



product page



Installation Guide

CATL Battery 30 Kwh 173Ah 173Volt BMS



箱体型号 Pack Type	L173G01
额定电压 Nominal Voltage	173.88 V
额定容量 Rated Capacity	173 Ah
额定能量 Rated Energy	30.08 kWh
电箱重量 Pack Weight	193 ± 5.8 kg
产品批次 Product Batch	121083379172

CATL MADE IN CHINA

Tools needed

- ¼" Ratchet
- ¼" 6" extension
- ¼" driver 7mm shallow socket
- ¼" driver 8mm shallow socket
- ¼" drive 13mm socket
- Razor knife
- Soldering iron
- Solder 18-20 gauge
- Flush cut diagonal cutters
- Multi meter (VOM)
- Optional: ¼" impact driver
- Optional tool Heat Gun

Additional Items

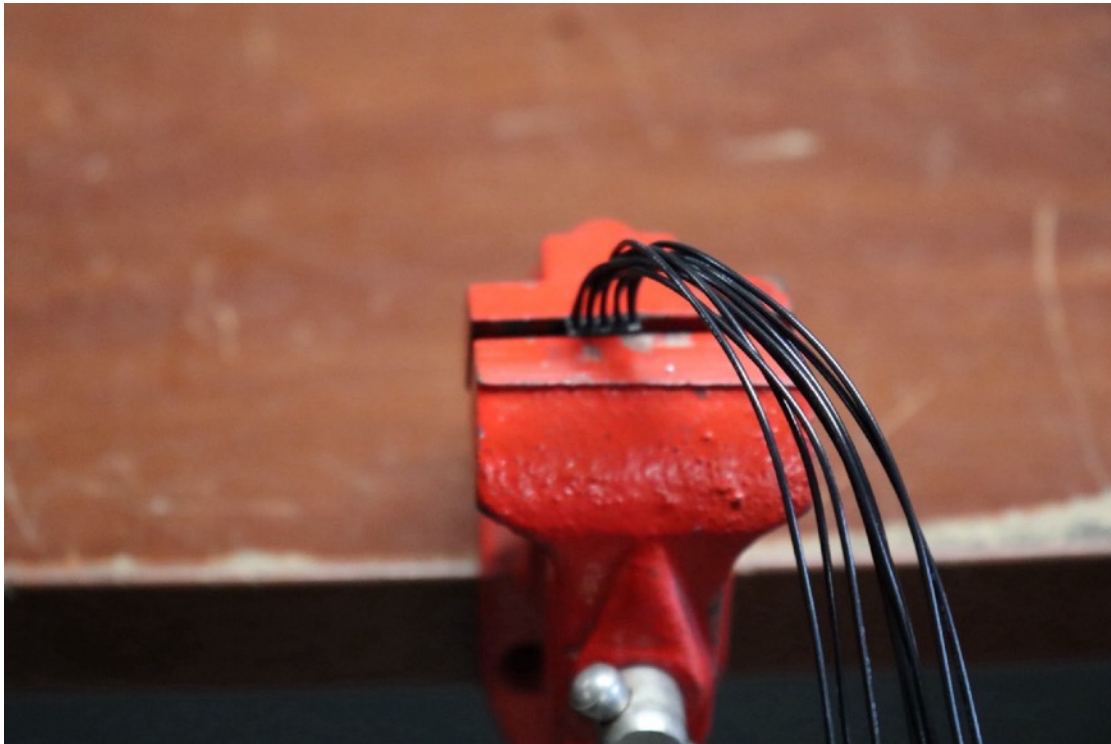
- Heat Shrink 1/16" to 1/8"
- Zip ties
- Kapton tape 1/4" to 1/2"
- RTV
- Thermistors
- 10 K NTC

Documents

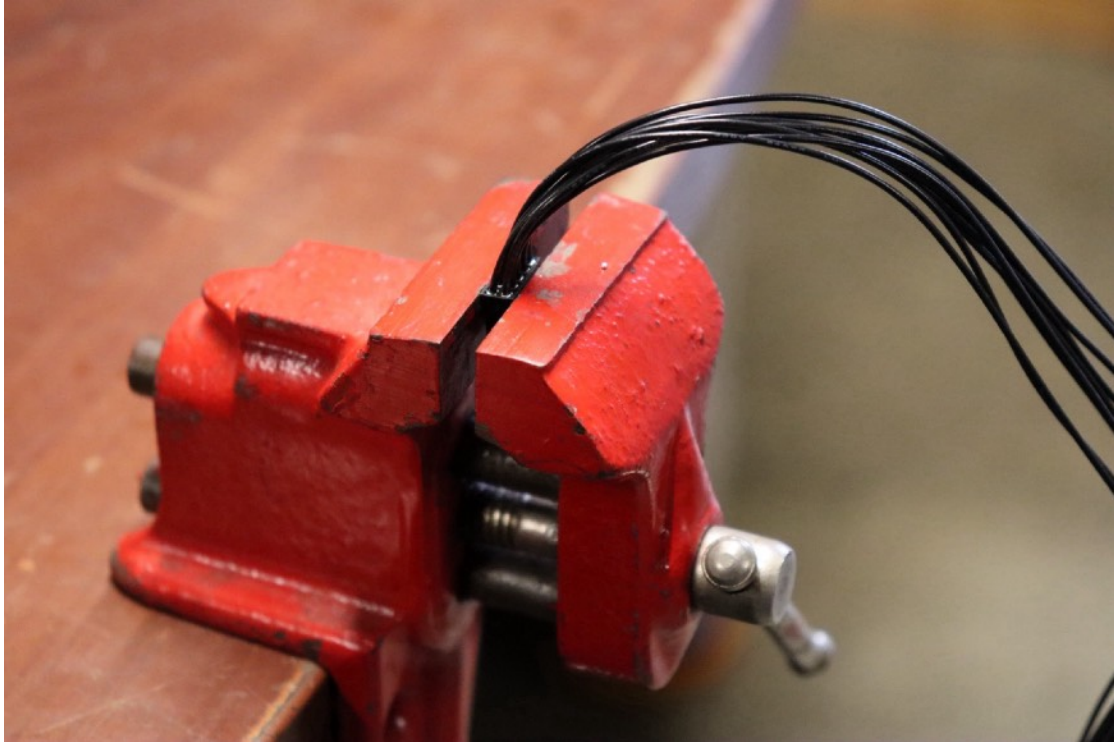
https://evwest.com/support/CATL_Pack_BMS_Settings_Quick_Start_Guide.pdf



Thermistor Harness

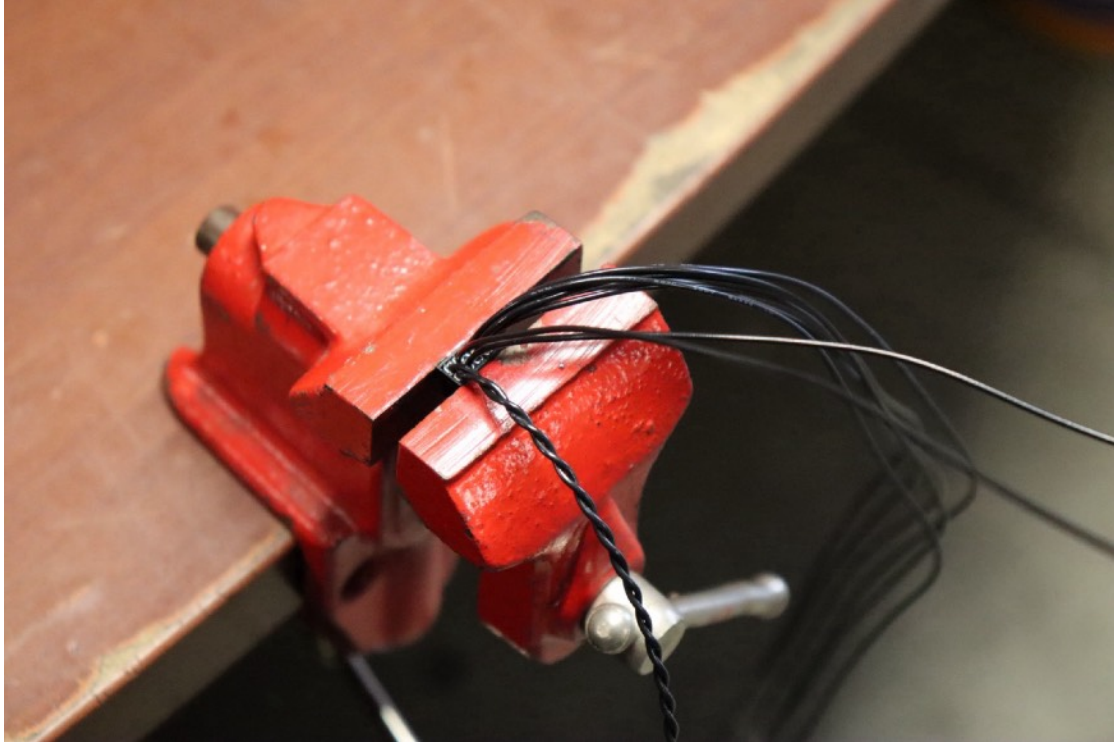


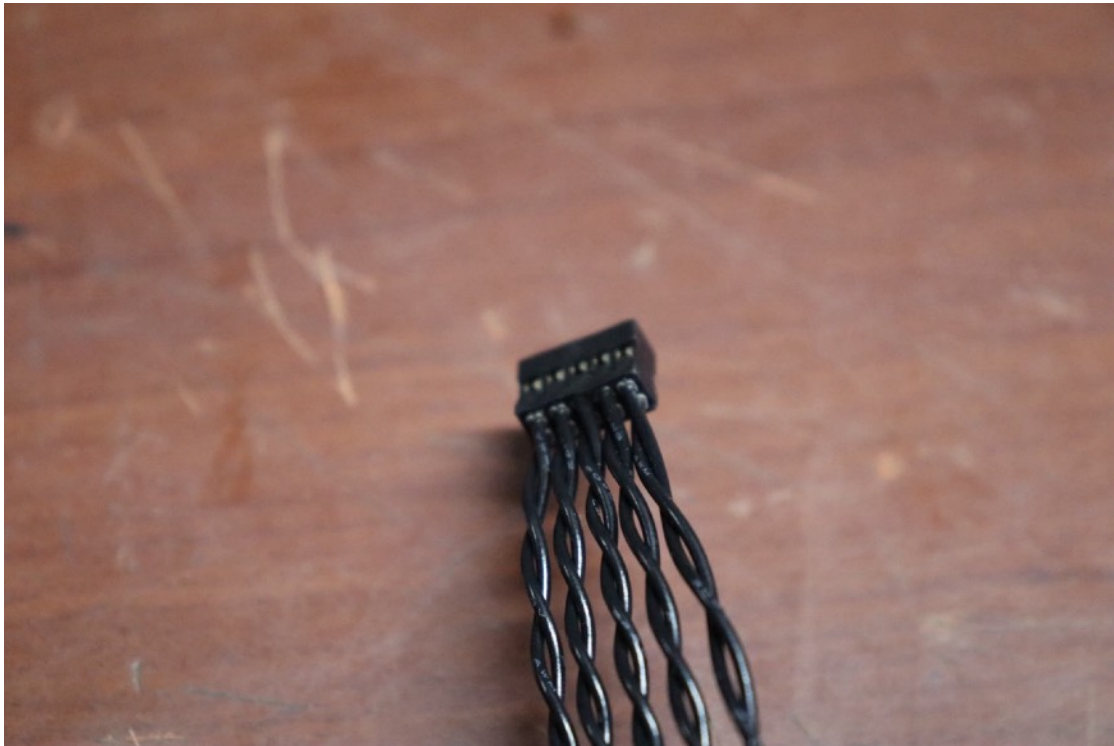
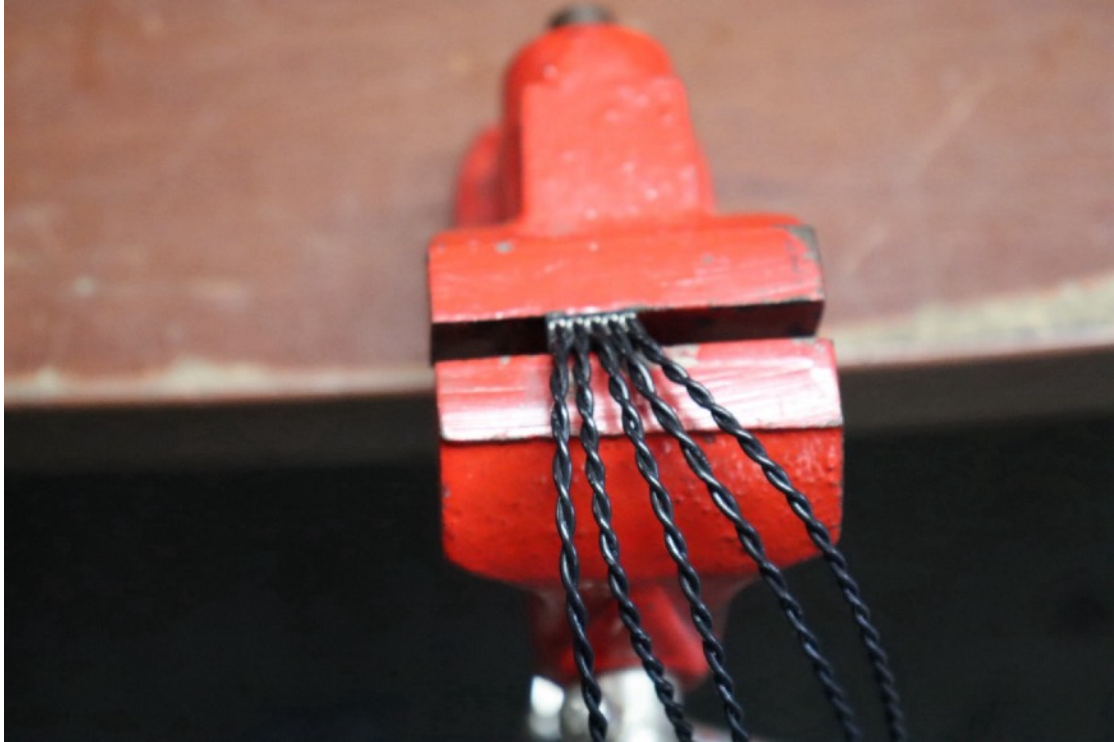
1) Separate thermistor wires for thermistors 1,2,3,4 and 5



2) Twist thermistor pairs together (optional step)

