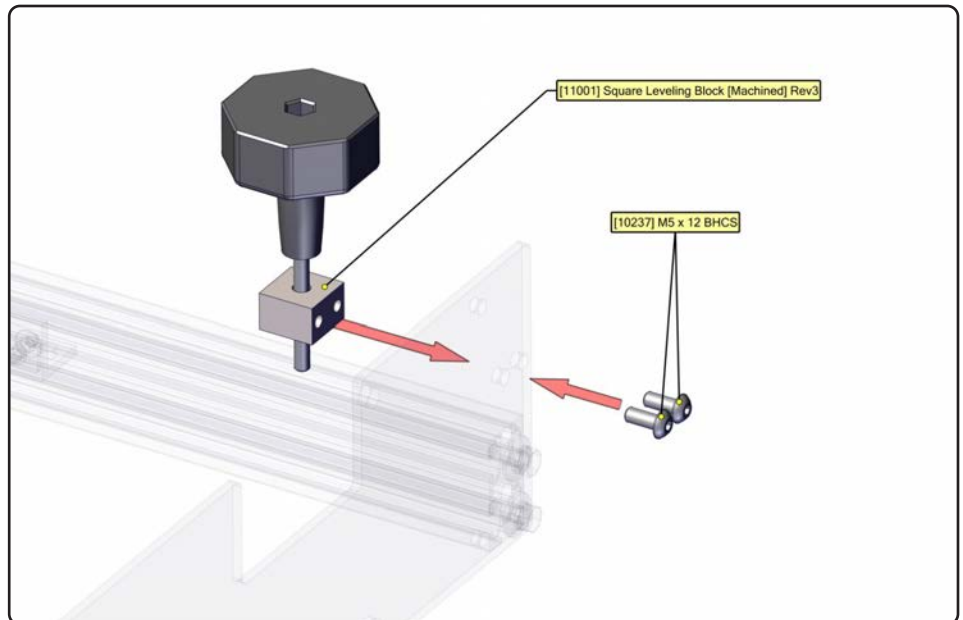
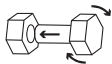


## D15

Next, you will install the [10961] Bed Leveling Knobs to the bed frame assembly.

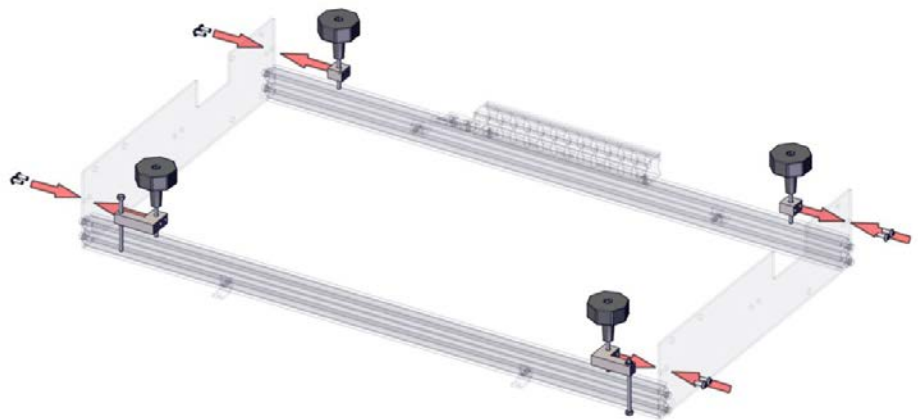
## D16

Start with the square leveling blocks that attach to the rear of bed frame. Secure these using the 3mm Allen Wrench and 2 [10237] M5x12 BHCS each.



## D17

Repeat this step to attach all bed leveling knob assemblies as shown.

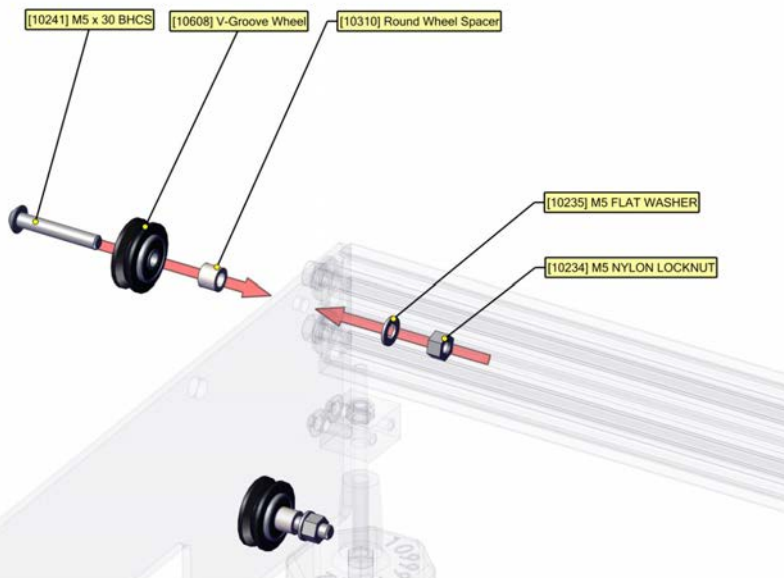


## D18

Next, you will attach the rear 4 [10608] [10608] V-Groove Wheels to the bed side plates, as shown.

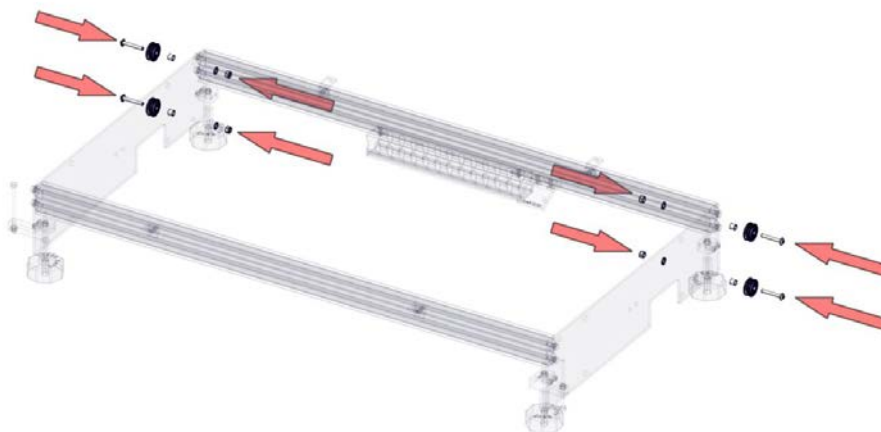






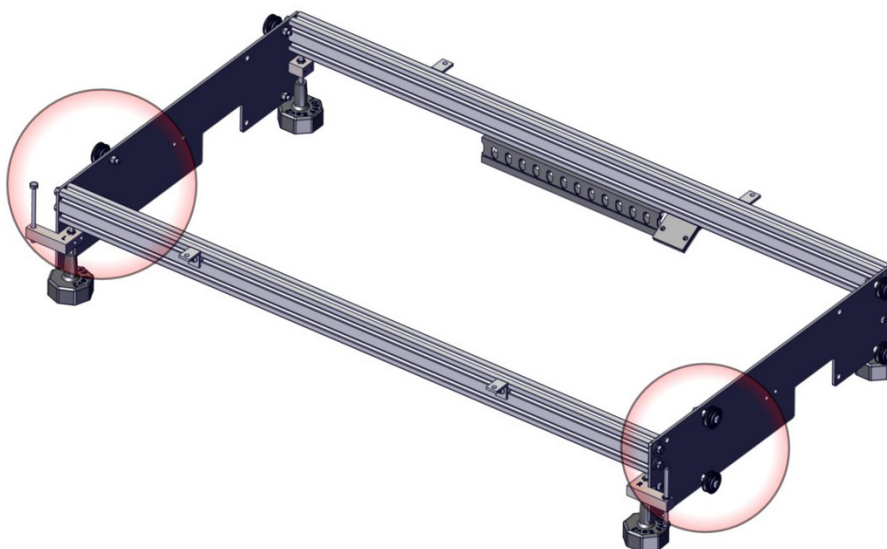
## D19

Each [10608] V-Groove wheel is attached using 1 [10241] M5x30mm BHCS, 1 [10310] **Round Wheel Spacer**, 1 [10235] M5 Flat Washer, and 1 [10234] M5 Nylock Nut. Use the 3mm Allen Wrench and 8mm Combination Wrench to fasten it together.



## D20

Repeat the previous steps to fasten a total of 4 wheels to the rear of the bed frame assembly.



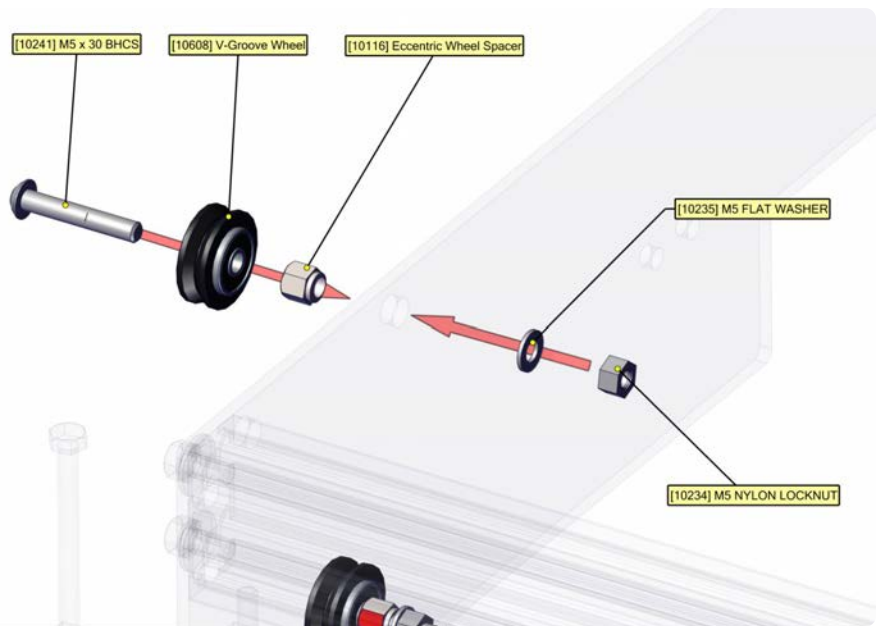
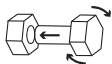
## D21

Next, you will attach 4 wheels towards the front of the bed frame assembly.

**Note:** Do not install them in the front-most holes, but the next set of holes.

## D22

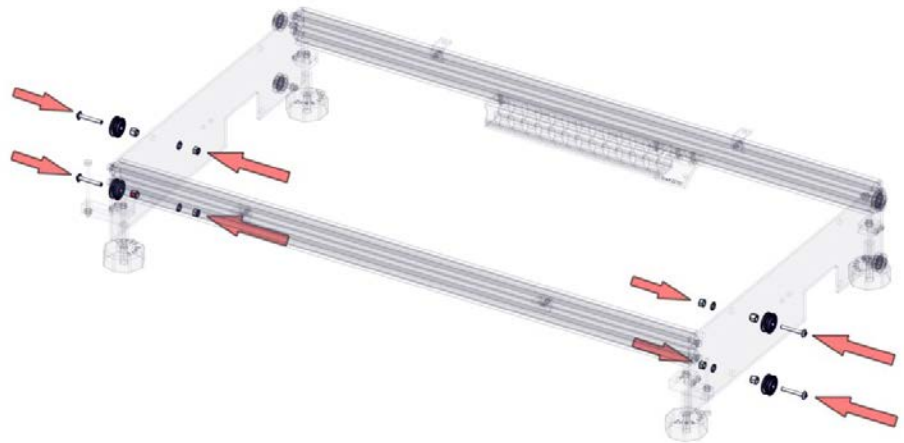
Here, each [10608] V-Groove wheel is attached using 1 [10241] M5x30mm BHCS, 1 [10116] Eccentric Wheel Spacer, 1 [10235] M5 Flat Washer, and 1 [10234] M5 Nylon Lock Nut. Use the 3mm Allen Wrench and 8mm Combination Wrench to fasten it together.



## D23

Repeat the previous steps to fasten at total of 4 wheels to the front of the bed frame assembly.

**Note:** Per step D21, be sure to install these in the correct holes - **NOT** the front-most holes.



## D24

The bed frame assembly should now look like this. The remaining components will be added while installing it into the Gigabot frame.

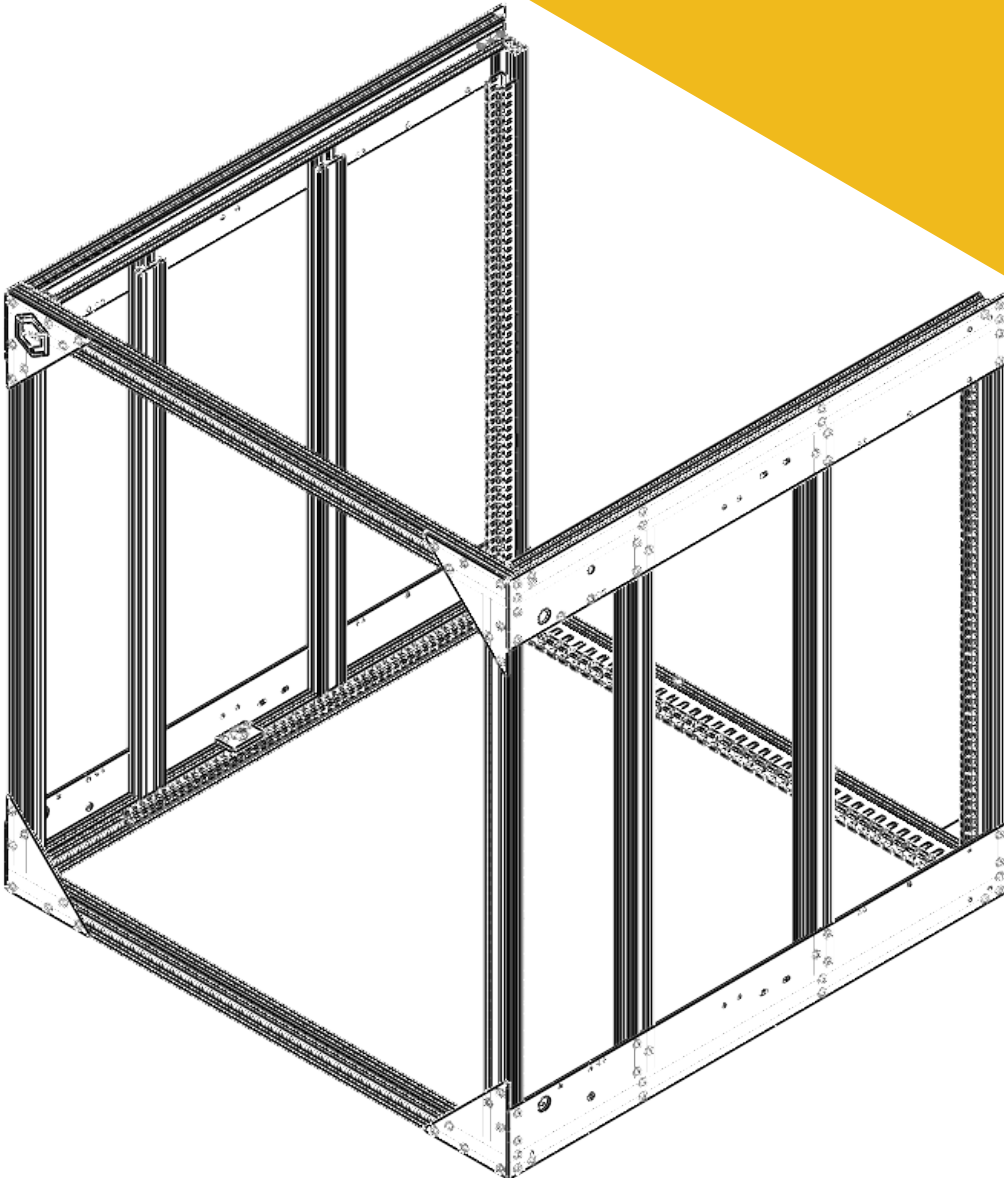


## **D25**

For further clarification on any steps, you may watch the video demonstration at this link:  
<https://www.youtube.com/watch?v=5eKVEPtmlp8>



# ***FRAME ASSEMBLY***





# TOOLS & PARTS

*Refer to packing list to identify parts*

| BOX #            | PART                     | QUANTITY |
|------------------|--------------------------|----------|
| <b>Snappybox</b> | [11537] M5 x 8 SHCS      | 76       |
| <b>Snappybox</b> | [10361] M5 T-nut         | 84       |
| <b>6</b>         | [10046] Allen Wrench Set | 1        |
| <b>Snappybox</b> | [11313] M5 x 12 SHCS     | 16       |
| <b>1</b>         | [11542] #5 x 29.875"     | 1        |
| <b>Snappybox</b> | [10363] Triangle Brace   | 4        |
| <b>Snappybox</b> | [11538] M5 x 10 SHCS     | 8        |
| <b>1</b>         | [10512] #2 x 29"         | 1        |
| <b>1</b>         | [10272] #5 x 30"         | 2        |

**WATCH THE  
ACCOMPANYING  
VIDEO:**

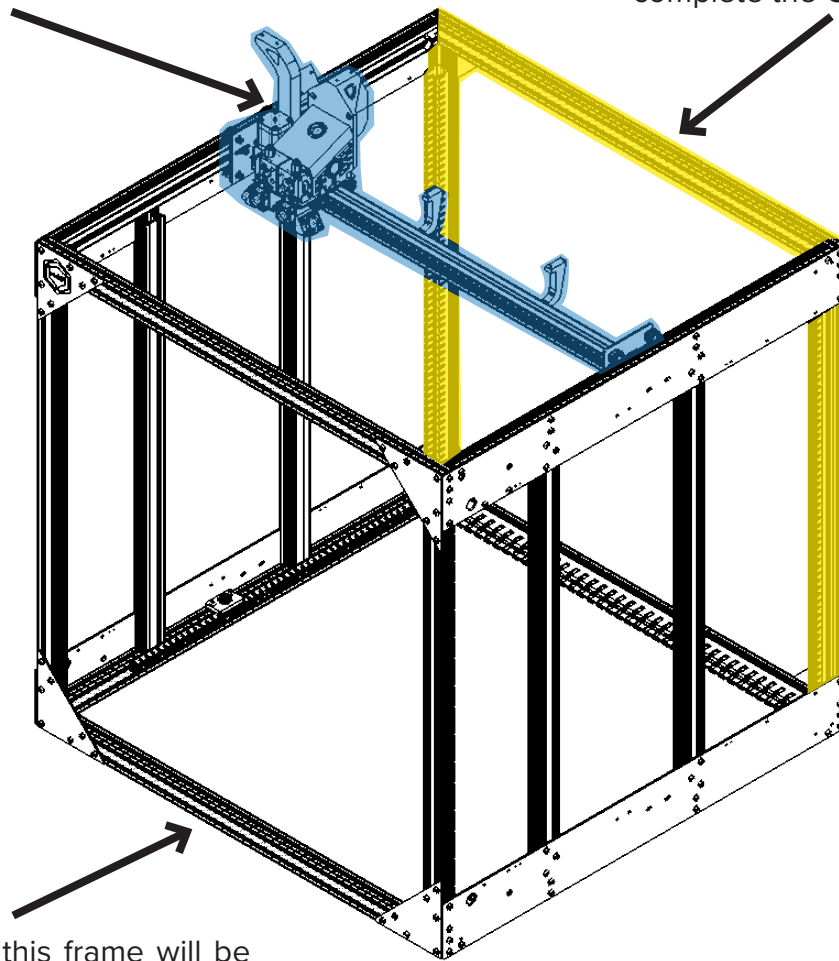
<https://youtu.be/Ml5B4gsB5io>

# OVERVIEW

The frame will be assembled as shown. Note that the bridge assembly is mounted before the rear uprights and rear header are installed.

2. The bridge assembly is mounted prior to the rear header and rear corner rails.

3. The rear header and these [10100] Common Rail are installed last to complete the Gigabot® frame.



1. The majority of this frame will be built first.

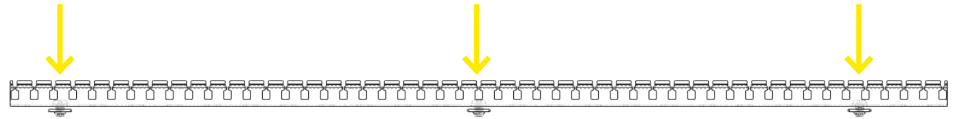
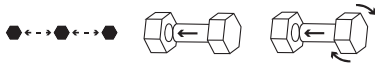
# TIPS & TRICKS

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- #1** Work on a flat surface.
- #2** Take your time when squaring the upright rails with the [10334] Straight Edge Steel Square to ensure the frame is properly built.
- #3** The subassemblies you will need include: headers, footers, upper and lower side plates.
- #4** Other components include: Z uprights, [10100] Common Rail (corners), and Panduits.
- #5** Mount the bridge assembly prior to installing the rear corner upright rails and the rear header.
- #6** Warning: The LED light strip may become hot during operation.

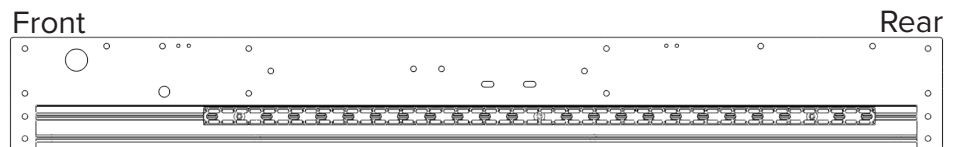
## E1

Prepare a #1 Panduit 24" by evenly spacing and inserting 3 [11537] M5 x 8 SHCS into the Panduit holes (use the small holes so that the screws stay in place). Loosely fasten a T-nut to each screw.



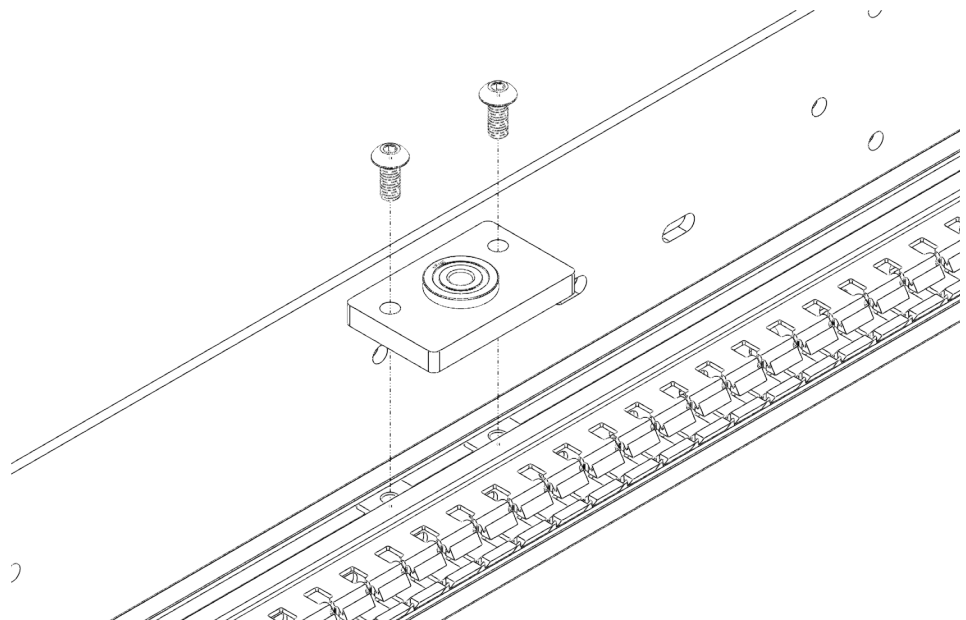
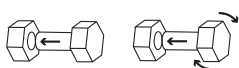
## E2

Insert this Panduit to the upper slot of the lower left side plate assembly (this will be used for the left Z motor and lower Z limit switch). Space the rear of this Panduit about 1.5" from the end of the rail and tighten the [11537] M5 x 8 SHCS with a 3mm Allen Key

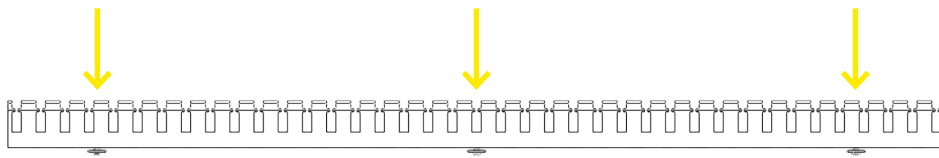


## E3

On the same assembly, install one of the lower bearing blocks into the top slot of the rail using 2 T-nuts and 2 [10237] M5 x 12 BHCS. Make sure that the bearing is protruding from the top of the block when it is mounted to the rail. This can be loosely fastened for now and will be aligned later when the ACME threaded rods are installed.

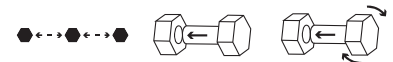






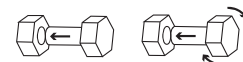
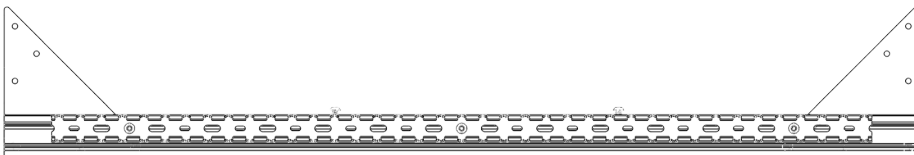
## E4

Similar to before, prepare a #4 Panduit 30" with 3 [11537] M5 x 8 SHCS and 3 T-nuts.



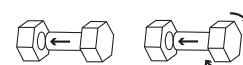
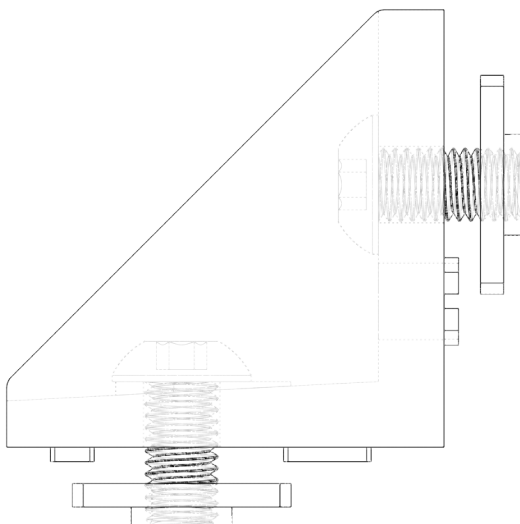
## E5

Insert this into the upper slot of the rear footer with the angled cuts of the Panduit facing down. Center this on the Panduit and tighten the [11537] M5 x 8 SHCS with a 3mm Allen Key.



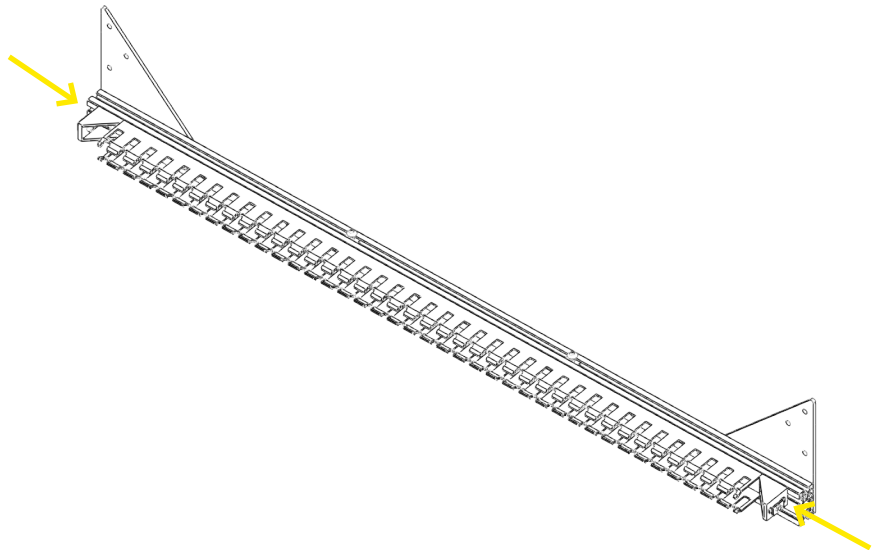
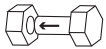
## E6

Prepare 4 [10363] Triangle Brace, each with an M5x10 and a T-nut on each side. If one side has more than one hole, use the most centered hole.



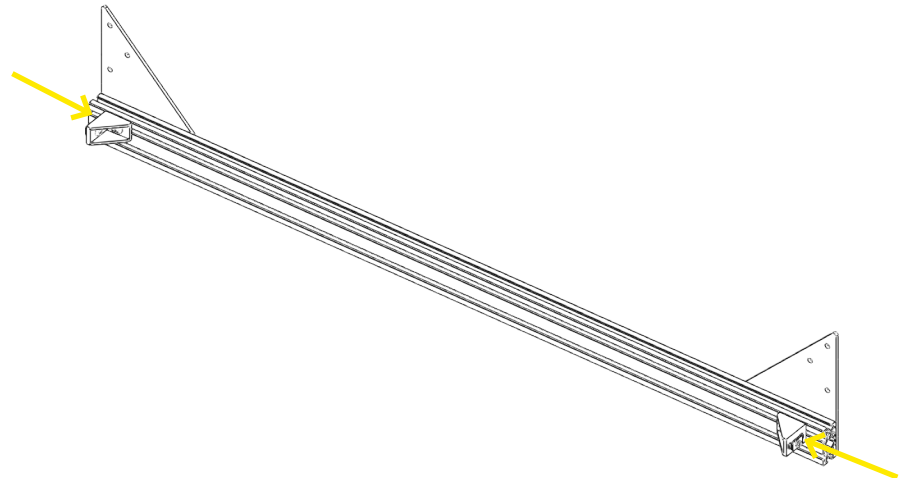
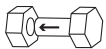
## E7

Insert one triangle brace assembly each into the corners of the rear footer, in the lower slot (total of 2 used).



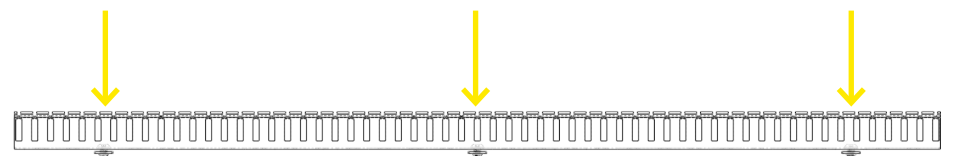
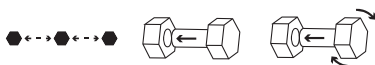
## E8

Insert one triangle brace assembly each into the corners of the front footer, in the lower slot (total of 2 used).

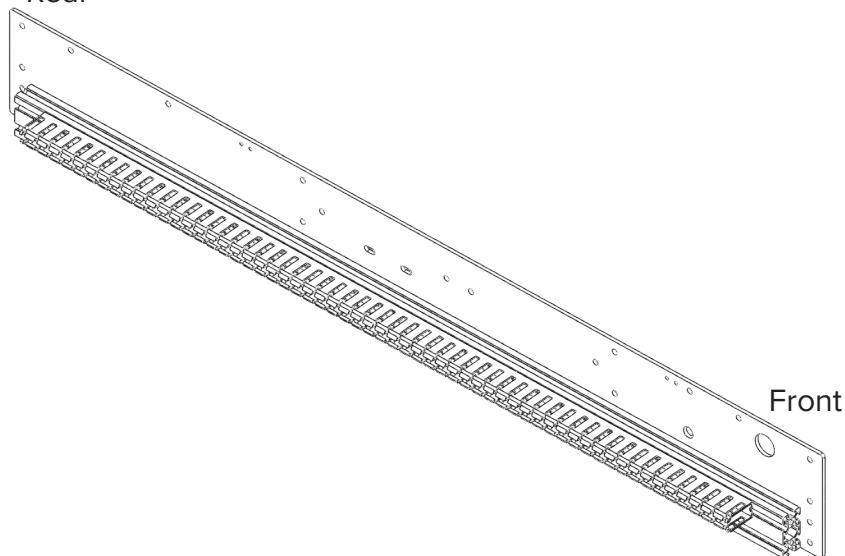


## E9

Prepare a #2 Panduit 29" in the same fashion as above with 3 [11537] M5 x 8 SHCS and 3 T-nuts.

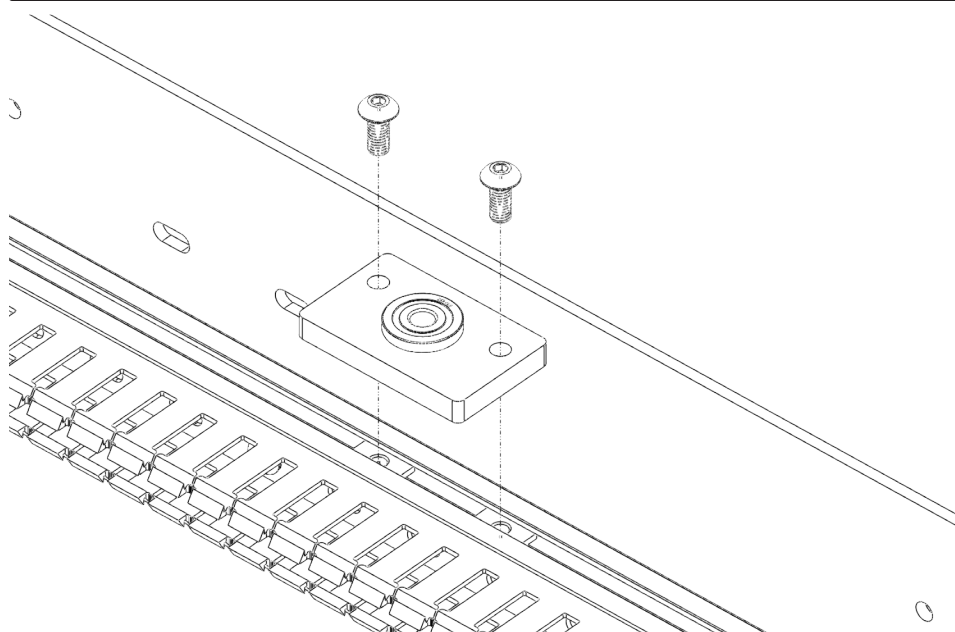
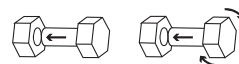


Rear



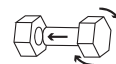
## E10

Insert this into the lower right side plate assembly (this will be used for the right Z motor and all wiring going to the bridge assembly). Space the rear of this Panduit about 1.5" from the end of the rail and tighten the [11537] M5 x 8 SHCS with a 3mm Allen Key.



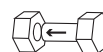
## E11

On the same assembly, install one of the lower bearing blocks into the top slot of the rail using 2 T-nuts and 2 [10237] M5 x 12 BHCS. Make sure that the bearing is protruding from the top of the block when it is mounted to the rail. This can be loosely fastened for now and will be aligned later when the ACME threaded rods are installed.



## E12

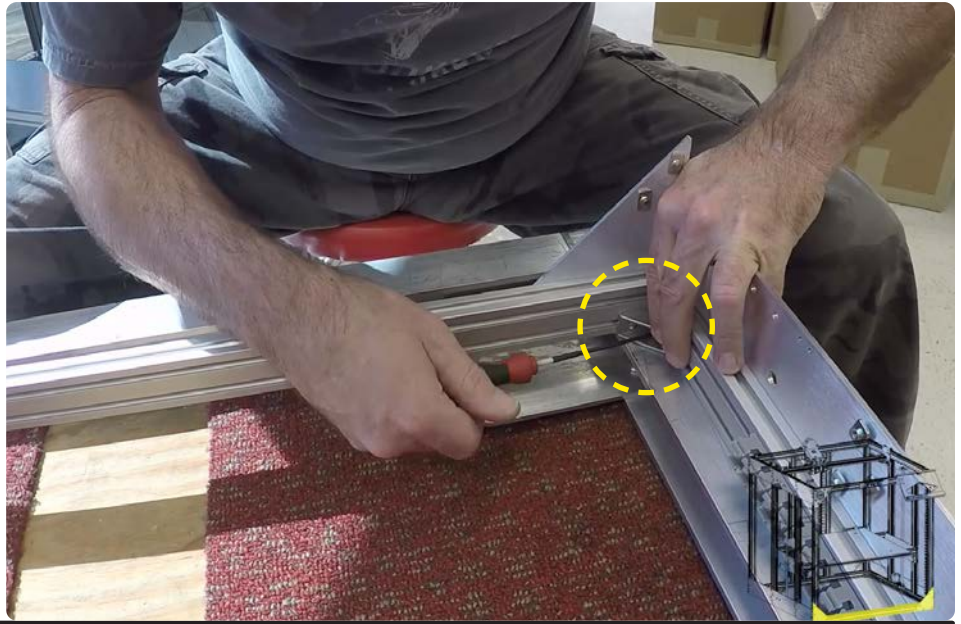
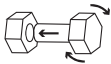
Connect the front footer to the lower side plate assemblies by sliding the T-nuts of the [10363] Triangle Brace into each rail.





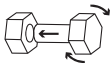
### E13

Holding the adjacent rails together, use the 3mm Allen Key to snug down down the 2 [11538] M5 x 10 SHCS in the triangle brace. Do this for both corners. (If you have framing clamps available, they are also very helpful when assembling these frames, [as seen in our video](#)).



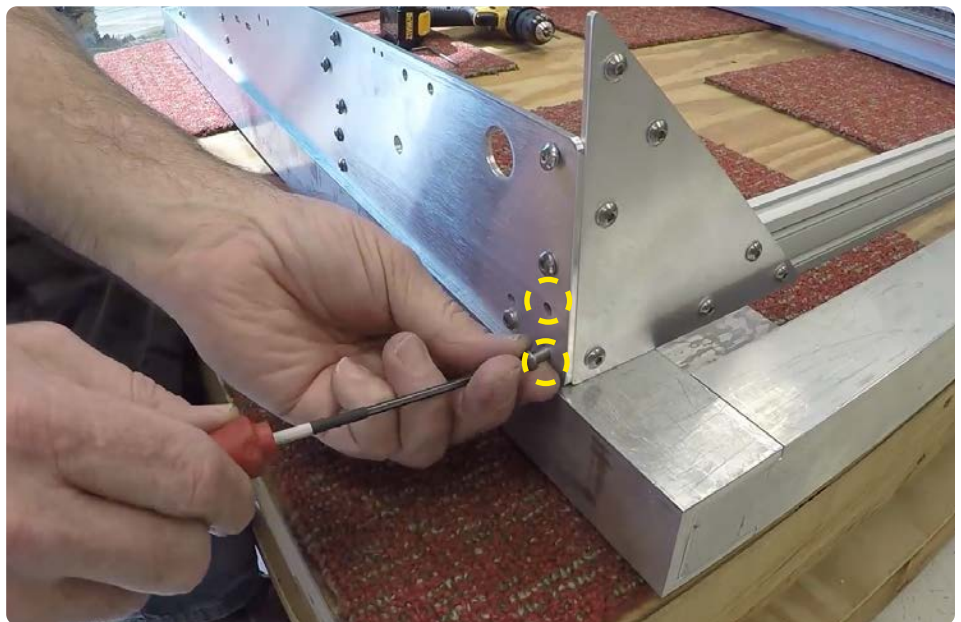
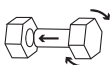
### E14

Repeat this process for the rear footer to attach it to the other end of the lower side plates.



### E15

Use [11313] M5 x 12 SHCS to loosely fasten the side plates to both the front and rear footers. Each side is fastened with 2 M5x12s each, so you will use 8 total.

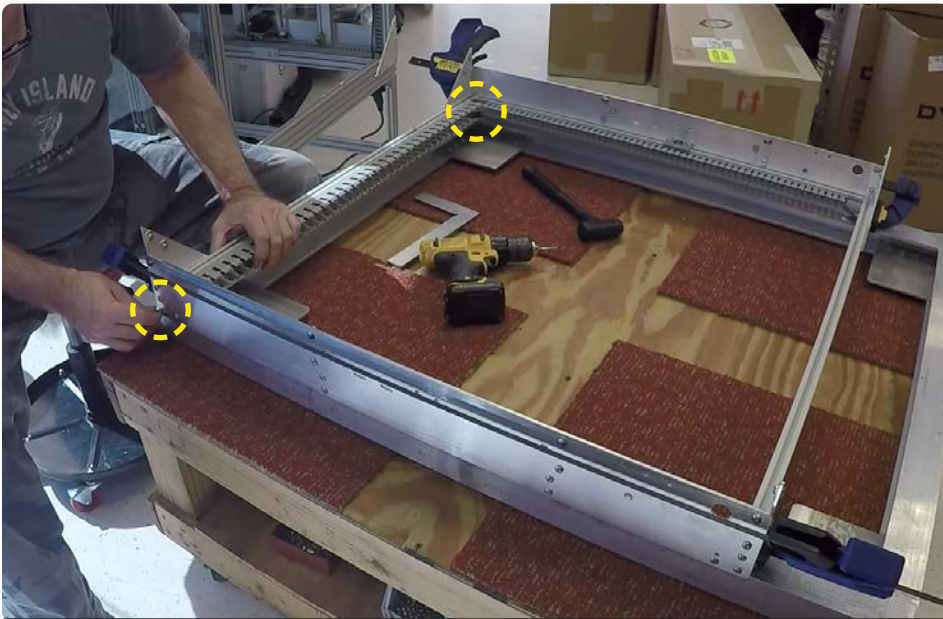






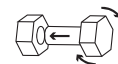
## E16

As the corners are fastened together, use the [10334] Straight Edge Steel Square to verify that the rail top surfaces are flush with each other. Place the [10334] Straight Edge Steel Square such that it lays across the two adjacent rails and use a hammer to gently tap it down until the surfaces are flush. Framing clamps are very useful in this application ([see our video](#)).



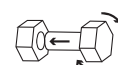
## E17

Once the cross rail is flush to the common rail, fully tighten the side plate against the cross rail by using the 3mm Allen Key to tighten the [11313] M5 x 12 SHCS.



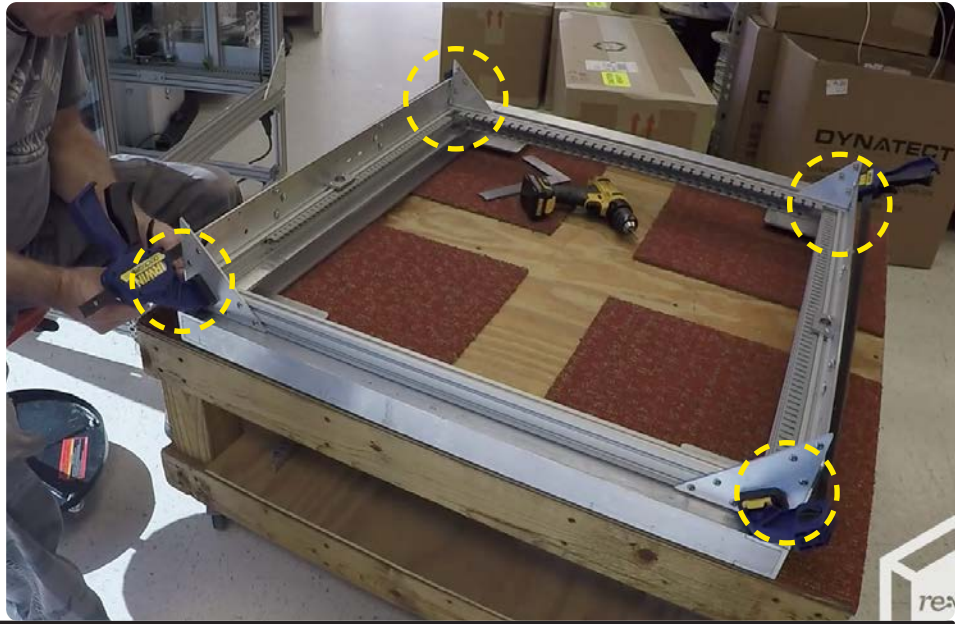
## E18

Fully tighten the triangle brace on this corner with the 3mm Allen Key.



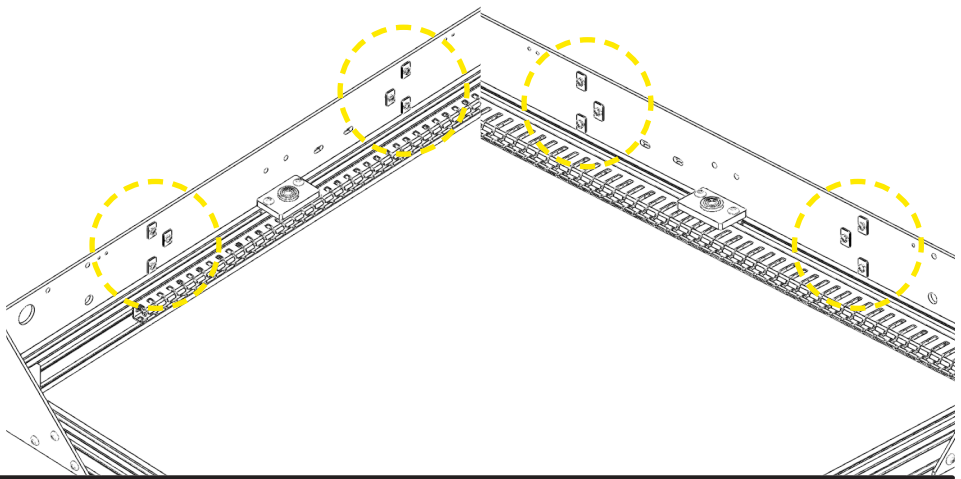
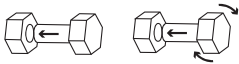
## E19

Repeat steps E15 through E18 for all 4 corners. If framing clamps were used, remove them after tightening all the hardware.



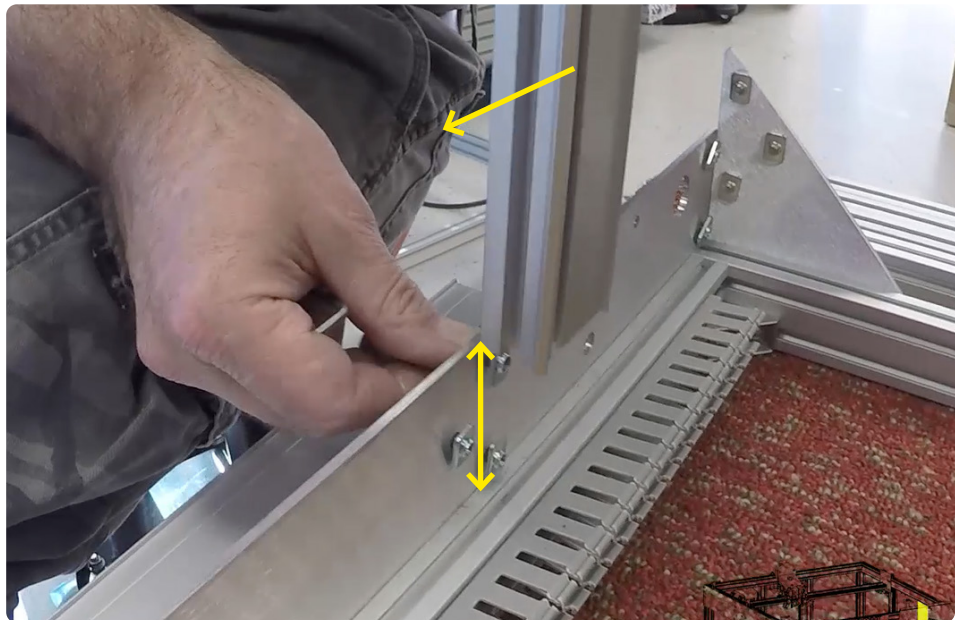
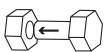
## E20

On the side plates, insert an [11537] M5 x 8 SHCS into each of the holes for the Z uprights. Loosely fasten an M5 T-nut to each screw. Each Z upright requires 3 sets of hardware to mount, so you will need to use 12 [11537] M5 x 8 SHCS and 12 T-nuts total.

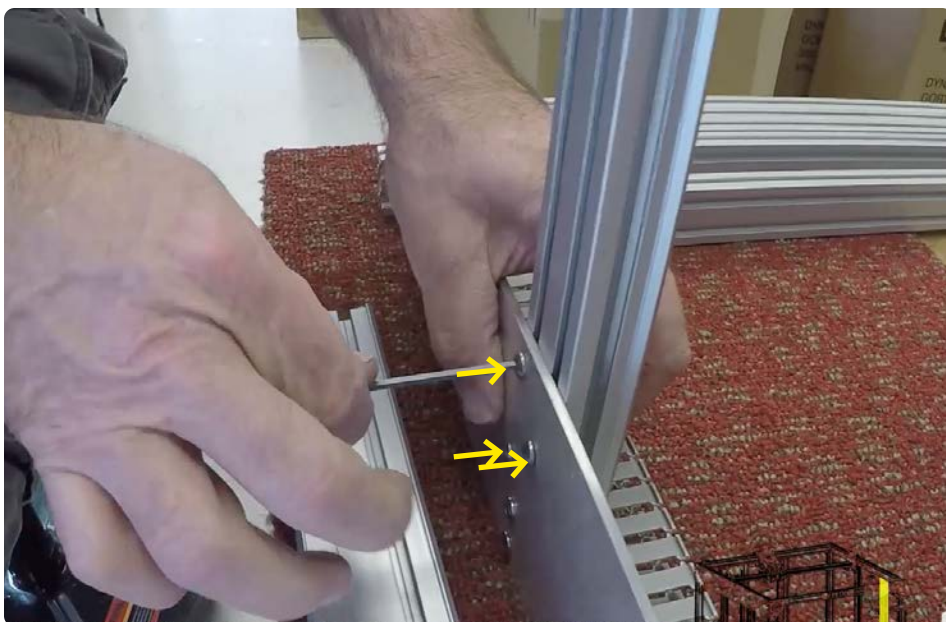


## E21

Orient the T-nuts vertically as shown, and slide the Z upright down. The T-nuts should insert right into the slots on the Z upright. Orient the Z upright such that the machined end is facing towards the inside of the Gigabot. Also, have the single slot on the upright pointing towards the middle of the side plate, as shown.

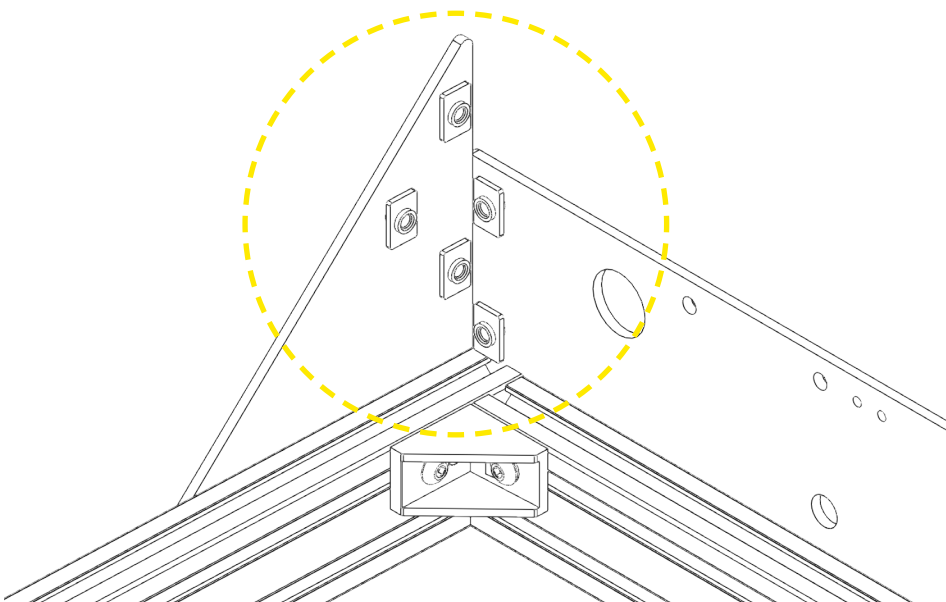
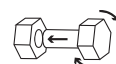






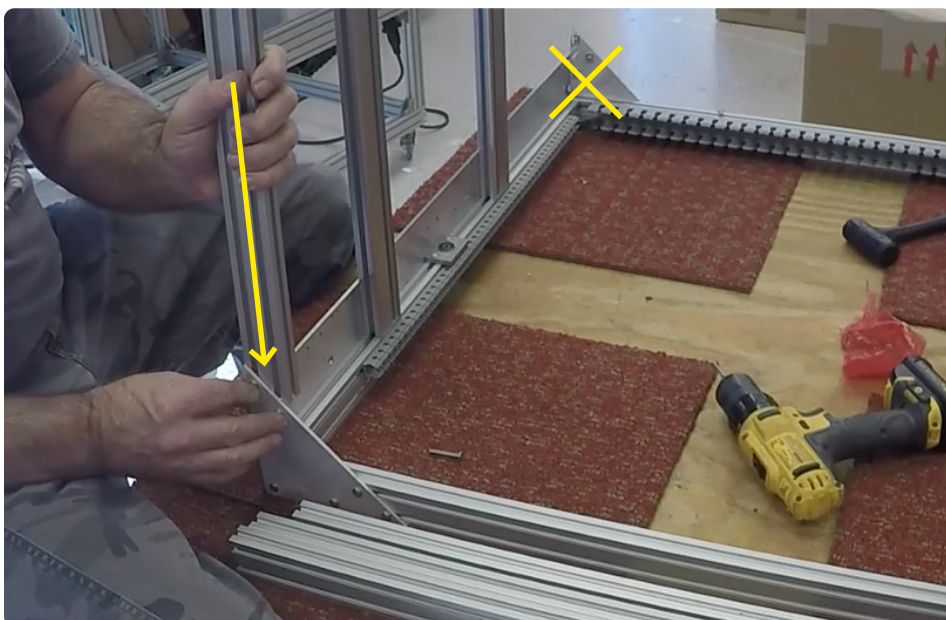
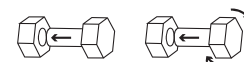
## E22

Loosely fasten the M5 x 8 SHCSs for each Z upright—these uprights will be fully fastened after making the final alignments. Do this for all 4 Z uprights.



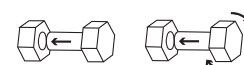
## E23

Similar to before, insert [11537] M5 x 8 SHCS into the holes in the side plates and corner plates of one of the corners and then loosely fasten a T-nut to each of those. There should be 5 [11537] M5 x 8 SHCS and 5 T-nuts per corner, so 20 of each piece of hardware to prepare all corners of the frame.



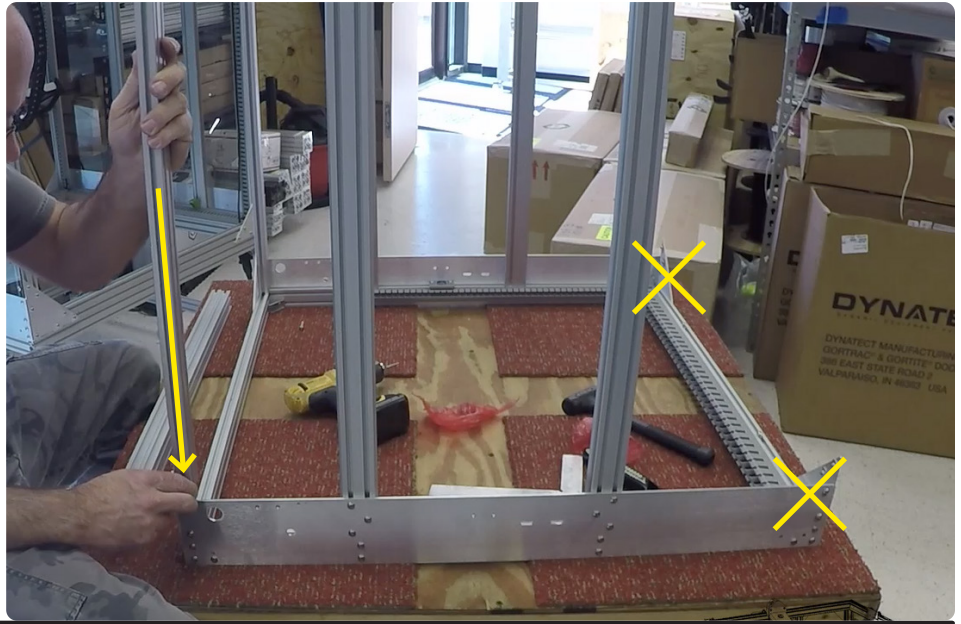
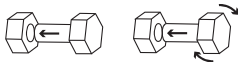
## E24

Orient the T-nuts vertically and then slide a vertical common rail down onto one of the front corners (not rear!) such that the T-nuts go into the slots of the rail. Loosely fasten the [11537] M5 x 8 SHCS so the rail stays in place. These will be squared and fully tightened later.



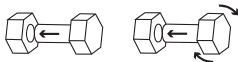
## E25

Repeat for the other vertical rail in the other front corner.



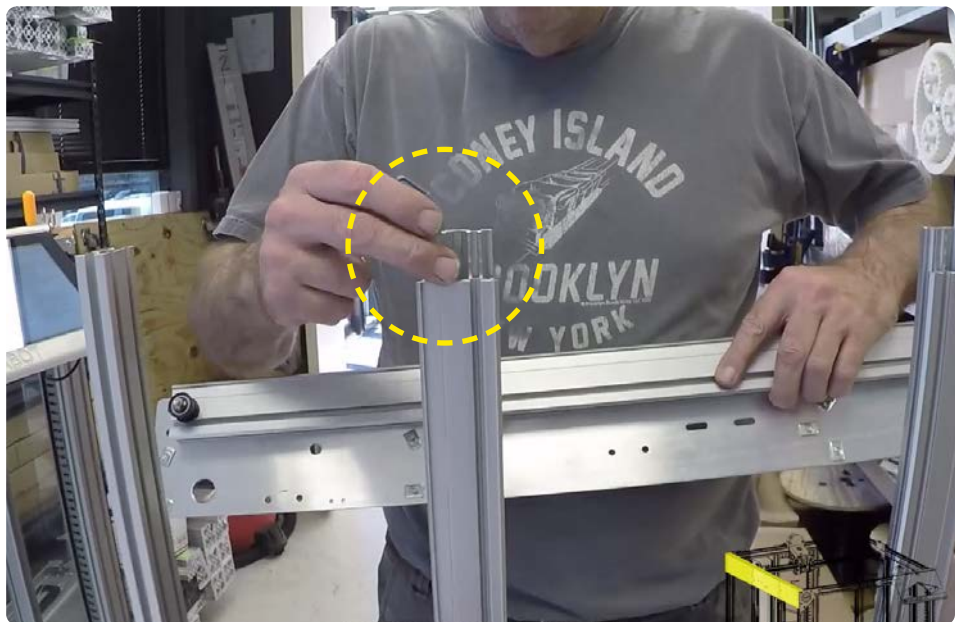
## E26

On each upper side plate assembly (runway rail, side plate, idler pulley), insert the [11537] M5 x 8 SHCS and T-nuts in the holes as shown. Use 10 [11537] M5 x 8 SHCS and 10 T-nuts per side plate. Again, these should be loosely fastened to allow the rails to easily slide on.



## E27

During the next steps, be careful not to pinch your fingers between the side plate assembly and the rails. Also be careful of any sharp edges on the rails.

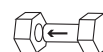






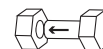
## E28

Starting with the left side plate assembly, orient it such that the large power switch hole and idler pulley pointing towards the front of the frame, and place it such that the T-nuts insert into the slots of the Z uprights and vertical common rail.



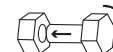
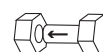
## E29

Since it is difficult to get all of the T-nuts aligned at once, you will need to slowly work each T-nut on the side plate assembly into the slots until it is totally seated on top of the rails.



## E30

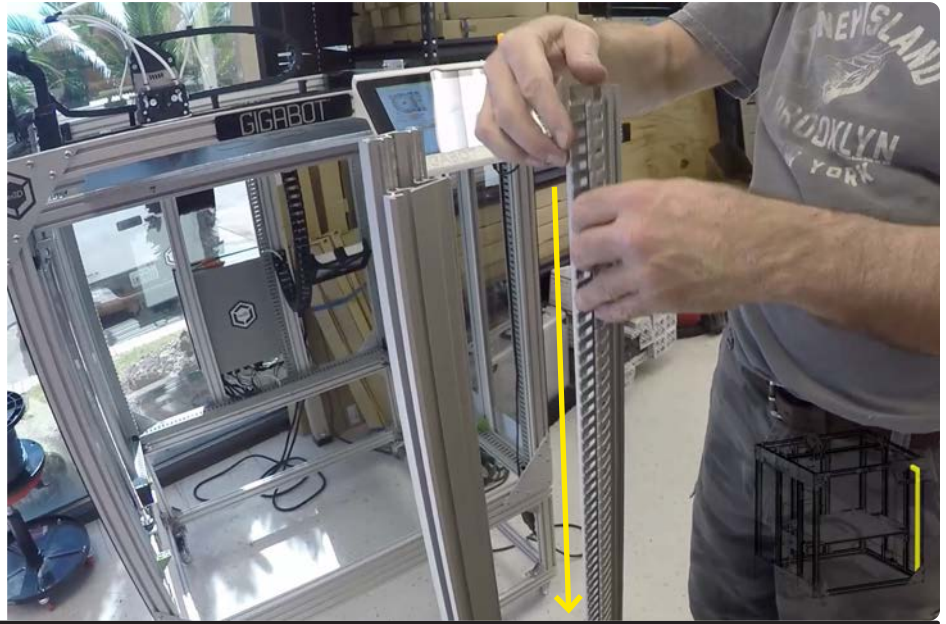
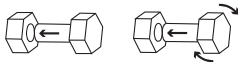
Evenly space and insert 3 [11537] M5 x 8 SHCS into the #2 29" Panduit and loosely fasten T-nuts on the screws.





### E31

Insert this Panduit into the front right vertical rail. There are two slots, so make sure to insert it in the innermost slot of the two. Let it run all the way down and then fasten the [11537] M5 x 8 SHCS with the 3mm Allen Key.



### E32

Install the right side plate assembly in the same process as above. Be careful not to pinch yourself!



### E33

Insert [11537] M5 x 8 SHCS into each of the corner plate holes in the front header (with logo corner plate) and loosely fasten them on with T-nuts. Use 6 [11537] M5 x 8 SHCS and 6 T-nuts in total.

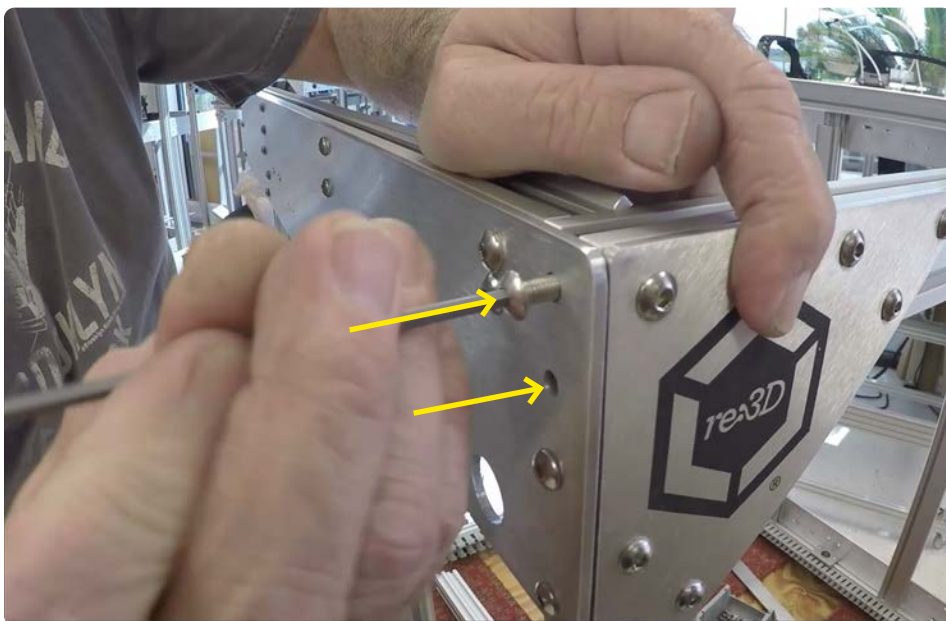






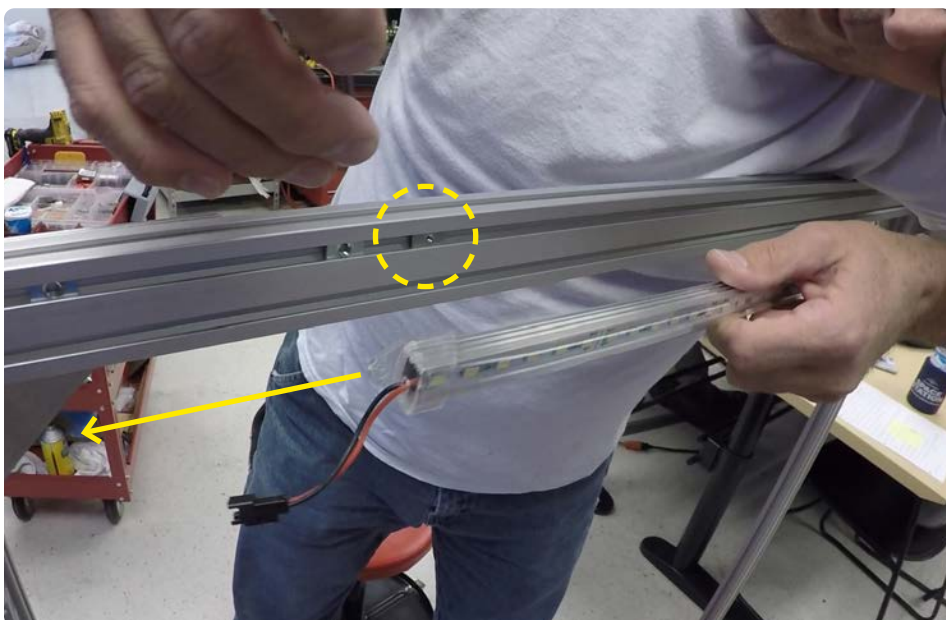
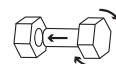
### E34

Similarly to the side plate assemblies, install the front header by dropping the T-nuts into the slots of the front vertical rails. Again, you may need to work the T-nuts into the slots one at a time. Be careful not to pinch your fingers.



### E35

Attach the cross rail of the header to the side plates by using 2 [11313] M5 x 12 SHCS on each end for a total of 4 [11313] M5 x 12 SHCS. These can be loosely fastened for now and fully tightened later after flushing the top surfaces of the rails, similar to what was done with the lower frame.



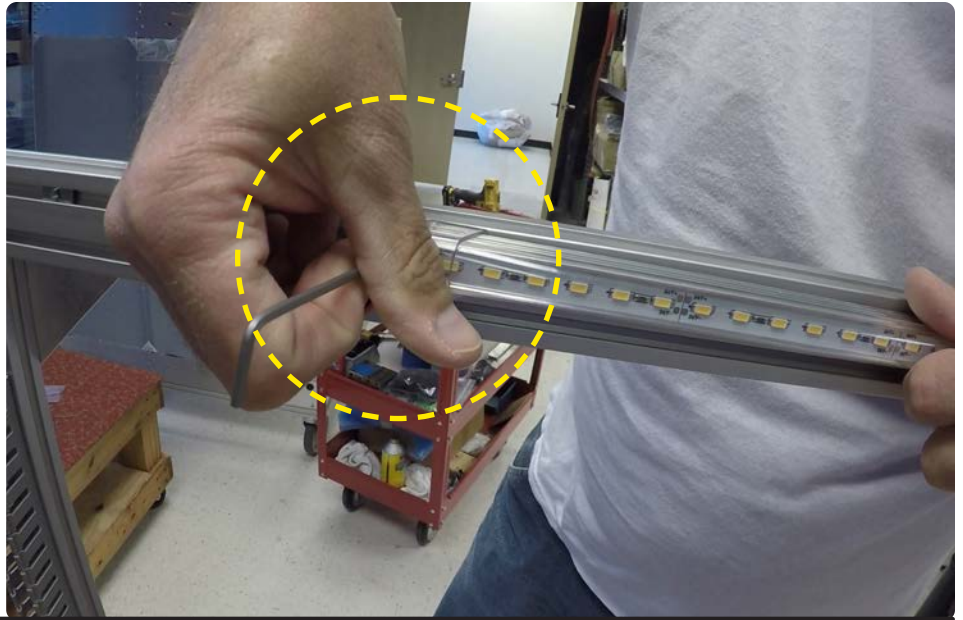
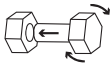
### E36

Recalling front header assembly from steps B2-B20, remove the [11537] M5 x 8 SHCS and [10224] M3x8mm SHCS from their respective T-nuts. Orient the LED strip such that the wire points towards the Gigabot® power switch. Loosely fasten this end of the strip to the M3 T-nut using a [10218] M3 Flat Washer, [10224] M3x8mm SHCS.



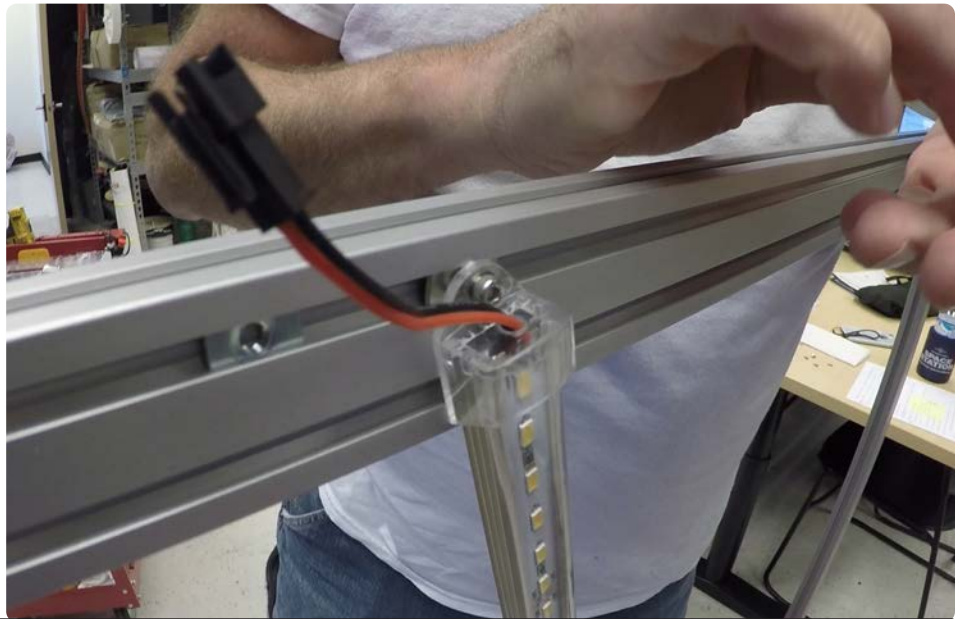
### **E37**

Tighten the screw using a 2.5mm Allen Key.



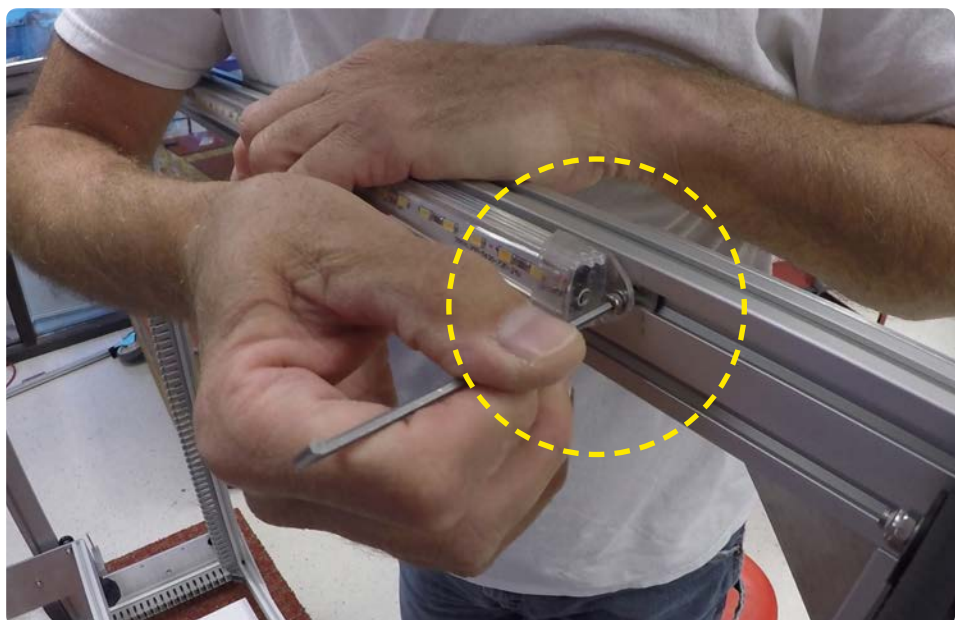
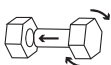
### **E38**

You can let this hang in this position while you prepare the hardware to fasten the other side.

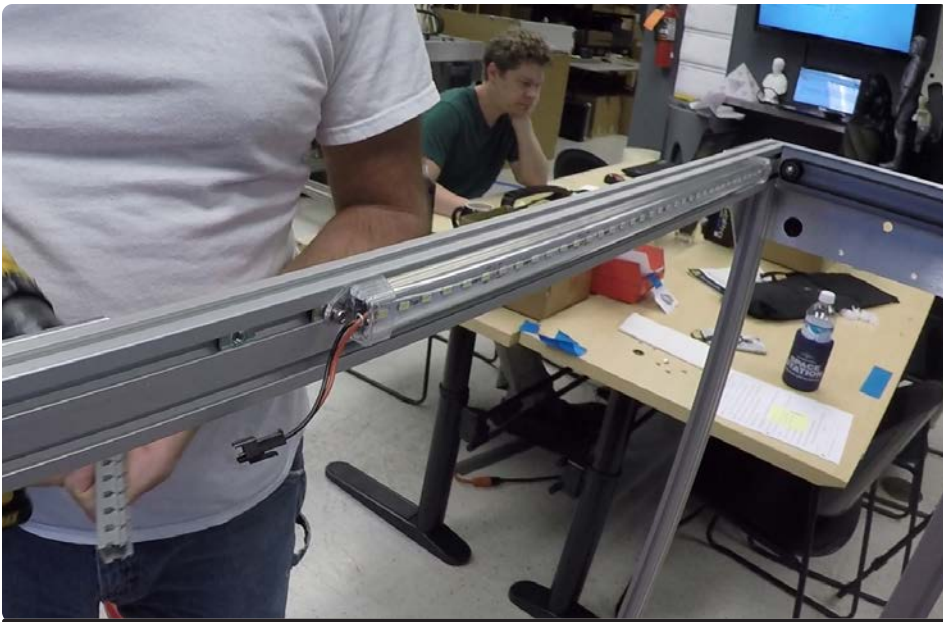


### **E39**

Similar to E36-E37, fasten the other side of the LED light strip to the M3 T-nut using a [10218] M3 Flat Washer, [10224] M3x8mm SHCS, and 2.5mm Allen Key.







