

MODEL: Karma Revero

DATE: November 2018

First Release

TITLE: Downstream O2 Sensor Inspection

PRIORITY: All

APPLICABILITY: MY18 Revero Presenting with associated DTCs

MARKET REGION: North America

PURPOSE: To ensure correct routing of secondary oxygen sensor wiring

Inspection for O2 sensor and related codes, P0036 (HO2S Heater Control Circuit Bank 1 Sensor 2) and/or P0037 (HO2S Heater Control Circuit Low Bank 1 Sensor 2), P0138 O2 sensor fault (O2 Sensor Circuit High Voltage Bank 1 Sensor 2) P2270 (O2 Sensor Signal Biased/Stuck Lean Bank 1 Sensor 2), check for proper clip attachment and following routing of the sensor. Also check the connector for any water ingress. Replace sensor as needed, route O2 sensor properly to avoid sharp areas and direct heat sources.

The tools as shown ,will be required to perform this set of inspections and adjustments.

- Flashlight
- t45 torx
- Appropriate ratchet
- Clip removal tool and a pick tool
- Wire snips Soldering tool,
- Shrink tubing
- Electrical tape



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Overview:

1. Place vehicle on lift
2. Remove front battery cover and central muffler to provide access to oxygen sensor area
3. Check for O2 sensor wiring and routing from clip on the braided covered hose
4. Follow the wire so that it is free of contact to direct heat sources and sharp surfaces (center muffler and heat shields)
5. Route and secure sensor wire if required, securely and properly
6. Inspect connector for water ingress, and any wires for nicks or damage.
7. If no corrosion or damage is found, reconnect
8. If corrosion on terminals/connector is found, replace oxygen sensor as required.
9. On the harness side, if this corroded, repair the harness with a pigtail connector (C161195900100 - Pigtail - Engine Harness O2 Sensor)
10. Reconnect the harness and
11. Reassemble vehicle and clear codes, test drive

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Remove the Shield-HV Battery,Front (fig 1a) for best viewing for the inspection. remove the four (4) torx head bolts. Reassembly torque is 20Nm (+/- 3).

Remove the center muffler at this time as well for best access. Exhaust clamp torque is 55.0 +/- 8Nm (fig. 1b) following page and the center muffler to catalyst studs is 17 +/- 2Nm (fig. 1c) on the following page as well.



fig. 1a

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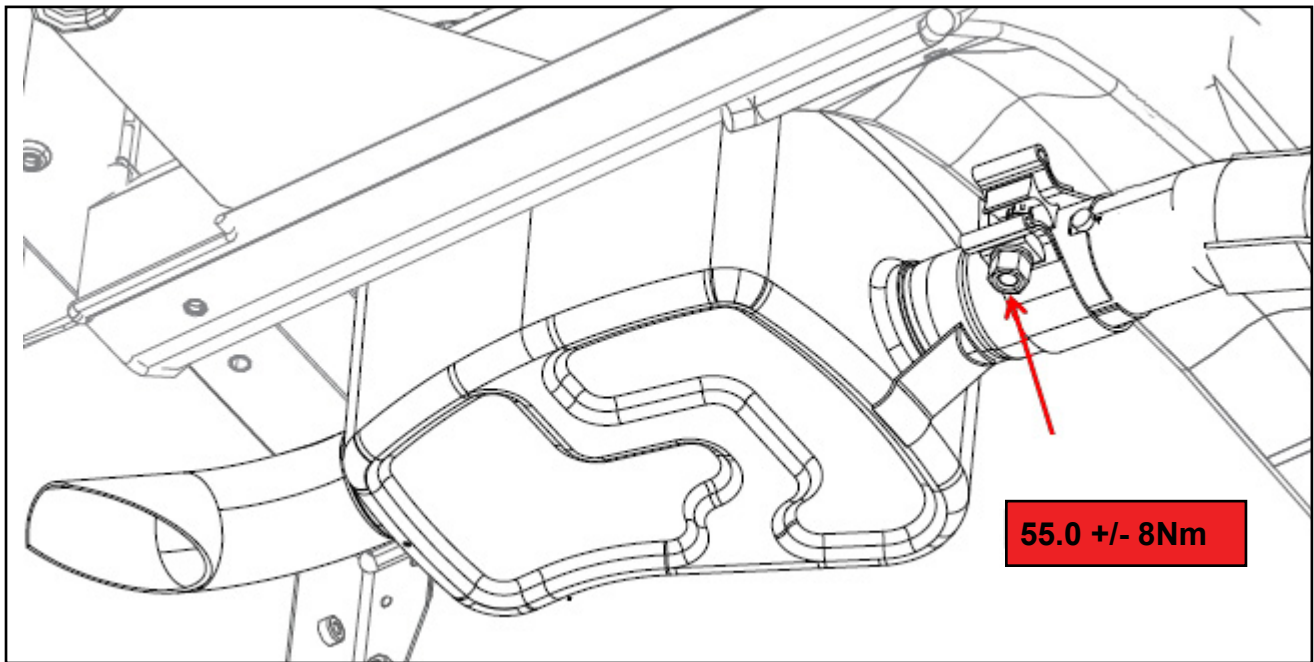


