TECHNICAL SERVICE BULLETIN

Subject	800vRR Vehicle Controller V4.10.2 and ESM V3.0.7 Update
Issue Date	04/02/2024
Service Bulletin Number	SC-24-009
Models Affected	Service Specified Vehicles
Complete By	Next Service Opportunity
Labor Operation Code	EN70Z
Description	Software update for the 800vRRs Vehicle and Body Software to reduce the radiator fan current draw to 80%. Additionally fix a bug to properly route ESM faults away from the coolant light icon.

Labor Table				
	Operation	**Technicians**	**Hours**	**Labor Time (T x H)**
1	Steps 1-30	1	.75	.75 Hours
		Total Labor Time:		.75 Hours

Contact the Phoenix Customer Service Team with any questions related to the following procedure.

864-438-0000
Service@phoenixmotorcars.com

Parts Required:

066259	Service Retrofit Kit, BUSCOM 3.0 Software Package, 800V RR-ZX5		Qty.	UOM
	066257	SOFTWARE, VEHICLE CONTROLLER RR-ZX5 M580, v4.10.2	1	EA
	066269	SOFTWARE, ESM, 800V, 3.0.7	1	EA
			Qty.	UOM

Tools Required:

- Phoenix Diagnostic Tool (PDT)
- Laptop
- Nesiq USB Link2

Change Notes:

Vehicle Controller:

Several calibrations, including those for radiator fan max speed and ambient temperature sensor fault detection were incorrect.

ESM:

Roadrunner Diagnostic lamp responses are modified to make it consistent with newer generations of vehicles.

Protect lamps were turned off as a part of the change.

Software Package Link: https://business-site-7460.my.salesforce.com/sfc/p/Ho000002fy70/a/Ho000000vhSu/TOqfjrs9iIZaHgHpE4b0ug5434XhDZ5ymaukwJKuSXo

Password: A9xmGDN5

IMPORTANT! NEVER access the software from the USB memory device, ALWAYS copy the software files to your computer hard drive and access the software from this location. Secure the bus with the Vehicle Master Disconnect in the rear ON.

Ensure prior software campaigns have been completed. Body Controller Software must be equal to or greater than V7.0.1. Charge Controller software version must be equal to or greater than V3.0.1.

Preparing the Vehicle to be Programmed:

When programming a vehicle, it is critical that the low-voltage batteries remain connected throughout the process. Ensure that the LV batteries are fully charged before starting the process. If they are low, use the vehicle to recharge them buy turning on high-voltage or place the bus on a low-voltage charger for the duration of the procedure.

ESM Controller Update

Step 1:

Power up and login to the Phoenix-Supplied laptop or a comparable PC that has the Phoenix Diagnostics Tool software installed with a valid license.

Step 2:

Ensure the SW Package is on the computer's hard drive and unzipped if applicable. For this section the SW "066269 ESM_HV_BMS_RoadRunner_Bootloader_20240207_1147_FULL" is to be used.

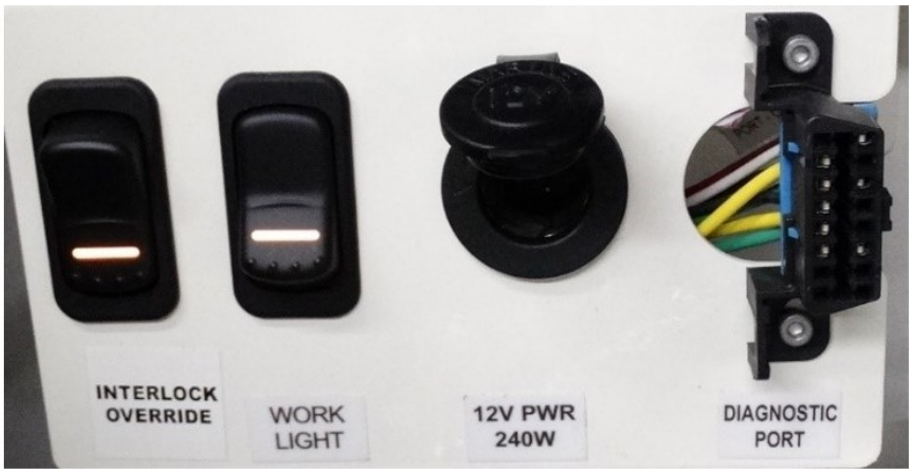
Step 3:

Turn ON the 12/24V rear Vehicle Master Disconnect located at the curbside rear charge port access panel.

Vehicle Master Disconnect

Step 4:

Connect the Nexiq USB Link2 device to the laptop and to the OBDII Diagnostic Port located in the streetside wheel well box



Step 5:

Press and hold the streetside wheel well WORK LIGHT switch until the work lights turn on.

Step 6:

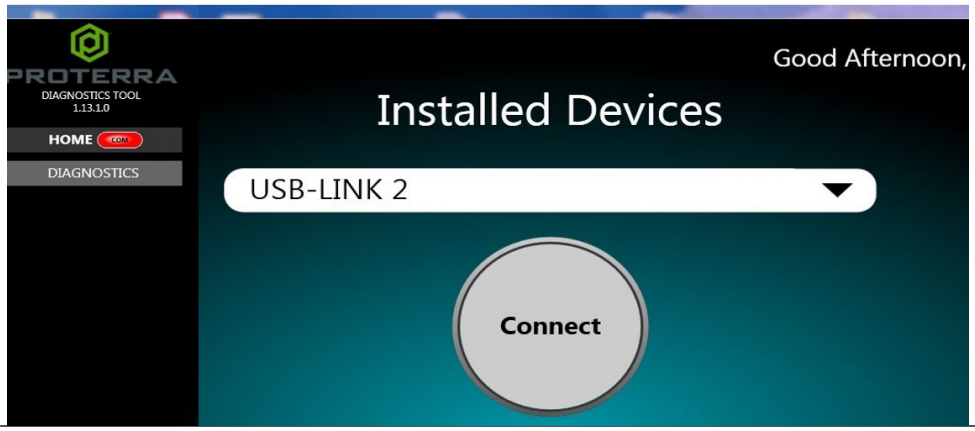
On the laptop, double-click on the Proterra Diagnostics Tool software icon to start the software.

Step 7:

When the program opens, read and click “OK” for the high-voltage safety prompt.

Step 8:

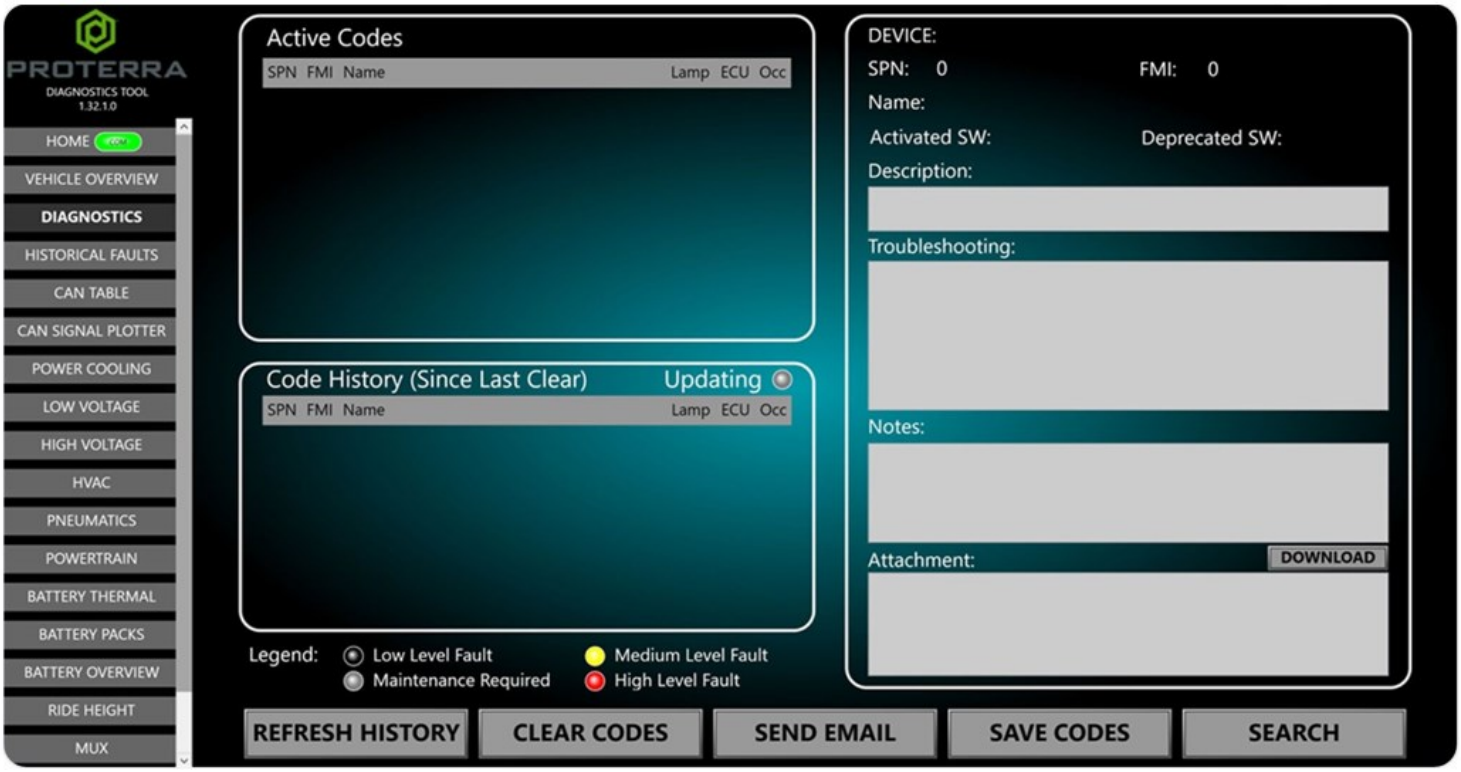
On the Home tab, select the appropriate device from the drop down and click “Connect”.



Step 9:

Once the diagnostic tool has connected to the vehicle, a VIN number and connection status will be displayed on the Home screen, and tabs available to navigate. If you do not see the Home Screen, check that the low-voltage batteries are connected and that the Nexiq tool is plugged in.

NOTE: 800V Proterra vehicles are equipped with an automatic battery disconnect that will protect the low-voltage batteries from a deep discharge.



Step 10:

Before beginning the programming process, check the bus for existing faults by clicking on the “Diagnostics” button below and make a note of any found.

Step 11:

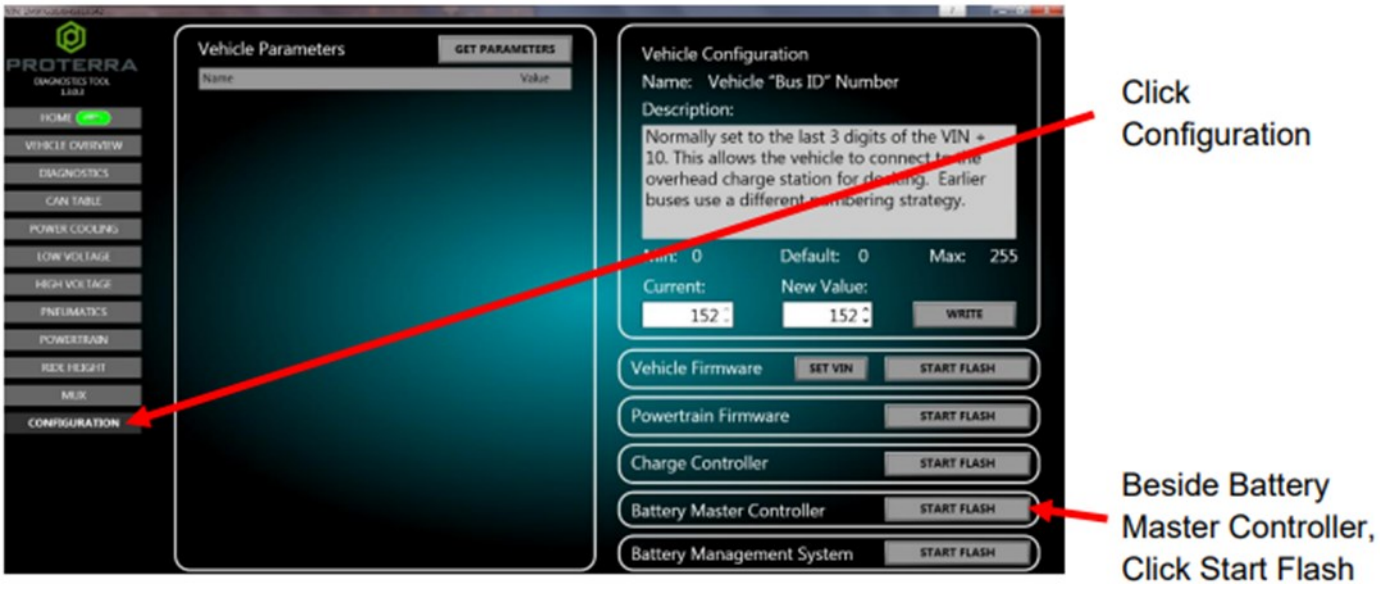
Navigate to the “Software Versions” tab and take a screenshot of the current software versions in-case any issues arise.

Step 12:

Turn the bus High-Voltage Master Switch to Accessory at the Driver's Workplace and ensure the Dash screen is ON. Set the Hazard Switch to ON.

Step 13:

Click on the “Configuration Tab” to open the Configuration screen and then click start flash on the “Battery Master Controller” section.



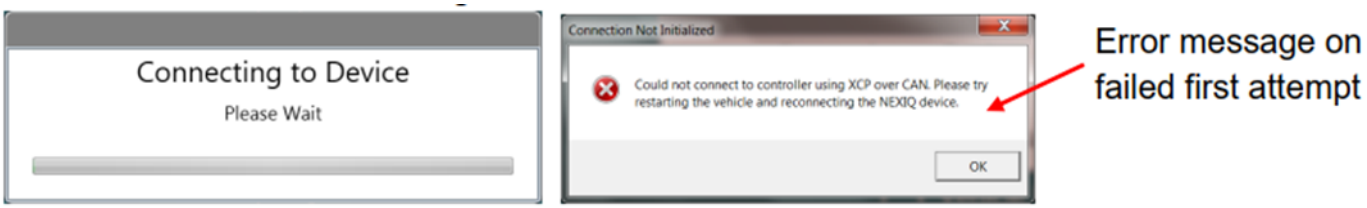
Step 14:

When prompted select file “066269 ESM_HV_BMS_RoadRunner_Bootloader_20240207_1147_FULL” from your hard drive, select open.

