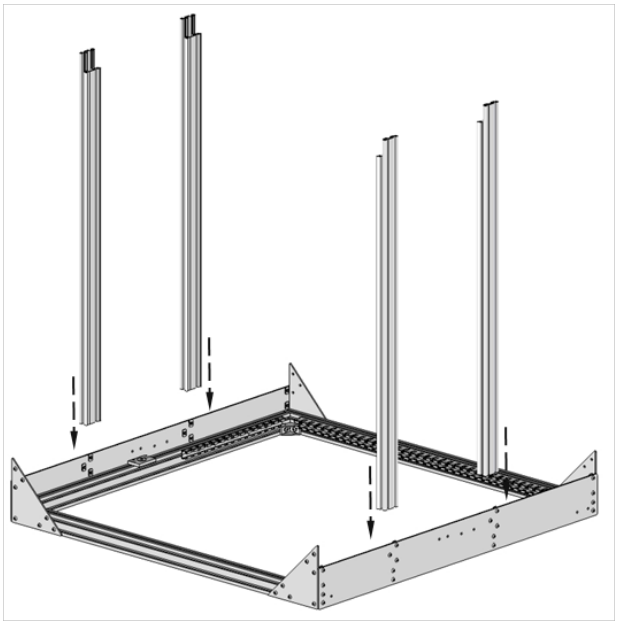
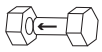
F : FRAME UPRIGHTS

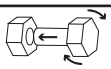


F1

Z uprights will be inserted to the lower frame as shown. The top ends are all machined out to allow the V-groove wheels on the bridge rail to travel through.

F2 

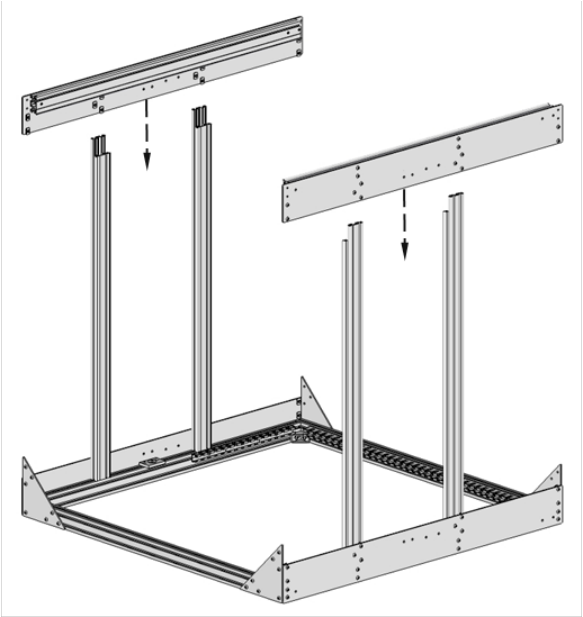
Insert the 4 Z uprights over the previously placed T-nuts. Make sure it is placed in the same orientation as shown above

F3 

Use the square to make sure the rail sits perpendicular to the cross rails and then fasten the M5x8mm BHCS with the 3mm Allen Key

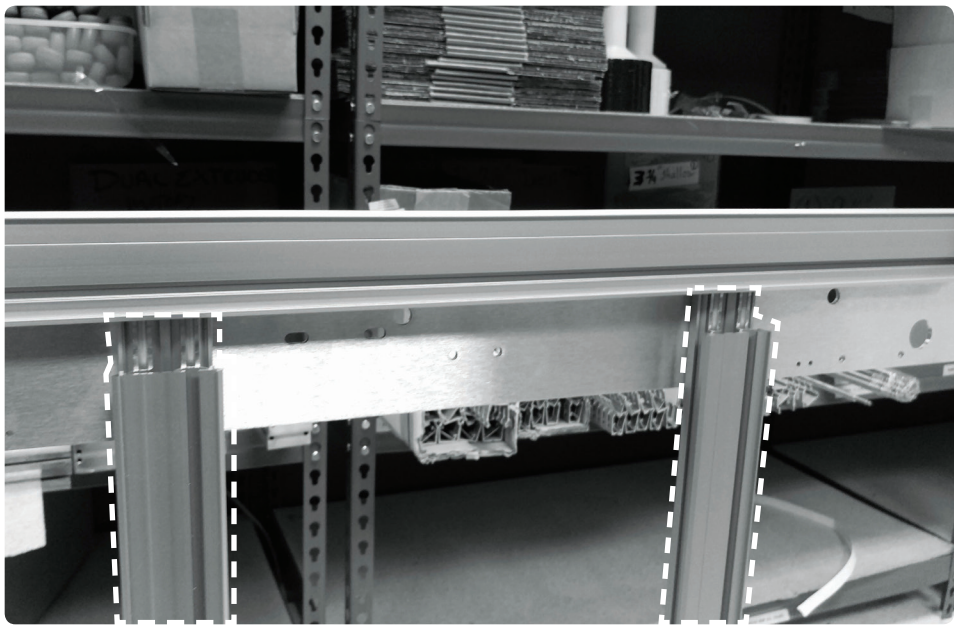
F4

Next, place the upper side plate and runway rail assemblies on top of the uprights



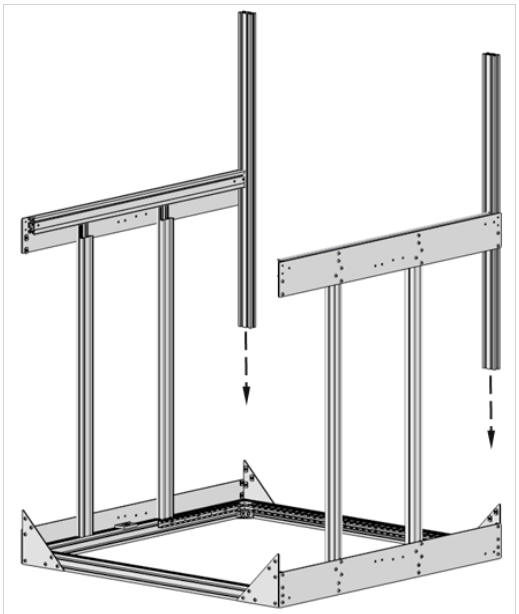
F5

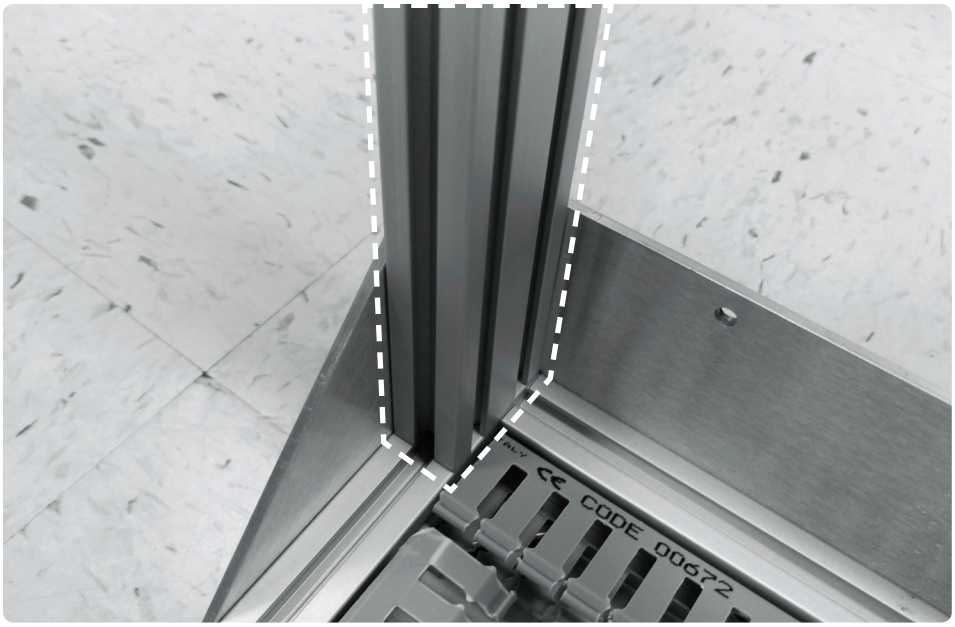
Let the T-nuts run through the slots in the uprights. Double check to make sure the runway rails are facing the right direction before fastening the M5x8mm BHCS (motor mounting holes should be in the rear while idler pulley hole is in the front)



F6

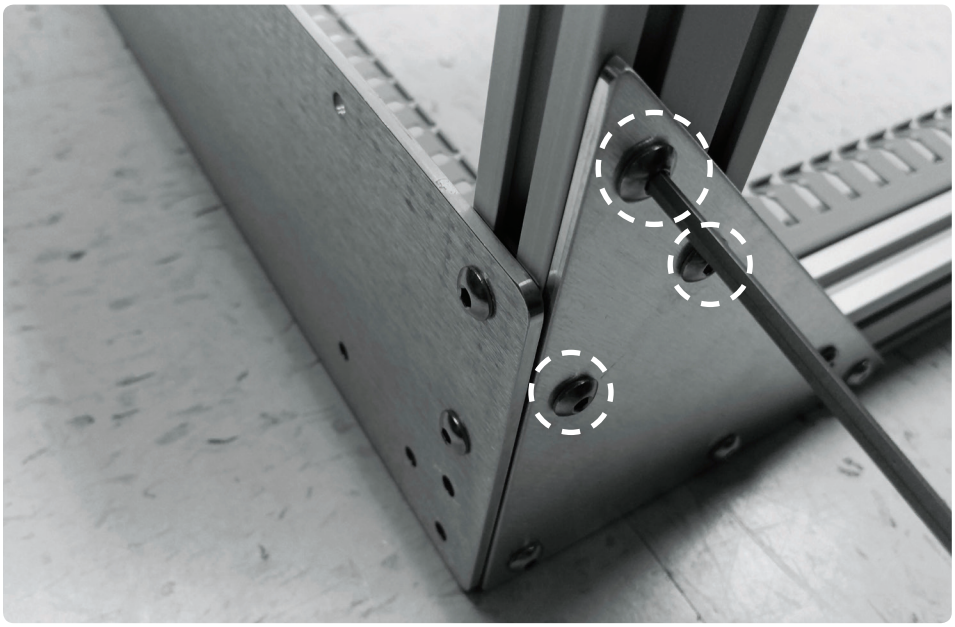
Install the rear vertical common rails by sliding them over the T-nuts on the upper side plates as well as the lower side plates and rear lower cross rail

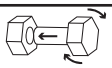




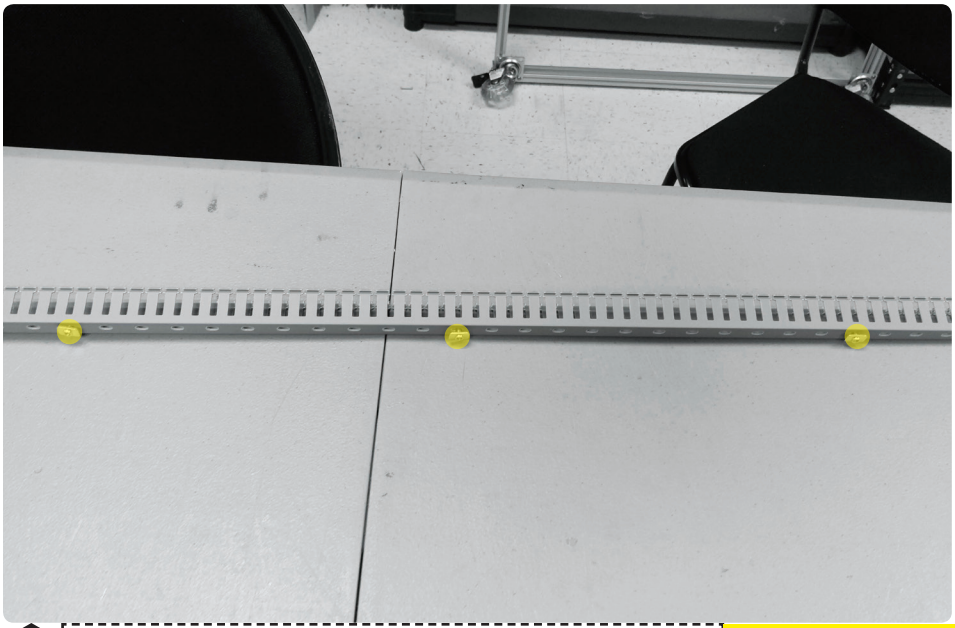
F7

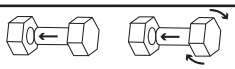
Use the square to make sure the common rail is perpendicular to the cross rail and common rail below it



F8 

Fasten M5x8mm BHCS with 3mm Allen Key

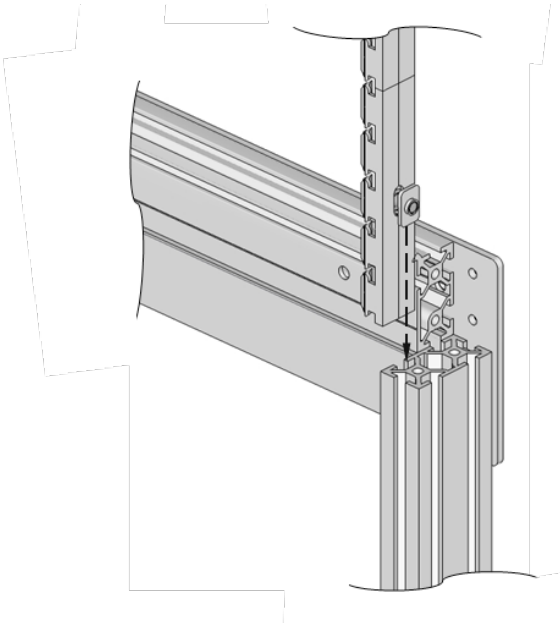


F9 

Prepare 2 31.5” deep and wide Panduits by evenly spacing and inserting 3 M5x8mm BHCS and 3 T-nuts

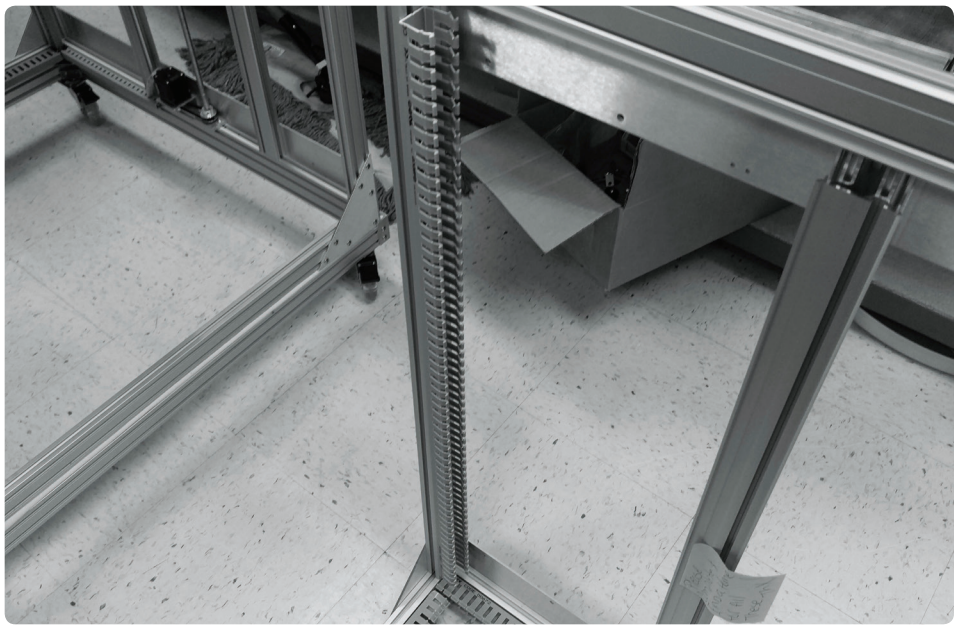
F10

Slide these into the rear common rails as shown



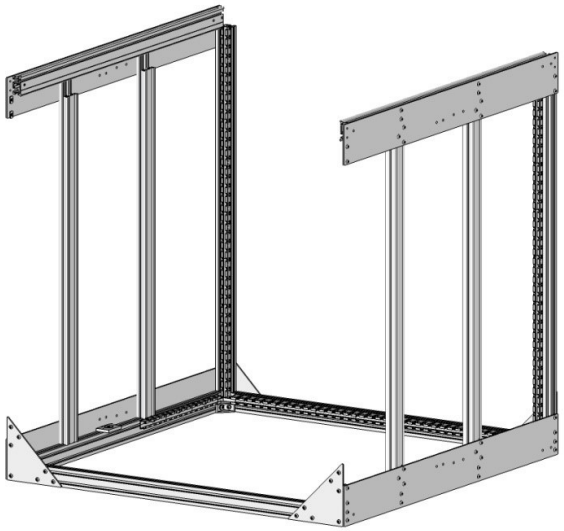
F11

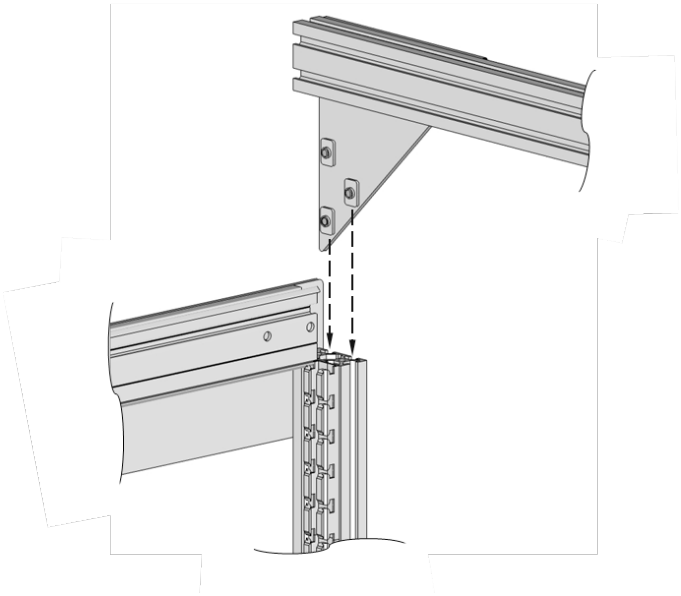
They will enclose the Y motor wires, as well as wiring for all of the bridge components



F12

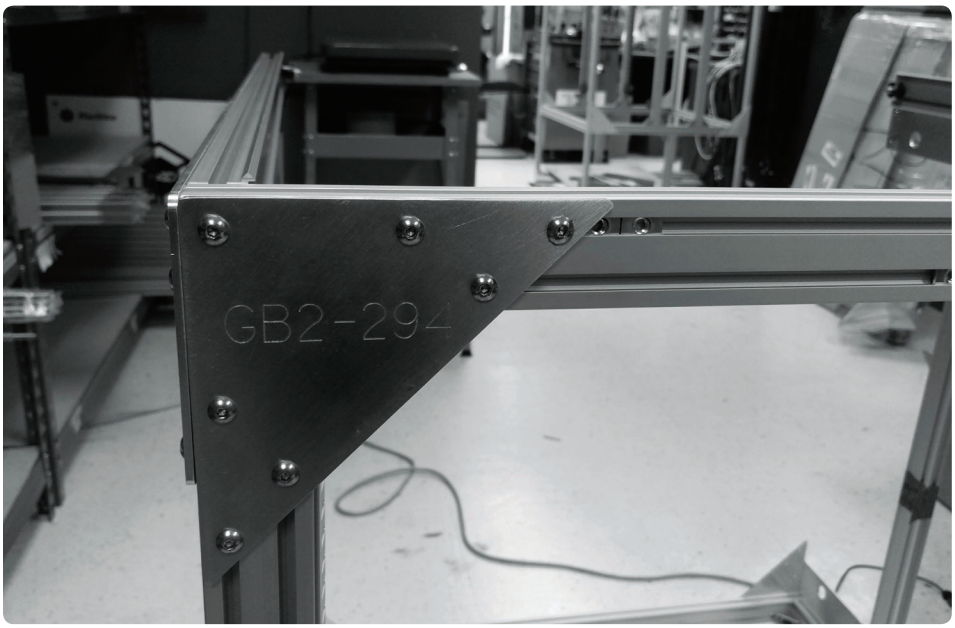
Again, make sure to install the Panduits on both rear common rails





F13

Next, the rear upper cross rail will be placed as shown, by sliding the cross rail T-nuts into the vertical common rails



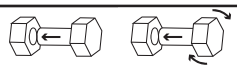
F14

Double check that you are using the right cross rail--the rear cross rail will have a serial number on one corner plate and some Y cable carrier links on the other

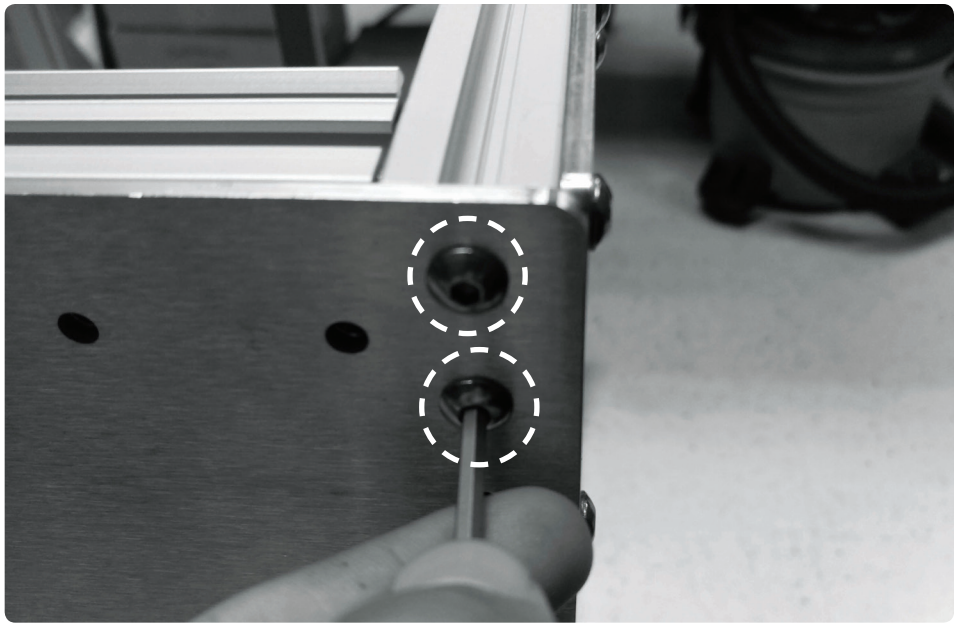
F15

Once it is seated, tighten the M5x8mm BHCS with the 3mm Allen Key

F16

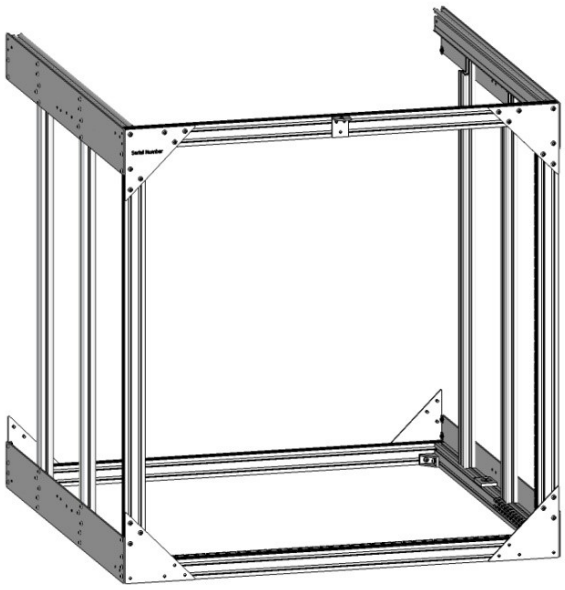


Secure the cross rail with 2 M5x12mm BHCS at each end



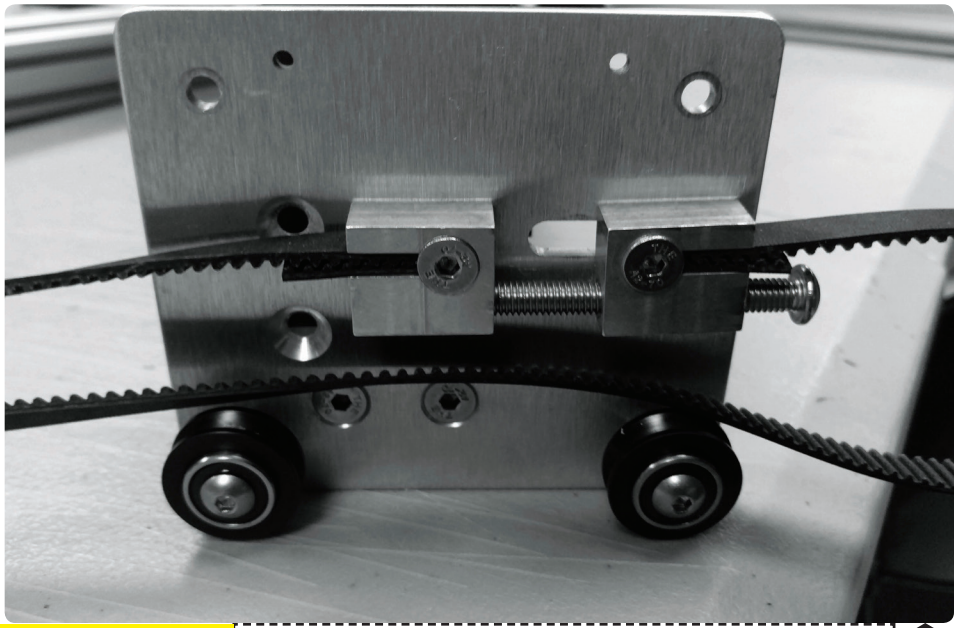
F17

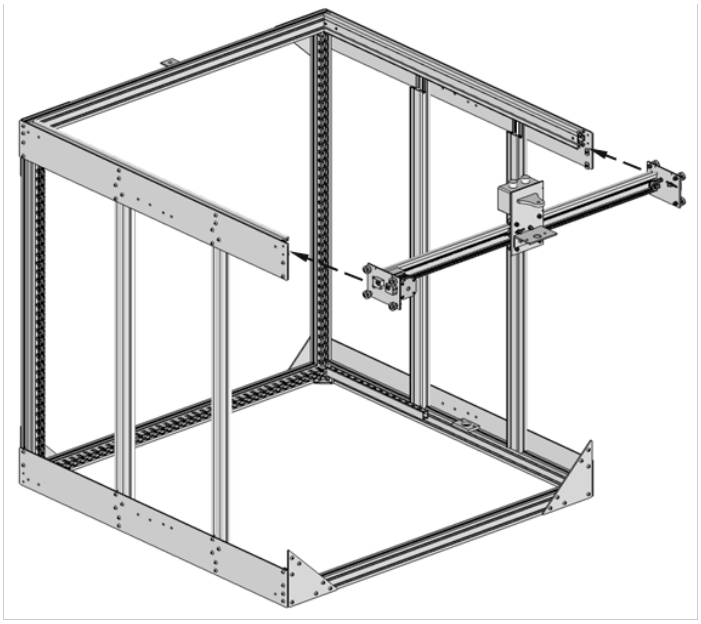
You should now have most of the Gigabot® frame built