fig. 1b

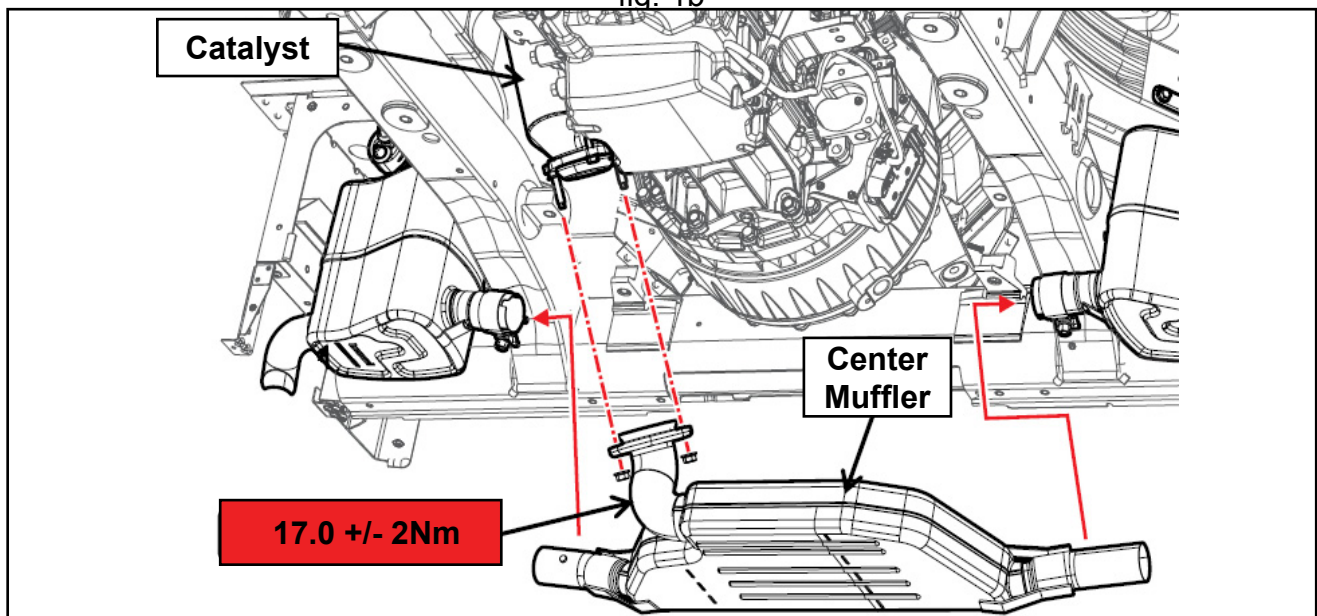


fig. 1c

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With the shield removed the catalyst monitor O2 sensor (downstream sensor) should be readily visible (fig. 2a). The sensor wire should be as shown, by following the wire up a clip around the braided hose should be visible. This is the correct location (fig 2a, 2b). If the retainer is not found here, un-clip it and relocate as necessary.



