ISSUE DATE:	6-27-2022
SERVICE BULLETIN SUBJECT:	Prodrive Powertrain Software Update
VINs or MODELS AFFECTED:	Service Specified Buses
COMPLETE BY:	Next Service Opportunity
SERVICE BULLETIN #:	SC-22-78
LABOR OPERATION CODE:	PD45Z

NOTICE! It is expected that this process will require one hour per bus. Please schedule appropriately to minimize vehicle downtime.

PRODRIVE POWERTRAIN SOFTWARE UPDATE

Description

This procedure updates the Prodrive Powertrain Software to the latest version for improved powertrain performance.

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Summary of Software Changes

Improvements:

- Limit coasting and braking regen torque in G2 to mitigate inverter overheating. No effect to G1 regen torque and no Customer RNDL configuration changes required*.

Bug Fixes:

- Updated accel and brake pedal sensor FMI 3 and FMI 4 calibrations for improved fault detection.

Configuration Notes:

- Proterra continues to recommend ECO as the preferred performance mode (EP_usi_ZR32_PerformanceMode_x = 0). This will mitigate inverter overheating and provide the best efficiency.
- Customers willing to sacrifice some efficiency and range should use the minimal RNDL configuration (EP_usi_ZR32_AllowedRNDLConfiguration_xx = 1) to minimize inverter thermal stress. Other customers may continue using their preferred RNDL configuration.

Tools/Parts Required

- Customer Service Laptop with Proterra Diagnostic Tool
- Nexiq USB Link2 Device

Parts Required:

- 061858 SOFTWARE, POWERTRAIN, 800V, PRODRIVE, v4.2.1 1 EA

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Connect to the Vehicle to Start the Proterra Diagnostics Tool

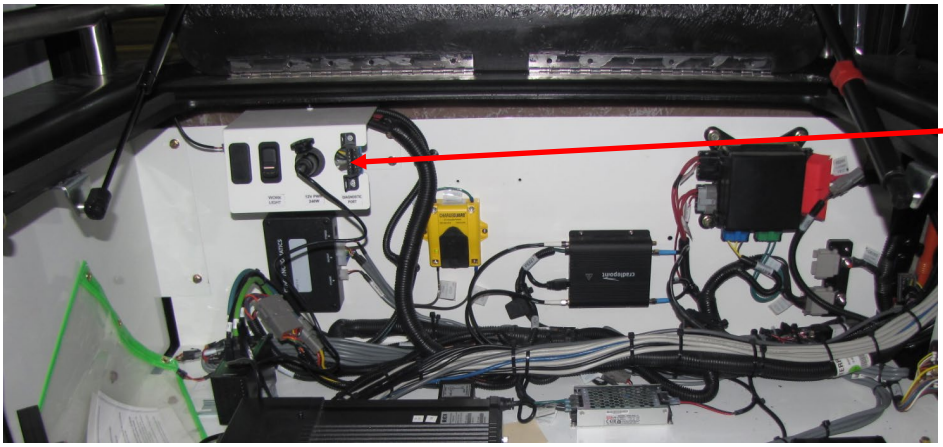
This process will guide the user to connect to the vehicle with the Proterra Diagnostics Tool.

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

2. Turn ON the bus Master Run Switch at the Driver's Workplace and ensure the Dash screen is ON to display “KEY ACC”.

Master Switch
“ACC”

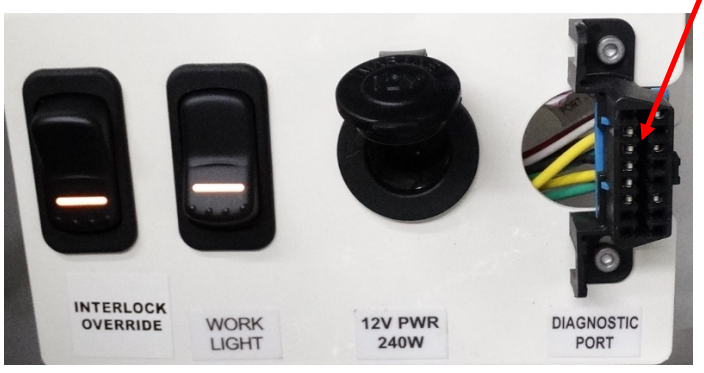
3. Open the Streetside wheel well box to access to the OBDII Port.