F18

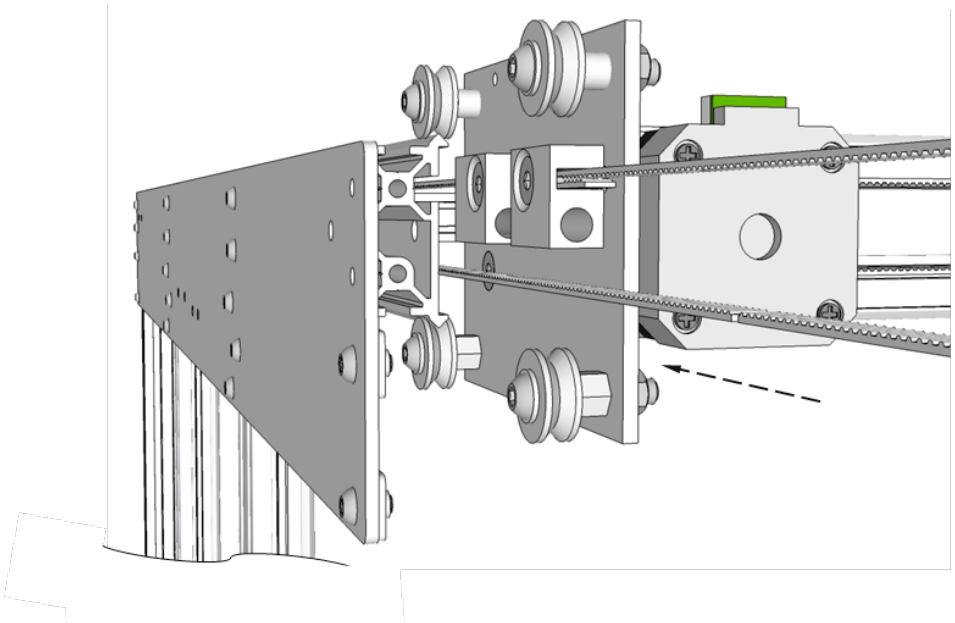
On the bridge rail, route the Y axis belts such that they lie in between the upper and lower V-groove wheels. If you have not done so, take this chance to install all of the wheels to the end trucks as well





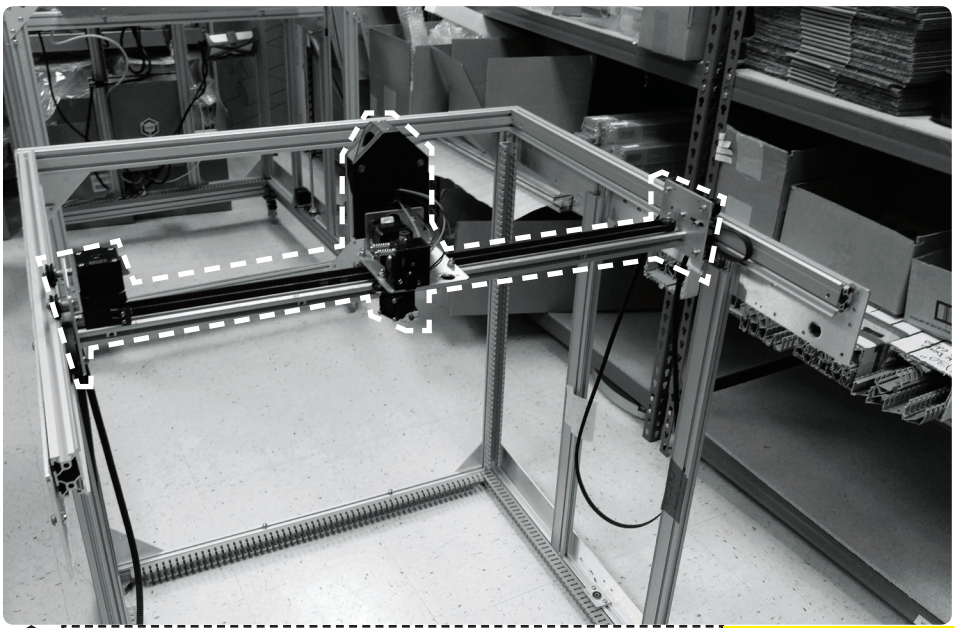
F19

Simply slide the bridge rail assembly onto the runway rails as shown. Be sure to insert the bridge rail at the right orientation



F20

Again, check both end trucks to make sure that the Y axis belts are staying between the wheels

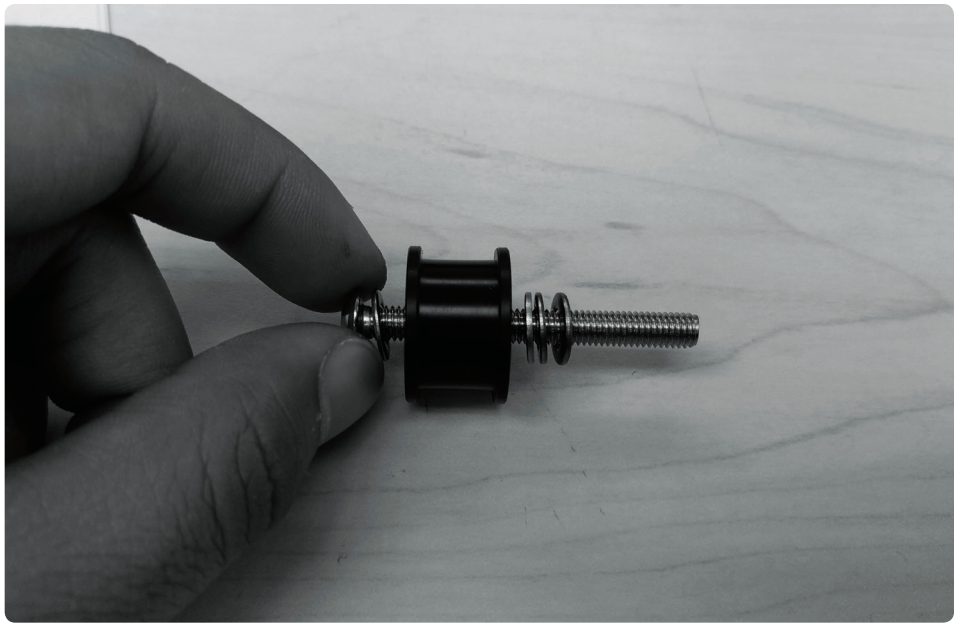


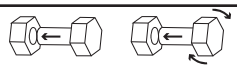
F21

Once the bridge rail is on the runway rails, tighten the eccentric spacers on the lower V-groove wheels with the 8mm wrench so it moves more securely

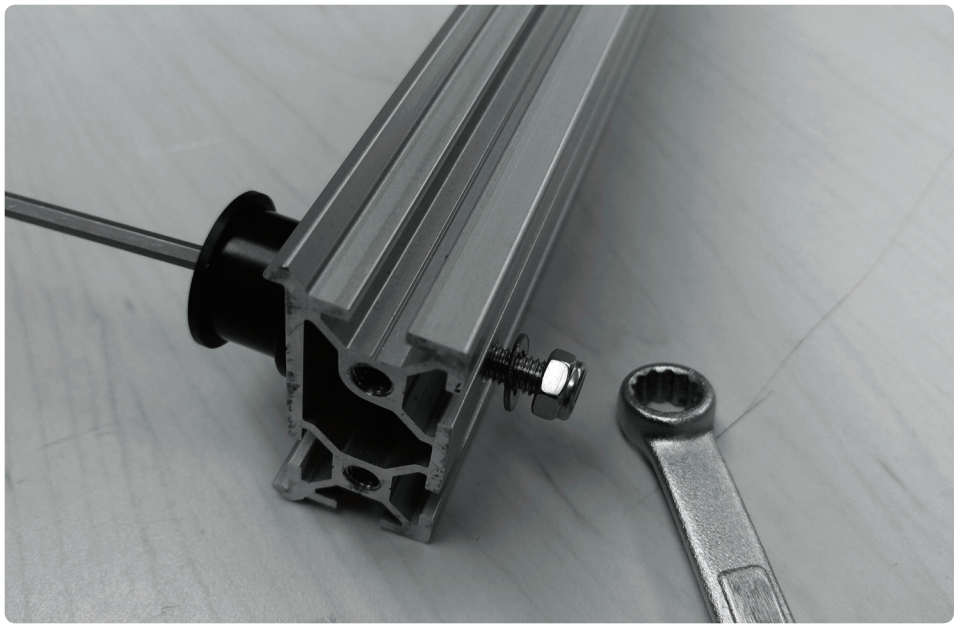
F22

In the same way as in step A21, assemble and install an idler pulley to the front of each runway rail (2 total). Use a M5x45mm BHCS, M5 washer, the idler pulley, 3 M5 washers, and then secure it from the other side of the rail with another M5 washer and an M5 lock nut



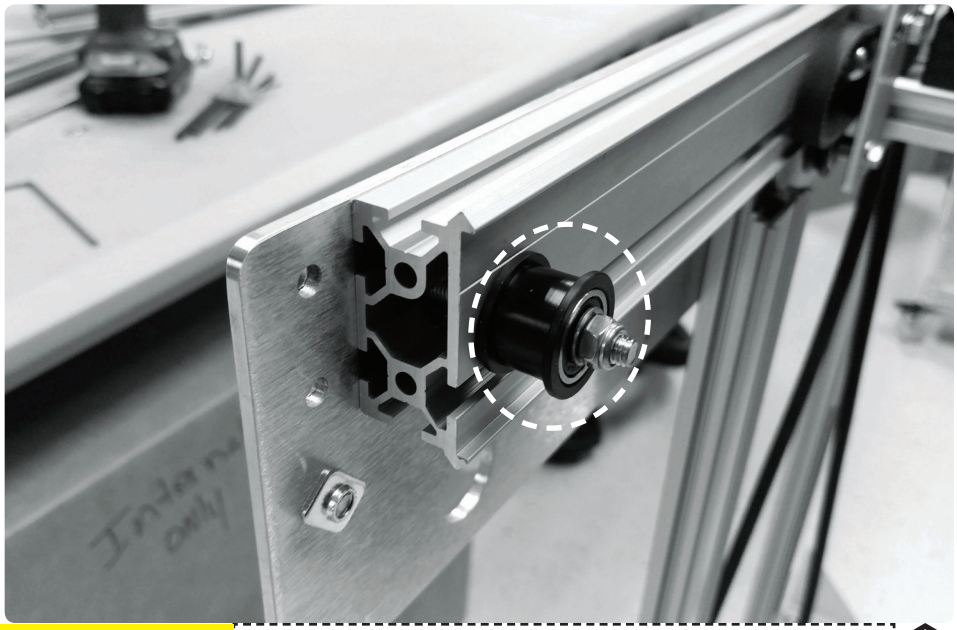
F23 

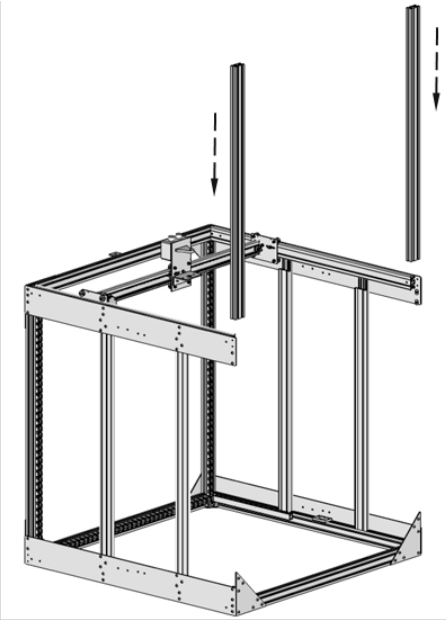
Secure it onto the rail with the 3mm Allen Key and 8mm wrench



F24

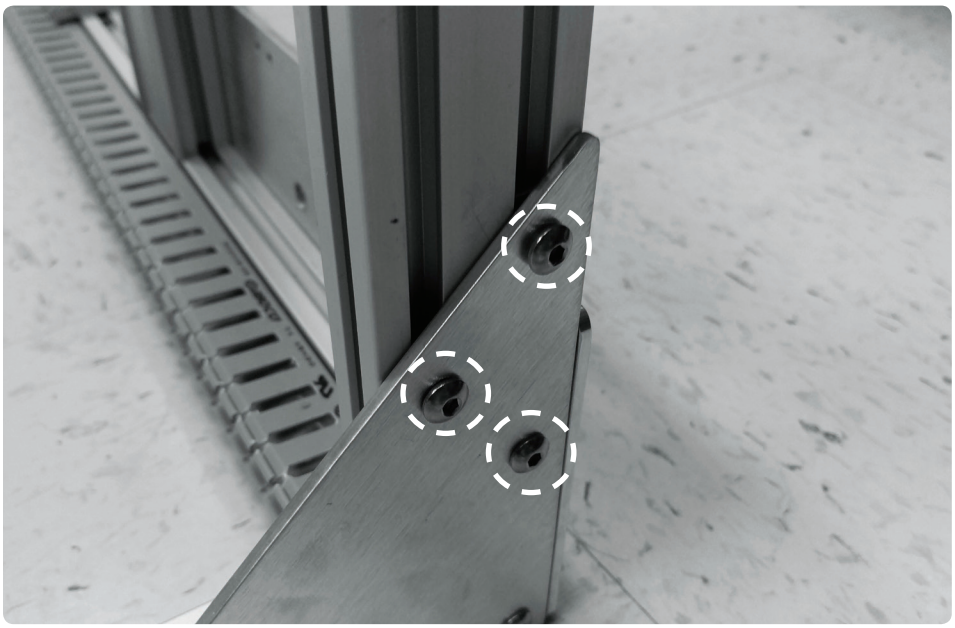
Be sure to install the idler pulleys on both runway rails

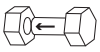




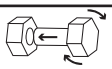
F25

Install front common rails as shown



F26 

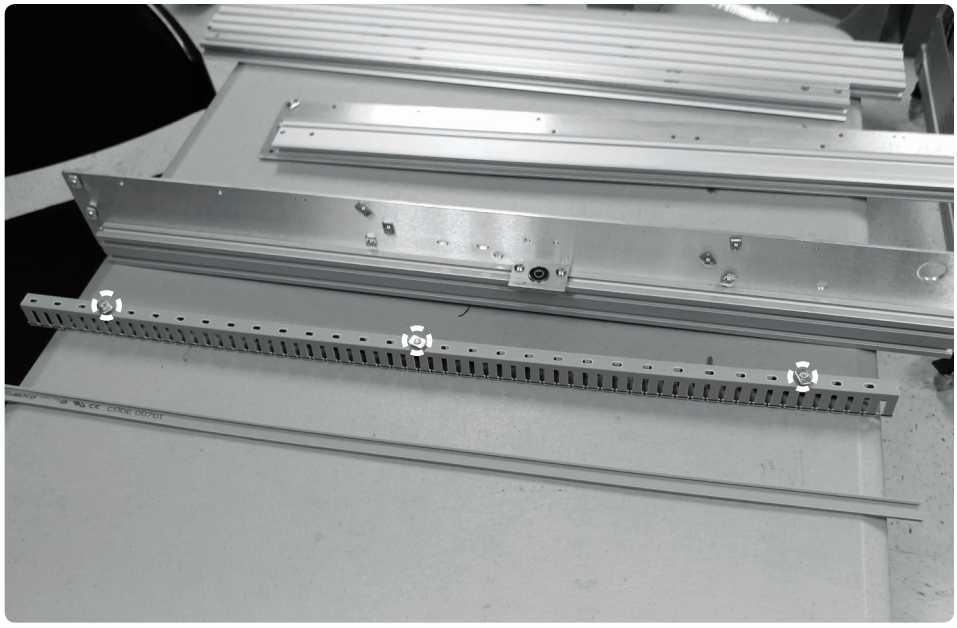
Slide them over the T-nuts on the upper side plates, lower side plates, and front lower cross rail

F27 

Use the square to properly seat the common rail and then fasten the M5x8mm BHCS with the 3mm Allen Key

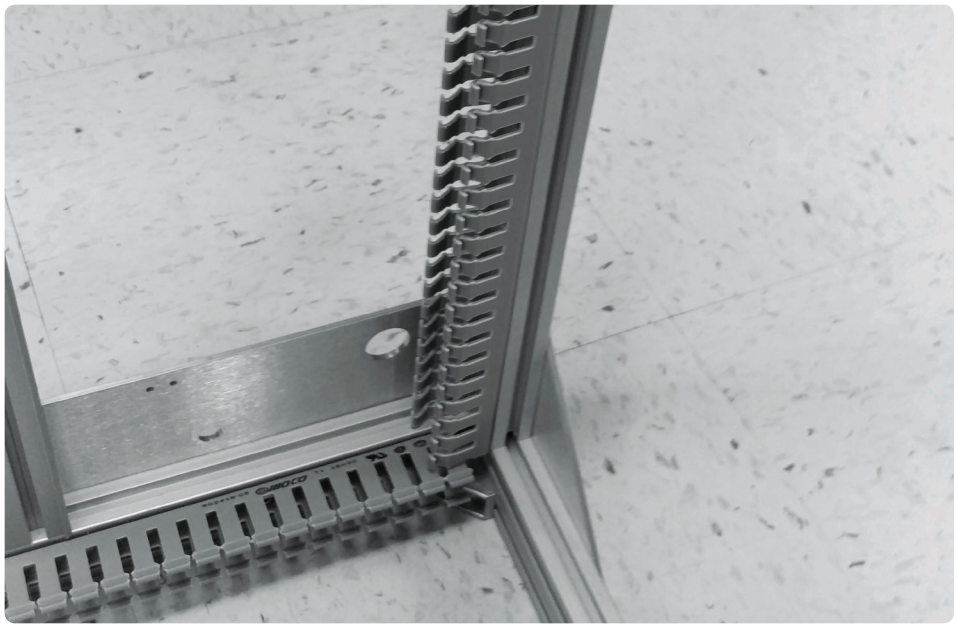
F28

Prepare another 31.5” deep Panduit with 3 M5x8mm BHCS and 3 T-nuts



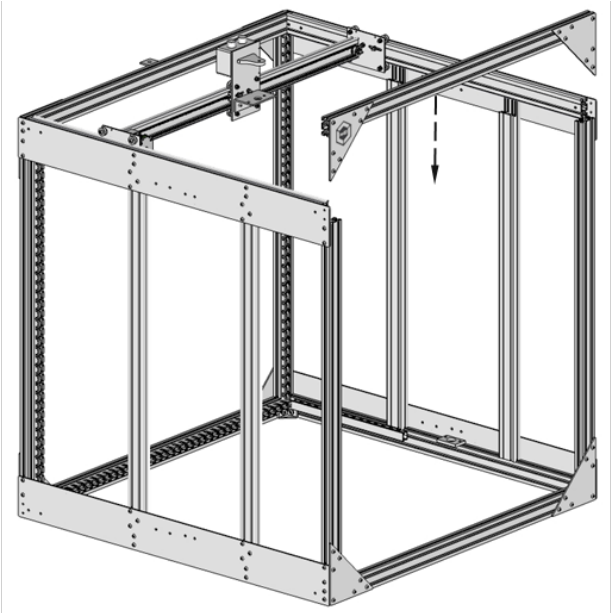
F29

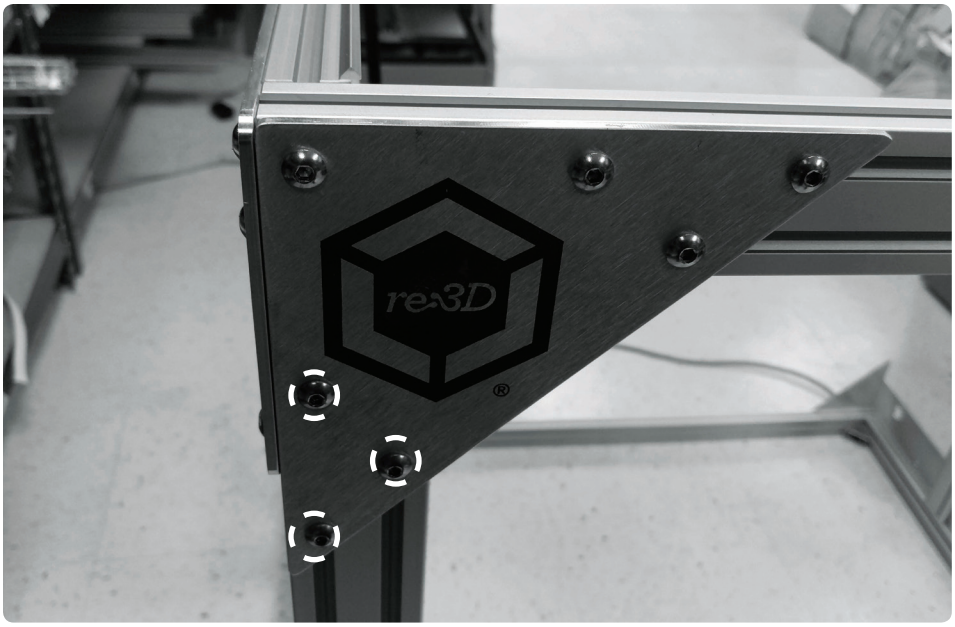
Slide this down onto the front right vertical common rail. This will enclose the upper Z limit switch and poewr switch wiring.