fig.2a

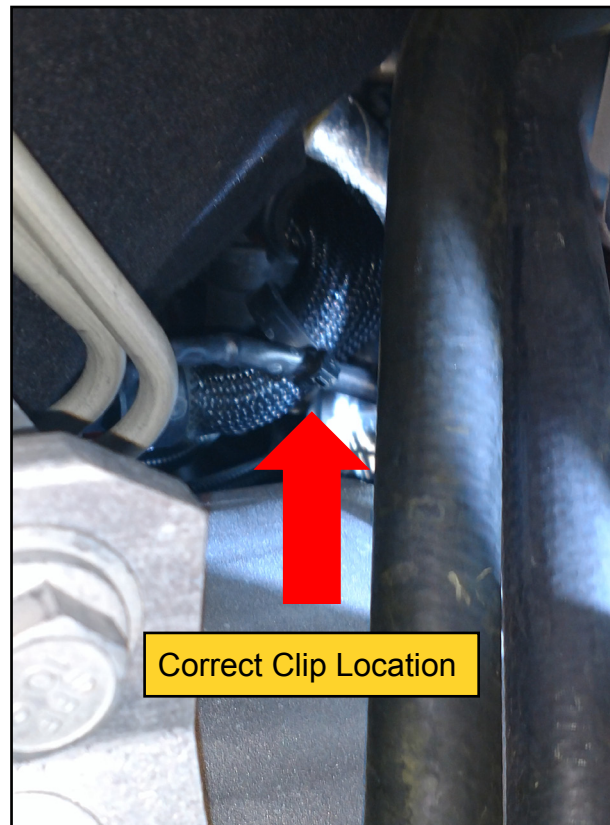


fig.2b

NOTE: This downstream sensor wire should in not contact the muffler or exhaust system.

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Inspect the connector. Follow the wire from the clip f down along the generator, the connector is accessible here (fig 3a). There is a tension clip to the generator mount fastening the connector, this can be popped off for inspection (fig 3b).

