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Service Information Bulletin

SUBJECT	DATE
SPN 520244 (MCM) (GHG17)	March 2017

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0193	GHG17 Medium Duty	SPN 520244/FMI 5 - GHG17	This is a new section.

DiagnosticLink users: Please update the troubleshooting guides in DiagnosticLink with this newest version. To update the tool troubleshooting guide, open DiagnosticLink and from the Help – Troubleshooting Guides menu, select the appropriate troubleshooting manual, then click Update.

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2 SPN 520244/FMI 5 - GHG17

Oxygen Sensor Pump Circuit Failed Open

Table 1.

SPN 520244/FMI 5	
Description	This Fault Code Sets when the Motor Control Module (MCM) Detects an Open Circuit on the Oxygen (O2) Sensor Pumping Voltage/ Current Wire (PUMP)
Monitored Parameter	O2 Sensor
Typical Enabling Conditions	Engine Running for more than 10 Minutes, Vehicle Speed greater Than 89 kph (55 mph), Engine Coast Greater than Five Seconds
Monitor Sequence	None
Execution Frequency	Always When Enabling Conditions Are Met
Typical Duration	Five Seconds
Dash Lamps	MIL, CEL
Engine Reaction	25% Derate
Verification	Run the Engine at Idle for 10 Minutes, Road Test the Vehicle for 10 Minutes at a Speed greater than 89 kph (55 mph). While Road Testing the Vehicle, Increase the Engine rpm to at Least 800 rpm and then Let the Vehicle Coast for More than Five Seconds

WARNING: PERSONAL INJURY

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

- Always start and operate an engine in a well ventilated area.
- If operating an engine in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system or emission control system.

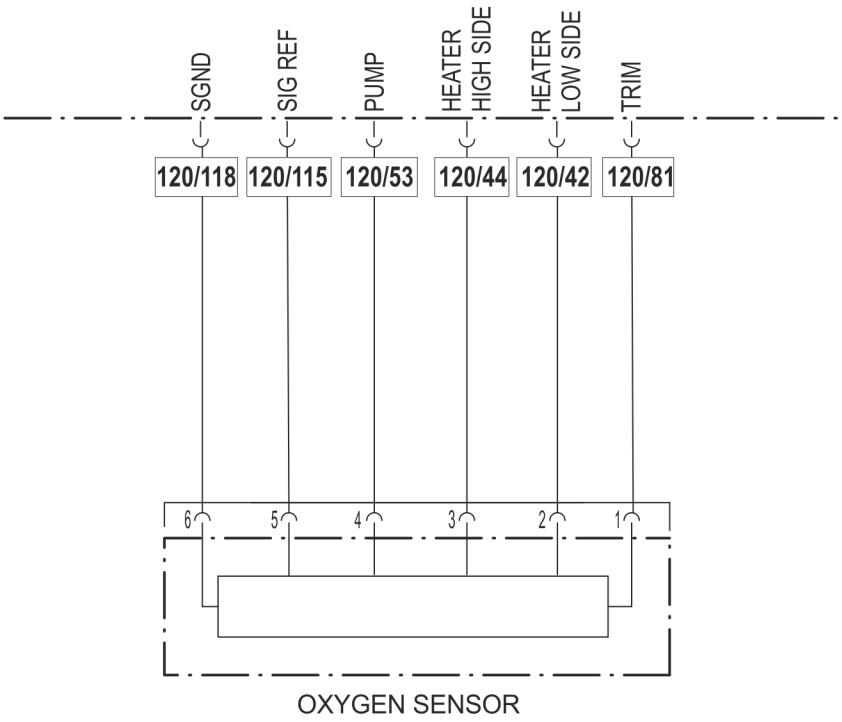
WARNING: PERSONAL INJURY

To avoid injury before starting and running the engine, ensure the vehicle is parked on a level surface, parking brake is set, and the wheels are blocked.

WARNING: ENGINE EXHAUST

To avoid injury from inhaling engine exhaust, always operate the engine in a well-ventilated area. Engine exhaust is toxic.

Check as follows:



