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Less Info

Title: Ground Splice 6747 Causing Multiple Fault Codes

Applies To: N9 and N10 powered vehicles built prior to Sep 28, 2015

Change Log

Please refer to the change log text box below for recent changes to this article:

02/19/2016 - Added terminal / seal information for the fuel heater and fuel pump connectors based on dealer feedback.
01/27/2016 - Updated broken hyperlink.
12/01/2015 - Updated coding for proper visibility to the dealer network.
11/06/2015 - Initial Article Release.

Description

A ground side wiring issue can cause multiple fault codes and may also cause engine performance issues. This document outlines the potential fault codes that could be present, the wiring that may be the cause, and the repair for the condition.

This applies to vehicles built prior to September 28, 2015 with an N9/10 engine.

Symptom(s)

Diagnostic Trouble Code(s) & Dashboard Indicator Light(s):

DTC/Light	Description
SPN 1761 FMI 19	DEFTL not detected on J1939
SPN 3216 FMI 19	NOxIN not detected on J1939
SPN 3226 FMI 19	NOxOUT not detected on J1939
SPN 4377 FMI 19	NH3 Sensor Module not detected on J1939
SPN 5742 FMI 19	DOC/DPF Temperature module not detect J1939
SPN 5743 FMI 19	SCR Temperature module not detect J1939
SPN 94 FMI 1	Fuel Delivery Pressure below Critical
SPN 651 FMI 14	Injector 1 Fuel quantity/timing error
SPN 1323 FMI 31	Misfire - Cylinder 1

Customer Observations or Concerns:

- MIL

- AWL
- Poor Engine Performance

Special Tool(s) / Software

Tool Description	Tool Number	Comments	Instructions
Indenter or Confined Crimp Tool for Closed Barrel Terminals		*Obtain Locally	

Service Parts Information

Part Description	Part Number	Quantity Required	Notes
Fuel Heater Terminal with 6" Lead *If equipped*	TXT126870129 or Terminal 2033819C1 Seal 2607907C1	1	Fuel Heater Lead (Part of Medium Duty Electrical Harness Repair Kit ITWX4048) *If equipped*
Fuel Pump Terminal with 6" Lead	TXT126870122 or Terminal 2590749C1	1	Fuel Pump Lead (Part of Medium Duty Electrical Harness Repair Kit ITWX4048)
Closed barrel butt connector	Obtain Locally 	2	Used as part of the repair for the fuel pump / fuel heater wiring change.
Heat shrink tubing	Obtain Locally	1	Used as part of the repair for the fuel pump / fuel heater wiring change.
16 gauge wire (white)	Obtain Locally	6 Feet	Used as part of the repair for the fuel pump / fuel heater wiring change. (3 feet for fuel pump, 3 feet for fuel heater)
Split Loom	Obtain Locally	4 Feet	Used as part of the repair for the fuel pump / fuel heater wiring change.
6747 Terminal with 6" Lead	2506112C1	As Needed	Use as needed to repair the 6747 connector
6747 Connector Body	3543733C1	As Needed	Use as needed to repair the 6747 connector
6747 Connector Body Lock	3543732C1	As Needed	Use as needed to repair the 6747 connector
6747 Bus Bar 3-4 Way	3543736C1	As Needed	Use as needed to repair the 6747 connector

Diagnostic Step(s)

Inspect the 6747 connector, terminals, wires, and splice block cap for any damage. If no damage is found, clean the terminals on the splice block cap gently with emery cloth. Even if no damage is found the repair steps should be followed if your N9 or N10 equipped vehicle was built prior to September 28th, 2015.

- The 6747 Ground Splice Connector is located on the left side (driver side) of the engine bay.
  - Refer to Figure 1 and Figure 2
- Inspect the connector and ground splice for any damage
  - Refer to Figure 3

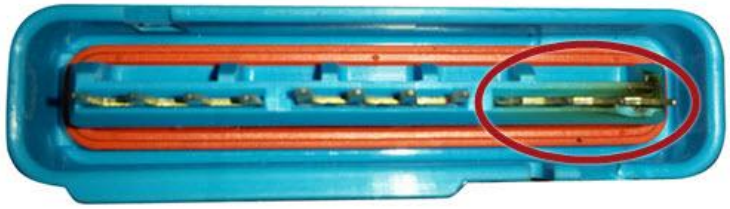
Figure 1 - 6747 Connector

Note: The 6747 may be located closer to the wiper bracket depending on truck model and configuration. Verify circuit numbers to ensure you are at the correct connector.