OBDII Port

4. Power up (boot) the Proterra-supplied laptop containing the Proterra Diagnostic Tool.

5. Connect the Nexiq USB Link2 device to the laptop and to the appropriate OBDII Diagnostic Port.



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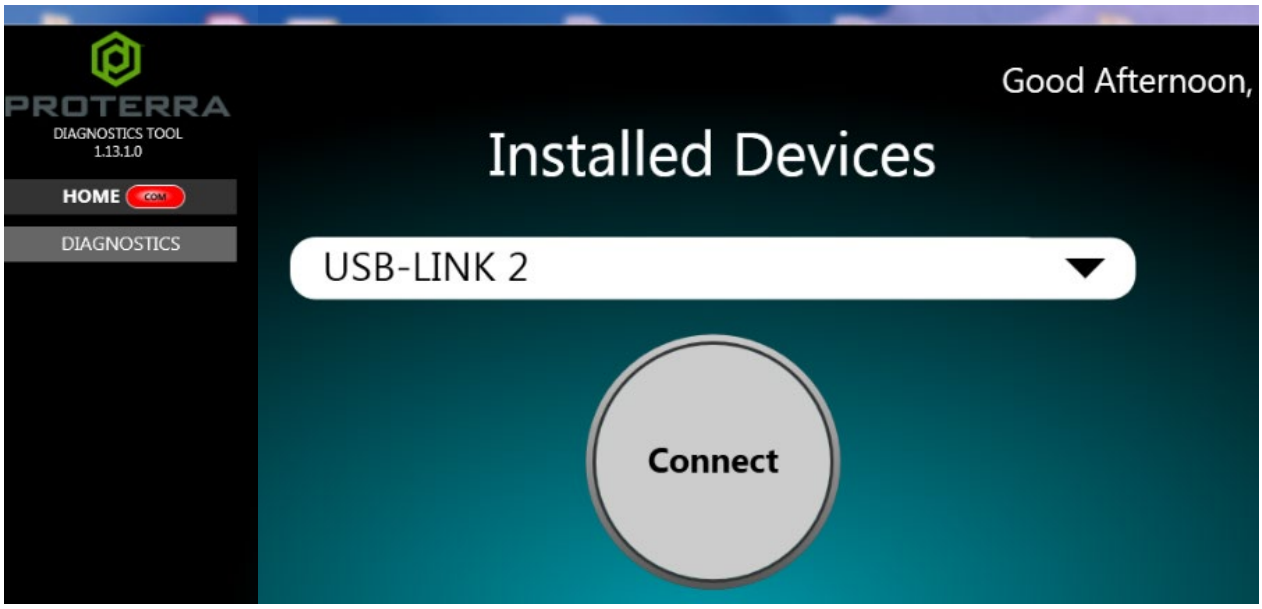
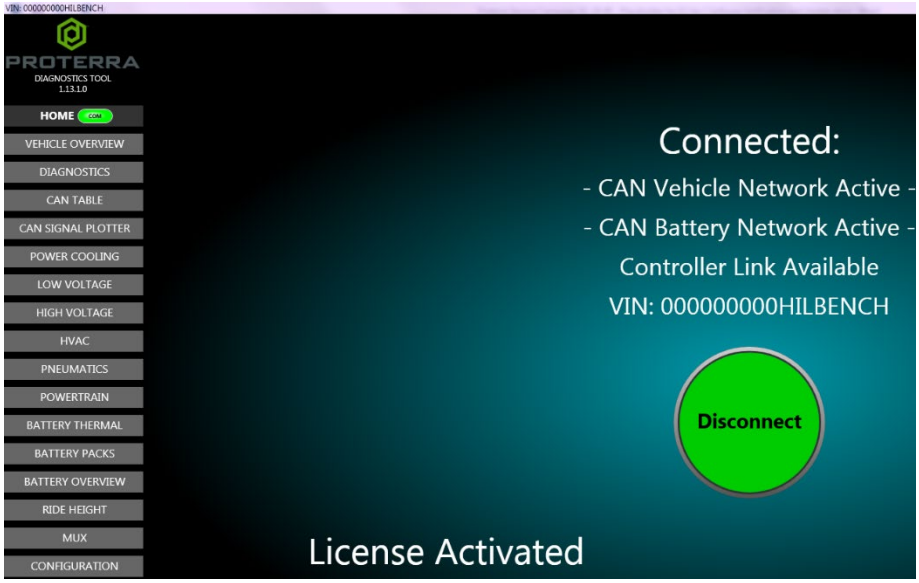
6. On the laptop, double-click on the Proterra Diagnostics Tool software icon to start the software.

