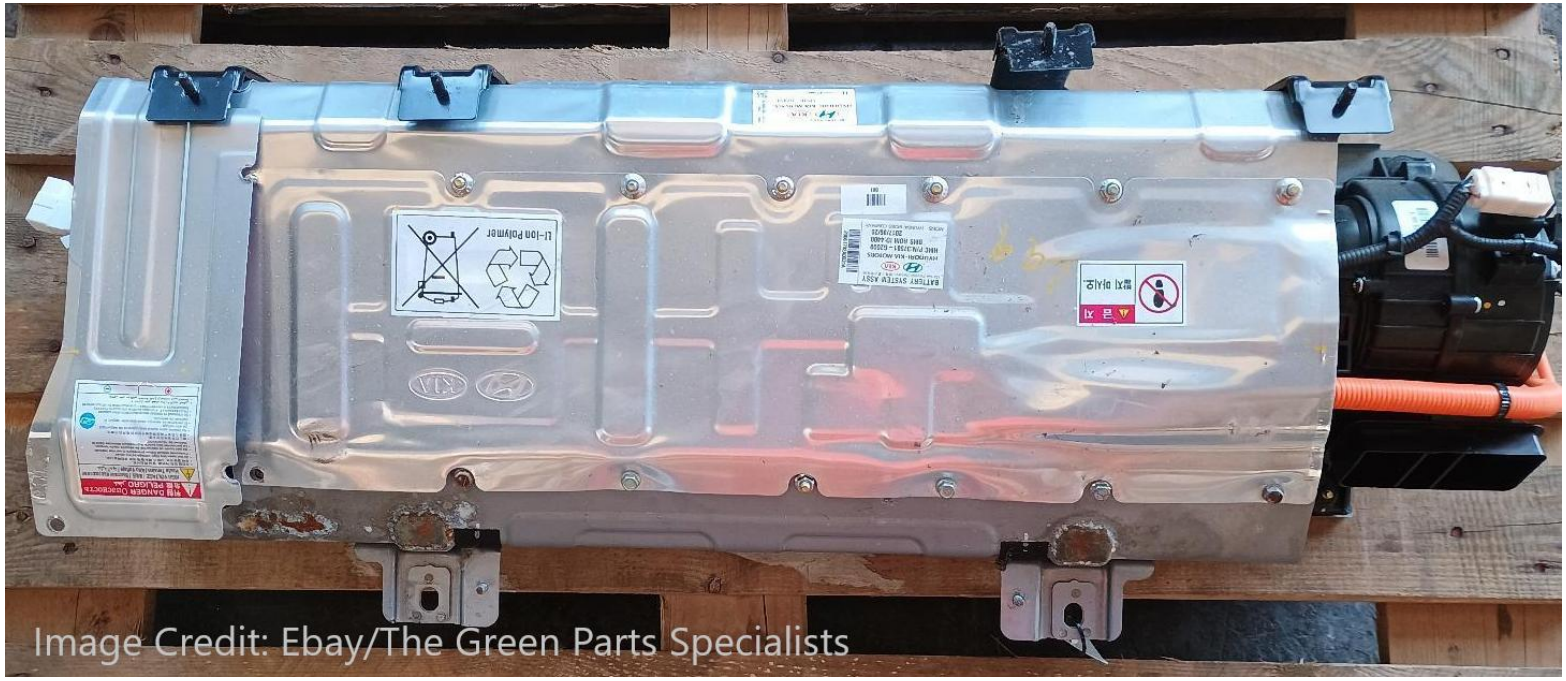


Hyundai Ioniq/Kia Niro PHEV 1.56KWh Battery Disassembly

Disassembly Instruction DI-37510-G2010

Any amendments to this document? – E-Mail sdobbie@live.co.uk

Revision History:

Issue	Date	Details of Change
A	15/03/2025	*Initial Release*

Recommended Tools:

Item ID	Description	Part Number	Image
1	*Multimeter rated for high voltage*	*N/A*	
2	*10mm deep socket wrapped in tape/heat shrink*	*N/A*	
3	*Drill or ratchet for socket*	*N/A*	
4	*Snips*	*N/A*	
5	*Long Nosed Pliers*	*N/A*	

Electric vehicle batteries are EXTREMELY dangerous if proper care is not taken. Thick rubber gloves should be worn while disassembling busbars or working around high voltage connections.

CARELESSNESS MAY RESULT IN FIRE, EXPLOSION ELECTROCUTION OR ALL 3 AT THE SAME TIME.

By proceeding, you agree to personally accept all responsibility for the above. DO NOT proceed unless you are fully confident and understand what you are doing.

Instruction Colour Codes

Standard instruction.

Instruction where great care and attention must be paid towards safety, part orientation, or other critical aspect of the task being carried out.

Instruction where lubricant, glue or other substance needs to be applied

Instruction where you need to refer to a website, external document, etc

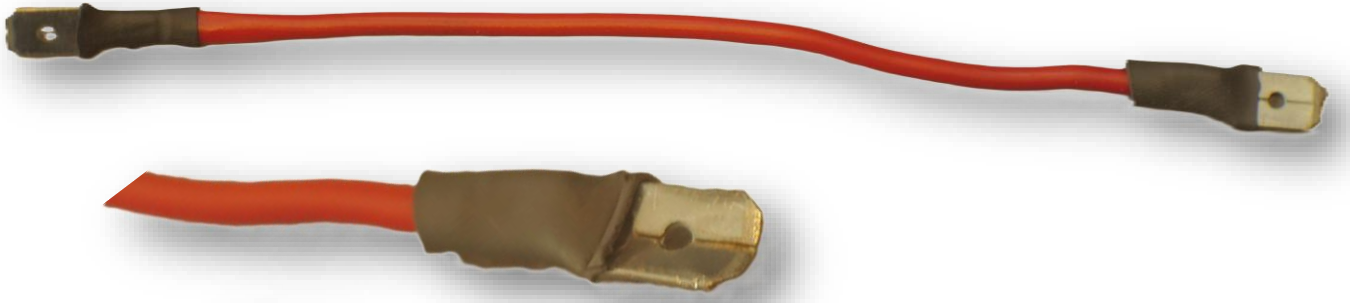
Notes, facts, memes etc.

Bill of Materials

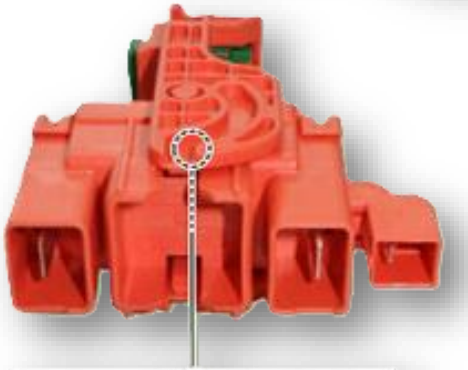
BOM ID	Vendor/Part Number	Description	Quantity
01	N/A	Thin insulated wire	100mm
02	N/A	6.5mm heat shrink	20mm
03	N/A	6.5mm Spade Crimps	2

Work Instructions:

1.01 If the HV isolator plug/main fuse is missing, Make a 100mm cable as shown using 6.3mm spade crimps. Bend the spade crimps so they will fit snugly into the socket. Do not plug in yet.

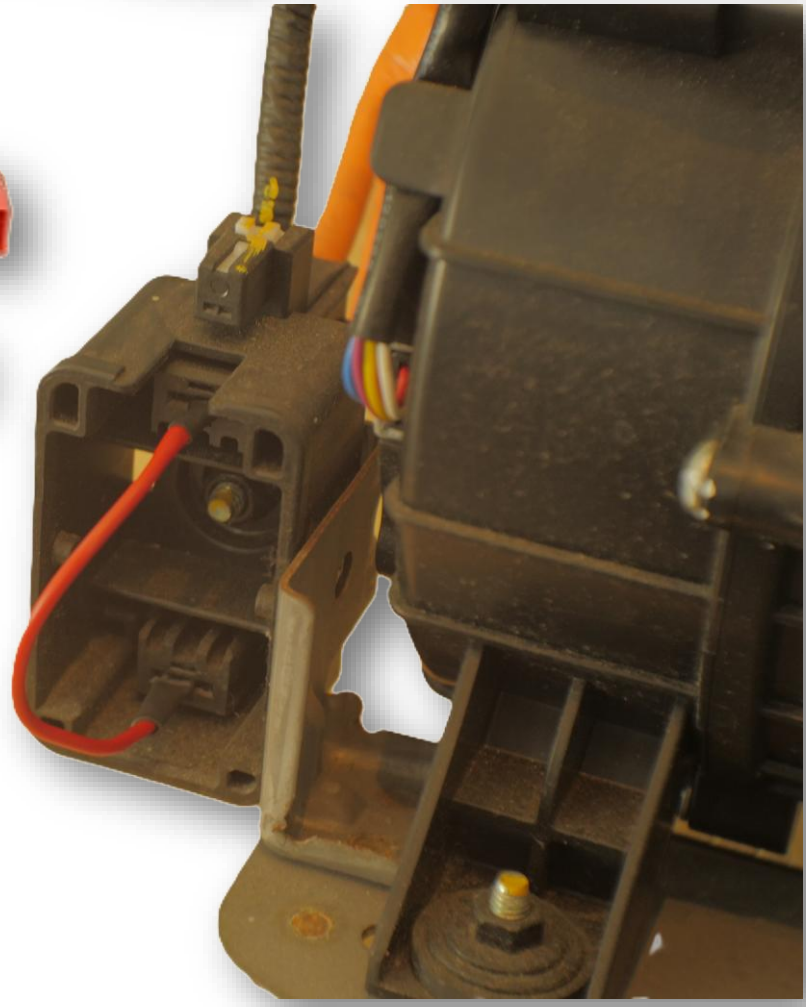


1.02 Measure the voltage across the HV disconnect plug. It should be around 20v or less due to the resistances within the battery management system. If it is much higher, do not proceed as there may be a short somewhere.



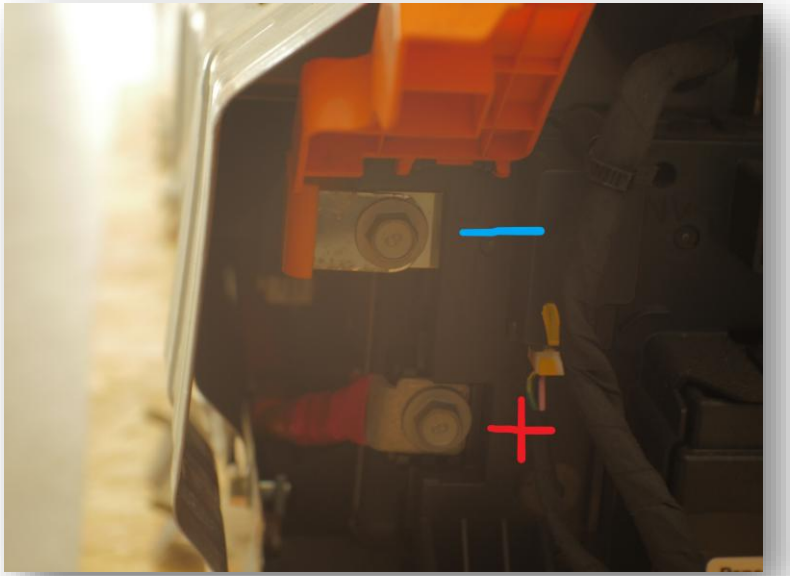
1.03 If the voltage is good, Insert the cable into the disconnect socket.