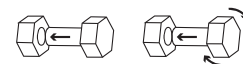
## E40

The LED light strip is now attached to the front header, but the final position will be determined after installing the corresponding Panduit.



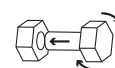
## E41

Insert 2 [11537] M5 x 8 SHCS into holes on each end of a #1 size 5.25" Panduit using the 3mm Allen Key.



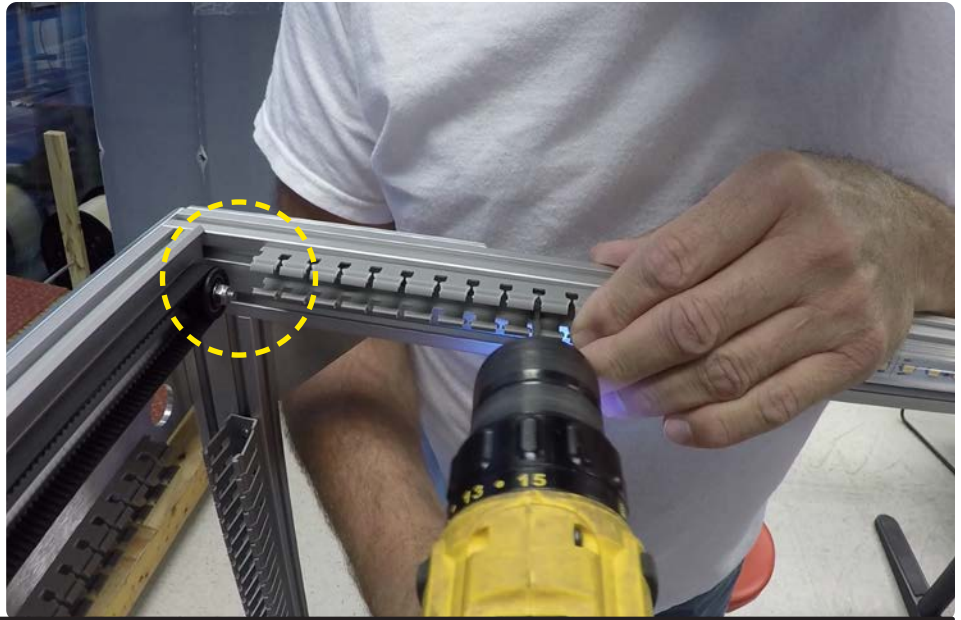
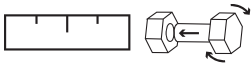
## E42

Fasten this Panduit to the M5 T-nuts in the front header using the 3mm Allen Key. Do one [11537] M5 x 8 SHCS at a time, as shown here.



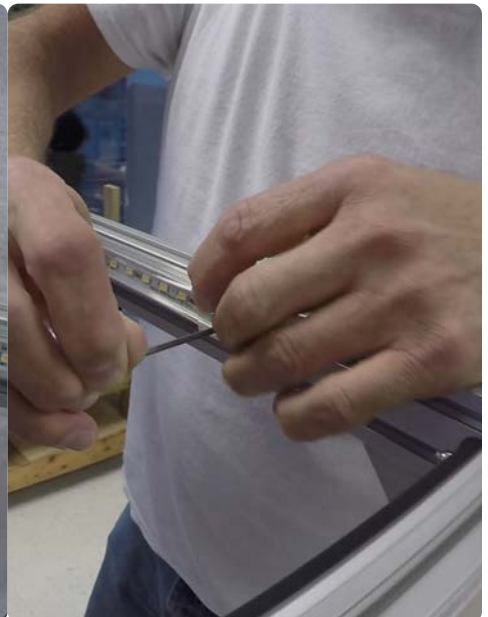
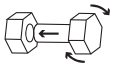
## E43

Space the Panduit roughly 3/8" from the [10241] M5x30mm BHCS on the idler pulley and fully fasten the Panduit into place.



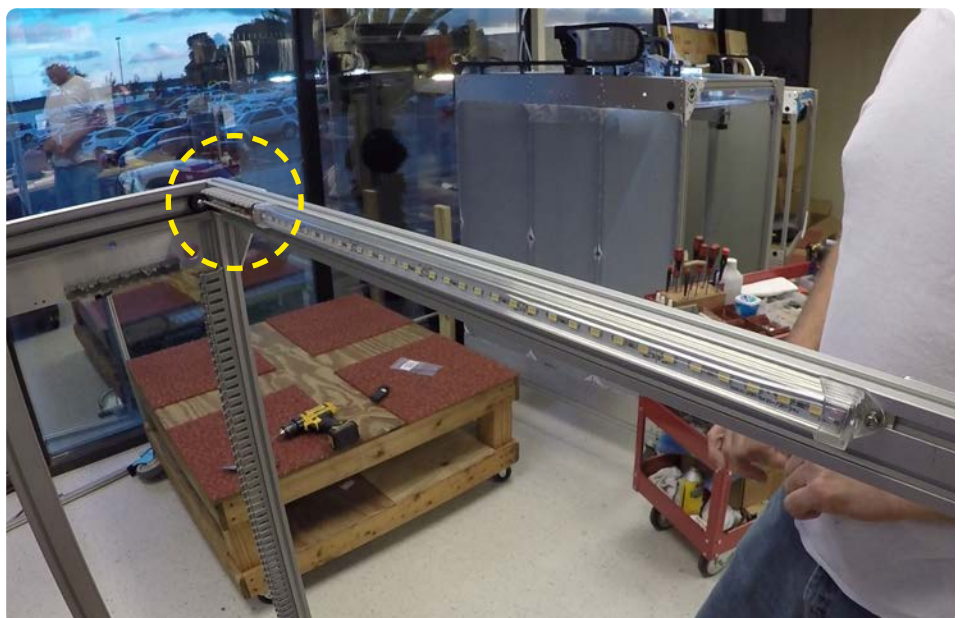
## E44

After fastening the Panduit, slide the LED light strip against the Panduit and fully fasten this into place using the 2.5mm Allen Key. Do not overtighten the screws, or you will break the plastic tabs.



## E45

The LED light strip and its Panduit are now fully fastened to the front header. You can route the LED wire through the Panduit to keep it out of the way.

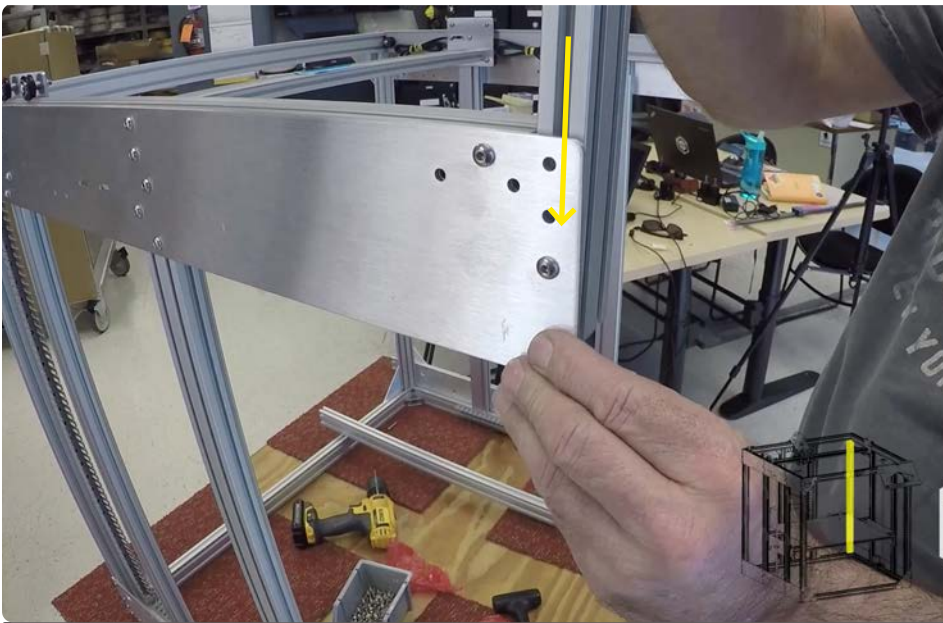






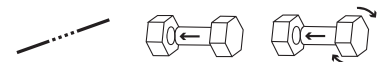
## E46

You are now ready to install the bridge assembly to the frame. With the extruders pointing towards the front of the Gigabot, roll the wheels onto the runway rails. Be sure that the Y-axis belts stay in between the upper and lower wheels as they mount to the runway rails.



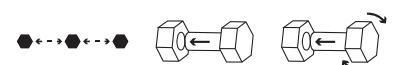
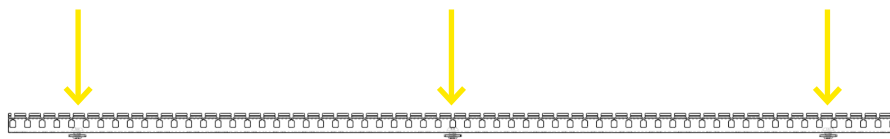
## E47

Mount the rear right vertical common rail by sliding it down into the rear right corner. There should already have been T-nuts installed to run through the slots of the rail that will hold it loosely in place. Finger tighten them once the rail is seated.



## E48

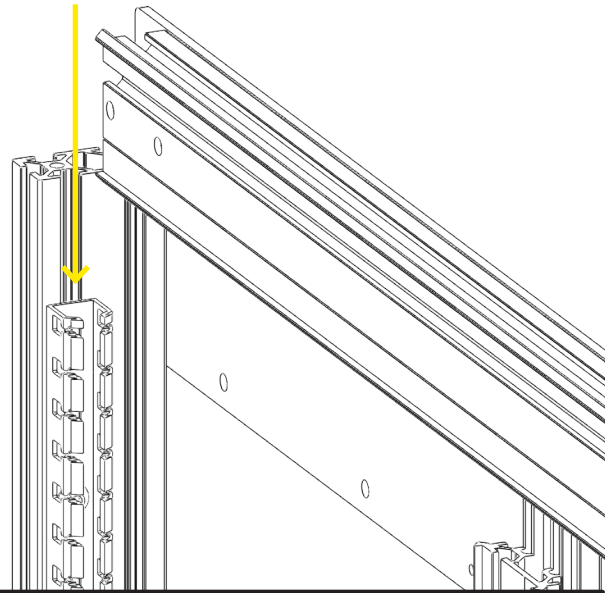
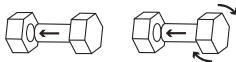
Evenly space and insert 3 [11537] M5 x 8 SHCS into the #1 30" Panduit and loosely fasten T-nuts on the screws.





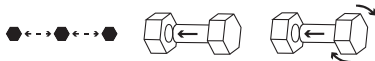
## E49

Insert this Panduit into the rear right vertical rail. There are two slots, so make sure to insert it in the innermost slot of the two. Let it run all the way down and then fasten the [11537] M5 x 8 SHCS with the 3mm Allen Key.



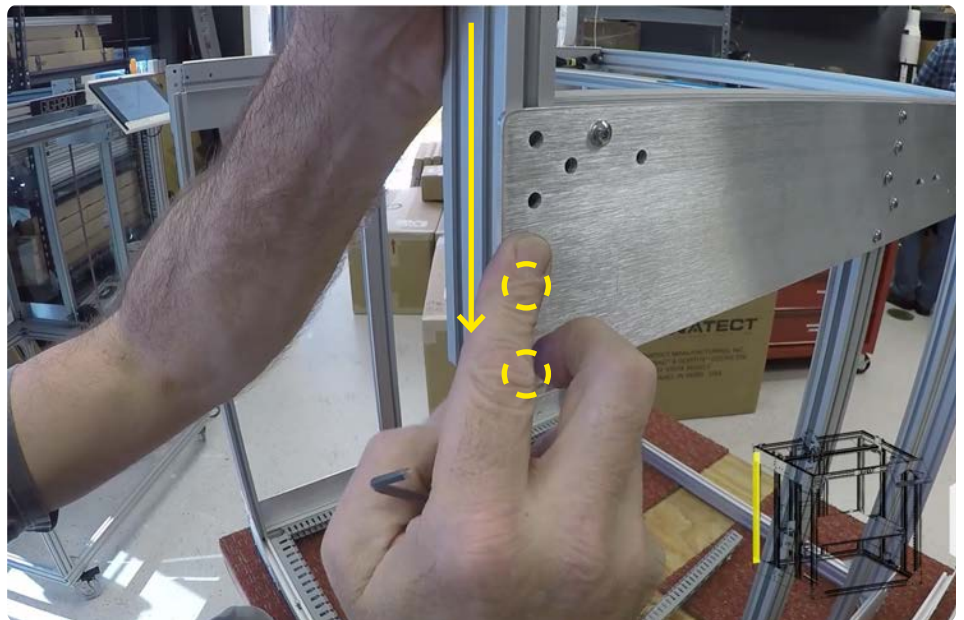
## E50

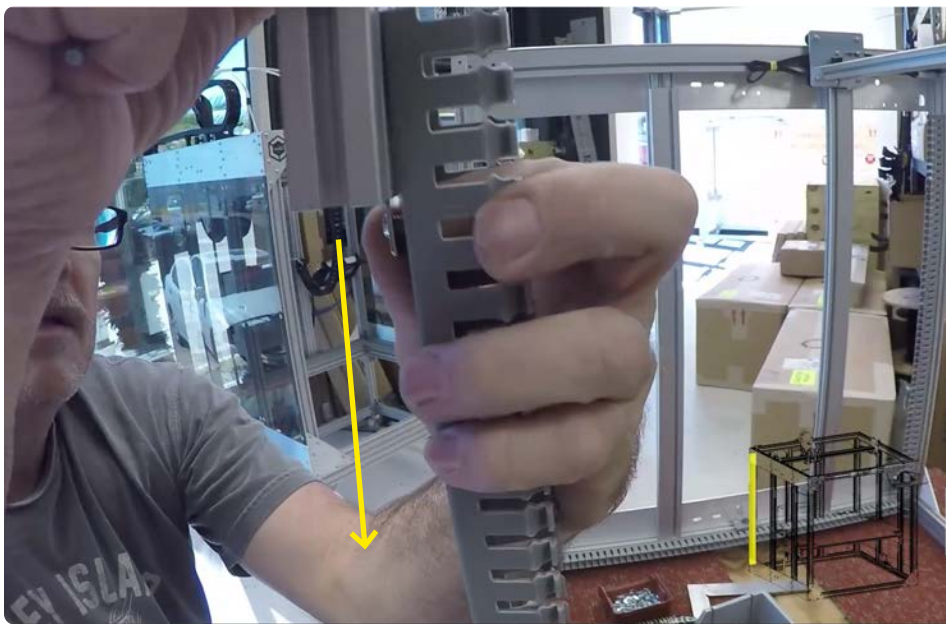
Evenly space and insert 3 [11537] M5 x 8 SHCS into the #3 30" Panduit and loosely fasten T-nuts on the screws.



## E51

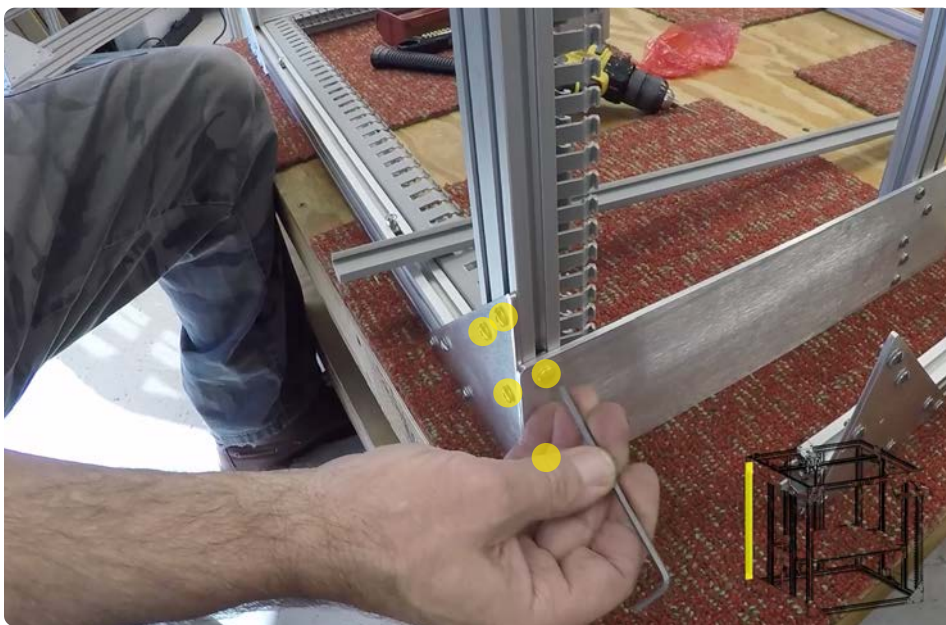
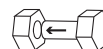
Get the rear left vertical rail started in the top 2 T-nuts of the side plate and hold this in place.





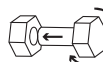
## E52

Start inserting the #3 30" Panduit into the innermost slot. Hold the Panduit in place and let the rail come down into the frame. As it descends, let the T-nuts on the Panduit run through the rail slots. Work the rail down until it is totally seated in the frame, with the side plate and corner plate T-nuts in the slots as well.



## E53

Hand tighten the [11537] M5 x 8 SHCS for this rail once it is seated. Also tighten the #3 30" Panduit to the rail.



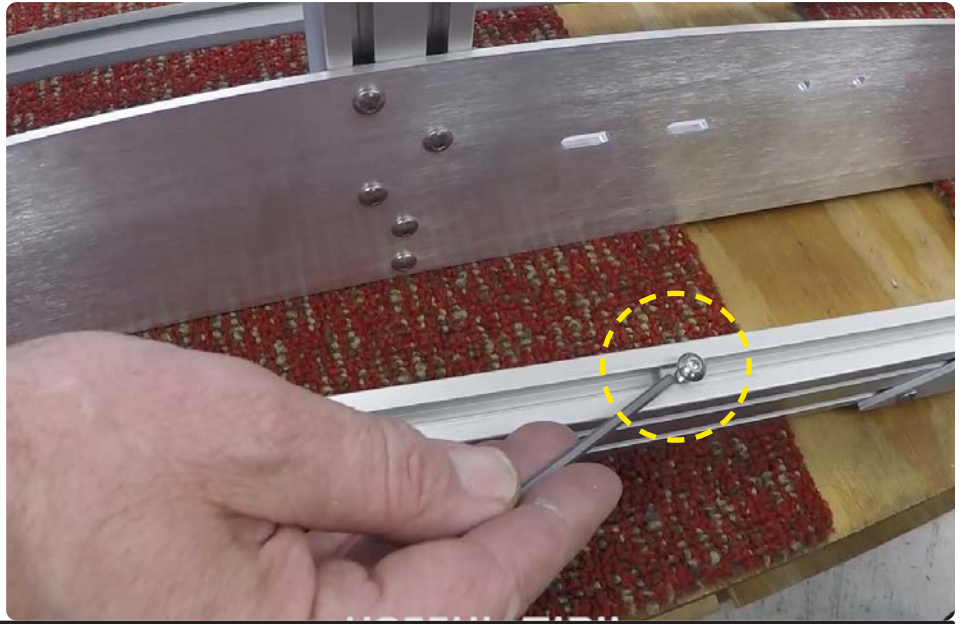
## E54

On the rear header, double check that the [11537] M5 x 8 SHCS and T-nuts are inserted into the corner plate holes. Use 6 [11537] M5 x 8 SHCS and 6 T-nuts.



## E55

Also check that the [10236] M5x10mm BHCS and M5 T-nuts are inserted to hold the electrical box uprights in place.

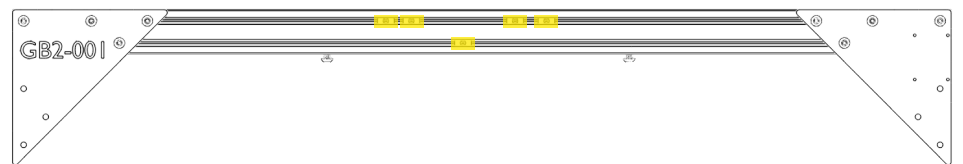


## E56

There should also be 2 extra T-nuts in the same slot to hold the #2 7.25" Panduit. (also +5 T-nuts for both FD and filament rod) The rear header includes the serialized corner plate and the machined corner plate for fastening the Y-axis cable carrier.



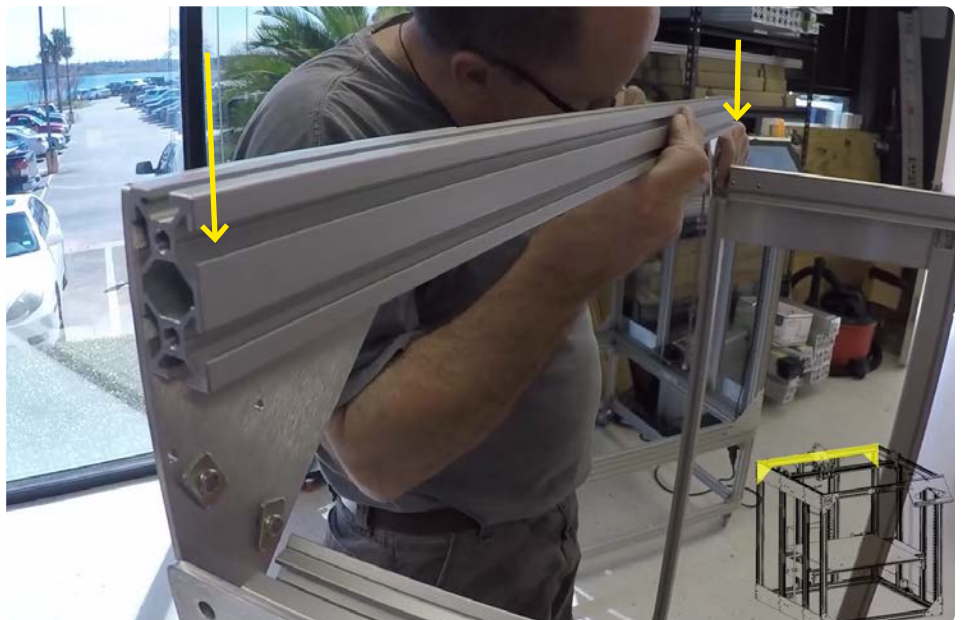
Bottom view



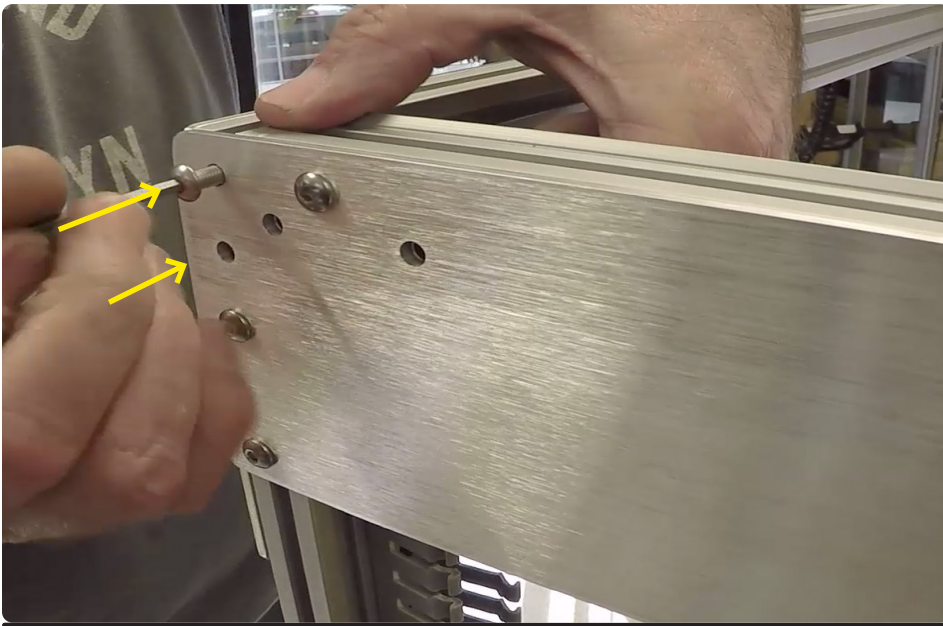
Back view

## E57

Similar to the front header, work the T-nuts down into the rear vertical rails until the rear header is seated on the Gigabot frame. Be careful not to pinch your fingers.

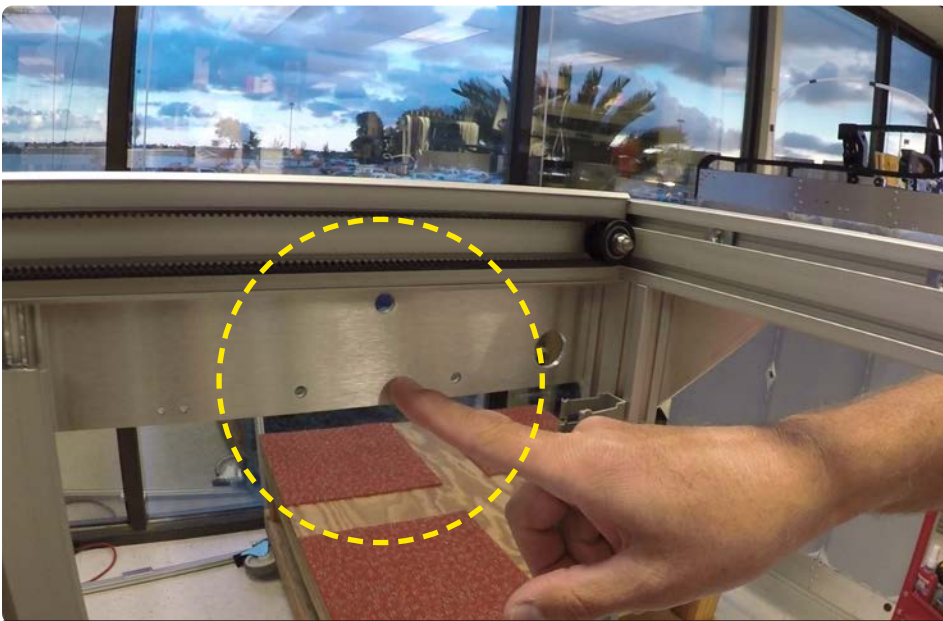
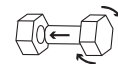






## E58

Fasten the rear header in place using 2 [10237] M5 x 12 BHCS at each end. Hand tighten them with the 3mm Allen Key.



## E59

Next, you will need to install the #1 size Panduit for the Z upper limit switch wires. The holes for this are located on upper right side plate when looking from the front of Gigabot.



## E60

Compare the holes on the Panduit with the side plate holes to determine where you need to insert the [11537] M5 x 8 SHCS on the Panduit. Regular Gigabots® use #1 size 2 3/8" Panduits, and XL use #1 size 5 1/4" Panduits.

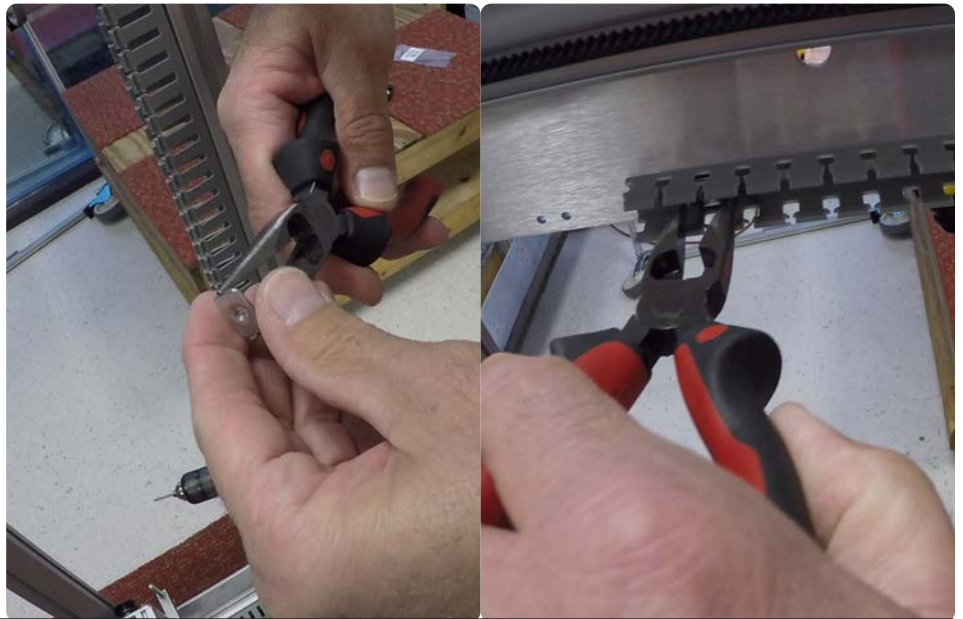
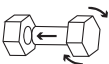
## E61

Insert a [11537] M5 x 8 SHCS into one of the holes from the other side of the side plate. Here, you can see the screw going through the hole and threading into the Panduit, which holds it in position.



## E62

Using pliers or another tool, hold an M5 T-nut against the [11537] M5 x 8 SHCS and fasten them together using a 3mm Allen Key.

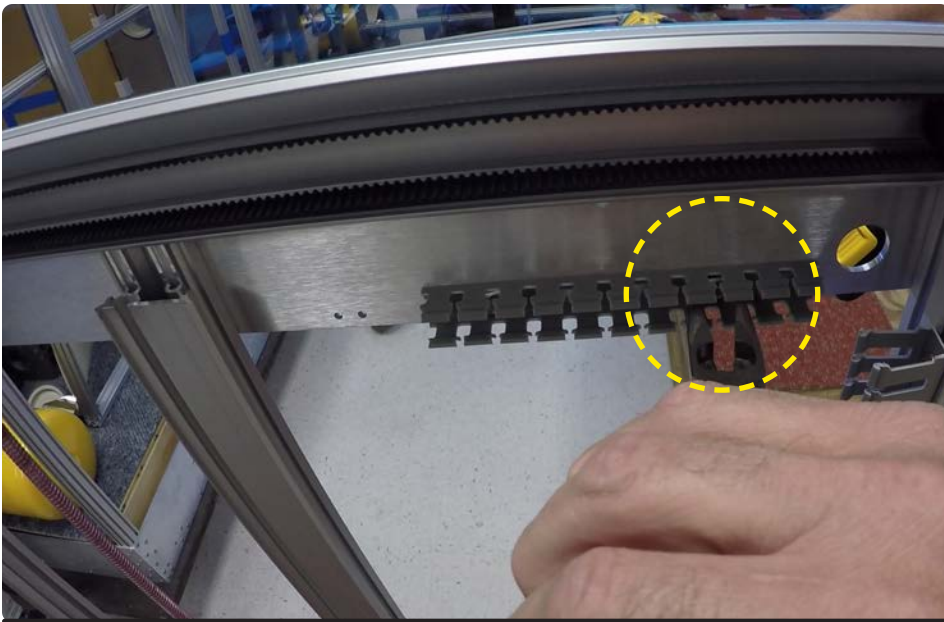


## E63

The T-nut and [11537] M5 x 8 SHCS now hold the Panduit in place, as shown.

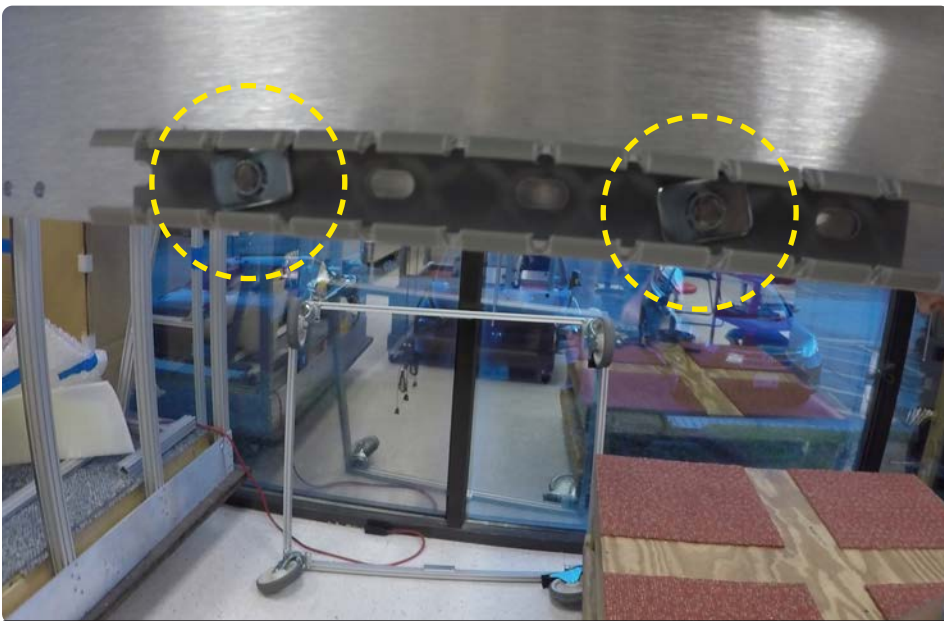
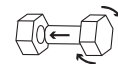






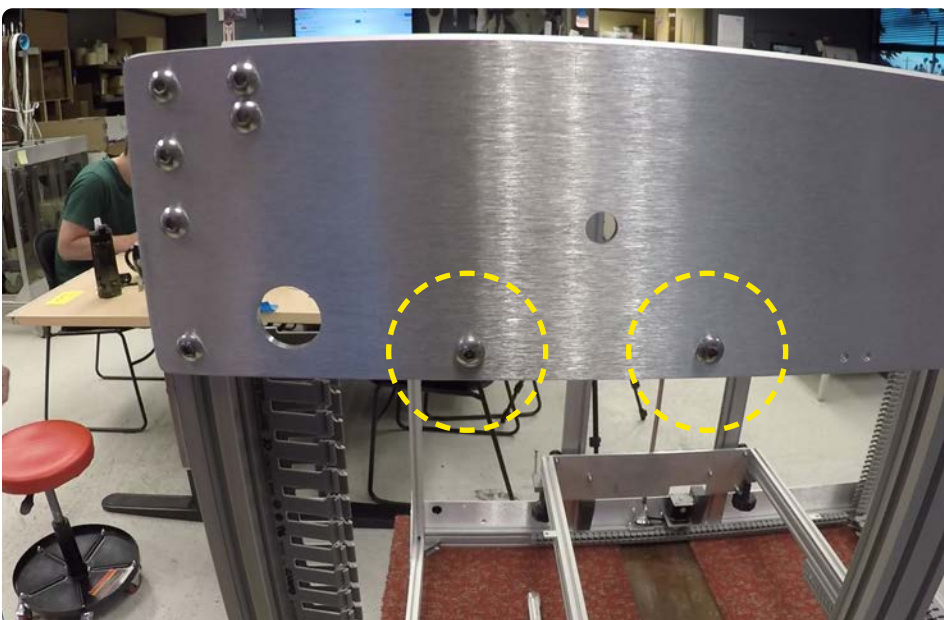
## E64

Repeat step E62 for the other Panduit hole.



## E65

Now, the Panduit is completely fastened to the side plate.



## E66

Here, [11537] M5 x 8 SHCS that fasten the Panduit are shown from the other side of the side plate.



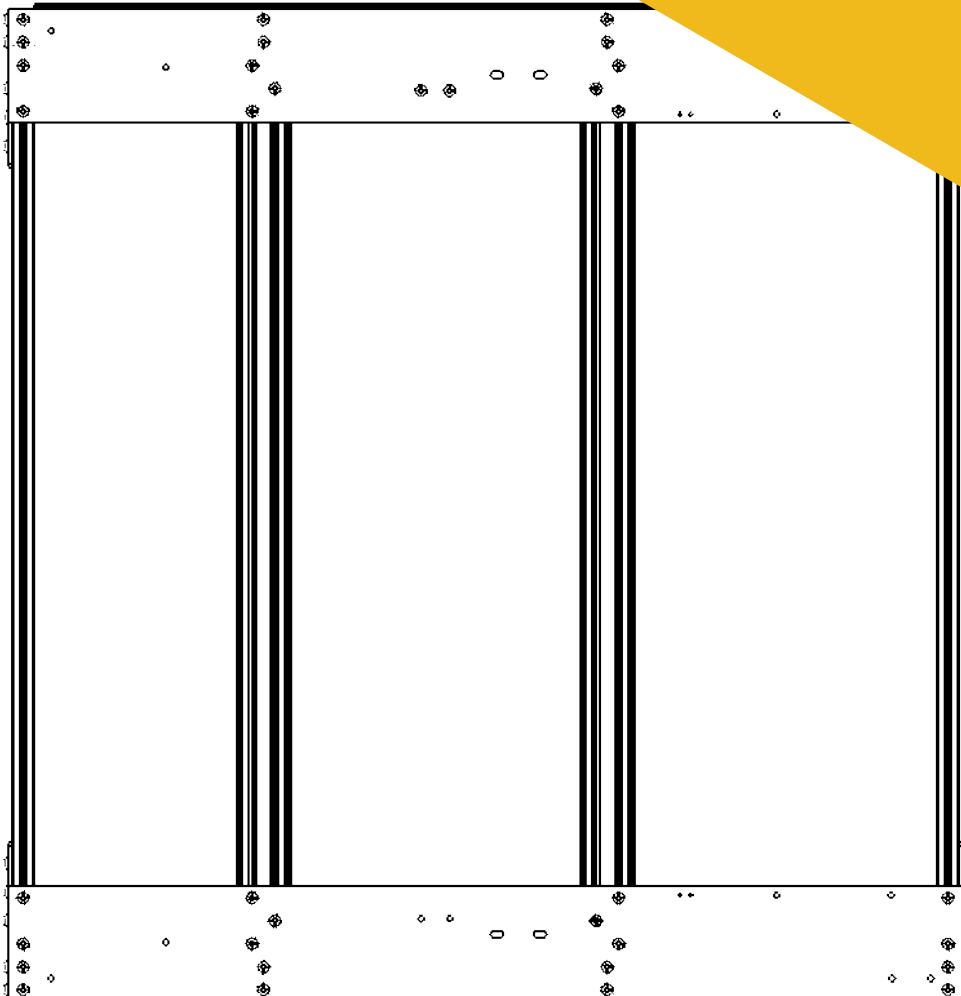
## **E67**

See the following video links for more detailed demonstrations:

- [Frame assembly](#)
- [LED light strip installation](#)
- [Z upper limit switch Panduit installation](#)



# ***SQUARING THE FRAME***



# TOOLS & PARTS

*Refer to packing list to identify parts*

| BOX # | PART                               | QUANTITY |
|-------|------------------------------------|----------|
| 1     | [10334] Straight Edge Steel Square | 1        |
| 6     | [10046] Allen Wrench Set           | 1        |
| 1     | [10423] Z Upright Alignment Tool   | 2        |

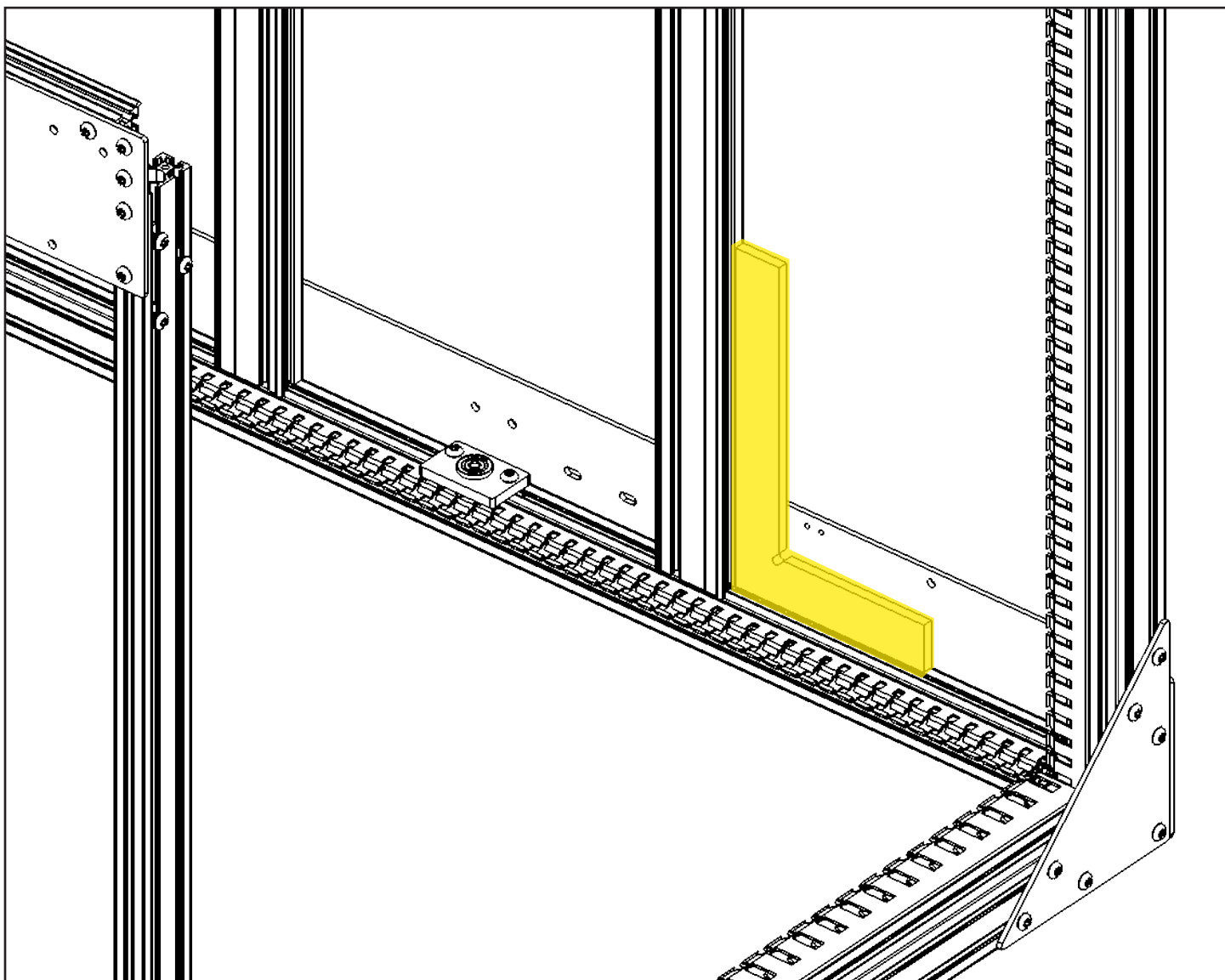
**WATCH THE  
ACCOMPANYING  
VIDEO:**

<https://youtu.be/BCIpl576FF4>



# OVERVIEW

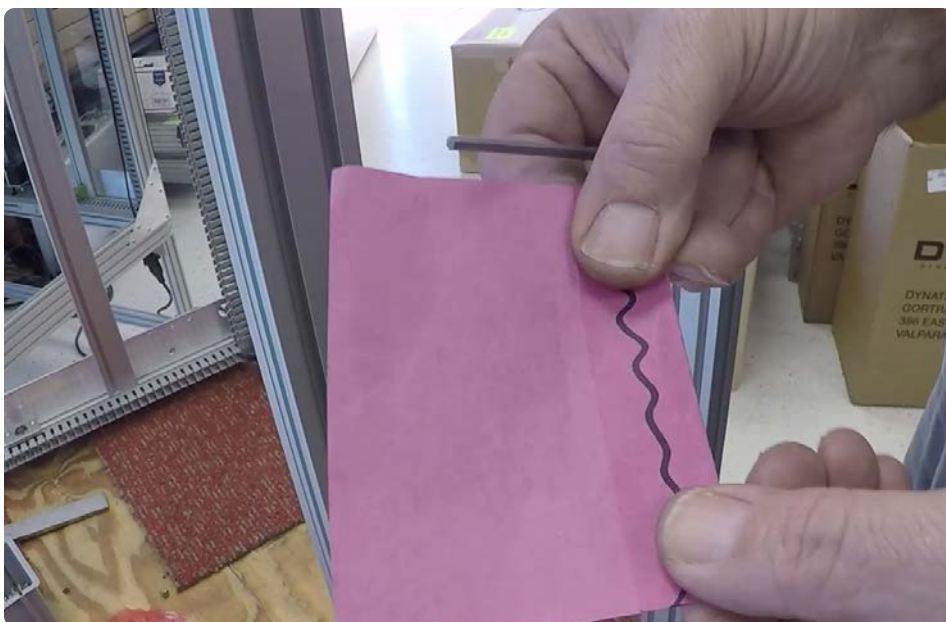
The [10334] Straight Edge Steel Square (as shown below) and the Z alignment fixtures will be used to square up each upright of the frame. Be patient and take your time to correctly go through this process to ensure that your Gigabot® is as square as possible. If Gigabot® is out of square, your prints will also be out of square.



# TIPS & TRICKS

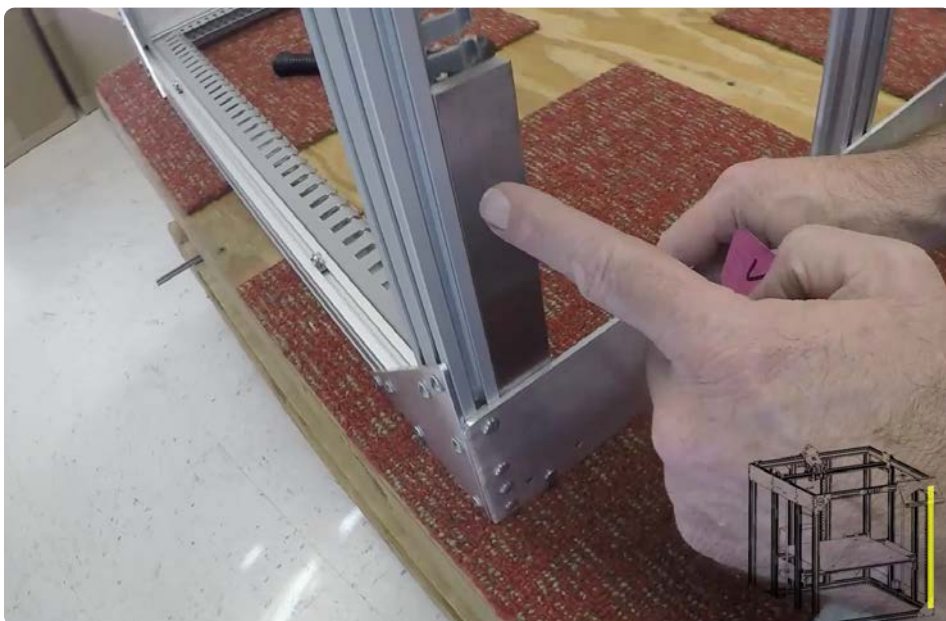
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- #1** Work on a flat surface.
- #2** Take your time when squaring the upright rails to ensure the frame is properly built.
- #3** Closely follow the steps outlined for using the [10423] Z Upright Alignment Tools (refer to the video if needed).



## F1

When squaring the frame, it will be helpful to use a small piece of paper, such as a post-it note, along with the [10334] Straight Edge Steel Square.



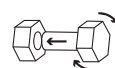
## F2

Starting with the rear left vertical rail, press the long leg of the [10334] Straight Edge Steel Square against the front of the rail.



## F3

If there is a noticeable gap between the rail and the square, hand tighten the lowest [11537] M5 x 8 SHCS attached to the rail while leaving all the other screws loosely fastened. This will let it act as a pivot point for the rail while making it square.





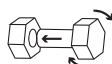
## F4

While using one hand to hold the square against the rail, use your other hand to adjust the position of the rail until it sits vertically.



## F5

Keeping one hand on the rail, use your other hand to snug up the M5 x 8 SHCS directly above the pivot point. This will temporarily hold the rail in place.



## F6

Use the piece of paper as a feeler gauge/shim between the rail and the [10334] Straight Edge Steel Square. Hold the paper against the rail using the square and tug on it. You should feel the same amount of resistance to the pull all along the length of the square.

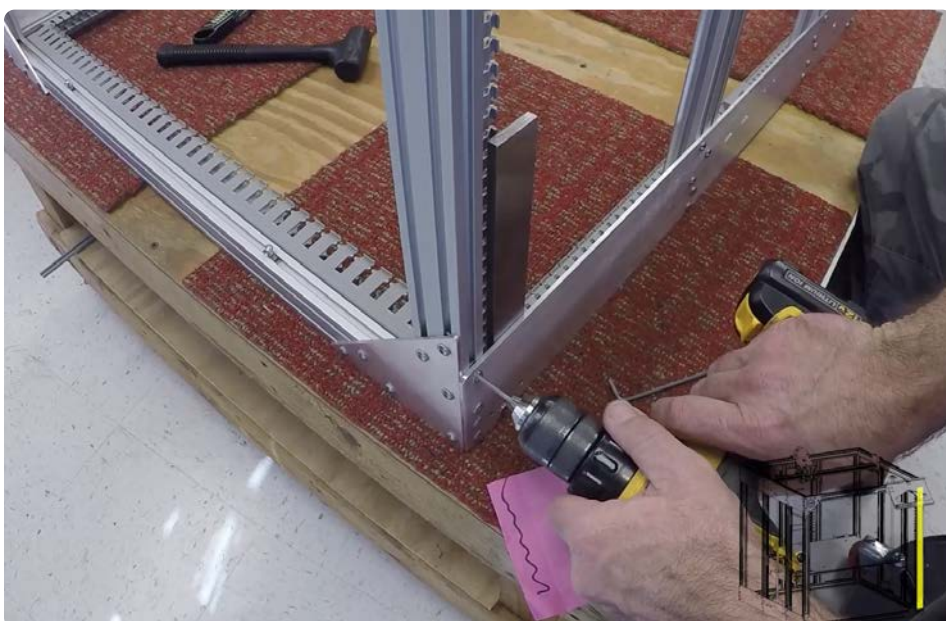
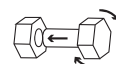






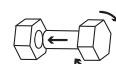
## F7

Once the squareness has been set, snug up all of the lower [11537] M5 x 8 SHCS. Check the squareness once more and adjust if needed.



## F8

If it is still square, fully tighten all of the lower [11537] M5 x 8 SHCS connected to the rail to fully fasten it to the lower frame.



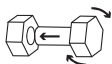
## F9

Repeat the squaring process all the way around each corner. Prioritize squaring the rails so that they are not pitched forward or backward relative to the frame of the Gigabot (Y-axis). The rail should already be fairly square between the left and right directions (X-axis).



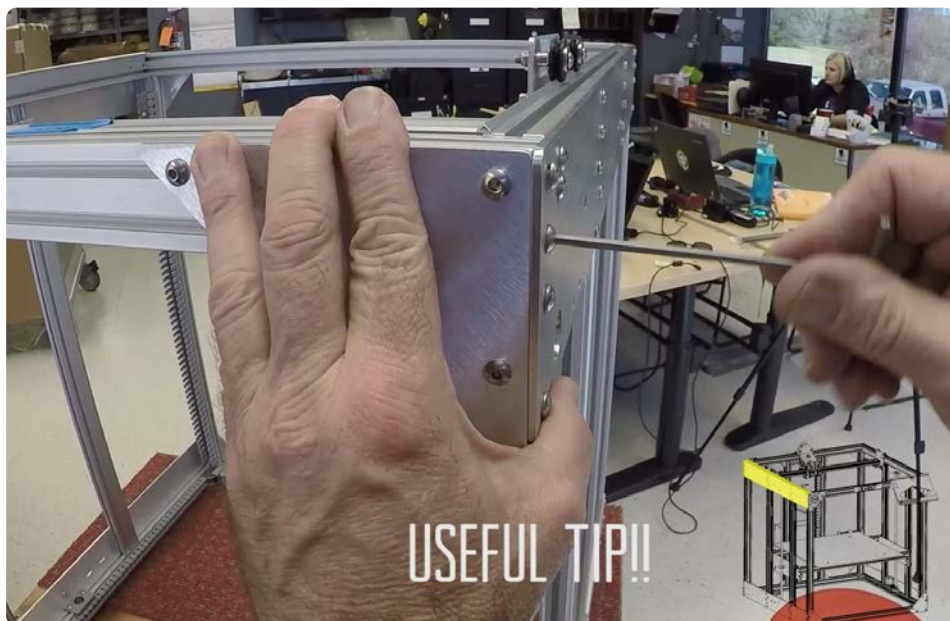
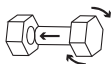
## F10

Starting at the rear right corner of the frame, press down on top of the header and fully tighten the [11537] M5 x 8 SHCS in the corner plate to secure it. Move around the frame and tighten down all 4 of the upper corner plates.



## F11

Again, at the rear right corner, push the side plate assembly slightly up so that the top surface of the runway rail is barely above the top surface of the cross rail on the header. Then snug up the [11313] M5 x 12 SHCS that fasten to the cross rail.



USEFUL TIP!!

## F12

Repeat this for each corner.







## F13

(If you have them,) attach framing clamps along the runway rails of the frame to hold the headers against the side plate assemblies. This will make sure that there are no gaps between the cross rails and the runway rails.



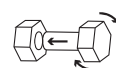
## F14

Again, use the [10334] Straight Edge Steel Square and a hammer to make the top surfaces of the rails flush. Have the long leg of the square laying flat across the top of both the runway and cross rail. Use the hammer to gently bring the runway rail down until it is flush with the cross rail.



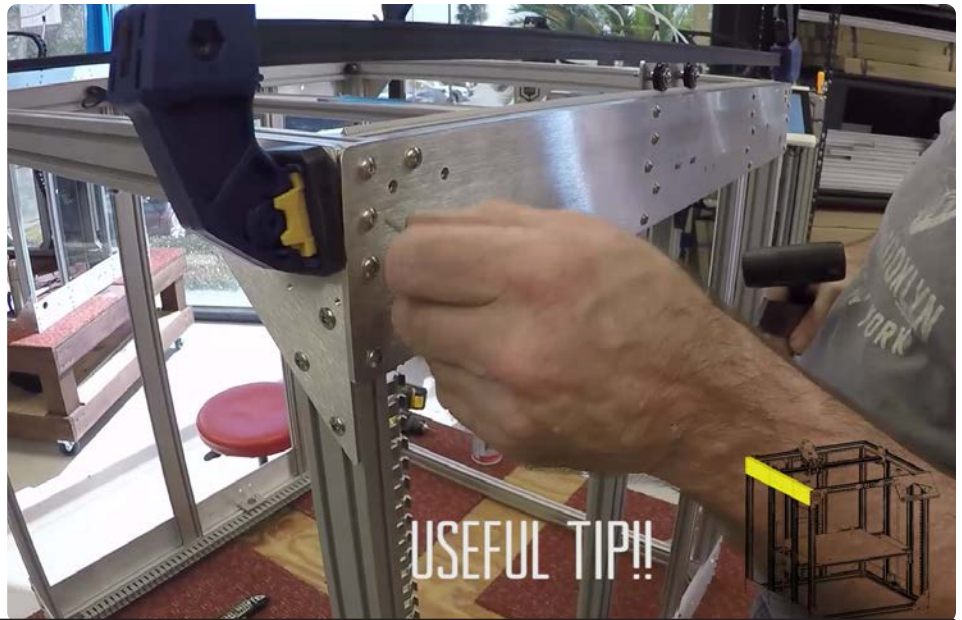
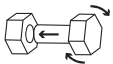
## F15

Repeat this for the opposite corner on the same side plate assembly. Gradually tighten the [11537] M5 x 8 SHCS as you go and continuously check for flushness on top of the rails.



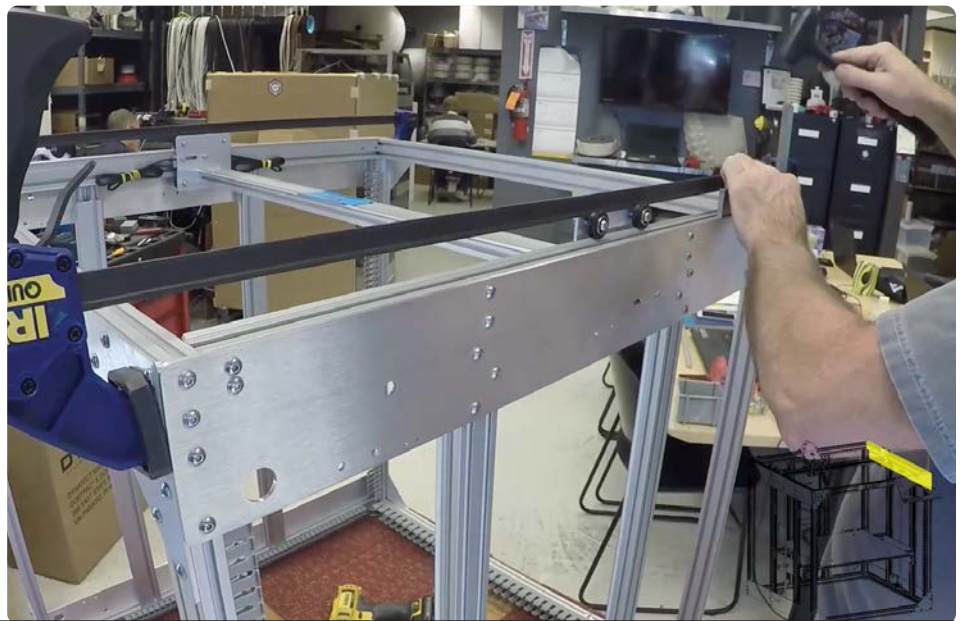
## F16

When both the front and rear of the side plate are flush with the front and rear headers, fully tighten the remaining screws on the side plate with the exception of the Z upright screws.



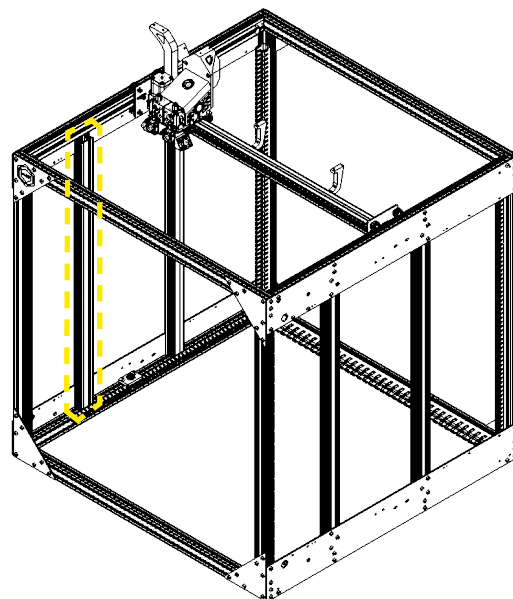
## F17

Do this all again for the corners of the other side plate assembly and then remove the framing clamps once finished.



## F18

Next will be aligning the Z uprights. All Z uprights should still be only loosely fastened to the frame at both the top and the bottom. Start with the front left Z upright.

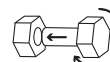






## F19

Notice how the bottom of the Z upright has room to move forward and backward. Push this all the way forward and make a pencil mark on the rail below it to where Z upright stops.



## F20

Then, pull the Z upright as far back as it will go. You can also make a mark here to help visual the total travel.



## F21

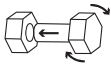
Move the Z upright halfway between its forward and backward limits (we typically find this to be about 1/32" from either mark).





## F22

Tighten the lowest [11537] M5 x 8 SHCS on the Z upright, similar to when the corner vertical rails were squared earlier.



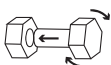
## F23

Use the [10334] Straight Edge Steel Square to square this Z upright in the exact same way as before. Use the paper to gauge the rail's parallelism with the square.



## F24

Hand tighten the top screws to temporarily hold the Z upright in place and double check the squareness. Adjust as needed.

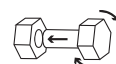






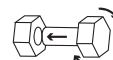
## F25

Once square, fully tighten both the bottom and top screws for the Z upright. You are now ready to use the Z alignment tools to set the spacing for the rear Z upright.



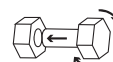
## F26

Install one of the alignment tools on the top of the Z uprights with the machined (shiny) side facing up. Fit the Z uprights in the grooves and push the tool all the way up until it contacts the side plate. Tighten the set screws on the sides of the tool with a 3mm Allen Key to hold it in place.



## F27

Similarly, install the other alignment tool on the bottom of the Z uprights with the machined side facing down and contacting the lower side plate. Fasten it in the same way as above.





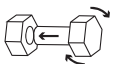
## F28

Perform a visual check to make sure that there is no gap between the inside of the alignment tool and the rail, as shown. This should be the case for both the top and the bottom.



## F29

Fully tighten the top and bottom screws for the Z uprights. Good practice is to gradually tighten them evenly rather than fully tightening them one at a time.

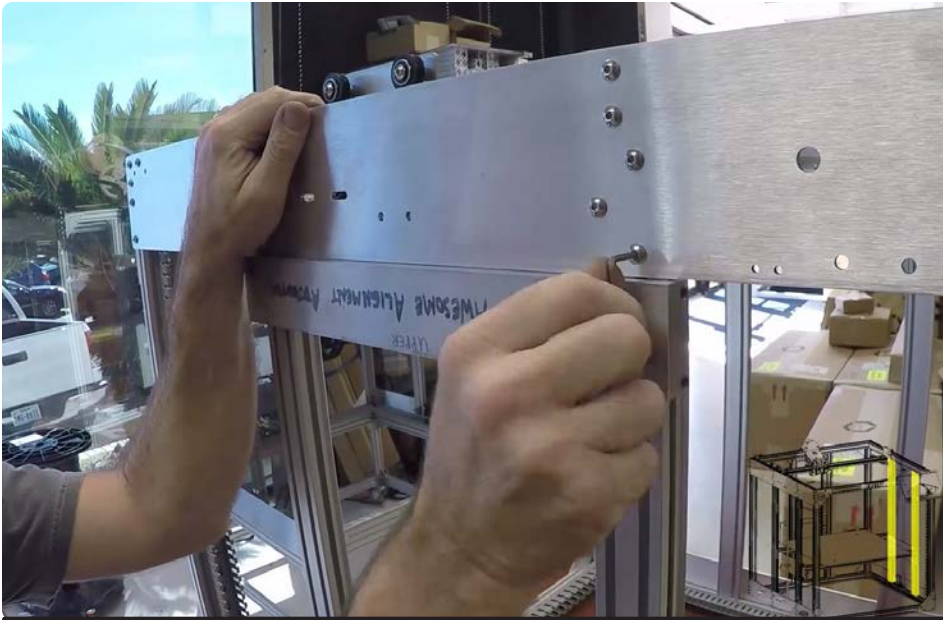


## F30

Loosen the set screws to remove the alignment tools. They should be fairly tight on the rails and require some force to remove.







### **F31**

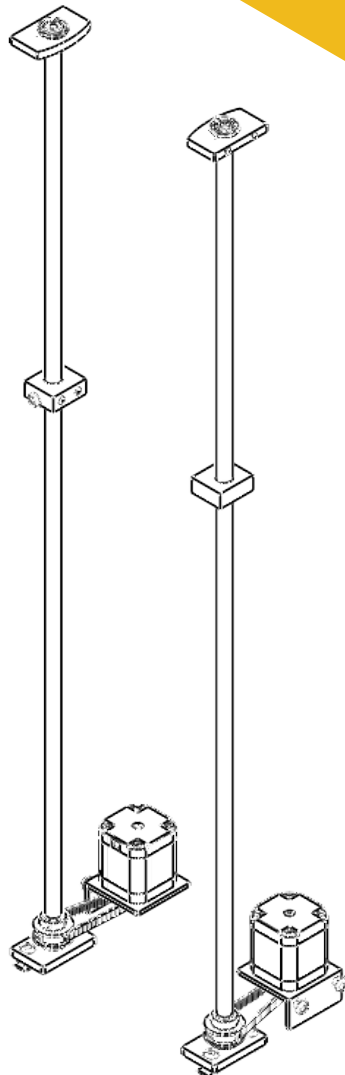
Repeat this same process on the right side Z uprights, beginning with centering and squaring the front right Z upright and going all the way through using the alignment tools to space them apart.

### **F32**

[For a demonstration of these step by step instructions, please see our video for this section.](#)



# ***THREADED RODS & Z MOTOR INSTALLATION***



# TOOLS & PARTS

*Refer to packing list to identify parts*

| BOX #     | PART                         | QUANTITY |
|-----------|------------------------------|----------|
| 8         | [11907] GB3+ Large Nut Cup   | 2        |
| 6         | [10046] Allen Wrench Set     | 1        |
| 1         | [10359] ACME threaded rods   | 2        |
| Snappybox | [10259] Threaded rod pulleys | 2        |
| 6         | [10175] [10175] Grease       | 1        |
| Snappybox | [10706] Upper bearing blocks | 2        |
| 5         | [11089] GB3+ Motors X, Y, Z  | 2        |
| Snappybox | [10069] MXL belt             | 2        |
| Snappybox | [11537] M5 x 8 SHCS          | 4        |
| Snappybox | [10237] M5x12 BHCS           | 4        |
| Snappybox | [10004] Z rod alignment tool | 1        |

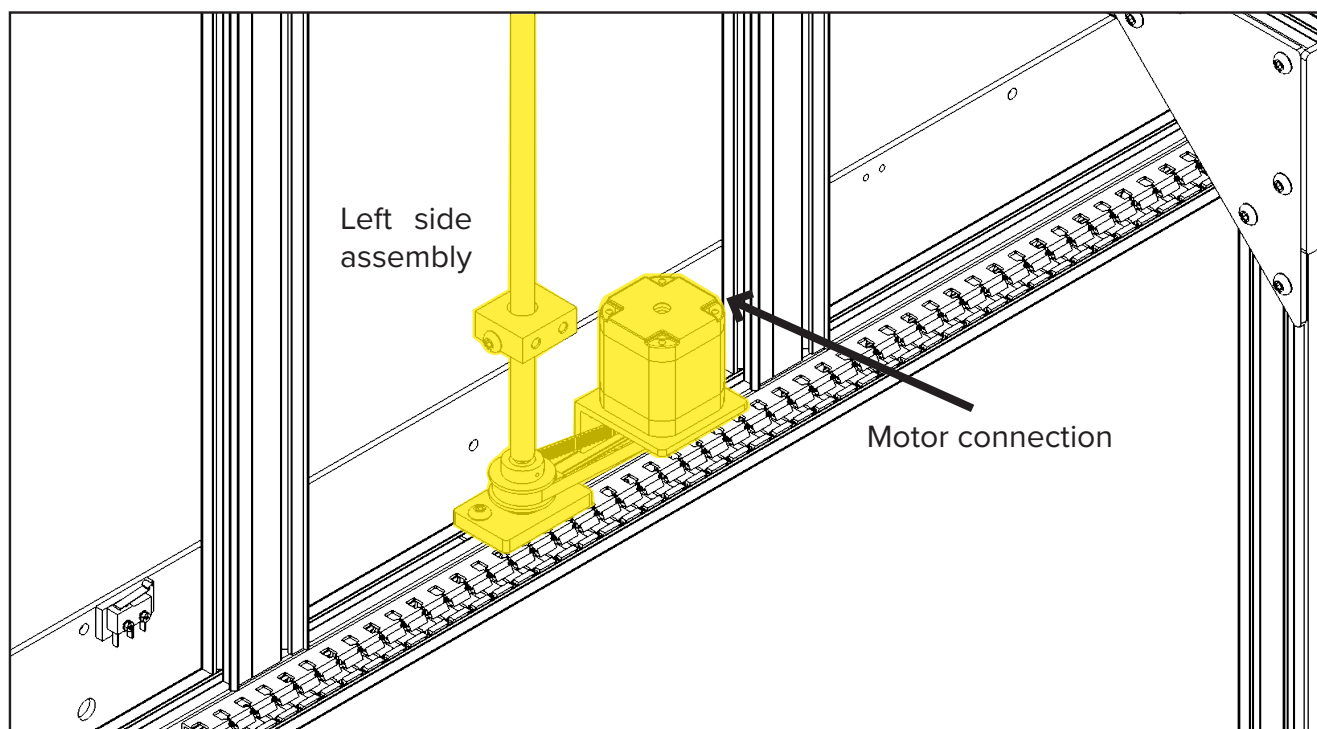
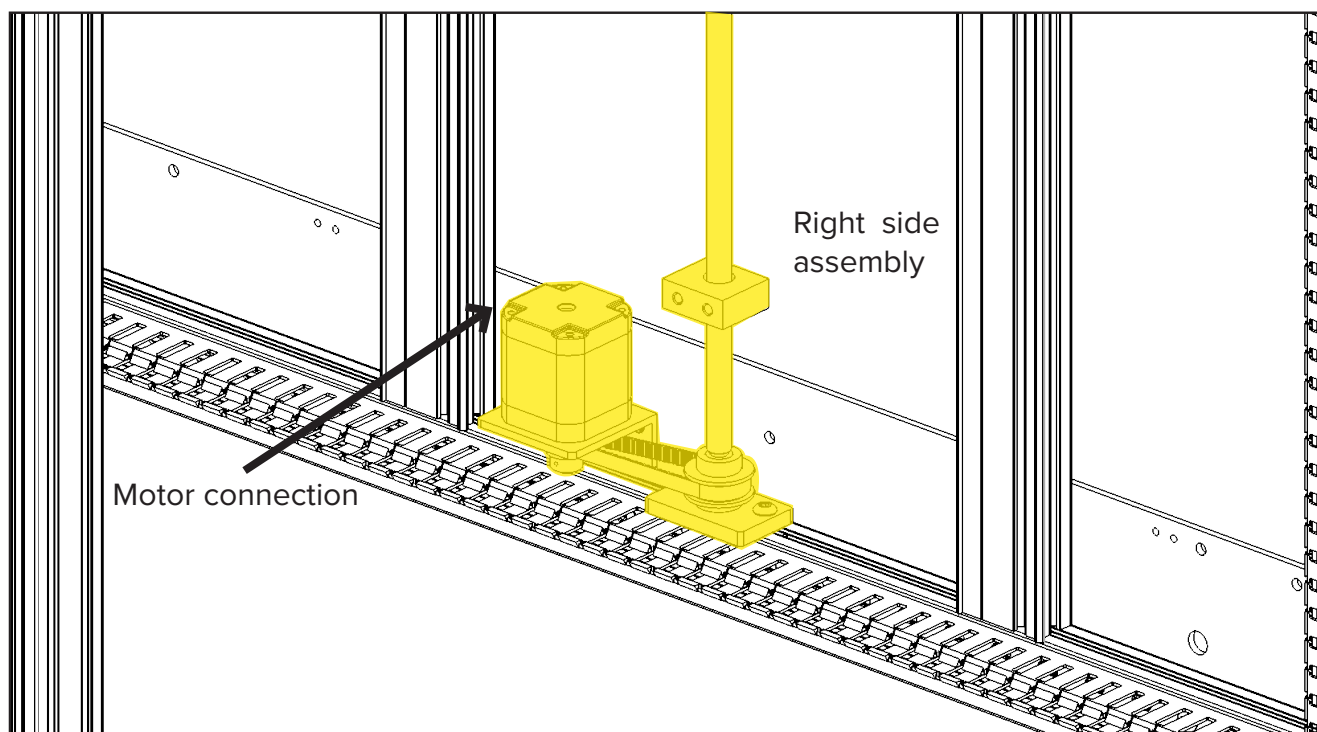
**WATCH THE  
ACCOMPANYING  
VIDEO:**

<https://youtu.be/K4mky41-6fo>



# OVERVIEW

You will install the Z motor and ACME threaded rod assemblies in the newly squared frame. These assemblies are what will drive the bed plate up and down in the Z axis.



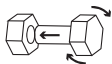
# TIPS & TRICKS

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- #1** Work on a flat surface.
- #2** Note that the Z motor assemblies are mirrored, with the motor cable connections always facing the rear of the frame.
- #3** The [10175] Grease is very messy and will easily stain clothing. Be prepared to wipe it off of your hands and wear clothes that you do not mind getting dirty, just in case.
- #4** In step G12, double check that the upper bearing block has the bearing protruding above the block instead of below. This is a safety feature in case the ACME threaded rods start to bind--the bearings will pop out of place without causing damage to the nut cups, bed side plates, or any other parts.

## G1

Check that the nut is secured in the nut cups by tightening the set screw with a 3mm Allen Key



## G2

With the nut facing away from you, fasten it onto the ACME threaded rod (Z rod). Let it run about 1.5" down the threads



## G3

Loosen the set screws from the Z rod pulleys using a 2mm Allen Key and place a drop of medium strength threadlocker (not provided) on each one.

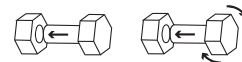






## G4

Reinsert them into the pulley just to start them, but do not fully tighten them yet



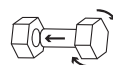
## G5

Place the pulley onto the end of the Z rod, with the face of the pulley about 0.035"-0.040" (approx. 1/32") past the edge of the "shoulder" on the rod.



## G6

Once the pulley is in place, fully tighten the set screws to keep them in place.



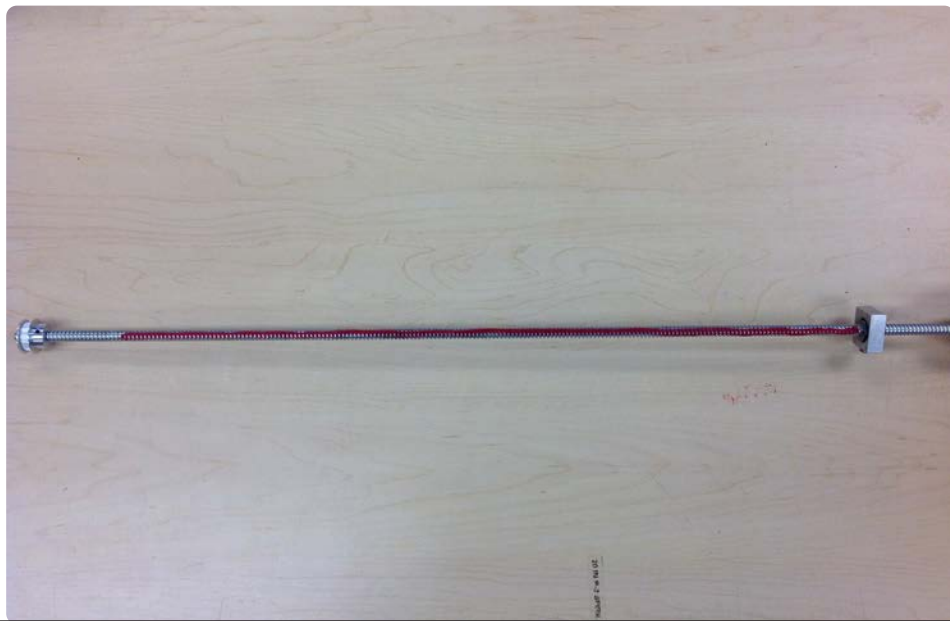
## G7

Do this for both rods. Clean any excess threadlocker as needed.



