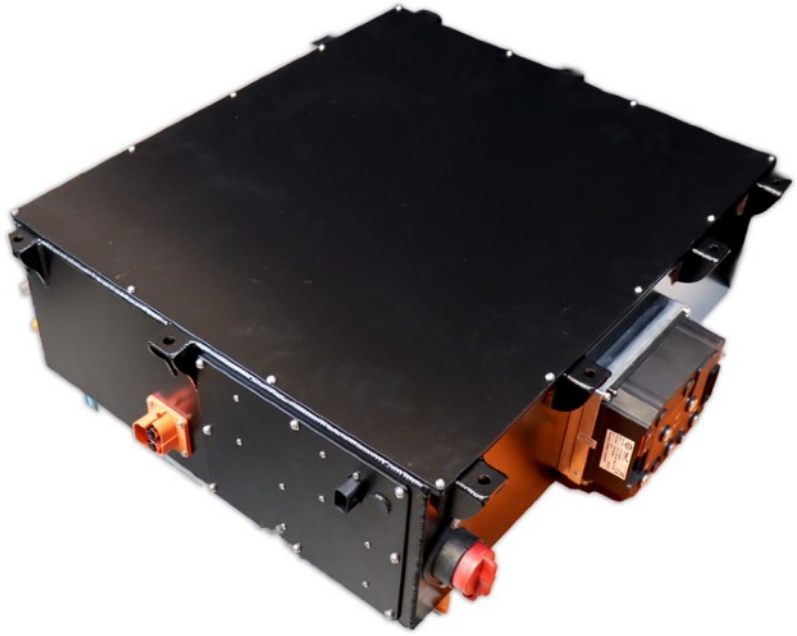
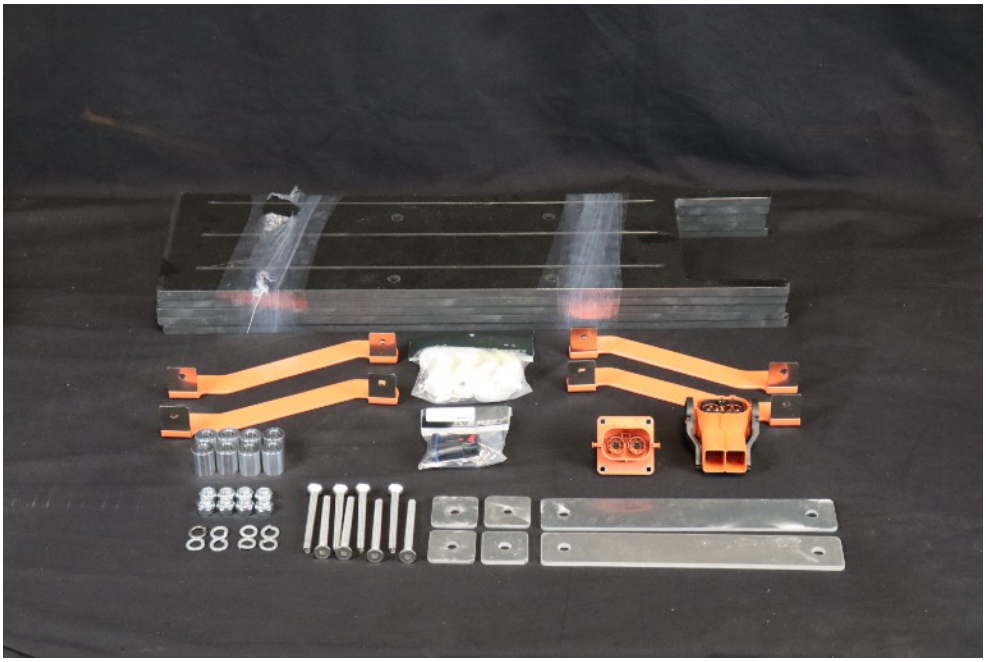
product page

1956 - 67 VW Bus Battery Box Installation Manual



Thank you for purchasing the 1956 - 67 VW Bus Battery Box. We appreciate your trust in our products and are excited to be part of your electric conversion journey. Attached, you'll find the installation instructions for assembling your VW Bus Battery Box. These instructions will help guide you through the process, ensuring a smooth and efficient installation. If you have any questions or concerns, please feel free to email us at support@evwest.com or call us at 888-591-5830



Parts needed to assemble battery box

(5) Battery Box Inserts
(2) Left Bus Bars
(2) Right Bus Bars
(4) 90° Bus Bars
(1) Amphenol 90°
(1) Mount Plate Kit
(1) MX150 Plug
(8) Aluminum Spacers
(8) 12mm Bolts
(8) 12mm Washers
(8) 12mm Nuts
(1) Amphenol Panel Mount
(1) RP-HV Maintenance Switch

Parts needed to assemble battery box but not included in the kit.

(1) BMS MCU
(2) BMS Satellite
(3) BMS Dual LTC Harnesses
(1) Fuse
(1) Fuse Holder
(6) Tesla Model S Modules 5.3Kw

Tools needed to assemble battery box

- 3/4 ratchet
- 13mm socket
- 13 mm wrench
- 17 mm socket/wrench
- 5 mm drill and tap (optional)
- 3 mm hex key
- 4 mm hex key
- 5 mm hex key

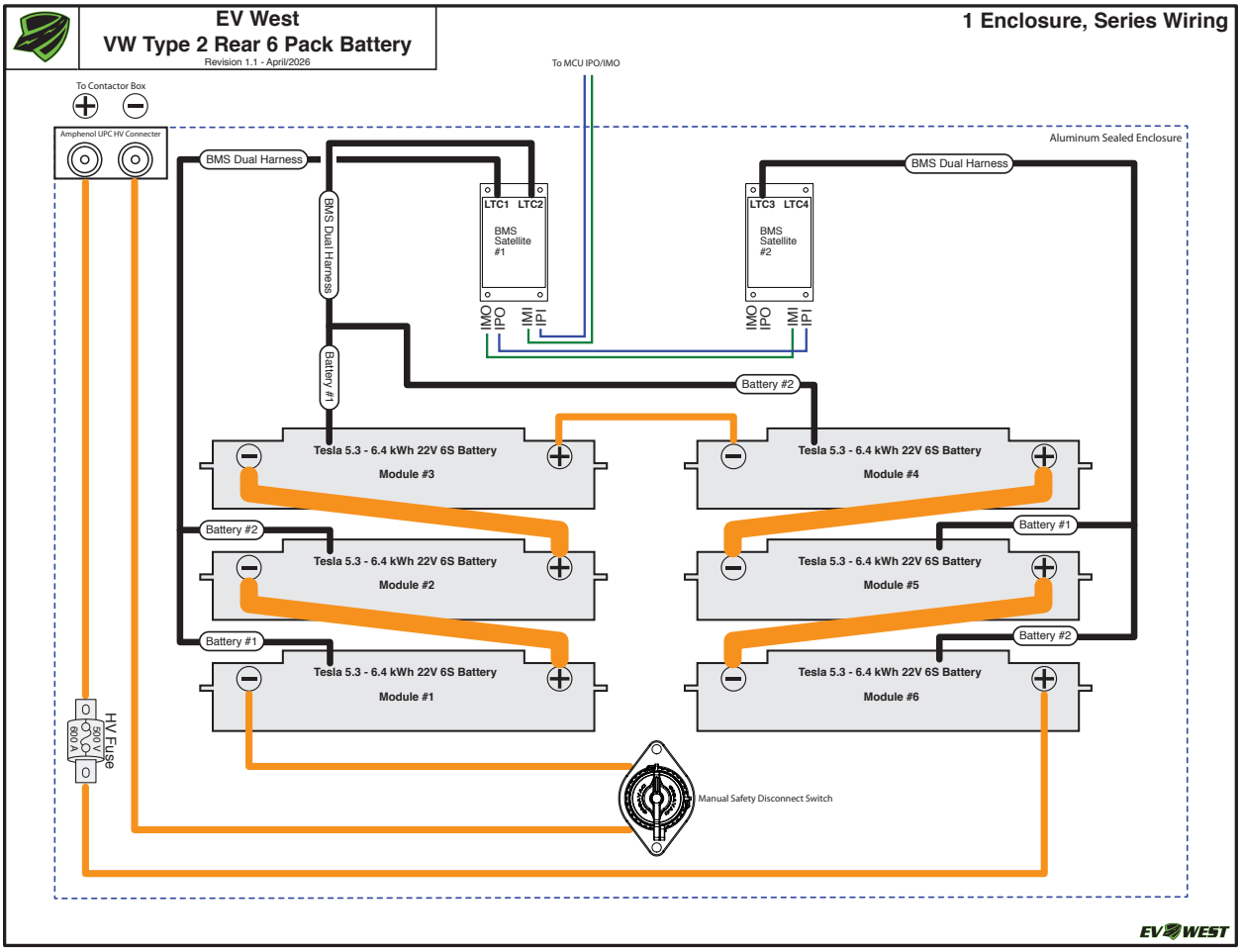
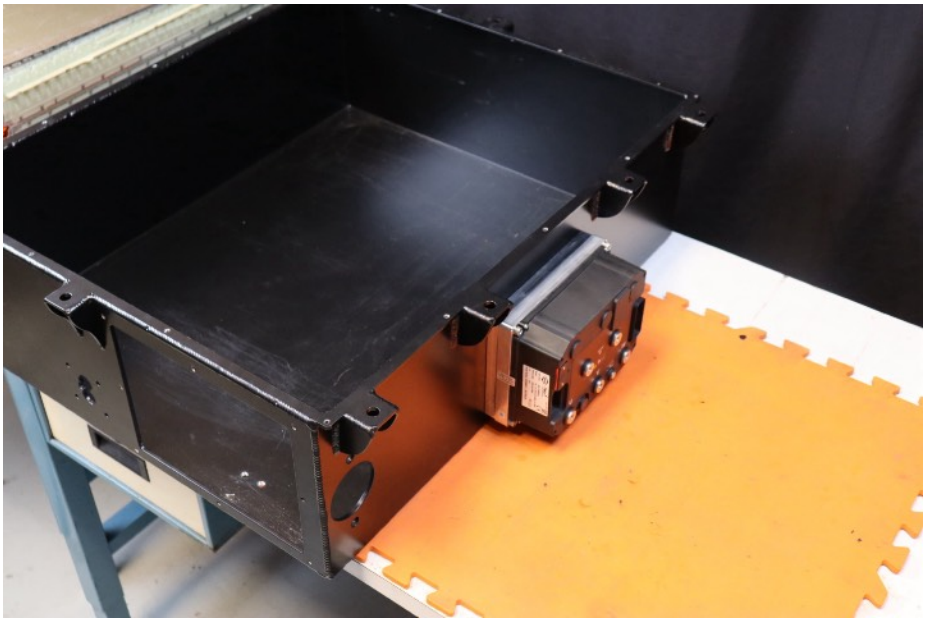


