

**NUMBER:** 25-003-13

**GROUP:** Emissions Control

**DATE:** February 28, 2013

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**SUBJECT:**

Malfunction Indicator Lamp Illumination Due To Oxygen Sensor

**OVERVIEW:**

This bulletin involves **inspecting for the part number of the transmission harness and based on the part number suffix, determining if the Oxygen Sensor Module Connector requires repair.** Some model year 2011 harness' were built with tin plated terminals in 5 of the connector cavities that should have been gold plated. Based on the transmission harness part number, the terminals will be replaced as required.

**NOTE: Service Bulletin's 25-004-012 and 18-012-12 REV. A (or later bulletins) must also be performed (if not previously performed).**

**MODELS:**

2011	(DJ)	Ram Pick Up (2500)
2011	(D2)	Ram Pick Up (3500)

**NOTE: This bulletin applies to vehicles equipped with a Cummins 6.7L engine (sales code ETJ).**

**SYMPTOM/CONDITION:**

If the vehicle has any of the following DTC's for O2 Sensors, Stored, Pending or Active, perform the Repair Procedure BEFORE replacing any parts.

- P013A O2 Sensor 1/2 Slow Response - Rich To Lean (Soot related code, see note)\*
- P013B O2 Sensor 1/2 Slow Response - Lean To Rich (Soot related code, see note)\*
- P014C O2 Sensor 1/1 Slow Response - Rich To Lean (Soot related code, see note)\*
- P014D O2 Sensor 1/1 Slow Response - Lean To Rich (Soot related code, see note)\*
- P0030 O2 Sensor 1/1 Heater Circuit
- P0031 O2 Sensor 1/1 Heater Circuit Low
- P0032 O2 Sensor 1/1 Heater Circuit High
- P0036 O2 Sensor 1/2 Heater Circuit Malfunction
- P0037 O2 Sensor Heater Circuit Low 1/2
- P0038 O2 Sensor Heater Circuit High 1/2
- P0053 O2 Sensor Heater 1/1 Resistance
- P0054 O2 Sensor Heater 1/2 Resistance
- P064D Internal Control Module O2 Sensors Processor Performance - Bank 1
- P0131 1/1 O2 Sensor Shorted To Ground
- P0132 1/1 O2 Sensor Shorted To Voltage
- P0135 O2 Sensor 1/1 Heater Performance
- P0137 1/2 O2 Sensor Shorted To Ground
- P0138 1/2 O2 Sensor Shorted To Voltage
- P0141 O2 Sensor 1/2 Heater Performance
- P113C O2 Sensor Power Supply Circuit Performance
- P2195 O2 Sensor 1/1 Out Of Range High
- P2196 O2 Sensor 1/1 Out Of Range Low
- P22AB O2 Sensor Positive Current Control Circuit/Open - Bank 1 Sensor 2
- P22AE O2 Sensor Reference Voltage Circuit/Open - Bank 1 Sensor 2
- P22B2 O2 Sensor Negative Current Control Circuit/Open - Bank 1
- P22B5 O2 Sensor 1/2 Pump Cell Current Trim Circuit Open
- P2237 O2 Sensor 1/1 Pump Cell Current Circuit Low
- P2243 O2 Sensor 1/1 Reference Voltage Circuit Open
- P2251 O2 Sensor 1/1 Negative Current Control Circuit/Open
- P2270 O2 Sensor 1/2 Out Of Range High
- P2271 O2 Sensor 1/2 Out Of Range Low
- P241A O2 Sensor 1/1 And 1/2 Oxygen Concentration Mismatch
- P2626 O2 Sensor 1/1 Pump Cell Current Trim Circuit/Open
- P2A00 O2 Sensor 1/1 Circuit Performance
- P2A01 O2 Sensor 1/2 Circuit Performance
- U011A Lost Communication With Exhaust Gas Sensor Module

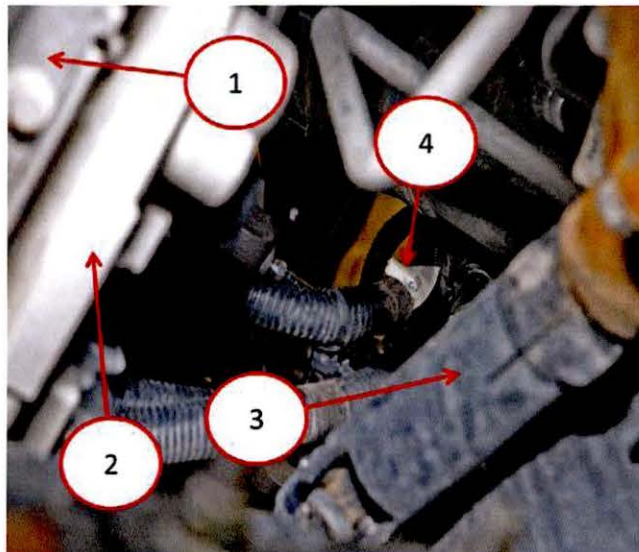
**NOTE: Soot related codes noted above with an asterisk (\*) may be the result of other system(s) and must be validated as described on the Diesel Diagnostic Worksheet, Section 4D. Vehicles that DO NOT pass the Validation Test require further diagnosis to determine the cause of excess soot build up.**