This will make the battery live with around 240V DC being present at the output. PROCEED WITH EXTREME CARE

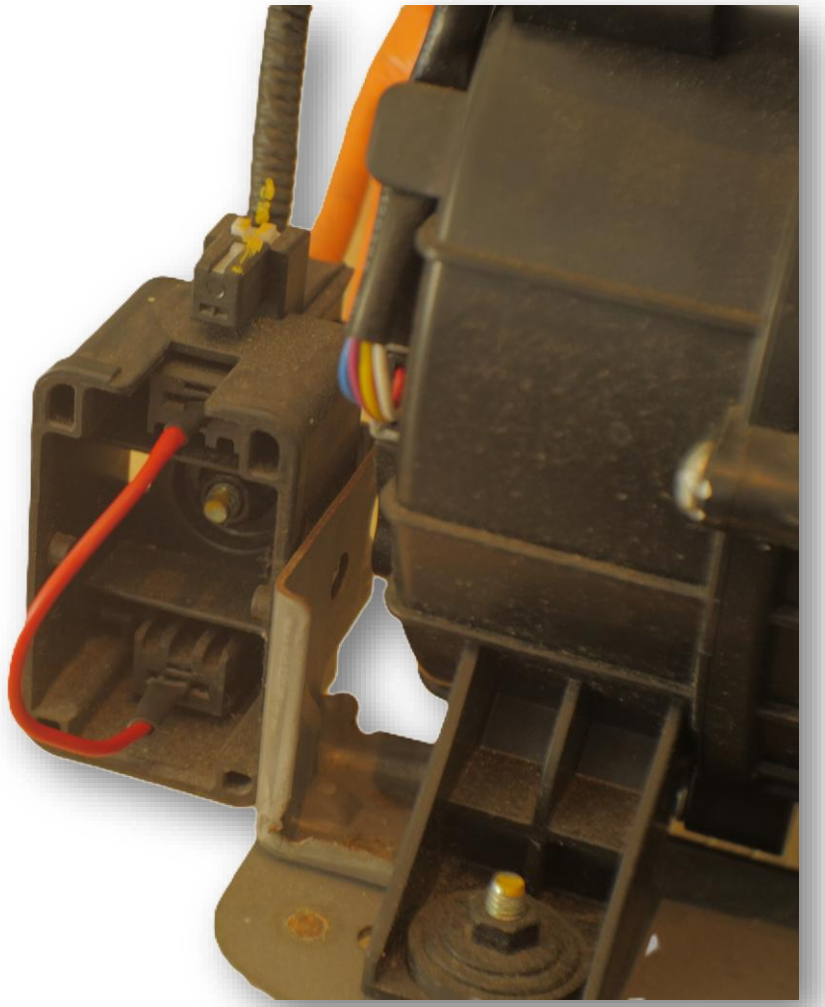


1.04 Verify that the multimeter is set up correctly. Ensure the test leads are NOT connected for current sensing as this will result in explosion/arc flash.

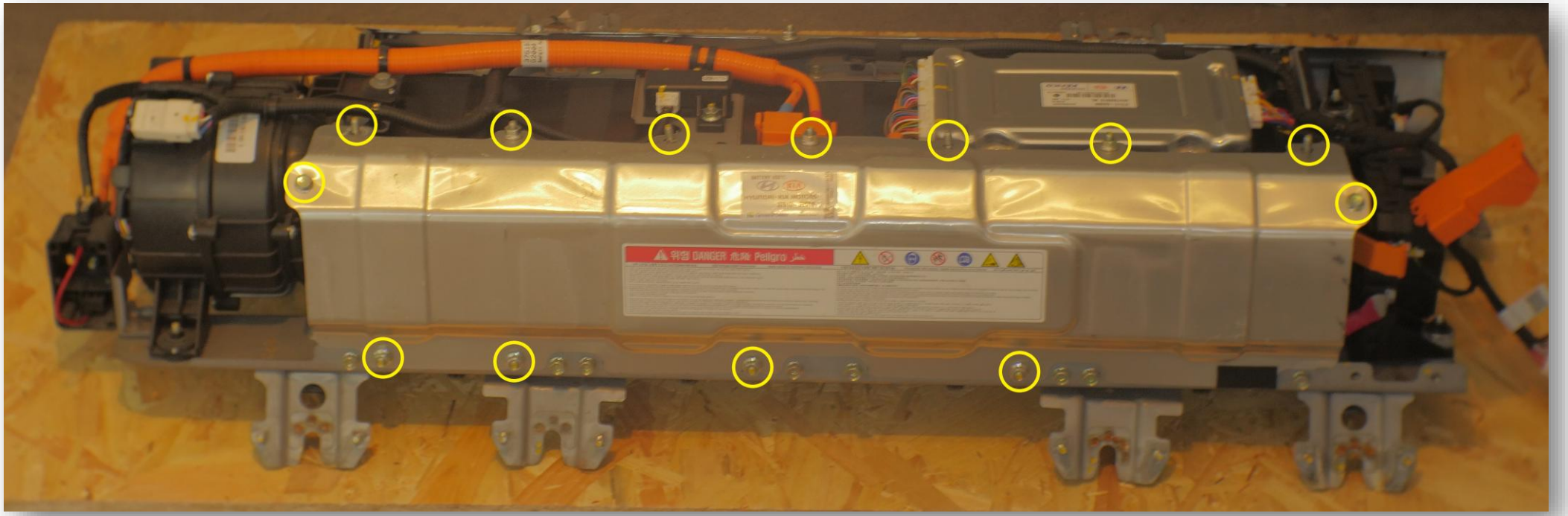
1.05 Carefully measure the voltage at the output. It should measure anywhere between 192 to 262.4 volts. If it is 192 or less, the battery should be returned to the seller as it is deeply discharged and has most likely been stored like that. This results in damage and capacity loss.



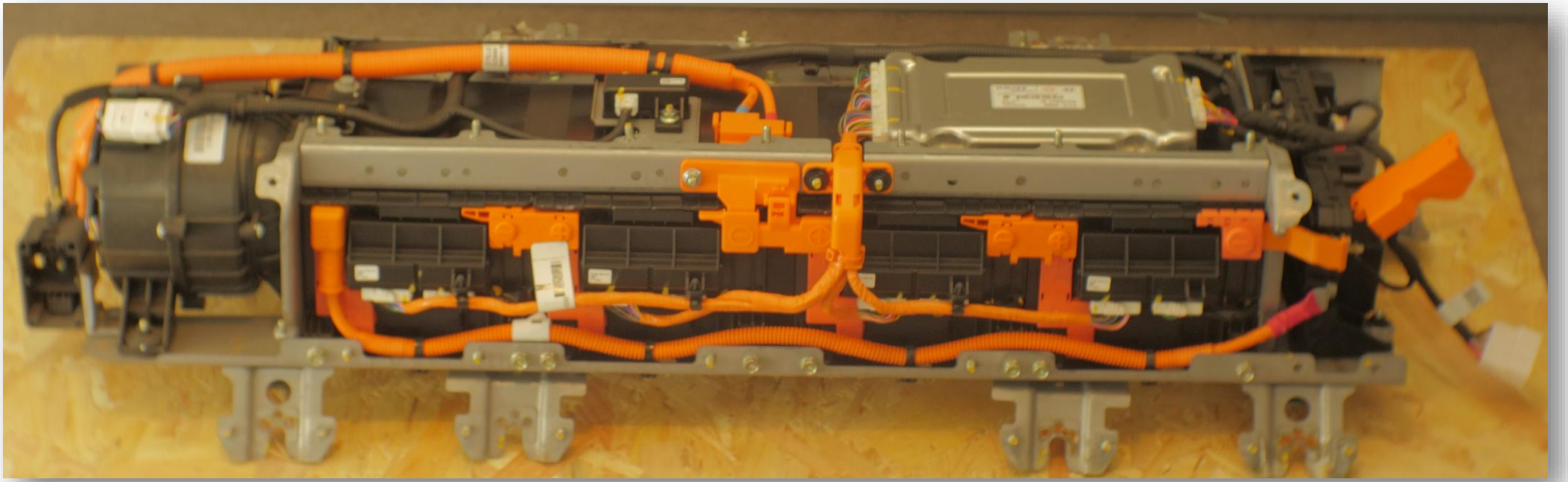
1.06 Disconnect the cable/service disconnect.



