

T&T Spirit Life-Size Proton Pack Single Connector Upgrade

Assembly Instructions

*** This Mod Requires Drilling and Cutting***

List of Required Tools

1. Needle Nose Pliers with Side Cutters
2. Allen Wrenches
3. Heat Gun, Hair Dryer, or lighter
4. Utility Knife
5. Plastic Bonding Super Glue
6. Drill
7. 7/64 Drill Bit
8. Sharpie Marker -Preferably Silver
9. Electrical Tape

List of Proton Pack and Neutrona Wand Required Parts

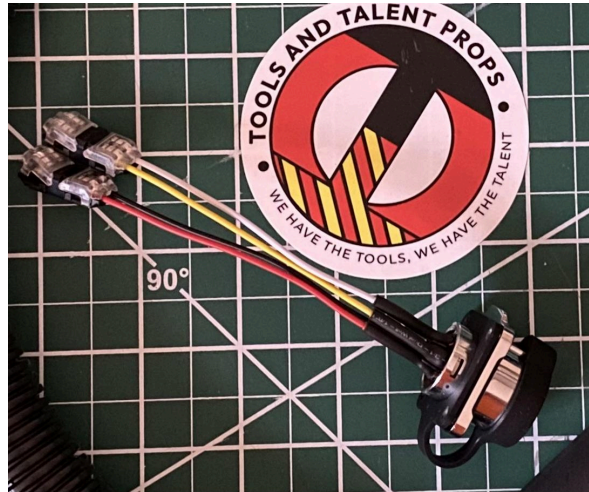
1. Spirit Life-Size Proton Pack

T&T HASLAB Proton Pack Single Connector Upgrade

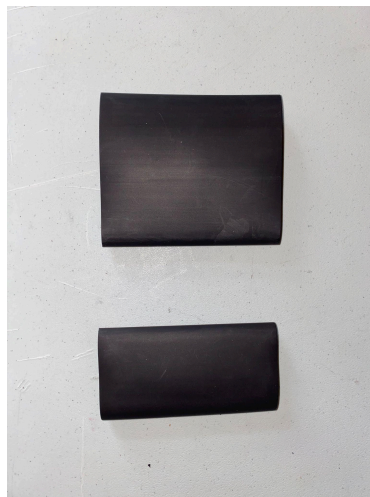
1. Preassembled T&T Gas Mask Hose



2. Proton Pack Hose Connector with Solderless Outlet (Connectors do not require the wire to be stripped. Full instructions below)



3. Heat Shrink



Assembly Instructions

1. First, we need to remove the padding from the motherboard on the rear of the pack to expose the (7) screws holding it on.

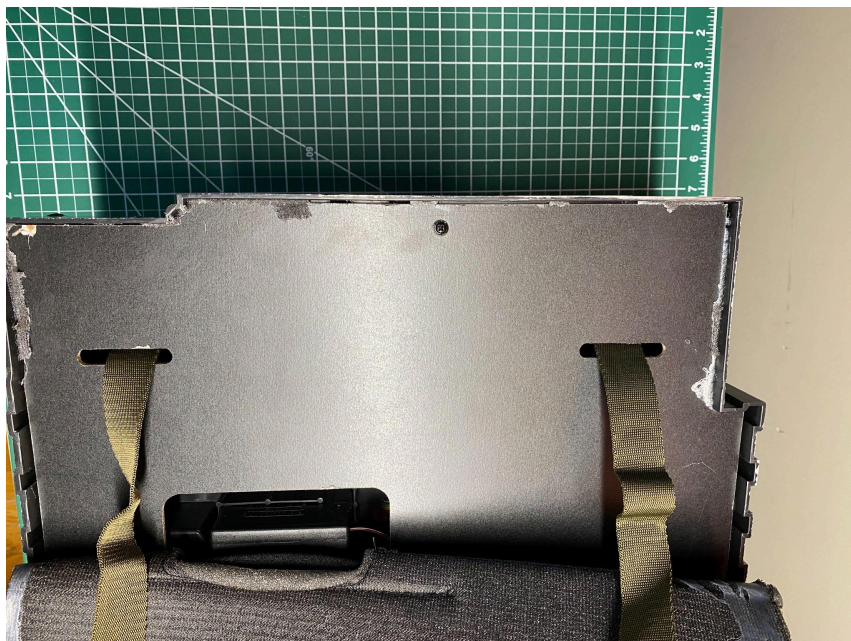


2. Loosen the shoulder straps all the way out to give yourself more room to work the motherboard padding away from the pack. Note- The shoulder straps will remain attached throughout the removal of the padding and motherboard. The shoulder straps are attached underneath the motherboard and cannot be removed until the

