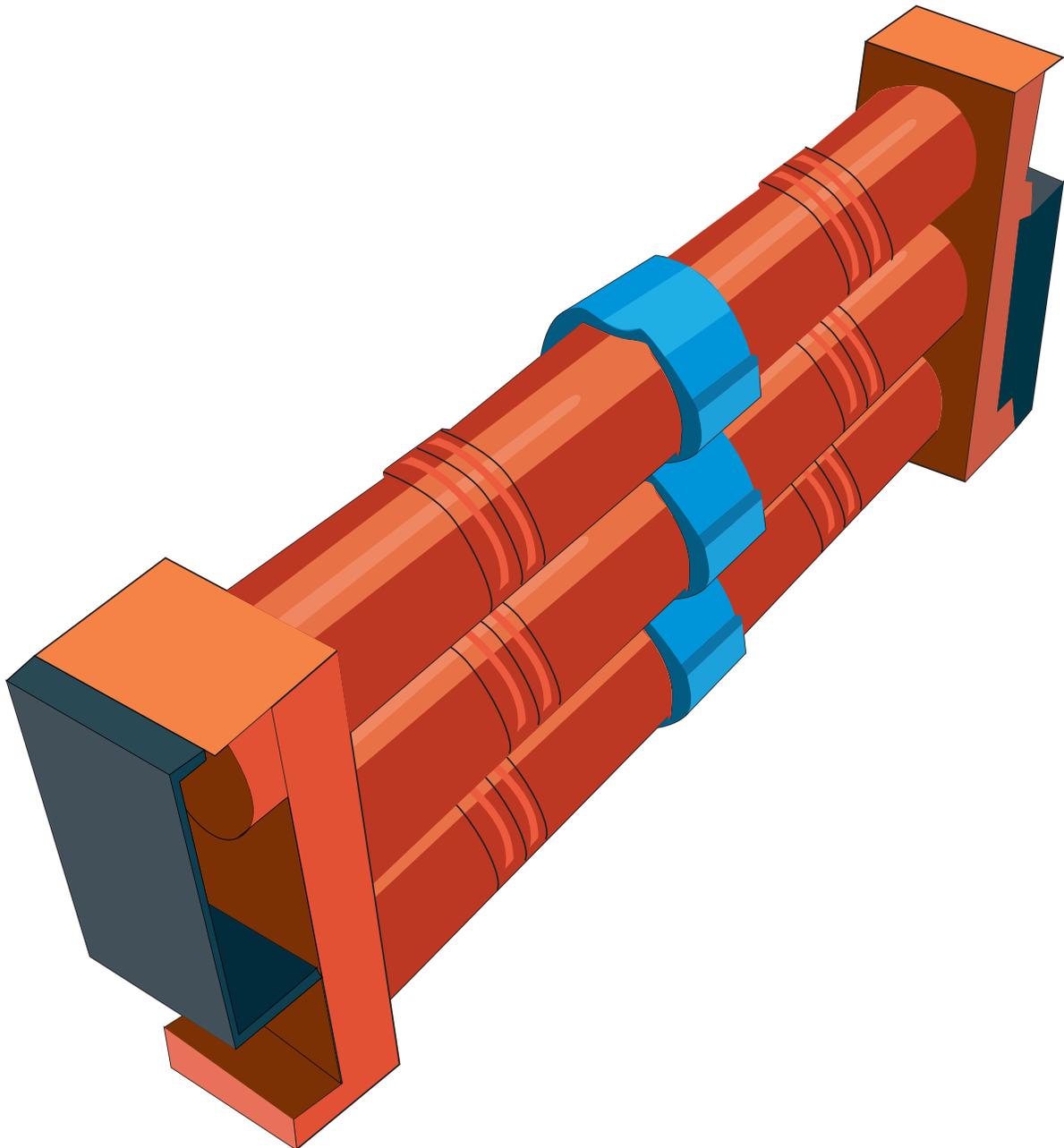


NewPriusBatteries.com

Toyota Prius

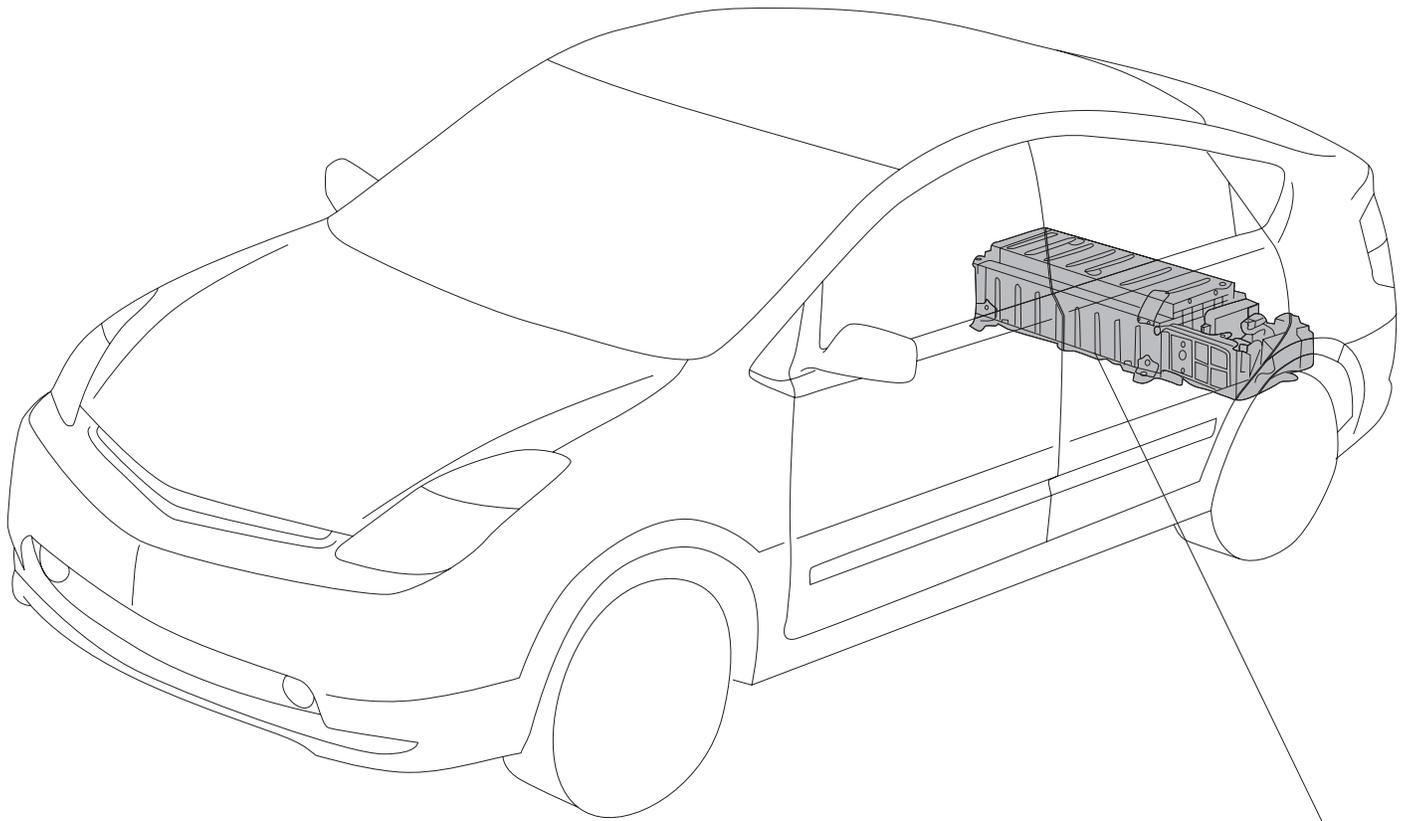
HYBRID BATTERY REPLACEMENT INSTALLATION MANUAL



NewPriusBatteries.com

TOYOTA PRIUS HYBRID BATTERY

INSTALLATION MANUAL



HIGH VOLTAGE (HV) BATTERY ASSEMBLY

Thank-you for your purchase of the only brand new aftermarket replacement battery kit for the Toyota Prius!

We at NewPriusBatteries.com want to remind you that the traction battery is a high voltage DC source and can be dangerous. When you open the exterior casing of the battery, you are exposing metal contacts that can potentially carry over 200v. You should exercise caution when dealing with the battery and it is highly recommended that you use a brand new and tested pair of high voltage insulated gloves. You can buy a pair on Amazon in the \$40-\$50 range. It is also recommended that you use a fully insulated socket set as if you are not careful with your tools you can short-circuit one or more modules together causing permanent damage to the modules or even injury to yourself. It is also a good idea to wear safety goggles if the condition of your used battery is poorly. If you have any questions please contact us via email and we will try to get back to you immediately. Feel free to send in images/photos during the install and we will advise the best we can.

We also want to help with the installation process where previous customers have identified omissions or confusion. We apologize for any confusion the manual may bring, but if you have questions, please ASK. The most important point is that the new battery should align similarly to the old battery. The main positive connection should be in the same place and the main negative connection should be in the same place.

You will see mention of “Vn” in the manual, where “n” is a number between 1 and 15. These are designations for the wiring harness. In Step #42 you deal with the “Primary Half of the Wiring Harness” which is the odd side. You will connect V3, V5, V7, V9, V11, and V13 to the battery but not V1 or V15 at that time. To identify the number on the wiring harness there is a small identifier near the ring terminal termination that will indicate its number.

ALWAYS double and triple check which bus bar goes where. If you accidentally place the bus-bar shorting two or more cells together, you will cause irreversible damage worst case. Sparks, fire, and gasses are also of concern. Refer to the images in the manual. But in general the battery connections “snake” from the main positive terminal V15 connected to the first battery module all the way around to the end at V1, the negative terminal. It is one big series chain. BE CAREFUL!

When attaching the wiring harness ring to the battery terminal and bus bar, it is easier to hold the tab that sticks out with the wire as you tighten, and press against your tightening. You don’t want to snap a wire in the harness by allowing it to spin freely.

For Step #45 with the temperature sensors, once you snap the sensors onto the module, they are on there firmly by design. The Gen-2 puts the sensors on the bottom, the Gen-3 on the top. We prefer to put them all on the top, it is easier and makes no difference with the design because of the cylindrical shape not blocking the airflow like the prismatics do. If you do put them on the bottom, you may find it easier to attach the sensors as you are repositioning the modules versus doing it after they are all positioned.

The little metal bar in Step #22 and #59 is actually really important and bent the way it is on purpose. Be very careful with it. If you bend it so that it doesn’t make good contact with the metal enclosure, the HV Isolation Fault tests may fail on system boot, and the car may refuse to READY.

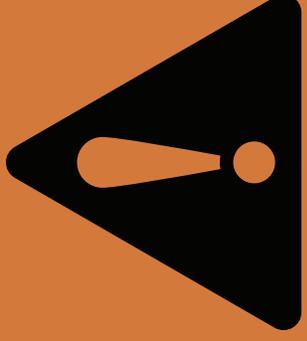
Similarly the safety disconnect switch from Steps #6 and #74 is difficult to get in and align properly. It is very easy to remove, but to put back in you must be gentle yet firm. If it doesn’t make the snap sound when going in, it will look perfectly well connected but won’t be. And your car will not READY. This is the first thing to check if your car does not READY after installation.

The next page can be torn out and used as a safety sign as you work on the battery. If you leave the pack exposed and connected please take precaution that nobody touches if you leave unattended.

Enjoy your new battery pack!

-- Nick
New Prius Batteries, LLC.

DANGER!



**DO NOT
TOUCH**

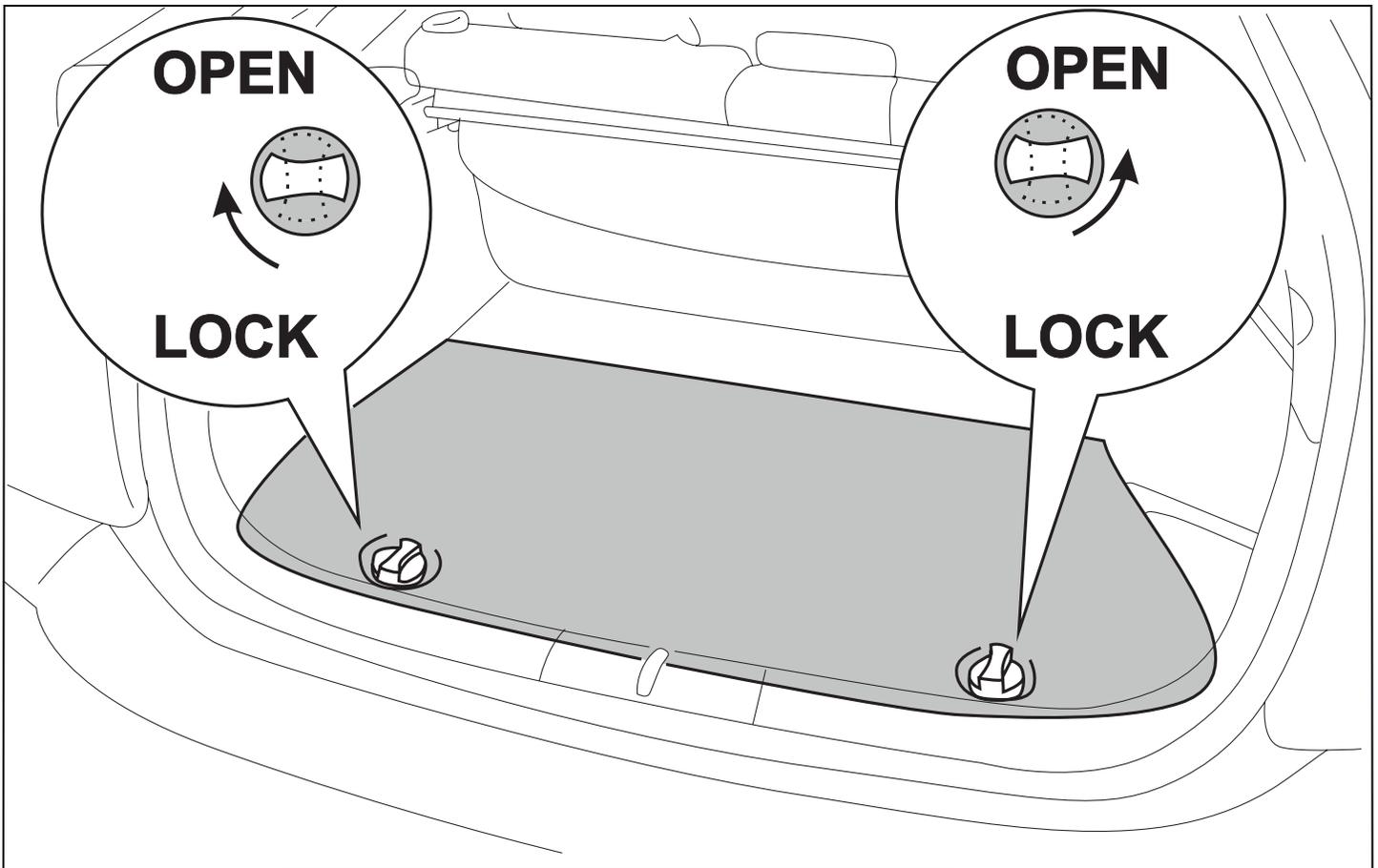


Rip out this page to display DANGER sign

REMOVE REAR FALSE FLOOR

01

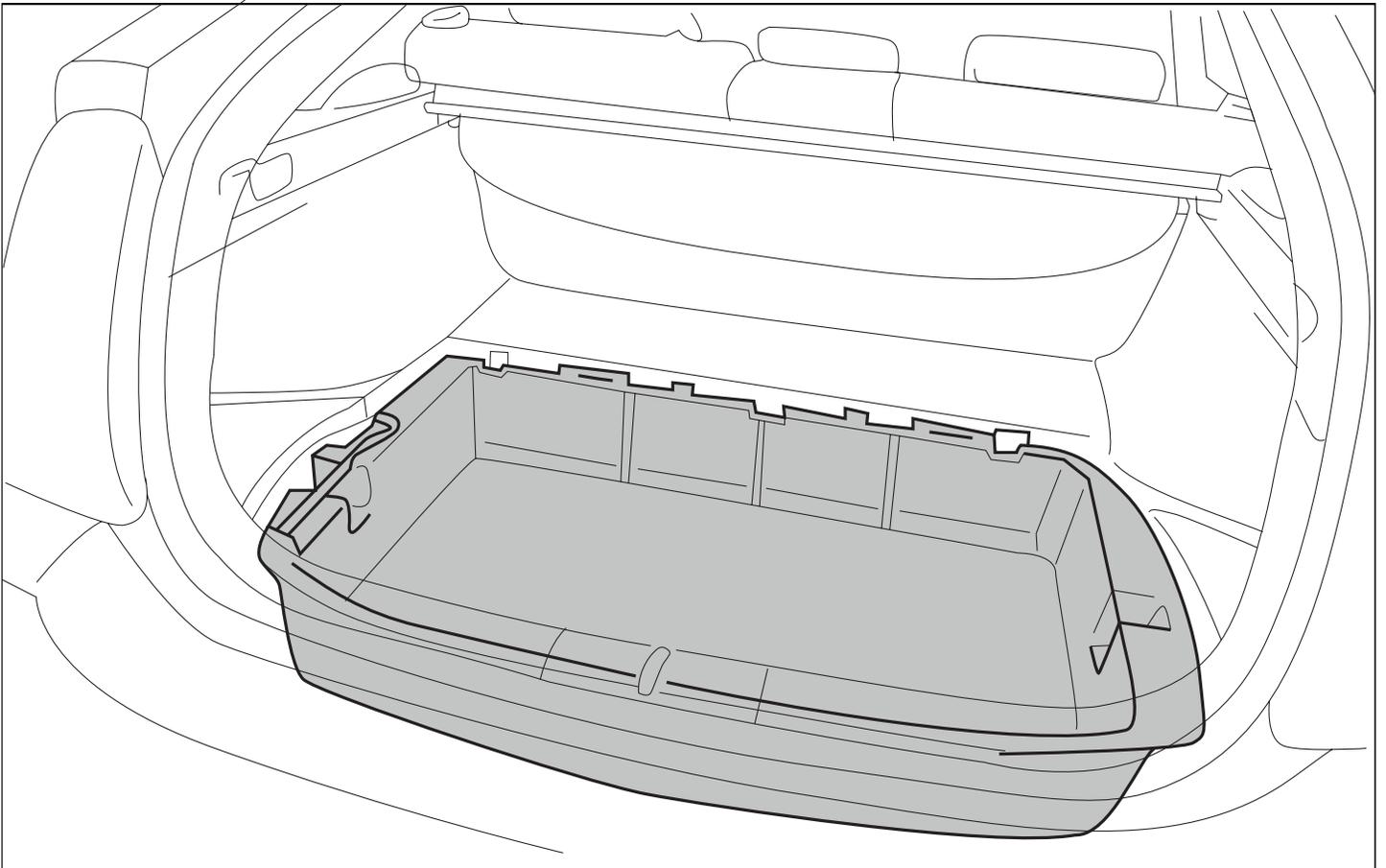
In the hatch area, twist the two clasps to unlock the rear false floor in the hatch area. Pull forwards and remove the flooring from the vehicle.



02

REMOVE THE REAR DECK BOX

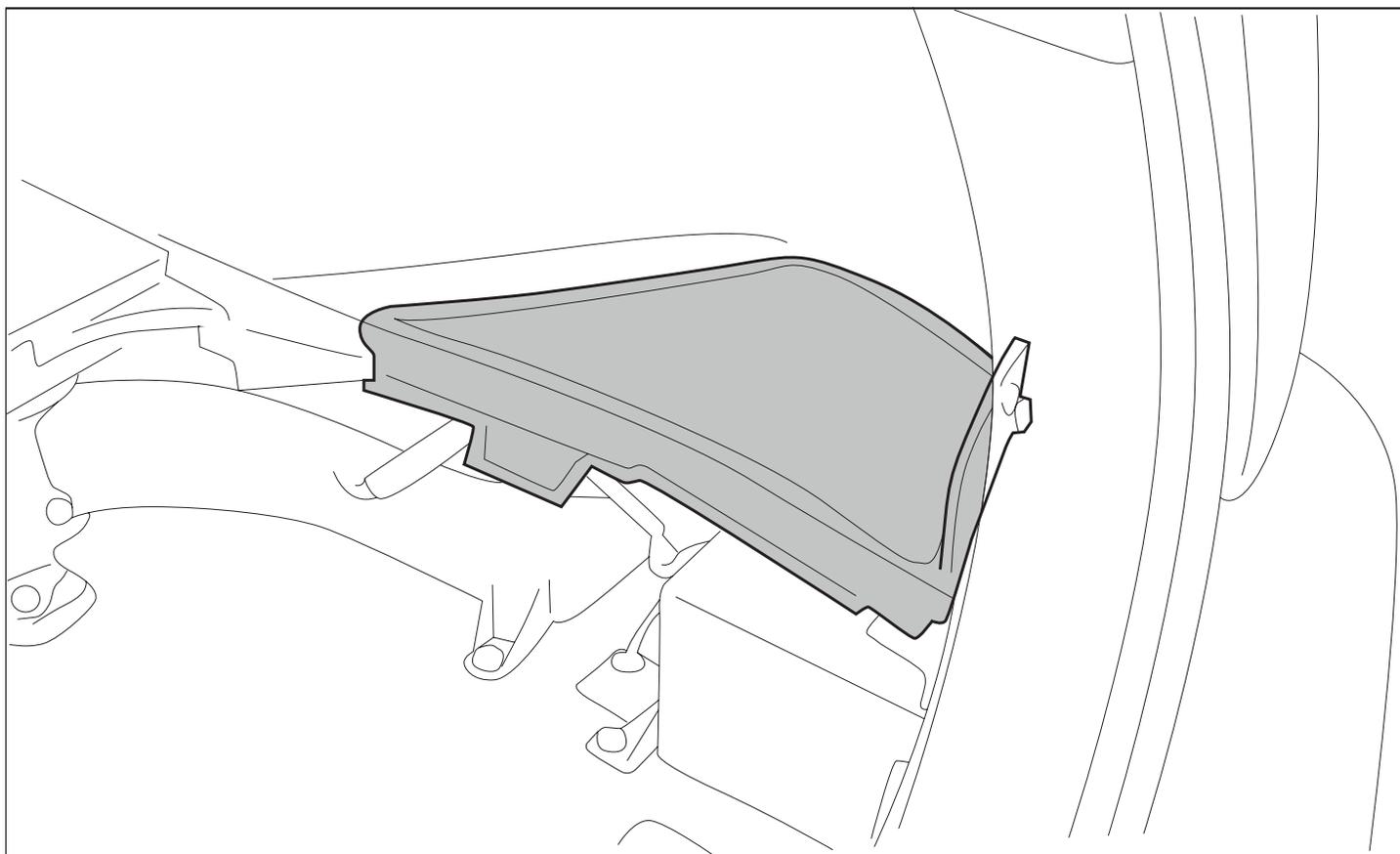
Lift the rear floor deck box up and out of the vehicle.



REMOVE AUX BATTERY FALSE FLOOR COVER

03

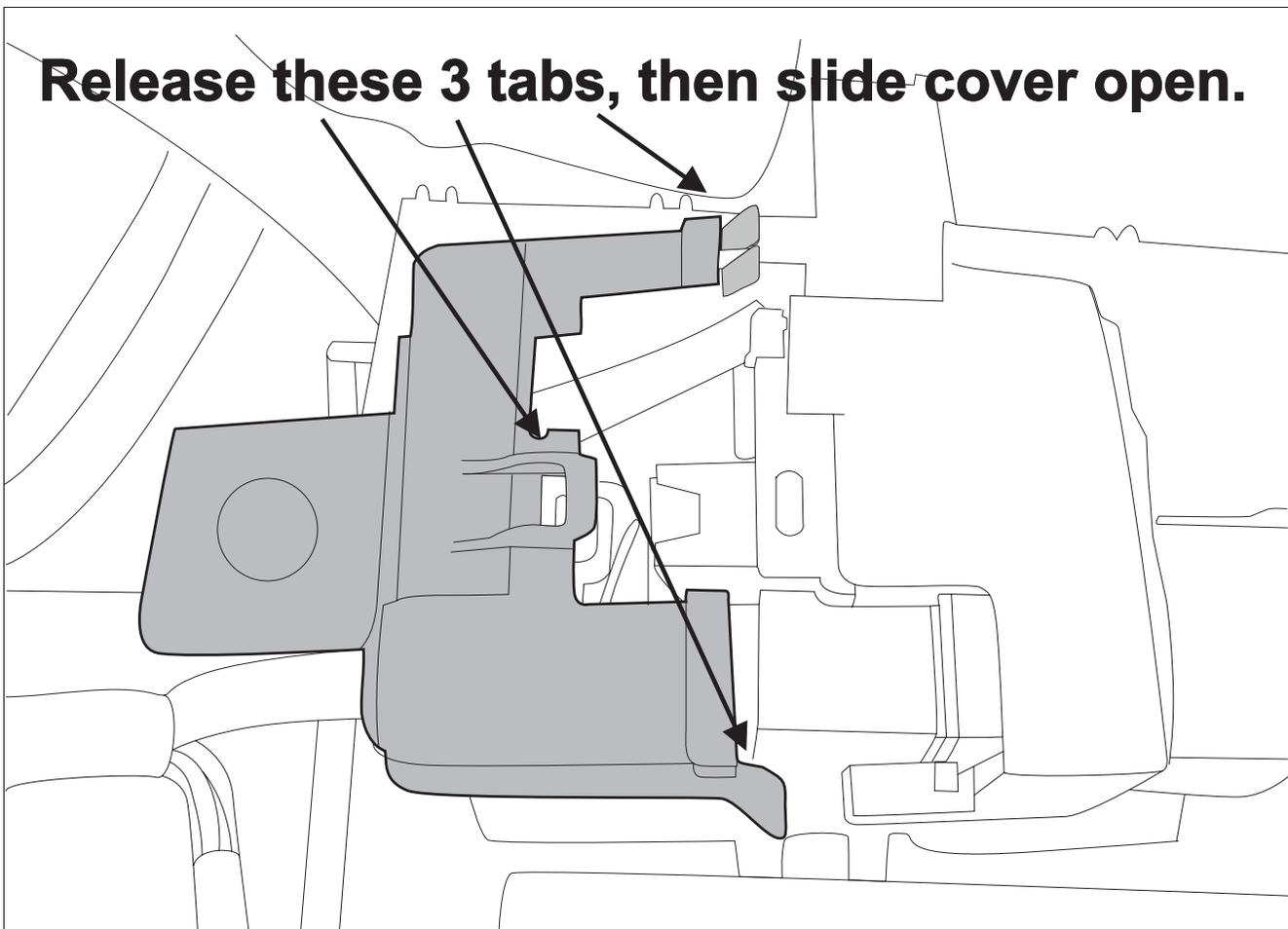
Remove the wedge shaped floor cover over the 12V auxiliary battery.



04

REMOVE AUX BATTERY CONNECTOR COVER

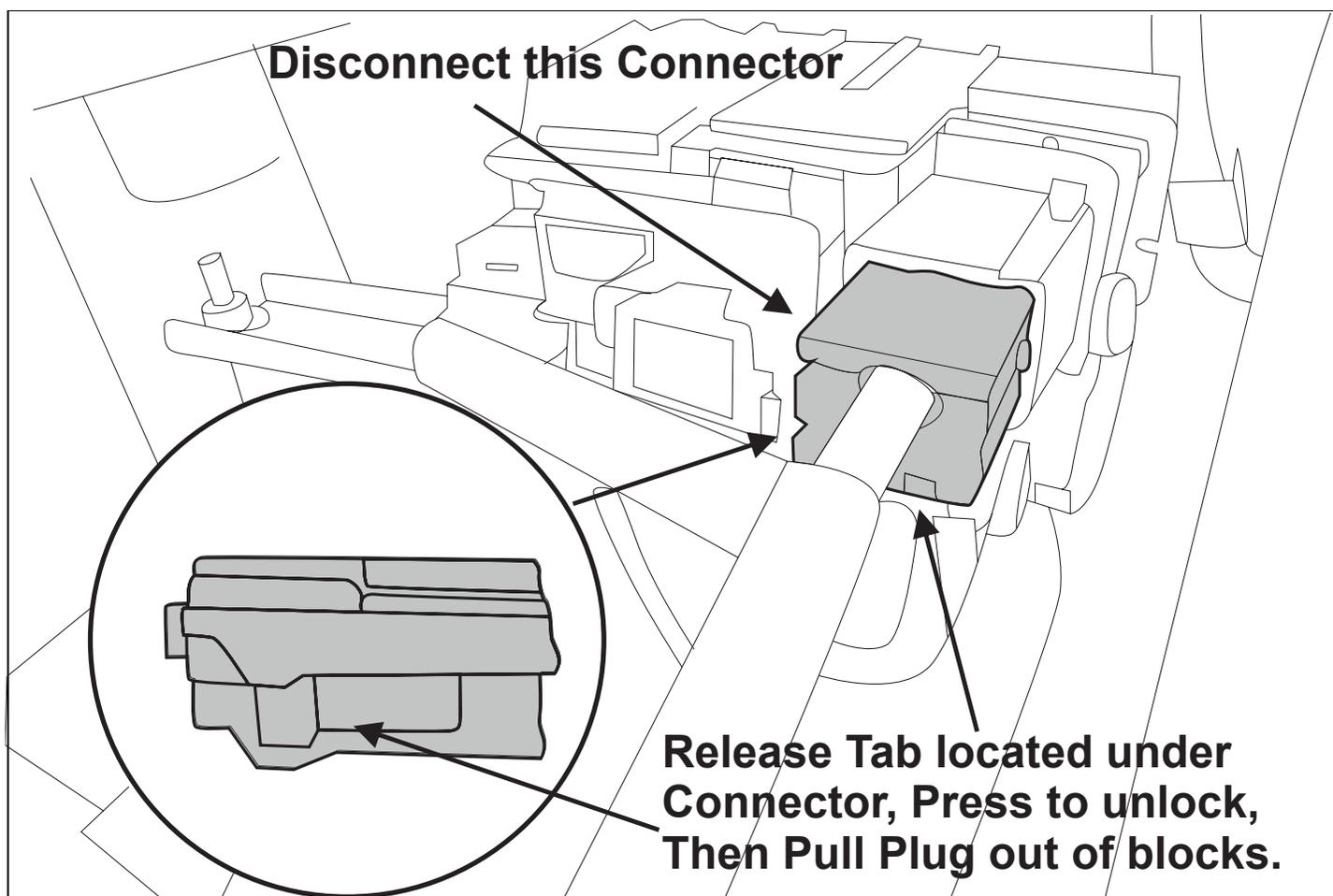
Release the 3 tabs as shown then slide the cover out to expose the battery connectors..



DISCONNECT AUX 12V BATTERY

05

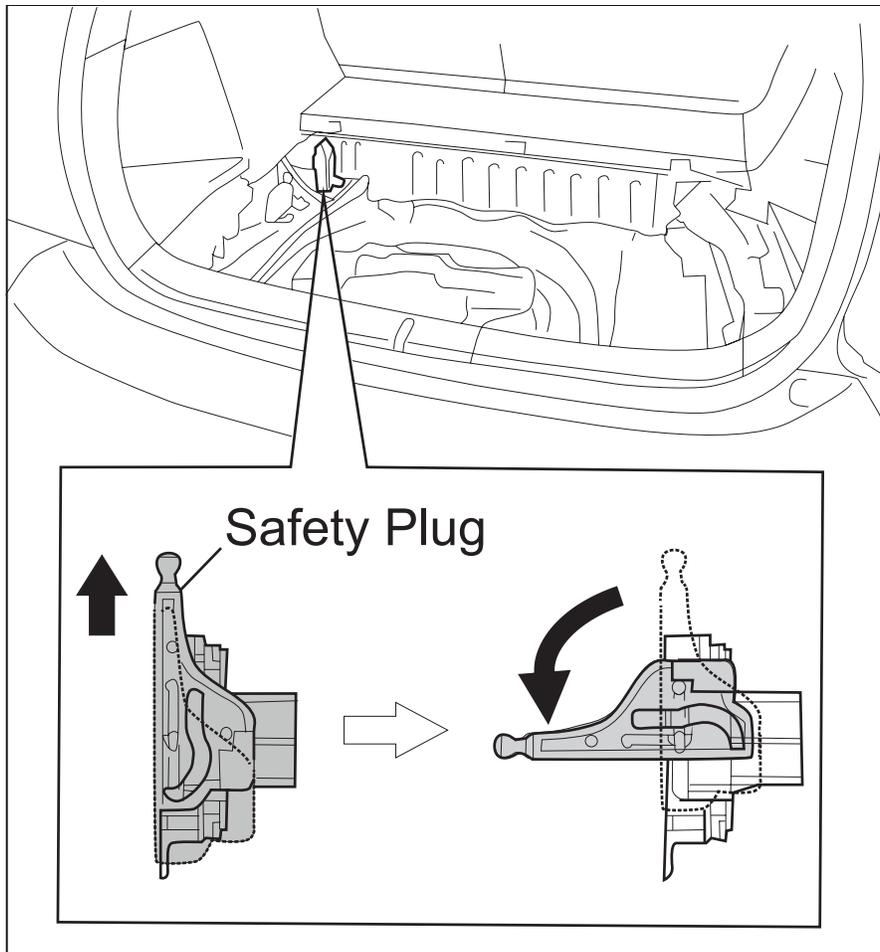
Make sure that the vehicle is unlocked. Release the tab and pull out the 12V auxiliary battery connector carefully.



06

REMOVE SAFETY SERVICE PLUG

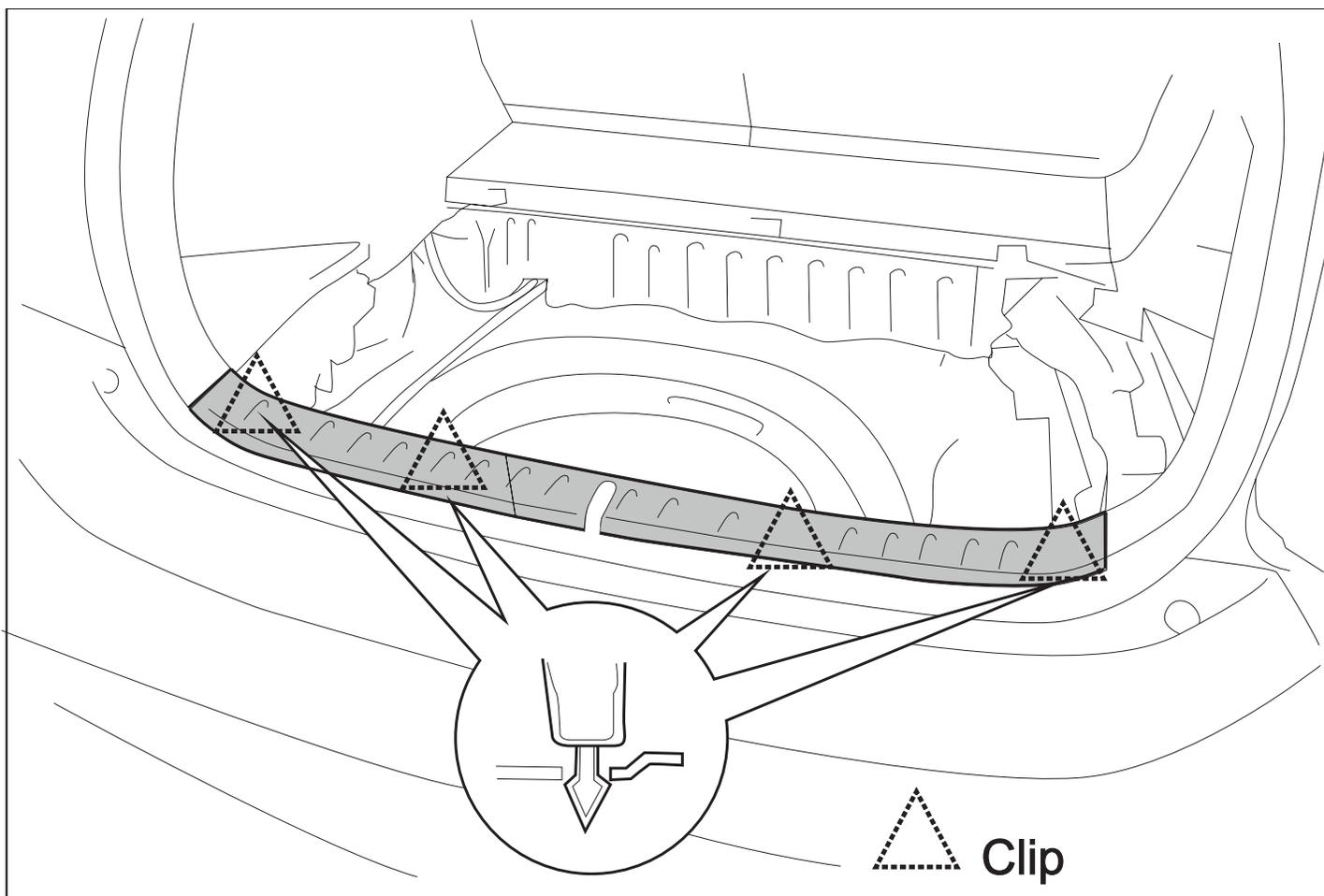
Hybrid system circuits can operate with up to 650 volts. These high voltages are dangerous and can cause severe personal injuries, burns, electrical shock and even death if proper safety precautions are not followed. Using Class 0 electrical insulating gloves meeting ASTM standard specifications (up to 1000 volts), pull upwards on the safety service plug handle fully. Then rotate the lever down by 90 degrees as shown in the image. Pull the safety service plug assembly outwards removing it from the vehicle.



REMOVE DECK TRIM COVER

07

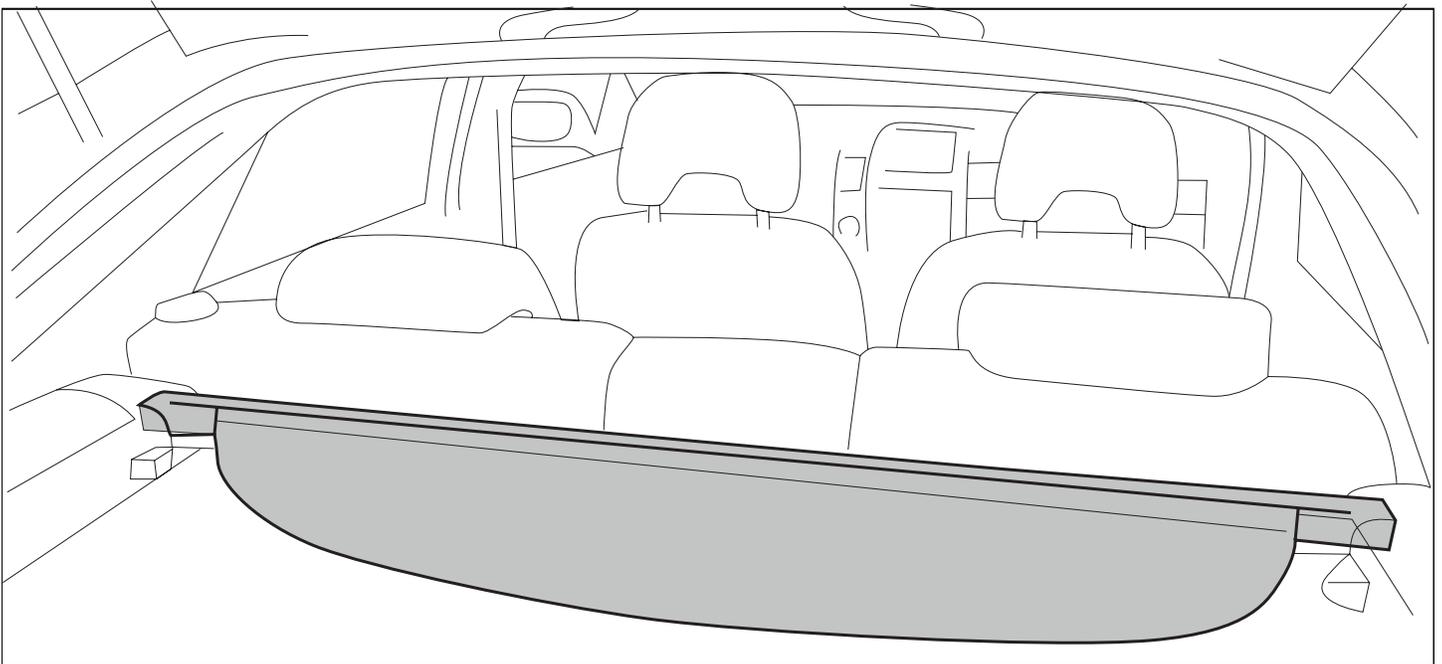
Disconnect the 4 clips shown in the illustration, then remove the deck trim cover.