7. When the program opens, read and click “OK” for the prompt.

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



9. Once the Diagnostic Tool has connected to the vehicle, you will have a VIN number and connection status displayed on the Home screen, and tabs available to navigate.



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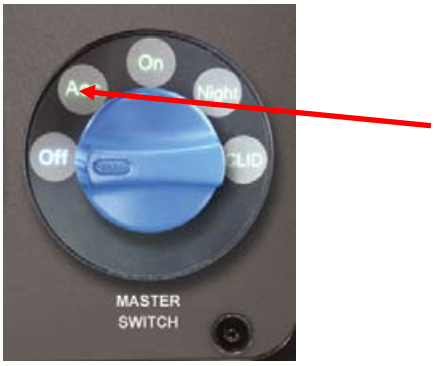
Update Powertrain Software

This procedure updates the Powertrain software version and maintains the Powertrain parameter configuration data across the flash download of new software.

1. Ensure you have the latest software file **061858.hex** in a known location on the service technician's computer (Folder or Desktop).
   IMPORTANT! NEVER access the software from a remote server or from a USB memory device, ALWAYS copy the software files to your computer hard drive and access the software from this location. It is recommended that you copy the entire "service bulletin files" folder to your local machine in order to more effectively keep track of the software versions you are deploying:
   \\bus.local\files\Engineering\Service Bulletins\Service Bulletin Files for SC-22-78\

2. Turn ON the 12/24V rear Vehicle Master Disconnect located behind the vehicle curbside rear upper access panel.

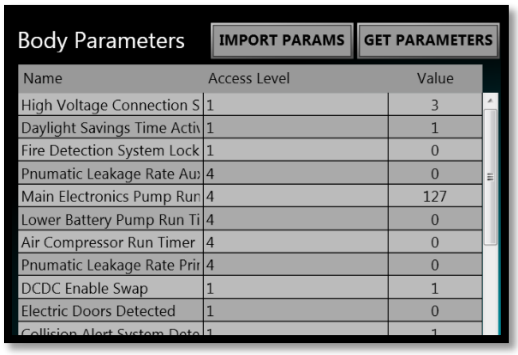
3. Turn ON the bus Master Switch at the Driver's Workplace and ensure the Dash screen is **ACC**.



Master Switch "ACC"

4. After connecting to the vehicle using the Proterra Diagnostic Tool at the **front OBDII Port (SSWW Box),** navigate to the Configuration Tab.

5. Wait at least ten seconds after starting the tool, then click the "GET PARAMETERS" button at the top of the page.
   a. **NOTE:** This ensures that we have a backup copy of the original configuration parameters stored in a "zip" file, contained in the C:/Logs folder on your computer in case we need to refer to it later.