2.01 Remove nuts and bolts indicated and set aside.

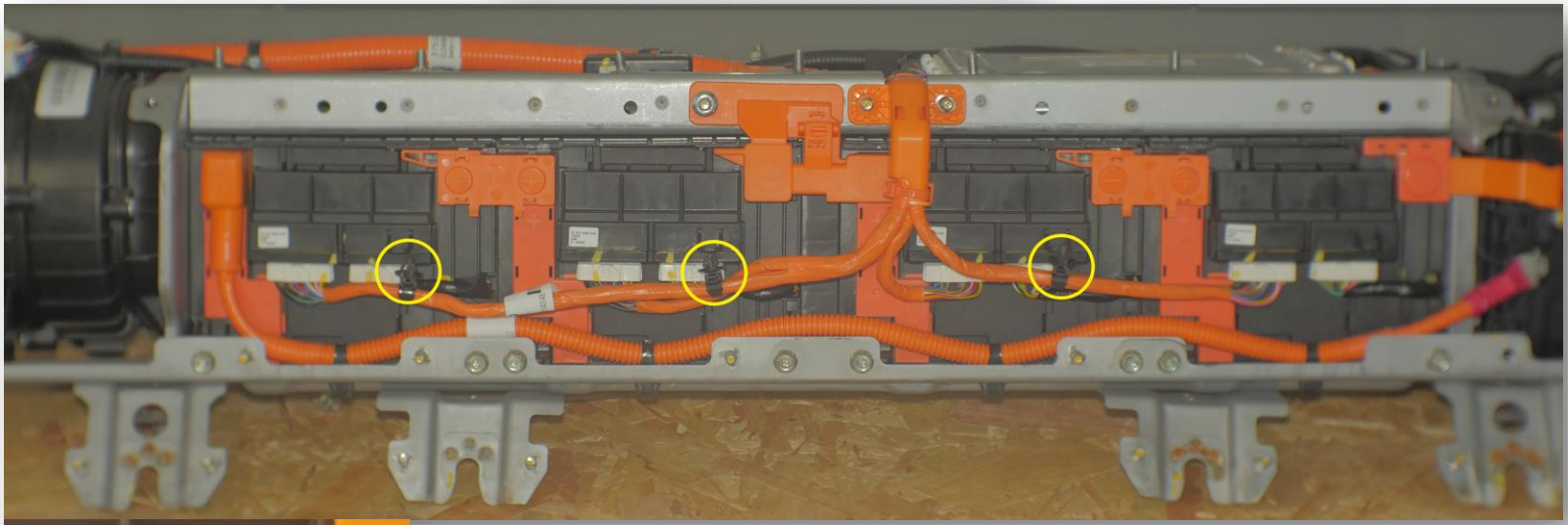


2.02 Remove the aluminium cover and throw in the recycling.



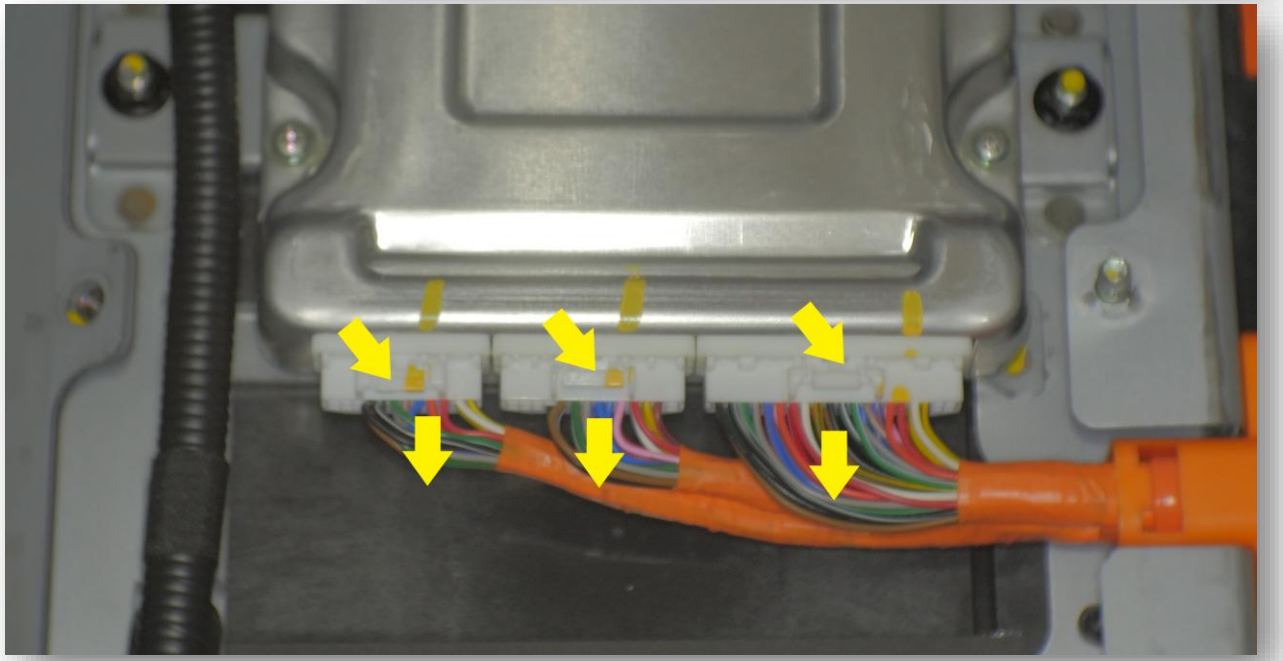
2.03 Remove the securing nuts for the cell balancing cable loom.

2.04 Unclip the cell balancing cable loom at the points shown using long nosed pliers.

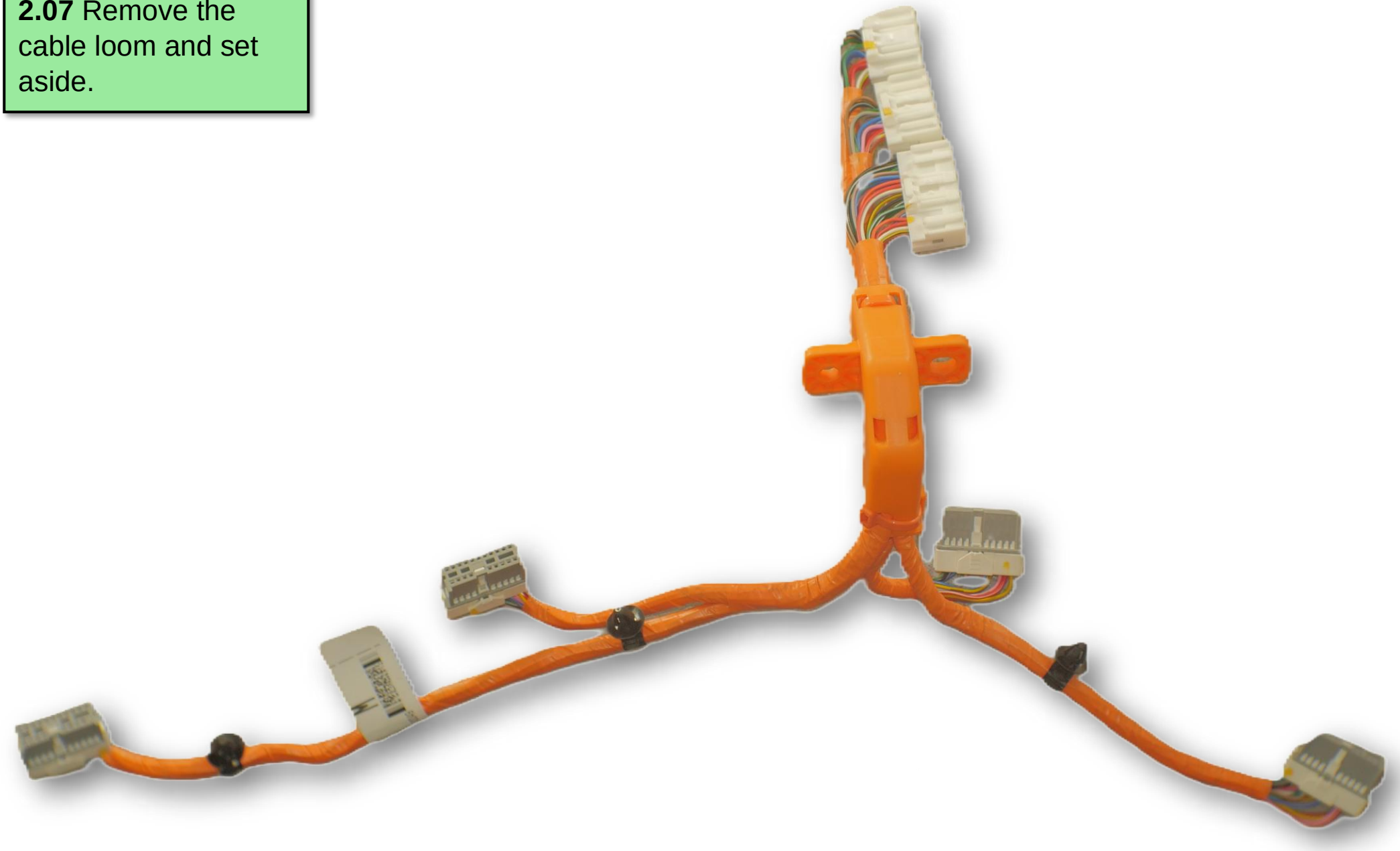


2.05 At each junction box, press on the connector tab and pull down at the same time to disconnect each plug.

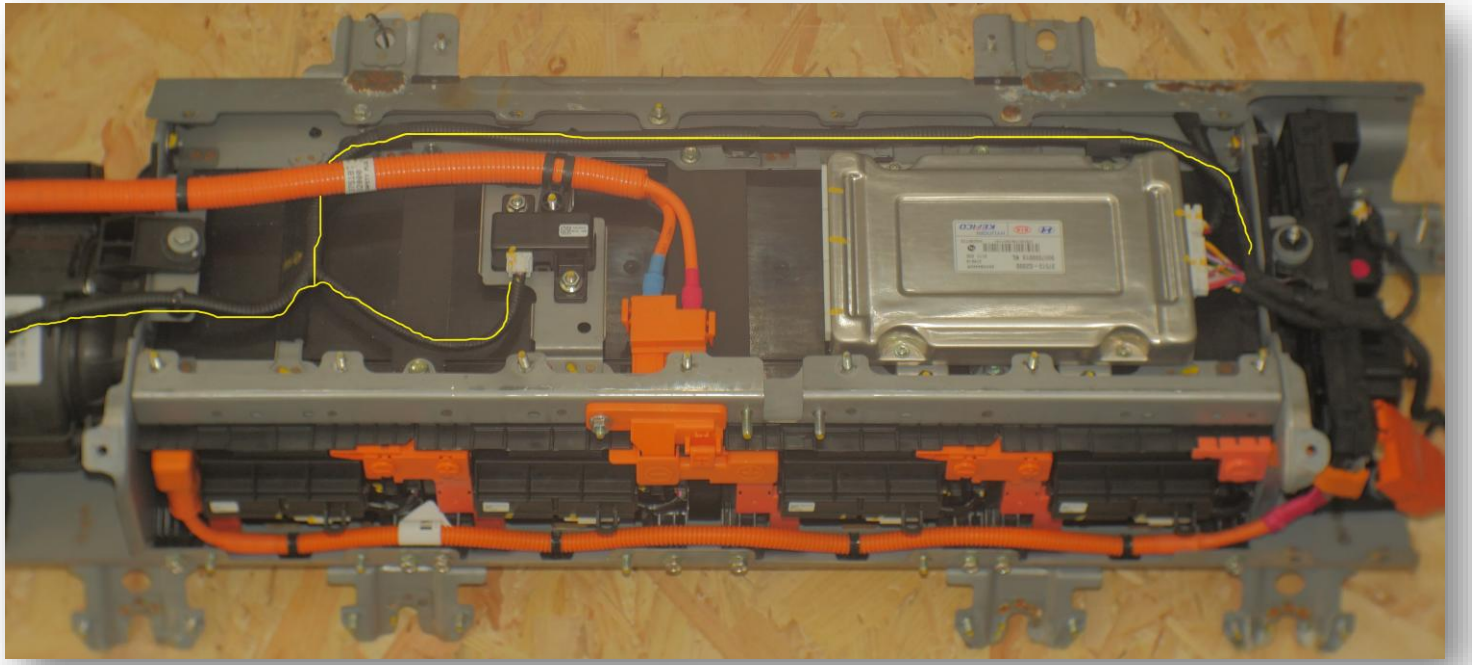
2.06 At the battery management system, press down on the tab of each connector while pulling at the same time to release.

