PRODEMAND

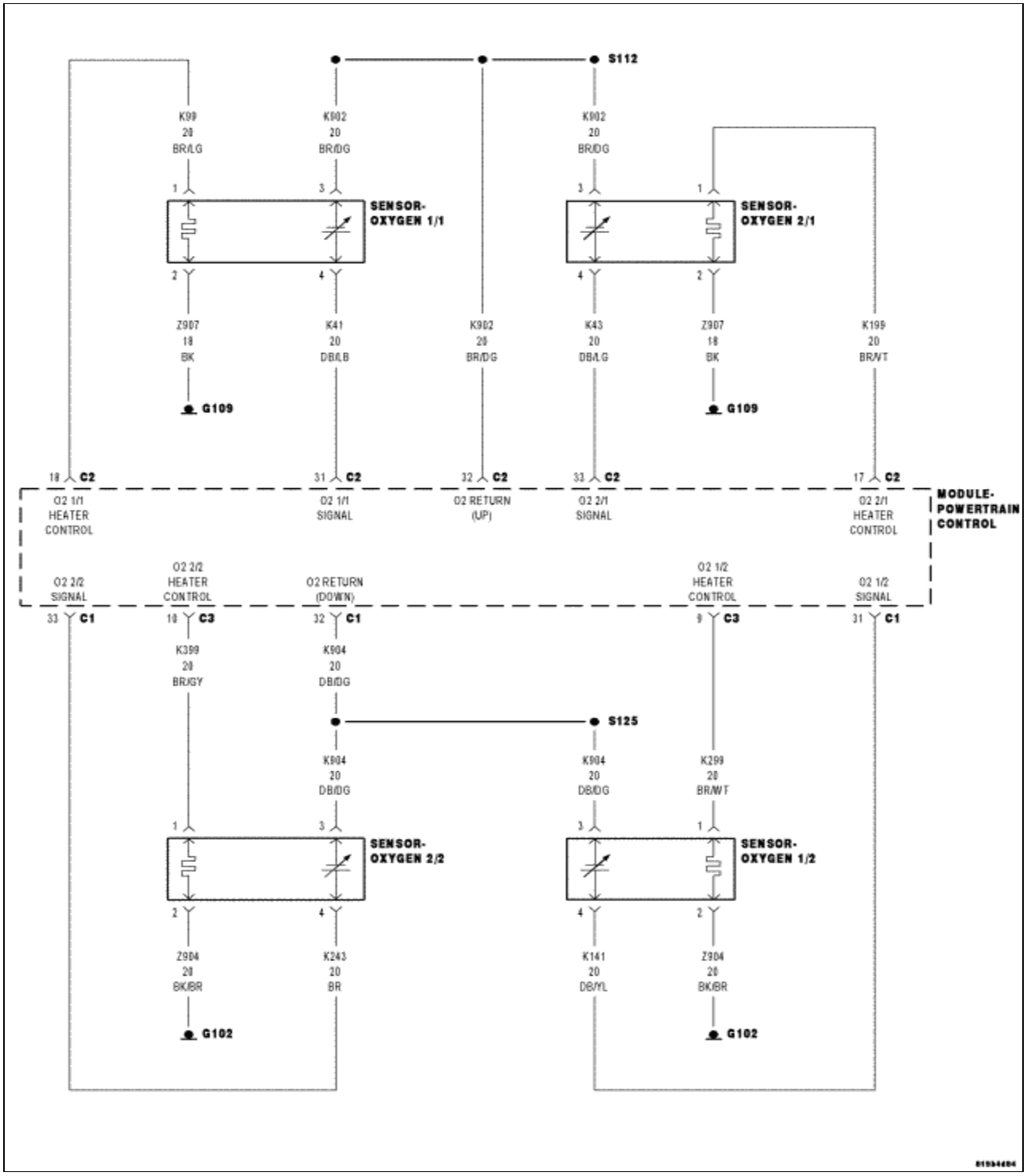
YMMS: 2005 Chrysler 300 C
Engine: 5.7L Eng
VIN:

Jul 21, 2020
License:
Odometer:

P2096-DOWNSTREAM FUEL TRIM SYSTEM 1 LEAN

Circuit Schematic

Fig 1: Oxygen Sensor Circuit Schematic



Courtesy of CHRYSLER LLC

For the Engine circuit diagram (Refer to ENGINE - SCHEMATICS AND DIAGRAMS) .

Additional Wiring

For a complete wiring diagram refer to appropriate Wiring Diagram article.

- For Chrysler 300, see SYSTEM WIRING DIAGRAMS .
- For Dodge Magnum, see SYSTEM WIRING DIAGRAMS .

Monitor Conditions

When Monitored:
With the engine running in closed loop mode, the ambient/battery temperature above (-7°C) 20°F, altitude below 8500 ft.