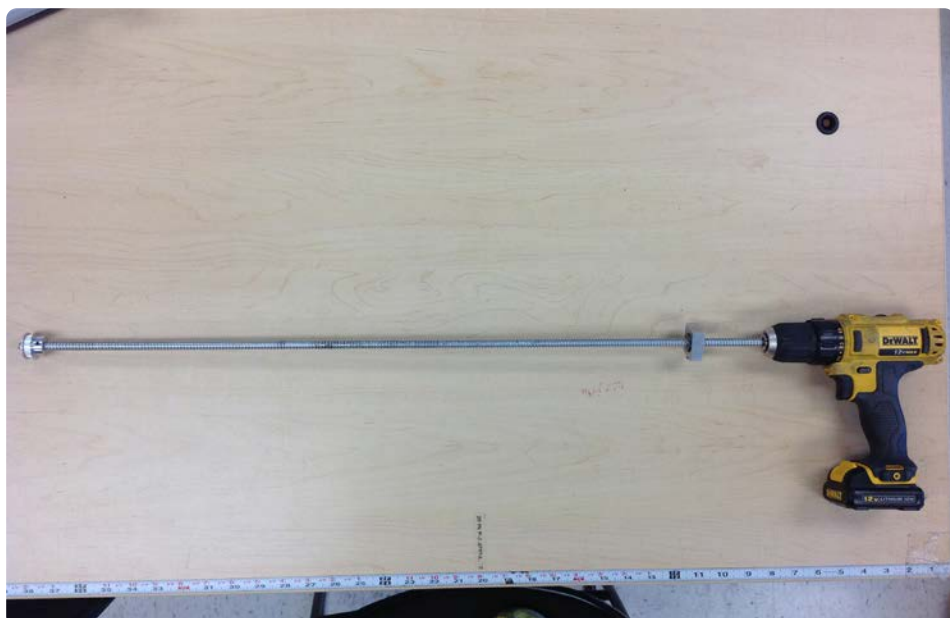
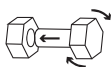
## G8

Deposit [10175] Grease along the length of the Z rod, up to about 3" away from the other end. Be careful not to get this on your clothes!

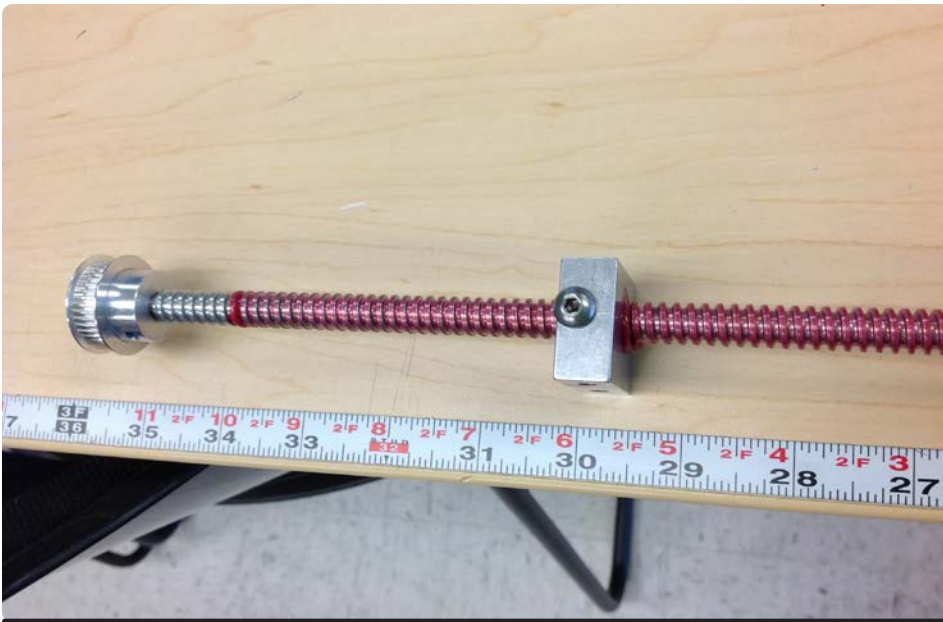


## G9

You can quickly spread the [10175] Grease around the threads by locking the bare end of the rod into the chuck of a drill and spinning it to work the nut cup along the length of the rod. Redistribute [10175] Grease that collects on the nut cup back on the rod, but again be careful not to get [10175] Grease on yourself.







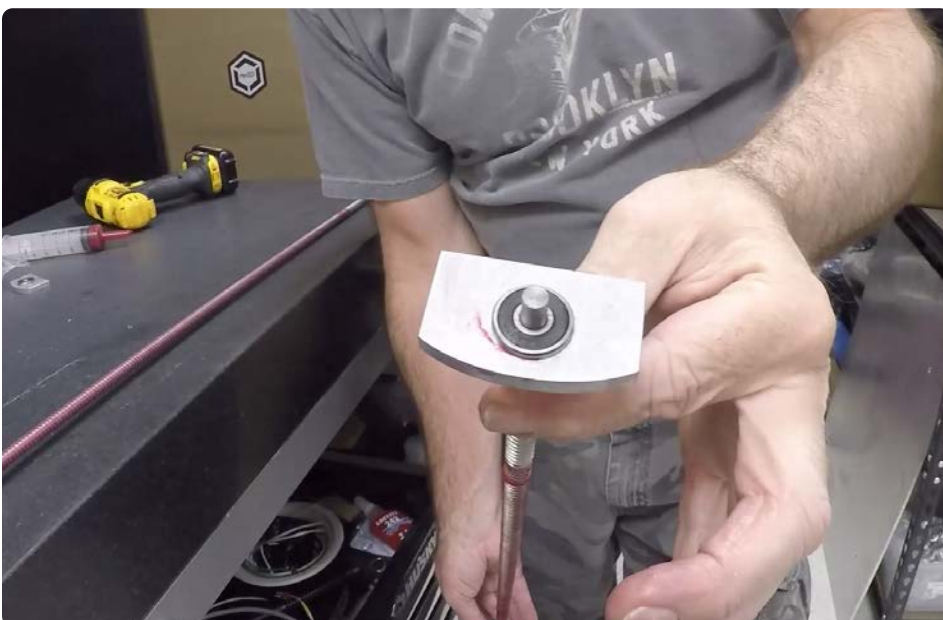
## G10

Repeat this until there is an even coat of [10175] Grease along the rod.



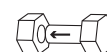
## G11

Do this for both rods.



## G12

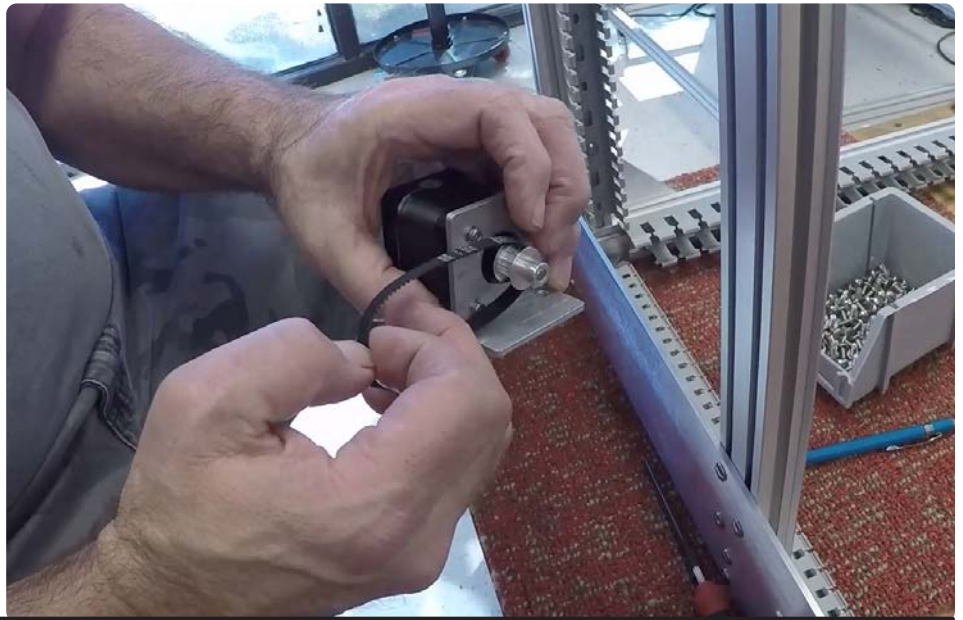
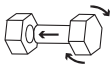
Place the upper bearing block onto one of the rods by inserting the rod end into the bearing. Insert it such that the bearing protrudes upward. If the bearing is indented, reverse the orientation of the upper bearing block. You are now ready to install the Z motors to the GB frame.





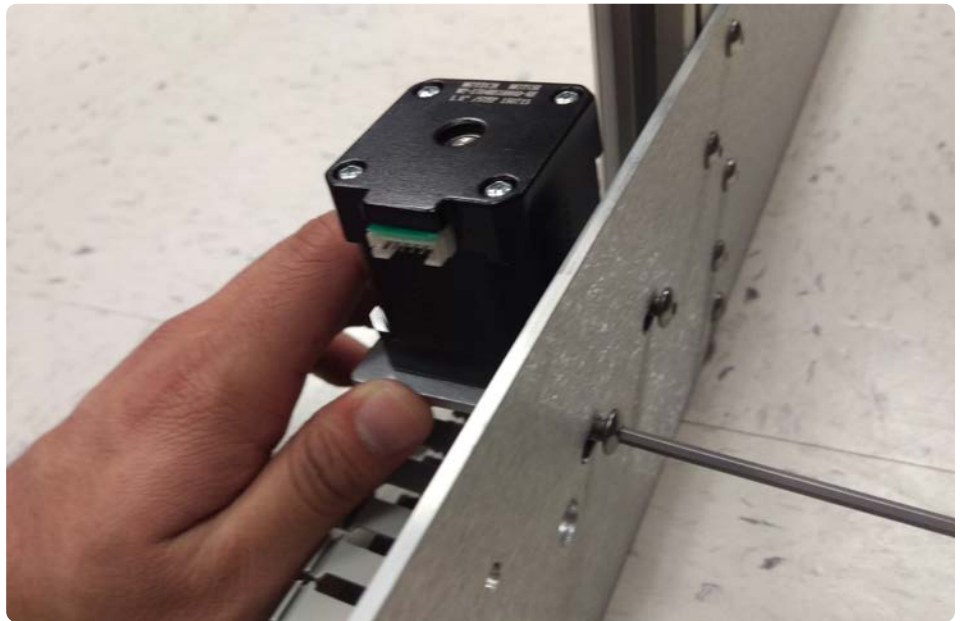
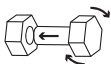
### G13

Loop the MXL belt onto the Z motor pulley prior to mounting the motors.



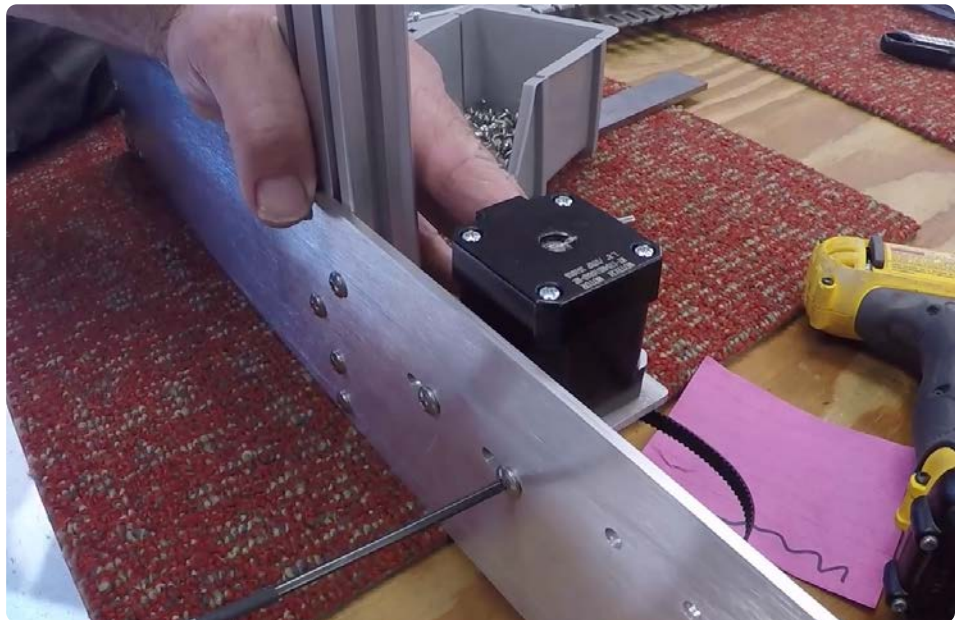
### G14

Fix the Z motors to the frame by loosely fastening the motor shelf to the side plate with 2 [11537] M5 x 8 SHCS each. The motor connectors must face the rear of the Gigabot®.



### G15

Push the motor forward in the slots and hang the MXL belt on the bearing in the lower bearing block.





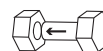
## G16

Bring one of the Z rod assemblies and loop the MXL belt around the pulley on the Z rod.



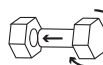
## G17

Insert the bottom of the rod into the bearing in the lower bearing block.



## G18

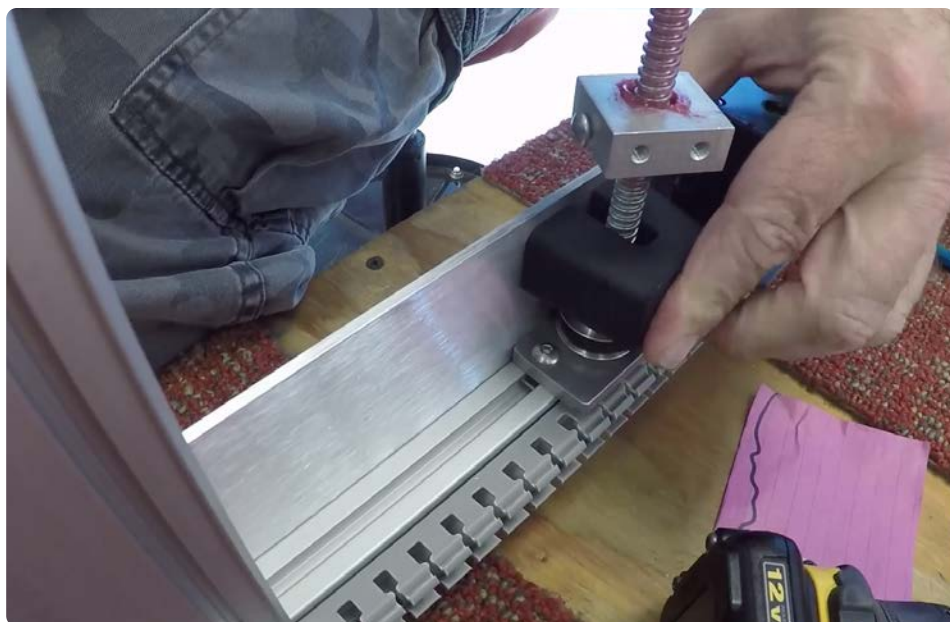
Loosely fasten the upper bearing block to the frame using 2 [11313] M5 x 12 SHCS.





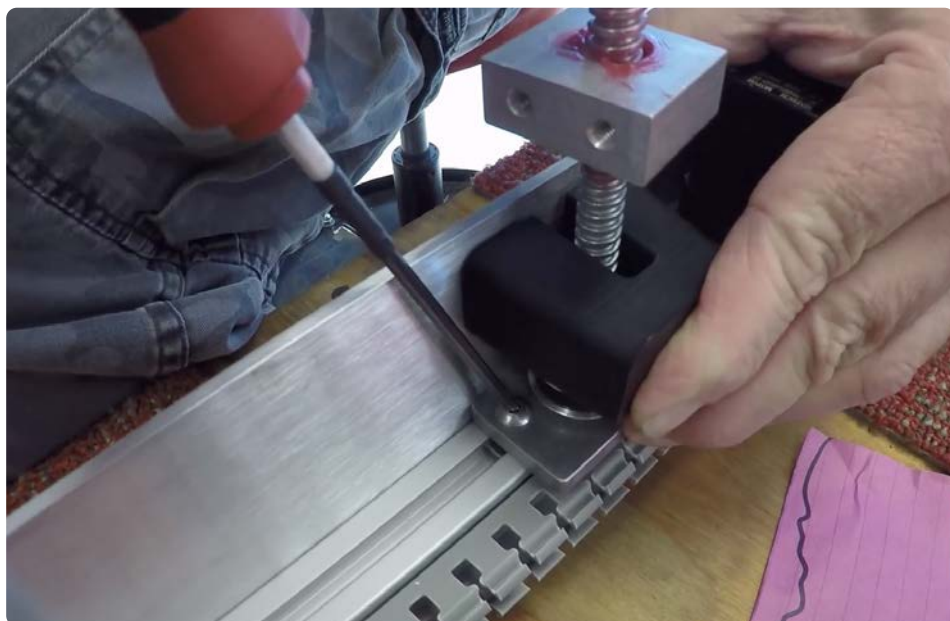
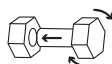
## G19

Use the printed Z rod alignment tool to center the rod between the guide holes.



## G20

Holding the tool in place, use the ball-end of the 3mm Allen Key to tighten the M5 BHCS on the lower bearing block.

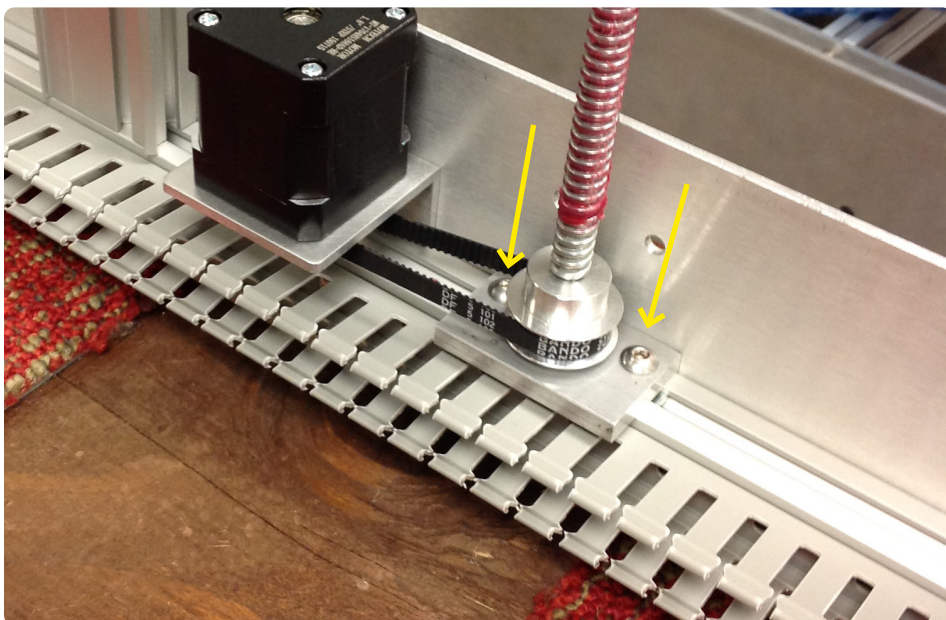


## G21

Once tightened, remove the Z rod alignment tool.

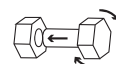






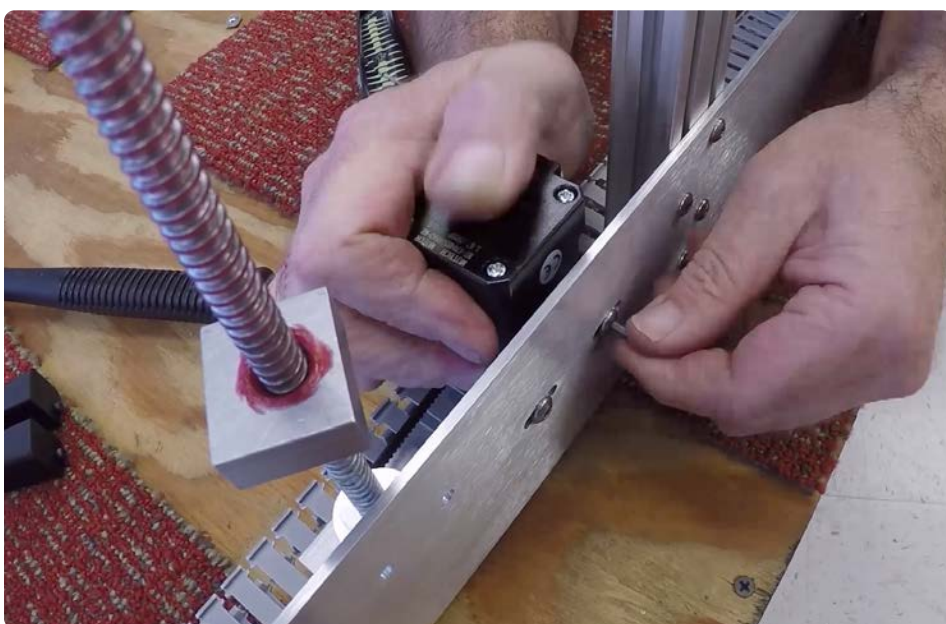
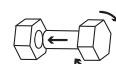
## G22

Fully tighten this lower bearing block into place.



## G23

Tension the MXL belt by pulling the Z motor back in the slots and then tightening the M5 SHCS for the motor shelf.

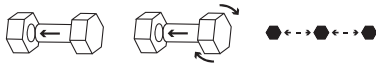


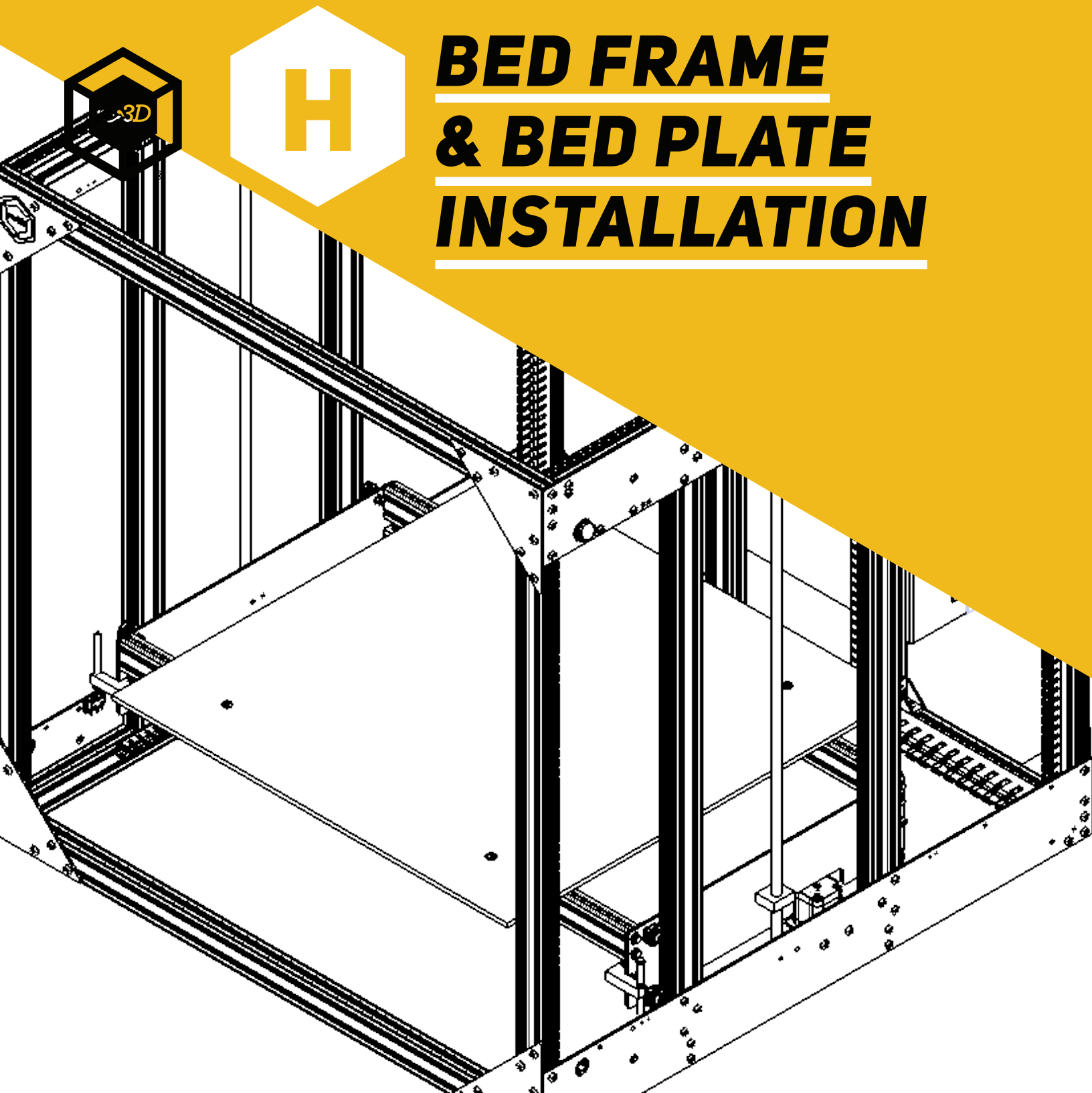
## G24

Repeat this process to install the other Z motor and Z rod assembly.

## G25

[For a demonstration of these step by step instructions, please see our video for this section.](#)





H

# ***BED FRAME & BED PLATE INSTALLATION***



# TOOLS & PARTS

*Refer to packing list to identify parts*

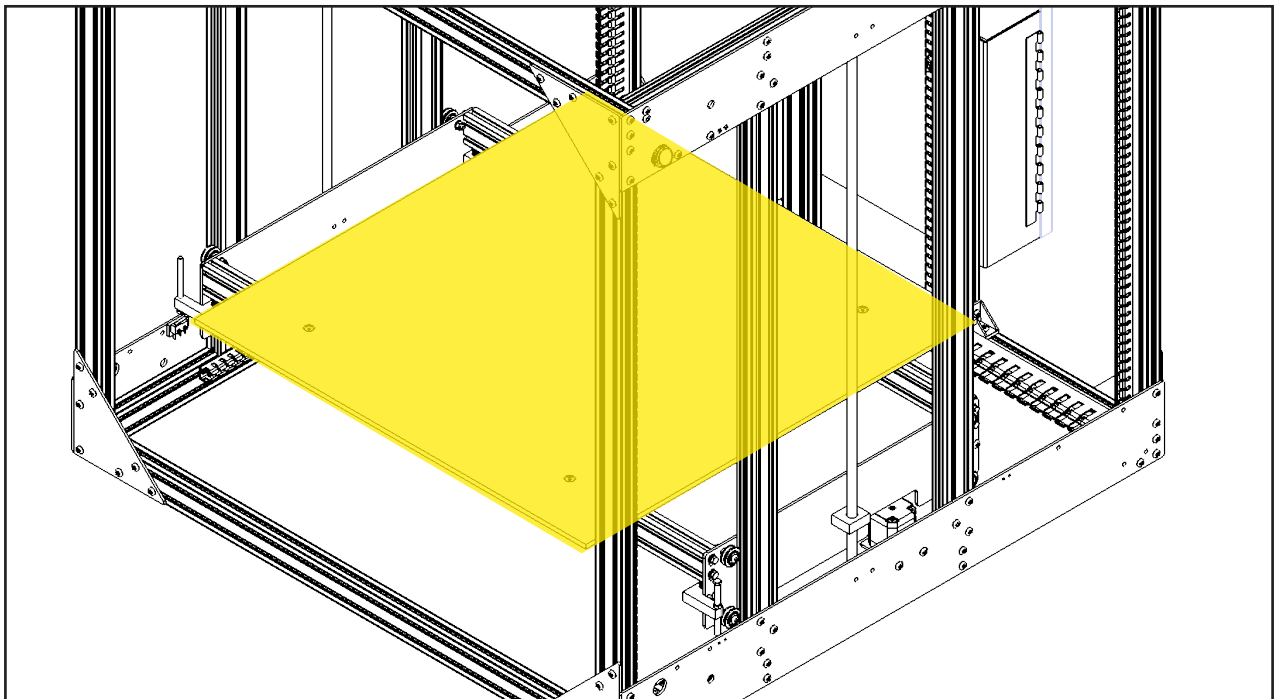
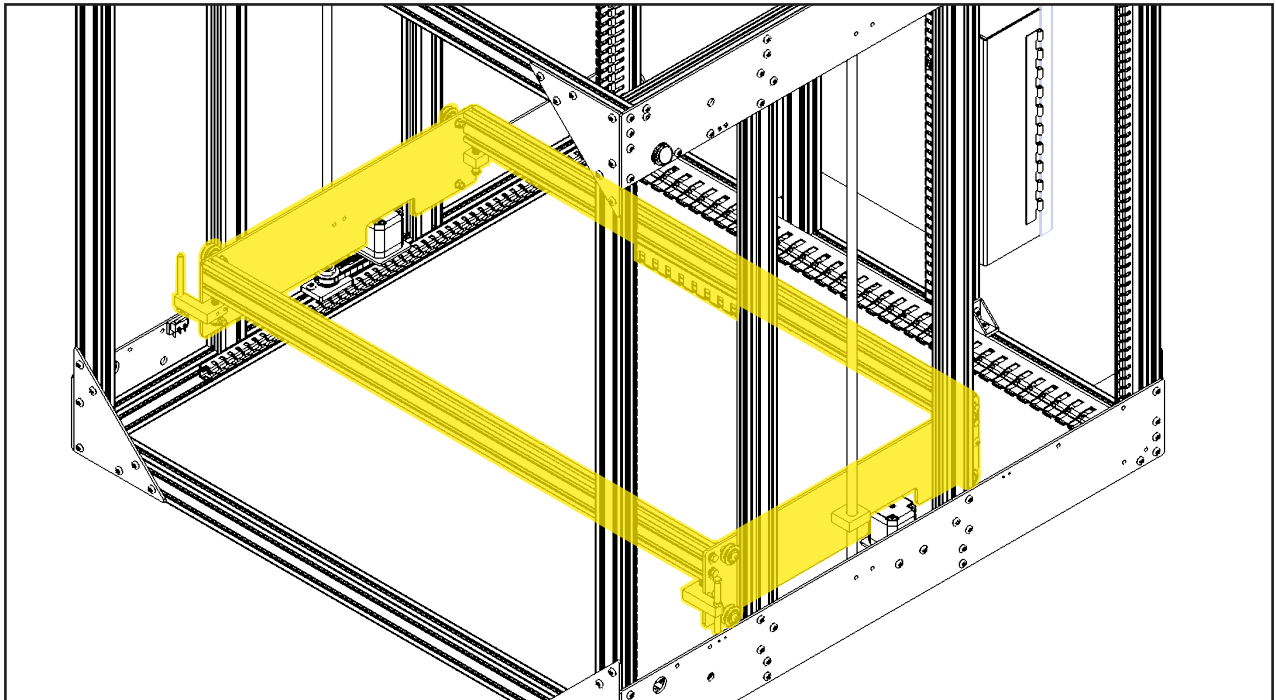
| BOX #            | PART                                | QUANTITY |
|------------------|-------------------------------------|----------|
| <b>Snappybox</b> | [10116] Eccentric Spacers           | 4        |
| <b>6</b>         | [10175] Grease                      | 1        |
| <b>Snappybox</b> | [10241] M5x30mm BHCS                | 4        |
| <b>Snappybox</b> | [10608] V-Groove Wheels             | 4        |
| <b>Snappybox</b> | [10235] M5 Flat Washer              | 4        |
| <b>Snappybox</b> | [10234] M5 Nylock Nut               | 4        |
| <b>6</b>         | [10046] Allen Wrench Set            | 1        |
| <b>Snappybox</b> | [10397] 8mm Combo Wrench            | 1        |
| <b>Snappybox</b> | [11537] M5 x 8 SHCS                 | 4        |
| <b>2</b>         | [10861] Bed Plate (with heater pad) | 1        |
| <b>Snappybox</b> | [12067] M5x40 FHCS                  | 4        |
| <b>Snappybox</b> | [10361] M5 T-nut                    | 4        |
| <b>Snappybox</b> | [10002] GB3+ Bed Leveling Spring    | 4        |
| <b>Snappybox</b> | [10235] M5 Flat Washers             | 8        |
| <b>Snappybox</b> | [10234] M5 Nylock Nuts              | 8        |

**WATCH THE  
ACCOMPANYING  
VIDEO:**

[https://youtu.be/94agIYOQW\\_0](https://youtu.be/94agIYOQW_0)

# OVERVIEW

There are two main steps in this section: Installing the bed frame to the Gigabot®, and then installing the bed plate.



# TIPS & TRICKS

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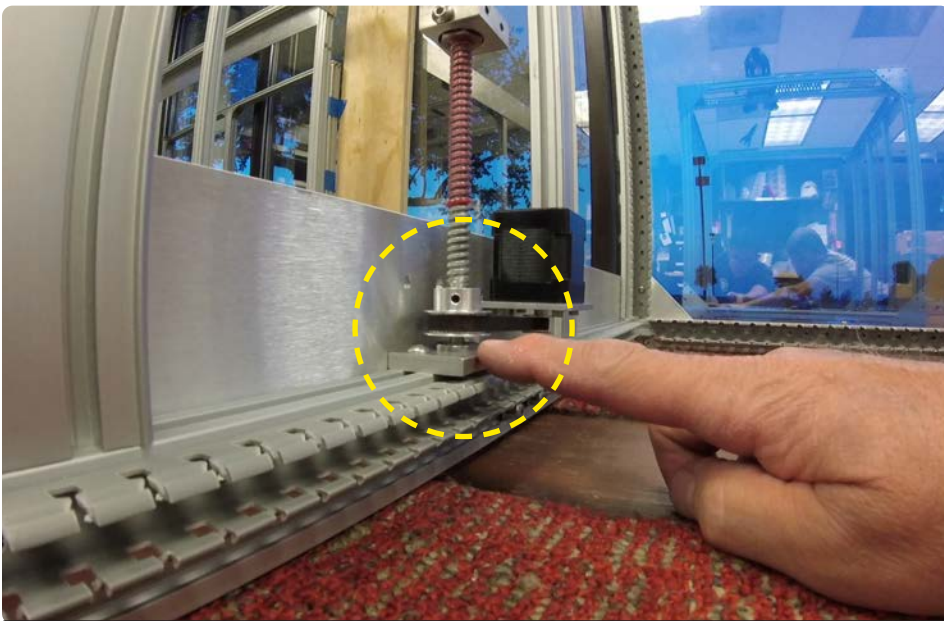
- #1** Work on a flat surface.
- #2** Take the time to properly align and fasten the nut cups to the bed side plates. This will ensure smooth movement of the bed as it goes up and down.
- #3** Align the left edge (looking from the front) of the bed plate with the pencil marks on the bed cross rail to properly position it on the bed frame.





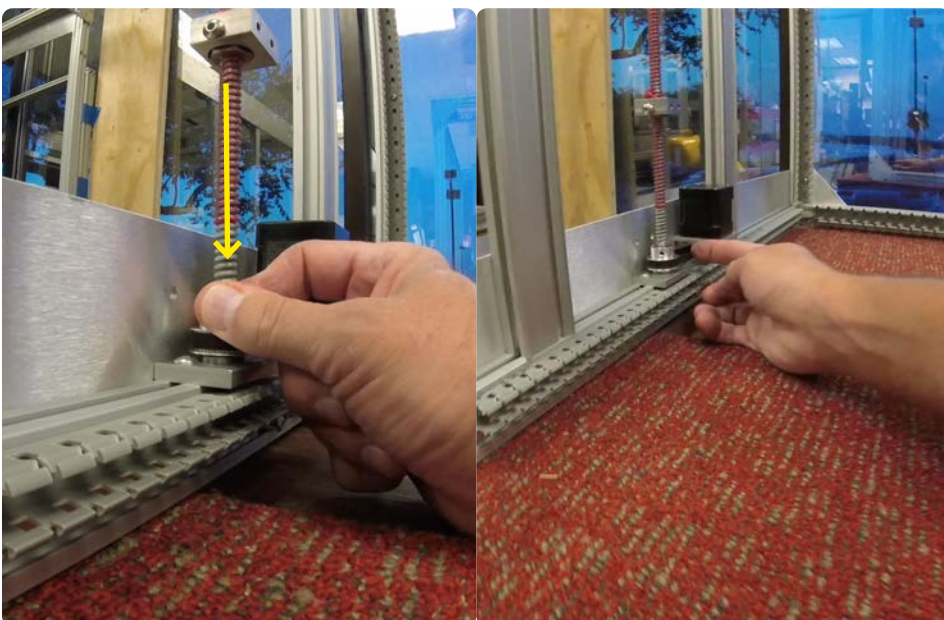
## H1

You will now install the bed frame and then the bed plate on top of that.



## H2

First, check that the threaded rods are securely seated inside the bearings of the bearing blocks.



## H3

If they are not seated, press them into the bearing before continuing on.





## H4

Repeat H2-H3 on the other side.



## H5

Place an object in the middle to hold the bed frame. Here, we use a box that is placed diagonally for more stability.



## H6

Without using a prop to hold the bed frame, the lower side plates will interfere with installing the remaining wheels to secure the bed frame to the Z-Uprights.





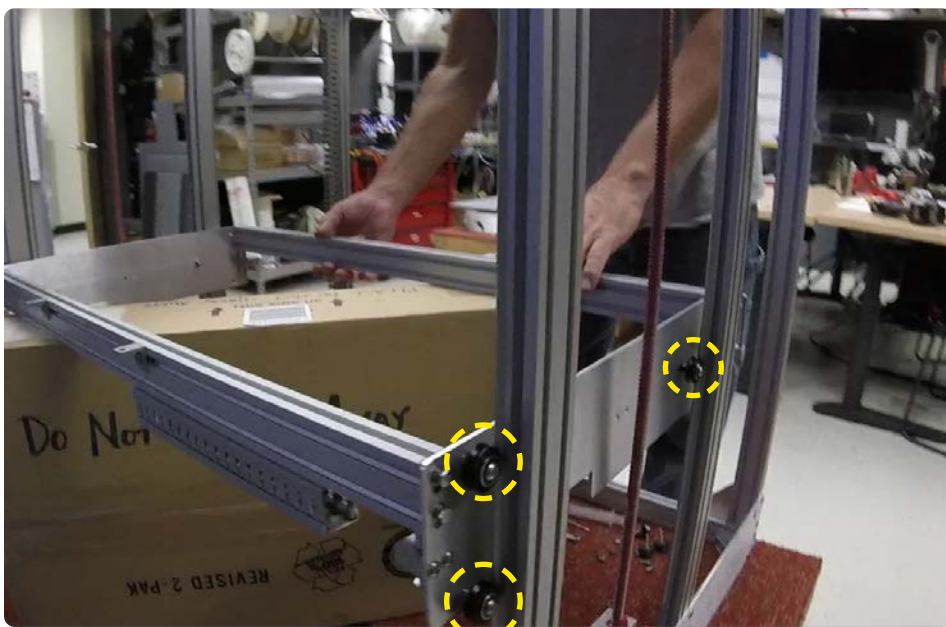
## H7

Here, the bed frame Panduit has been offset from center to accomodate the box that will prop it up.



## H8

Carefully lower the bed frame down into the Gigabot® frame.



## H9

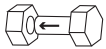
Place the bed frame on top of your prop, which each of the bed frame wheels resting against the Z-uprights.





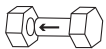
## H10

Apply [10175] Grease to the outer edge of one of the holes near the rear of the bed frame. Insert the [10116] Eccentric Spacer here such that the mark (thinnest side) is facing away from the rail.



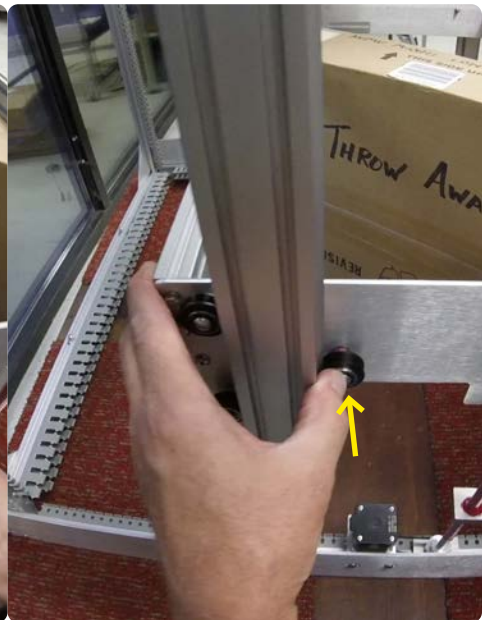
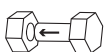
## H11

Insert a [10241] M5x30mm BHCS into a V-groove wheel. Apply [10175] Grease along the screw threads and insert it into the [10116] Eccentric Spacer. It is easier to place the wheel onto the rail and then insert the screw, as shown on the right.



## H12

Place pressure on the rear of the bed frame and insert the [10241] M5x30mm BHCS through the wheel and spacer.





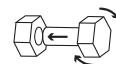
## H13

Place an [10235] M5 Flat Washer on the screw.



## H14

Fasten an [10234] M5 Nylock Nut onto the same screw and fasten this into place using an 8mm wrench and 3mm Allen Key. Refer to the bed frame assembly section for other examples of fastening the wheels.



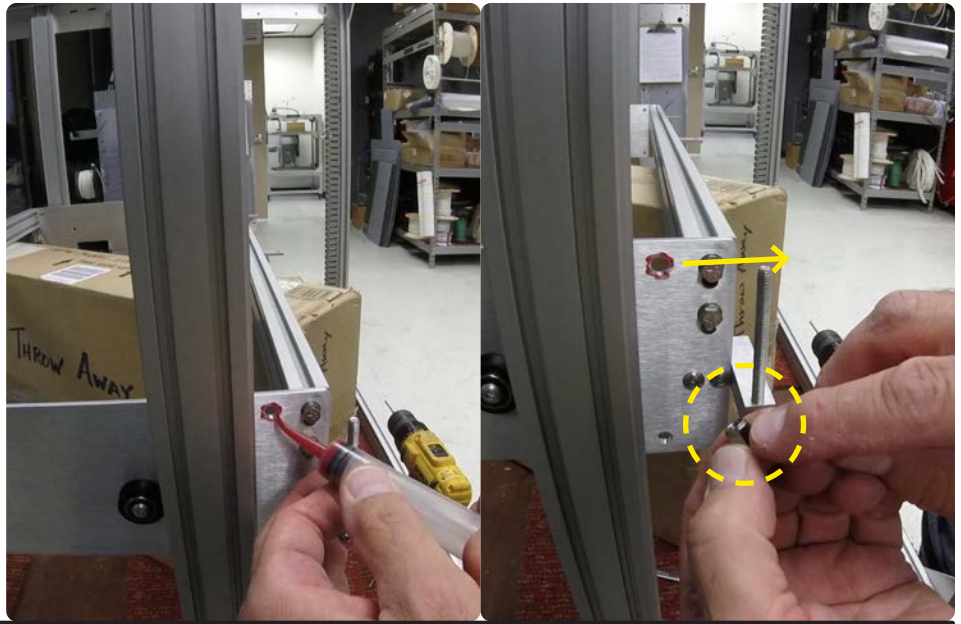
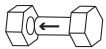
## H15

You have now secured the bed frame onto one of the rear Z-Uprights.



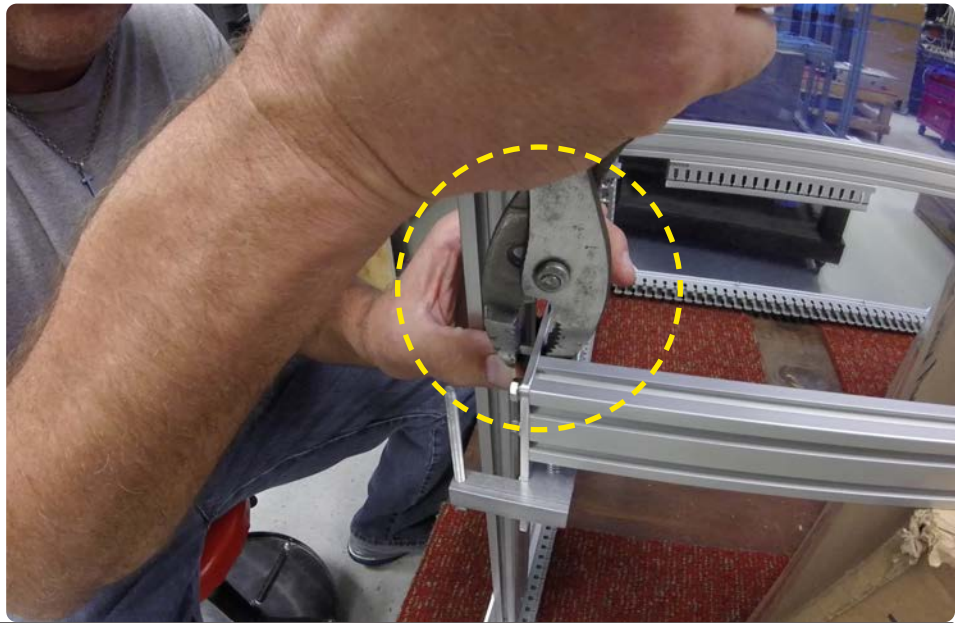
## H16

Repeat H10-H14 for the wheels in the front of this same side of the bed frame. Again, the [10116] Eccentric Spacer should be positioned such that the mark (marked on the thinnest side) faces away from the rail.



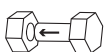
## H17

If the [10116] Eccentric Spacer is difficult to insert into the bed side plate, it may be pressed into place with the help of pliers.



## H18

Insert another V-groove wheel in the same way as in H12.







## H19

Place an [10235] M5 Flat Washer and [10234] M5 Nylock Nut on the [10241] M5x30mm BHCS and fasten the wheel into place with an 8mm wrench and 3mm Allen Key.



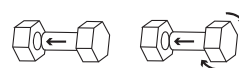
## H20

You now only need to fasten one more V-groove to secure this side of the bed frame to the Z-uprights.



## H21

Repeat H10-H14 for the remaining wheel on this side of the bed frame.



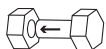
## H22

You have now completed fastening wheels to one side of the bed frame. Next, you will add the remaining wheels to the other side of the bed frame.



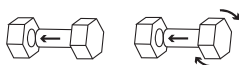
## H23

Apply [10175] Grease and insert an [10116] Eccentric Spacer into the rear hole in the same way as H10.



## H24

Insert a V-groove wheel here in the same way as H11-H12. Place an [10235] M5 Flat Washer and [10234] M5 Nylock Nut on the [10241] M5x30mm BHCS.

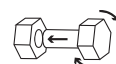






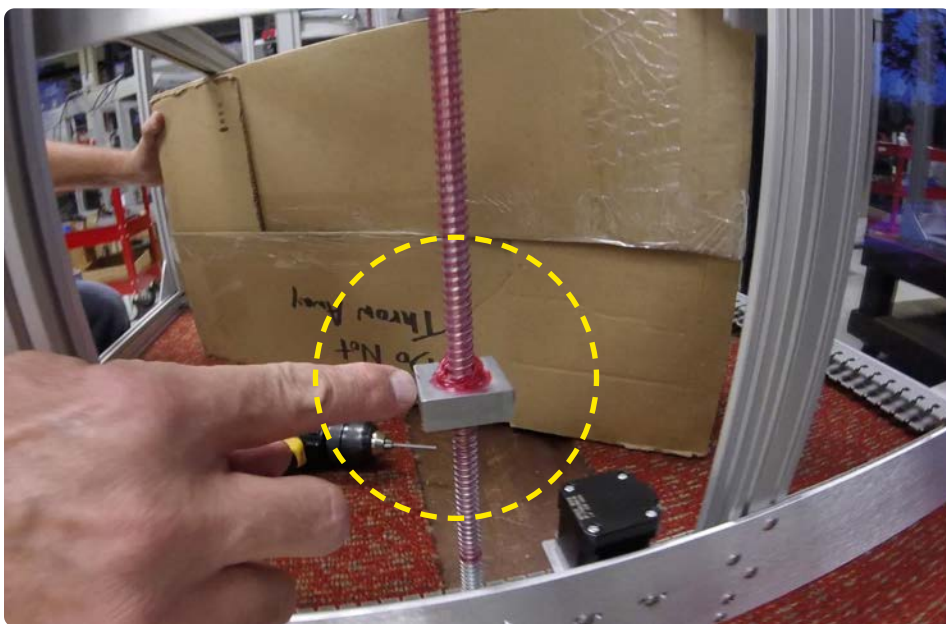
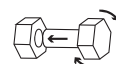
## H25

Fasten the wheel into place using a 3mm Allen Key and 8mm wrench as in H14.



## H26

Repeat steps H16-H21 to fasten the remaining 2 [10608] V-Groove Wheels to the bed frame. This will mostly secure the entire bed frame to the Z-uprights.



## H27

Make sure the nut cups on each side of the Gigabot® are positioned such that the threaded holes are facing inward. Again, do this for both nut cups!



## H28

Hold the bed frame up and remove the prop from below it.



## H29

Gently lower the bed frame until it sits on top of the Z axis motors.

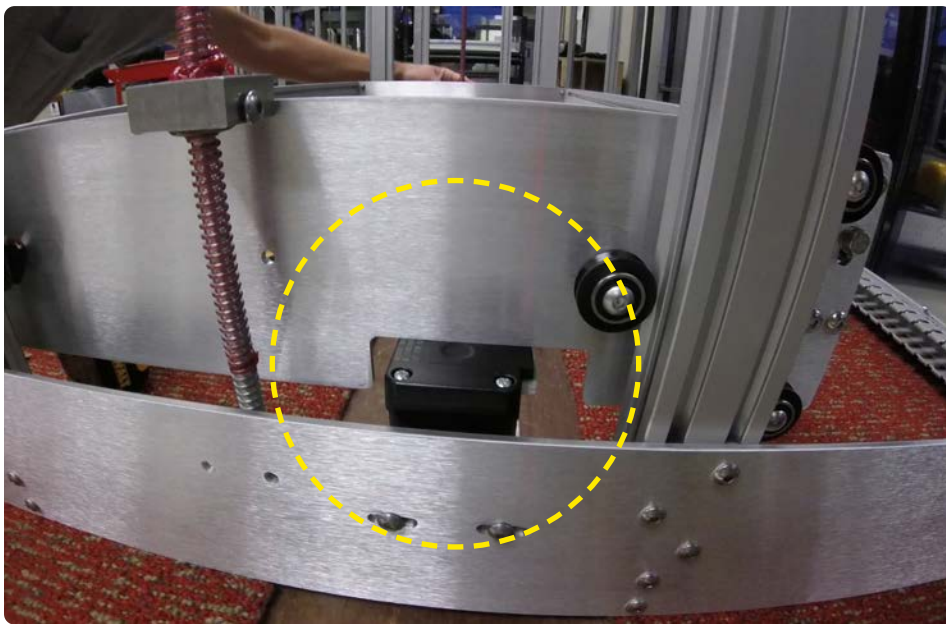


## H30

At first, the bed frame may rest on top of the nut cups themselves, but carefully work the frame in between the two nut cups and let it sit on top of the motors. The nut cup will likely not be aligned with the bed side plate holes yet.

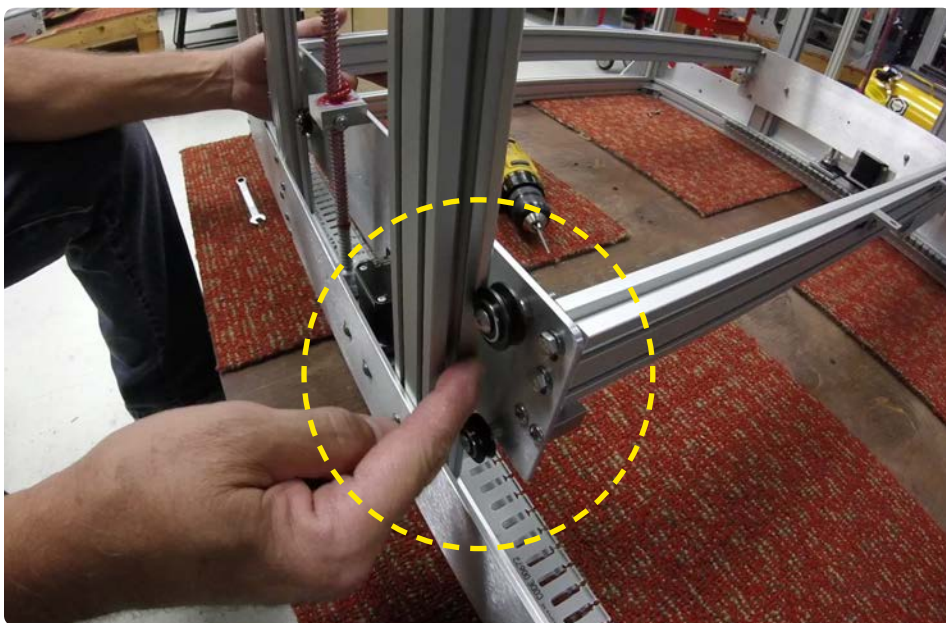






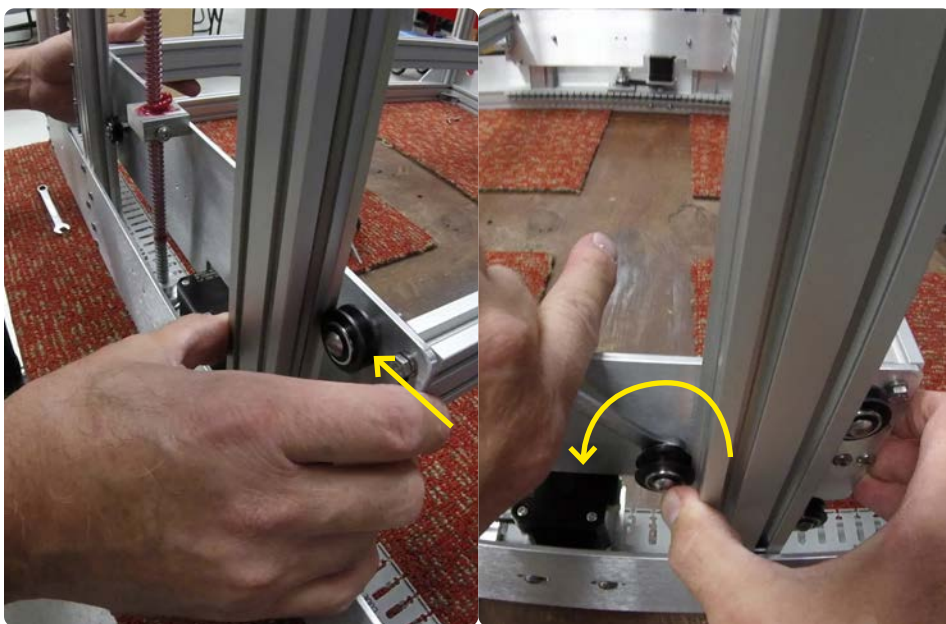
### H31

Check that the bed frame is resting directly on top of the Z motors on both sides.



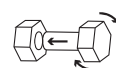
### H32

Since the rear bed frame wheels use [10310] Round Spacer, they need to be pressed against the rail when tensioning the other wheels to ensure the most secure fit.



### H33

Starting on the right side of the bed frame, apply pressure to the rear of the bed frame against the Z-upright and use the 8mm wrench to gradually turn the [10116] Eccentric Spacer counter-clockwise. This tightens the wheel against the rail.





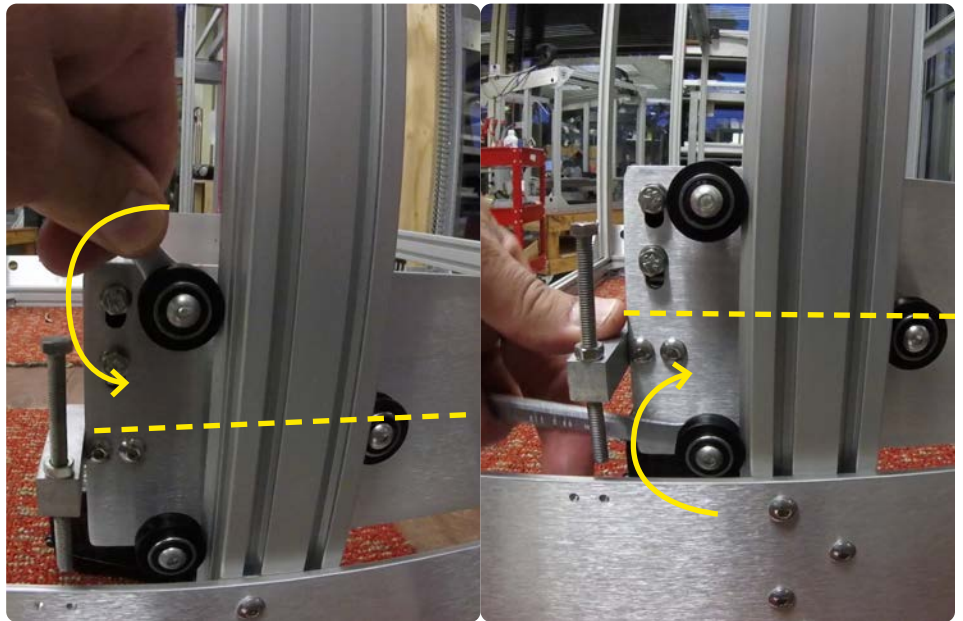
### H34

After each gradual rotation, check that the wheel is making good contact with the rail, yet can still be spun in place by hand. Continue adjusting the wheel until this condition has been met.



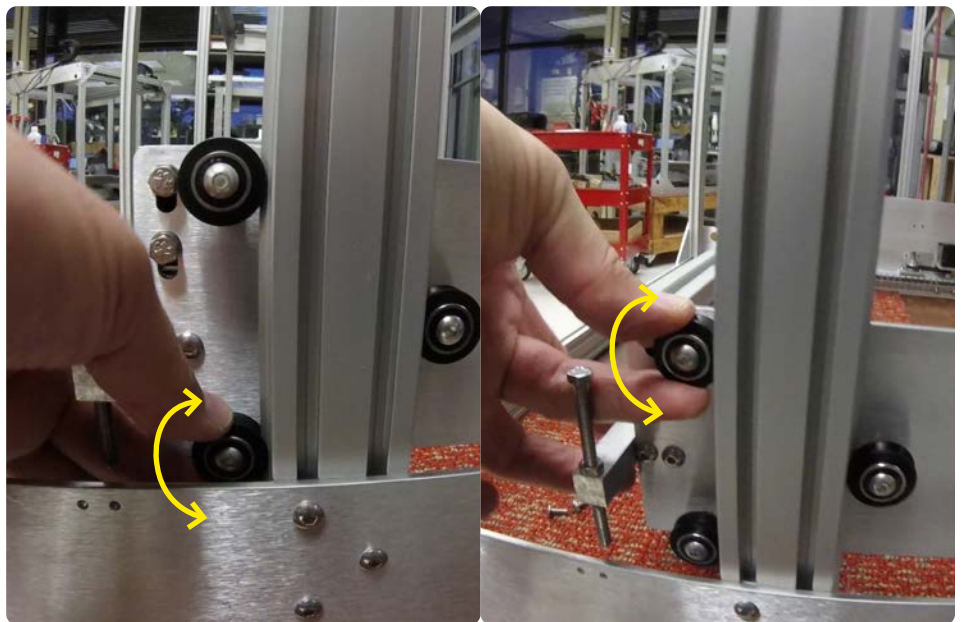
### H35

On the same side of the bed frame, repeat this for the front wheels. Here, the convention is to turn the wheel towards the horizontal center of the bed side plate to tighten, and turn away from it to loosen.

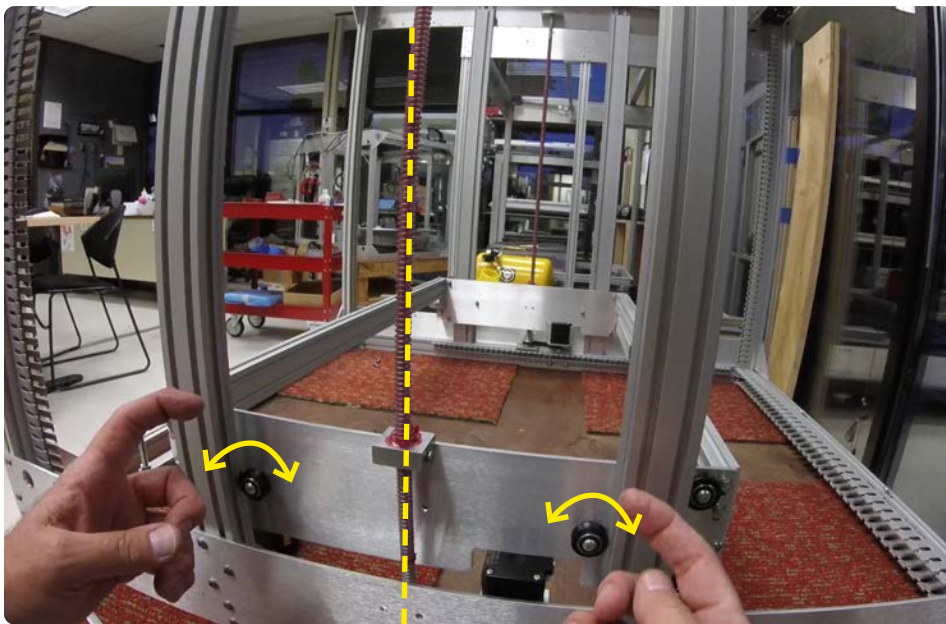


### H36

Check the wheels in the same fashion as in step H34 and adjust as needed.

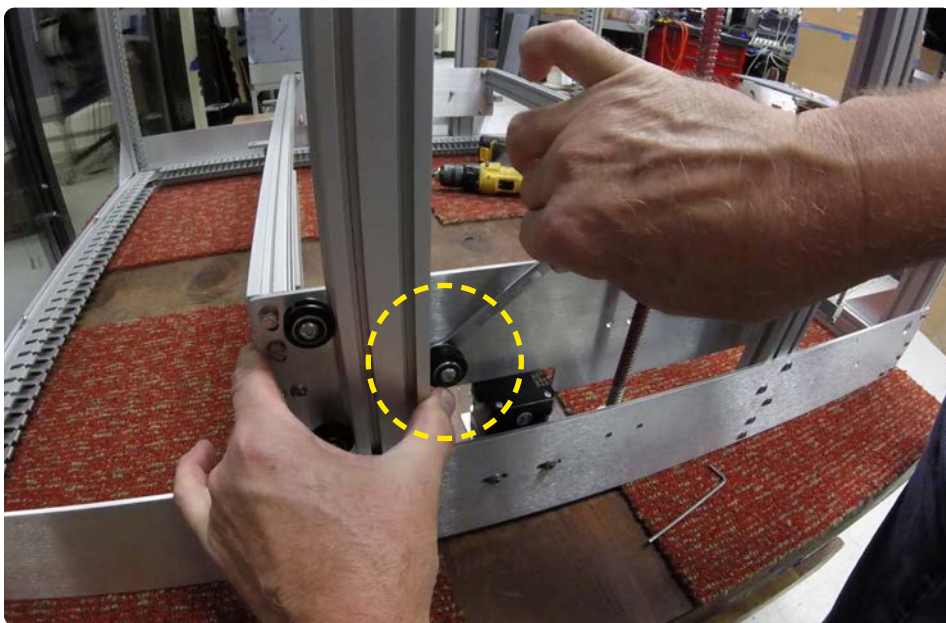






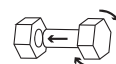
### **H37**

This was alluded to in H33-H35, but for the center wheels on the right-side bed side plate, the convention to tighten is to turn them towards the vertical center of the plate (as opposed to the horizontal center).



### **H38**

Repeat steps H33-H37 for the opposite side of the bed frame.



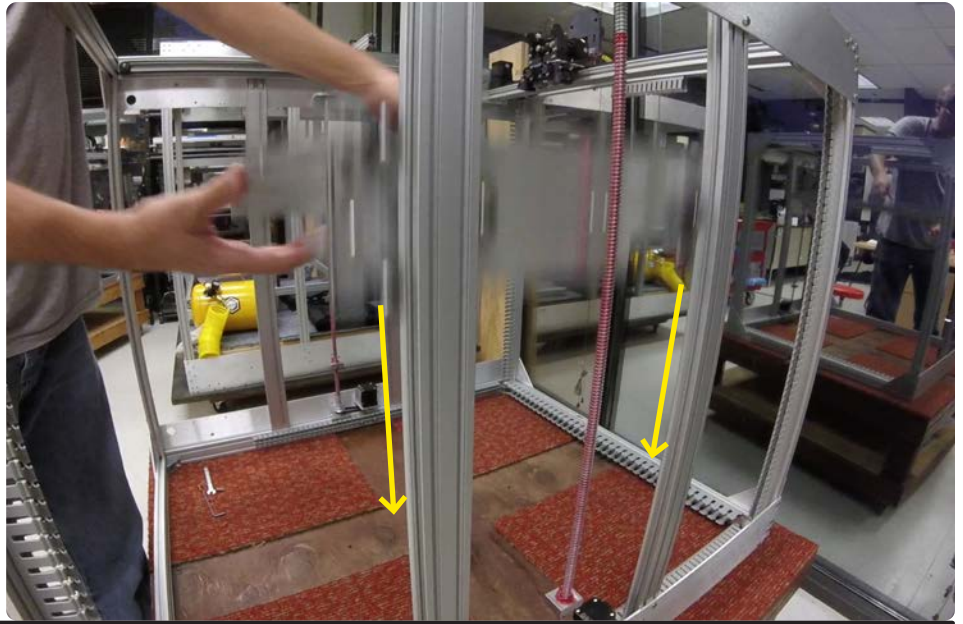
### **H39**

After performing the tensioning on all of the wheels, move the bed frame up and down along the Z-uprights and perform the same check as in H34 at different locations and adjust as necessary.



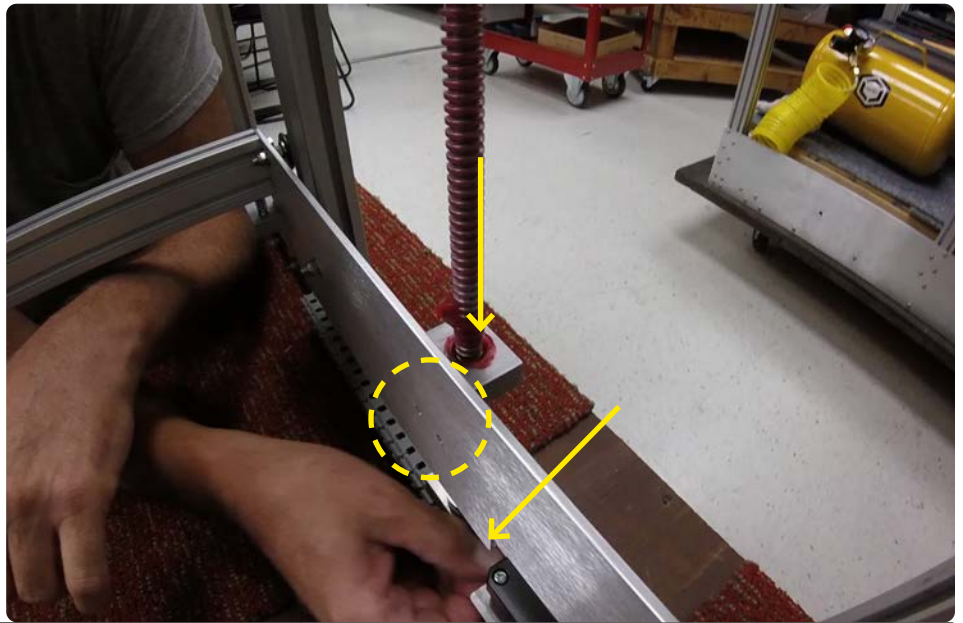
## H40

The bed frame should be able to freely travel along the entire length of the Z-uprights. If you release the bed frame, it should fall straight down from its own weight. If you check this, be ready to catch it from below--don't let it crash and get damaged!



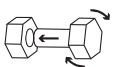
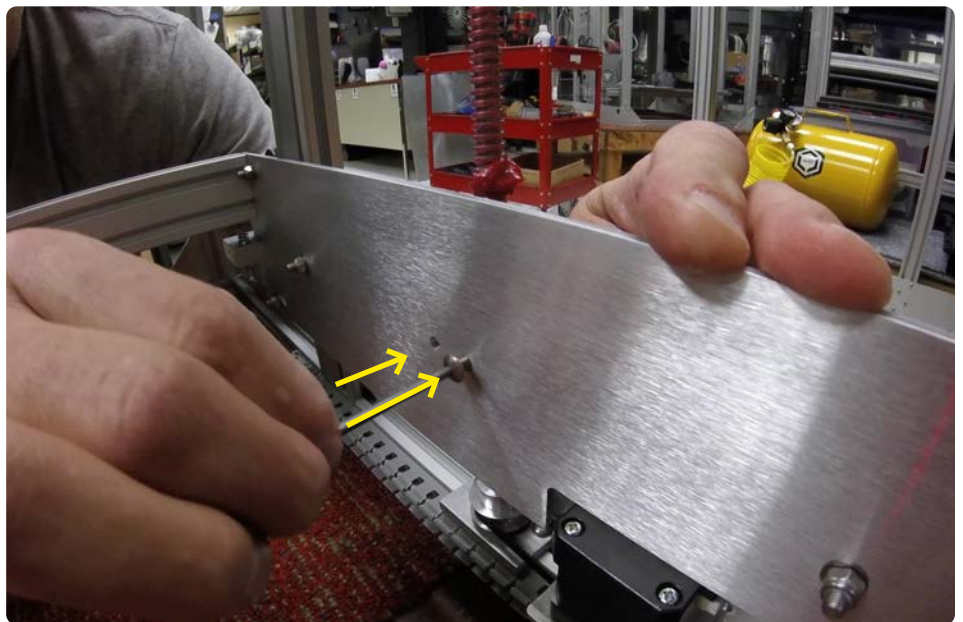
## H41

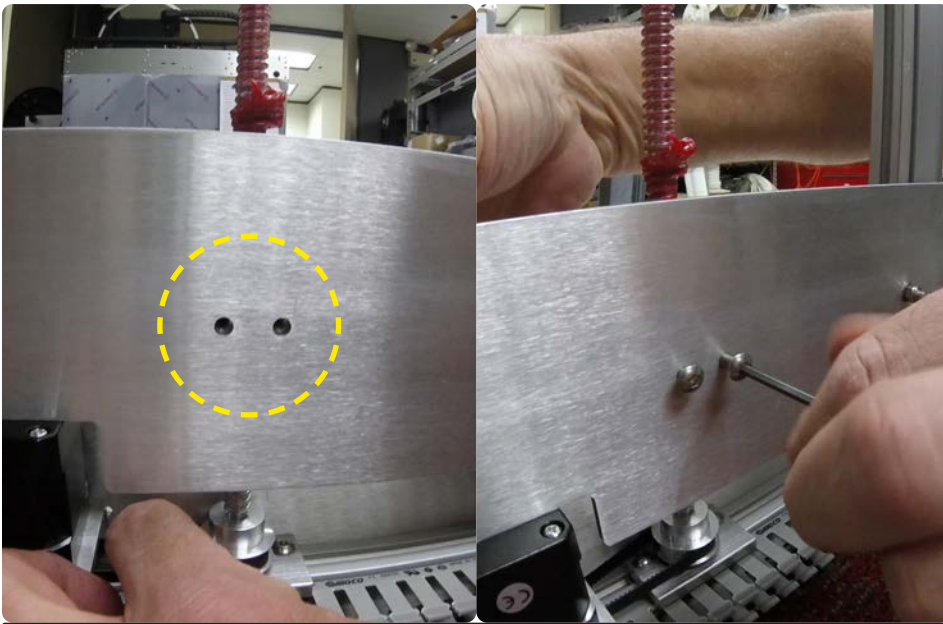
There are MXL belts that connect the pulleys on the Z motors and ACME threaded rods. Turn the belt by hand to align the nut cup with the holes in the bed side plate.



## H42

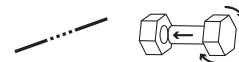
Once the nut cup holes are aligned with the holes in the bed side plate, fasten them together using 2 [10237] M5 x 12 BHCS and a 3mm Allen Key.





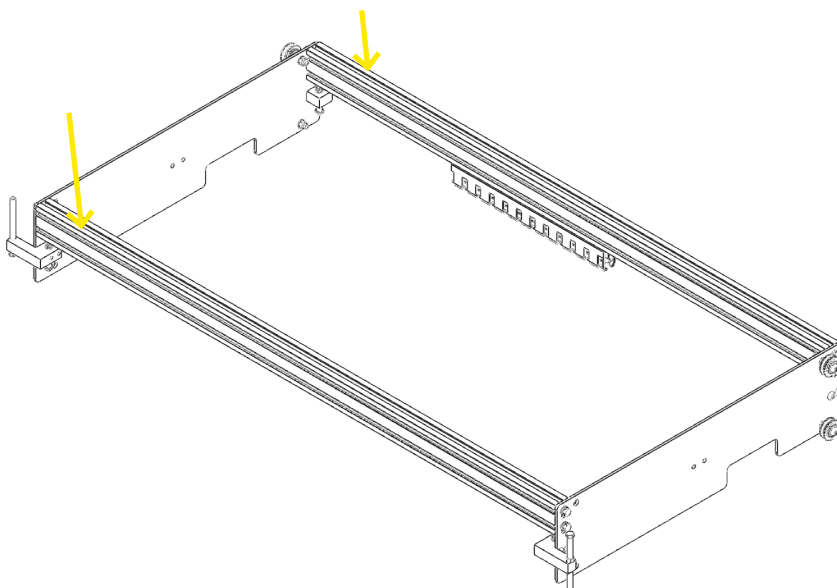
### H43

Repeat this alignment and fastening process with the other nut cup as well.