Step 15:

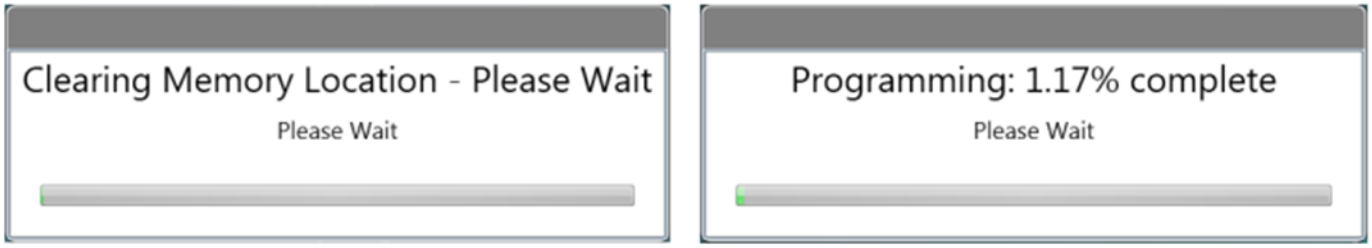
The Proterra Diagnostic Tool will attempt to connect to the device.

NOTE: You may receive an error on the first attempt. If so, retry by clicking the ESM Controller Start Flash button again.



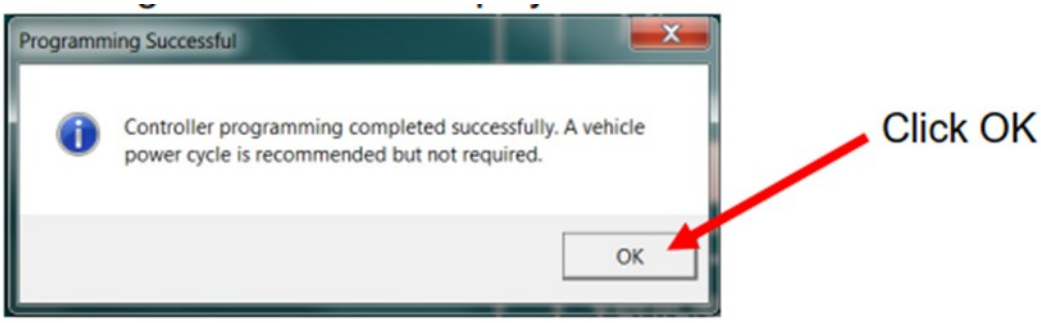
Step 16:

When the software update begins, the following screens will be displayed.



Step 17:

Once the following screen displays the update is now complete.



Step 18:

Close the Proterra Diagnostic Tool (PDT), turn off work light and cycle the buses power and verify no faults.

Vehicle Controller Software Update

Step 19:

One again, ensure the LV batteries and laptop are charged.

Step 20:

Power up and login to the Proterra-Supplied laptop or a comparable PC that has the Proterra Diagnostics Tool software installed with a valid license.

Step 21:

Turn ON the 12/24V rear Vehicle Master Disconnect located at the curbside rear charge port access panel.

Step 22:

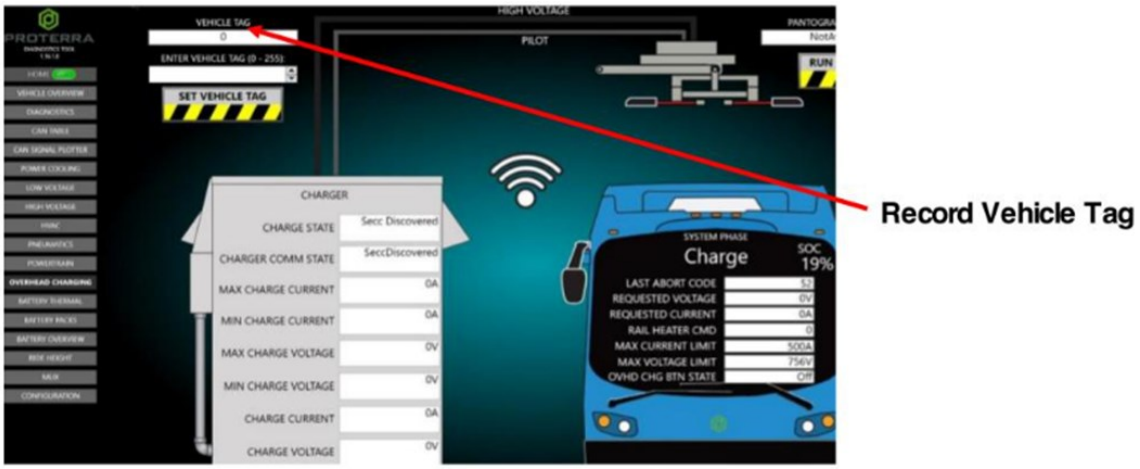
Turn OFF the bus High-Voltage Master Switch at the Driver's Workplace and ensure the Dash screen is OFF.

