



INTRODUCTION

THANK YOU FOR PURCHASING THE GIGABOT® TROLLEY & CABLE CARRIER RETROFIT KIT FROM re:3D Inc.®!

This upgrade will let you install the third generation trolley as well as cable carriers on your Gigabot®. You will find that this new hot end and extruder configuration can achieve great, reliable print quality with an even wider range of possible print materials. Those with dual extruder trolleys can enjoy the benefits of multi-color, or multi-material prints, or other types of print jobs that only dual extruder configurations can achieve. Please note that these instructions include assembly for both the single and dual extruder trolleys.

The cable carriers are helpful in cable management, keeping all of the machine's wiring organized while also maximizing their useful life. Please be very attentive in how all cables are routed: improper routing can introduce unnecessary resistance to cables during operation, eventually leading to fatigue and then failure.

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, please search for "re3D Tech" on YouTube and find our "Gigabot® Trolley & Cable Carrier" video.

LEGALESE

READ INSTRUCTIONS: All the safety and operating instructions should be read before the printer is operated.

RETAIN INSTRUCTIONS: The safety and operating instructions should be retained for future reference. **HEED WARNINGS:** All warnings on the product and in the operating instructions should be adhered to. **FOLLOW INSTRUCTIONS:** All operating and use instructions should be followed.

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

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

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

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

VENTILATION: Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

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

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

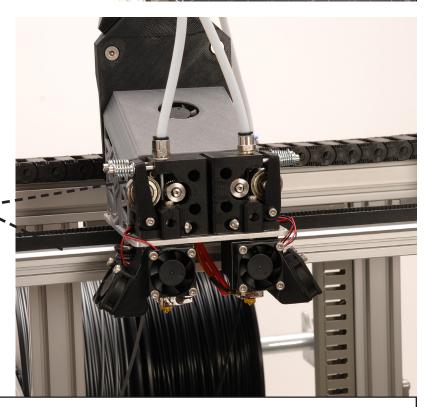
X axis cable carriers

Y axis cable carriers

Z axis cable carriers

New cable carriers will be added for better cable management.

Bridge rail will be reoriented to accomodate the new Gigabot® trolley design. The trolley will have 1 or 2 extruders depending on the kit you have purchased.



*Full Gigabot® rendering is for illustrative purposes only and may not reflect the final construction of your Gigabot®

LEGEND

HOME Z AXIS



REMOVE



EVENLY SPACE



LOCATE/IDENTIFY



Objects of importance are highlighted in yellow

DISCONNECT



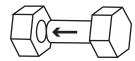
PLACE



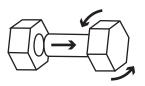
CONNECT



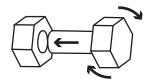
INSERT



UNFASTEN/UNSCREW



FASTEN/SCREW



ROUTE

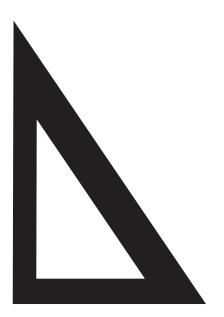


ALIGN



BEFORE YOU BUILD

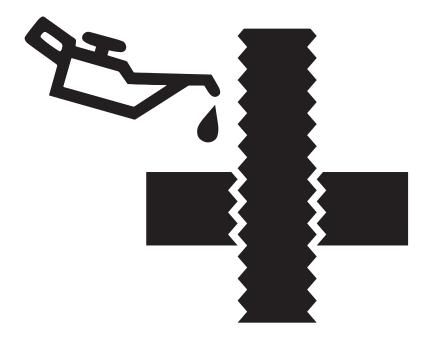
IT'S HIP TO BE SQUARE!



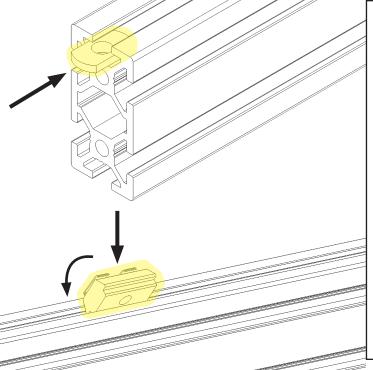
When assembling the Gigabot®, it is essential to work on a flat surface and to carefully square perpendicular parts as much as possible. This is especially important while assembling the side plates, Z-axis uprights and vertical common rails, bed frame, upper and lower cross rails, and bridge assembly. Use large clamps to help square up frames if needed.

Make good use of grease during assembly. These will help hold the eccentric spacers when installing the V-groove wheels and also keep them from damaging the side plates or end trucks during adjustment. Likewise, it will ensure smooth, quiet operation when applied the the Z-axis ACME threaded rods.

THE USES OF GREASE



T-NUTS, HOW DO THEY WORK?



T-nuts are an essential part of assembling the Gigabot®. These are inserted into the aluminum extrusion in order to fasten parts to the frame.

Post assembly T-nuts are also used. These hold their positions well without sliding around, and are useful when installing retrofits.

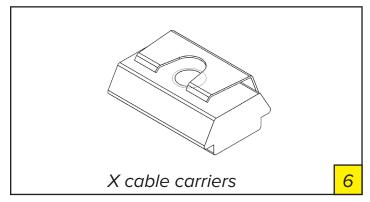
MEASURING AND MARKING

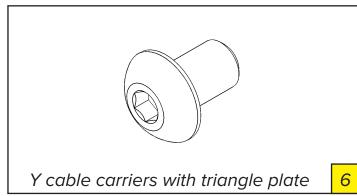
There are parts of the instructions that suggest marking spots on the Gigabot® to properly place parts. When marking, be sure to only use a pencil--using a permanent marker will leave unsightly marks on the metal!

