



HVIL Connector Upgrade

Classification	Repair Bulletin	Section/Group	44 - High Voltage System	Country/Region	North America, Europe
Year	2012-2013	Model	Model S	Version	All

Bulletin Classification: This repair bulletin provides instructions and guidelines for a noted condition or a customer concern. The information provided can address a broad range of known or perceived issues with the operation of Tesla vehicles. This bulletin might not be VIN-specific. These instructions assume knowledge of motor vehicle and high voltage electricity repairs, and should only be executed by trained professionals. Tesla Motors assumes no liability for injury or property damage due to a failure to properly follow these instructions or repairs attempted by unqualified individuals.

This Service Bulletin supersedes SB-13-44-003 R1, dated 29-May-13. Each content change is marked by a vertical line in the left margin. Discard the previous version and replace it with this one.

Condition

Intermittent fault codes appear in the vehicle logs due to an open circuit within the High Voltage Interlock Loop (HVIL) system. This can eventually lead to the inability to start the vehicle.

Correction

Refer to TN-13-44-003, HVIL Diagnostic Guide to identify the root cause of the fault. In some cases, an intermittent connection has been isolated to the PTC cabin air heater, battery coolant heater, and A/C compressor connectors due to a loose terminal fit. The terminal pins have been lengthened in the new connectors for improved fit (Figures 1 and 2). Replace all 3 connectors.

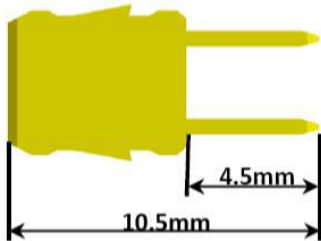


Figure 1 (Old length)

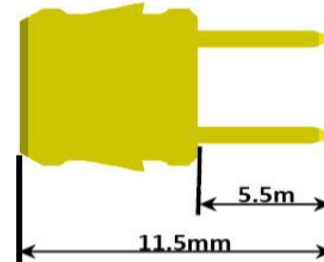


Figure 2 (New length)

Required Part(s):	Part Number	Description	Quantity
	1025003-00-A	CONNECTOR, HV, PTC HEATER	1
	1025005-00-A	CONNECTOR, HV, COOLANT HEATER	1
	1025004-00-A	CONNECTOR, HV, AC COMPRESSOR	1

These part numbers were current at the time of publication. Use the revisions listed or later, unless otherwise specified in the Parts Manual.

Correction Description	Correction	Time
Replace 3 HVIL Connectors	S011344003	1.0

Accessing the DCDC Converter Connectors

1. Perform the vehicle electrical isolation procedure (refer to Service Manual procedure 17010000).

⚠ WARNING: Before starting work on electrical components, wait at least 5 minutes for all electrical circuits to fully discharge. Failure to follow this instruction could result in exposure to shock hazard.

2. Remove the RHF upper wheel arch liner (refer to Service Manual procedure 12010902).

3. Remove the RHF lower wheel arch liner (refer to Service Manual procedure 12011302).

4. The DCDC Converter is mounted on the RHF side fender well. Locate the PTC cabin air heater, battery coolant heater, and A/C compressor connectors on the DCDC converter (Figure 3).

NOTE: Each connector terminal on the DCDC converter assembly is identified by name for reference.