### H44

The bed frame is now properly secured into the Gigabot® frame.



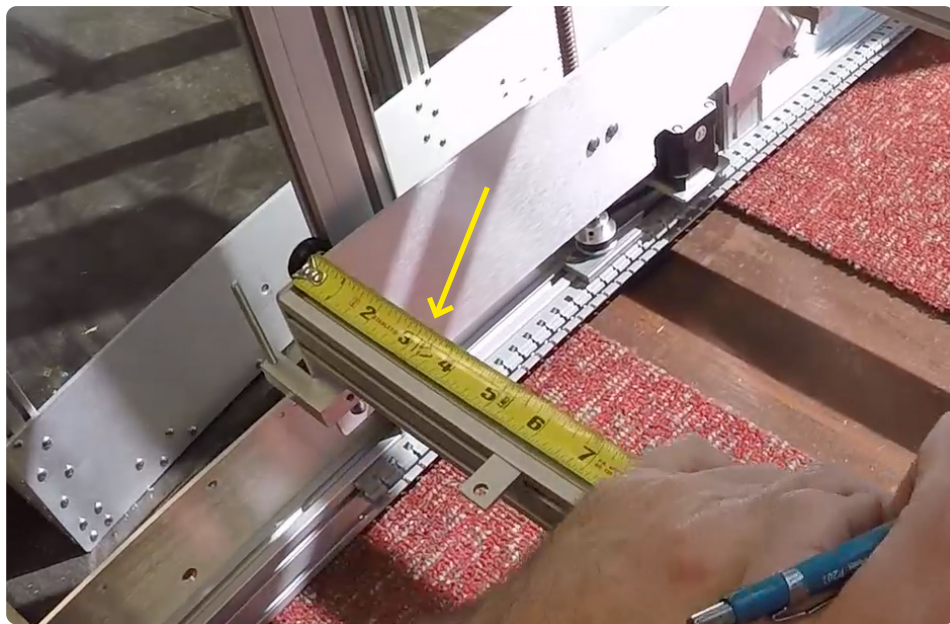
### H45

Next, you will make marks on the bed frame to help with the placement of the bed.



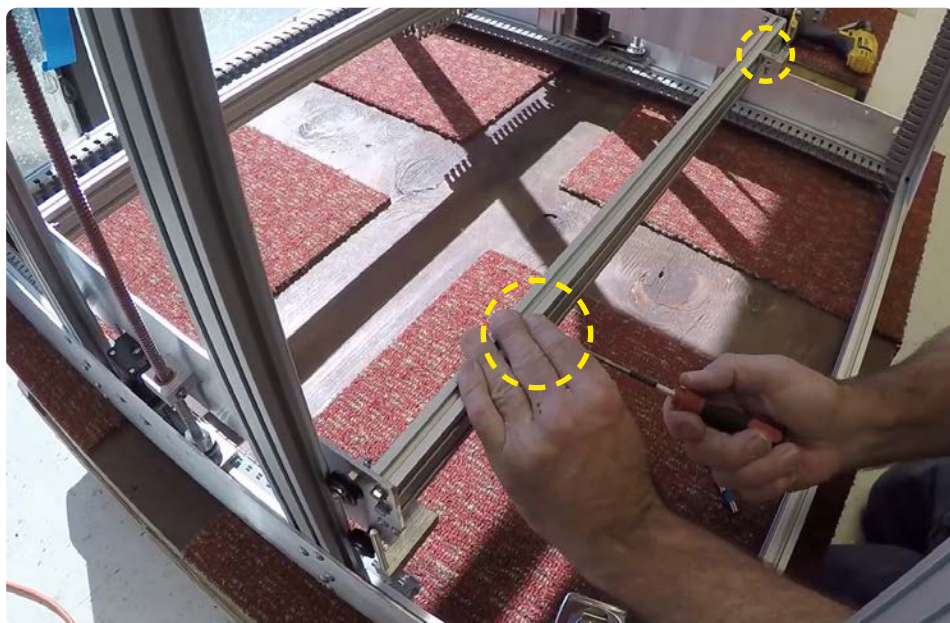
## H46

On each bed cross rail, make a mark  $3\frac{3}{16}$ " from the left most edge of the bed side plate.



## H47

Slightly loosen the M5 x 8 SHCSs securing the 4 bed angles to the bed cross rails so that they can move freely along the rails.

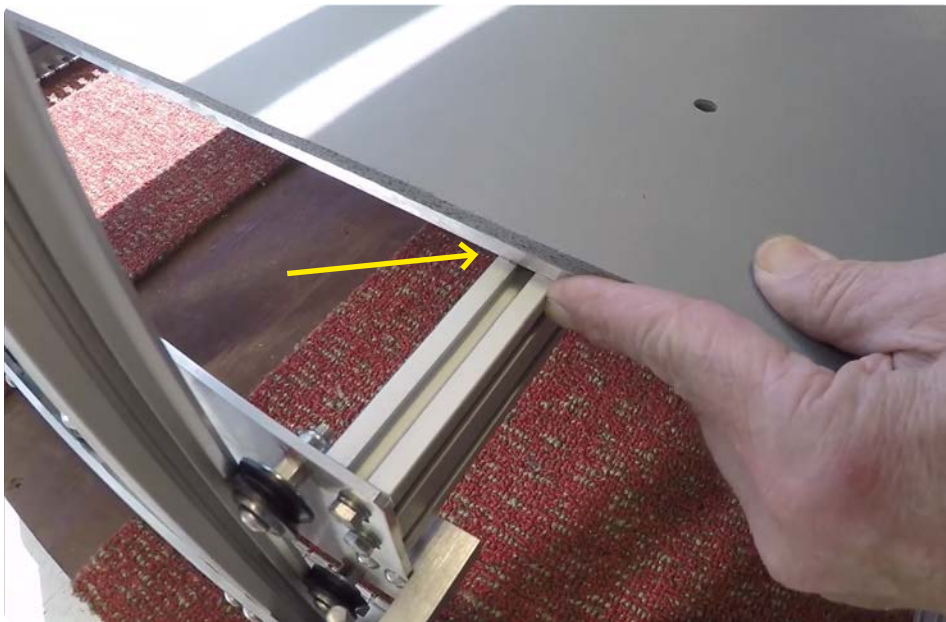


## H48

The following several steps are something we do in-house to assure that the bed angles are properly aligned and also fastened to the bed cross rails without becoming skewed. Place the bed plate metal side down onto the bed frame and align the left edge with the marks made previously.

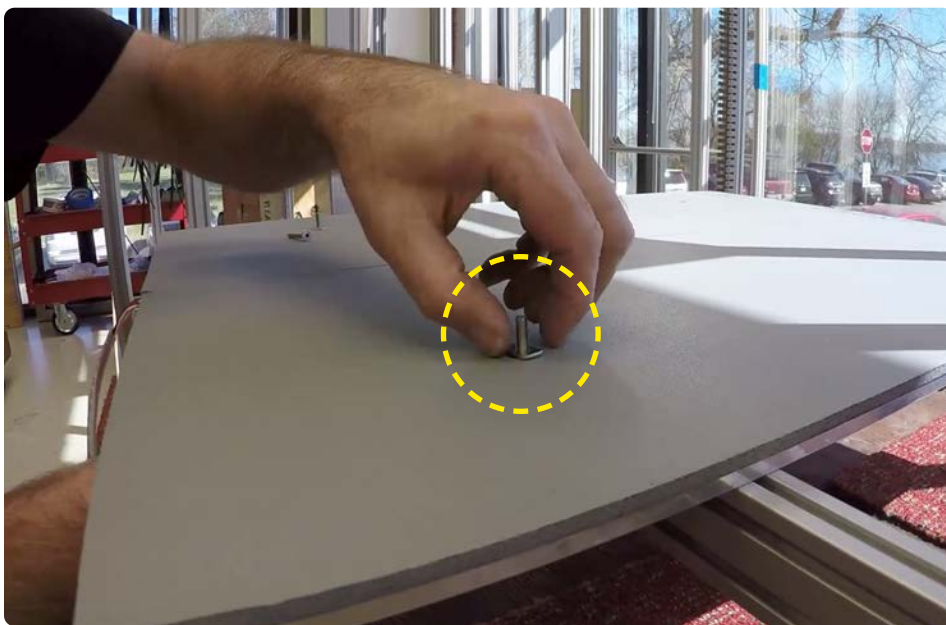






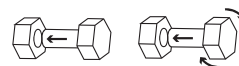
## H49

Align the bed plate with the marks made on the bed cross rail, then align each bed angle with the holes in the bed plate.



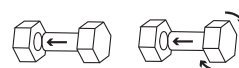
## H50

Insert an [12067] M5 x 40 FHCS from below through the holes in the bed angle and bed plate and secure a T-nut onto it from the other side. Finger tighten these.



## H51

Repeat for the other 3 bed angles.



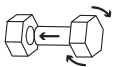
## H52

Once all 4 [12067] M5 x 40 FHCS are secured, double check that the bed plate is still aligned with the marks you made on the rails.



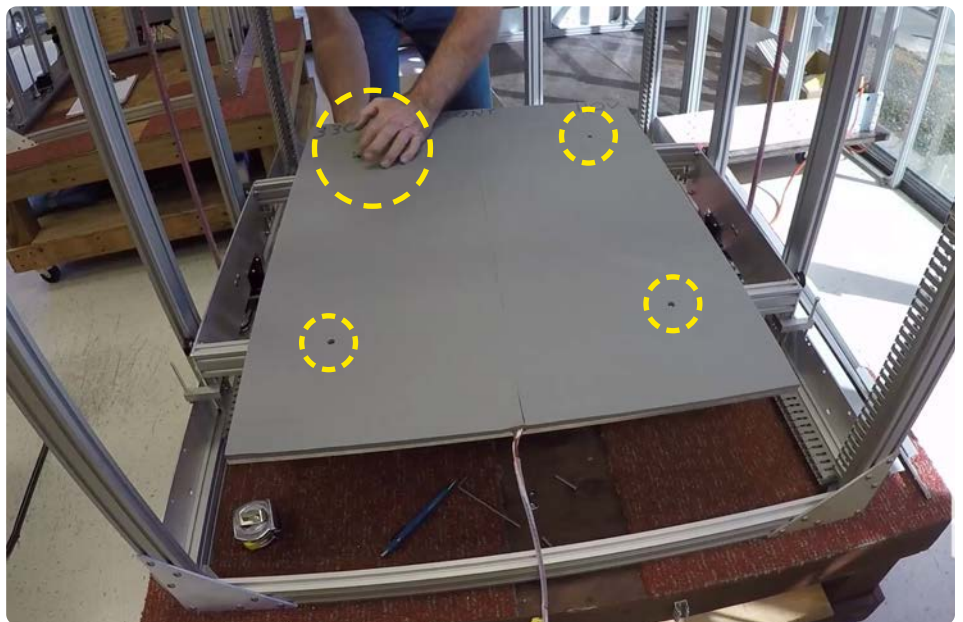
## H53

Fully tighten the M5 x 8 SHCS for each bed angle using the 3mm Allen Key. Apply pressure on the bed plate above each bed angle while it is being secured so that the bed angle doesn't become skewed as you tighten it.



## H54

Once each bed angle is tightened to the cross rails, remove each [12067] M5 x 40 FHCS and their T-nuts.







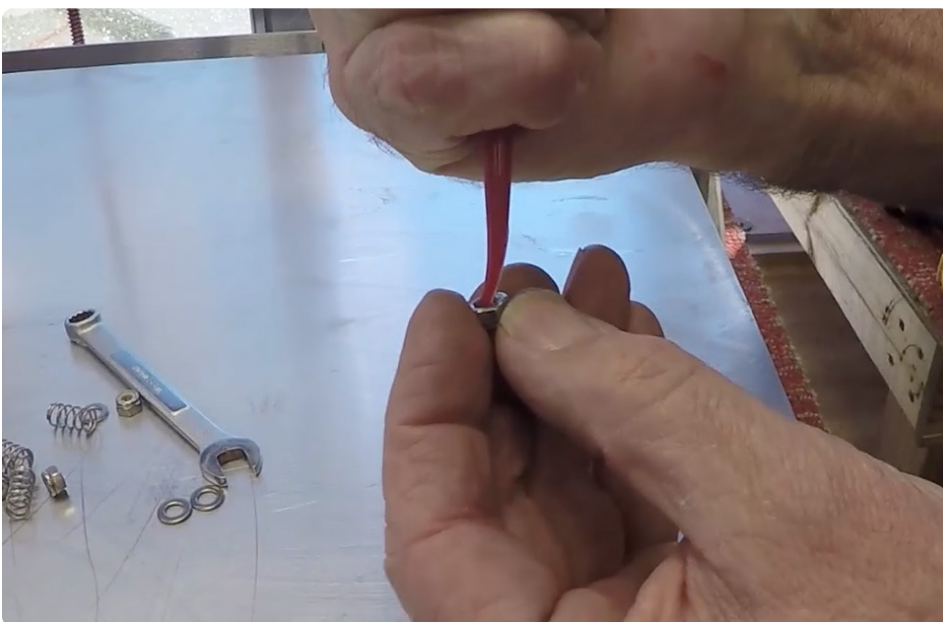
## H55

Flip the bed plate over so that the metal side is facing up. Orient it such that the wires run towards the back of the Gigabot frame and keep the left edge of the bed aligned with the marks on the rail.



## H56

Next, you will finally secure the bed plate to the bed angles with the same [12067] M5 x 40 FHCS used before, 4 [10002] GB3+ Bed Leveling Spring, 4 flat washers, and 4 lock nuts.

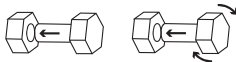


## H57

Prepare each lock nut by depositing a small amount of red [10175] Grease on the threads to keep them from galling. [See this article on more information about thread galling.](#)

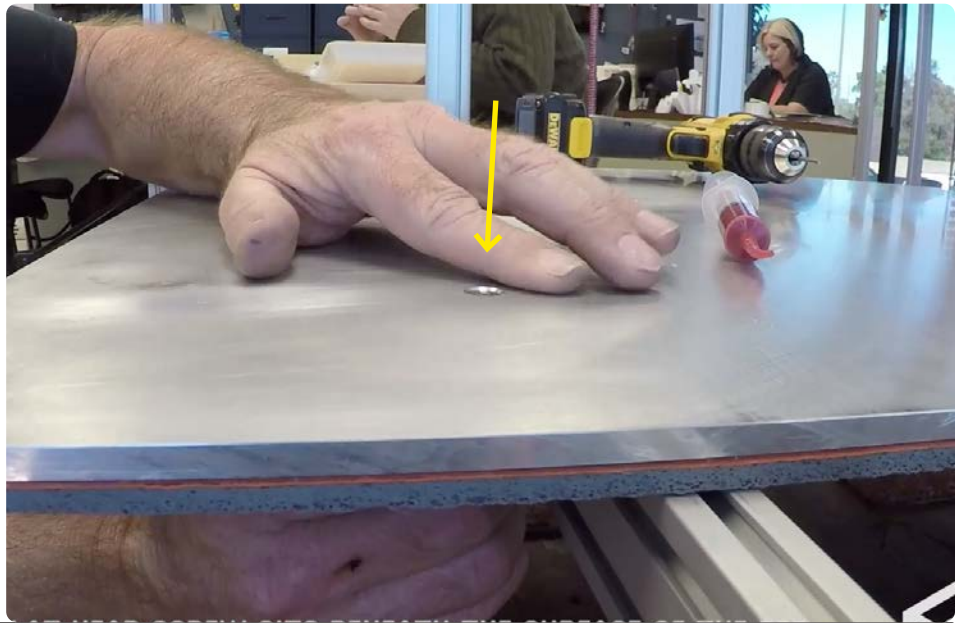
## H58

For each bed angle, insert the M5x35 from above this time. Below, insert the spring, a flat washer, and finally the lock nut.



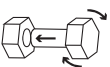
## H59

The bed plate holes are countersunk which should allow the heads of the [12067] M5 x 40 FHCS to sit below the top plane of the bed plate. Should you find that they are flush or that the FHS sit above the top plane, the holes will need to be countersunk further. [Please see the video regarding how to countersink them.](#)

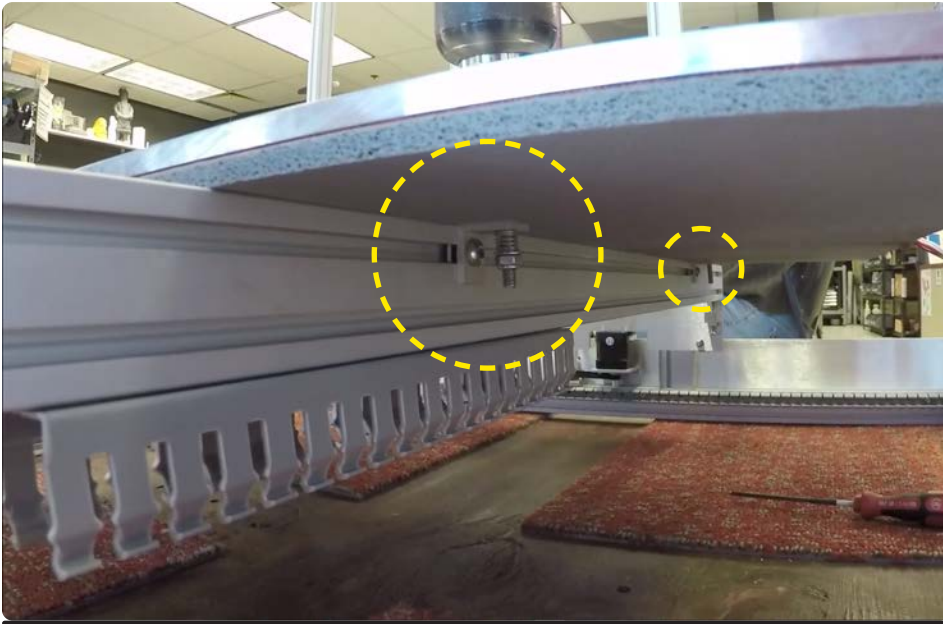


## H60

Use the 3mm Allen Key and [10397] 8mm Combo Wrench to tighten until the spring is almost completely compressed, with the locknut a little less than halfway up the threads of the M5x35.

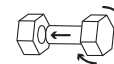






## H61

Repeat this for each hole in the bed plate. There are 4 in total.



## H62

The bed plate is now properly oriented, aligned, and secured to the bed frame.

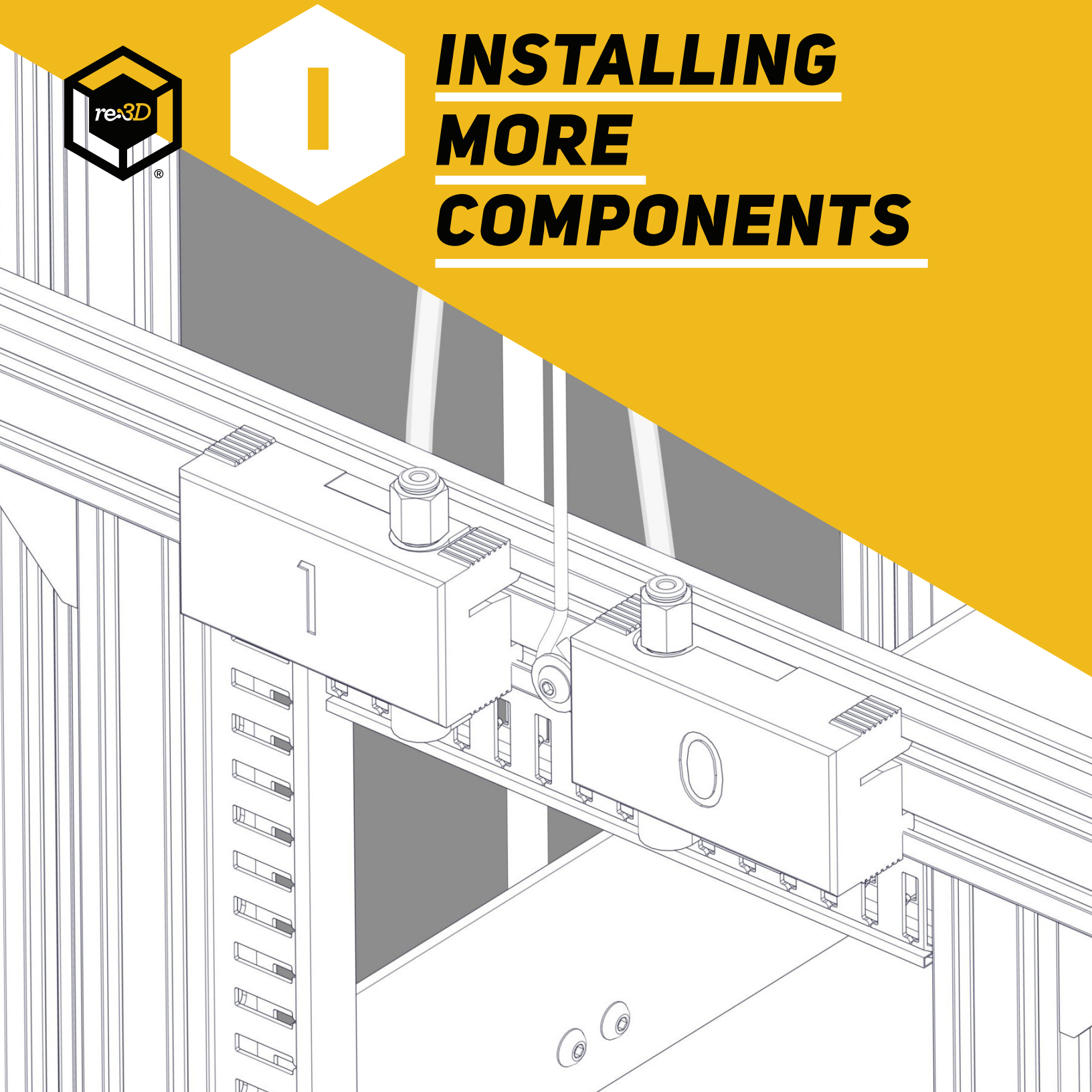
## H63

[For a demonstration of these step by step instructions, please see our video for this section.](#)





# **INSTALLING** **MORE** **COMPONENTS**



# TOOLS & PARTS

Refer to packing list to identify parts

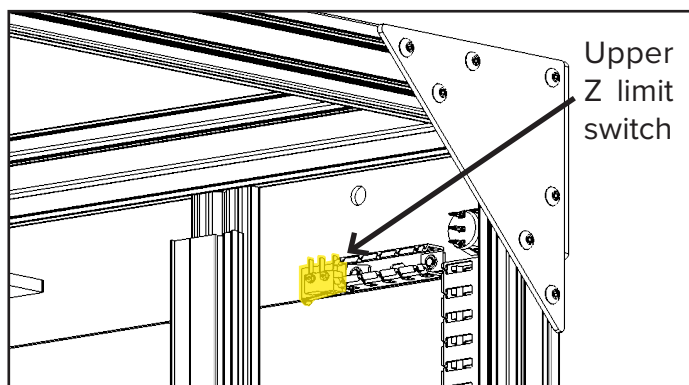
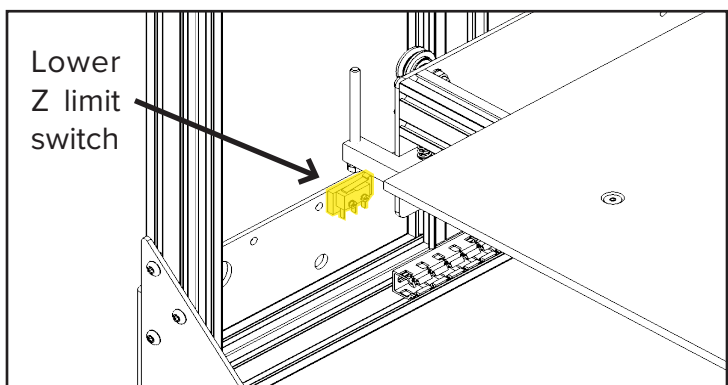
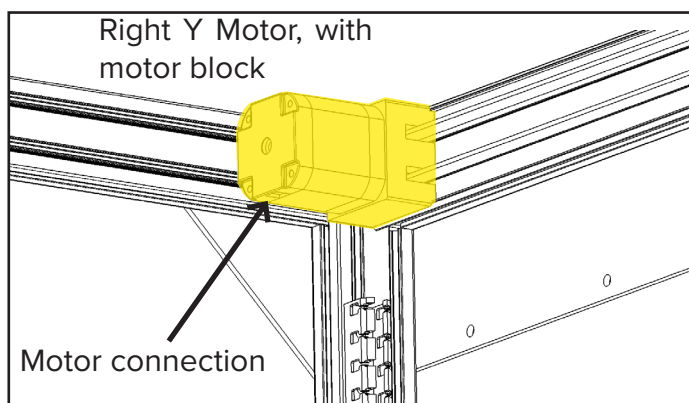
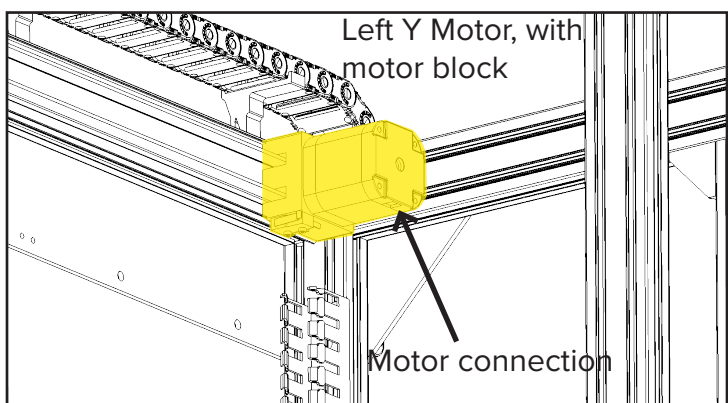
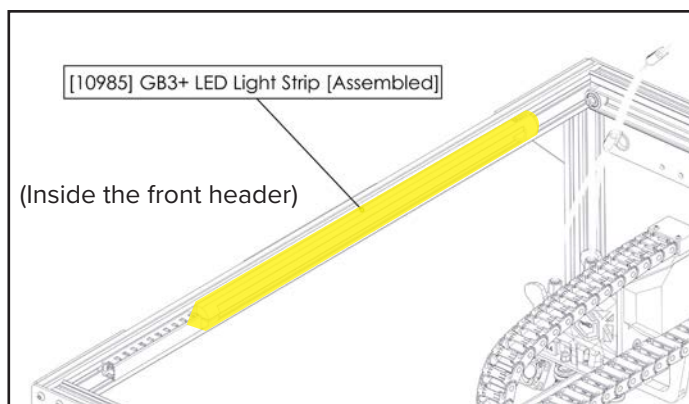
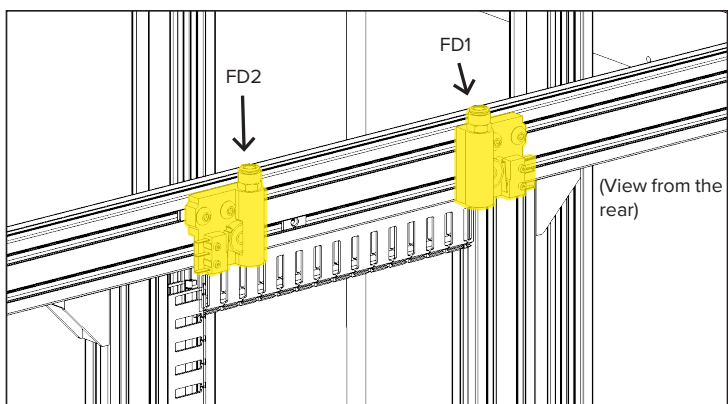
| BOX #            | PART  | QUANTITY |
|------------------|---|----------|
| <b>Snappybox</b> | [11313] M5 x 12 SHCS                        | 4        |
| <b>8</b>         | [10827] Right Filament Detection Unit       | 1        |
| <b>8</b>         | [10828] Left Filament Detection Unit        | 1        |
| <b>Snappybox</b> | [10235] M5 Flat Washer                      | 4        |
| <b>Snappybox</b> | [10640] M5 Fender Washer                    | 1        |
| <b>Snappybox</b> | [10236] M5x10mm BHCS                        | 1        |
| <b>8</b>         | [10935] Extruder Bundle Rod                 | 1        |
| <b>5</b>         | [11089] GB3+ Motors X, Y, Z PRO (Assembled) | 2        |
| <b>Snappybox</b> | [10244] M5x45mm BHCS                        | 4        |
| <b>Snappybox</b> | [10201] Limit Switch                        | 2        |
| <b>Snappybox</b> | [10417] Z-Limit Spacer                      | 2        |
| <b>Snappybox</b> | [10210] M2x16mm SHCS                        | 4        |
| <b>Snappybox</b> | [10208] M2 Split Washer                     | 4        |
| <b>Snappybox</b> | [10206] M2 Hex Nut                          | 4        |
| <b>6</b>         | [10046] Allen Wrench Set                    | 1        |
| <b>Snappybox</b> | [10218] M3 Washer                           | 2        |
| <b>Snappybox</b> | [10224] M3 x 8 SHCS                         | 2        |
| <b>1</b>         | [10985] GB3+ LED Light Strip                | 1        |

**WATCH THE  
ACCOMPANYING  
VIDEO:**

<https://youtu.be/BZIUFTe0yUM>

# OVERVIEW

This section goes through installation of the Filament Detection (FD) unit(s), both Y axis motors, the upper and lower Z limit switches, and the LED light strip.





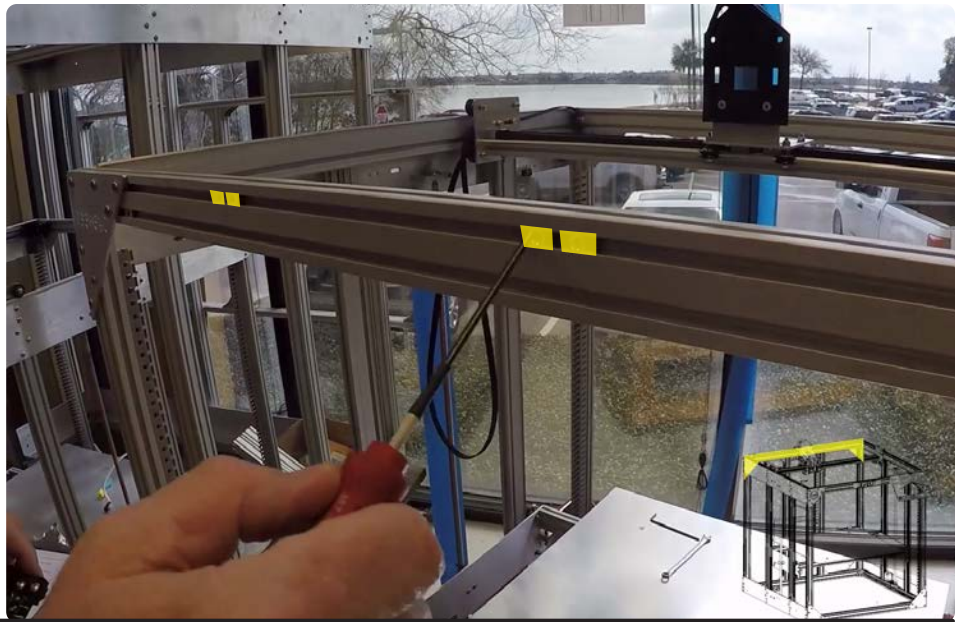
# TIPS & TRICKS

---

- #1** Be careful not to accidentally drop the M2 hardware. These parts are very small and easy to lose.
- #2** When installing the Y motors, do not overtighten the M5x45 screws in the plastic motor mounts. The plastic threads will easily strip if enough force is applied.

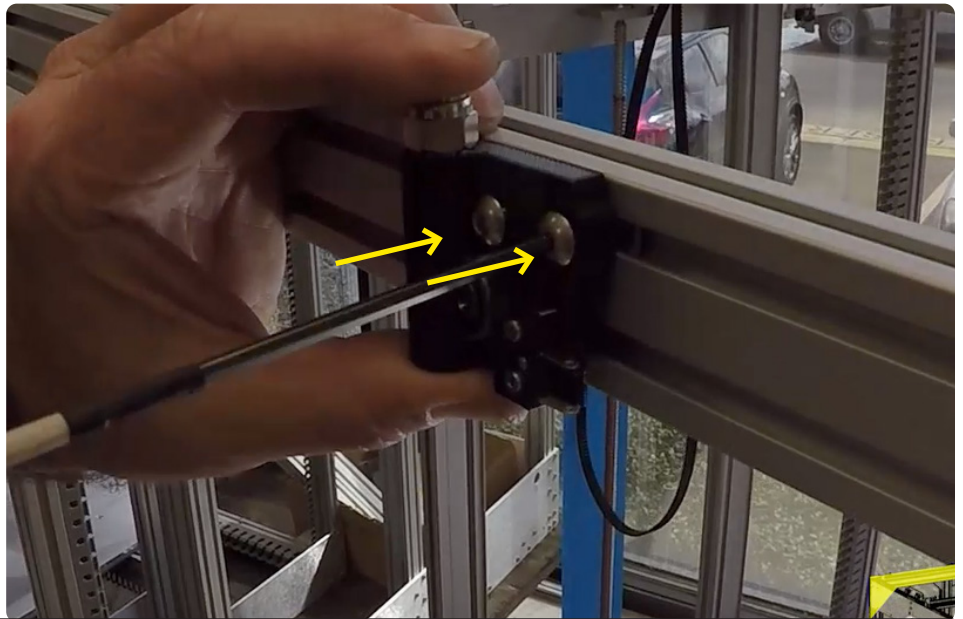
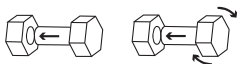
## I1

There are 4 T-nuts already installed in the upper slot of the rear header. These are for installing the Filament Detection (FD) units.



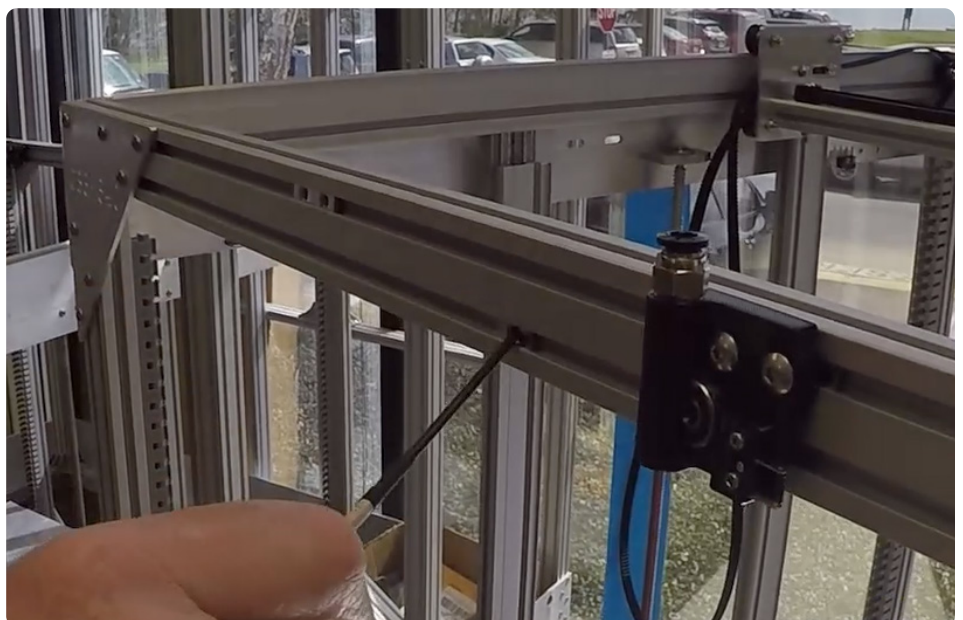
## I2

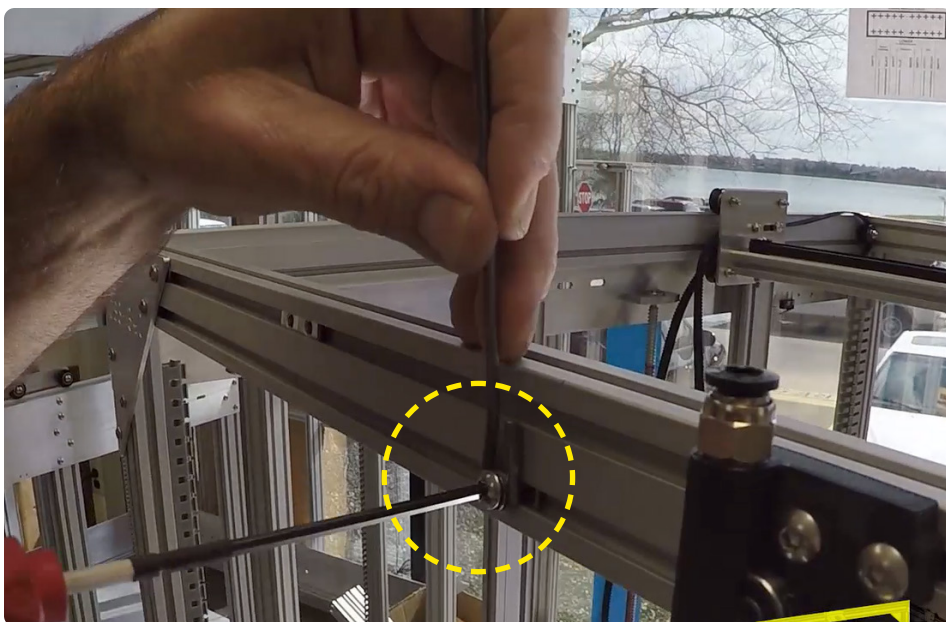
Use 2 [11313] M5 x 12 SHCS to fasten each FD unit to the frame. You must distinguish FD1 from FD2, as shown.



## I3

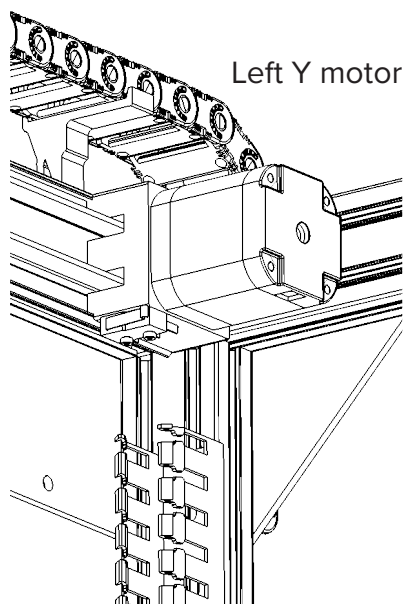
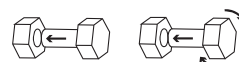
There is 1 T-nut already installed in the lower slot of the rear header. This is for installing the [10935] Extruder Bundle Rod.



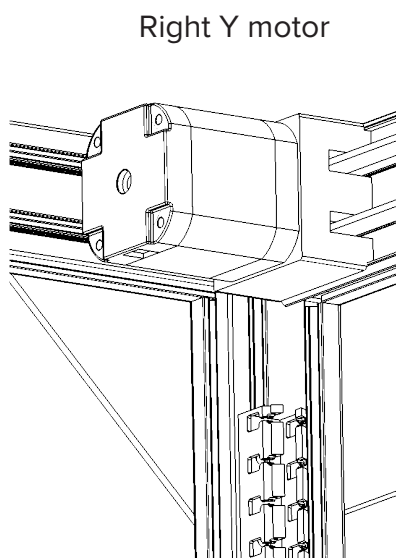


## 14

Use 1 [10640] M5 Fender Washers and 1 [11538] M5 x 10 SHCS to install the [10935] Extruder Bundle Rod onto the frame as shown. You may also opt to install this at the very end of assembly since it is not really necessary until filament tubes are installed.



Left Y motor



Right Y motor

## 15

Next, you will need to install the Y motors. Note that the Y motors are mirrored from each other. On the Gigabot frame, they need to be oriented such that their cable connector is facing down and the motor blocks accommodate the Y axis belts.



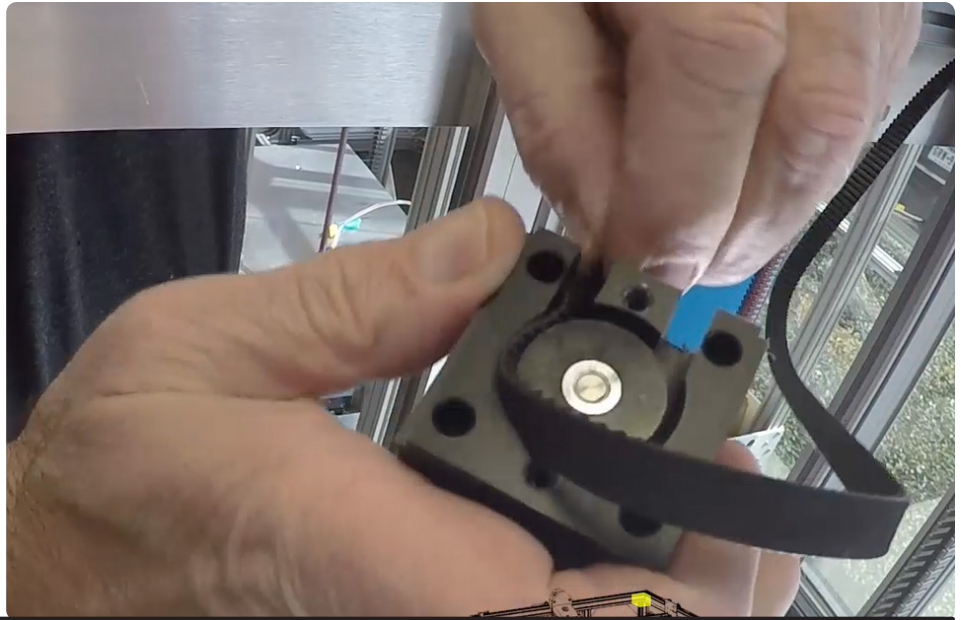
## 16

Starting on one side, first straighten out the Y-axis belt such that it is not twisted.



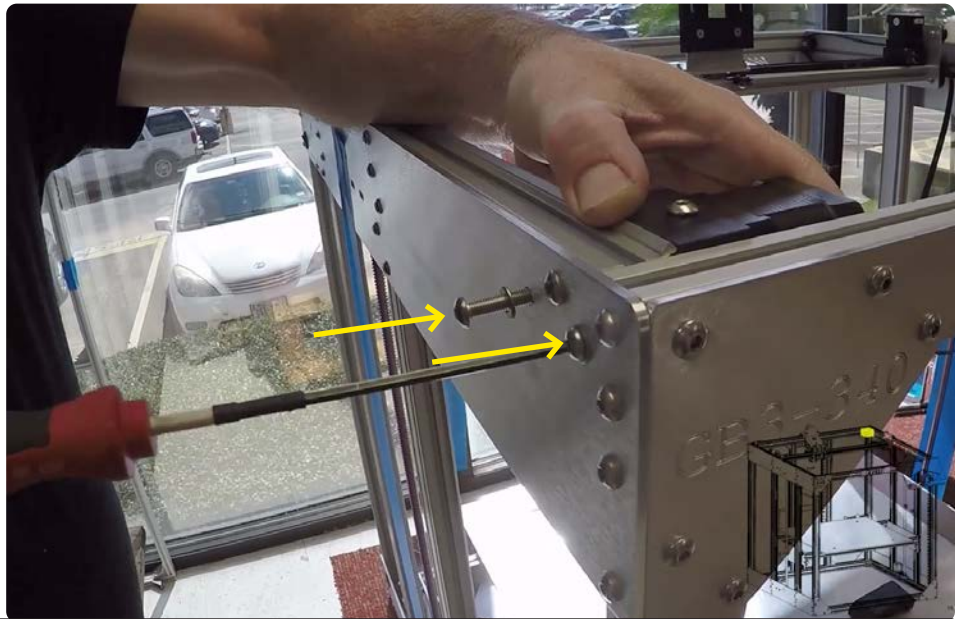
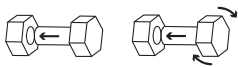
## 17

Loop the belt into the motor block as shown. Recall the orientation of the motor as mentioned above. [See video for a demonstration.](#)



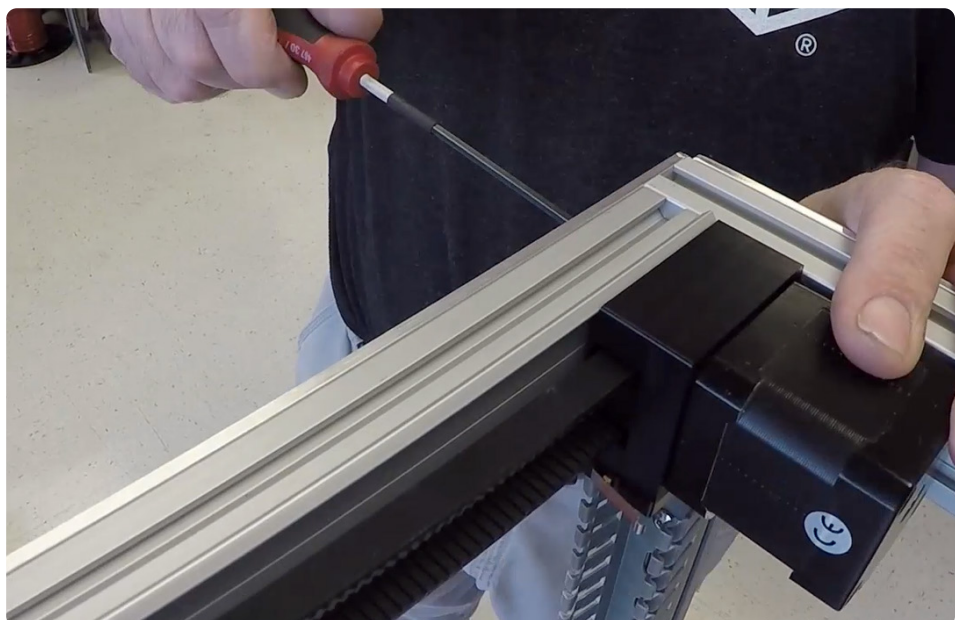
## 18

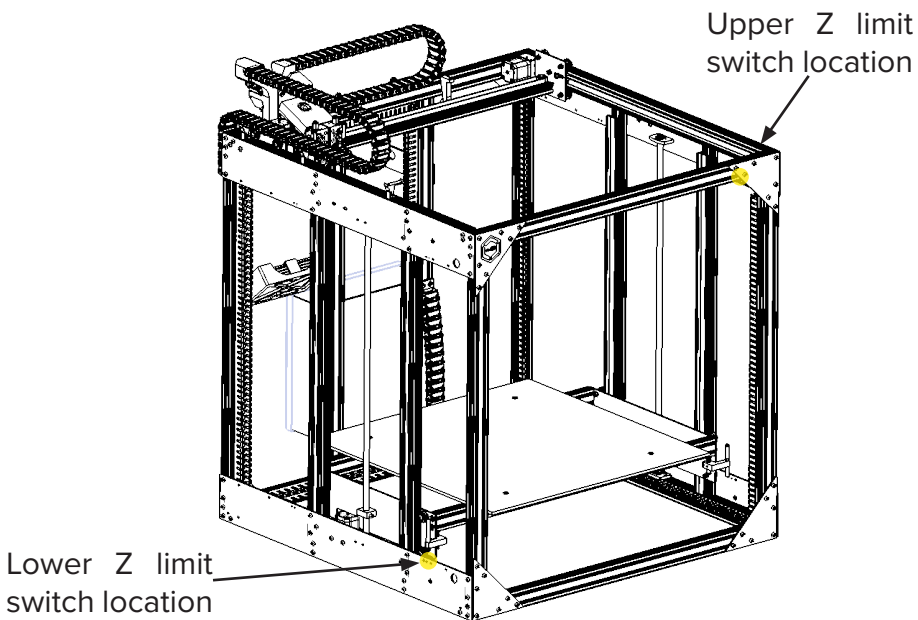
Mount the Y motor to the frame using 2 [10244] M5x45mm BHCS and 2 [10235] M5 Flat Washers each. If the belt is twisted, carefully remove and replace it in the proper orientation and then mount the Y motor. Be careful not to overtighten these in case you strip the threads in the plastic motor blocks.



## 19

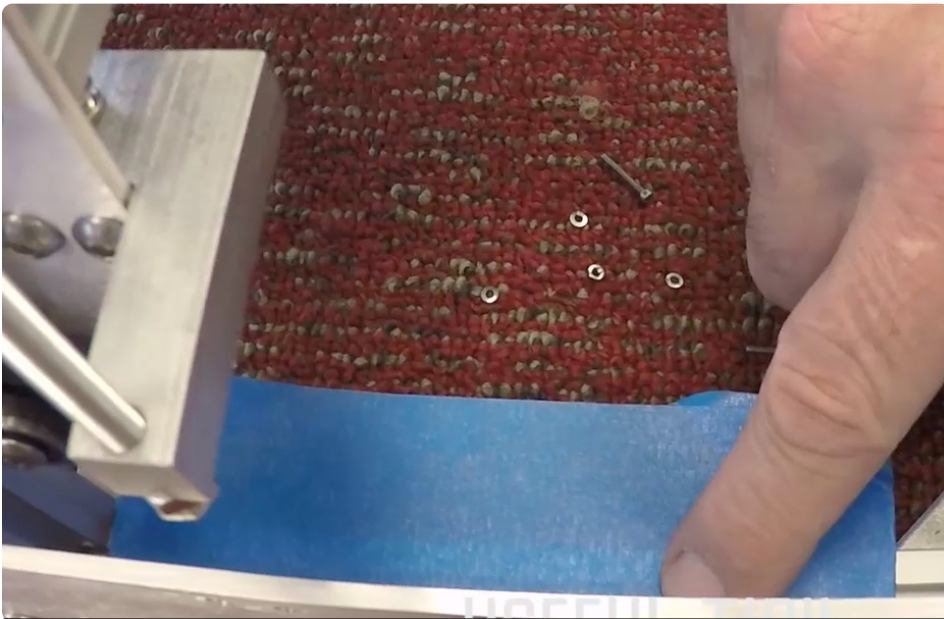
Do this for both Y motors. Note that the left side Y motor already has a limit switch installed, while the right side Y motor does not use a limit switch.





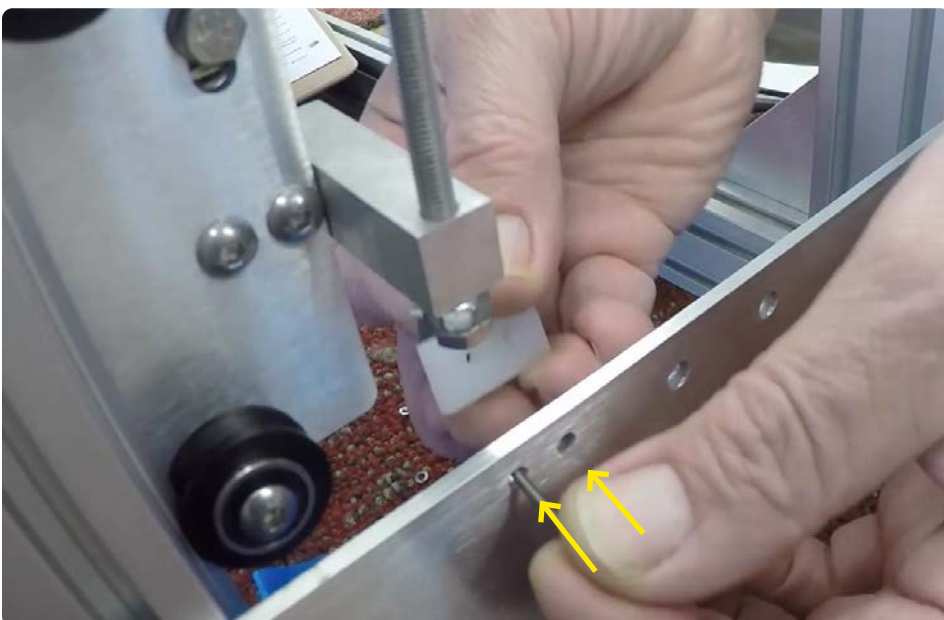
## I10

Next, you will install the Z upper and Z lower limit switches. They are installed using the same hardware, but face opposite directions.



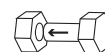
## I11

Before starting, it is helpful to put a piece of tape or paper on the rail underneath the Z lower limit switch to catch any hardware you may accidentally drop.



## I12

Insert 2 [10210] M2x16mm SHCS into the limit switch holes.





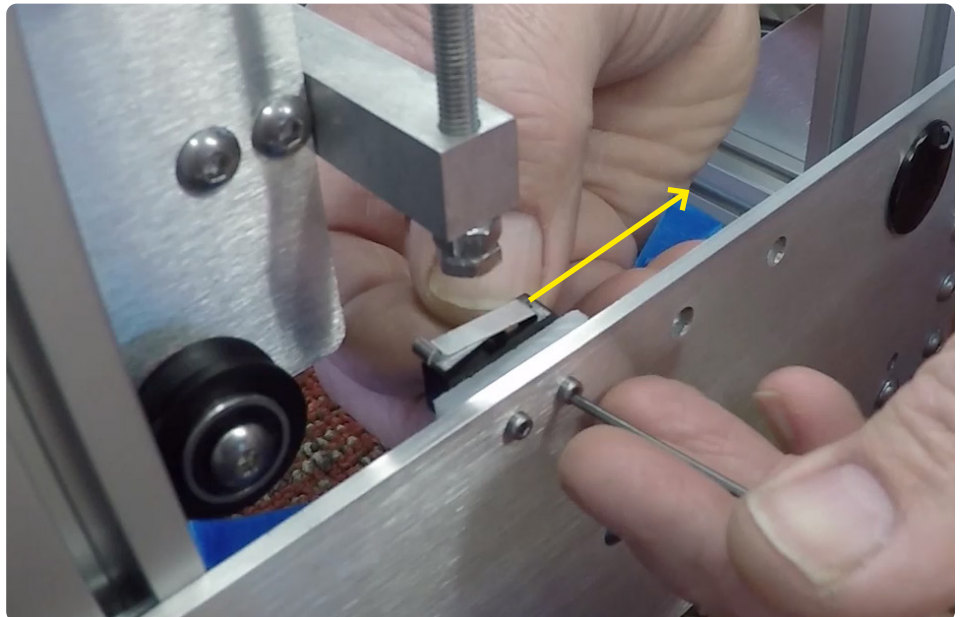
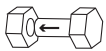
### I13

Add the white plastic limit switch mount. Note that the holes are offset slightly, and that the narrower side should be flush against the edge of the side plate.



### I14

Add the limit switch, with the hinge of the switch pointing towards the front of the Gigabot.



### I15

Place the [10208] M2 Split Washer and [10206] M2 Hex Nut on the M2x16. You can use your fingers to get them started and just finger tighten them before using the 1.5mm Allen Key and needle nose pliers to fully tighten them. You do not want the force of the bed frame to be able to move the limit switch on its mount.







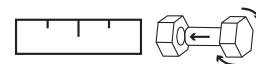
## I16

Repeat this for installing the other Z limit switch.



## I17

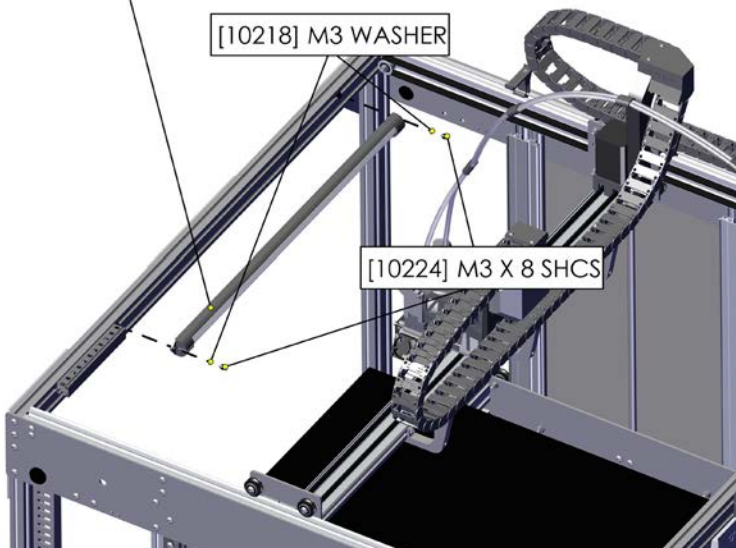
On the Z lower limit switch, go ahead and bring the M5x70 hex head screw all the way down until it engages the limit switch. This is a preliminary setting, and will be finally adjusted during calibration.



[10985] GB3 LED Light Strip [Assembled]

[10218] M3 WASHER

[10224] M3 X 8 SHCS



## I18

Mount the [10985] GB3+ LED Light Strip to the inside of the front header. Use 2 [10218] M3 Washers and 2 [10224] M3 x 8 SHCS.

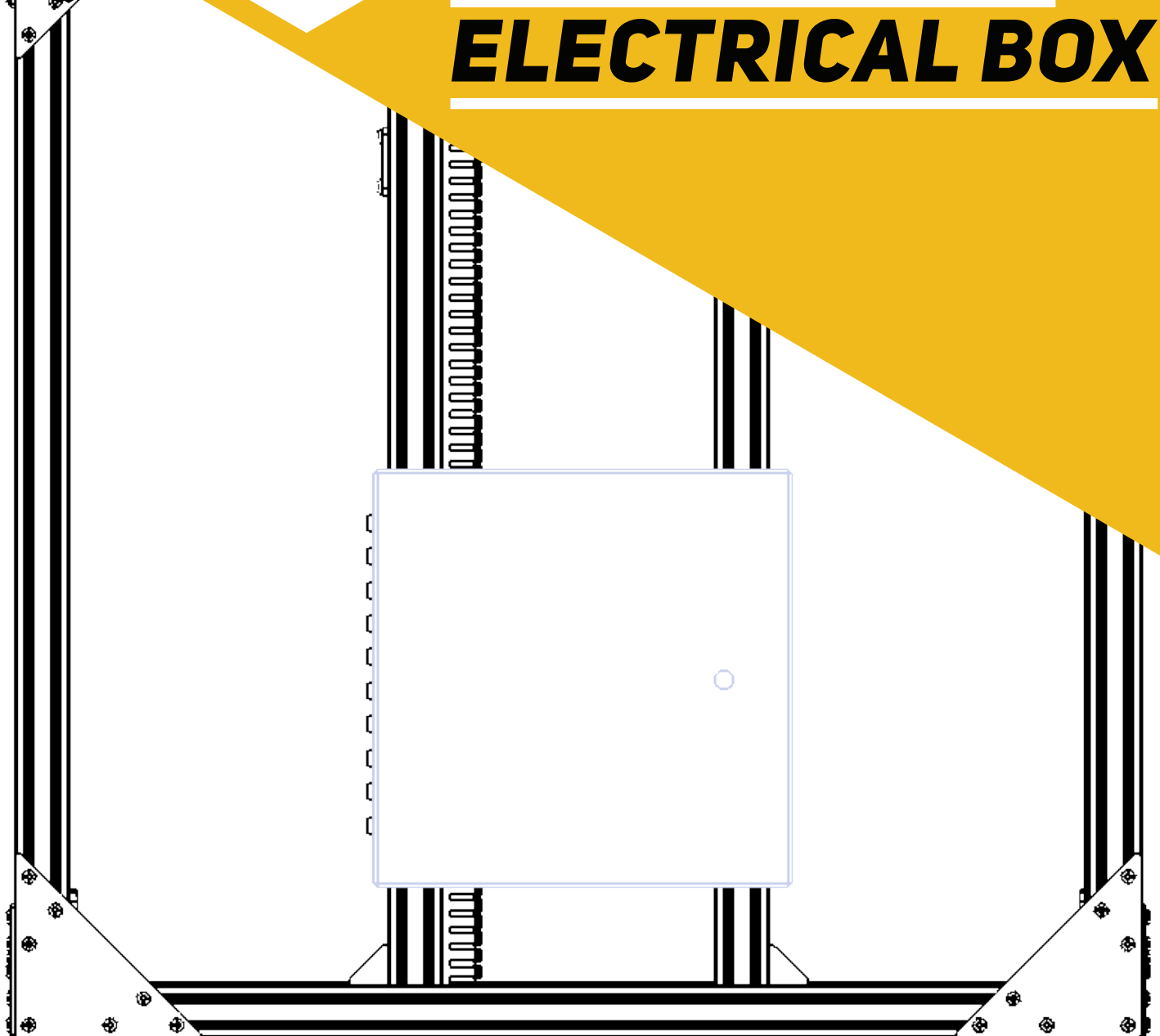
For a demonstration of these step by step instructions, please see our video for this section.

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# ***WIRING: Y SUPPORTS & ELECTRICAL BOX***



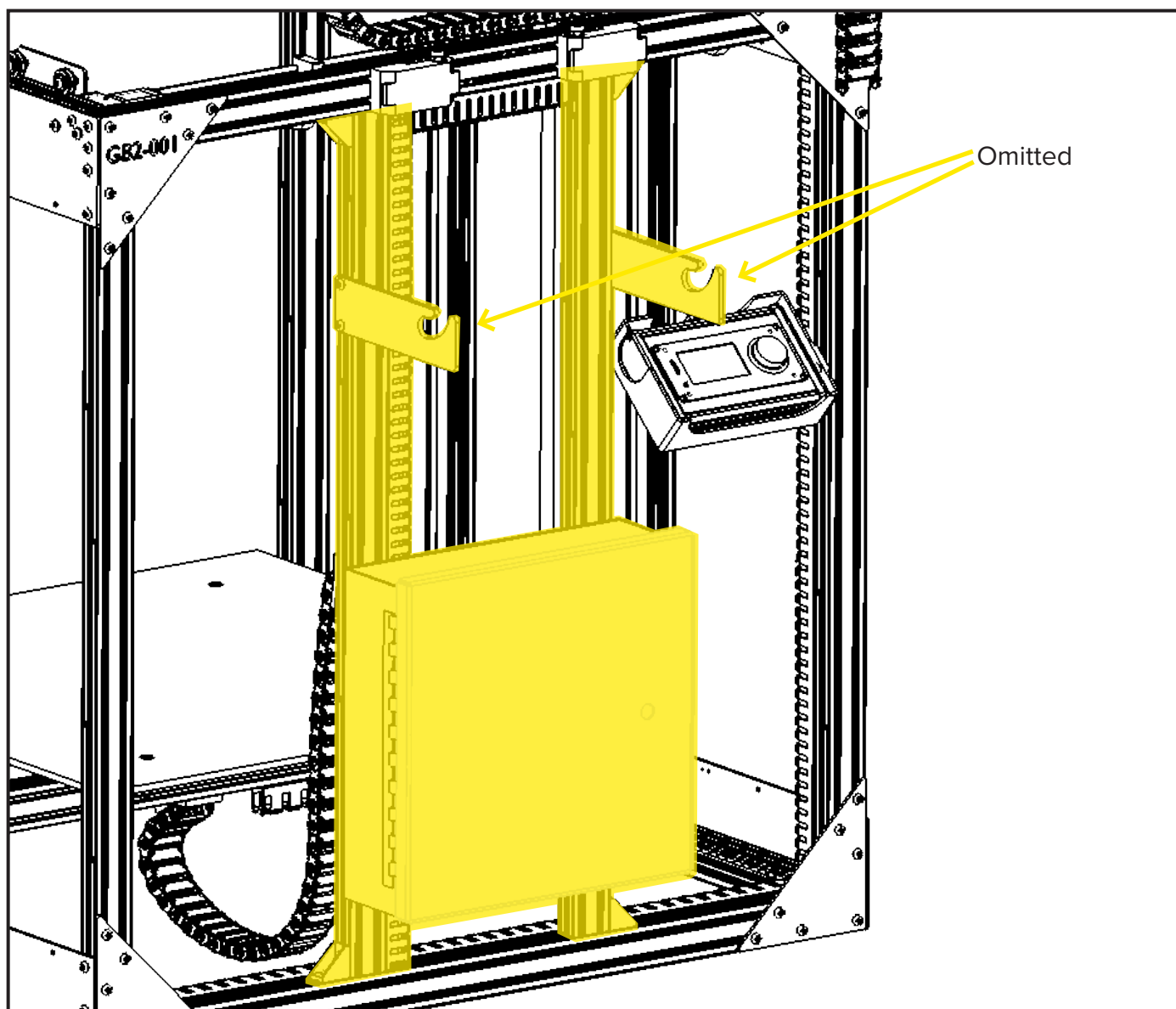
# TOOLS & PARTS

*Refer to packing list to identify parts*

| BOX #  | PART  | QUANTITY |
|--|---|----------|
| <b>Snappybox</b>                             | [10725] Y-Axis Carrier Support  | 3        |
| <b>Snappybox</b>                             | [10363] Triangle Brace  | 4        |
| <b>Snappybox</b>                             | [10236] M5x10mm BHCS  | 8        |
| <b>Snappybox</b>                             | [10361] M5 T-nut  | 8        |
| <b>1</b>                                     | [10514] #2 x 31"  | 1        |
| <b>Snappybox</b>                             | [11537] M5 x 8 SHCS   | 4        |
| <b>1</b>                                     | [10100] Common Rail   | 2        |
| <b>3</b>                                     | [11088] GB3+ Electrical Enclosure                                       | 1        |
| <b>6</b>                                     | [10046] Allen Wrench Set  | 1        |
| <b>WATCH THE<br/>ACCOMPANYING<br/>VIDEO:</b> | <a href="https://youtu.be/PEEyj3-02yU">https://youtu.be/PEEyj3-02yU</a> |          |

# OVERVIEW

In this section you will install the Y axis cable carrier supports in the Gigabot® frame as well as mount the electrical box to the Gigabot® frame. Note that GB3+ no longer uses the spool rod plates from GB3, so these parts are omitted. Instead, [10864] Spool Holders will be installed towards the end of the build.





# TIPS & TRICKS

---

- #1** Work on a flat surface when placing the electrical box on the [10100] Common Rail.
- #2** Be careful not to bump against the [10725] Y-Axis Carrier Support once they are inserted, or you may risk breaking them.
- #3** M5x10s and T-nuts for the electrical box uprights should have already been included in construction of the rear header and footer. Check section B again to ensure that these have been installed.

## J1

Next you will install the Y axis cable carrier supports on the left runway rail of the Gigabot. These are the 3D printed pieces as shown here.



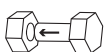
## J2

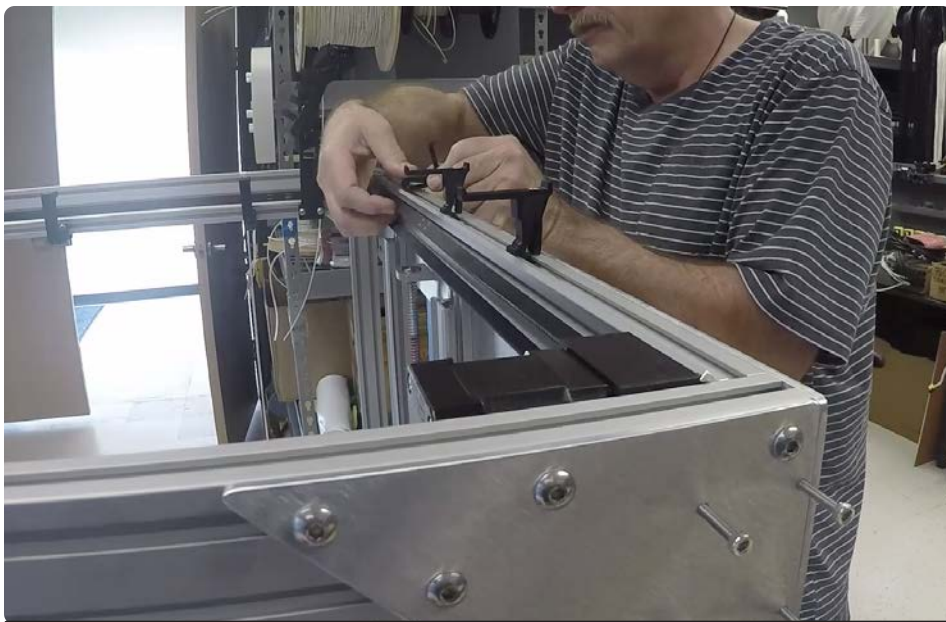
Lay the flat leg of the support on the rail as shown.



## J3

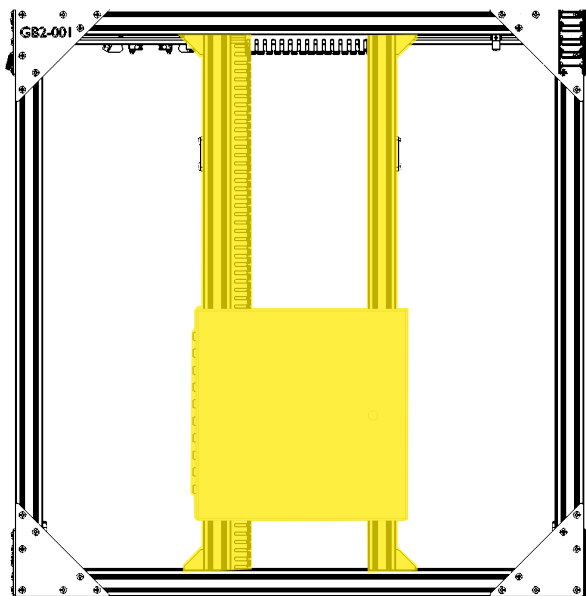
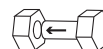
Press the rounded end into the slot of the rail and tilt the support up. It should stand upright while maintaining a grip on the rail itself.





## J4

Install 3 total Y axis cable carrier supports into the left runway rail. These will be put in their final spacing once the Y axis cable carrier is installed.



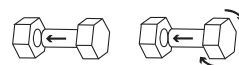
## J5

Next you will be assembling the electrical box uprights with the electrical box.



## J6

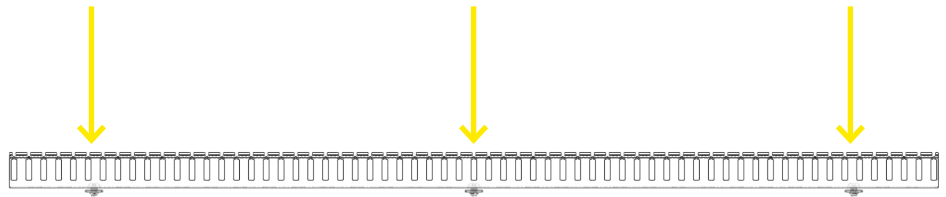
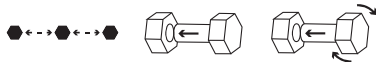
Prepare 4 [10363] Triangle Brace with an [11538] M5 x 10 SHCS and a T-nut on one side, as shown. If there is more than one hole on one side of the brace, use the hole that is most centered.





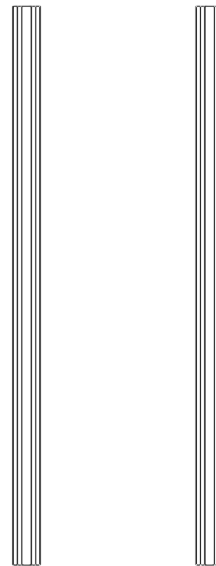
## J7

On the 31" #2 Panduit, evenly space and insert 3 [11537] M5 x 8 SHCS. Loosely fasten a T-nut to each end of the screws.



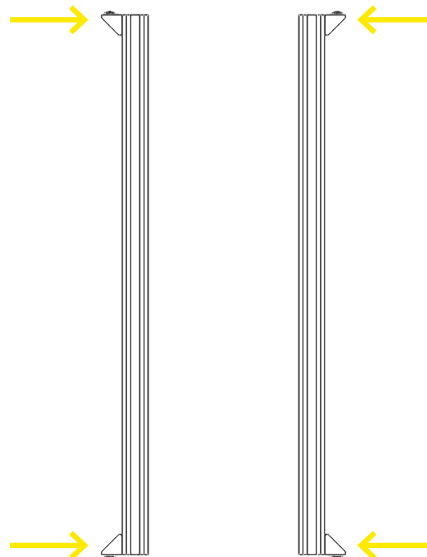
## J8

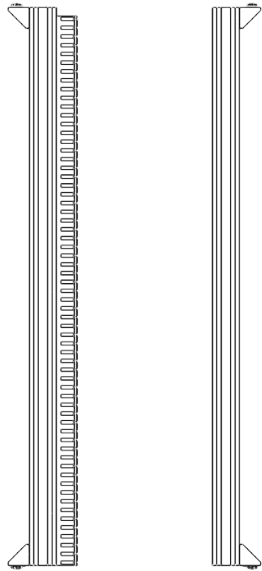
Remove 2 [10100] Common Rail (green tape) from box #1 and lay them flat as shown.



## J9

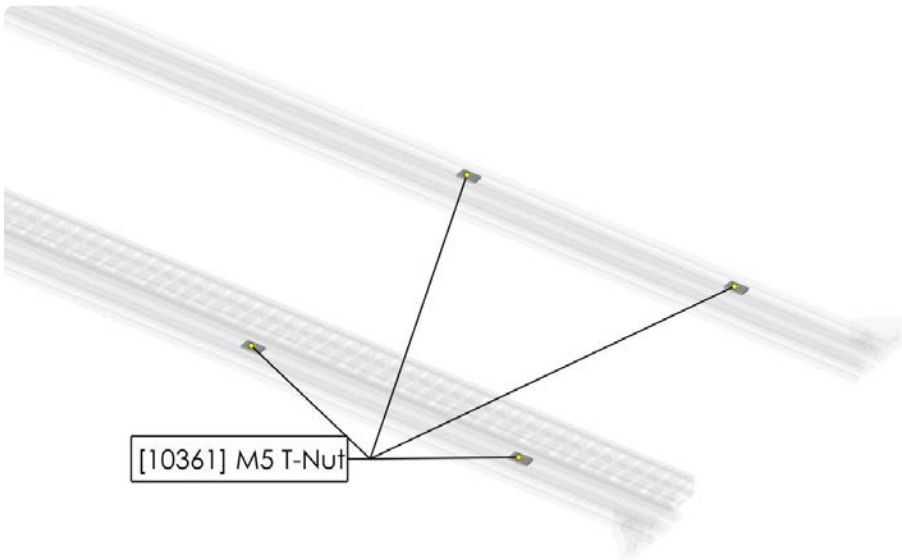
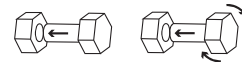
Insert the 4 [10363] Triangle Brace into the outer slots as shown, placing 1 at each end of the rails. The lower braces should be made flush and fully fastened. The upper braces can be loosely fastened for now. Recall that there is already hardware in the rear header and footer to accommodate these [10363] Triangle Brace.