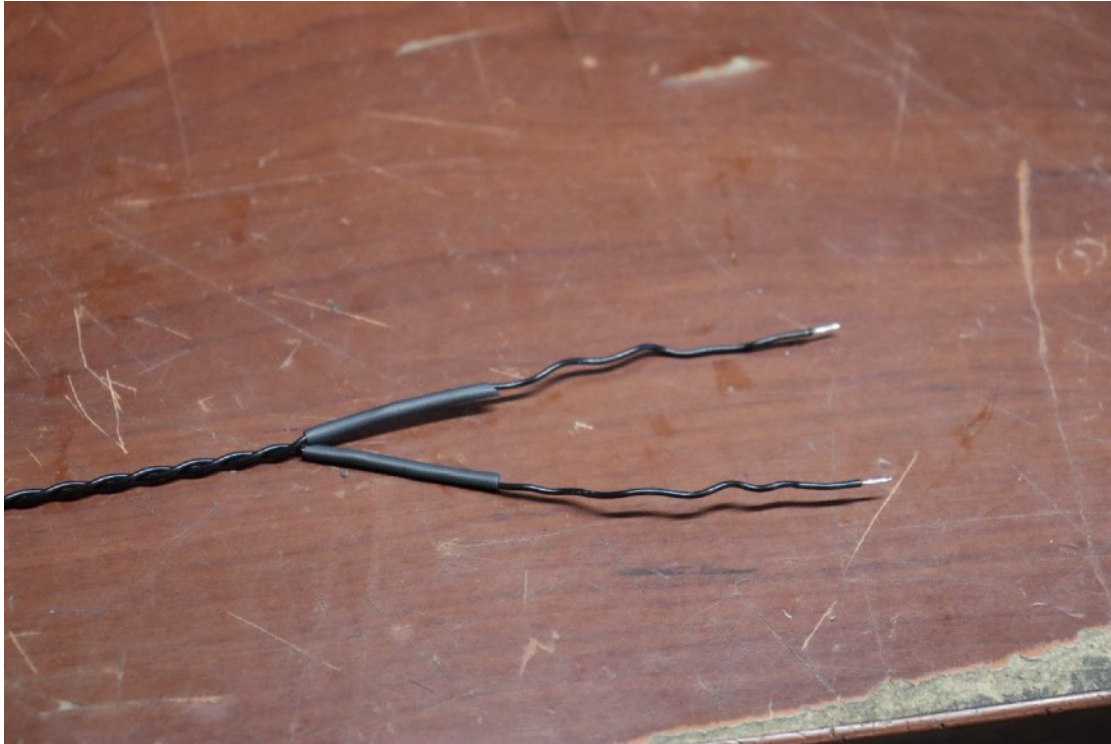




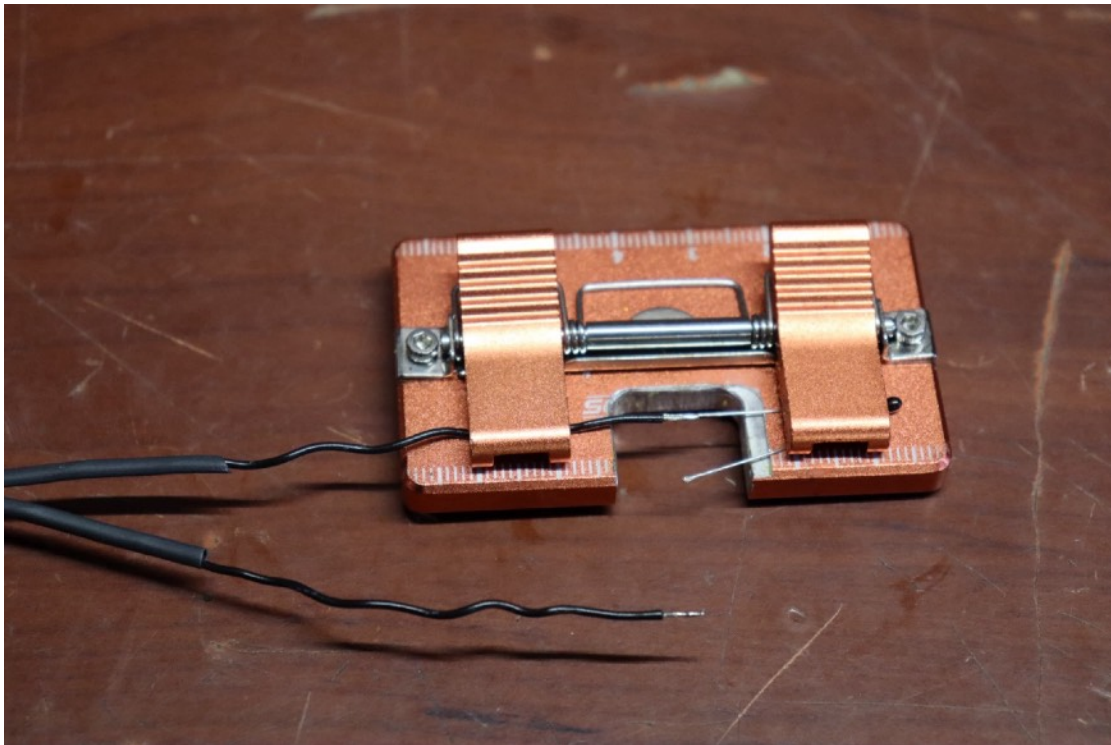




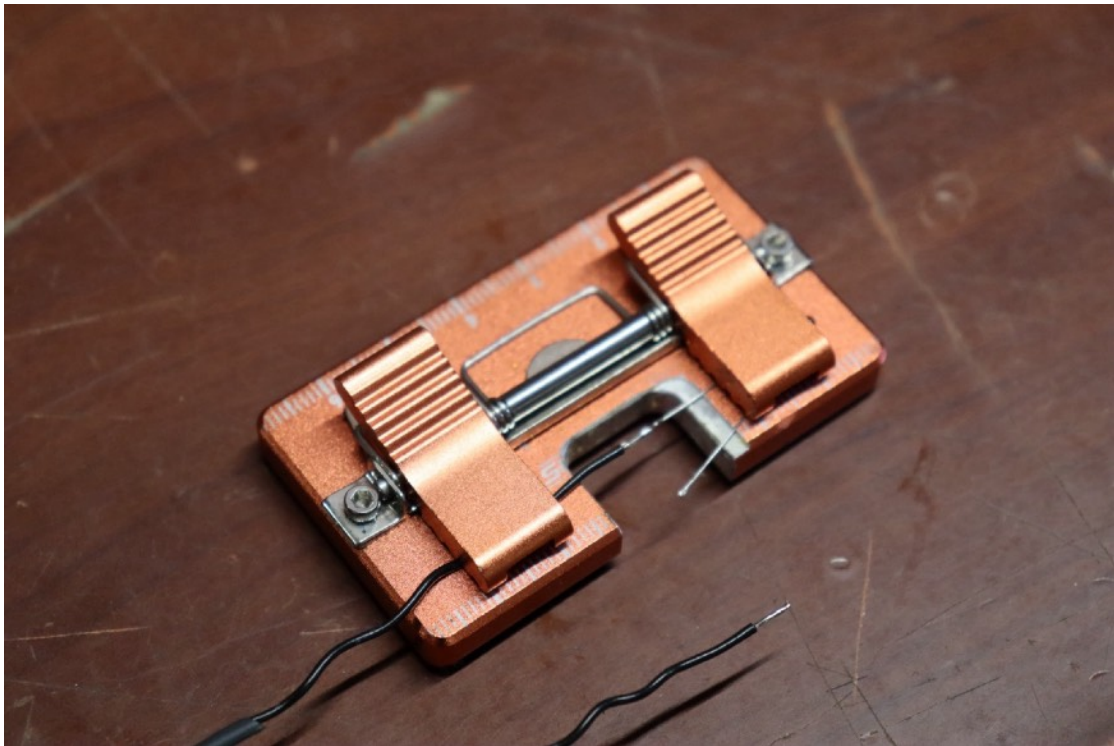
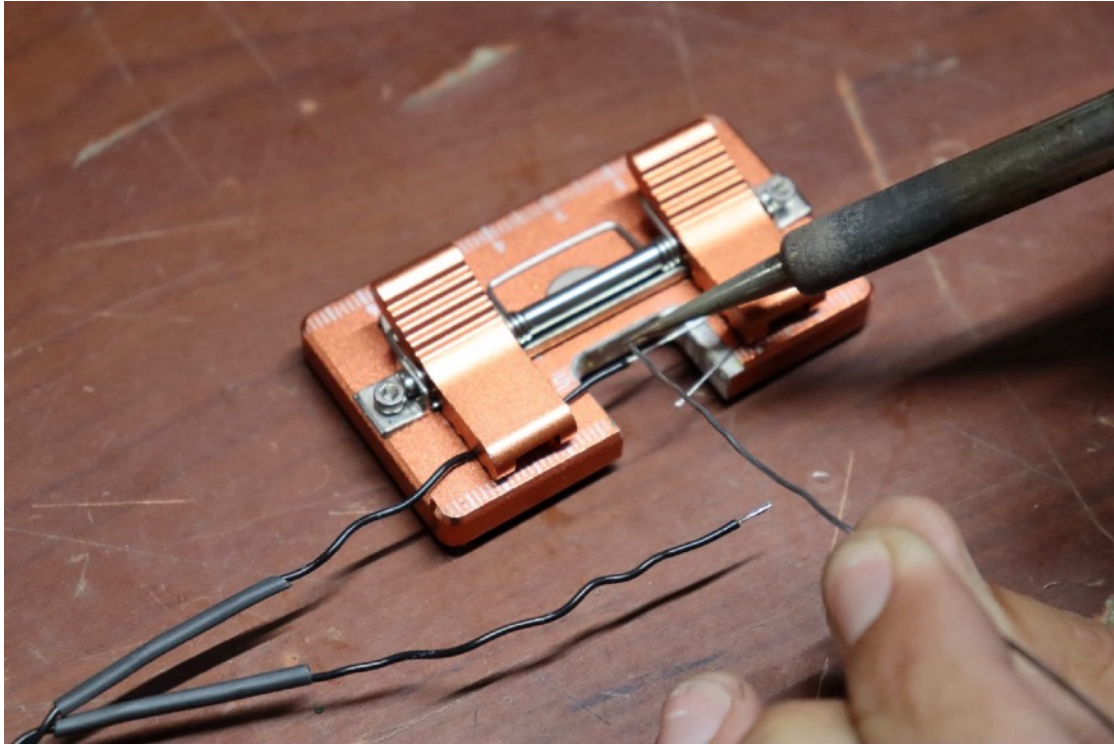
3) Cut to length

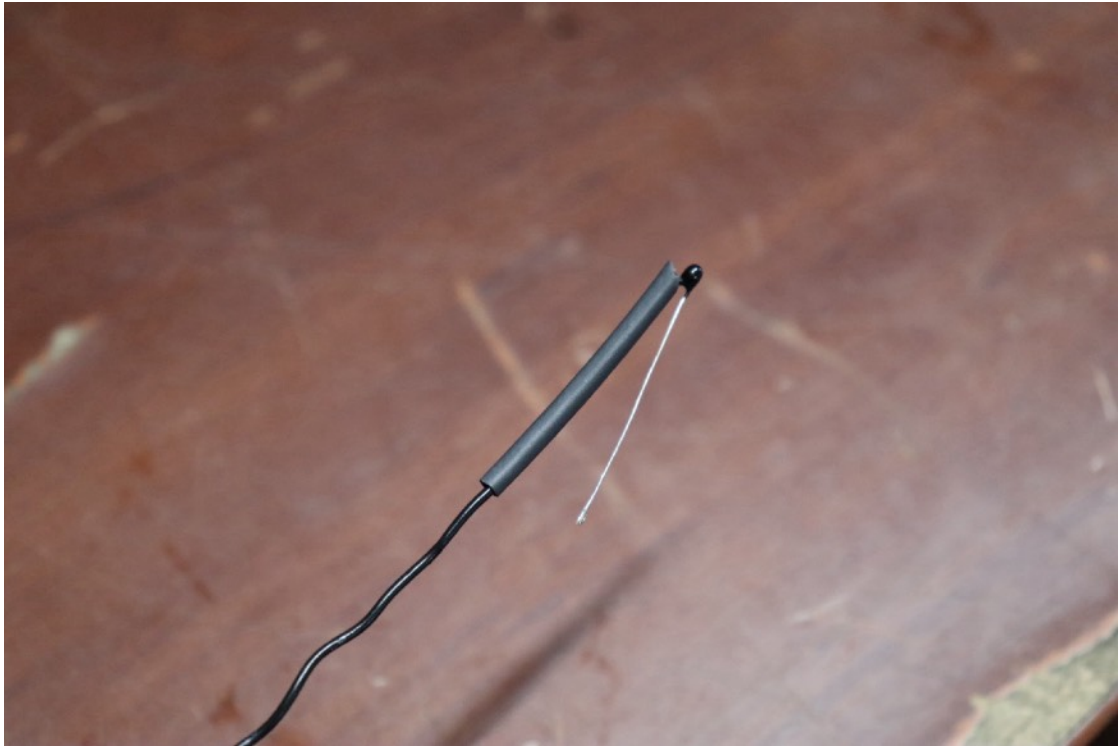
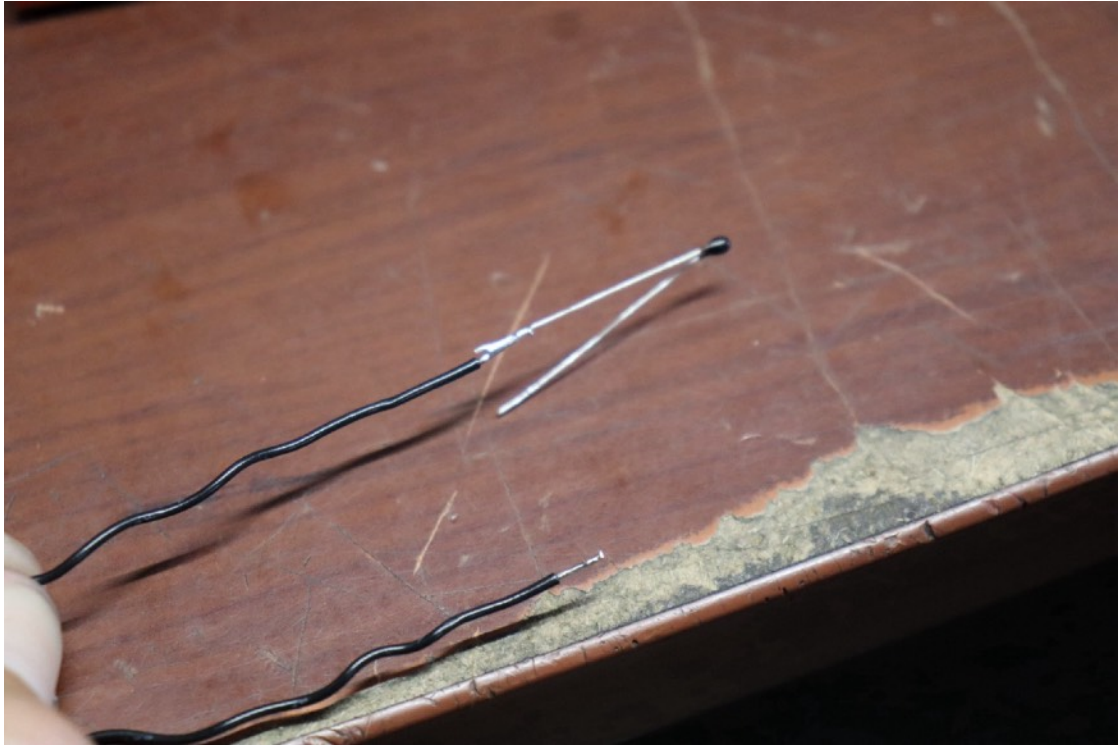


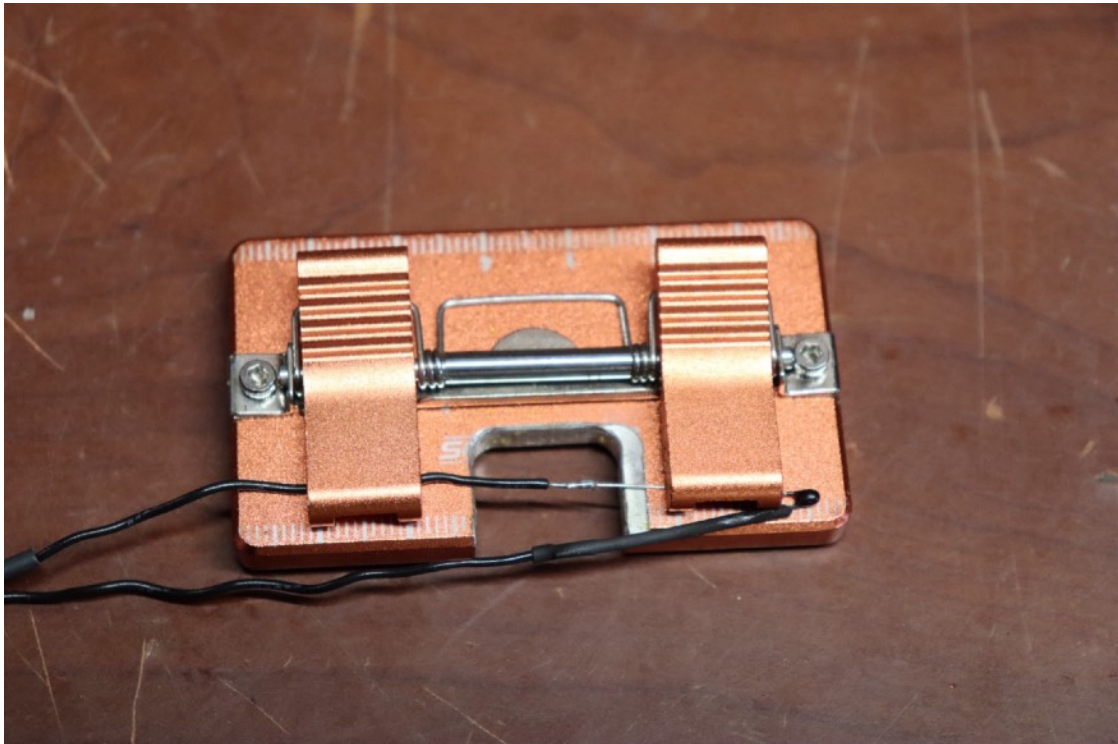
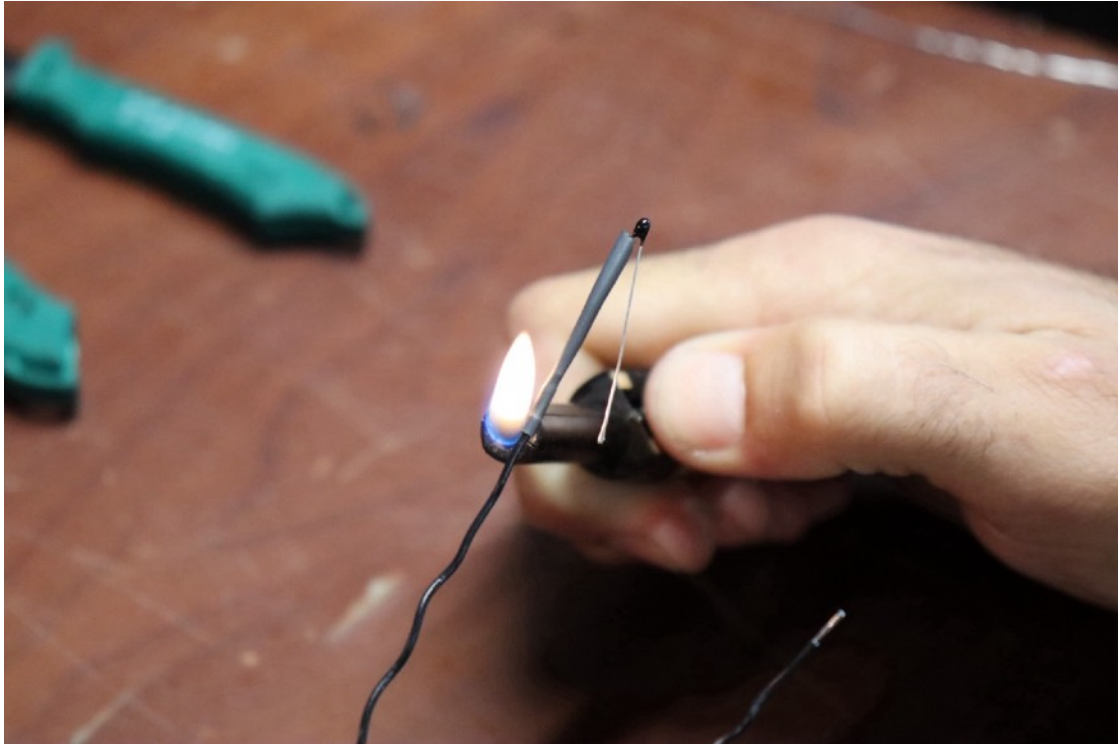
4) Strip and feed thermistor into heat shrink

