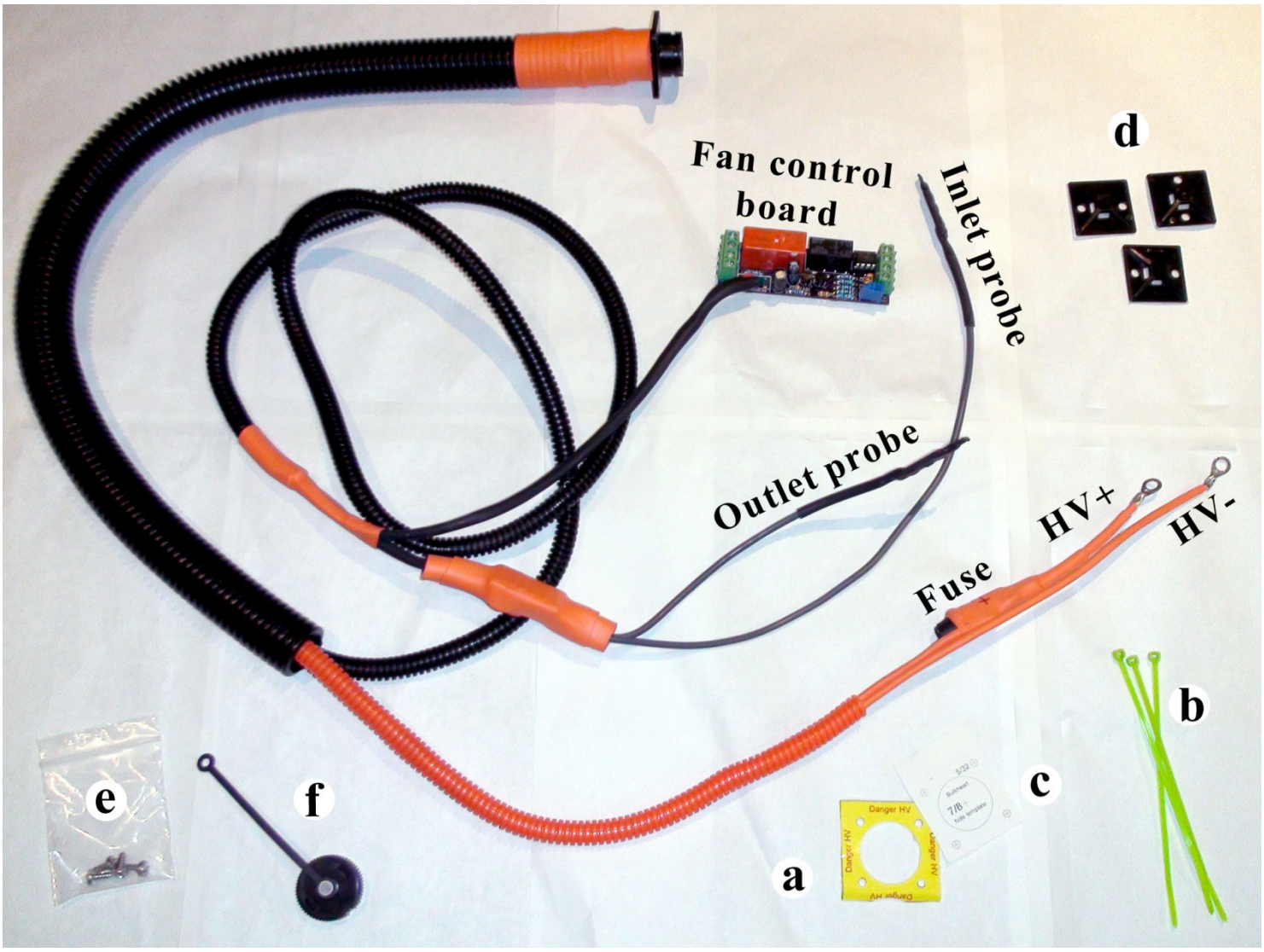
Installing the Hybrid ReVolt Universal grid charger in a 2004 – 2009 Toyota Prius



This harness kit includes:

Toyota Prius harness (2004 to 2009)

(a) HV warning label
(b) 3 zip ties
(c) Drill template
(d) 3 self adhesive pads
(e) 4 #6 mounting screws for HV label / cover
(f) Charger connector cover

You will need the following tools and equipment:

Good pair of small wire cutters
Wire stripper
Metric socket set (8mm, 10mm, 12mm, and 14mm)
Wide flat blade screwdriver
Small flat blade screwdriver
Drill
5/32" drill bit (for bulkhead connector)* {*3/16" will also work*}
7/8" step drill bit
Glass cleaner or similar (non-residual cleaner)
Digital multi-meter (Radio Shack or Harbor Freight have inexpensive ones)

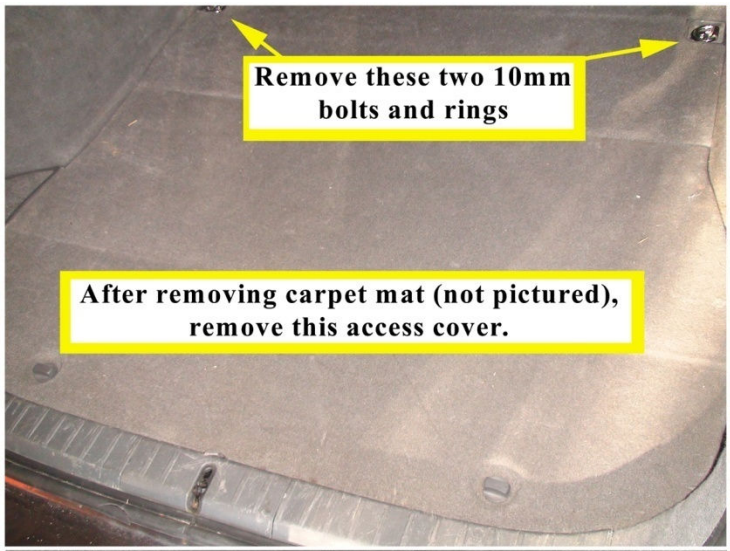
Instructions:

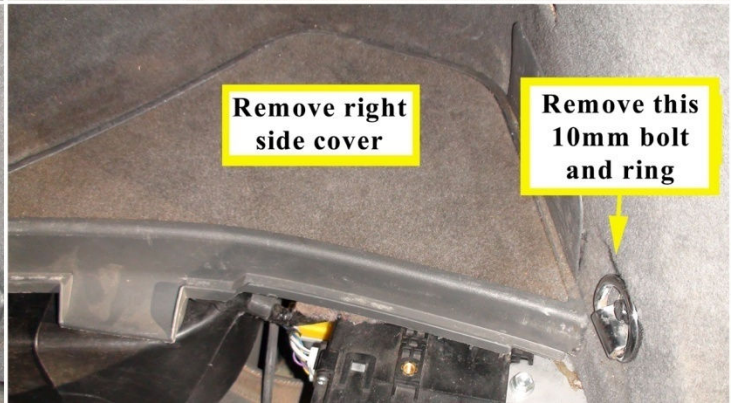
Note: All references to front, back, left, right, or top are in relation to the vehicle. A reference to the front of the pack would mean a location on the pack towards the front bumper, left would reference toward the driver's side, etc.

***WARNING:* The hybrid (traction) battery contains lethal voltage, even when the vehicle is off! *Install at your own risk*. You must evaluate your abilities to safely perform this installation and seek qualified help if you are not 100% certain in your abilities.**

Remove the rear trim.

Begin by removing the rear carpet mat (if equipped). Next remove the cover from the storage compartment. Remove the two side covers (1 each: left and right). Using a 10mm socket, remove the 4 ring tie downs.

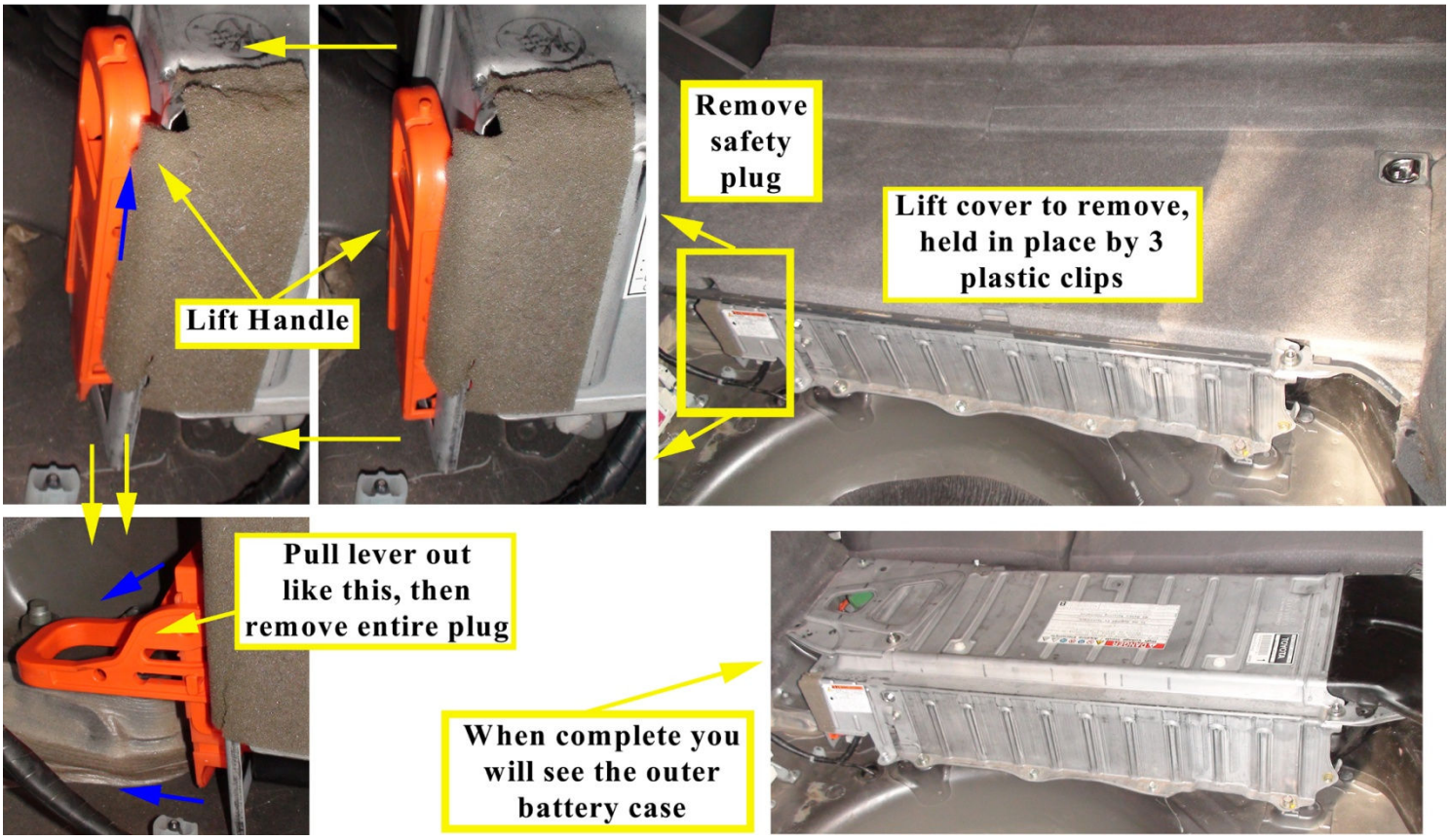




Next we will remove the cover over the battery. This is held in place by two 10mm bolts (removed in previous step) and 3 plastic clips. Velcro attaches the carpet in the front of the cover to the rear seat backs. Pull up on the cover to detach the 3 clips and remove the cover.