FIGURE 1 - Battery Schematic

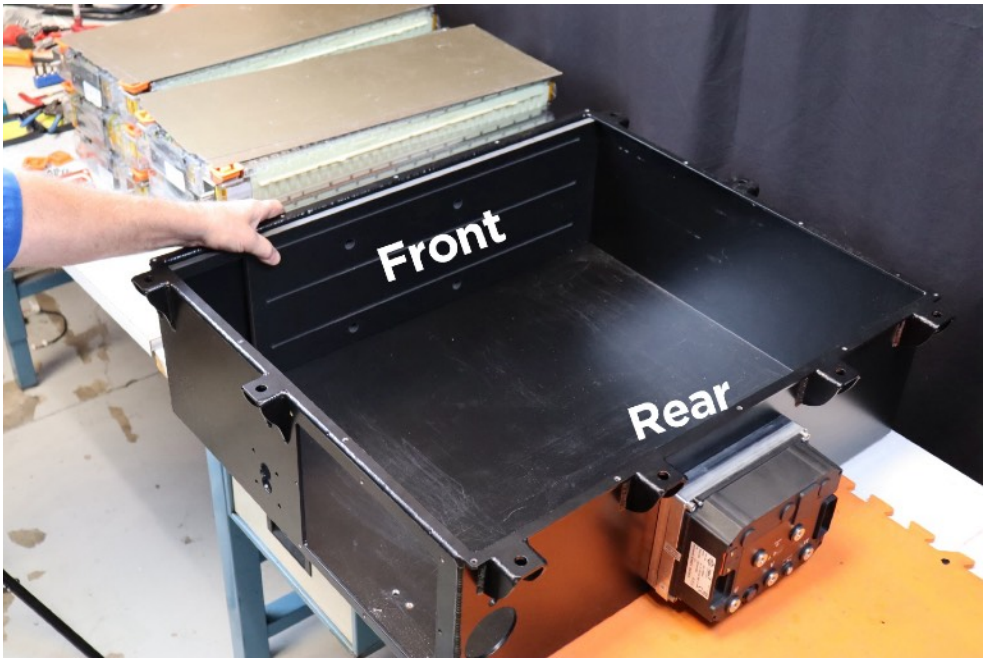
VW Type 2 - Rear 6 Pack Battery Diagram

Url - https://evwest.com/support/Type_2_Rear_6_Pack_Battery_Bus.pdf



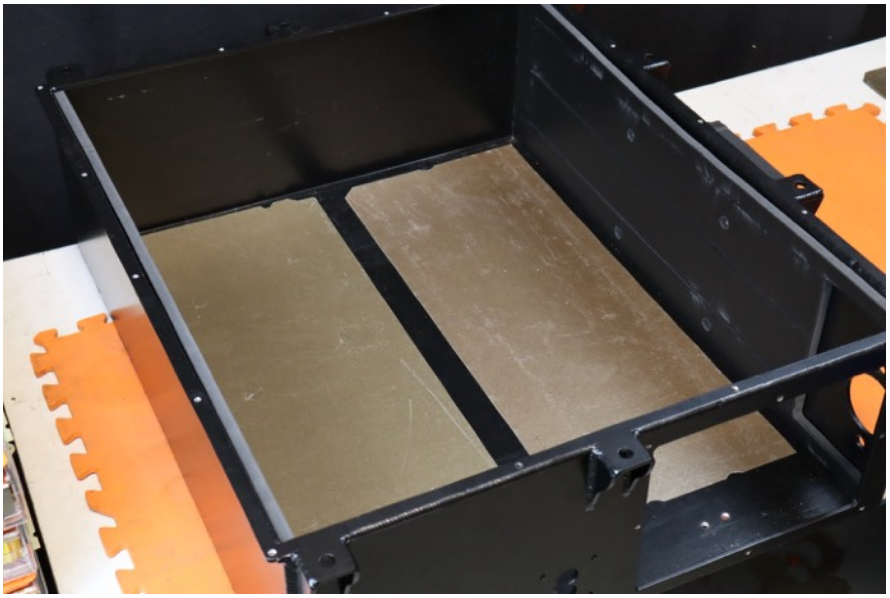
1) Mount inverter to battery box face. Bolt the Hyper 9 chill plate and ACX1 controller to the box using M5 socket cap bolts. Make sure to use Permatex RTV or equivalent to seal the chill plate to the controller during installation. **<Link to chill plate guide?>**

STOP - Use caution. Put on gloves and eye protection when working with live batteries. If you have any questions or concerns please do not hesitate to call us.



2) Install the front most and rear most Polymer battery support inserts. Due to weld tolerances the inserts may need to be trimmed to fit properly. Only trim the smaller two protrusions.





3) Install the Mica boards on the bottom of the battery box.

Note: Installing mica sheets is a simple and effective way to improve battery safety by adding an extra layer of electrical insulation. By placing mica sheets between the modules and the box s, we eliminate the risk of shorts, leakage paths, or arcing. Mica is heat-resistant, durable, and non-conductive, making it an ideal solution to prevent such issues while also providing added thermal stability and long-term reliability.



4) Install the 90° bus bar on the negative terminal on battery module #1. Using a 13mm socket torque to 25-30Nm [18.4–22.1 ft-lb]

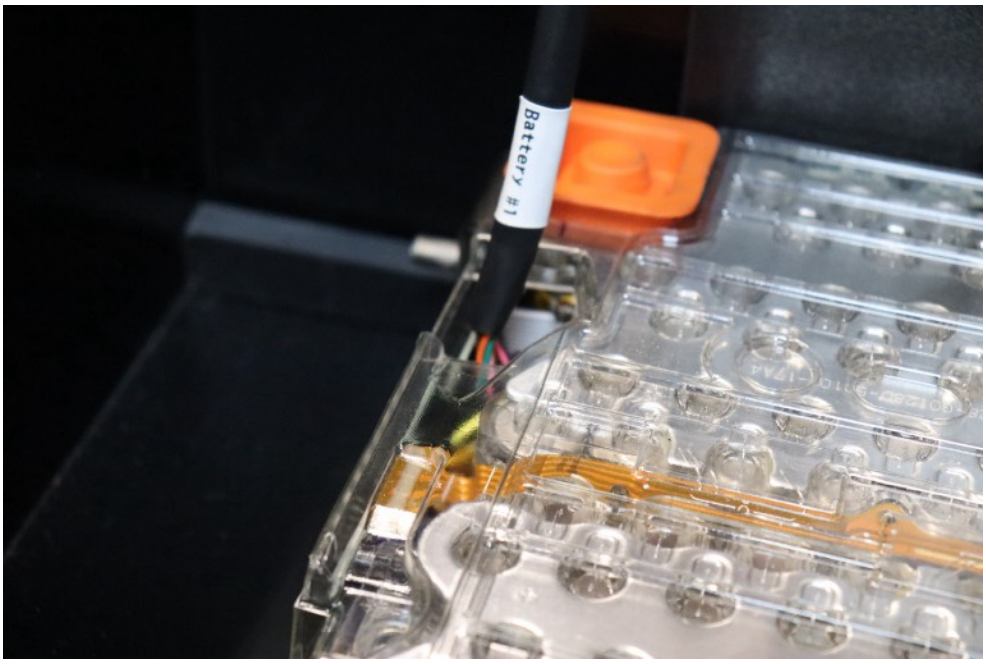


5) Install the first battery module in the rear position of the box. Make sure that the flange on the side of the battery is seated into the slot on the plastic insert.





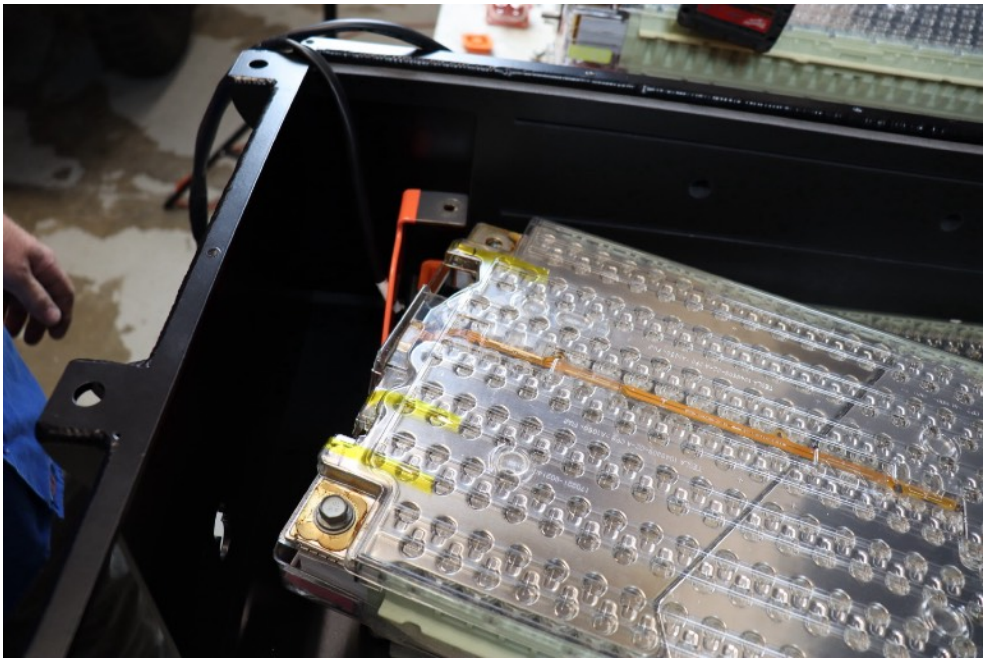
6) Using the EV West dual BMS Harness. Plug the "Battery #1" lead into the PCB board on module #1.



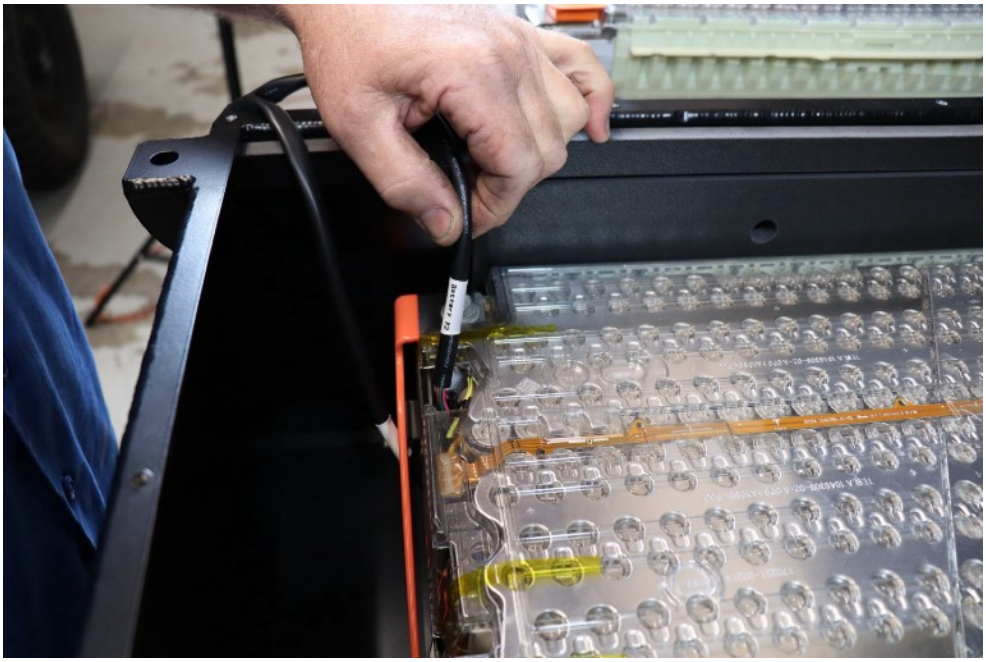
7) This is how the plug should look correctly installed.