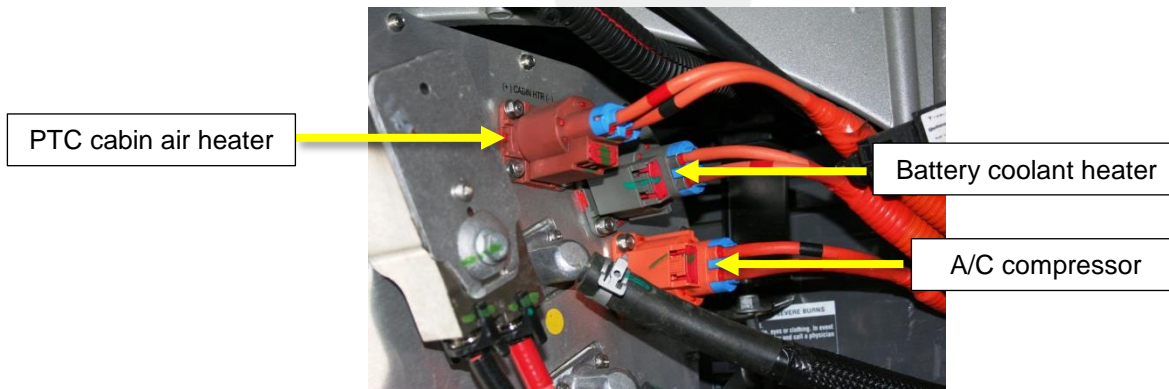


Figure 3

Replacing the 3 HVIL Connectors

NOTE: Perform this procedure for each of the 3 HVIL connectors.

1. Release the connector from the DCDC converter by first pulling the red tab out, and then pushing down on the connector tab to unlock it (Figure 4).

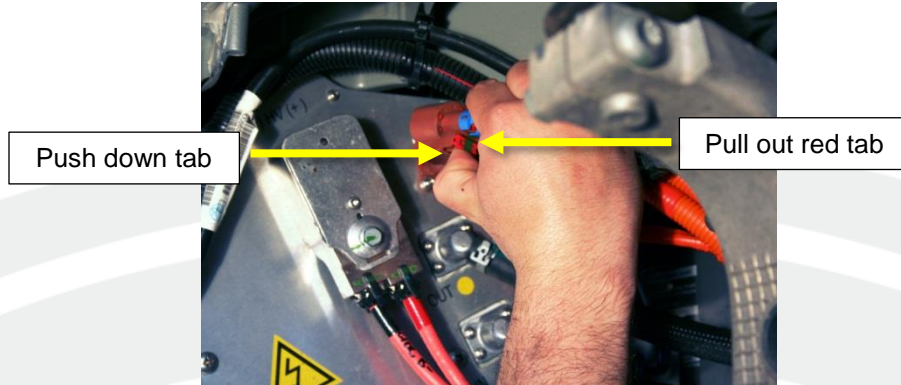


Figure 4 (PTC cabin air heater connector shown)

NOTE: All 3 connectors are repaired while in the vehicle. Connectors are shown below on a work bench for clarity.

2. Release the wire holder from each side of the connector using a flat-bladed screwdriver approximately 2 mm wide (Figure 5).

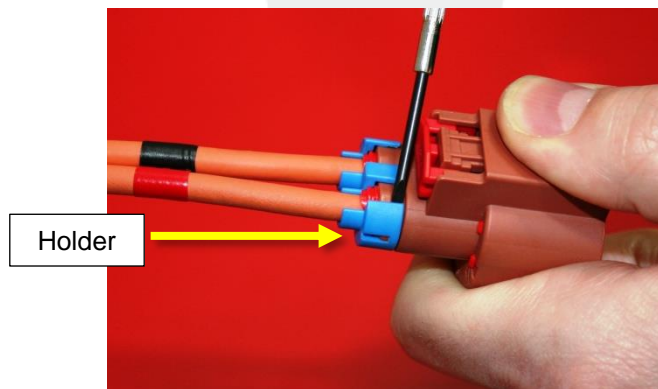


Figure 5

- Slide the holder away from the connector towards the color bands (Figure 6).