Disconnect the battery safety plug. To disconnect it, first slide the handle up to unlock, and then swing the handle to the left. Now pull the entire plug from the battery. <u>DO NOT ALLOW THE PLUG TO BE REINSERTED UNTIL INSTRUCTED!</u>

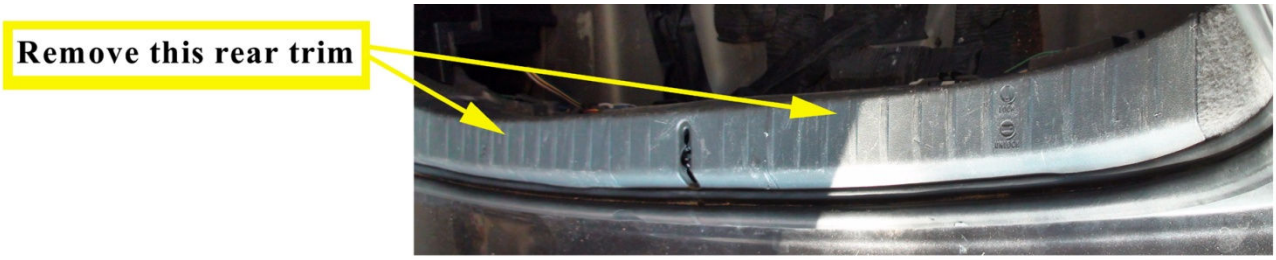
Once these steps are complete, you should now see the outer case of the high voltage battery (lower right picture).

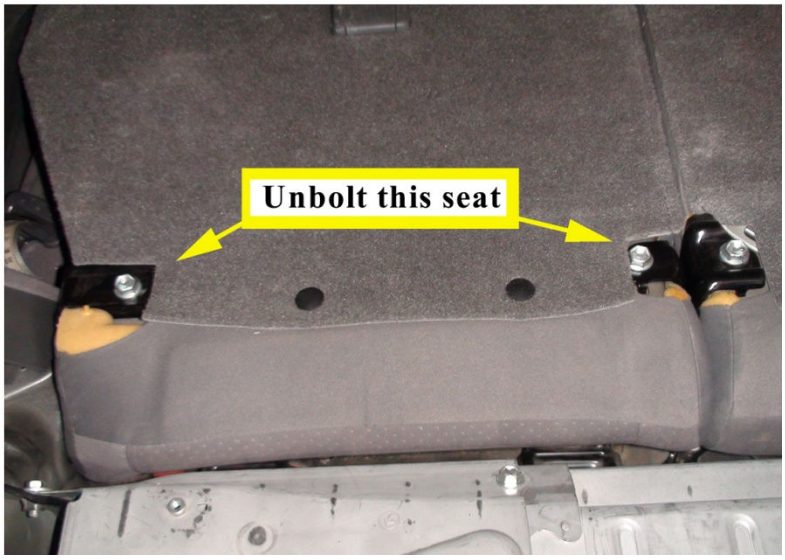


Remove the rear trim where the lift gate closes. It is held in by clips. Firmly pull up from both ends to remove.

Remove the small storage compartment from the left rear. There is one 10mm bolt holding it down in the center (inside) of the compartment.

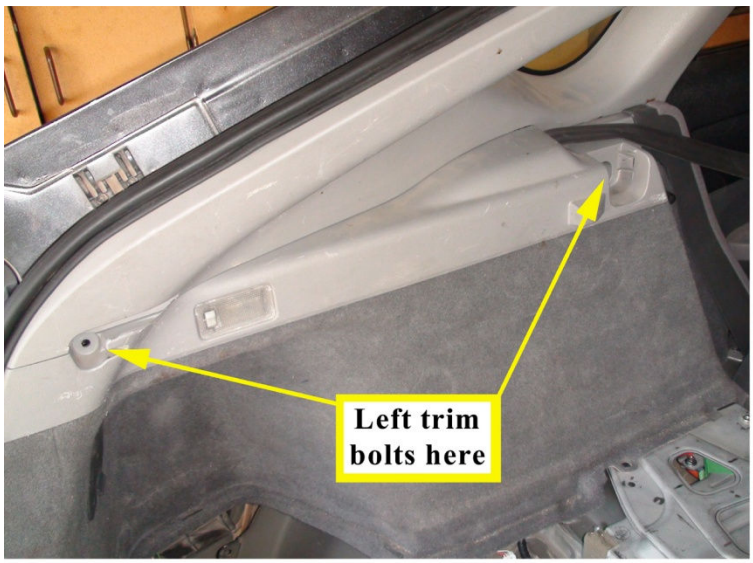
Unbolt the left rear seat. Remove these two 14mm bolts. Slide the seat forward so we can have access to the bolts it was blocking. Seat belt does NOT need to be removed. Leave the right rear seat in place.