## J10

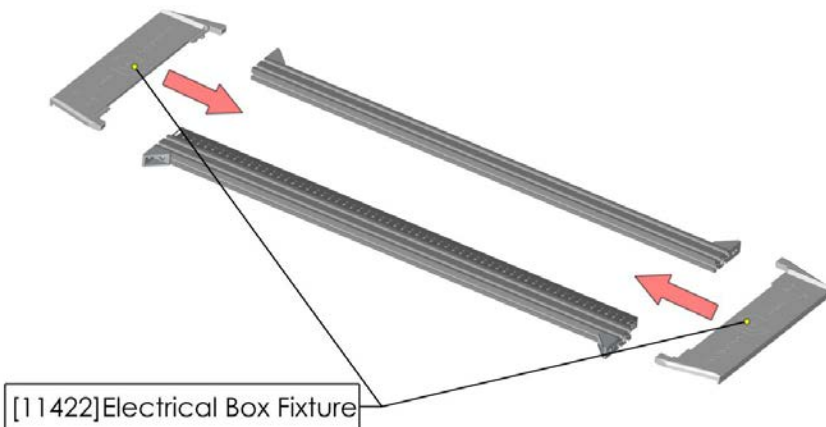
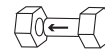
Insert the #2 31" Panduit along the inside slot of the left common rail (which will become the right electrical box upright when installed to the frame). Fully tighten the [11537] M5 x 8 SHCS once these are in place.



[10361] M5 T-Nut

## J11

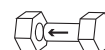
Insert 2 more T-nuts into each rail as shown (4 total). These will be for securing the electrical box to the uprights.



[11422] Electrical Box Fixture

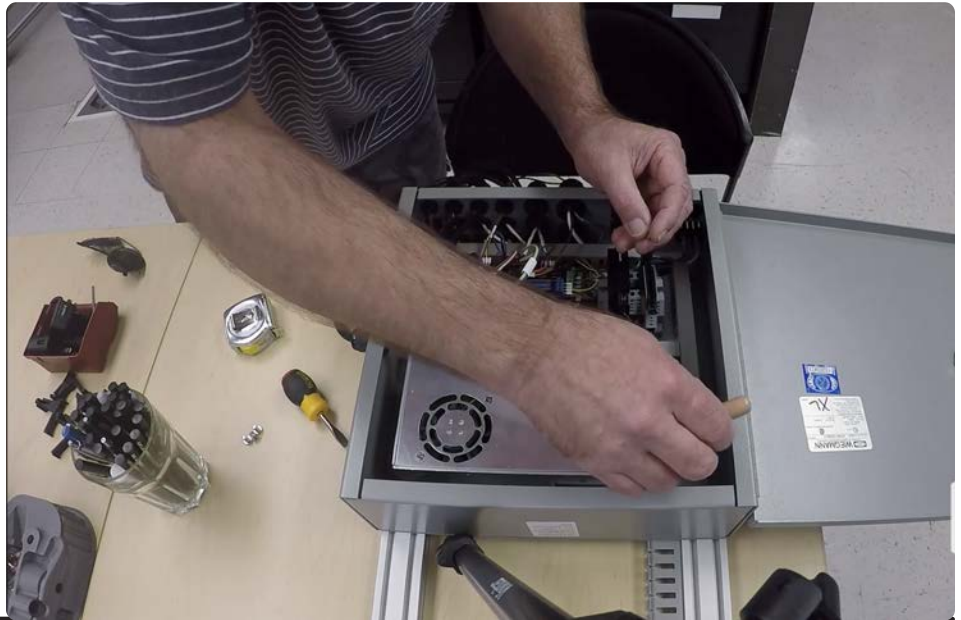
## J12

Attach [11422] Electrical Box Fixture to both the top and bottom of the electrical box uprights. Slide each fixture into the slots of the rails until the rail stops against the bottom of the fixture.



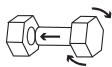
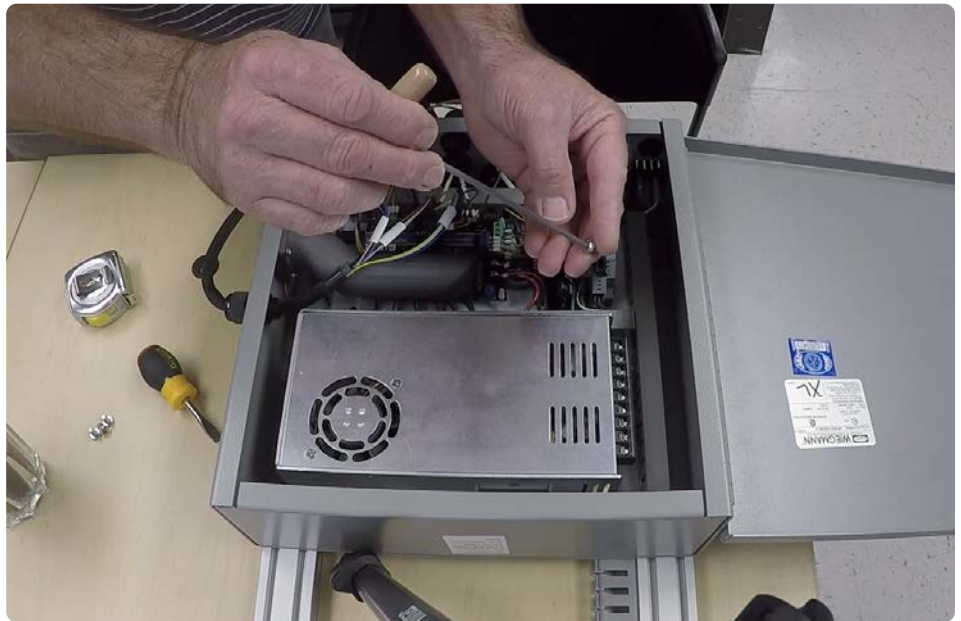
## J13

Open the electrical box with a flathead screwdriver and check that the T-nuts are aligned with the holes in the electrical box. Adjust as necessary by lifting the box and using something like an Allen Key to move the T-nuts.



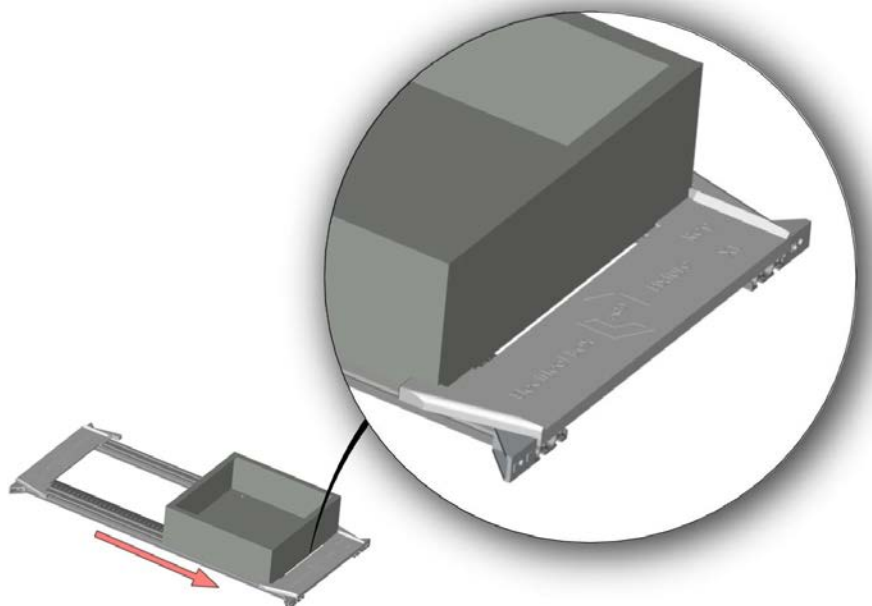
## J14

Once the T-nuts are aligned with the holes, loosely fasten the box to the rails using 4 M5 x 8 SHCS.



## J15

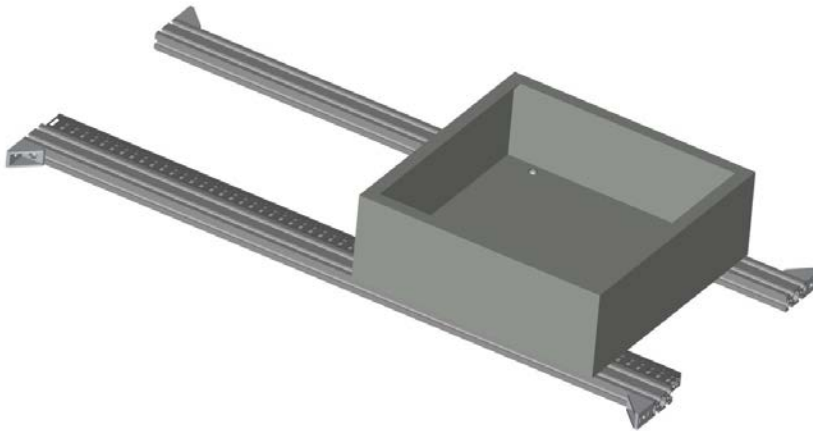
Move the electrical box down so it sits right against the lower fixture. Fully tighten the [11537] M5 x 8 SHCS using the 3mm Allen wrench and close the electrical box.





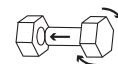
## J16

Remove the [11422]  
Electrical Box Fixtures.



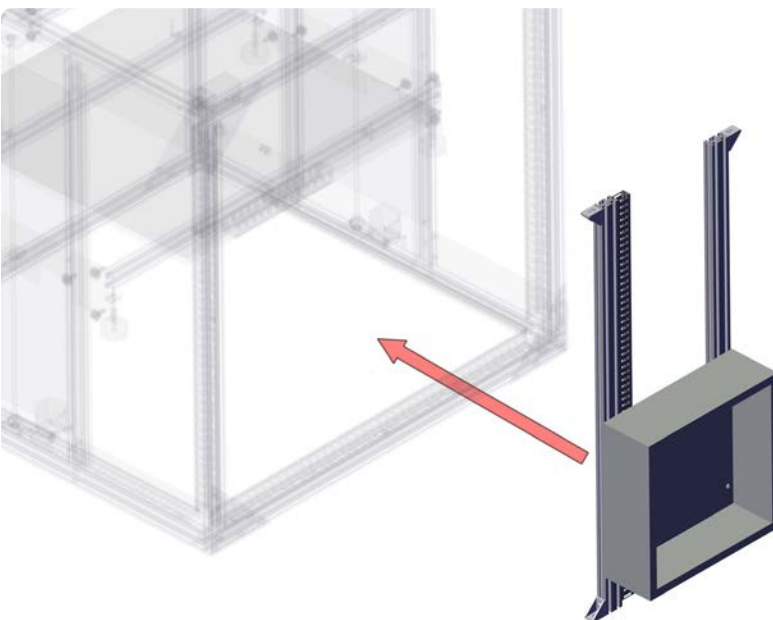
## J17

Close the electrical box  
and lock it using the  
flathead screwdriver.



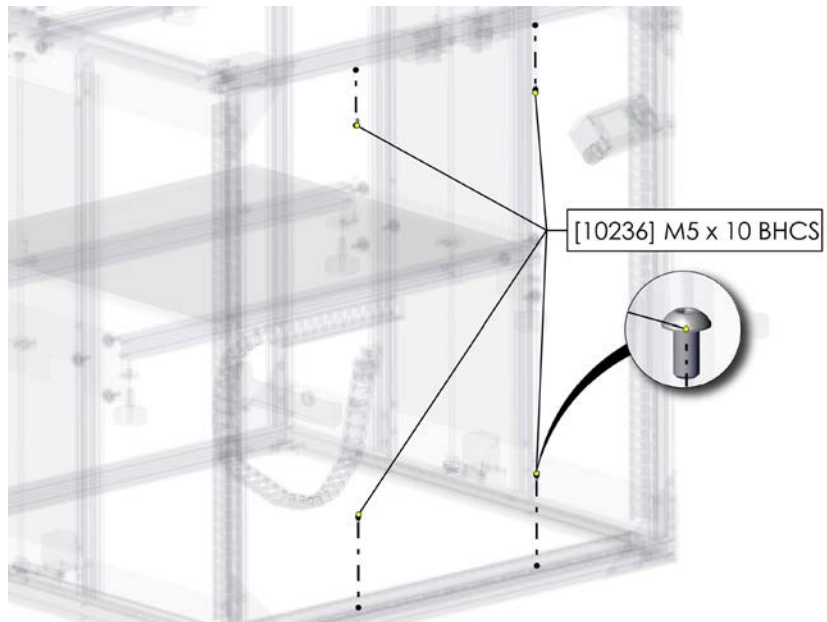
## J18

Now you are ready to  
mount the entire electrical  
box assembly with the  
upright rails into the  
Gigabot frame.



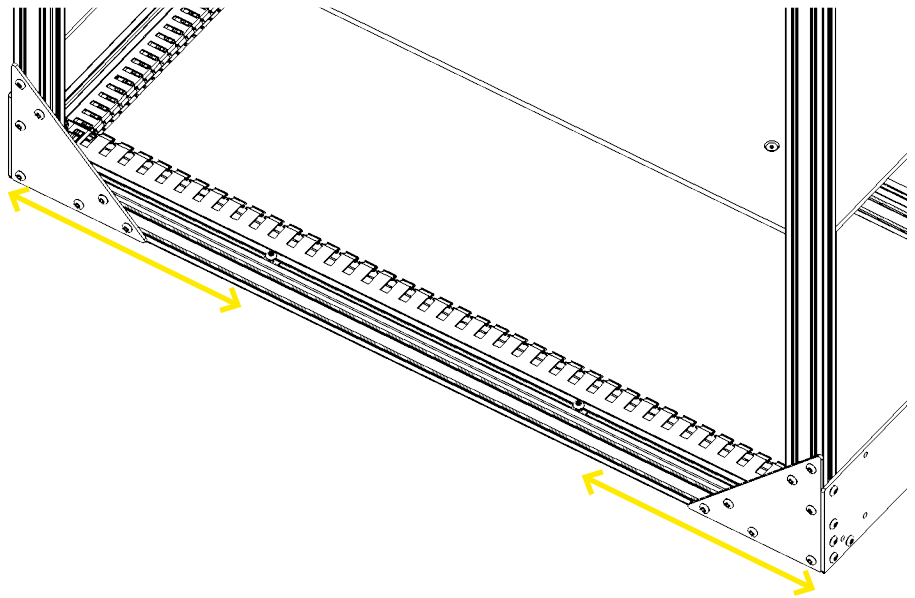
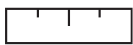
## J19

Remove the M5x10s on the rear header and footer to accommodate the [10363] Triangle Brace.



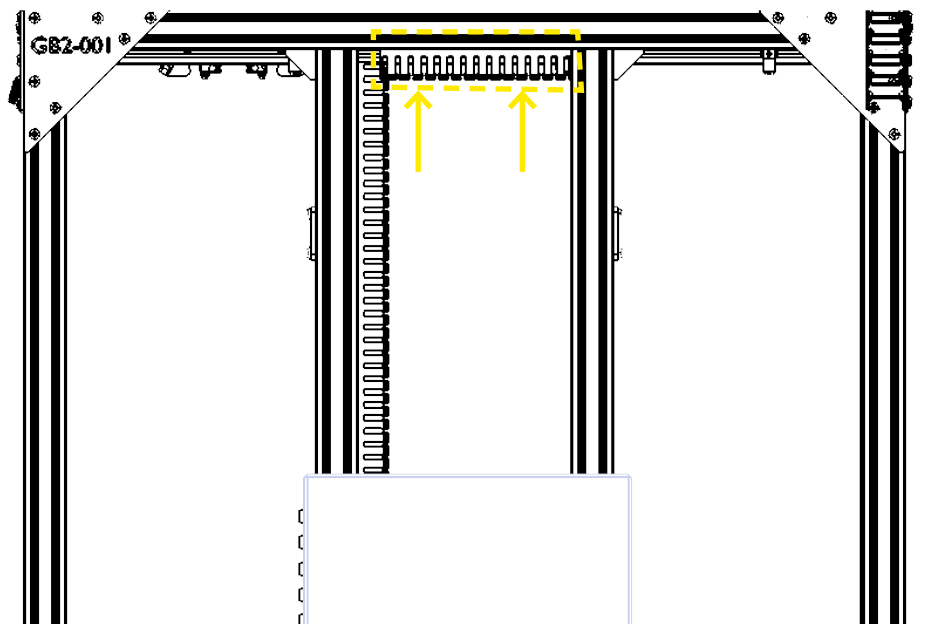
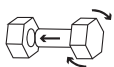
## J20

Make 2 marks on the rear footer at 10 7/8" from each end if you haven't already. This is used to properly space the electrical box uprights.



## J21

Fasten the #2 size 7 1/4" Panduit below the rear header using 2 [11537] M5 x 8 SHCS and the 3mm Allen Key as shown. This will go in the center of the header in between the [10100] Common Rail for the electrical box.







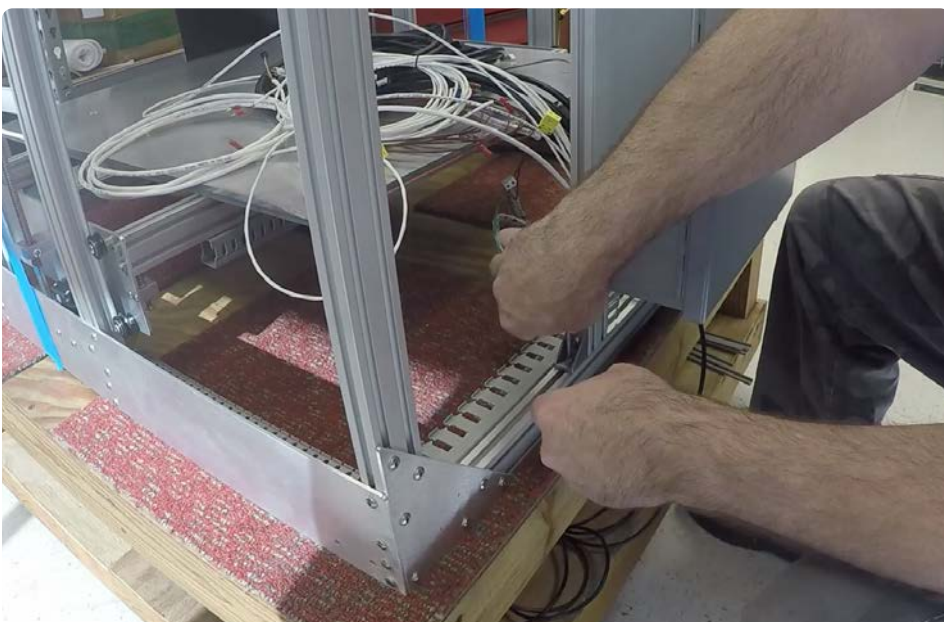
## J22

Hold the electrical box assembly at an angle and place the lower ends of the uprights on the rear footer, aligning them with your pencil marks and the T-nuts.



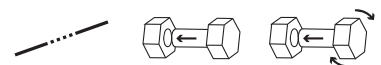
## J23

Pivot the assembly upward and fit the top ends of the rails under the cross rail of the rear header.



## J24

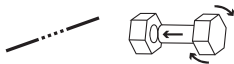
Align the T-nuts with the [10363] Triangle Brace and replace the M5x10s to fasten them down.





## **J25**

Double check that the uprights are aligned with the marks you previously made and then fully tighten the M5x10s. You may need to gently nudge the rails into alignment if they are misaligned.



## **J26**

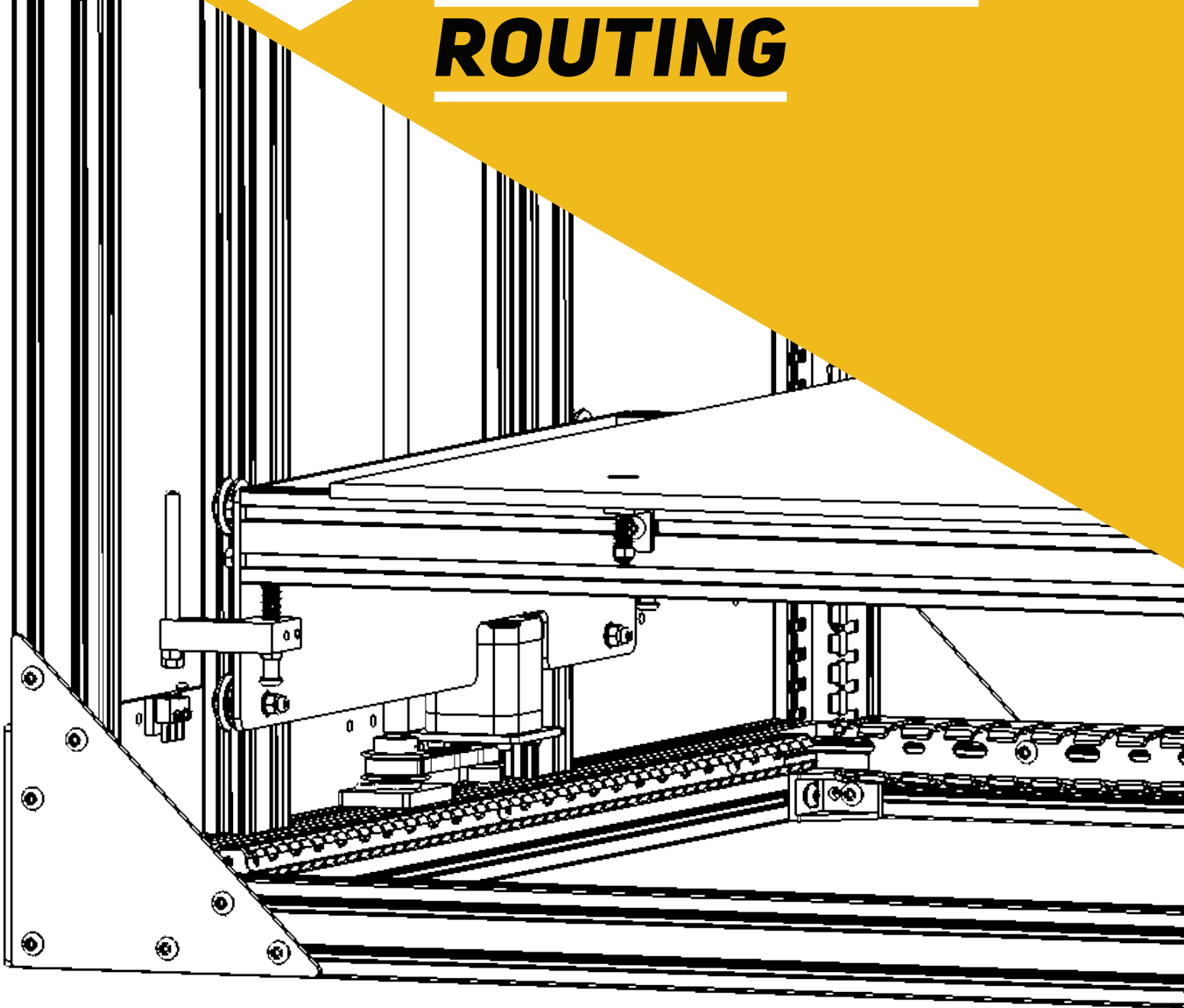
[For a demonstration of these step by step instructions, please see our video for this section.](#)

## **J27**



K

# **WIRING: PRELIMINARY ROUTING**



# TOOLS & PARTS

*Refer to packing list to identify parts*

| BOX # | PART | QUANTITY |
|-------|------|----------|
|-------|------|----------|

|           |                             |   |
|-----------|-----------------------------|---|
| Snappybox | [10819] X-Axis Wiring Clips | 3 |
|-----------|-----------------------------|---|

|           |                             |   |
|-----------|-----------------------------|---|
| Snappybox | [10820] Y-Axis Wiring Clips | 3 |
|-----------|-----------------------------|---|

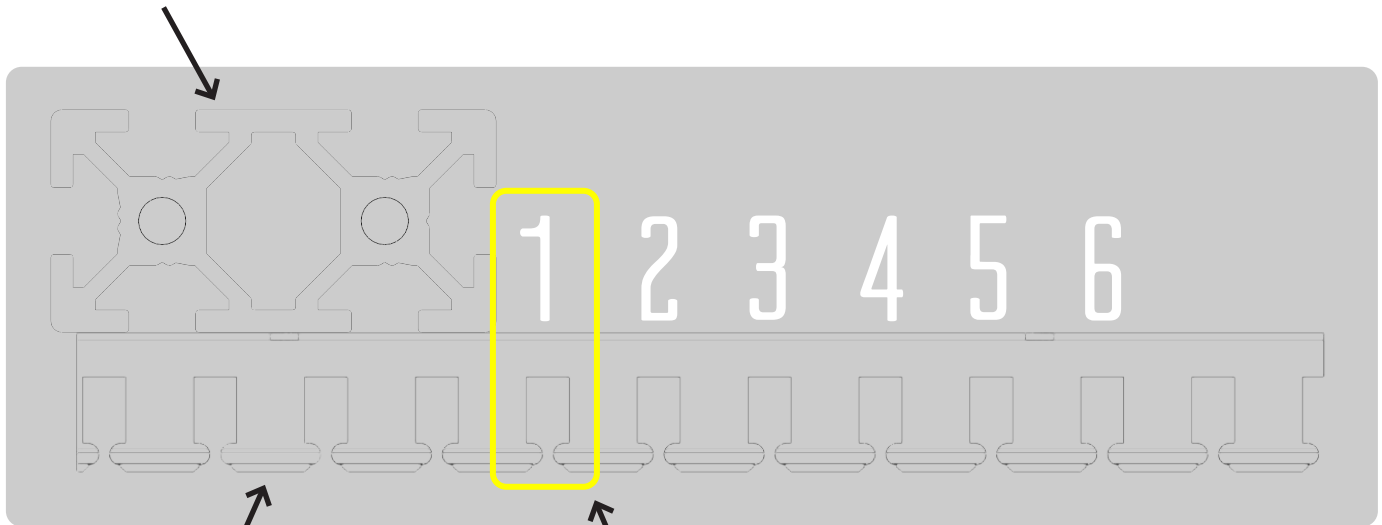
|  |   |  |
|--|---|--|
| <b>WATCH THE<br/>ACCOMPANYING<br/>VIDEO:</b> | <a href="https://youtu.be/av96ntgamH4">https://youtu.be/av96ntgamH4</a> |  |
|--|---|--|



# OVERVIEW

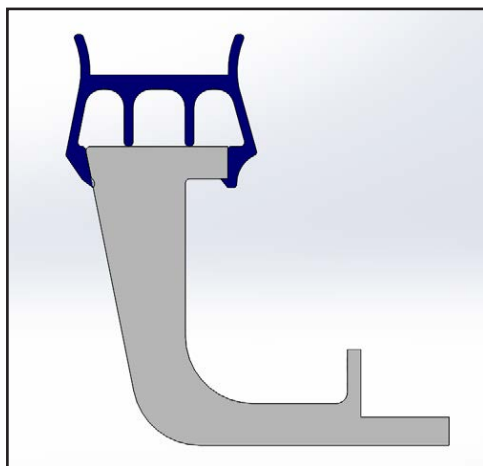
In this section, the wires will be routed from the electrical box to all of Gigabot's components. You may see smaller versions of the diagram below that call out which slot on the #4 Panduit the cables should be routed into.

This represents the left electrical box upright rail.

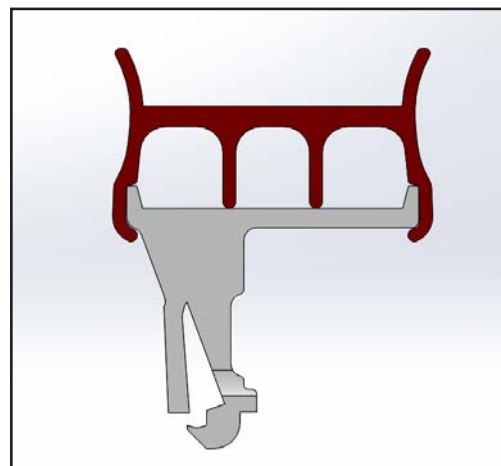


This represents the #4 30" Panduit installed on the rear footer.

This indicates that the current cable(s) should be routed into the first slot to the right of the rail. Similarly, a yellow box around any other number signifies it should be routed through that number slot.



X wiring clip as shown on the [10837] X Cable Carrier (53 links) support



Y wiring clip as shown on the Y cable carrier support

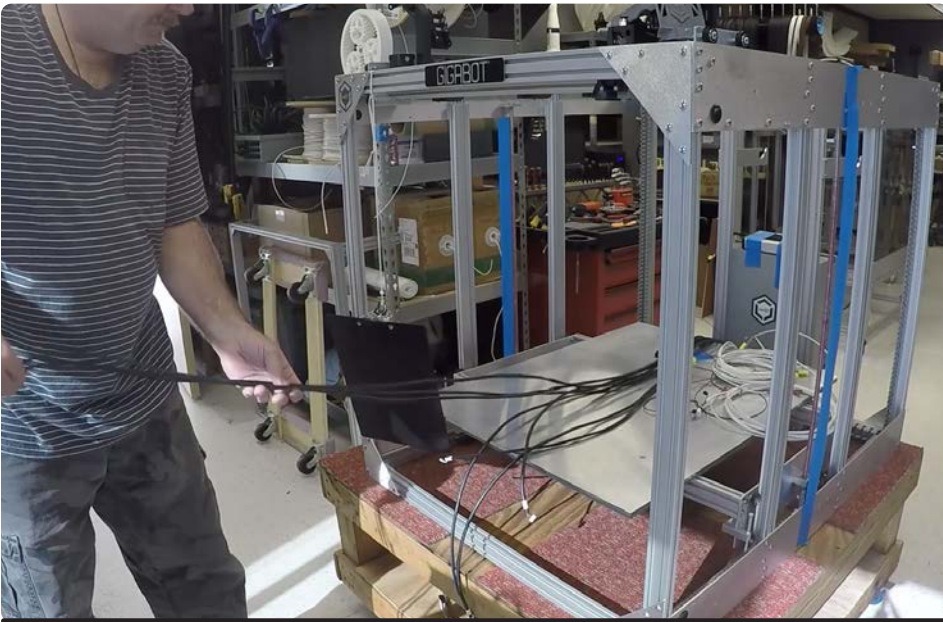
# TIPS & TRICKS

---

- #1** Use twist-ties liberally to keep the cables managed until the Panduit covers are installed.
- #2** The X wiring clips are different from the Y wiring clips.
- #3** Each cable is labeled at the end, near the connector.
- #4** Be patient!

## K1

Next, you will start routing your wires from the electrical box to their respective components and begin organizing them in the Panduits.

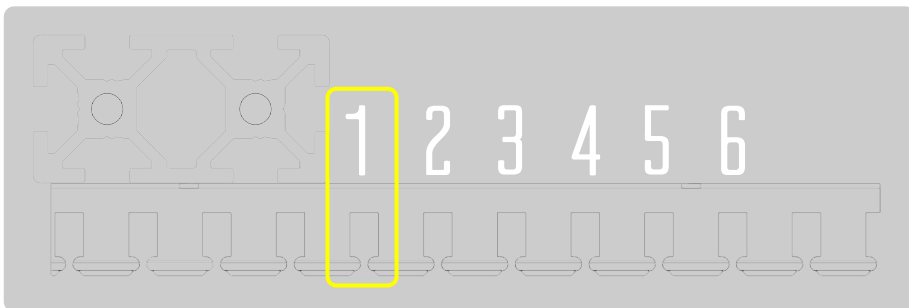


## K2

The thicker black cables are motor cables. Pull those from the box out through the front of the Gigabot frame and check that they are not tangled with each other. The longest cables are for the X motor and the extruder motors.

## K3

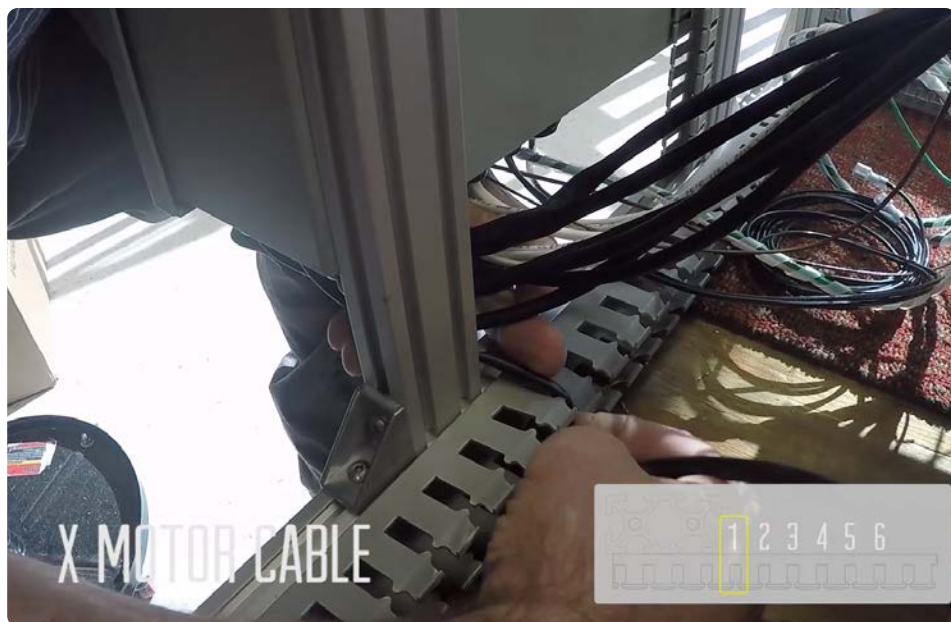
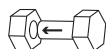
Generally, the cables will be inserted into the largest #4 Panduit in the rear footer via a specific slot in the Panduit. We use up to 6 slots starting close to the left electrical box upright rail, as shown in the diagram.





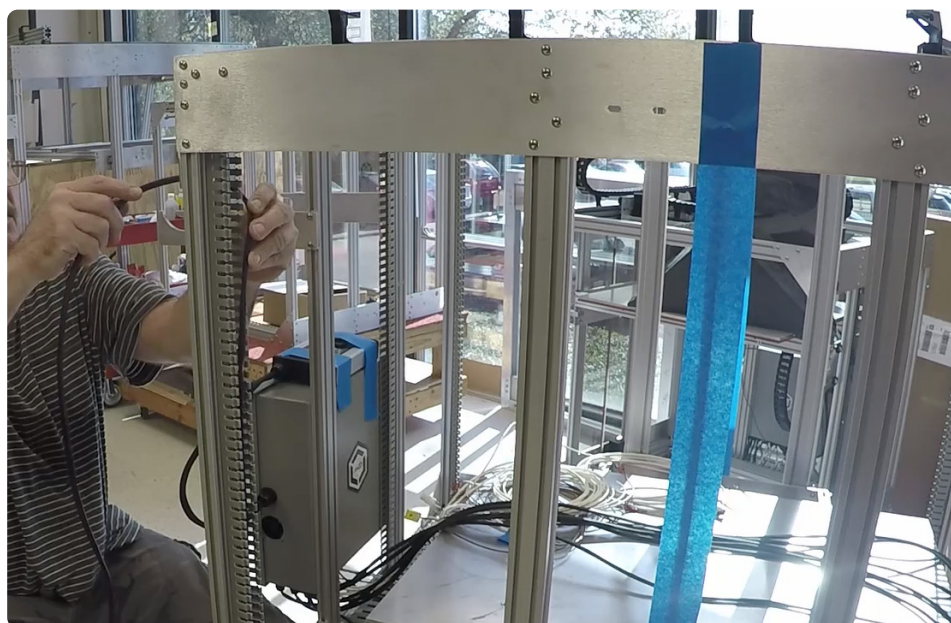
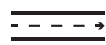
## K4

Starting with the X motor cable, insert it into the 1st slot of the #4 Panduit.



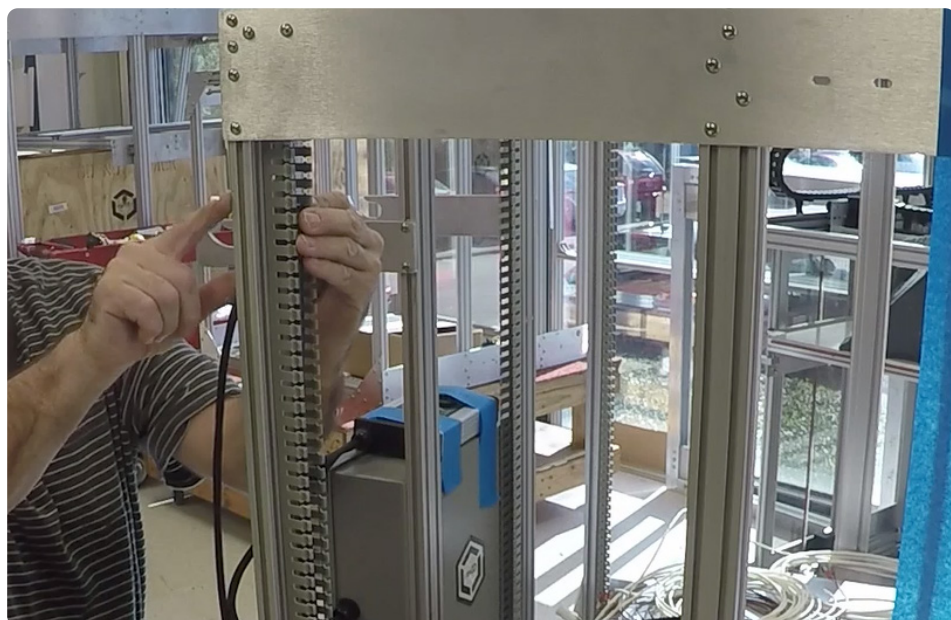
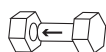
## K5

Run the X motor cable up through the #3 Panduit on the rear left corner.



## K6

Insert the X motor cable again through one of the slots of the #3 Panduit, approximately 1 slot below the bottom of the machined corner plate as shown.







## K7

Run the X motor cable up through the initial Y axis cable carrier on the corner plate and all along the length of the left runway rail. Let this hang here for now.



## K8

Next, you will wire the Left Z motor (ZL), Left Y motor (YL), and Extruder 2 motor (E2)



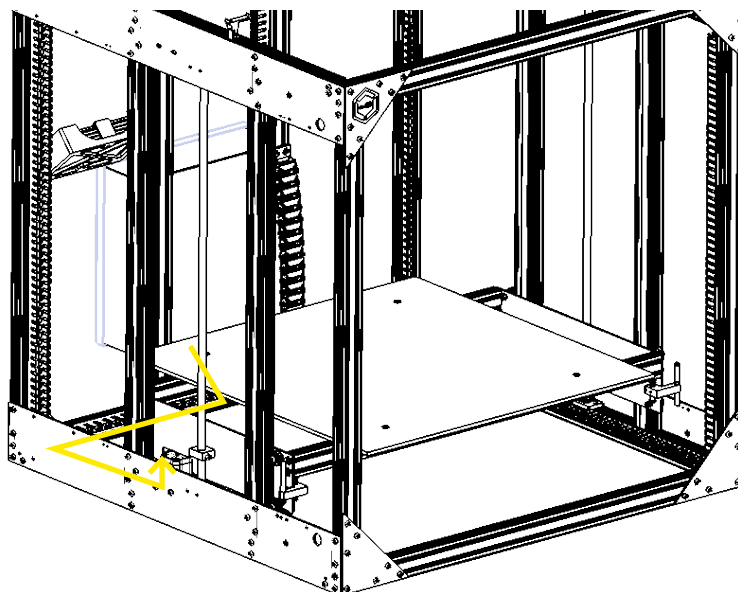
## K9

Following the order mentioned above, route the cables in the same way as the X motor cable, again using slot #1 in the #4 Panduit.



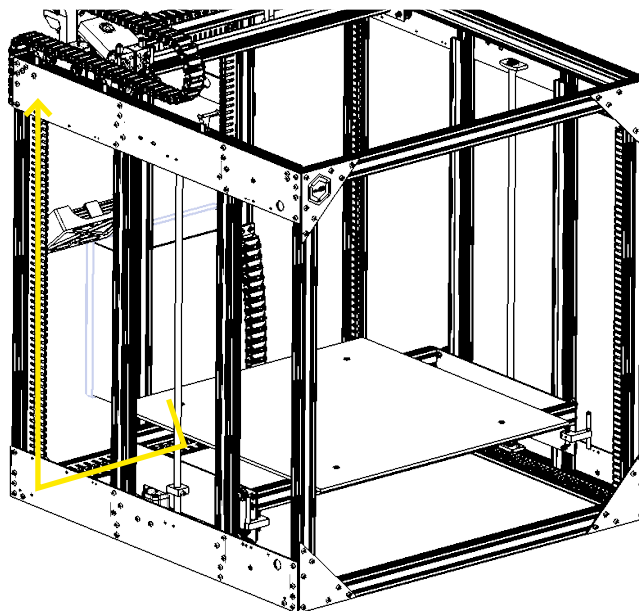
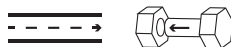
## K10

Route the ZL motor cable towards the Z motor.



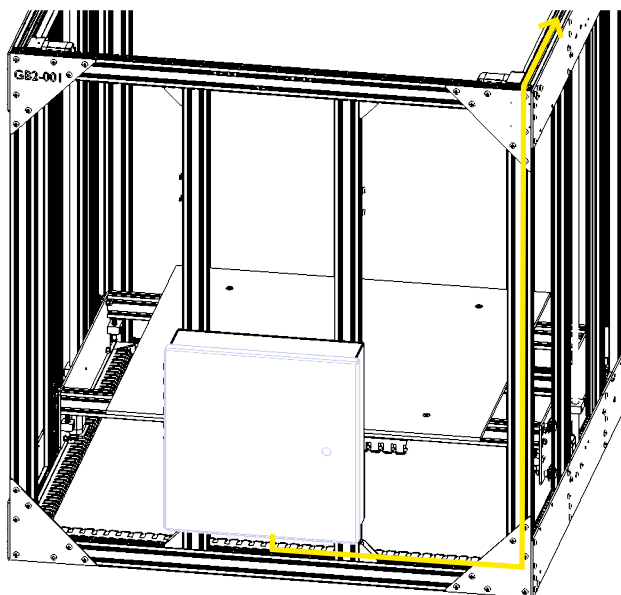
## K11

Route the YL motor cable up towards the Y motor. You can insert it into one of the Panduit slots to hold it temporarily for now.



## K12

Route the E2 motor cable up through the initial Y axis cable carrier on the corner plate and along the left runway rail in the same way as the X motor cable.







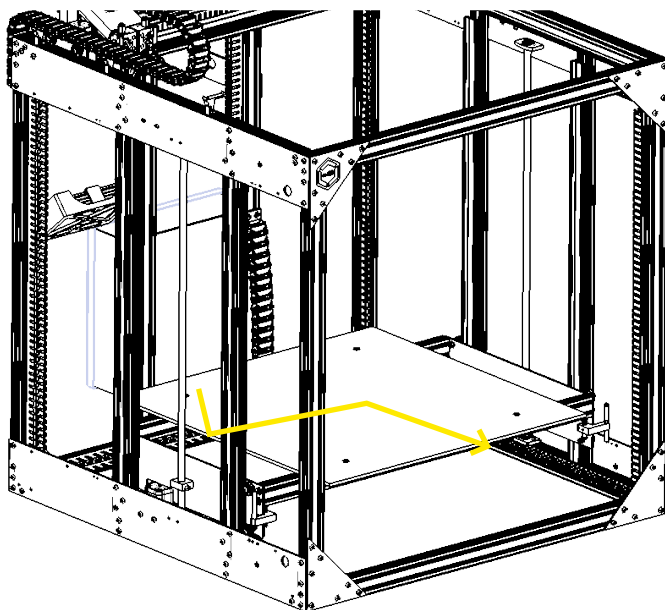
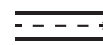
### K13

At this point, it is helpful to use the wiring clips to keep the cables held in place on the [10725] Y-Axis Carrier Support. Simply clip them on as shown.



### K14

In Slot 2 of the #4 Panduit, you will route the right Y motor (YR), the right Z motor (ZR), and the Extruder 1 motor (E1).



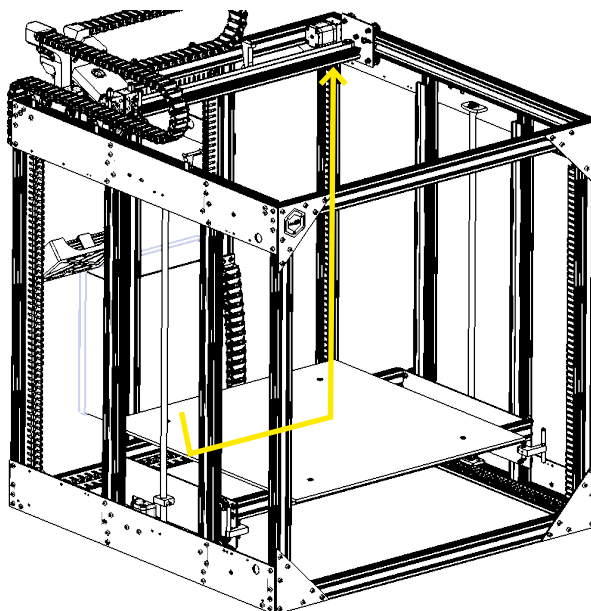
### K15

Route the ZR motor cable towards the right Z motor.



## K16

Route the YR motor cable up towards the right Y motor. Fold the excess cable into the Panduit. (Full X, Y, and Z cable carriers have not yet been installed as they are in the diagram)



## K17

Route the E1 cable in a similar manner to E2 and X, bringing it up through the initial Y axis cable carrier on the corner plate and along the runway rail. Use the wiring clips to hold it in place on the runway rail.



## K18

You can also use some twist ties to hold the wires in the Panduits.







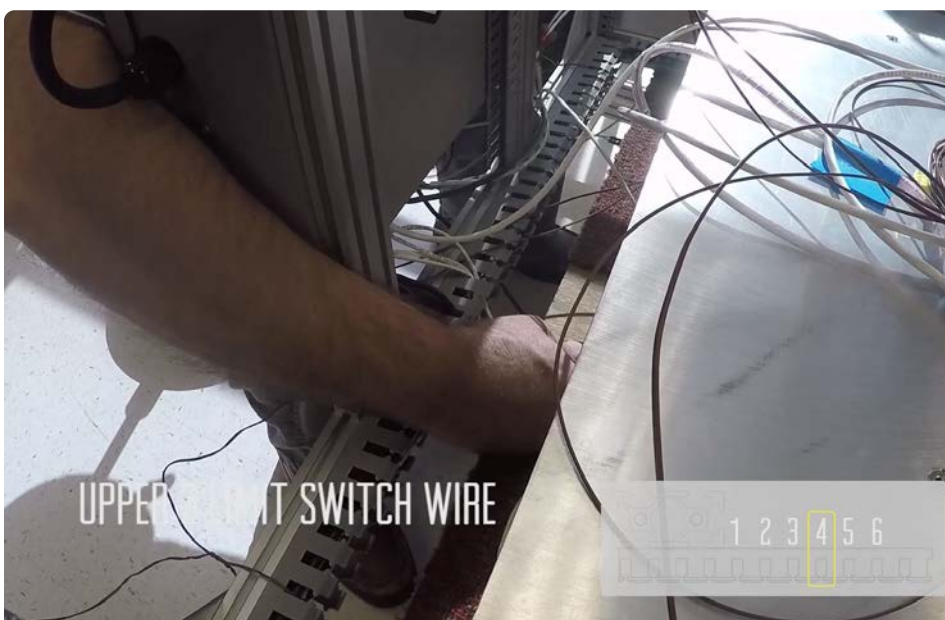
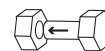
## K19

Next, you will run the limit switch wires, starting with the X limit switch wire.



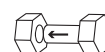
## K20

Insert the X limit switch wire into slot 4 of the #4 Panduit and route it up through the initial Y axis cable carrier on the corner plate and along the runway rail along with the X, E1, and E2 cables as shown. Use the wiring clips to keep these in place.



## K21

Next is the upper Z limit switch wire. Insert it into slot 4 in the #4 Panduit and route it the other direction towards the right side of the bot.





## K22

Next, insert both thermocouple wires (TC1 & TC2) along with the head cable (all trolley fans and HE1 & HE2) into slot 4 of the #4 Panduit and again run it up through the initial Y axis cable carrier on the corner plate and along the left runway rail, using the wiring clips.



## K23

Generally, you will want to let the wires run with the motor cables on the bottom and the limit switch wires, head cable, and thermocouples stacked on top of them as shown. The specific arrangement aside from this does not really matter as long as the cables are not twisted or tangled amongst each other.



## K24

You can also continue reusing the twist ties to hold more and more wires within the Panduits.

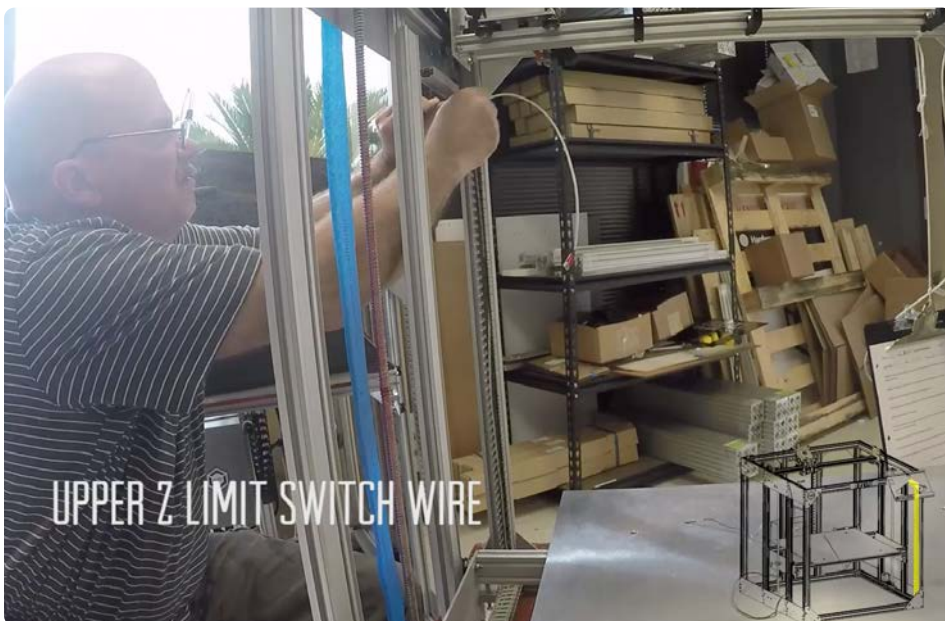






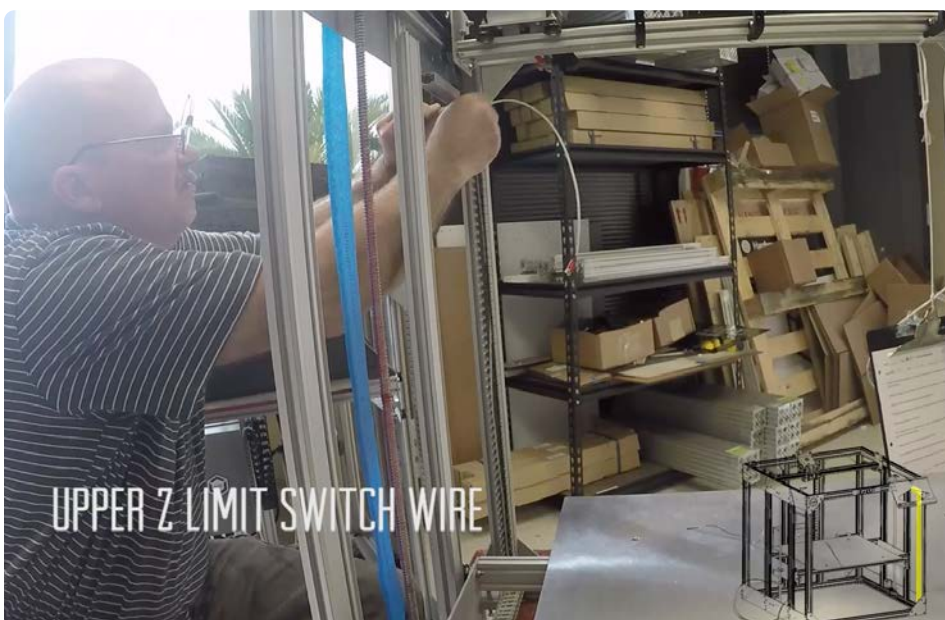
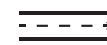
## K25

Insert the filament detection wires (FD1 & FD2) into slot 5 of the #4 Panduit and route them up the #2 Panduit on the electrical box upright towards the FD units. Insert it into a Panduit slot to keep it in place for now.



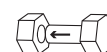
## K26

Next, run the LED light strip wires and power switch wires (there are 2) through slot 6 of the #4 Panduit and run these along the right side Panduits and up towards the power switch. Also, run the upper Z limit switch wires through the same Panduits as well.



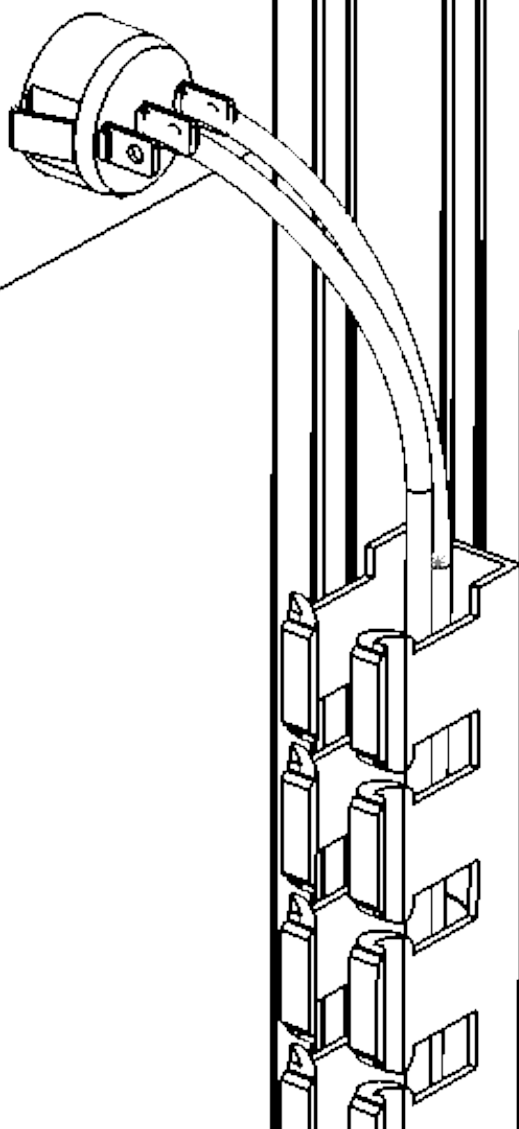
## K27

Insert the upper Z limit switch, LED light strip, and power switch wires into the Panduit slots to hold them in place.





# ***WIRING: CONNECT COMPONENTS & COVER PANDUITS***





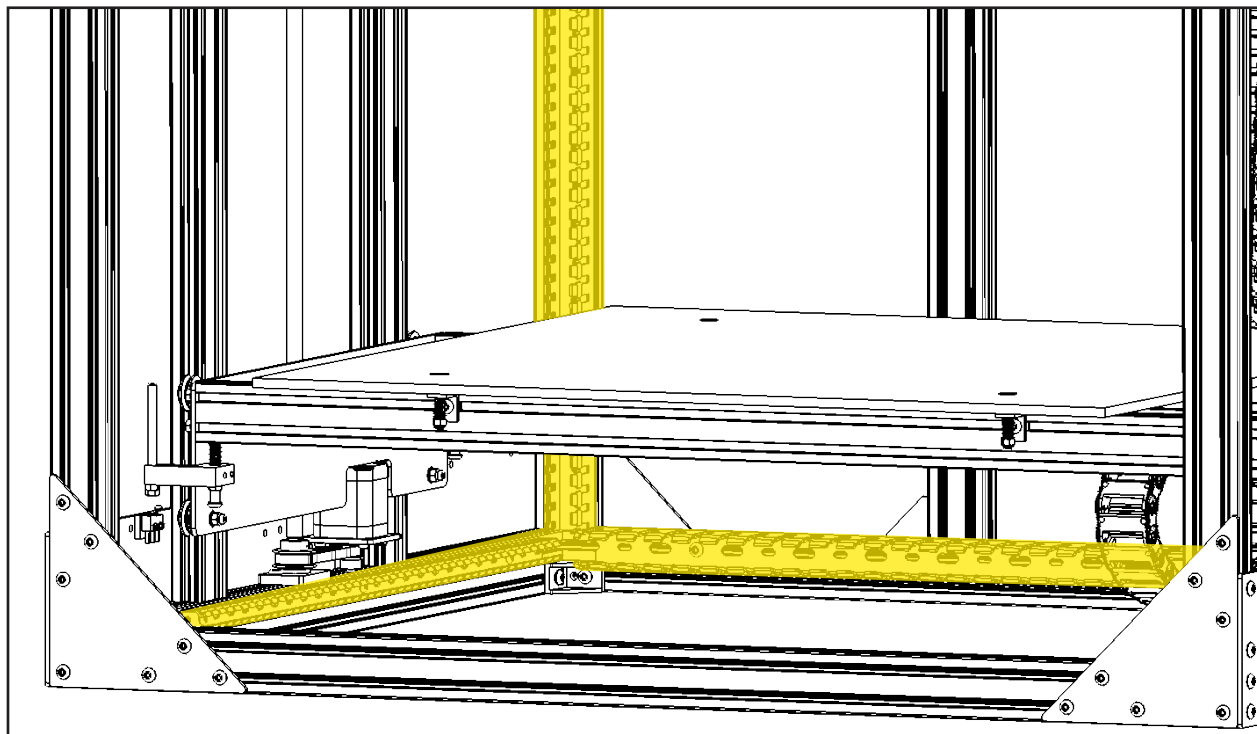
# TOOLS & PARTS

*Refer to packing list to identify parts*

| BOX #                               | PART  | QUANTITY |
|-------------------------------------|---|----------|
| Snappybox                           | [10224] M3x8mm SHCS   | 1        |
| Snappybox                           | [10218] M3 Flat Washer  | 1        |
| 6                                   | [10046] Allen Wrench Set  | 1        |
| WATCH THE<br>ACCOMPANYING<br>VIDEO: | <a href="https://youtu.be/bK3z52PC5sU">https://youtu.be/bK3z52PC5sU</a> |          |

# OVERVIEW

Here, you will connect each cable to its corresponding component (except for those on the bridge assembly, which will be done later). You will also connect the heated bed wires, which includes fastening a green ground wire to the rear of the build plate.



In the previous section, wires were routed through the Panduits such as in the diagram above. Now, the cables will be connected to their electronic components, managed within the Panduits, and then covered. Note that the picture above also shows the Z cable carrier, which will be installed later.

# TIPS & TRICKS

---

- #1** If you have used them, remove any twist-ties along a Panduit as the cover is placed.
- #2** Most connectors are made only to fit in one orientation. Do not force two connectors together, or you risk breaking them.
- #3** As you connect components, double check the label at the end of the cable and verify that it matches the component you're connecting to.
- #4** When installing the heated bed ground wire, DO NOT overtighten the [10224] M3x8mm SHCS. Gently tighten the screw until it is just snug--any more and you risk stripping the threads in the hole.



## L1

Connect the right Z motor.



## L2

Cover the #1 Panduit on the lower right side of the frame.



## L3

Connect the Z upper limit switch, LED light strip, and the power switch with their respective wires.







## L4

Route the Z upper limit switch wire into the 2.75" Panduit and cover it.



## L5

Route both the Z upper limit switch wire and the power switch wires into the #2 Panduit on the front right corner upright and cover it.



## L6

Connect the lower Z limit switch and the left Z motor.





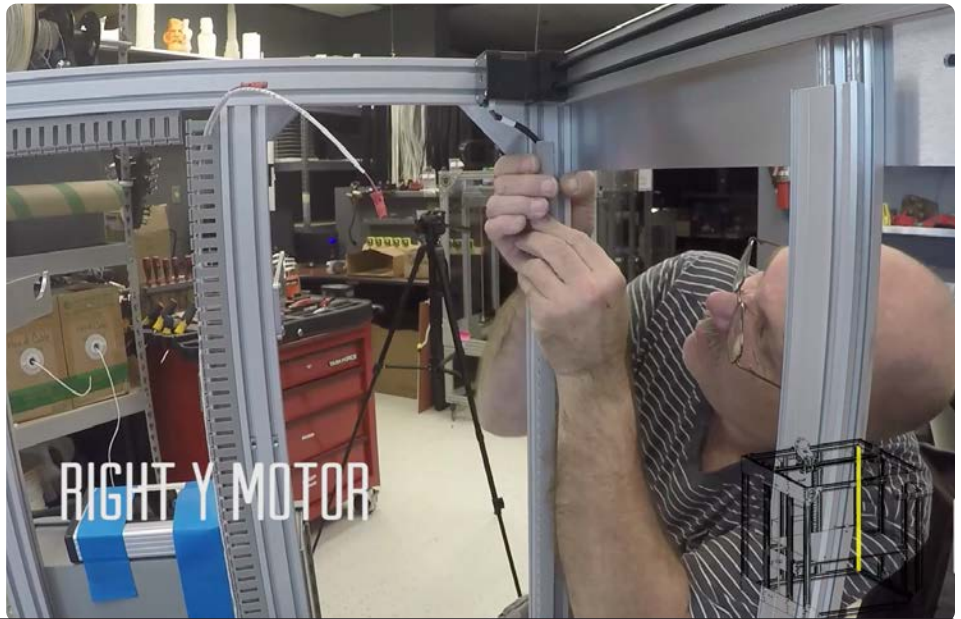
## L7

Cover the #1 Panduit on the lower left side of the frame.



## L8

Connect the right Y motor.

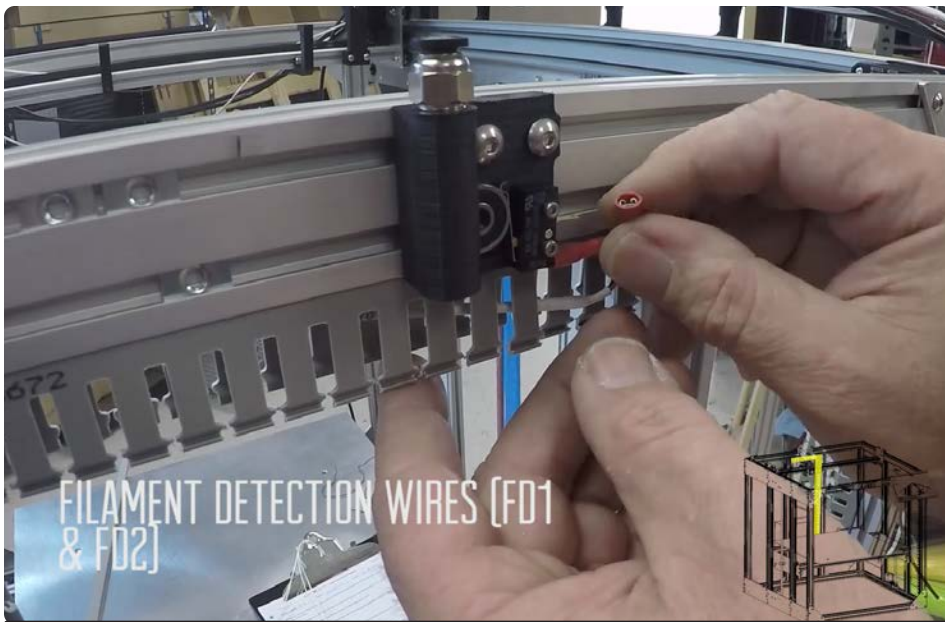


## L9

Cover the #1 Panduit on the rear right corner of the frame.







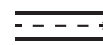
## L10

Connect the FD wires to the FD units.



## L11

Route the FD wires into the #2 Panduit on the rear header and cover it.



## L12

Route the heated bed wires into the #2 Panduit on the right electrical box upright and insert it into a slot near the top of the electrical box as shown.



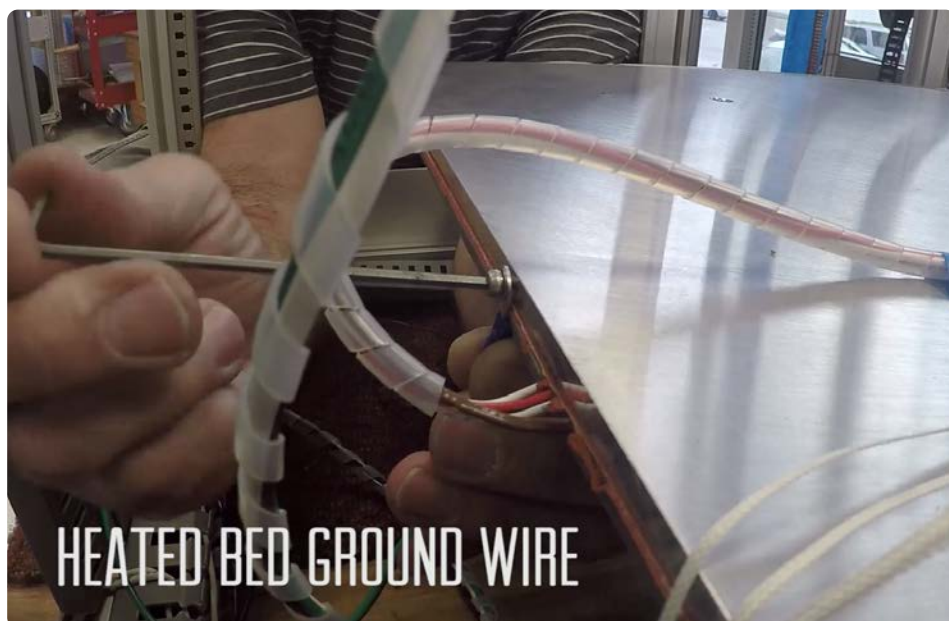
## L13

Route the FD wires into this same Panduit and cover it.



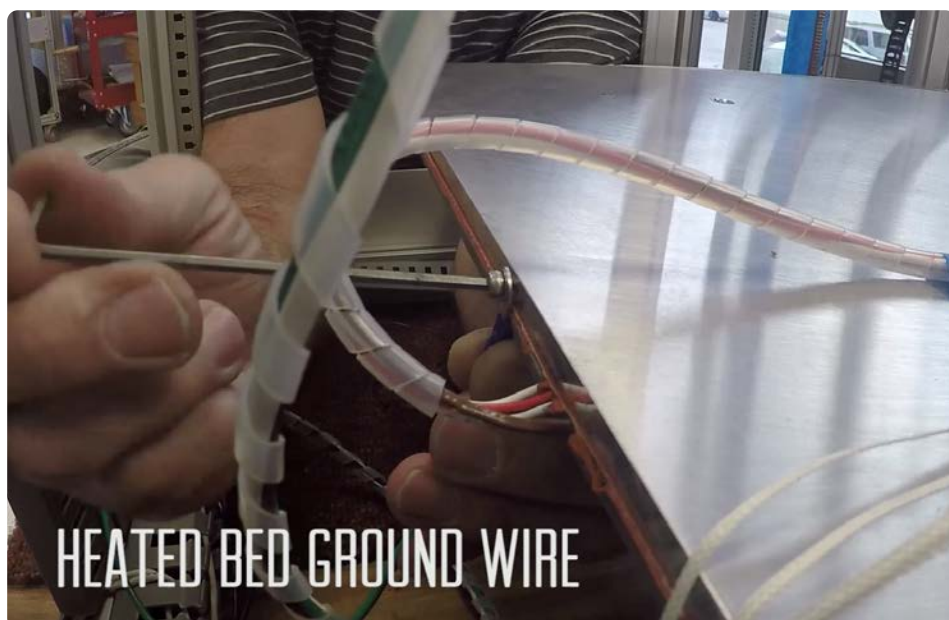
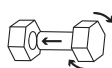
## L14

Next, you will connect the heated bed wires.

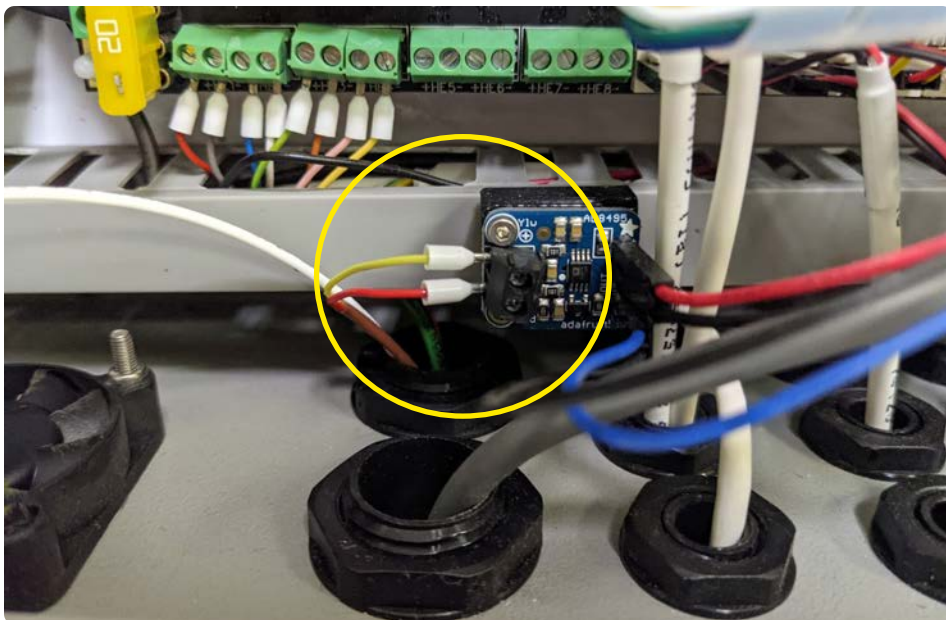


## L15

The green wire in the heated bed wiring bundle is a ground wire. Use a [10224] M3x8mm SHCS and [10218] M3 Flat Washer to fasten this to the M3 tapped hole on the rear of the bed plate. Make sure the top of the connector is below the surface of the bed plate. DO NOT overtighten this screw, or you will easily strip the threads.

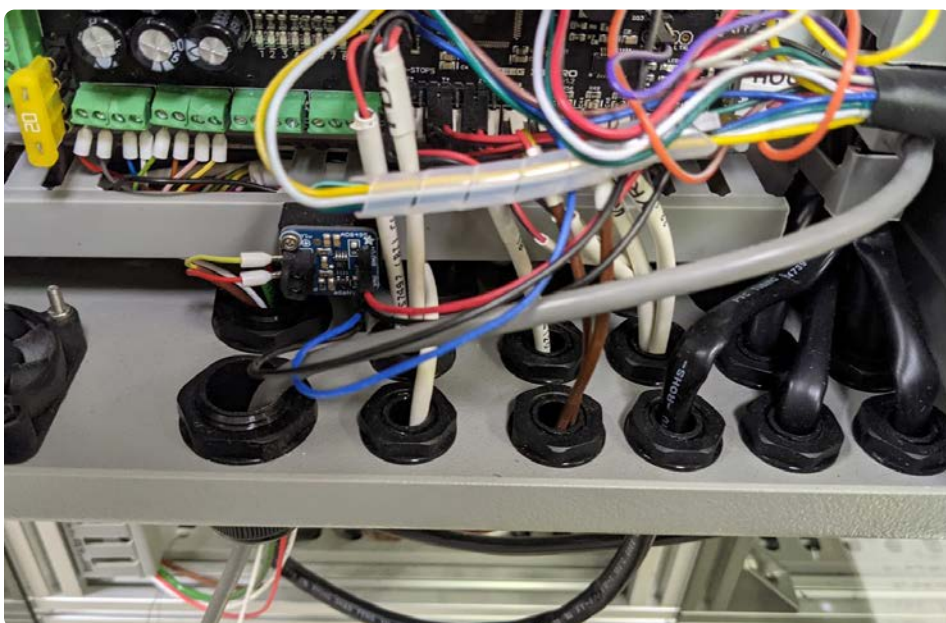






## L16

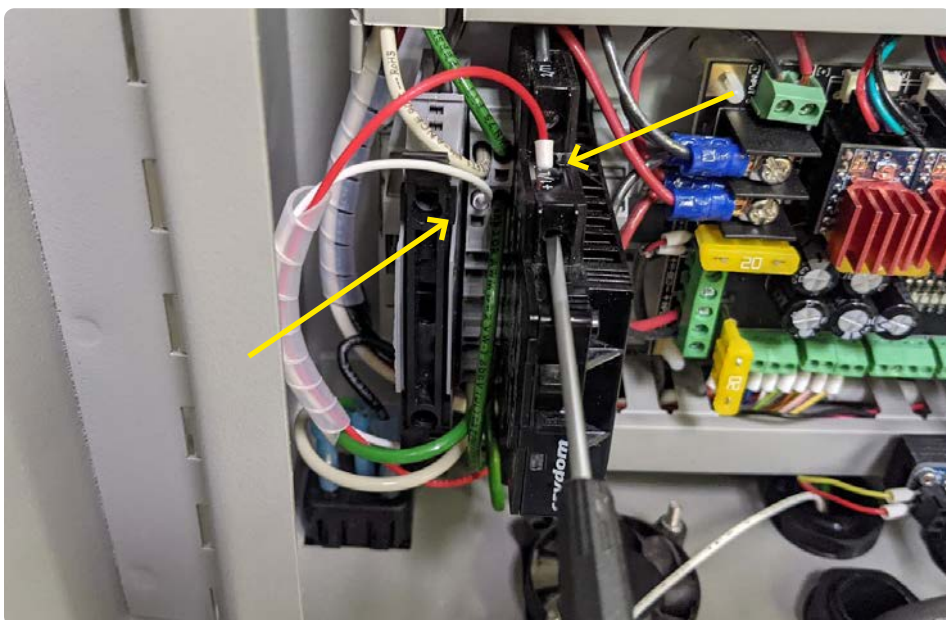
Route the heated bed thermocouple wire through the indicated grommet in the electrical enclosure and connect it directly to the daughterboard. Refer to the [Azteeg X3 PRO wiring diagram](#) as needed.



## L17

Route the blue sheathing back through the indicated grommet on the electrical enclosure.

NOTE: You can use the same grommet as the thermocouple.