F30

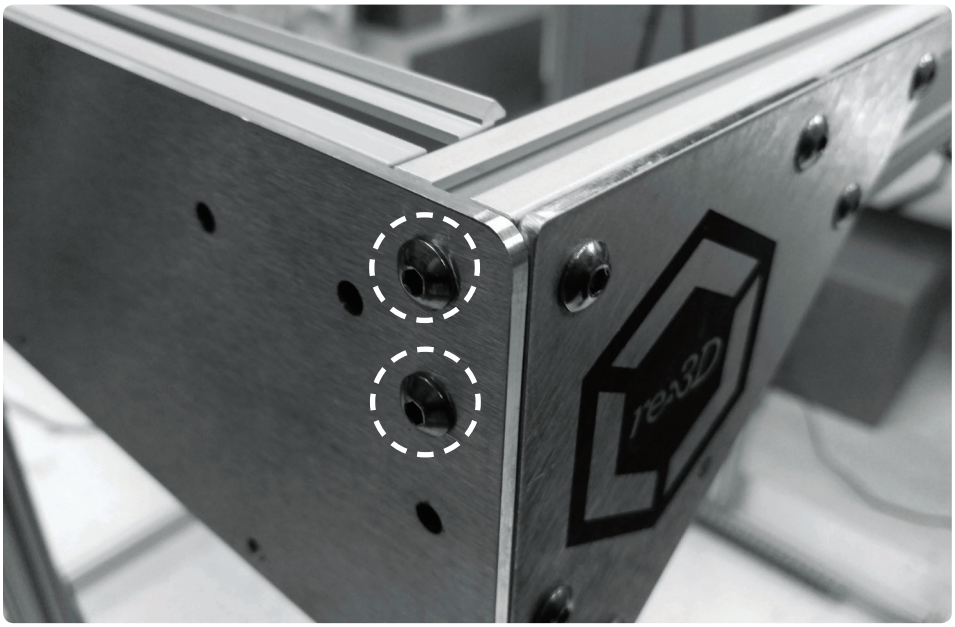
Next, place the upper front cross rail as shown

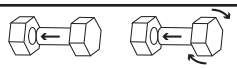




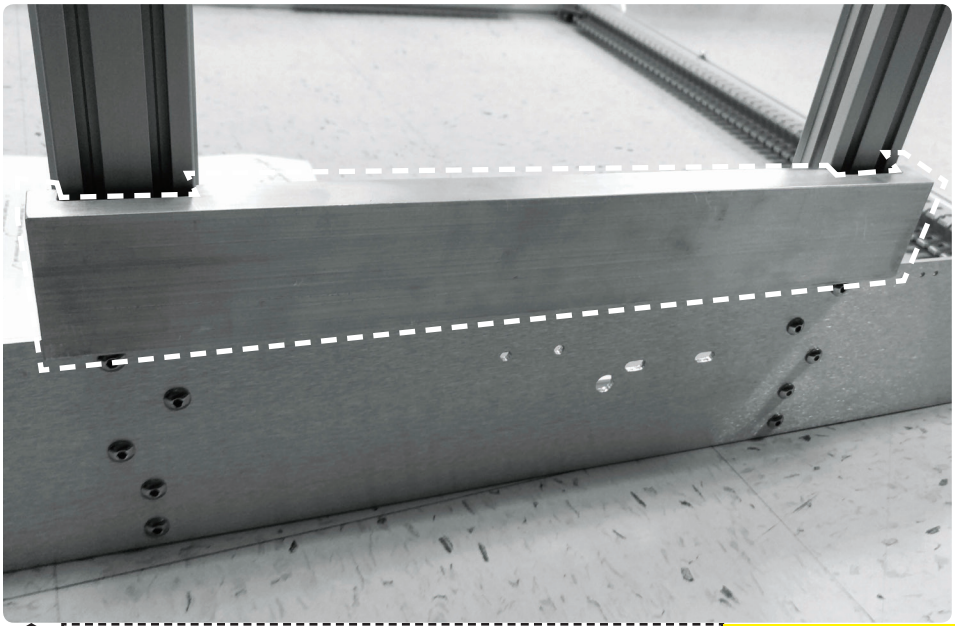
F31

Slide the T-nuts on the corner plates into the slots on the front common rails to seat the cross rail



F32 

Fasten the M5x8mm BHCS on the corner plate and M5x12mm BHCS on the cross rail ends



F33 

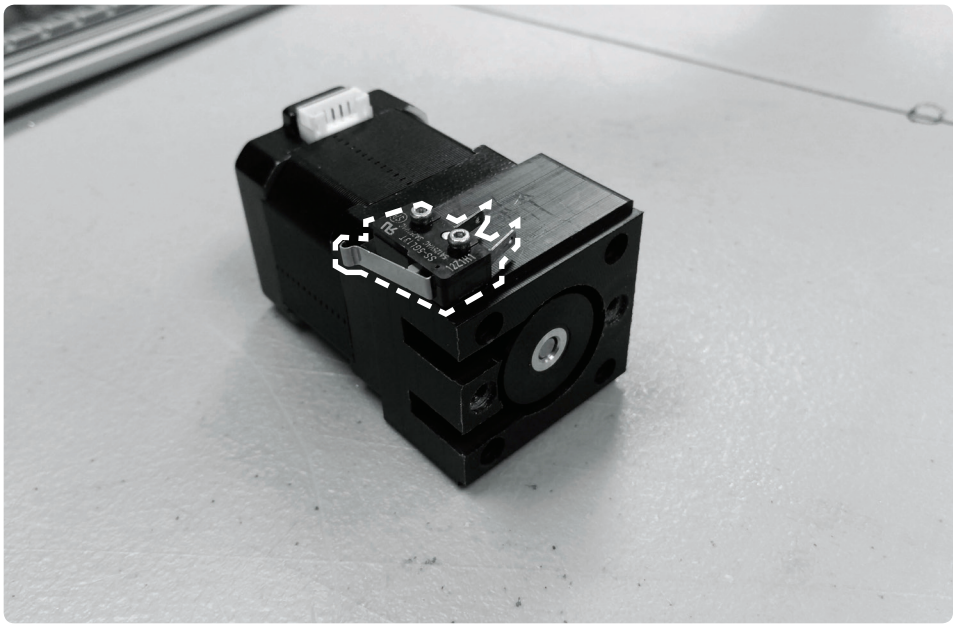
User the bar alignment tool to double check the upright rails for squareness

F34

After fully checking the alignment and angles, tightly fasten all screws on the Gigabot® frame

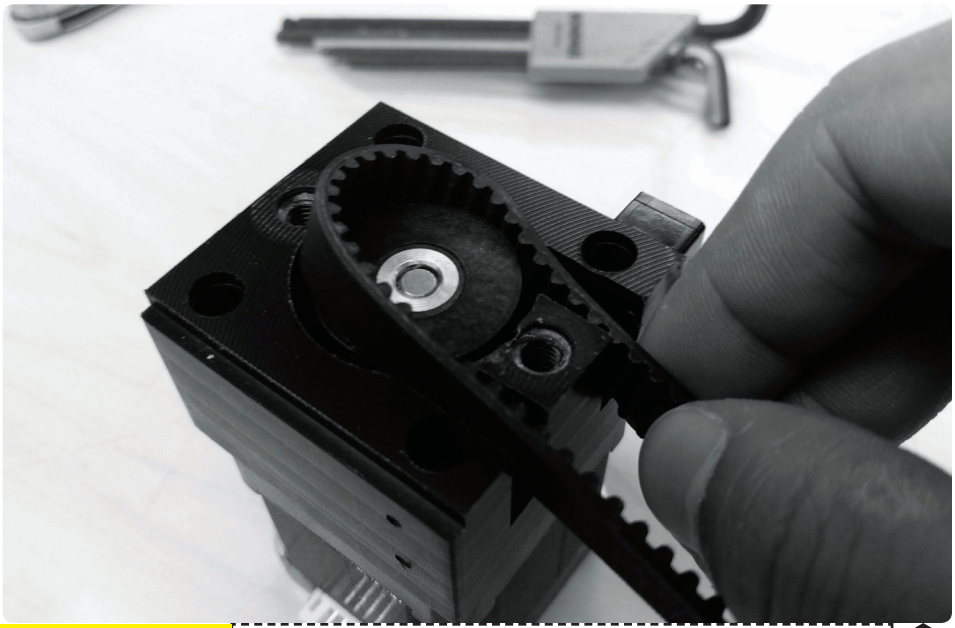
F35

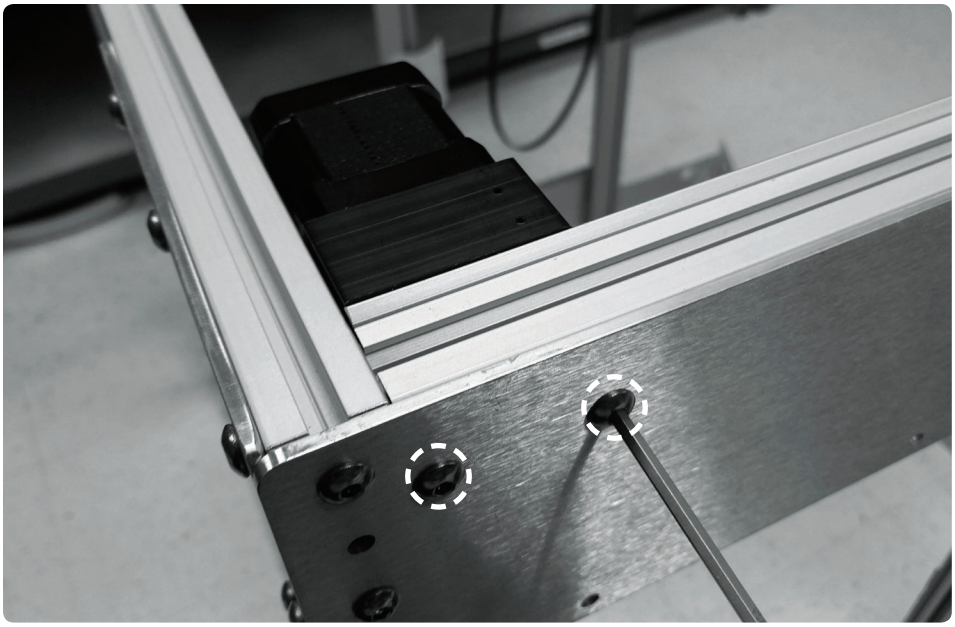
Add a limit switch to the left Y axis motor as shown. Fasten with 2 M2x10mm SHCS



F36

Carefully loop the Y axis belt around the motor by routing it around the pulley until it sits correctly inside



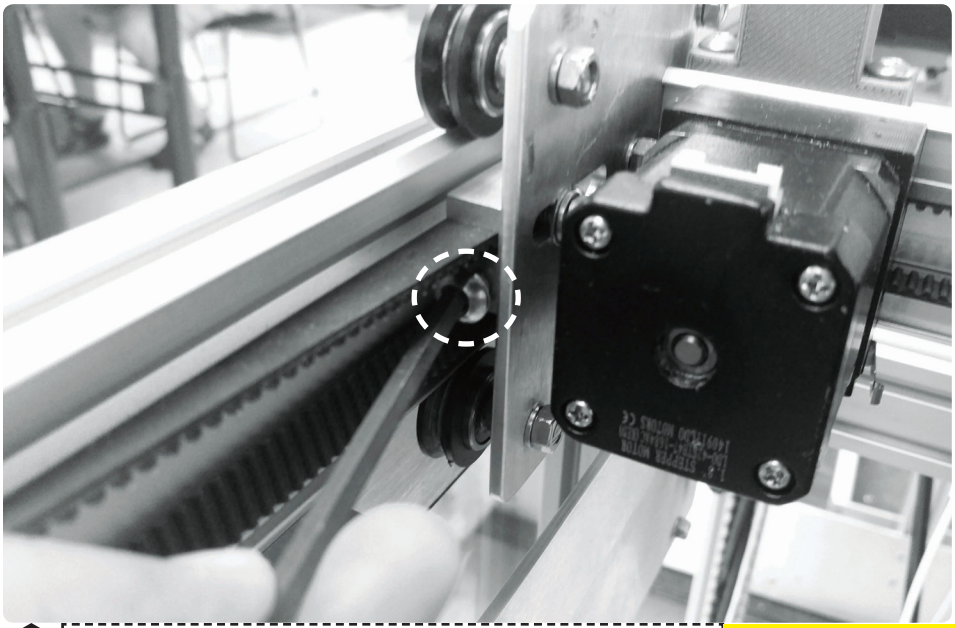


F37

Fasten the left Y axis motor to the back left corner side plate with 2 M5x45mm BHCS. Repeat the belt and motor installation for the other side

F38

Loop both Y axis belts around their respective idler pulleys at the front of the frame



F39

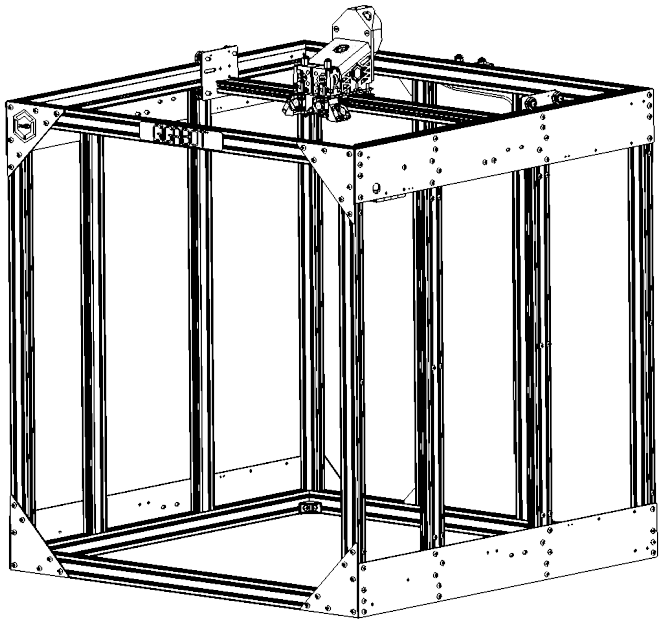
Tighten the Y axis belt tensioners on both end trucks as needed. Lock them in by tightening the lock nut with the 8mm wrench

DOUBLE-CHECK YOUR WORK :

Please look over previous sections and make sure everything has been assembled correctly. Pay particular attention to the assembly of the lower frame and uprights--it is essential that this part of the build is made as square and flush as possible for the Gigabot® to operate at its best. If you have further questions, please refer to the video instructions (search “re3D Tech” on YouTube and find “Cable Carrier” video) or contact us through the references listed in the conclusion.

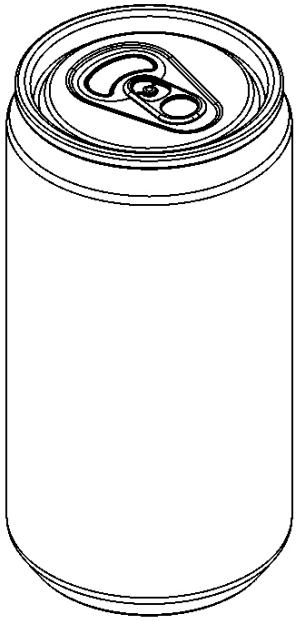
F41

Your Gigabot® should look similar to this by this point

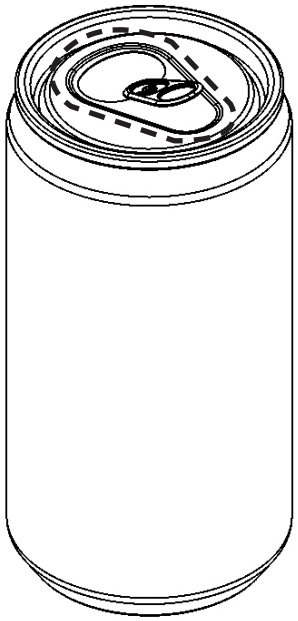


NOW IS A GOOD STOPPING POINT...

Acquire beverage of your choice



Actuate pull tab

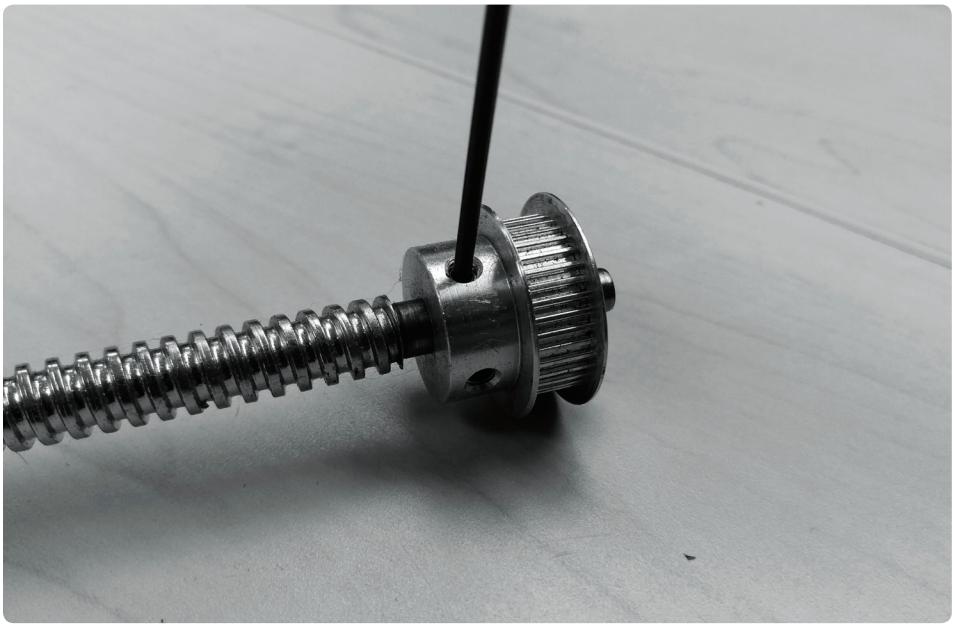


Consume

G : Z AXIS RODS AND MOTORS

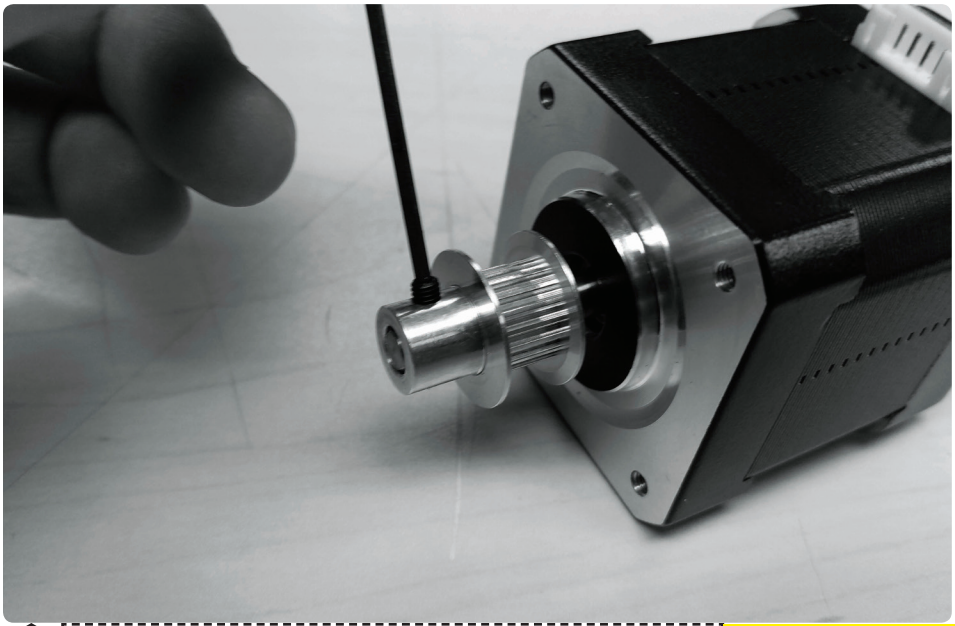
G1

Insert ACME rod onto MXL 36 tooth pulley. It may be helpful to unmount a lower bearing block and use it to space the pulley before fastening. The width of the smallest Allen Key (1.5mm) is recommended.



G2

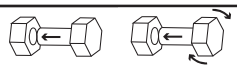
Use threadlocker on the set screw and use a 2mm Allen Key to tighten the pulley onto the ACME threaded rod



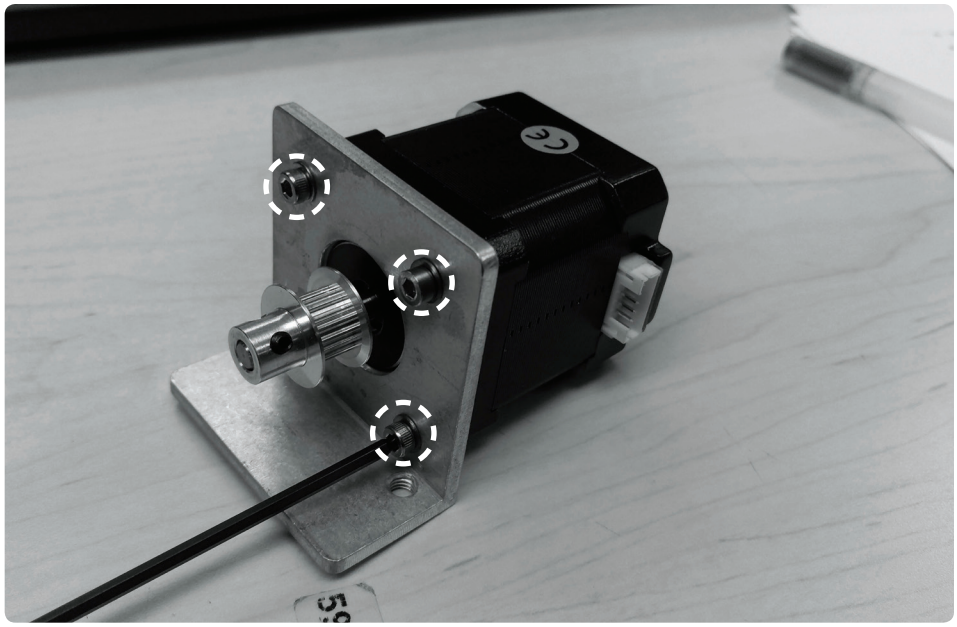
G3

Mount the MXL 18 tooth Z motor pulley as shown, keep the face of the pulley flush with the end of the motor shaft. Again, use threadlocker on the set screw

G4

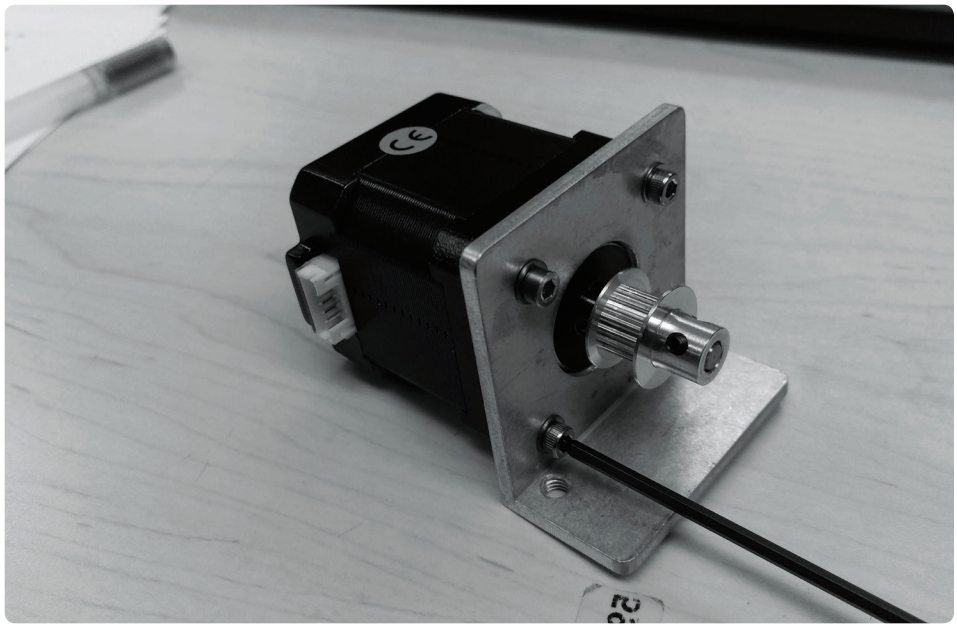


Fasten Z motor mount with a single M3x8mm SHCS and M3 washer for each mounting hole (4 total). Orient the motor as shown