08

REMOVE TONNEAU COVER

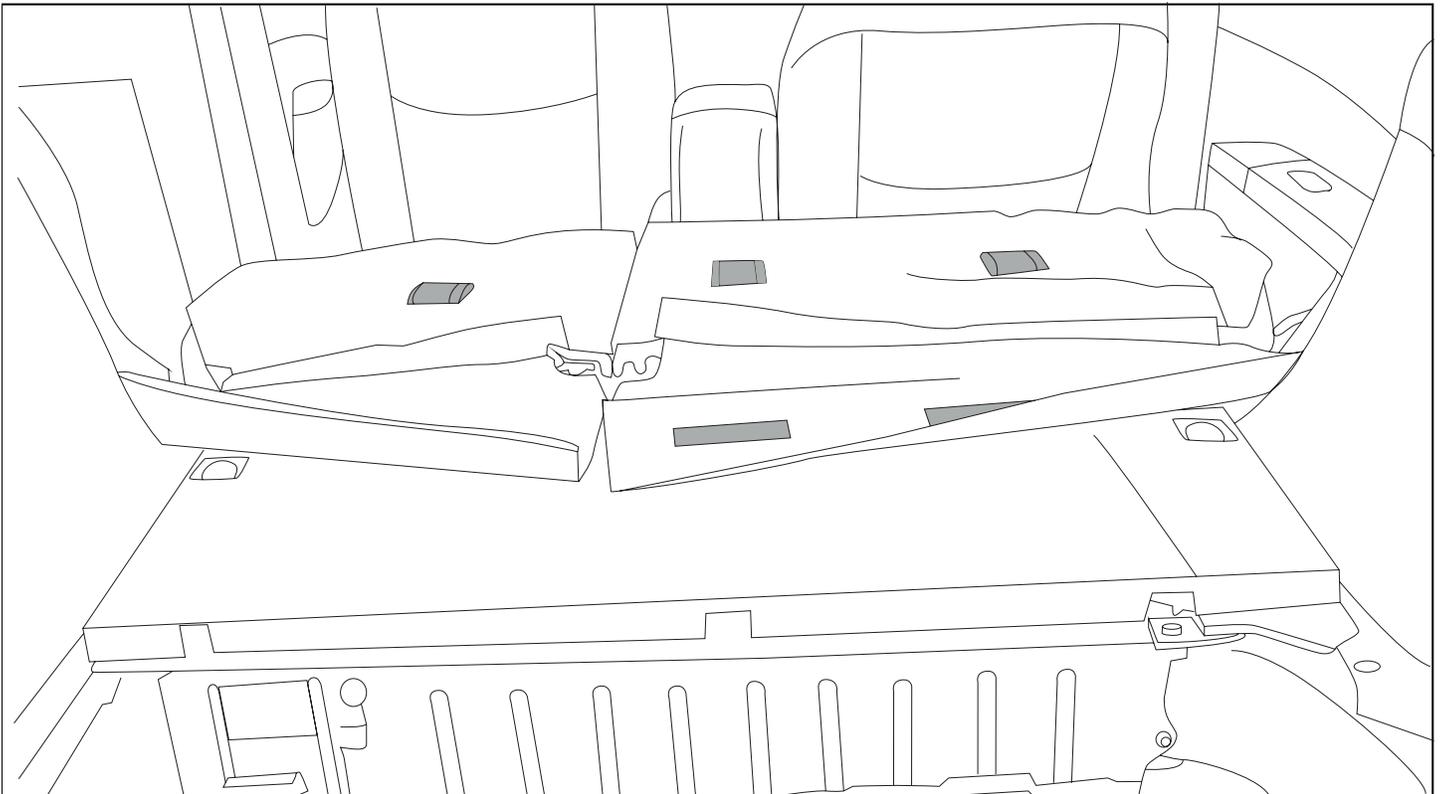
Remove the tonneau cover from the vehicle if it is installed and store carefully.



FOLD DOWN REAR SEATS

09

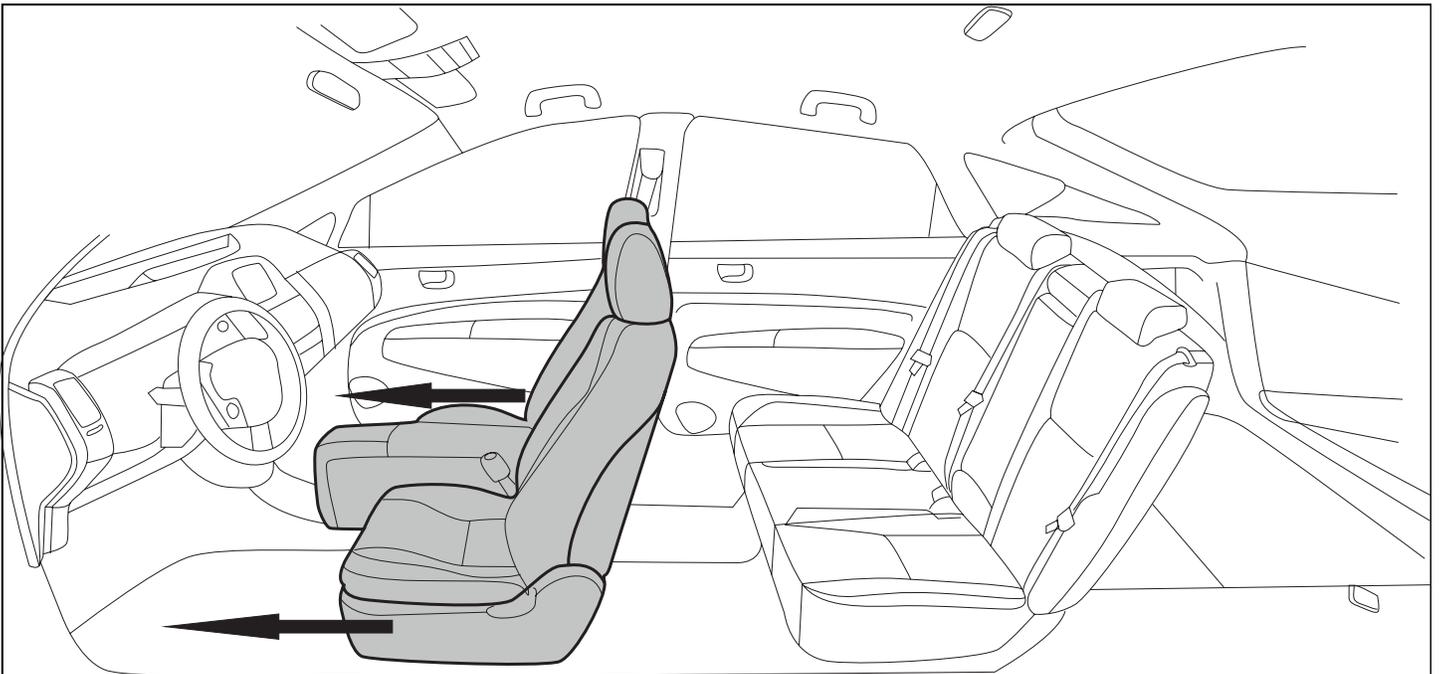
Fold down the rear seats and undo the velcro fabric between the seat and the hatch floor.



10

ADJUST FRONT SEATS

Move your front seats as far forwards as possible.

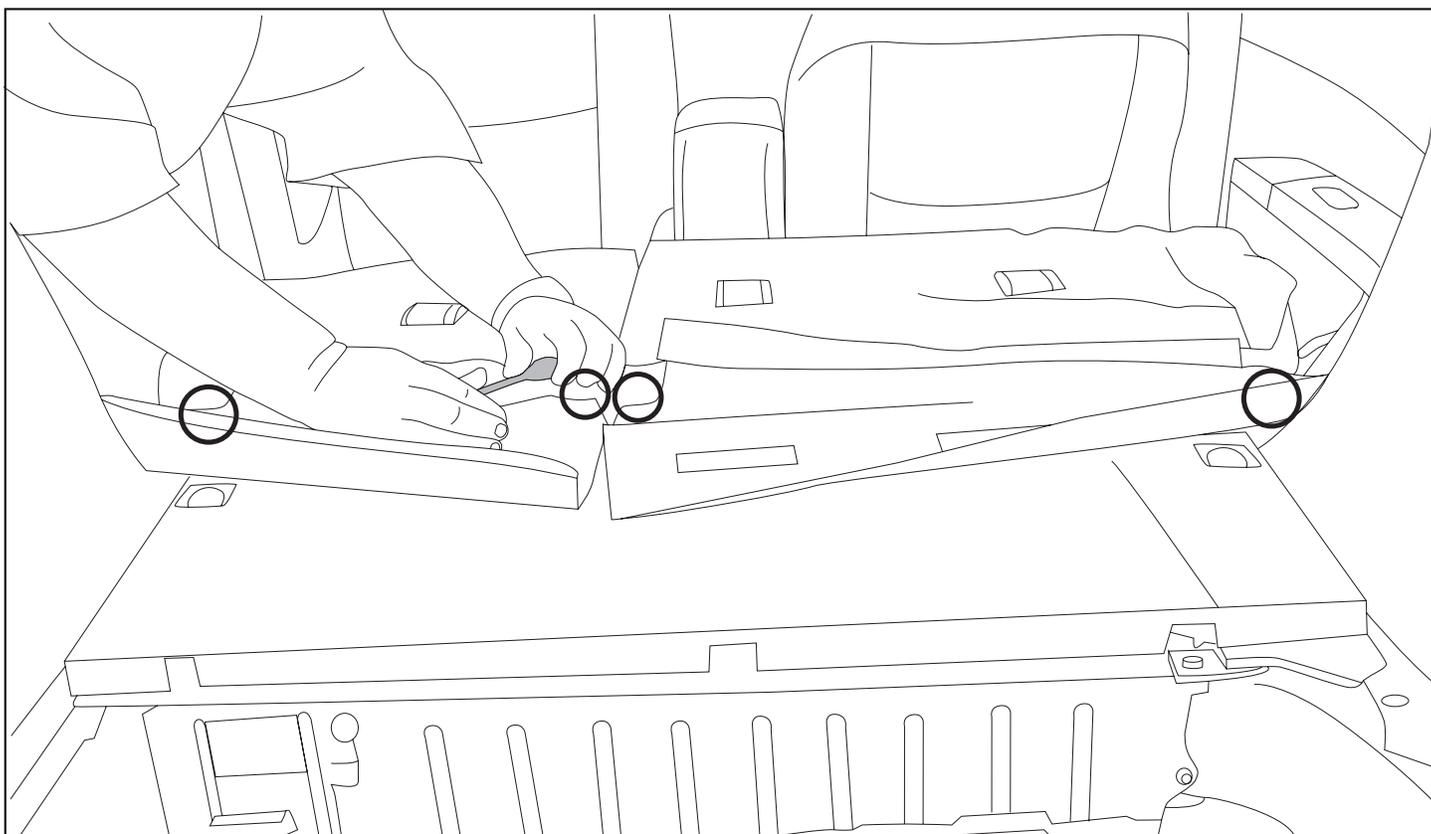


INTERIOR VIEW

REMOVE REAR SEAT BOLTS

11

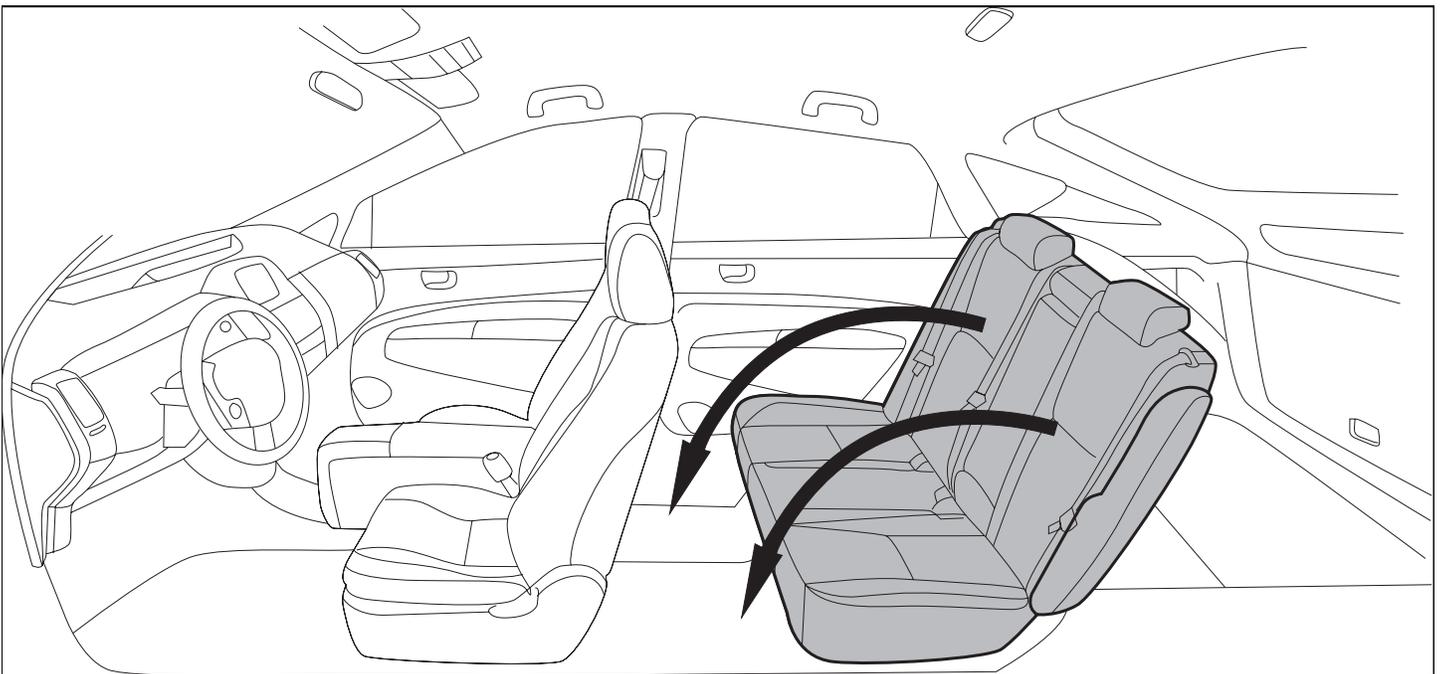
Using a 14mm socket remove the 2 bolts per rear seat.



12

FLIP REAR SEATS FORWARDS

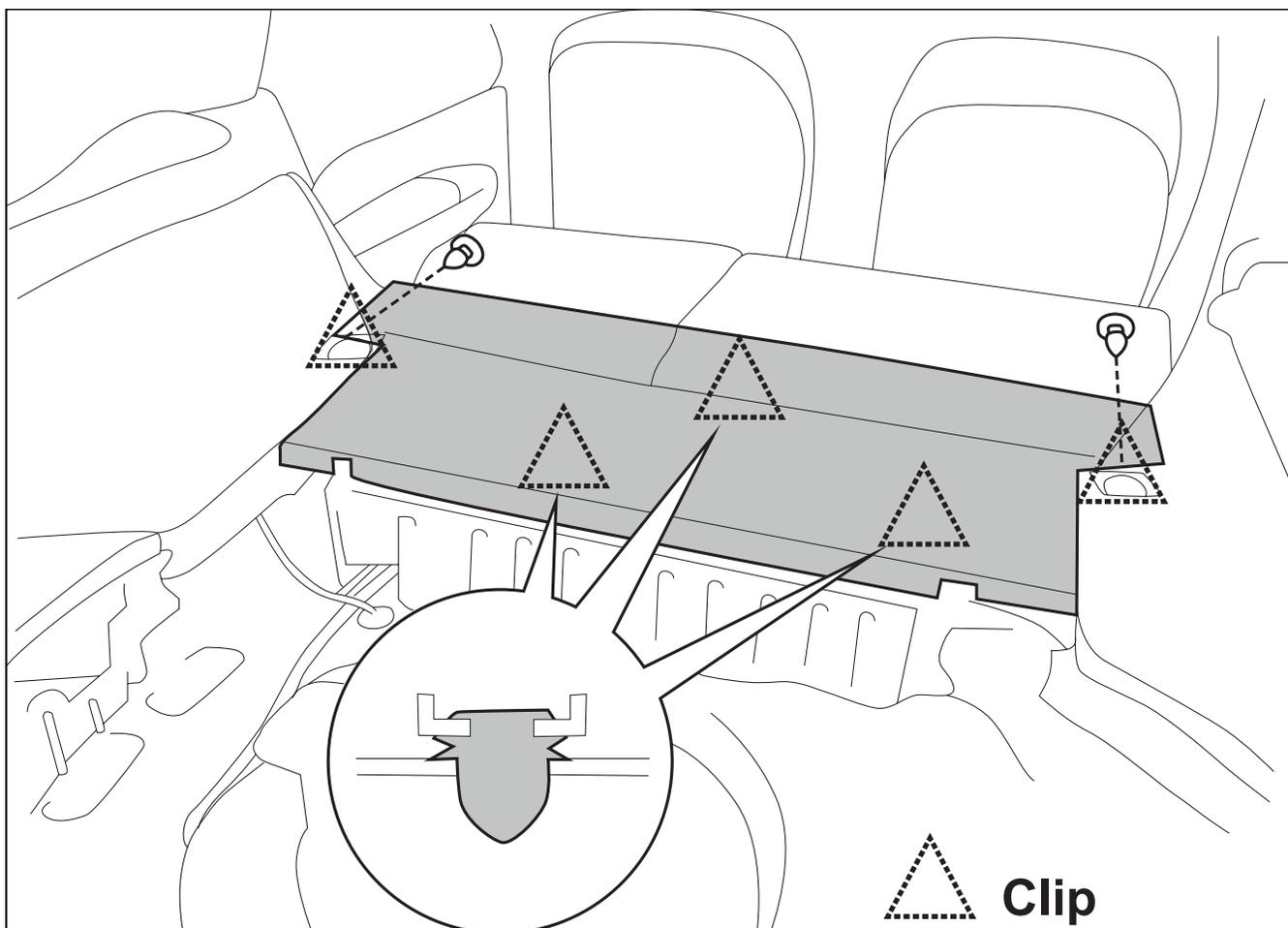
Flip the rear seat backs forward and slide them head-rest down to the floor behind the front seats. This gets them out of the way to continue working on the hybrid pack without needing to remove them from the vehicle completely.



REMOVE REAR FALSE FLOOR BOARD

13

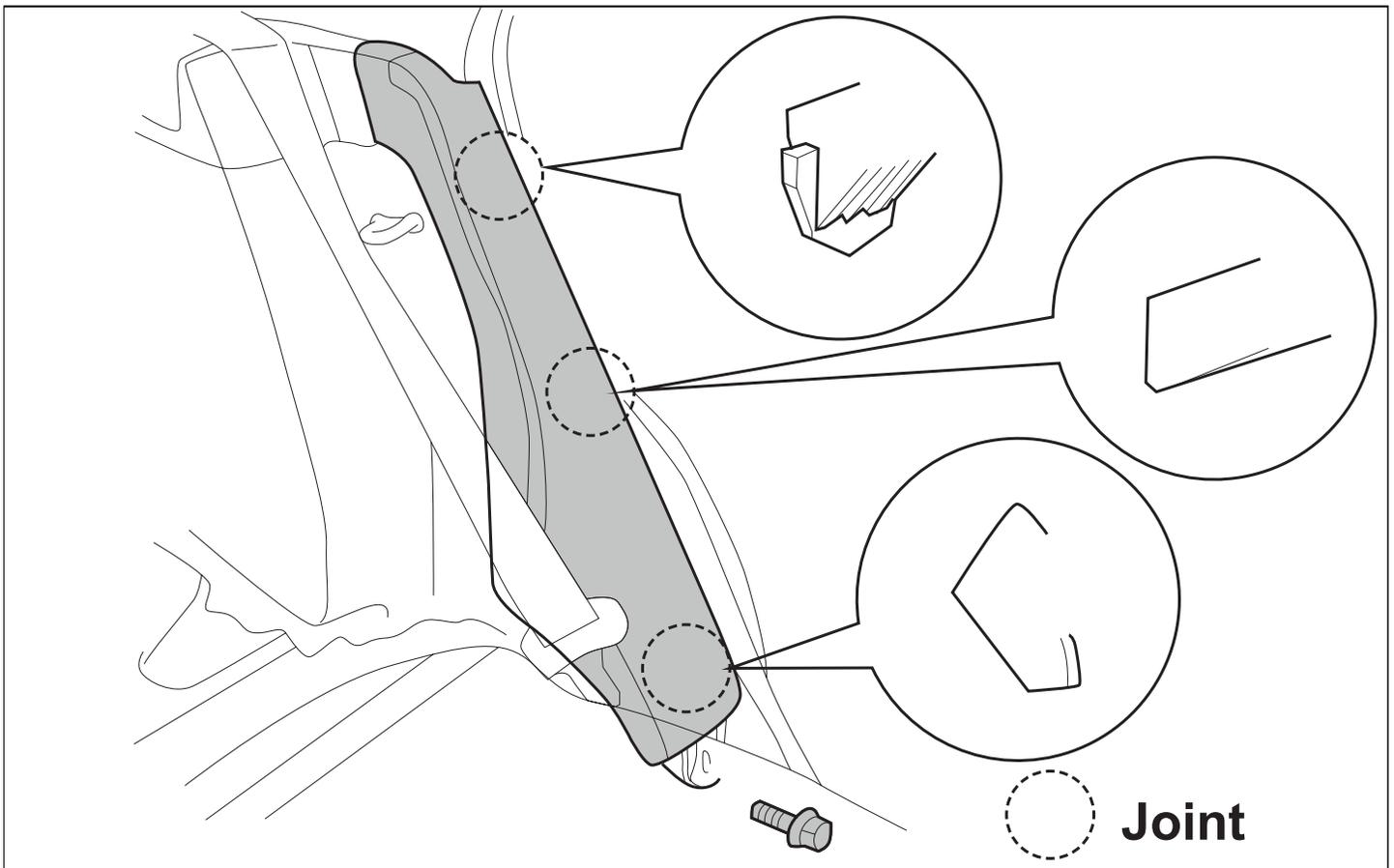
Remove the 2 bolts and 5 clips as shown in the illustration to remove the rear floor board from the vehicle.



14

REMOVE DRIVER SIDE TRIM PIECE

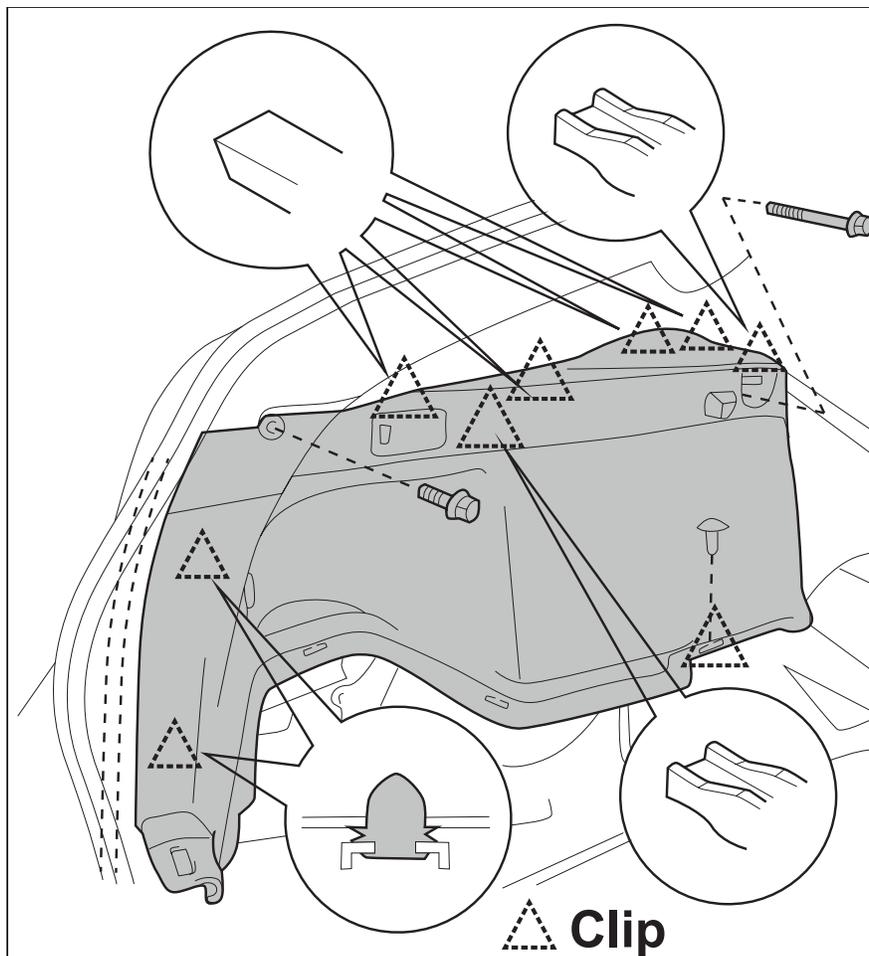
Remove rear driver side seat back trim by removing the bolt on the bottom and disconnecting the 3 plastic joints. To get to the bolt, you may need to compress the rear seat cushion (for example by kneeling your body weight onto it). **BE CAREFUL.** It is extremely easy to lose the bolt forever inside the car if you drop it!



REMOVE REAR DRIVER SIDE FABRIC PANEL

15

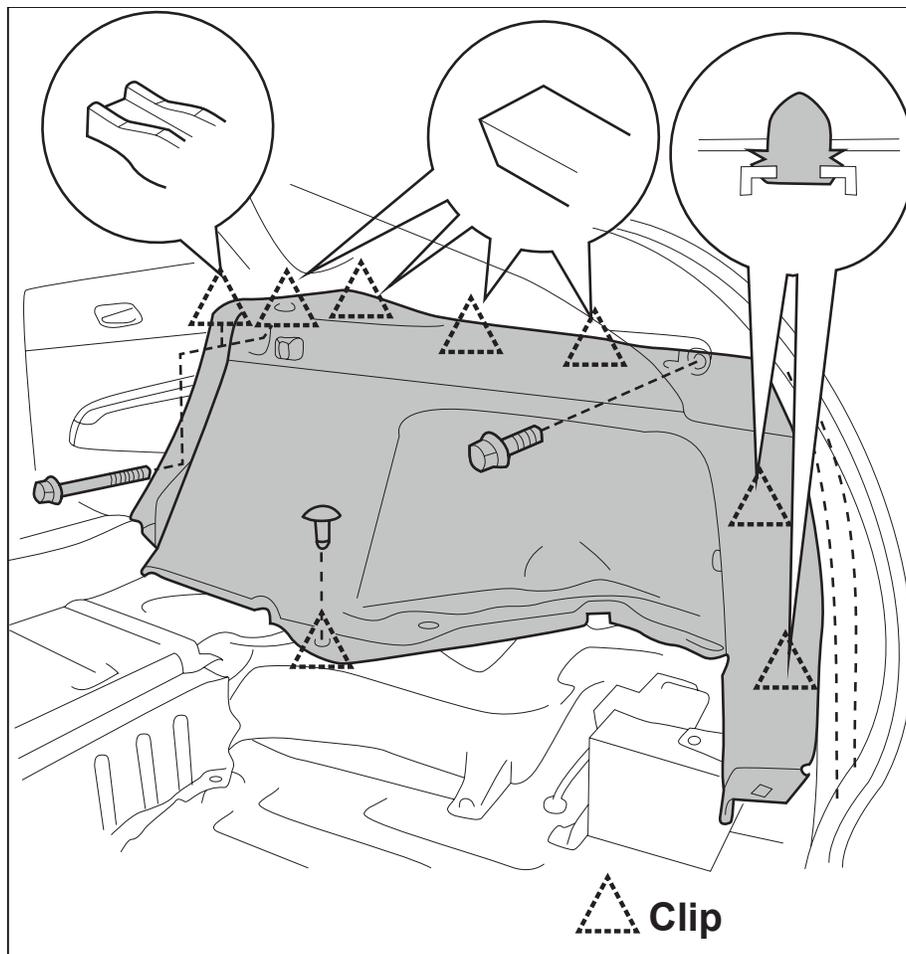
Remove the recessed bolt near the top by the rear seats and seat belt holder. Remove the bolt nearer-to the hatch. Carefully remove the entire fabric panel being conscious of the clips that aren't visible. DO NOT pull the panel out forcibly as the rear hatch light is still connected. Once the panel is moved out slightly, disconnect or wrangle out the rear hatch light so that you can remove the entire piece from the vehicle.



16

REMOVE REAR PASSENGER SIDE FABRIC PANEL

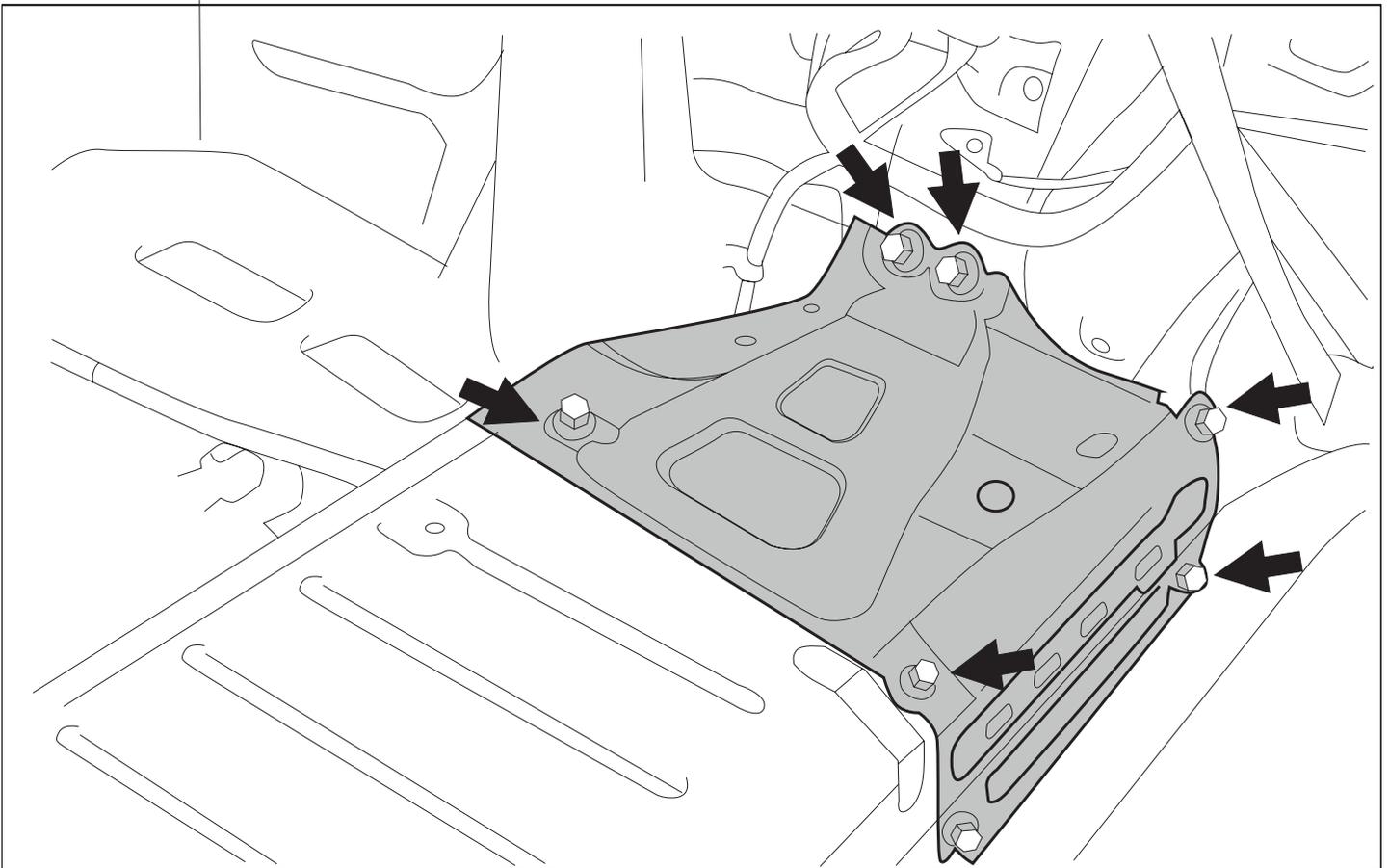
Similar to the Drive Side Fabric Panel in step #15, remove the recessed bolt near the top by the rear seats and seat belt holder. Remove the bolt nearer-to the hatch. Carefully remove the entire fabric panel being conscious of the clips that aren't visible.



REMOVE BATTERY BRACKET

17

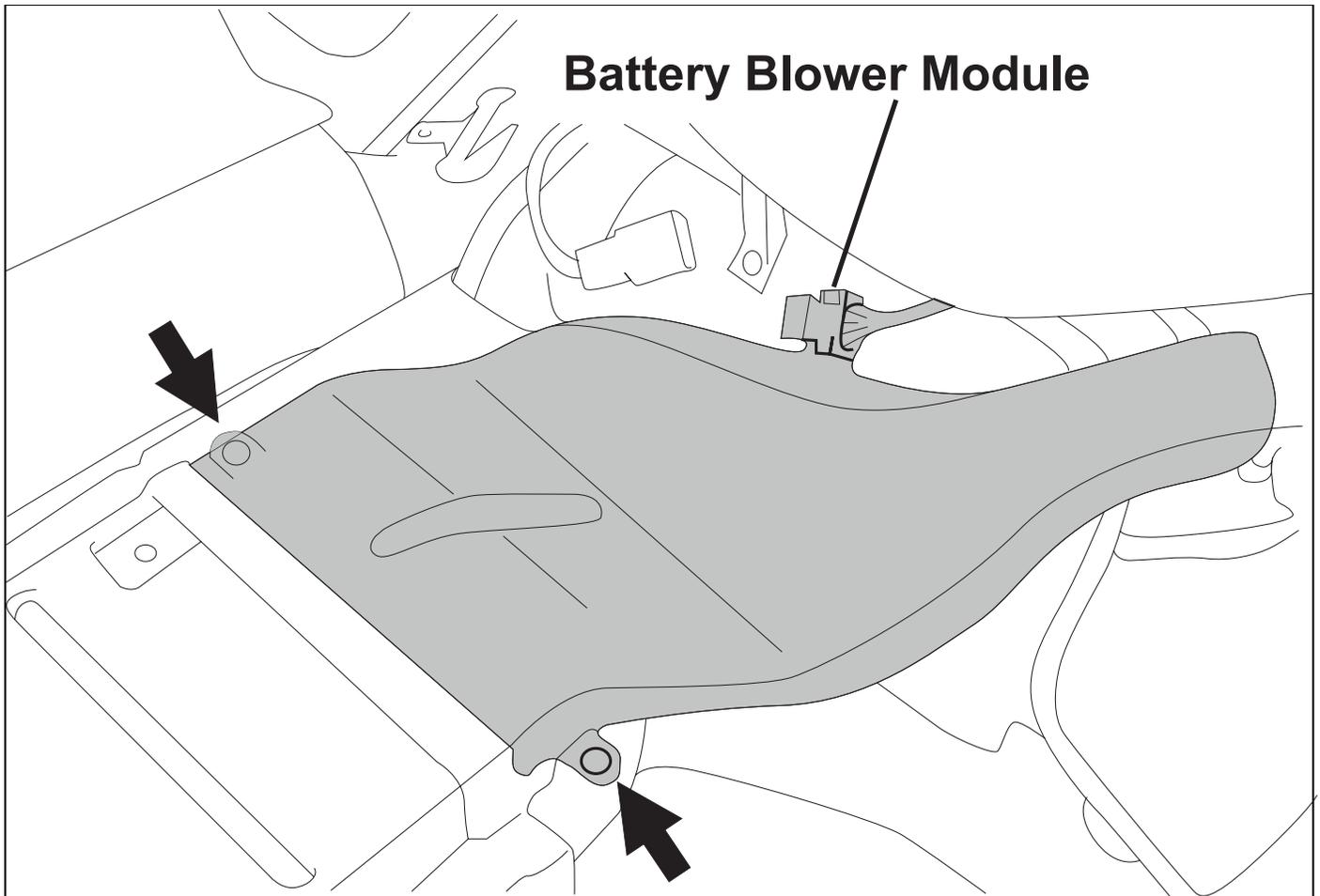
At this point the HV Battery should be entirely visible. Even with the safety plug removed, the battery still contains high voltage DC and can seriously maim or kill those who are not careful. Remove the 7 bolts holding the bracket, and then remove the entire battery bracket from the passenger side of the vehicle.