Figure 2 - 6747 Connector

Note: The 6747 may be located closer to the wiper bracket depending on truck model and configuration. Verify circuit numbers to ensure you are at the correct connector.

Figure 3 - 6747 Splice Bus Bar



Note the damage to the connector and terminals

Repair Step(s)

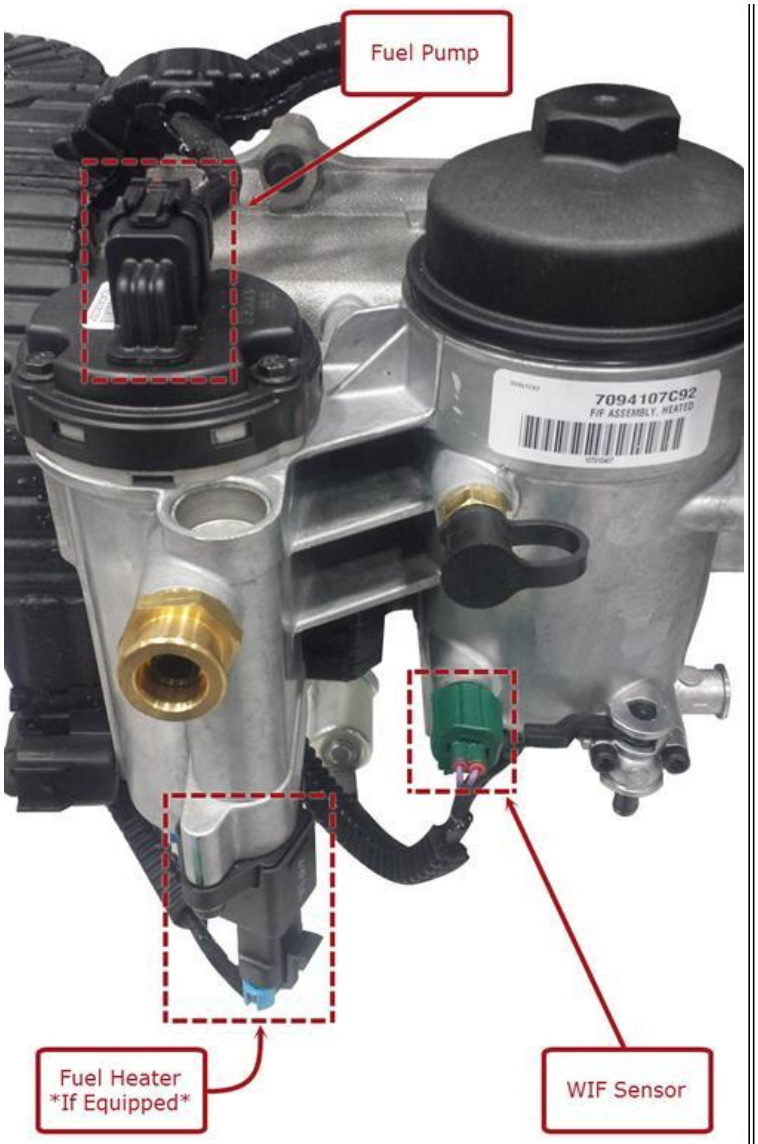
Replace any damaged components on the 6747 connector using the parts listed above.

Move the fuel pump ground and fuel heater ground (if equipped) to an engine ground stud.

- Even if no damage is found at the 6747 connector the repair steps should be followed if your N9 or N10 equipped vehicle was built prior to September 28th, 2015.