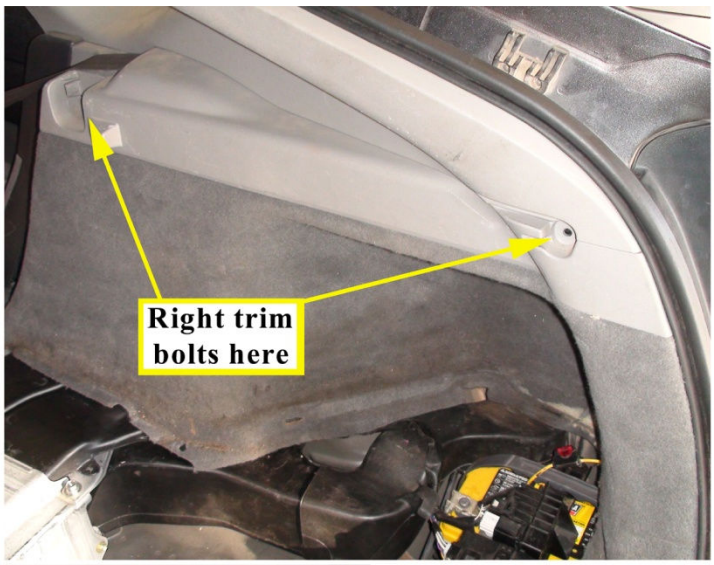


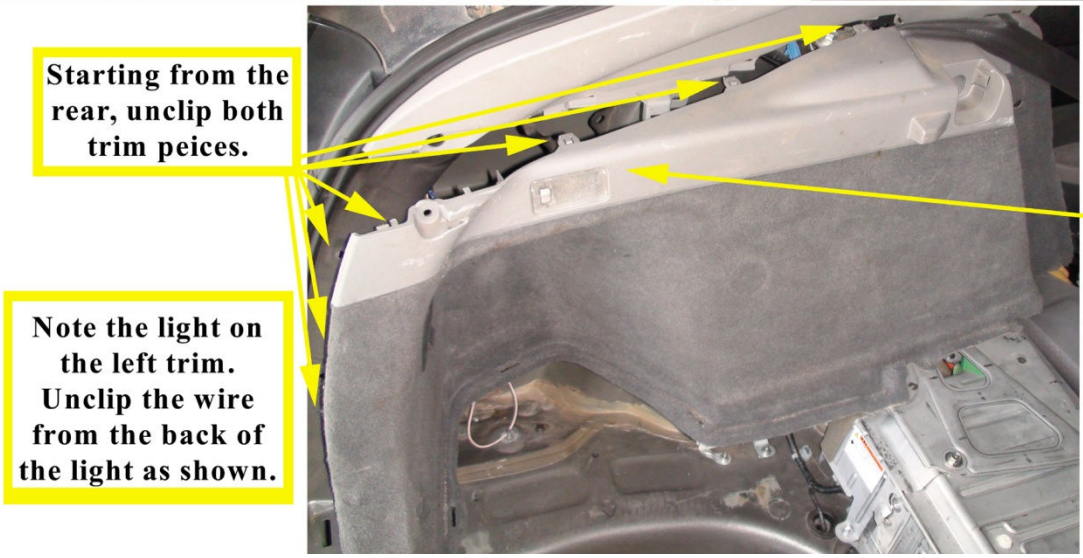


Last we need to remove the side trim panels. They are held in place with a 10mm bolt on the front, a 10mm screw on the rear, and several clips. Note that the left trim has a light*. First remove the 10mm bolt and screw on each panel, then starting from the rear, pull the trim away from the vehicle body. The trim has a slot for the seat belt. Carefully slide the seat belt out of its slot. The trim is tucked under the rear door trim, either carefully slide it from behind this trim, or remove the rear door trim (not pictured).

* The light must be unhooked from its wire as shown by depressing the release and sliding the wire forward.