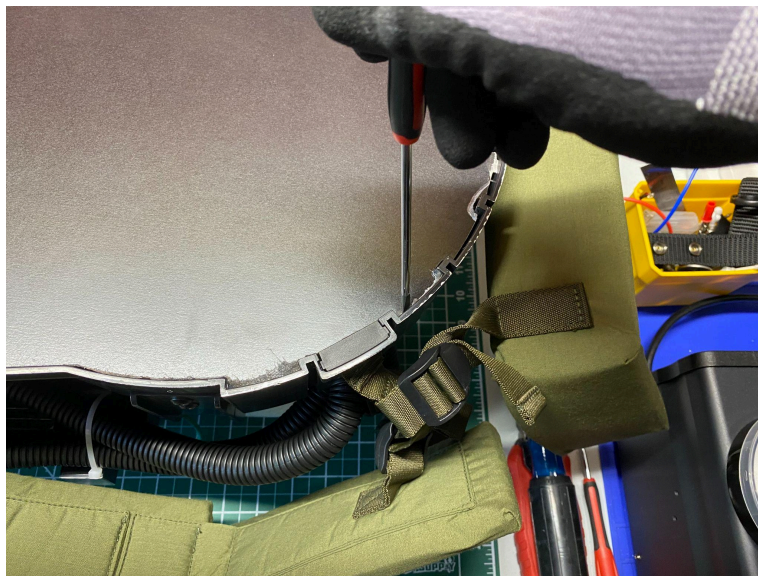


motherboard is off. So take care to work around them and not damage them.

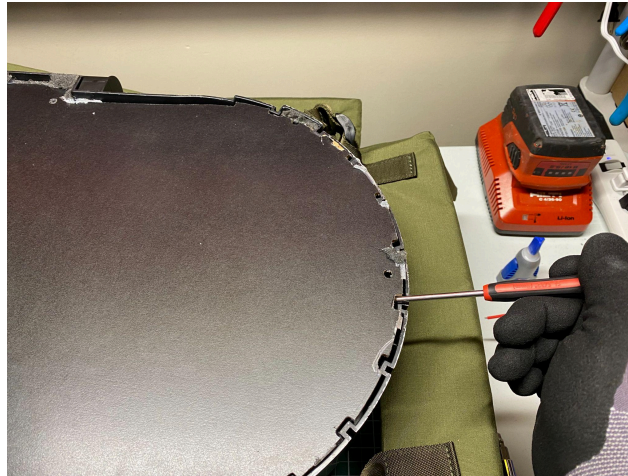
3. Slowly remove the motherboard padding by gently prying corners up until freed. Then work the loosened padding section around the entire pack edge by slowly lifting and separating with a flat head screwdriver. The goal is to lift this up in one big piece that can either be re-glued down or attached with velcro if desired. Do this slowly and take care to not tear the padding.