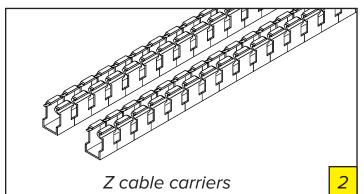


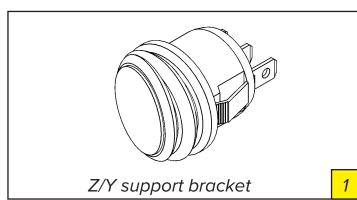
BUILD GUIDE

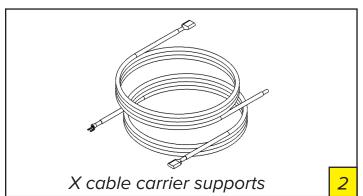
BILL OF MATERIALS

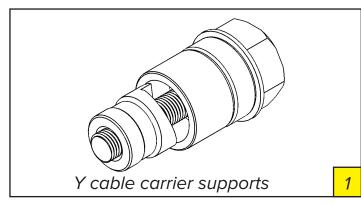


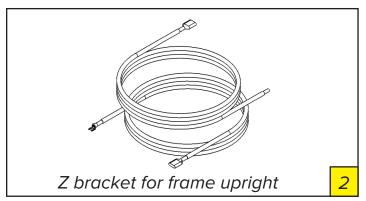




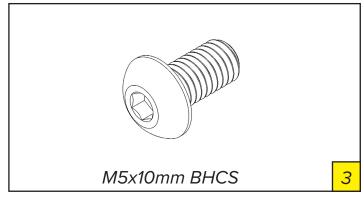


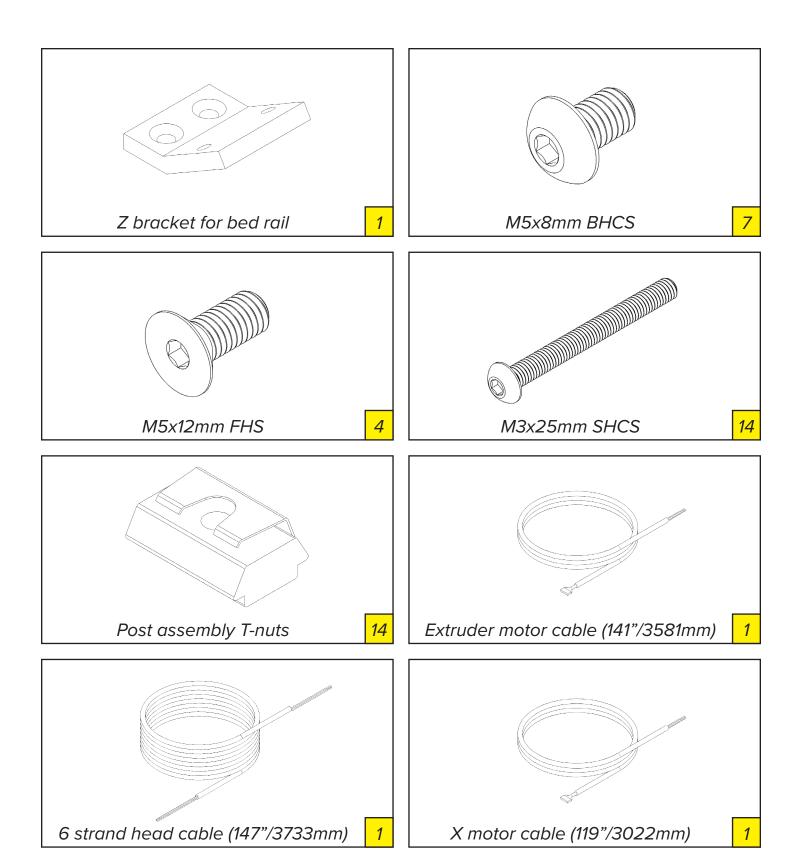




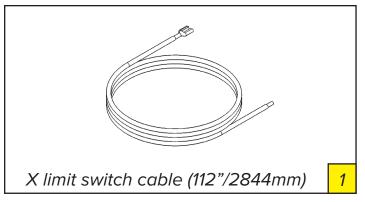


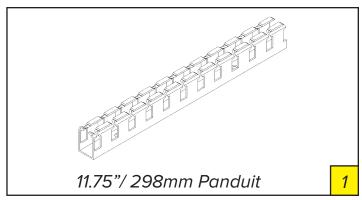
re:3D Inc.®

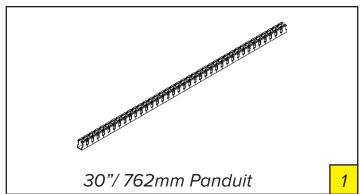


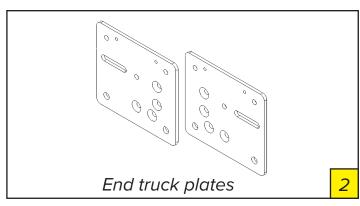


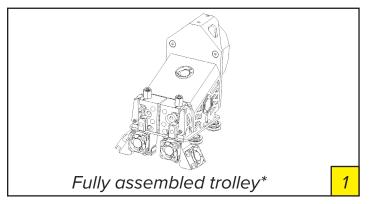
This kit also includes an amplifier breakout board that will be the new heated bed connections to the Azteeg

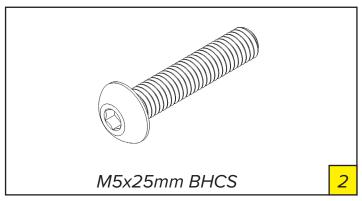












*Single extruder trolley will be the same, except with a one less each of the extruder, hot end, and thermocouple

TOOLS YOU'LL NEED

- 3MM, 2.5MM, 2MM, AND 1.5MM ALLEN KEY
- NEEDLE NOSE PLIERS
- SMALL FLAT HEAD SCREWDRIVER
- SMALL PHILLIPS HEAD SCREWDRIVER

A: REMOVAL AND REPLACEMENT







Home the bed and unload any filament from the extruder



WARNING

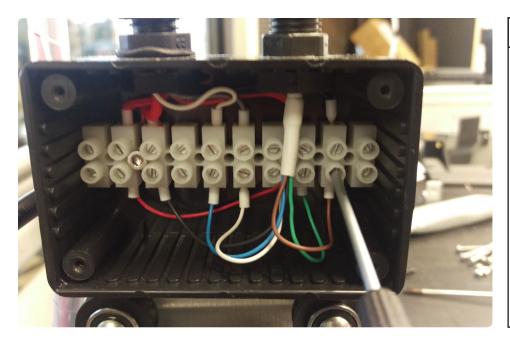
PLEASE be sure that you have turned off and unplugged your Gigabot before attempting any modifications!





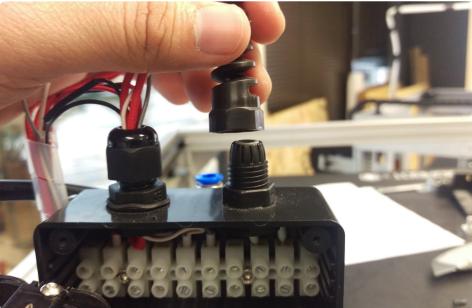
Disconnect the filament guide tube





A4

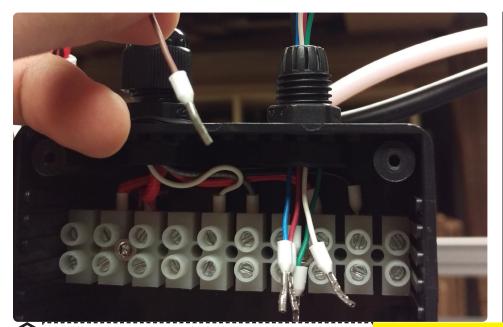
Open terminal box for access to head cable wires; leave open