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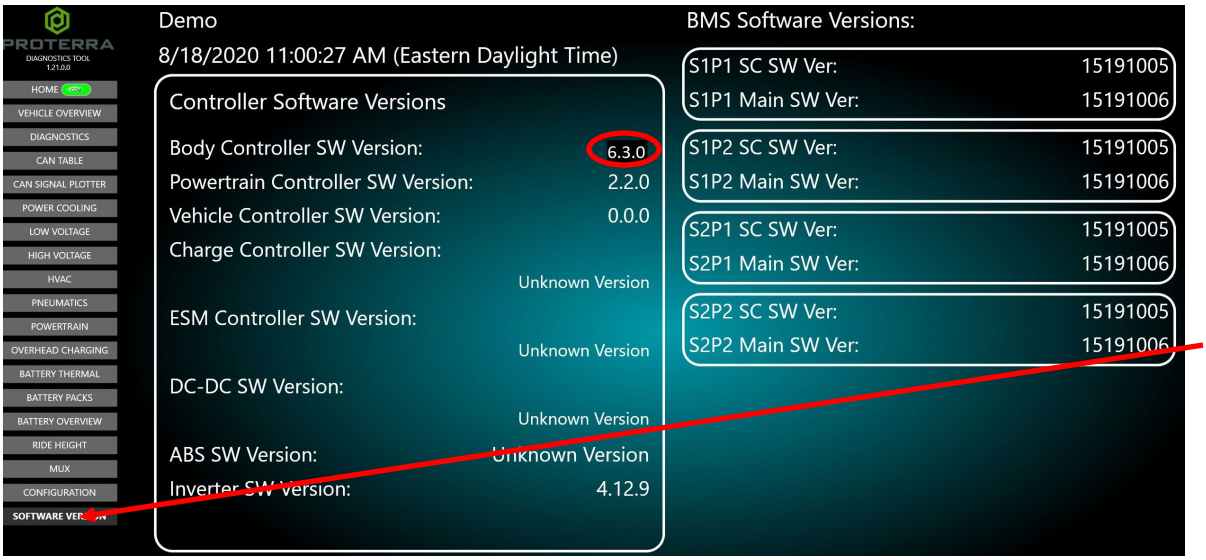
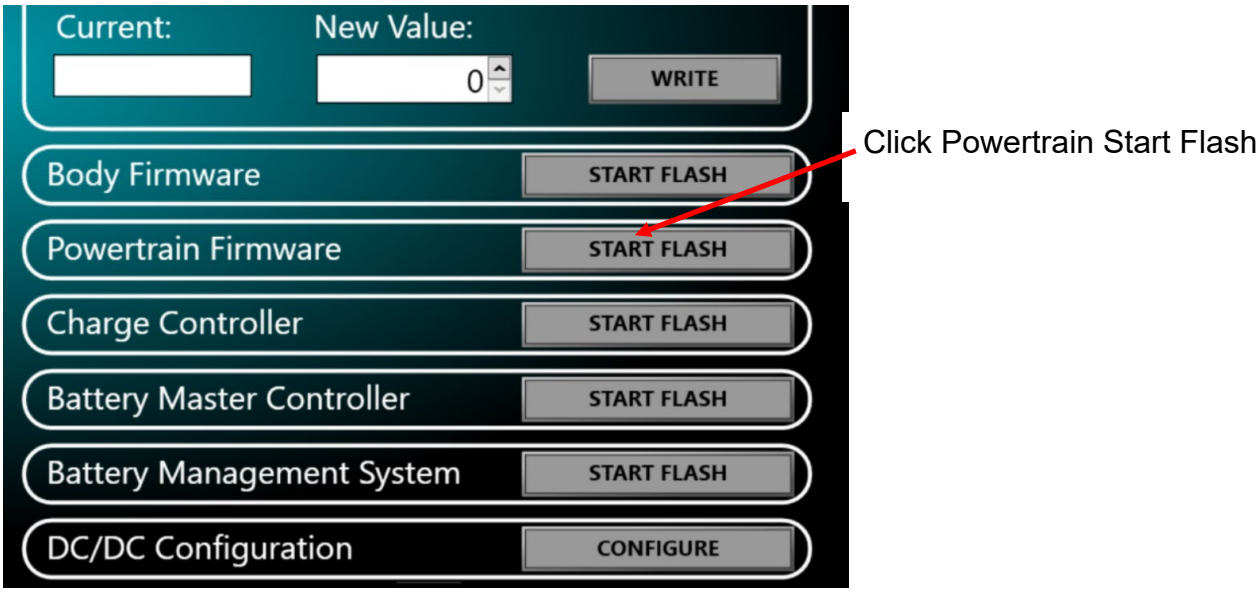
6. Click on the “SOFTWARE VERSION” button at the bottom left of the screen. Verify that the Body Controller Software is version 6.12.0
   Note: If it the Software is not version 6.12.0 or later, Proterra Service Campaign SC-20-58 800V Body Controller Software Release (6.12.0) must be performed on the vehicle before proceeding.