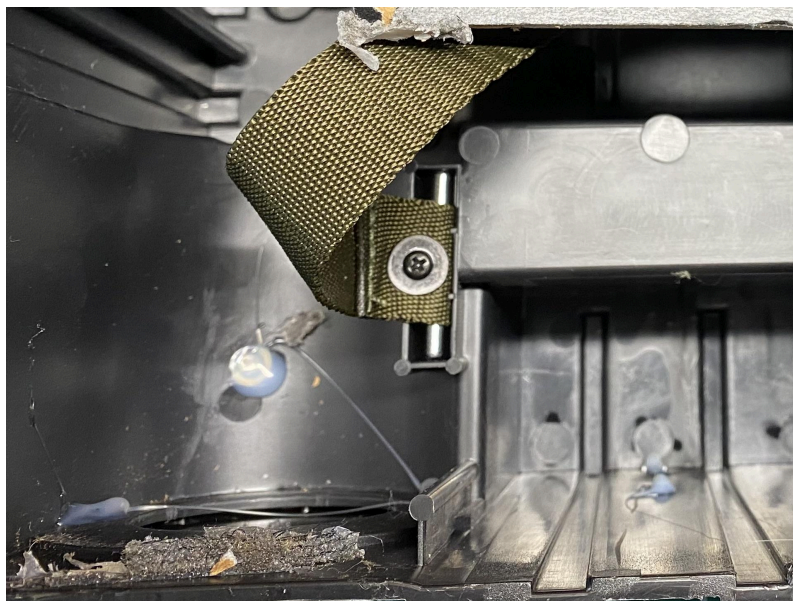
4. With the padding separated you now have access to the (7) screws that hold the motherboard to the pack shell. They are located around the edge of the motherboard. Once those have been removed, you will need to separate the motherboard from the pack shell. This step requires extreme care to not damage the motherboard. Use a flat head screw driver and utility knife to remove as much of the glue as possible before prying the motherboard away from the shell.



5. With the glue removed, start separating the motherboard from the pack shell slowly by lifting and prying with a flat head screwdriver. Take care and do this slowly. Work around the entire pack shell edge until the motherboard is completely separated from the pack shell.



6. With the motherboard separated you can access the screws that hold the shoulder straps on.

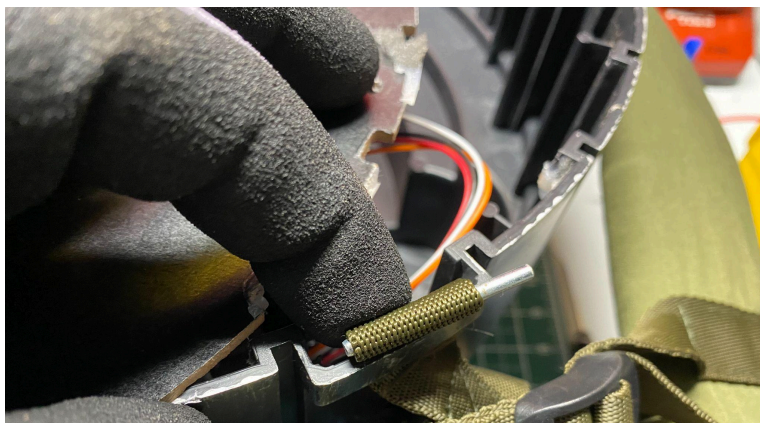


Remove both the shoulder strap screws and retaining bars. Then slide the shoulder straps out through the motherboard to separate them. You can now completely separate the motherboard from the pack shell.

7. Next, you will need to do the same thing to the waist straps. Each side of the waist strap is held in with a screw, retaining bar, and plastic clip. The hose side waist strap has an external screw that will need to be removed first.



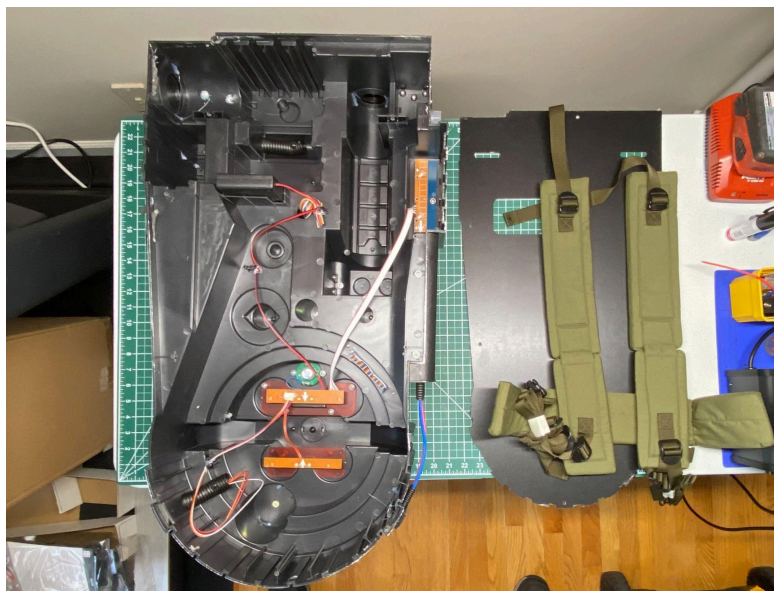
Once the external screw has been removed, the strap can be detached by simply sliding the plastic clip out of place and removing the retaining bar like the shoulder straps.