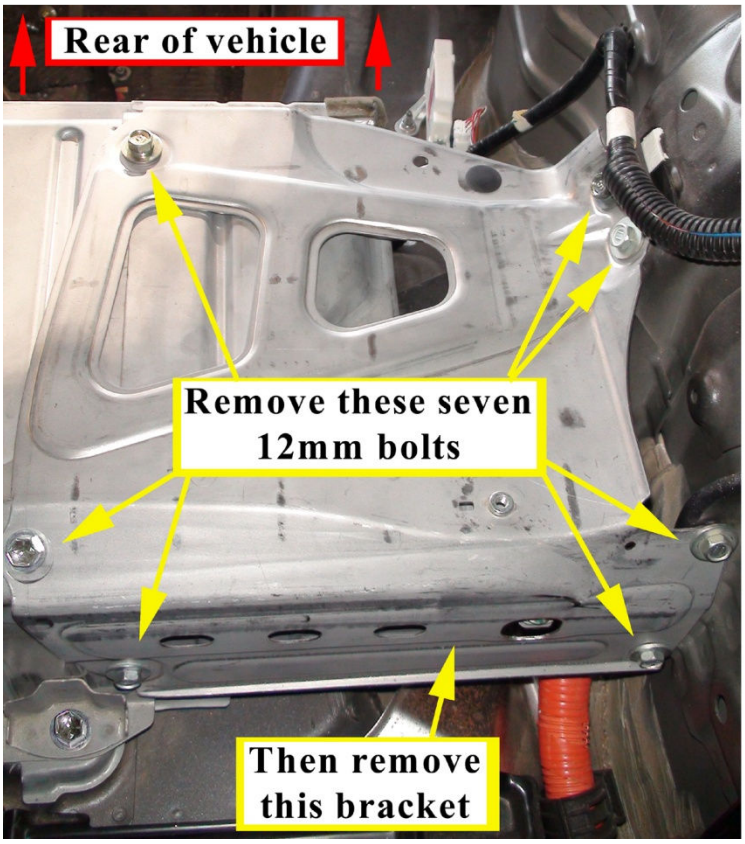


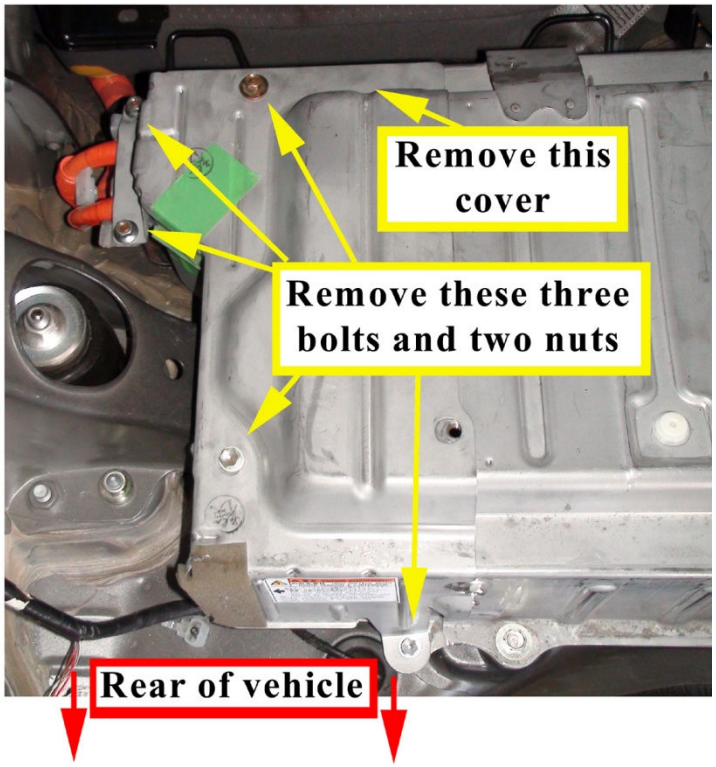


Remove HV battery access cover.

Begin by removing the seven 12mm bolts holding the battery brace on the left side of the battery (left photo). Once these bolts are removed, lift the brace off of the battery. (Note: The photo on the left taken from a different angle, red arrows point towards rear of vehicle)

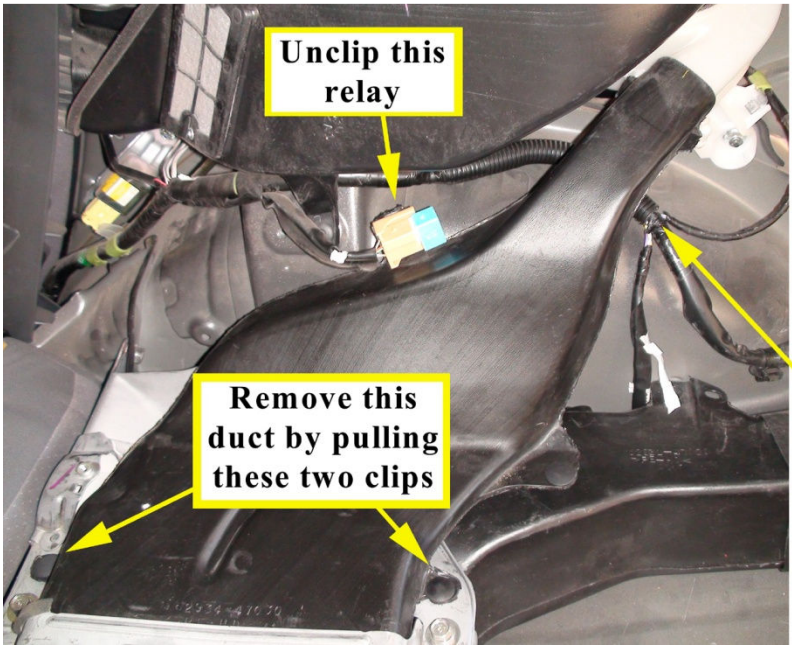
Once the brace is removed, remove the three 10mm bolts and two 10mm nuts from the access cover that was under the brace (right photo). Remove the access cover.