Set Conditions

- **Set Condition:**
  If the PCM multiplies short term compensation by long term adaptive as well as a purge fuel multiplier and the result is below a certain value for 30 seconds over two trips, a freeze frame is stored, the MIL illuminates and a trouble code is stored. Two Trip Fault. Three good trips to turn off the MIL.

Possible Causes

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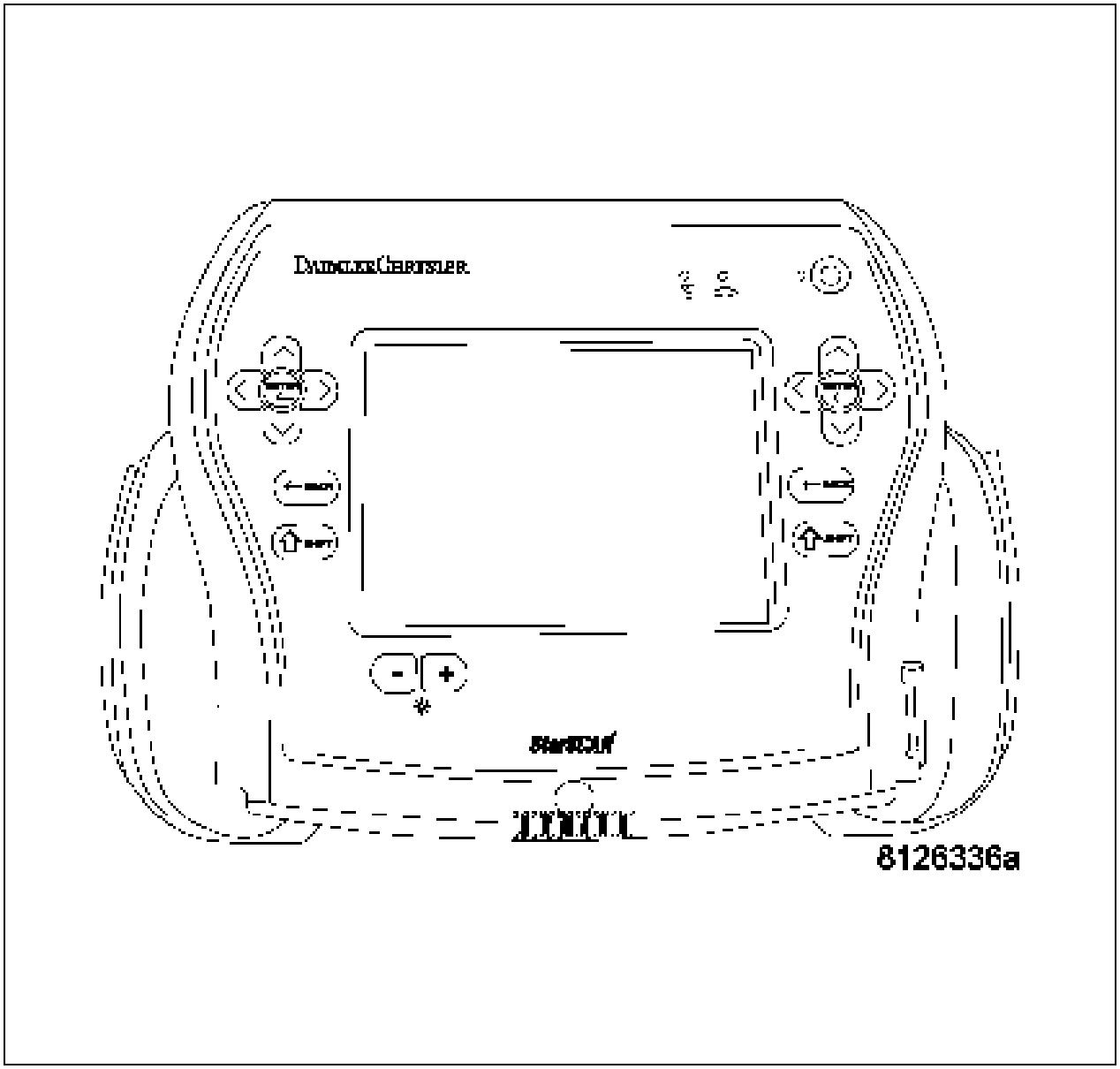
EXHAUST LEAK
ENGINE MECHANICAL PROBLEM
1/2 O2 SENSOR
(K141) O2 SENSOR 1/2 SIGNAL CIRCUIT
(K299) O2 1/2 HEATER CONTROL CIRCUIT
(K904) O2 DOWNSTREAM RETURN CIRCUIT
FUEL CONTAMINATION

Always perform the PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE before proceeding.

Diagnostic Test

1) ACTIVE DTC

Fig 2: SCAN TOOL (STARSCAN)



Courtesy of DAIMLERCHRYSLER CORP.