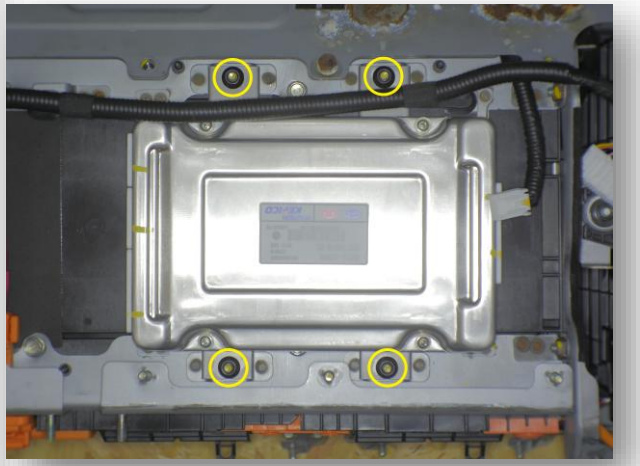


2.07 Remove the cable loom and set aside.



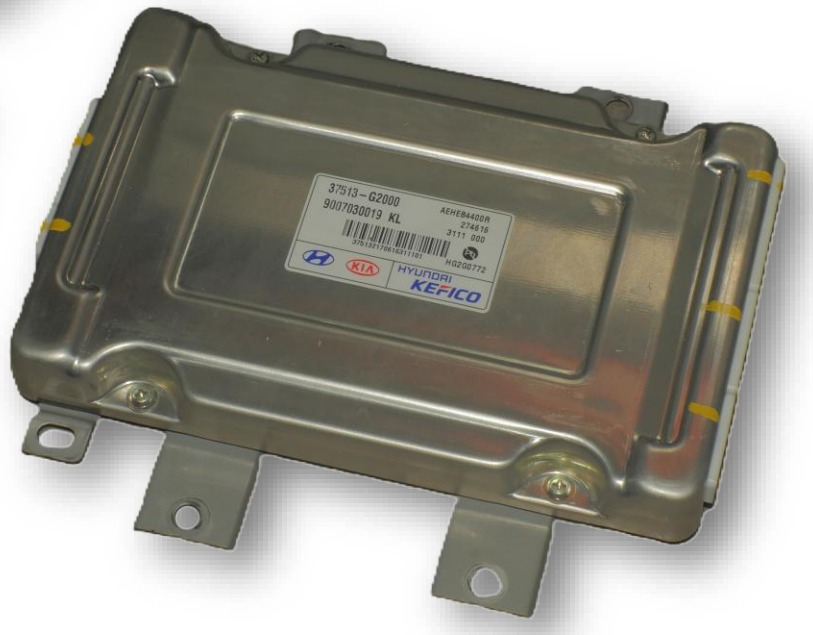
3.01 Remove the entire black cable loom highlighted along with the 4 nuts holding the battery management system in place. Use the same techniques shown previously for unplugging connectors. You may need to cut tape or cable ties at certain points.



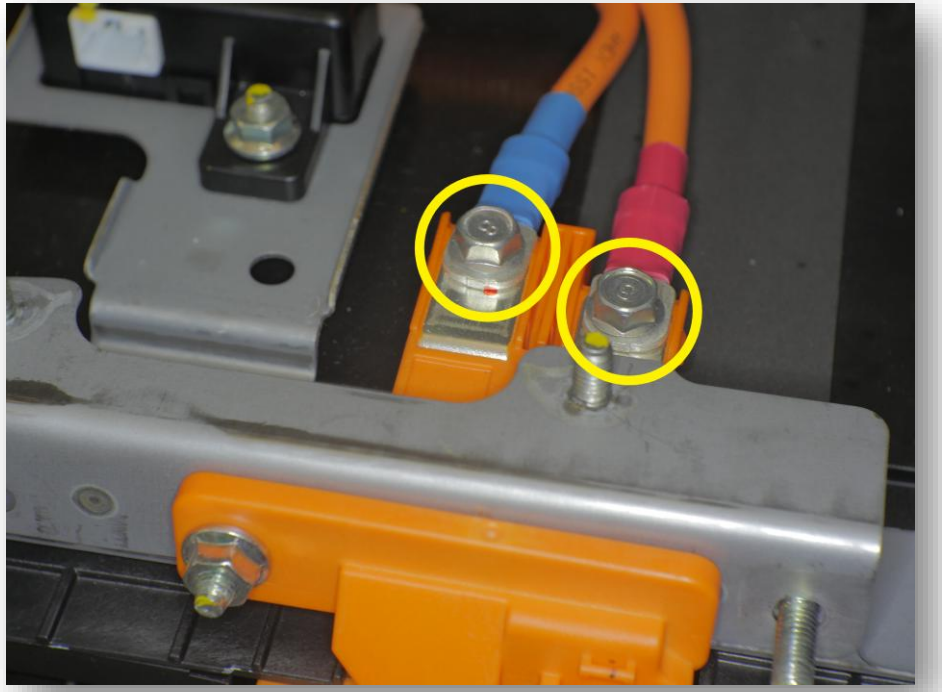


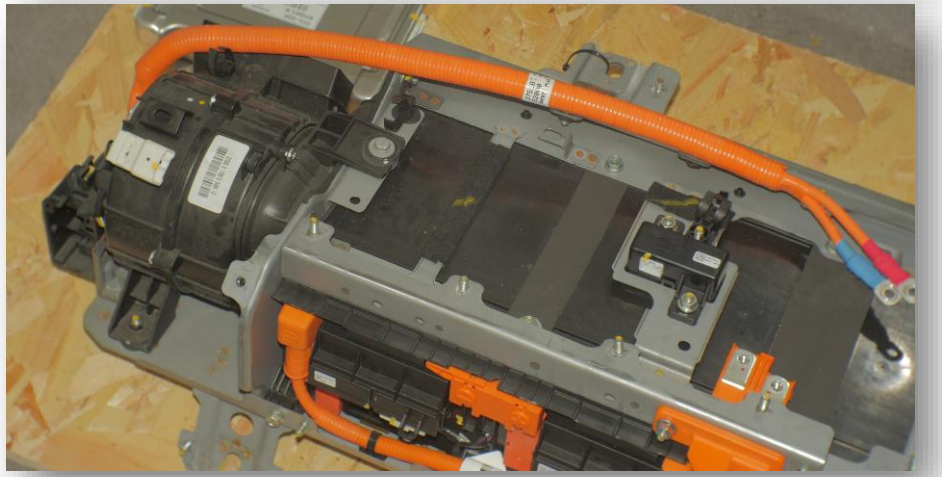
3.02 Set cable loom and battery management system aside

Although this is a 64 cell battery, the battery management system appears to have enough channels on it for 72 cells.

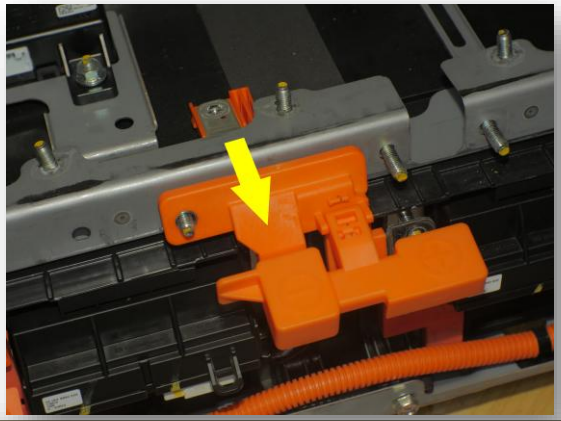


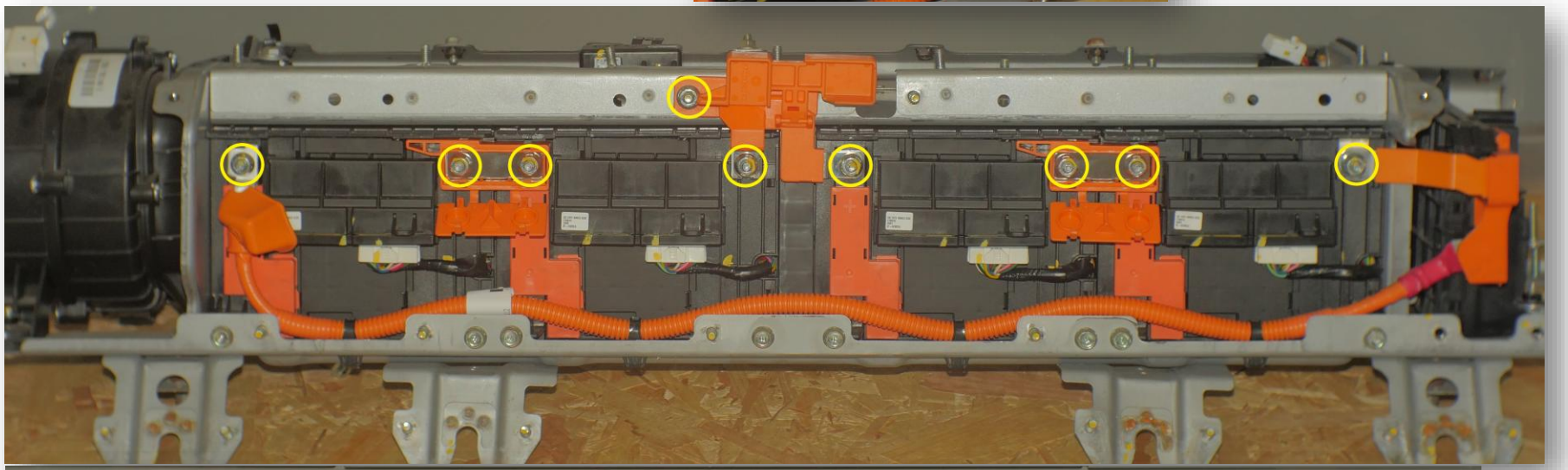
4.01 Remove the high voltage disconnect cable and cut any cable ties securing it.