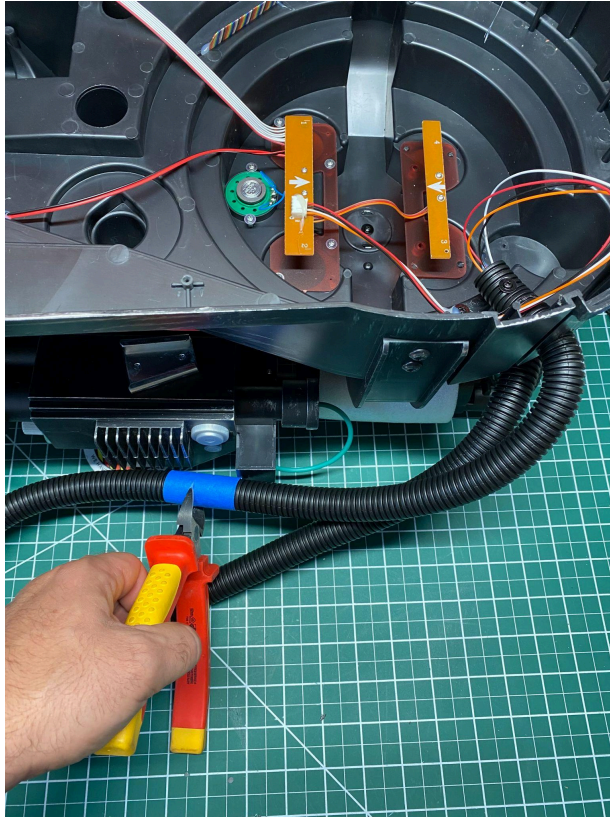
The remaining waist strap is held in by an internal screw and glue. Remove the screw and then use a pair of pliers to remove the glue and retaining bar. Now, pull the straps through their holes to separate.



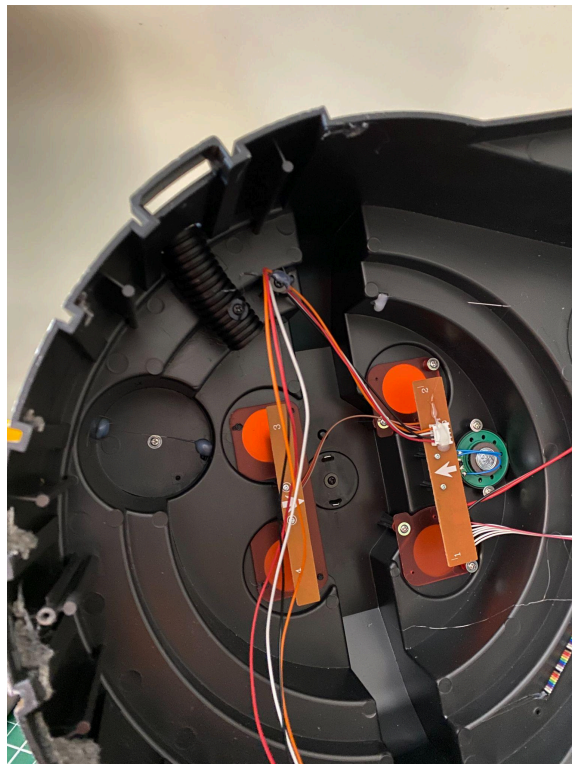
Now, you have fully separated both the motherboard and straps.