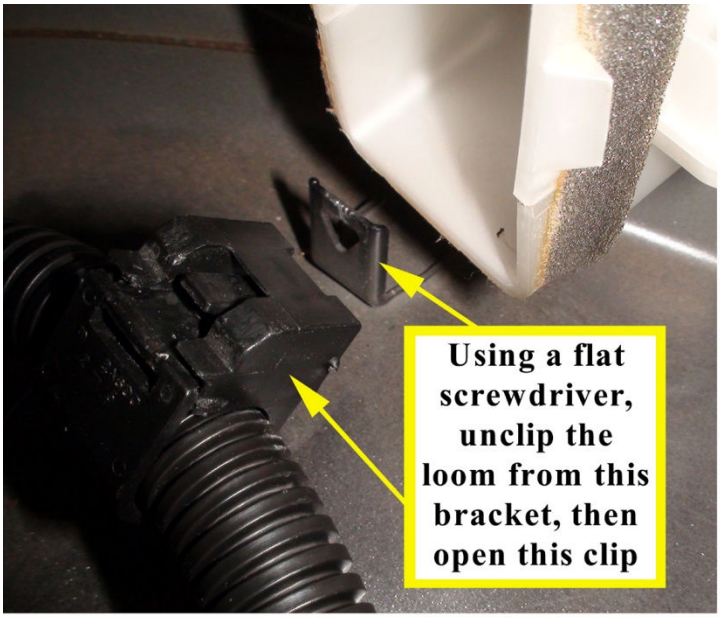


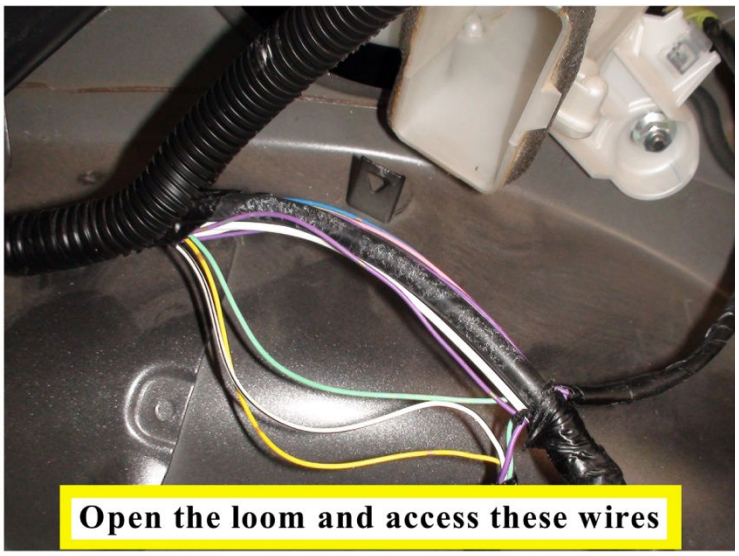
Install the PWM fan control board.

We need to remove the inlet duct to gain access to the fan wires below it. The inlet duct is held in place by two push clips. Remove the push clips with a flat screwdriver. Unclip the relay that is attached to the duct. Then remove the duct by sliding it off of the fan first, then out of the battery.



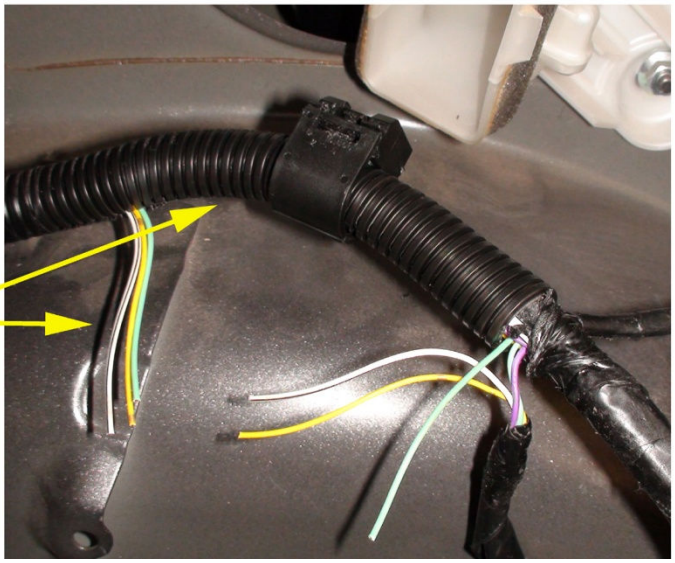
Unclip the loom and open the bracket holding the loom. Remove the tape and slide the loom off of the wires as shown. Isolate and cut the three wires (White w/ Black strip, Yellow, Green). Reassemble the loom, leaving the three cut wires accessible. Reattach the clip and secure it back in place on its bracket. Strip ¼" off of each end of the 3 exposed wires.





Isolate these wires:
White /w Black stripe
Yellow
Green

Cut these three wires. Reassemble the loom with these wire outside, reattach the clip and secure it back on its bracket.

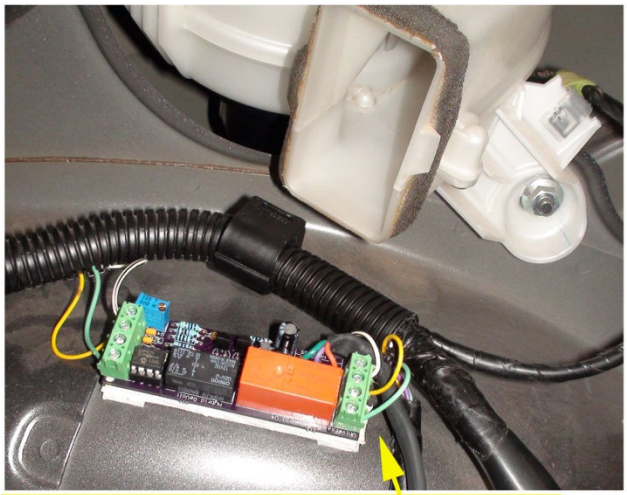


Install the fan board as shown (left photo). The wires are installed from closest to farthest from the fan: White w/ Black, Yellow, {*empty*}, Green. Clean the wheel well location where the fan board will mount using glass cleaner or similar. Secure the fan board to the vehicle using the tape affixed on the back, firmly pressing it into place.

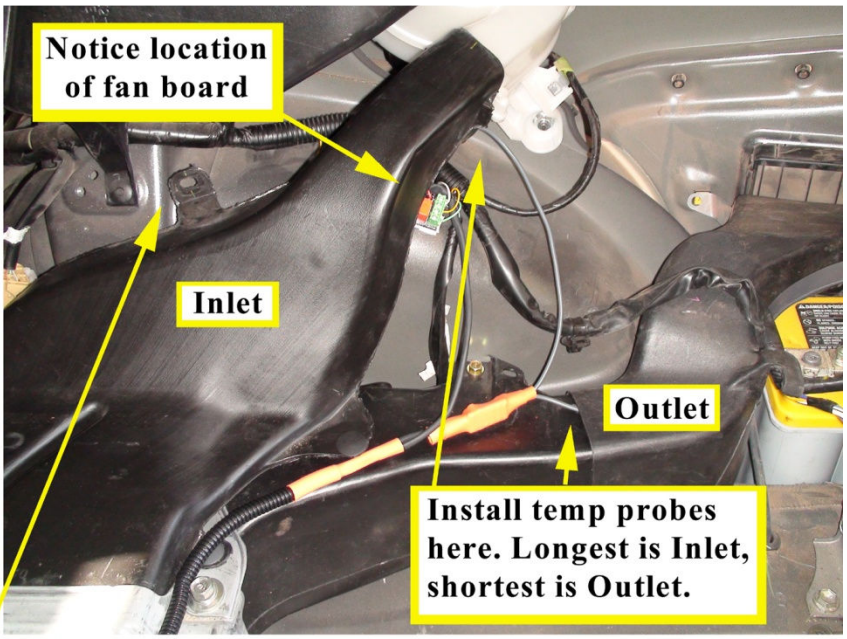
Reinstall the Inlet duct in the reverse order it was removed, placing the longer of the two temperature probes into the Inlet duct as shown, making sure the probe points away from the fan. Reattach the relay removed earlier.