**DIAGNOSIS:**

Complete a Diesel Diagnostic Worksheet per instructions in Service Bulletin 18-045-11 Dated October 19, 2011 and U. S. Warranty Bulletin D-11-55 Dated October, 2011. All DTC's need to be recorded on the WRO and DTC's other than the ones listed above may require additional diagnosis and repair after completing this Bulletin.

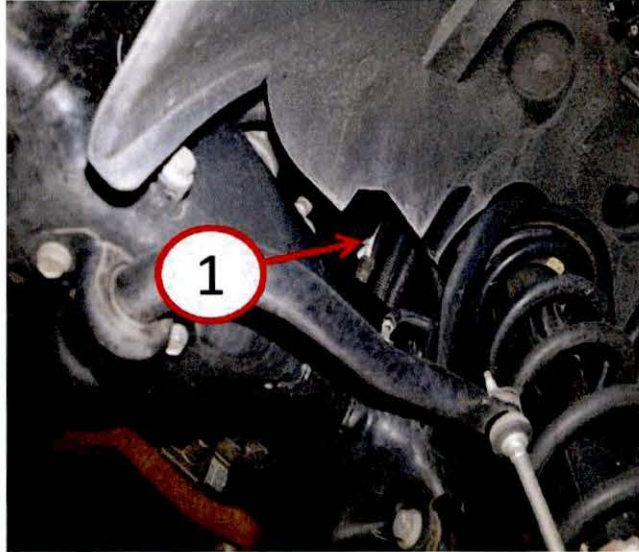
Vehicles that exhibit **ANY DTC('s)** (Stored or Active), pertaining to Oxygen Sensors or Oxygen Sensor related components must have this Repair Procedure completed **BEFORE** any parts are replaced.

1. Determine if the Oxygen Sensor Module terminals require replacement. Inspect the tag on the Transmission Wiring Harness for the part number suffix (the last two digits). This wiring harness tag is attached to the harness at a point usually most visible from under the hood. Initially, it is easiest to locate the tag from under the vehicle. Follow the harness from the PCM (front) connector up to the takeout that heads toward the driver's side of the vehicle. The tag is located on this takeout, near the frame rail, behind the left front wheel well splash shield. See (Fig. 1) and (Fig. 2) for tag location references.



**Fig. 1 LOCATION OF TRANSMISSION HARNESS TAG, VIEWED FROM BELOW**

- 1 - Engine Oil Pan
  - 2 - PCM
  - 3 - Steering Shaft
  - 4 - Transmission Wiring Harness Tag Location
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**Fig. 2 TRANSMISSION HARNESS TAG, VIEWED FROM LEFT WHEEL WELL**

1 - Transmission Tag as Visible Through Drivers Side Wheel Well

2. The harness part number is located on the left side of the tag between the 2 bar codes. Does the part number end with the suffix AC ?
  - a. Yes >>> If the suffix is AC, The Repair Procedure for Module Connector **IS** required. Perform the repair procedure below.
  - b. No >>> This bulletin does not apply. Ensure SB's 25-004-12 and 18-012-12 REV. A (or later bulletins) have been completed.

**SPECIAL TOOLS / EQUIPMENT REQUIRED:**

NPN	Soldering Iron
NPN	Narrow Blade, Flat Screwdriver (3mm Wide Max)
1 (AR)	Molex Terminal Release Tool. MX 150-MX150L / 63813-1500 (Molex) <b>OR</b>
1 (AR)	A 1 mm Drill Bit (CHAMFERED ON THE NON-CUTTING END) and Handle From Miller Tool #8351 Which is Part of Kit 8283 or 8529)
1	05019912AA Mopar (Miller Tool # 10042)

**PARTS REQUIRED:**

Qty.	Part No.	Description
1	68203454AA	Wire Repair Kit (Oxygen Sensor Module) Kit Contains 5 Terminals With Pigtails, Heat Shrink Tube

**NOTE:** Prior to replacing any parts, (Oxygen Sensors, Oxygen Sensor Module, Transmission Wiring Harness or PCM) perform the Repair Procedure below and also perform an Oxygen Sensor Verification test drive also described below.