NOTE: *Check the vehicle repair history. If the 1/2 O2 has been replace make sure that the O2 sensor was properly installed and meets OEM specification.*

NOTE: *Check for contaminants that may have damaged the O2 Sensor: contaminated fuel, unapproved silicone, oil and coolant.*

Ignition on, engine not running.

With a scan tool, read DTCs.
Is the DTC active at this time?
Yes

Go To step 2).
No

Refer to INTERMITTENT CONDITION .

Perform NGC POWERTRAIN VERIFICATION TEST VER - 5 .

2) EXHAUST LEAK
Turn the ignition off.

> **WARNING:** *To avoid personal injury from the exhaust system being hot, allow the exhaust to cool down to a safe temperature before performing a physical inspection. Failure to follow these instructions can result in personal injury or death.*

Visually and Physically inspect for holes, cracks and blockage in the exhaust system.
Is the exhaust system is good condition?
Yes

Go To step 3).
No

Repair or Replace as necessary.

Perform NGC POWERTRAIN VERIFICATION TEST VER - 5 .

3) ENGINE MECHANICAL PROBLEM
Check for any of the following conditions/mechanical problems.
AIR INDUCTION SYSTEM - must be free from leaks
ENGINE VACUUM - must be at least 13 inches in neutral
ENGINE VALVE TIMING - must be within specifications
ENGINE COMPRESSION - must be within specifications
ENGINE EXHAUST SYSTEM - must be free of any restrictions or leaks
ENGINE PCV SYSTEM - must flow freely
TORQUE CONVERTER STALL SPEED - must be within specifications
POWER BRAKE BOOSTER - no internal vacuum leaks
FUEL - must be free of contamination
FUEL INJECTOR - plugged or restricted injector; control wire not connected to correct injector
Are there any engine mechanical problems?
Yes

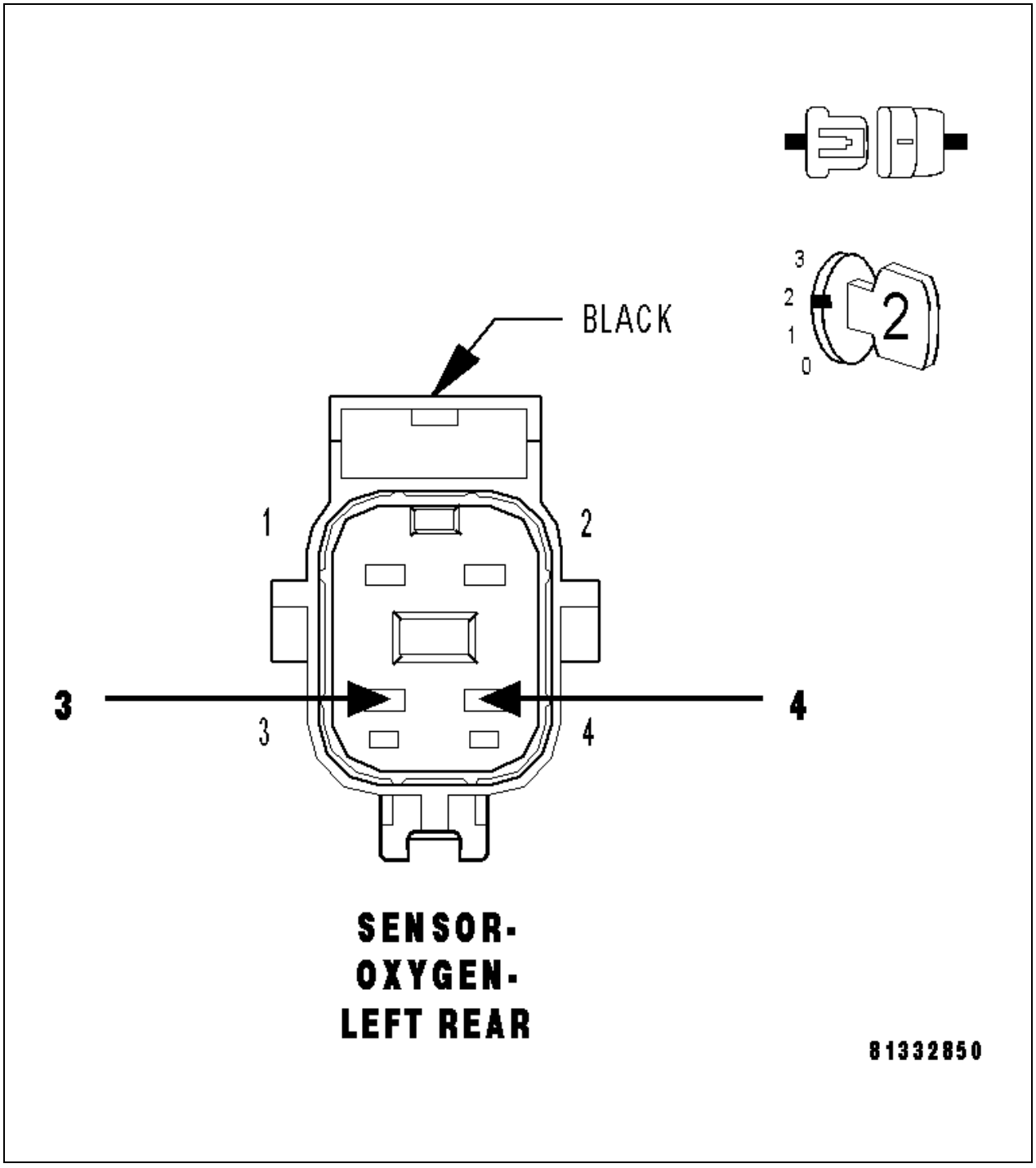
Repair as necessary.