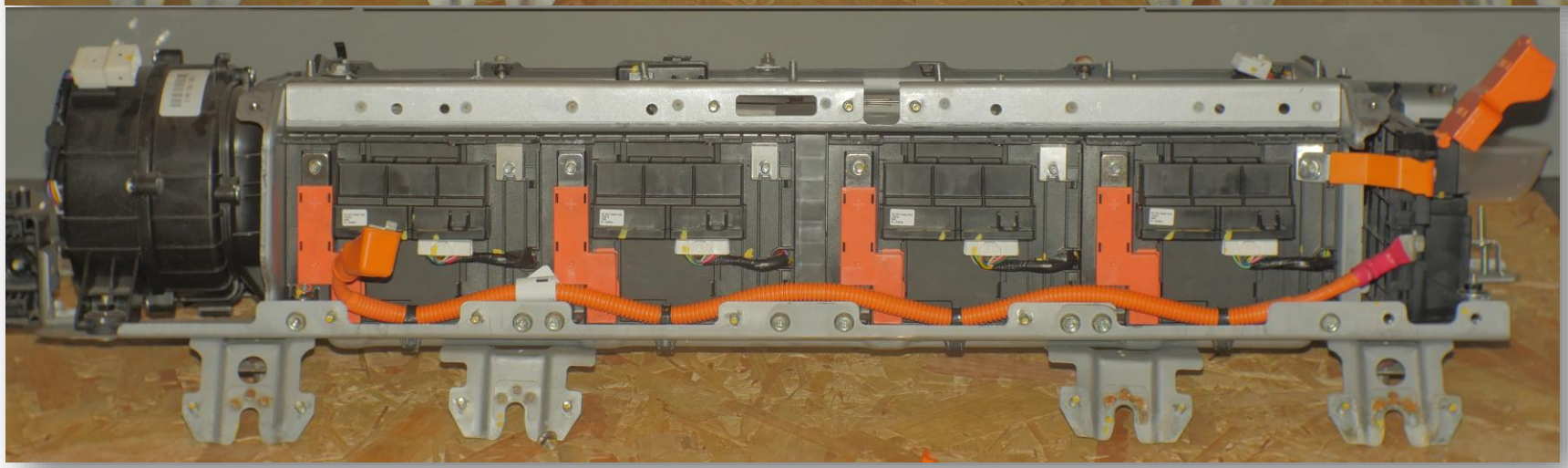




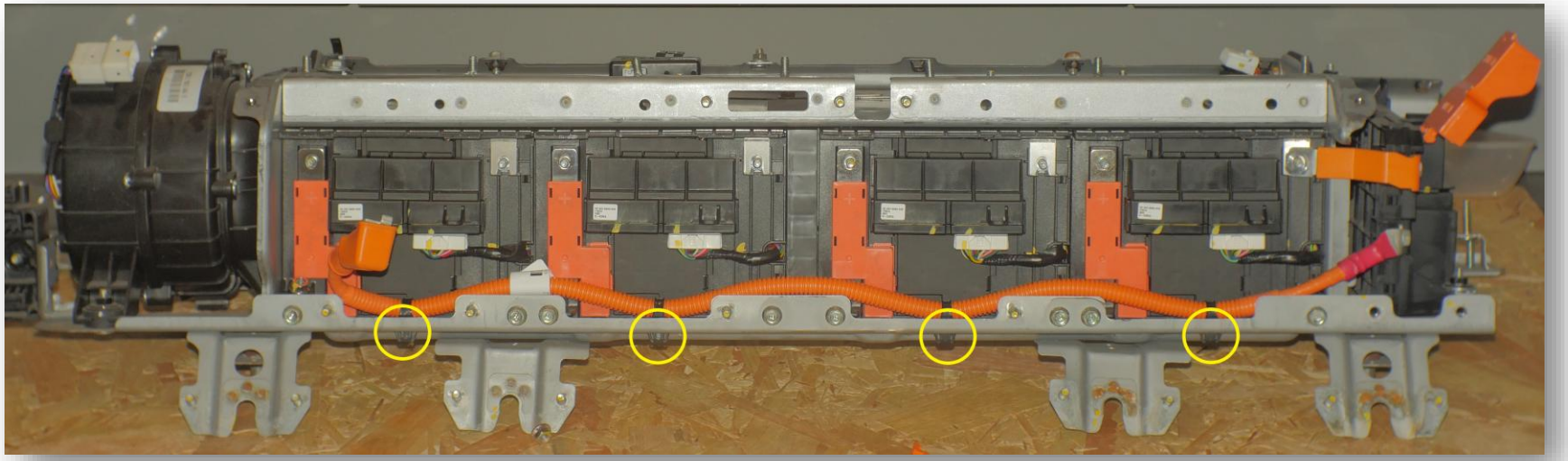
4.02 Remove all nuts and busbars shown, ensuring you do not short circuit anything.

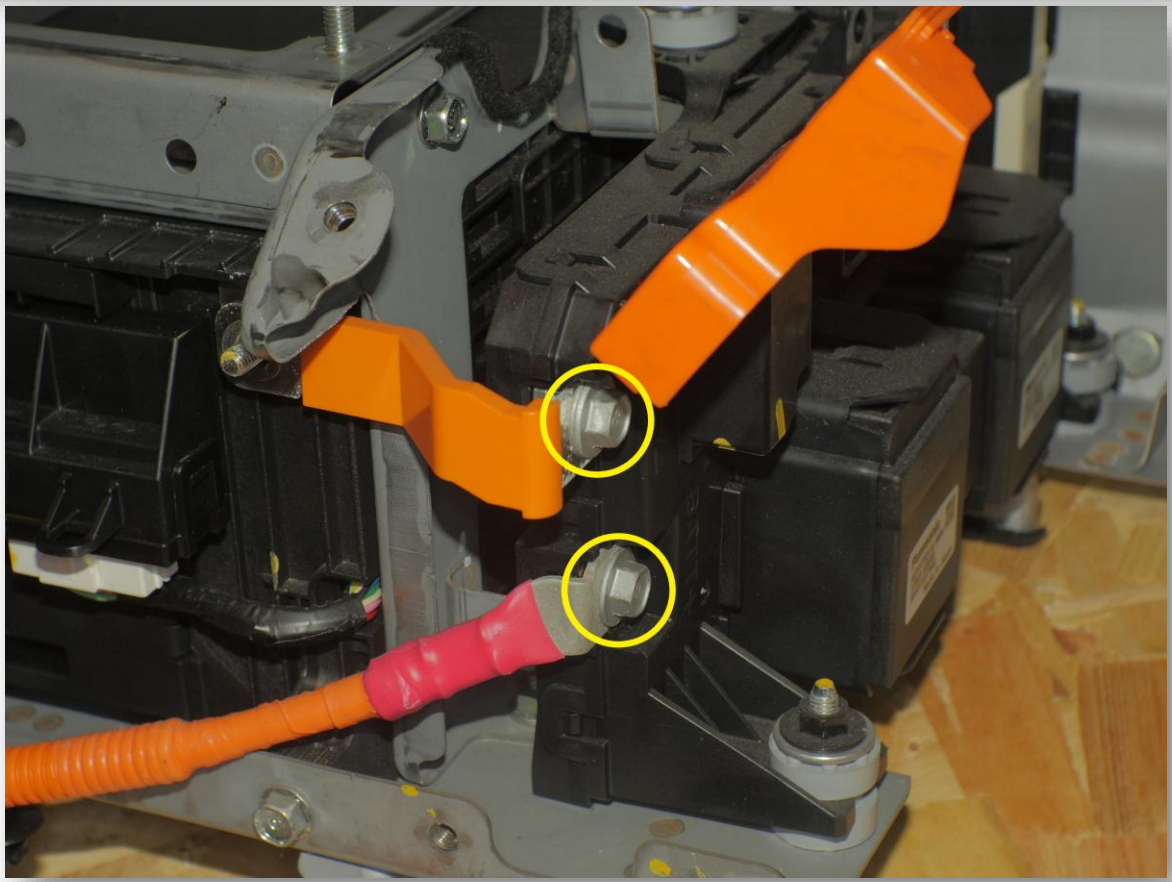




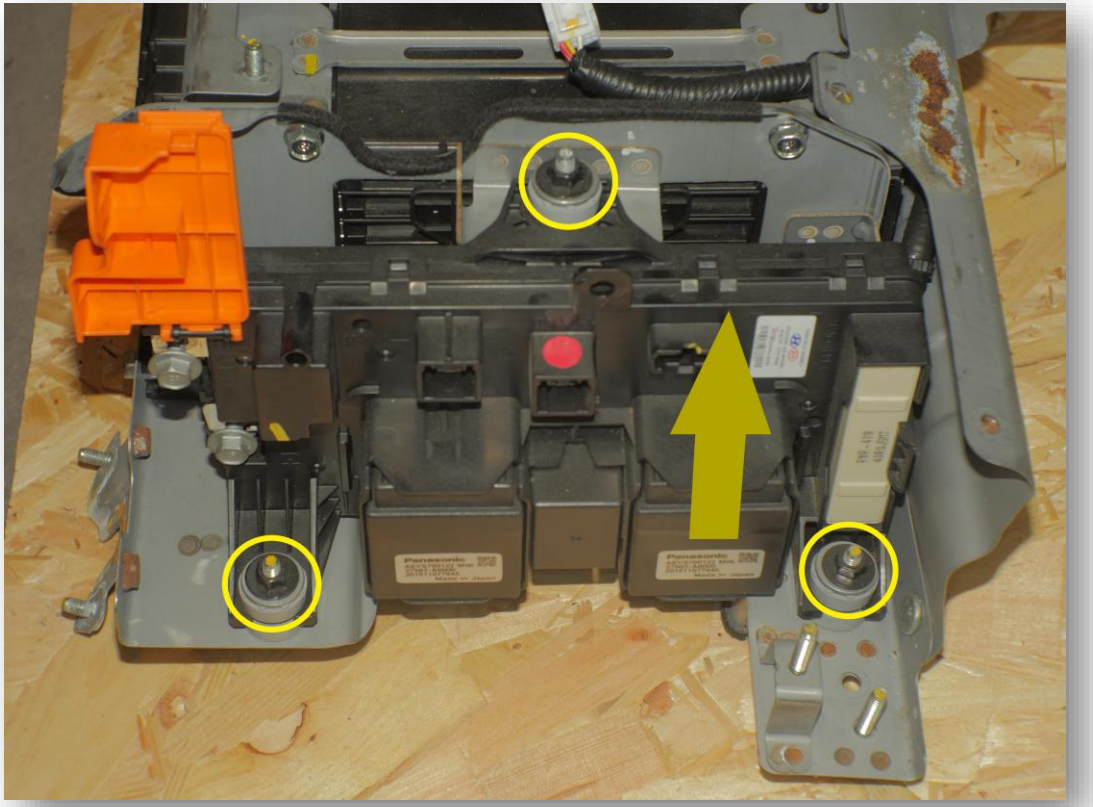


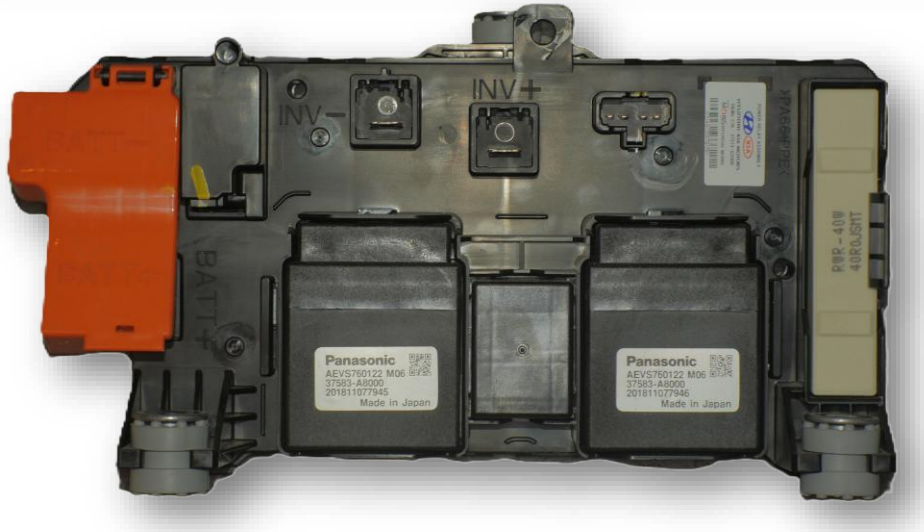
4.03 Unclip the positive HV cable at the points shown and remove the two bolts indicated. Set cable aside.