18

REMOVE COOLING FAN DUCT

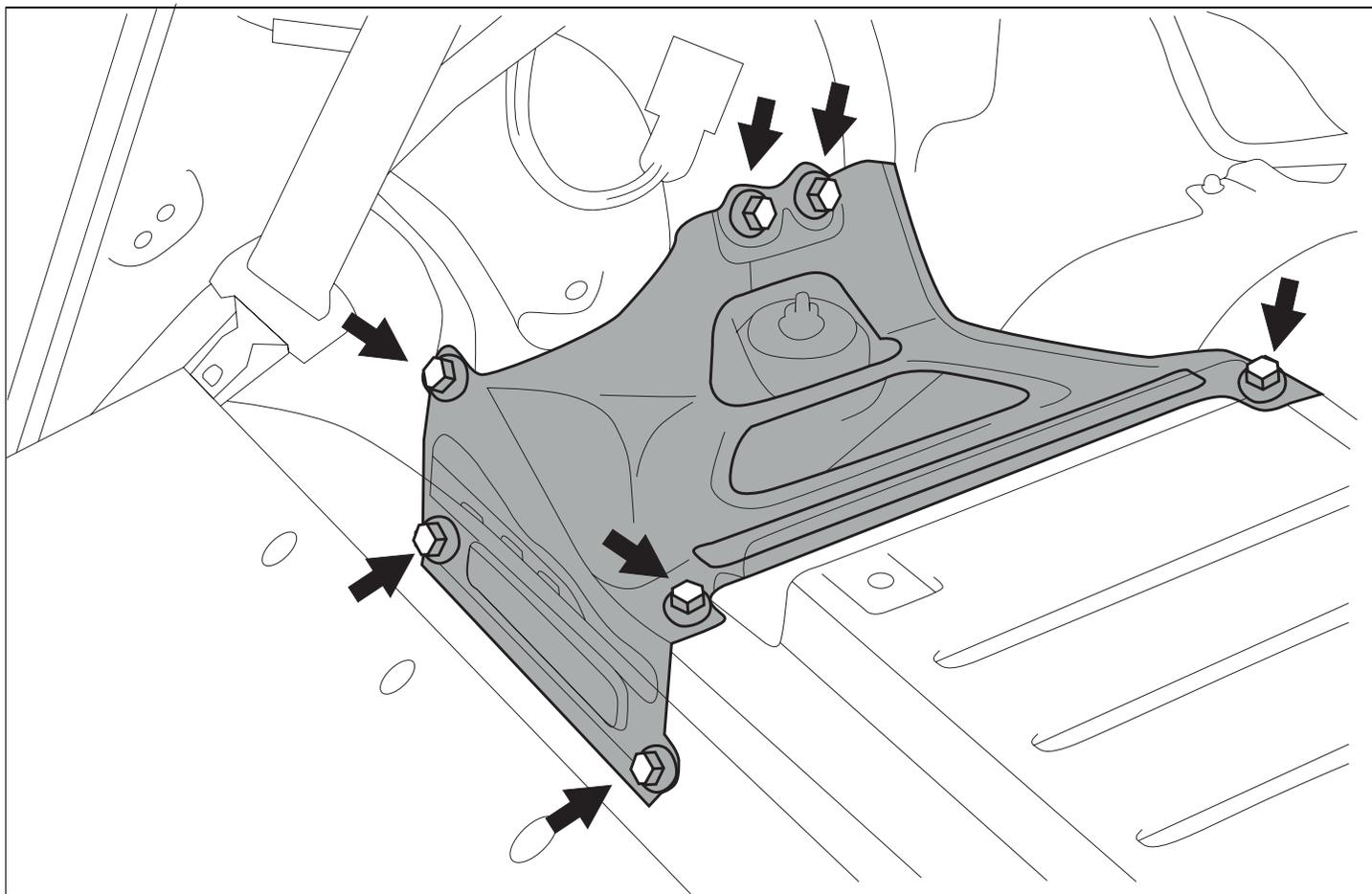
Disconnect the 2 clips and the Battery Blower Module. Slide the duct to then remove it.



REMOVE OTHER BATTERY BRACKET

19

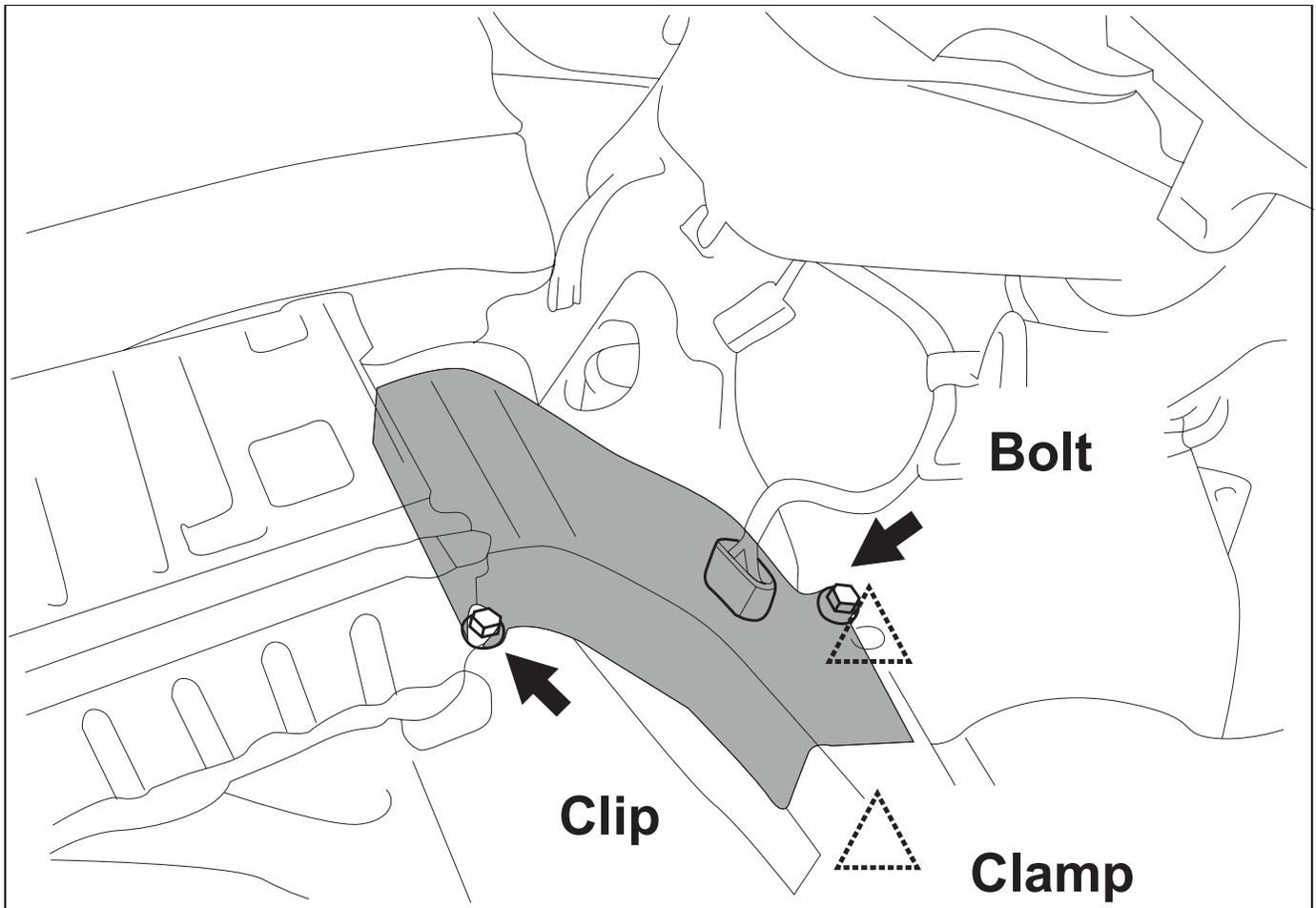
Remove the battery bracket on the driver-side by removing the 7 bolts.



20

REMOVE THE OTHER AIR DUCT

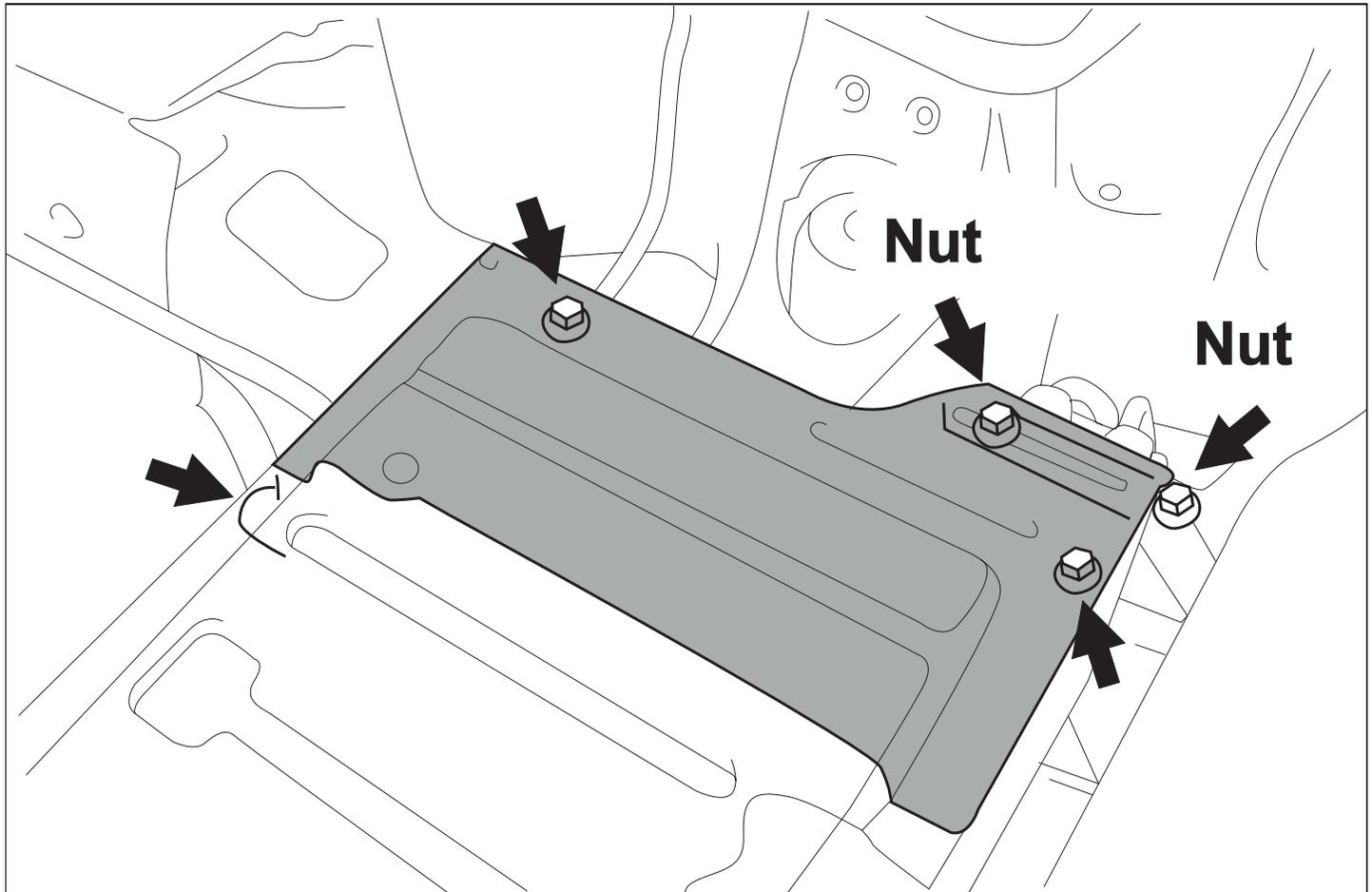
Disconnect the connector, remove the clamp, then disconnect the wire harness, remove the bolt, and clips. Then you can remove the 2nd HV Battery Fan Duct.



REMOVE HV BATTERY COVER

21

Remove the bolts and nuts. Make sure that you have your HV Isolation Gloves on as once you remove this panel you have directly exposed the high voltage DC of the battery. If less than 10 minutes has passed since removing the orange safety plug, do not continue until at least 10 minutes has elapsed. The high voltage DC systems in the hybrid vehicle may keep a charge for a while even after being disconnected.

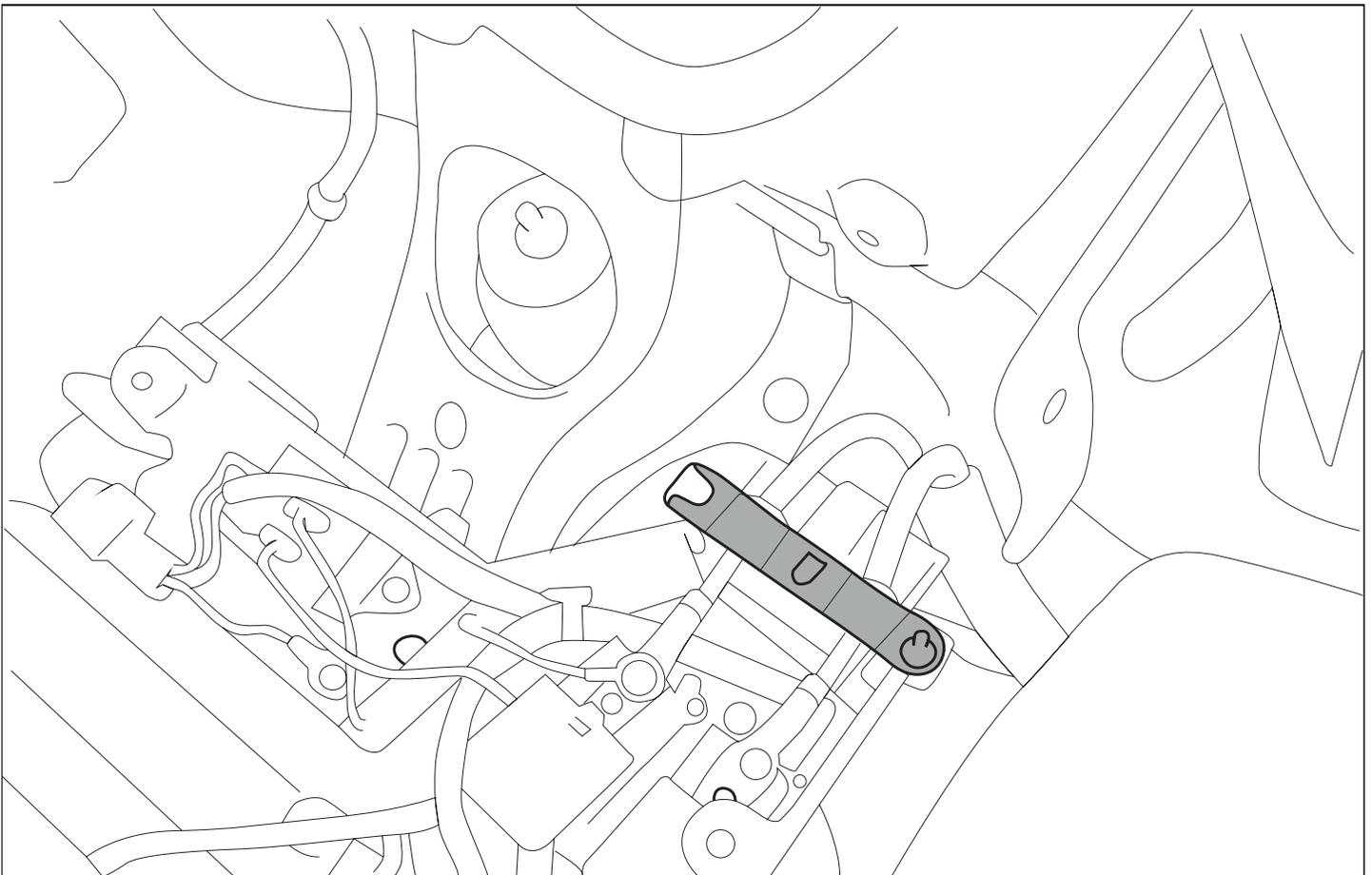


22

REMOVE THE FRAGILE METAL PLATE

Undo the nuts on the HV isolation bolts and then remove the stamped metal plate.

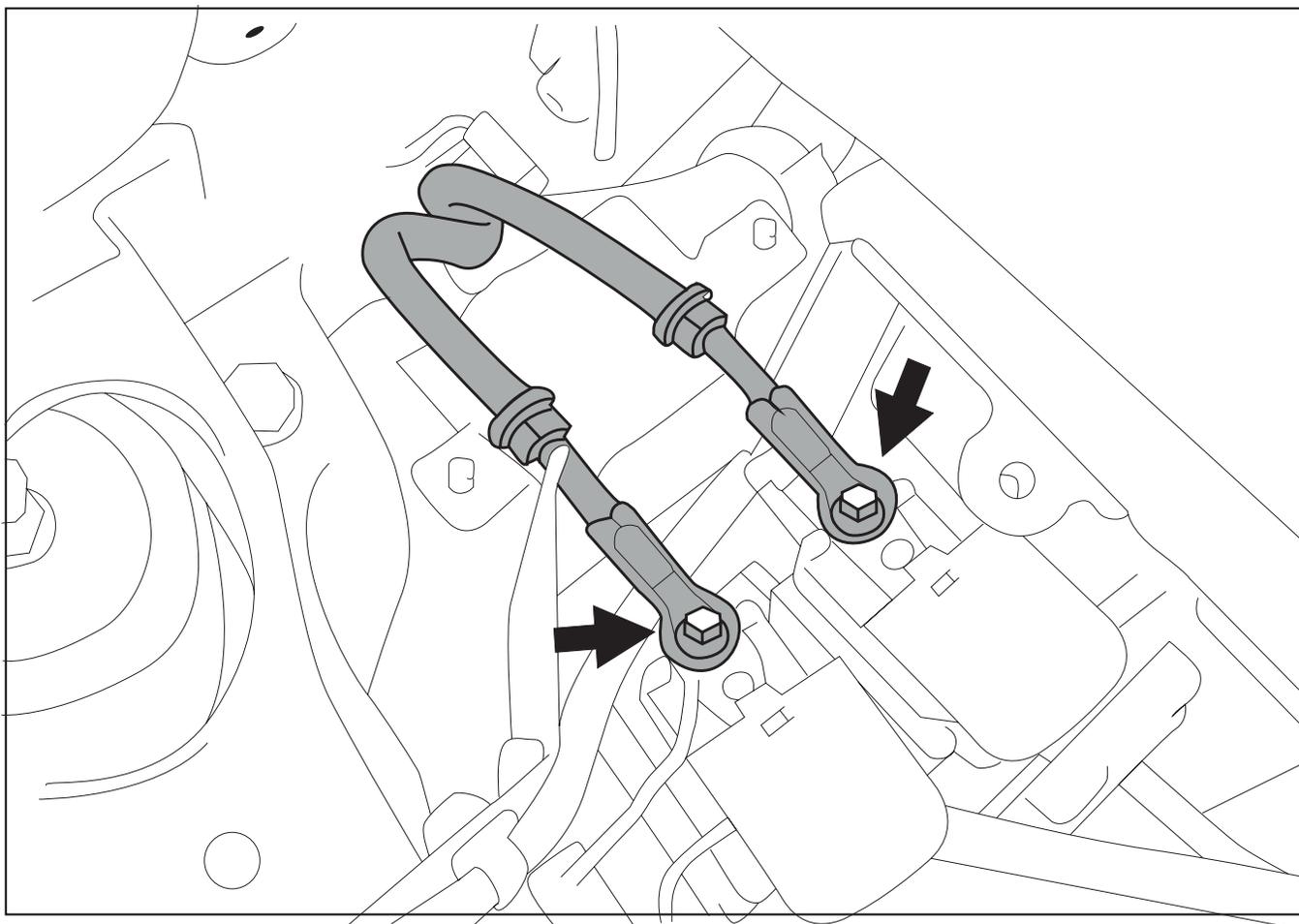
Be careful not to deform the plate, as this can cause HV Isolation Faults and detection problems.



DISCONNECT ORANGE HV WIRES

23

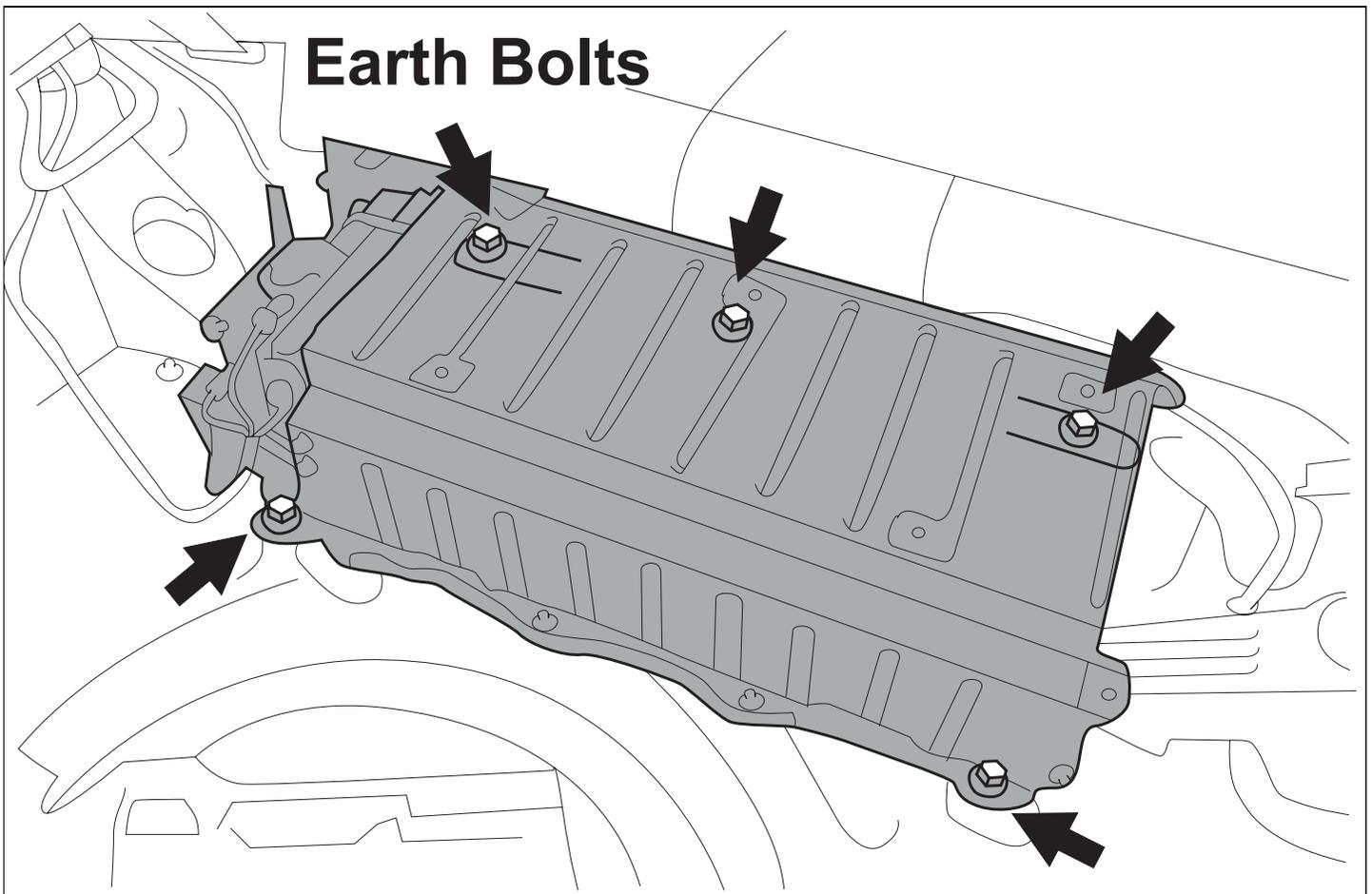
Carefully disconnect the HV power wires. These are routed through the vehicle to the front of the car, so move them out of the way but do not try to remove them.



24

REMOVE HV BATTERY BOLTS

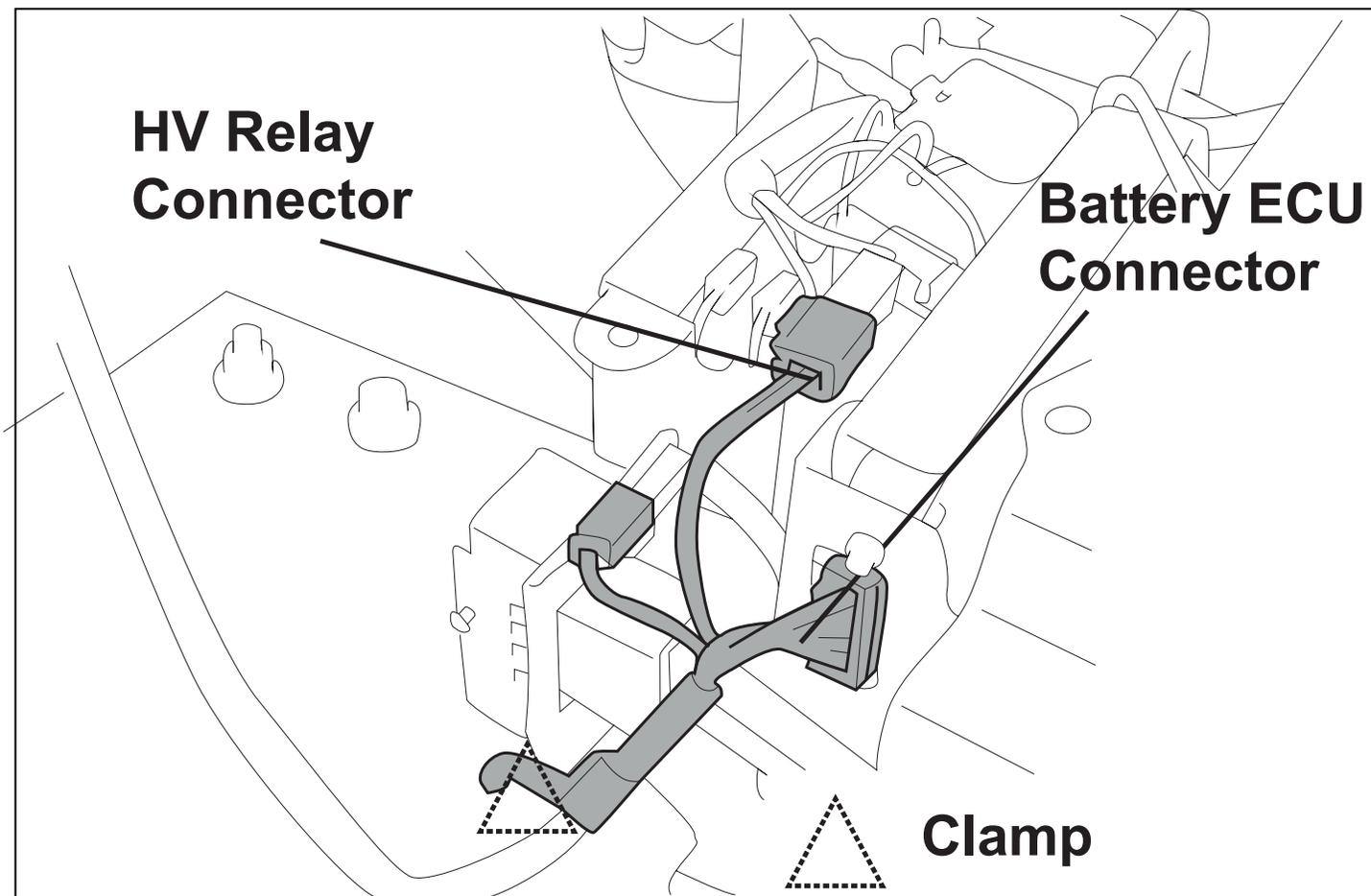
Remove the bolts that secure the HV Battery to the floor of the vehicle.



DISCONNECT WIRING HARNESSES

25

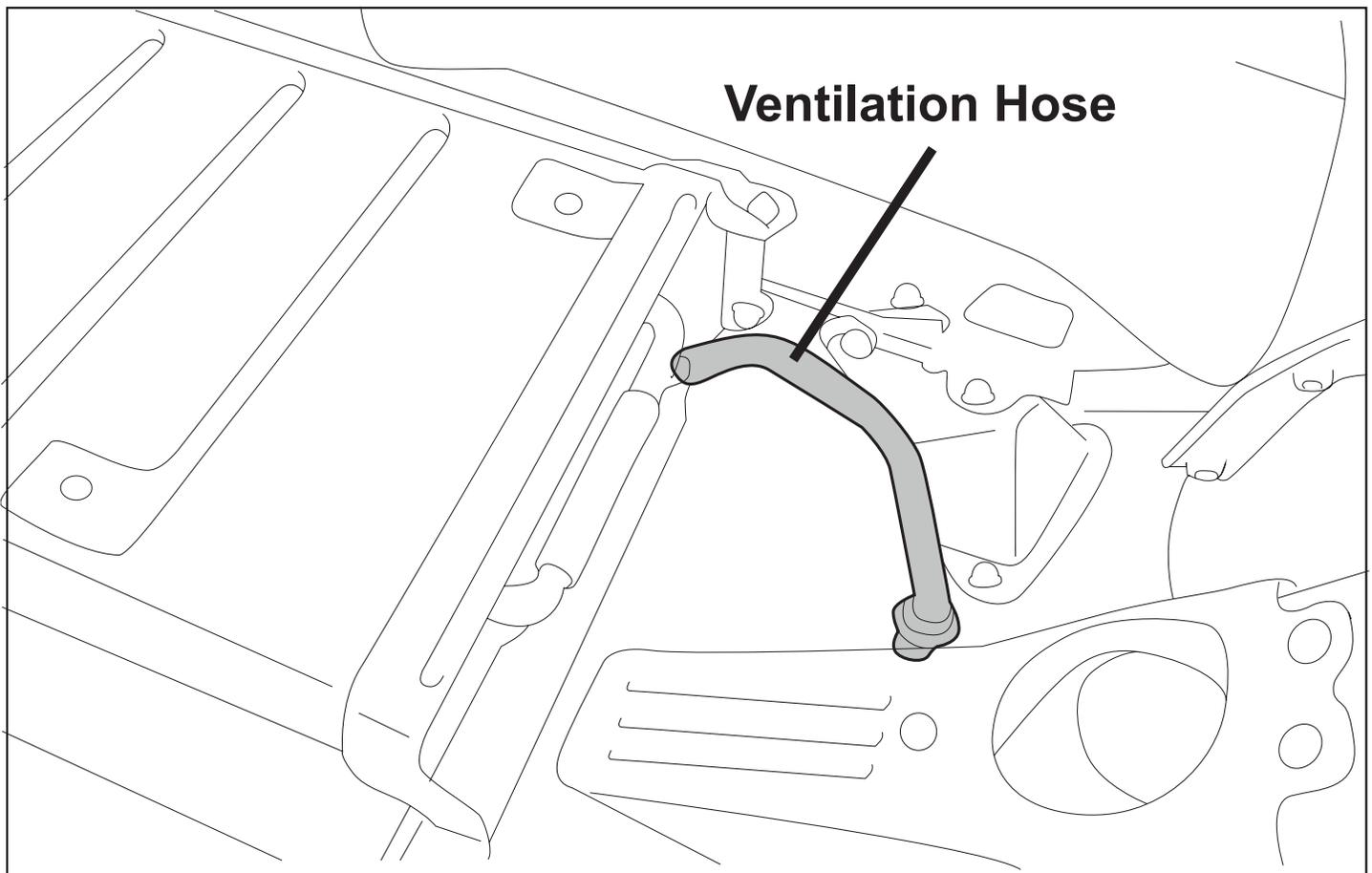
Disconnect the 3 different wiring harness connectors that connect to various HV components. Be careful as you depress the tongue and pull the connector straight out. These are all very expensive and tedious to repair if you break! Move the wires out of the way. It may be useful to tape them to the side of the car to keep them from harm.



26

DISCONNECT VENTILATION HOSE

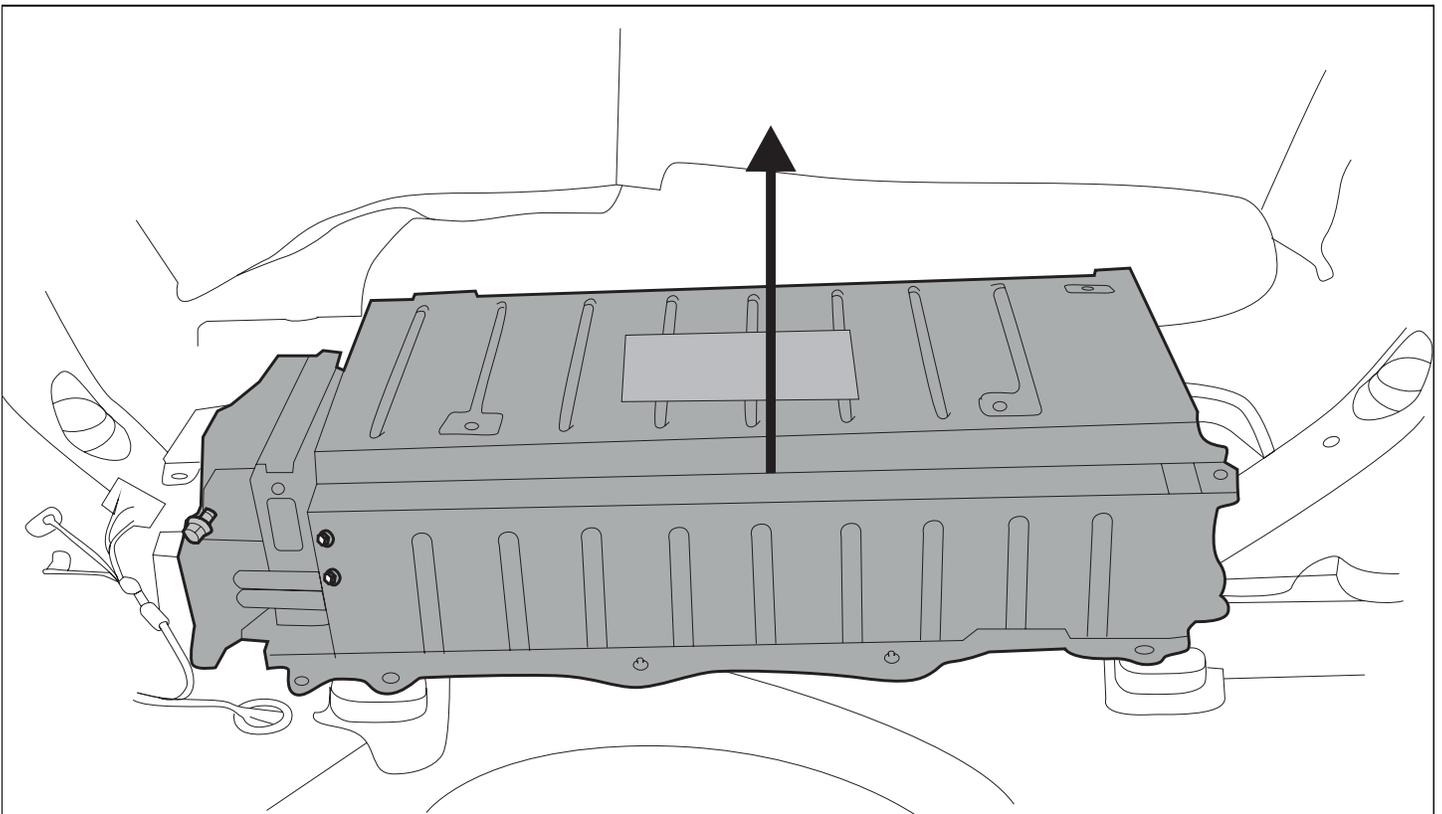
Pull firmly on the hose and disconnect. It will not be used in the new battery installation



REMOVE HYBRID BATTERY FROM VEHICLE

27

Now remove the hybrid battery pack from the vehicle. Easier said than done. The battery is very heavy and the enclosure has very sharp edges. Some find it easier to lay some wood 2x4 pieces over the spare tire and shimmy the entire HV battery slowly out towards the open hatch. From there you may be able to grasp the battery and lift it out the vehicle. It is recommended to have a flat work surface cleared off before hand to have a place to put the newly removed pack. If you can bribe a second person into helping you remove the pack, that would be highly advisable.



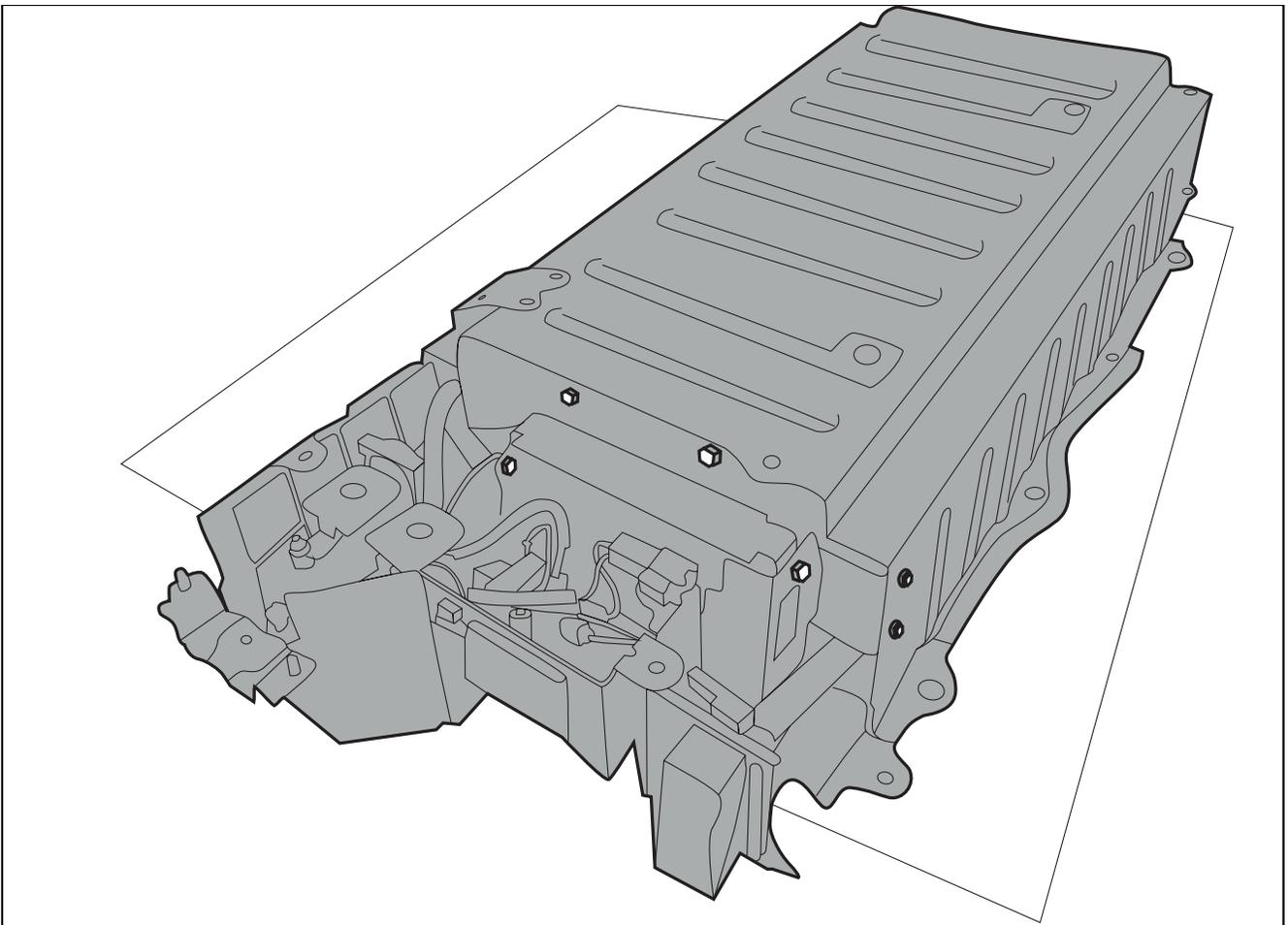
END OF PHASE 1

GOOD TIME TO TAKE A BREAK...

28

POSITION HV BATTERY PACK

Put the High Voltage Battery Pack on a large sturdy table or bench to work on. A protective piece of cardboard is recommended to protect your work surface from the sharp metal casing. During installation, you will be moving the battery over the edge of the table a few times, so sturdiness and balance is key. Do NOT use a lightweight plastic style table as it may tip over when you position the battery to overhang the edge of the table.