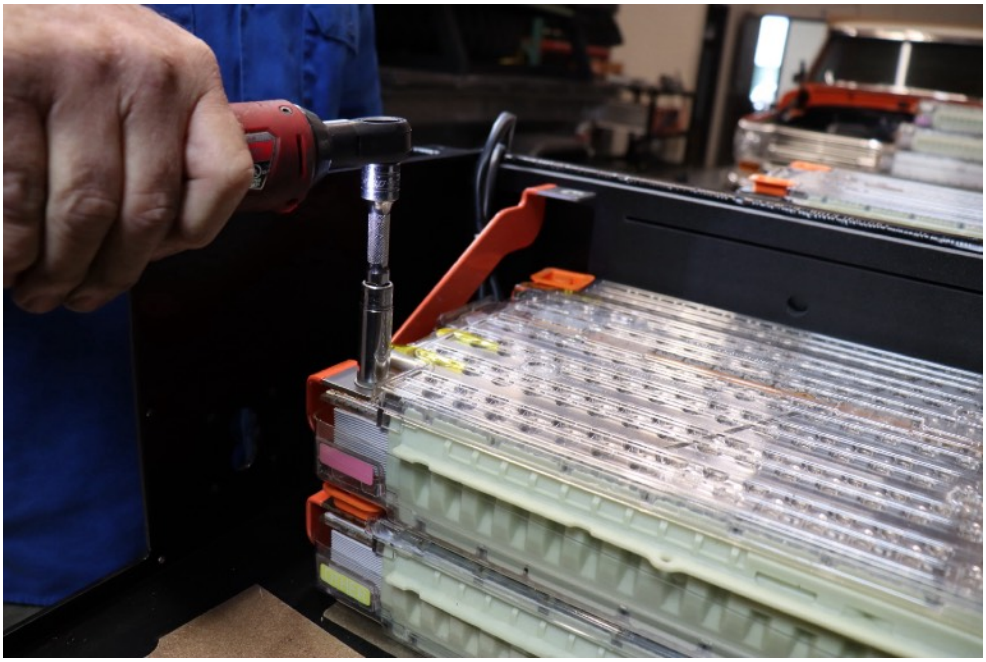
8) Install the first "Left" busbar onto the positive terminal on battery module #1. Torque to 25-30Nm [18.4–22.1 ft-lb]



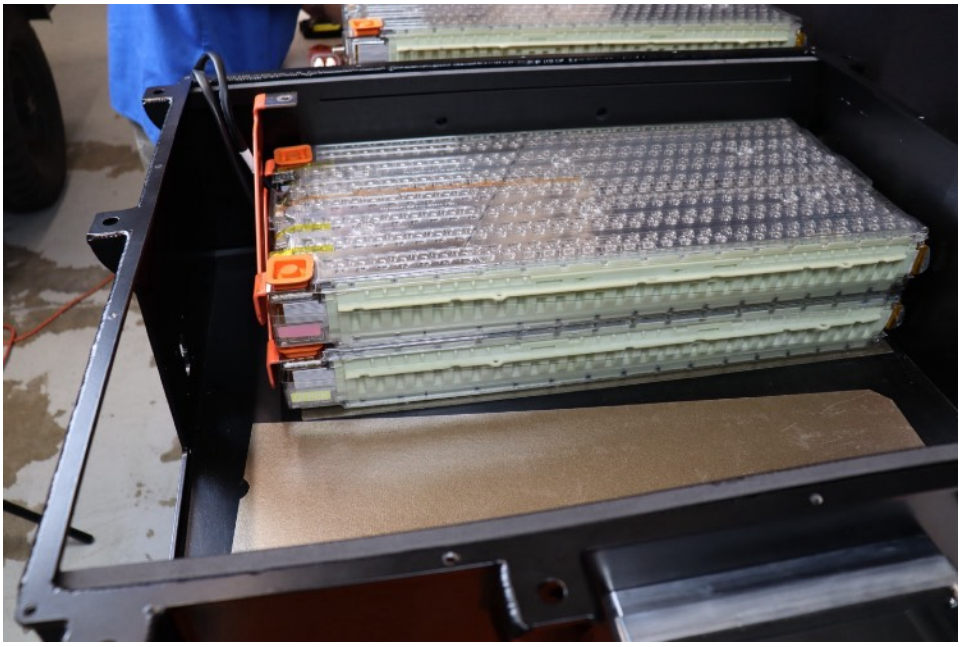
9) Install module #2 on top of module #1. Bolt the bus bar to the negative terminal on module #2. Torque to 25-30Nm [18.4–22.1 ft-lb]



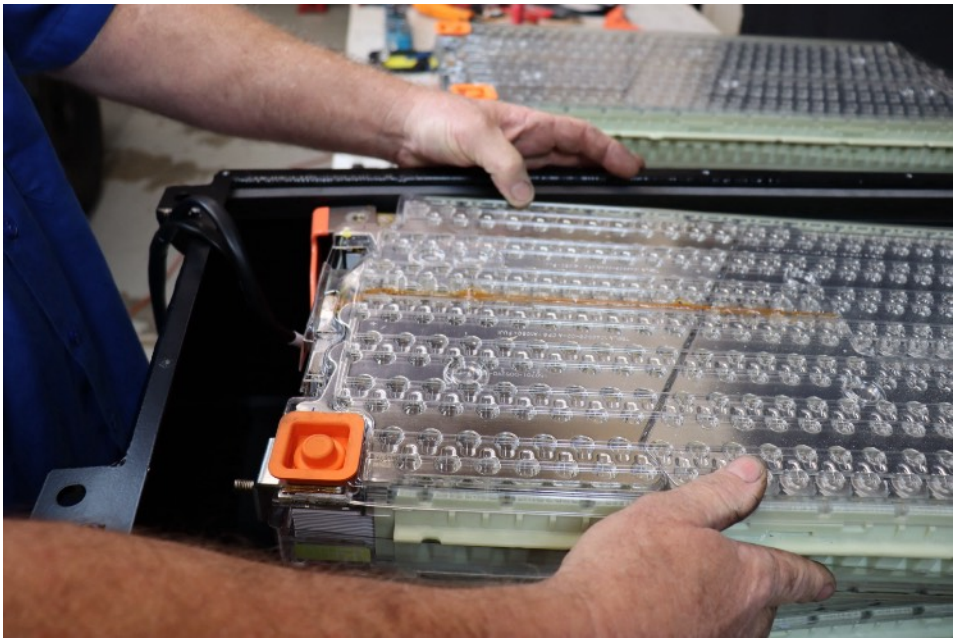
10) Using the first BMS harness, plug the "Battery #2" plug into the PCB board on module #2.



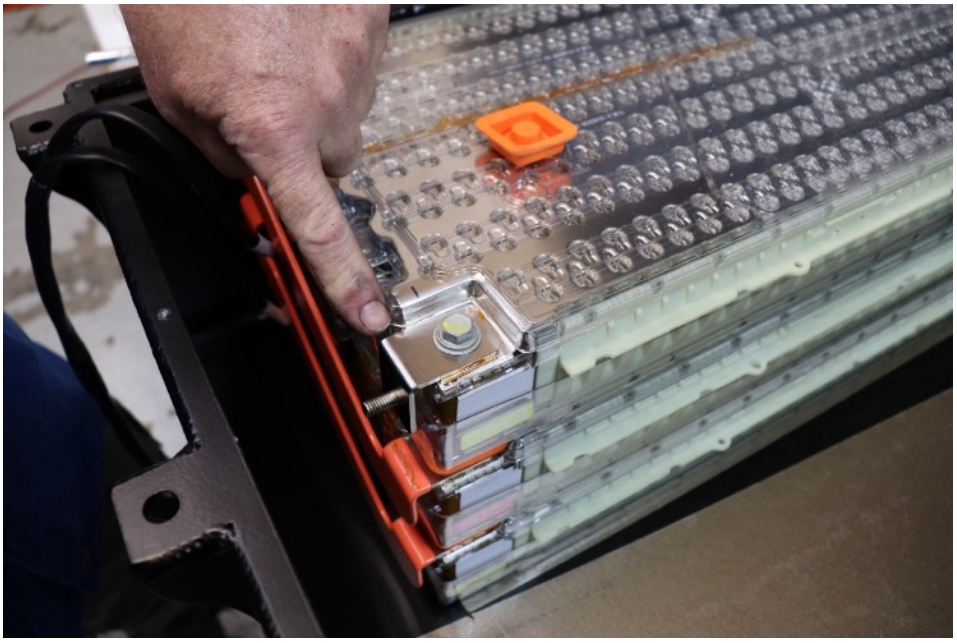
11) Install the 2nd "left" busbar onto the positive terminal of module #2. Torque to 25-30Nm [18.4–22.1 ft-lb].



12) Install module #3 on top of module #2. Bolt the bus bar to the negative terminal on module #3. Torque to 25-30Nm [18.4–22.1 ft-lb]. Make sure that the flanges on the side of the batteries is seated into the slots on the plastic inserts.



13) Slip module three under the bus bar and into the battery support slot. Bolt the negative terminal and torque to 25-30mm



14) Install the 90° bus bar on the positive terminal on battery module #3. Using a 13mm socket torque to 25-30Nm [18.4–22.1 ft-lb]



15) Install the inner battery support polymer panel onto modules one, two and three at the center of the box. Make sure that the flange on the side of the battery is seated into the slot on the plastic insert.





16) Add a second battery support Polymer panel to the center of the box. This will support the next stack of three battery modules



17) Plug the 2nd BMS harness labeled "Battery #1 into module #3's PCB Board.

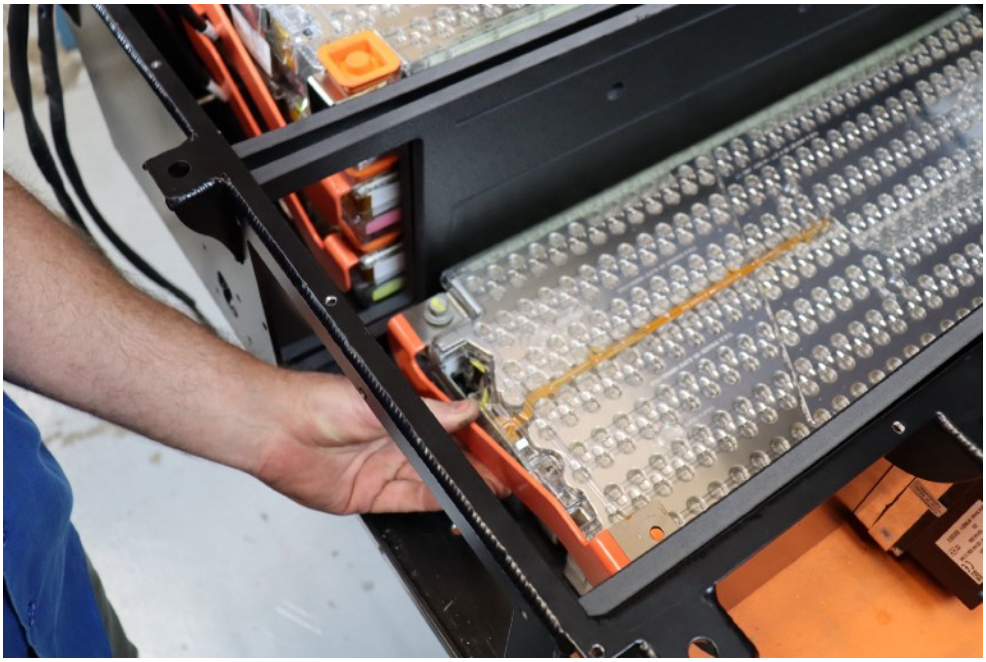


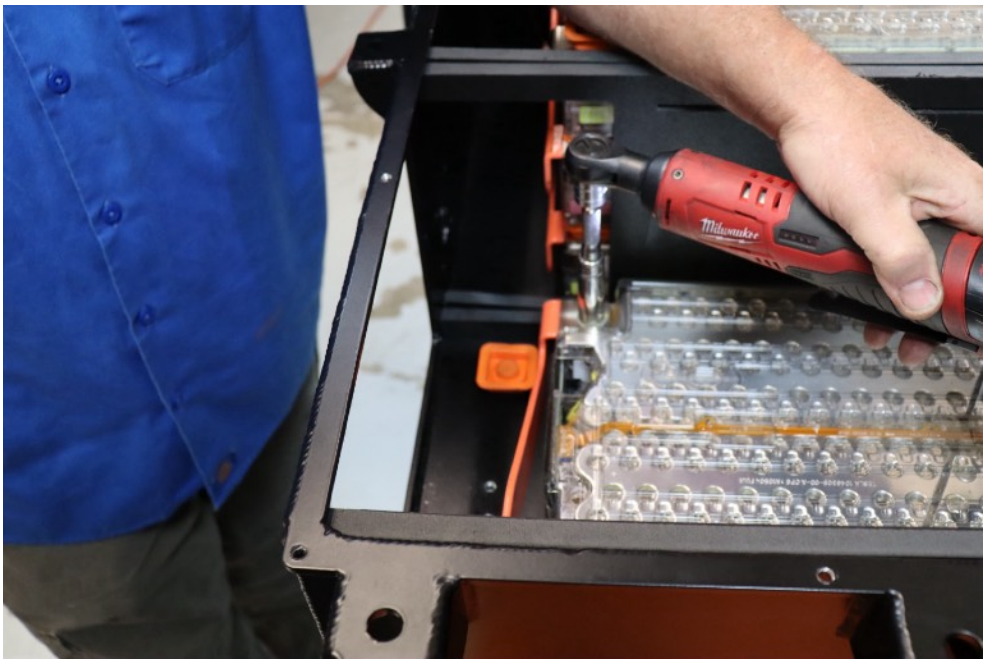
18) Install a 90° bus bar on the negative terminal of module #6 and torque to 25-30Nm [18.4–22.1 ft-lb]





19) Install module six into the battery box. Only engage the outer edge of the module into the outer Polymer battery support. Leave the inner edge unsupported for the moment. It will engage the inner support later.