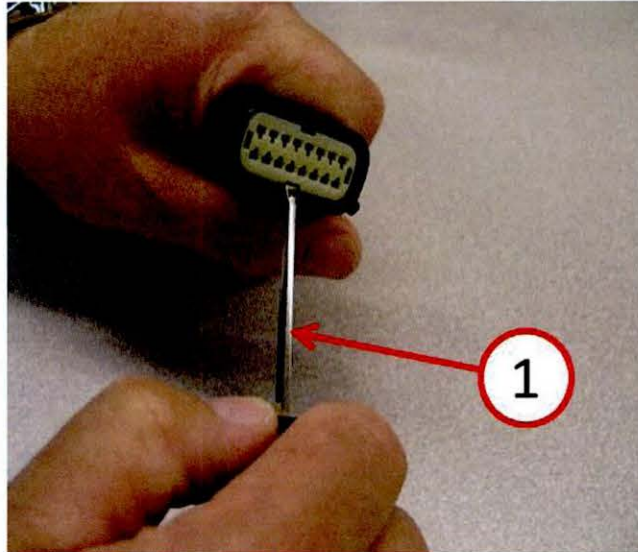
**NOTE:** Vehicles experiencing P013X or P014X DTC's must have the Aftertreatment Validation Test (Section 4D of the Diesel Diagnostic Worksheet) performed to ensure excess soot is not causing the DTC(s). IF excess soot is found during Aftertreatment Validation Test, perform appropriate repairs to eliminate soot accumulation. The repair procedure below should be performed regardless of outcome or repairs performed for other issues.

### **REPAIR PROCEDURE:**

Specific female terminals on the Oxygen Sensor Module Vehicle Harness Connector on the vehicle transmission harness will be removed and replaced with a new terminal and pigtail. Replacement terminals are gold plated.

The pigtail splice points should be staggered to eliminate bulk in the harness.

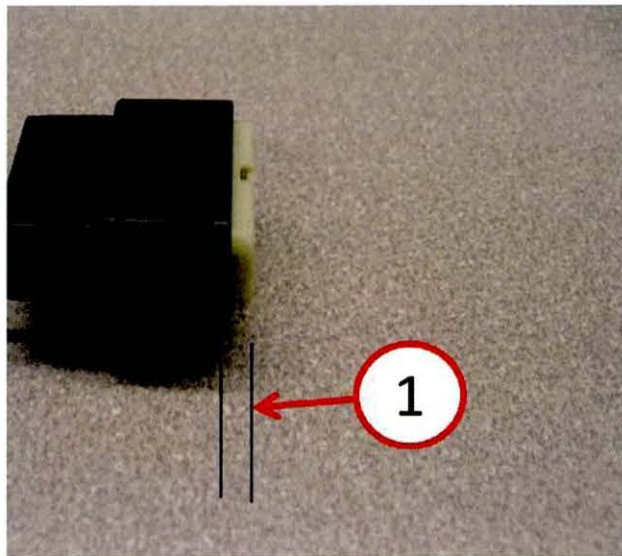
1. Open hood.
2. Disconnect and isolate both negative battery cables.
3. Raise and support vehicle on a suitable hoist.
4. Disconnect the **Oxygen Sensor Module Connector** and remove the protective tape and plastic shield on the connector.
5. Using a narrow blade, flat screwdriver (3 mm wide max), pry the white TPA (white cover seen when looking in connector). Note travel of white TPA is only 5 mm until "click" is heard. This is the release point of the TPA. NOTE: the TPA is a device that locks the release finger so that when seated, terminal will not and cannot be disengaged, (Fig. 3) and (Fig. 4).



**Fig. 3 PRY OUT THE TPA 5MM**

1 - Small Blade (3mm Wide Max) Screwdriver

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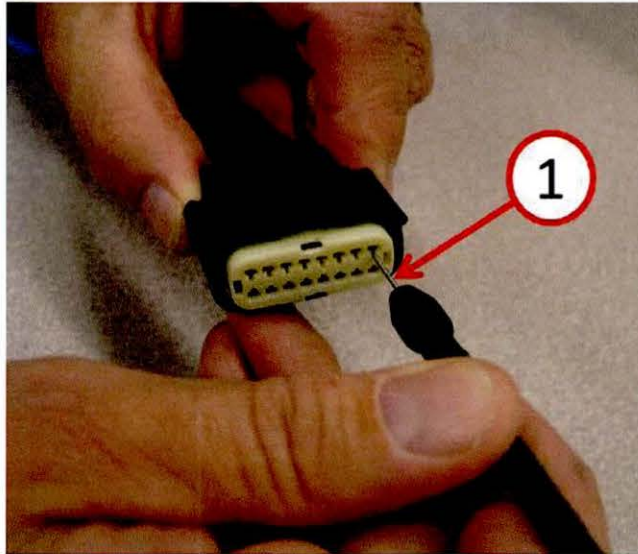