Step 23:

Connect the Nexiq USB Link2 device to the laptop and to the OBDII Diagnostic Port located in the streetside wheel well box.

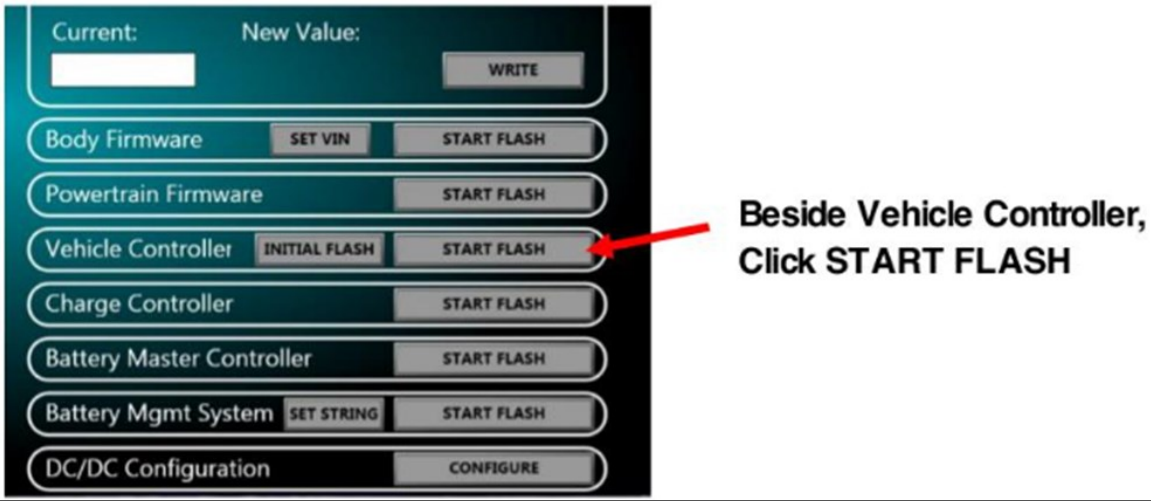
Step 24:

If vehicle is equipped with overhead charging, please use the Proterra diagnostic tool to navigate to the “Overhead Charging” page and record the vehicle tag number. This will be re-entered at the end of this section.



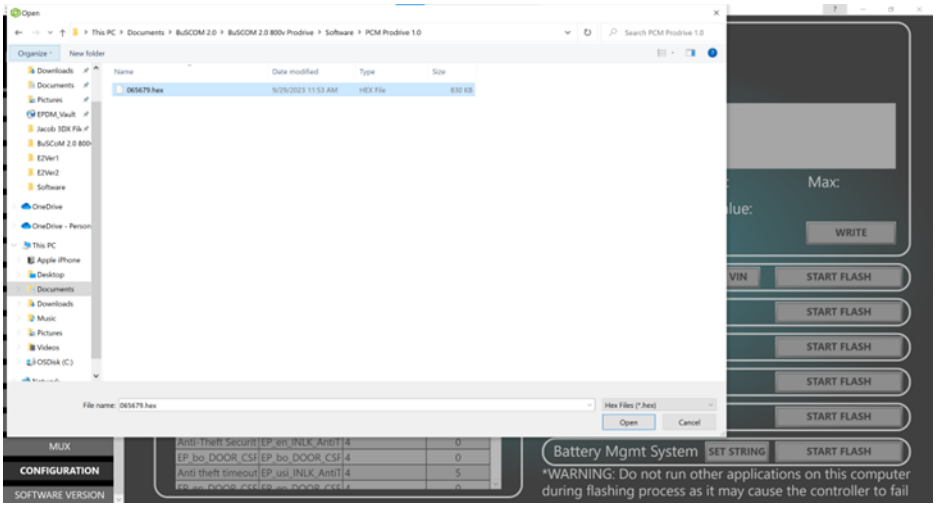
Step 25:

Navigate to the “Configuration Tab” then Click Start Flash for the Vehicle Controller Sections.



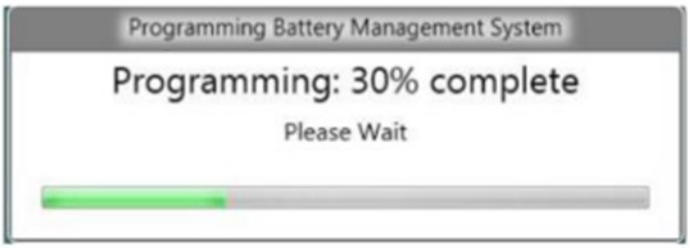
Step 26:

When prompted select file “VIC_v4.10.2.hex” from your hard drive, select open.



Step 27:

The Programming window will come up and will take several minutes to complete. Its important to note do not switch screens or have any CAN tools to be running in the background.



Step 28:

Once the software update is complete navigate to the Overhead Charging screen and set the Vehicle Tag Number previously recorded.

Step 29:

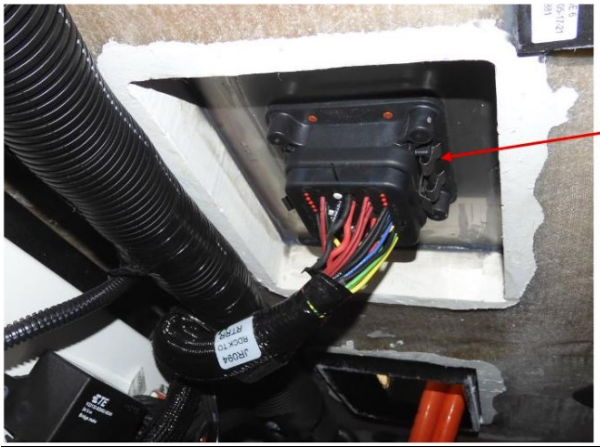
Close the PDT, turn off work light, turn off the bus at the rear master switch located at the rear curbside access panel.

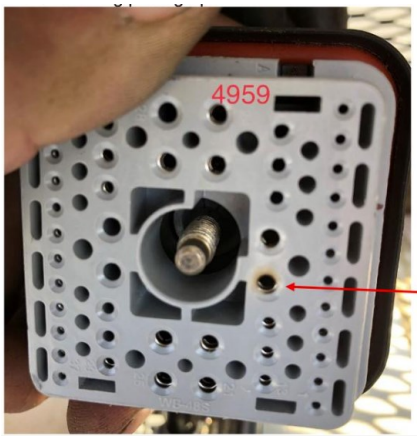
Step 30 (Wiring Inspections):

Inspect each of the radiator fan terminals for any heat damage.

Step 31:

Inspect the rear 48 way for heat damage in the connector body.





Step 32:

Finally the power and ground must be checked at the rear VEC. Please disconnect the corresponding plugs for the radiator fan circuitry and check the connector and pins for heat damage. The common plugs will be PC341, PC342, and PC337 the grounds 1QC001, 2QC001, and 3QC001. Check you schematics to verify due to model and configuration differences

Step 33:

If any heat damage is found please take photos and escalate the findings to the back office support team.