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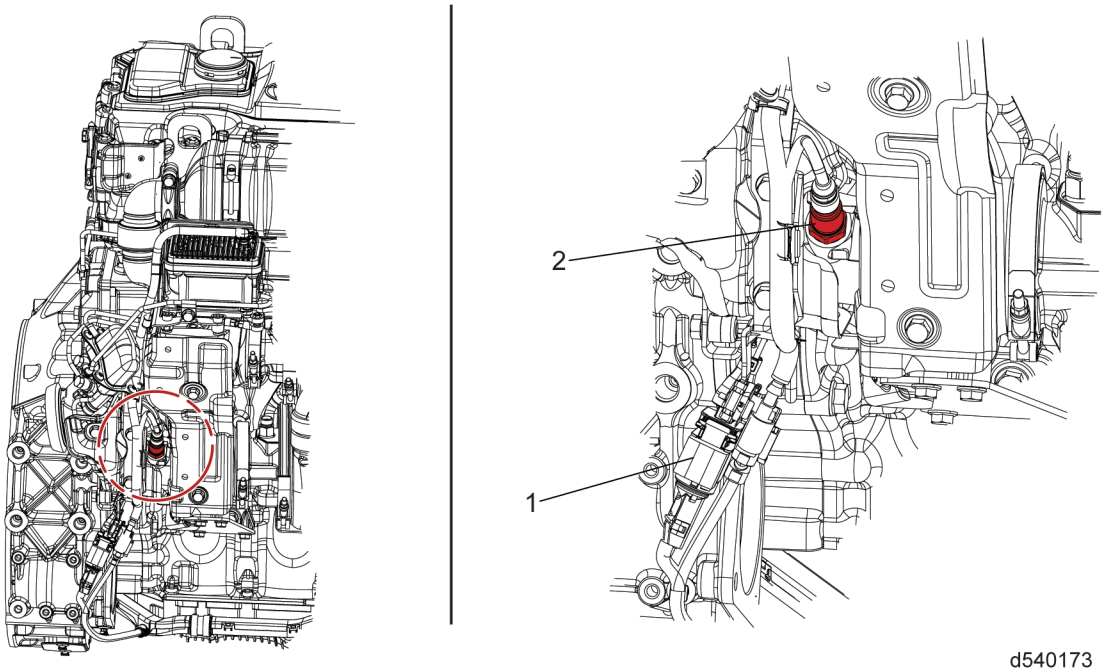
Possible causes:

- Oxygen sensor pump circuit failed open
- Oxygen sensor ground circuit failed open
- Failed oxygen sensor

1. Turn the ignition OFF.
2. Disconnect and inspect the O2 sensor electrical connector (1) harness side. Is corrosion present?



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a. Yes; replace the O2 sensor and the electrical connector. Verify repair.
b. No; Go to step 3.

3. Are any of the pins or the connector damaged?
   a. Yes; Go to step 4.
   b. No; Go to step 5.
4. Inspect the O2 sensor electrical connector component side. Are any of the pins or the connector damaged?
   a. Yes; replace the O2 sensor and the electrical connector.
      For DD5; Refer to section "Removal of the Oxygen Sensor". Verify repair.
      For DD8; Refer to section "Removal of the Oxygen Sensor". Verify repair.
   b. No; replace the O2 sensor electrical connector. Verify repair.
5. Using the correct flex probe, check pin 4 and pin 6 of the O2 sensor electrical connector harness side. Are the pins spread?
   a. Yes; replace the O2 sensor electrical connector harness side.
      For DD5; Refer to section "Removal of the Oxygen Sensor". Verify repair.
      For DD8; Refer to section "Removal of the Oxygen Sensor". Verify repair.
   b. No; Go to step 6.
6. Disconnect and inspect the MCM 120-pin electrical connector harness side. Is there corrosion present?
   a. Yes; replace the MCM and the engine harness.
      For DD5; Refer to section "Removal of the Motor Control Module (MCM)"
      For DD8; Refer to section "Removal of the Motor Control Module (MCM)"
      For DD5; Refer to section "Removal of the Engine Wiring Harness"
      For DD8; Refer to section "Removal of the Engine Wiring Harness"
   b. No; Go to step 7.
7. Are any of the pins or the connector damaged?
   a. Yes; Go to step 8.
   b. No; Go to step 9.
8. Inspect the MCM 120-pin electrical connector component side. Is the connector or pins 53 or 118 damaged?
   a. Yes; replace the MCM and the engine harness.
      For DD5; Refer to section "Removal of the Motor Control Module (MCM)"
      For DD8; Refer to section "Removal of the Motor Control Module (MCM)"
      For DD5; Refer to section "Removal of the Engine Wiring Harness"
      For DD8; Refer to section "Removal of the Engine Wiring Harness"
   b. No; replace the engine harness.
      For DD5; Refer to section "Removal of the Engine Wiring Harness"
      For DD8; Refer to section "Removal of the Engine Wiring Harness"
9. Using the correct flex probe, check pins 53, and 118. Are any of the pins spread?
   a. Yes; replace the engine harness.
      For DD5; Refer to section "Removal of the Engine Wiring Harness"
      For DD8; Refer to section "Removal of the Engine Wiring Harness"
   b. No; Go to step 10.
10. Measure the resistance between pin 4 of the O2 sensor electrical connector harness side and pin 53 of the MCM 120-pin electrical connector harness side. Is the resistance greater than five ohms?
    a. Yes; repair the circuit between pin 4 of the O2 sensor electrical connector harness side and pin 53 of the MCM 120-pin electrical connector harness side.
    b. No; Go to step 11.
11. Measure the resistance between pin 6 of the O2 sensor electrical connector harness side and pin 118 of the MCM 120-pin electrical connector harness side. Is the resistance greater than five ohms?
    a. Yes; repair the circuit between pin 6 of the O2 sensor electrical connector harness side and pin 118 of the MCM 120-pin electrical connector harness side.
    b. No; replace the O2 sensor.
       For DD5; Refer to section "Removal of the Oxygen Sensor". Verify repair.
       For DD8; Refer to section "Removal of the Oxygen Sensor". Verify repair.