1. Unplug the fuel pump connector.
    - Refer to Figure 4.
2. Remove terminal from Pin 1.
3. Cut the wire back 1 inch from the molded foam.
4. Discard the terminal side.
5. Heat shrink the remaining side of the cut wire to protect the wire.
    - The heat shrink should extend off the wire to seal and protect.
6. Install a new terminal TXT126870122 in the connector body.
7. Crimp the newly installed fuel pump wire to a 3 foot piece of 14 gauge white wire. Solder and heat shrink the splice.
8. Route the wire along the harness towards the engine block ground stud.
    - Refer to Figure 5 and Figure 6.
9. Install a 3/8 inch eyelet on the white wire at the ground stud.
10. Unplug the fuel heater connector (if equipped).
    - Refer to Figure 4.
11. Cut the wire back 1 inch from the molded foam.
12. Discard the terminal side.
13. Heat shrink the remaining side of the cut wire to protect the wire.
    - The heat shrink should extend off the wire to seal and protect.
14. Install a new terminal TXT126870129 in the connector body.
15. Crimp the newly installed fuel heater wire to a 3 foot piece of 14 gauge white wire. Solder and heat shrink the splice.
16. Route the wire along the harness towards the engine block ground stud.
    - Refer to Figure 5 and Figure 6.
17. Install a 3/8 inch eyelet on the white wire at the ground stud.
18. Install split loom around the ground wires and secure properly.

Figure 4 - Fuel Pump / Filter Assembly

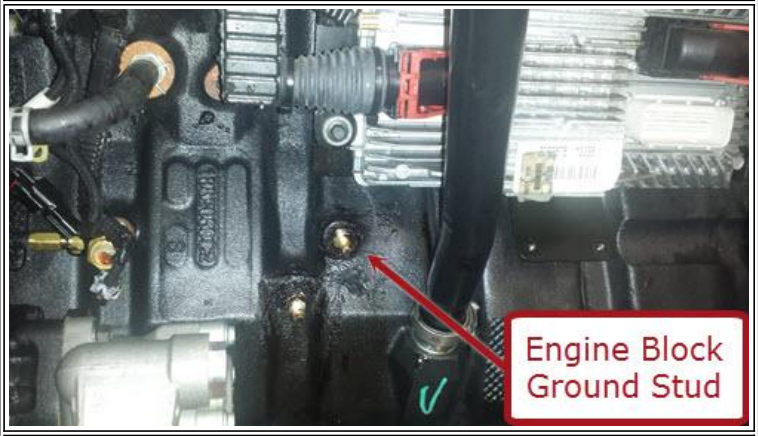


Note: Items removed for clarity

Figure 5 - Engine Block Ground Stud

Ground Stud is located on the left side (driver side) of the engine block, just under the ECM.

Figure 6 - Engine Block Ground Stud



Note: Items removed for clarity.

Warranty Information

Warranty Claim Coding:

Group:	15080 - Electric Fuel Pump
Noun:	379 - Fuse / Circuit Breaker

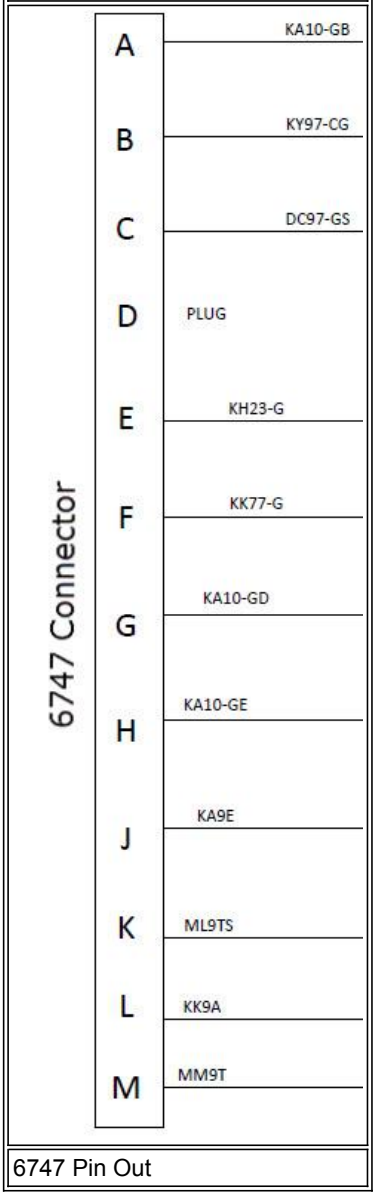
Standard Repair Time(s):

SRT Description	Service Repair Time Procedure	SRT Hours
Wiring Repair(s), Perform	A08-2001A (All Models) A08-2002A A08-2003A A08-2004A	Click Here

	A08-2005A	

Other Resources

Figure 7 - 6747 Connector



6747 Pin Out

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