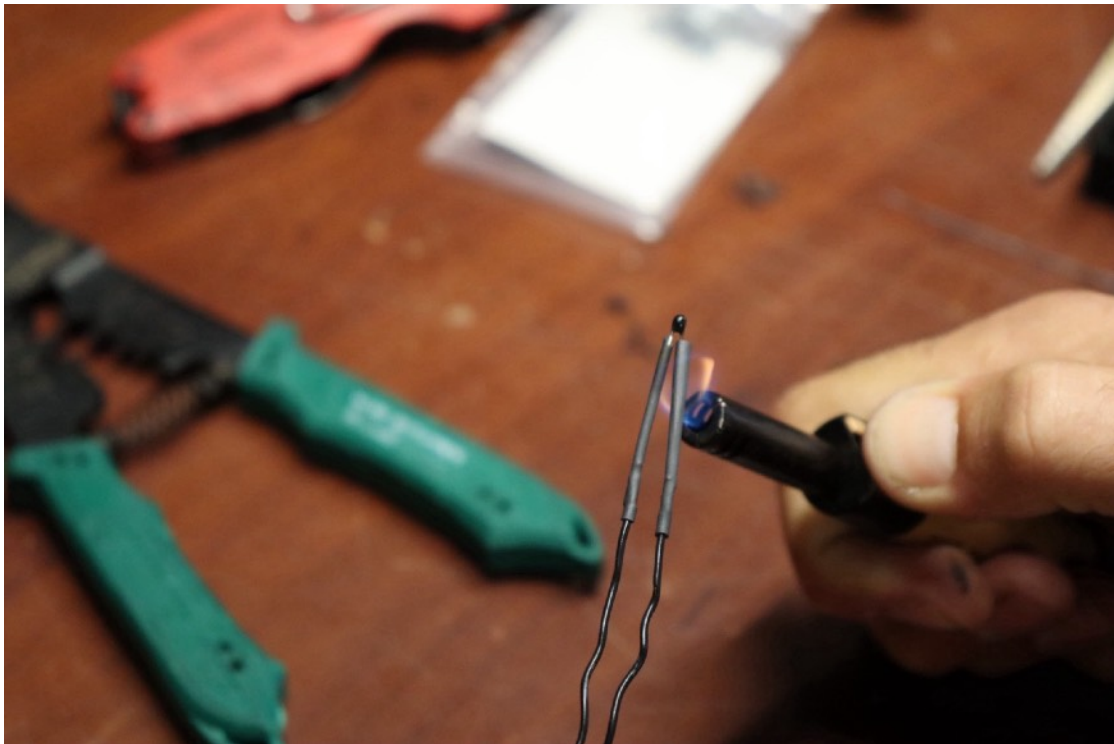


5) Solder Thermistor





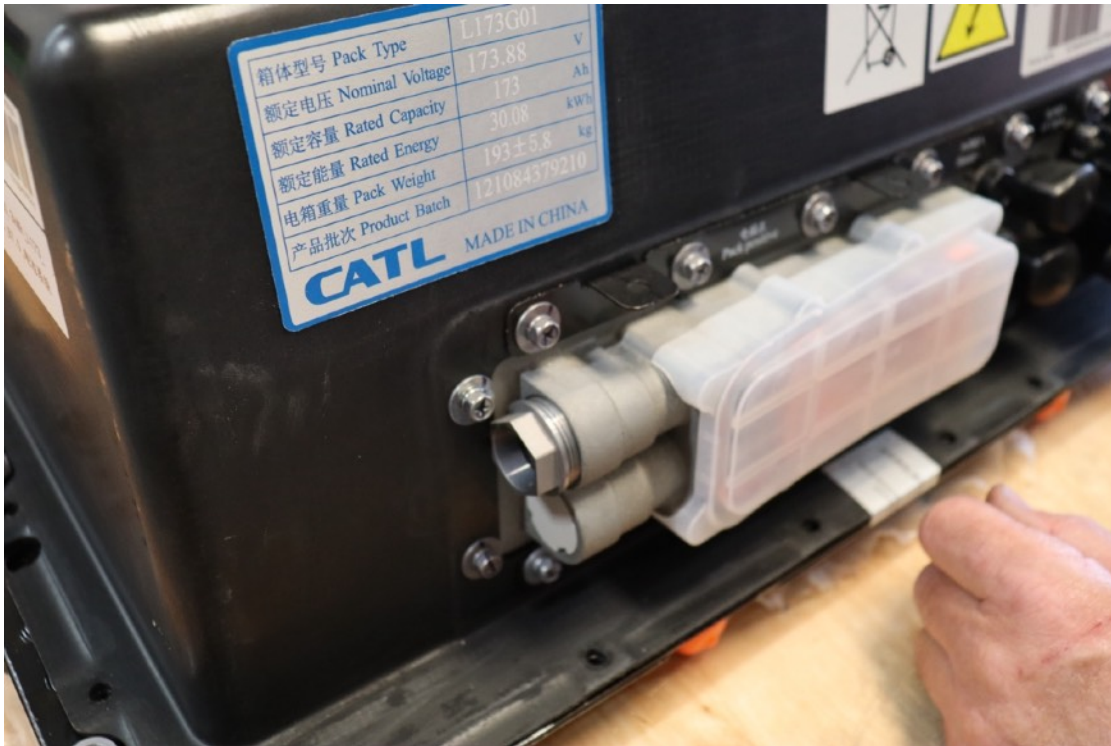




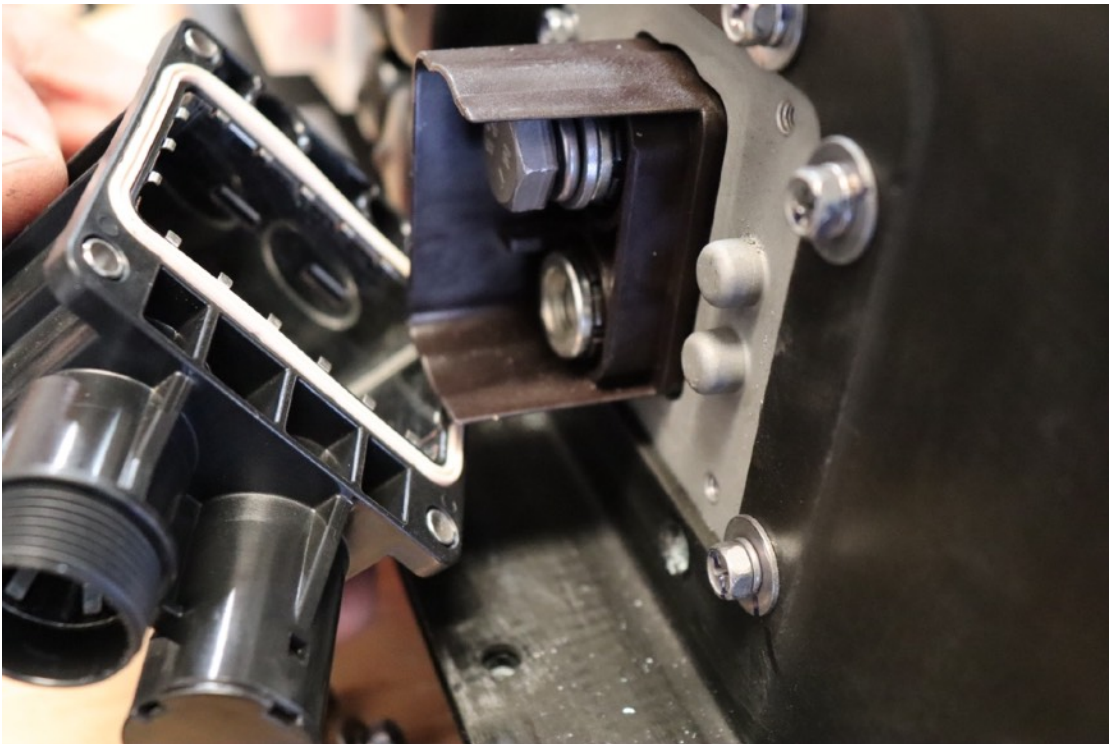
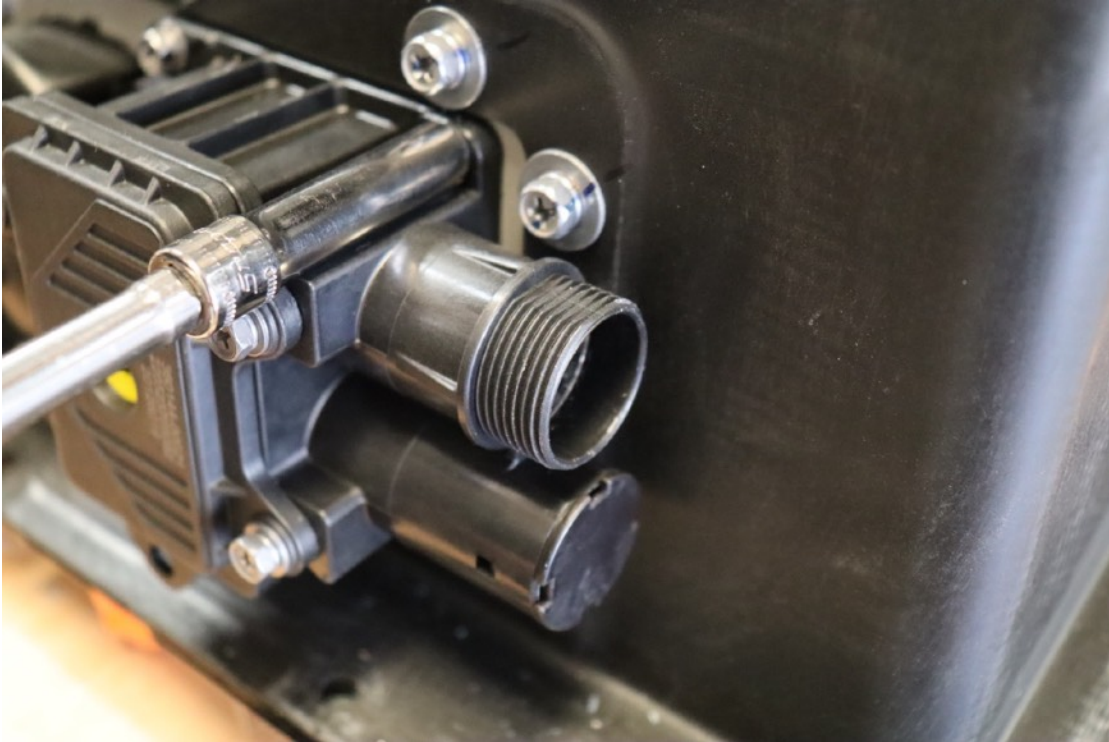




Disassembly of Battery Pack



1) Unscrew negative and positive cable seals



2) Remove four (4) 7mm bolts from under the negative battery cable cover



3) Remove sixteen (16) bolts from around the termination area



4) Remove four (4) 14mm bolts from battery box to pallet.



5) Remove thirty-four (34) 8mm bolts from the rim of the battery enclosure



6) Remove and discard the three brackets (Spicer wants to add before and after photos)



7) Remove labeling brackets and set aside (wants before and after photos)



8) Cut the 'void warranty sticker'



9) Lift cover



10) Peel off black tape and uncover terminals. NOTE: Save tape for reuse, stick to the foam



11) Remove 13mm bolt for negative cable



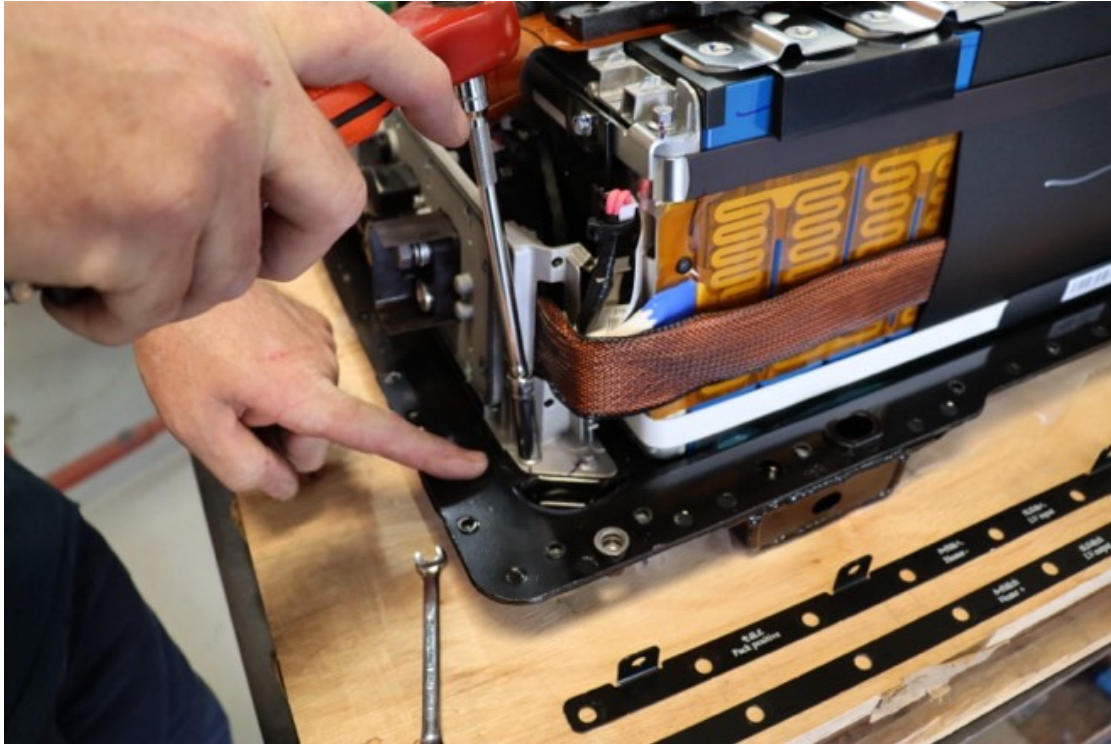
12) Remove 13mm bolts for intermediate bus bar battery bank one and bank two



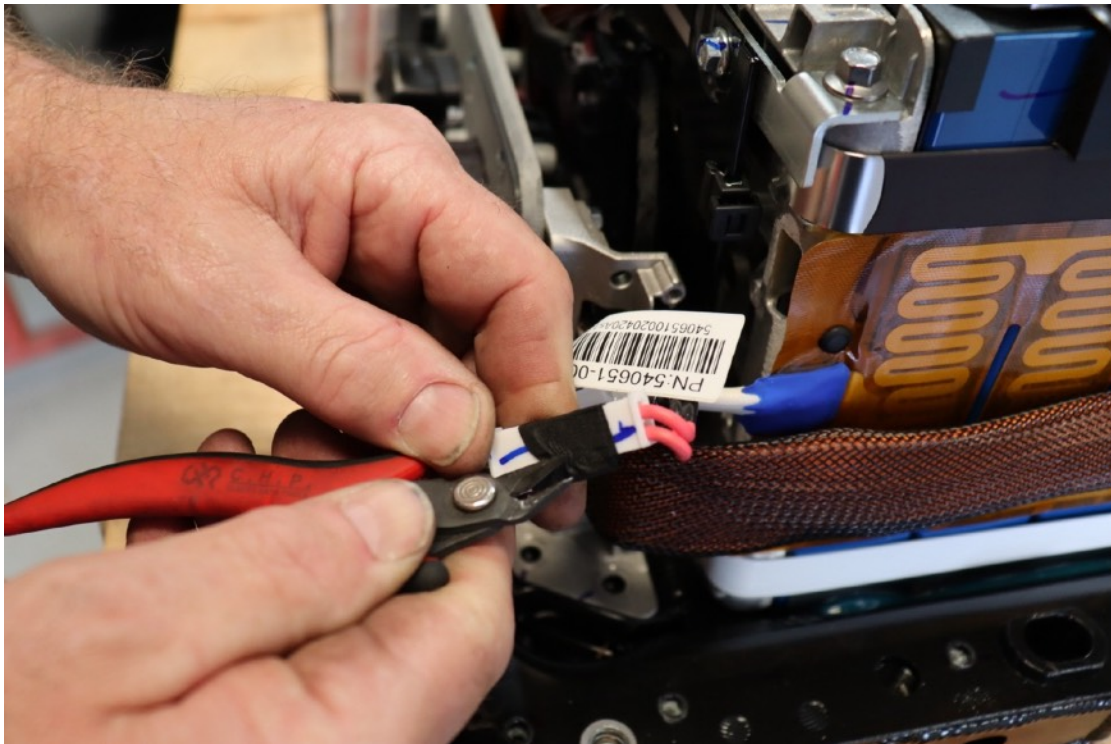
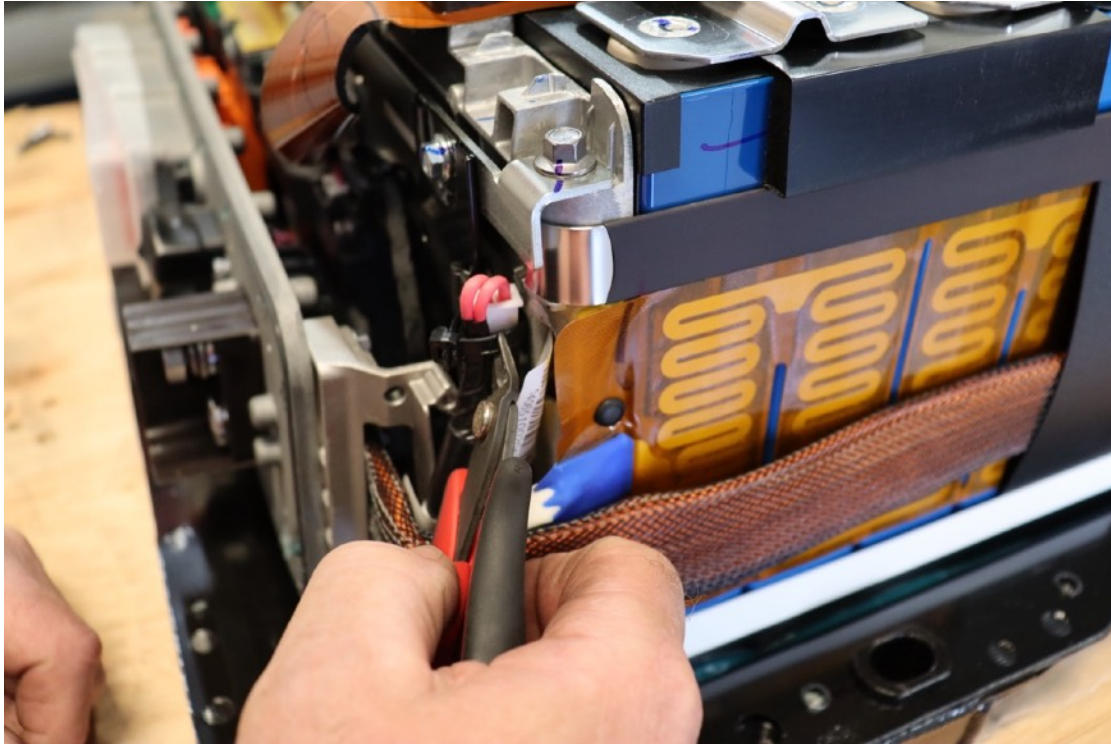
13) Remove 13mm bolts for the second intermediate bus bar battery bank two and bank three



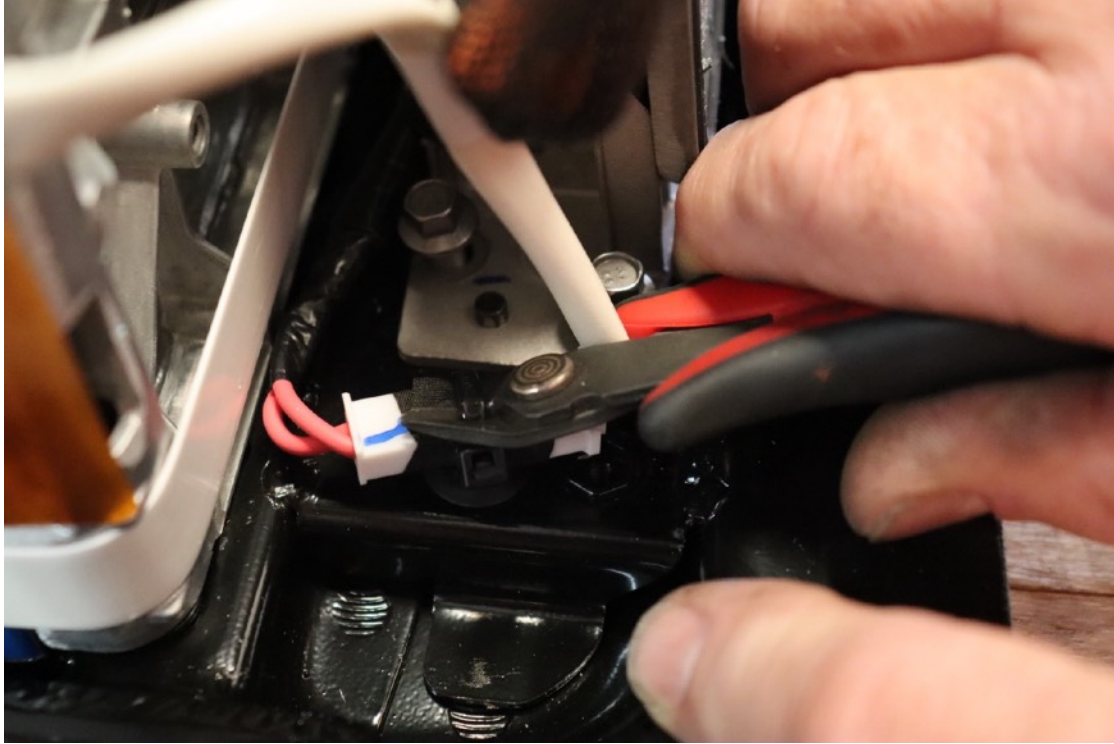
14) Remove 13mm bolt for positive cable



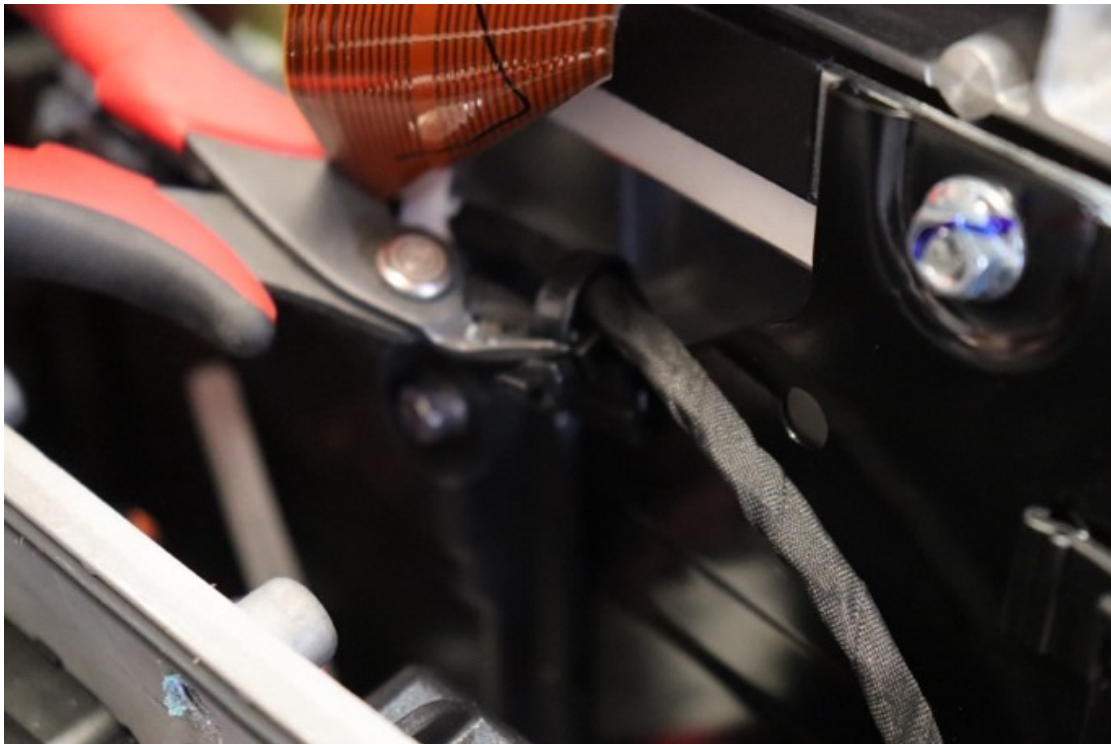
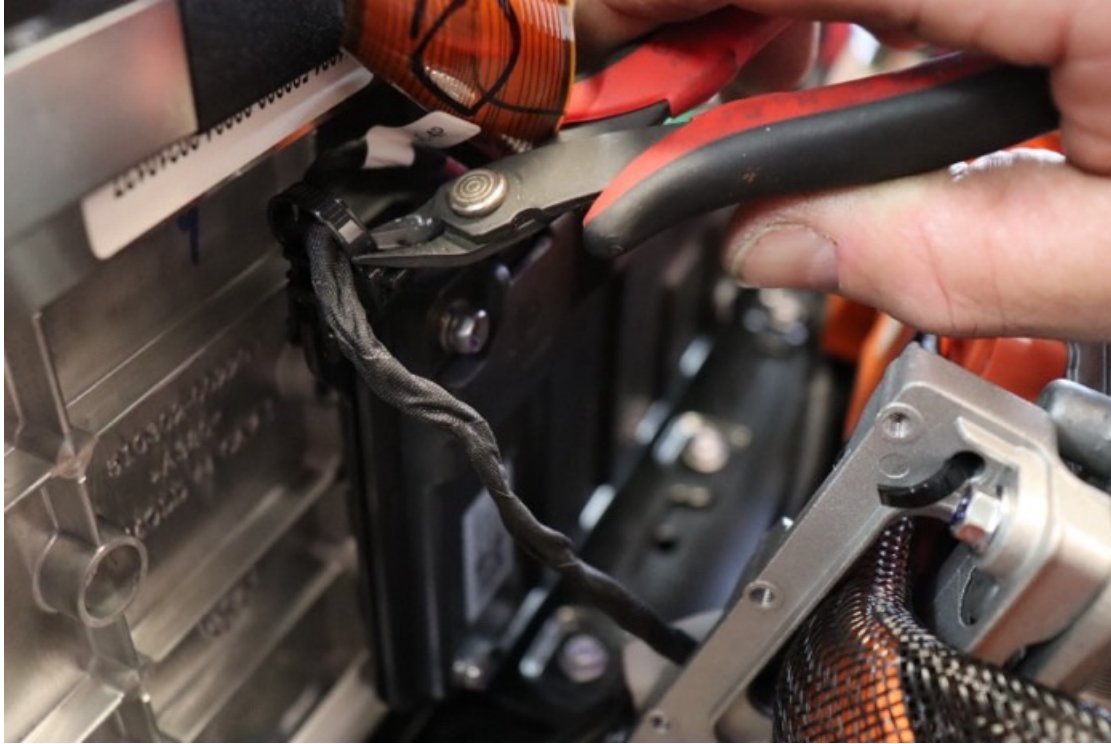
15) Remove connection control panel. Four (4) 8mm bolts in two locations (Spicer wants picture from other side)