Perform NGC POWERTRAIN VERIFICATION TEST VER - 5 .
No

Go To step 4).

4) O2 SENSOR

Fig 3: Checking Left Rear Oxygen Sensor Signal Circuit & Ground Circuit



Courtesy of DAIMLERCHRYSLER CORP.

Ignition on, engine not running.
Disconnect the 1/2 O2 Sensor harness connector.
With the scan tool, monitor the 1/2 O2 Sensor voltage.
The O2 Sensor voltage should read 5.0 volts on the scan tool with the connector disconnected.
Using a jumper wire, jump the (K141) O2 Sensor 1/2 Signal circuit to the (K904) O2 Downstream Return circuit in the O2 Sensor harness connector.

NOTE: *The voltage should drop from 5.0 volts to 2.5 volts with the jumper wire in place.*

Did the O2 Sensor volts change from 5.0 volts to 2.5 volts?
Yes

Replace the O2 Sensor

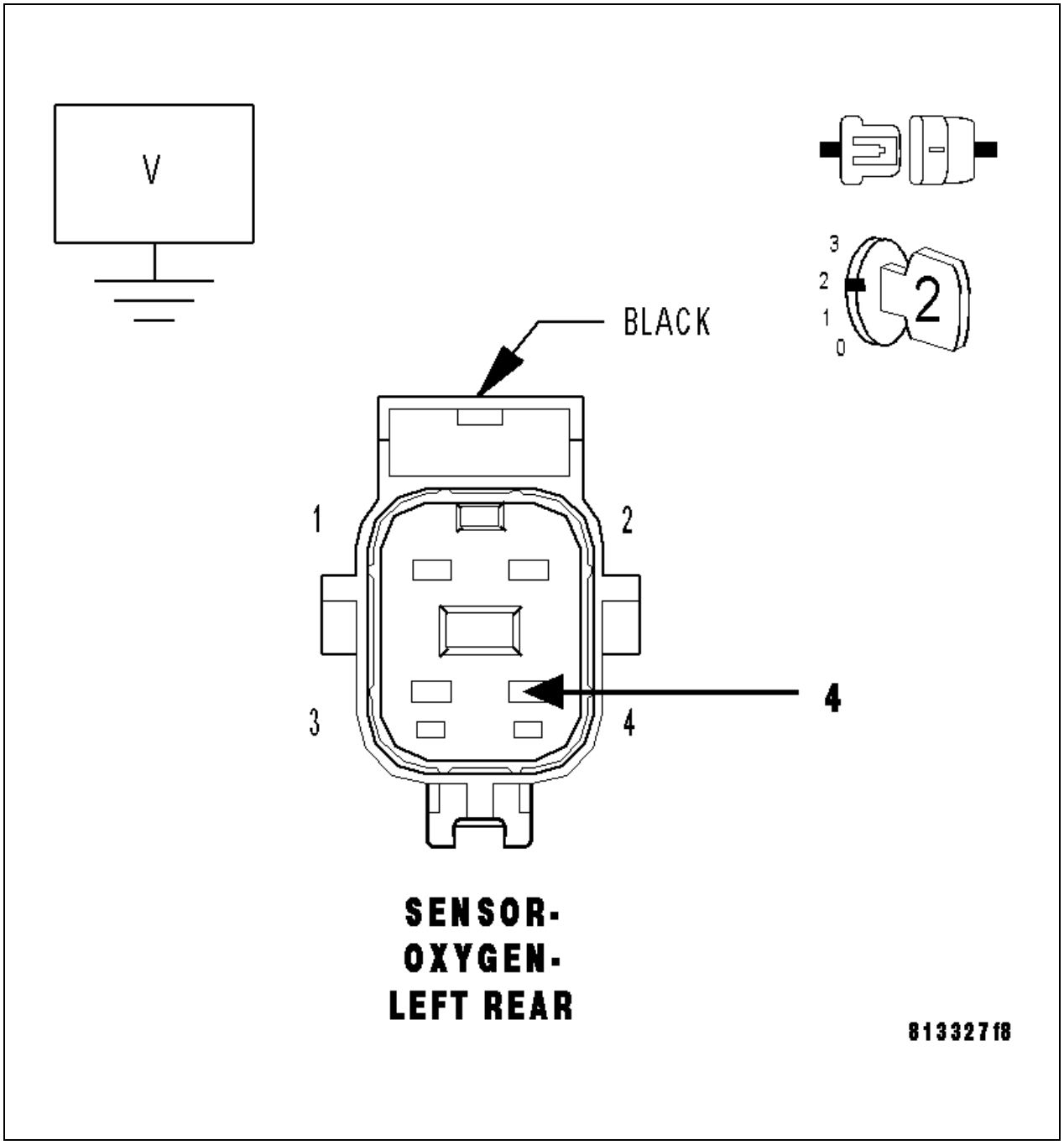
Perform NGC POWERTRAIN VERIFICATION TEST VER - 5 .