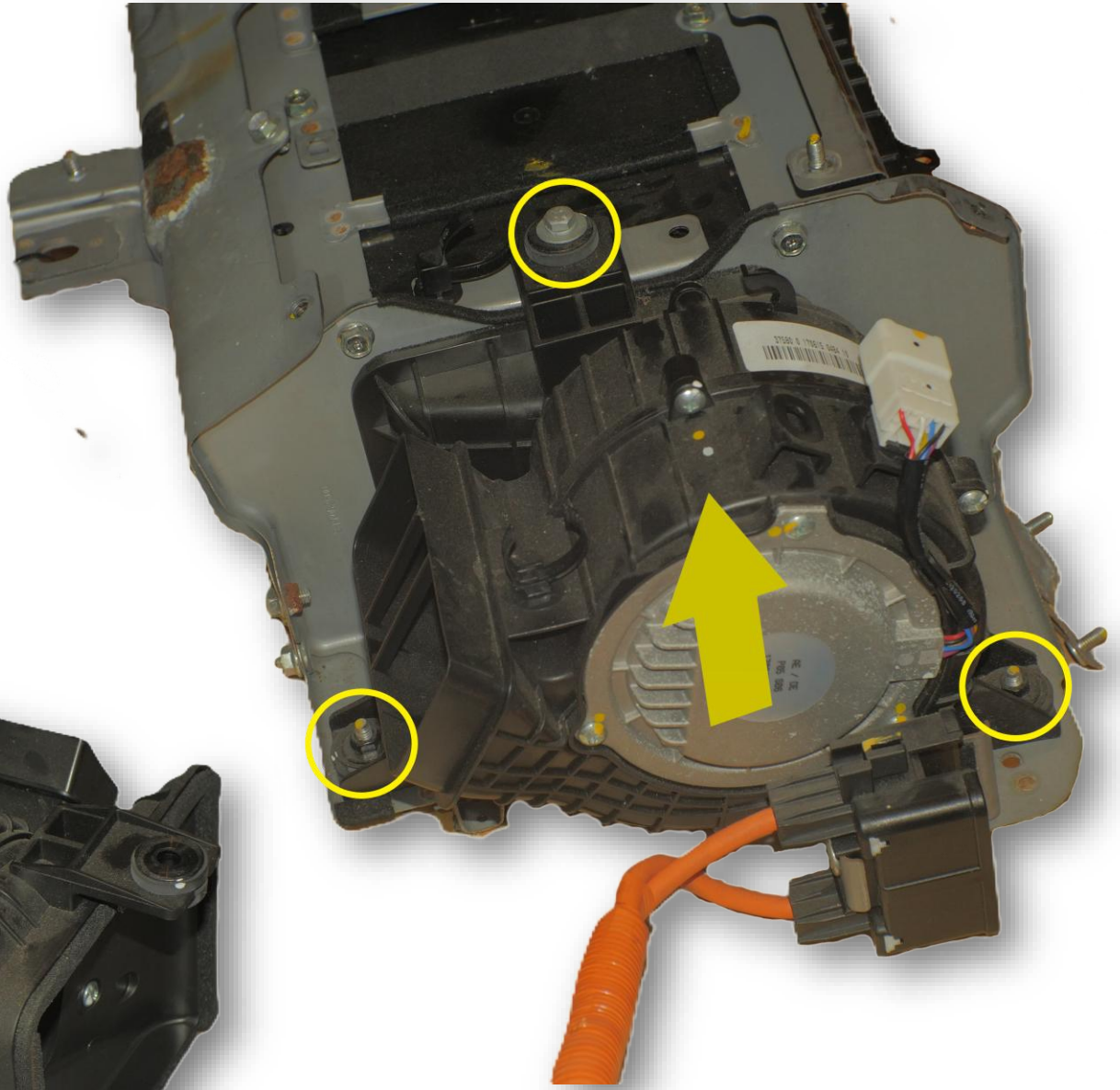
5.01 Remove nuts indicated and pull upwards to remove the Power Relay Assembly



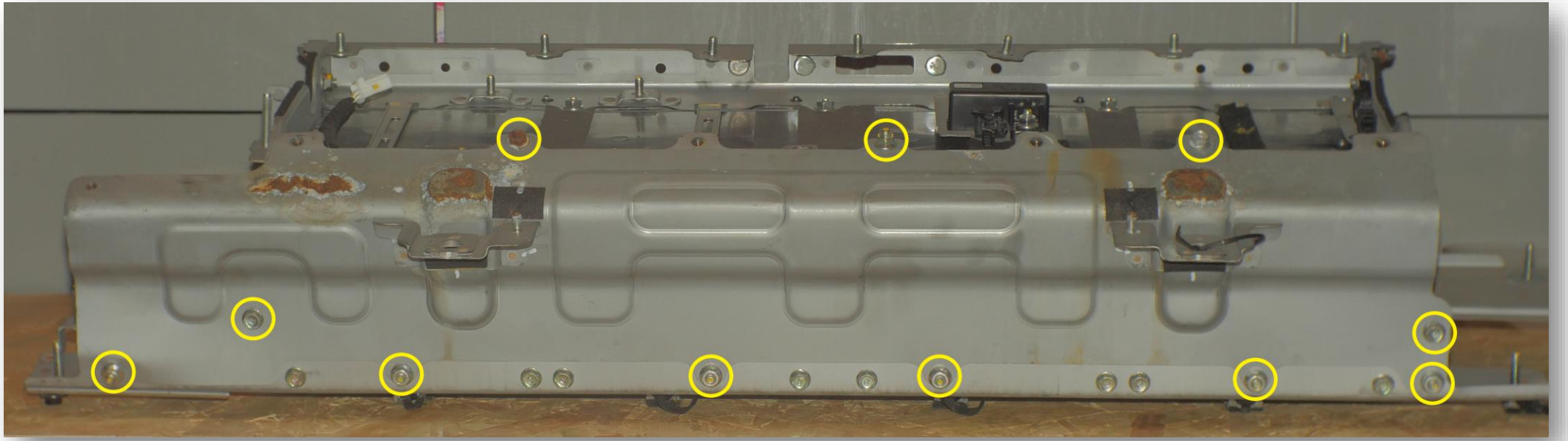


5.02 Remove nuts/bolts indicated and pull upwards to remove the fan assembly. This will require some force.

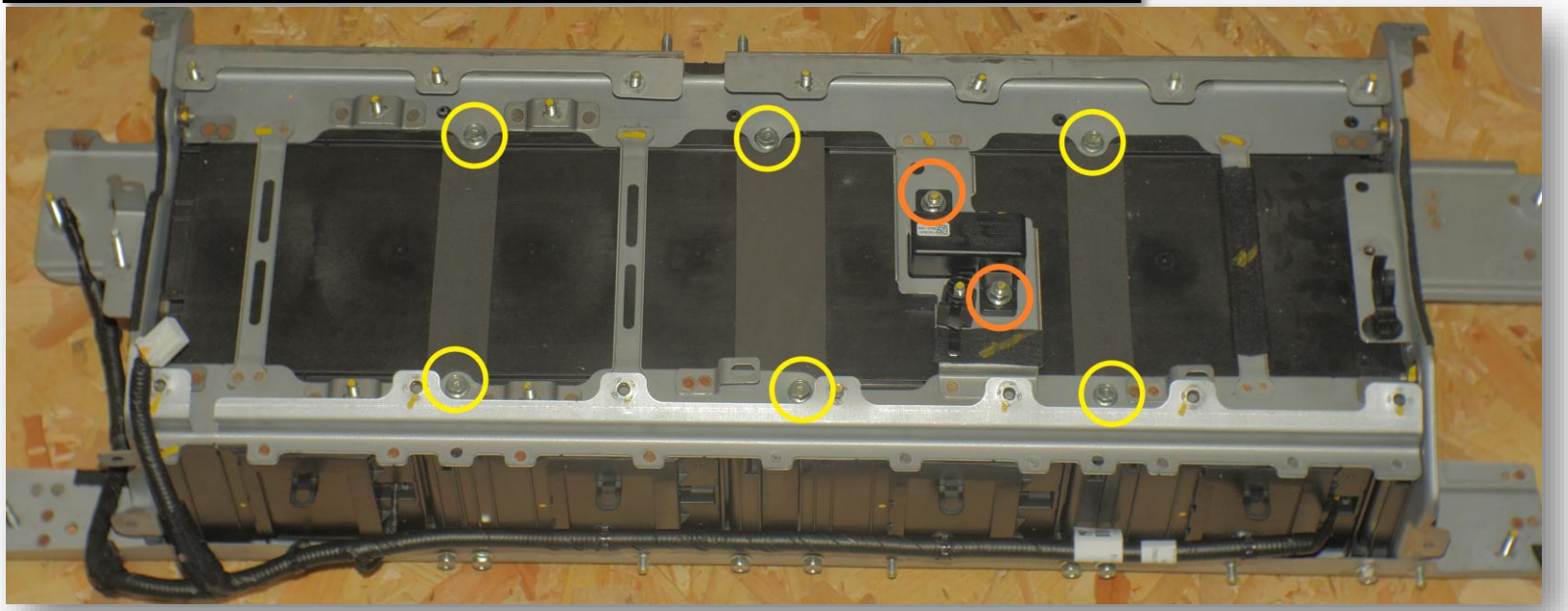
Supplying 12V to the fan unit did not yield any results. It seems to be controlled by canbus, so will be useless for any other applications without further reverse engineering of the canbus instructions.