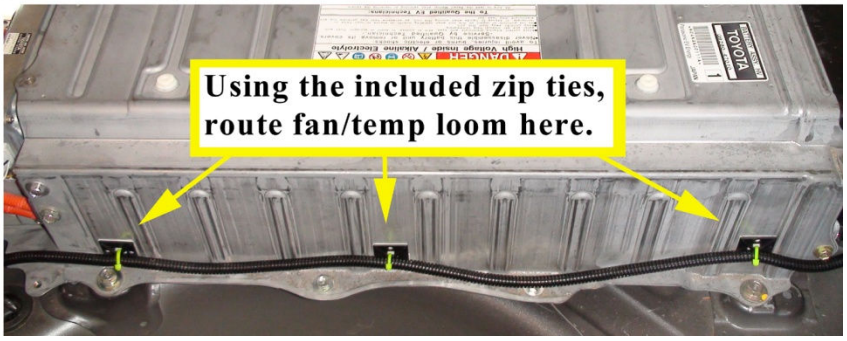
The Outlet temperature probe is placed as shown by sliding it between the two pieces of the outlet duct.

Route the small black loom as shown using the included zip ties and self adhesive pads.



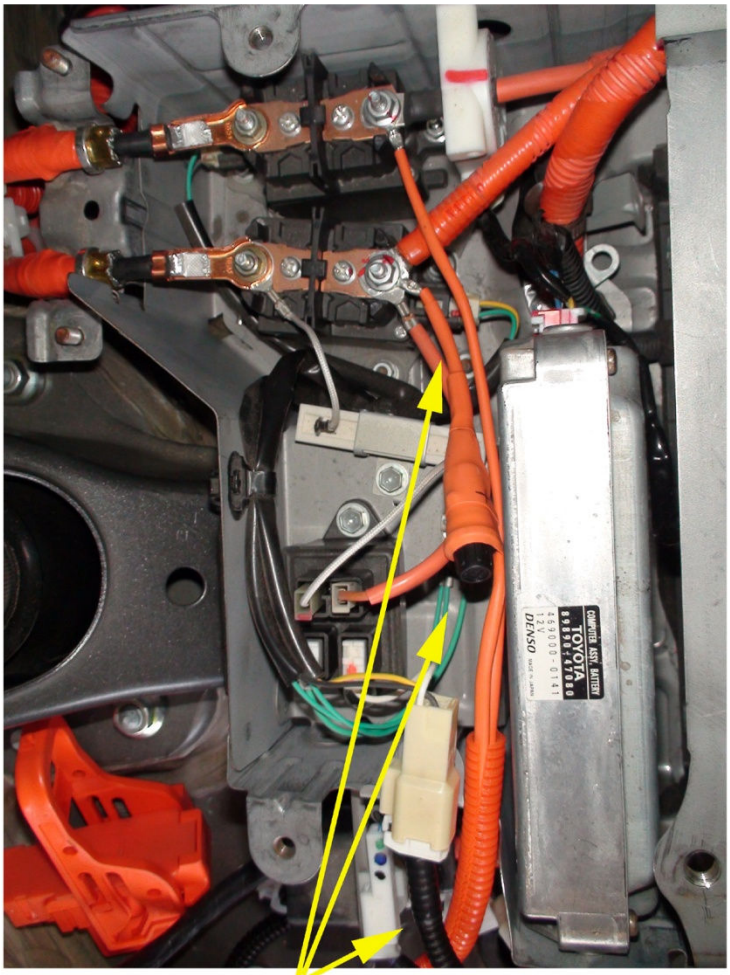
Install fan board in this location.
Wires, in order from top to bottom:
White w/ Black
Yellow
{empty}
Green



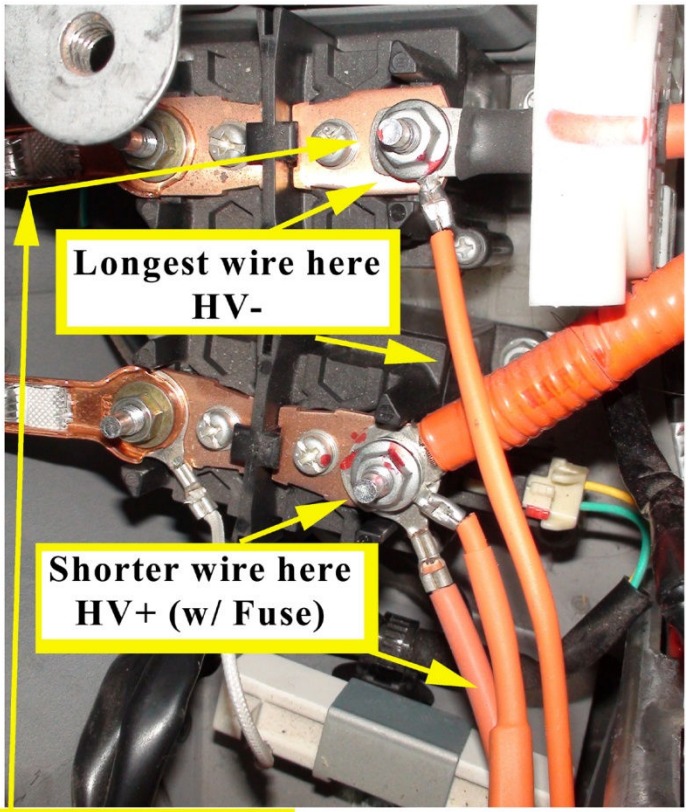


Connect the HV leads.