No

Go To step 5).

5) (K141) O2 SENSOR 1/2 SIGNAL CIRCUIT

Fig 4: Checking Left Rear Oxygen Sensor Signal Circuit

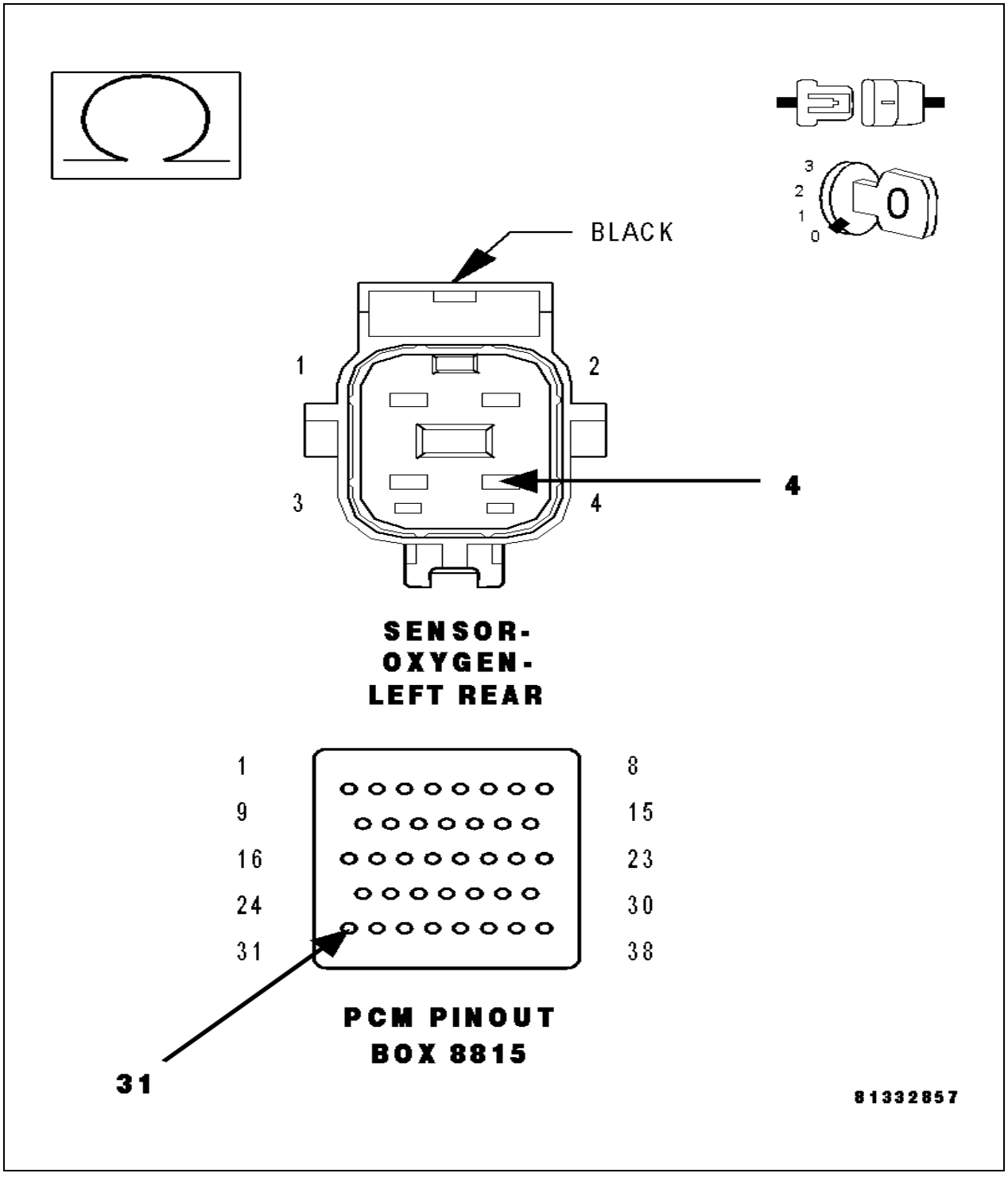


Courtesy of DAIMLERCHRYSLER CORP.