16) Remove first zip tie on heater plug connector, remove tape and disconnect



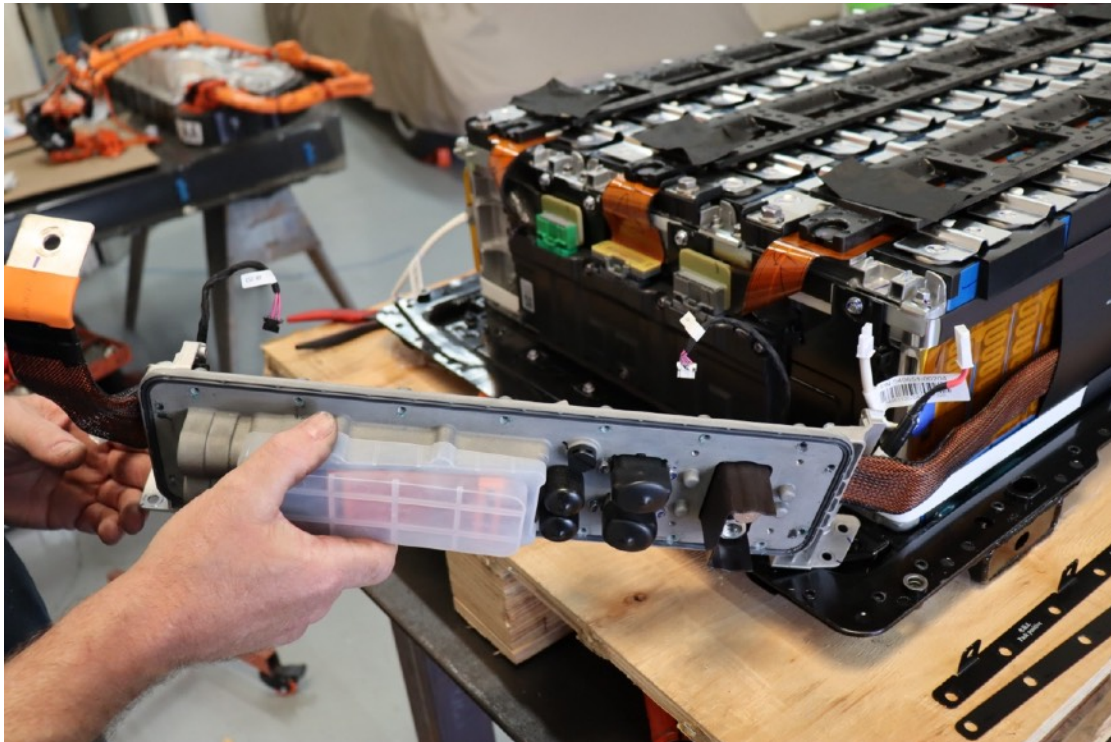
17) Remove second zip tie on heater plug connector, remove tape and disconnect



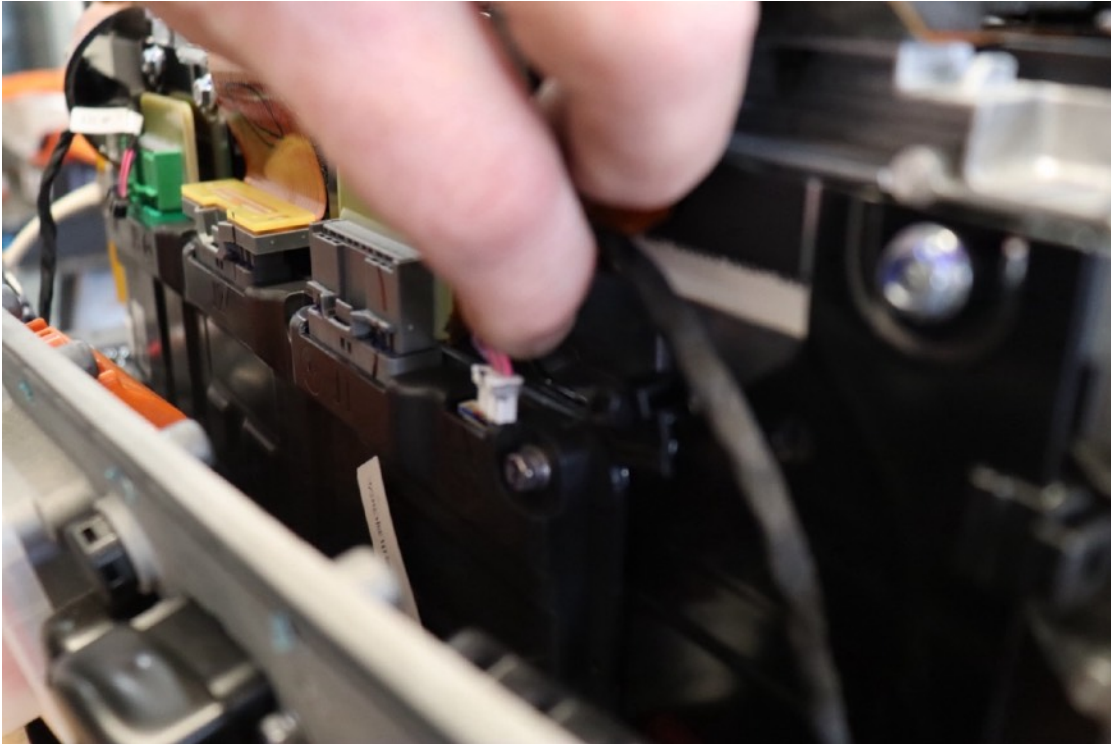
18) Cut two more zip ties



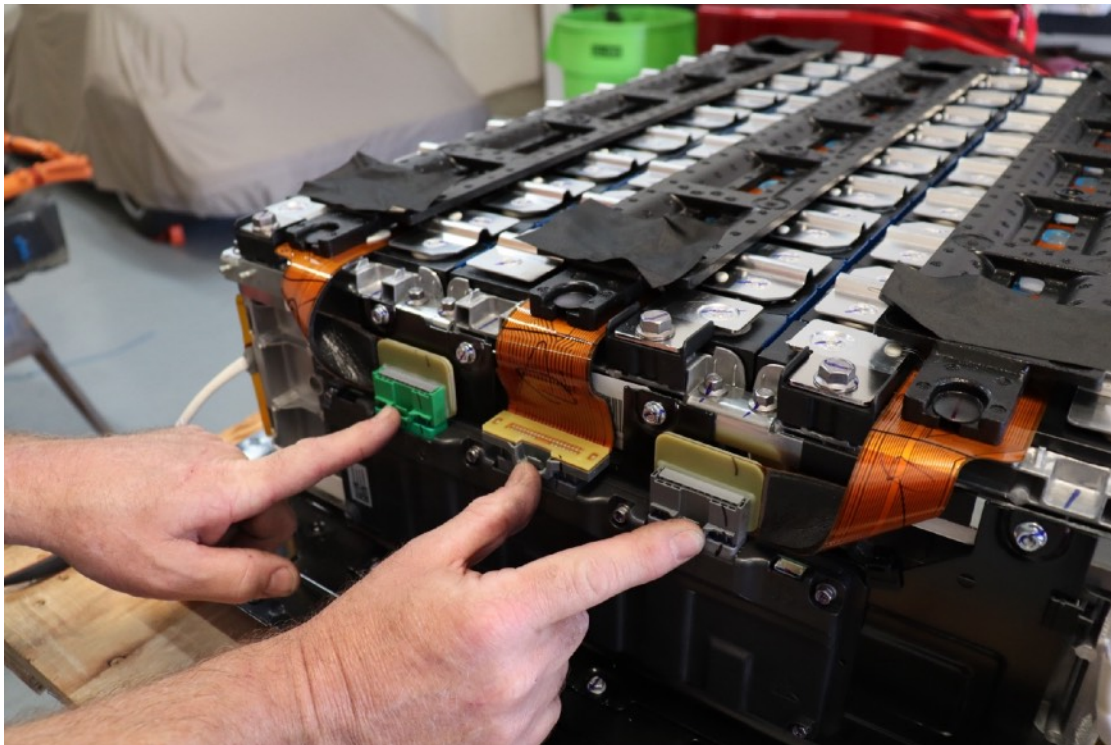
19) Remove third zip tie on heater plug connector, remove tape and disconnect
(got lost in the zip tie cutting photos please review from #16)



20) Remove fourth zip tie on heater plug connector, remove tape and disconnect , unplug BMS Connectors



21) Peel connection panel out of the way



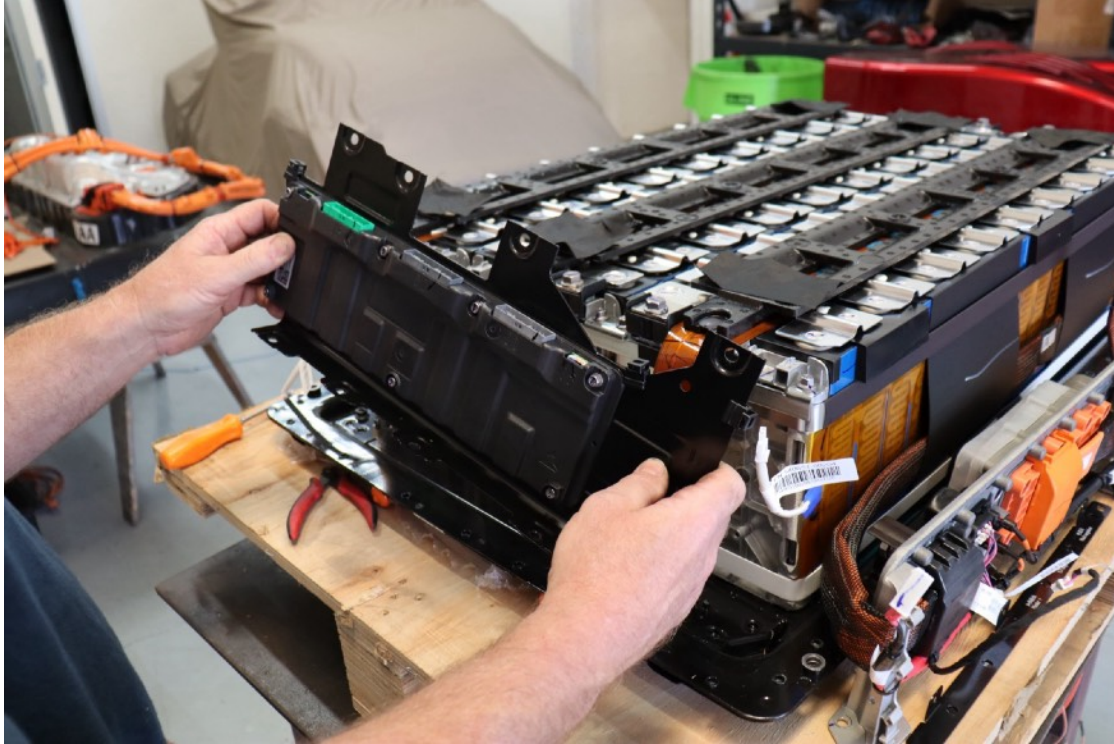
22) Unplug the three BMS plugs. CAUTION: Cell voltage on all three BMS plugs



23) Remove four (4) 7mm bolts holding the bottom BMS bracket



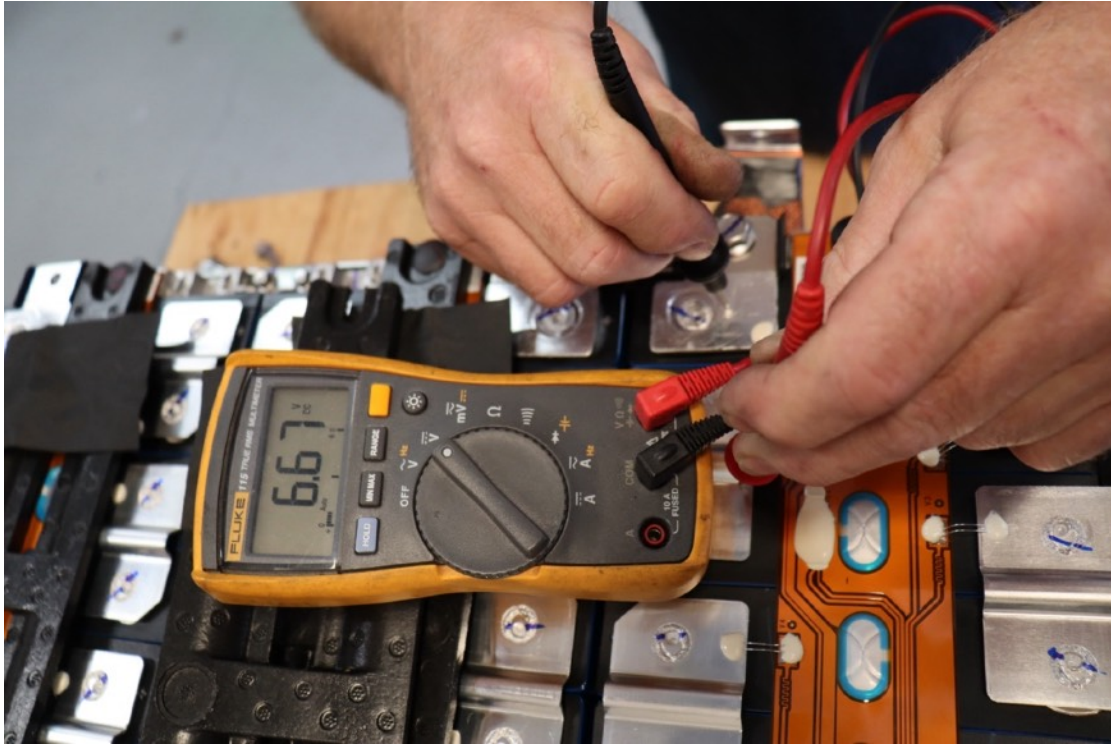
24) Undo the four (4) 8mm nuts holding the top of the BMS bracket