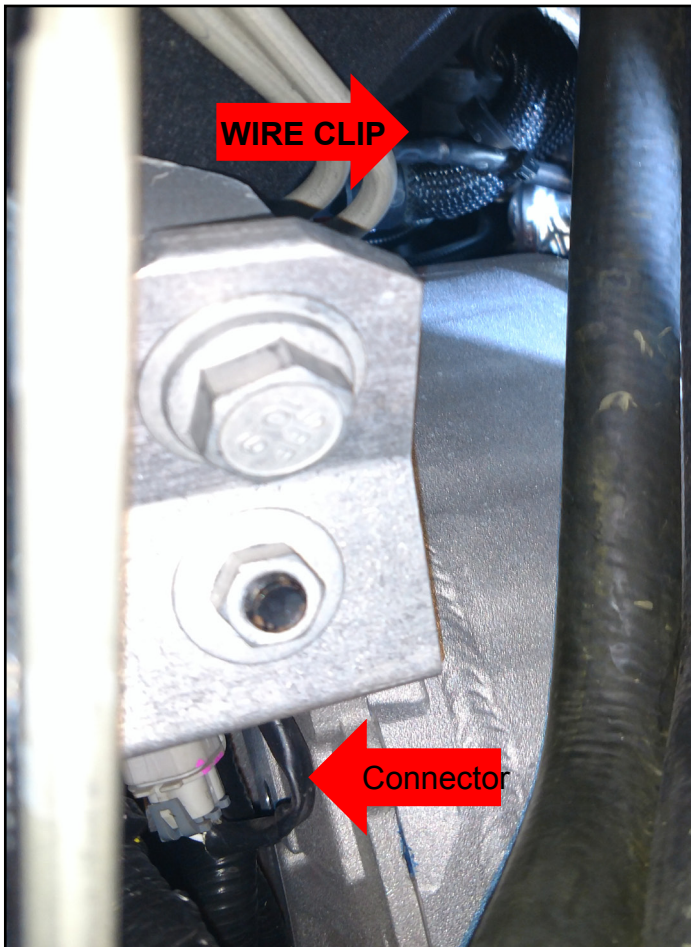


fig.3a

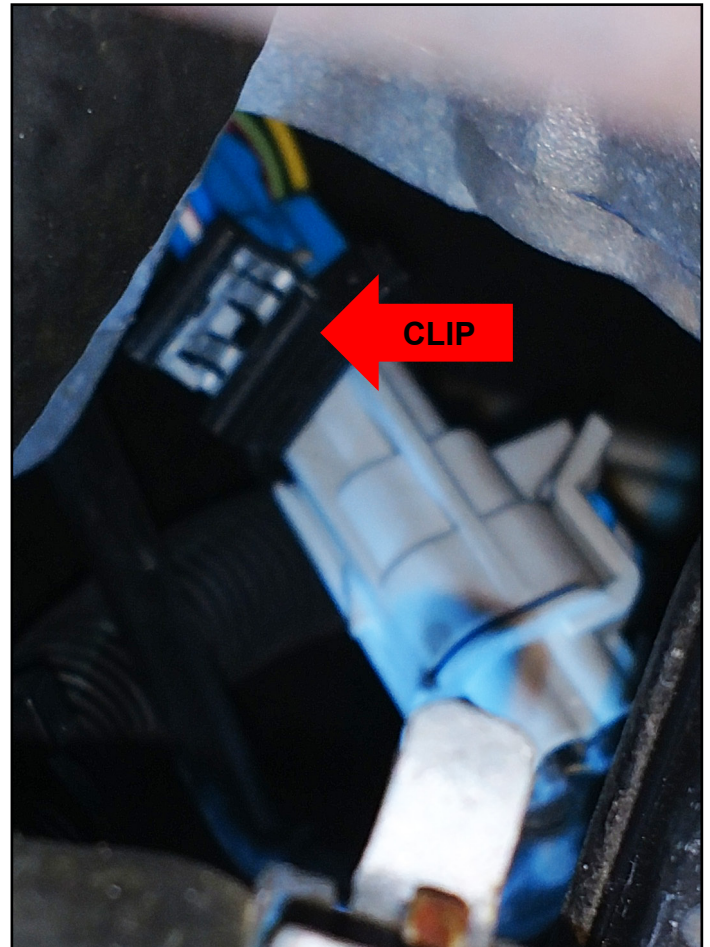


fig.3b

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To undo the device connector, there is a blue locking tab, this can be pushed out, and saved for reassembly (fig.4a) and inset.

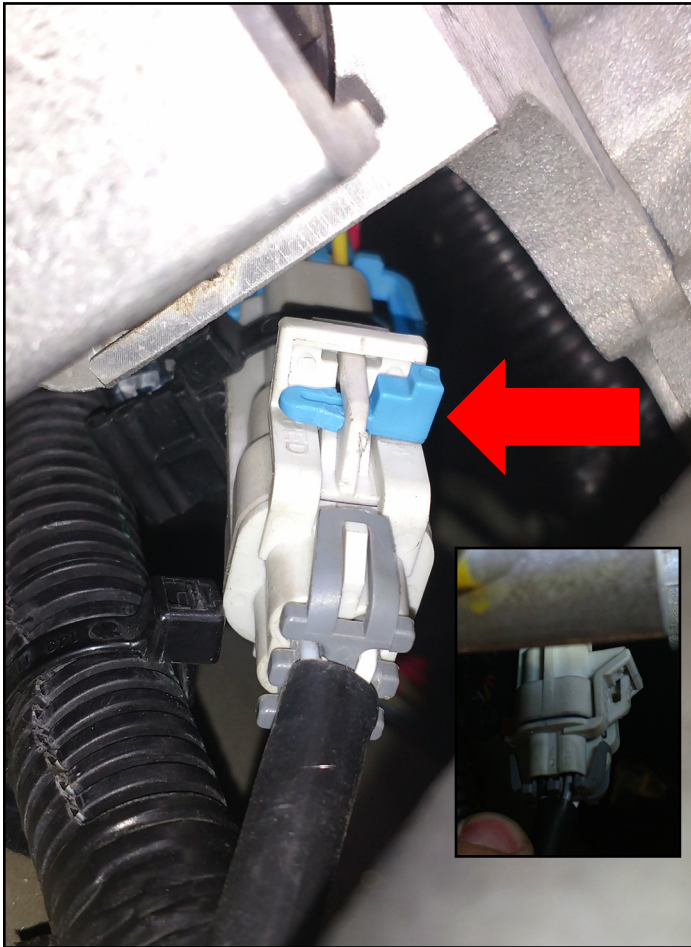


fig.4a



fig.4b



fig.4c

The connector and terminals should be found clean (fig 4b, 4c). Reassemble when the inspection is complete with no damage or corrosion found.

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Should any corrosion be found, replace the Oxygen sensor, and splice a new connector end on to the harness.

Remove the blue clip, and save to reuse on the spliced on connector, expose as much of the harness as possible. Use part number C161195900100, Pigtail - Engine Harness O2 Sensor (fig. 5b) to splice on to the harness. Be sure to connect the same wire colors to the existing ones in the harness (fig 5c), this is critical for proper operation. Use the extra length provided in the pigtail to create a drip loop, protecting the connector from future water ingress. Use zip-ties to secure the longer cable now, away from direct heat sources or sharp edges.