7. Next click on the Powertrain Firmware “START FLASH” Button.



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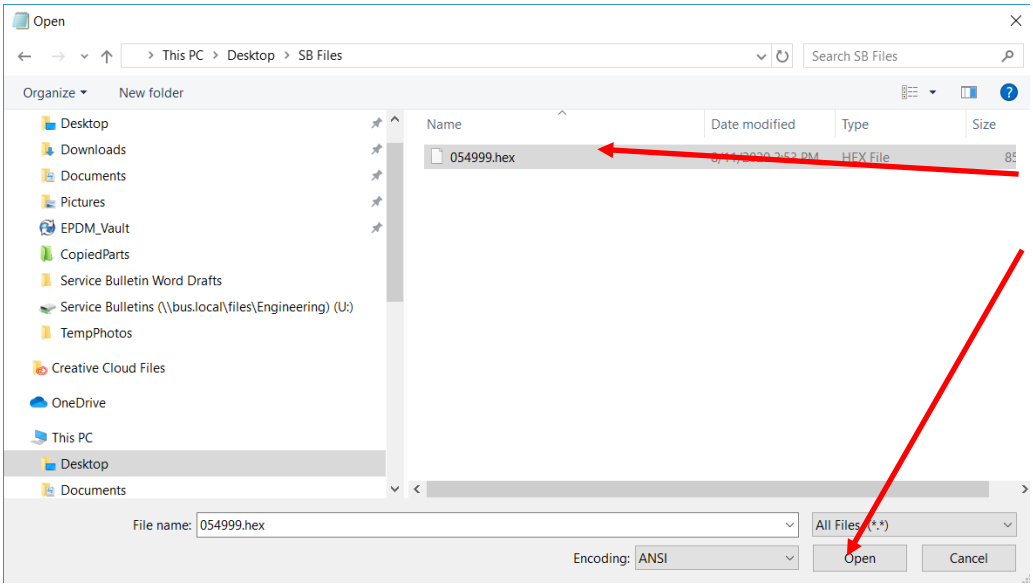
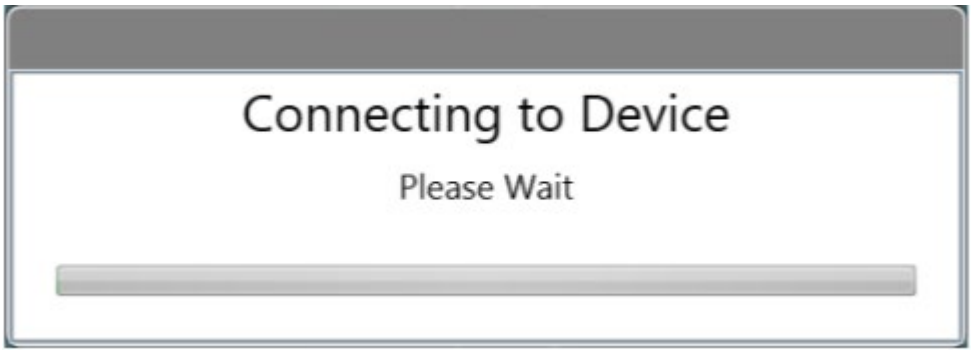
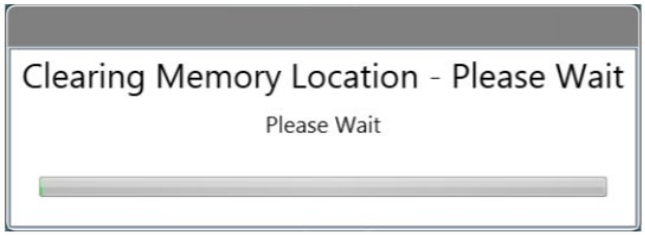
8. The following screen will be displayed. Navigate to the location where you stored the configuration file earlier. Select the software file downloaded previously and click “Open” to load the file.
NOTE: The file name displayed should be 061858.hex.

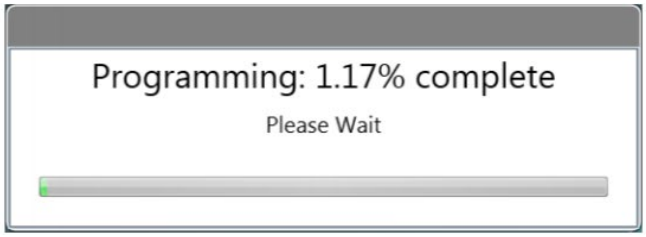


9. The Proterra Diagnostic Tool will attempt to connect to the device.



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





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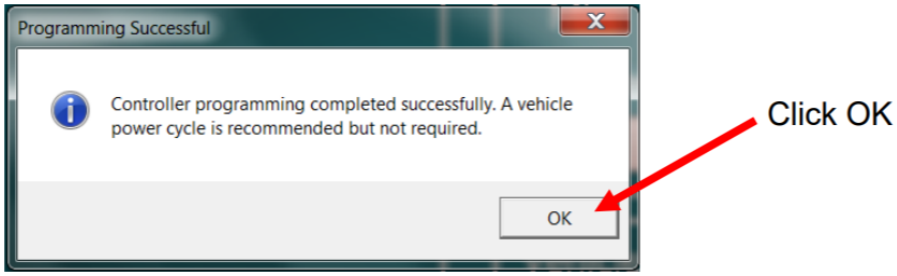
11. The software update may take several minutes to complete. When the update is complete the following will be displayed. Click the “OK” button to complete the update process.



12. Power off the bus by selecting “Off” on the Master Switch.

13. The software update is now complete.

14. Disconnect the cable from the OBD-II port.

15. Close the Streetside wheel well box

16. Power off the bus by opening the main disconnect at the Curbside rear of the bus.

17. Turn the main disconnect on before returning the bus to service.

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