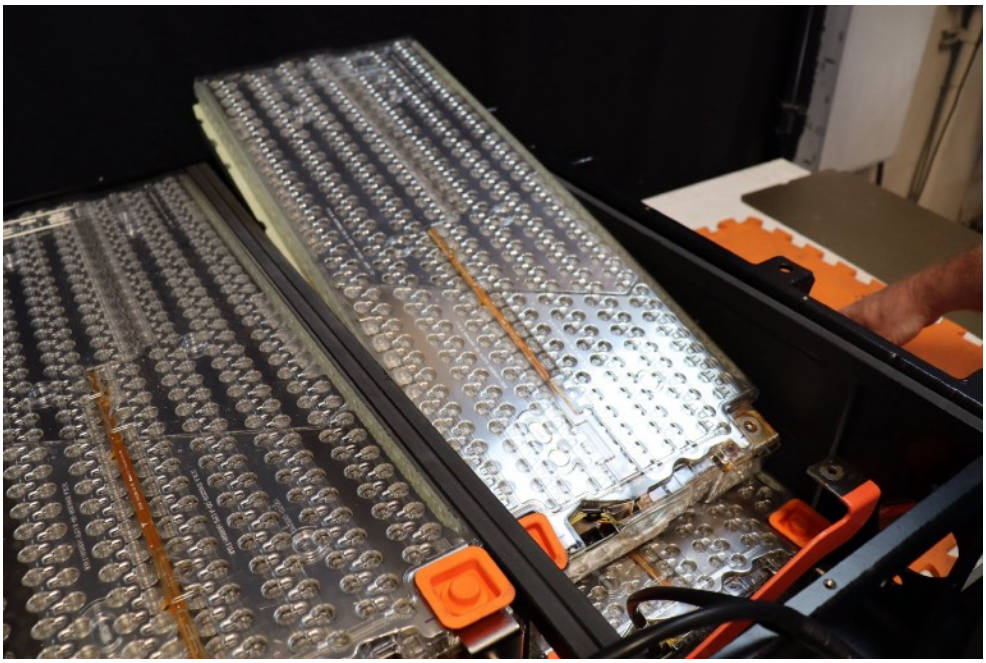




20) Install the "right" bus bar onto the negative terminal of module #6. Torque to 25-30Nm [18.4–22.1 ft-lb].



21) Plug the 2nd BMS harness labeled "Battery #2 into module #6's PCB Board



22) Install module #5 into the box.

Note: It is easier to slide the module in from the passenger side of the box and under the "Right" bus bar and then into the slot in the insert.



23) Make sure that the flange on the side of the battery is seated into the slot on the plastic insert.





Note: Leave model five out of the center Polymer battery support, it will be locked in later.



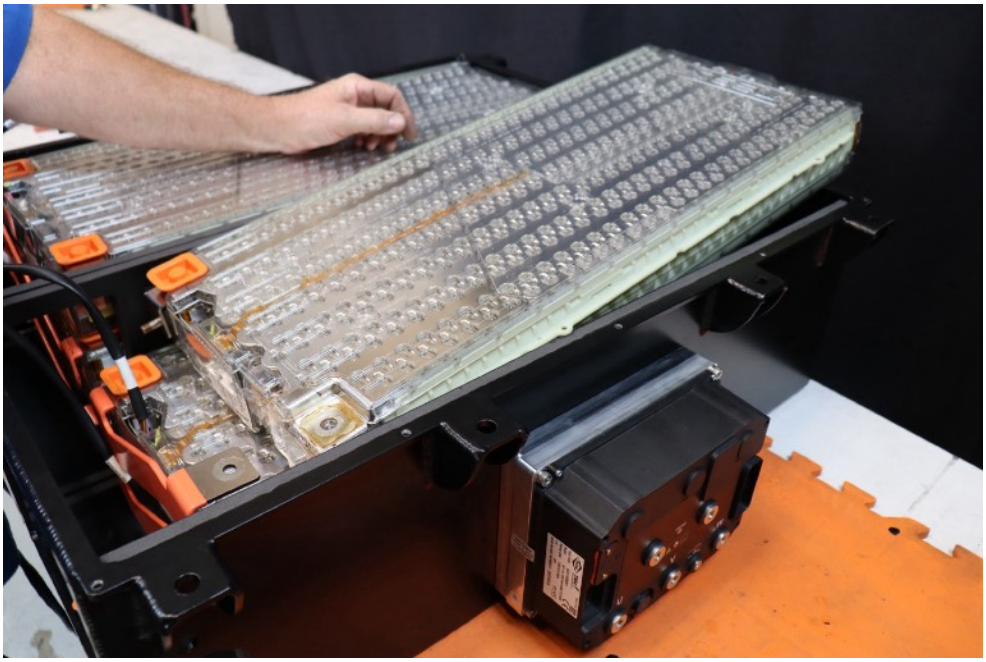
24) Bolt the "right" bus bar onto the positive terminal of module #6. Torque to 25-30Nm [18.4–22.1 ft-lb].

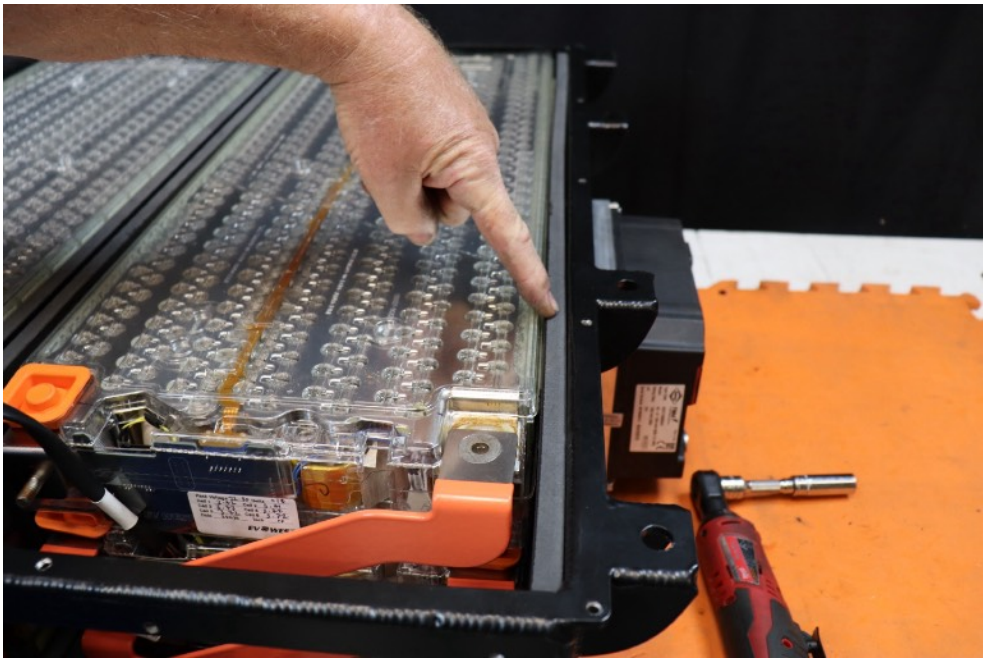


25) Install the "right" bus bar onto the negative terminal of module #5. Torque to 25-30Nm [18.4–22.1 ft-lb].



26) Plug the 3rd BMS harness labeled "battery #1" into modules #5's PCB board.





27) Install modules #4 into the box. Be sure to install the 90° bus bar on the negative terminal of module #4.

Note: Like before, It is easier to slide the module in from the passenger side of the box and under the "Right" bus bar and then into the slot in the insert.



Note: Leave module #4 out of the center Polymer battery support, it will be locked in later.
Install the "right" bus bar onto the positive terminal of module #4 Torque to 25-30Nm [18.4–22.1 ft-lb].



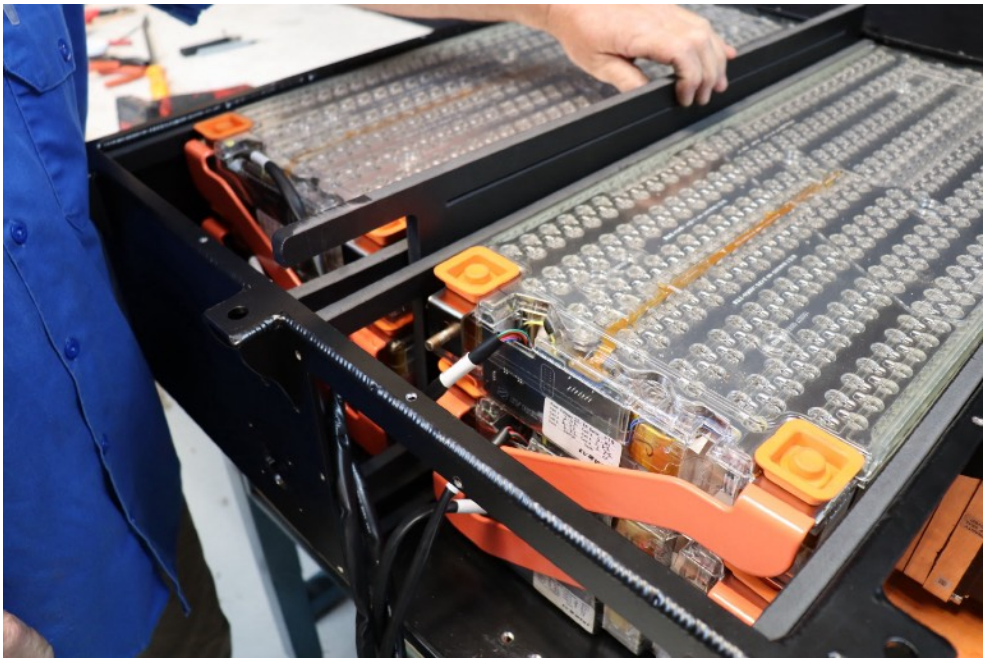
28) Plug the 3rd BMS harness labeled "Battery #2 into module #4's PCB Board.

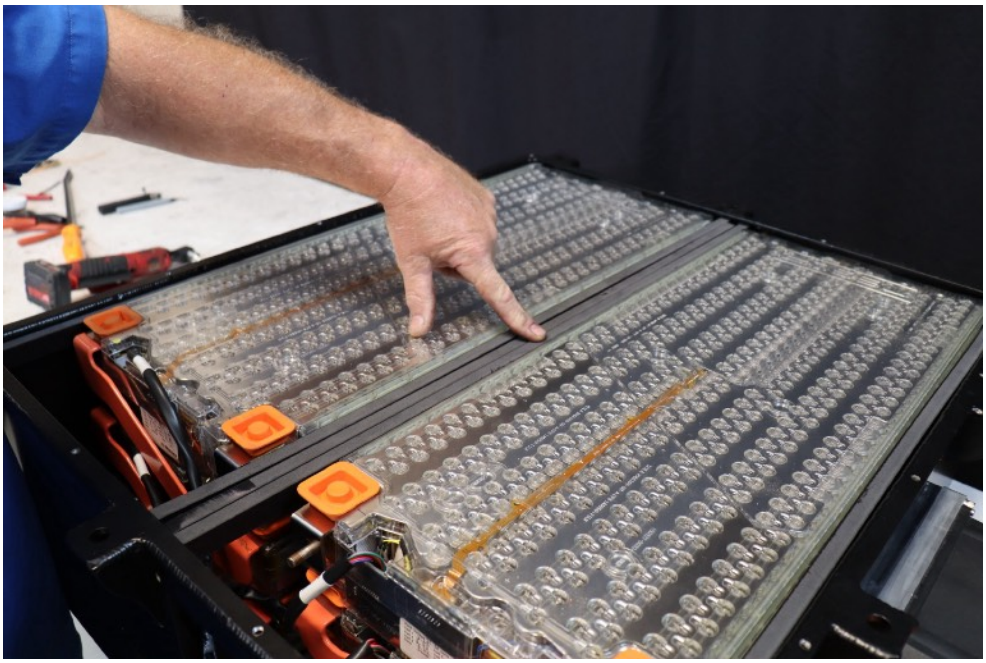


29) Slide center Polymer battery support panel onto rear module stack. Leave a gap between the two module stacks for "wedge" panel



Note the gap between module stacks. Trimming of the "wedge" panel will be needed to allow the panel to slip between existing. Trim the smaller leg not solid side.