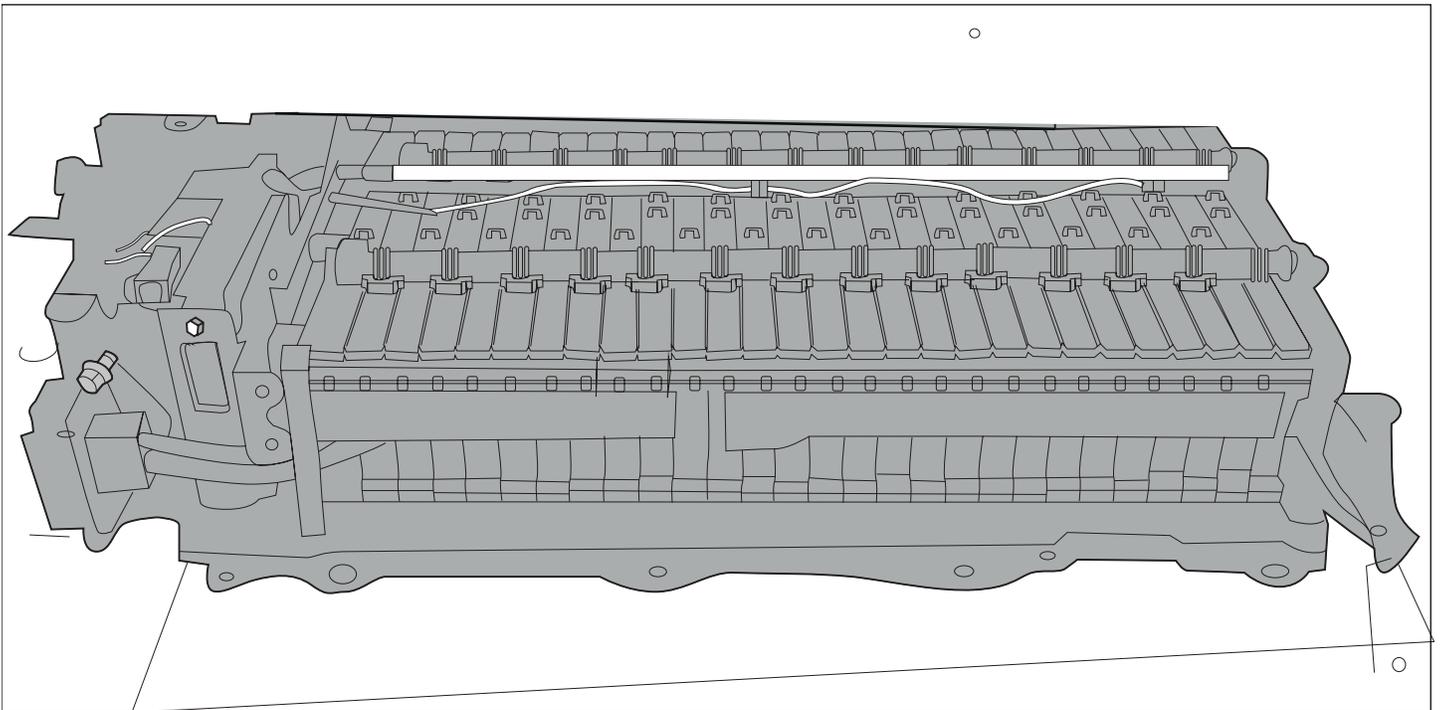
EXPOSE ORIGINAL BATTERY MODULES

29

Remove the top of the battery casing exposing the 28 individual original battery modules. Set the cover aside.

• **WARNING** •

Now that the cover is off and the modules are exposed there is high voltage DC between some of the metal pieces. Be cautious and take your time.

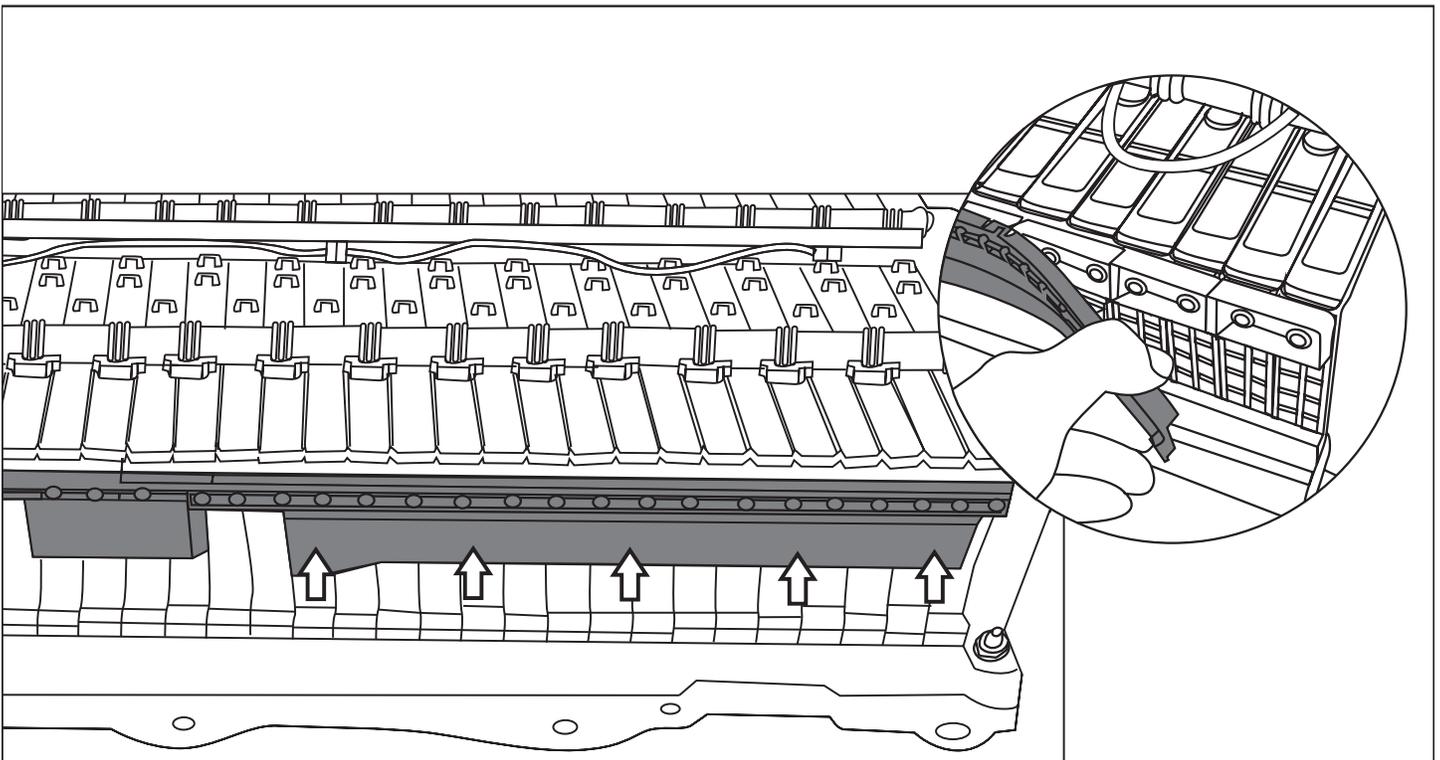


30

REMOVE ORIG. BLACK SHROUDING & OBSERVE

Pry the black shrouding off of the original exposed battery modules on both sides. It just peels away. You will NOT be re-using this material in the new kit installation.

At this point make note of which wire is your main positive wire and which wire is your main negative wire. On most USDM vehicles the module closest to the ECU with the shorter main orange wire is the positive. But verify this by looking at which terminal it is connected to on your old battery and look at the terminal marking on the top or side of the original battery module. **THIS IS VERY IMPORTANT.** Sometimes your pack may have been “repaired” and we have seen packs where the wires are reversed. The main thing to remember when arranging modules and assembling the new pack is to make it like-for-like. Main (+) connection goes to the same positive terminal. Main (-) to the same negative terminals.



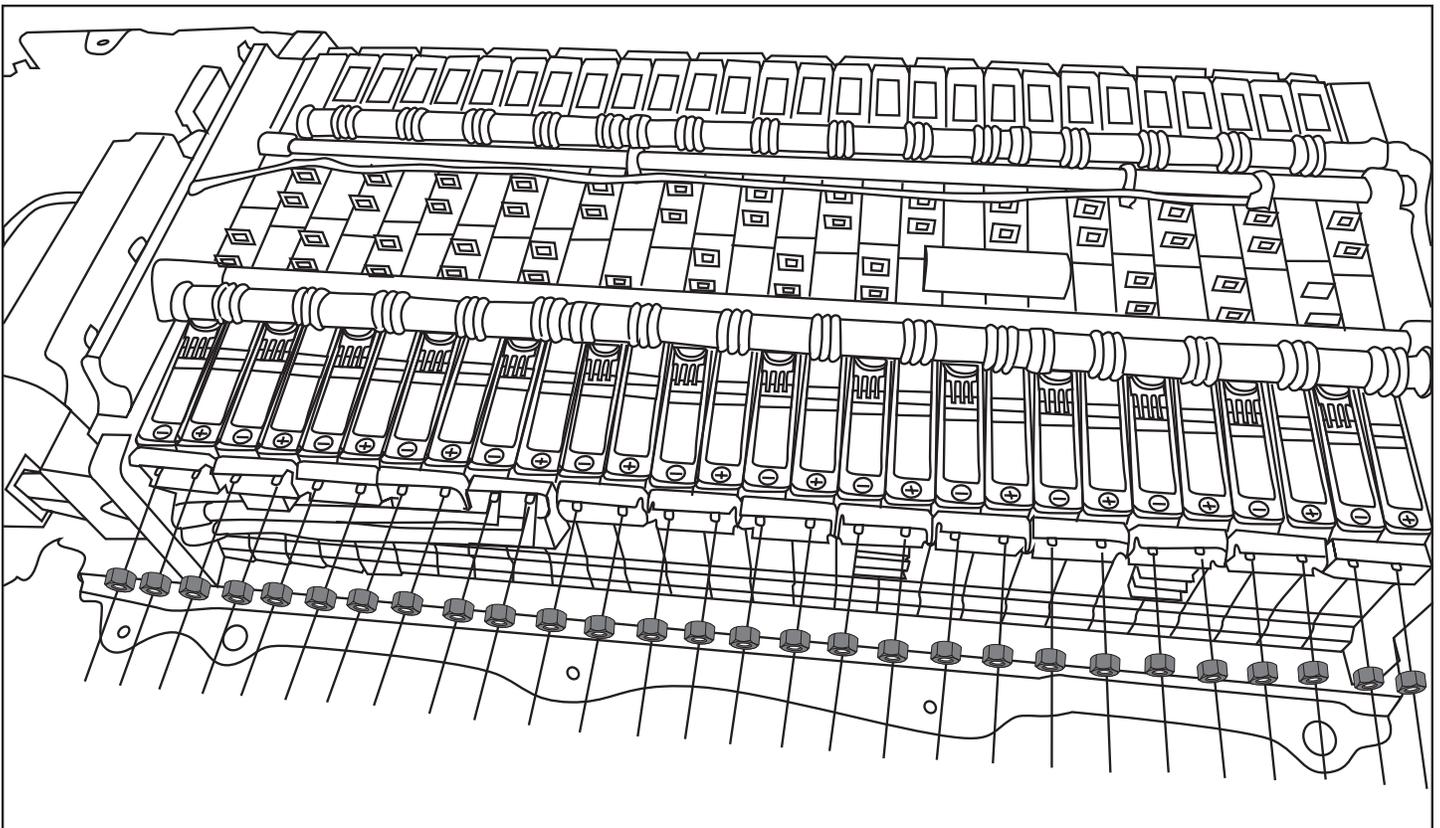
REMOVE ORIGINAL TERMINAL NUTS

31

Remove the individual nuts over each terminal screw attached to the original battery modules. This will loosen the original bus-bars.

• WARNING •

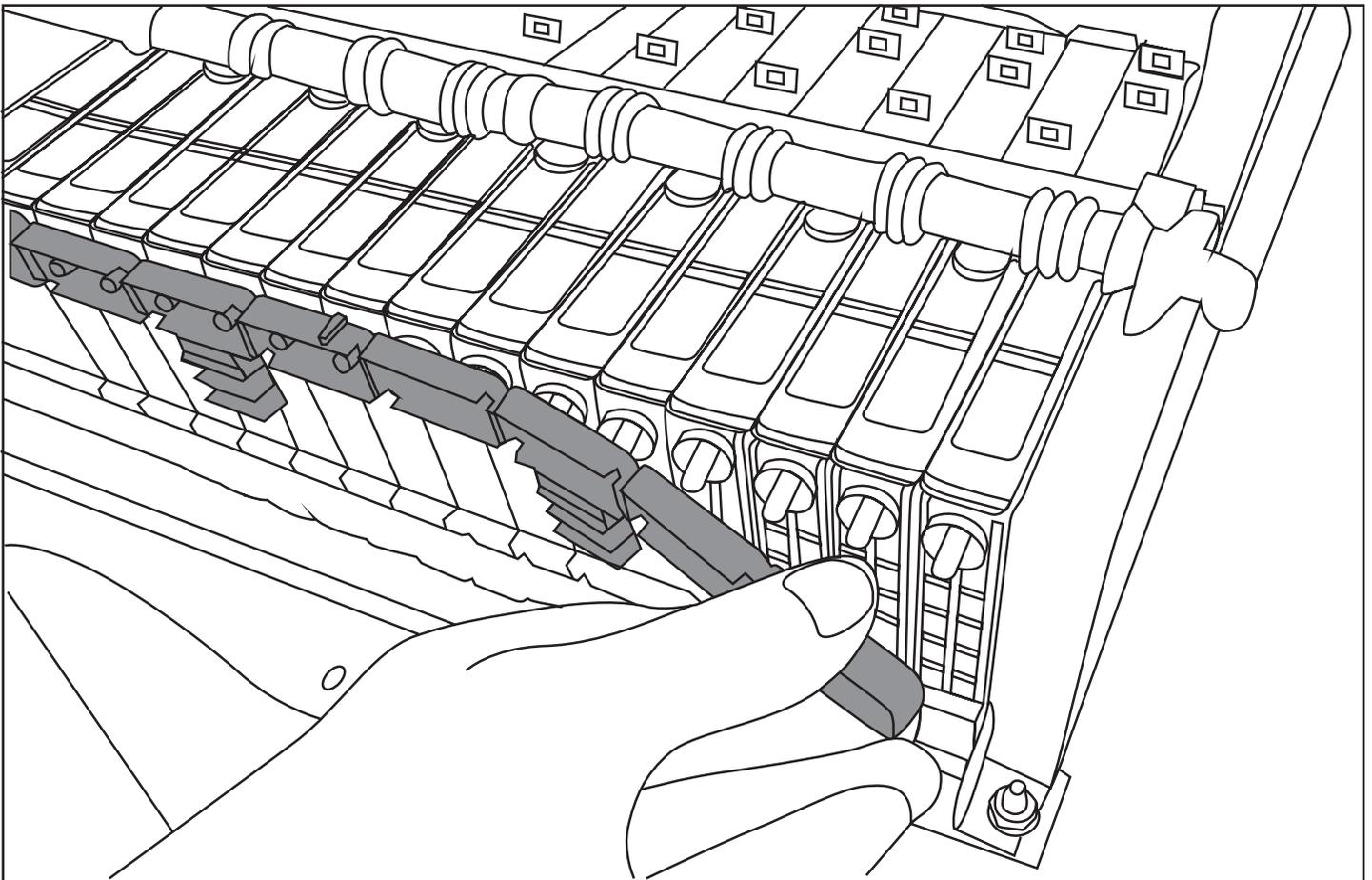
The nuts are energized. If you are not careful you could short between 2 or more adjacent nuts and cause high current DC voltage to flow between the battery terminals through the path of least resistance, usually **THE TOOL YOU ARE HOLDING ONTO**. It is highly recommended to use a fully insulated socket adapter and a rubber insulated tool just in case. Take your time and be careful and methodical.



32

TAKE WIRING HARNESS OFF

Now that all the terminal nuts are removed, the orange plastic bus bar and wiring harness holder can be removed. Just pull straight off and each side will come off in large pieces.



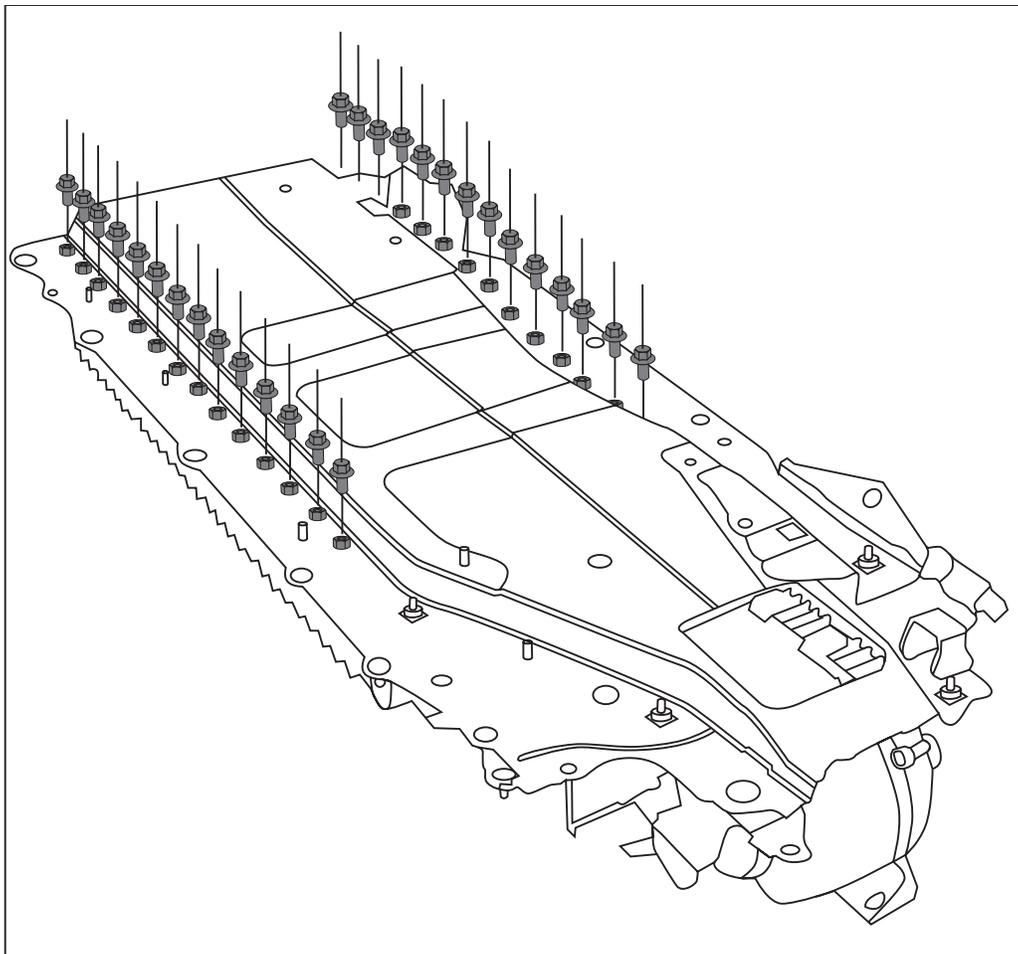
REMOVE UNDER-BOLTS FROM MODULES

33

Each battery module is secured to the metal frame via 2 bolts on the bottom. These are not easy to get to and is the main reason we recommend doing this work on a sturdy table with a protective shield over the surface.

Slide the entire battery slowly over the edge of the table to expose the bolts underneath. BE CAREFUL. The battery pack is still very heavy and very sharp and now the center of gravity is being moved. It can much more easily tip/slide/fall off the surface and cause irreparable damage.

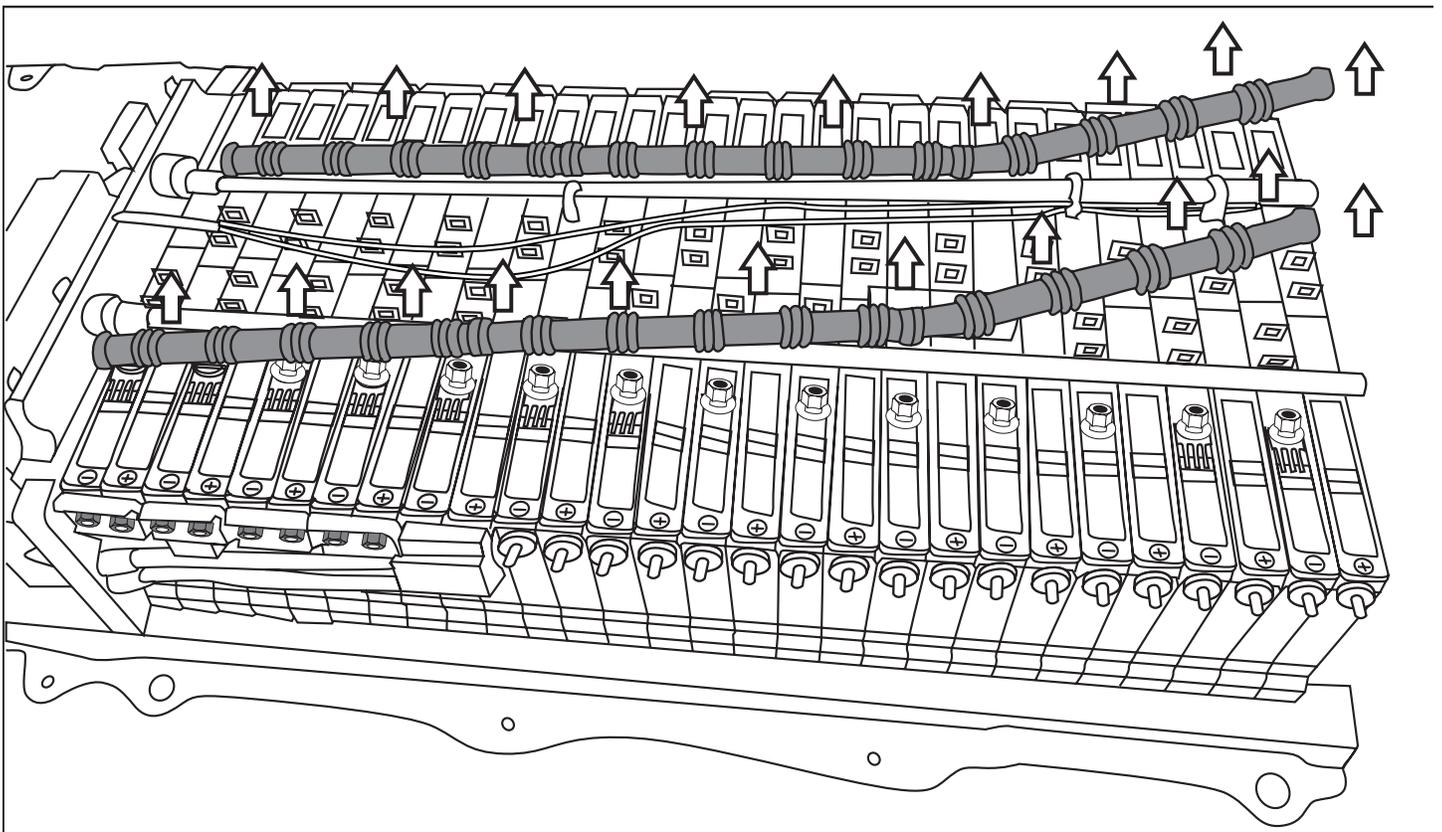
After you do one side, then push back onto the table, rotate 180 degrees, and slide back off to get to the other side. Some people prefer to hulk-style pick up and flip the pack just to expose everything. Once the bolts are off, the batteries will be completely loose. The image shown below is the Gen-3 Prius pack flipped upside down. But it is very similar for Gen-2.



34

REMOVE VENT TUBES

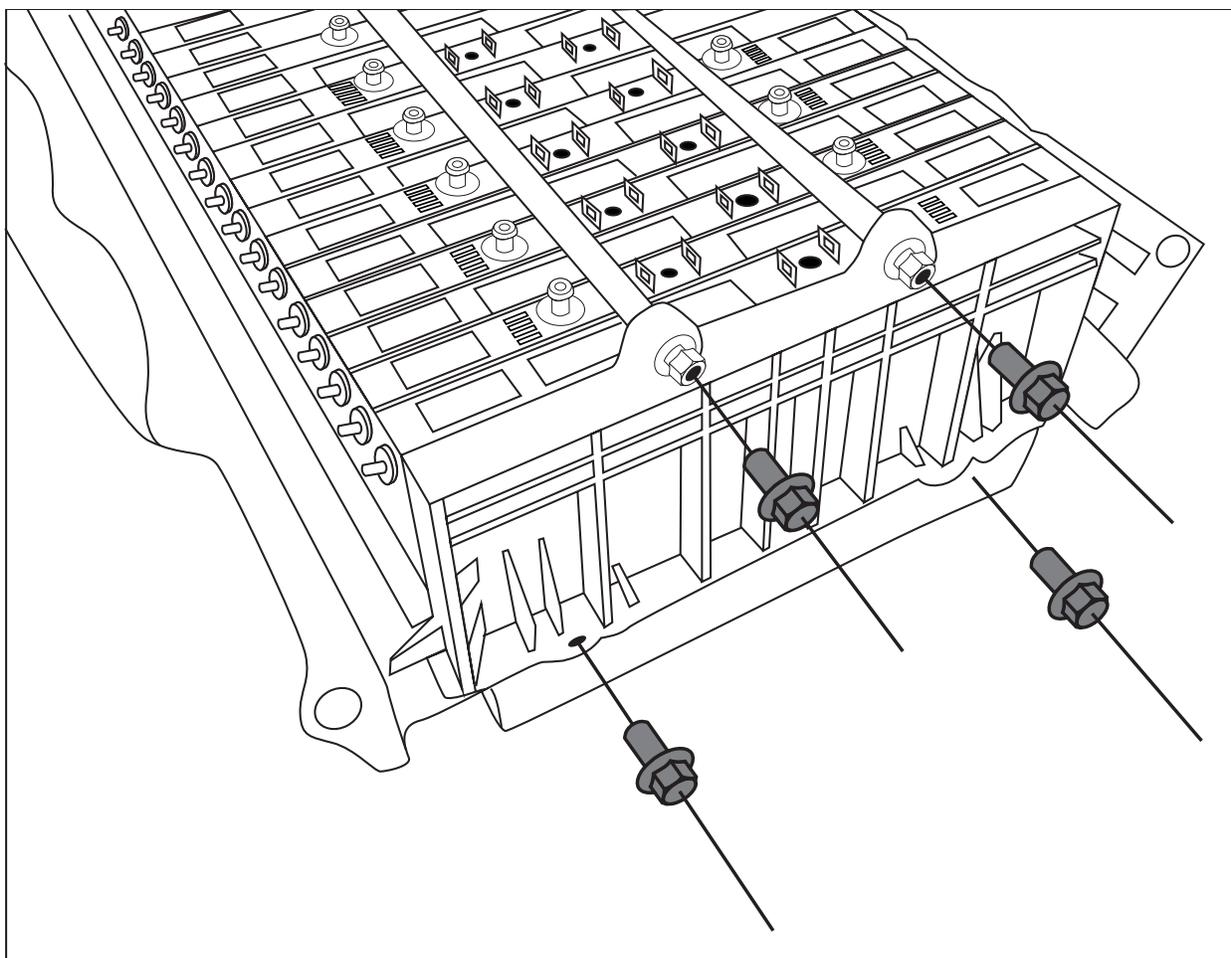
Remove the soft-rubber vent tubes from the top of the battery. You will NOT be re-using this material in the new kit installation. Just pull straight up. These are really grippy so it may take some force. The cylindrical cells have more room for expansion than the prismatic cells and the vent tubes aren't needed.



REMOVE COMPRESSION PLATE BOLTS

35

There are 4 large bolts holding the white-plastic compression plates on the end of the battery, furthest away from the ECU. Unscrew all 4 bolts.

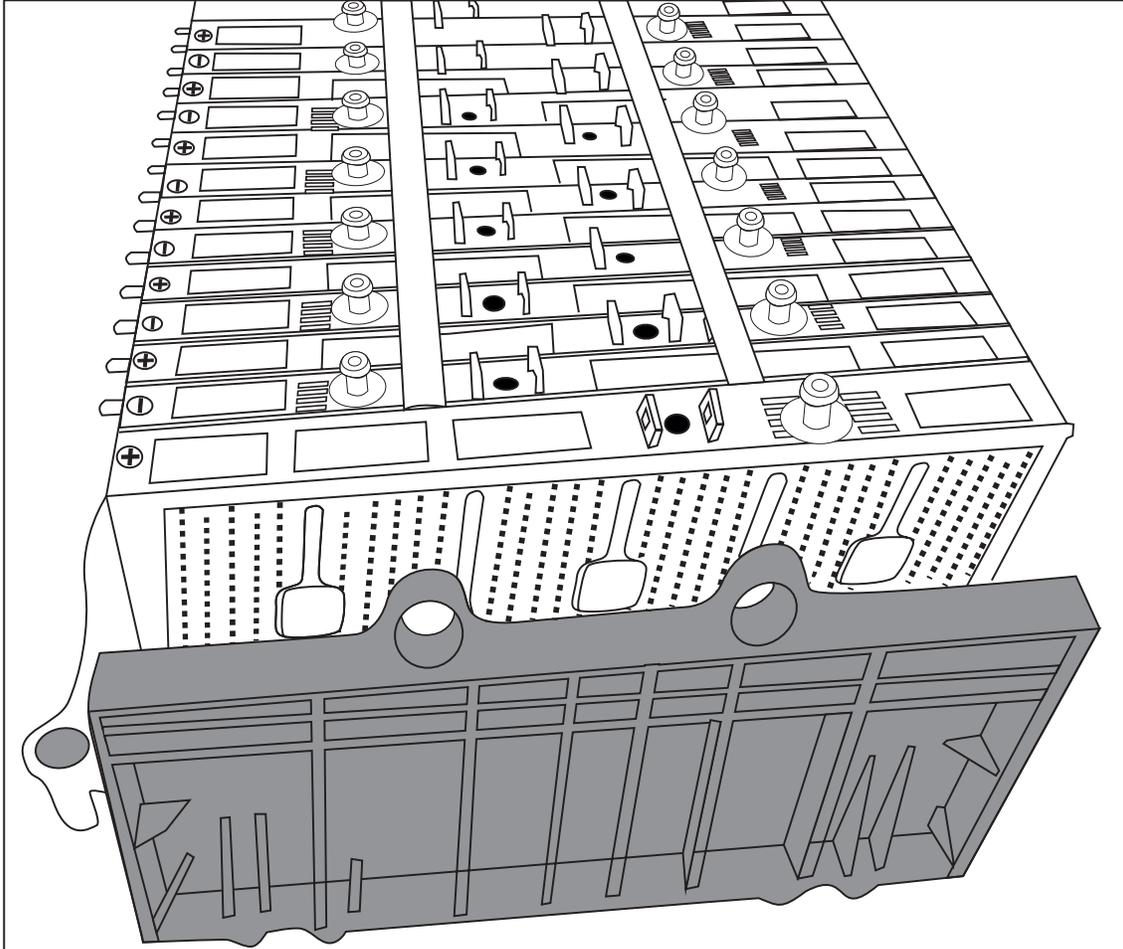


36

REMOVE END COMPRESSION PLATE

Remove the compression plate on the end (furthest away from the ECU). Pull up and out to remove the plate.

NOTE that the bottom posts do not come out. These make it difficult to remove at first. This is why you must remove UP and out, to clear those bottom posts. DO NOT “pry” the plate towards you. You will be able to remove it that way, but you will cause all sorts of damage to the old battery modules themselves (including causing gasses to escape). You may also bend the metal enclosure if you attempt to pry it out.



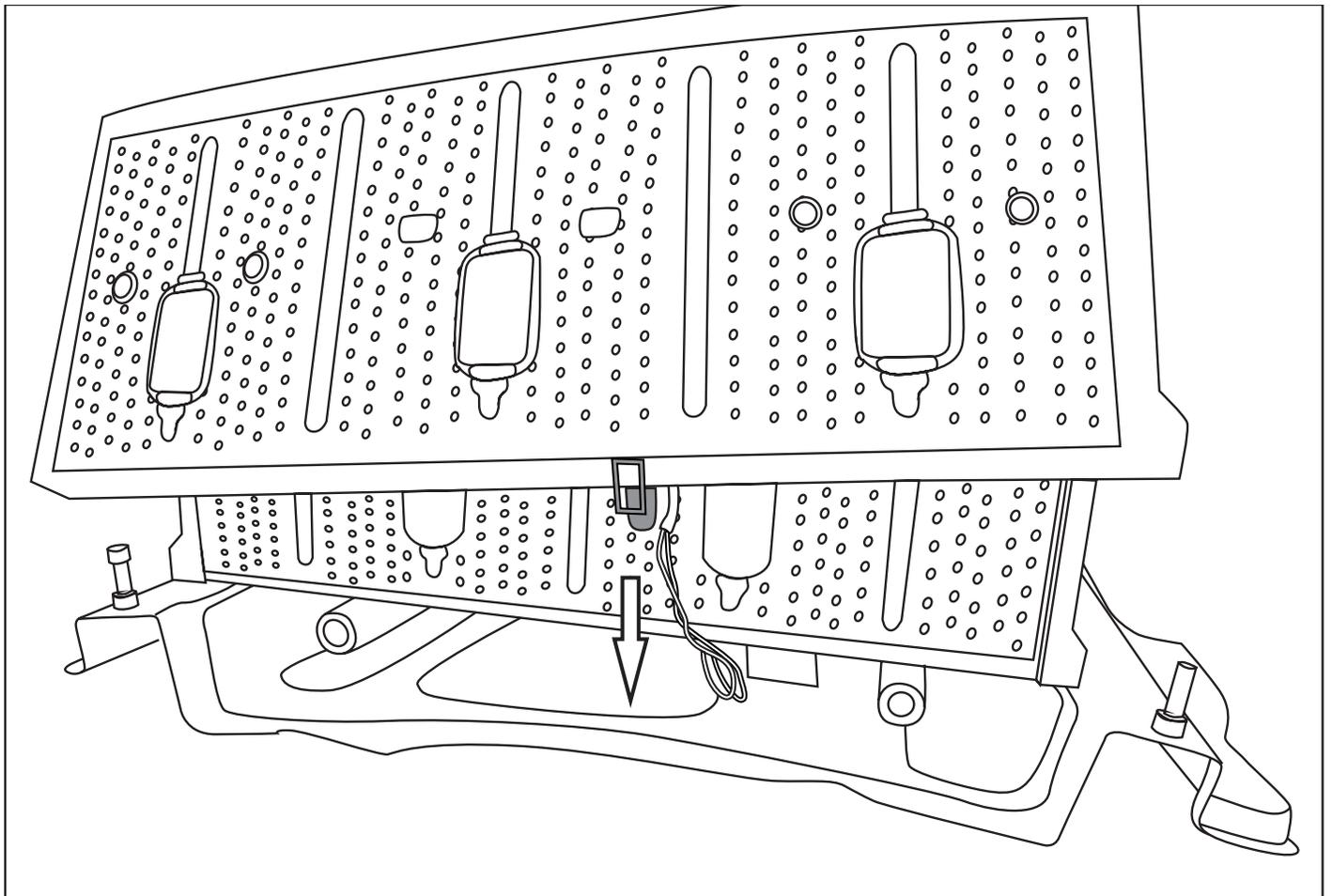
REMOVE THE FIRST BATTERY MODULE

37

CAREFULLY remove the first battery module. There is a temperature sensor clipped to the bottom of the battery module.

CAUTION CAUTION CAUTION CAUTION CAUTION

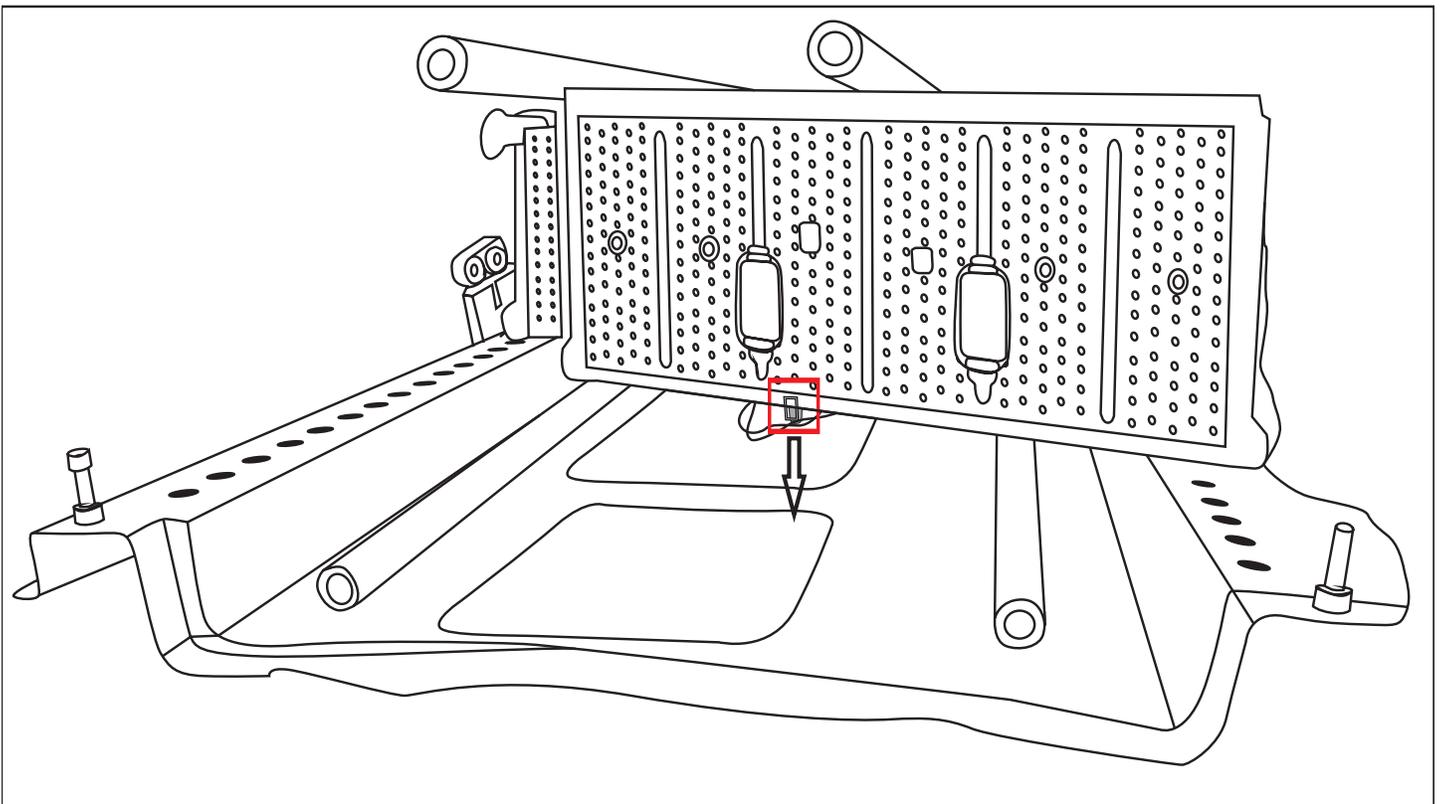
If you just yank the module out, you may break the temperature sensor clip or the sensor itself. These are extremely cheap sensors but really hard to find. If it breaks, a thermal code will be thrown and the car will work just as poorly as if the battery itself was bad.



38

REMOVE BATTERY MODULES 02 THROUGH 14

Remove the next half of the modules. CAREFULLY remove the 14th battery module. There is a temperature sensor clipped to the bottom of the battery module. Just like the first module, if you just yank the module out, you may break the temperature sensor clip or the sensor itself. These are extremely cheap sensors but really hard to find. If it breaks, a thermal code will be thrown and the car will work just as poorly as if the battery itself was bad.