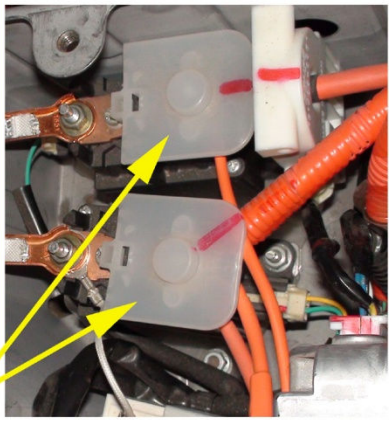
Route the orange HV leads as shown, making sure to avoid any sharp edges that may damage the wires. Remove the plastic covers from the relays and remove the 8mm nuts shown. Connect the shorter wire (with the fuse, ***HV+***) on the rear relay and tighten the 8mm nut. Connect the longer wire (no fuse, ***HV-***) on the front relay and tighten the 8mm nut. Replace the plastic relay covers.



Route the orange HV leads as shown. The shorter wire with the fuse is the HV+, the longer wire is the HV-.



Remove the 8mm bolts on top of the relay and install the wires as shown. The wire with the fuse goes on the rear relay.



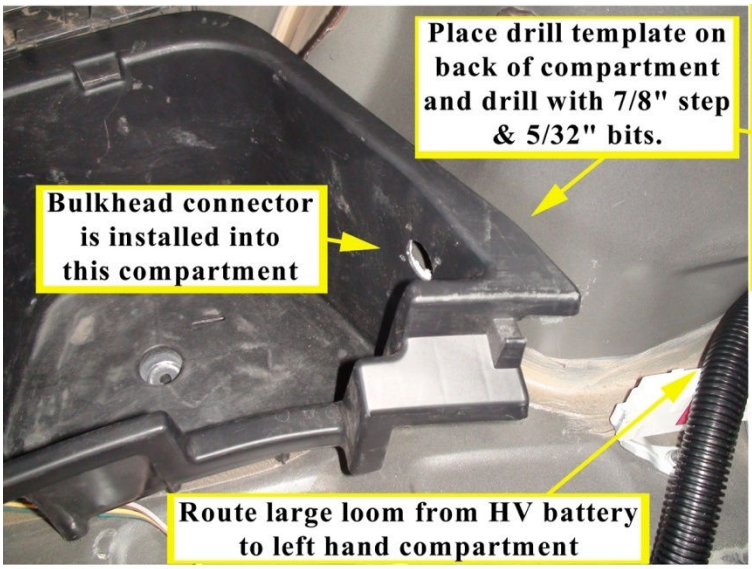
Once the wires are secured and the 8mm bolts reattached, make sure you replace the relay covers.

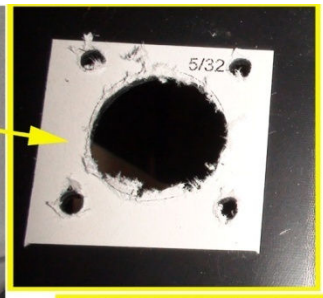
Install the bulkhead connector.

The bulkhead connector is installed in the left rear of the vehicle, in the small compartment under the main floor. It is installed in the top front of this compartment (see photos for location).

Place the drill template on the outside of the compartment; about 2” below the top (see photos for reference). Drill the four outer holes using a 5/32” drill bit. Drill the center hole with the 7/8” step drill bit. Place the yellow HV warning label around the hole inside the compartment.

Route and install the loom from the HV battery to the bulkhead hole, staying close to the left wheel well. Install the bulkhead connector with the 4 screws provided, making sure to secure the cover with one of the screws. Place the cover on the bulkhead connector.





Harness is now installed!

Follow the instructions in reverse order to reinstall (replace in this order):

- ☐ The battery access cover (Page 7)
- ☐ The battery brace (Page 7)
- ☐ Reinstall the HV safety plug*(Page 4) (test now, see below)
- ☐ Side trim panels (reconnect the light!) (Page 6)
- ☐ Left rear seat (Page 5)
- ☐ Left rear compartment (Page 5)
- ☐ Rear lift gate trim (Page 5)
- ☐ Carpeted battery cover (Page 4)
- ☐ Four ring tie downs (Page 3)
- ☐ Left and right side covers (Page 3)
- ☐ Cargo tray (Page 3)
- ☐ Cargo access cover (Page 3)
- ☐ Floor mat

*This would be a good time to connect the charger and test if everything is working properly. If everything is properly connected, the charger should display the battery voltage when connected and turned on. Next, start a mode 1 charge (default) and make sure the battery cooling fan on the vehicle turns on. Let the charger run for 10 minutes. If the charger runs without problems for 10 minutes, turn off, disconnect the charger and continue with the above steps. <u>Always make sure to replace the bulkhead connector cover whenever the charger is not connected!</u>

**** If the charger reports a problem during the test, contact ****
Hybrid ReVolt for assistance.