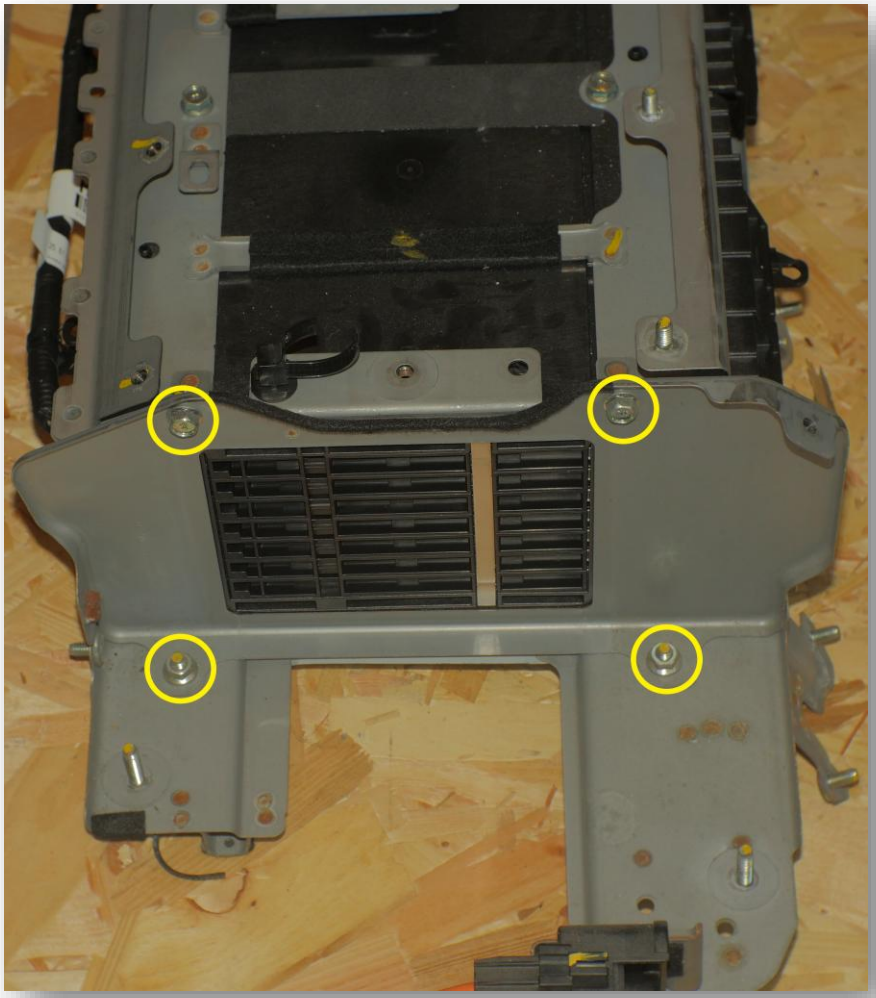


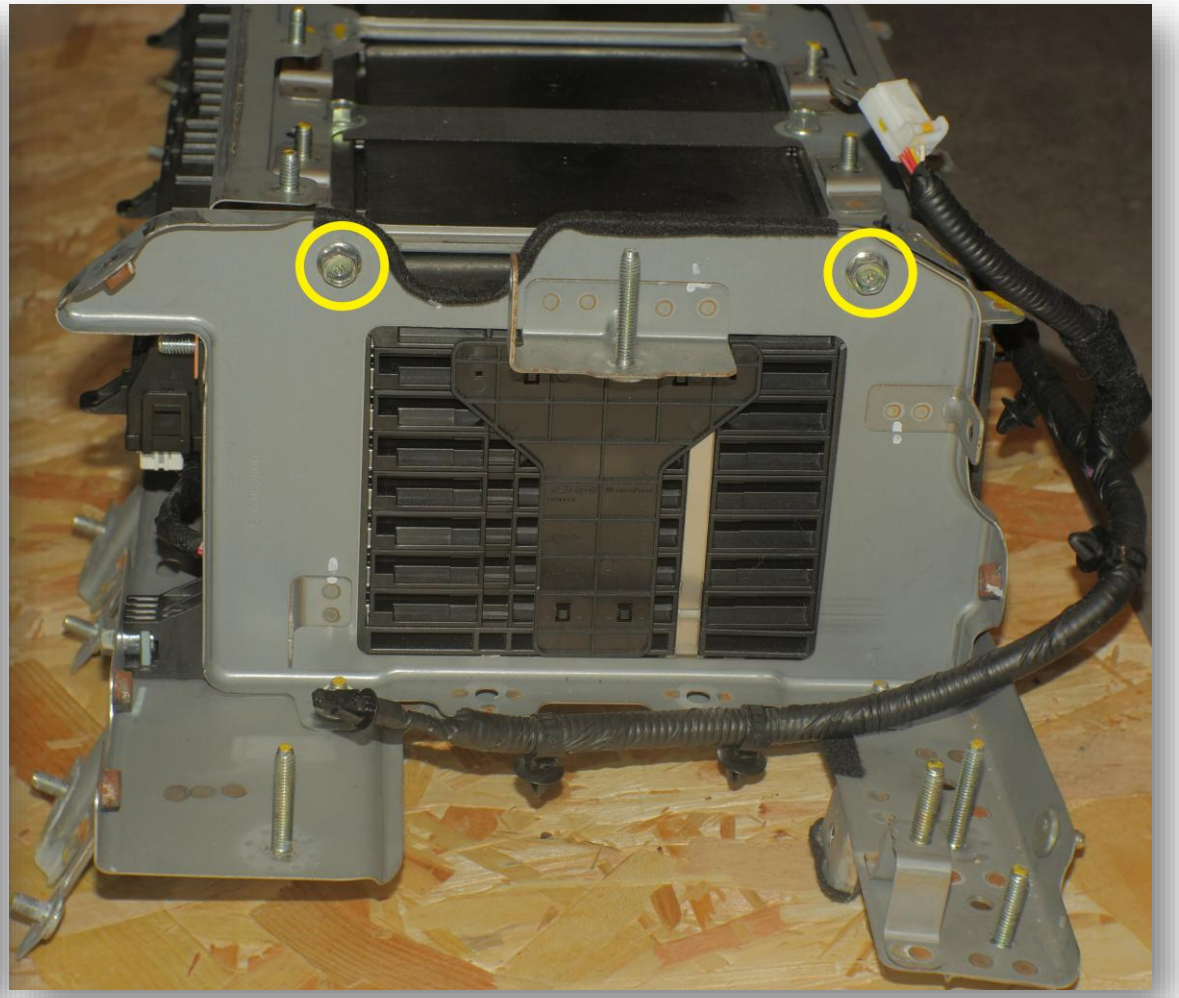
6.01 Remove nuts indicated and remove metal cover.



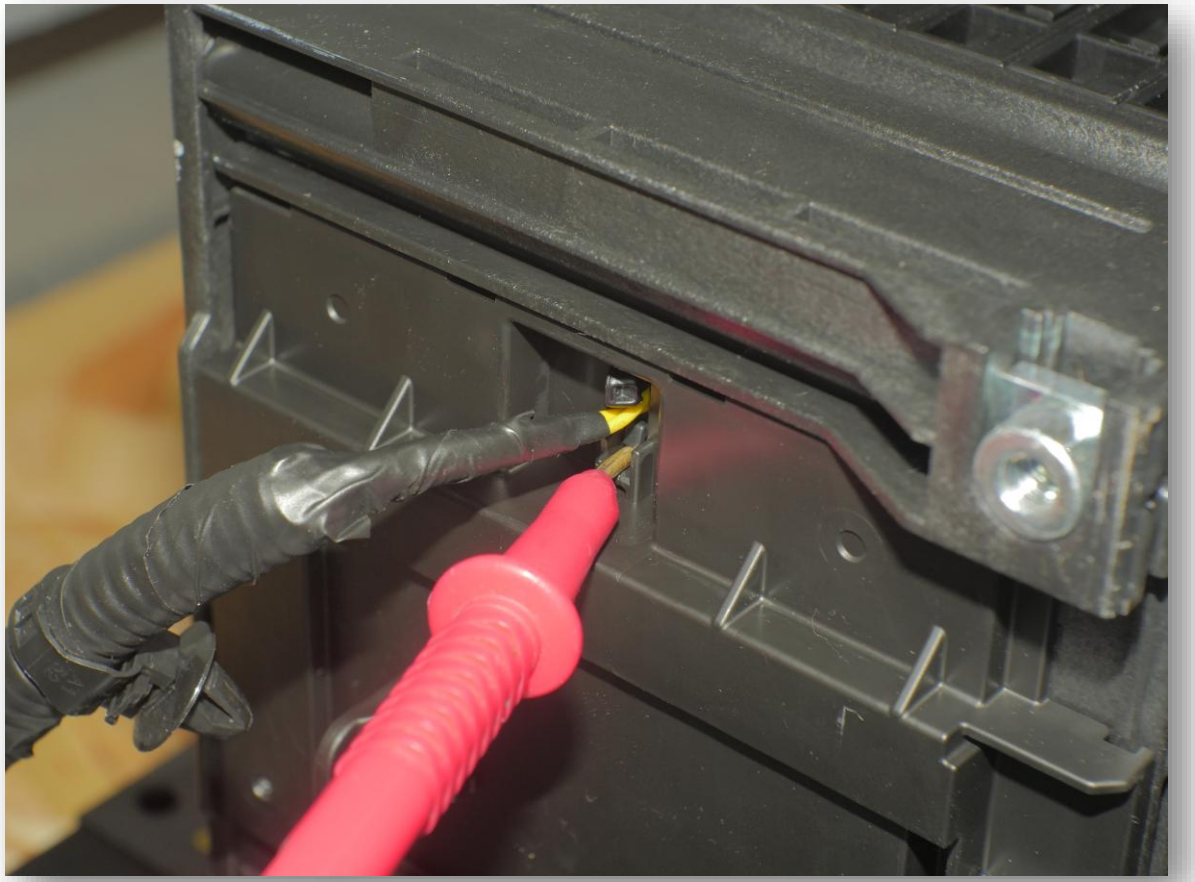
6.02 Remove nuts indicated. The nuts highlighted in orange are for the swelling sensor which may be essential if you want to repurpose the battery management system.