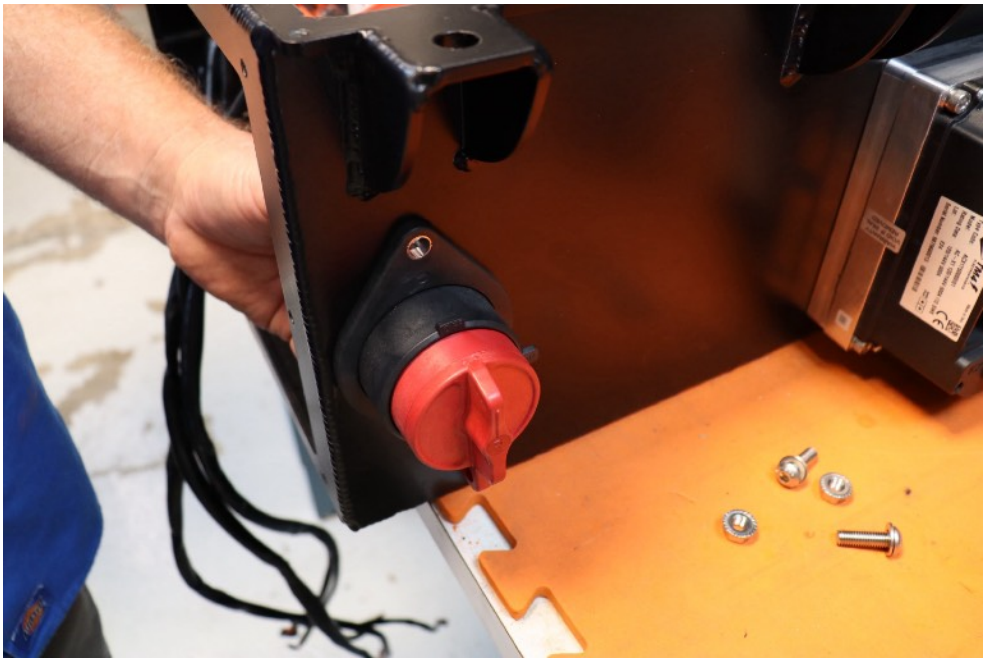


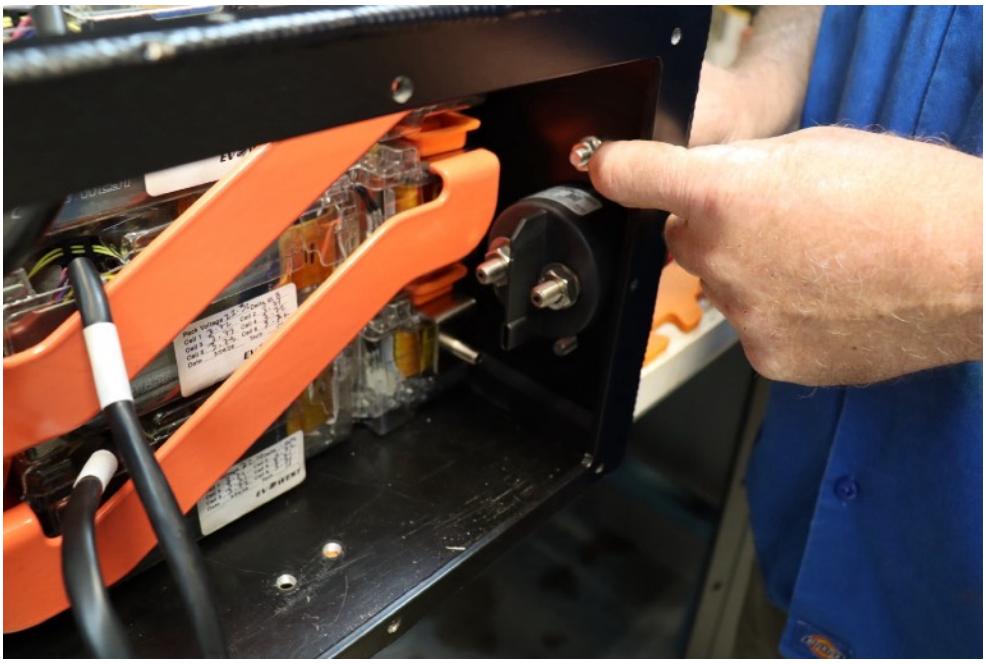


30) Insert "wedge" panel



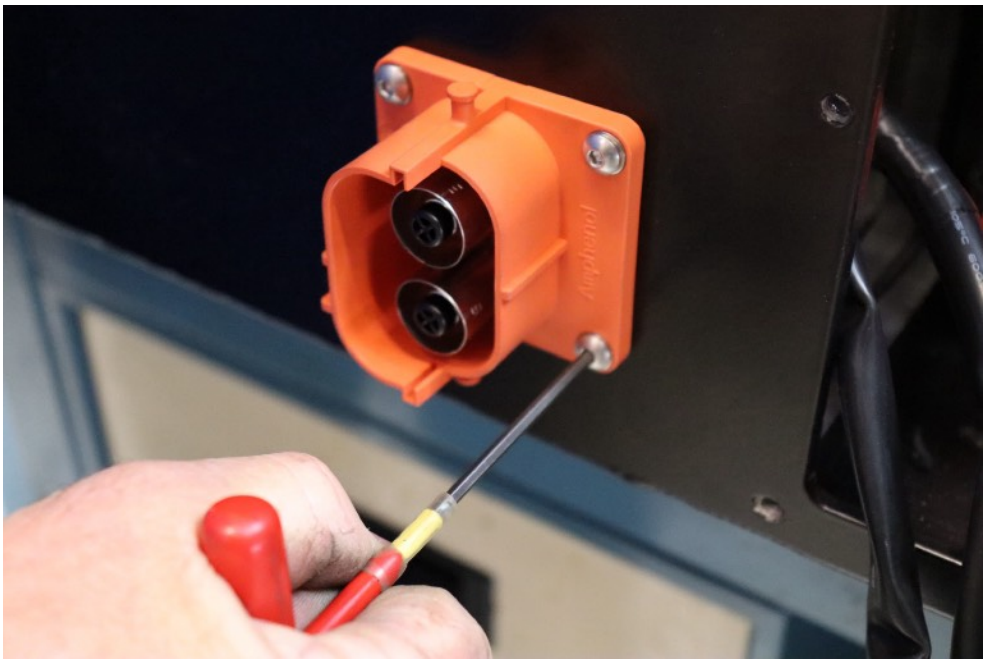
Note: Wedge panel flush with Polymer supports



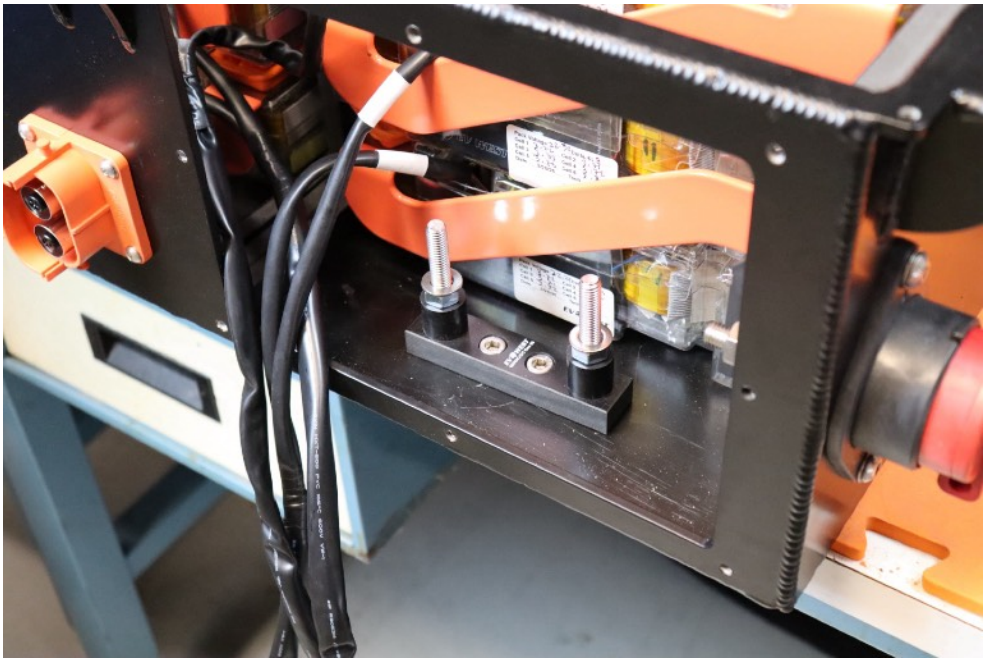


31) Mount maintenance switch using 8mm hardware

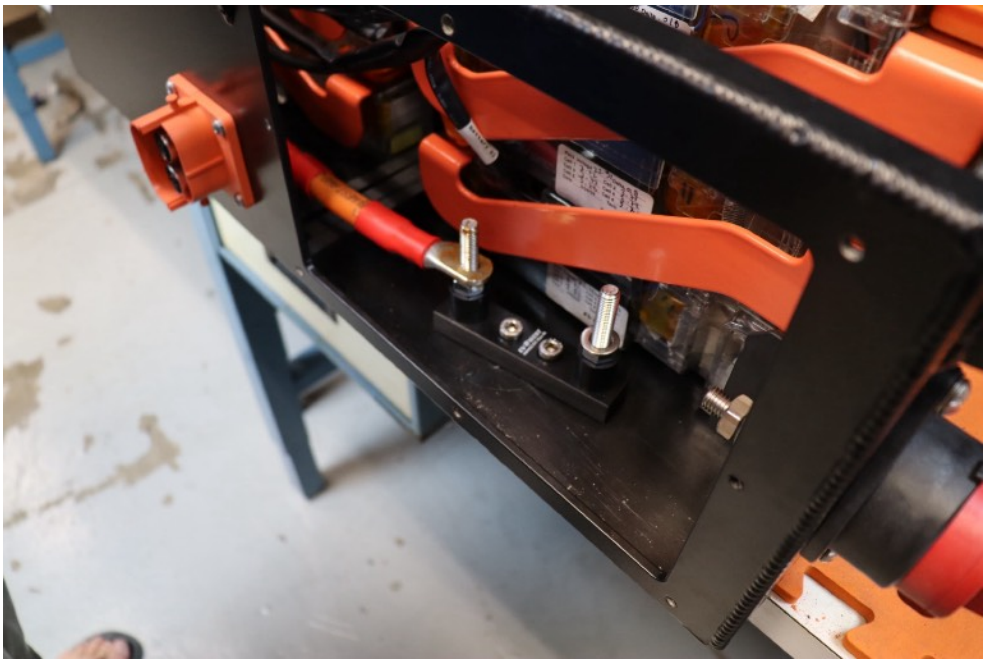




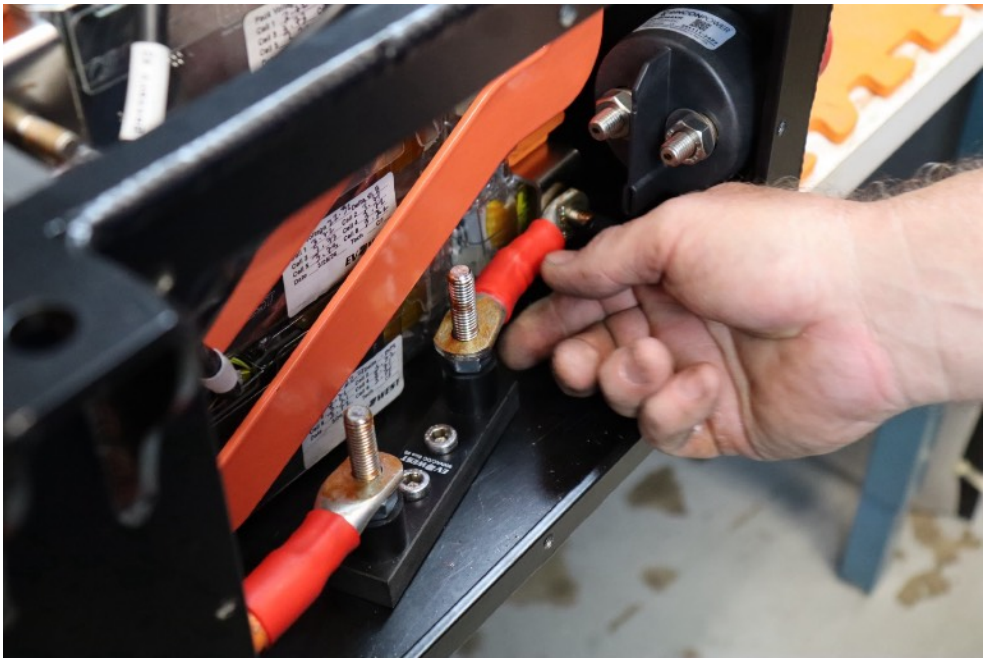
32) Install Amphenol connector using 5mm hardware. Drill and tap or through bolt.