A5 (□→Ú),



Loosen and remove head cable grommet and guide



A6



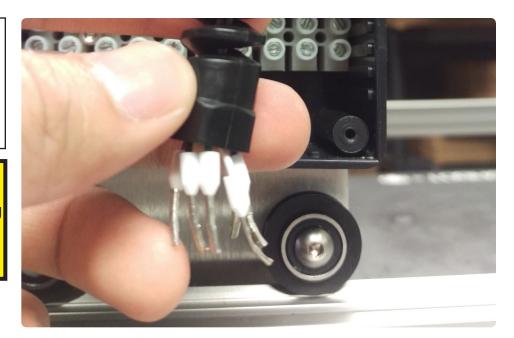
Remove head cable wires individually

A7



Disconnect the lower terminals to remove head cable

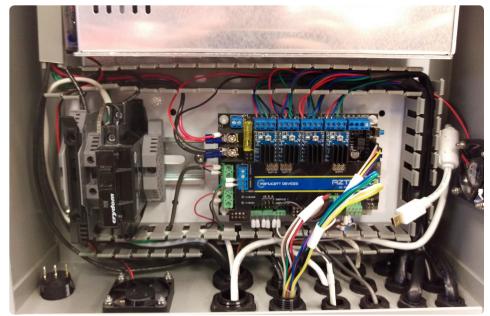
Refer to terminal box wiring schematic if needed



A8



When accessing the
electrical box, remove
all of the Panduit covers
and disconnect the USB
connection from the Azteeg
controller board

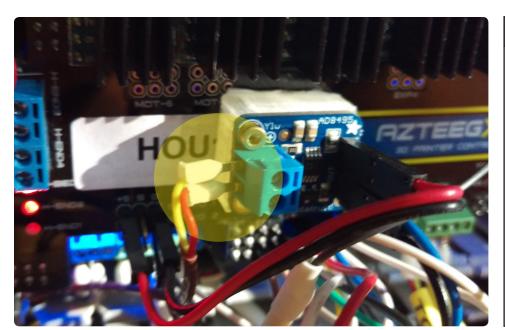


A9



While in the electrical box, use double sided tape to attach the 3D printed amplifier breakout mount and attach the amplifier breakout board

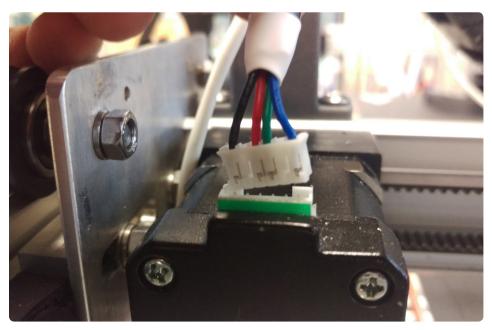








Connect the heated bed wires to the terminals in the amplifier breakout board as specified in the wiring diagram

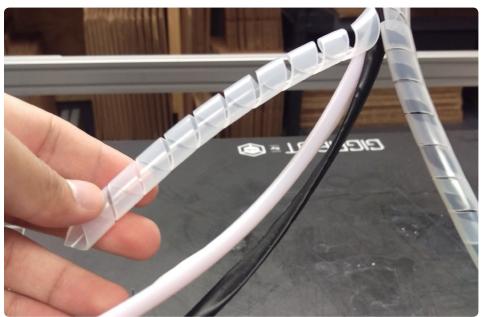


A11



Also disconnect X motor wires from X motor and X limit switch wires from X limit switch

Snip cable ties if needed



A12



Unwind spiral wrap from cables

A13

Hang these cables over the back cross rail for now—it is suggested that the other ends be kept connected to the electrical box for reference when wiring new extended cables



A14



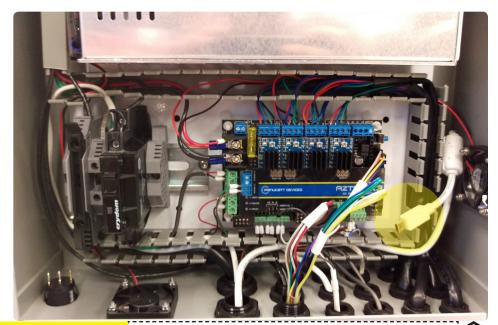
If you know exactly where to route the new cables, you may opt to remove the existing cables altogether



A15



If opting to remove existing cables, uncover the Panduits in the electrical box and unplug the USB connection, as stated in the "Rewiring to Azteeg controller board" section









Uncover rear left vertical **Panduit**



A17



Remove cables



A18 ()



Unscrew and remove Panduit with 3mm Allen Key







Place new deep and wide Panduit and fasten



A20



Remove cover on bottom rear Panduit



A21

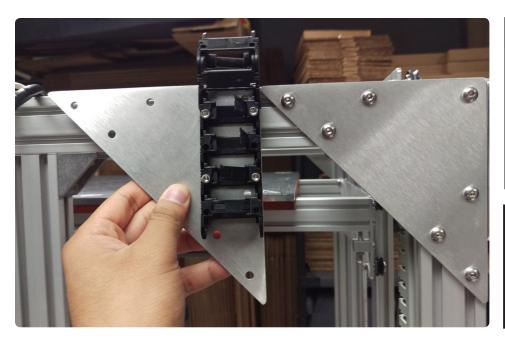


- - - - >

Under the bed, remove the Panduit cover in order to reroute the heated bed wires to the other side

If needed, it's possible to reposition Panduit by loosening screws









Remove the existing back left corner plate and replace with the custom corner plate with Y cable tray mount

Y cable tray will already be attached and can be left loose until supports are installed

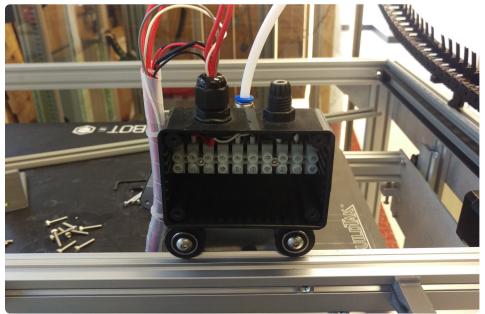
B: TROLLEY REPLACEMENT





*B*1

Lower the bed slightly for better access when unmounting bridge rail



В2

All wires connecting to X motor, X limit switch, and trolley should have already been disconnected. Double check that there is nothing still connected to the trolley and bridge rail assembly