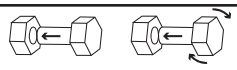


G5

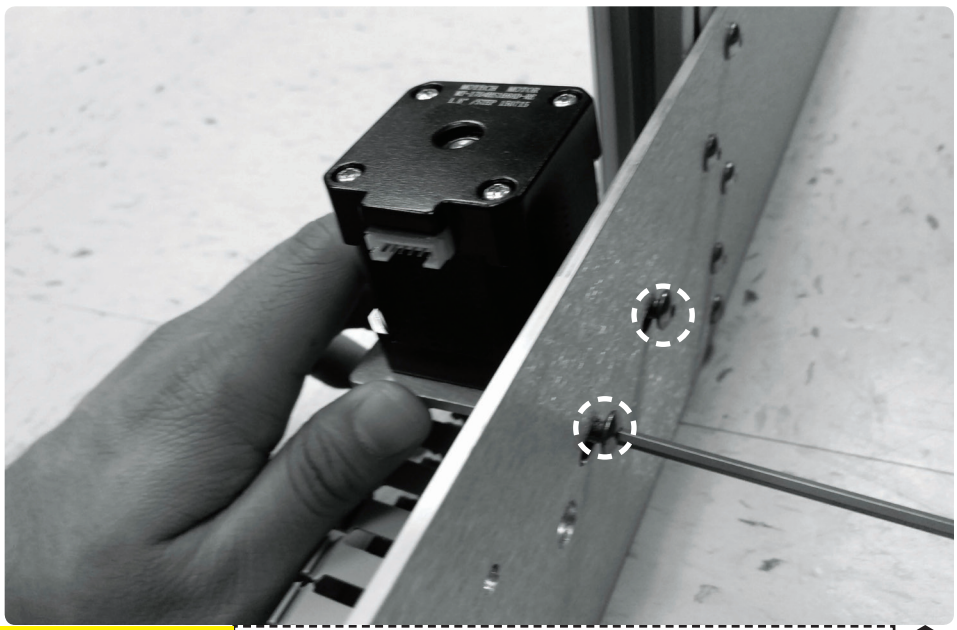
Repeat with the other Z motor, but in a mirrored orientation

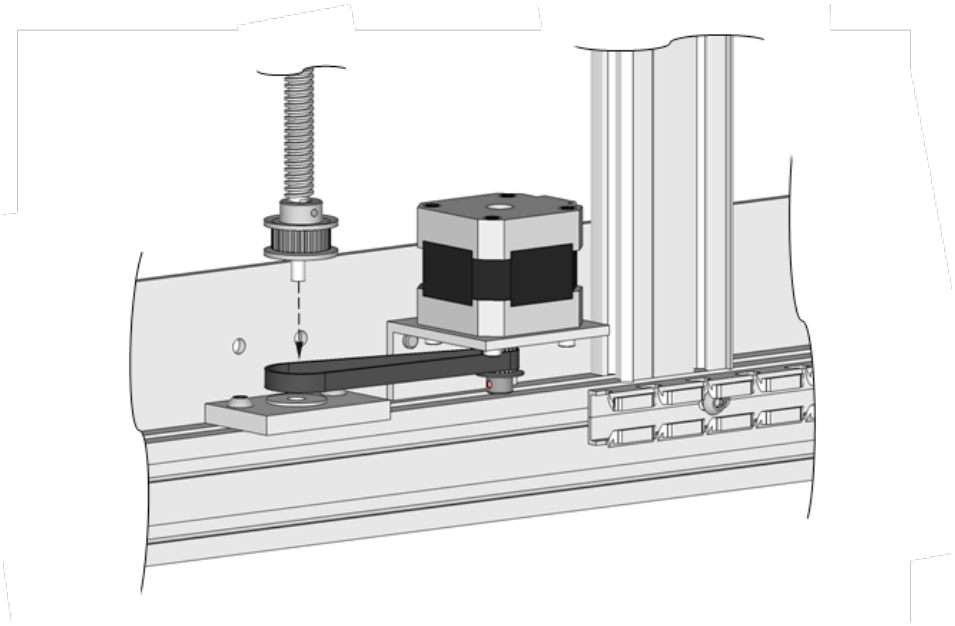


G6



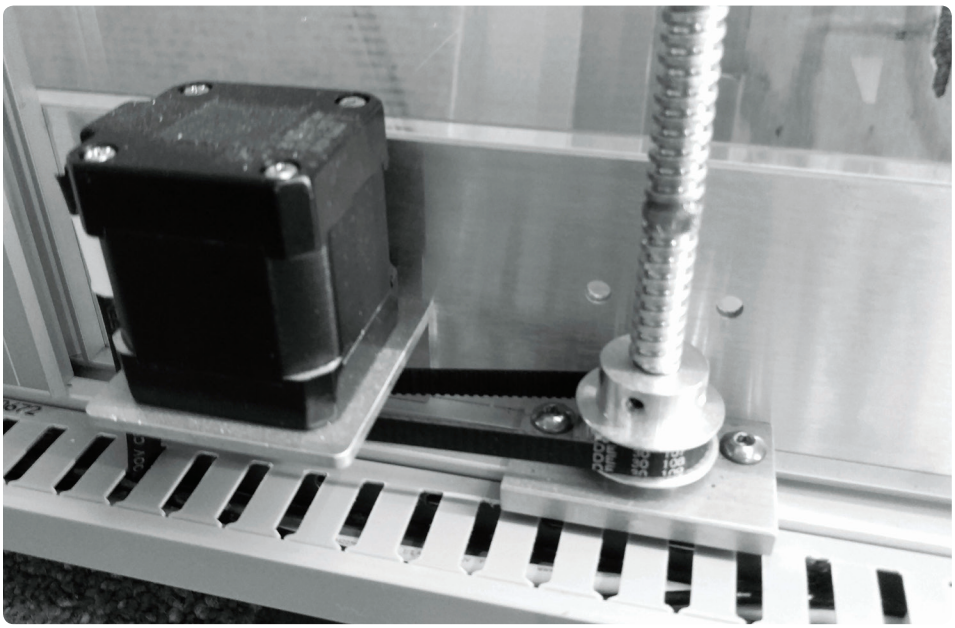
Use 2 M5x8mm BHCS to mount the Z motor to the lower side panel, near the lower bearing block. Make sure to orient the motor such that the power connection is facing the back of the Gigabot®. Repeat on the other side





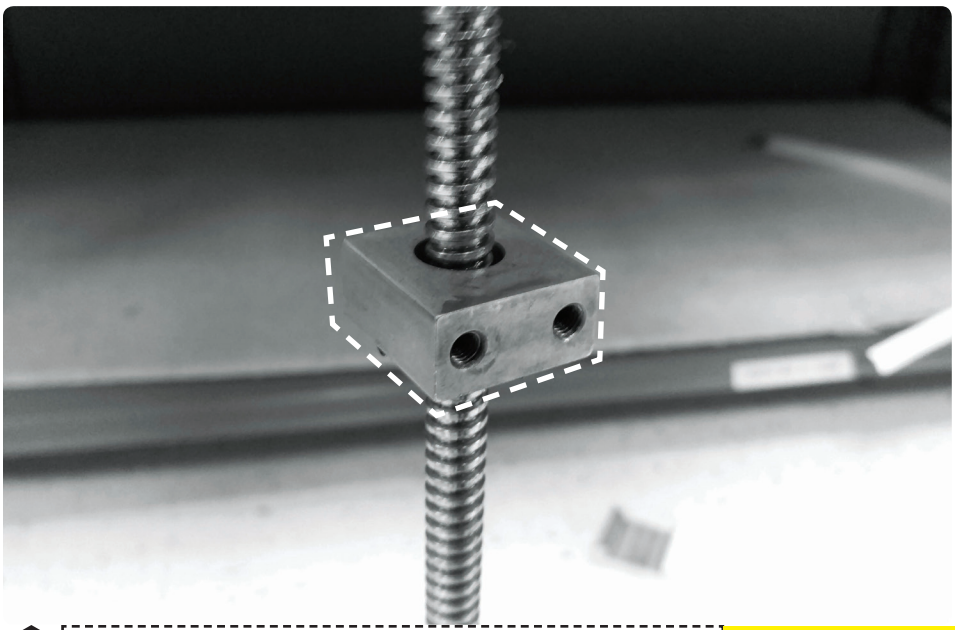
G7

Loop the MXL belt around the Z motor pulley and add the ACME threaded rod as shown. Loop the belt around the threaded rod pulley before pressing into lower bearing block



G8

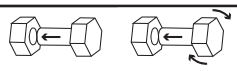
Repeat for the other Z motor and ACME threaded rod



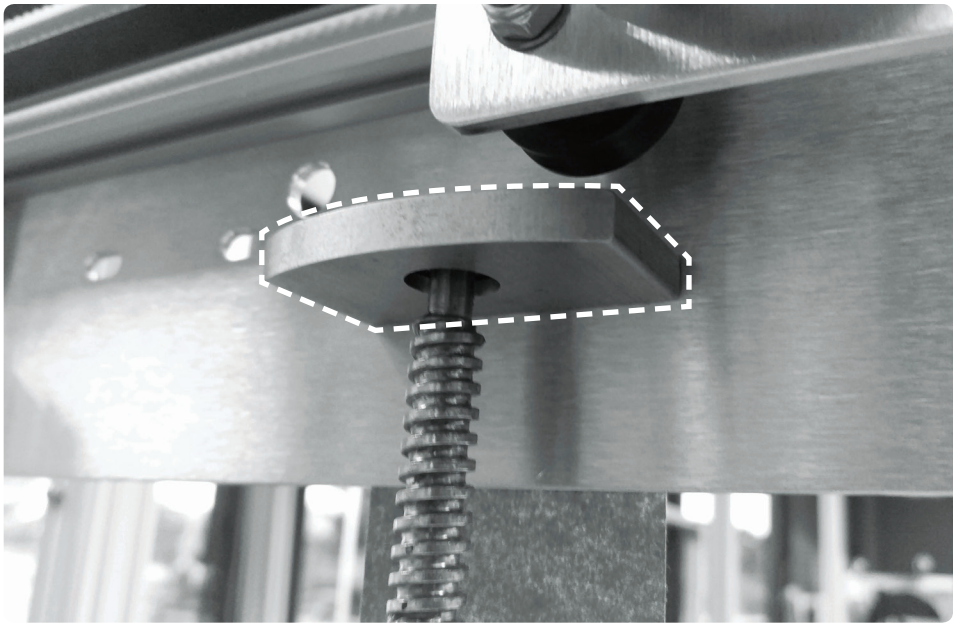
G9

Add grease to the nut cup and thread it down the ACME rod. This will lubricate the threaded rod for smooth motion during operation. Bring the nut cup down about 2” above the lower side plates

G10

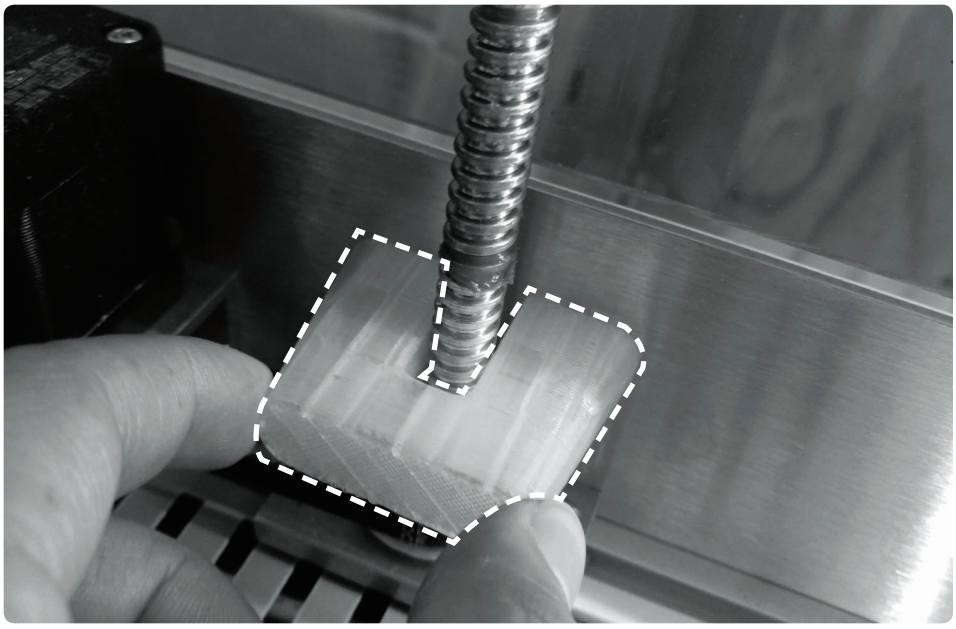


Press the upper bearing block over the ACME rods and mount it to the side plate with 2 M5x12mm BHCS. Repeat for the other threaded rod



G11

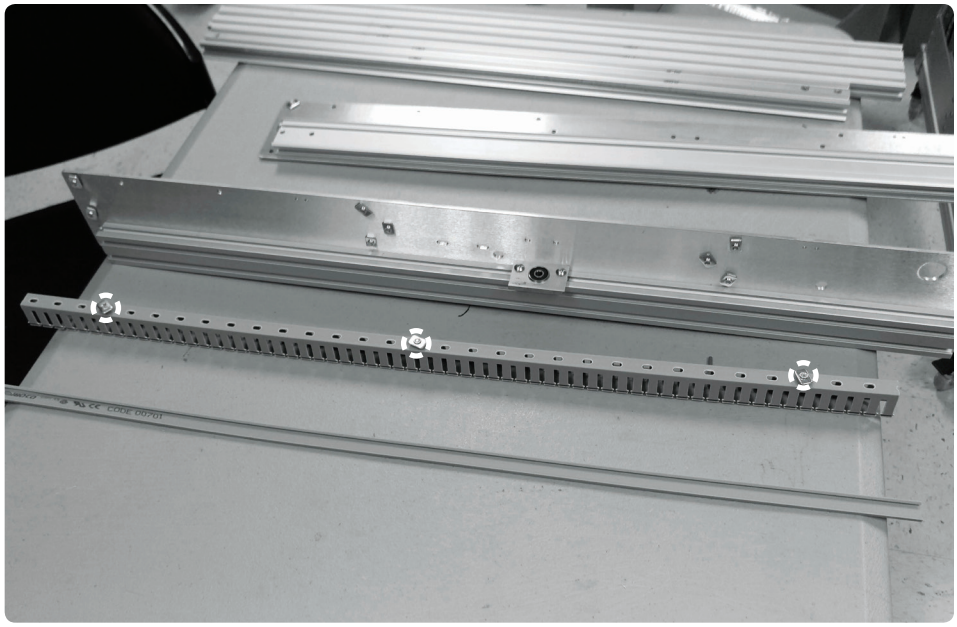
Use printed Z alignment “U” tool to center the ACME threaded rod. Align the holes on the tool with the side plate holes to center the rod. Once centered, fully fasten the lower bearing blocks to the common rail. Repeat for the other rod



H : PANDUITS AND ELECTRICAL BOX

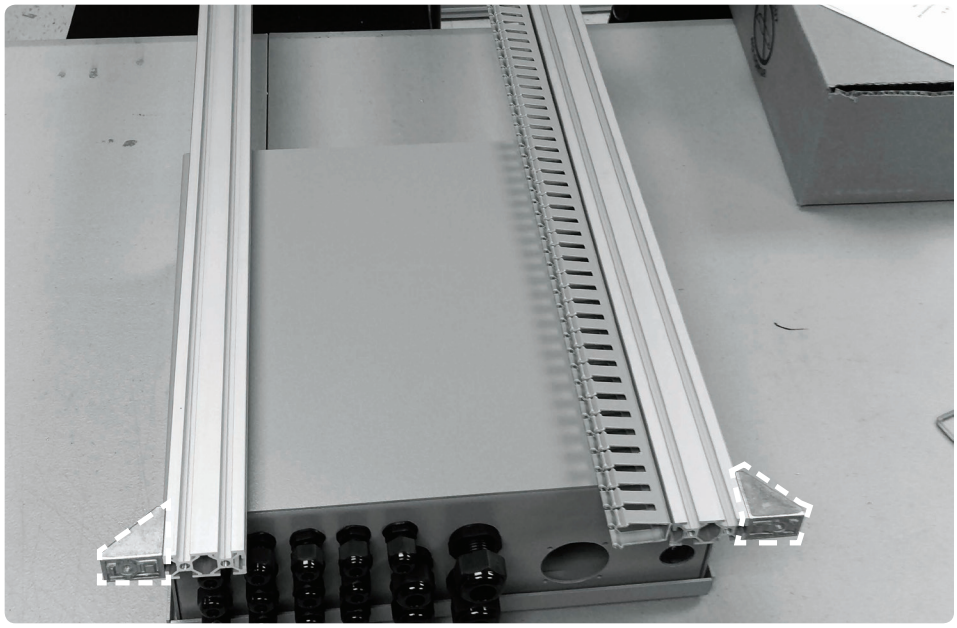
H1

Prepare a 31.5” deep Panduit by adding 3 M5x8mm BHCS and 3 T-nuts, evenly spaced



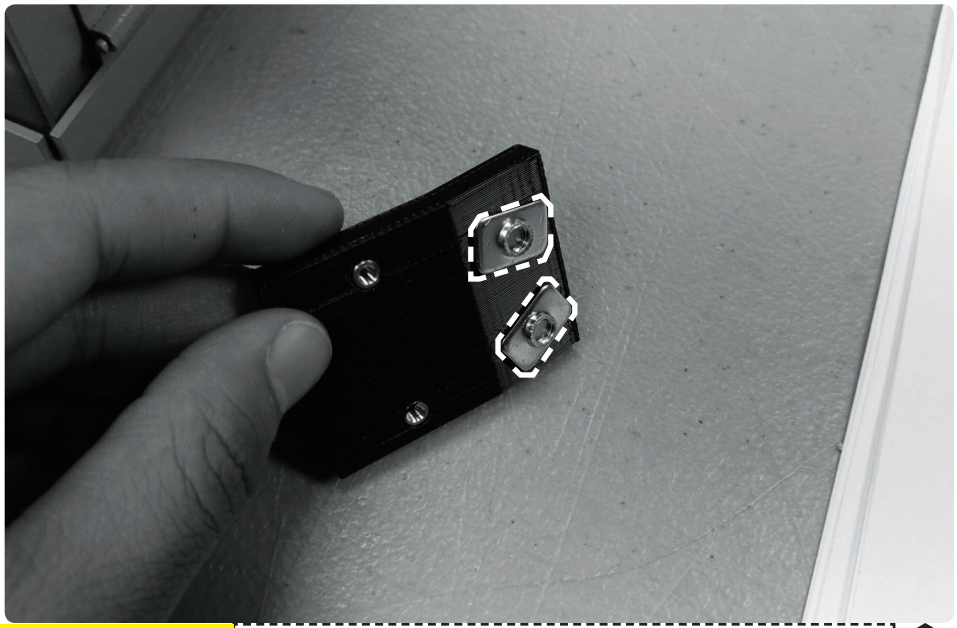
H2

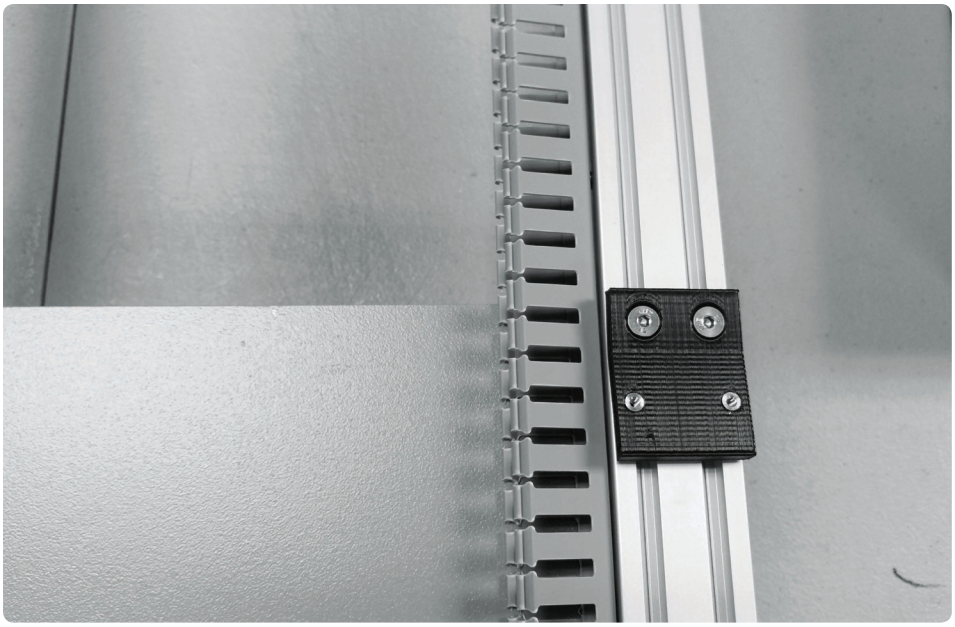
Slide Panduit onto inside of right support rail



H3

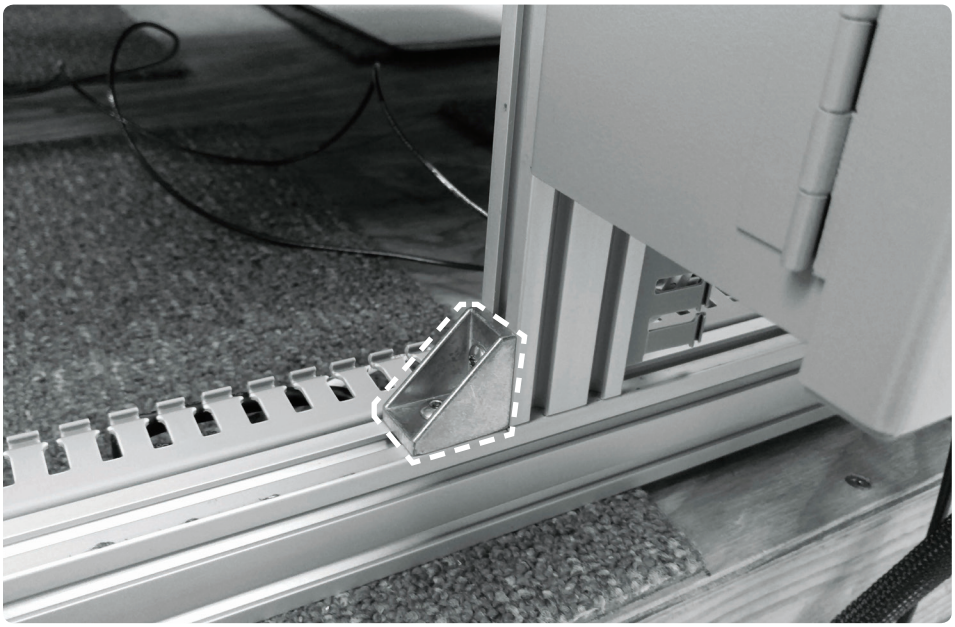
Prepare frame side Z cable carrier bracket by inserting 2 M5x12mm FHCS and 2 T-nuts