Remove the jump wire.
Ignition on, engine not running.
With the scan tool, monitor the 1/2 O2 Sensor voltage.
Is the voltage above 4.8 volts?
Yes

Go To step 6).
No

Fig 5: Checking Left Rear Oxygen Sensor Signal Circuit



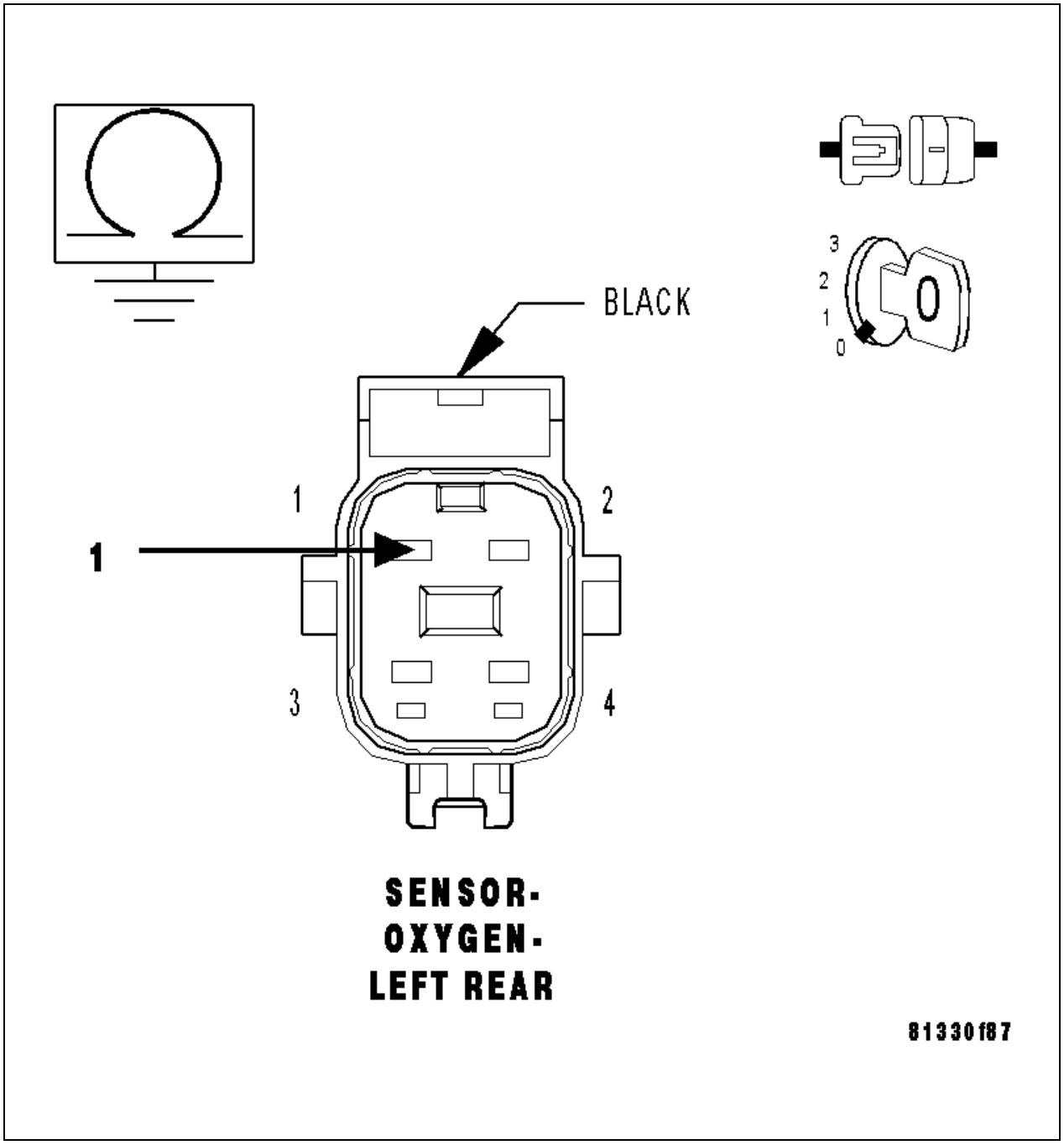
Courtesy of DAIMLERCHRYSLER CORP.

Check the (K141) O2 Sensor 1/2 Signal circuit for an open or short to voltage. Inspect the O2 Sensor connector and the PCM harness connector. If OK, replace and program the Powertrain Control Module. Refer to MODULE-POWERTRAIN CONTROL .