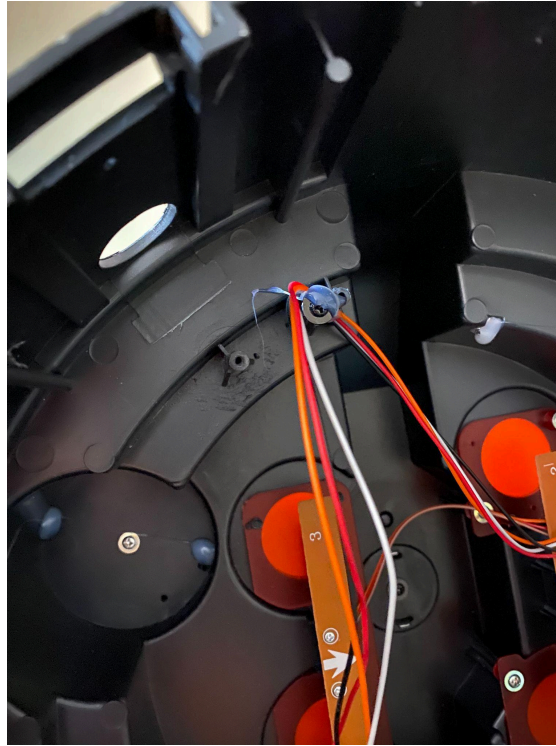
8. With the internals of the pack fully exposed, you are now ready to install your new Spirit Life-Size Pack Single Connector (SPSC) hose upgrade. First, cut the hose



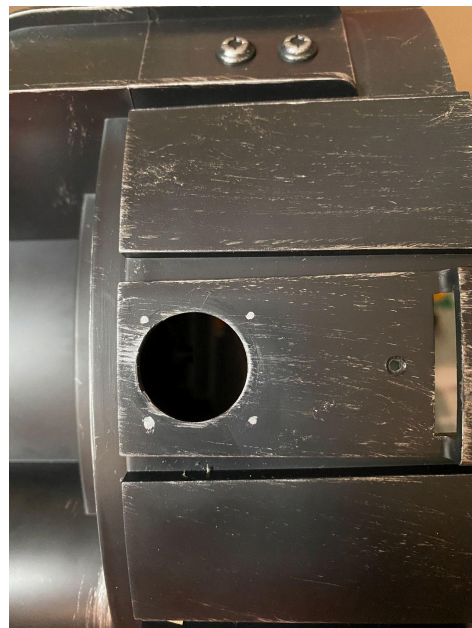
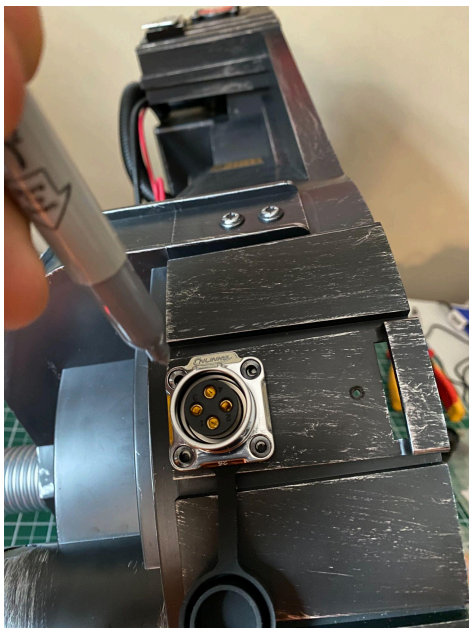
connecting to the neutrona wand roughly 12" away from the outside of the pack and pull the wiring from inside of the pack out through the hose.



Now, remove the screw from the factory installed hose and then remove the remaining piece of the hose.



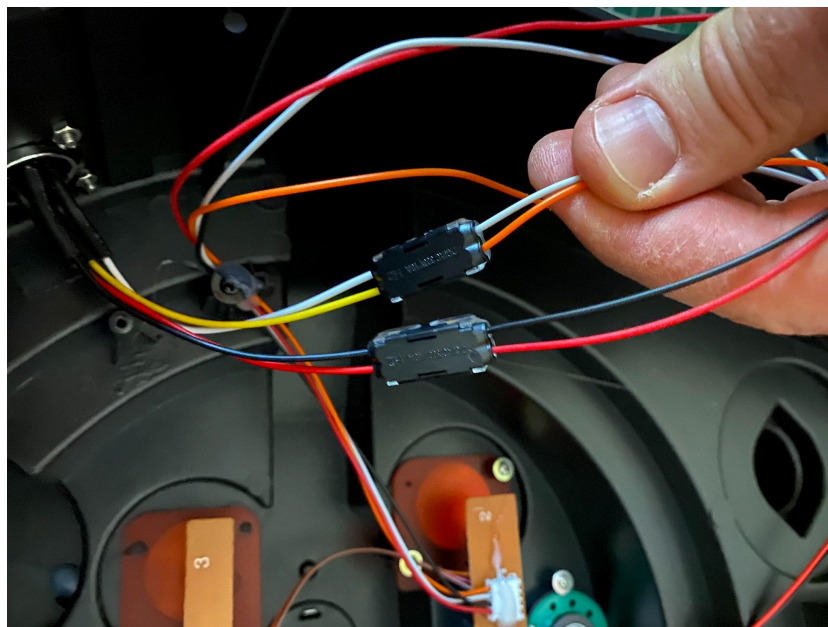
9. It is now time to install the Pre-soldered Proton Pack outlet. This will be done by fitting the outlet into the existing pack hole and marking the location of the mounting holes of the outlet. I suggest using a silver marker for the best visibility on