## L18

Connect the wires according to the [diagram](#), based on the voltage for your machine.  
 110V: Red wire to relay (+1/L1). White wire to neutral terminal block.  
 220V: Either white wire to relay (+1/L1). The other white wire to neutral terminal block.  
 Use a 2.5mm flathead screwdriver to tighten the screw terminal on the relay

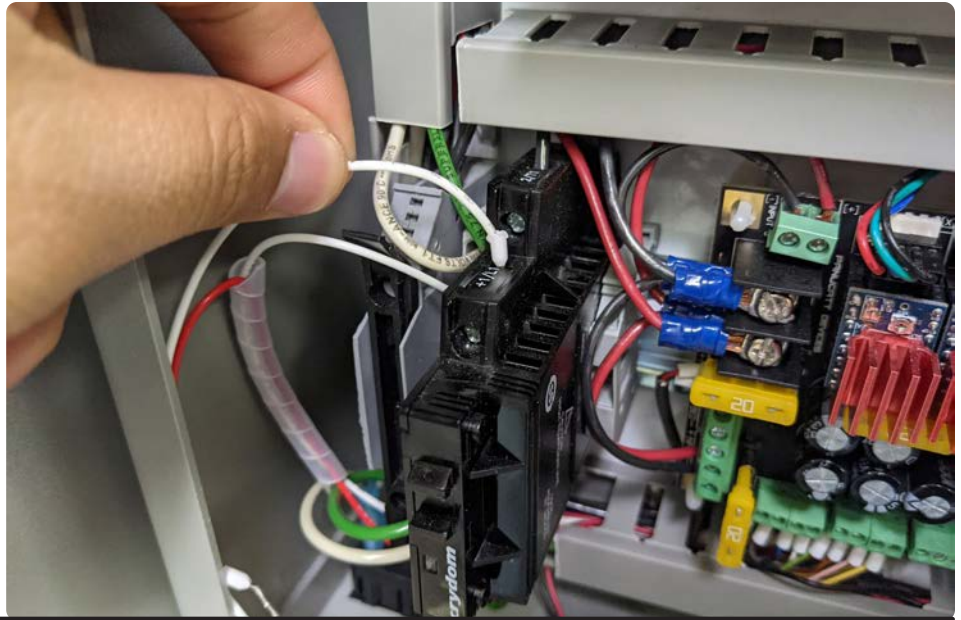




## L19

Double check your wiring and correct any mistakes. Do a “pull” test on each connection to make sure there is a secure connection. You are now ready to do the trolley wiring.

NOTE: This picture shows a 220V wiring example.

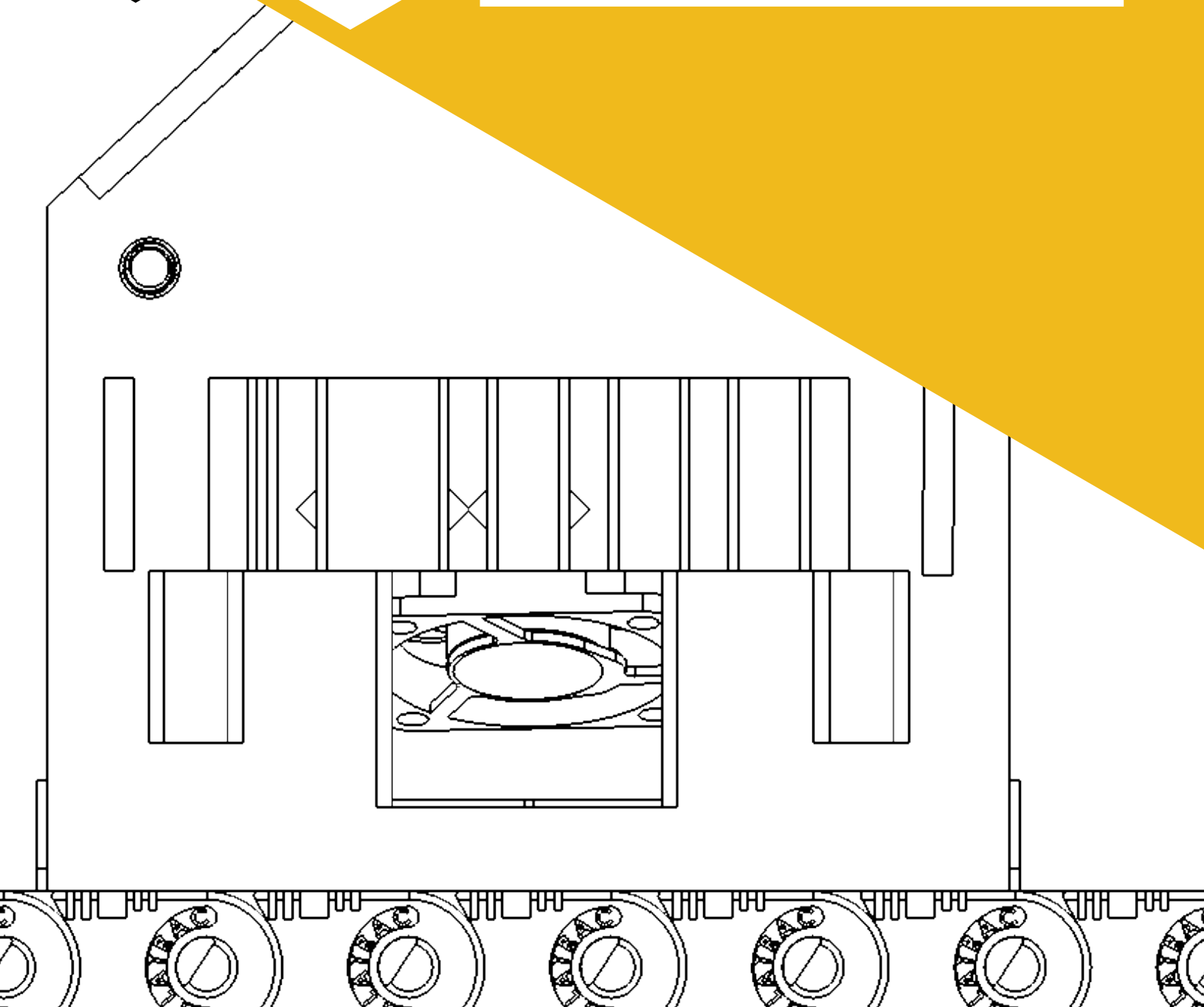


## L20

[For a demonstration of these step by step instructions, please see our video for this section.](#)



# **WIRING:** **TROLLEY WIRING**



# TOOLS & PARTS

*Refer to packing list to identify parts*

| BOX #     | PART                                    | QUANTITY |
|-----------|---|----------|
| 8         | [10837] X Cable Carrier (53 links)      | 1        |
| 8         | [10839] GB3+ Y Cable Carrier [50 links] | 1        |
| 8         | [11093] X/Y Upright                     | 1        |
| Snappybox | [10222] [10222] M3x25mm BHCS            | 4        |
| Snappybox | [10240] M5x25 BHCS                      | 2        |
| Snappybox | [10819] X-Axis Wiring Clips             | 3        |

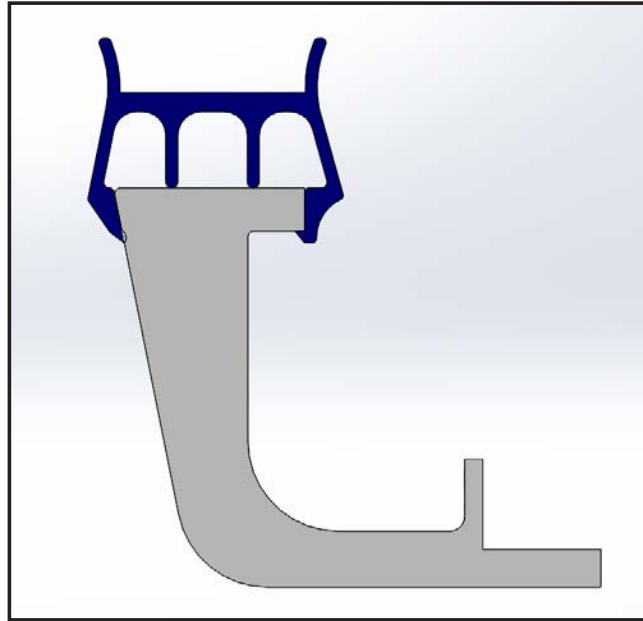
**WATCH THE  
ACCOMPANYING  
VIDEO:**

<https://youtu.be/wb17emNXd7c>

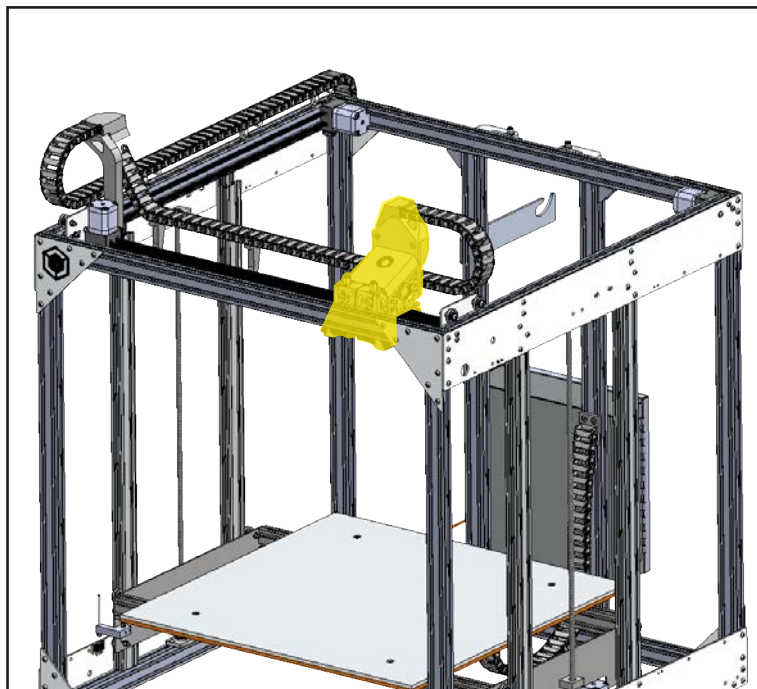


# OVERVIEW

In this section you will connect all of the components on the bridge assembly, which includes the X motor, X limit switch, and everything on the trolley.



X wiring clip as shown on the [10837]  
X Cable Carrier (53 links) support



Prior to wiring the trolley, push it to the front right corner of the frame, as shown above. Note that you have not yet installed any cable carriers.

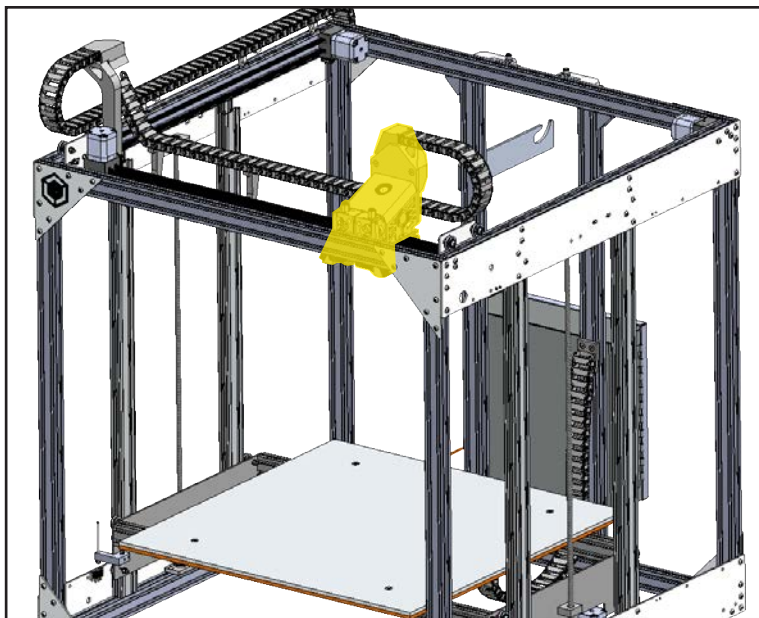
# TIPS & TRICKS

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- #1** Continue using the X wiring clips to hold wires in their place as you wire the trolley.
- #2** Start with the trolley in the front right corner of the frame, such that the wires are routed at their full extension.
- #3** When removing links from the X and Y cable carrier bundles, keep track of which is which.
- #4** Verify that each extruder motor cable is connected to the correct extruder.

## M1

Move the trolley so that it is in the front right corner of the frame, as shown.



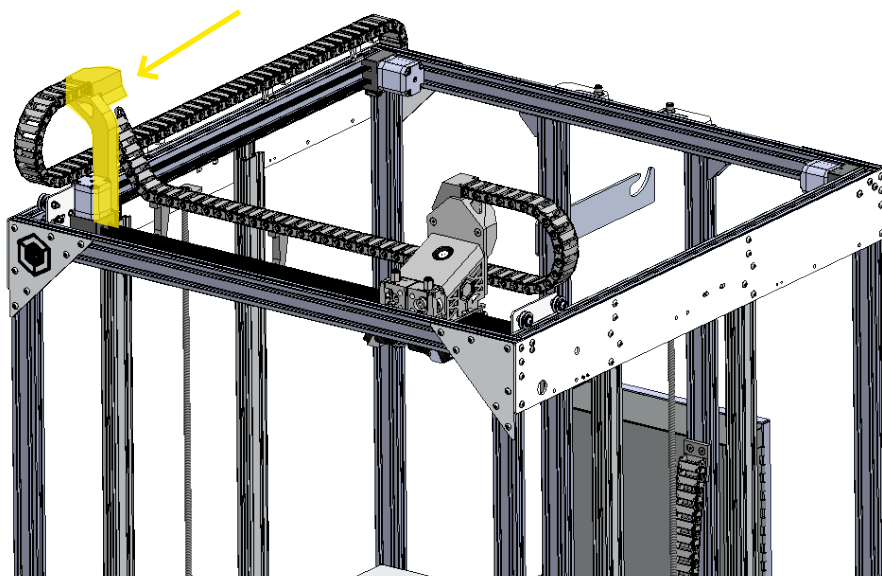
## M2

Separate the X and Y cable carrier bundles. Be mindful of which is which.



## M3

If you have attached the X/Y upright to the bridge, remove it now. It is easier to do the next steps without it being attached.





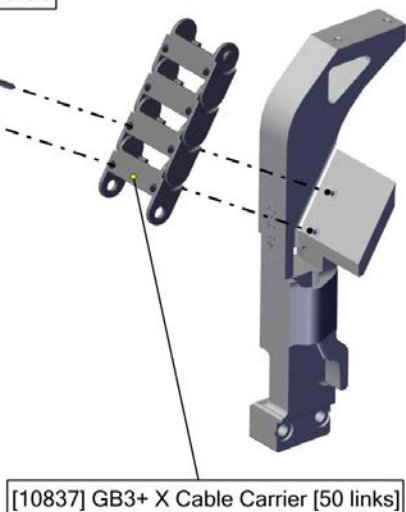


## M4

Remove 4 links from the [10837] X Cable Carrier (53 links) by using a small flathead screwdriver to wedge in between the connection. Pry it apart as shown.



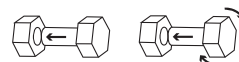
[10222] M3 x 25 BHCS



[10837] GB3+ X Cable Carrier [50 links]

## M5

Use 2 [10222] M3x25mm BHCS to attach it to the X/Y Upright as shown. Note the orientation of the links.



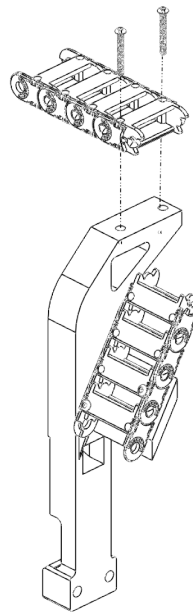
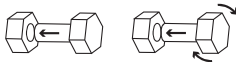
## M6

Remove 4 links from the Y cable carrier in the same fashion as before.



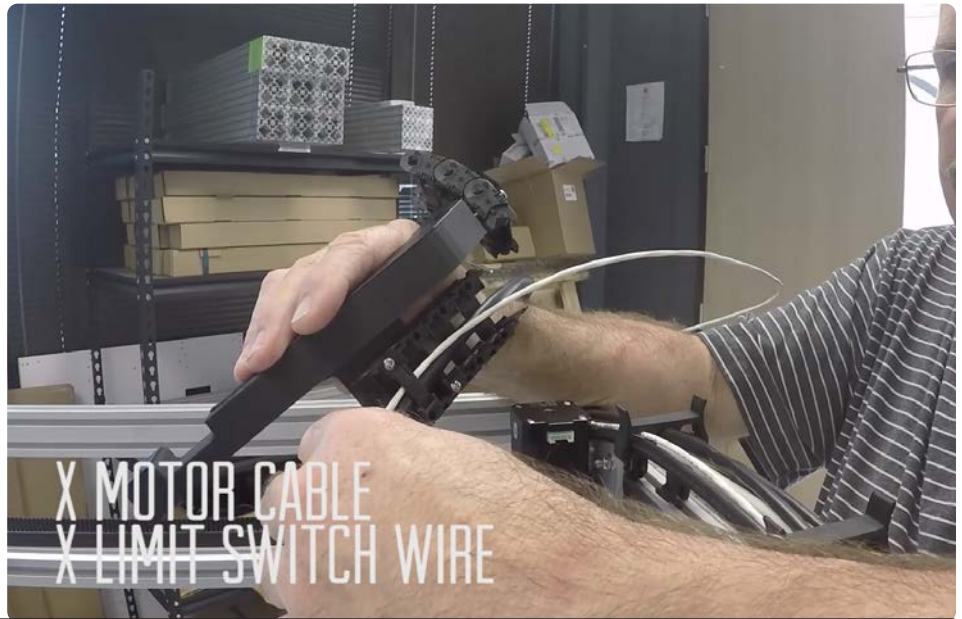
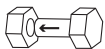
## M7

Use 2 [10222] M3x25mm BHCS to attach it to the X/Y Upright as shown. Note the orientation of the links.



## M8

Insert the X motor cable and X limit switch wire through the [10837] X Cable Carrier (53 links) links. Make sure they are entering from the top.



## M9

Route them down through the body of the X/Y upright.

Note: The X motor cable goes through the body of the X/Y upright while the X limit switch cable wraps around it.

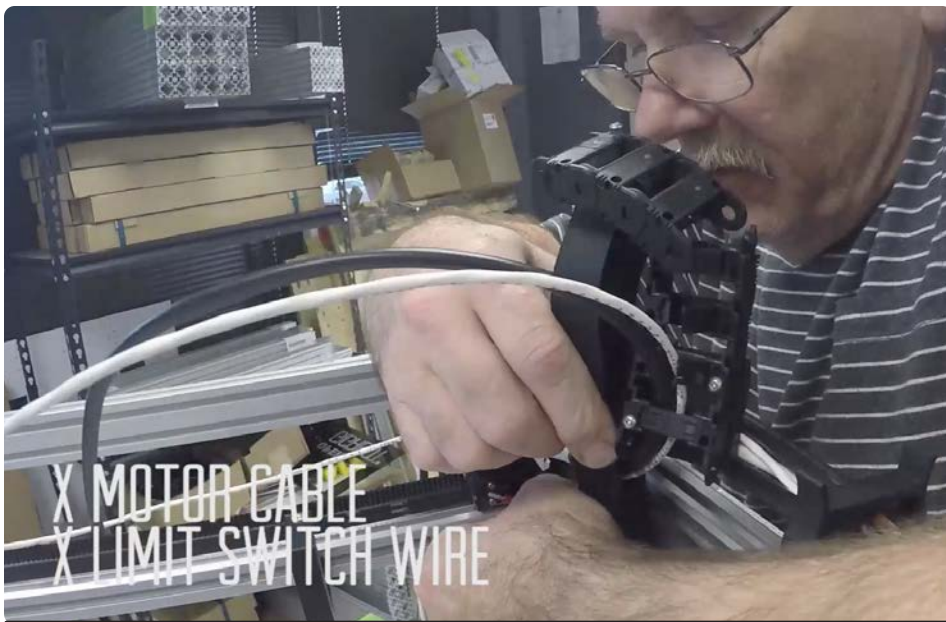


X Motor Cable



X Limit Switch Cable





## M10

Connect the X limit switch wire.

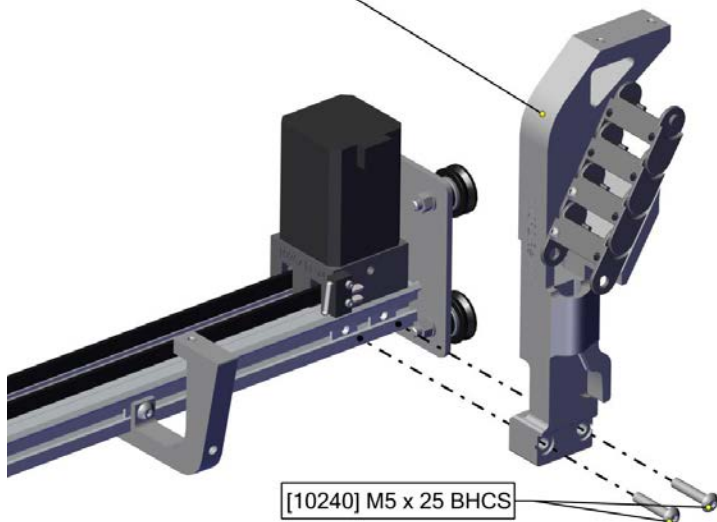


## M11

Connect the X motor cable.

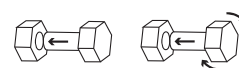


[11092-EXP] GB3+ XY Upright [Printed] Rev11.2



## M12

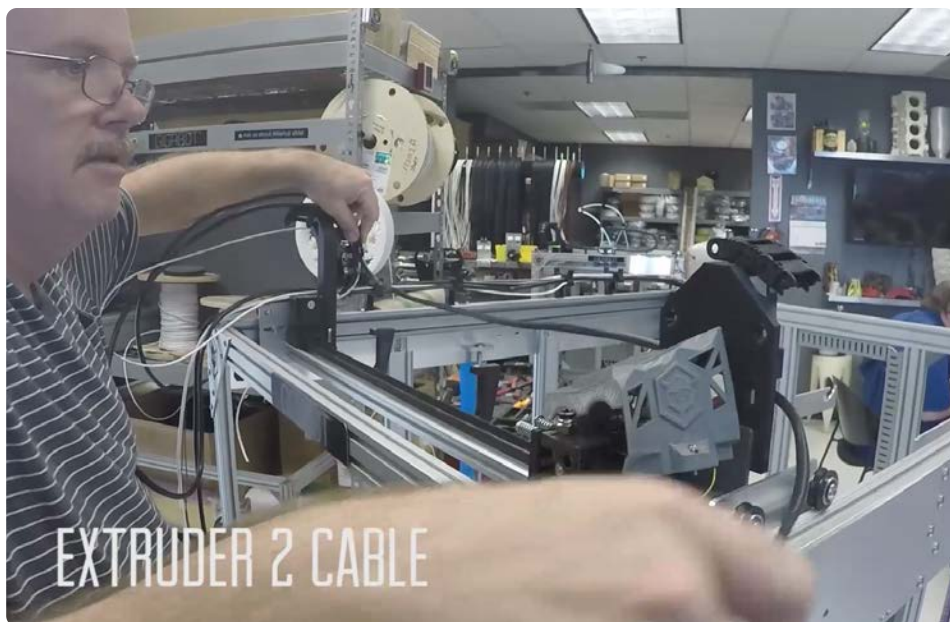
Use 2 M5x25 BHCS to fasten the X/Y upright to the bridge rail. The X limit switch wire and X motor cable should fit inside the channel on the X/Y Upright.





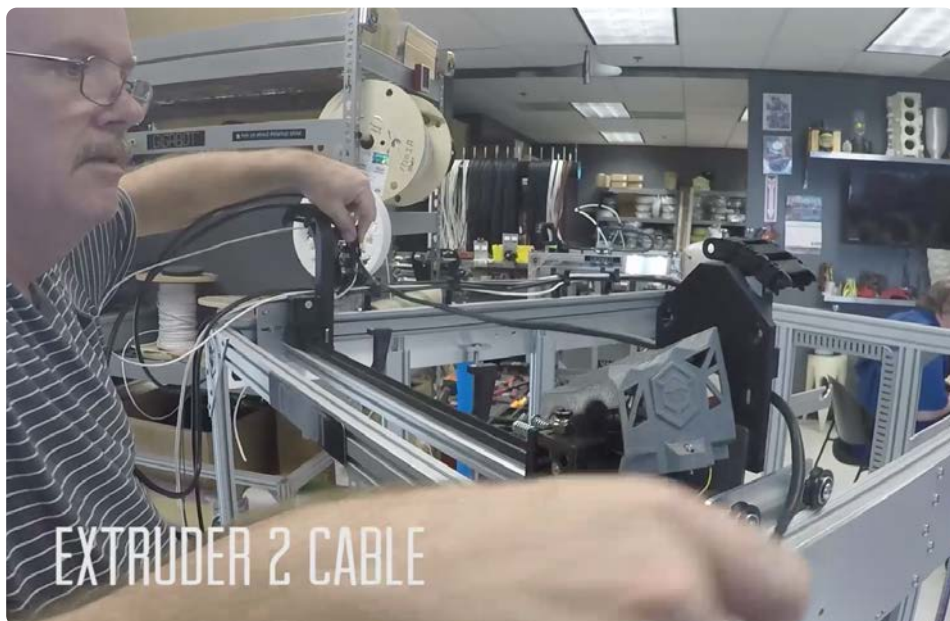
### **M13**

Route the E2 cable through the X/Y upright cable carriers as shown.



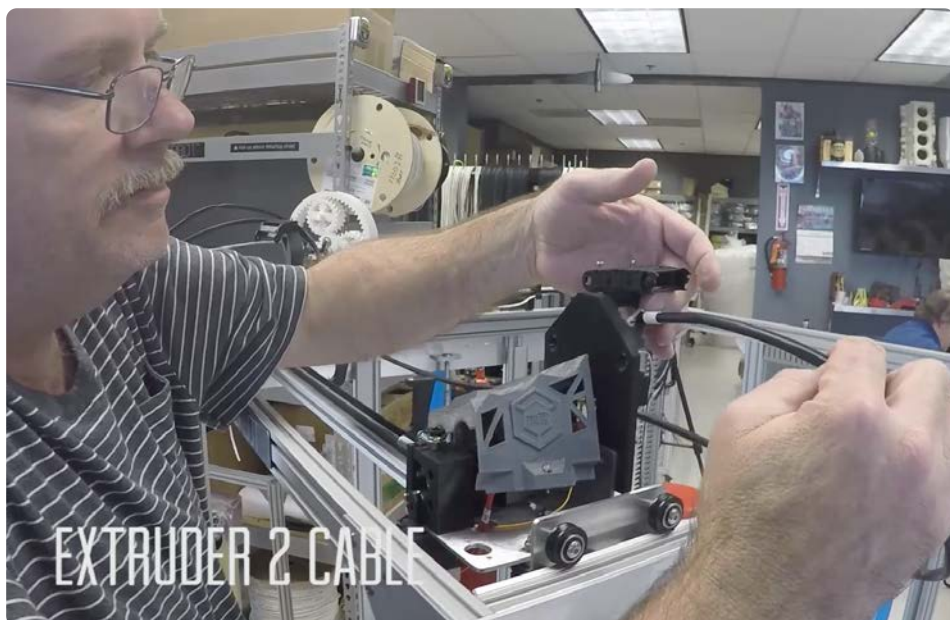
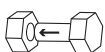
### **M14**

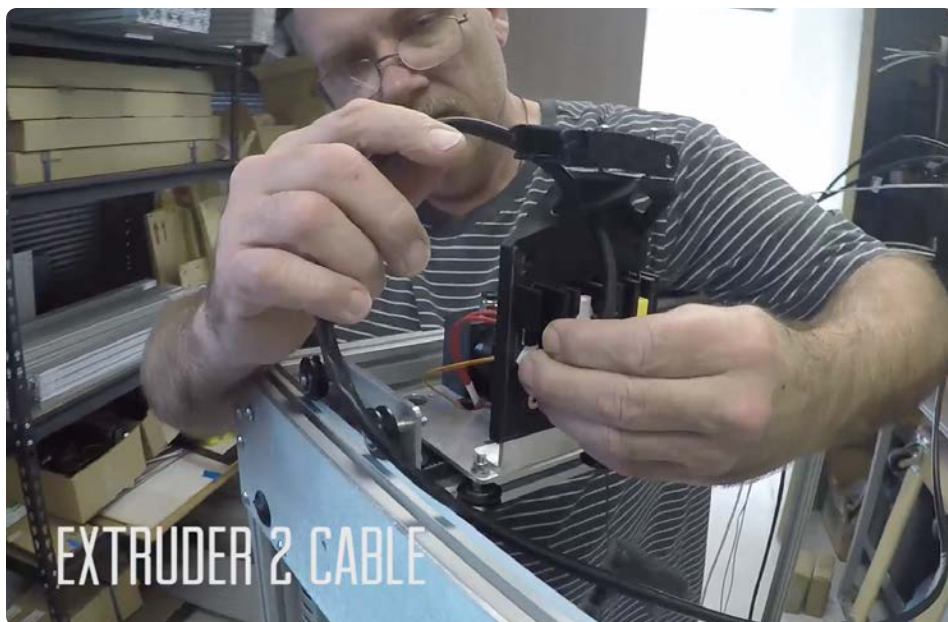
Continue routing E2 down the bridge (X axis) towards the trolley.



### **M15**

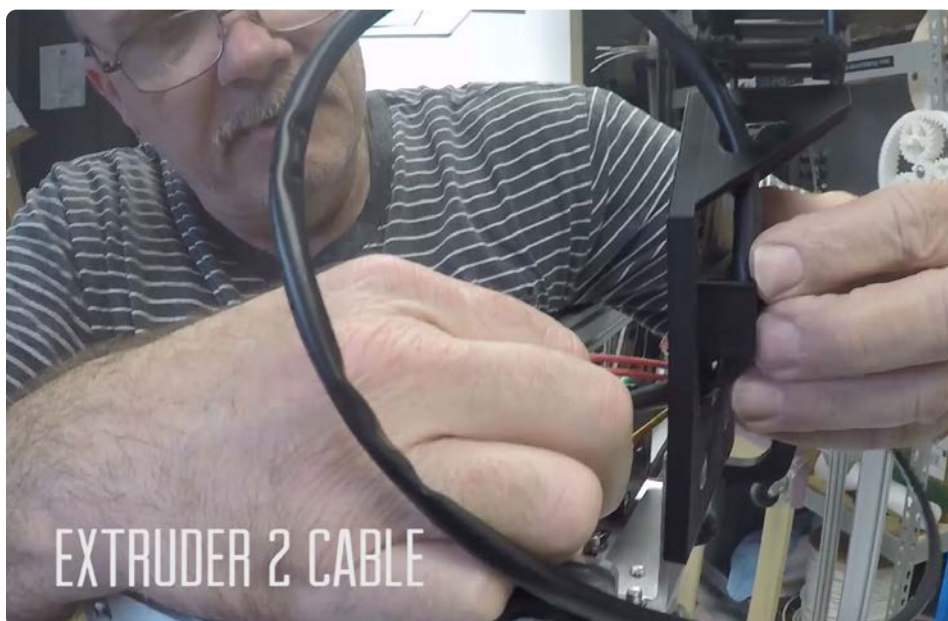
Loop it around and insert it into the hole in the trolley bracket as shown.





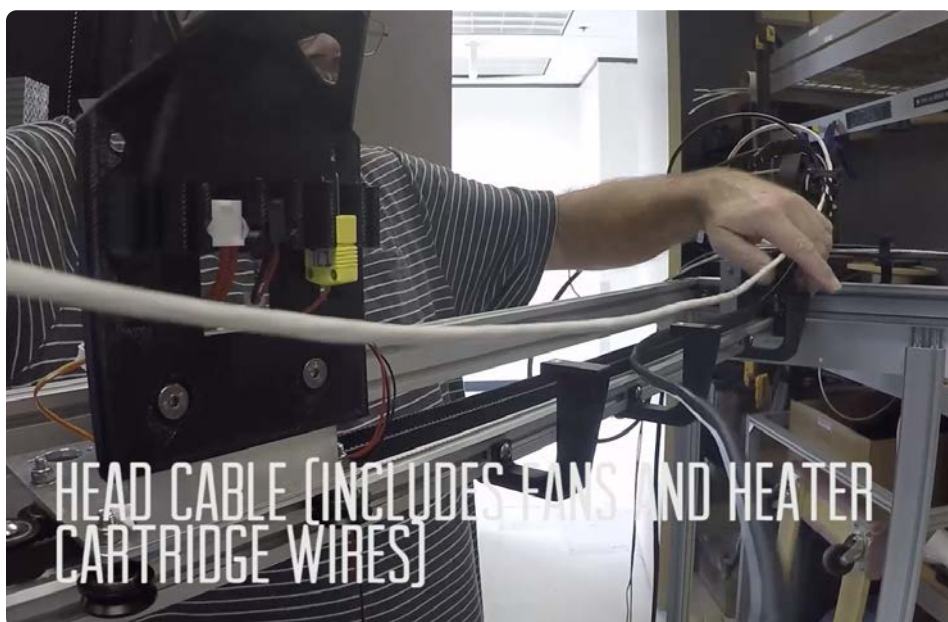
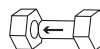
## M16

Route the motor cable through the bracket and connect this to the E2 motor.



## M17

Press the E2 motor cable into its slot in the trolley bracket.



## M18

Next, route the head cable in the same way. The head cable contains connections for the fans and the hot ends.





## M19

Use the [10837] X Cable Carrier (53 links) wiring clips to help keep the wires in place. Note that these are smaller in size than the Y cable carrier wiring clips.



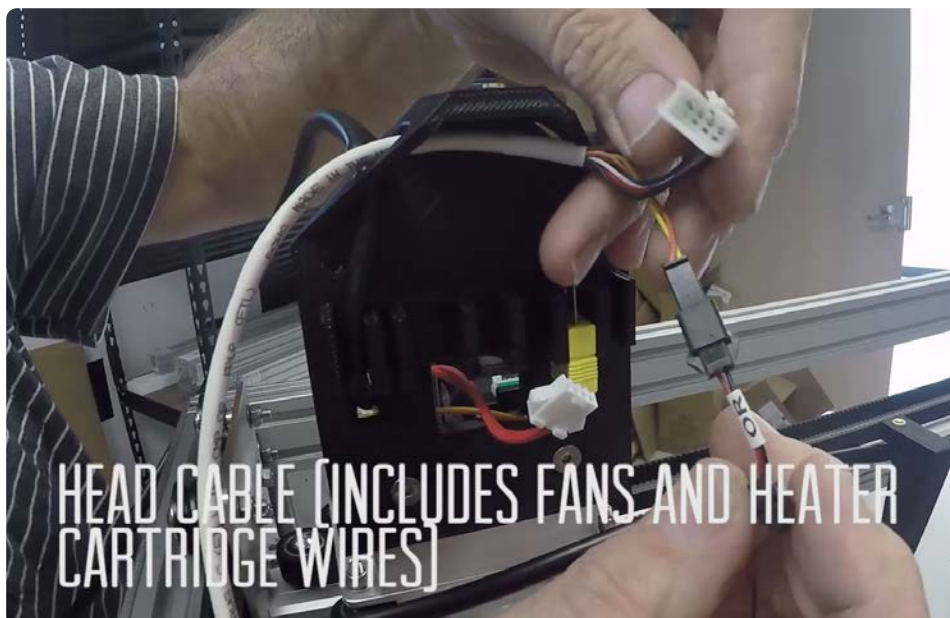
## M20

Route the head cable through the same hole as E2.



## M21

Connect the fans—the wires labeled “OR” for outrigger get connected together, with the leftover fan wires connecting to the remaining connector.

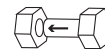






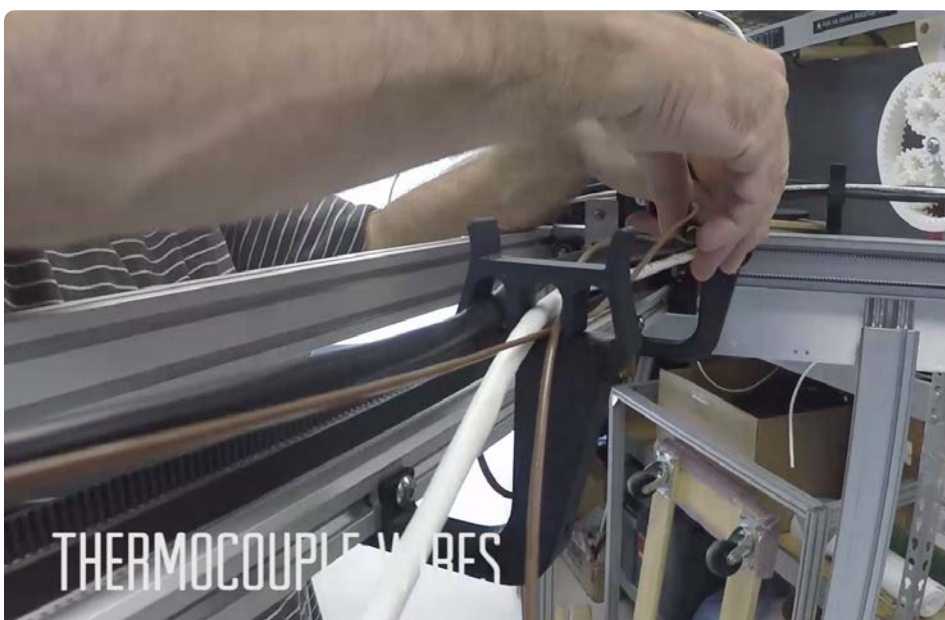
## **M22**

Stack the two fan connections above each other and insert them into their slot in the trolley bracket, as shown.



## **M23**

Connect the hot ends as well. These power the heater cartridges.



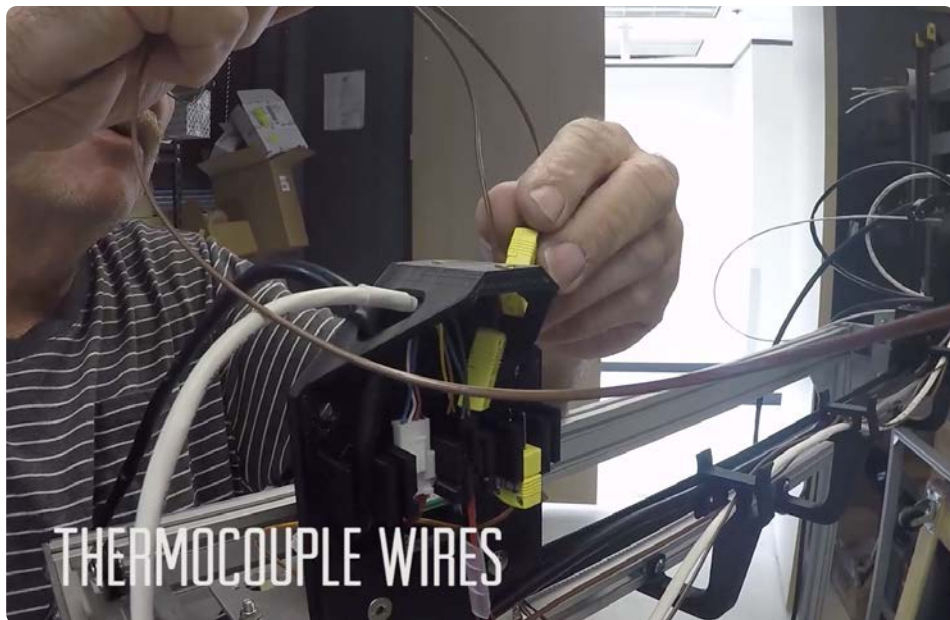
## **M24**

Next, route the thermocouple wires (TC1 & TC2) in the same way as the others before.



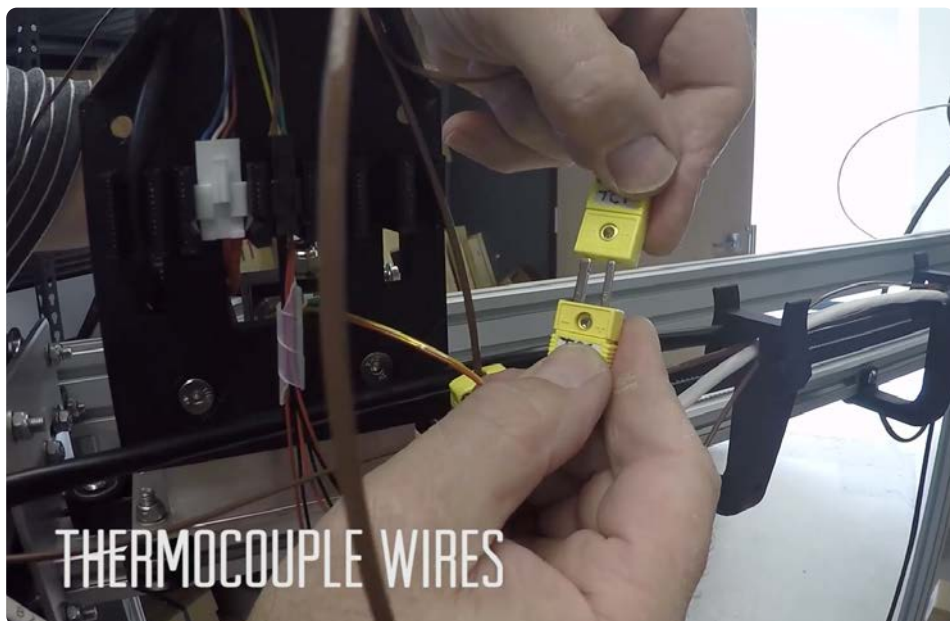
## M25

Route these over the trolley and through the hole on the opposite side of the trolley bracket, as shown.



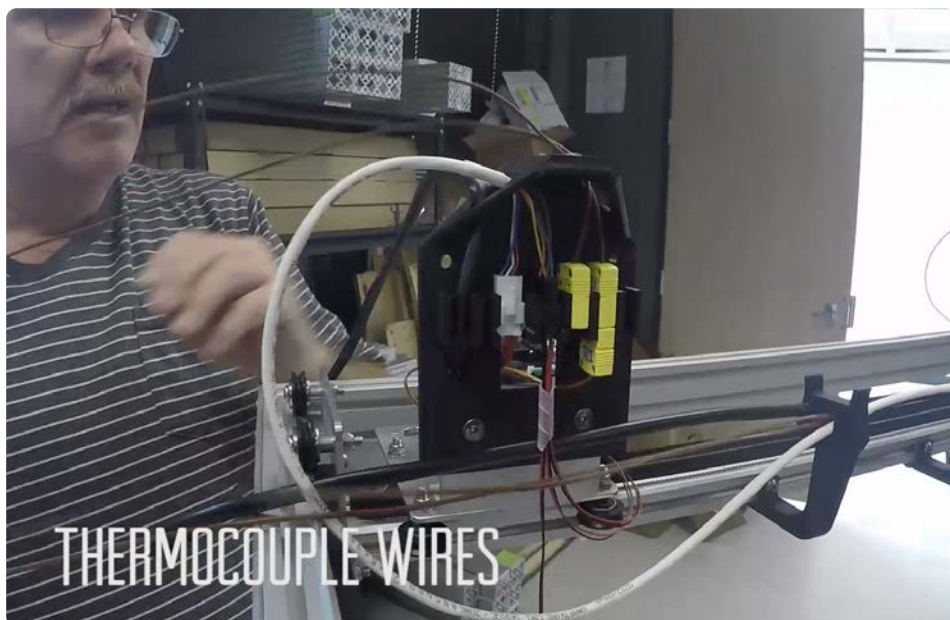
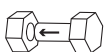
## M26

Connect the wires to the thermocouples, they are labeled TC1 and TC2 respectively.

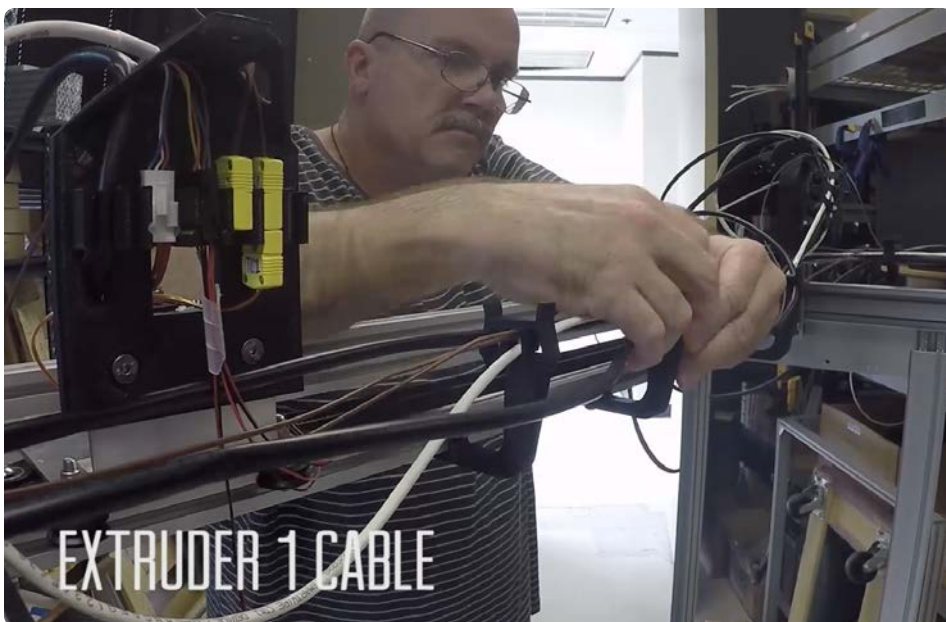


## M27

Press both the TC1 and TC2 connections into their slots on the trolley bracket as shown.

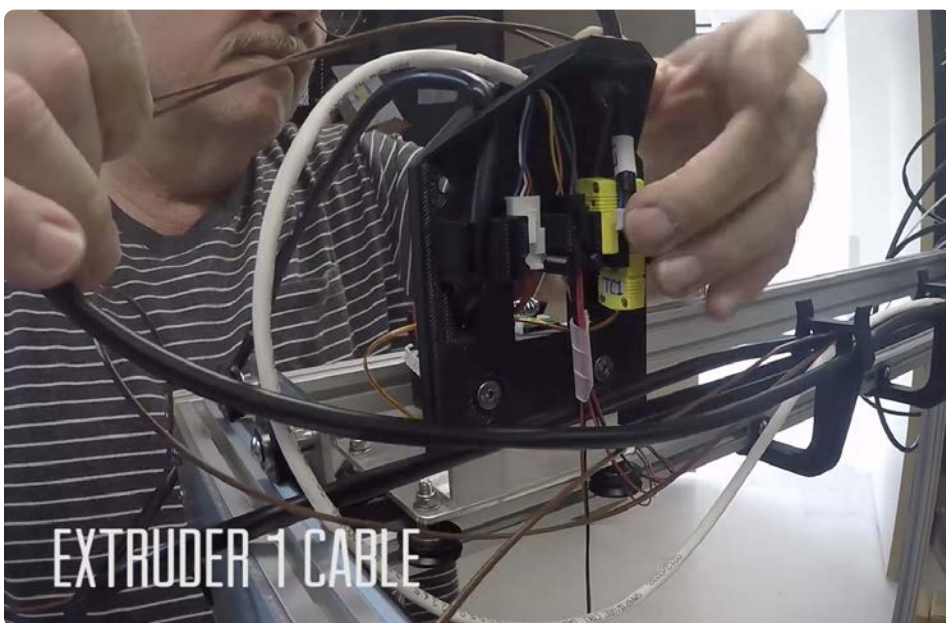






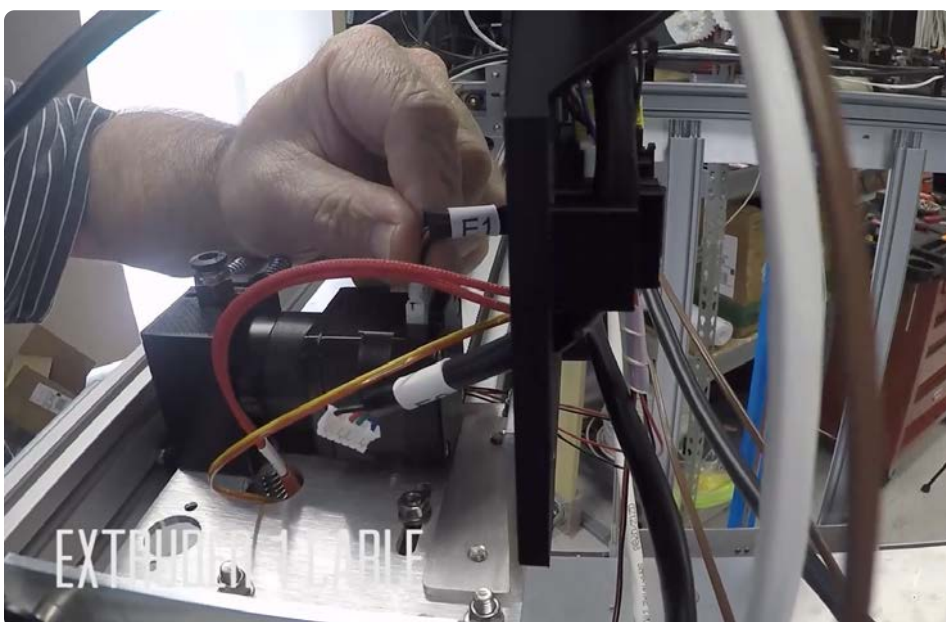
## **M28**

Finally, route the E1 motor cable through in the same way, all the way to the trolley.



## **M29**

Loop this around and route it through the same hole as TC1 and TC2.



## **M30**

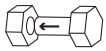
Route E1 through the trolley bracket and connect it to the E1 motor.





### **M31**

Press the E1 cable into its slot as shown.



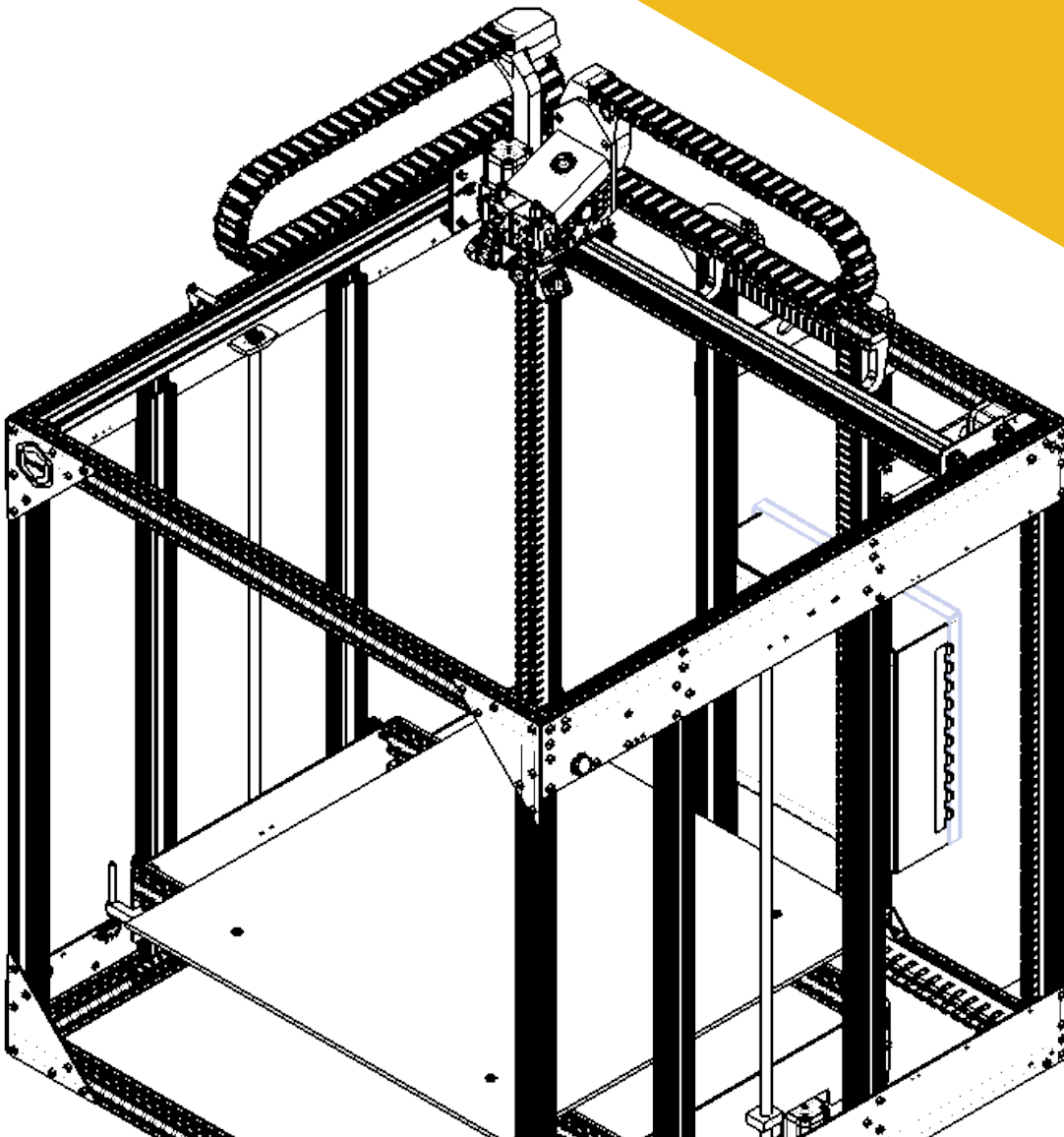
### **M32**

[For a demonstration of these step by step instructions, please see our video for this section.](#)



N

# ***WIRING: CABLE CARRIERS & PANDUIT COVERS***



# TOOLS & PARTS

*Refer to packing list to identify parts*

| BOX #     | PART   | QUANTITY |
|-----------|--|----------|
| 8         | [10837] X Cable Carrier (53 links) (full roll) | 1        |
| 7         | [10529] GB3+ Trolley Top Cover (on trolley)    | 1        |
| Snappybox | [10222] M3x25mm BHCS                           | 10       |
| 6         | [10046] Allen Wrench Set                       | 1        |
| 8         | [10839] Y Cable Carrier (49+8 links)           | 1        |
| 8         | [11757] GB3+ Wire Separator                    | 23       |

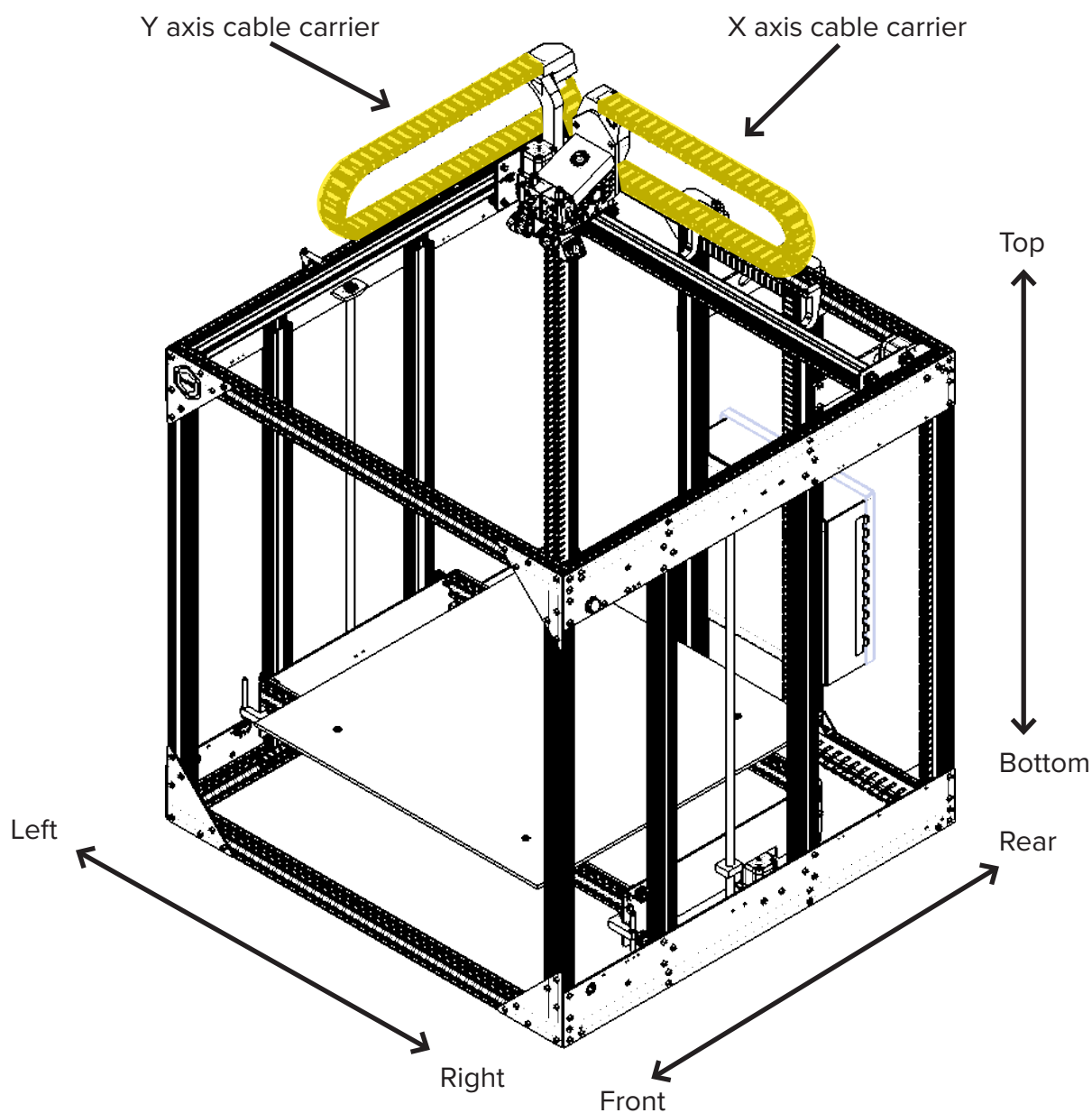
**WATCH THE  
ACCOMPANYING  
VIDEO:**

<https://youtu.be/RhGulQimddg>



# OVERVIEW

You are now ready to insert the cables into the X and Y cable carriers, as shown below. The Z cable carrier will be installed later. This is by far the longest section within this manual, so take your time and be patient to ensure this gets done correctly. You may also refer to the assembly videos for further clarification.



# TIPS & TRICKS

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- #1** Use a small flathead screwdriver to separate the cable carrier links apart into shorter segments.
- #2** Be mindful of the orientation of the cable carriers. They will turn in only one direction.
- #3** Continue using the wiring clips, removing them as you install the cable carriers.
- #4** The 8 links on the tapped corner plate are reverse-oriented. In other words, they attach to the Y cable carriers, but are oriented such that they turn in the opposite direction relative to the rest of them. Two tabs on the interfacing link of the reverse-oriented links have been removed to allow for this. If your set has not had this done, carefully remove them with a small knife, or grind them away using a rotary tool.



## N1

Remove 3 links from the [10837] X Cable Carrier (53 links) bundle.



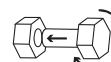
## N2

Clip these links onto the Thermocouple wires (TC1 & TC2) and E1 cable as shown. Note that the direction of the links should match the corresponding [10837] X Cable Carrier (53 links) links on the X/Y upright.



## N3

Place the [10529] GB3+ Trolley Top Cover over these 3 links and fasten them to the trolley bracket with 2 [10222] M3x25mm BHCS.





## N4

Divide the remaining [10837] X Cable Carrier (53 links) bundle into increments of approximately 6 to 8 links. Do not divide up the Y cable carriers yet, or you risk accidentally mixing them together and accidentally changing the number of total links in either the X or Y cable carriers.



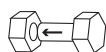
## N5

On one section of cable carrier links, open all of the doors as shown. Use a small flathead screwdriver if needed.



## N6

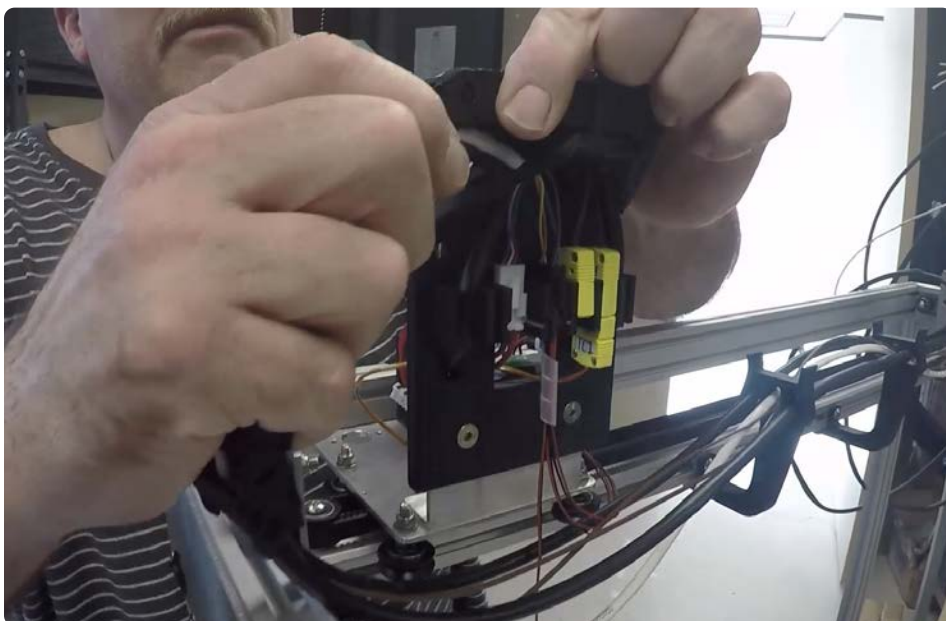
Insert the trolley wires into this section of links as shown, starting with the E1 and E2 cables on top, then the head cable and thermocouple wires below that. Exact arrangement apart from this does not matter, as long as the wires do not get tangled or overlap each other—keep them as parallel as possible while installing cable carriers.





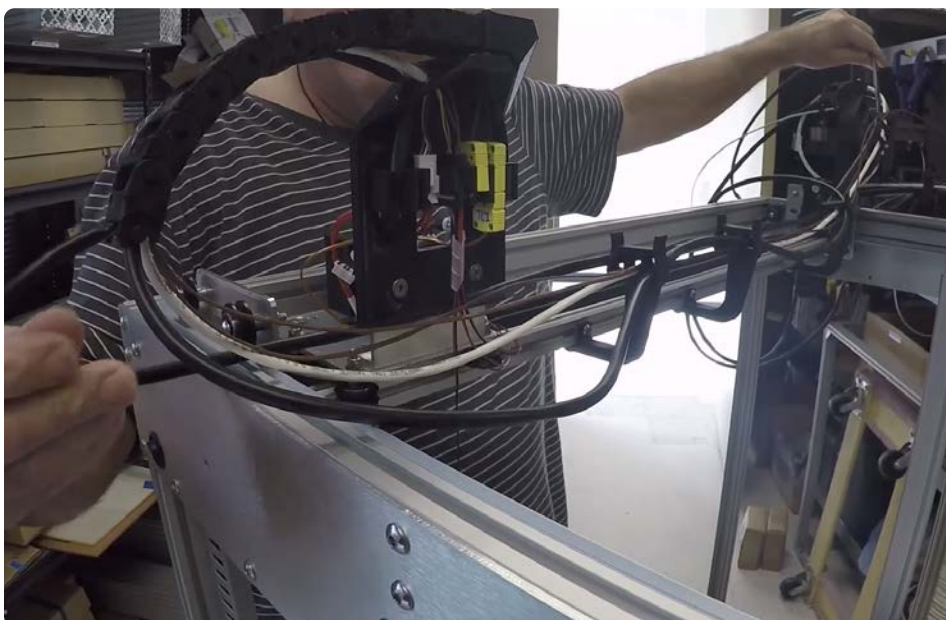
## **N7**

Close the doors on the links to hold the wires in place. Note that you may have to keep the door open on the link closest to the trolley, or remove it altogether. This is because the position of the wires may keep it from staying closed.



## **N8**

Once the doors on this section are closed, attach it to the links on the trolley bracket.



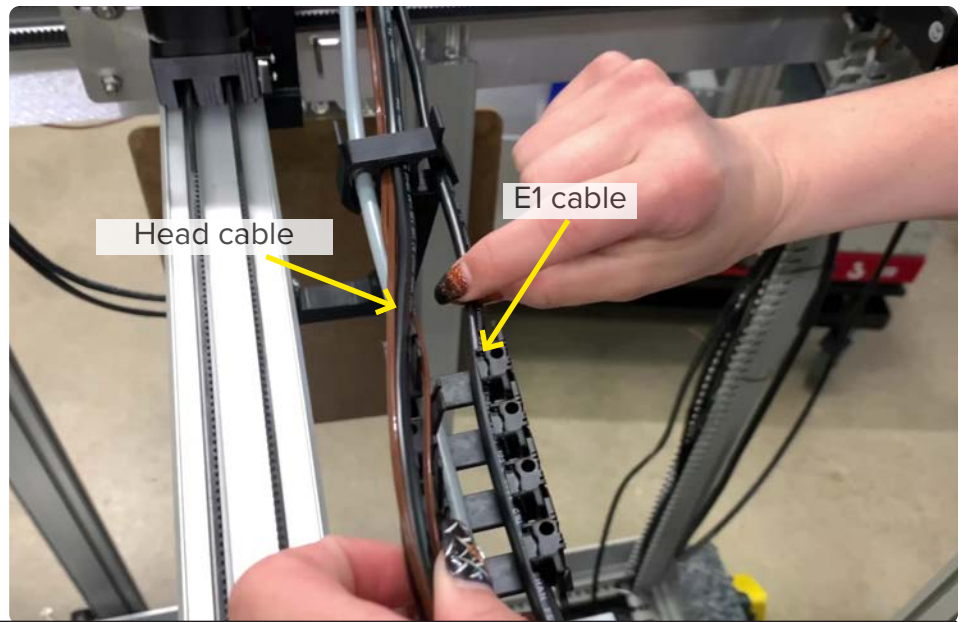
## **N9**

Pull the wires out slightly towards the X/Y upright to remove the slack near the trolley.



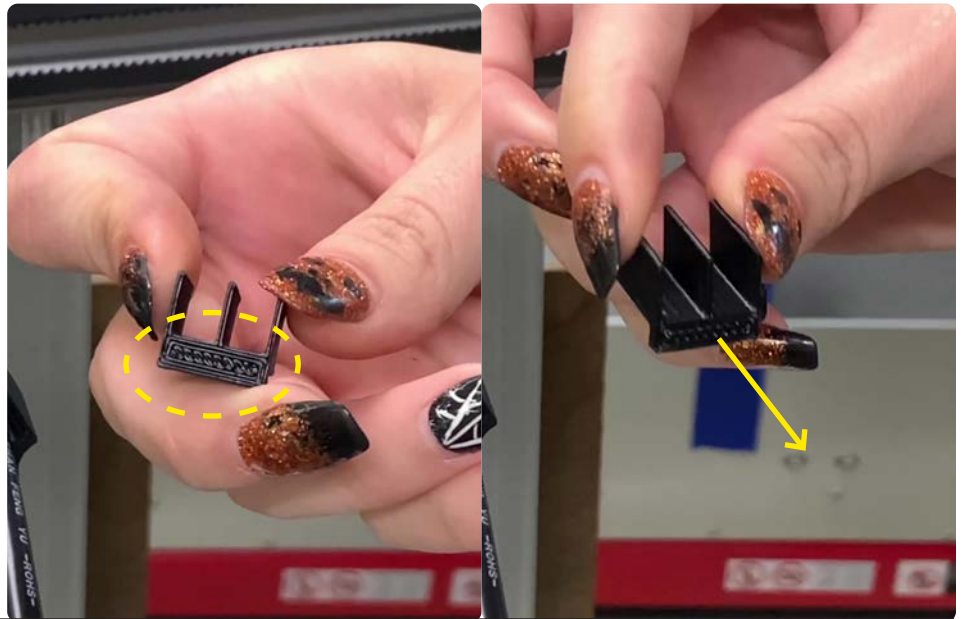
## N10

Slide the gray head cable and black E1 cable into a section of cable carrier links. These will sit on the outside of the cable carrier.



## N11

The wire separator will be inserted with the flange pointing towards the trolley assembly.



## N12

Slide the wire separator inside the cable carrier in between the head cable and E1 cables.

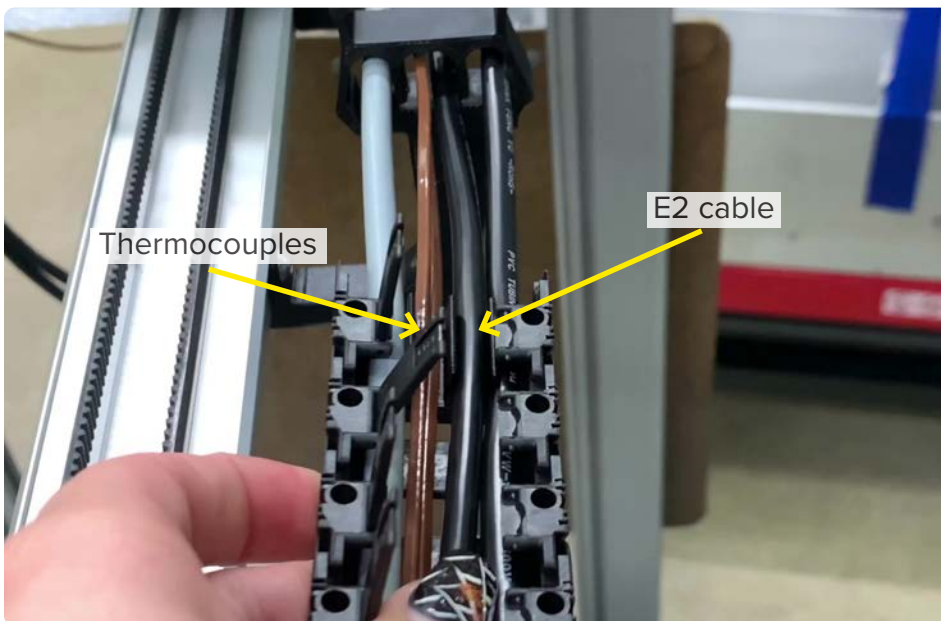






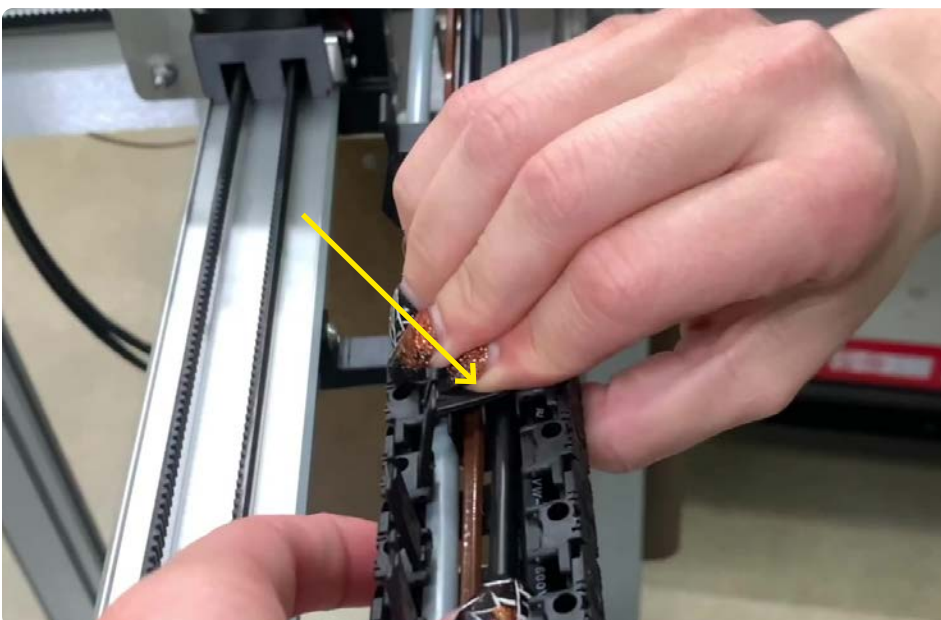
### **N13**

Press the flange of the wire separator against the cable carrier link. This will help it to retain its position. Insert a wire separator every 4 links.



### **N14**

Insert the thermocouple wires and E2 cable into the slots in the wire separator, as shown.

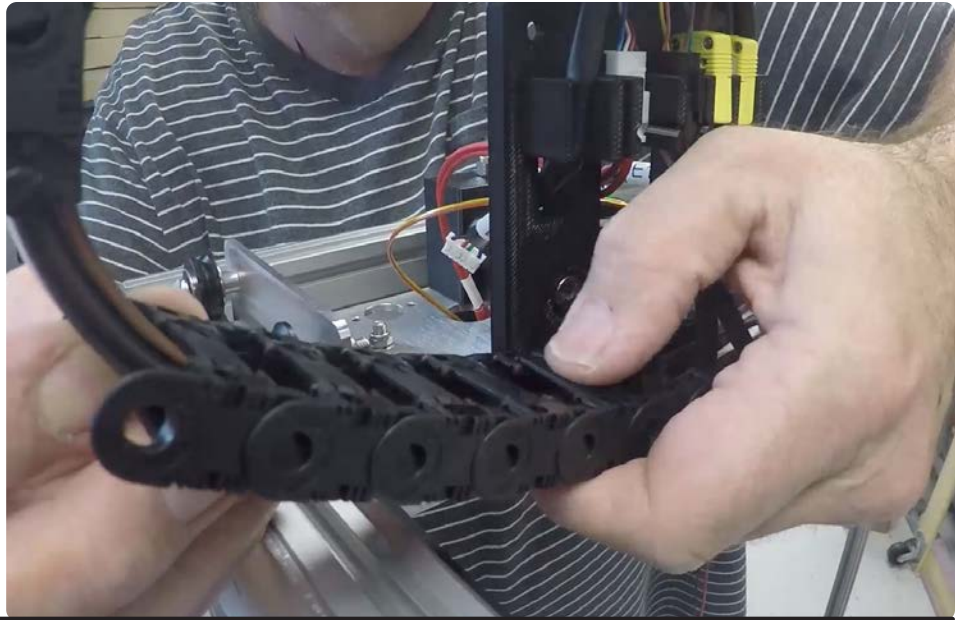


### **N15**

Make sure the wires are all laying flat inside the cable carrier and then close each link.