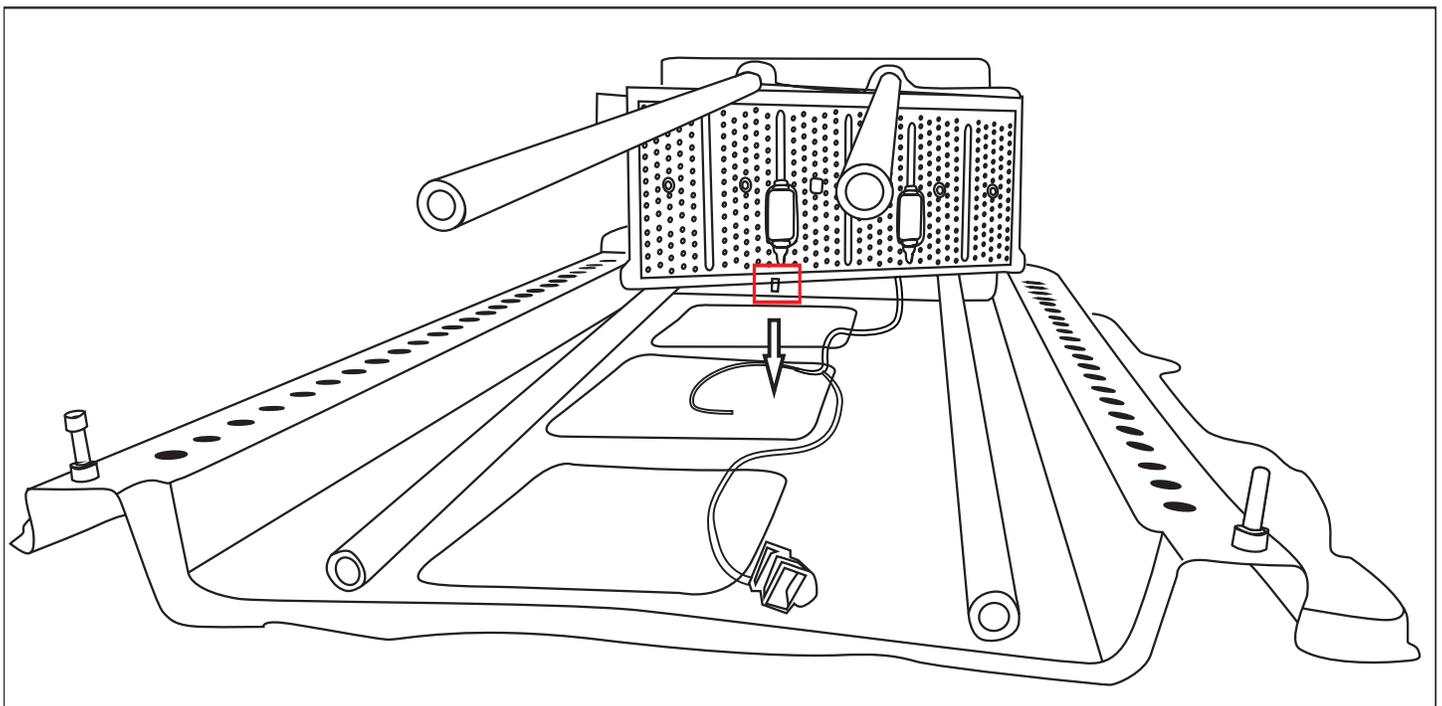


REMOVE BATTERY MODULES 15 THROUGH 28

39

Remove the last half of the modules. CAREFULLY remove the 28th battery module. There is a temperature sensor clipped to the bottom of the battery module. Just like the first module and the 14th module, if you just yank the module out, you may break the temperature sensor clip or the sensor itself. These are extremely cheap sensors but really hard to find. If it breaks, a thermal code will be thrown and the car will work just as poorly as if the battery itself was bad.

Now that all the modules are removed, you can access the 4 black torsion rods. If you want to isolate the rods, you can use the included electrical tape and wrap the bars. This is optional but is an additional layer of safety to isolate the battery modules in case of a horrific accident.



40

FIND NEW BLACK ENDCAP SAFETY COVERS

The black end caps that will eventually cover each module come in 3 different types. There are single wide caps for the ends, double wide short caps for most modules, and double wide taller caps for modules with extra wiring near the ECU part of the pack. Just make sure you have these caps included in your kit. They are not 100% needed. But it is always a good idea to have more protection between the high voltage terminals and everything else which is what it does.

You may have extra end caps included in your kit. We include some just incase they get broken or damaged in shipping. Also, some battery packs have wiring that is a little longer than others which makes the wire longer and then the cap may not fit flush. Cutting the top of the cap is an easy fix, so we include extras so that you can try that too.

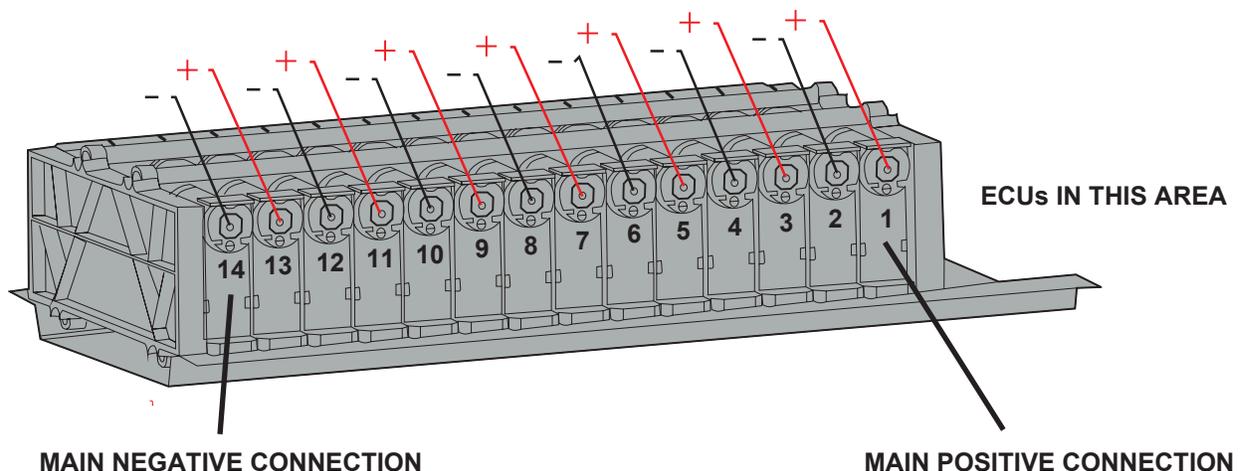
ARRANGE NEWPRIUSBATTERIES.COM MODULES

41

Arrange the new modules in order from #1 through #14. The numbering of each module can be found on the top laser marked in black on the red casing. Your unique serial number is identified by a letter and 4 digits such as «K0123» and the module number is identified as a two digit number such as «01» or «14». Write down your serial number for warranty registration.

In the image below showing a Gen2 Prius, the electronics (with the ECU) are on the right in the blank space. Order the modules with #01 closest to the electronics/ECU counting up to #14 at the “other end” of the pack.

NOTE: Before you do this, read through to step #45 about installing the temperature sensors. If you decide to put the temperature sensors on the top of the modules (as we recommend) then you need to remove the pre-installed black temperature retaining clips from modules #1, #7, and #14. It is possible that the wires in your pack a little shorter than normal and they may not fit to the top of the modules if they were previously on the bottom. It is a good idea to do a sanity check before you start attaching everything and make sure the wires will fit. If you are going to install the temperature sensors on the bottom, then you should attach them as you go that way you don't have to disassemble the pack to attach the clips.



42

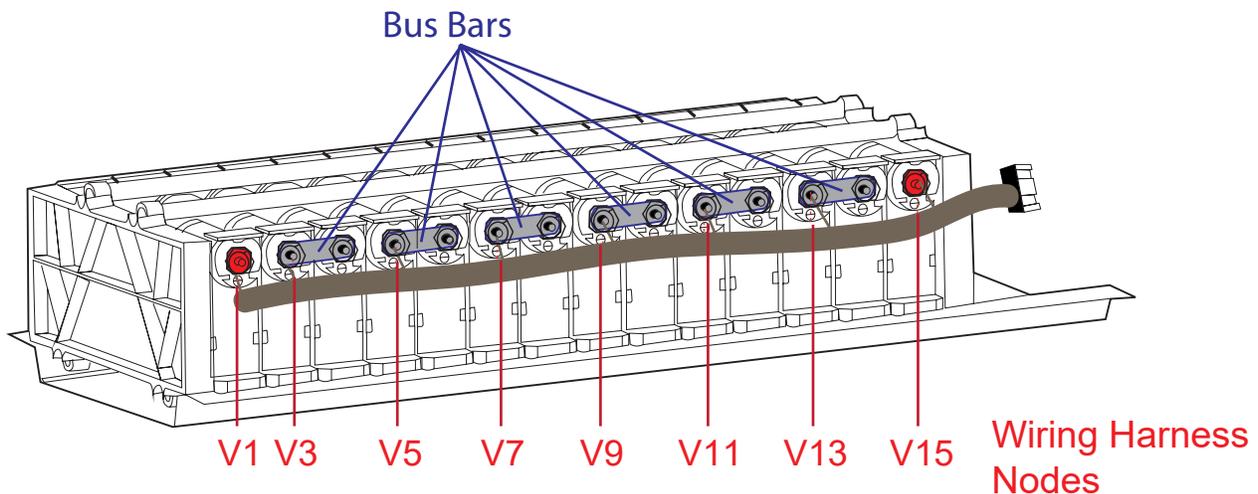
CONNECT PRIMARY HALF OF NEW KIT

Attach the Primary Half of the Wiring Harness, Bus Bars, and Terminal Bolts. This is the side that the main positive and main negative wires connect to.

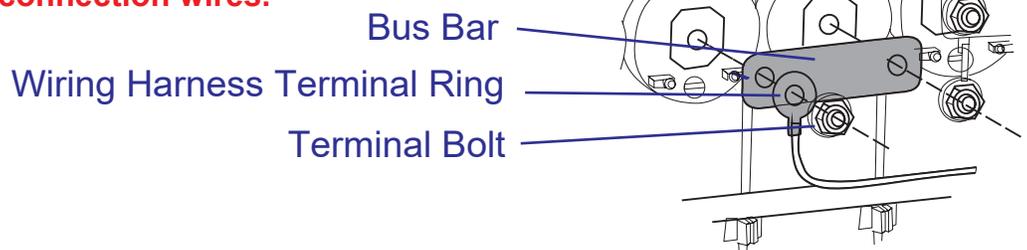
Place a bus bar directly against the batteries' terminals, followed by a ring terminal from the wiring harness, and loosely tighten a terminal bolt into the battery. Then attach the second terminal bolt and fully tighten. Go back to the bolt over the ring terminal and fully tighten to 5.4 Nm (48 in-lbf / 55kgf-cm). Look at the image below for a graphical representation of the order.

Do NOT attach V1 or V15 to the assembly at this time.

This is the side where the main battery connection wires are attached later.



Do NOT connect V15 or V1 as those will later connect to the main battery connection wires.



CONNECT THE SECONDARY HALF OF NEW KIT

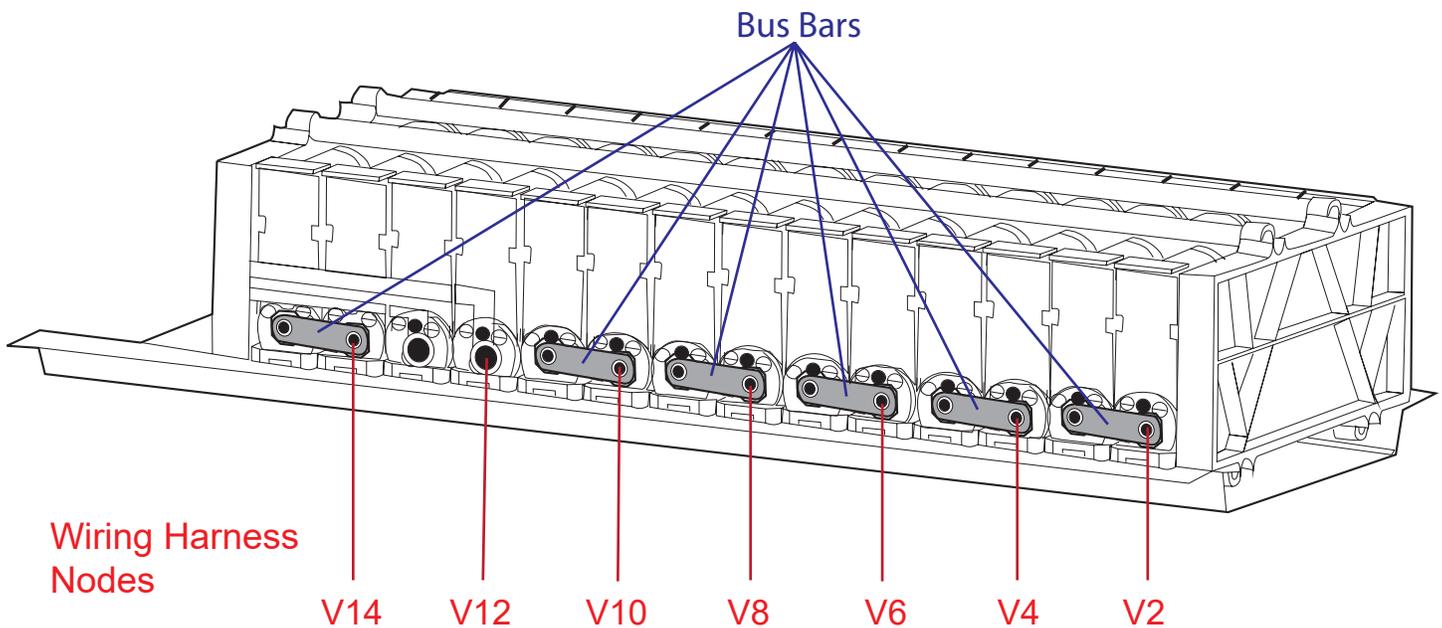
43

Attach the Secondary Half of the Wiring Harness, Bus Bars, and Terminal Bolts. This is the side the safety disconnect switch wires connect to.

Place a bus bar directly against the batteries' terminals, followed by a ring terminal from the wiring harness, and loosely tighten a terminal bolt into the battery. Then attach the second terminal bolt and fully tighten. Go back to the bolt over the ring terminal and fully tighten to 5.4 Nm (48 in-lbf / 55kgf-cm). Look at the image below for a graphical representation of the order.

Do NOT attach a bus bar or terminal nuts to either of the batteries where V12 will later attach. Do NOT attach V12 to the assembly at this time.

This is the side where the safety disconnect switch wires are attached.

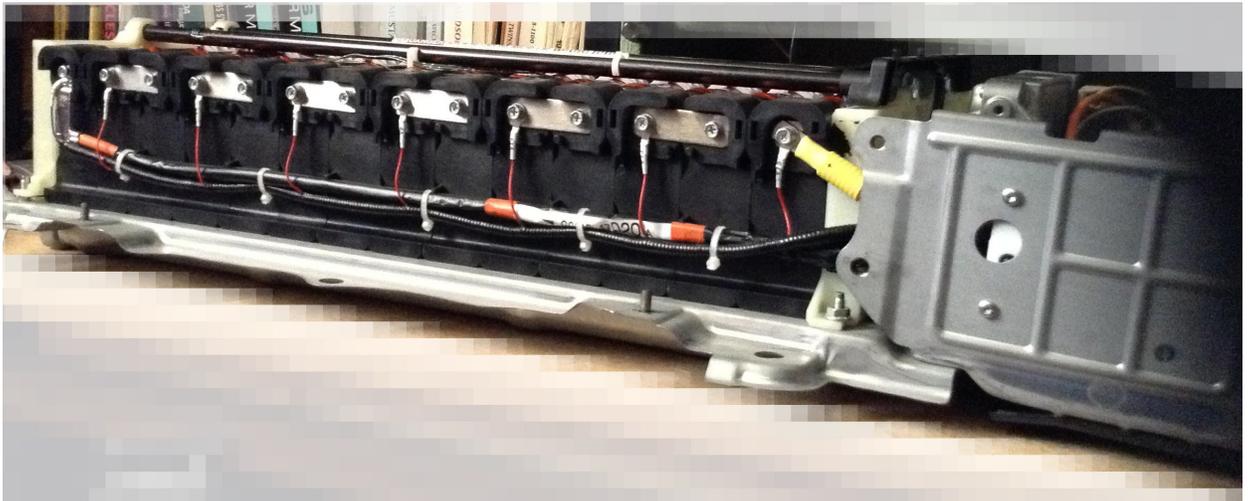


Do NOT connect V12 as that will later connect to the safety disconnect wires

44

EXAMPLE PHOTOS

Please note that the main wires (V1 & V15) as well as the safety disconnect wires (V12) are shown in their positions in the images below but should NOT be connected at this time. This is just for illustrative purposes only.



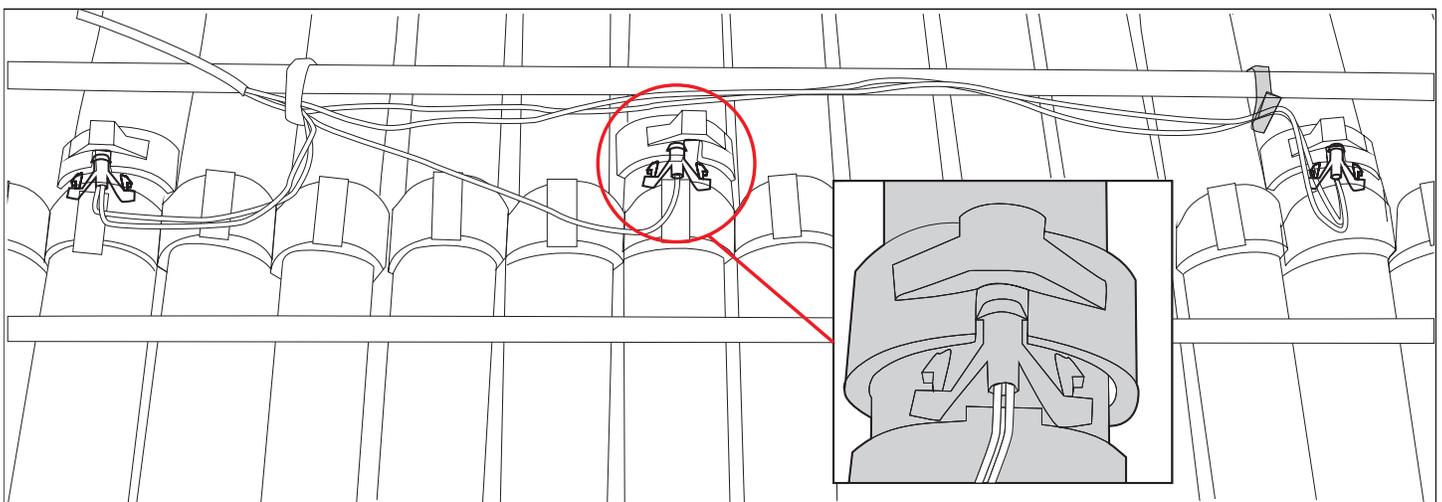
ATTACH TEMPERATURE SENSORS TO NEW PACK

45

Attach the temperature sensors onto modules #01, #07, and #14. Be careful to not snap the connectors as you attach them. They fit very snugly on purpose. For the Gen2 Prius (2004–2009) the original sensors come out on the bottom of the pack so you will need to lift up the pack gingerly and attach the sensors on bottom if you want them in the same place. For the Gen3 Prius (2010–2015) the original sensors come out on the top of the pack.

We recommend you clip the temperature sensors to the top of the pack on any of our kits. Also you will notice your fan turning on more often than before after you install the pack. This is because the temperature sensor is now directly against metal and the car will think the battery is hotter than it actually is. This is a GOOD thing as it will more aggressively cool your new pack to last longer. But it does make the readings wrong in most apps.

Securing the temperature sensor wires to the torsion bars with zip ties (not included) is recommended as well just to make things nice and clean. But not needed.

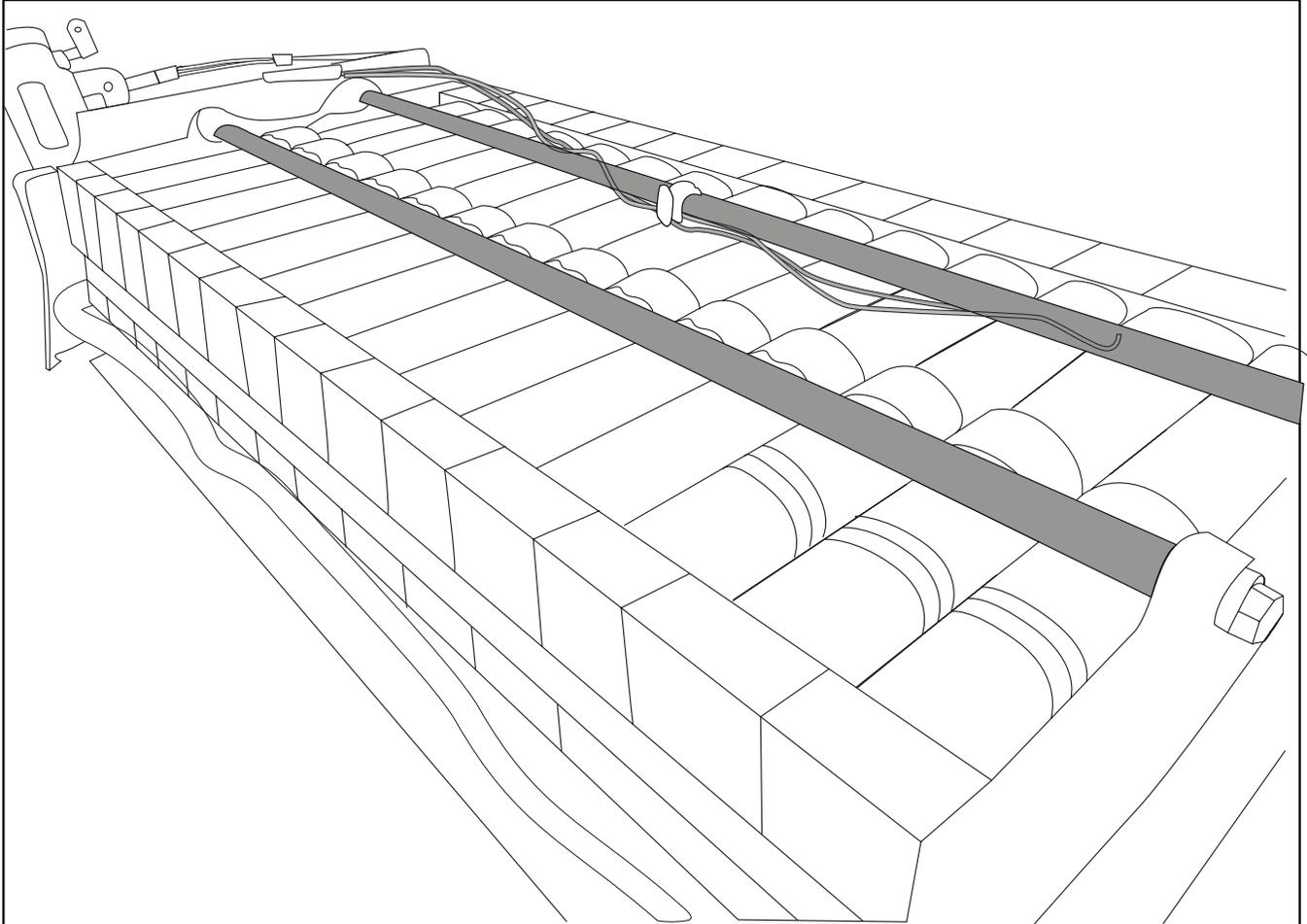


46

LOOSELY-TIGHTEN COMPRESSION PLATE BOLTS

Loosely tighten the cylindrical metal rods that squeeze the pack together, the torsion rods. Make sure to not fully tighten as you will need to arrange the battery modules onto the metal frame and align the holes on the bottom up properly.

The pack is **NOT** stable in this arrangement, so do not consider it assembled. Move the pack as if it were very fragile, because **IT IS** at this stage of the assembly.

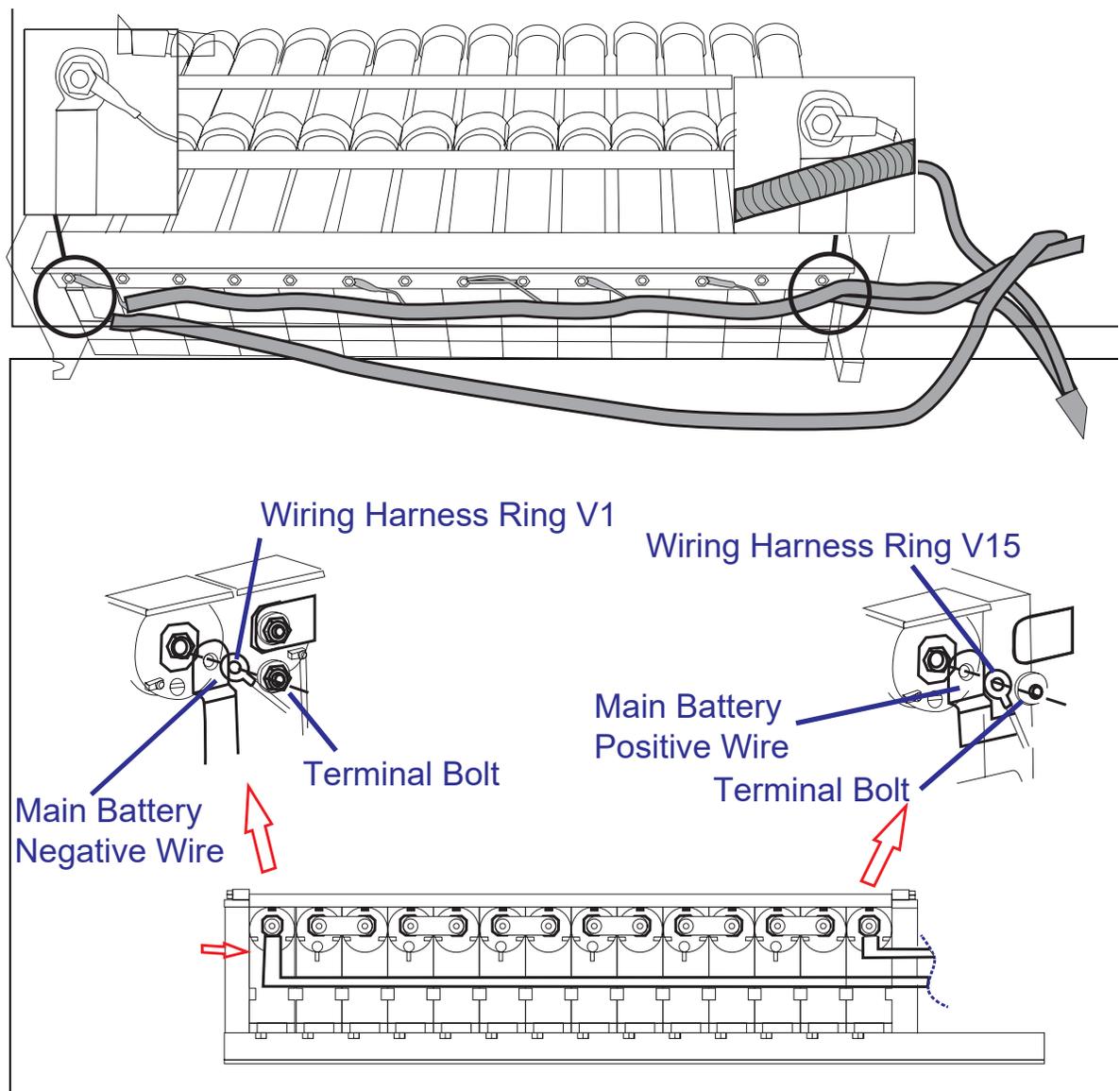


ATTACH MAIN BATTERY CONNECTION WIRES

47

Attach the original positive and negative Main Battery Connection Wires along with the wiring harness sensor ring terminals V1 and V15. We also include a new positive main battery connection wire. It is optional. With some battery packs, the original wire may not reach the new battery terminal location which is located about a half module width further away from the pack due to the geometry difference of the new cylindrical pack versus the old prismatic pack. If you replace it just torque both sides down.

The main thing to keep in mind is that this battery is just like the original battery. The main positive connection and the main negative connection attach to the same place. When in doubt, make it just like the original.

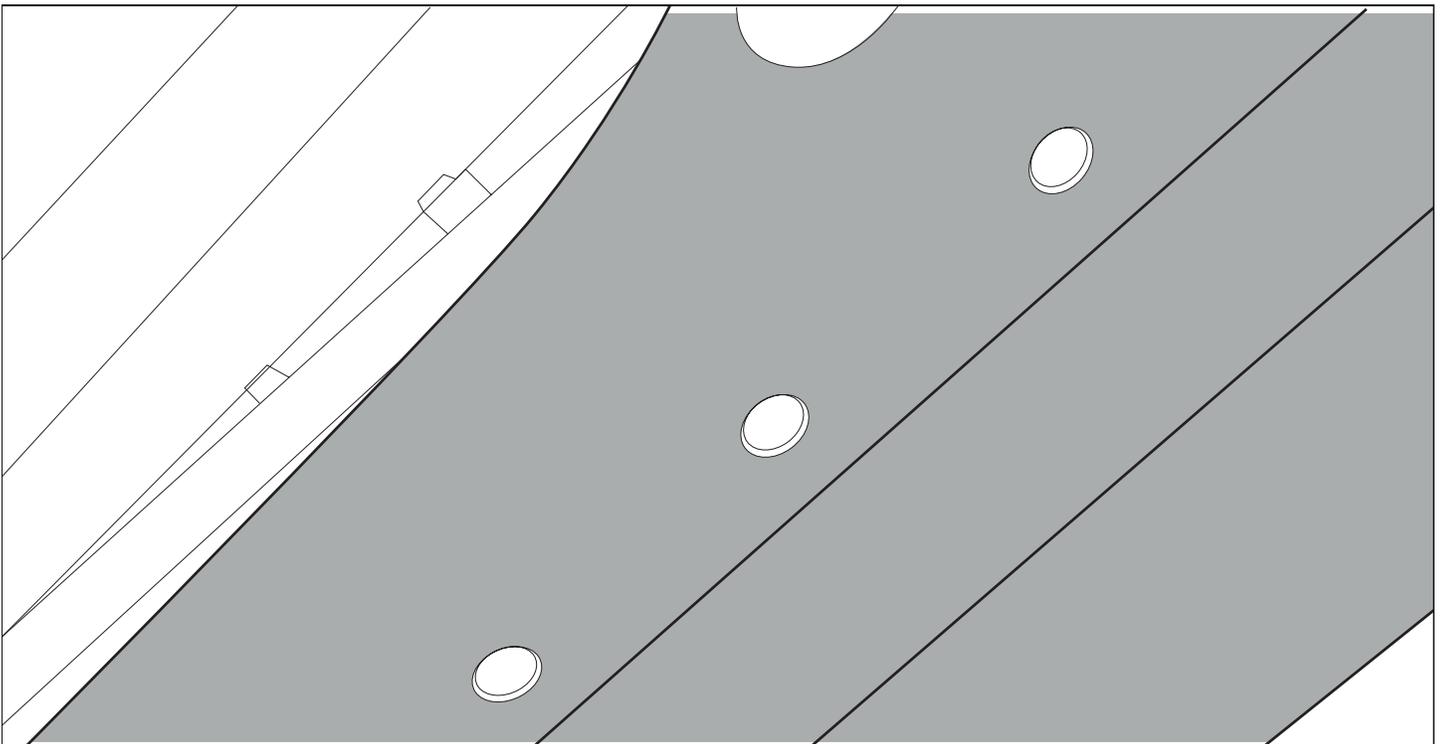


48

MOVE BATTERY TO TABLE EDGE

This is where assembling the battery pack on a heavy duty table comes in handy yet again. Ensure your table is sturdy and level. The battery pack at this point will weigh almost 100 pounds, and if it falls not only will it be damaging to the battery, it will most likely destroy your floor and any part of your body it lands on in the process.

Very carefully move the entire battery assembly in the metal case to the edge of the table. Make sure to only move the assembly the absolute minimum to expose the holes to screw into the battery modules themselves. Move the batteries as to align the threaded holes with the holes in the metal enclosure.

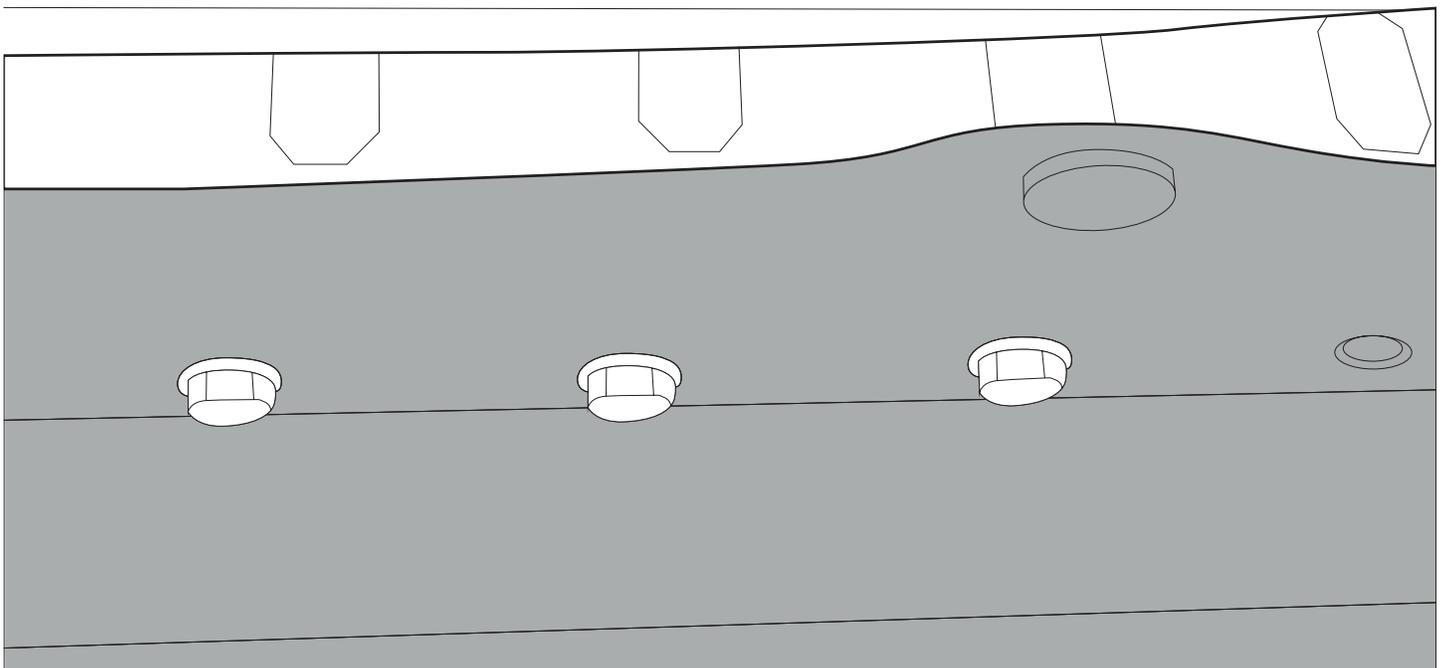


SCREW MODULES INTO ENCLOSURE

49

Screw the M5 bolts into the battery modules through the metal enclosure from the bottom. Do NOT fully tighten. It will take more time and rotations, but will be better in the end. After you have finished loosely tightening all the bolts on one side, push the entire assembly back onto your sturdy table, rotate 180 degrees, and pull the pack off the edge of the table again to expose the holes on the other side. Screw the rest of the bolts into the battery modules, again loosely. Once all the bolts are fully installed, then start tightening them. Tighten these bolts to 5 Nm (44 in-lbf / 50 kgf-cm). Push the whole pack back, rotate, and pull the pack again to get to the first side and finish tightening those bolts fully as well.

You only need 1 bolt per side per battery module. Since there are half as many modules, you only need 28 bolts total to hold the pack together.

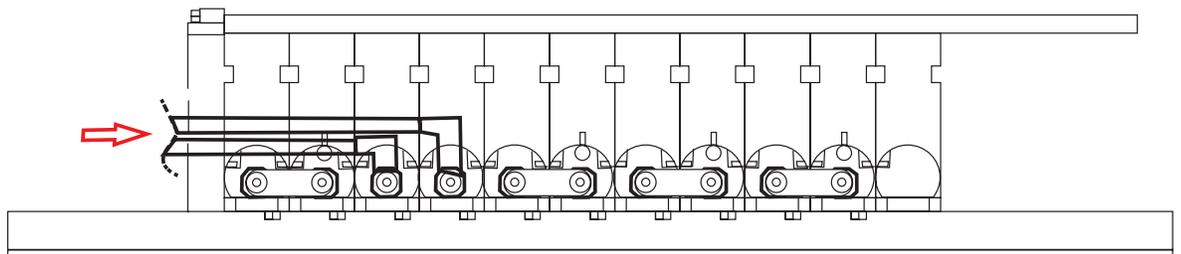


50

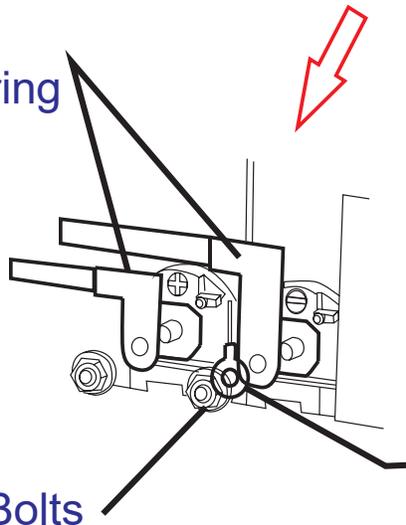
INSTALL ORIGINAL SAFETY DISCONNECT WIRES

Now install the original Safety Disconnect Switch Wiring and the V12 sensor ring terminal connector from the new wiring harness. The Safety Disconnect Switch metal goes directly over the battery module terminal, then the ring terminal, and then the battery terminal bolt. Order is important!

These wires are now slightly longer than they need to be. You can move more of the wire into the ECU compartment to use up some of the slack which allows for the wires to be attached at 90 degree angles. To make the wires less stiff you can use a heat gun on a low setting just to where the insulation is warm, never too hot to touch, just warm. This should allow it the flexibility to bend. If you do not want to do this, then you can attach them with the extra wires by the battery modules. Either way is up to you. The most important part is the connection itself.



