

GENERIC · POWERTRAIN

P0150

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0150

O2 Sensor Circuit Malfunction (Bank 2 Sensor 1)

P0150 means the engine computer has detected an abnormal signal from the upstream oxygen sensor on bank 2, the side of the engine that does not contain cylinder number one. The sensor is responsible for reporting the oxygen content in the exhaust before the catalytic converter, and the computer sees a voltage or circuit condition that does not match what a healthy sensor should produce.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- A noticeable drop in fuel economy as the computer defaults to a rich fuel mixture
- Rough idle or hesitation during acceleration because fuel delivery is no longer accurately trimmed
- An increase in tailpipe emissions that may cause a failed emissions inspection
- In some cases, a sulfur or rotten egg smell from the exhaust due to excess fuel reaching the converter

Common causes, most likely first

- 1 A failed or degraded bank 2 upstream oxygen sensor
- 2 A damaged or corroded sensor wiring harness or connector
- 3 A blown fuse that supplies power to the oxygen sensor heater circuit
- 4 An exhaust leak before the sensor that allows outside air to skew the reading
- 5 A faulty engine coolant temperature sensor that confuses the computer's fuel strategy
- 6 A vacuum leak or intake leak that affects bank 2 more than bank 1
- 7 A problem in the engine computer itself, though this is rare



How to diagnose and fix it

- 1 Scan all stored and pending codes to confirm P0150 is the only oxygen sensor code and check for related misfire or fuel trim codes
- 2 Inspect the bank 2 upstream oxygen sensor wiring and connector for chafing, corrosion, or loose pins
- 3 Check the oxygen sensor heater circuit fuse and verify power and ground at the sensor connector with the key on
- 4 Use a scan tool to watch live bank 2 upstream oxygen sensor voltage and compare it to bank 1 upstream sensor behavior
- 5 Perform a smoke test or visual inspection for exhaust leaks between the cylinder head and the sensor location
- 6 Replace the bank 2 upstream oxygen sensor if the circuit and live data confirm the sensor is not responding correctly
- 7 Clear the codes and complete a drive cycle to verify the repair and confirm the monitor runs without resetting the code

What the code does not always mean

- A P0150 is frequently set by a wiring problem rather than a dead sensor, so inspect the harness near hot exhaust components before buying a new sensor.
- An exhaust leak just ahead of the sensor can pull in outside air and make a good sensor report a false lean condition, triggering this code.
- On engines with two upstream sensors, a vacuum leak that affects only bank 2 can set P0150 even though the sensor itself is healthy.
- A lazy sensor that responds slowly may not set a hard code until the computer runs its monitor under specific driving conditions, so the light can come and go.
- Replacing the sensor without checking the heater circuit fuse can lead to a repeat failure if the fuse blows again due to a shorted wire.

Can I keep driving with P0150?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration or long trips because the engine may run rich and damage the catalytic converter over time. If the check engine light begins flashing, stop driving and have the vehicle towed.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Oxygen sensor socket
- Smoke machine for exhaust leak testing
- Basic hand tools and wire repair kit



Reading P0150

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 1** Fuel and air metering.
- 50** The exact fault within that area.

Often seen with

P0130 O2 Sensor Circuit Malfunction (Bank 1 Sensor 1) · **P0135** O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 1) · **P0155** O2 Sensor Heater Circuit Malfunction (Bank 2 Sensor 1) · **P0171** System Too Lean (Bank 1) · **P0174** System Too Lean (Bank 2)

See it working

Watch the animated explainer [How a Radiator Fan Relay Circuit Works](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0150/>