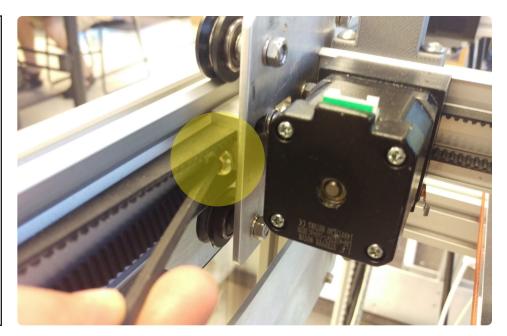


B3 □ □ □

Loosen the Y-Axis belt tension blocks with 8mm wrench B4



Loosen the belts on both sides with 4mm Allen Key. Once the belt is loose, unlatch the belt from the pulleys



*B*5

After removing the top
4 roller wheels, you can
maneuver the X-Axis
assembly so that the
bottom wheels rest on the
top of the Y-rails. This is just
for easy access for the next
steps

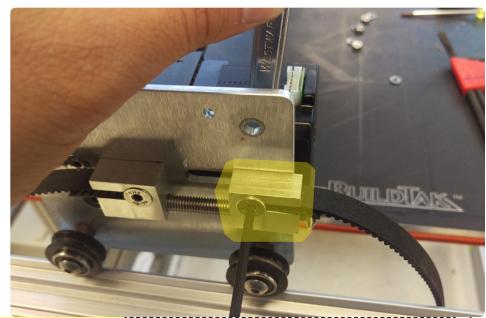


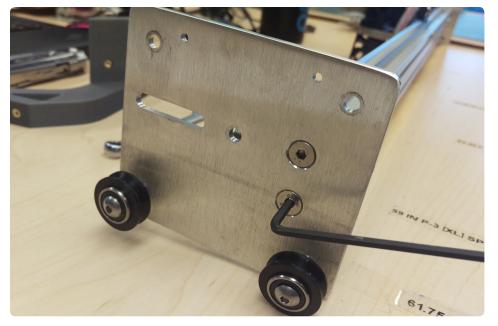
*B*6

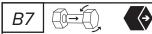




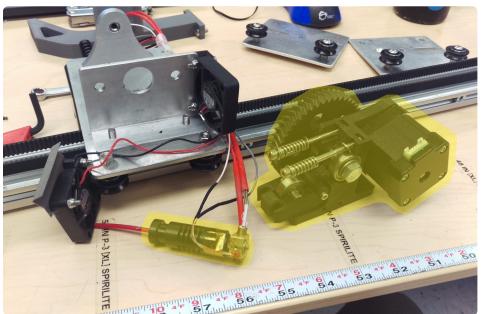
Unbolt and remove the belt tensioners from the endtruck plates using 8mm wrench and 3mm Allen Key

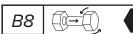




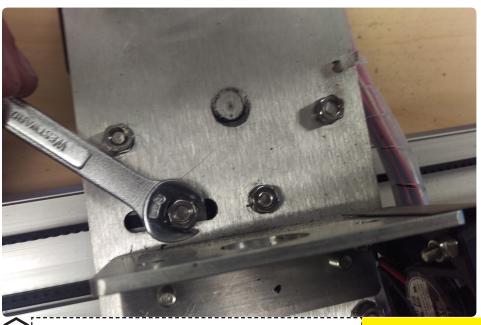


Unbolt and remove both endtruck plates from the bridge rail





Remove the hot end and extruder from trolley by loosening M3 SHCS and then the M5 FHCS with Allen Keys



B9 (□→ (□)

(3)

Loosen the X axis belt tensioner with 8mm wrench and 3mm Allen Key and free belt from the idler pulley





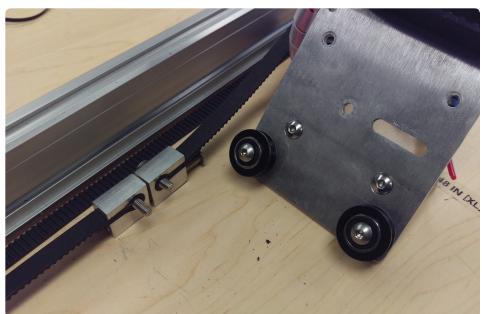
Remove one set of the trolley plate wheels to unmount the entire trolley from the bridge rail







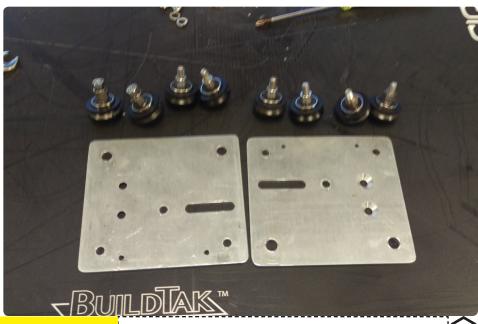
Remove the X tensioning blocks from the trolley and set the trolley aside. At this point, you no longer need the existing trolley

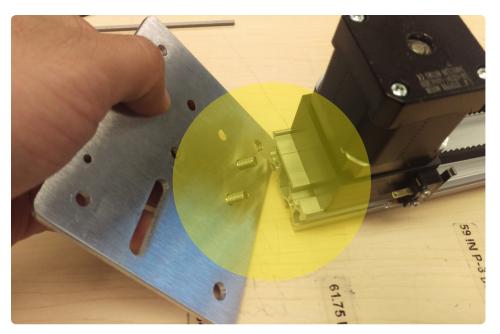






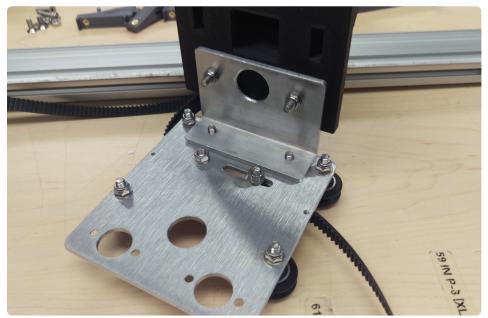
Remove the wheels from the old endtruck plates. The wheels and their hardware will be reused







Attach new left end truck in new orientation as shown with M5x12 FHCS and 3mm Allen Key