Original Safety Disconnect Wiring



Wiring Harness Ring V12

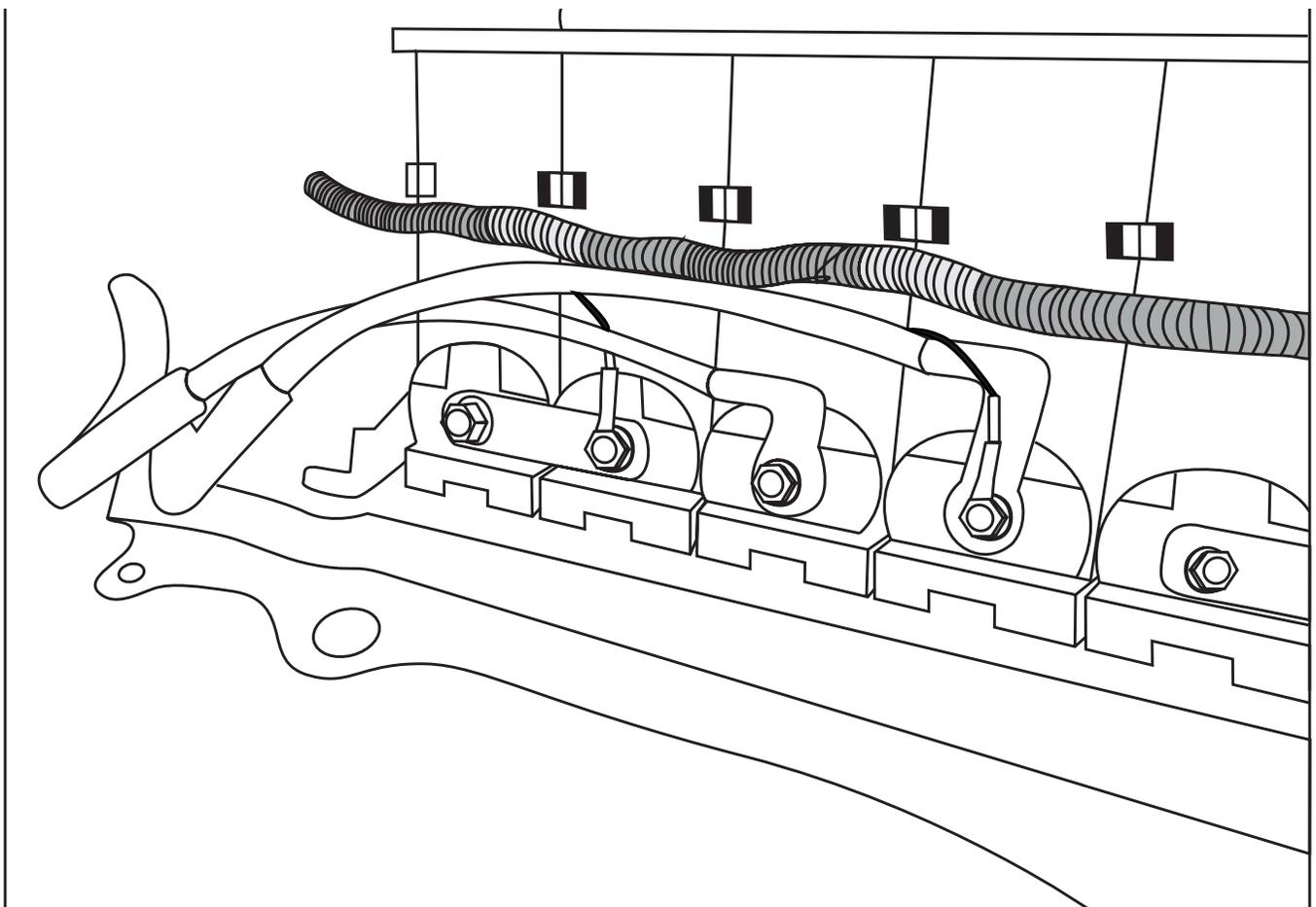
Terminal Bolts

ARRANGE ORIGINAL SAFETY DISCONNECT WIRES

51

You will find that the original Safety Disconnect Switch Wiring is just a little bit too long. You can leave as is, or you can pull the wires back into the ECU compartment CAREFULLY to make them a little shorter and maintain nice 90-degree angles on the battery terminals themselves.

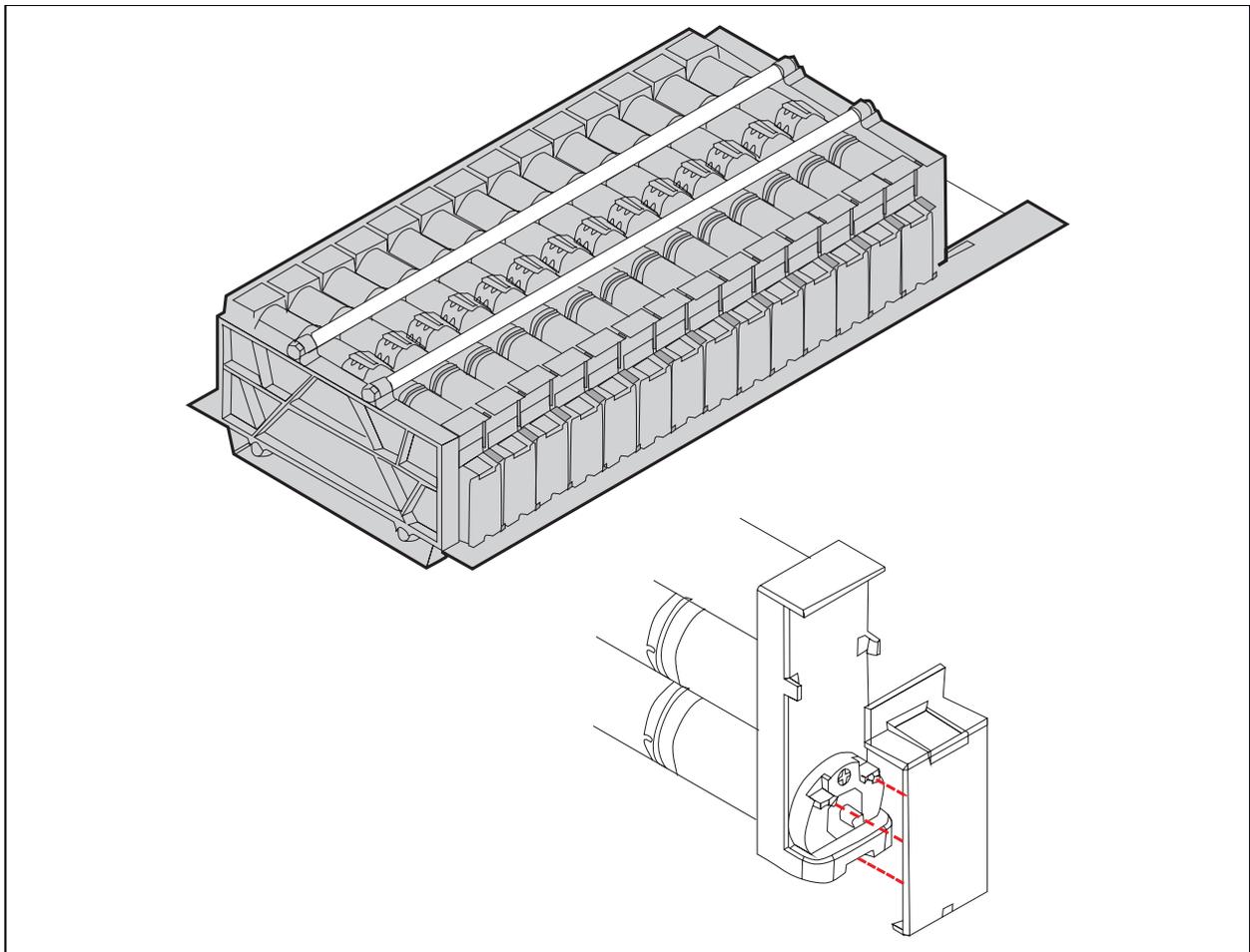
If the wires are very cold the insulation is stiff and less flexible to move. A very gentle warm breeze like from a heat-gun from a distance should be enough to make the wires easier to move. It should never get too hot to touch or to hold your hand in front of. You just want it warm, not hot. Too much heat will cause irreversible damage. This step is optional as long as you can maneuver the wires properly and without shorting to other terminals in the first place. If the wires are not at 90 degree angles, the black end caps in that area will not fit, at least not without modification like cutting the tops off. It is worth the extra time and effort to make this nice.



52

INSTALL BLACK SAFETY COVERS

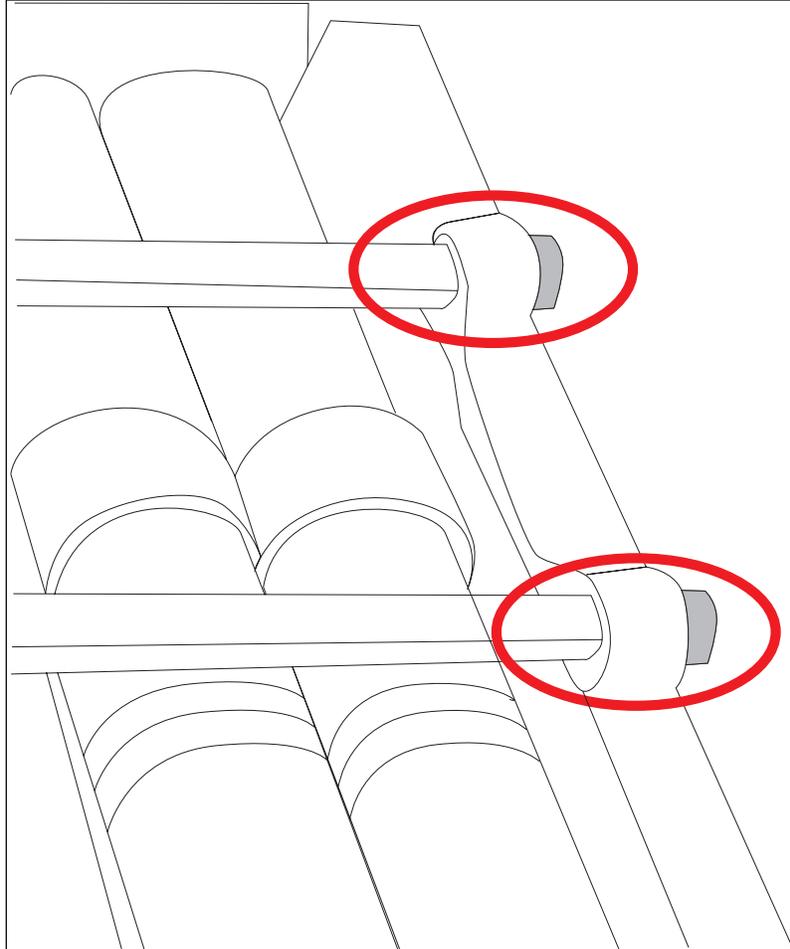
Now install all the black plastic safety covers. With the extra bulk of the wires you may have to carefully route the wires to make everything neat and fit. This is a step that takes a single page, but depending on how meticulous you want to be, may take a long time. Routing things neatly takes extra care but will make the battery happier overall. The sensor wires themselves can be positioned into the detents in the plastic covers on the modules. Depending on how the wires are positioned the caps may be hard to snap into place. It may take some re-jiggering of the connections to make everything perfect.



TIGHTEN THE COMPRESSION PLATE RODS

53

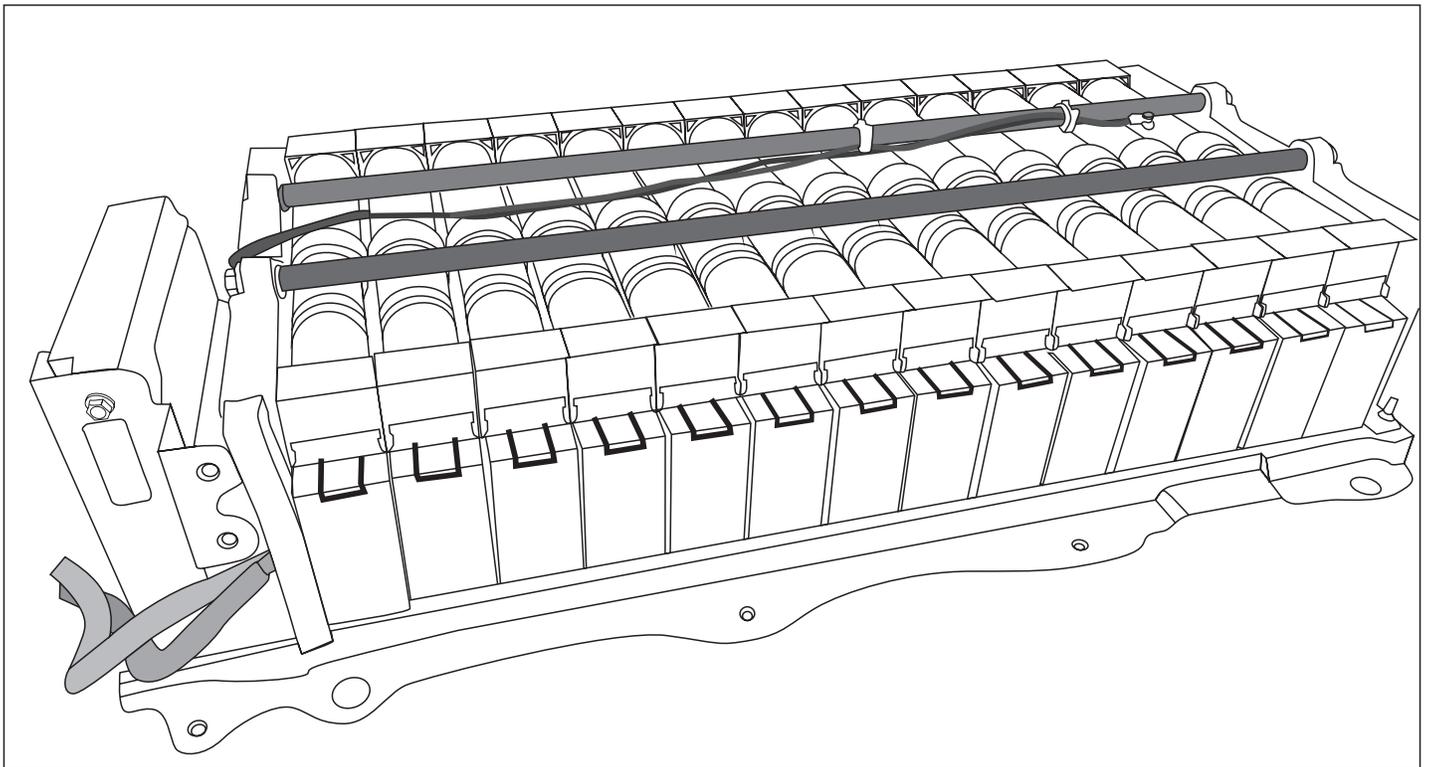
Now tighten the tension rod bolts that squeeze the pack together. In the old pack they were to be tightened to 38 Nm (28 ft-lbf / 390 kgf-cm). With the new pack, they are just for show as the compression is done on an individual cell basis by the shape of the cell being a cylinder. This superior design means you can just tighten these bolts tight enough so the pack doesn't go anywhere but it doesn't require any kind of extreme force. The magic of cylinders!



YOUR PACK IS NOW FULLY ASSEMBLED

ALL THAT'S LEFT IS PUTTING IT ALL BACK TOGETHER AGAIN

**NOW IS A GOOD TIME TO DOUBLE CHECK CONNECTIONS,
POLARITY, AND ACCURACY OF YOUR INSTALL. MUCH EASIER
TO CORRECT AN ERROR NOW, THEN AFTER YOU PUT IT BACK
IN THE CAR!**



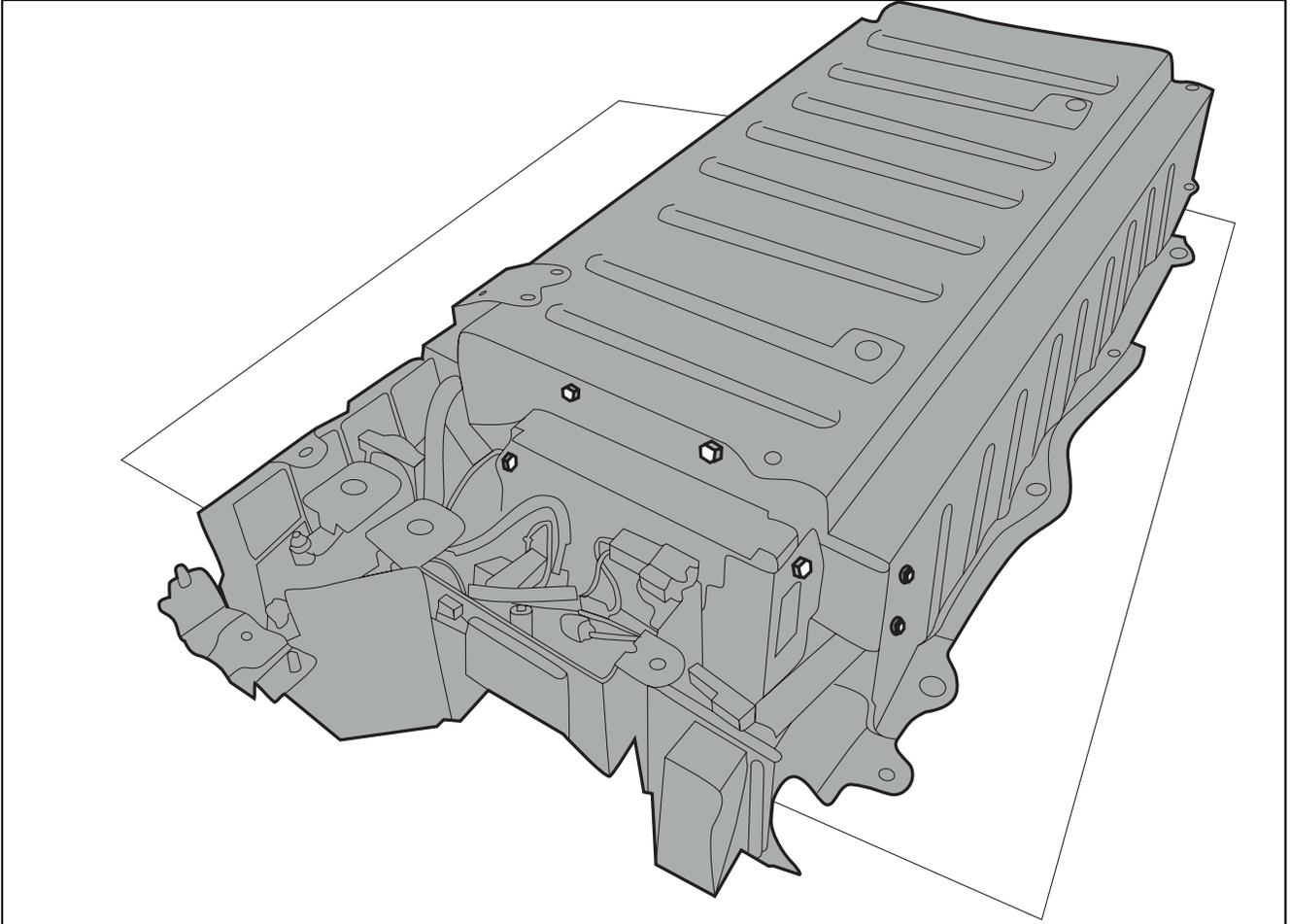
END OF PHASE 2

GOOD TIME TO TAKE A BREAK...

54

RE-INSTALL TOP BATTERY PLATE COVER

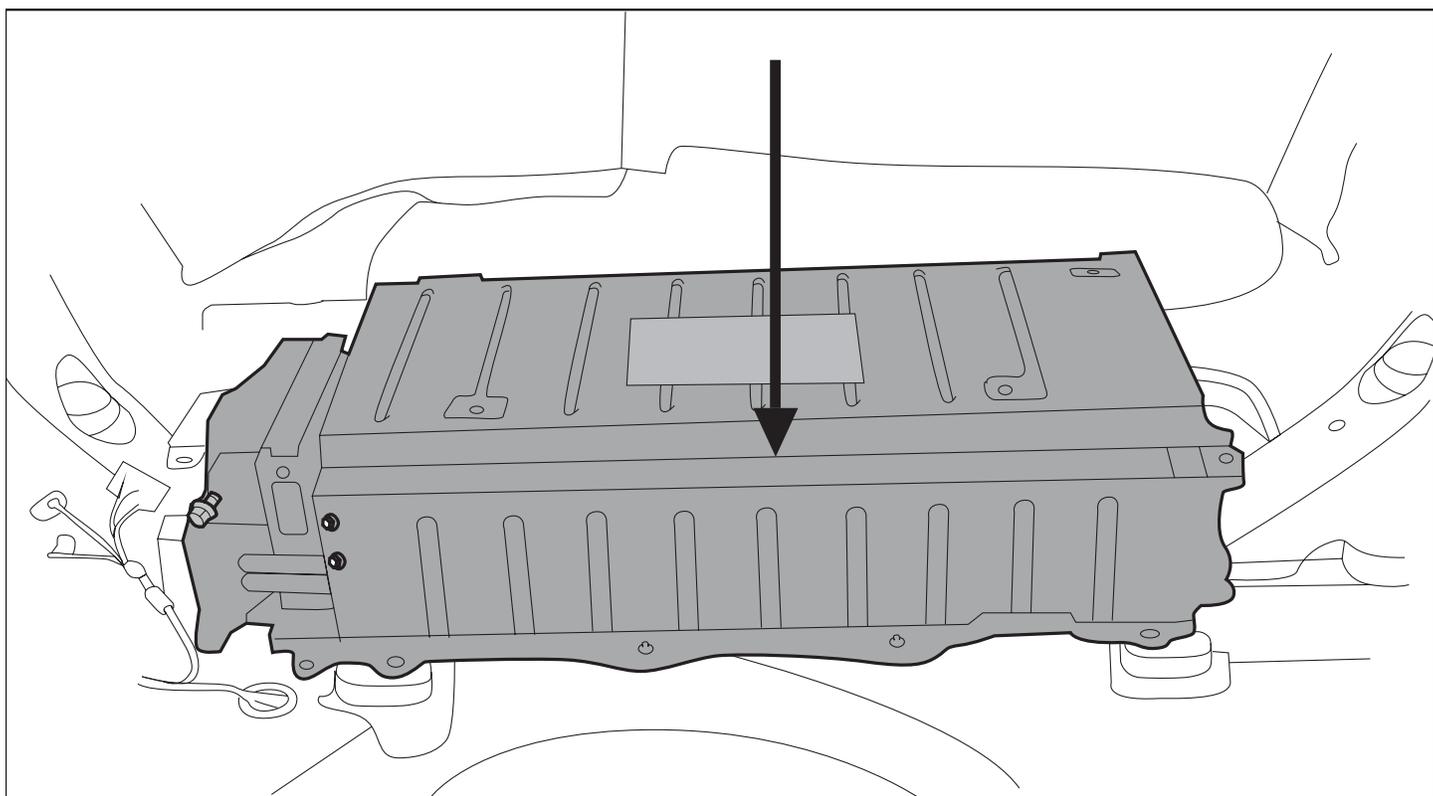
Re-install the top battery plate cover that was removed earlier in (29).



PUT IT BACK IN THE CAR!

55

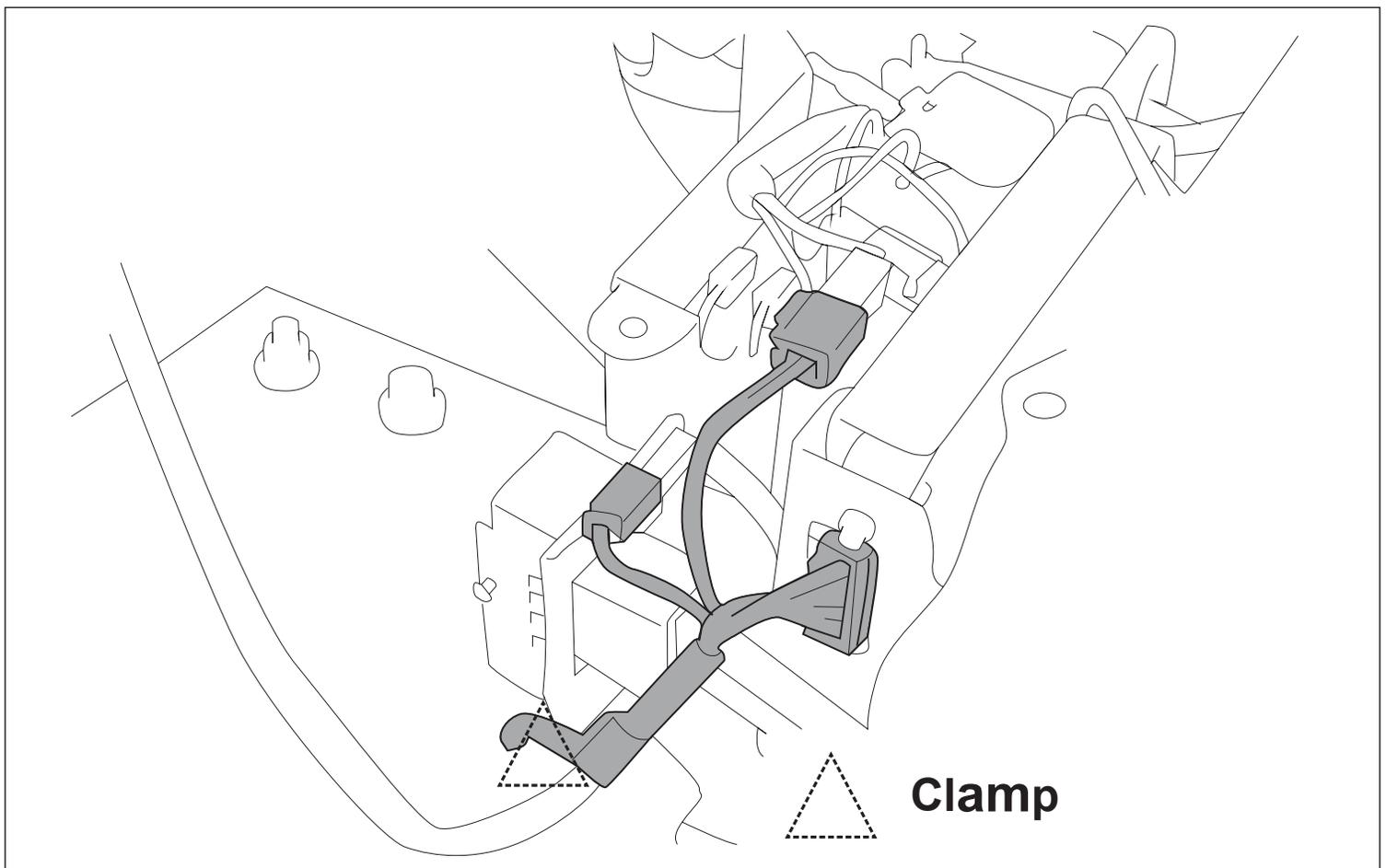
Put the entire HV Battery assembly back into the vehicle.



56

RECONNECT THE WIRING

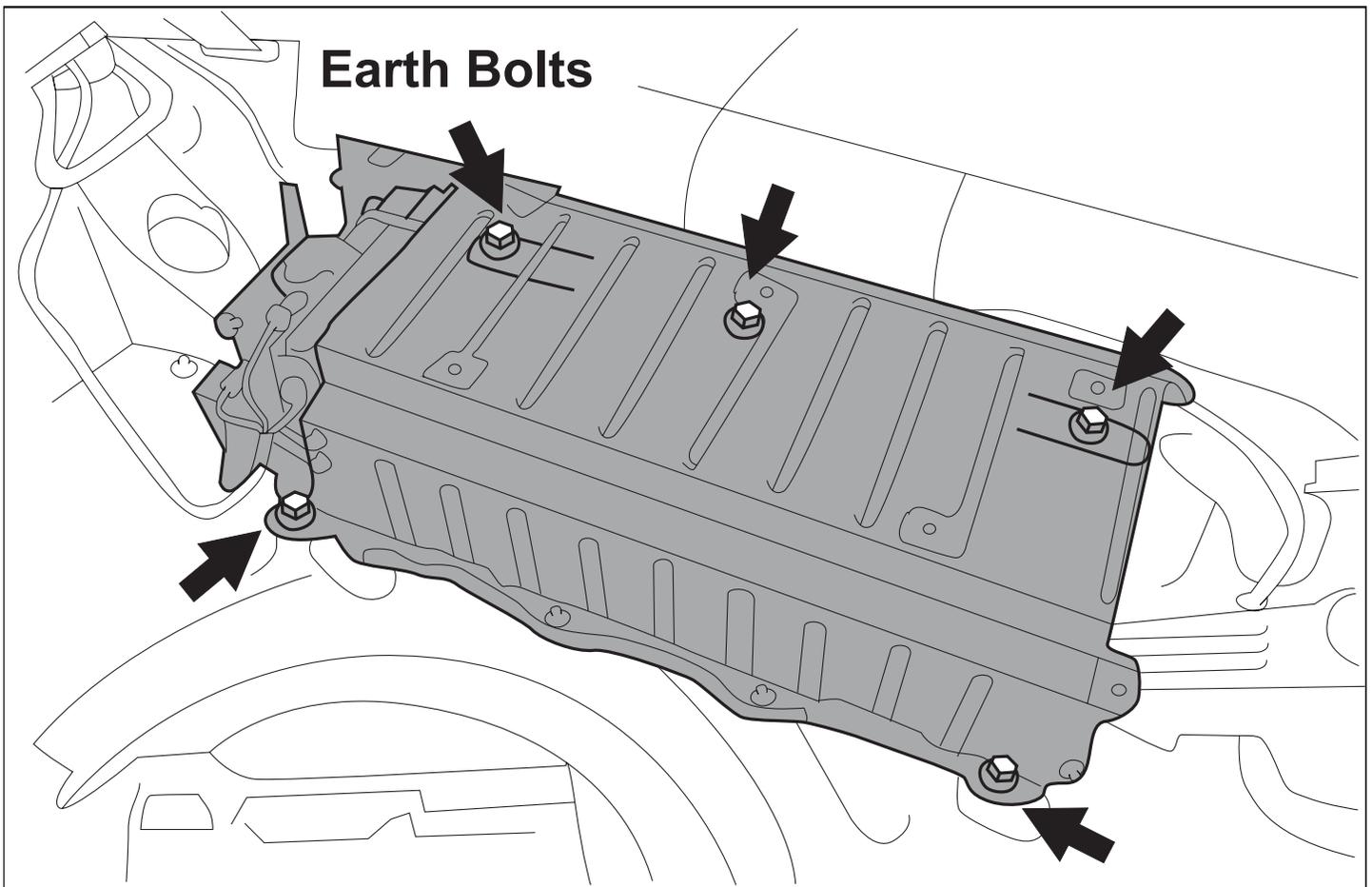
Connect the main relay wiring, and ECU wiring still in the vehicle.



TIGHTEN HV BATTERY ASSEMBLY TO VEHICLE

57

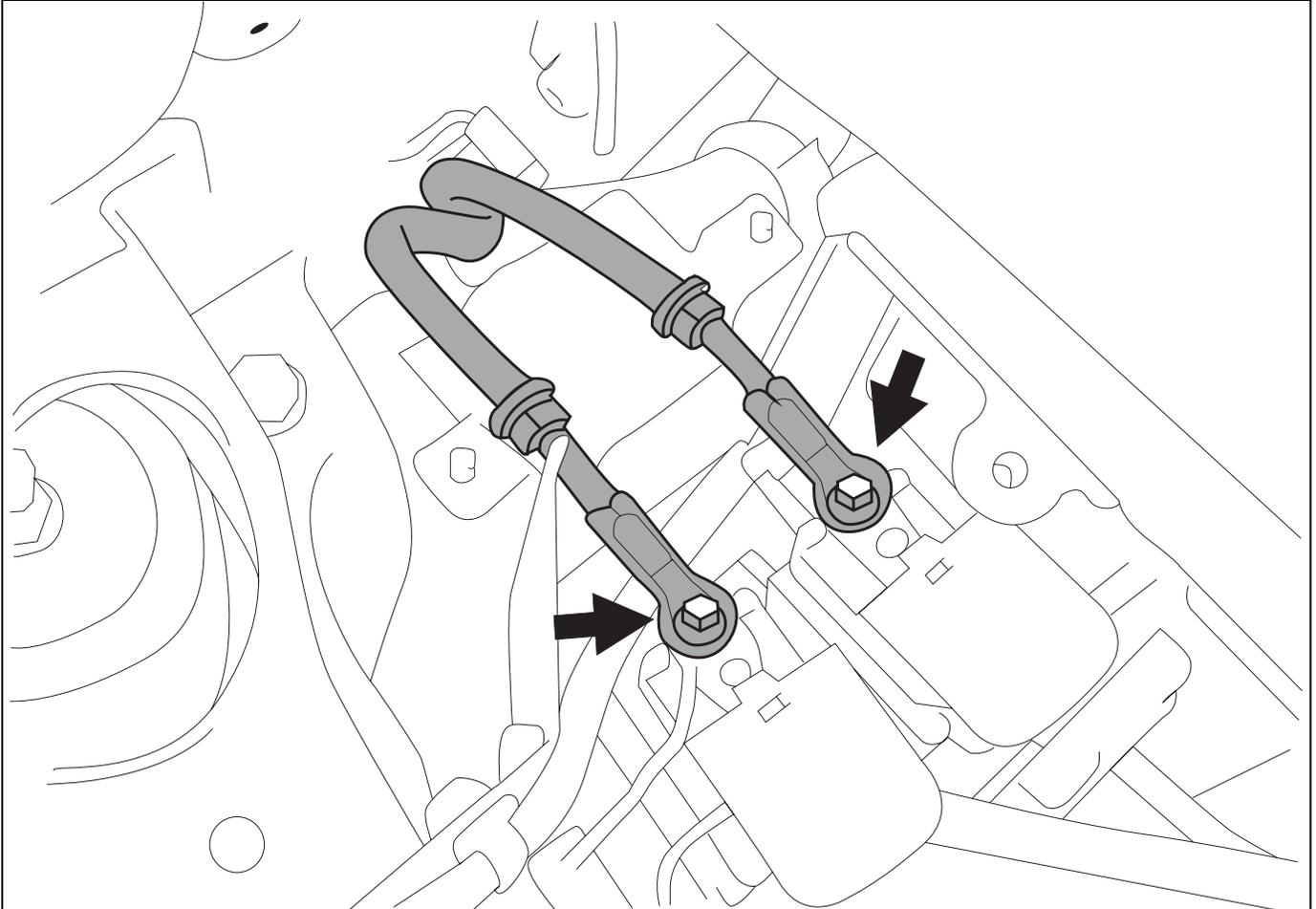
Tighten the grounding bolts as shown in the figure below.



58

CONNECT MAIN WIRING

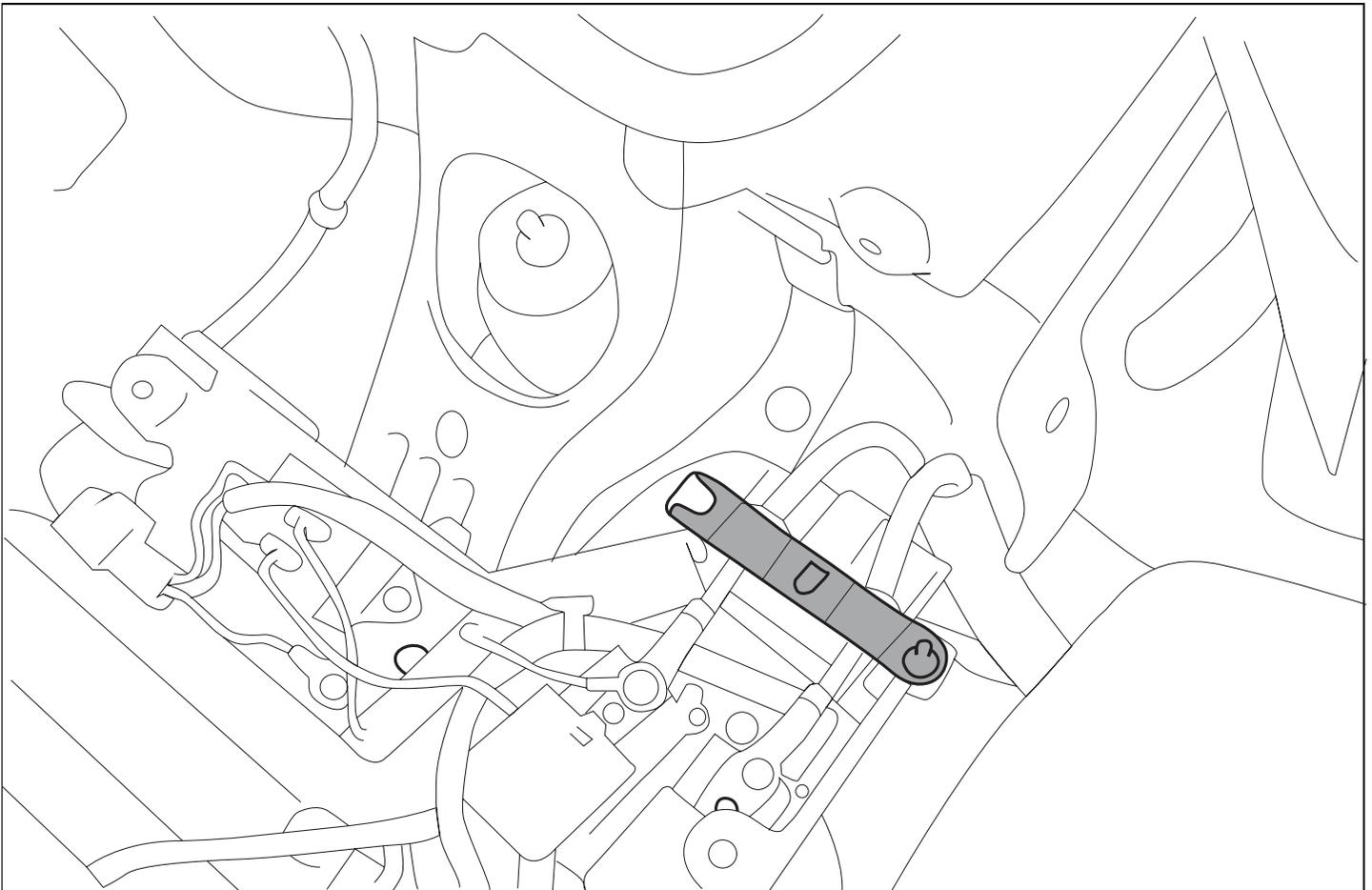
Connect the main wiring from the vehicle's internal wiring to the HV Battery Pack as shown with the original nuts.