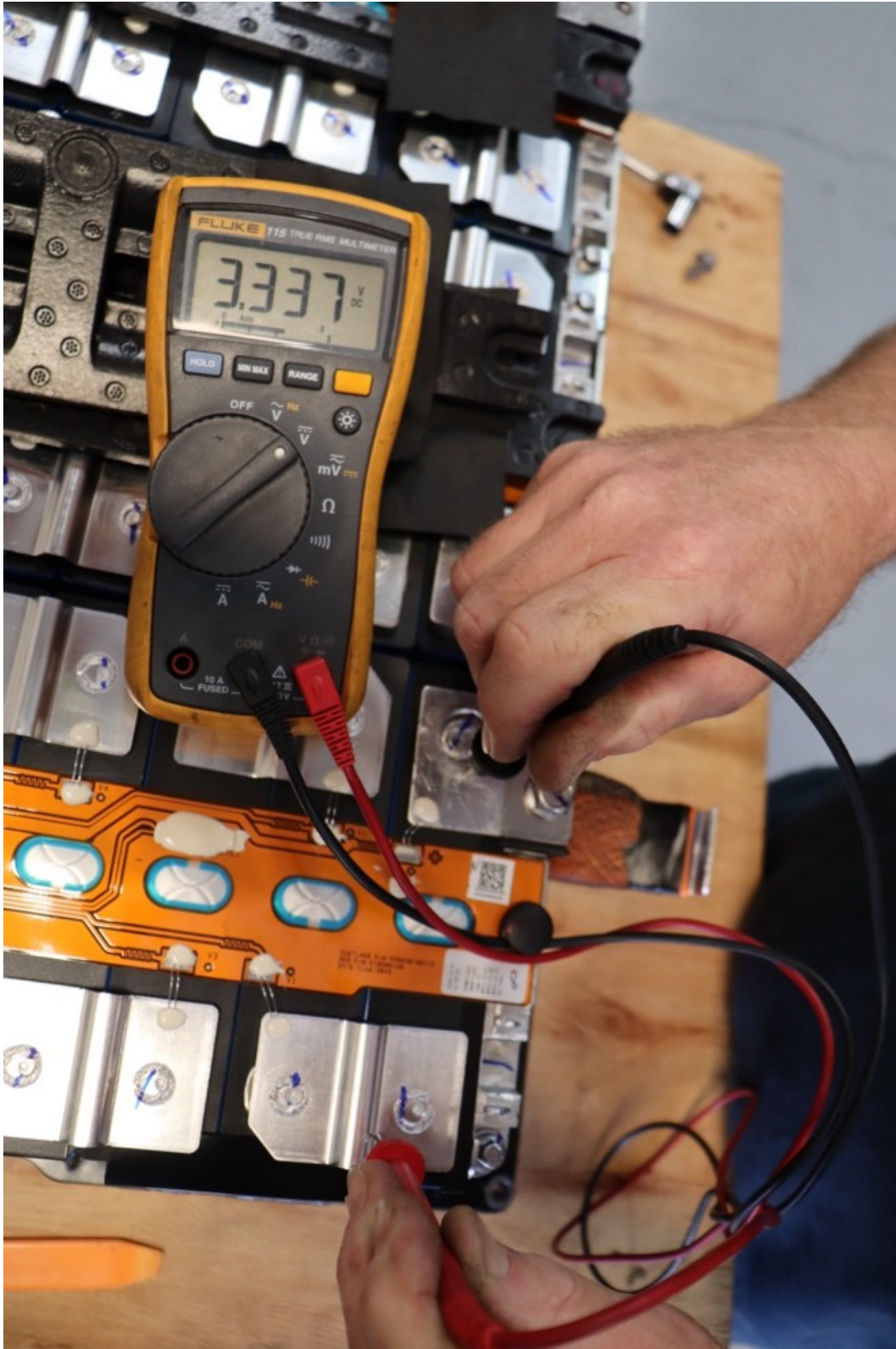
25) Remove and discard BMS and bracket



26) Remove first foam insulator



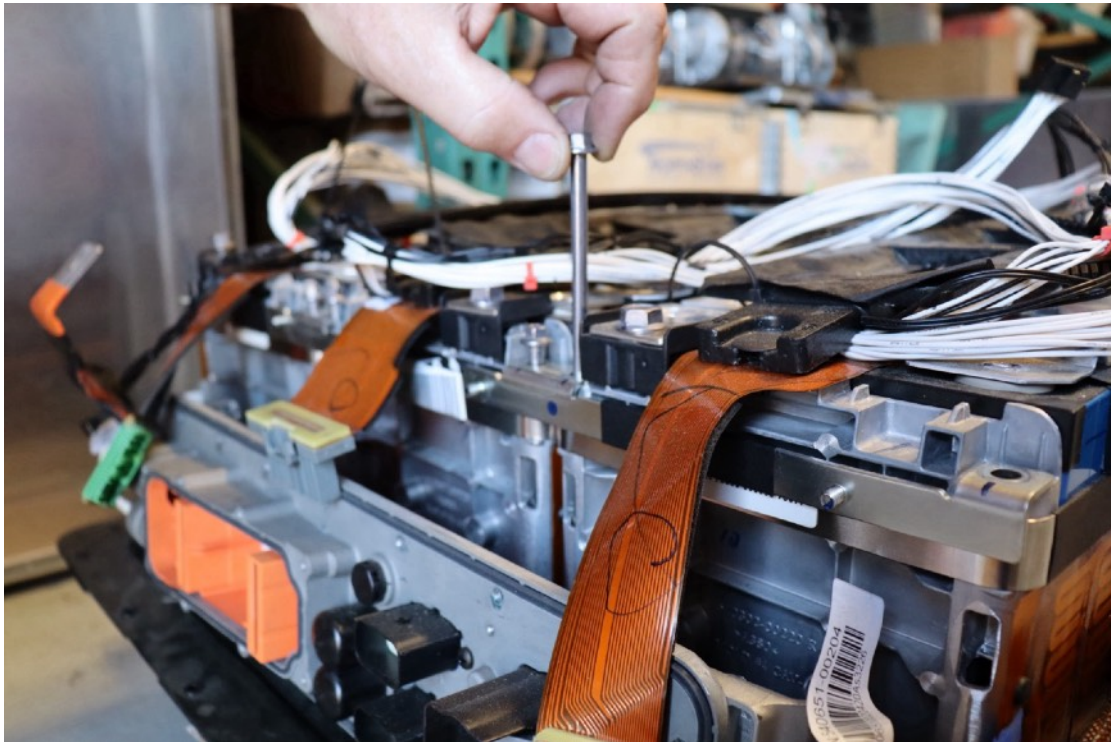
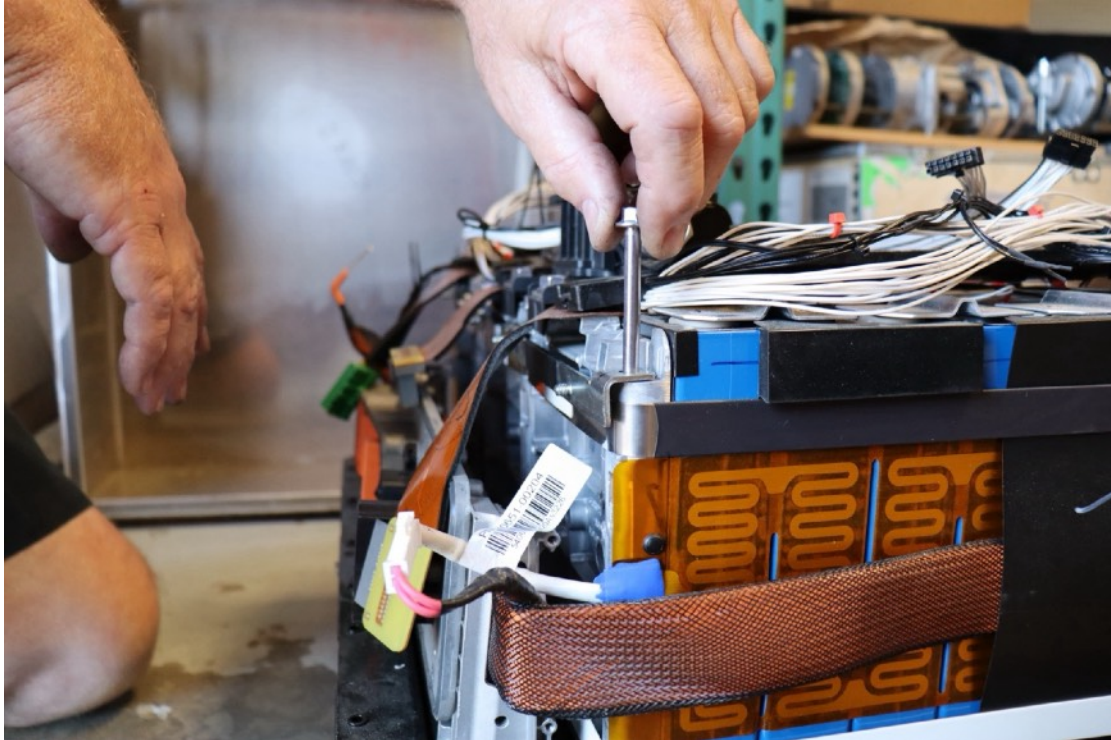
CAUTION: DO NOT TOUCH TERMINALS. Varying voltages upon completing a circuit



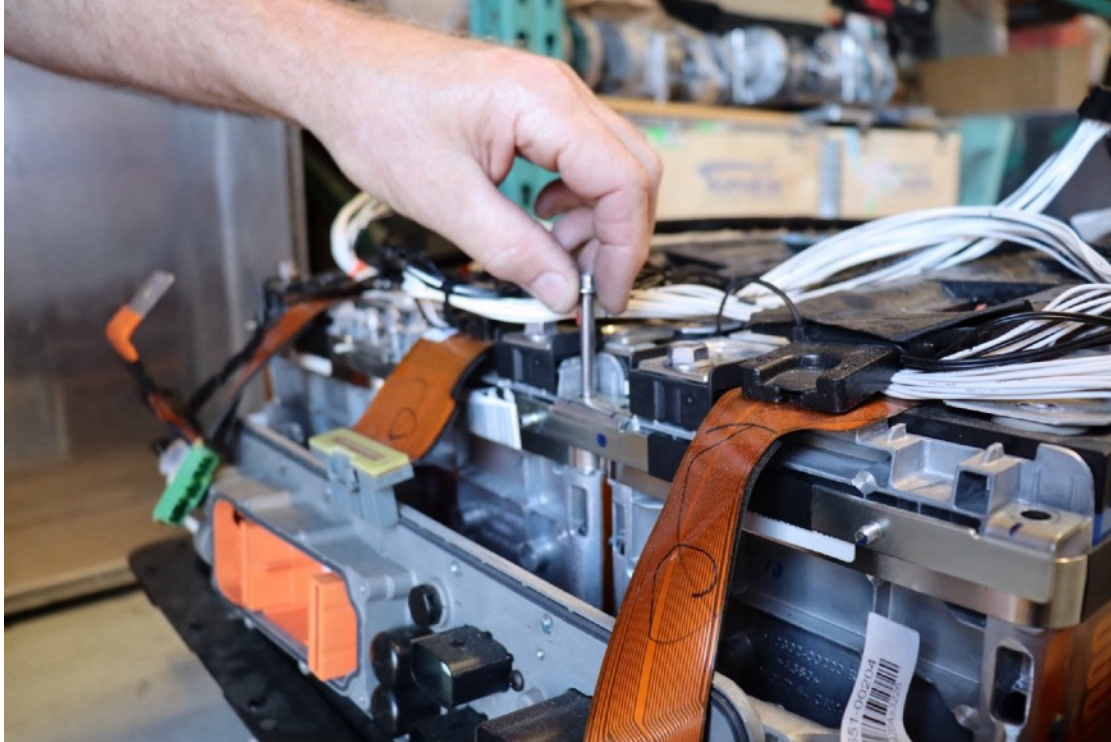
CAUTION: DO NOT TOUCH TERMINALS. Varying voltages upon completing a circuit

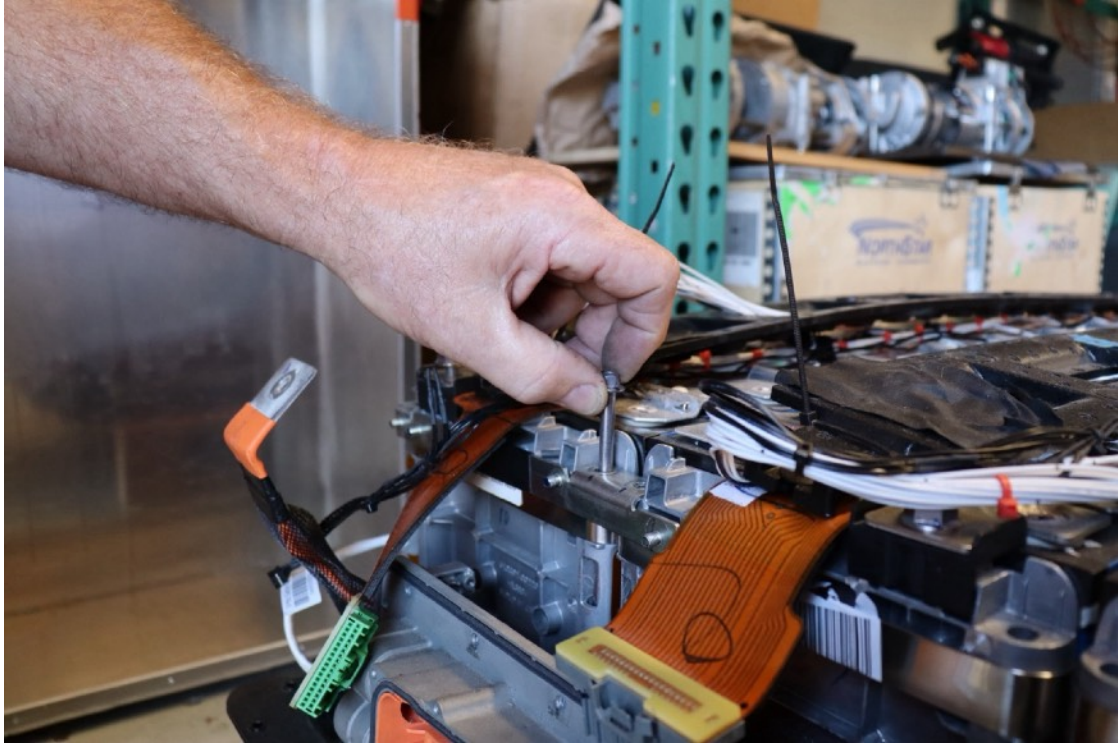


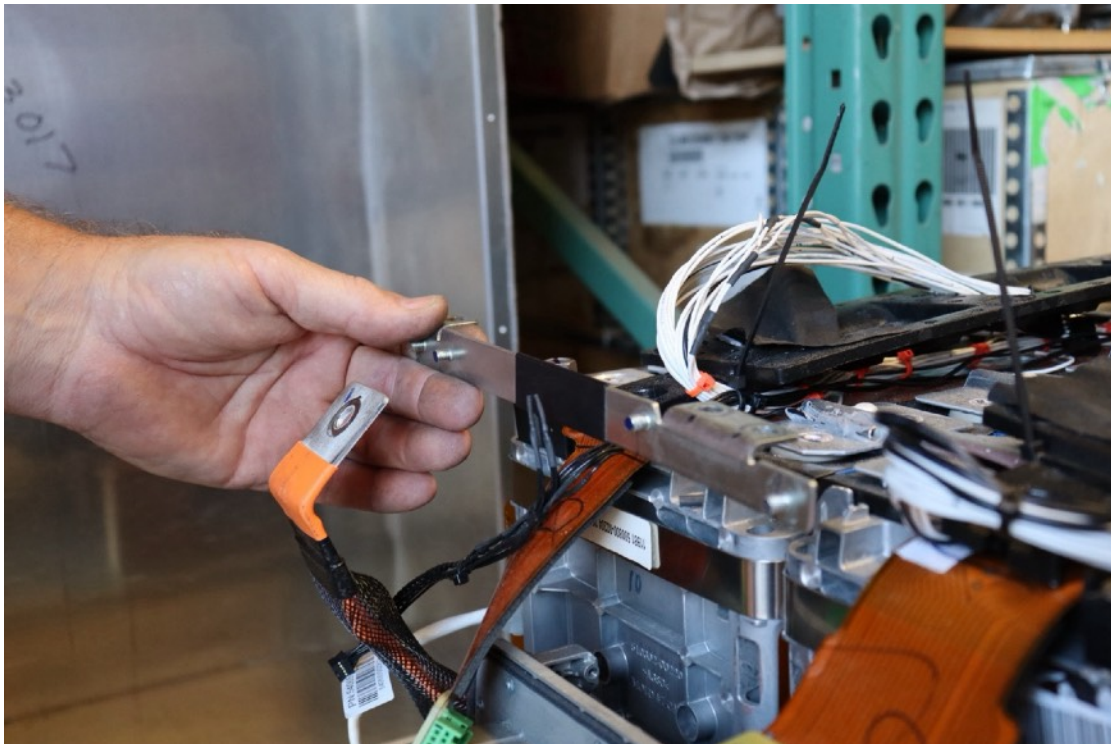
Mounting BMS



- 1) Remove 6 bolts holding bracket to cells. Might be held in place with epoxy, heat bolt bottoms to release.







2) Remove Brackets

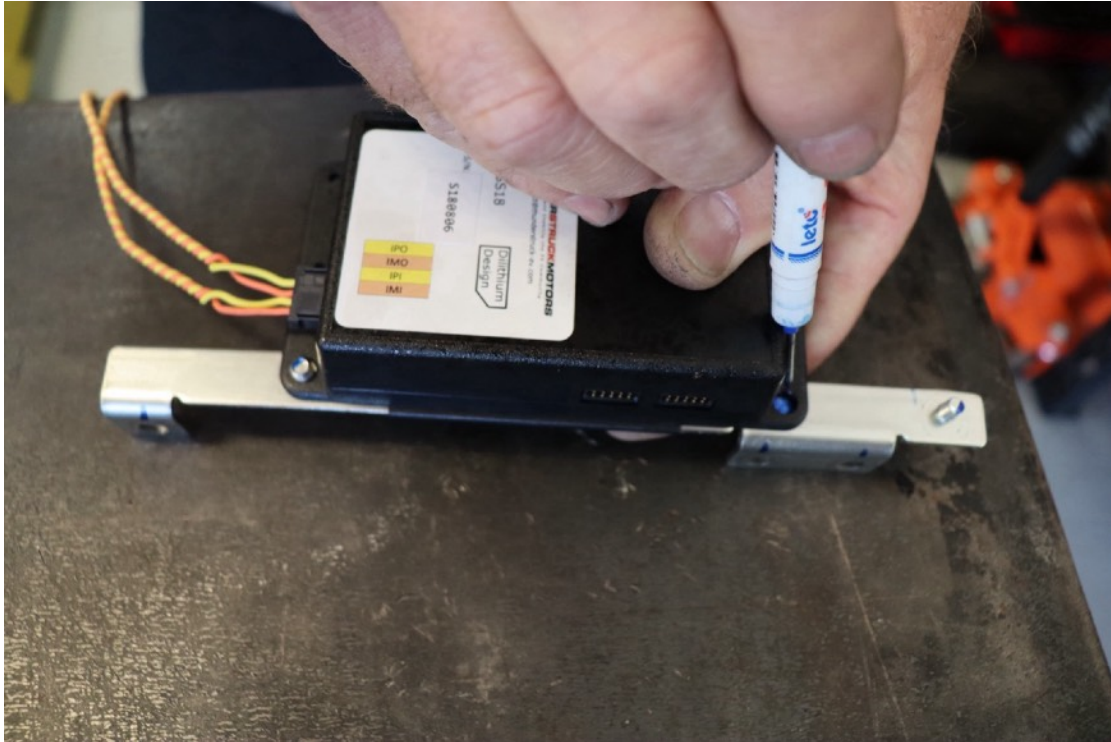


3) Cut, drill, grind, hammer out indicated studs.







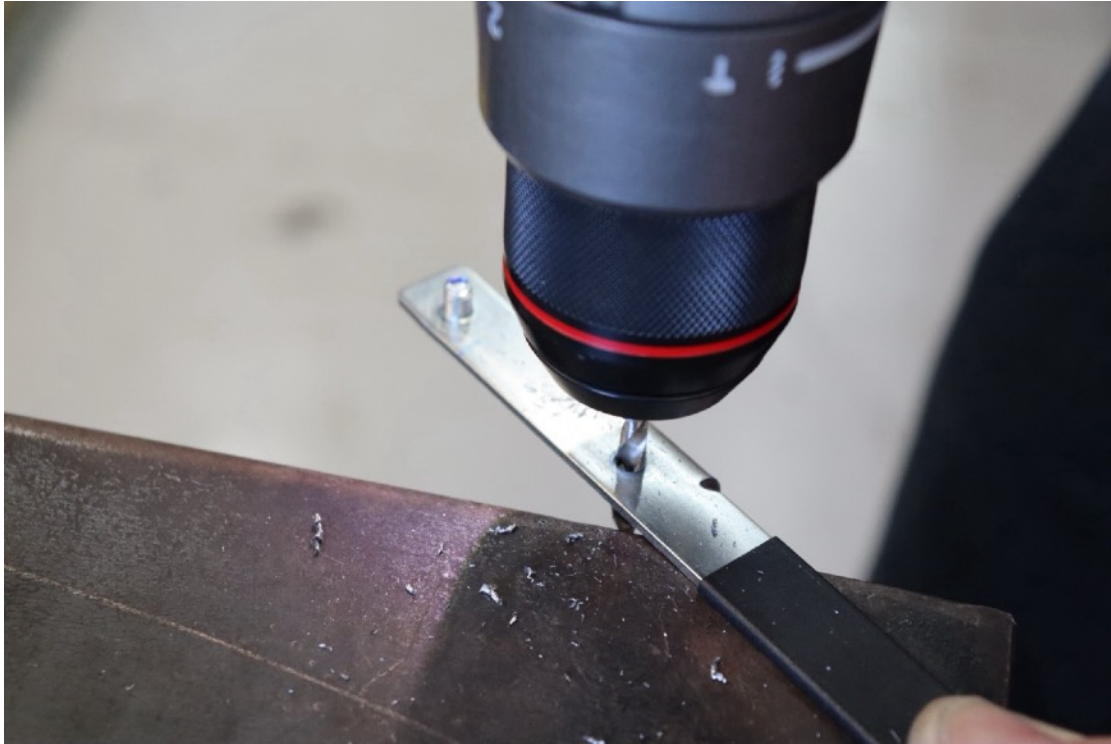


4) Mark location of BMS



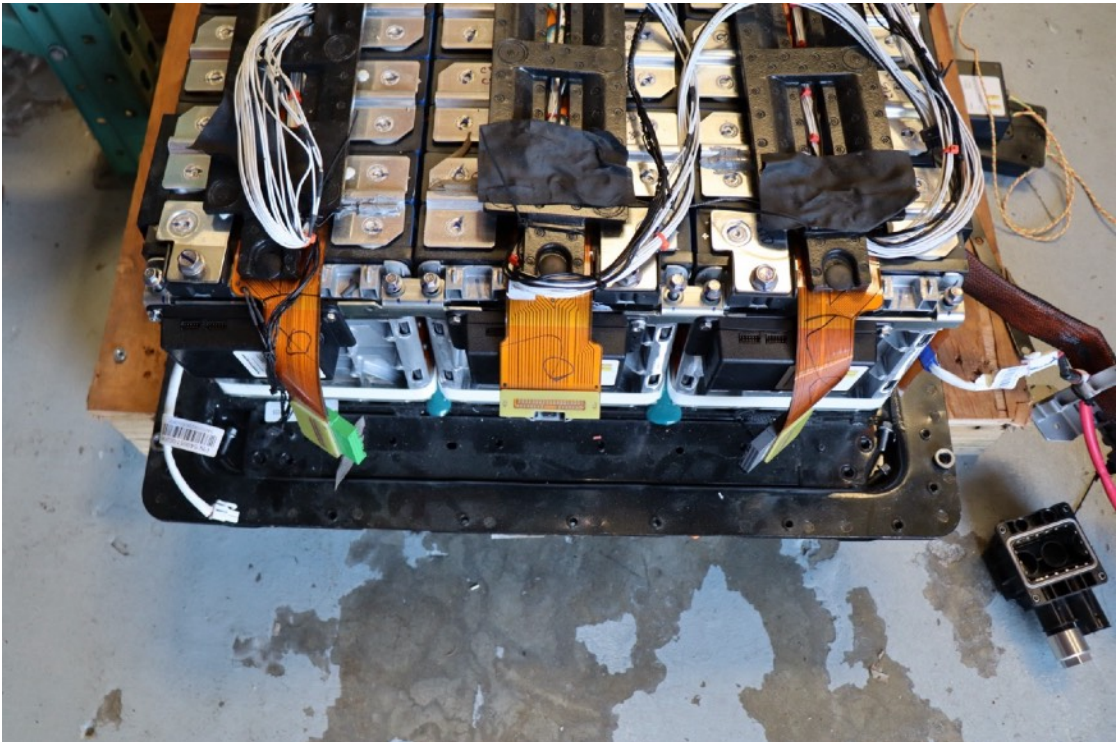
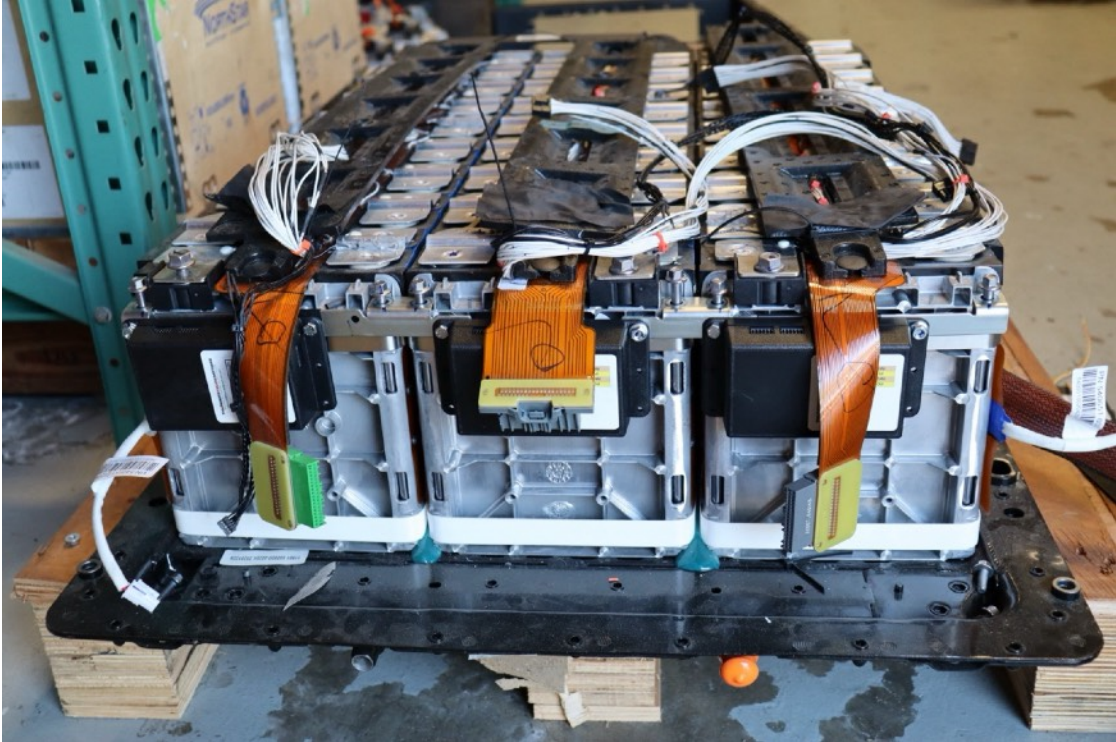