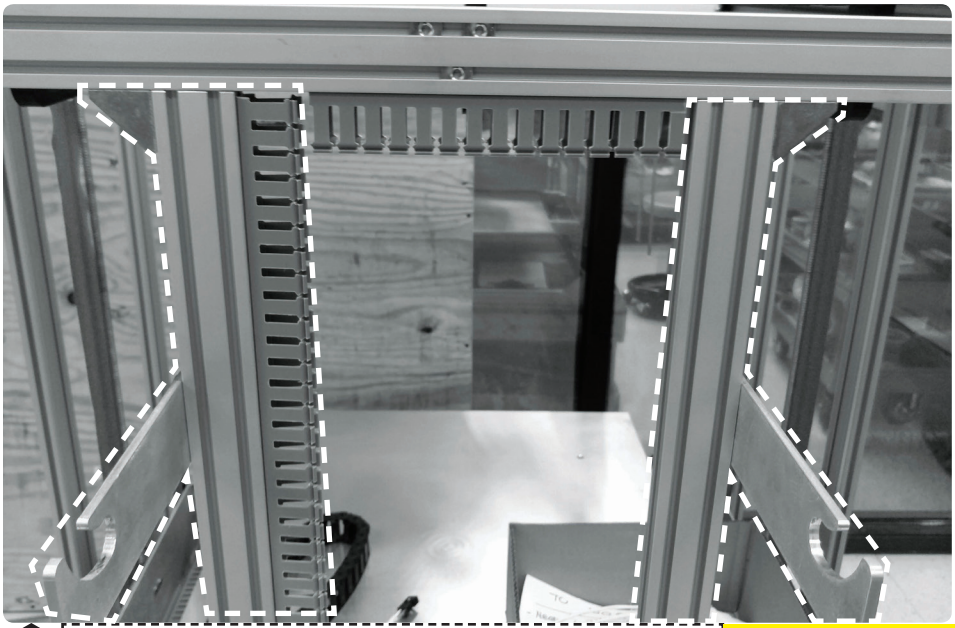
H4

Slide and fasten into right support rail, near the top of the electrical box



H5

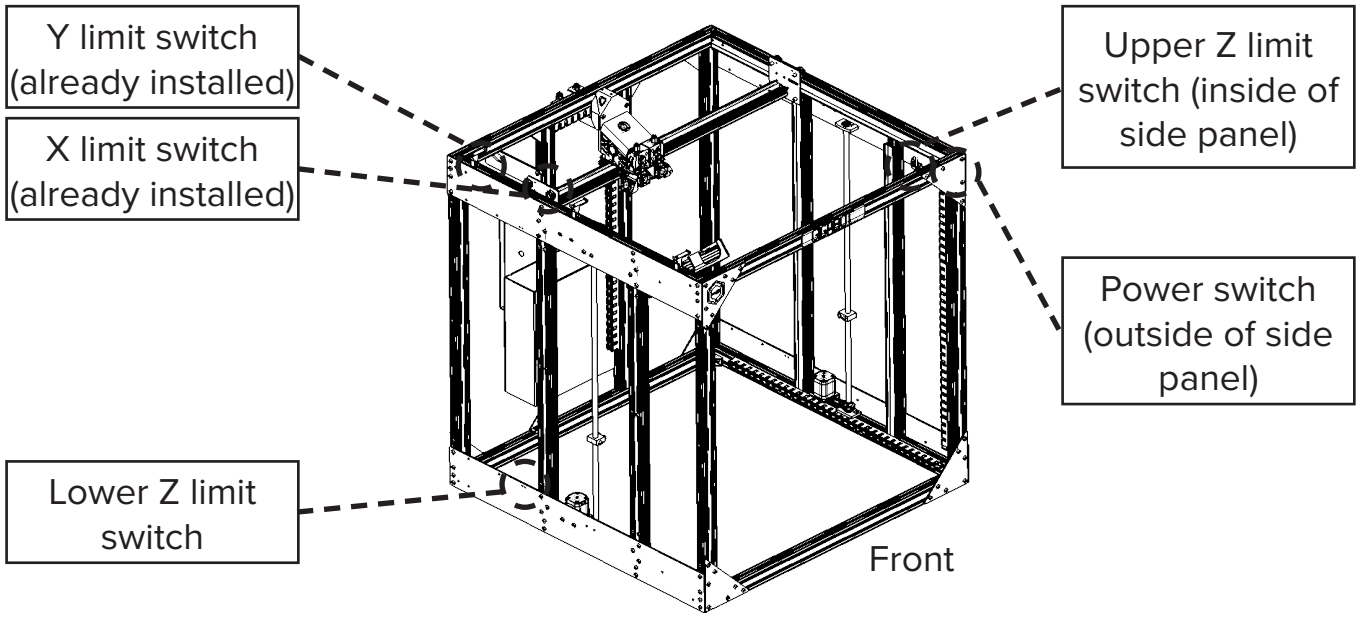
Bring entire electrical box subassembly to Gigabot® frame and fasten to the back, using preplaced triangle brackets and the M5x12mm BHCS placed earlier in the cross rails

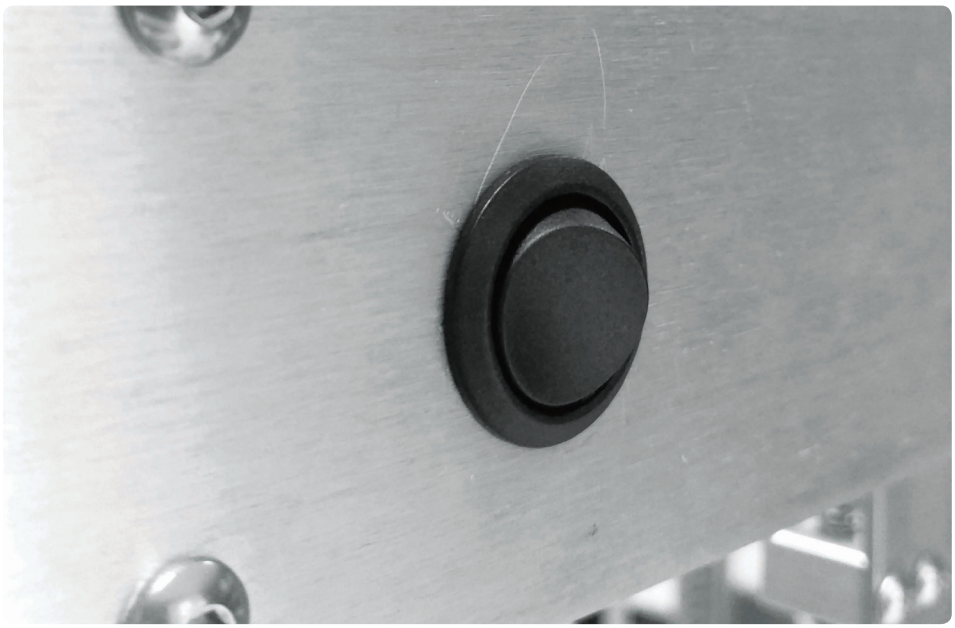


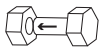
H6

Try to center the electrical box on the frame. A good approximation is about 10 7/8” from the edge of the frame to the support rails, measured from both sides

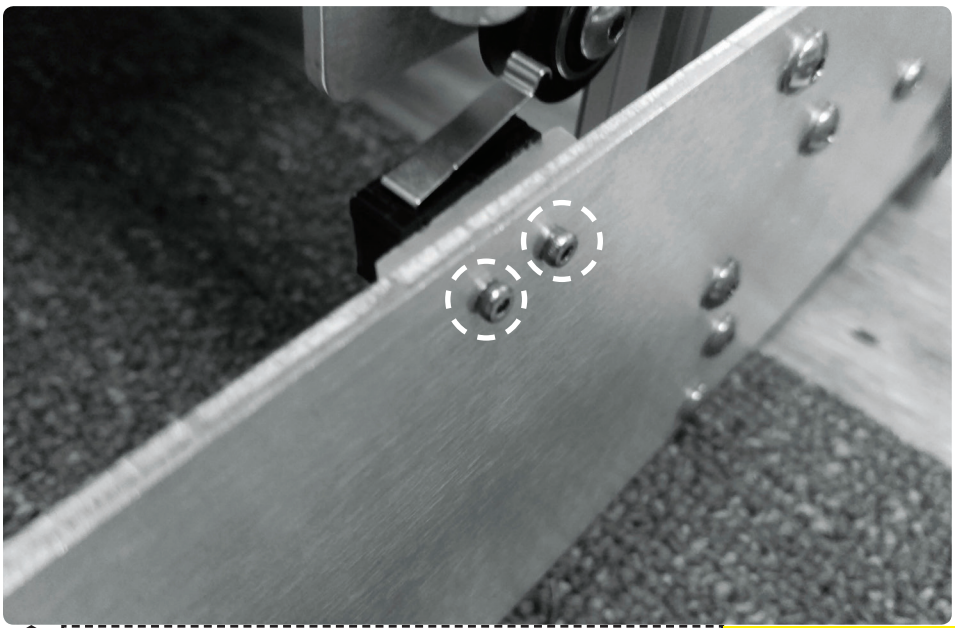
I : POWER AND LIMIT SWITCHES

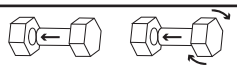




C1 

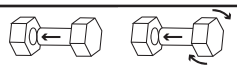
Since the X and Y limit switches are already installed, you only need to install the Z limit switches and power switch. Press the power switch into its side plate hole to install



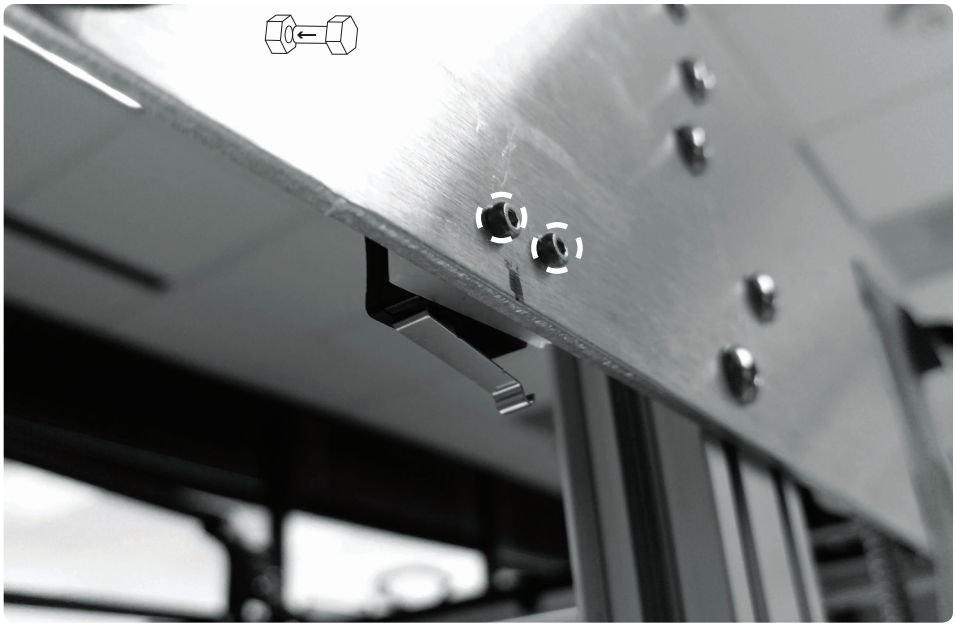
C1 

Mount the lower Z limit switch to the lower left side plate, near the rear. Use 2 M2x16mm SHCS inserted into the side plate to secure an insulating block and the limit switch with 2 M2 lock washers and 2 M2 nuts on the other side. Fasten with 1.5mm Allen Key

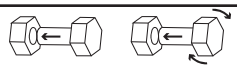
C1



Mount the upper Z limit switch to the upper right side plate, near the front. Use 2 M2x16mm SHCS inserted into the side plate to secure an insulating block and the limit switch with 2 M2 lock washers and 2 M2 nuts on the other side. Fasten with 1.5mm Allen Key



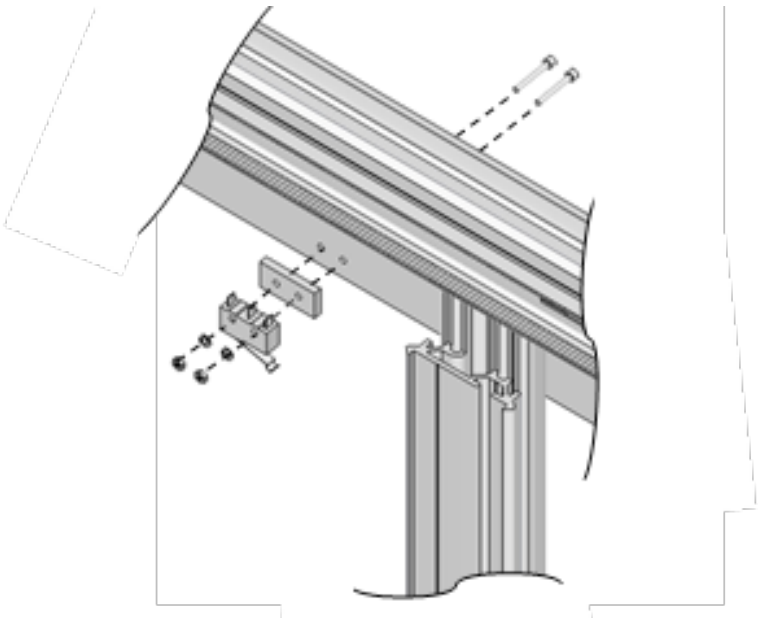
C1



Mount a 3 1/4” Panduit between upper Z limit switch and power switch using 2 M5x8mm BHCS and 2 T-nuts

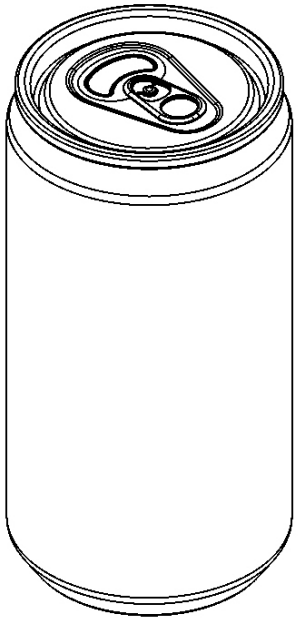
C1

For clarification, install Z limit switches as shown

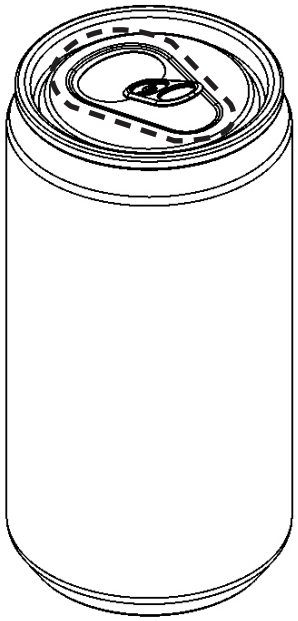


NOW IS A GOOD STOPPING POINT...

Acquire beverage of your choice

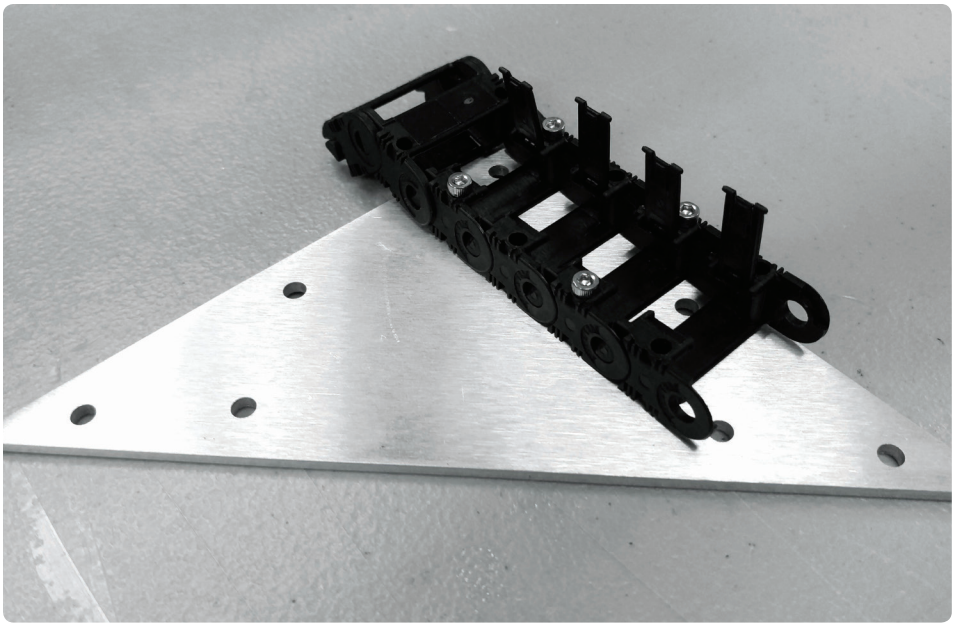


Actuate pull tab



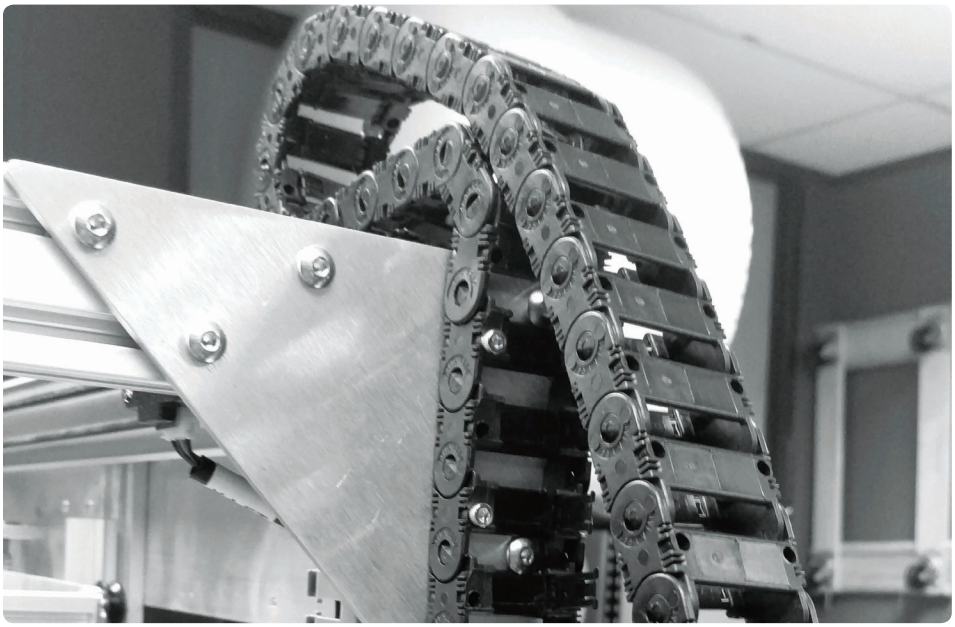
Consume

J : CABLE CARRIERS



J1

During frame assembly, first 8 links for Y cable carriers were already attached to a corner plate



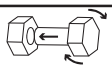
J2

Attach the remaining Y cable carriers in opposite orientation, so as to bend in the other direction

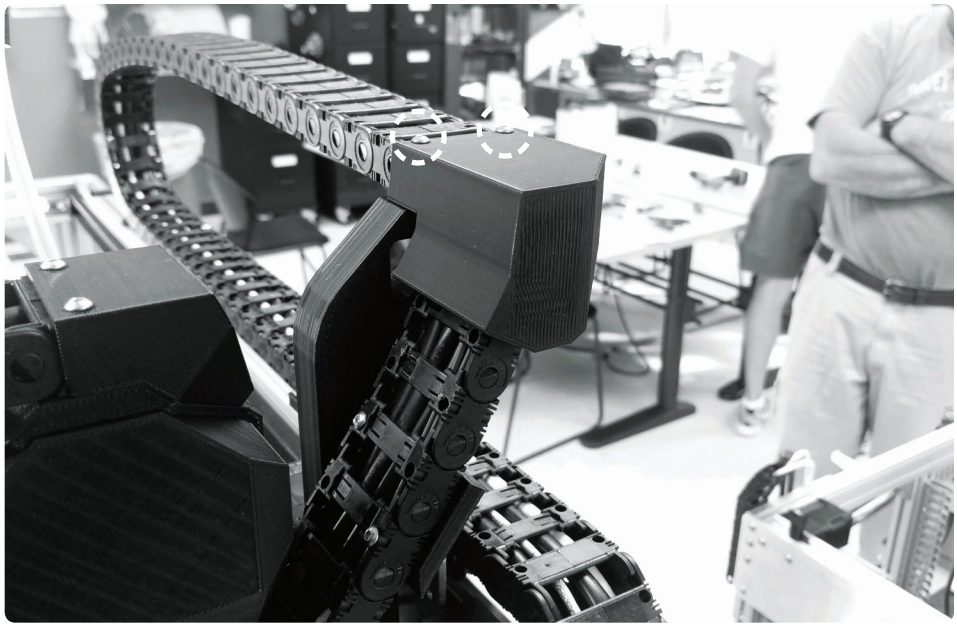
J3

Install snap-in Y support brackets in upper left runway rail and evenly space. A good approximation is to place one near the Y motor, the rear Z upright, and another at the front Z upright

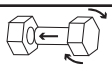
J4



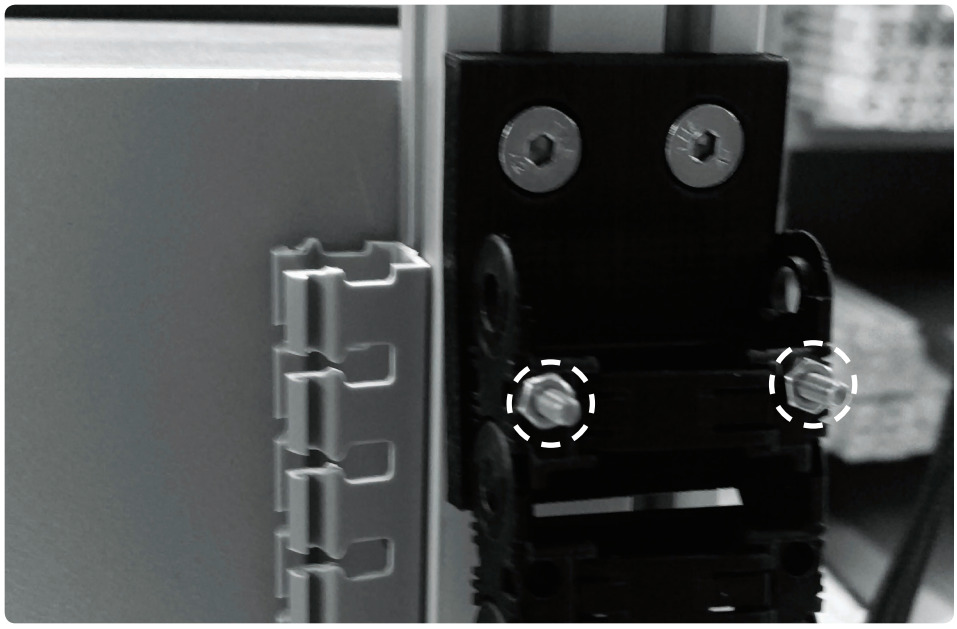
Mount loose end of Y cable carrier to X/Y support bracket with 2 M3x25mm BHCS



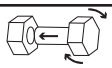
J5



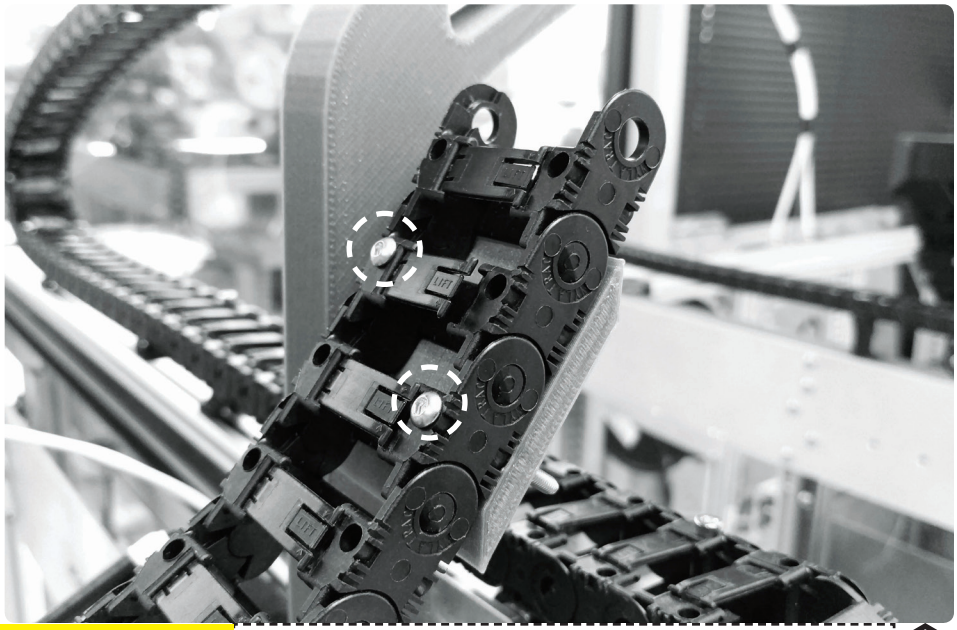
Mount one end of the Z cable carrier to frame side bracket near the electrical box