Perform NGC POWERTRAIN VERIFICATION TEST VER - 5 .

6) (K299) O2 SENSOR 1/2 HEATER CONTROL CIRCUIT

Fig 6: Checking Left Rear Oxygen Sensor Heater Control Circuit



Courtesy of DAIMLERCHRYSLER CORP.

Turn the ignition off.
Measure the resistance between ground and the (K299) O2 Sensor 1/2 Heater Control circuit in the O2 Sensor harness connector.
Is the resistance below 5.0 ohms?
Yes

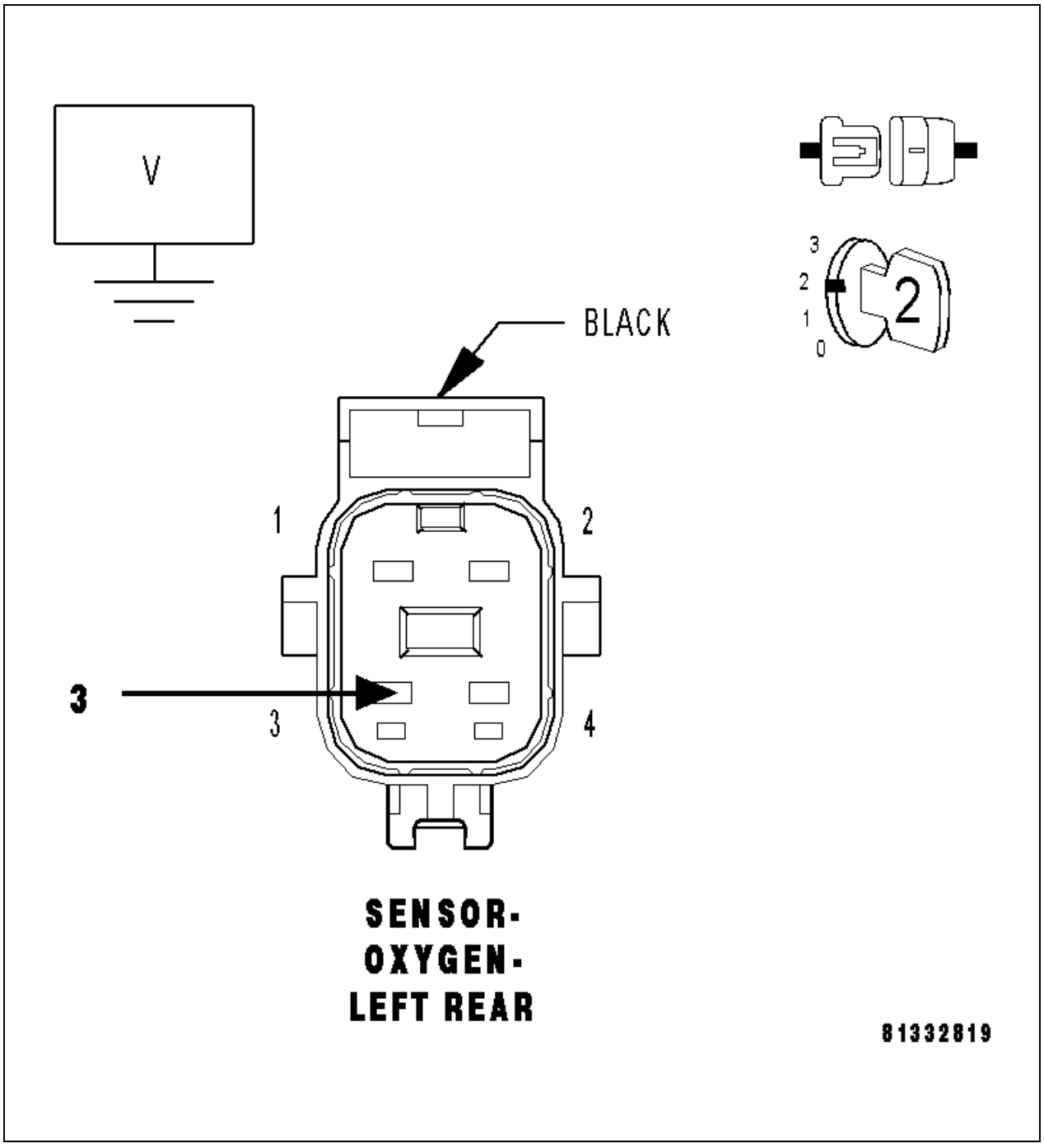
Repair the short to ground in the (K299) O2 Sensor 1/2 Heater Control circuit.

Perform NGC POWERTRAIN VERIFICATION TEST VER - 5 .
No

Go To step 7).