33) Locate where you want to mount the fuse holder. Mark and drill 2 M8 holes to bolt it down. We recommend mounting right in the opening of the BMS panel for ease of service if needed.

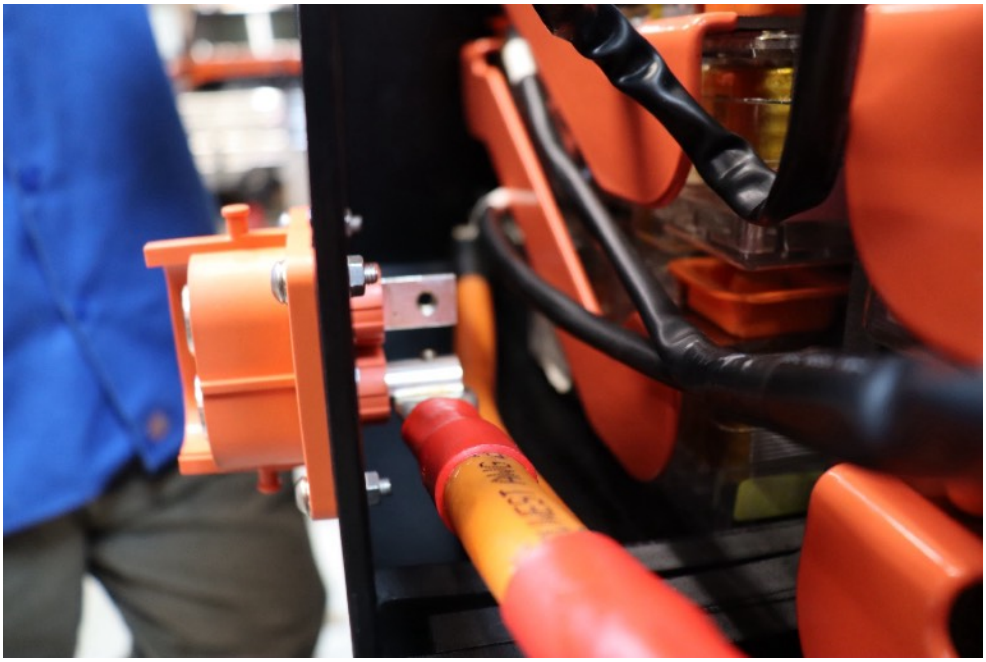


34) Build your cables as needed





35) Install the cable from the positive terminal of module 6 to one post of the fuse holder



36) Install cable from fuse holder to Amphenol using a 5mm bolt. The lower terminal works best. Make sure the flat face of the Amphenol connector faces down.

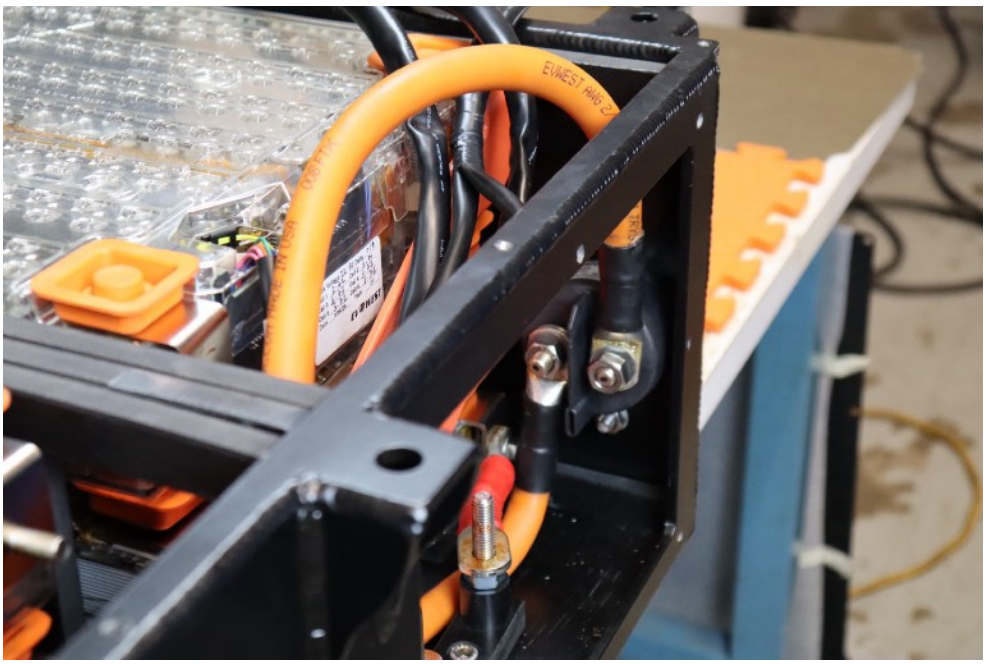
When making the cable for the Amphenol panel mount you will use the 1/0 cable lug with 1/4" bolt hole.



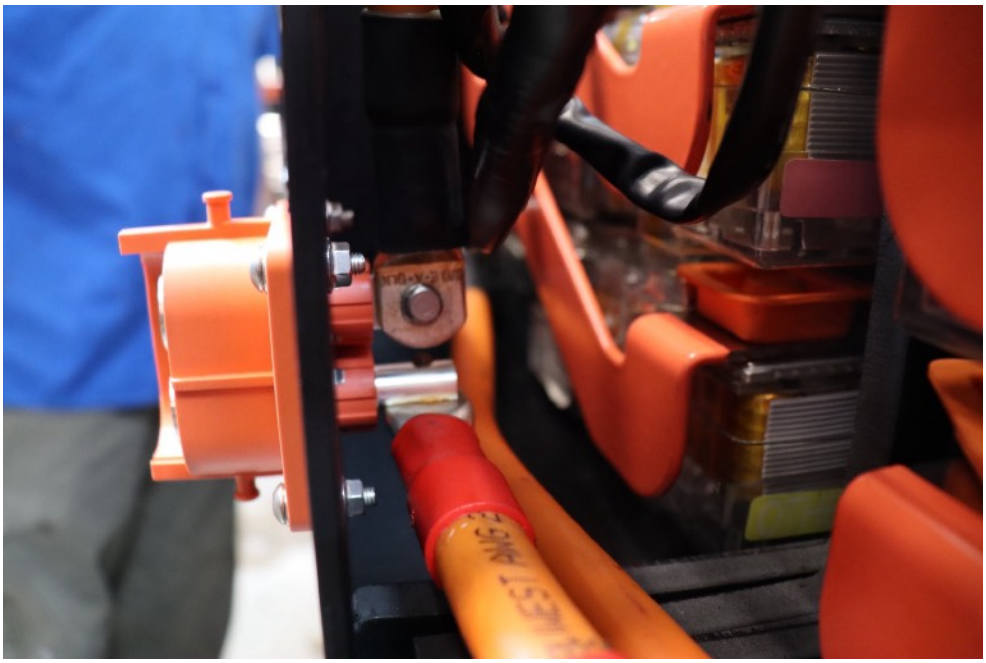
37) Make the cable that will go from the negative terminal of module #1 to one post of the maintenance switch and install.



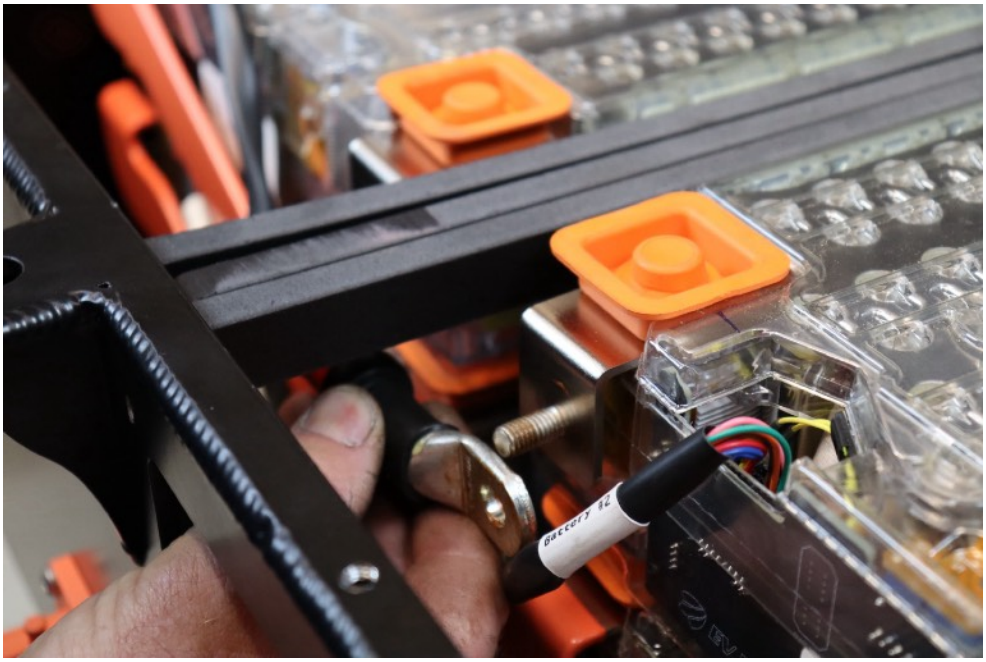
38) Make the cable that will go from the open post of the maintenance switch to the last open terminal on the Amphenol plug.

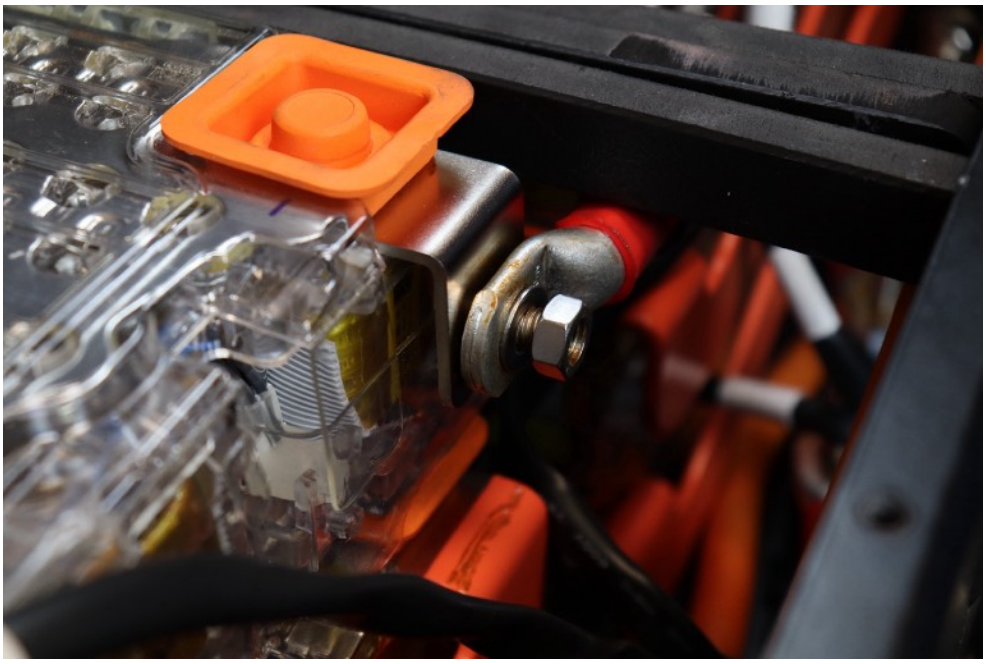


39) Connect maintenance switch to Amphenol connector.