**Fig. 4 TPA EXTENDED 5MM**

1 - Extend TPA 5MM Only

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6. Insert either J-38125-217 (Kent Moore number) OR MX 150-MX150L / 63813-1500 (Molex) OR a fabricated tool, (consisting of a chamfered 1mm drill bit installed with the cutting end of the drill in the handle of Miller Tool #8351), into TPA (module side of connector) into the desired "service port" until resistance is felt. (Fig. 5)



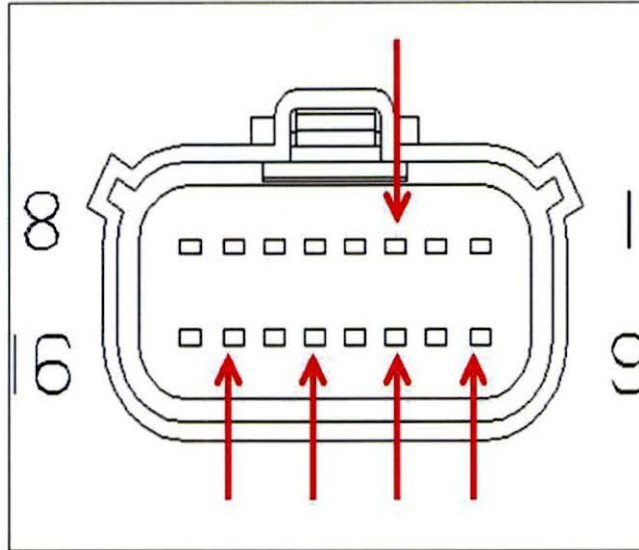
**Fig. 5 TERMINAL RELEASE TOOL INSERTED**

1 - Tool Inserted to Release Terminal From Connector

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7. Push the wire into the connector from the back, and while keeping the tool or drill at 90° angle to face of TPA, push the tool or drill in until it releases the lock finger in the connector. At this point the wire should pull out the back. Note the orientation of the terminal in the connector for ease of installation later.

**NOTE: The following splice procedure requires the use of splice bands crimped in place BEFORE soldering. Soldering wires alone may cause too much circuit resistance.**



**Fig. 6 TERMINALS TO BE REPLACED**

Replace Terminals Indicated By Red Arrows

8. Replace terminals #3, 9, 11, 13 & 15 (one at a time) as called out with RED ARROWS in (Fig. 6) with the gold terminal / pigtail included in Wire Repair Kit, p/n 68203454AA. The pigtail splice points should be staggered to eliminate bulk in the harness;
  - a. Cut each wire, (one at a time) in a staggered manner.
  - b. Slide heat shrink tube on wire prior to splicing. Strip insulation on each wire and crimp together using band clamp **BEFORE SOLDERING** using Mopar splice band tool, p/n 05019912AA (or equivalent) then solder the crimped connection and heat shrink each wire individually.
9. With the TPA still in the "released" position, install the terminal into the connector through the insulator noting proper orientation of terminal as noted in [Step #7](#) above.
10. Repeat for all 5 terminals to be replaced.
11. Relock the TPA into original position.
12. Clean (with shop air) Oxygen Sensor Module connector and secure connector to the module.
13. Secure all wiring to proper anchors.
14. Tape wires together then install the removed plastic protector and continue taping convolute to connector body.
15. Lower vehicle, reconnect batteries.
16. Perform SB 18-012-12 REV. A (or later bulletin).
17. Perform SB 25-004-12 (or later bulletin).
18. Perform Verification procedure at the end of SB 25-004-12 (or later bulletin).



**POLICY:**

Reimbursable within the provisions of the warranty.

**TIME ALLOWANCE:**

<b>Labor Operation No:</b>	<b>Description</b>	<b>Amount</b>
08-90-22-90	MY 2011 Connectors, Oxygen Sensor Module, Inspect Only (2 - Skilled)	0.2 Hrs.
08-90-22-91	MY 2011 Connectors, Oxygen Sensor Module, Inspect and Replace (2 - Skilled)	0.5 Hrs.

**FAILURE CODE:**

ZZ	Service Action
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