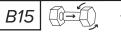




Remove cover on new

pre-assembled trolley and unmount the extruder(s) using a 2.5mm Allen Key





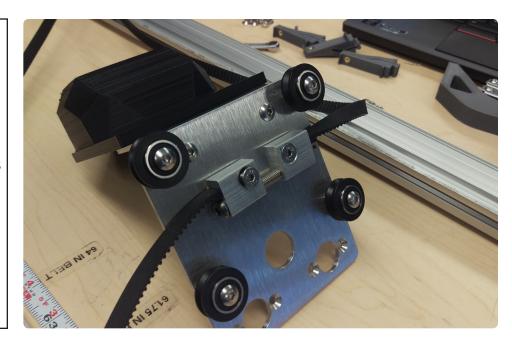
Remove the front wheels of the trolley

Gigabot® Trolley & Cable Carrier

re:3D Inc.®



Attach X tensioning blocks to new trolley



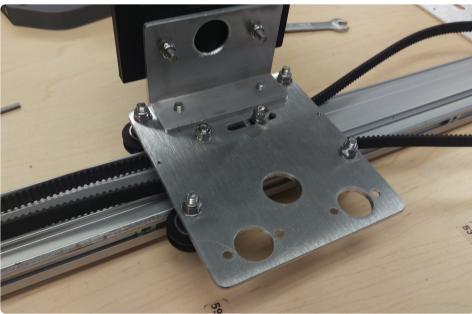
B17





Mount to bridge rail and reattach front wheels to hold in place

Be sure to keep belt in between the front and back wheels



B18

Loop X belt over the pulley





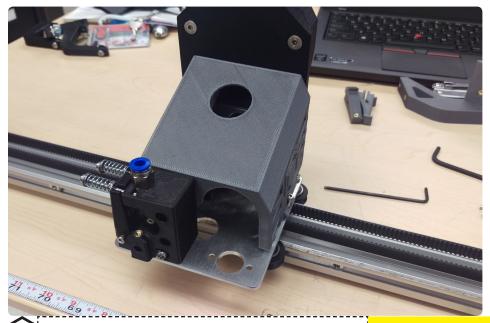


Tighten eccentric spacers on back wheels





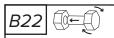
Tension the X belt by tightening tensioning screw with 4mm Allen Key







Reattach the extruder(s), route wires to back of trolley, and replace the cover



Attach new right end truck in new orientation with M5x12 FHCS and 3mm Allen Key

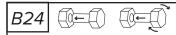
On a flat surface, level end trucks and full tighten to bridge rail





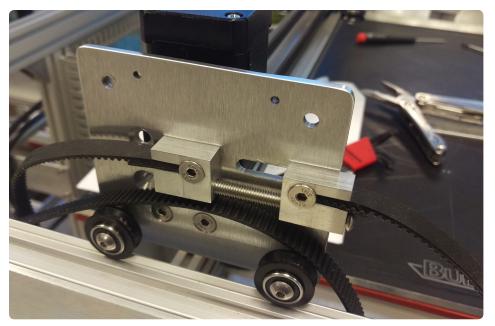
Before fully tightening end trucks, put the assembly on a flat surface to make sure that both ends are level with each other. Once level, fully tighten

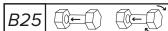




Replace the bottom 4 roller wheels and tensioners on the two endtrucks, so that the bridge rail may sit on top of the Gigabot frame

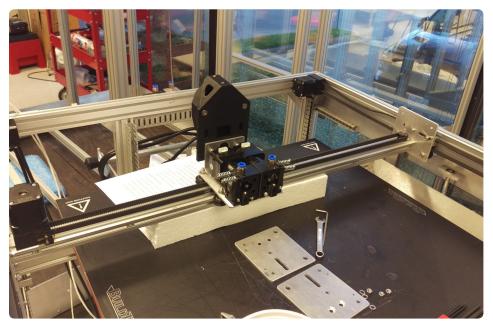






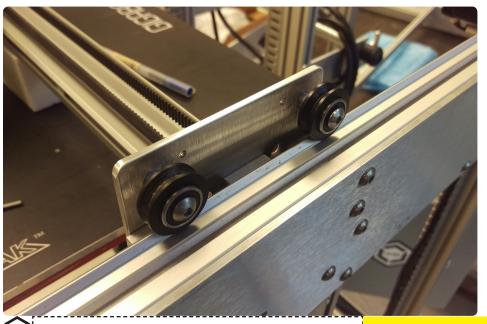
Replace the Y-axis belt tensioning blocks to end trucks using 8mm wrench and 3mm Allen Key, keeping them untensioned

For next step, it may help to prop bridge up with something while working





Maneuver the bridge assembly and replace the top 4 roller wheels on the two endtrucks in order to completely fasten the bridge rail assembly to the Y-axis rails.

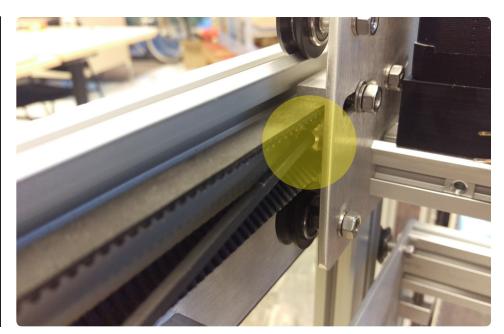


B27 (€_()

Adjust the bottom row eccentric spacers with a wrench in order to tighten end truck wheels onto the Y-axis rails

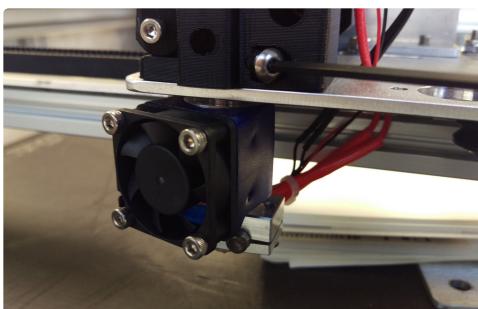


Be sure to fully tension the Y-Axis belts



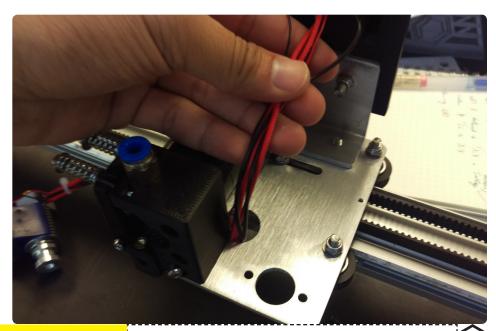
B29 () () ()

Mount hotend by inserting into extruder bottom and tightening set screw with 2.5mm Allen Key.



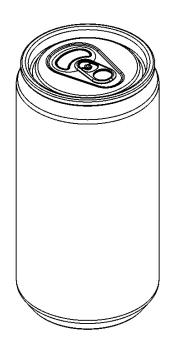
B30 ====

Route the wires into the back of the trolley. You may need to remove the extruder motor cover.

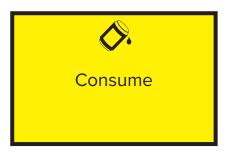


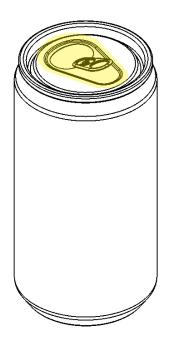
NOW IS A GOOD STOPPING POINT...