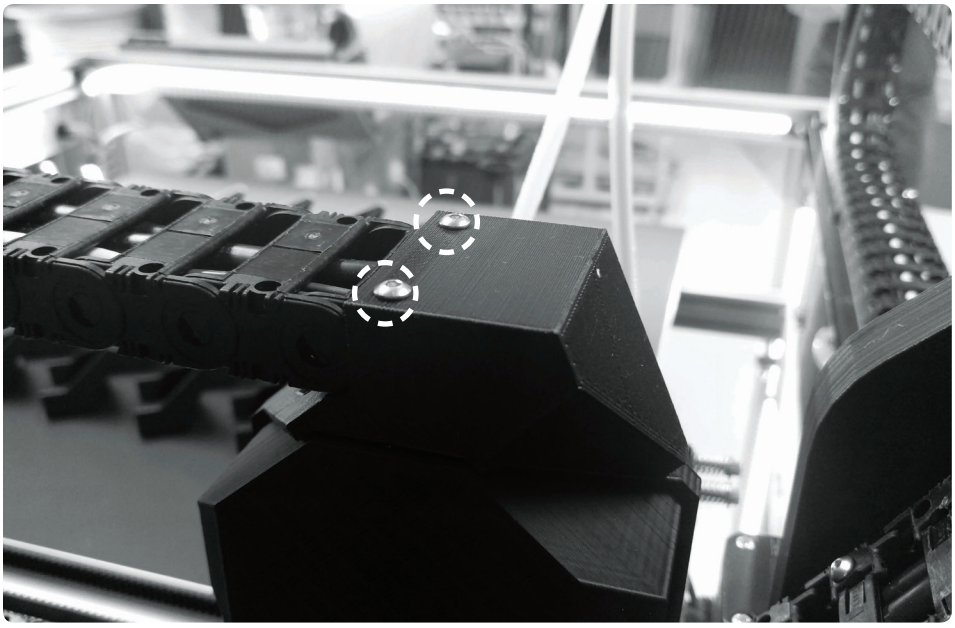


J6



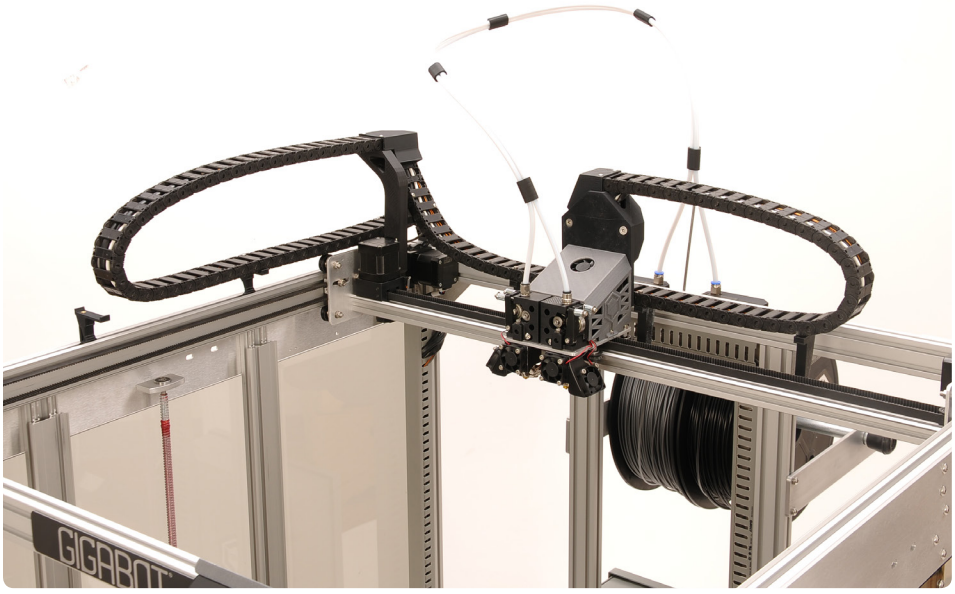
Mount one end of X cable carrier to X/Y support bracket shelf with 2 M3x25mm BHCS. Let last 2 links hang off of the edge





J7

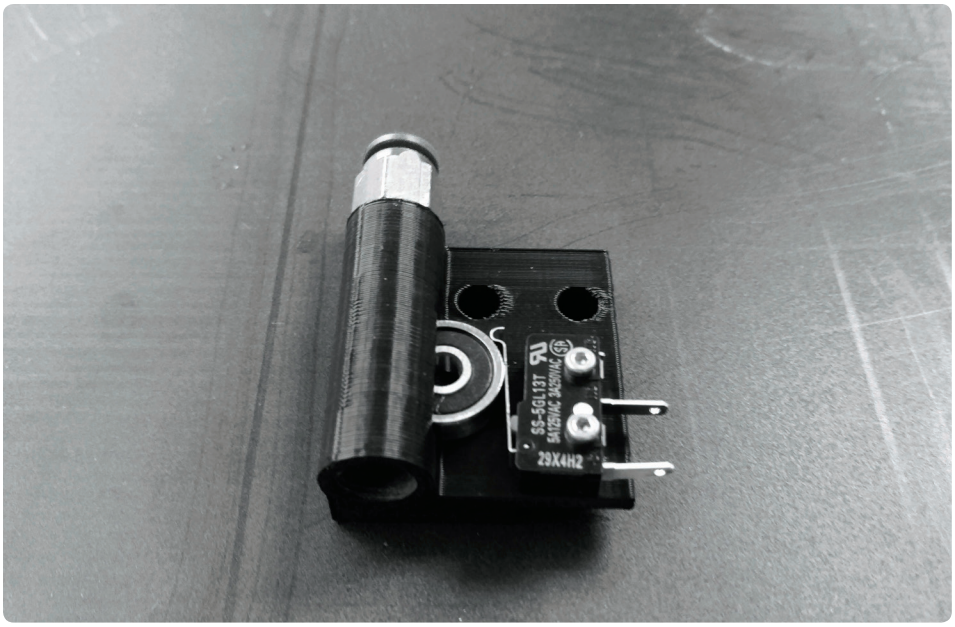
Mount other end of X cable carrier to trolley bracket with 2 M3x25mm BHCS



J8

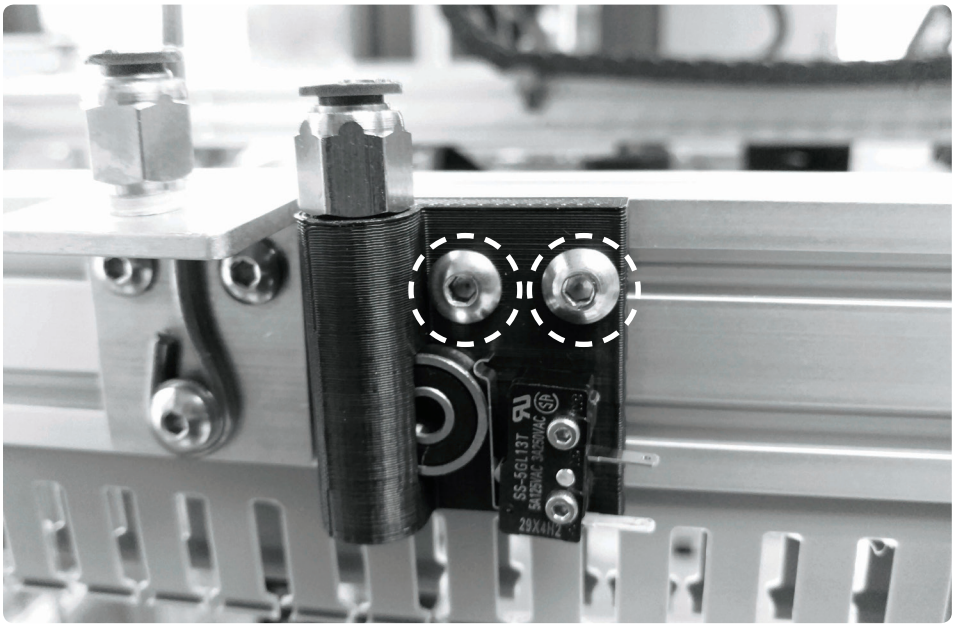
Finished cable carriers should look similar to the picture shown

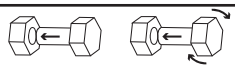
K : FILAMENT DETECTION



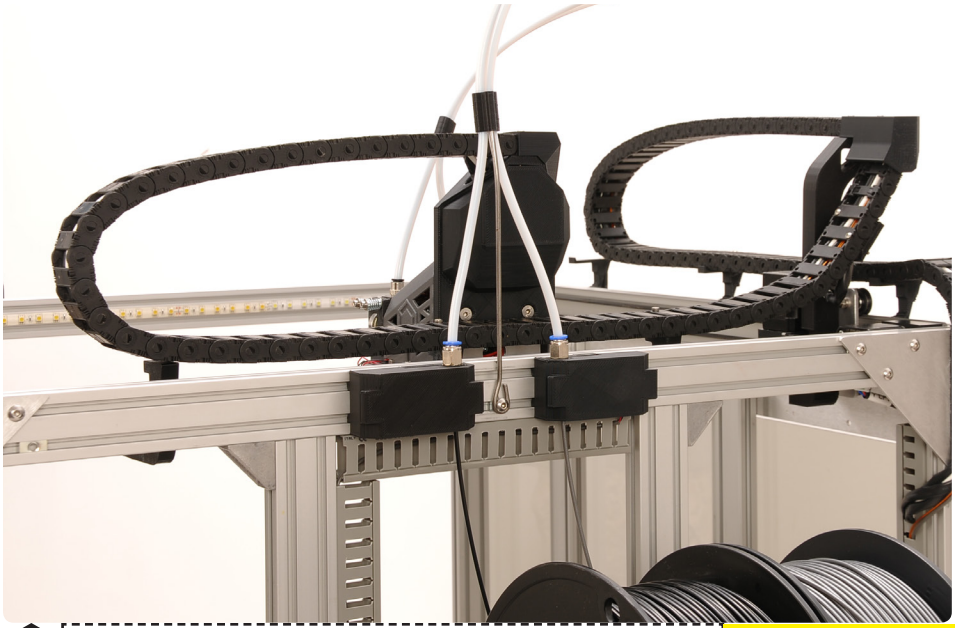
K1

Filament detection bracket will already be pre-assembled



K2 

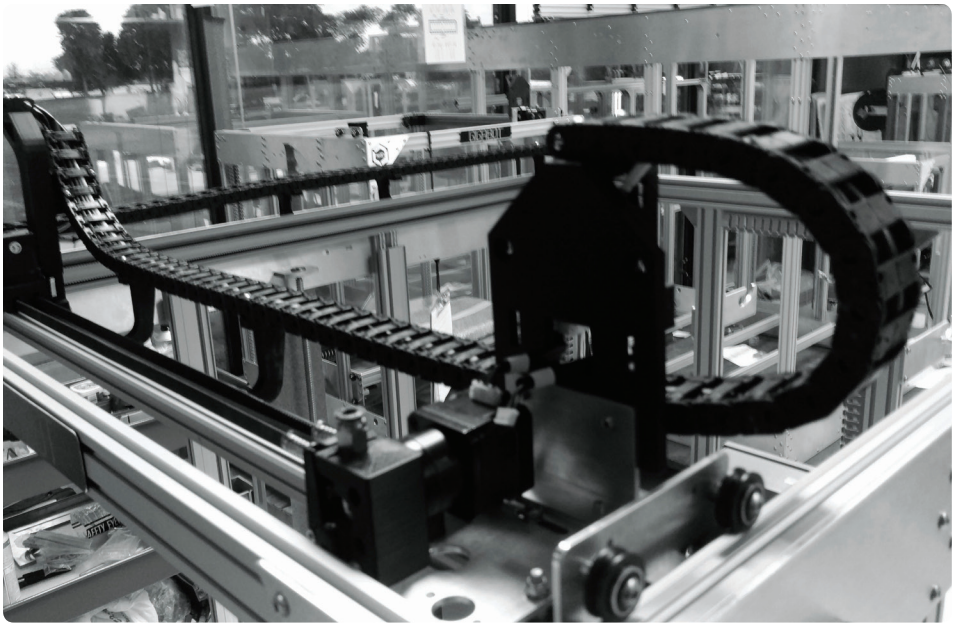
Fasten bracket to rear top cross rail with 2 M5x12mm BHCS. If using dual extruders, you must fasten a second, mirrored filament detection bracket on the other side of the filament guide rod shelf



K3

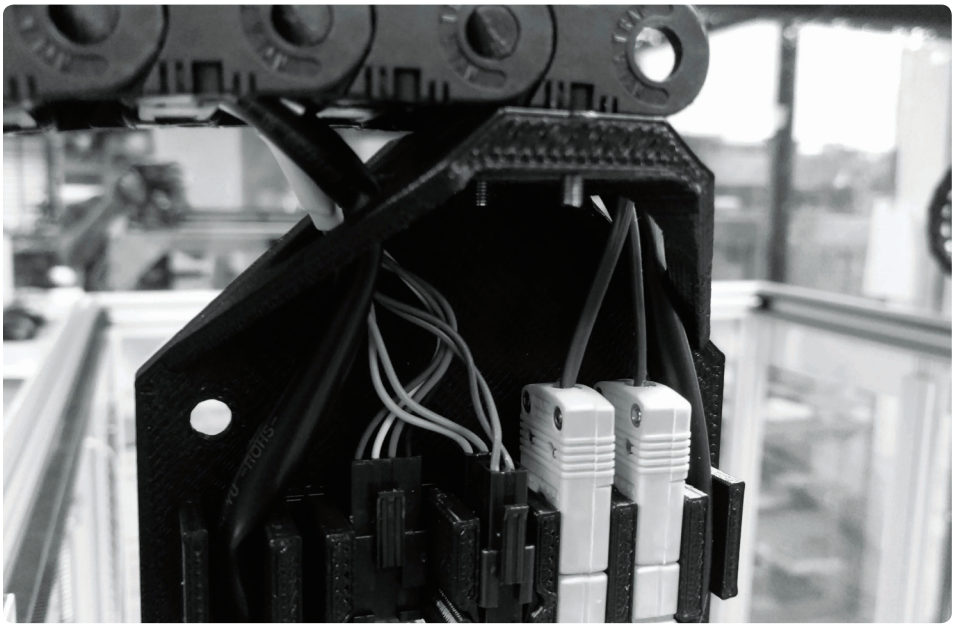
An example of dual filament detection with covers

L : WIRING



L1

Move trolley to front right corner of Gigabot® (maximum distance from home position). Open up the cable carrier links for wire routing



L2

On the trolley, route all trolley wires to the back and place them in their corresponding holders

L3

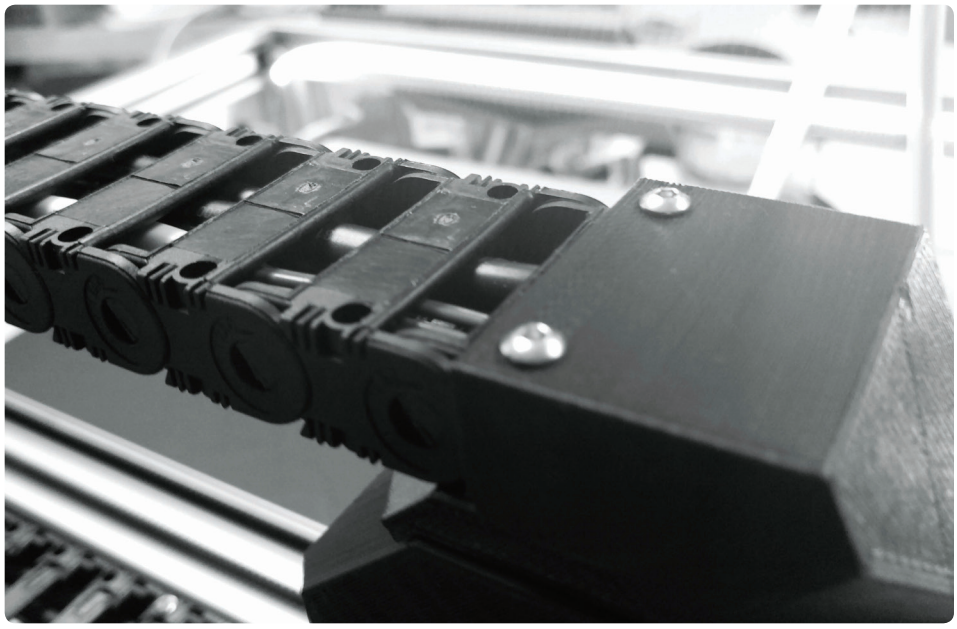
Route X motor and X limit switch wires from electrical box to bridge rail. These should route through cable carriers and through the hole in the X/Y support bracket to connect to the X motor and X limit switch

L4

Route trolley wires to trolley and connect fans, thermocouples, hot ends, and extruder motors

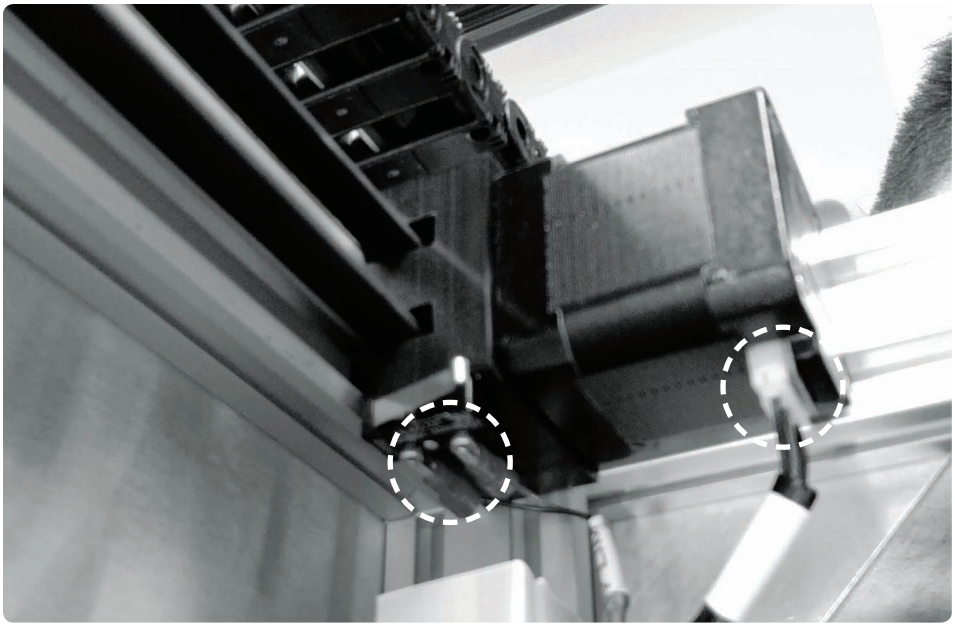
L5

Route all cables back through cable carriers and close all links. Place them parallel to each other with no overlaps or tangles!



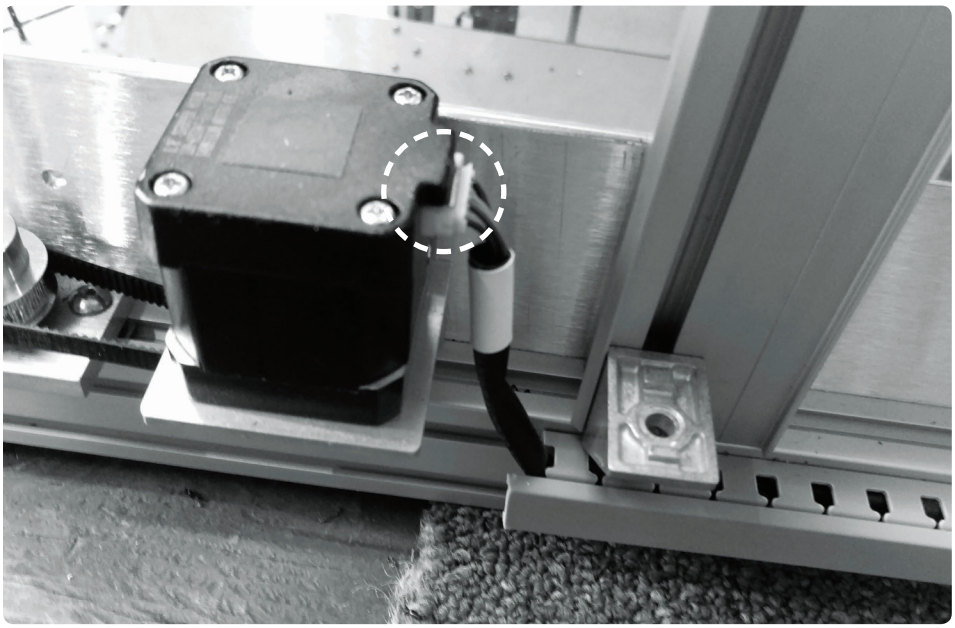
L6

Route these cables through the rear left common rail panduits



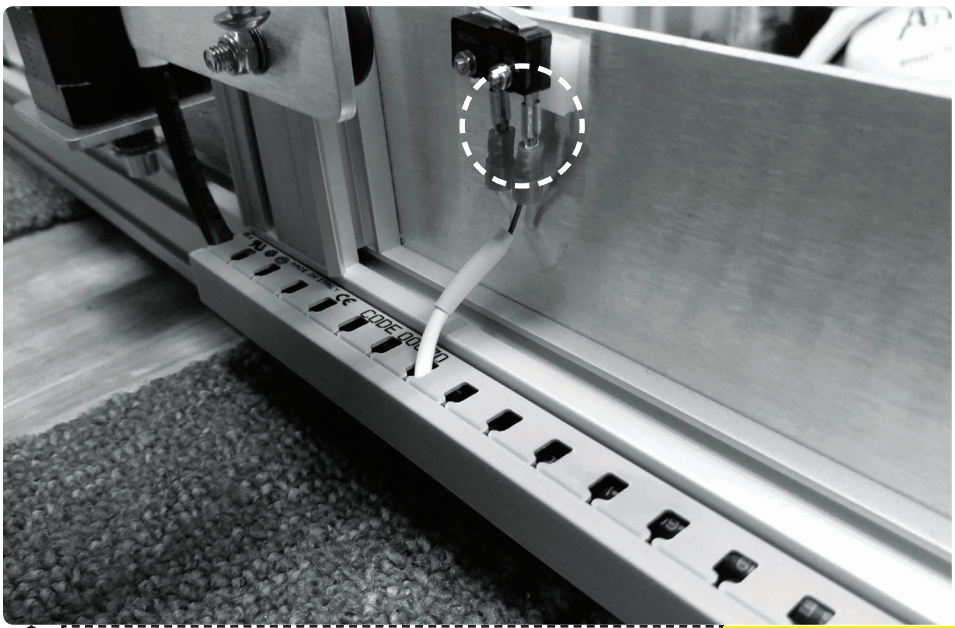
L7

Connect both Y motor wires. On the left side, also connect the Y limit switch. Route these wires into the panduits in the rear common rails



L8

Connect both Z motors. Route the motor cables through the bottom panduits on the left and right sides



L9

Connect the lower Z limit switch. Route this wire through the panduit on the lower left common rail

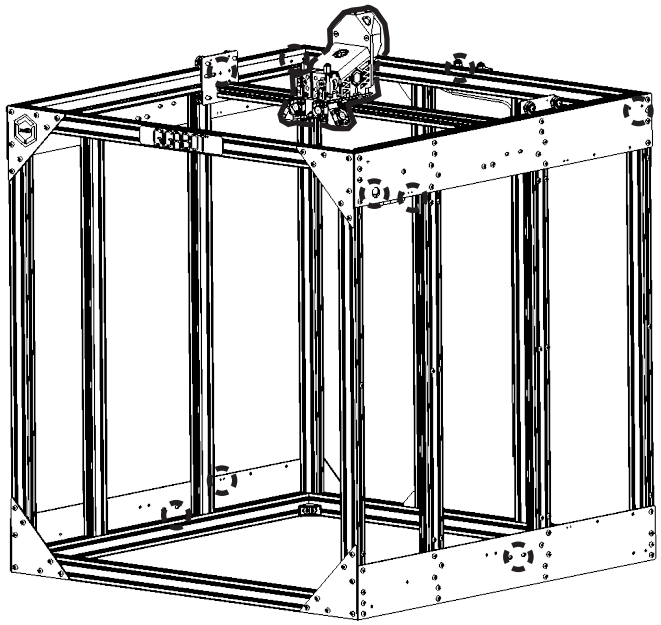
L10

Connect the upper Z limit switch and power switch. Route these wires through the front right vertical common rail panduit and the lower right common rail panduit

Currently, you should have wired:

- Left Z motor
- Right Z motor
- Power switch
- Upper Z limit switch
- Lower Z limit switch
- Left Y motor
- Right Y motor
- X motor
- X limit switch
- Y limit switch
- The trolley: which includes hot ends, thermocouples, fans, and extruder motors

You have yet to wire the heated bed and filament detection

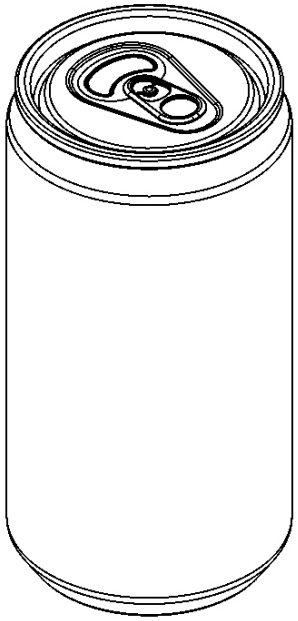


DOUBLE-CHECK YOUR WORK :

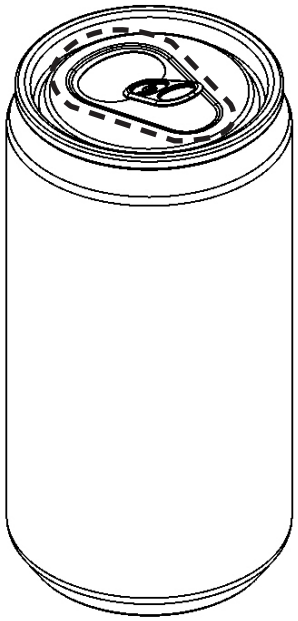
Please look over previous sections and make sure everything has been assembled correctly. Pay particular attention to the cable carrier wiring: any overlaps or tangles can introduce unnecessary resistance to the cables during normal operation, which can lead to wire fatigue and eventually failure. If you have further questions, please refer to the various video instructions for related retrofit kits (search “re3D Tech” on YouTube), browse through our Wiki, or contact us through the references listed in the conclusion.