## N16

Take another section of cable carriers and repeat this same process. Be sure you maintain the arrangement of the cables such that they do not overlap or get tangles.



## N17

Continue this method until you are ready to connect the links on the X/Y upright with the rest of the [10837] X Cable Carrier (53 links) s. Remove the wiring clips as needed. These are only meant to hold wires in place until cable carriers are installed, and will not be needed afterward.



## N18

Organize the wires such that the X motor cable joins the E1 and E2 cables at the bottom of the cable carriers, with the X limit switch, TC1, TC2, and head cable on top.

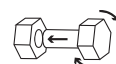






## N19

Connect the [10837] X Cable Carrier (53 links) to the X/Y Upright and close the door on the remaining [10837] X Cable Carrier (53 links) links on the X/Y Upright.



## N20

Double check the wires inside the [10837] X Cable Carrier (53 links). If they are misaligned or starting to overlap, you can use a small screwdriver to gently shift their positions.



## N21

Gently push down on the [10837] X Cable Carrier (53 links)s so that they closely follow the angle of the shelf on the X/Y upright. If this angle is too shallow, then the trolley may hit the cable carriers by accident while homing.





## N22

You should still be able to slide the [10724] X-Axis Carrier Support along the bridge rail. If you cannot, use the 3mm Allen Key to loosen the M5 x 8 SHCS and M5x12 screws that hold these supports in place.



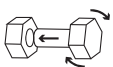
## N23

Slide the middle support so that it is approximately in the middle of the bridge rail. You can use a tape measure to verify the middle if needed.



## N24

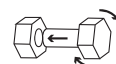
Place it directly under the nearest cable carrier link and fasten the cable carrier to the support with a [10222] M3x25mm BHCS, using the 2mm Allen Key.





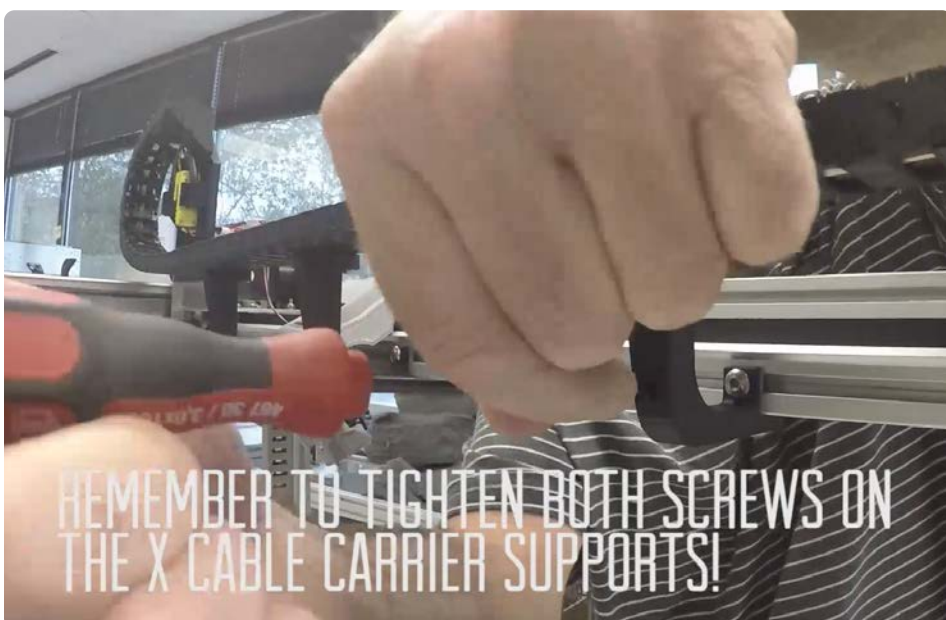
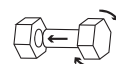
## N25

Use the 3mm Allen Key to tighten the M5 x 8 SHCS and [11313] M5 x 12 SHCS that hold the support to the bridge rail. Do not overtighten or you may split the plastic.



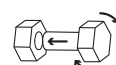
## N26

Slide the support nearest to the X/Y Upright so that it is 10 links apart from the middle support, and fasten this with a [10222] M3x25mm BHCS.



## N27

Again, tighten the M5 x 8 SHCS and M5x12 for this support as well.





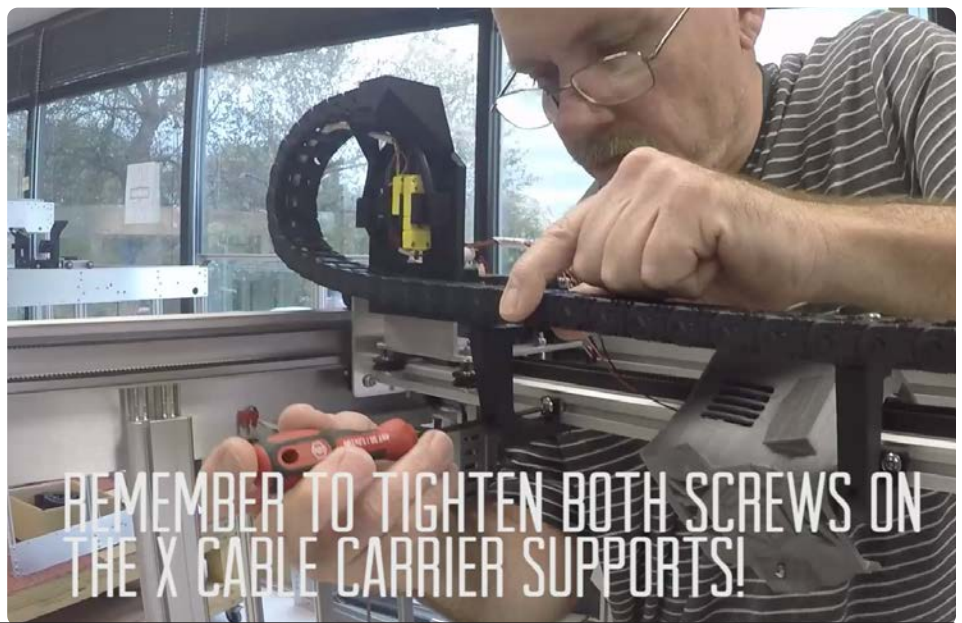
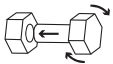
## N28

Finally, space the support that is closest to the trolley 10 links apart from the middle support as well. DO NOT fasten this at all. The cable carrier needs to be able to lift off of this as it travels across the bridge rail.



## N29

Tighten the M5 x 8 SHCS and M5x12 for this support.



## N30

You have now completed assembling the X axis cable carrier.







### **N31**

On top of the X/Y Upright should be 4 links for the Y axis cable carrier. Take note of its orientation.



### **N32**

Use the 2mm Allen Key to remove the [10222] M3x25mm BHCS and remove the links. Open up the doors to the links.

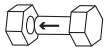


### **N33**

Pull the wires out from the exit of the X axis cable carrier to remove the slack. Maintain the same arrange of all the cables.

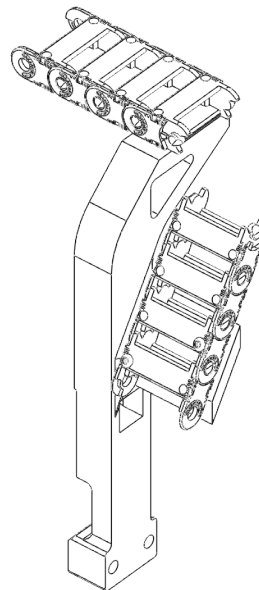
### N34

Insert the wires in the links in the same way it was done on top of the trolley bracket at step N2. You may have to twist the wire bundle around so that the motor cables remain on the “closed” part of the links, with the head cable and thermocouple against the doors.



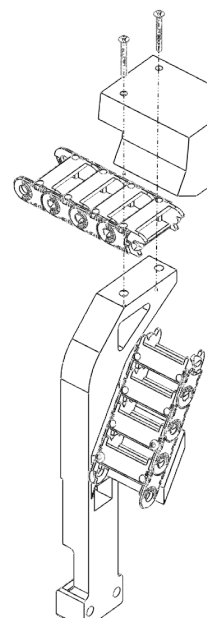
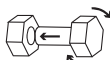
### N35

Place the links on top of the X/Y Upright again, but do not fasten it yet. Check the orientation of the links, such that it is the same as in step N25.



### N36

Place the X/Y Upright cover on top of the Y cable carrier links and use the 2 [10222] M3x25mm BHCS to fasten it to the X/Y Upright. This conceals the transition of the wires from X axis to Y axis.







YOU WILL NEED TO DO THIS FOR THE X & Y CABLE CARRIERS (THIS TIP WAS REPEATED FOR CONVENIENCE)

### **N37**

Now, separate the Y axis cable carrier bundle into sections of 6-8 links each.



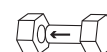
### **N38**

Pull the cables taut to remove the slack.



### **N39**

Open all of the doors on the links of one of the sections and insert the cables into it.





## **N40**

Make sure that the orientation of the links in this section also matches the orientation of the links on the X/Y Upright. Also, maintain the arrangement of the cables inside this section.



## **N41**

Once the wires are inserted, close the doors to all the links and connect this section to the links on the X/Y Upright.



## **N42**

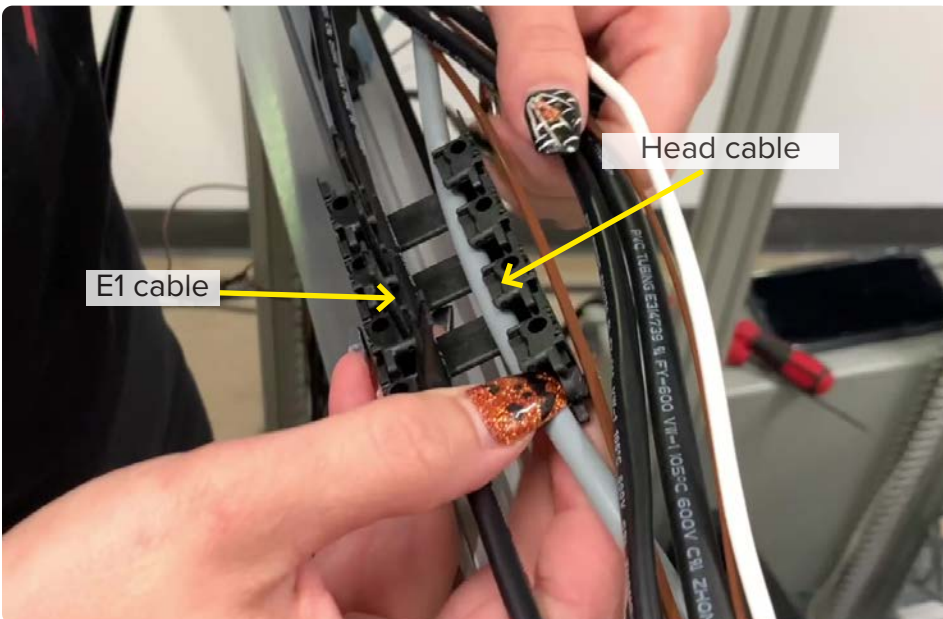
Repeat this method in the same fashion as you did for the [10837] X Cable Carrier (53 links)s.





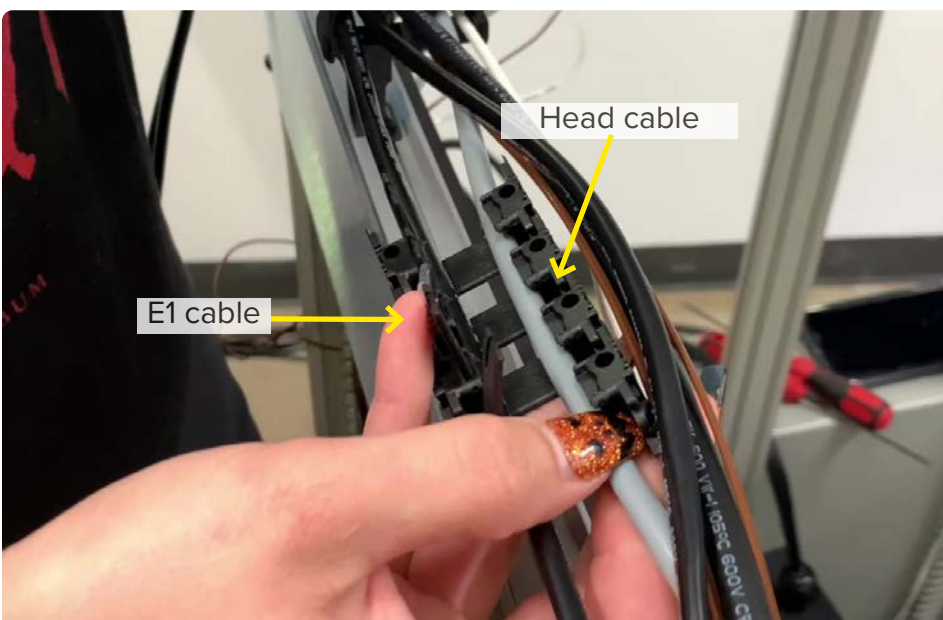
## N43

Similar to the X Axis, you will also insert the wire separators along the Y Axis as well.



## N44

Same as before, slide the E1 cable and head cable into a section of cable carriers.



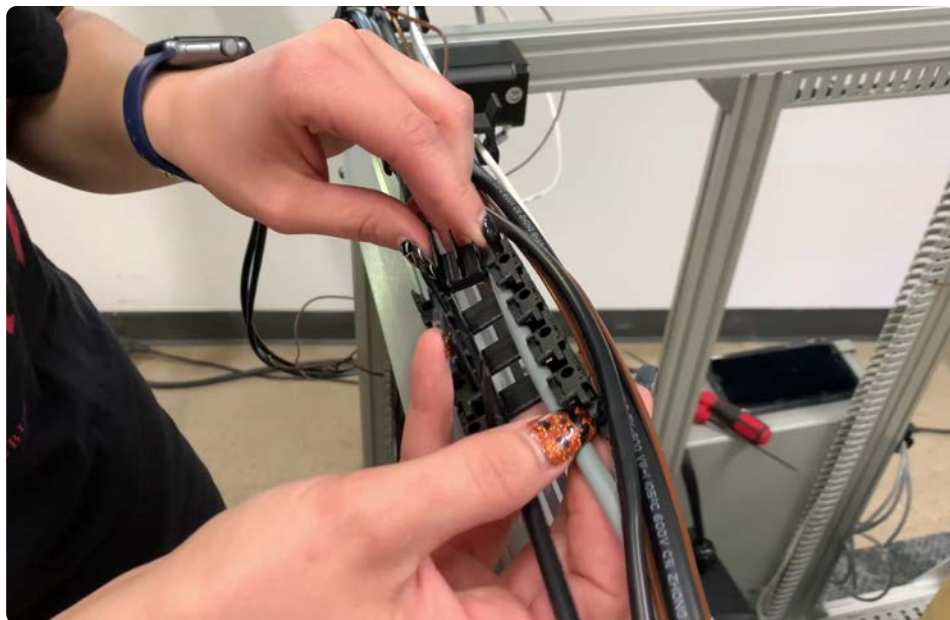
## N45

Place these cables so that they are the outermost cables, sitting against the sides of the cable carrier.



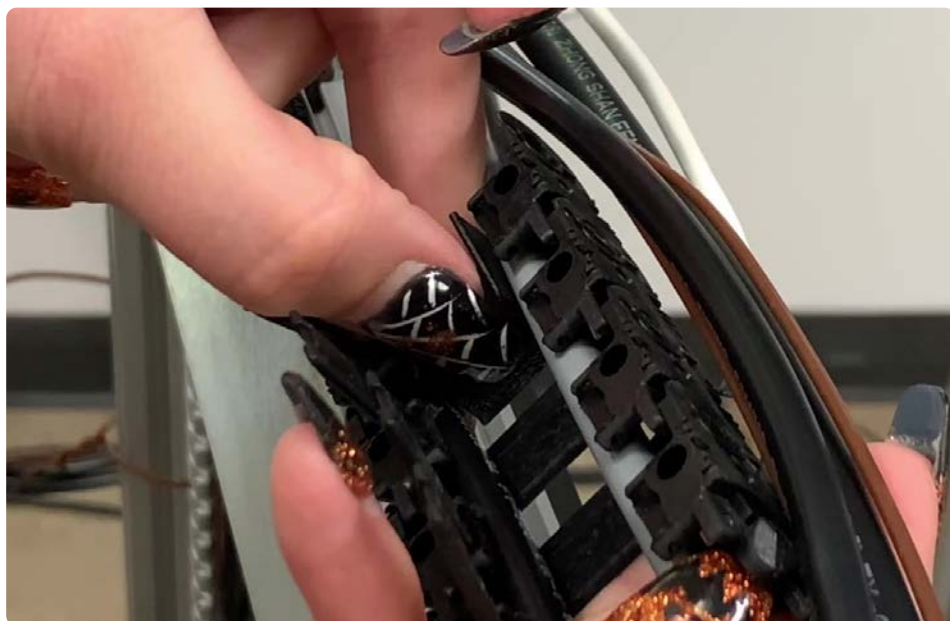
## **N46**

Again, insert the wire separator onto one of the cable carrier links in between the head cable and E1 cable.



## **N47**

Push the wire separator back so that the flange rests against the cable carrier link.

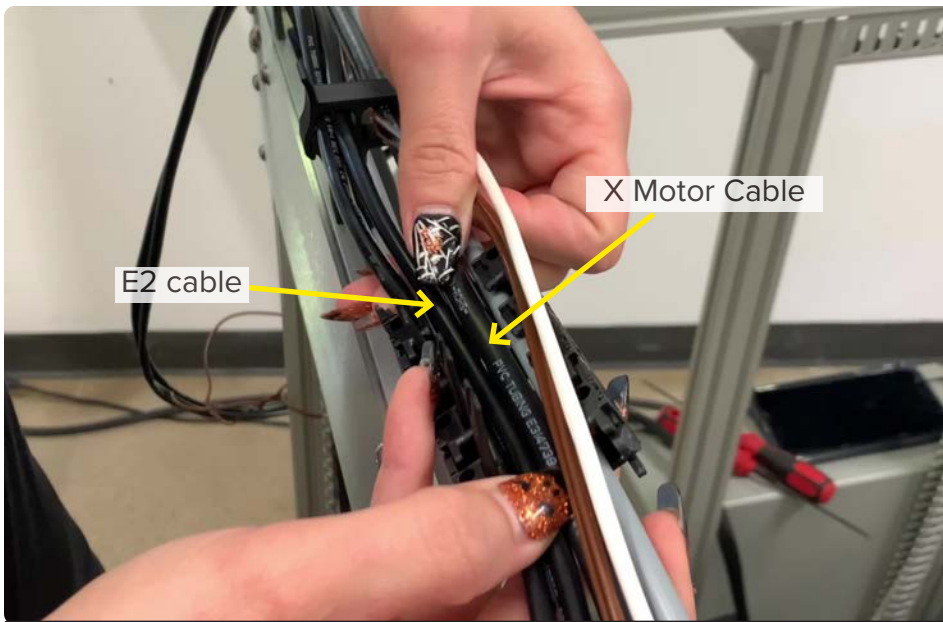


## **N48**

When placed properly, the wire separator will more easily hold its position, as shown. Insert one of these every 4 links.

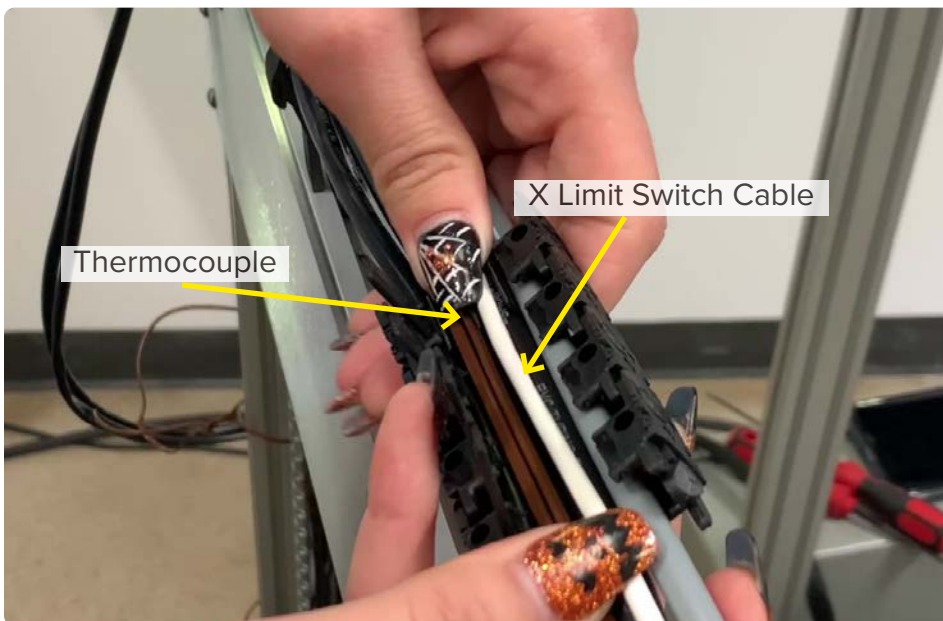






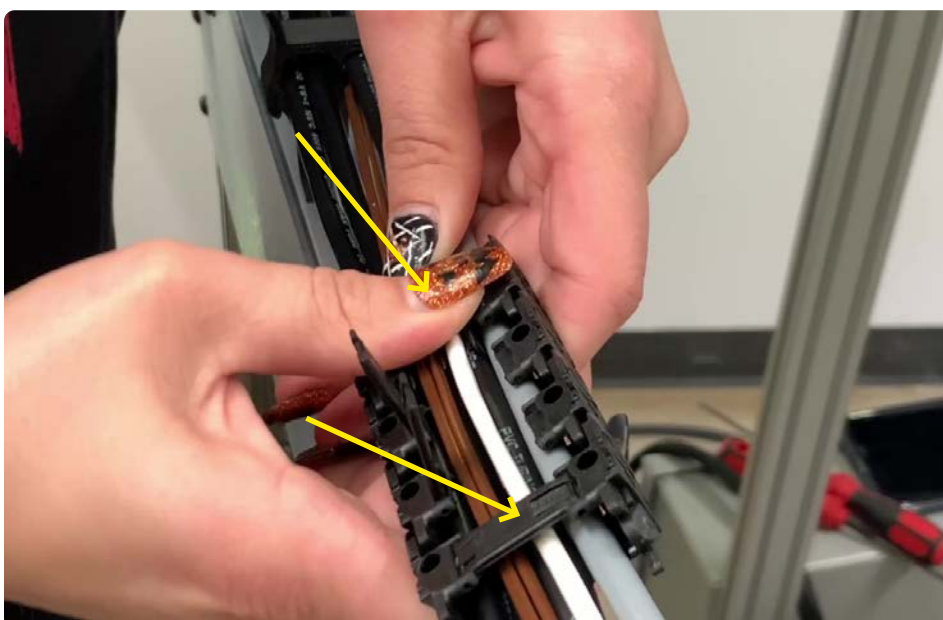
## **N49**

Next, insert the E2 cable and X motor cable inside the slots of the wire separator, as shown.



## **N50**

Lay the thermocouple and X Limit Switch cables on top.

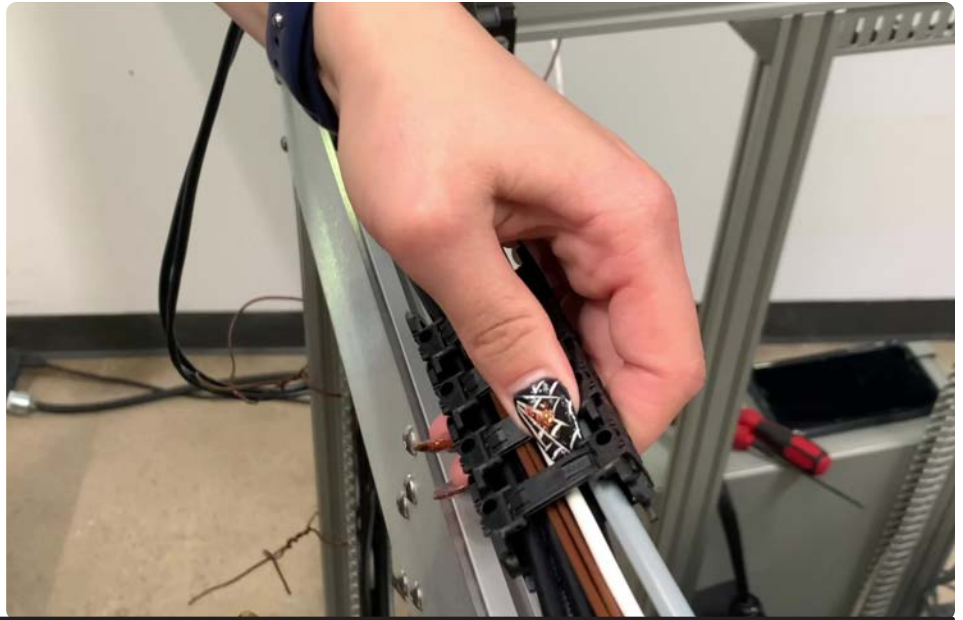


## **N51**

Press the wires down and close the link over the wires.

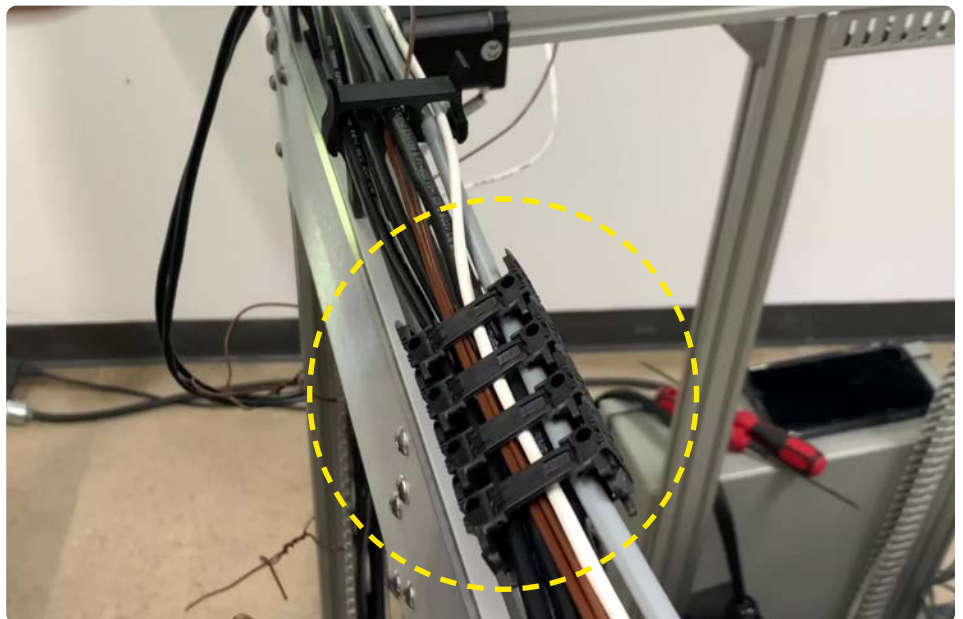
## N52

Continue closing links until the whole section is now routed and closed over the wires.



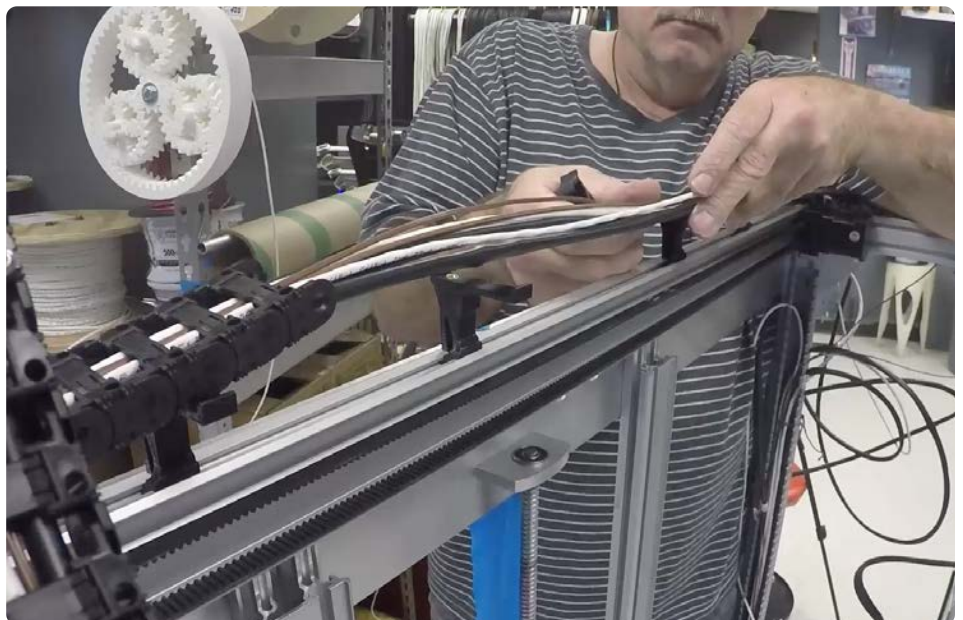
## N53

The fully closed section of cable carrier links should look like this.

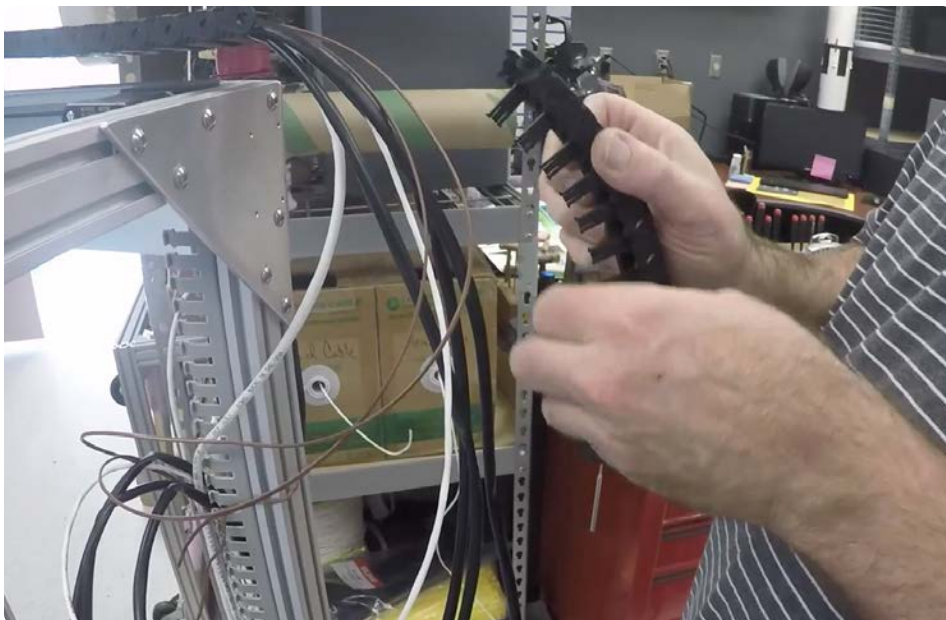


## N54

Remove the wiring clips from the cable carrier supports as you go.

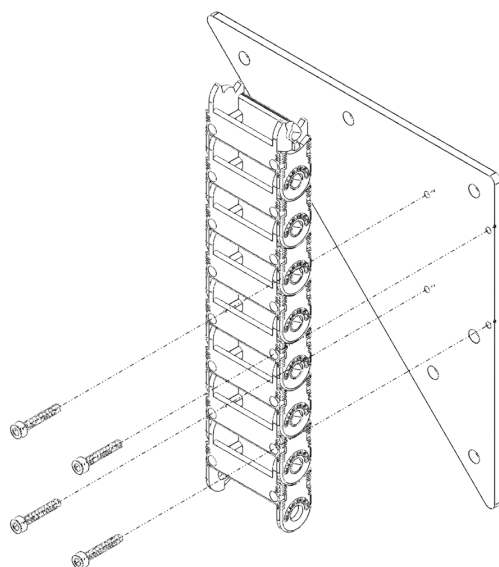






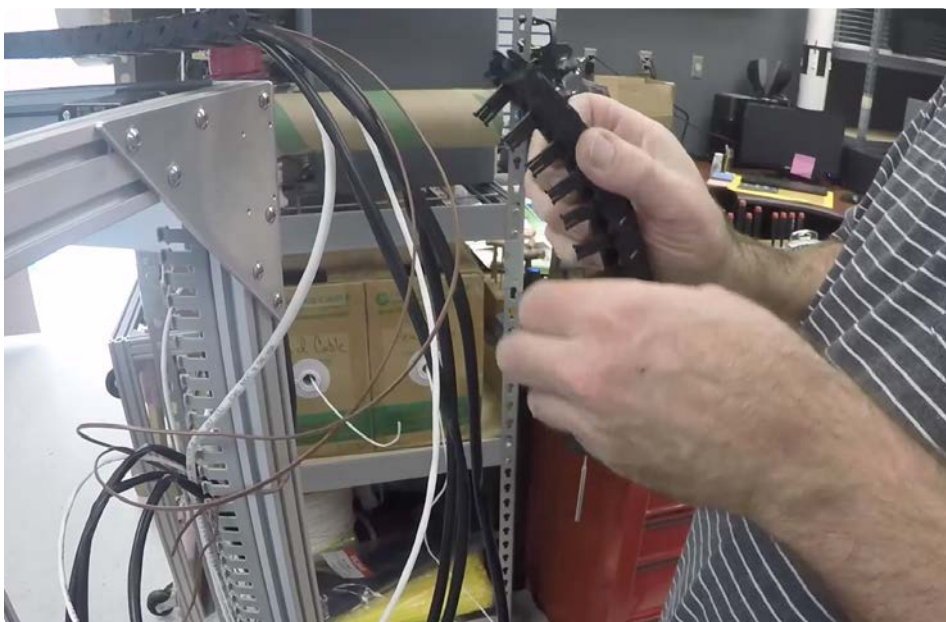
## N55

There is a section of Y cable carrier specifically made to attach to the machined corner plate. This section bends in the opposite direction as the rest of the Y axis cable carrier.



## N56

Remove this section from the plate (if it hasn't been removed already) by loosening the 4 M3x18 SHCS.



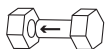
## N57

Open all the doors for the links.



## N58

Insert the wires into the cable carrier links. This time, let the wires run straight down without twisting the bundle, as you did in the X/Y transition in steps N28.



## N59

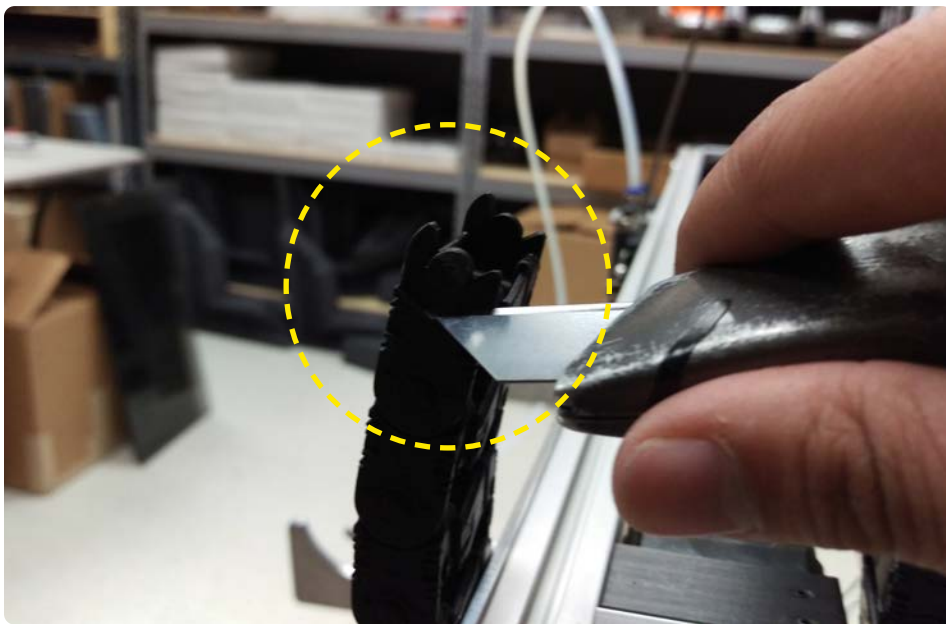
Close the doors in the links to hold the wires in place.



## N60

The Y cable carriers should be able to connect to the links on the machined corner plate. The corner plate links are flipped around so as to rotate the opposite direction.





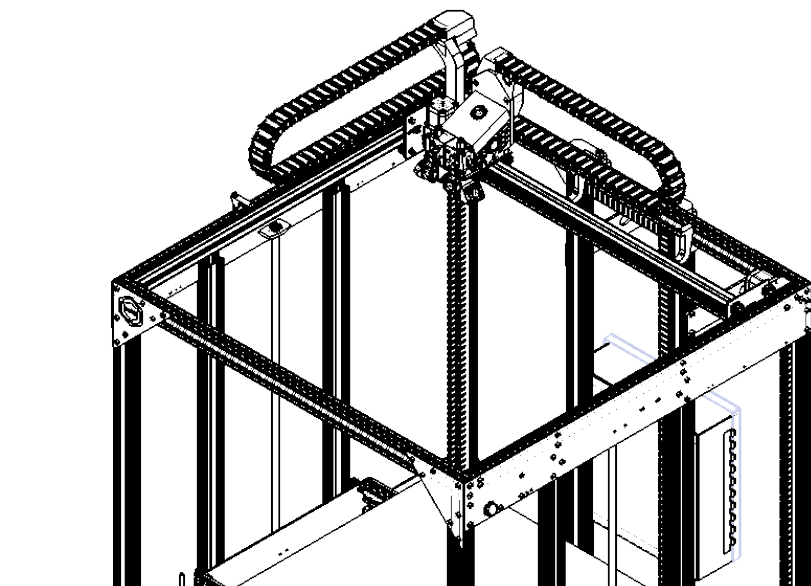
## **N61**

If these do not connect, you may need to remove the tabs on the connecting link as shown. Carefully scrap this away with a sharp utility knife or x-acto knife. You can also use a rotary tool such as a Dremel or a drill press to grind this away. After removing the tabs, connect the links.



## **N62**

Check your work all the way down the Y axis and ensure that the wires remain parallel with no overlaps or tangles. Use a small screwdriver to reposition them as needed, or open the cable carrier doors for better access.



## **N63**

You have now completed assembling the X and Y cable carriers.



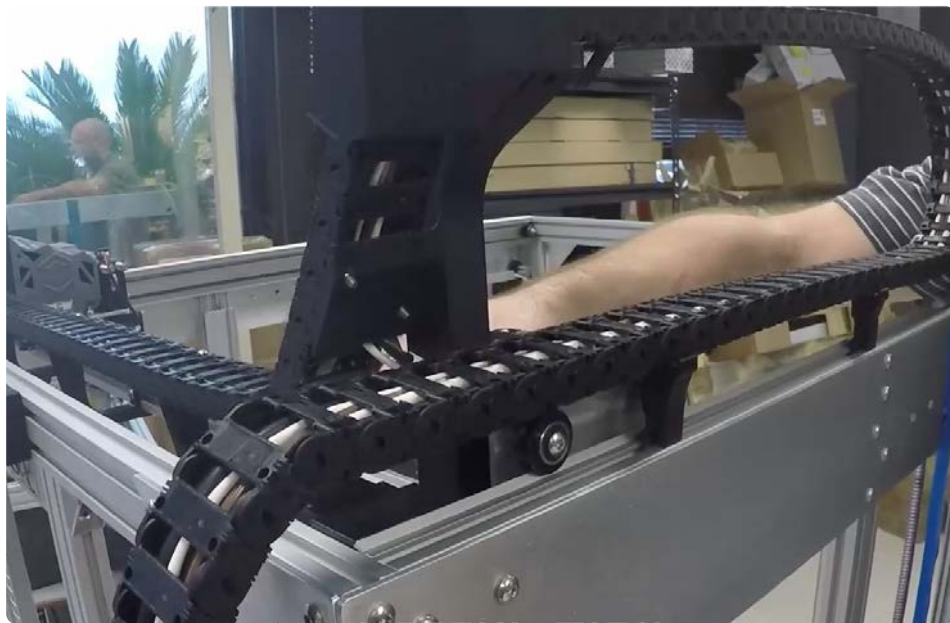
## N64

With the bridge assembly at the front of the Gigabot, slide the front-most Y axis cable carrier support directly underneath the horizontal link closest to the bend in the cable carrier, as shown. DO NOT fasten this.



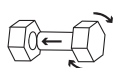
## N65

Gently move the bridge assembly by hand to the rear of the frame.



## N66

Slide the middle support directly underneath the horizontal link closest to the bend in the cable carrier, as shown. Fasten this with a [10222] M3x25mm BHCS.

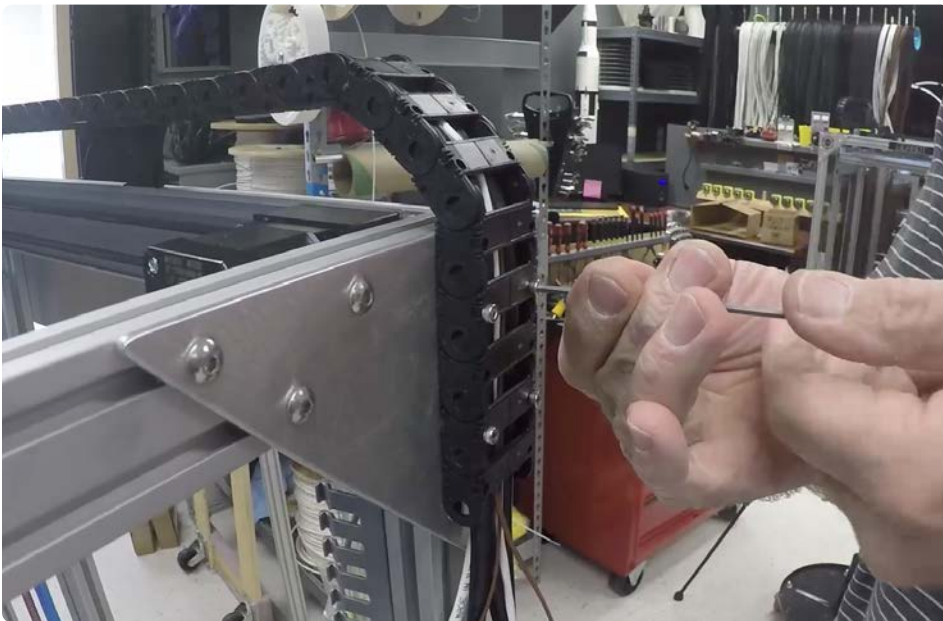
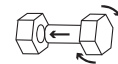






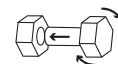
## N67

Slide the rear support so that it is about 10 links away from the middle support, and fasten this with a [10222] M3x25mm BHCS.



## N68

Fasten the last, reverse-oriented section to the machined corner plate as shown using 4 M3x18 SHCS. Note where the M3x18 SHCS are inserted in the links.



## N69

Pull the cables out from the #3 Panduit on the rear left corner upright. You will put them in their final positions.

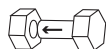
## N70

Choose a slot in the #3 Panduit to start. This should be below the machined corner plate.



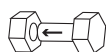
## N71

Insert a motor cable into the slot.

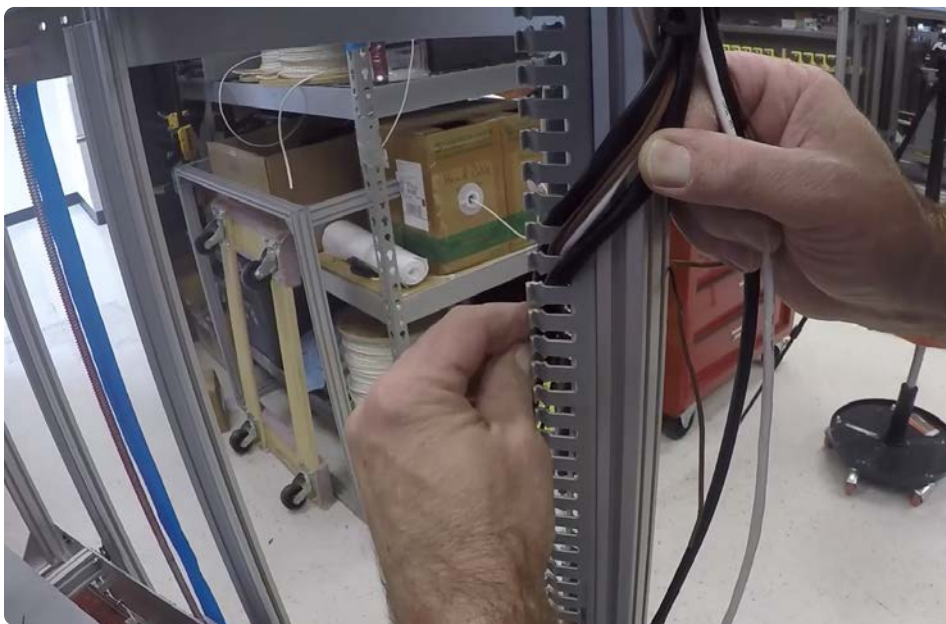


## N72

In the slot below, insert the thermocouples and X limit switch cables.

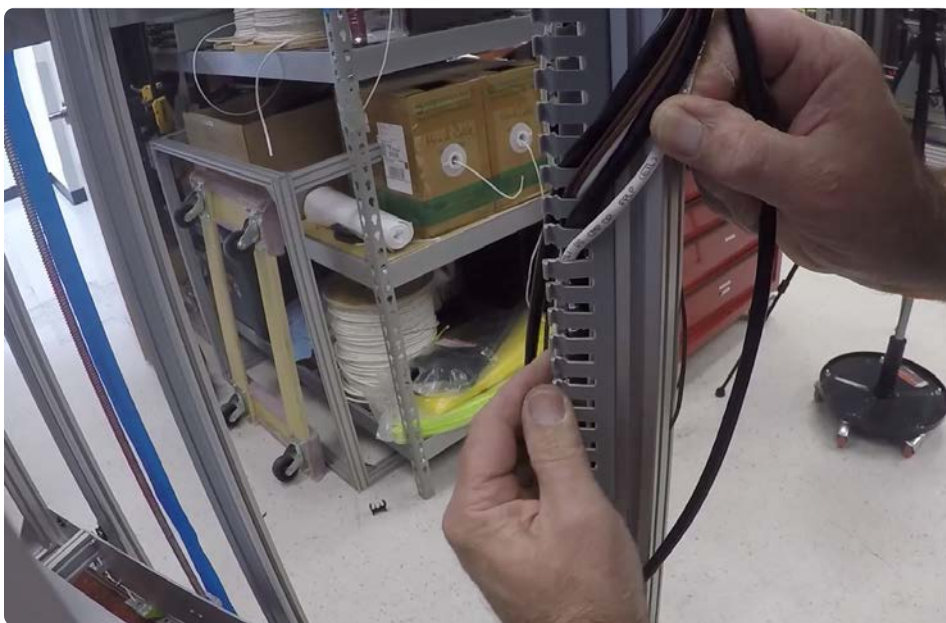
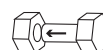






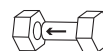
## **N73**

Insert another motor cable in the slot below.



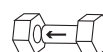
## **N74**

Insert the head cable in the next slot.



## **N75**

Finally, insert the last motor cable in the next slot.





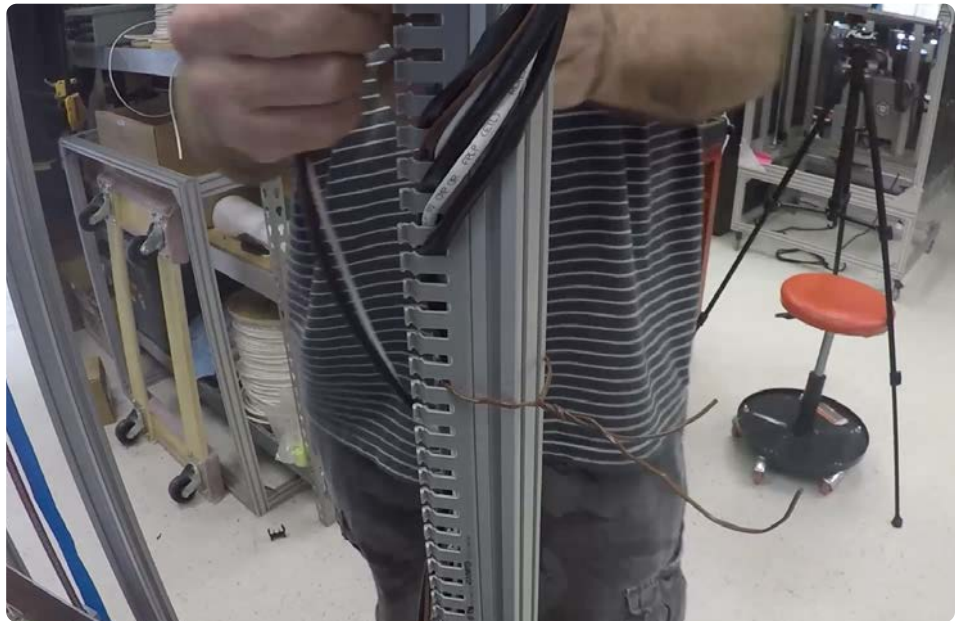
## N76

Make sure there is some slack in the cables as the transition from the cable carrier to the Panduit.



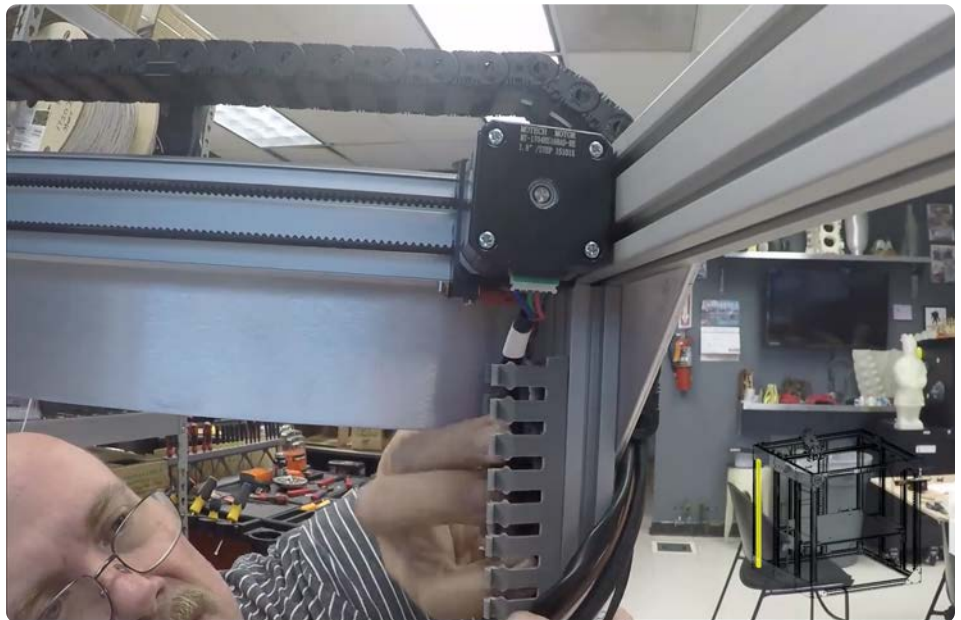
## N77

Use a twist tie to hold the wires in place at this position.



## N78

Connect the Y motor cable to the left Y motor.





## **N79**

Connect the Y limit switch cable to the Y limit switch. Do a quick pull test to diagnose the quality of connection between the terminals.



## **N80**

If the connection is too loose, use some pliers to gently crimp the female terminals so there is a better connection. Work slowly and **DO NOT** overtighten them, or you will not be able to connect them properly.

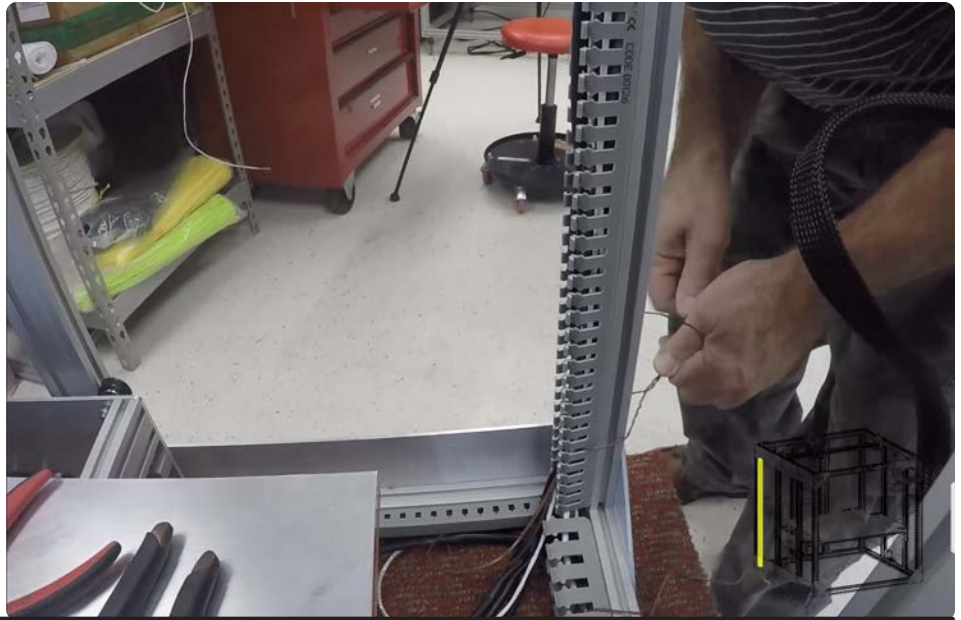
## **N81**

Gently pull the cables down to remove slack and insert them all into the #3 Panduit. Let the excess hang out of the bottom of the Panduit.



## **N82**

Use another twist tie at the bottom of the Panduit to hold these in place.



## **N83**

Place the cover on the #3 Panduit and remove the twist ties holding the cables in place.



## **N84**

Tuck all of the excess cabling into the largest #4 Panduit at the base of the frame. Start with the larger motor cables first, and then place the smaller thermocouple, limit switch, and head cables above those. Continue using twist ties to hold things in place temporarily as needed.







## **N85**

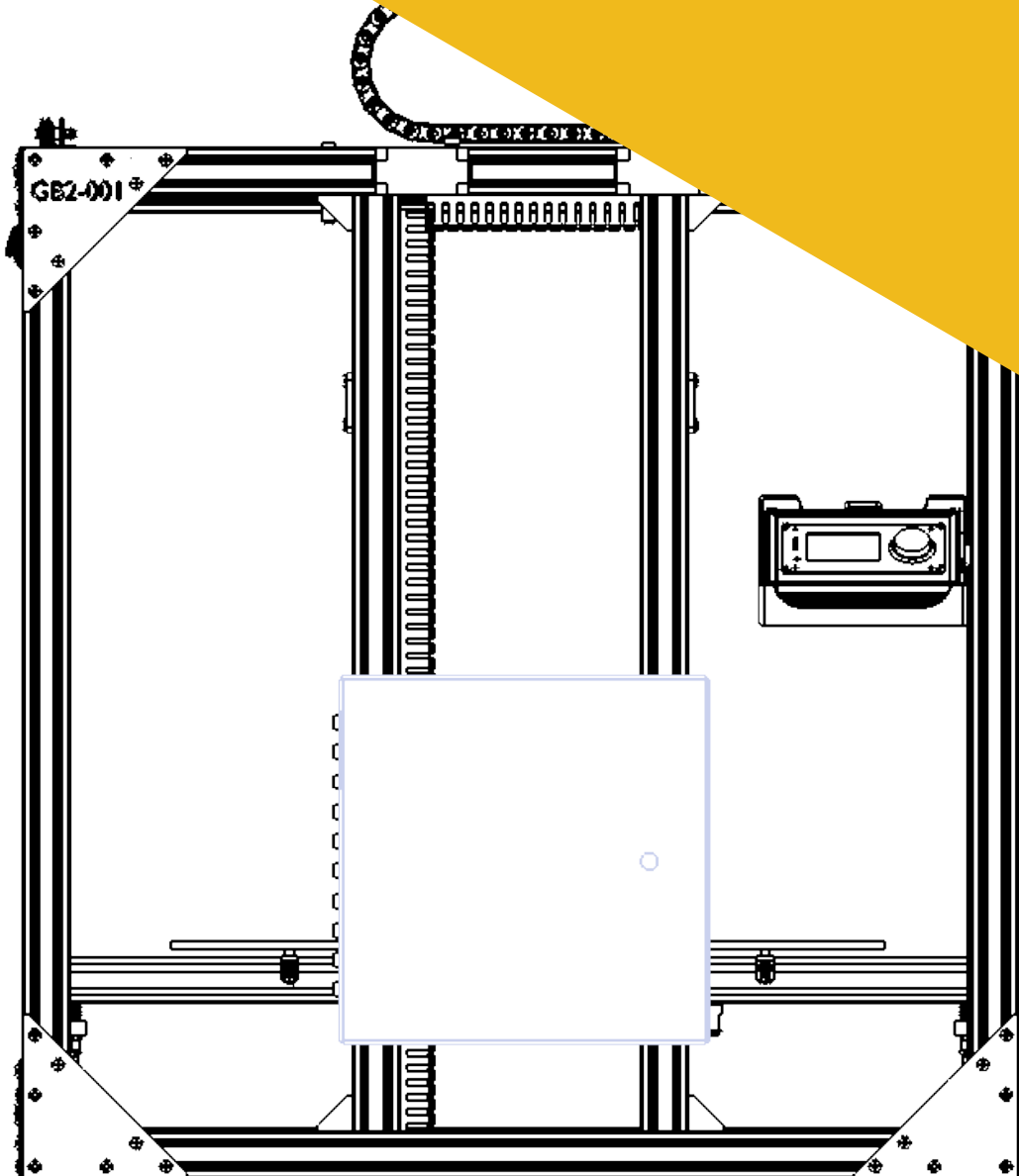
Once the excess cabling has been inserted into the #4 Panduit, cover the Panduit and remove the twist ties.

## **N86**

You have now completed the wiring for Gigabot. For a detailed demonstration, feel free to see the accompanying video here: <https://youtu.be/RhGulQimddg>



# ***VIKI HOLDER INSTALLATION***



# TOOLS & PARTS

*Refer to packing list to identify parts*

| BOX # | PART | QUANTITY |
|-------|------|----------|
|-------|------|----------|

|   |                                   |   |
|---|-----------------------------------|---|
| 3 | Viki (attached to electrical box) | 1 |
|---|-----------------------------------|---|

|   |                          |   |
|---|--------------------------|---|
| 6 | [10046] Allen Wrench Set | 1 |
|---|--------------------------|---|

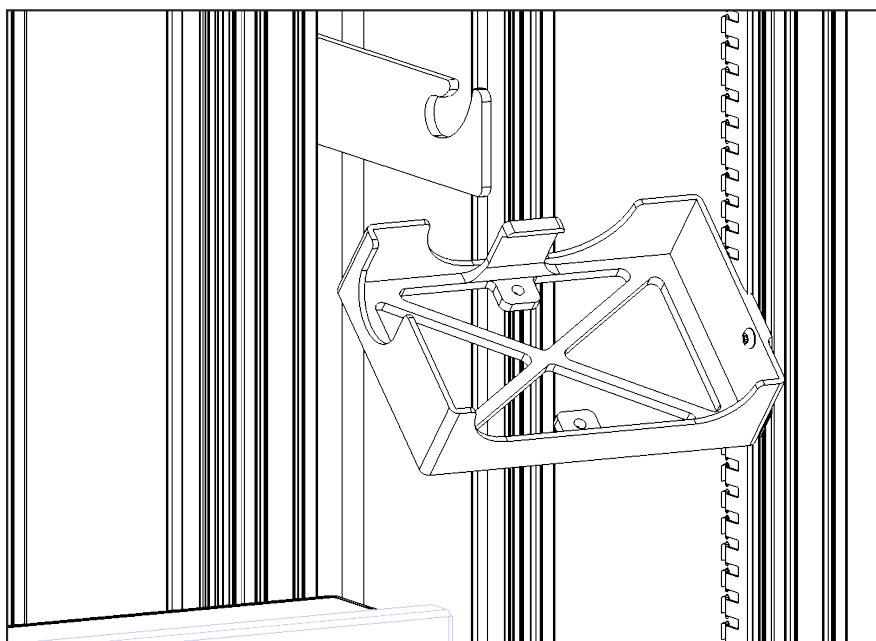
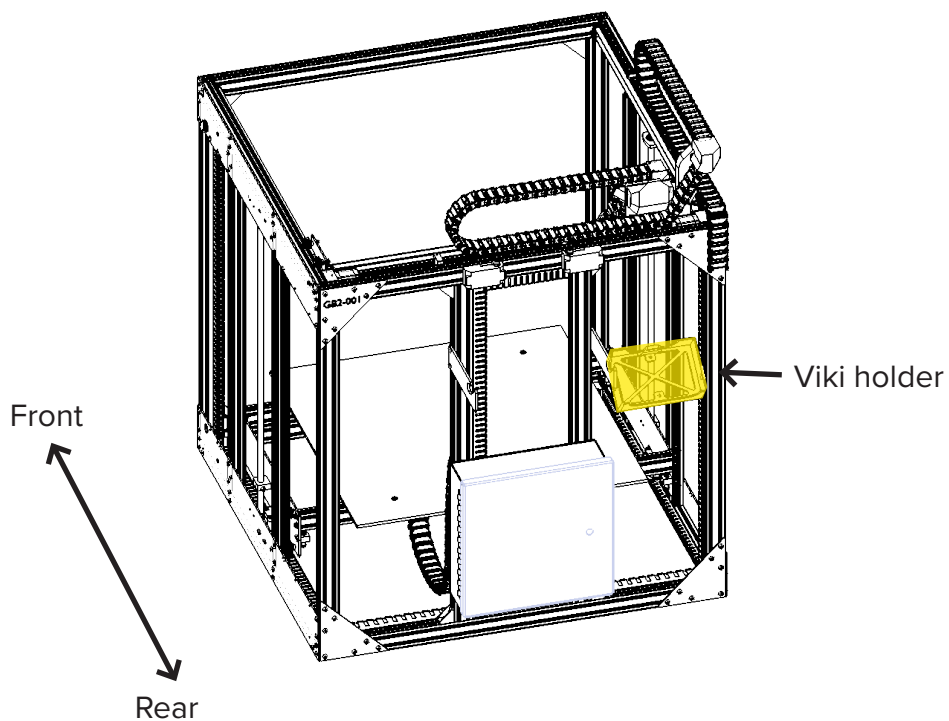
**WATCH THE  
ACCOMPANYING  
VIDEO:**

[https://www.youtube.com/watch?v=4HUxKQiiI\\_c](https://www.youtube.com/watch?v=4HUxKQiiI_c)



# OVERVIEW

Next you will mount the Viki to the frame. You will need to install the Viki holder to a corner upright using [10362] M5 Magic T-nuts (post assembly T-nuts).



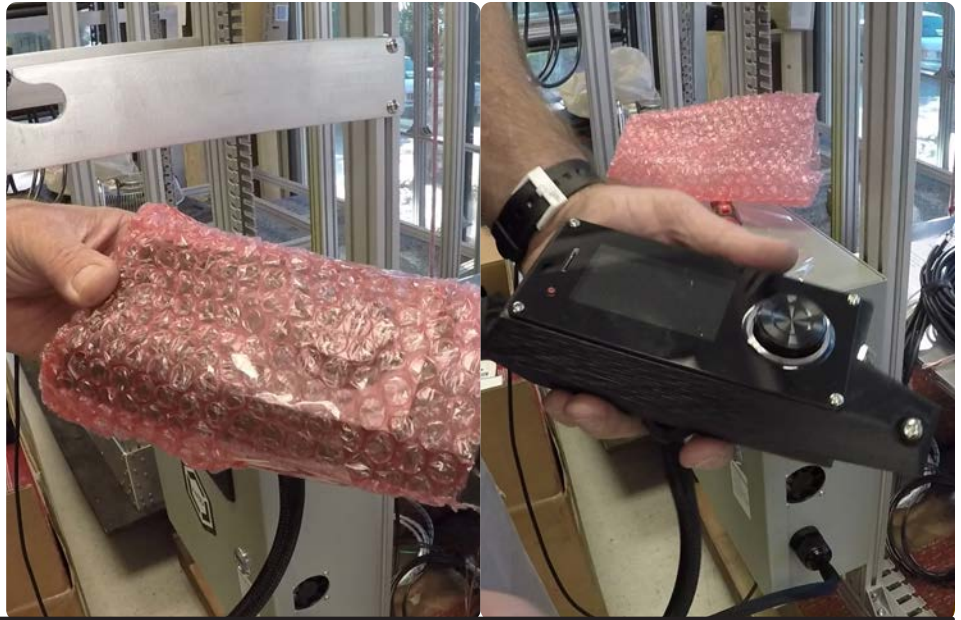
# TIPS & TRICKS

---

- #1** Do not overcompress the leaf [10002] GB3+ Bed Leveling Spring on the [10362] M5 Magic T-nuts, or they will no longer hold their place within the rail.
- #2** Do not overtighten the screws on the Viki holder, or you risk breaking the plastic.
- #3** Do not place too much tension or strain on the Viki wires.
- #4** When arranging where the Gigabot will be placed in a room, try to prioritize having easy access to the Viki.

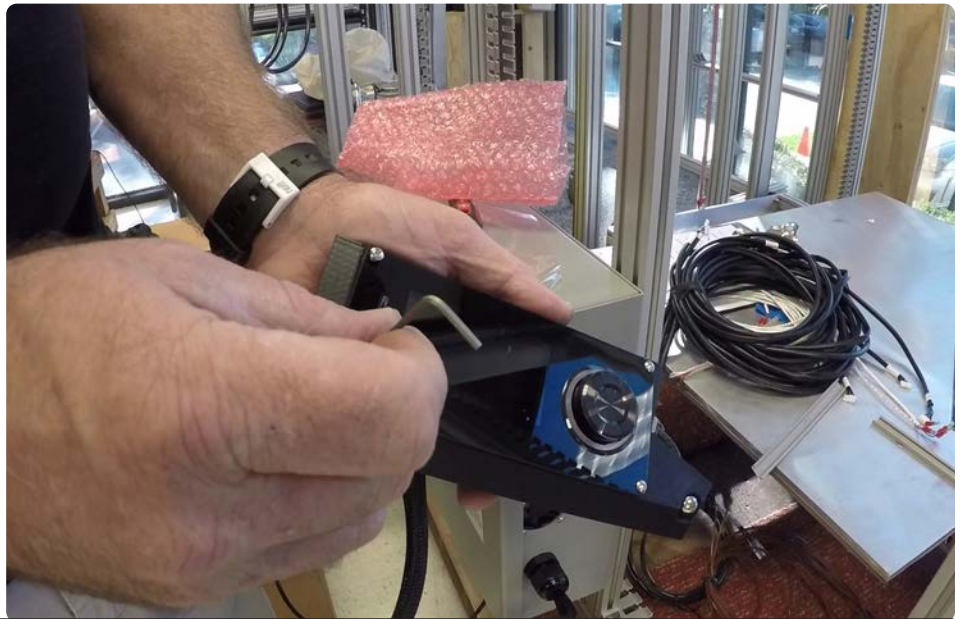
## 01

The Viki LCD is already enclosed and attached to the electrical box. Remove the protective bubble wrap.



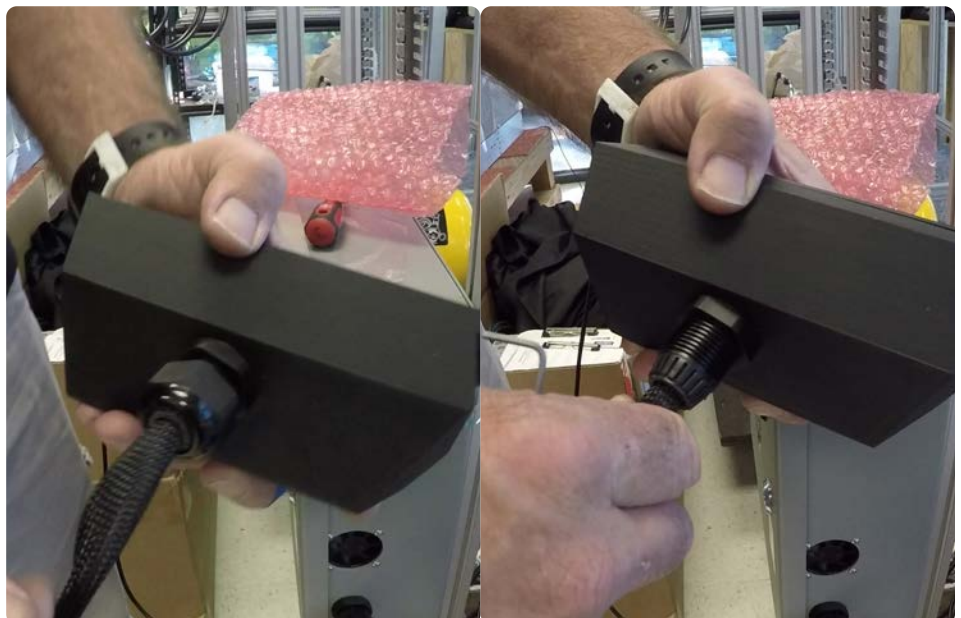
## 02

Use the 2mm Allen Key to remove the 4 M3 BHCS securing the Viki LCD to its enclosure.

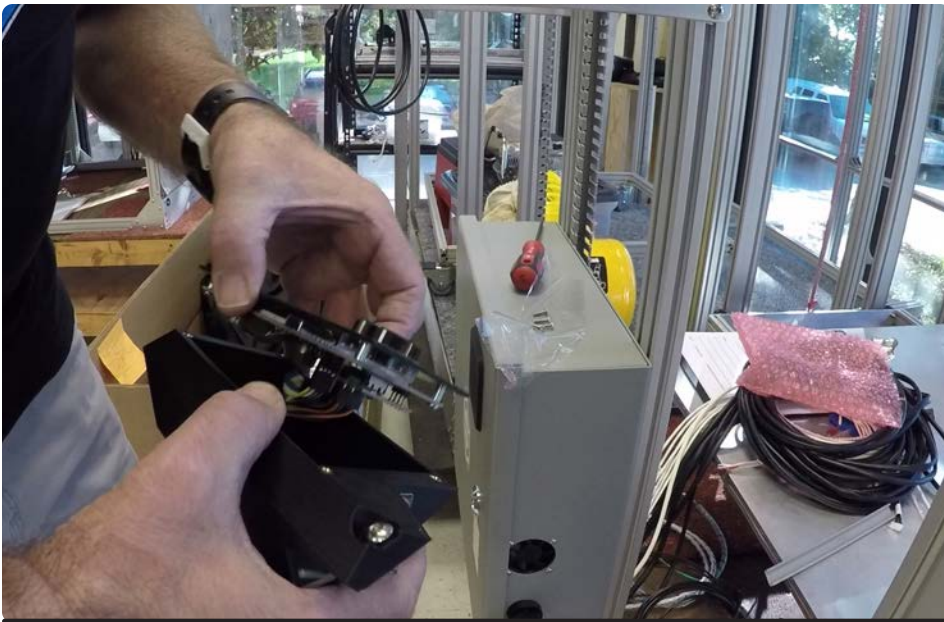


## 03

Also, unscrew the grommet cap on the rear of the enclosure to allow the Viki wires to move freely through the grommet.







## 04

Gently remove the Viki from the enclosure so you have access to the interior of the enclosure.



## 05

There is 1 [10237] M5 x 12 BHCS set inside the enclosure. Remove the magic T-nut from this.



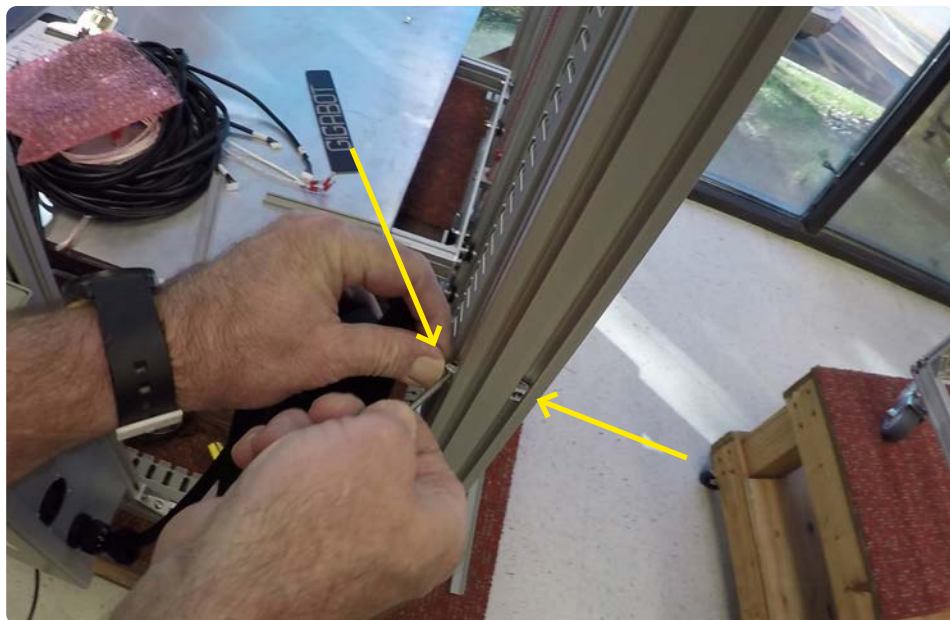
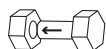
## 06

Remove the magic T-nut from the other [10237] M5 x 12 BHCS.



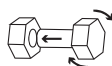
## 07

Insert the M5 [10362] M5 Magic T-nuts into the rail as shown. Refer to the Overview page of this section to see the location of this rail.



## 08

Use the 3mm Allen Key and 2 [10237] M5 x 12 BHCS to loosely fasten the enclosure to the rail. Do not fully tighten them yet.