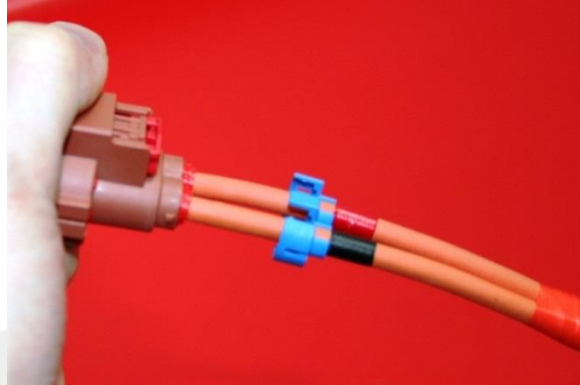


Figure 6

- Insert the screwdriver blade between the inner housing lance tab and the electrical terminal end (Figure 7). Pry up on the lance tab to release it from the terminal pin (Figure 8).

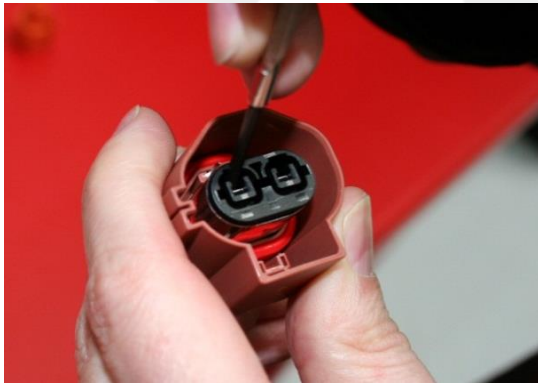


Figure 7

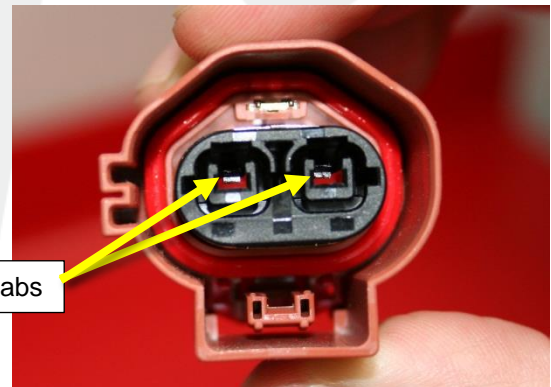


Figure 8

- Remove the terminal ends from the connector.
- Inspect the terminal ends and harness seals for damage.
- Ensure that the wire harness seals in place before installing the new connector (Figure 9).

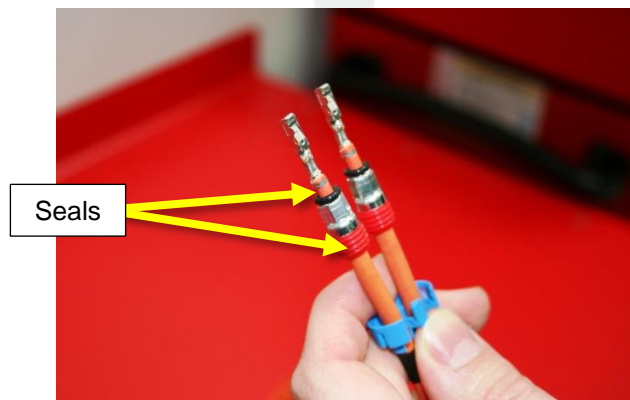


Figure 9

8. Verify that the replacement connector is identified by a yellow dot (Figure 10).

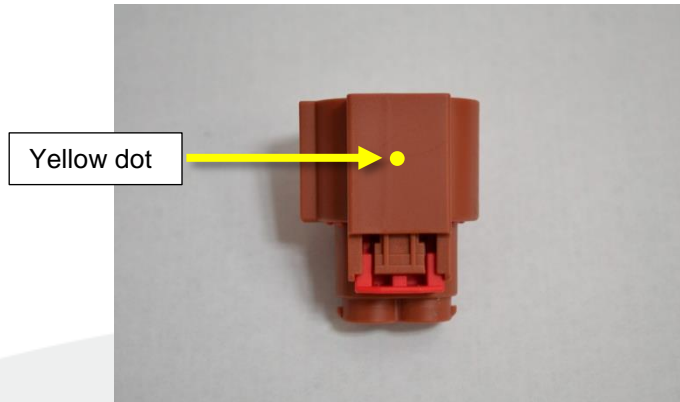


Figure 10

9. Verify the locations of terminal #1 and #2 stamped on the connector (Figure 11).



Figure 11

10. Carefully guide the wires into the connector (Figure 12).



Figure 12

NOTE: Ensure that the wires for terminals #1 and #2 are correctly matched according to Table 1.