NOW IS A GOOD STOPPING POINT...

Acquire beverage of your choice

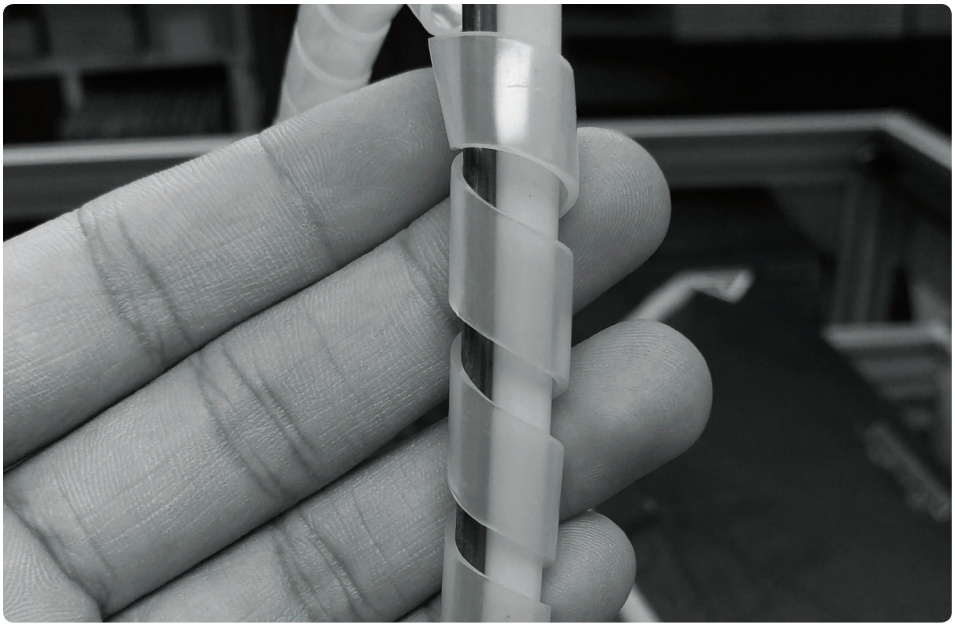


Actuate pull tab



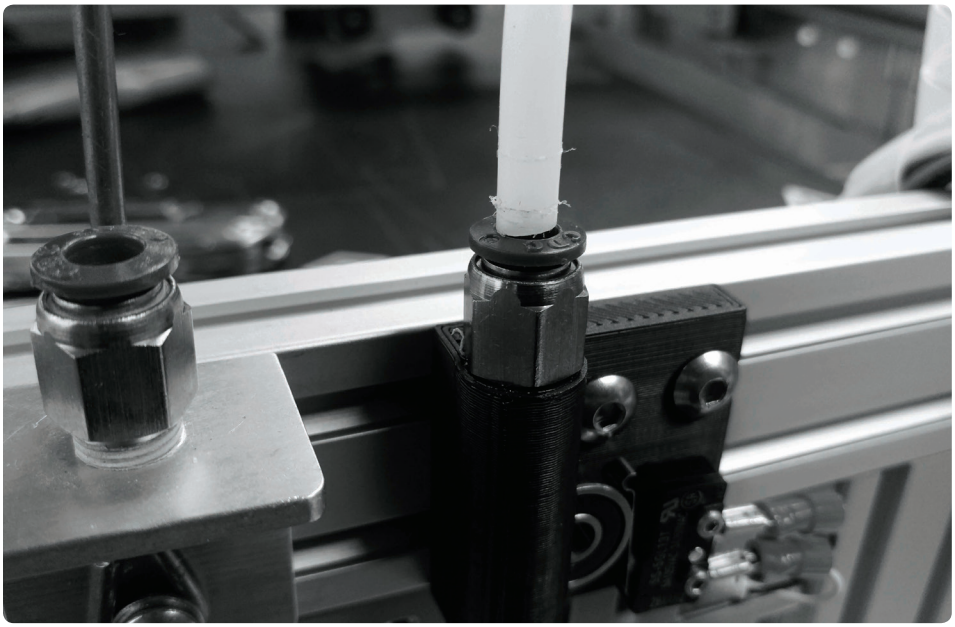
Consume

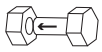
M : FILAMENT TUBE AND EXTRA WIRING



M1

User Spiralite to connect filament tube with 10” filament guide rod



M2 

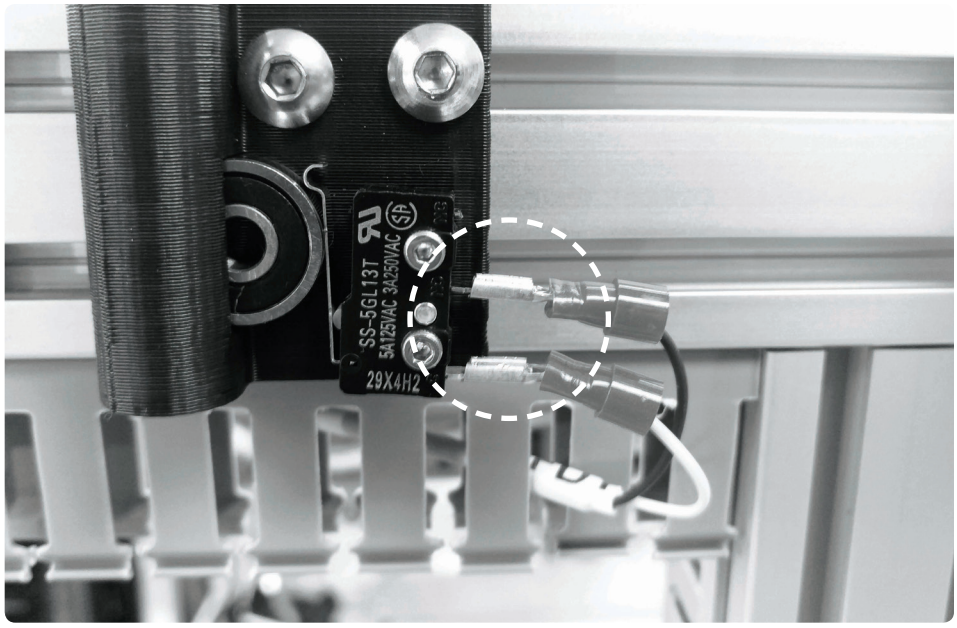
Connect filament tube to push fit connector on filament detection

M3

Alternative to using spiralite, your kit may also include printed tube guides that will hole the filament tubes together with the 10” filament guide rod

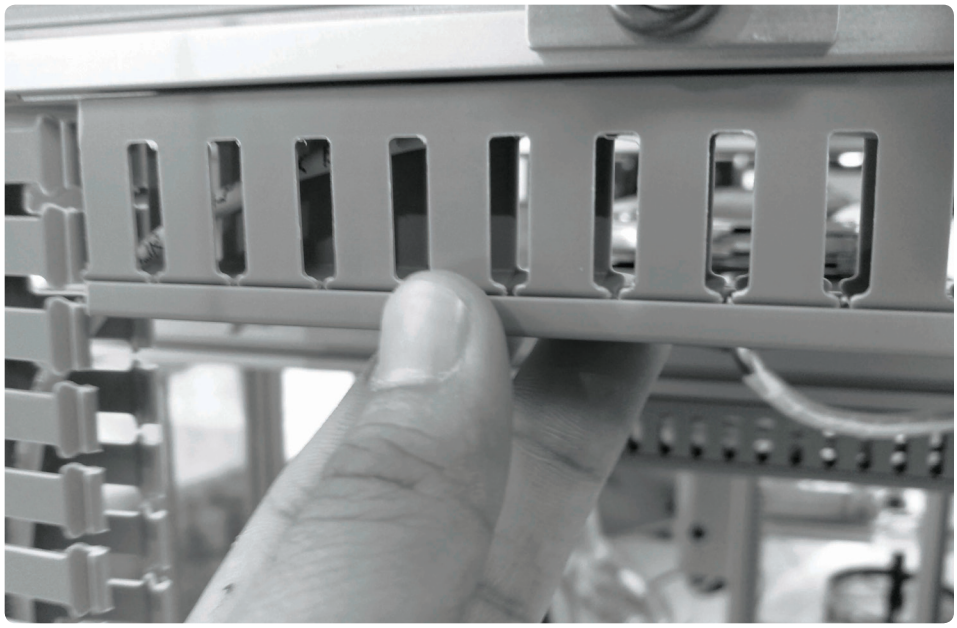
M4

Connect the filament detection limit switch



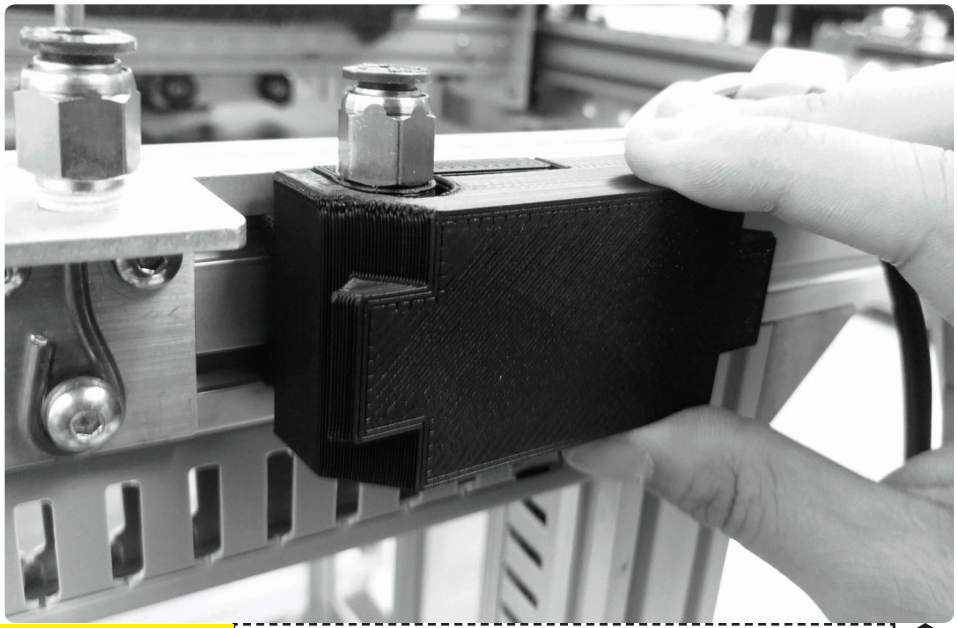
M5

Route limit switch wire through panduits and cover as you go



M6

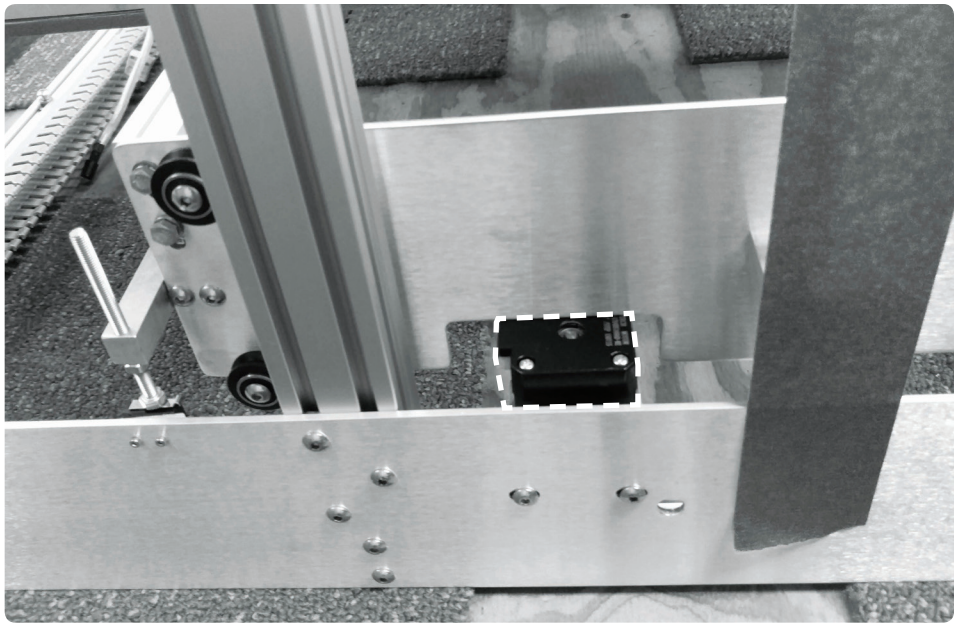
Place cover over filament detection bracket



N : BED PLATE

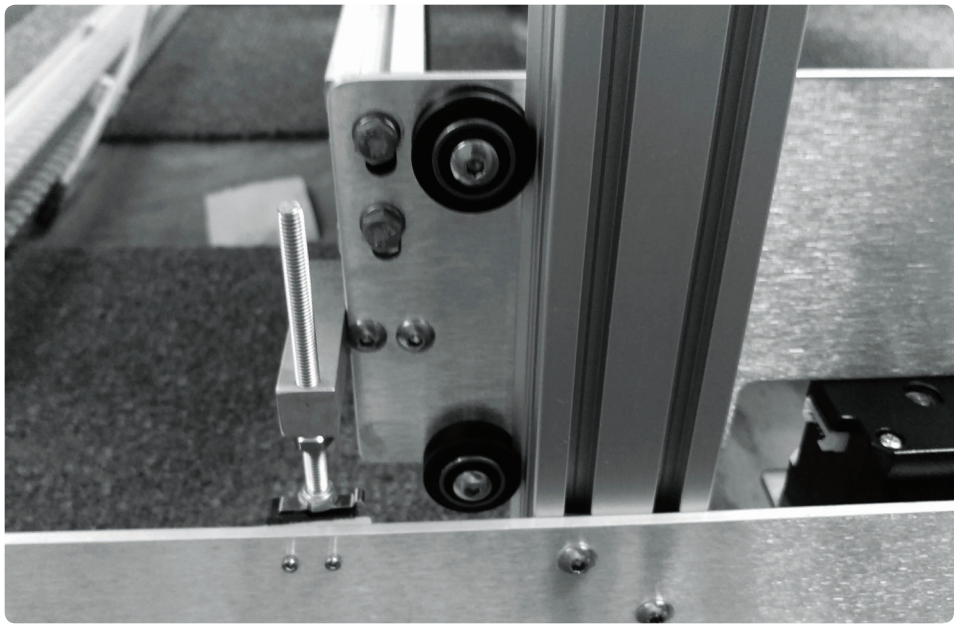
N1

Place the bed frame assembly inside the Gigabot® and rest it on top of the Z motors



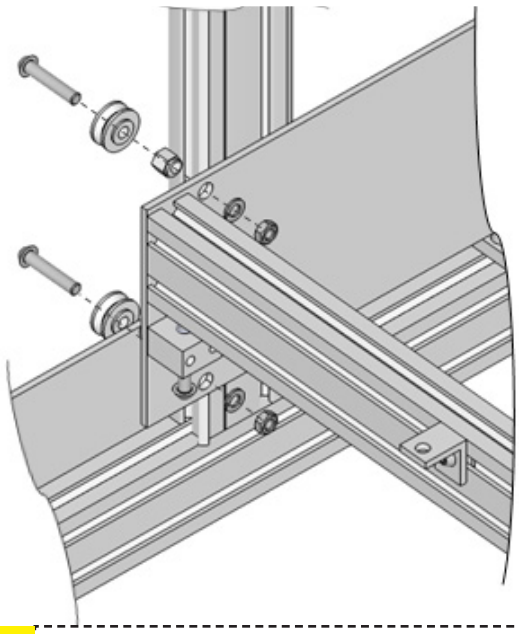
N2

Align the back wheels with the Z upright rails



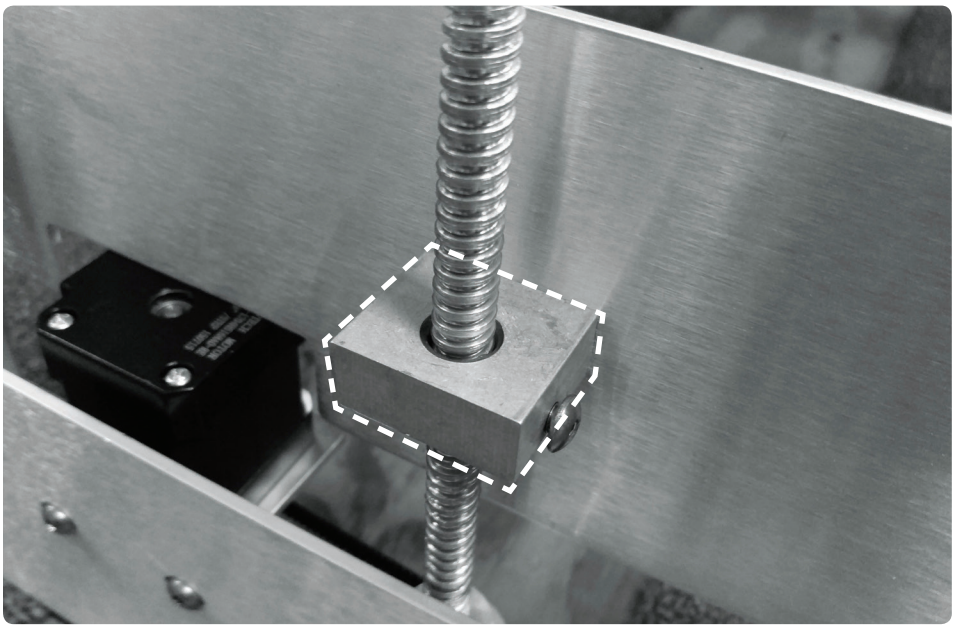
N3

Add front bed wheels as shown. Use a M5x30mm BHCS, V-groove wheel, and eccentric spacer fastened to the bed frame and a lock washer and M5 hex nut on the other side.



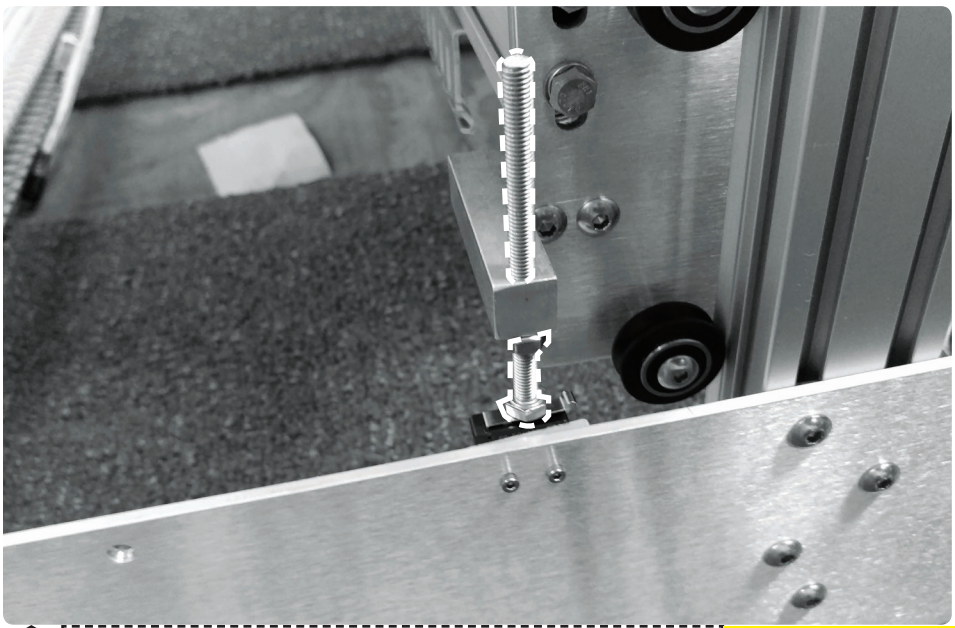
N4

Once wheels are installed, use 8mm wrench to turn eccentric spacers and tighten bed frame to Z uprights



N5

Mount the nut cup assemblies to the bed frame side plates using 2 M5x8mm BHCS each

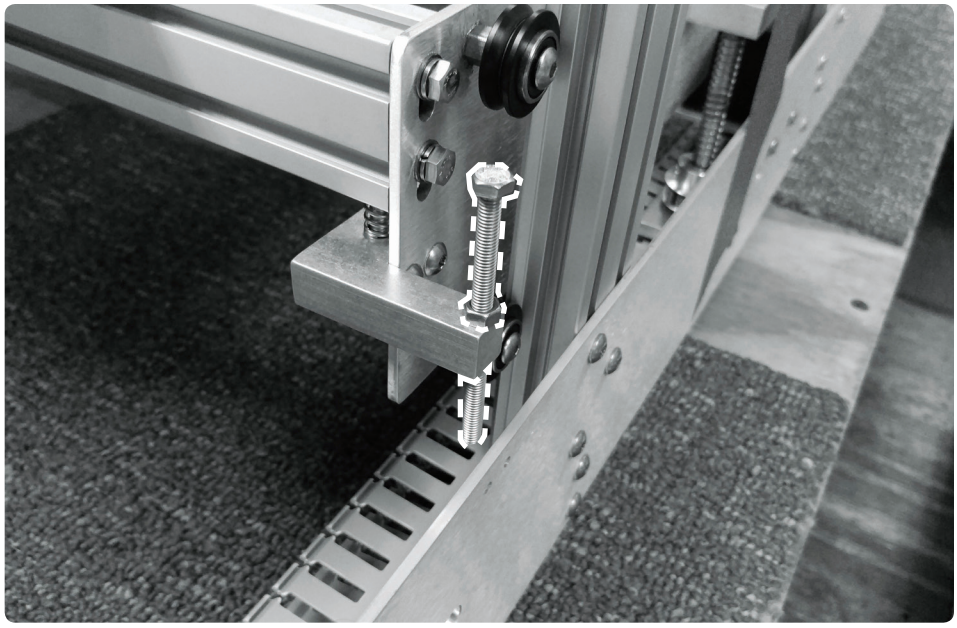


N6

Adjust the lower Z limit switch leveling block so that the M5x70 hex head is actuating the lower Z limit switch. Tighten the hex nut to keep the screw in place