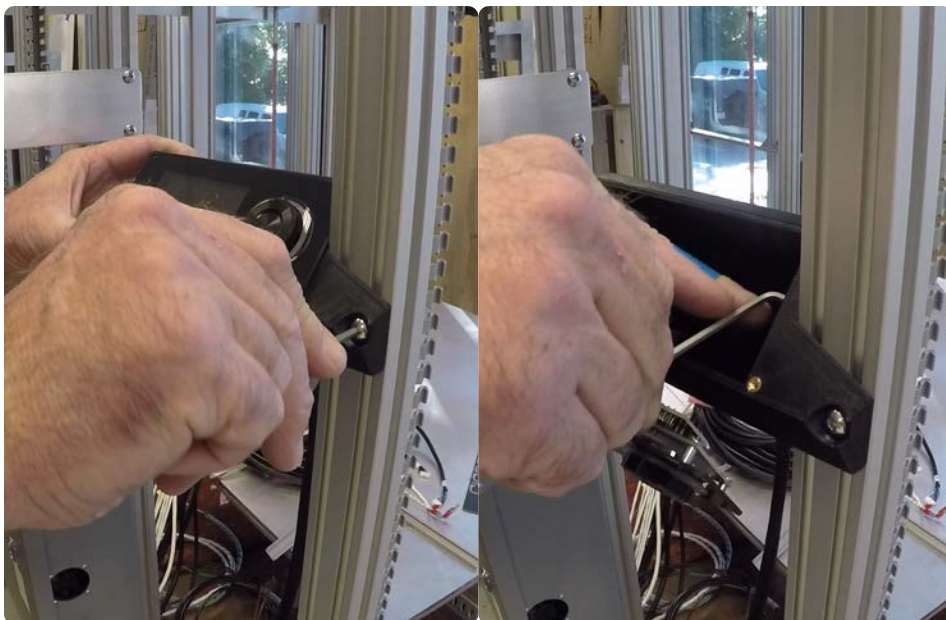


## 09

Place the Viki LCD on the on its enclosure again. Slide the enclosure up and down along the rail until it is in an easy to access position for operation. Ensure that there is still some slack in the Viki cable.

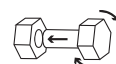






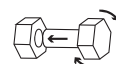
## 010

Once the Viki enclosure is in the desired position, use the 3mm Allen Key to fully fasten it into place. You will need to temporarily move the Viki LCD to access the interior [10237] M5 x 12 BHCS.



## 011

Next, fasten the Viki LCD to the enclosure using the 4 M3 BHCS from step O2 and a 2mm Allen Key. Also, re-tighten the grommet cap on the back of the enclosure.



## 012

The Viki LCD is now set in place.

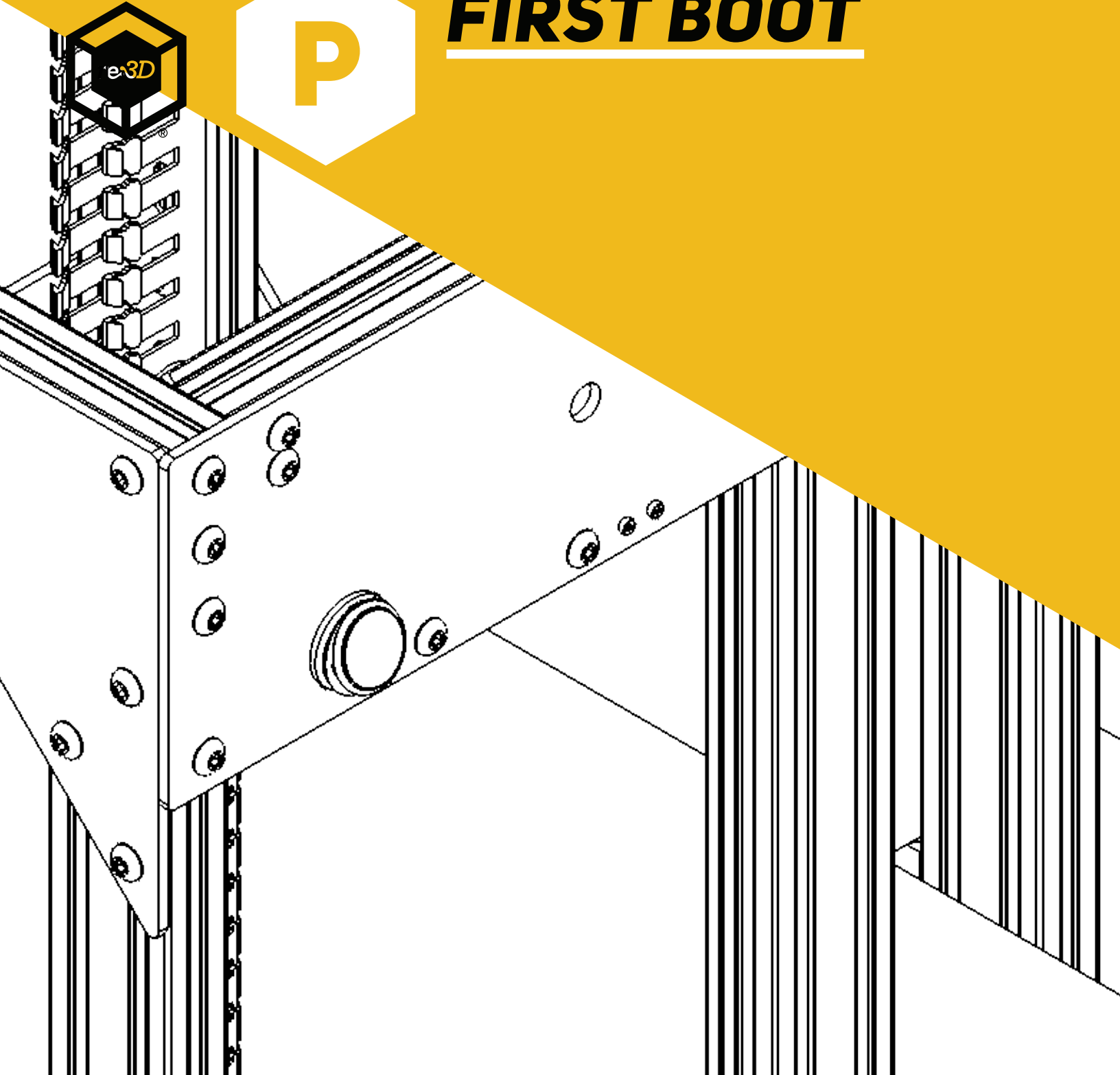


## **013**

For a more detailed demonstration, please [watch our video](#) to install the Viki enclosure.



# **FIRST BOOT**



# TOOLS & PARTS

*Refer to packing list to identify parts*

| BOX # | PART | QUANTITY |
|-------|------|----------|
|-------|------|----------|

|           |                          |   |
|-----------|--------------------------|---|
| Snappybox | [10397] 8mm Combo Wrench | 1 |
|-----------|--------------------------|---|

|   |                          |   |
|---|--------------------------|---|
| 6 | [10046] Allen Wrench Set | 1 |
|---|--------------------------|---|

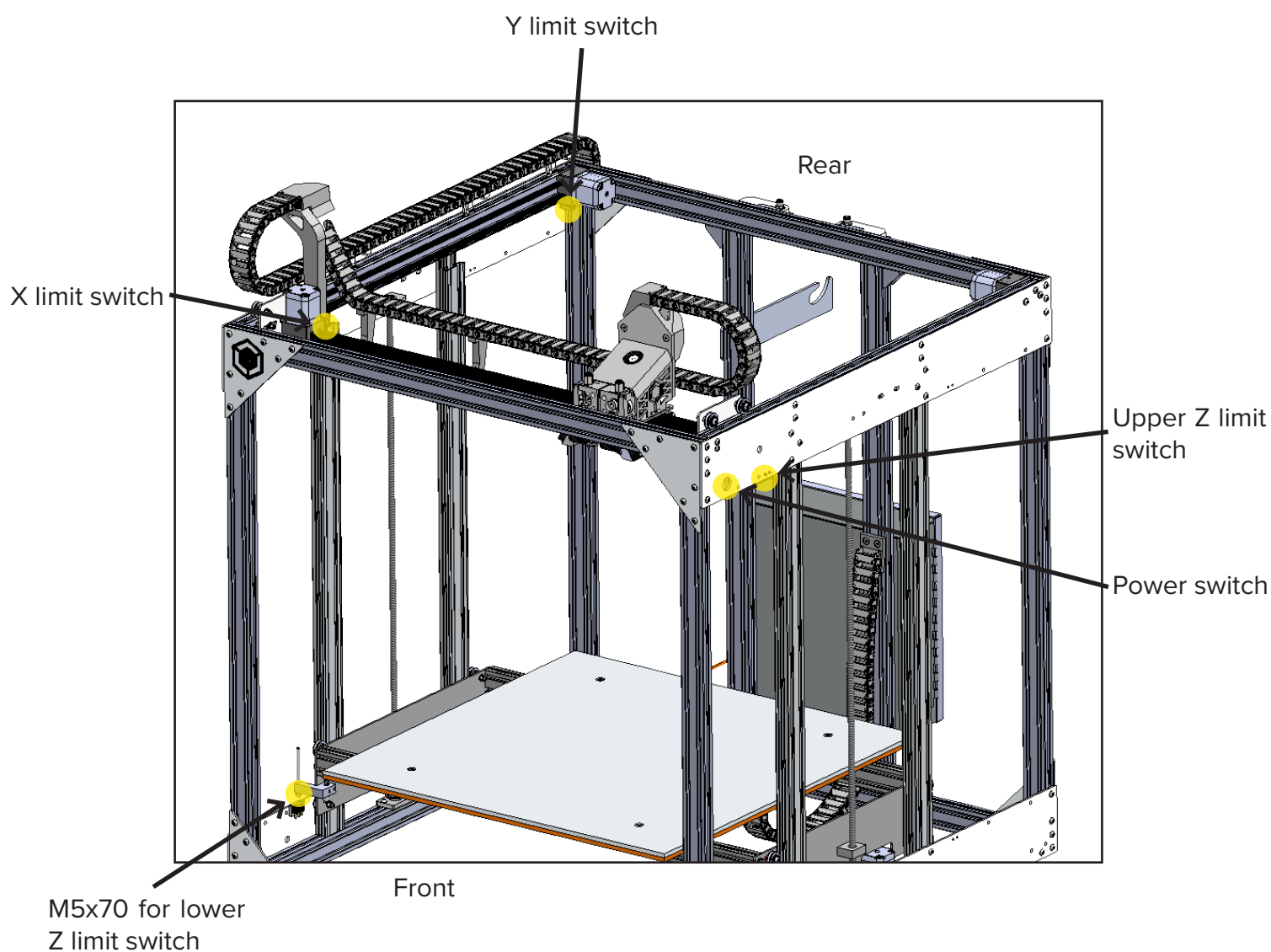
**WATCH THE  
ACCOMPANYING  
VIDEO:**

<https://youtu.be/V66-3DNGrzY>



# OVERVIEW

During the first boot, you will perform some preliminary checks to make sure your Gigabot® is functioning normally. These include checking all of the limit switches and setting the M5x70 hex head screw for the lower Z limit switch.



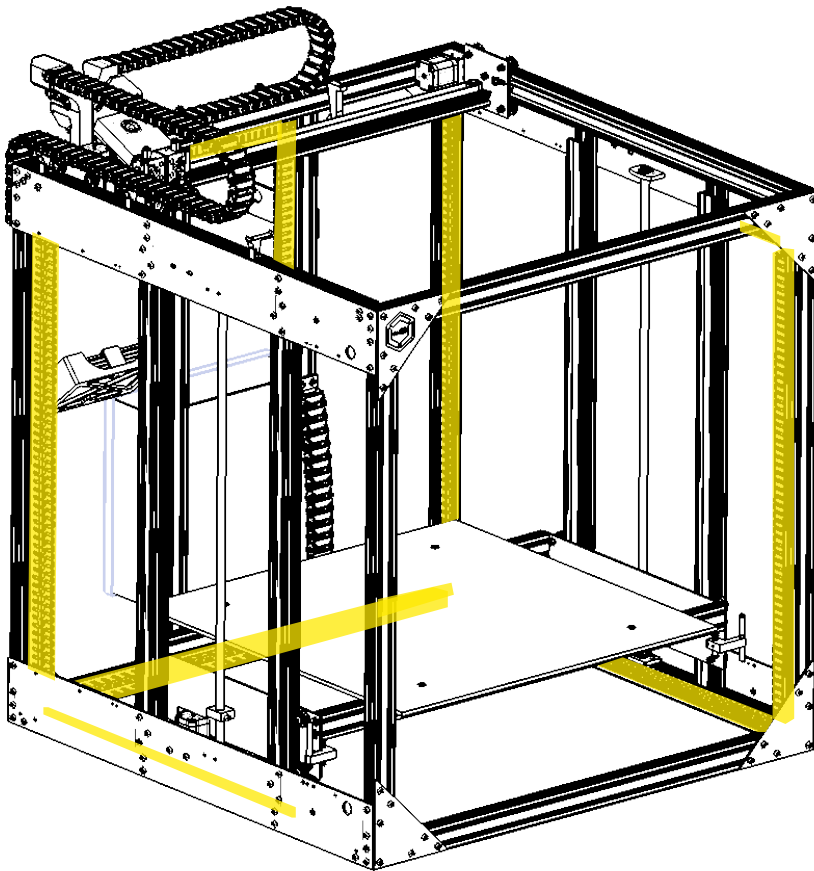
# TIPS & TRICKS

---

- #1** During the preliminary checks, be prepared to shut off Gigabot® at any time by switching off the power button.
- #2** Do not overtighten the rear trolley cover, or you risk breaking the plastic.
- #3** The switch may already be in the “on” position, and if so the Gigabot® will turn on as soon as it is plugged in.

## P1

Check Gigabot® to make sure all components are connected: Left Z motor, right Z motor, lower Z limit switch, FD1, FD2 (if applicable), left Y motor, Y limit switch, right Y motor, power switch, upper Z limit switch, X limit switch, X motor, E1 motor, E2 motor (if applicable), TC1, TC2 (if applicable), head cable (fans & hot ends).



## P2

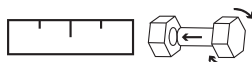
Also check that all of the cables are neatly organized in the Panduits and that all Panduits have covers. Please refer to our Panduit diagram for all Panduit sizes and locations: [http://wiki.re3d.org/images/3/39/Panduit\\_Sizes.pdf](http://wiki.re3d.org/images/3/39/Panduit_Sizes.pdf)





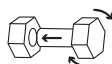
### P3

On the Lower Z limit switch, check that the hex head screw has been brought down to fully engage the limit switch. After raising the bed the first time, the hex head screw needs to be brought down even lower, approximately 0.100" or 2.5mm to provide clearance between the Z motors and bed frame.



### P4

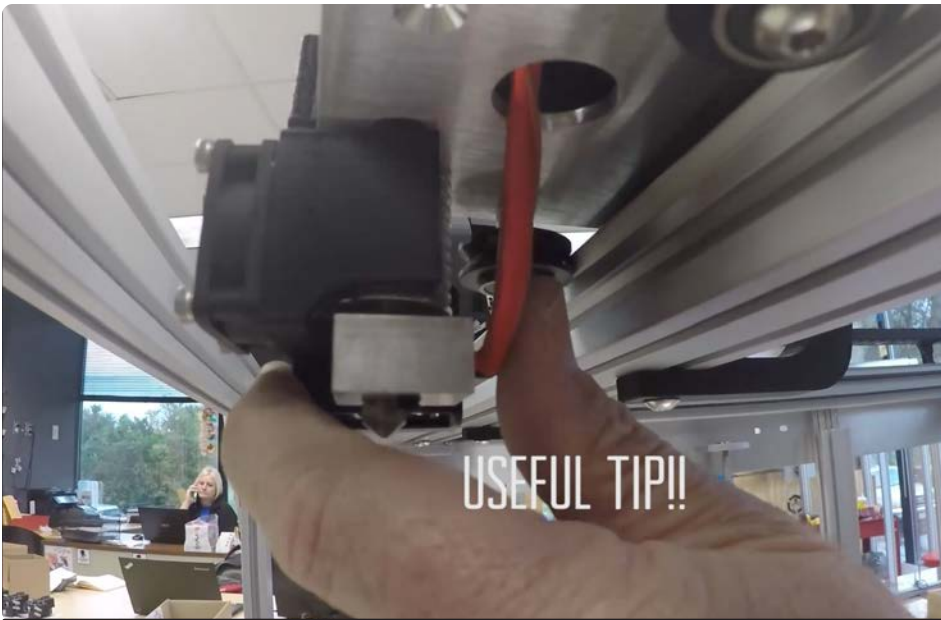
Check that the trolley cover is fastened with 2 M3x14 SHCS.



### P5

Place the rear trolley cover on the trolley bracket and fasten it with 2 M4x12 FHS.





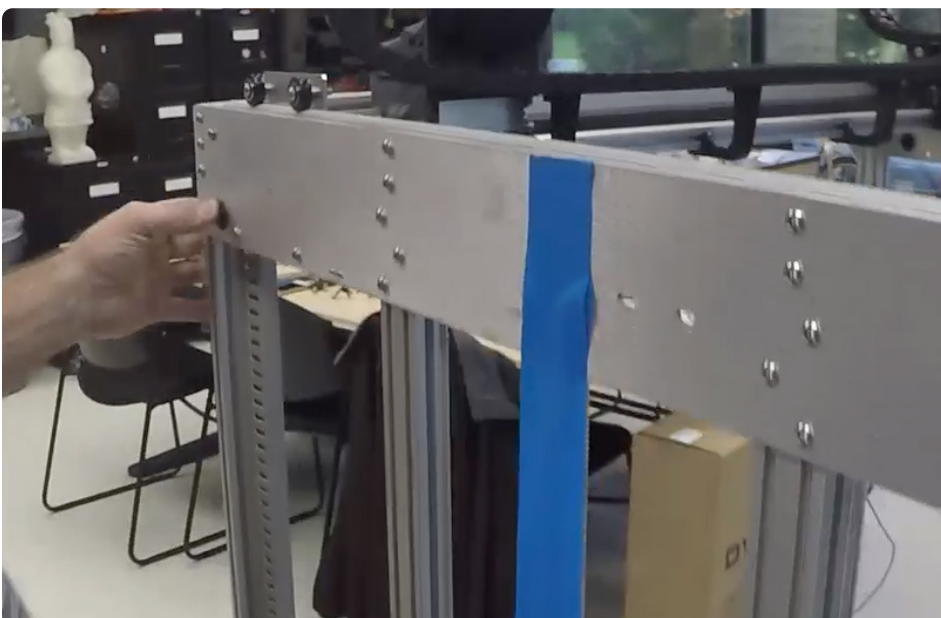
## **P6**

Underneath the trolley, push the hot end wires (thermocouple and heater cartridge) up through the hole in the trolley plate. This keeps them out of the way of the trolley wheels and also makes sure they are not rubbing against the bridge rail.



## **P7**

You are now ready to power on Gigabot. Plug the female end of the power cord into the electrical box, and then plug the other end into an 120V or 240V A/C outlet.



## **P8**

Turn on the power switch at the front of the Gigabot and the machine will power on.



## P9

Once on, you will see the Viki LCD light up and you will be able to control Gigabot.



## P10

Next you will test that the limit switches work. Verify the locations of the X limit switch, Y limit switch, and upper Z limit switch. You will command Gigabot to go home, and then press the switches yourself to see if it will stop.



## P11

Press the button to reach the main menu.







## **P12**

Scroll down to Prepare and press the button.



## **P13**

Scroll down to Auto home and press the button to make Gigabot go home.



## **P14**

Press the X limit switch (you may need to press twice) and the trolley should stop moving. If it does not stop, turn off the Gigabot using the power switch and double check your wiring.

## P15

Do the same for the Y limit switch as it homes in the Y direction, and the upper Z limit switch as it homes in the Z direction. For each axis, the trolley, bridge, and bed should move towards the limit switch as it homes.



## P16

Once you have confirmed proper homing, execute Auto home again and let the Gigabot home all axes on its own.



## P17

As the Z axis homes, watch the distance between the plate and the hot ends and also the distance between the upper Z limit switch and the hex head screw beneath it.







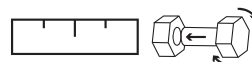
## P18

The screw should engage the limit switch before the hot ends can contact the bed. If this is not the case, be prepared to manually engage the upper Z limit switch to avoid damaging your hot end.



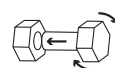
## P19

After homing once, take a moment to readjust the hex head screw for the lower Z limit switch. Lower it about 0.100" or 2.5mm, or just over 3 full rotations of the screw.



## P20

Once adjusted, tighten the jam nut on the hex head screw against the leveling block.

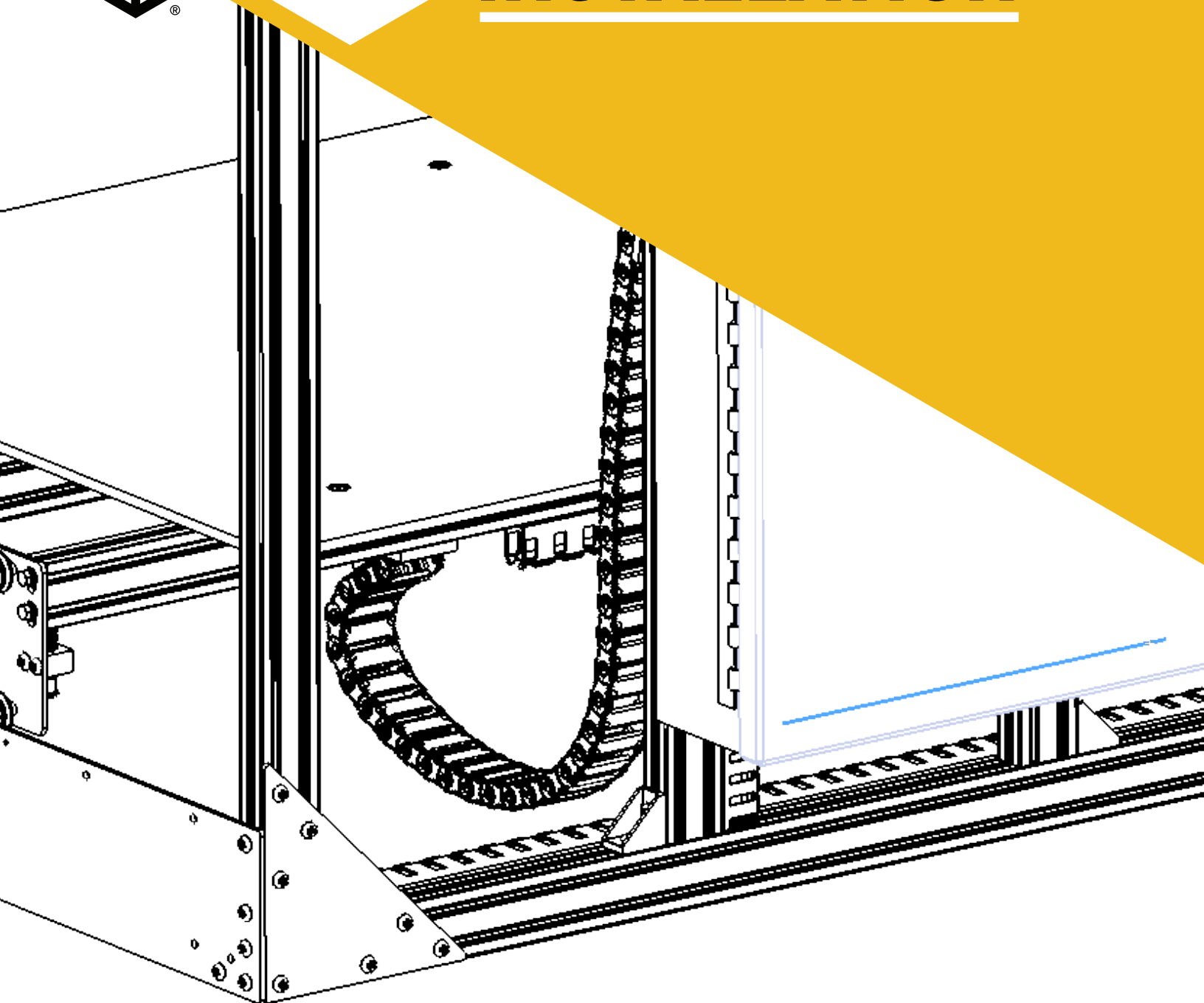






Q

# ***Z CABLE CARRIER INSTALLATION***



# TOOLS & PARTS

*Refer to packing list to identify parts*

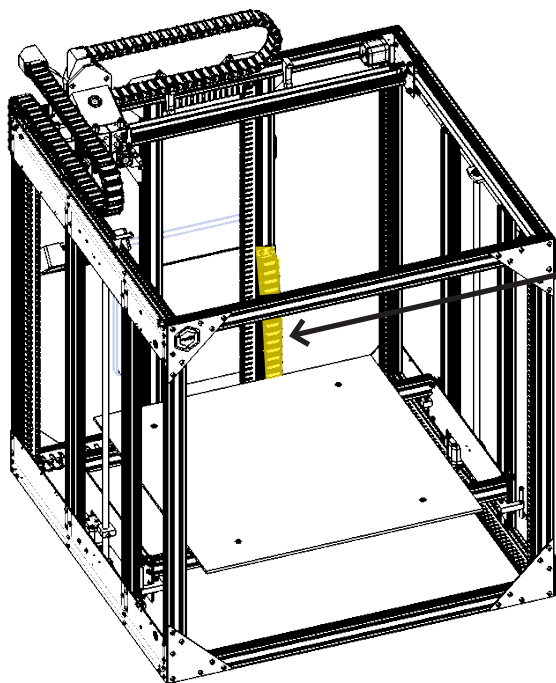
| BOX #            | PART                             | QUANTITY |
|------------------|----------------------------------|----------|
| 8                | [10838] Z Carrier (34 links)     | 1        |
| <b>Snappybox</b> | [10362] M5 Magic T-nuts          | 2        |
| <b>Snappybox</b> | [10723] Z-Axis Frameside Bracket | 1        |
| <b>Snappybox</b> | [10238] M5x12mm FHS              | 4        |
| <b>Snappybox</b> | [10722] Z-Axis Bedside Bracket   | 1        |
| <b>Snappybox</b> | [10222] M3x25mm BHCS             | 4        |
| 6                | [10046] Allen Wrench Set         | 1        |

**WATCH THE  
ACCOMPANYING  
VIDEO:**

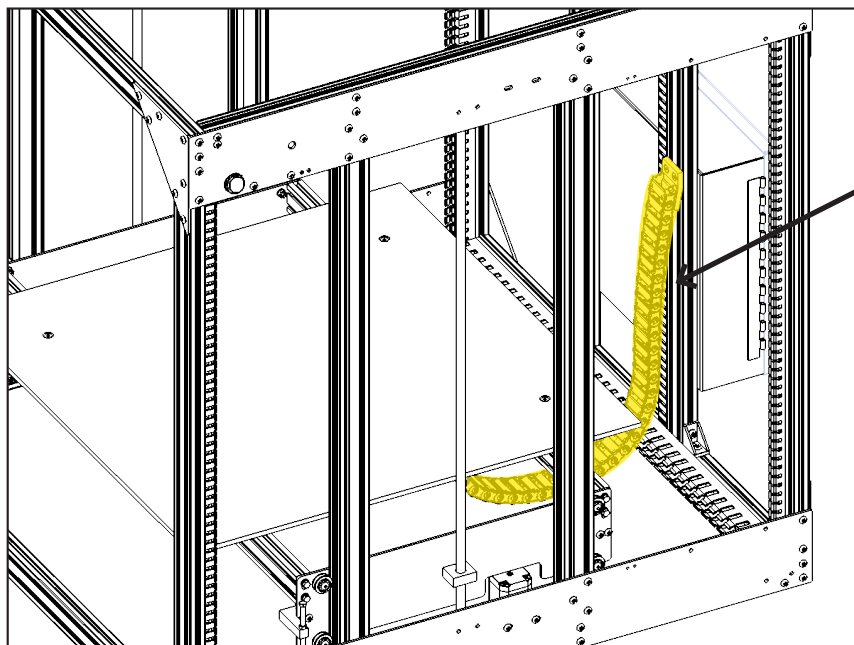
<https://youtu.be/V66-3DNGrzY>

# OVERVIEW

Previously, it was not possible to easily install the Z cable carrier because the bed frame would have needed to be propped up in order to do so. Now that the machine is completely wired and assembled, it is simple to install the Z cable carrier after homing the bed for the first time.



Once you have installed the Z cable carrier, it will have no problems extending for the bed's full length of travel.



An alternate view of how the Z cable carrier will fit below the bed frame.



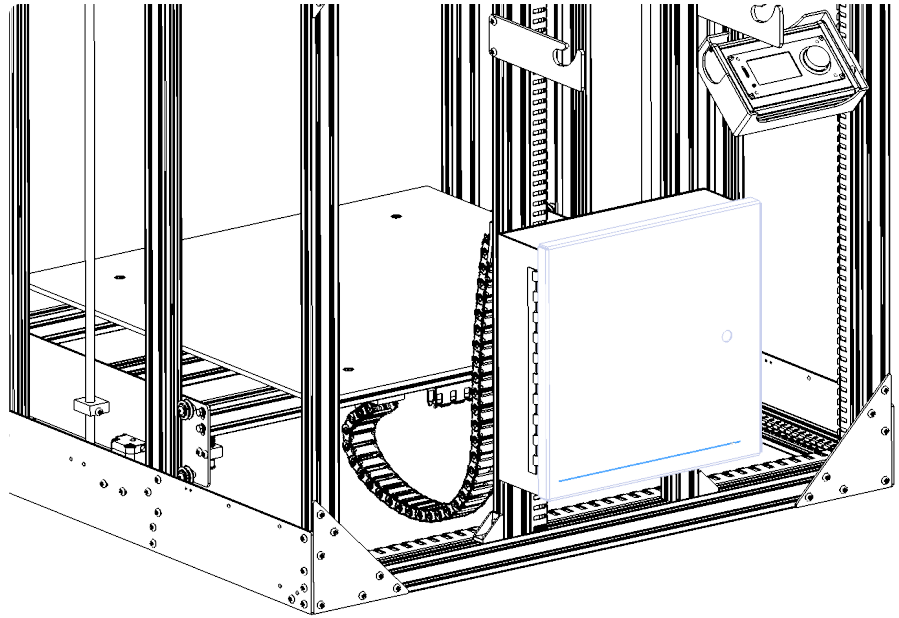
# TIPS & TRICKS

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- #1** Do not overtighten the [10238] M5x12mm FHS on the Z cable carrier brackets, or you risk breaking the plastic parts.
- #2** Before fully tightening the Z brackets, ensure that the two are aligned with each other. If not, this will introduce extra strain in the Z cable carrier as it moves.
- #3** Be mindful of which part is which--the frameside bracket is more flat than the bedside bracket.

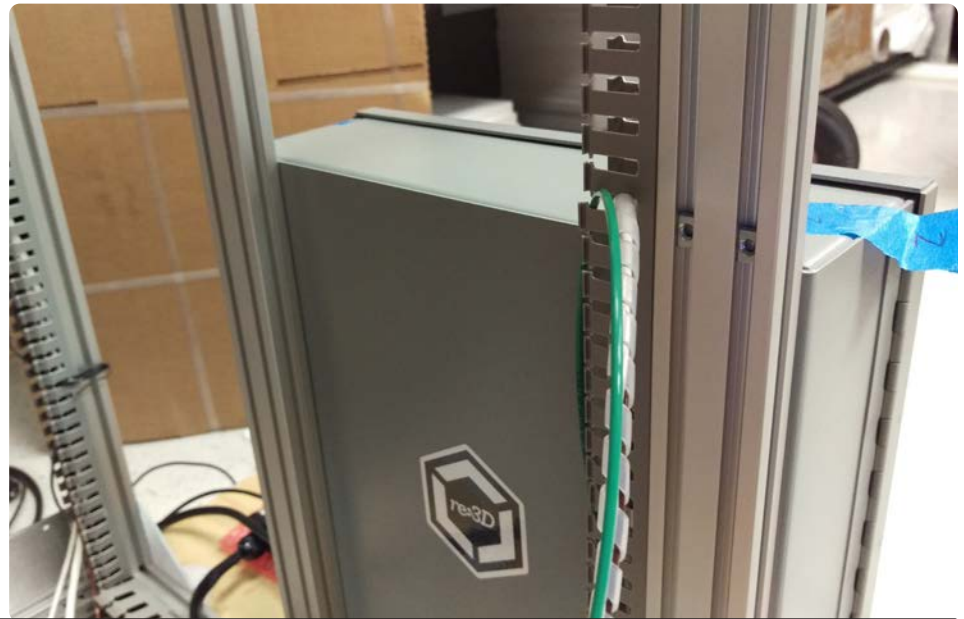
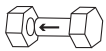
## Q1

You are now ready to install the Z cable carrier. You do not need to separate this into shorter sections, as you did with X and Y.



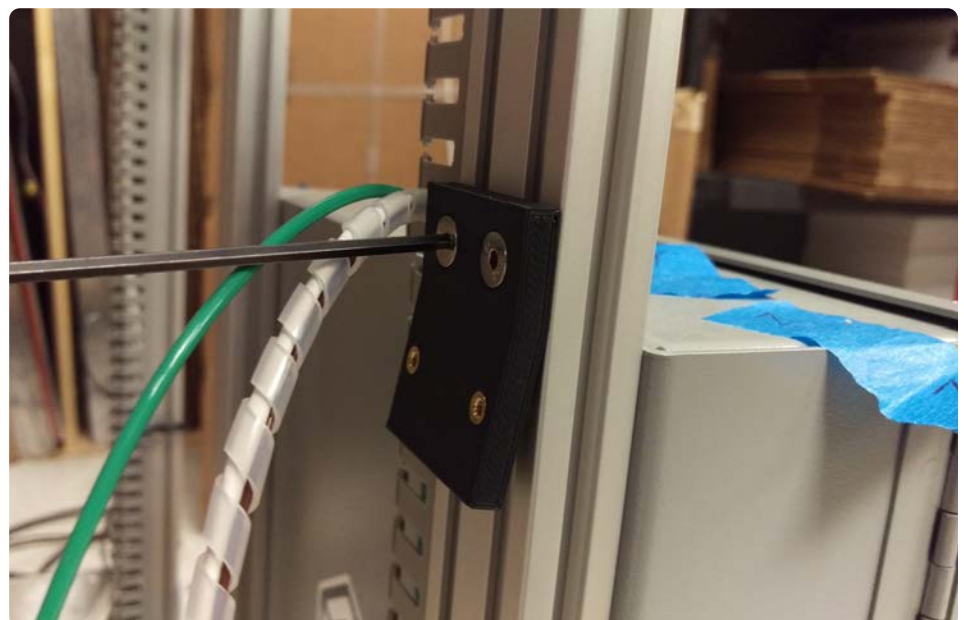
## Q2

Insert 2 [10362] M5 Magic T-nuts into the right electrical box upright near the top of the electrical box, as shown.



## Q3

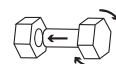
Fasten the frame side Z cable carrier bracket here using 2 [10238] M5x12mm FHS as shown.





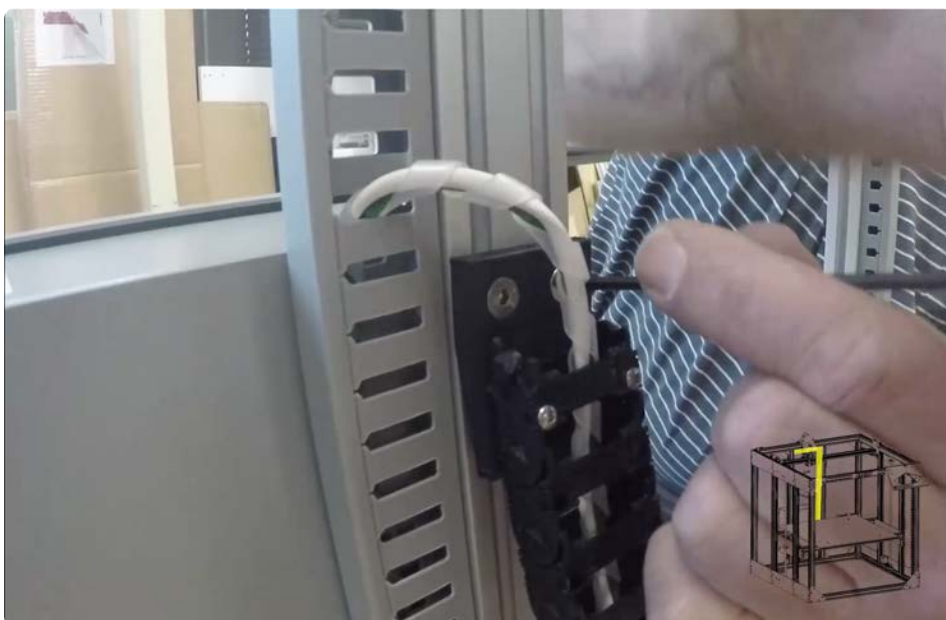
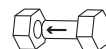
## Q4

Underneath the rear bed cross rail, fasten the bed side Z cable carrier bracket using 2 [10238] M5x12mm FHS as shown.



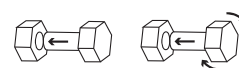
## Q5

Starting closer to the frame side bracket, insert the heated bed cables into the Z cable carrier and close the doors on the links until the entire cable carrier has been attached.



## Q6

Fasten each end of the Z cable carrier to each bracket with [10222] M3x25mm BHCS.





## Q7

The fully installed Z cable carrier should look as shown. Double check that both the frameside and [10722] Z-Axis Bedside Brackets are aligned with each other.



## Q8

Finally, organize the excess wiring into the #2 Panduit on the bed cross rail and cover the Panduit.



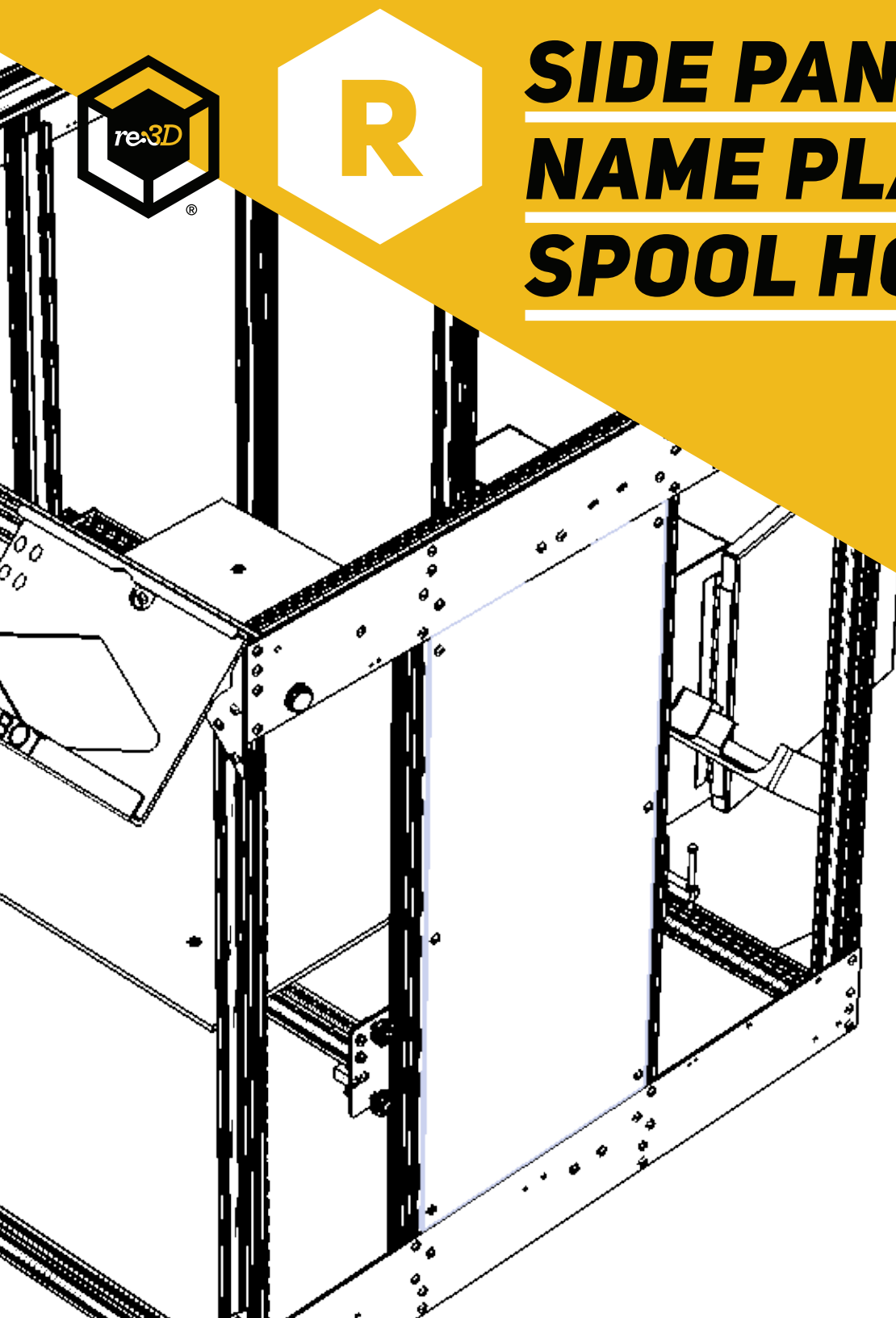
## Q9

[For a step-by-step demonstration of these instructions, please see our video for this section.](#)



R

# **SIDE PANEL, NAME PLATE, & SPOOL HOLDER**



# TOOLS & PARTS

Refer to packing list to identify parts

| BOX #            | PART   | QUANTITY  |
|------------------|--|-----------|
| <b>Snappybox</b> | [10362] M5 Magic T-nuts                      | 20 or 44* |
| <b>Snappybox</b> | [11537] M5 x 8 SHCS                          | 12 or 36* |
| <b>1</b>         | [10516] Side Panel Center (29 9/16" x 12")   | 2         |
| <b>1</b>         | [10517] Side Panel Front (29 9/16" x 8 3/4") | 0 or 2*   |
| <b>1</b>         | [10519] Side Panel Rear (29 9/16" x 12 1/4") | 0 or 2*   |
| <b>6</b>         | [10046] Allen Wrench Set                     | 1         |
| <b>Snappybox</b> | [11005] M3 x 8mm BHCS                        | 4         |
| <b>8</b>         | [10174] Gigabot 3+ Nameplate                 | 1         |
| <b>Snappybox</b> | [10218] [10218] M3 Flat Washer               | 4         |
| <b>8</b>         | [10864] Spool Holder                         | 2         |
| <b>8</b>         | [10237] M5 x 12 BHCS                         | 8         |

## WATCH THE ACCOMPANYING VIDEO:

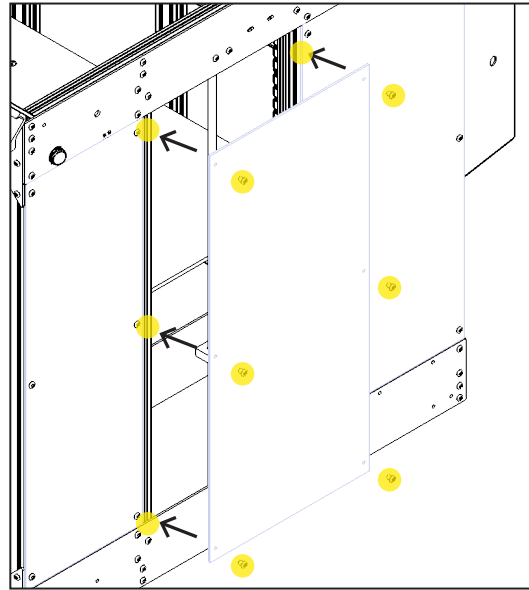
- [Using \[10362\] M5 Magic T-nuts](#)
- [Installing spool holders](#)
- [Installing the name plate](#)

\* The Gigabot® kit includes only the [10516] Side Panel Center by default. If you ordered the full set of Side Panels, you will also receive the Front and [10519] Side Panel Rear along with the necessary hardware to install them.

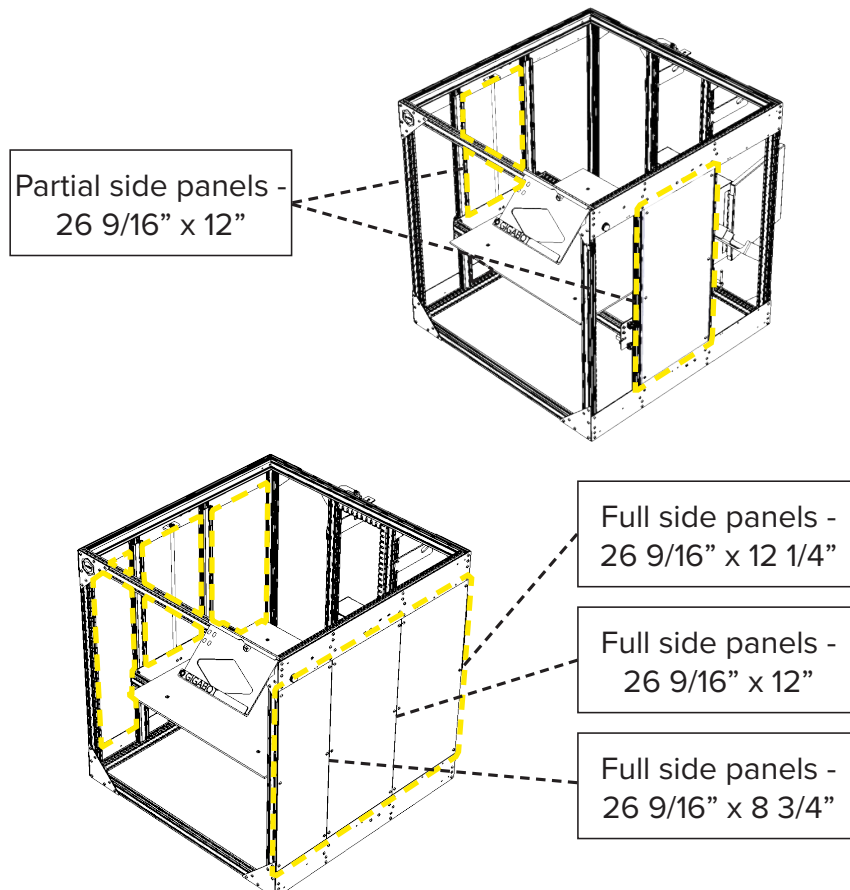


# OVERVIEW

Previously, it was not possible to easily install the Z cable carrier because the bed frame would have needed to be propped up in order to do so. Now that the machine is completely wired and assembled, it is simple to install the Z cable carrier after homing the bed for the first time.



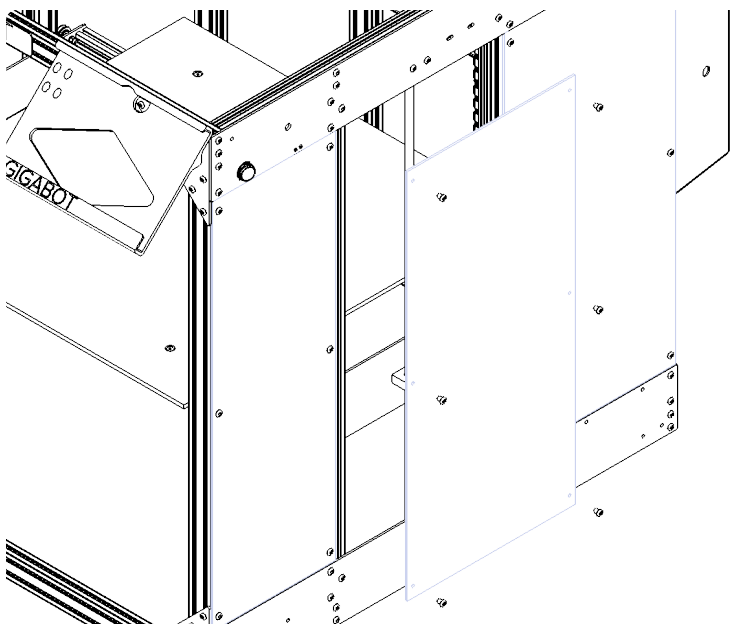
Installing the side panels requires 6 [10362] M5 Magic T-nuts and 6 [11537] M5 x 8 SHCS per panel.



# TIPS & TRICKS

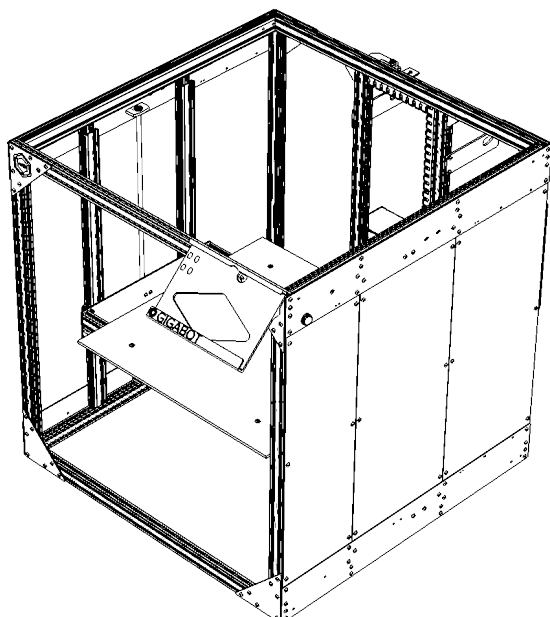
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- #1** Do not overcompress the leaf [10002] GB3+ Bed Leveling Spring on the [10362] M5 Magic T-nuts, or they will no longer hold their positions in the slot of the rail.
- #2** Do not overtighten the screws on the panels, or you may crack the panel.
- #3** Avoid completely removing the protective film on any of the panels until they have been fully fastened to the frame. This will minimize the amount of fingerprints collected on the panel during assembly.



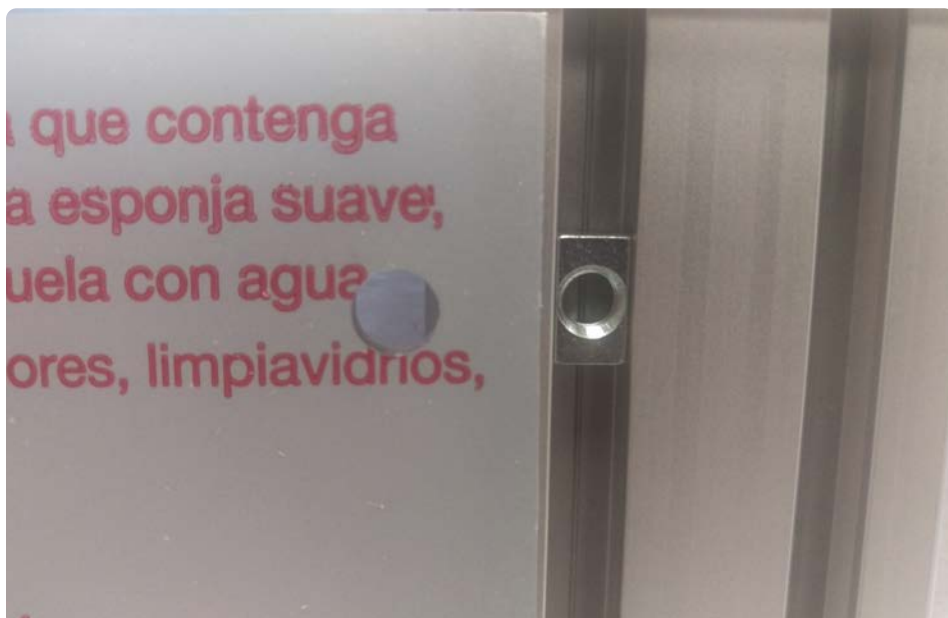
## R1

As the finishing touch, you will now install the side panels to your Gigabot.



## R2

Identify the location of each panel (see overview). GB3s come standard with the [10516] Side Panel Center (29 9/16" x 12"). A full set of side panels also include the [10517] Side Panel Front (29 9/16" x 8 3/4") and [10519] Side Panel Rear (29 9/16" x 12 1/4").



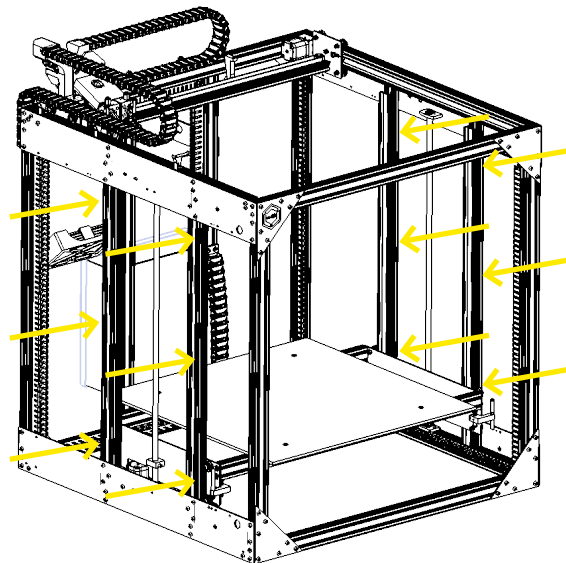
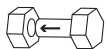
## R3

Without peeling off the protective film, use each panel to approximate the location of each magic T-nut.



## R4

Insert the [10362] M5 Magic T-nuts into the upright rails corresponding to the locations as determined above.



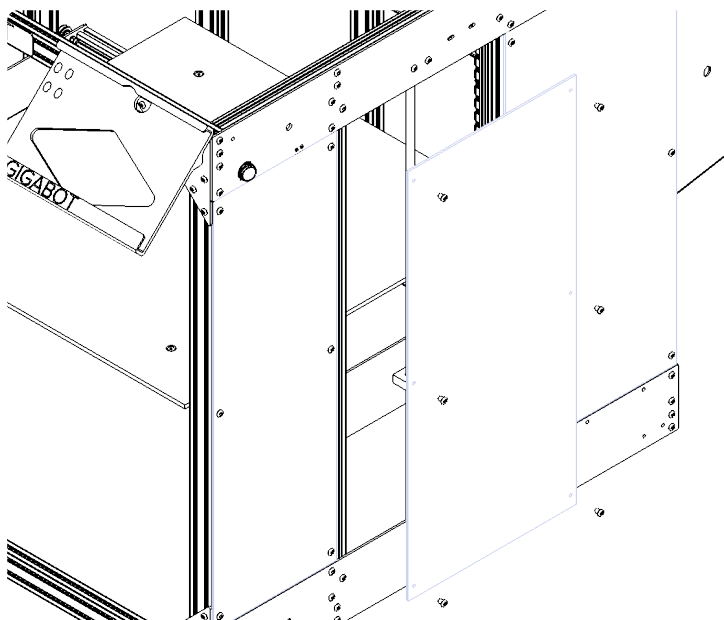
## R5

Remove the protective film from one side of one of the center panels.



## R6

Place the panel in its corresponding location. The bare side of the panel should be touching the rails, and the side with the remaining protective film should be facing outward from the frame. (Diagram may not represent final construction of Gigabot®)





## R7

Peel back the protective film near each hole on the panel, just enough to uncover the hole.



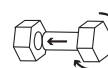
## R8

Use your Allen Key or another object to align the T-nut with the hole.



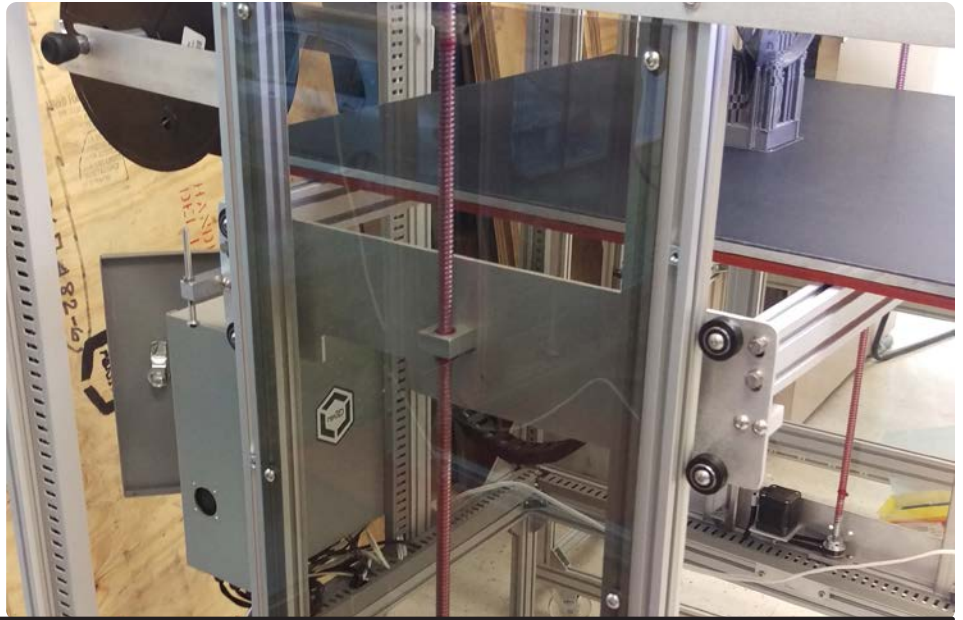
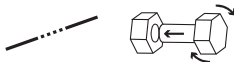
## R9

Fasten the panel to the frame using a [11537] M5 x 8 SHCS and the 3mm Allen Key.



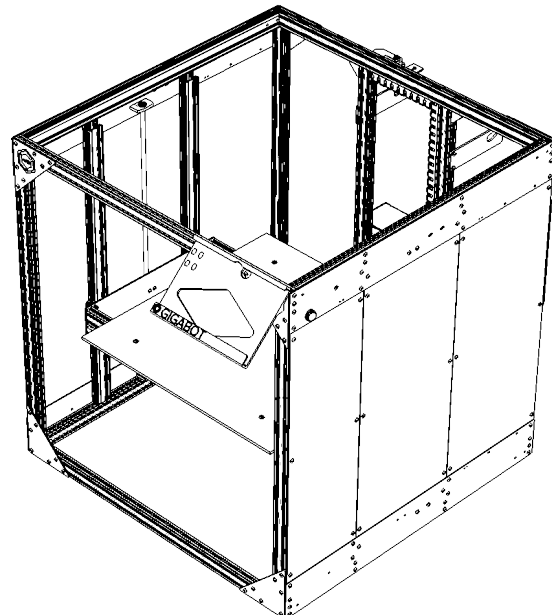
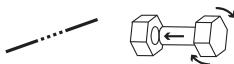
## R10

Repeat steps R7-R9 for each hole until the panel is totally secured to the frame.



## R11

Repeat steps 5-9 on the remaining panel(s) until all panels are secured to the frame. (Diagram may not represent final construction of Gigabot®)

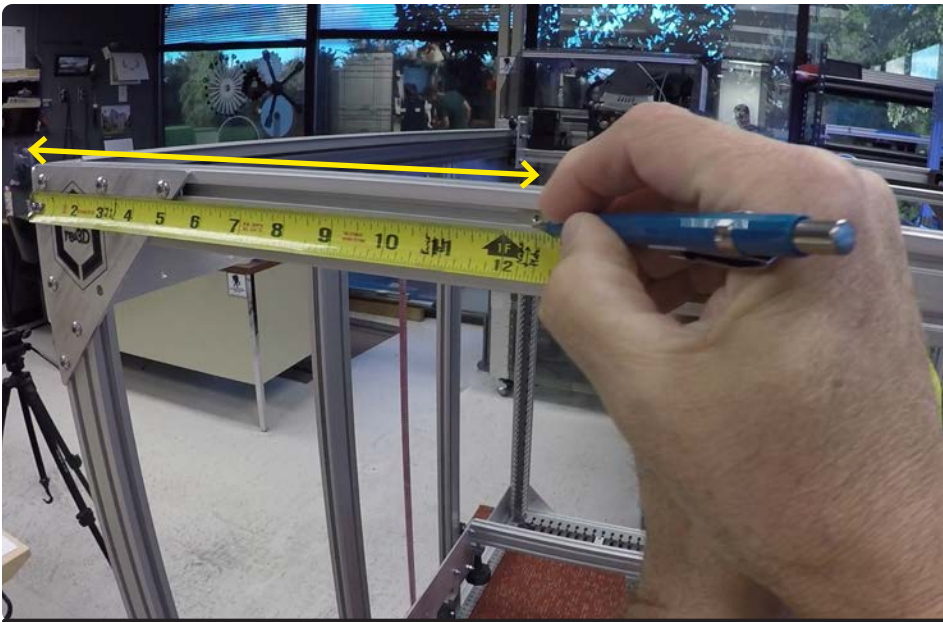


## R12

Once the panels are all secured, completely peel off the remaining protective film. (Full panels are shown).

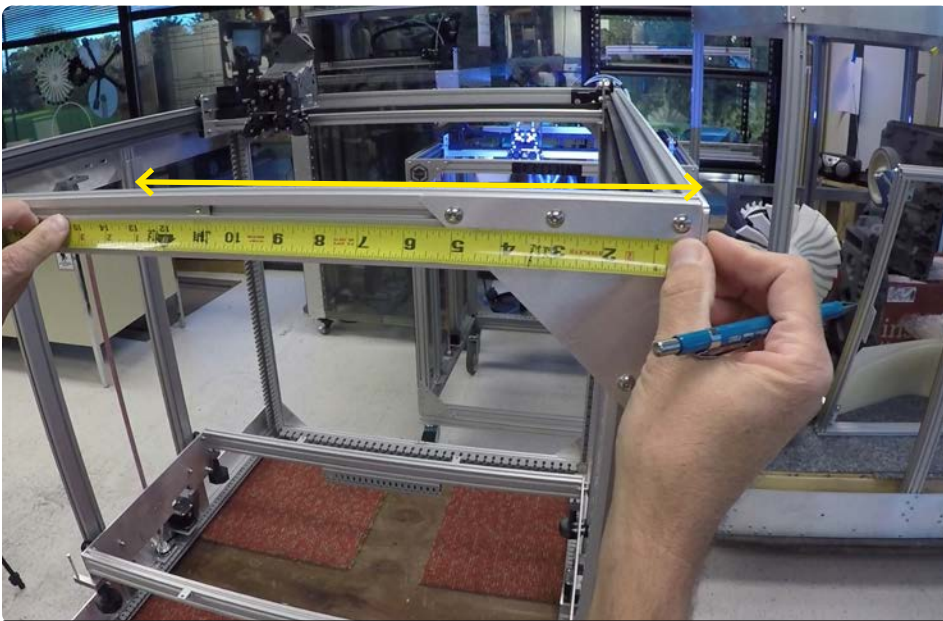
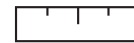






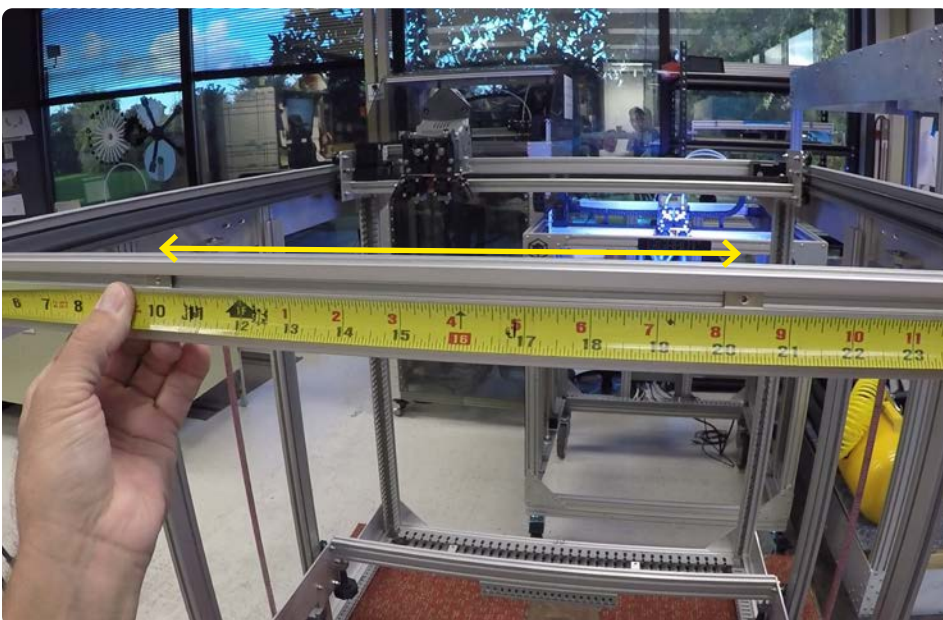
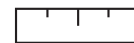
## R13

Make a pencil mark 12 3/8" from the left edge of the front header. This is the approximate location of the left-side M3 T-nuts for the name plate.



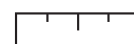
## R14

Repeat step R13 for the right side to indicate the location for right-side M3 T-nuts.



## R15

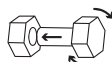
Slide the M3 T-nuts so that they are at their corresponding locations. They should be very roughly 9" apart from each other.





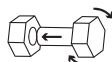
## R16

Loosely fasten one of the upper corners to an M3 T-nut using an [10218] M3 Flat Washer, [11005] M3 x 8mm BHCS, and 2mm Allen Key.



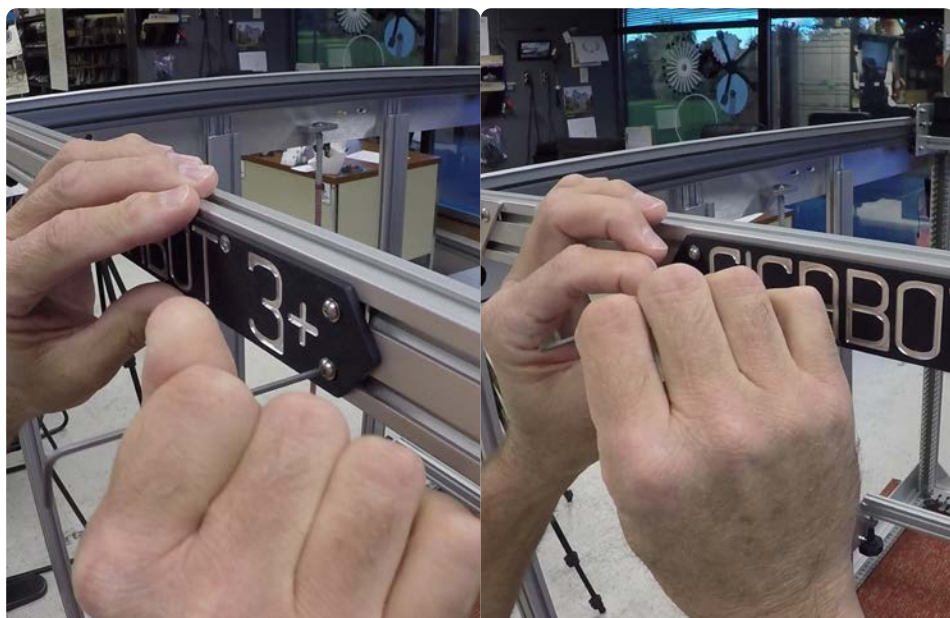
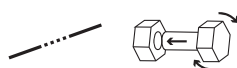
## R17

Repeat R16 for the other upper corner. You may need to slide the name plate to make the hole align with the T-nut.

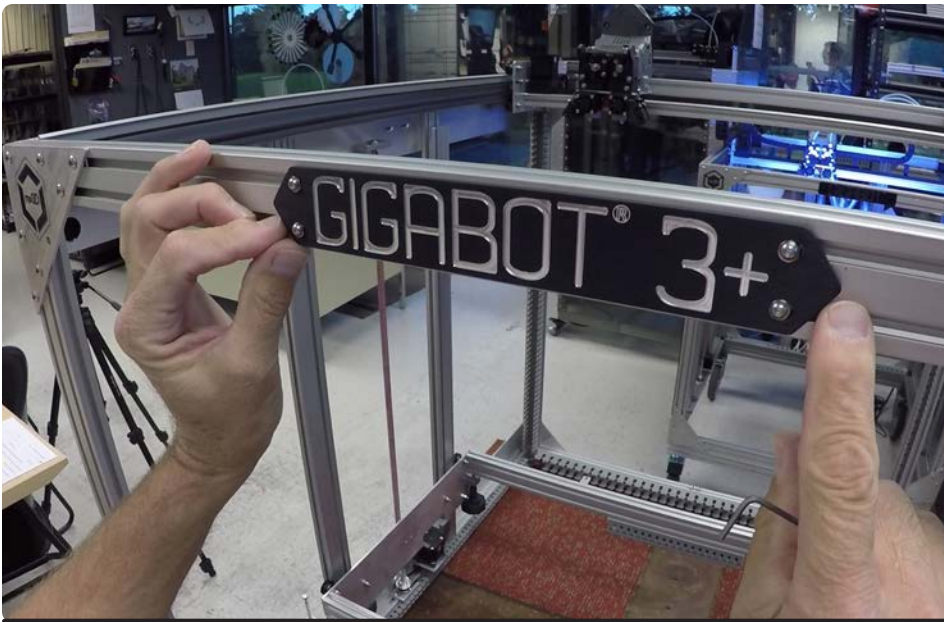


## R18

Align the other M3 T-nuts and fasten those in the same way as in R16.

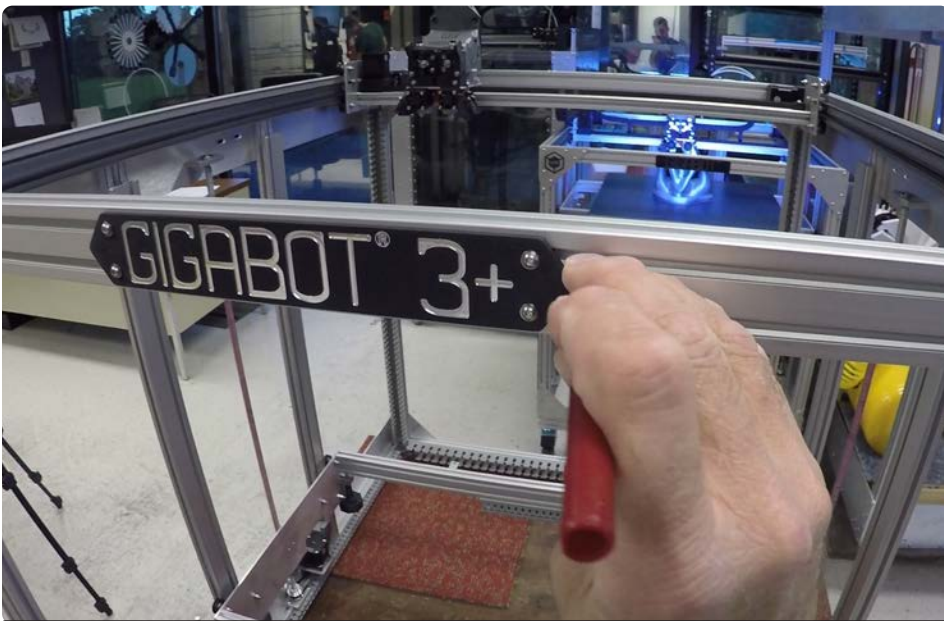






## R19

Center the name plate between the previously made pencil marks and then fully fasten the [11005] M3 x 8mm BHCS with the 2mm Allen Key to secure the name plate in its location.



## R20

If desired, erase the pencil marks.



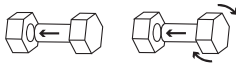
## R21

The name plate is now fastened in place.



## R22

Install the spool holder(s) to the back of Gigabot® with 2 [10362] M5 Magic T-nuts and 2 [10237] M5 x 12 BHCS each. Use the 3mm Allen Key to fasten the hardware. Users may decide how far up or down the rail these are located.



## R23

For a more detailed demonstration, please watch the videos below:

- [Using \[10362\] M5 Magic T-nuts](#)
- [Installing spool holders](#)
- [Installing the name plate](#)

# NEXT STEPS

## CHECK YOUR WORK

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This is a good time to skim over your previous work and make sure you have not missed anything. Otherwise, you will have to fix any errors prior to calibrating the machine.

## GETTING STARTED

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Now that you have completed assembly, you must now calibrate your machine. Please refer to our Wiki page ([http://wiki.re3d.org/index.php?title=Calibrating\\_your\\_Gigabot](http://wiki.re3d.org/index.php?title=Calibrating_your_Gigabot)) and our Getting Started Guide ([http://wiki.re3d.org/index.php?title=Fully\\_Assembled\\_Gigabot](http://wiki.re3d.org/index.php?title=Fully_Assembled_Gigabot)) for calibration steps.

## PRINT SURFACES

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It is typical to place a print surface on top of the bare metal plate to give the printed plastic something to adhere to as it is printed, and to help it stay adhered through the entirety of the print without warping or coming loose from the bed altogether. The cheapest solution is laying down blue painters tape, but we recommend using BuildTak or PrintinZ (Zebra Skin), which are available in 24"x24" sizes from our online store ([shop.re3d.org](http://shop.re3d.org)). You will need to recalibrate the offset between the hot end and bed by adjusting the hex head screw for the upper Z limit switch.

# CONCLUSION

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## **CONGRATULATIONS! YOU HAVE NOW COMPLETED THE ASSEMBLY OF YOUR VERY OWN GIGABOT®!**

We are confident that you will find the Gigabot® to be a high quality and very capable machine, but please do not hesitate to contact us for any further issues or questions. Feedback on assembly instructions, support, and other aspects of your experience are welcome. Reach out to us at:

**FORUM:** <https://re3d.zendesk.com/hc/en-us/community/topics>

**WIKI:** [wiki.re3d.org](http://wiki.re3d.org)

**EMAIL:** [support@re3d.org](mailto:support@re3d.org)

**PHONE:** 512-730-0033

Happy printing!



# REFERENCES & DOCUMENTS

**GIGABOT®:  
UNASSEMBLED  
(COMPLETE DIY KIT)  
MANUAL PDF:**

[http://wiki.re3d.org/index.php?title=Gigabot\\_Kit](http://wiki.re3d.org/index.php?title=Gigabot_Kit)

**RE:3D, INC.®  
YOUTUBE CHANNEL:**

<https://www.youtube.com/user/GigaBot3D>

**GIGABOT® AZTEEG  
WIRING DIAGRAMS:**

[http://wiki.re3d.org/index.php?title=Gigabot\\_Kit](http://wiki.re3d.org/index.php?title=Gigabot_Kit) (scroll to the bottom of the page)

**VIKI 2.0 WIRING  
DIAGRAM:**

<http://panucattdevices.freshdesk.com/support/solutions/articles/1000158562-viki-lcd-2-0-support-files>

**GIGABOT® PRINTED  
PARTS:**

<https://sketchfab.com/re3d>

**GIGABOT® QUICK  
START GUIDE:**

<https://www.dropbox.com/s/muss3ypu7k7unta/GB3%2B%20Quick%20Start%20rev02%20reduced.pdf?dl=0>

## This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

[illegible]



## This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

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