CONNECT HV ISOLATION BAR

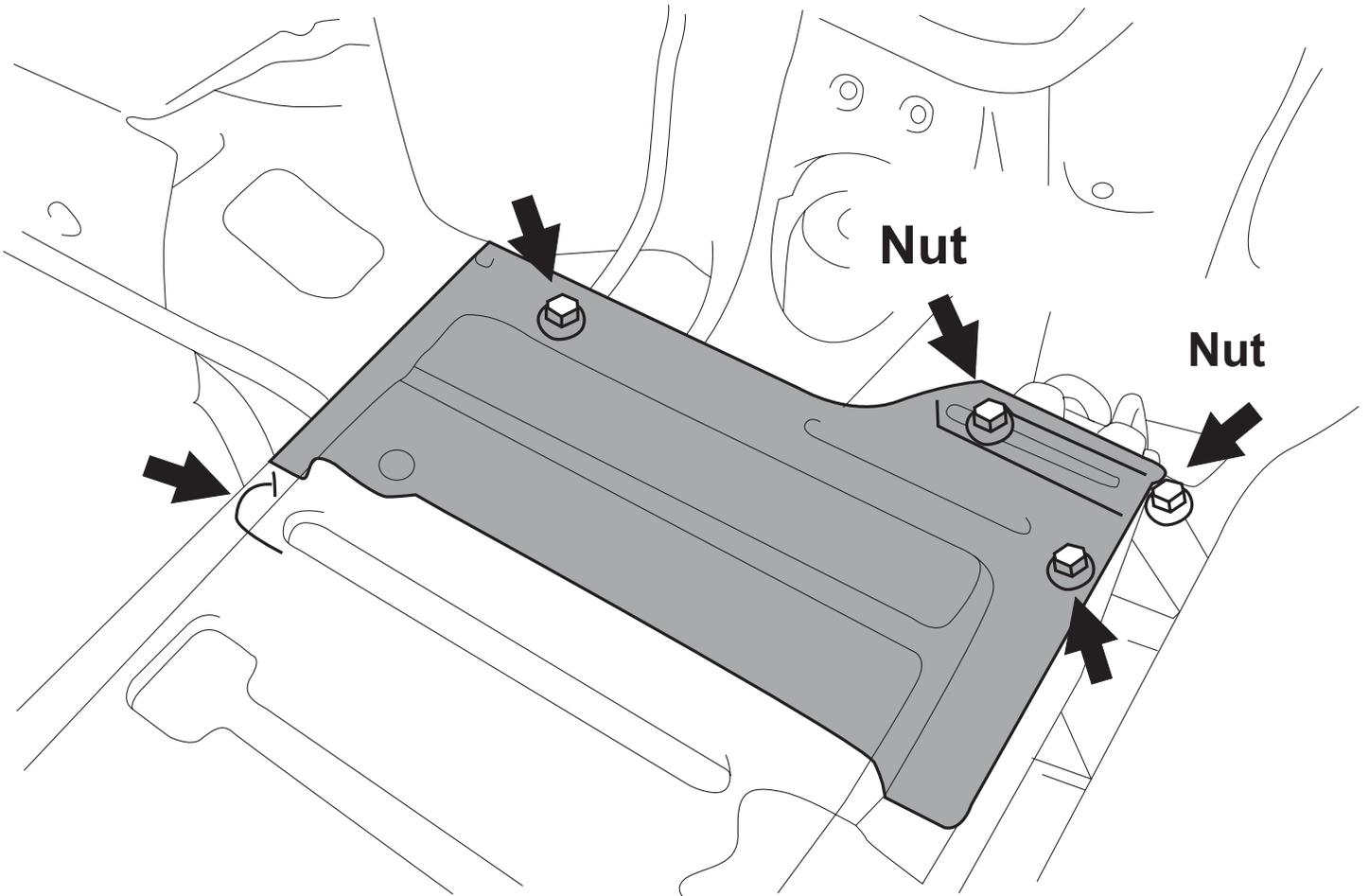
59

Lay the metal plate across the High Voltage Shielding Isolation area. The shape of this metal plate is weird yet important. If this plate does not make proper contact with the metal enclosure, you will get HV Isolation Faults and the car may refuse to READY along with the Red Triangle of Death. So take care with this metal plate.



60

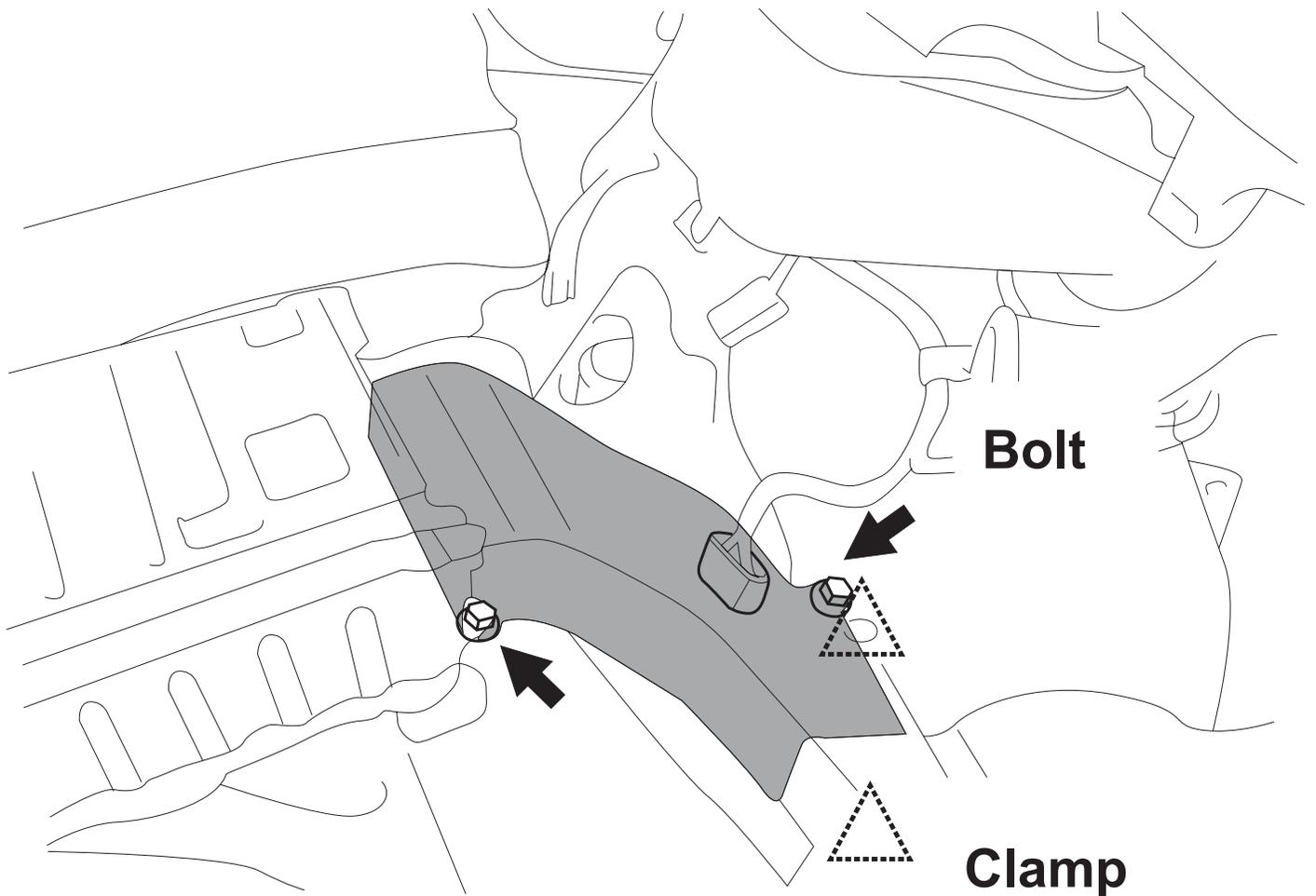
ATTACH BATTERY PLATE



ATTACH PLASTIC VENT DUCT

61

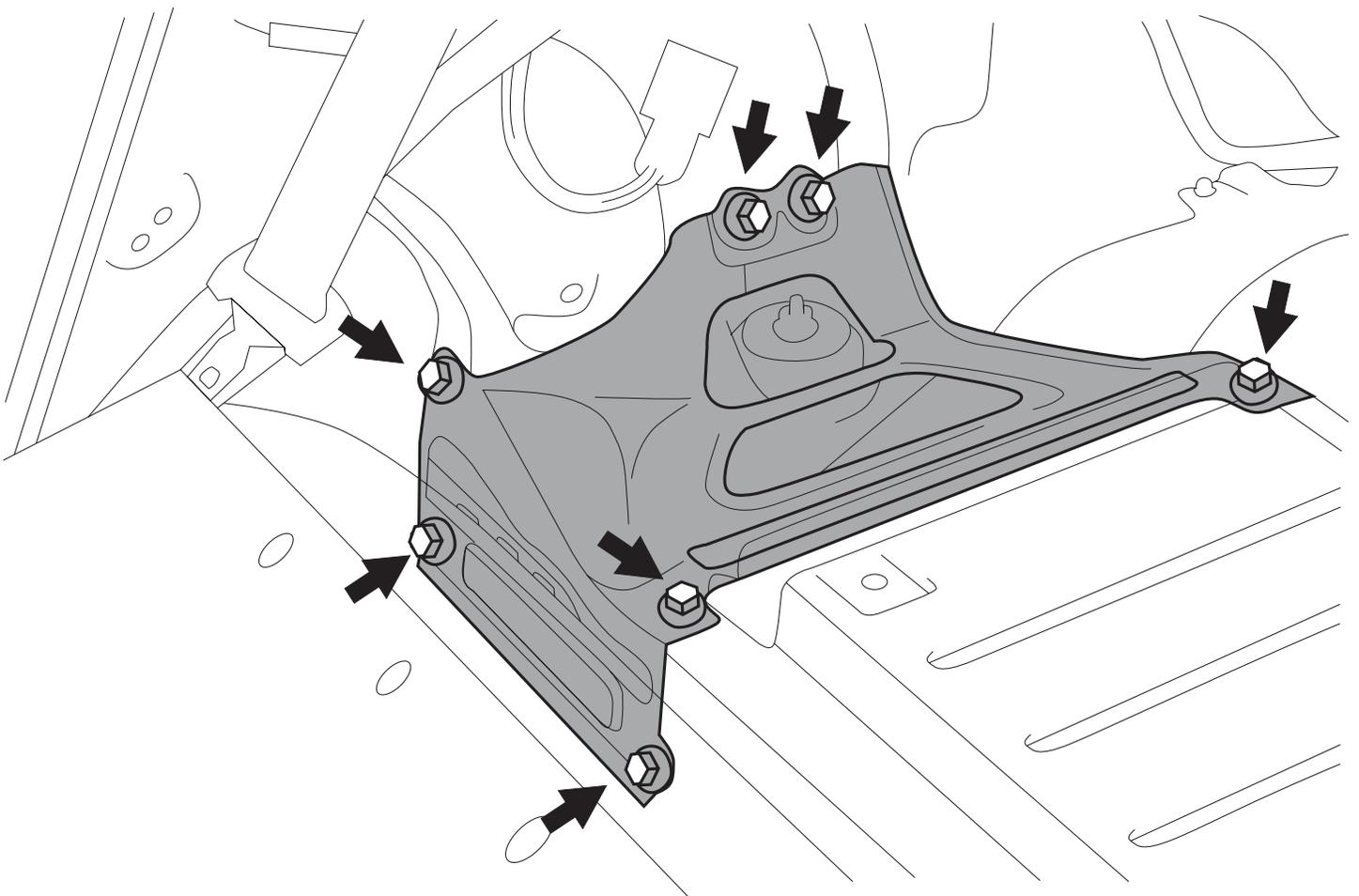
Insert the plastic vent duct into the HV Battery assembly. Attach with the original bolts.

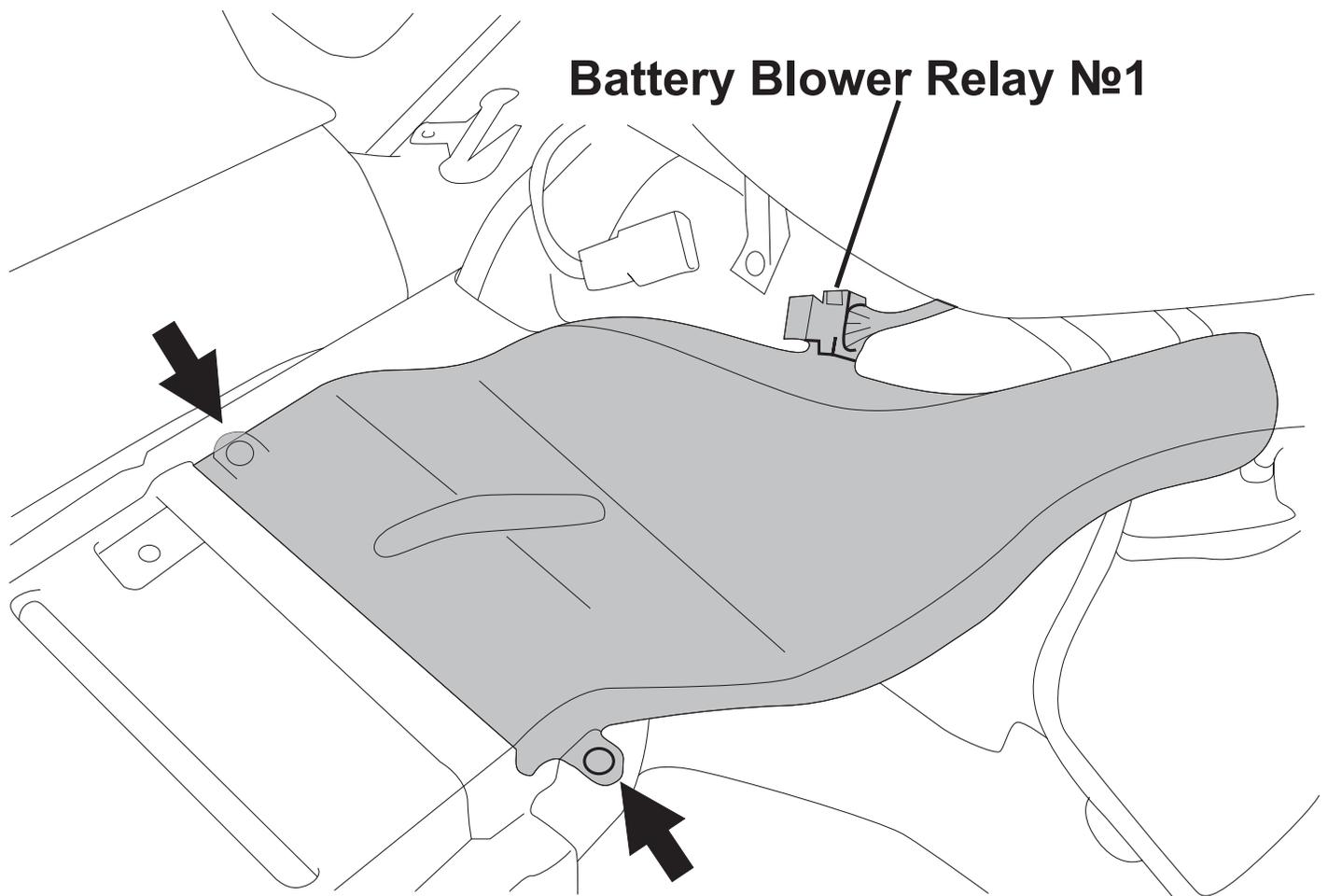


62

ATTACH SECOND BATTERY PLATE

Tighten the 7 bolts that hold the battery plate.

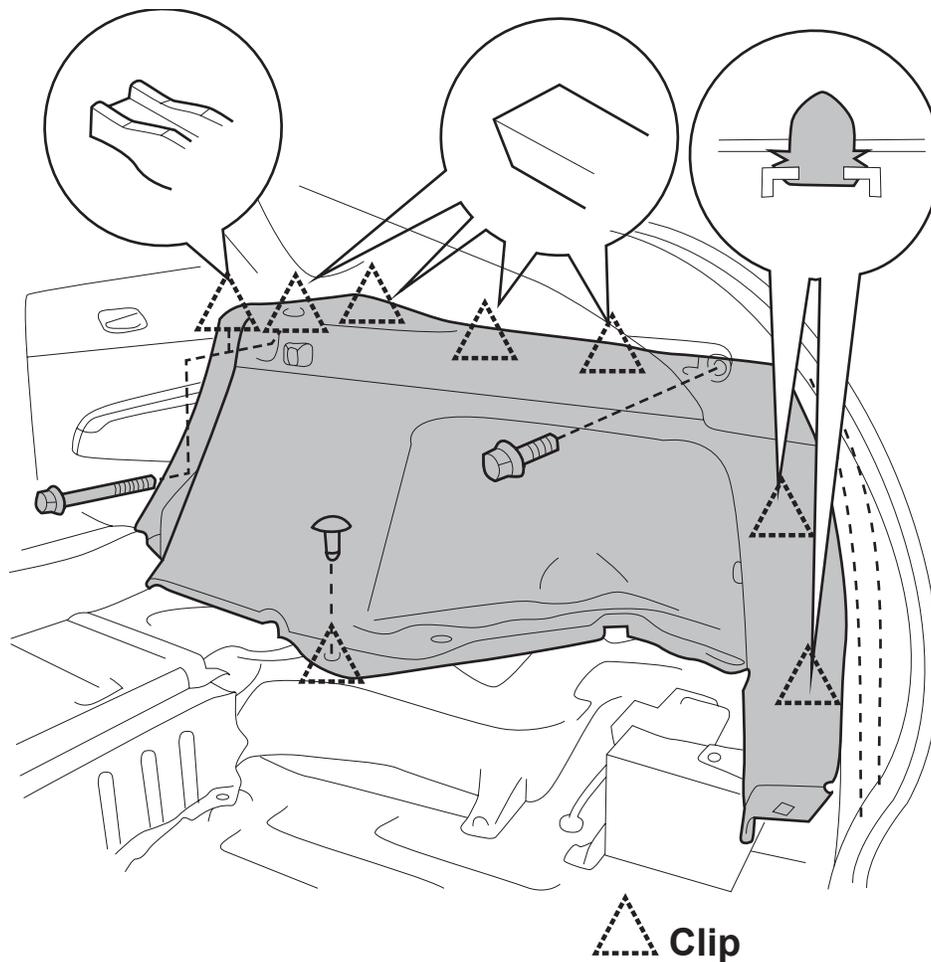




64

INSTALL THE PASSENGER INTERIOR TRIM PANEL

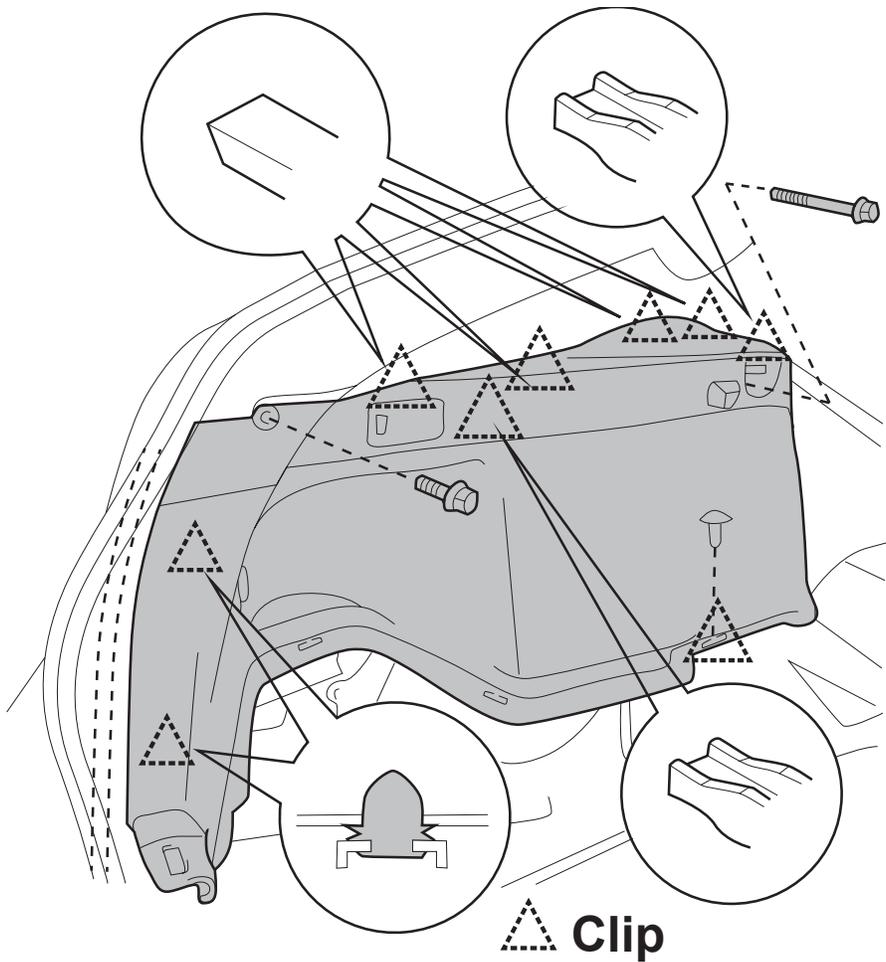
Install the interior trim panel as the reverse of the removal.

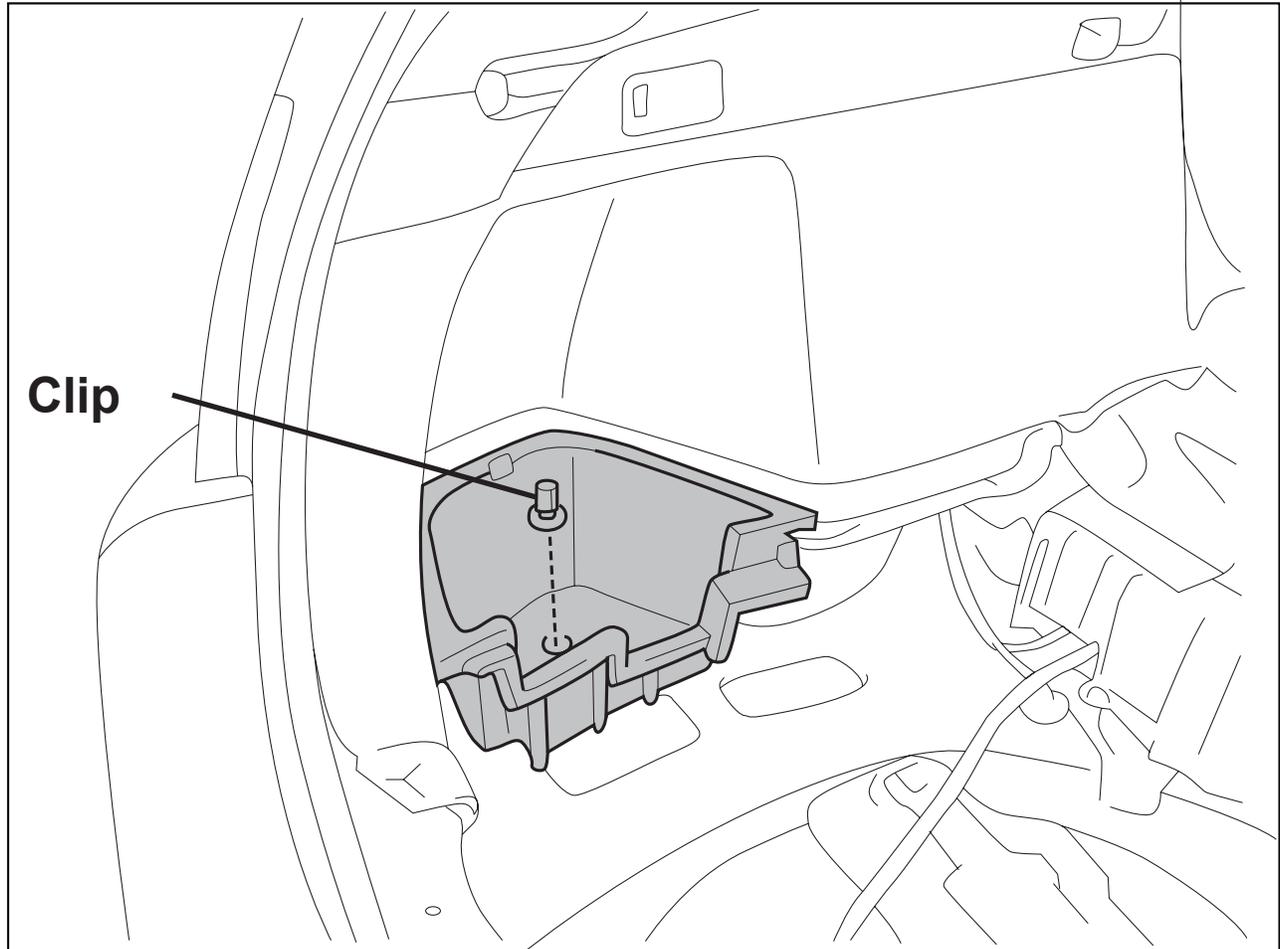


INSTALL THE DRIVER INTERIOR TRIM PANEL

65

Install the interior trim panel as the reverse of the removal.

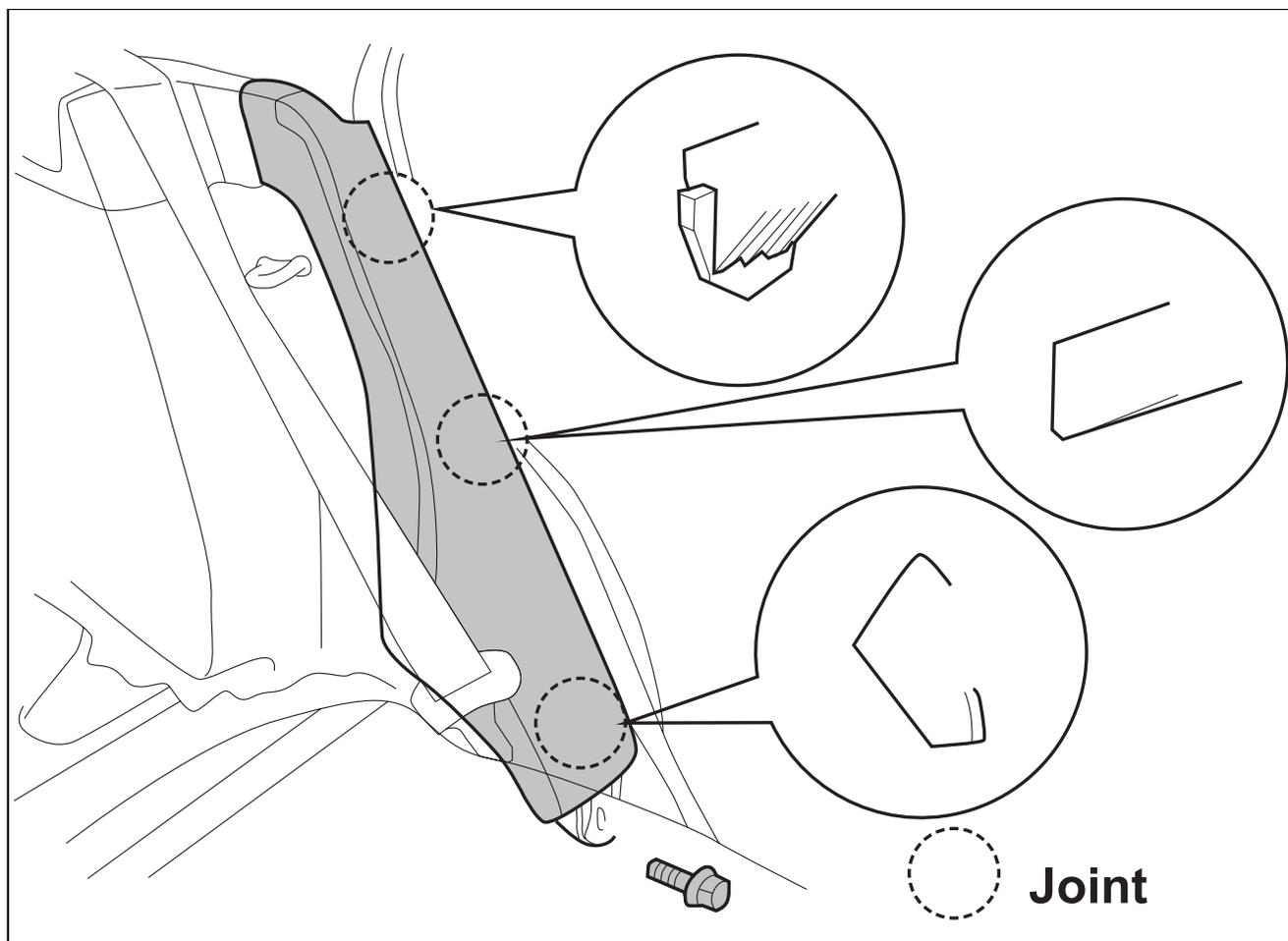


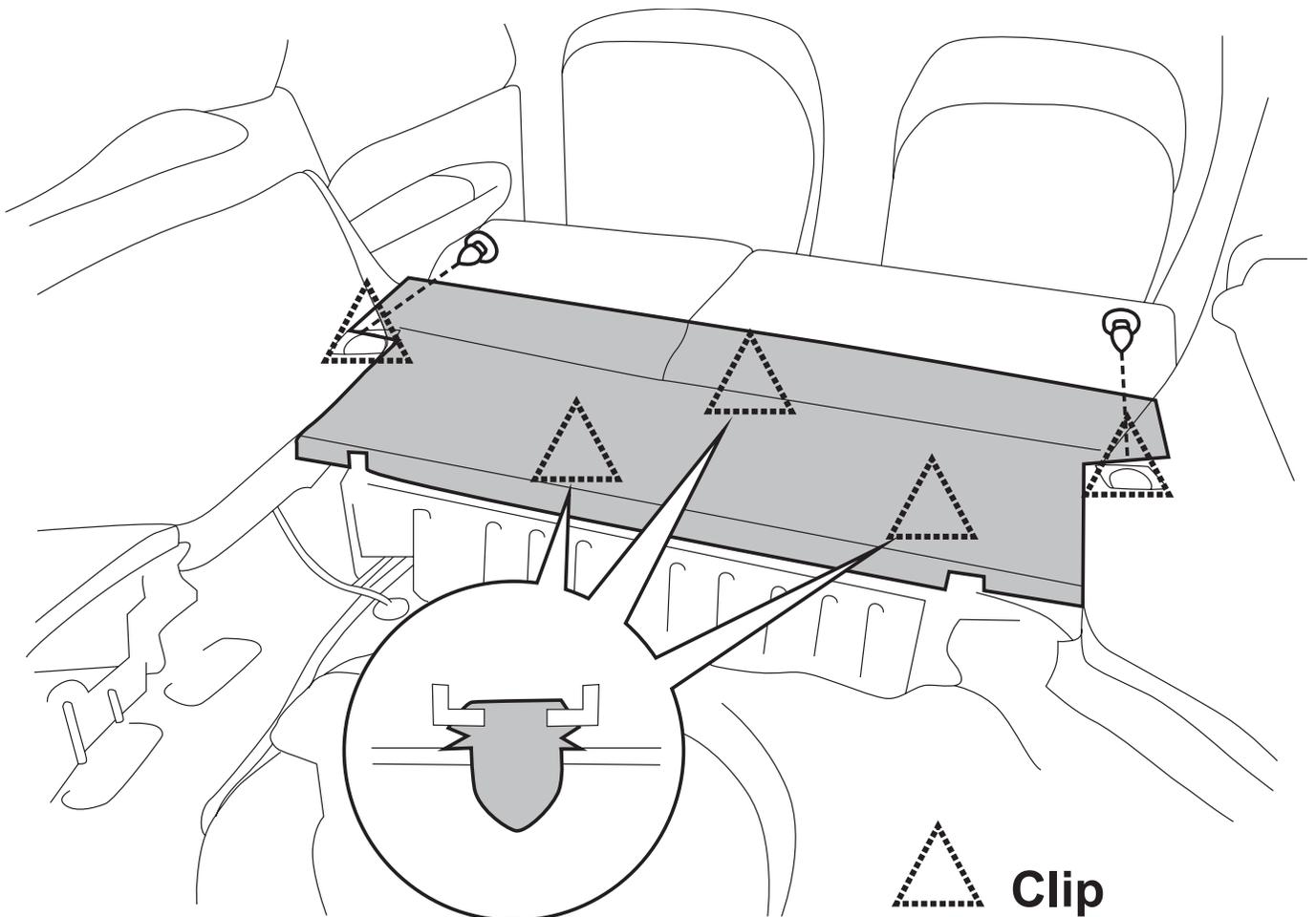


REINSTALL DRIVER SIDE PLASTIC TRIM PANEL

67

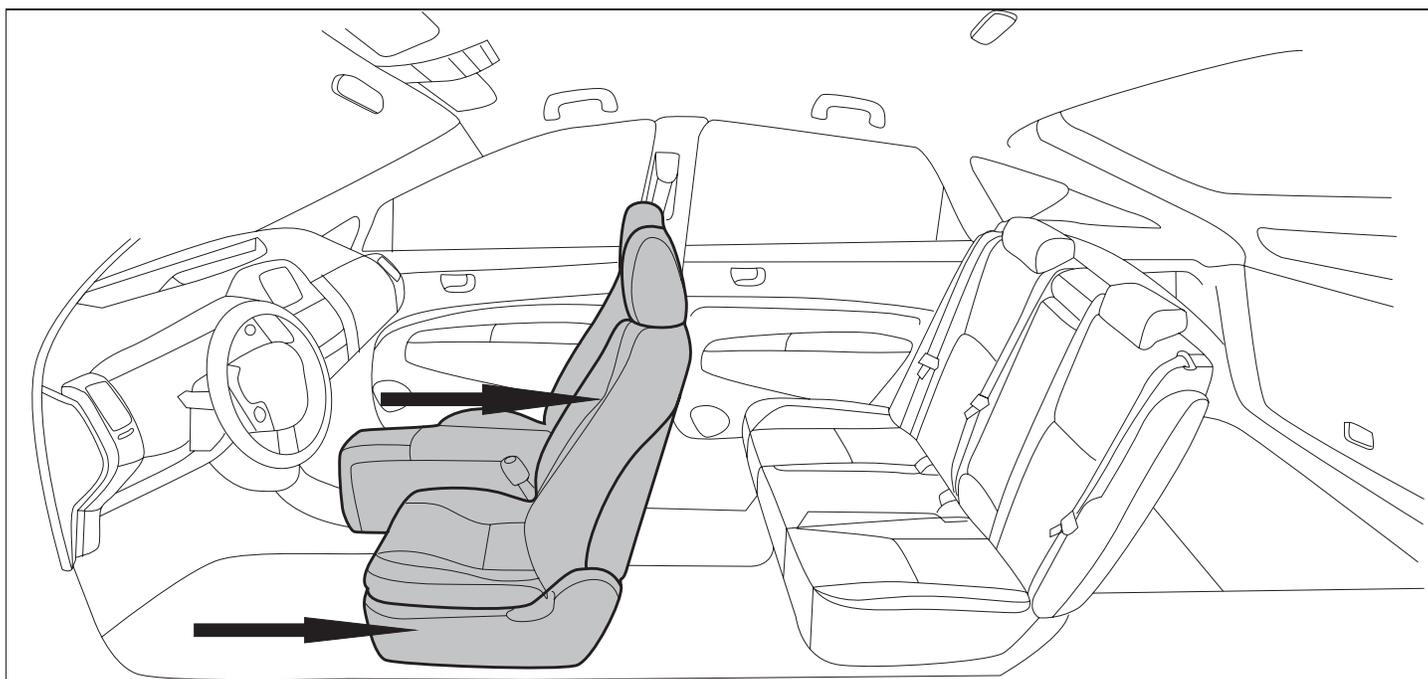
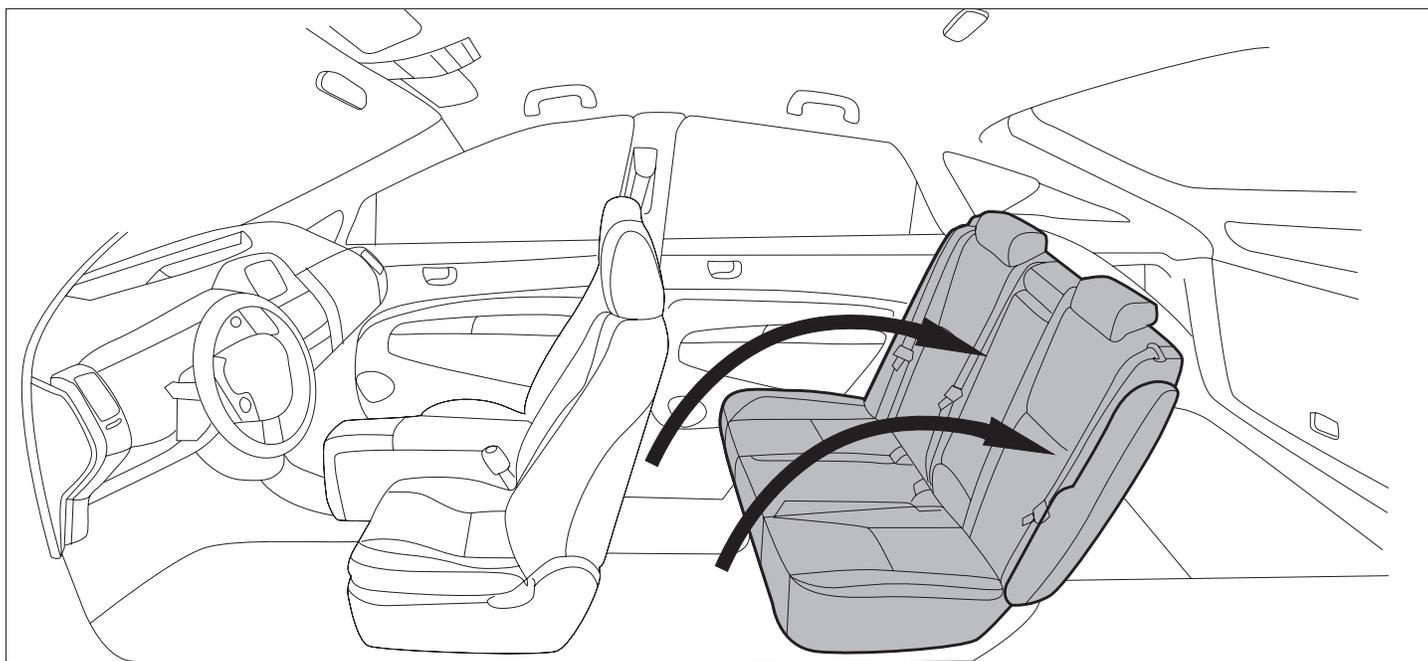
Attach via the 3 clips and 1 bolt. Again remember that if you drop the bolt down into the void, it will be lost forever. So take your time and be very careful.





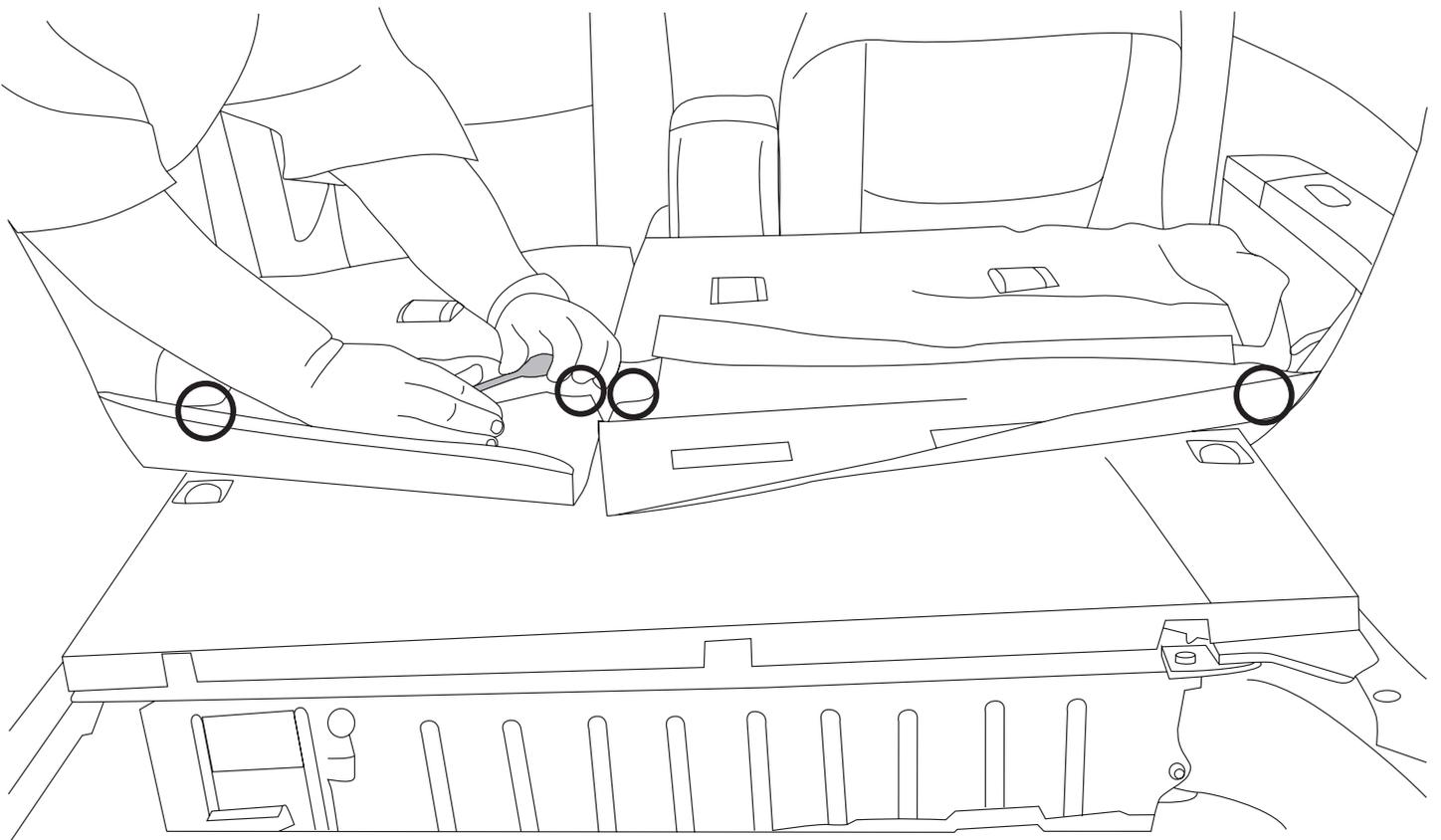
FLIP BACK UP REAR SEATS

Flip the rear seats back up. At this point you can also move your front seats backwards to where you like them.