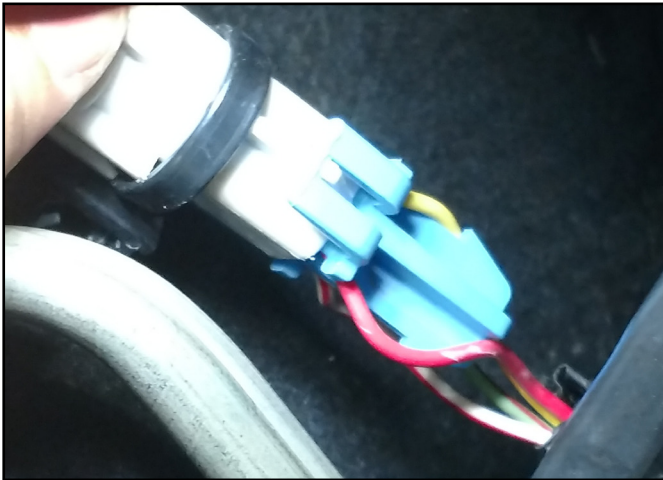
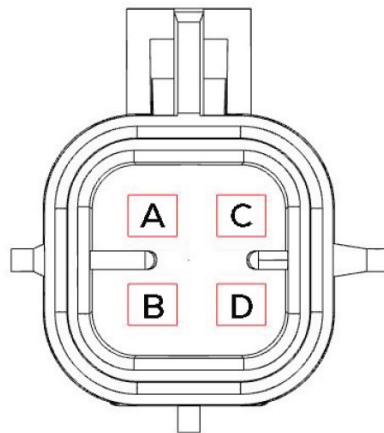


fig. 5a



fig. 5b



DESCRIPTION: Oxygen Sensor 2

PIN	WIRE	Pin Function Descrip
A	Lt Green/Red Str	Heated Oxygen Sensor 2 Low Signal
B	White/Red Str	Heated Oxygen Sensor 2 High Signal
C	Yellow	Heated Oxygen Sensor 2 Heater Low Control
D	Red	Heated Oxygen Sensor 2 Ign Voltage

fig. 5c

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The splice-in repair part has matching wire colors, to connect like to like. The harness connector is visible here. (fig 6a).

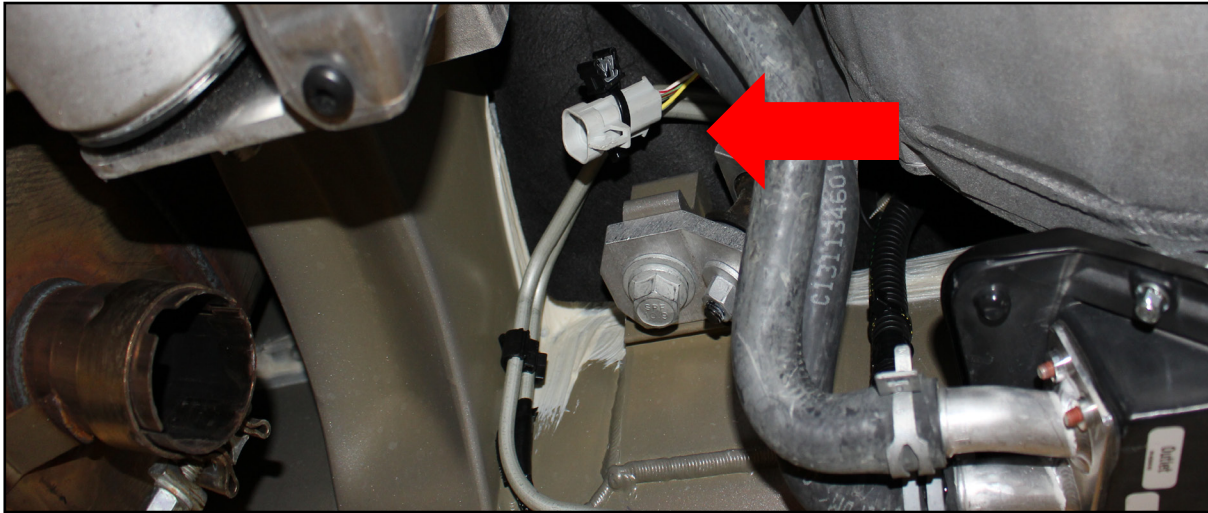


fig.6a

There are several cable ties (“zip ties”) holding the harness up, these will require being cut to provide further access, and should be replaced when repair is complete. the harness will also need to be opened to provide more wire length to splice in the new connector section (fig 6b).