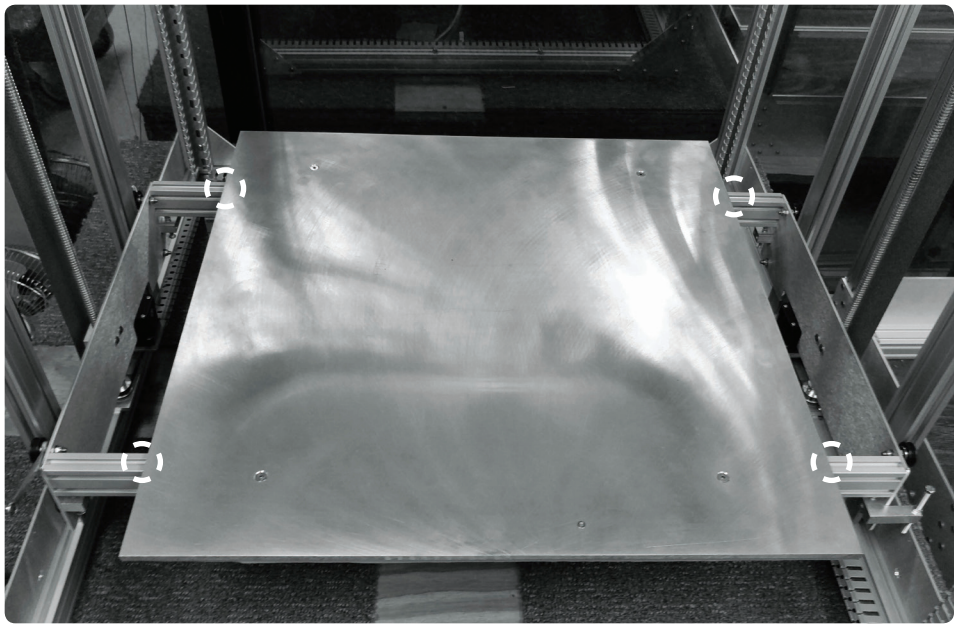
N7

The upper Z limit switch leveling block should have a M5x70mm hex head screw as well. For now, you will want this long enough so that when you first home the bed the screw will activate the Z limit switch before crashing into the hot ends



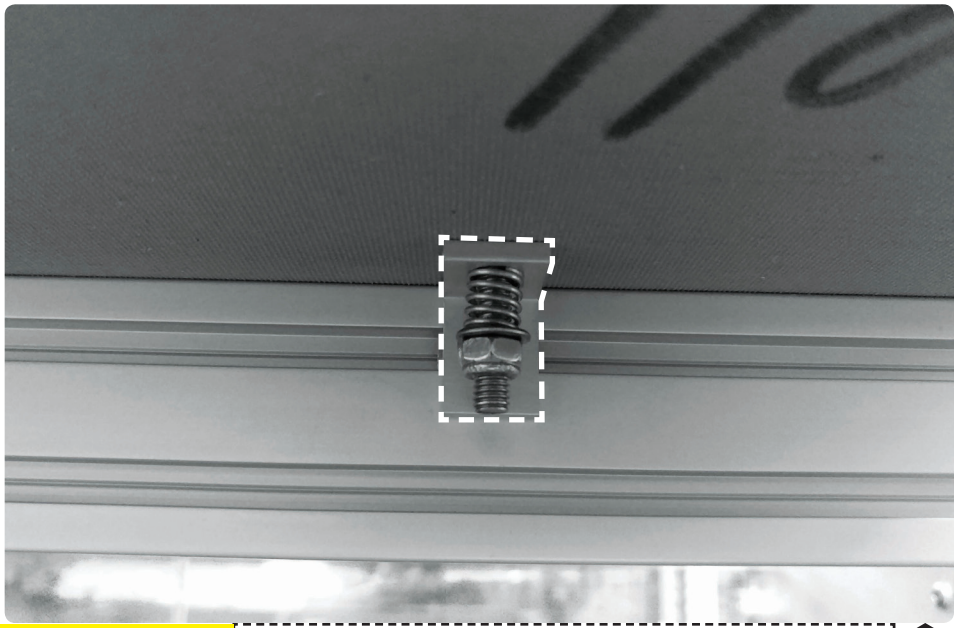
N8

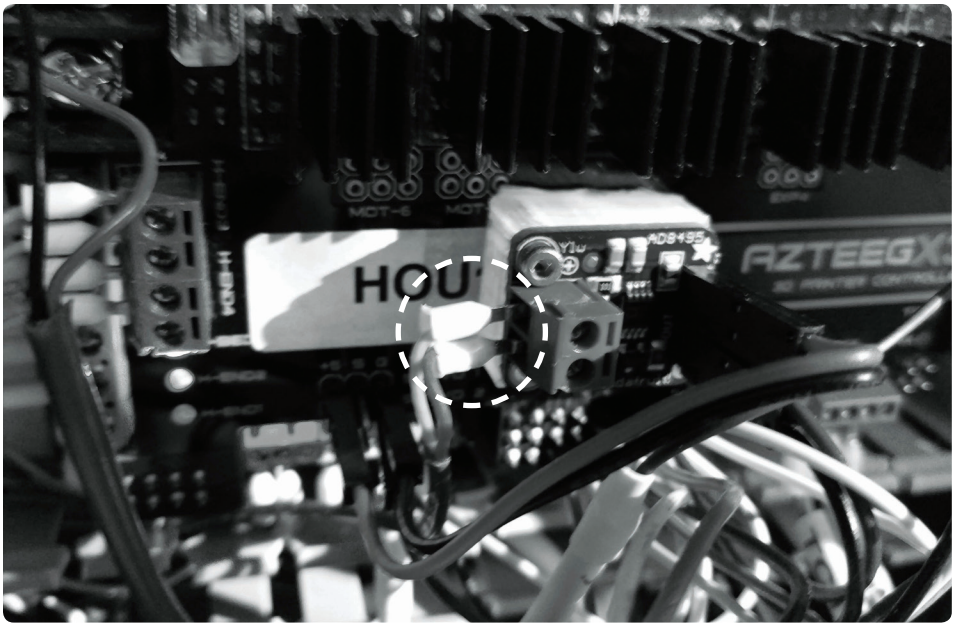
From the outside of each side plate, measure 3 3/4” to the inside and mark each cross rail. Use these 4 marks to place the bed correctly on the frame. Be careful to orient it so that the heater wires are pointing towards the back



N9

Align the bed plate brackets on the bed cross rails and secure the bed with 4 M5x35mm FHCS. These should be fastened with an M5 washer, spring, another washer, and an M5 lock nut. You will need 4 total sets of these

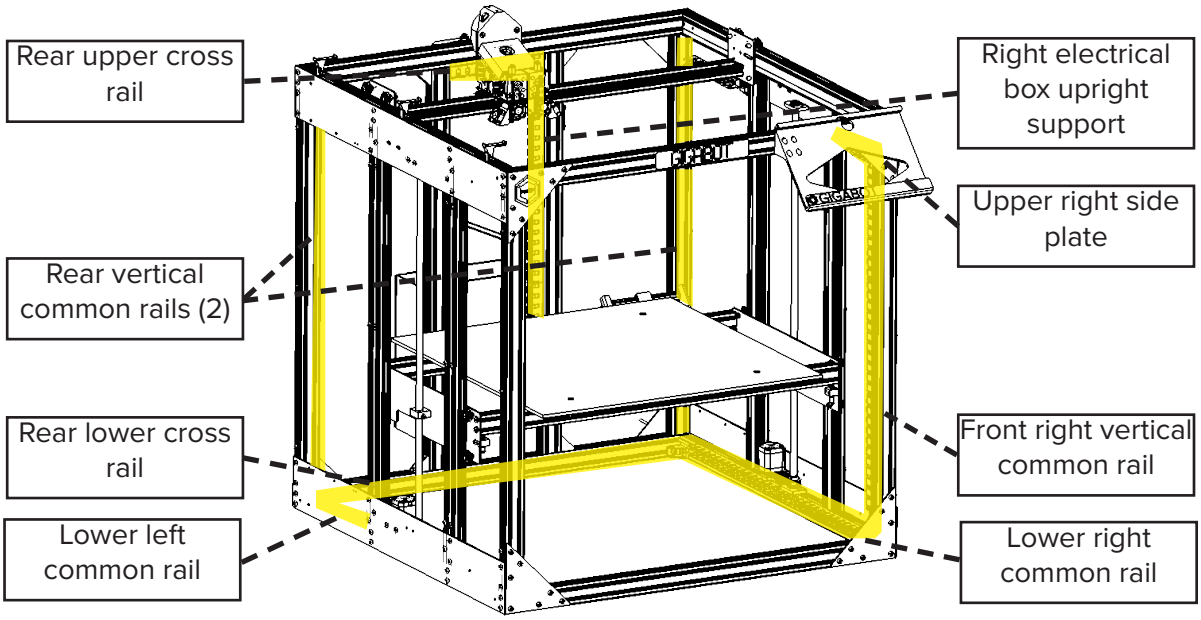


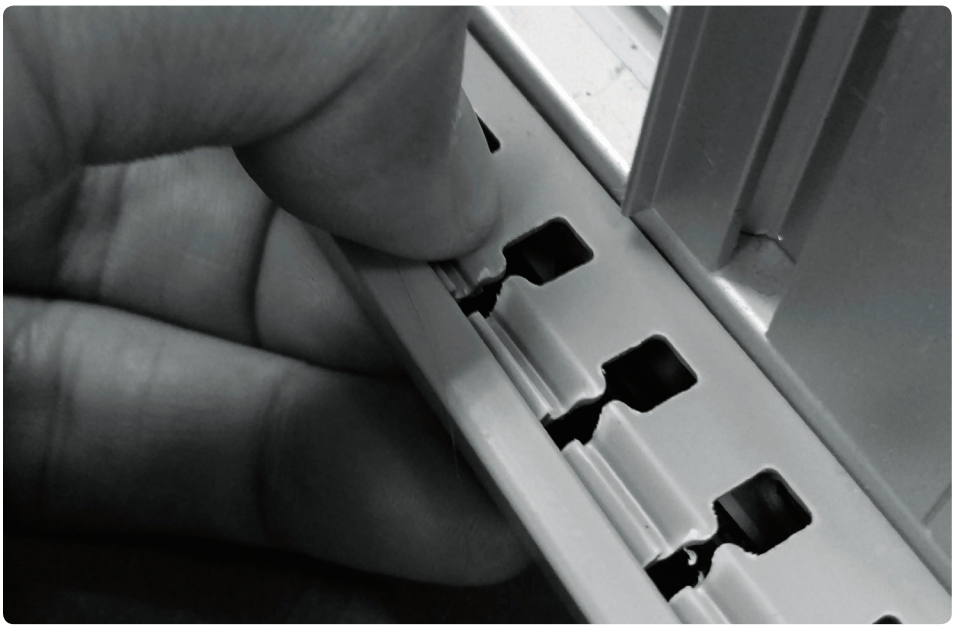


N10

Route the heated bed wire through a grommet in the electrical box and connect it to the Azteeg according to the wiring diagram

0 : FINISHING TOUCHES





O2

Use the above diagram for all of the Panduit locations. Check them all to make sure each one is covered. You can place covers by sliding them on, snapping them on, or squeezing the Panduit walls in to press it on slowly

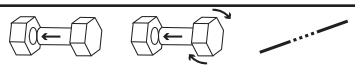
O3

To install center side panels, use side panel hole spacing to approximate the locations of each T-nut. Press 6 post assembly T-nuts into their approximate locations in the Z upright rails

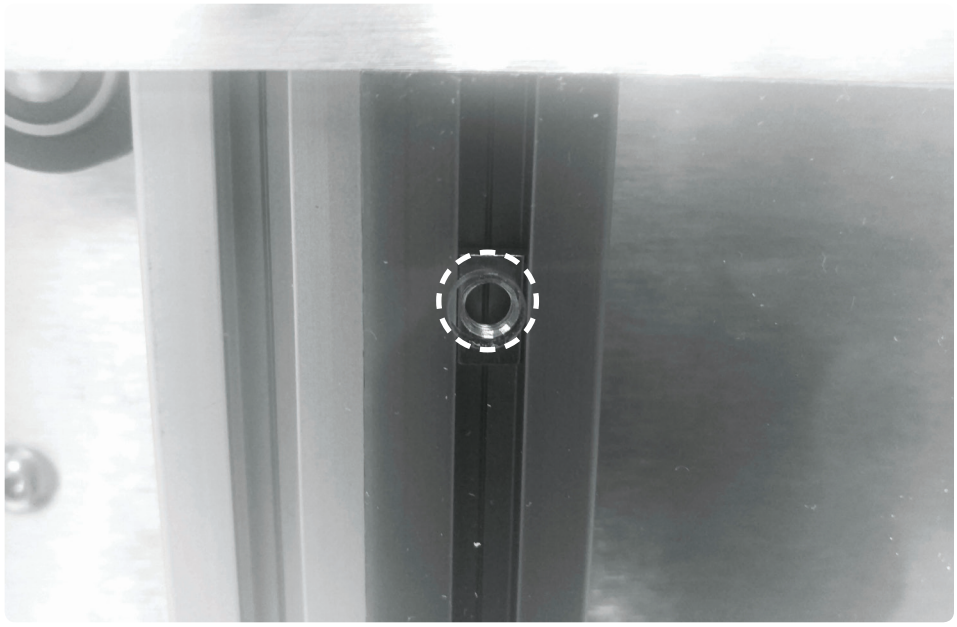
04

Peel back the protective film from the side panels

05

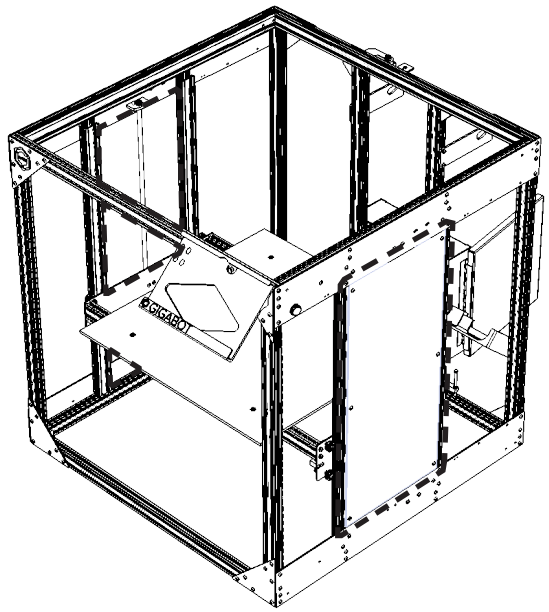


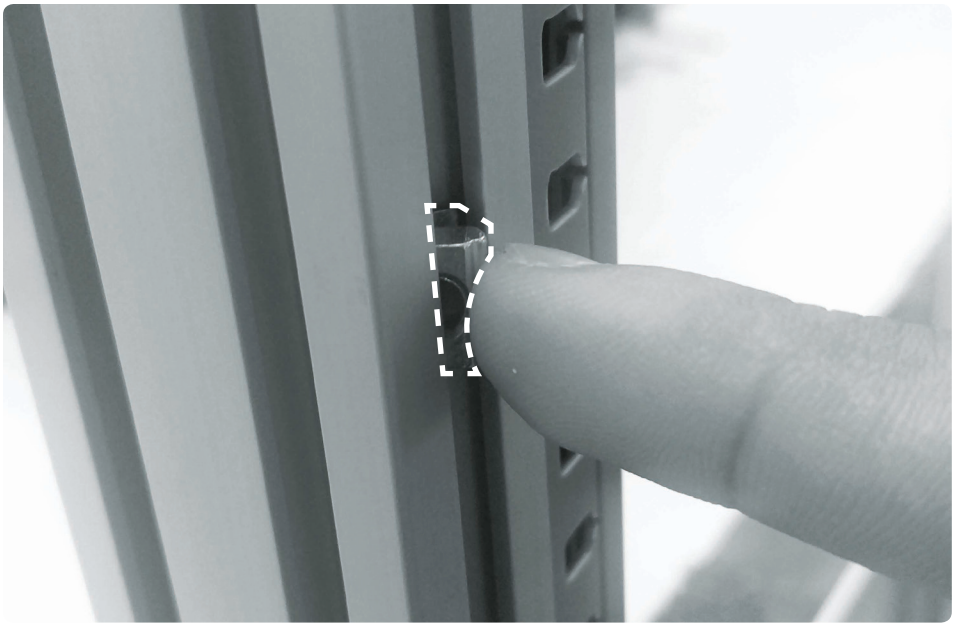
Align the holes with the T-nuts and fasten with 6 M5x8mm BHCS



06

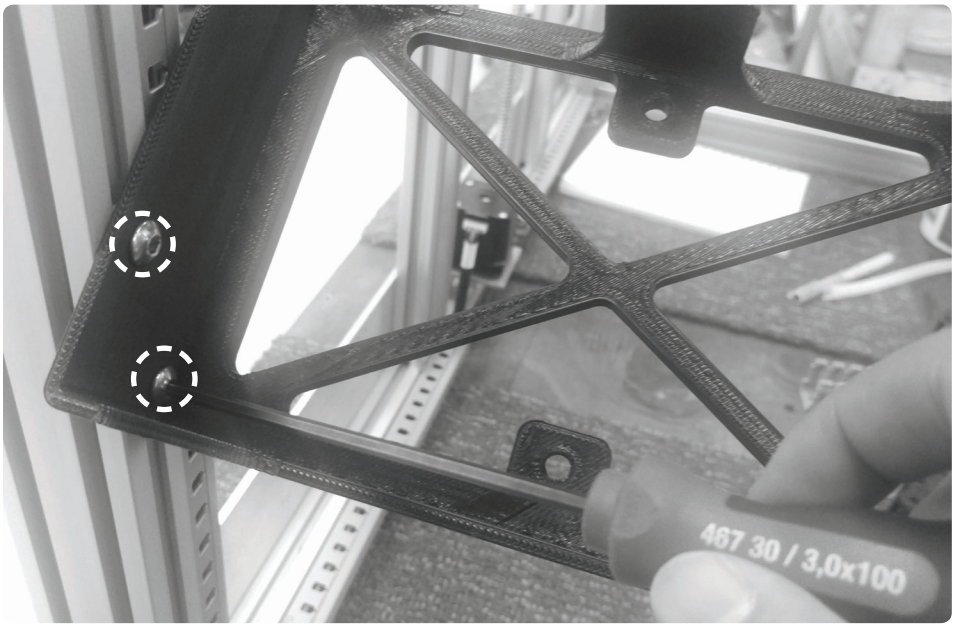
Refer to this diagram for the center side panel locations. A retrofit kit is available should you wish to install side panels to completely cover the left and right sides of the Gigabot®





07

Insert 2 post assembly T-nuts to the rear right vertical common rail for the Viki holder



08

Align the holes with the T-nuts and fasten 2 M5x12mm BHCS with a 3mm Allen Key

09

To install the Gigabot® name plate, and mark 12 7/8” from both outside edges of the frame towards the middle. Use double sided tape to mount the name plate over the marks (name plate should cover them)

O10

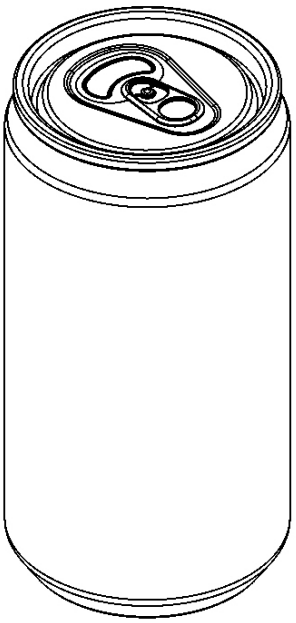
To install the remaining Z cable carrier, you must power on the Gigabot® and move the bed up. Turn off the Gigabot® and route the heated bed wires through the cable carrier. Mount the loose end to the bed rail bracket with 2 M3x25mm BHCS

DOUBLE-CHECK YOUR WORK :

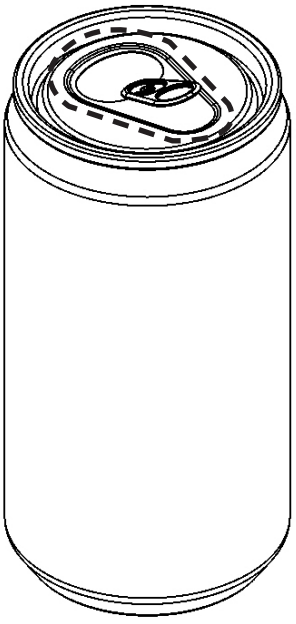
Please look over your completed kit and make sure everything has been assembled correctly. If you have further questions, please refer to the various video instructions for related retrofit kits (search “re3D Tech” on YouTube), browse through our Wiki, or contact us through the references listed in the conclusion.

NOW IS A GOOD STOPPING POINT...

Acquire beverage of your choice



Actuate pull tab



Consume

CONCLUSION

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:

WIKI : wiki.re3d.org

EMAIL : support@re3d.org

PHONE : 512-730-0033

Happy printing!

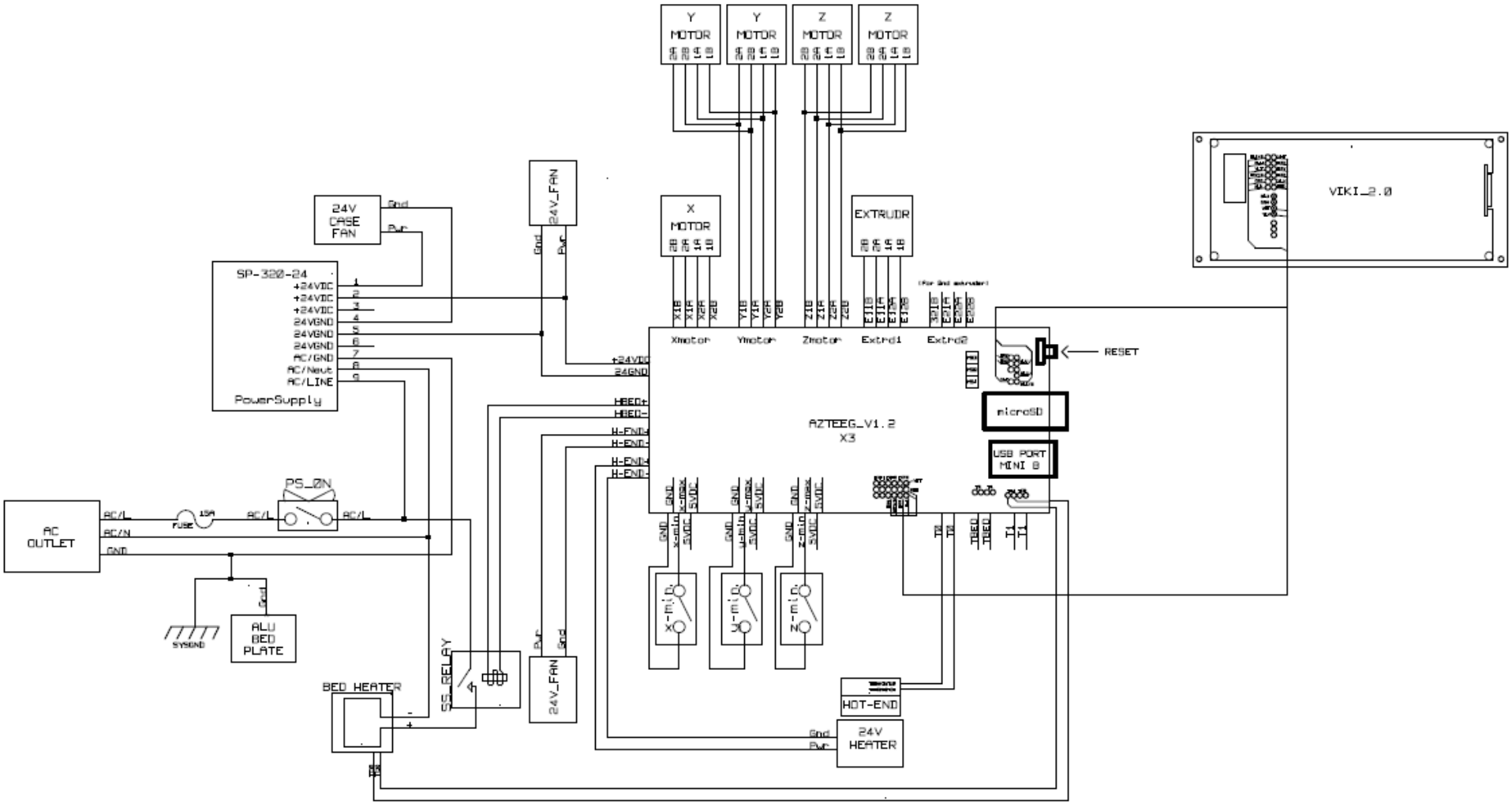
THINK BIG, PRINT HUGE!

From the re:3D Inc.® team

REFERENCES & DOCUMENTS

GIGABOT® UNASSEMBLED (COMPLETE DIY KIT) MANUAL PDF :	http://wiki.re3d.org
re:3D Inc.® YouTube CHANNEL :	https://www.youtube.com/user/GigaBot3D
GIGABOT® AZTEEG WIRING DIAGRAM :	http://wiki.re3d.org
GIGABOT® TROLLEY WIRING DIAGRAM :	http://wiki.re3d.org
re:3D Inc.® MODELS AND PRINTED PARTS :	https://sketchfab.com/re3d

GENERAL GIGABOT®
AZTEEG WIRING



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