System	Connector Color	Terminal #1 Wire Color	Terminal #2 Wire Color
PTC Cabin Air Heater	Brown	Black	Red
Battery Coolant Heater	Grey	Red	Black
A/C Compressor	Orange	Red	Black

Table 1

11. Push the wires firmly into the connector (Figure 13). A “click” can be heard when the wire terminals are fully attached to the lance tabs.



Figure 13

12. Perform a pull test on each wire to ensure the terminal pins are securely seated in the connector.

13. Push the outer seal rings into the connector (Figure 14) before securing the connector wire holder clip (Figure 15).

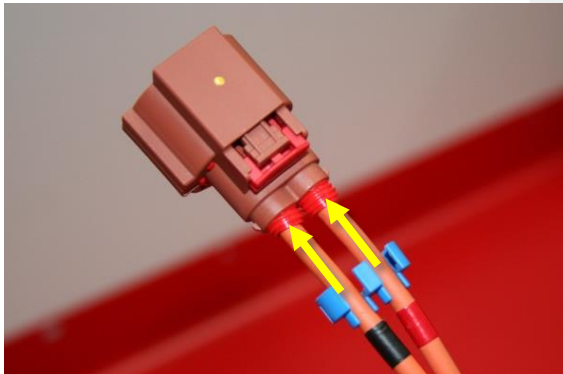


Figure 14

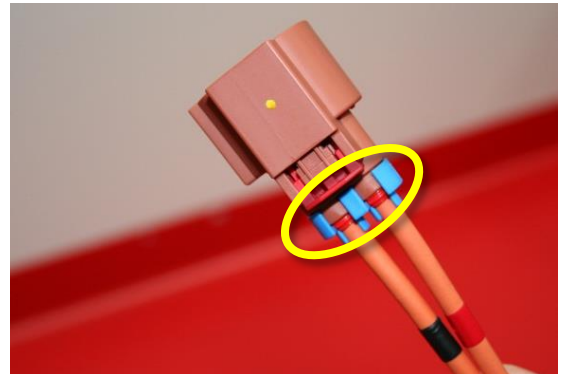


Figure 15

14. Reinstall the connector on the DCDC converter terminal. Ensure that the red tab is pushed in to lock the connector (Figure 16).

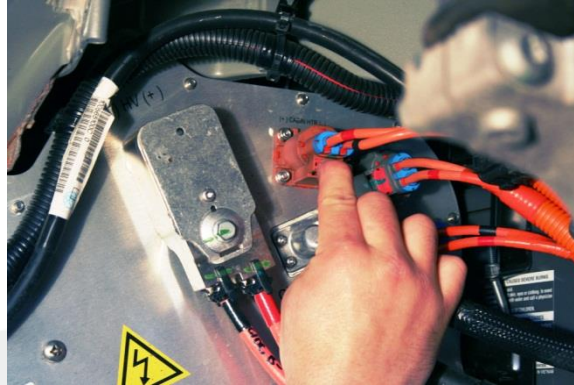


Figure 16

15. Perform steps 1–14 in this section for each connector.

16. Installation procedure is the reverse of removal.

Affected VIN(s) Affected Model S vehicles built before approximately April 8, 2013.

NOTE: This is a simplified summary of the affected VIN list. Refer to the VIN/Bulletin Tracker or Customer/Vehicle profile to determine applicability of this bulletin for a particular vehicle.

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