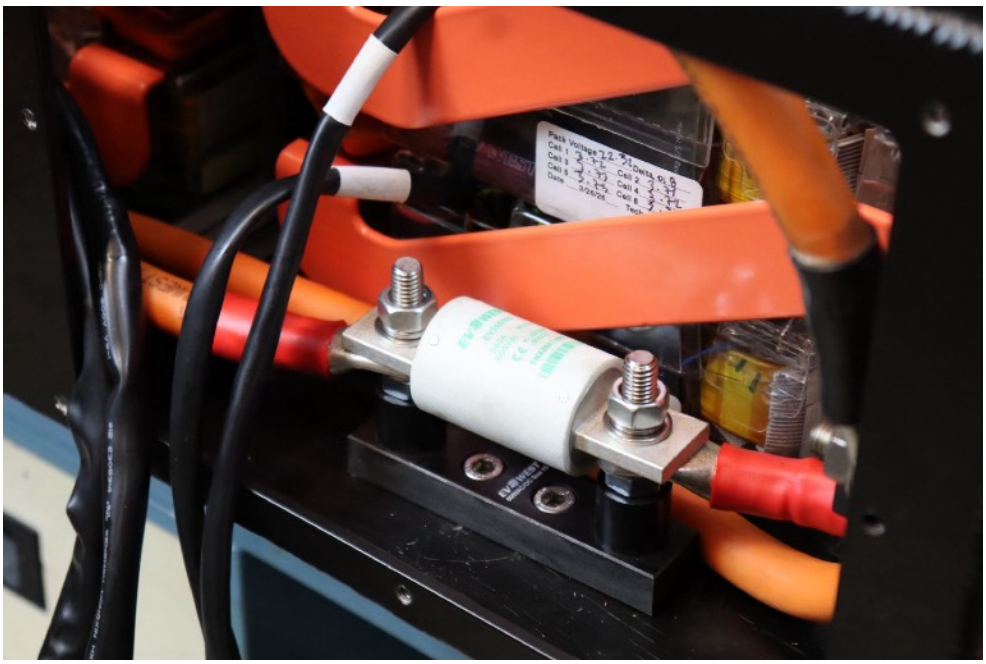


Note: Make sure flat face is vertical on the Amphenol when installing the cable





40) Install interconnect cable between module three positive and module four negative

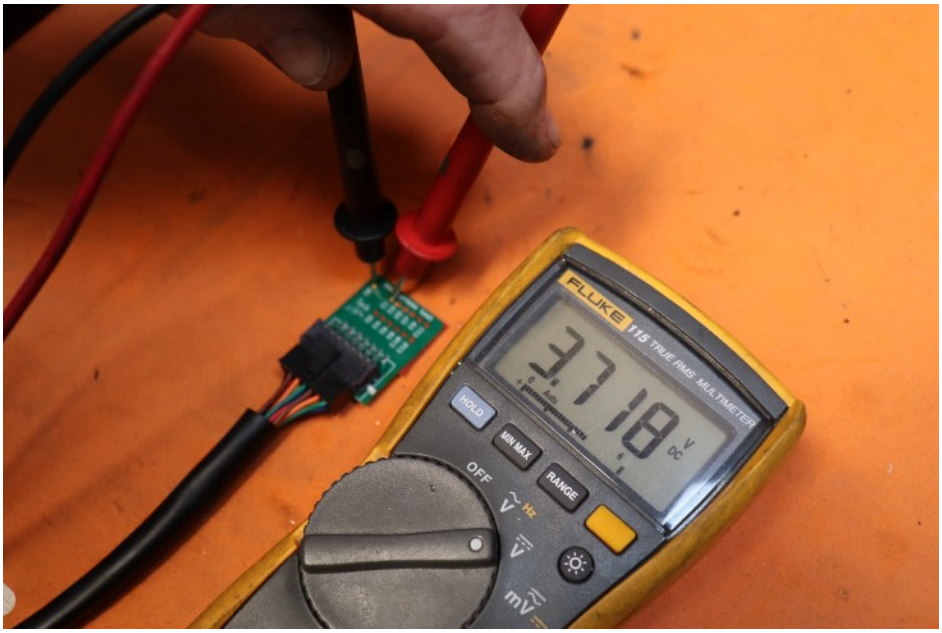


41) Once all of the series connections have been terminated as well as the Amphenol and Maintenance switch you can then install the main pack fuse.

Note: STOP! Do not plug your harnesses into the BMS until this next step is COMPLETE!

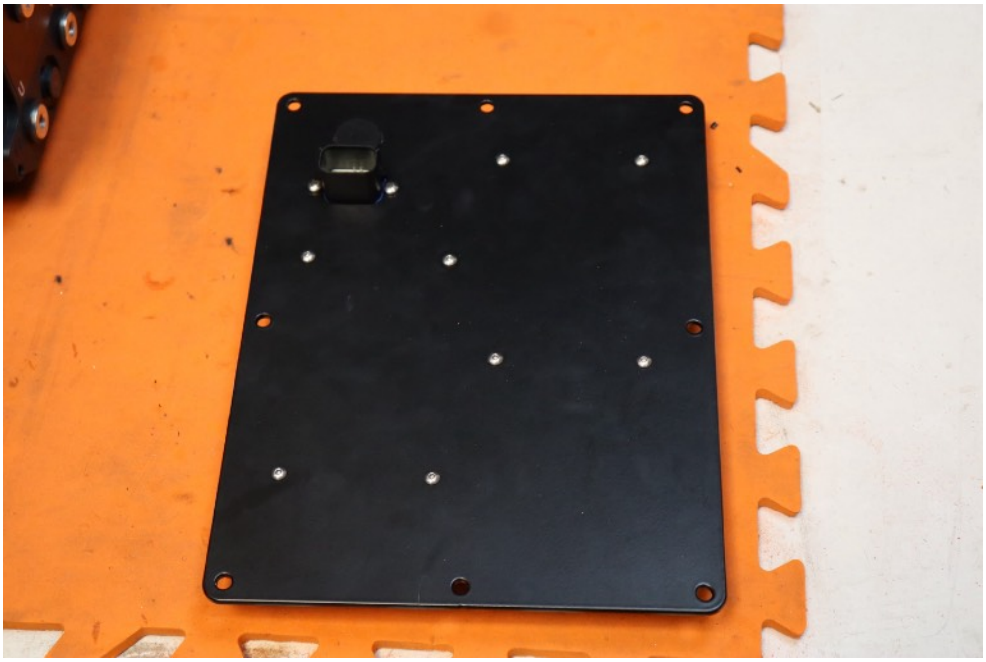


42) Once the batteries are installed with the proper series connections and all of the BMS harnesses are plugged into the PCB boards it is now time to test the harnesses before plugging them into the BMS units.

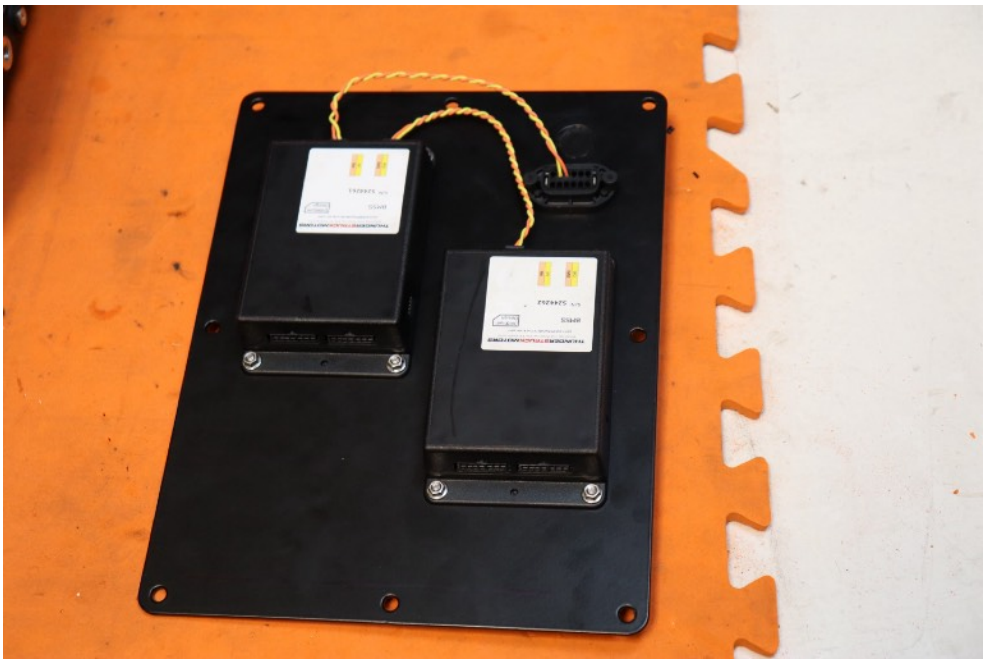


Dilithium BMS Manual

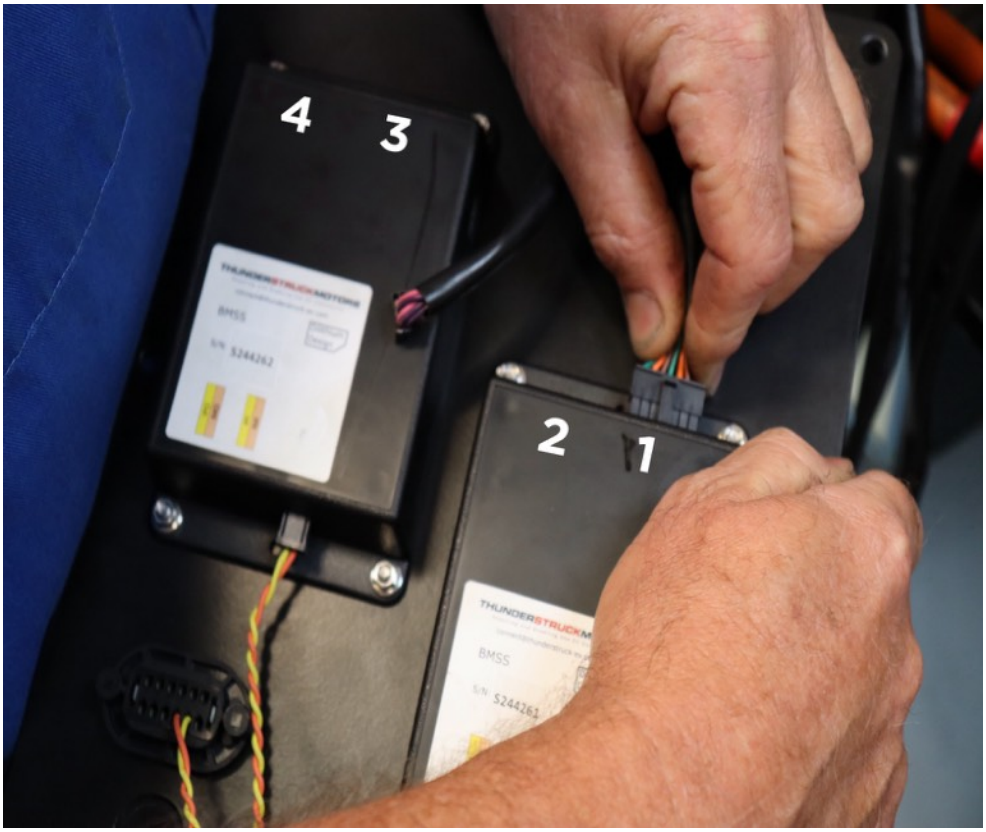
43) You will need the provided BMS harness tester as well as your volt meter. Proceed to follow the instructions on page 23 of the Dilithium BMS manual for the next steps. Use QR code above or enter this link - https://evwest.com/support/BMSv2.2.pdf