7) (K904) O2 DOWNSTREAM RETURN CIRCUIT

Fig 7: Checking Left Rear Oxygen Sensor Return Circuit



Courtesy of DAIMLERCHRYSLER CORP.

Measure the voltage on the (K904) O2 Downstream Return circuit in the O2 Sensor harness connector.

Is the voltage at 2.5 volts?

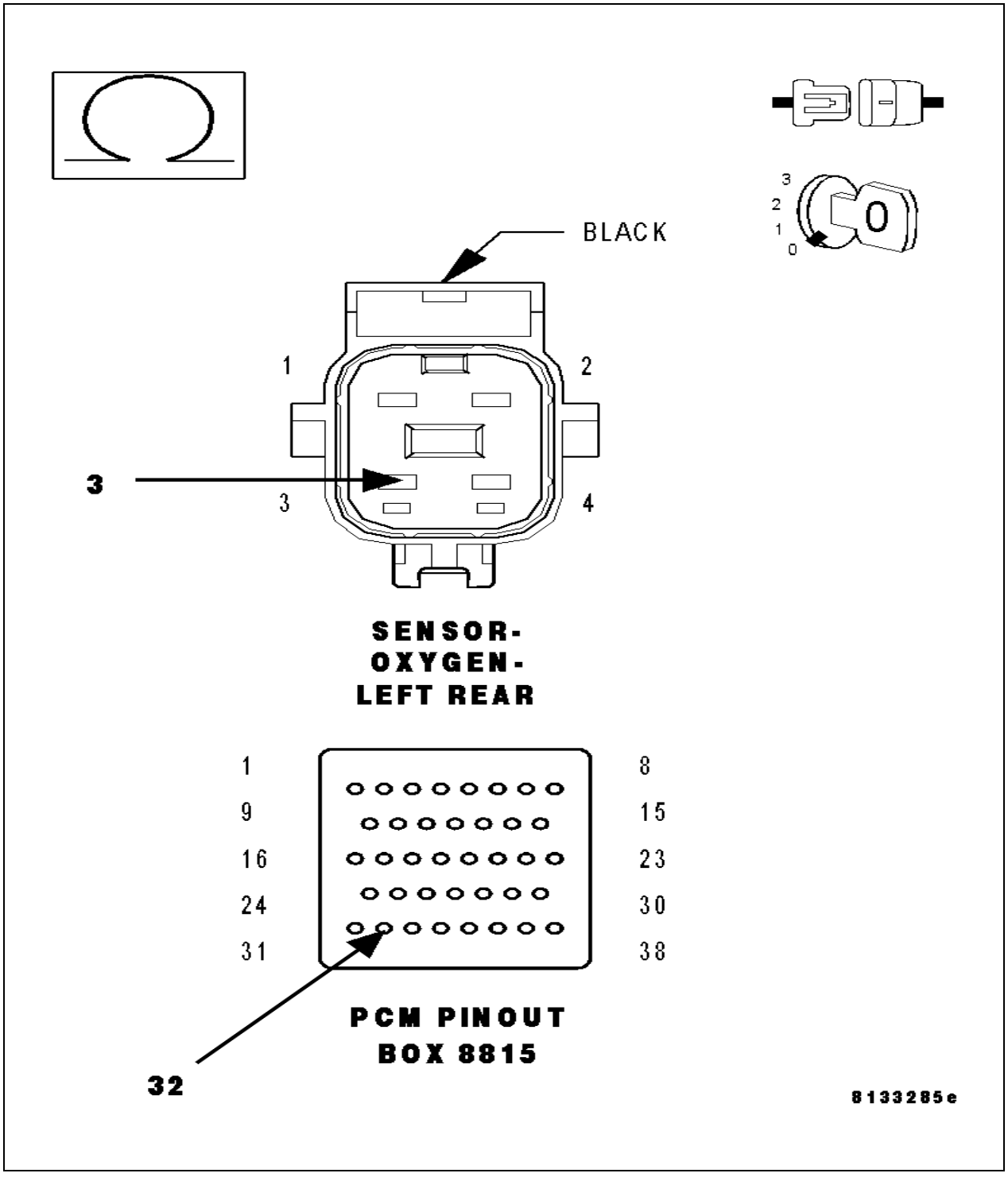
Yes

Check the fuel system for contaminants.

Perform NGC POWERTRAIN VERIFICATION TEST VER - 5 .

No

Fig 8: Checking Left Rear Oxygen Sensor Return Circuit



Courtesy of DAIMLERCHRYSLER CORP.

Check the (K904) O2 Downstream Return circuit for a short to ground, open, or short to voltage. Inspect the O2 Sensor connector and the PCM harness connector. If OK, replace and program the Powertrain Control Module. Refer to MODULE-POWERTRAIN CONTROL .

Perform NGC POWERTRAIN VERIFICATION TEST VER - 5 .