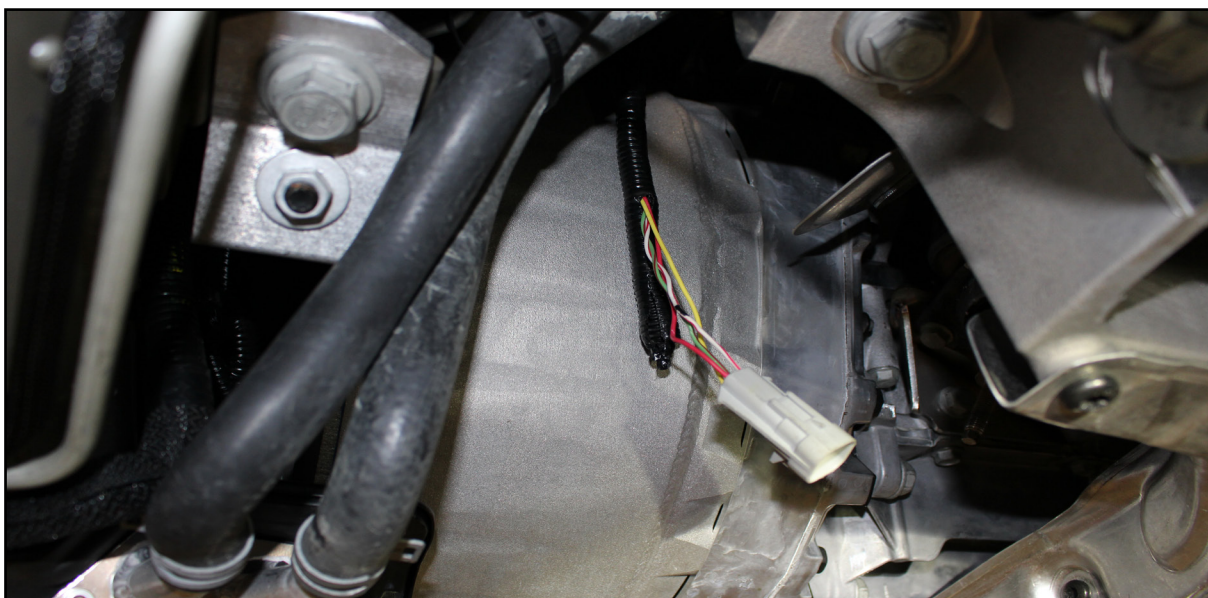


fig.6b

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When making the splice the connections should be staggered so as not to create a thicker bundle in this area. (fig 7a). When complete tightly wrap the bundle with the tape as shown (fig 7b). The extra wire length if any should be hung to create a "drip loop" (fig. 7) and prevent any water from entering the connector area. Reinstall the wire ties and clips, reinstall the muffler and test drive, report any codes to TSS and proceed with any instructions provided.



fig. 7a



fig. 7b

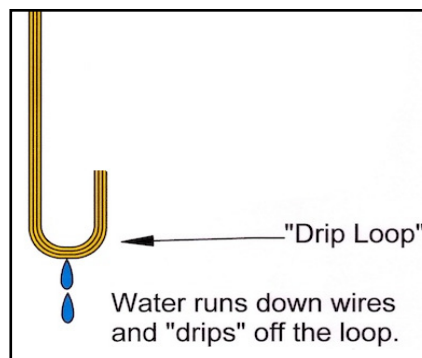


fig. 7c

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Technical Service Bulletin

TB-18-12-05

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PARTS IF REQUIRED:

PART NUMBER	DESCRIPTION	QTY
C161195900100	Pigtail - Engine Harness O2 Sensor	1

SHOP SUPPLIES:

PART NUMBER	DESCRIPTION	QTY
N/A	N/A	

SPECIAL TOOLS:

DESCRIPTION

CAUSAL PART:

PART NUMBER	DESCRIPTION
C131115302000	Oxygen Sensor - CAT Monitor

LABOR CODES:

CODE	DESCRIPTION	TIME	DEFECT CODE
12-40-23-05	Downstream Sensor Inspection	1.9	12-40-23-13

SUBLET:

CODE	DESCRIPTION	AMOUNT
N/A		

WARRANTY DISPOSITION: This repair is covered under the New Vehicle Limited Warranty, in effect for five (5) years from the in-service date with no mileage limitation.

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