Acquire beverage of your choice



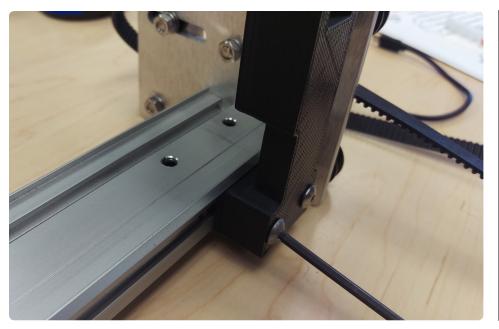
Actuate pull tab

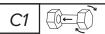




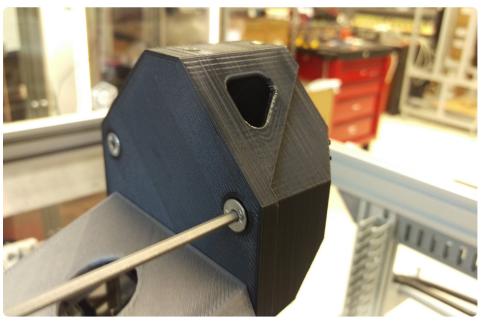
C:X&Y CABLE CARRIERS







Fasten the X/Y cable tray support bracket to the bridge rail near the X motor with 2 Post assembly T-nuts and 2 M5x25 BHCS (X motor is already included at this point)

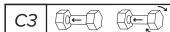




Loosely fasten trolley back plate with X cable tray bracket with M5x12mm FHCS

Close and fully tighten after wiring necessary cables



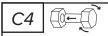


Insert X cable carrier supports to bridge rail with Post assembly T-nuts, 1 M5x8 BHCS and 1 M5x10 BHCS each

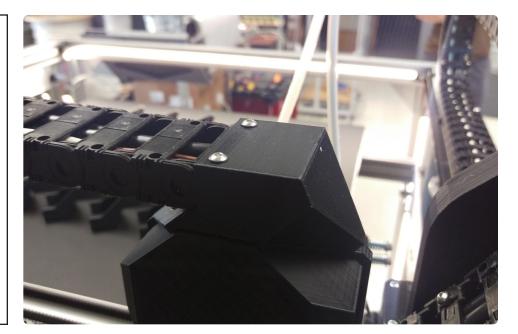
Final spacing of supports will be done later

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Fasten X cable tray to the X bracket on terminal box back plate with 2 x M3x25 BHCS



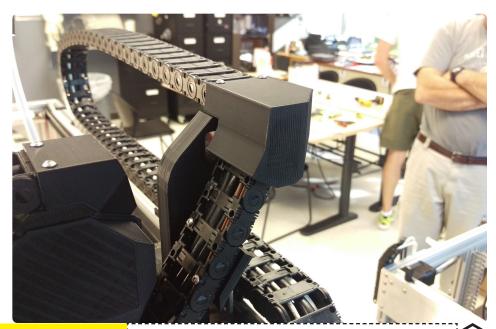
C5 •...• (F)

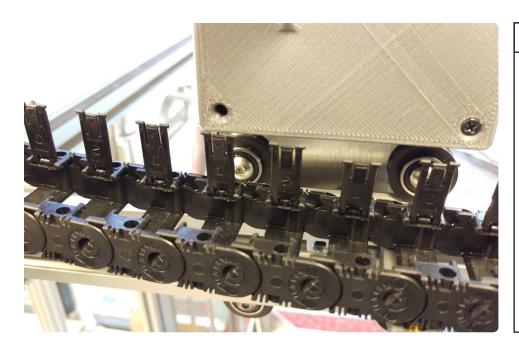
Evenly space and insert 3 snap-in Y cable tray supports



C6 (F)

Fasten X & Y cable carriers to X/Y bracket with M3x25mm BHCS. Fasten the last Y cable carrier link to the bracket. Let two X cable carrier links go past the X/Y bracket and fasten.





C7

Make sure all cable carrier links are open

D: Z CABLE CARRIER & HEATED BED WIRING



WARNING

PLEASE be sure that you have turned off and unplugged your Gigabot before attempting any modifications!



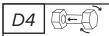


Use 3mm Allen Key to fasten new Panduit to the inside of the right rear support using 2 x post assembly T-nuts and 2 x M5x8mm BHCS





Similarly, use 3mm Allen
Key to fasten end bracket
of Z cable tray to right rear
support, parallel to top of
electrical box with 2 x post
assembly T-nuts and 2 x
M5x12mm FHS. Fasten Z
cable carrier



Use 3mm Allen Key to fasten other cable tray end bracket to rear bed rail with 2 x post assembly T-nuts and 2 x M5x12mm FHS. Fasten other end of Z cable carrier

This view is seen from behind the Gigabot®



Starting at the end of the cable tray towards the electrical box, route the heated bed wire through the cable tray, closing each link in succession until reaching the rear bed rail



D6

Check cable carrier alignment and reposition bed rail Z bracket if needed





D7 =---

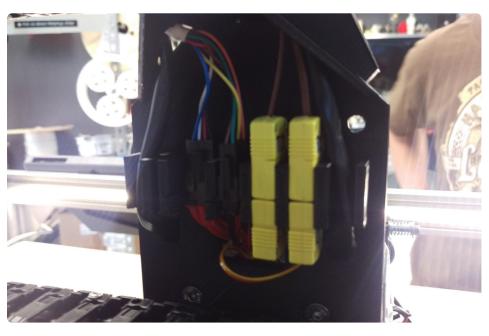
Make sure the heated bed cable is routed carefully through the Panduits and replace the Panduit covers

E:X&YWIRING



WARNING

PLEASE be sure that you have turned off and unplugged your Gigabot before attempting any modifications!









Remove dual extruder trolley back cover and connect extruder motors, thermocouples, and head cable to corresponding terminals in trolley

Single extruder has 3 total cables, while dual has 5

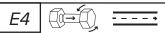


E3 ====

Carefully placing the wires parallel next to each other, route them through the X cable tray to the X/Y bracket

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It might help to unmount the cable carrier from trolley bracket and route wires through first 5 or so links, and then remount to trolley bracket

It may also help to close some links intermittently to keep wires within cable carriers



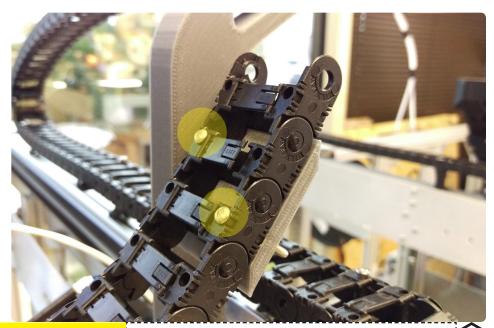
*E*5

Finish closing links through X cable carrier, but leave last 5 or 6 links open to allow routing of X motor and X limit switch wires



E6 | ()=[

Let last 2 cable carrier links hang off of end of X support shelf on X/Y support bracket and fasten with 2 x M3x25mm BHCS