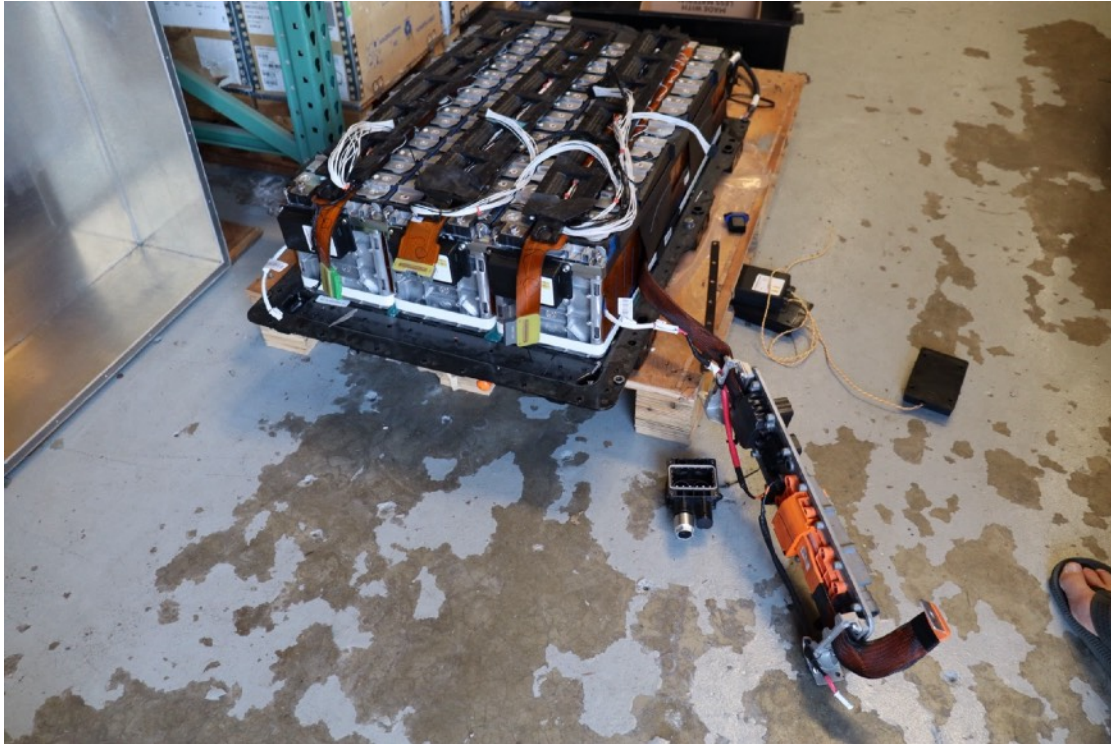
5) Drill for mounting hardware. We use M5 X 7mm bolts









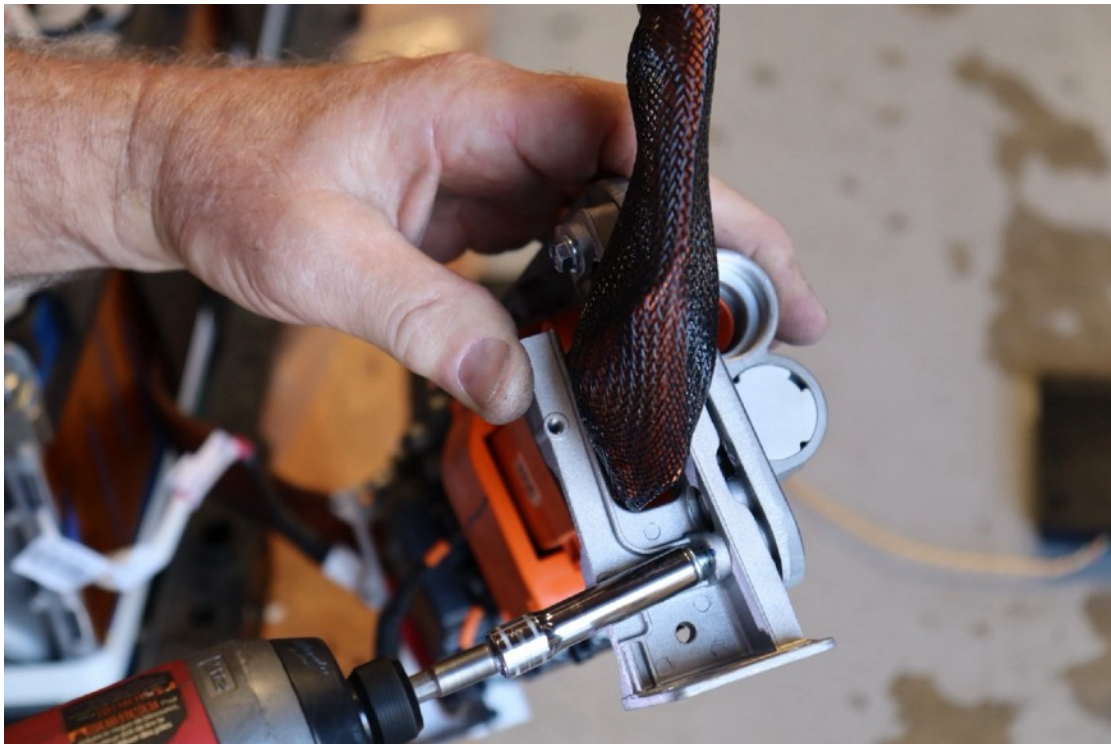


6) Remove cable holding bracket



7) Cut bracket corner to clear new BMS

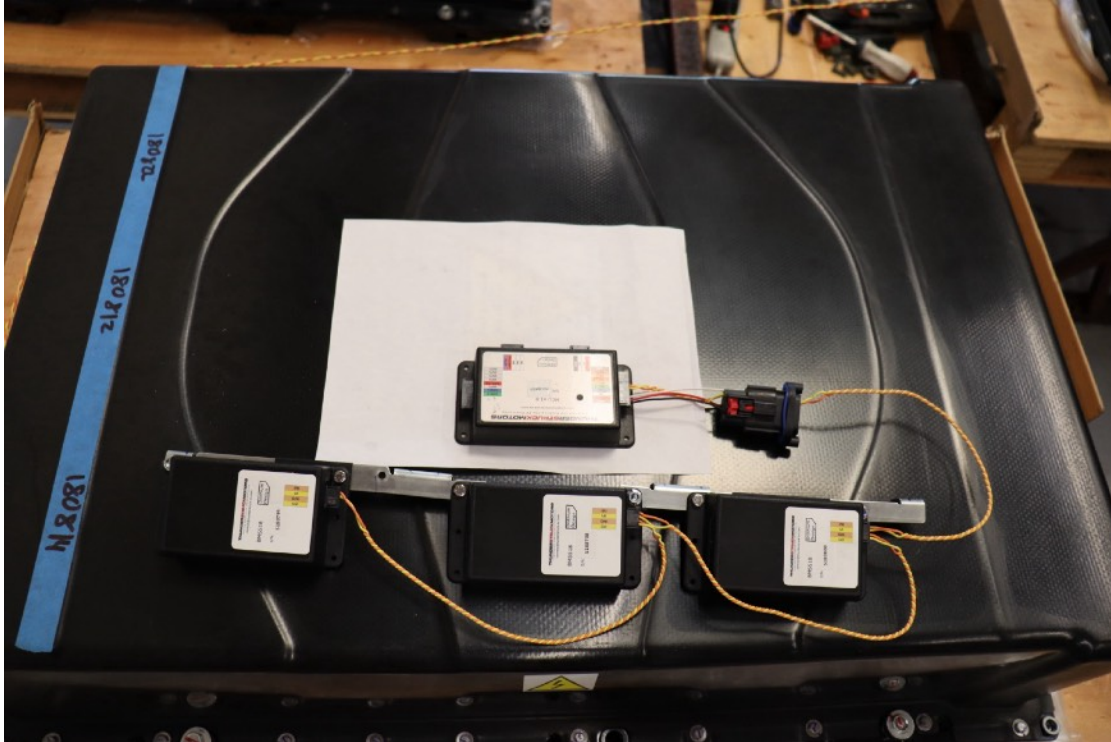




8) Install modified cable bracket



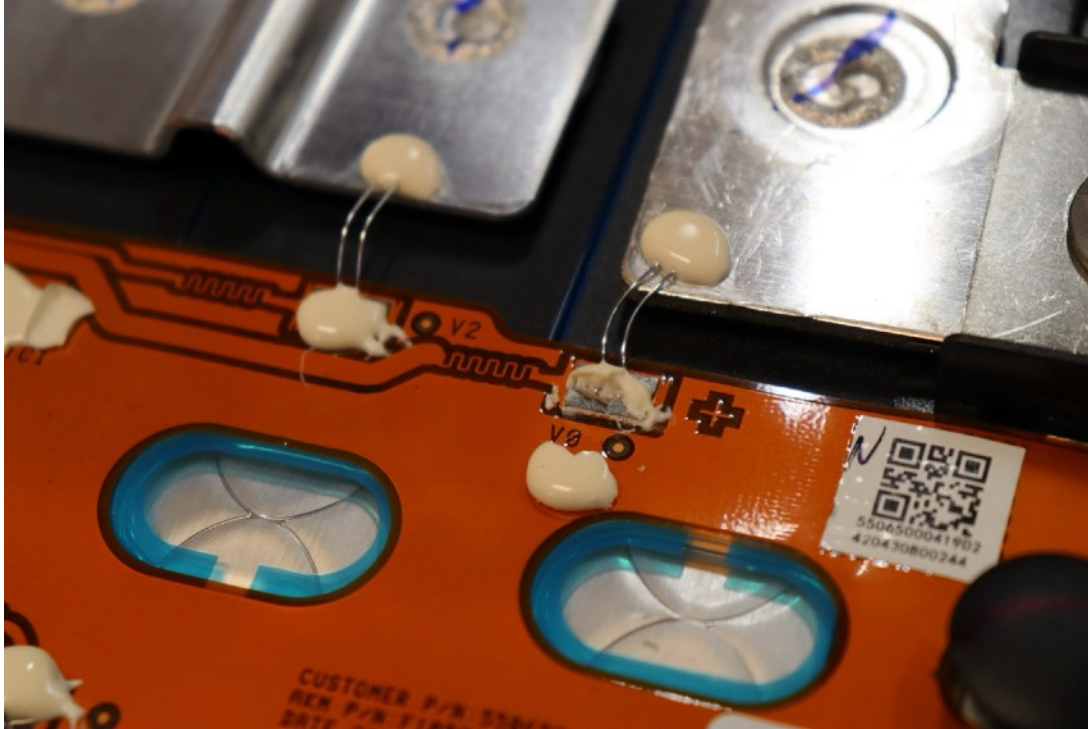
9) Install cut cable bracket



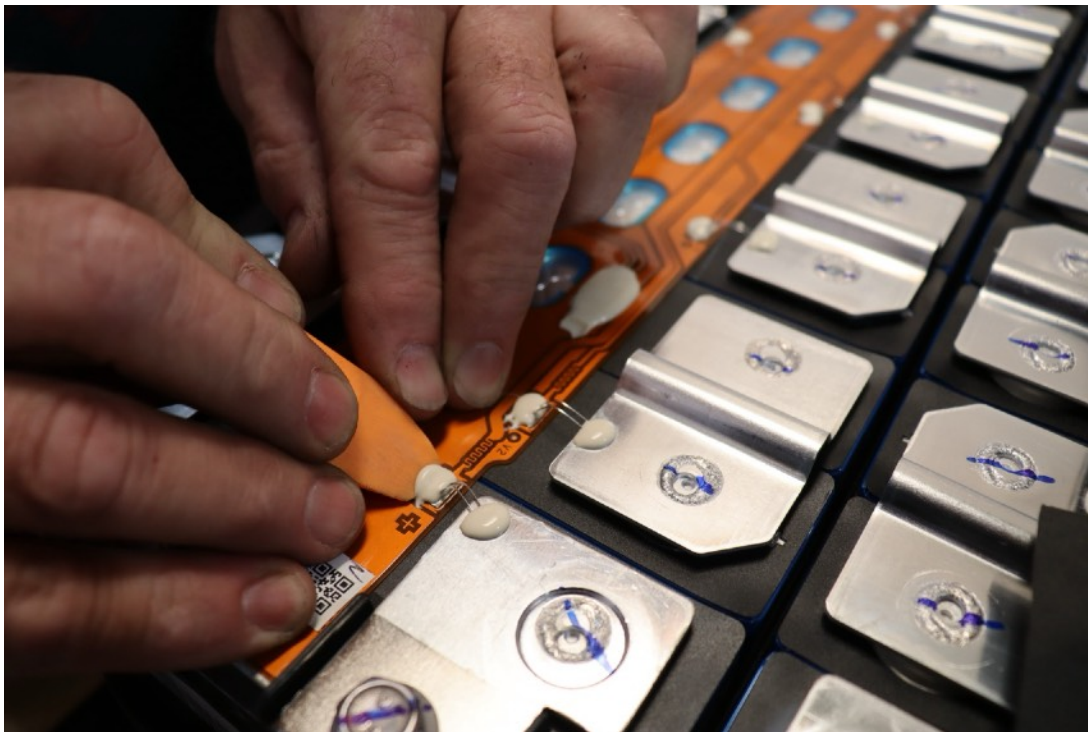
10) Example of basic wiring needed with BMSS and MCU



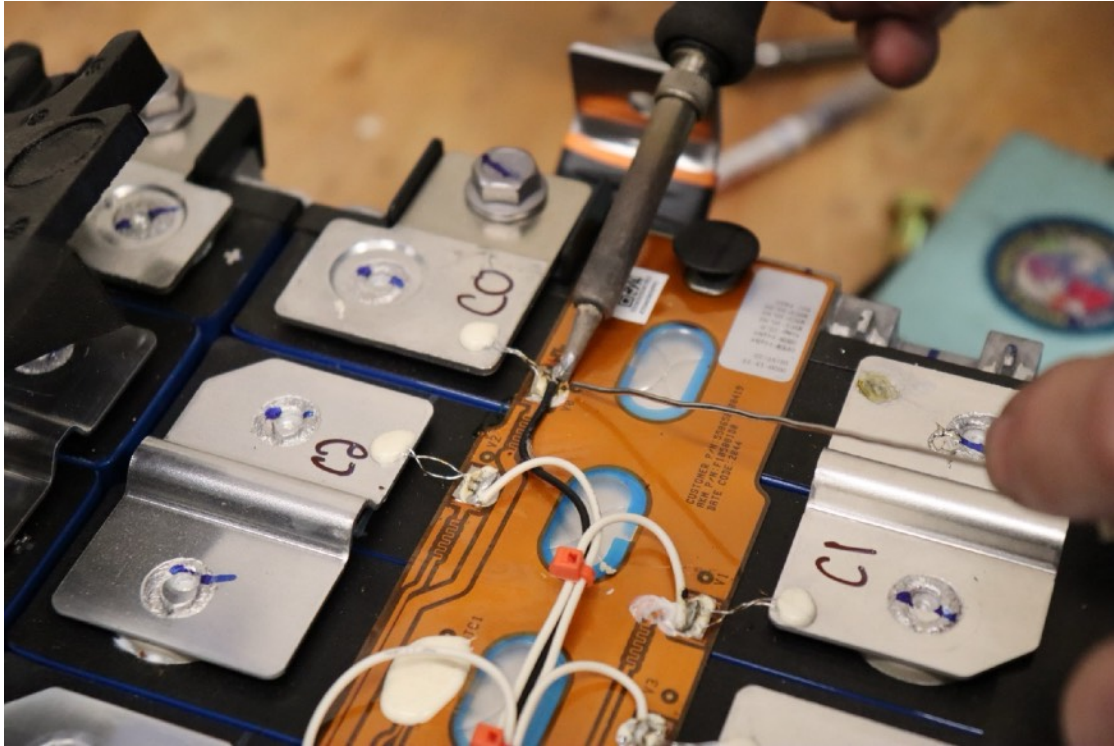
Wiring BMS



1) Remove RTV/silicone with a non-conductive panel removal tool. USE EXTREME CAUTION NOT TO BREAK SMALL WIRES WHILE DOING SO.