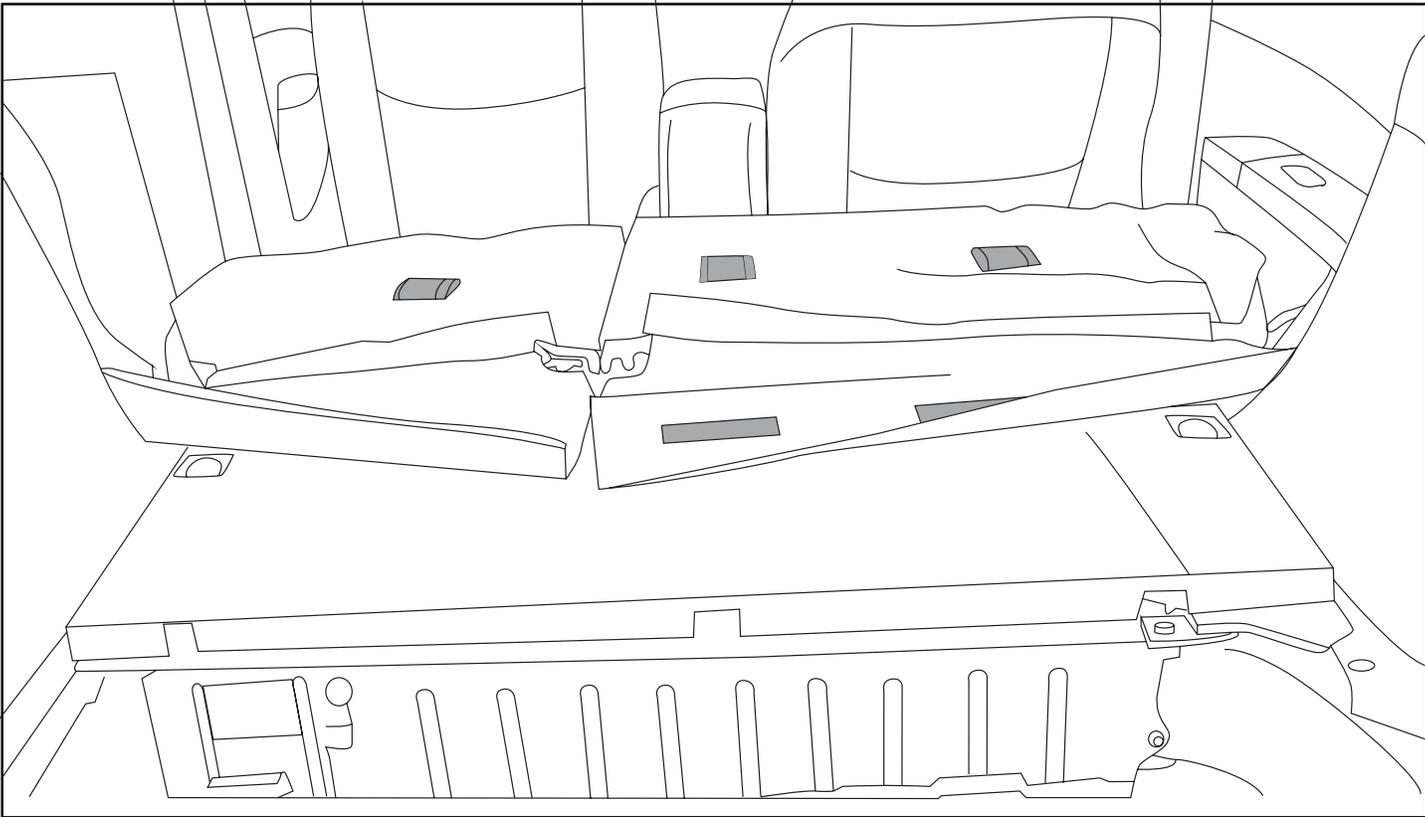


70

REINSTALL REAR SEAT BACKS

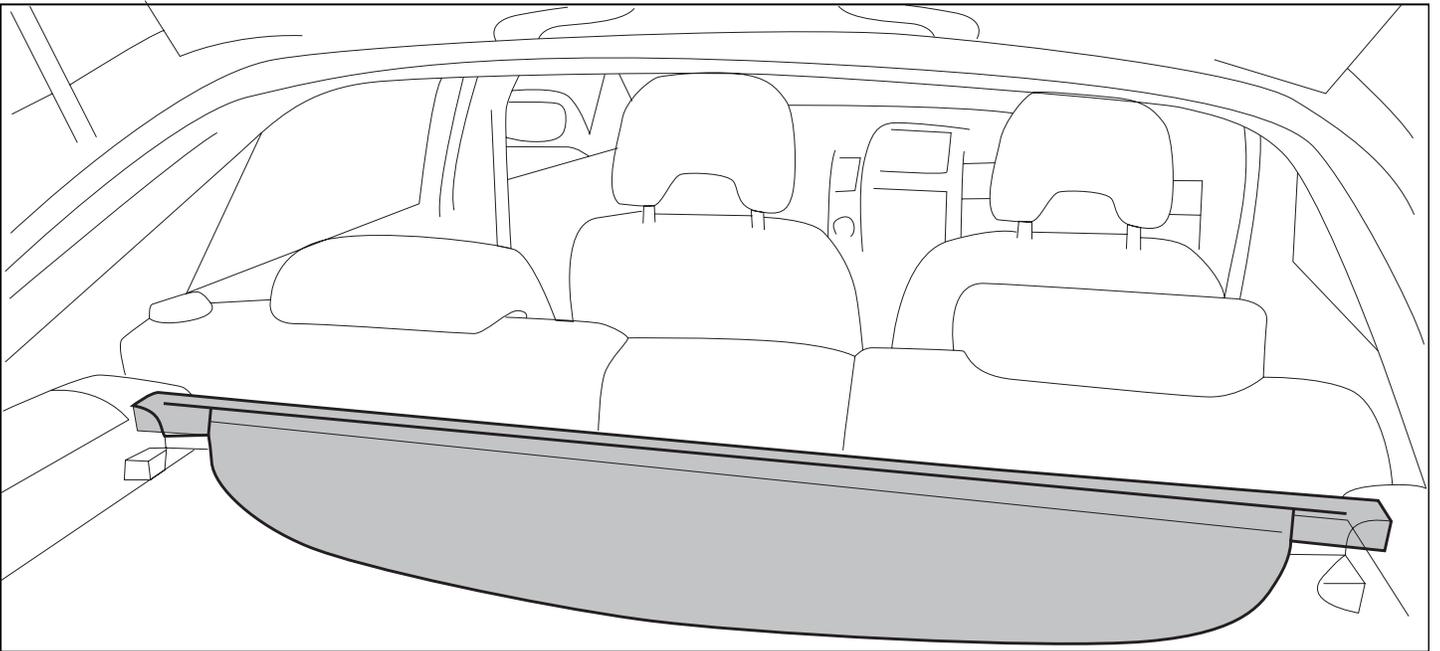


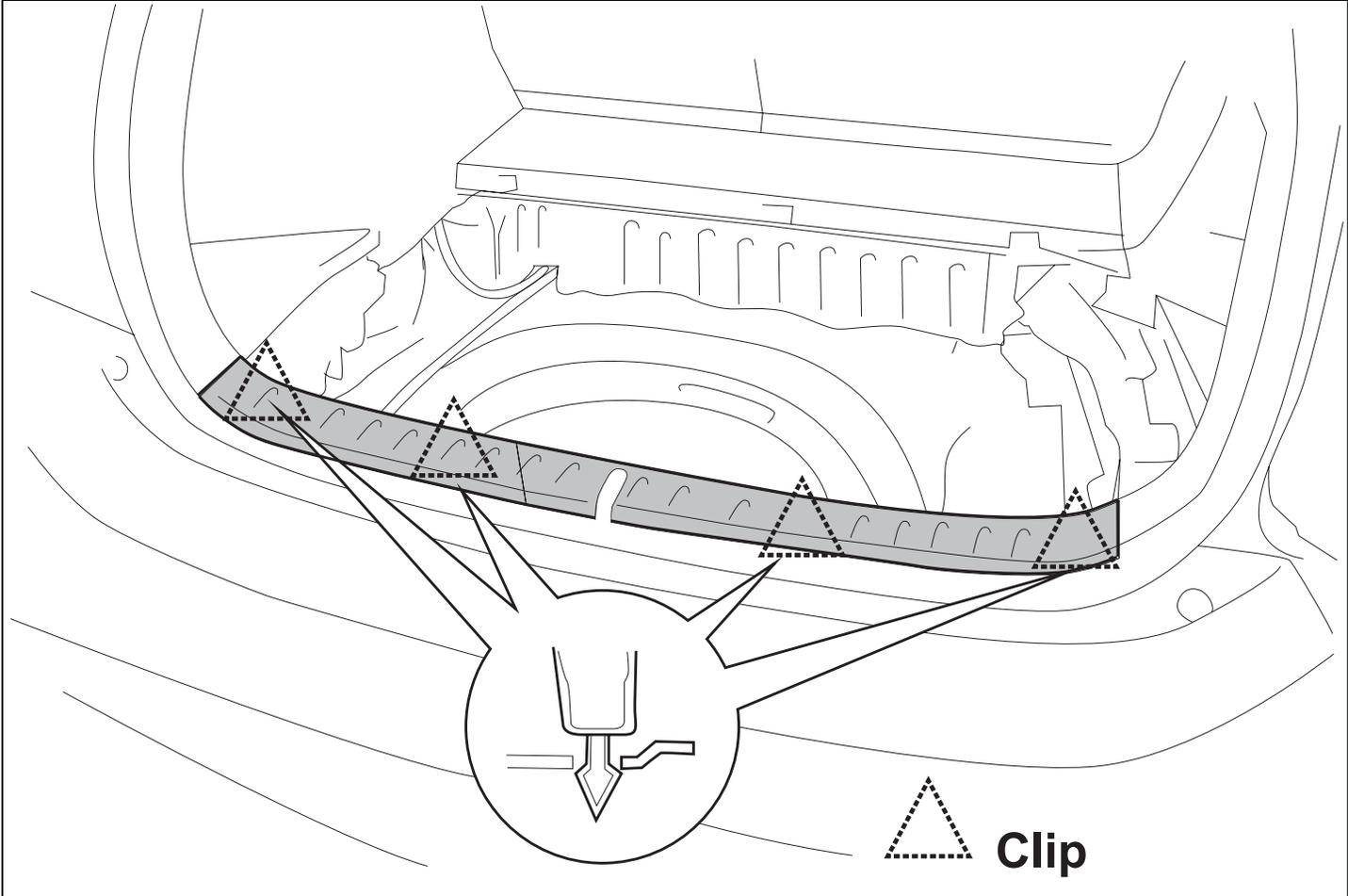
REATTACH THE VELCRO



72

REINSTALL COVER



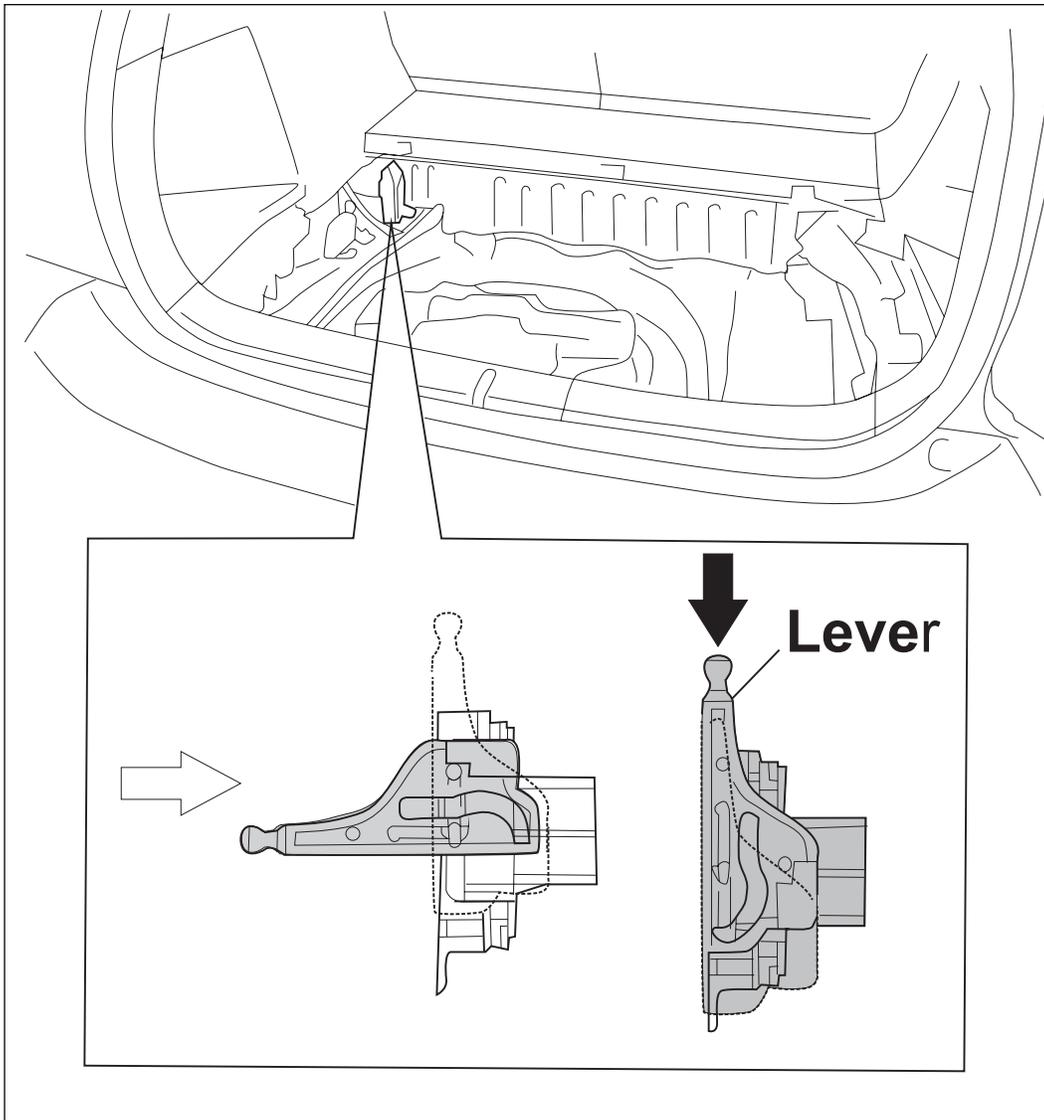


74

INSTALL SAFETY DISCONNECT SWITCH

CAUTION CAUTION CAUTION CAUTION CAUTION

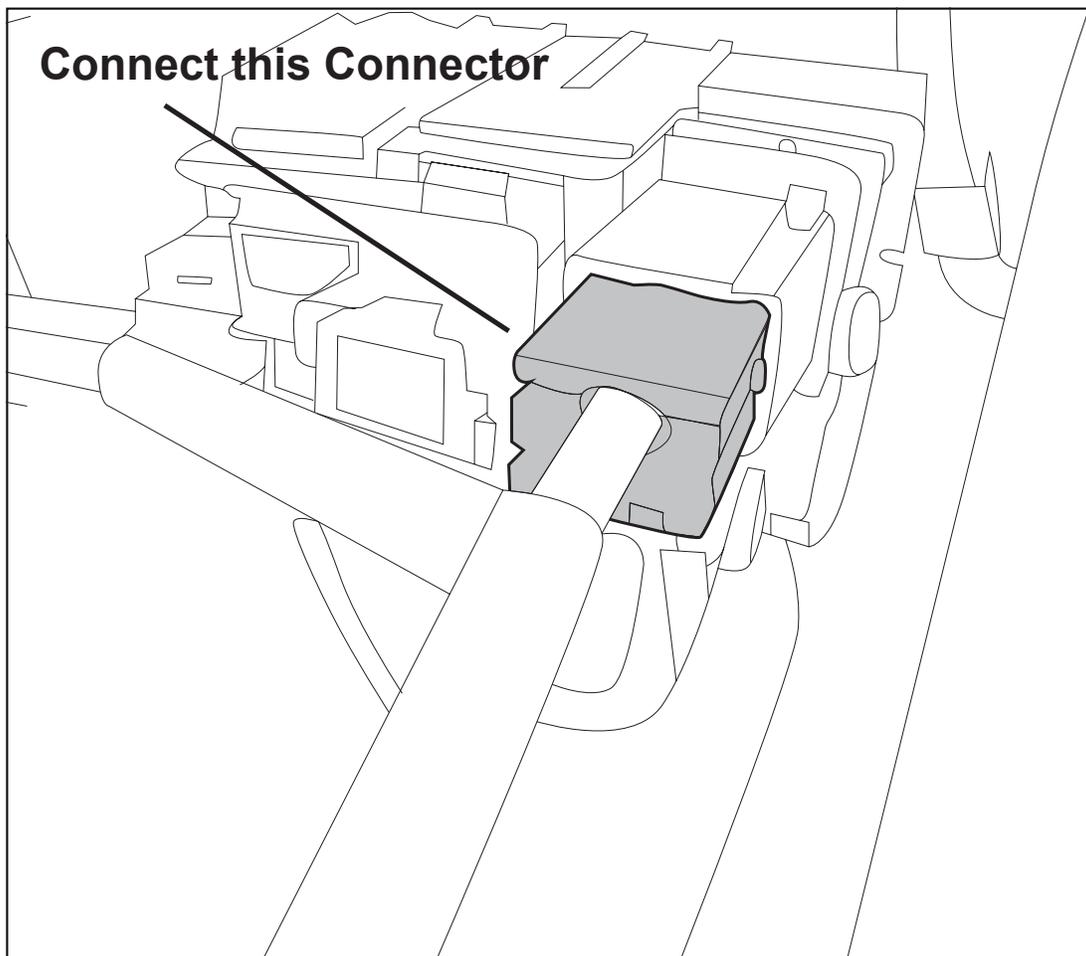
Push the plug straight in. Rotate the lever upwards 90 degrees. Then push the lever handle down completely until it clicks.



ATTACH 12V AUX BATTERY CABLE

75

Insert the plug into the receptacle and make sure that the retention tab snaps into place. If the connector does not mate properly it may come loose over time.

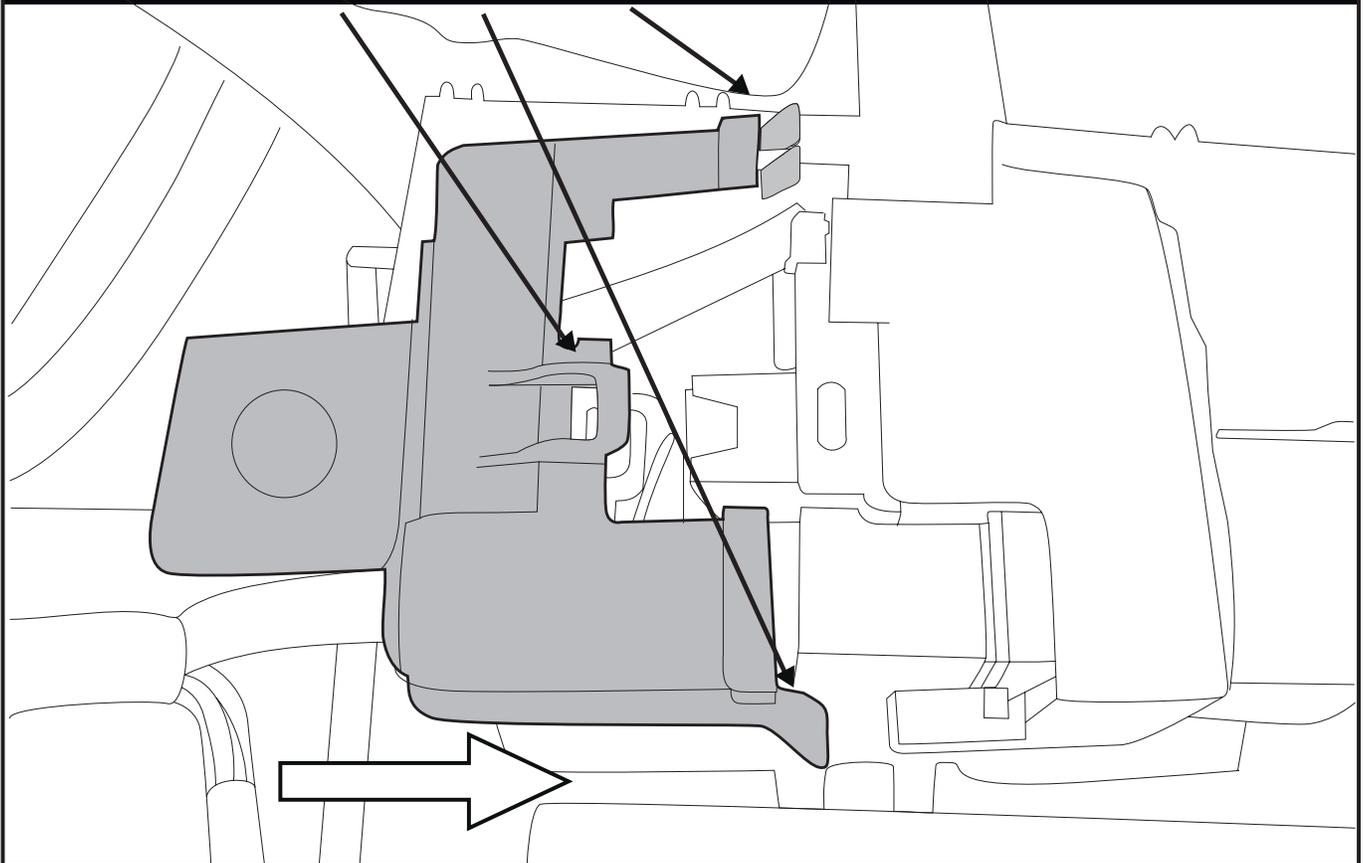


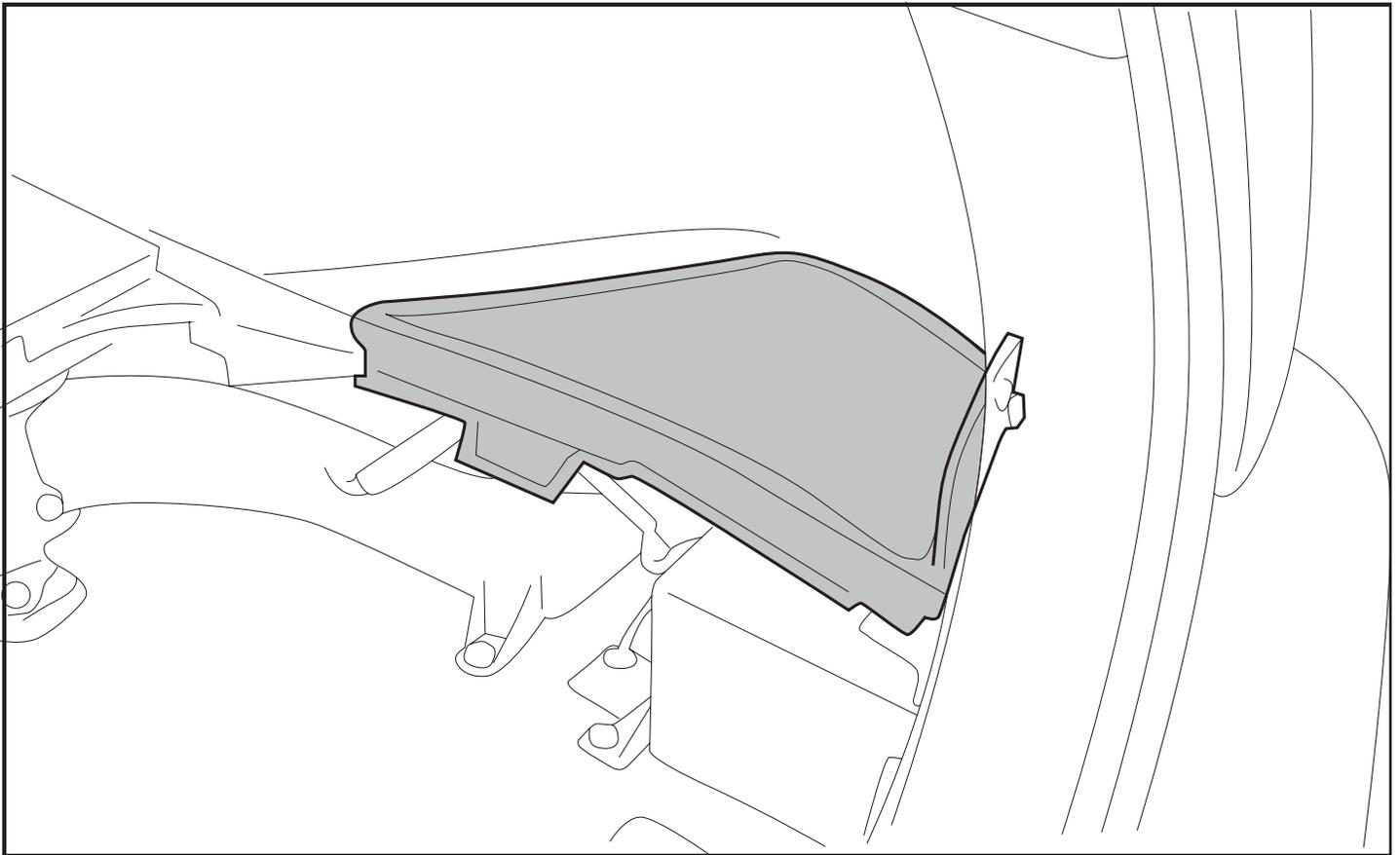
76

ATTACH 12V AUX BATTERY CONNECTOR COVER

Make sure the 3 clips clasp into place.

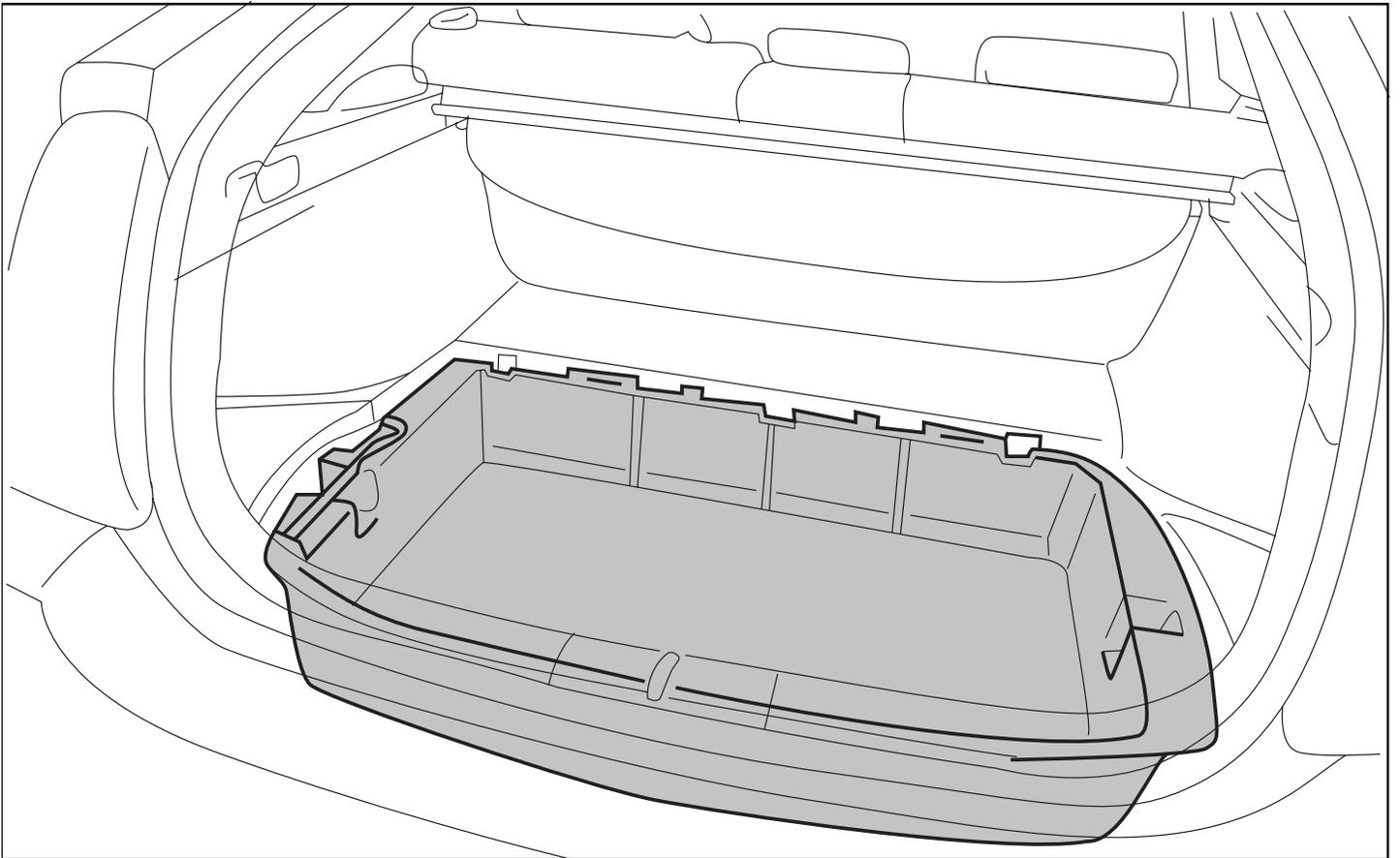
Close the cover, then make sure that 3 tabs are closed

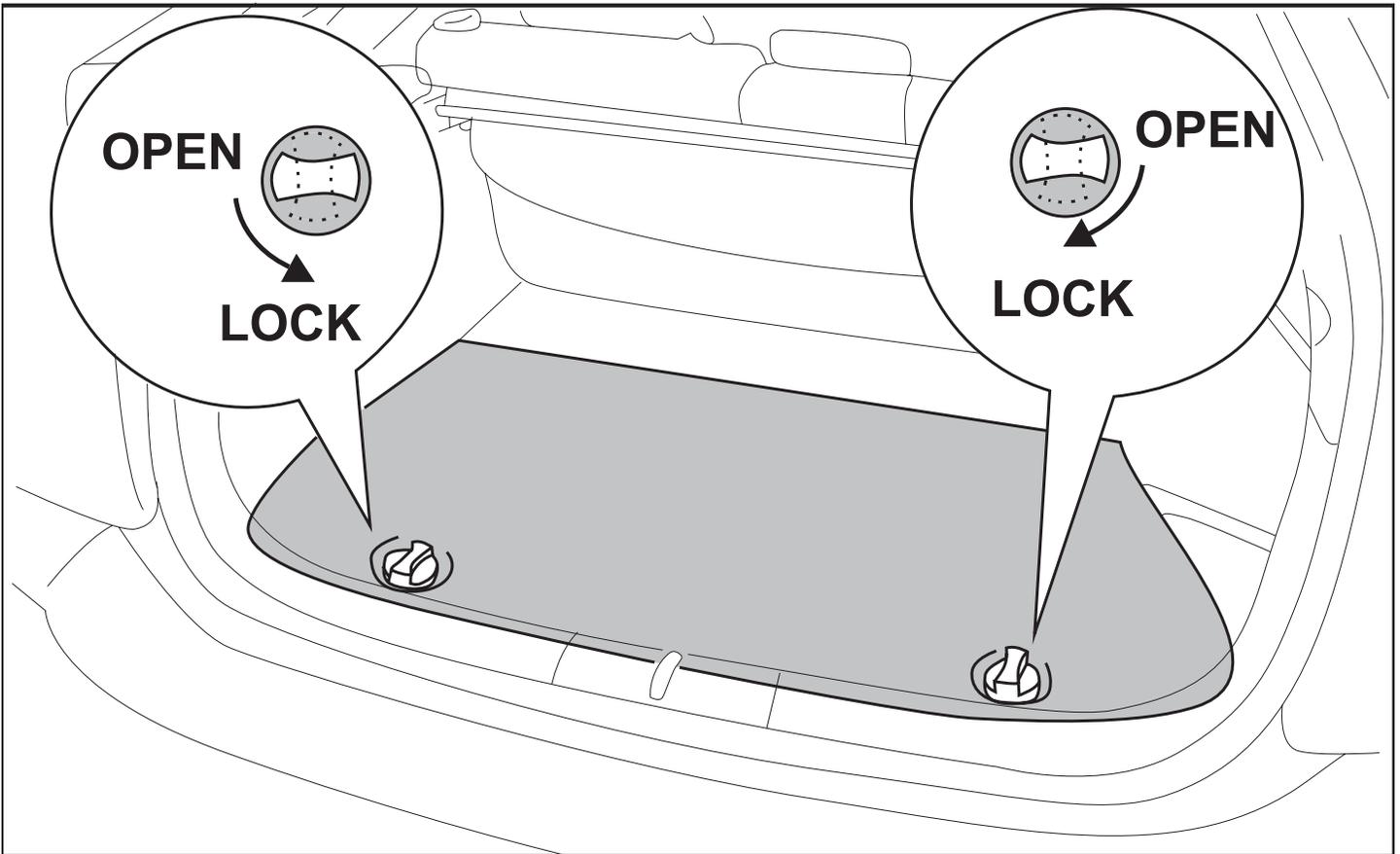




78

INSERT FALSE FLOOR TRAY

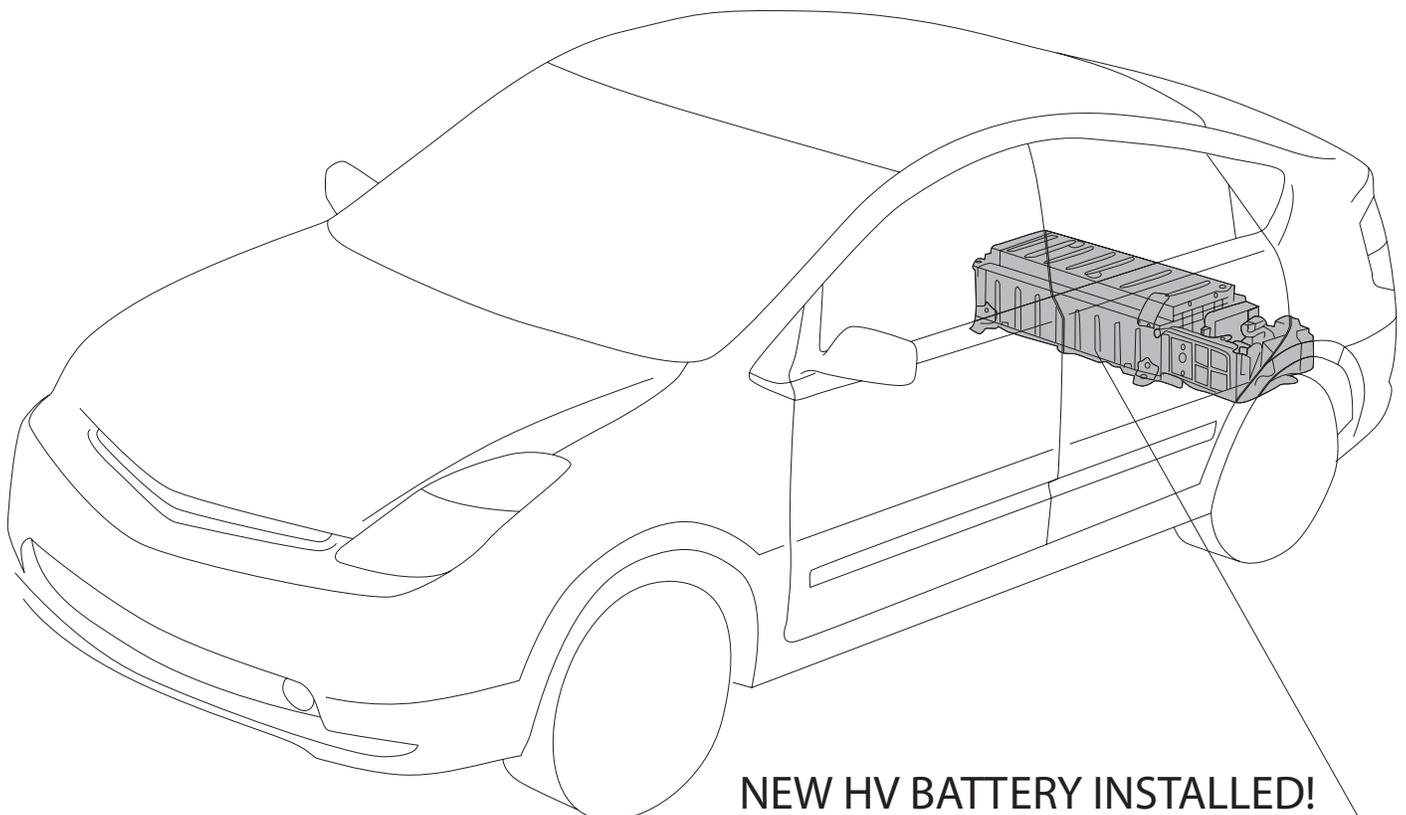




YOUR PACK IS NOW FULLY INSTALLED!

YOU SHOULD NOW BE ABLE TO READY THE PRIUS. YOU MAY STILL HAVE WARNING LIGHTS (DEPENDING ON HOW LONG THE 12V BATTERY WAS DISCONNECTED). USE AN OBDII TOOL TO CLEAR THE STORED CODES AND REBOOT THE CAR.

NO CODES SHOULD REAPPEAR. IF THE RT0D REAPPEARS AFTER INSTALLATION, READ THE CODES FOR TROUBLESHOOTING. GOOGLE THE CODES FOR HINTS. THE MOST COMMON MISTAKES ARE THE SAFETY DISCONNECT PLUG NOT BEING SEATED PROPERLY AND THE HV ISOLATION METAL STRIP BEING DEFORMED. EMAIL US FOR MORE HELP. WE ALSO RECOMMEND POSTING TO AN ONLINE PRIUS FORUM SUCH AS PRIUSCHAT.COM FOR GROUP HELP.



NEW HV BATTERY INSTALLED!

END OF PHASE 3

RELAX AND ENJOY YOUR LIKE-NEW PRIUS!