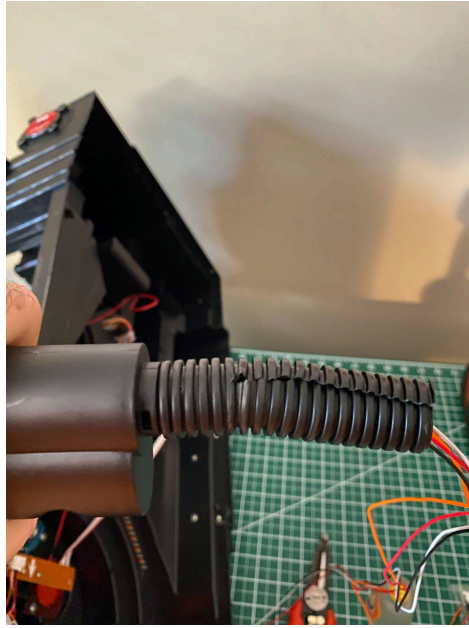
the black shell. Make sure to orient the metal tab pointing up towards the top of the pack. Also, make sure to favor the outlet towards the back of the pack as much as possible to allow for the nuts to fit on the bolts internally. Now, use a 7/64 drill bit and drill out each marked hole. (An alternate drill bit size may be used but make sure to not drill the holes too big because you want enough of the pack shell material to remain so that the nuts have enough material to hold on to.) Then bolt the outlet in place with the included hardware.



10. Next, you are going to wire the Outlet to the pack's internal wiring via the included solderless connectors. It is critical that you match the same colored wires on each side of the connectors; Black to Black, White to White, Red To Red and Orange to Orange (Yellow wires may be substituted for Orange wires in some kits.). Ensure the wires are straight and fully inserted into the connectors. (Wire stripping is not required for connectors; see full connector instructions located on the last page. Stripping the wires may result in stray strands of wire migrating into the wrong location of the connector causing failure.) Use pliers to fully close the connectors once wires have been fully seated in the connector.

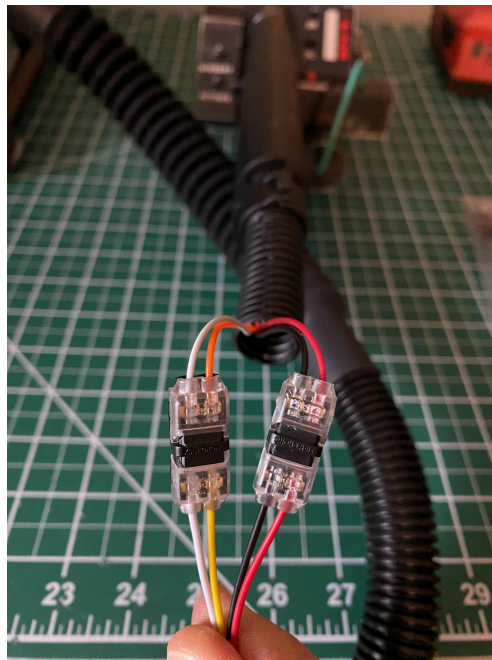


11. Setting aside the pack for now, it is time to work on the Spirit Neutrons Wand.



Carefully cut the wire loom without cutting the internal wiring. You want to leave about 3" of the factory wire loom attached to the neutrons wand and at least 12" of the internal wiring intact. Now, use a pair of scissors to cut the loom up the middle to the hard wand connector.