2) Rub uncovered surface until shiny/polished (need third photo of clean shiny terminal pad)



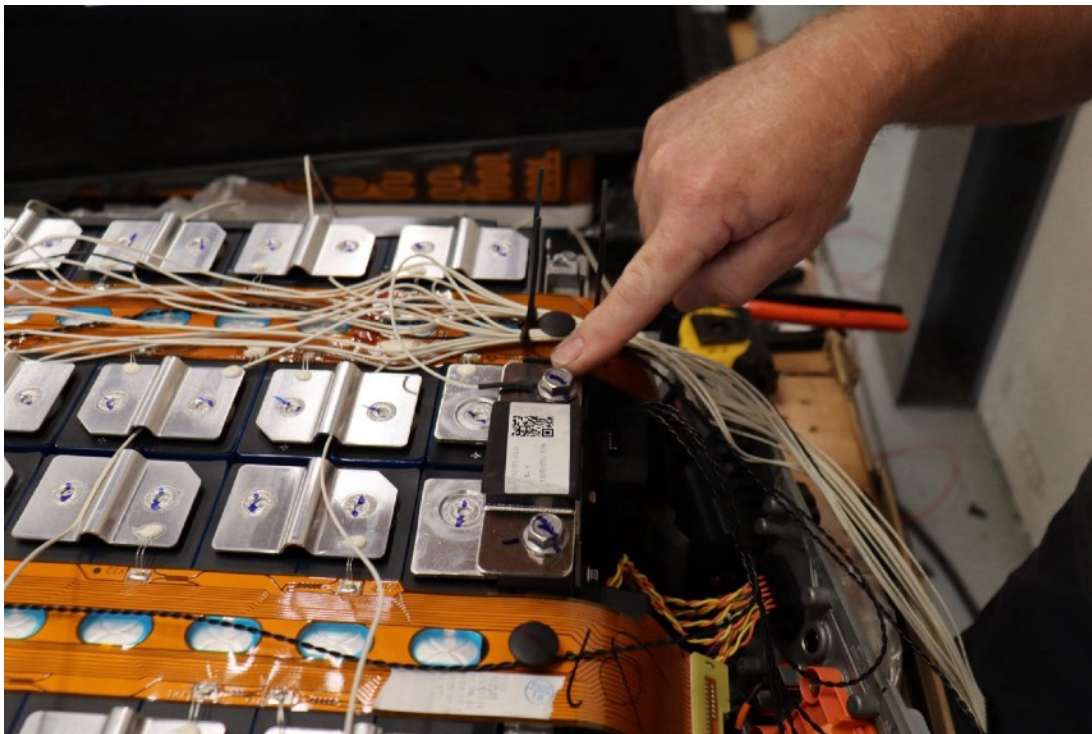
3) Using the wiring diagram available on the EV West BMS page, Solder BMS wires to each corresponding cell tap that was uncovered and polished in step #28



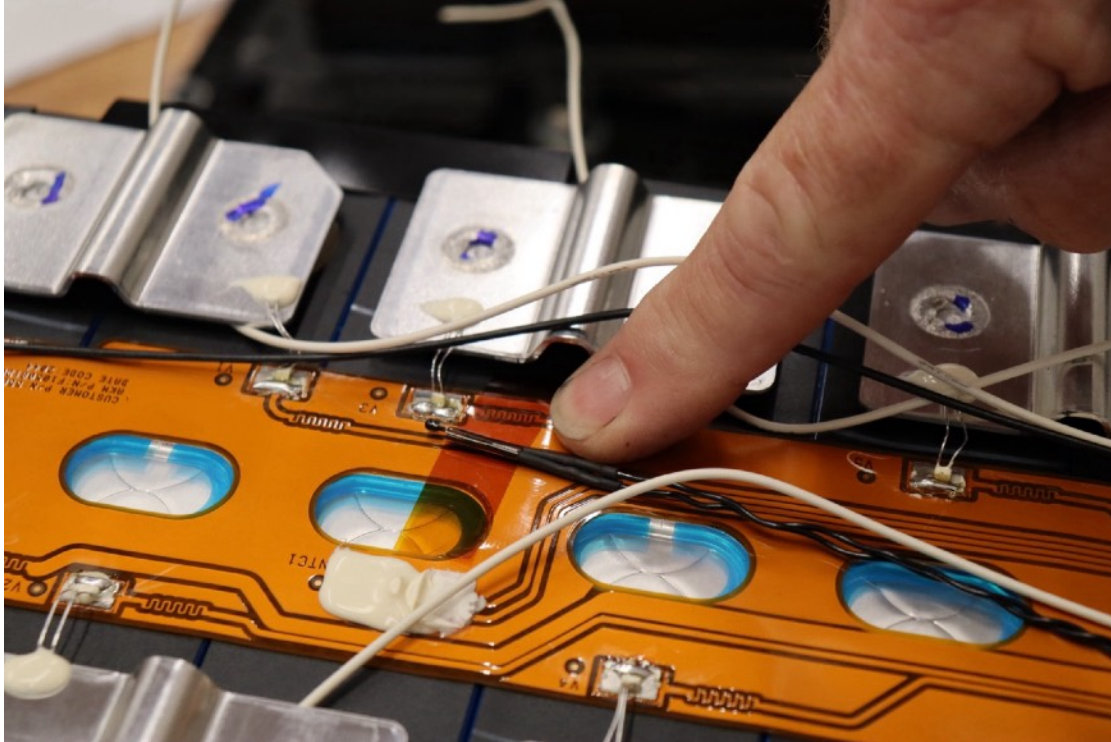
4) Route wires to cell taps



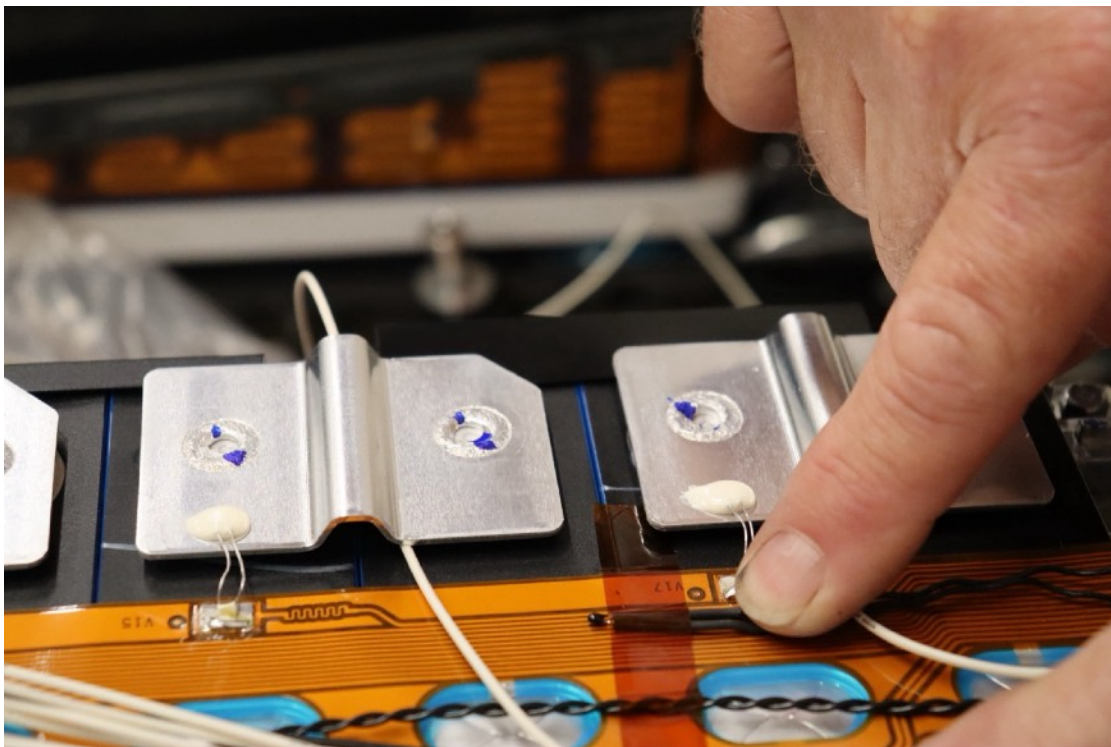
Note: W0 and W18 can optionally be connected to busbar bolts



5) LTCA W18 connected to bank one most positive



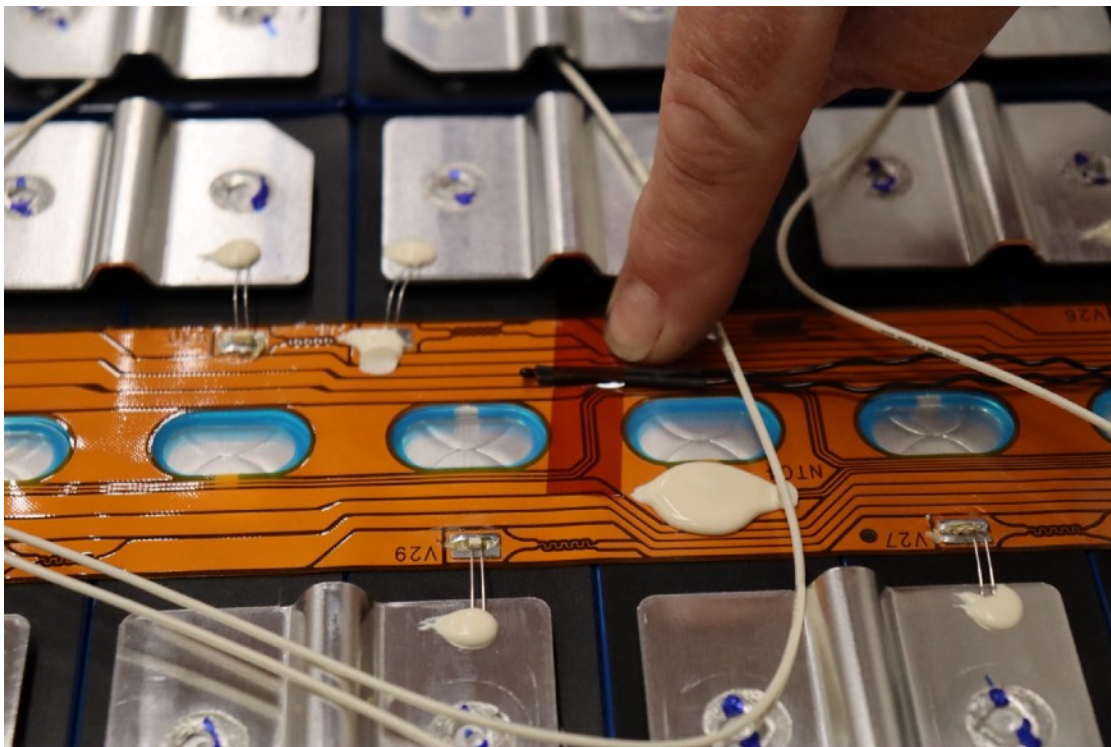
6) Secure thermistors to ribbon cable with tape. (ADD magnify glass V numbers in photo)



7) TH2



8) TH2



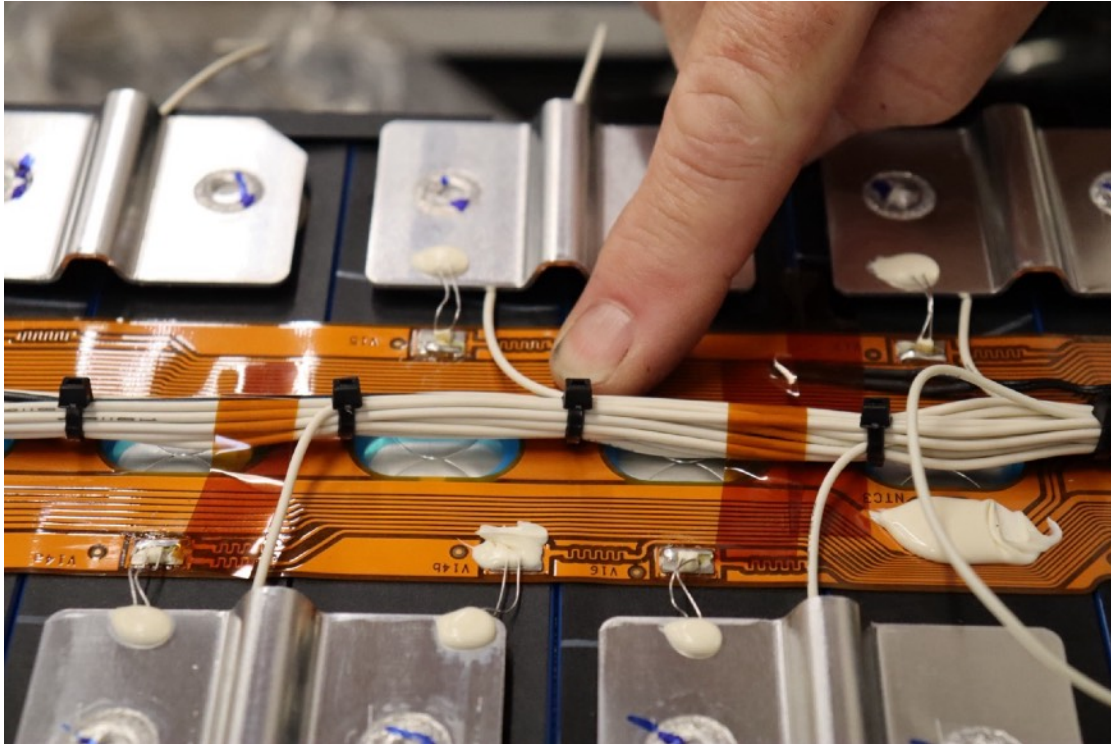
9) TH3



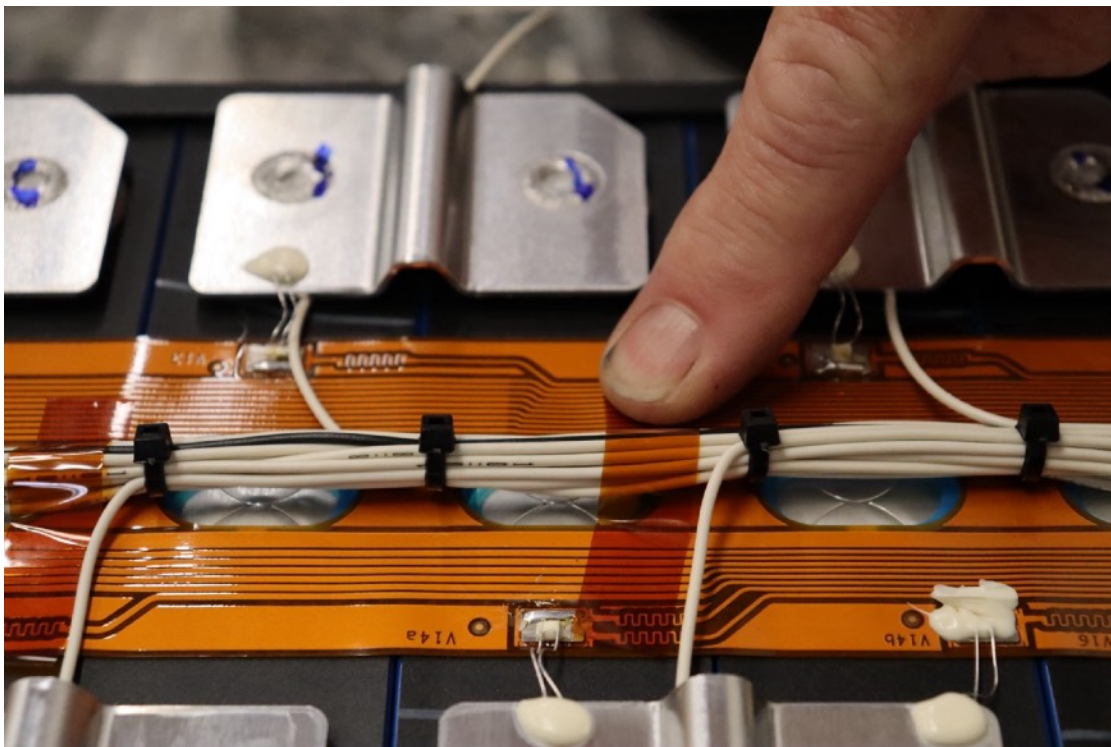
10) TH4



11) TH5



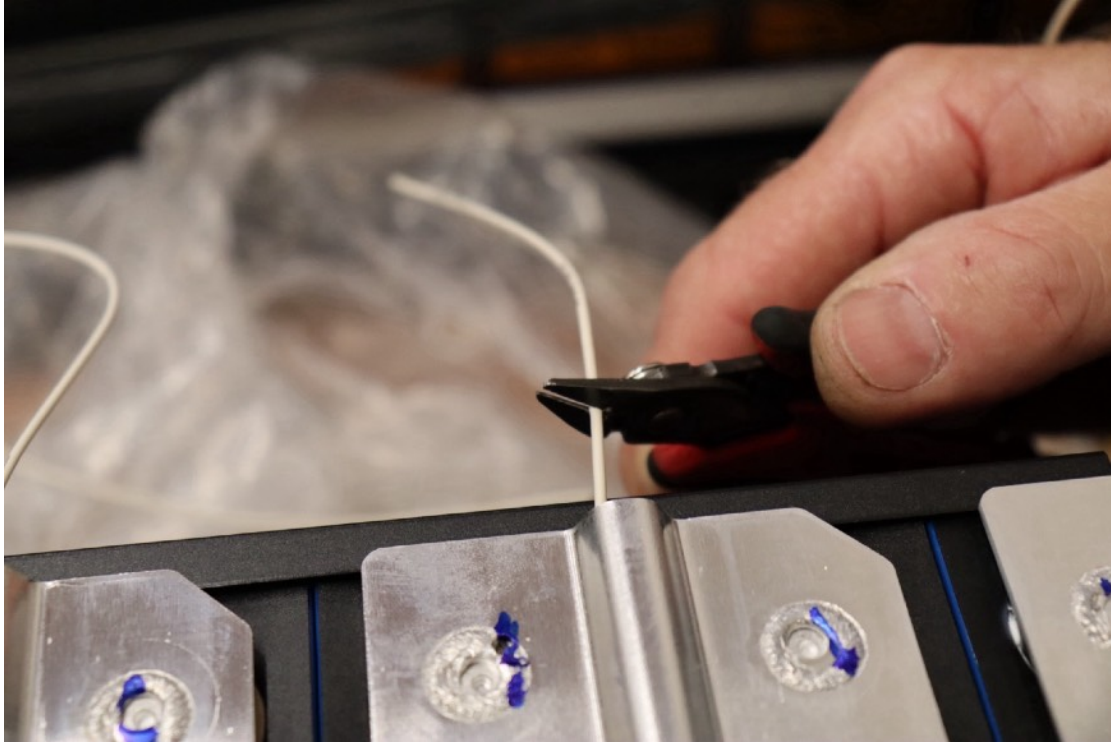
12) Secure harness wire bundles with zip ties. One at each all seam





13) Secure zip tied harness to ribbon cable with Kapton tape



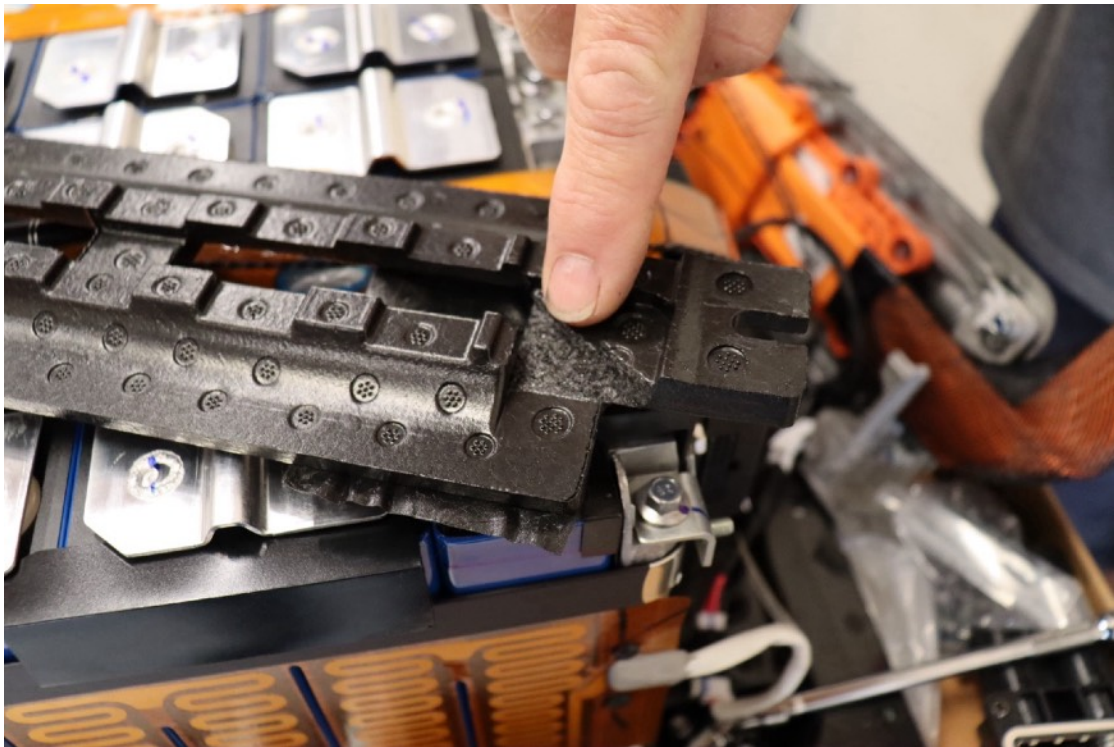


14) Trim wires to desired lengths

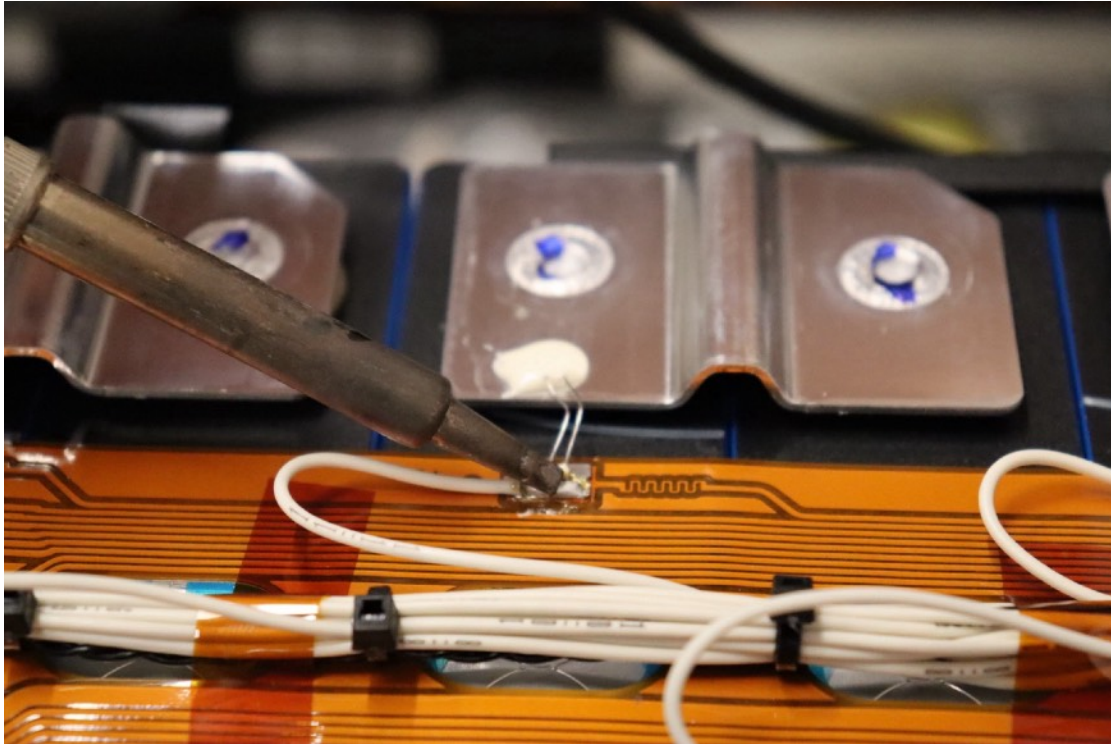




15) Route thermistor harness (add graphic showing approximate locations)



16) Relieve foam insulators for wire exit.