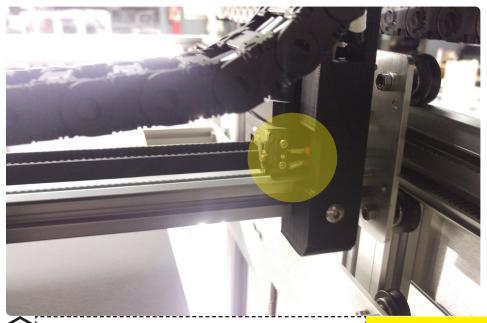


On this end, let cable carrier run at an angle until reaching the plane of the X suports. At this joint, fasten cable carrier to X support with M3x25 BHCS



E8 •...• (E)

Space middle support so that links remain taut and fasten with M3x25mm BHCS



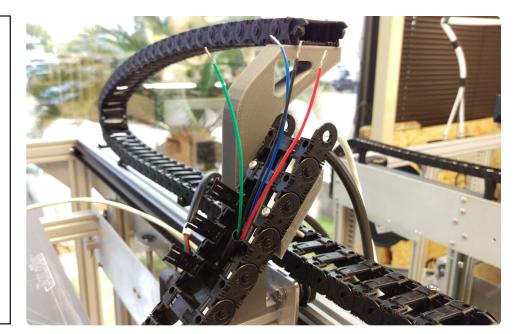
9

Connect the extended X motor cables and X limit switch cables

X limit switch and X motor wires need to be routed through the X/Y support bracket

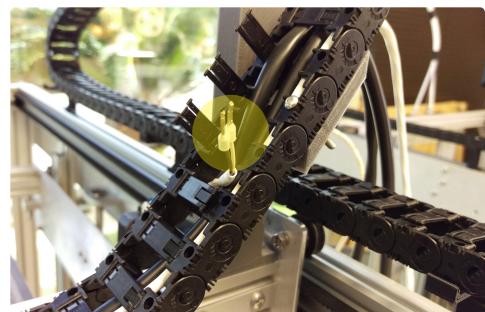
E10 ====

Route X motor cable through X/Y support bracket and one of the X cable carrier links



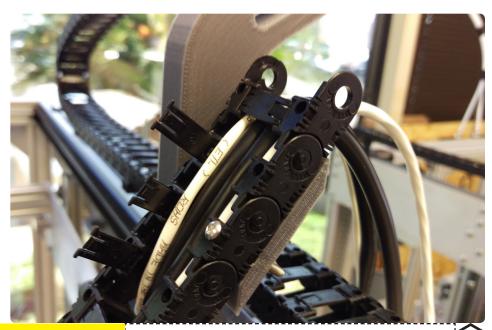
E11 | ====→

Repeat for limit switch wire



E12 ====

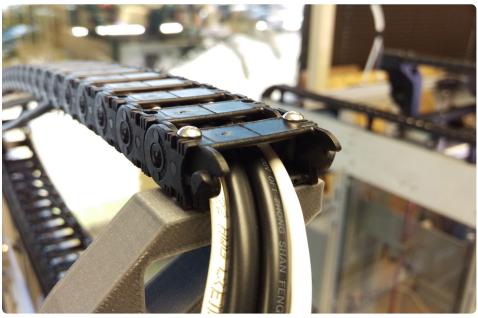
Route both through X cable carrier on inside curve, next to other 5 cables from trolley; hang over X/Y support bracket





E13

Close up any remaining X cable carrier links



E14 =---

Carefully placing all
7 cables (5 for single
extruder) parallel to each
other, route them through
the Y cable carrier and
down through the Panduits
on the rear left vertical
common rail and bottom
cross rail



Similar to X cable carriers, it may help to unmount Y cable carriers from X/Y support bracket and route and close through first 5 links before remounting

E16 ====

Route cables through to end of Y cable carriers and let them hang off of corner

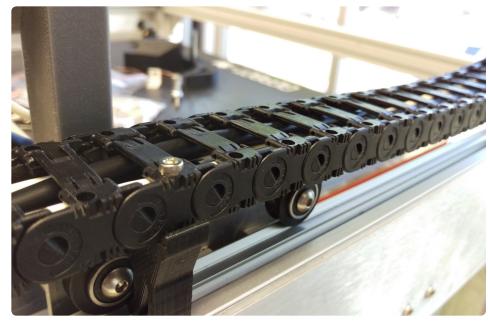
It may help to close some links intermittently to keep wires within cable carriers



E17

Finish closing up all Y cable carrier links and fasten to Y supports with M3x25mm SHCS

Be very careful to place wires only parallel to each other—do not let them overlap or tangle!



E18 =---

Route wires into Panduit on vertical common rail and down through bottom back Panduit towards electrical box







Replace any remaining

Panduit covers



E20

All 7 cables should all now be ready to go into the electrical box (5 cables in total for single extruder)

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 video instructions (search "re3D Tech" on YouTube and find "Gigabot® Trolley & Cable Carrier" video) or contact us through the channels listed in the conclusion.

F: REWIRING TO AZTEEG

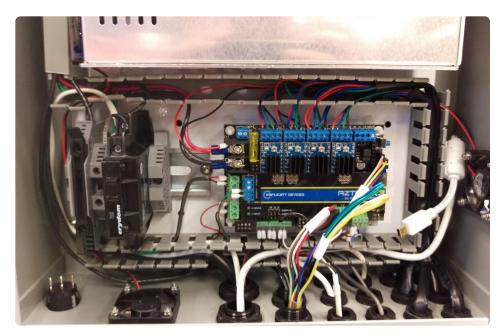


WARNING

PLEASE be sure that you have turned off and unplugged your Gigabot before attempting any modifications!

F2

The electrical box should still be open from the "Disassembly" portion of this guide, with the heated bed thermocouple already connected to the amplifier breakout board on the Azteeg cover plate



F3



Double check that the board is powered off and unplugged, Panduit covers are removed, and USB is disconnected from Azteeg

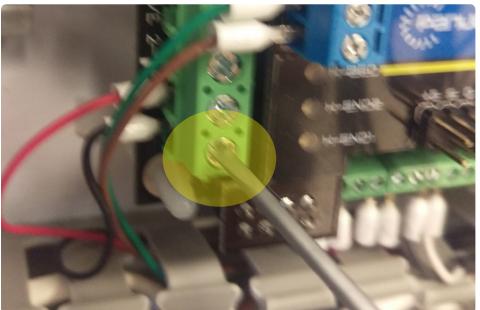
The order in which you replace each cable does not matter. Replacement of each will follow the same general procedure:

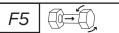






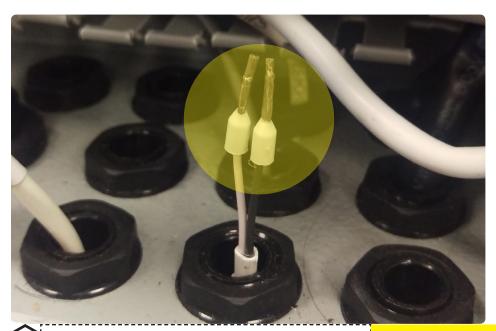
Identify the corresponding grommet and loosen the cap







Using a small screwdriver, disconnect the existing cable and remove completely through the grommet



F6 ----

Replace the existing cable with the corresponding extended cable, routing through the same grommet







Use the small screwdriver to connect to the same terminal on the Azteeg controller board



F8

Repeat steps F4 through
F7for all 7 cables (2
x Extruder motor, 2 x
thermocouples, 1 x 6 strand
head cable, X motor cable,
and X limit switch cable), 5
cables for single extruder

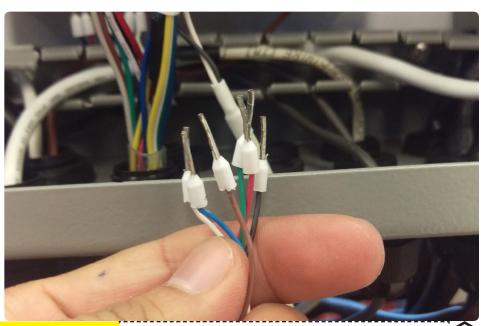
Refer to the color-coded wiring schematic for the exact connections on the Azteeg controller board

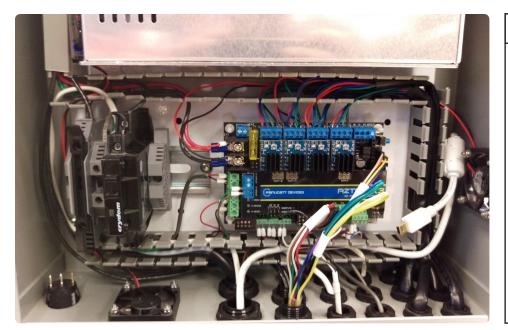
F9

Pay particular attention to how to individually wire each connection on the 6 strand head cable

For the dual extruder configuration, the 6 strand head cable includes wiring for the two heater cartridges and the fans

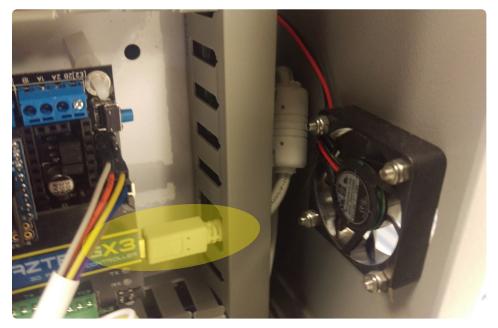






F10 ====

Carefully route all of the cables back into the Panduits



F11 |





Reconnect the USB connection to the Azteeg controller board and replace all of the Panduit covers

F12

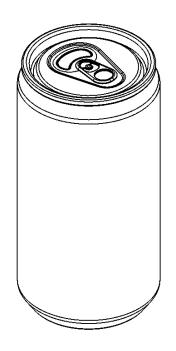
Close the electrical box and test that the Gigabot functions properly

DOUBLE-CHECK YOUR WORK:

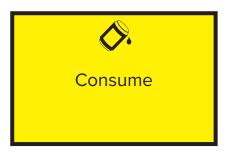
Please look over your completed kit and make sure everything has been assembled correctly. If you have further questions, please refer to the video instructions (search "re3D Tech" on YouTube and find "Gigabot® Trolley & Cable Carrier" video) or contact us through the channels listed in the conclusion.

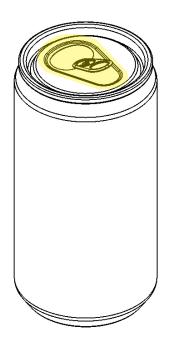
NOW IS A GOOD STOPPING POINT...

Acquire beverage of your choice



Actuate pull tab





CONCLUSION

CONGRATULATIONS! YOU HAVE NOW COMPLETED THE GIGABOT® TROLLEY & CABLE CARRIER RETROFIT ON YOUR GIGABOT®.

We are confident that you will find this upgrade very helpful in your every day use of the Gigabot®, 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® PARTS KIT OPENING GUIDE:

http://wiki.re3d.org/images/1/13/Parts_Kit_Box_ Opening_Guide_v1.pdf

GIGABOT® TROLLEY & CABLE CARRIER **MANUAL PDF:**

http://wiki.re3d.org

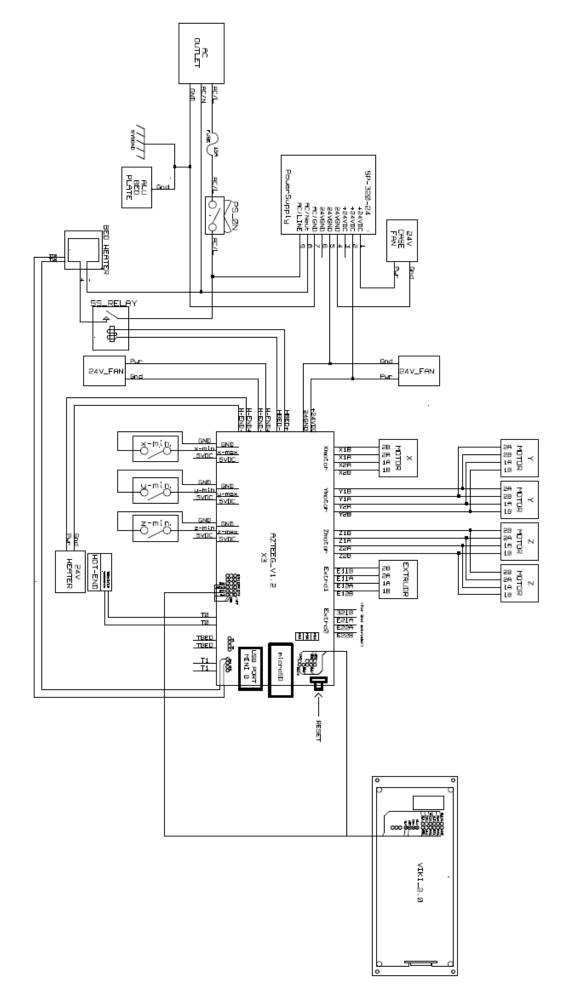
re:3D Inc.® YouTube **CHANNEL:**

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

TERMINAL BOX WIRING http://wiki.re3d.org **DIAGRAM:**

GIGABOT® AZTEEG WIRING DIAGRAM: http://wiki.re3d.org

GENERAL GIGABOT® AZTEEG WIRING



NOTES

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