12. Now, let's connect the SPSC Hose to the Spirit Neutrons Wand. Make sure that the heat shrink is loose on the hose before making any electrical connections. (Once the connections are complete and the hose is attached you will slide the heat shrink down over the hose to finish.) It is critical that you match the same colored wires on each side of the connectors; Black to Black, White to White, Red To Red, and Orange to Orange (Yellow wires may be substituted for Orange wires in some kits.). Ensure the wires are straight and fully inserted into the connectors. (Wire stripping is not required for connectors; see full connector instructions at the end. Stripping the wires may result in stray strands of wire migrating into the wrong location of the connector causing failure.) Use pliers to fully close the connectors once wires have been fully seated in the connector.



Once the wires are connected, STOP! It is now time to test before completing the installation. It is important to test your connection before heat shrinking your joints together. Use a multimeter to test for continuity in your wires or attach the wand to the pack and test functionality. Once you have proven your wiring is working correctly, it is time to finish the connection of the new hose to the neutrona wand. Tuck all of the loose wiring into the new hose section. (I like to gently coil the wires leaving slack on either end and then tape them together before tucking them into



the hose.) Gently fold over the factory loom that you have split over itself to fit inside of the new SPSC hose upgrade. Once the hose is fully inserted, slide the supplied heat shrink over the hose and wand connector.



Now, use a heat source (heat gun, hair dryer, or lighter) to activate the heat shrink. Be extremely careful positioning the heat shrink. Once the heat shrink has been fully activated it will be permanently bonded and cannot be moved. Also, take extreme care not to melt the hose while activating the heat shrink. Never place a heat source on the bare hose section.

13. Now, reverse the previous steps(1-7) to reattach your straps and motherboard. You may choose to re-install the padding onto the motherboard, for this you could use either hot glue or adhesive velcro. We suggest using adhesive velcro to allow for easy removal of the padding to access the screws for future modifications. Now



you're done!

Connector Instructions

INSTRUCTIONS FOR USE

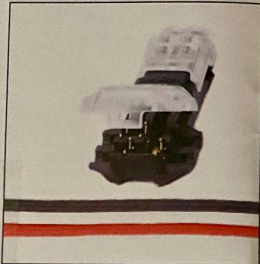


Fig. 1

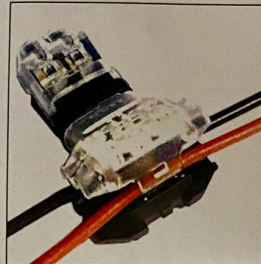


Fig. 2



Fig. 3

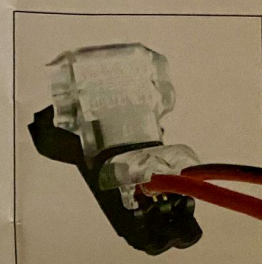


Fig. 4

1. Separate the wire first. (Fig. 1)
2. Insert the wires into the metal slots of one end of the connector. Make sure all wires have to nest properly before the covers are closed. (Fig. 2)
3. Close the cap. And then use pliers to secure the connection. (Fig. 3)
4. Insert the wires into the rings of the other end of the connector. If the wires are a little thicker, please use sissors to cut the ring to make the wire to be accom-dated. (Fig. 4)
5. Close the cap, and use pliers to secure the connection. That is it. (Fig. 5)

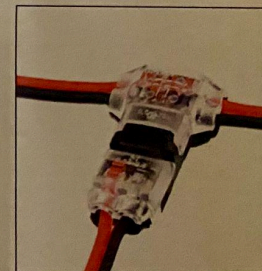
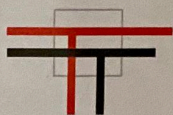


Fig. 5

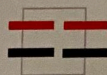
Note: Installation of four type connectors is similar, so we just use T Type Dual Way connectors as an example.

Reusable: Can be opened if needed after use. You will need a pocket knife or something to pop them open, as they will be tight after use.

Circuit Diagrams of 4 Type Connectors



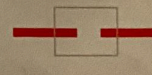
T Type Dual Way



I Type Dual Way



T Type Single Way



I Type Single Way