17) Solder wires to cell tap pads on ribbon cable

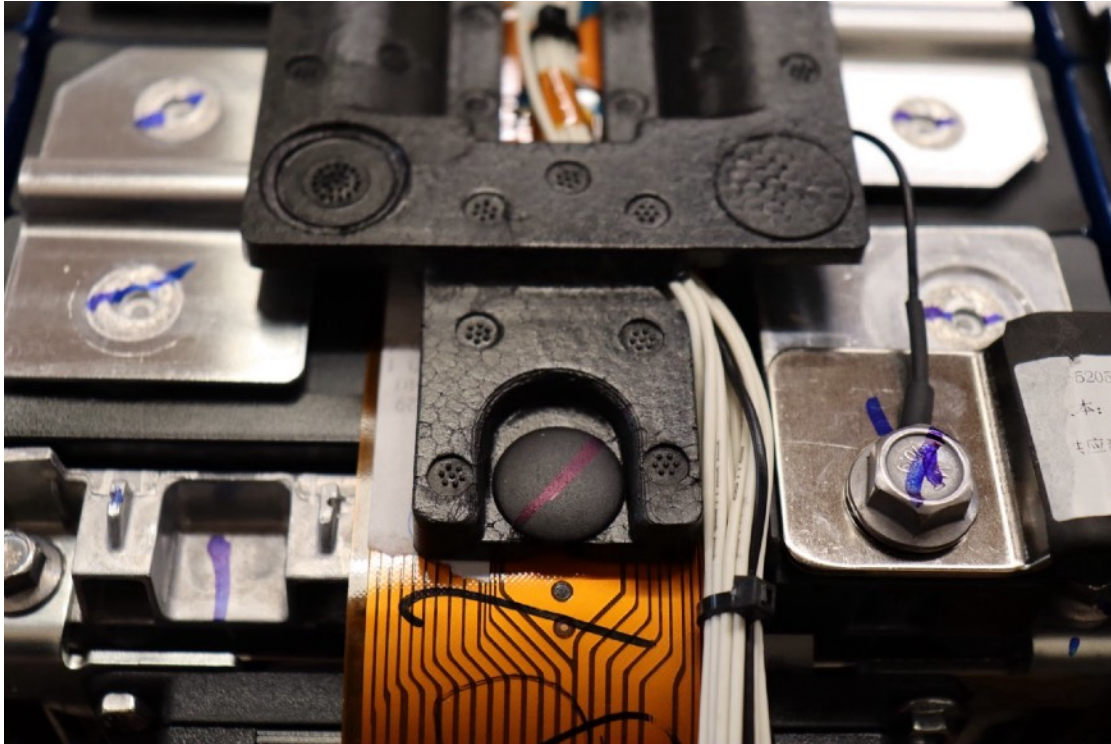




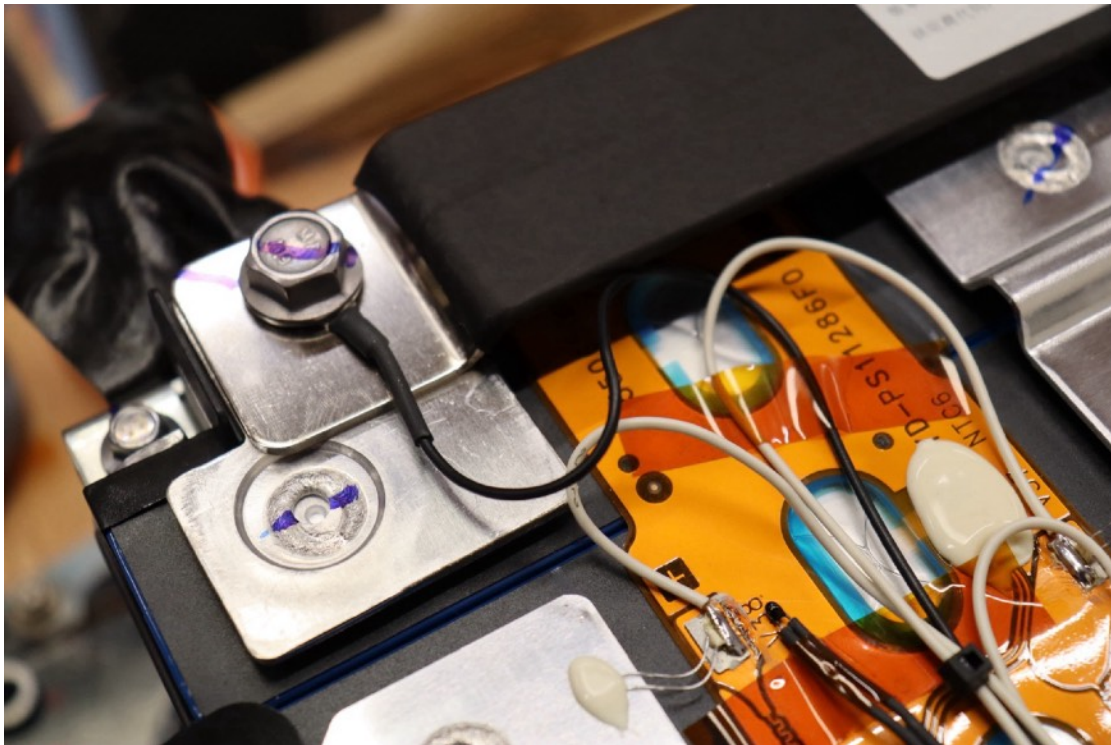
18) Route wire bundle to side of foam retainer pin for clearance exiting pack



19) Optional ring terminal connection of LTC A1, W18 and LTCA2, W0 and LTCA2, W18



20) LTC A3, W0

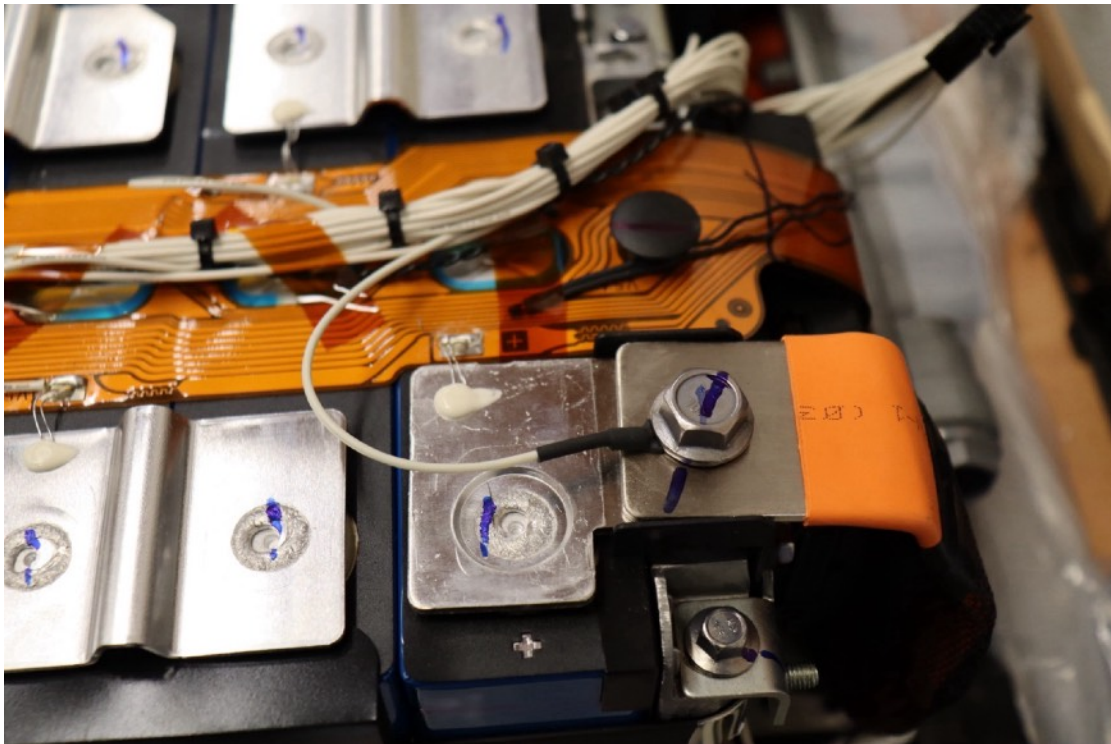


21) LTC A3, W0

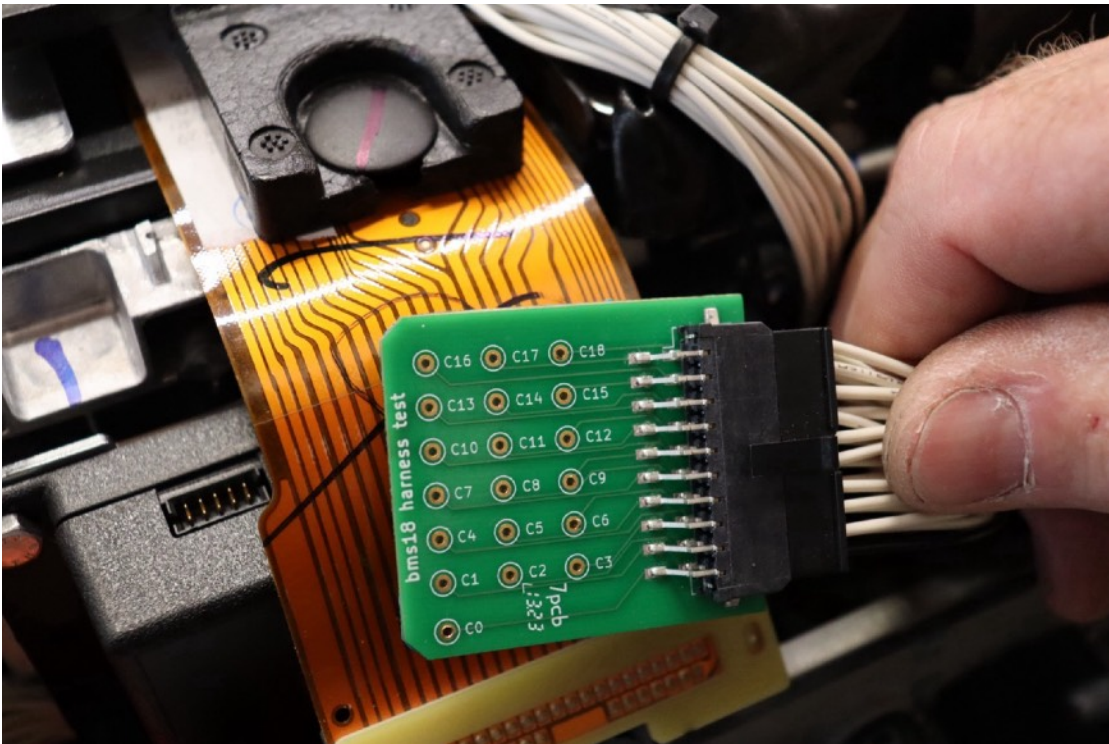
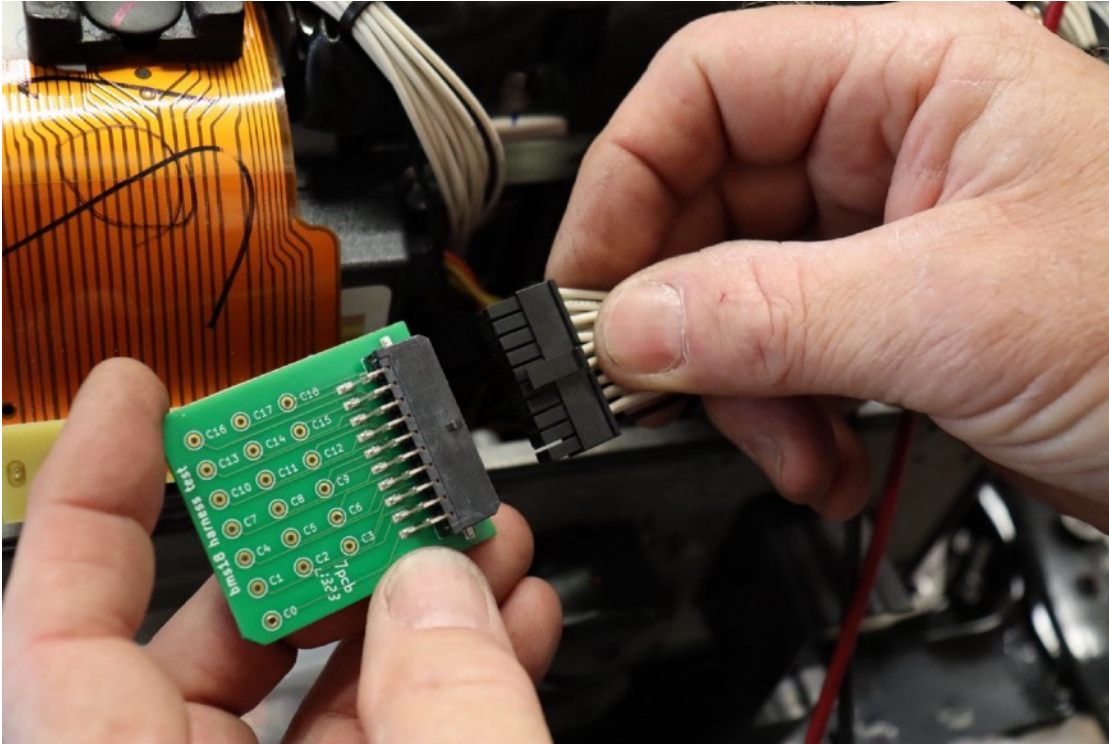


22) LTC A3, W0

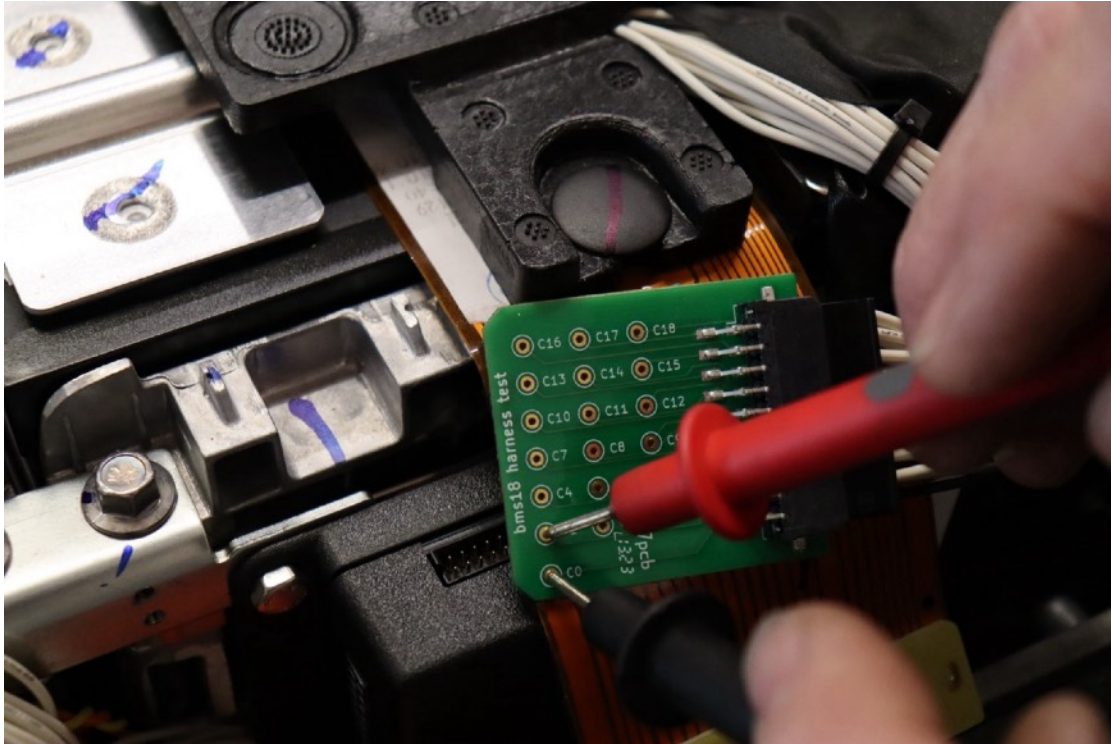
23) LTC A2, W18



24) LTC A3, W18



25) Connect cell tester



26) Check each cell voltage C0 through C18



27) Glue thermistors to ribbon cable



Procedure: MCU Wiring and BMS Configuration

1) Power and Control Inputs

Connect the Key Switch Input to the MCU's ignition or enable pin.

Supply +12 V from the battery positive terminal to the MCU's VIN (Battery 12+).

Tie the MCU ground to the vehicle chassis ground.

2) Signal Routing to BMS Satellites

Connect the MCU's IPO and IMO signal lines to the BMSS LTC A1 IPI and IMI inputs, respectively.

Daisy-chain from BMSS LTC A1 to A2: connect A1's IPO/IMO outputs to A2's IMI/IPI inputs.

Daisy-chain from BMSS LTC A2 to A3: connect A2's IPO/IMO outputs to A3's IMI/IPI inputs.

(Set serial port Utilities https://evwest.com/support/DD_SerialPortUtilities_v1.3.pdf)

3) Parameter Configuration

Input the EV West–recommended BMS settings. ee EV West parameter recommendations at the following URL

https://evwest.com/support/CATL_Pack_BMS_Settings_Quick_Start_Guide.pdf

Cell Map Verification:

Enter `SHOW CMAP`.

Confirm all 54 cells display as “X” (no “.” placeholders).

Thermistor Setup:

Enable external thermistor support: `ENABLE THERMISTORS EXT`.

Enter `SHOW THERMISTORS`.

Verify each of the five thermistor channels reports a valid temperature.

4) Finalize Settings

Execute `LOCK PARAMETERS` to prevent further changes.