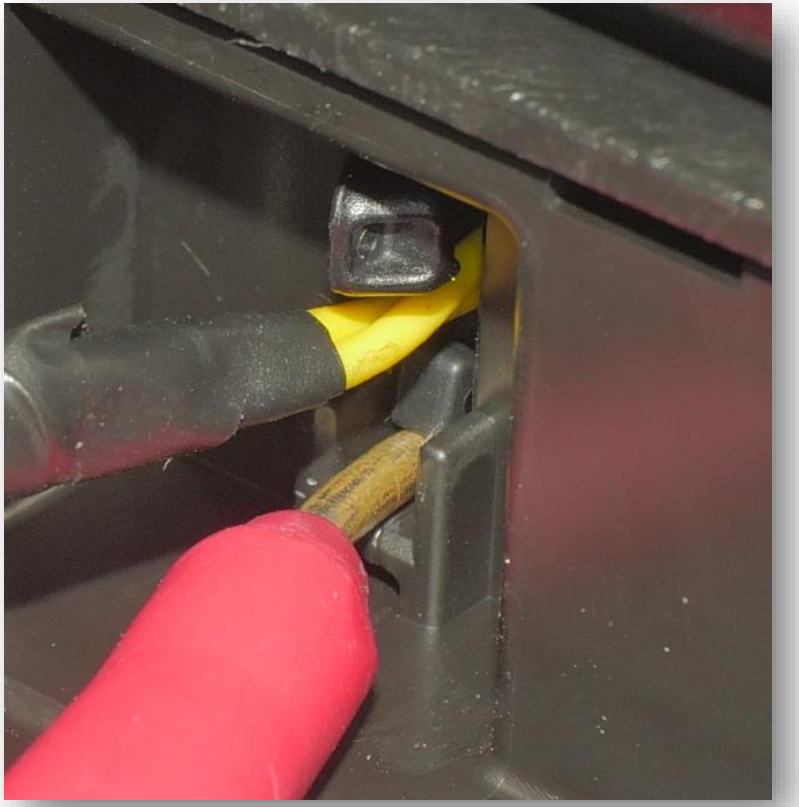


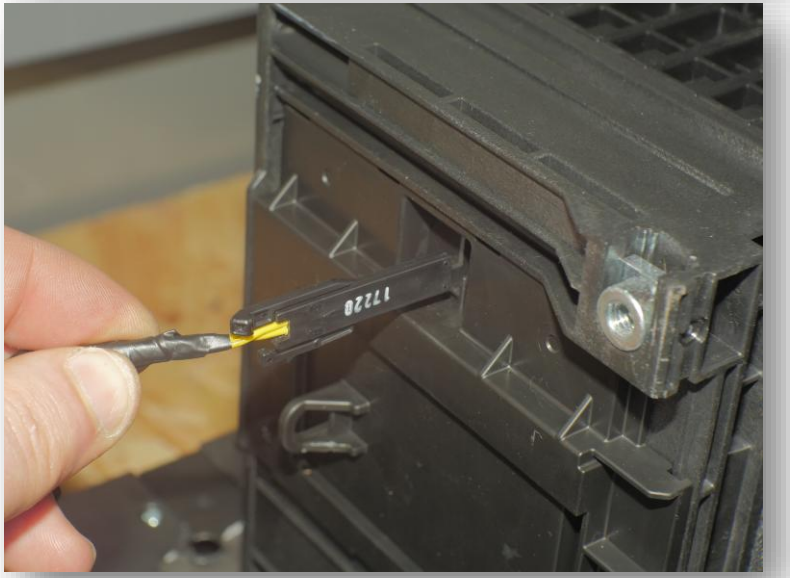




7.01 Remove the temperature sensors from the battery modules by inserting a suitable tool and pressing on the retaining tab while pulling the sensor. Retain the temperature sensing cable assembly if repurposing the battery management system.

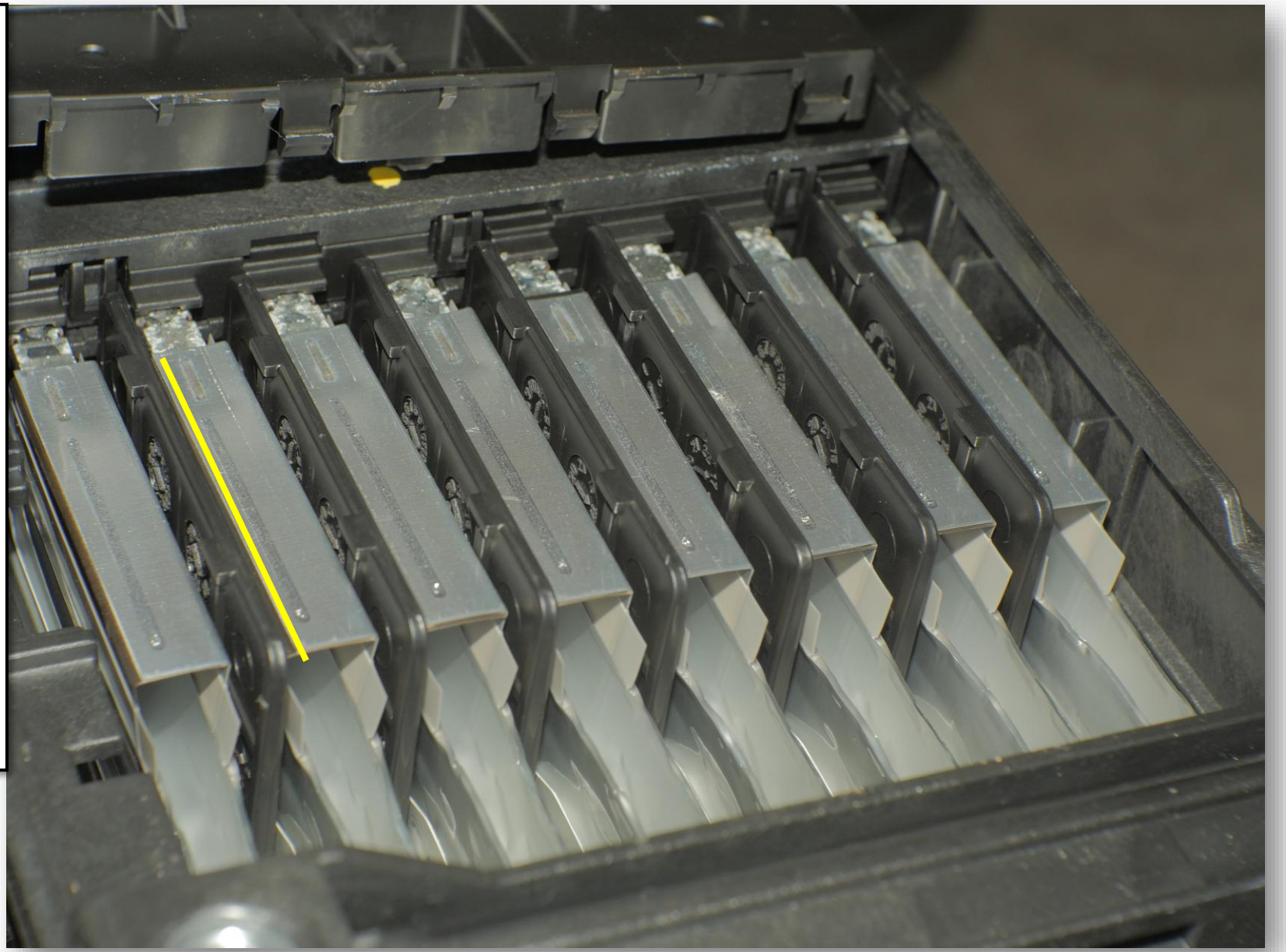




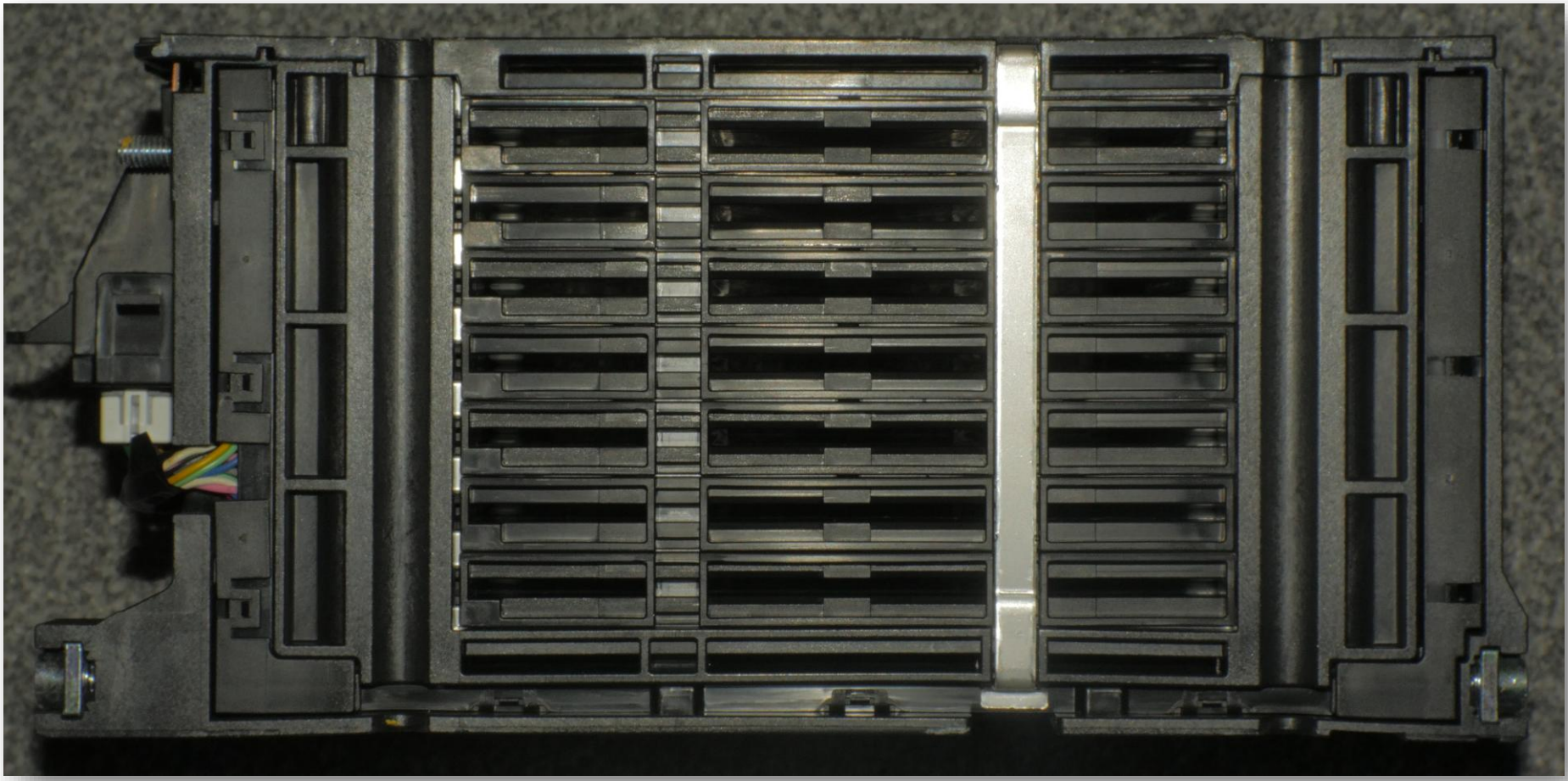


7.02 All metalwork surrounding the battery can now be removed and the modules lifted out.

Removing the cover on each module reveals the welded connections on the cells. One tab is most likely nickel, and the other is aluminium. It maybe possible to cut behind the weld so that you end up with a nickel tab on one cell and an aluminium tab with a piece of nickel welded to it on the next cell. Nickel can be soldered whereas aluminium can’t.



The cells have an air gap between them to allow cooling as well as space for the cells to swell as they age. Repackaging them to remove the space would mean less cooling and thus less power delivery. The modules could be used as is and wired to a suitable 16 cell battery management system for bikes or other applications.



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