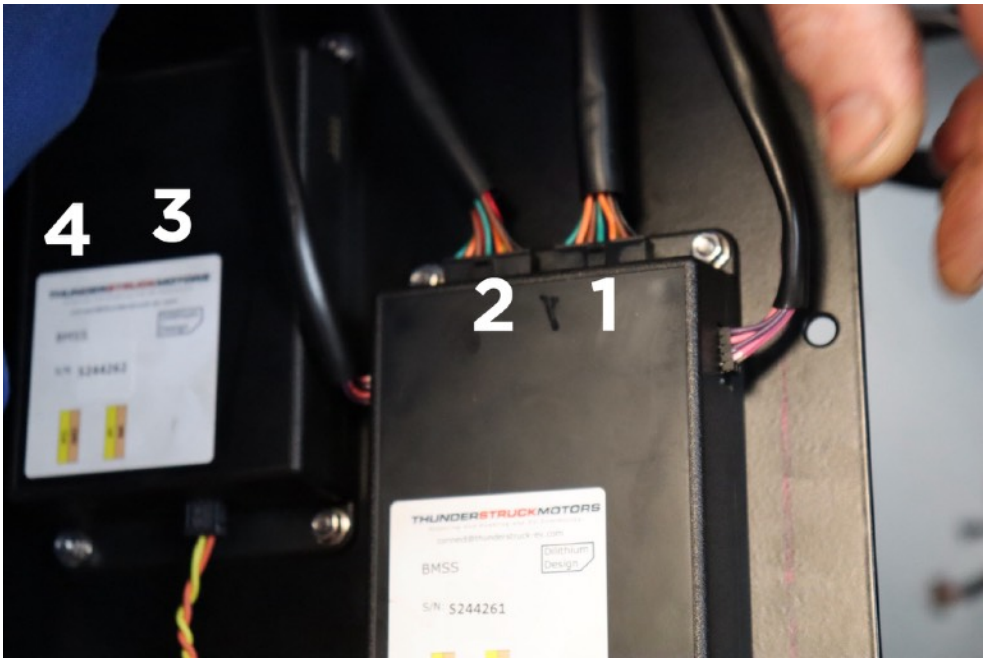
44) Mark where you want the BMS modules to mount. Drill holes and through bolt them to the access door.



45) You will also install the MX150 at this time as well. You will wire the MX150 according to the BMS manual for the IMO/IMI wiring.



46) Plug the BMS harness from module #1 and #2 into the BMSS LTC 1. socket. Plug the corresponding thermistor harness into the same side as well.





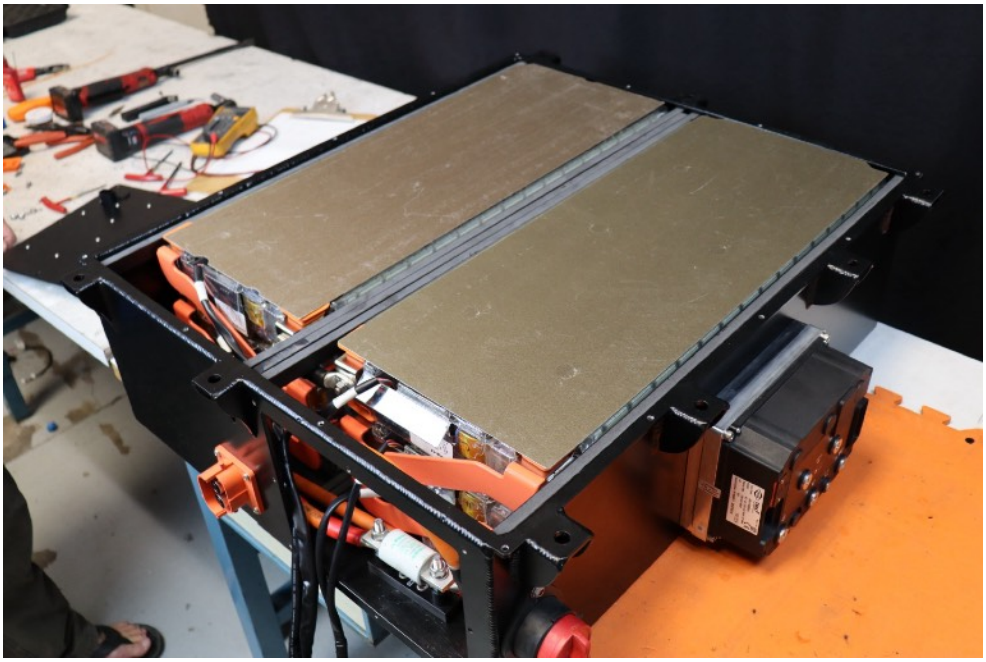
47) Plug second BMS harness into LTC 2 of unit one. This would be for modules #3 and #4.



48) Repeat the same steps for the BMS harness for module #5 and #6 and plug them into BMSS #2 LTC3.



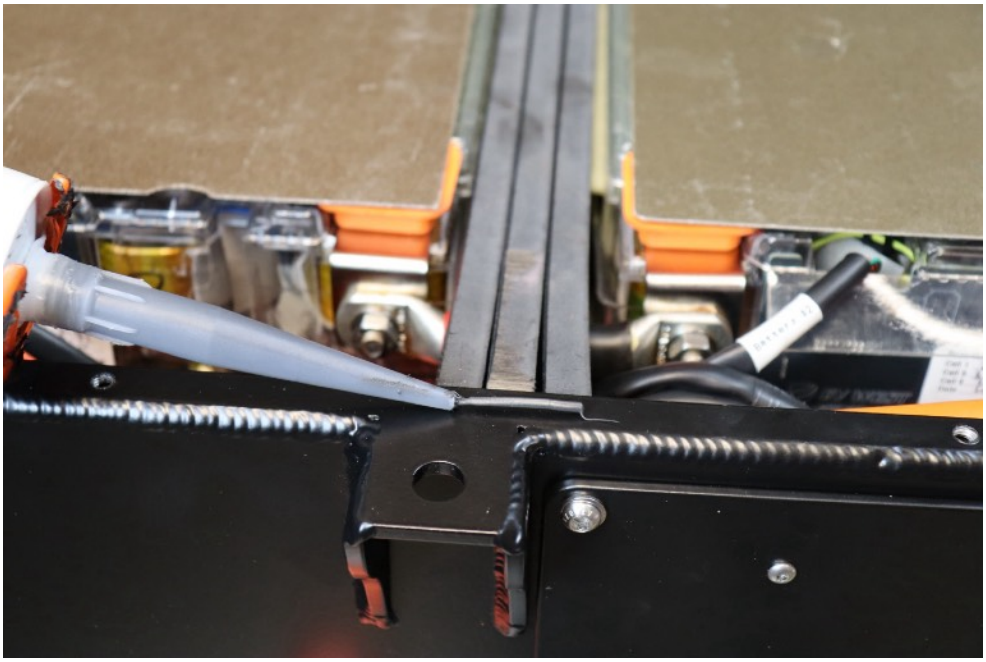
49) All LTC pugs and thermistor plugs properly plugged into their corresponding BMS units.



50) Install top Mica sheets into the box.



51) Secure the BMS harness wires so they will not get snagged or interfere with anything inside the box while installing the access door.

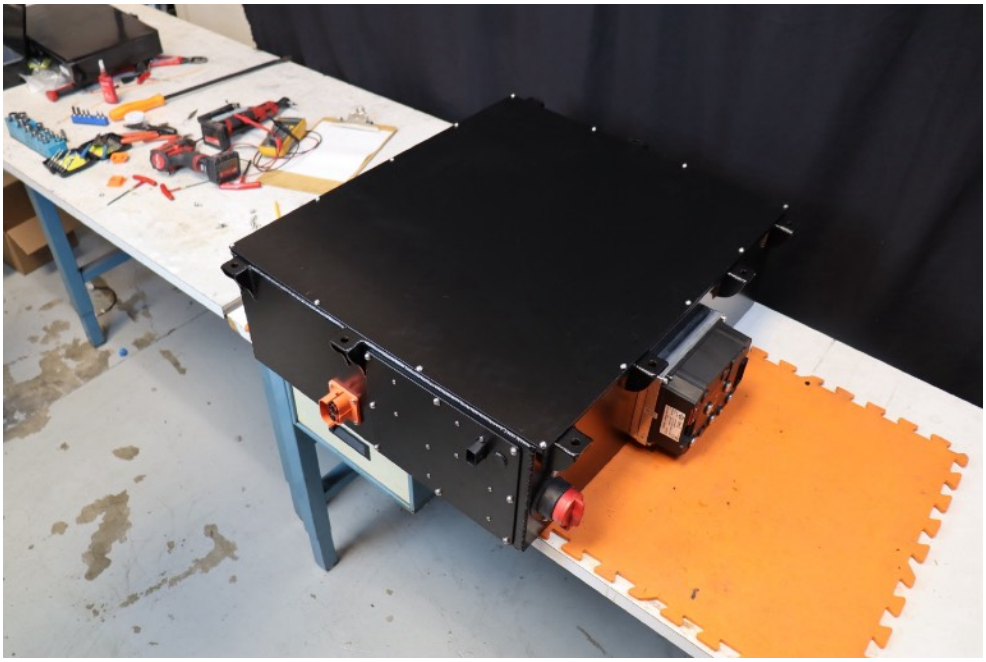


52) Run a small bead of RTV on the two flanges for the covers. This will help keep water intrusion out of the box.

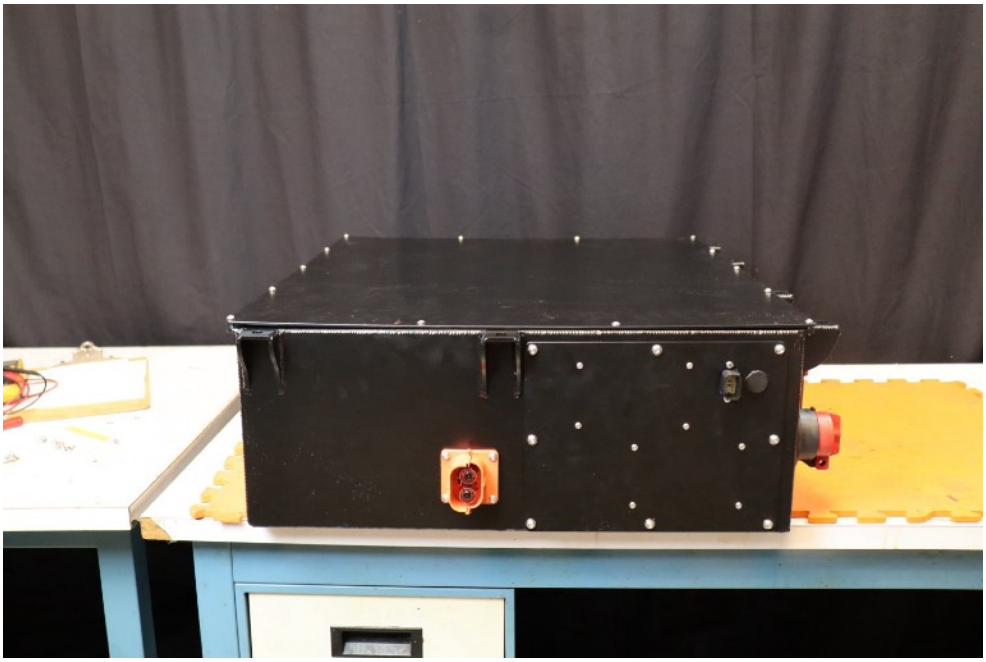




53) Install access door



54) Bolt the lid down with the provided hardware



You have just completed the assembly of your 6 Module Battery Box—excellent work! This marks another key milestone in EV Conversion, bringing you one step closer to completing your project.

If you have any questions or concerns as you move forward with your project, please don't hesitate to email us at **support@evwest.com** or call us at **888-591-5830**. We're here to help make your conversion a success from start to finish.