

FORD · POWERTRAIN

P1134

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1134 · Ford

Bank 1 Fuel Control Shifted Rich

P1134 on Ford vehicles means the powertrain control module has detected that the bank 1 fuel control system has shifted rich beyond its calibrated limit, based on oxygen sensor feedback over a defined driving cycle. The engine computer is adding fuel based on sensor readings but the exhaust still shows a rich condition, so the long-term fuel trim has hit its rich authority limit on bank 1. This code is stored when the adaptive fuel strategy can no longer correct the mixture and the oxygen sensor signal stays rich longer than expected.

SYSTEM

Powertrain

CODE TYPE

Ford specific

SEVERITY

Medium

FIX DIFFICULTY

Professional

AREA

Fuel and air metering

Symptoms you may notice

- Often no symptoms besides the warning light, especially if the rich shift is mild and recent.
- A noticeable decrease in fuel economy as the engine runs richer than commanded.
- Black sooty exhaust smoke or a strong fuel smell at idle and under light load.
- Rough idle or engine surging when the rich condition worsens and spark plugs begin to foul.
- Failed emissions inspection due to high carbon monoxide or hydrocarbon readings.
- In some cases, a hesitation or stumble on acceleration as the computer struggles to balance fuel delivery.

Common causes, most likely first

- 1 A leaking or stuck-open fuel injector on bank 1 delivering excess fuel into the cylinder.
- 2 A faulty bank 1 oxygen sensor that is biased rich and reporting a false rich signal to the computer.
- 3 High fuel pressure caused by a restricted fuel return line or a failing fuel pressure regulator.
- 4 A contaminated mass air flow sensor that over-reports airflow, causing the computer to add too much fuel.
- 5 A stuck-open or leaking purge solenoid allowing fuel vapor to be drawn into the intake continuously.
- 6 Mechanical issues such as low compression or a worn camshaft lobe on bank 1 that alter the air-fuel mixture.
- 7 A wiring problem or exhaust leak before the bank 1 oxygen sensor that skews the sensor reading rich.



How to diagnose and fix it

- 1 Connect a scan tool and record freeze-frame data and long-term fuel trim values on bank 1 to confirm the rich shift.
- 2 Inspect the bank 1 oxygen sensor signal with a graphing scan tool or oscilloscope to verify it is not stuck rich or lazy.
- 3 Check fuel pressure with a gauge and compare to Ford specifications; inspect the fuel pressure regulator and return line for restrictions.
- 4 Perform a cylinder balance test or injector flow test to identify a leaking or stuck-open injector on bank 1.
- 5 Clean or replace the mass air flow sensor if contamination is found, and verify intake air temperature sensor readings.
- 6 Test the evaporative emissions purge solenoid for sticking open and command it closed with the scan tool to see if fuel trim changes.
- 7 After repairs, clear the codes and complete a drive cycle to confirm the fuel trim returns to normal and P1134 does not reset.

Why bank 1 runs rich on Fords

- A lazy upstream oxygen sensor on bank 1 can report rich even when the actual mixture is correct, causing the computer to pull fuel until it hits the rich limit and sets P1134.
- Ford's adaptive fuel strategy can mask a small vacuum leak or injector issue for many miles before the trim limit is exceeded, so the code often appears long after the root cause began.
- An exhaust leak just ahead of the bank 1 oxygen sensor draws outside air into the exhaust stream, which the sensor interprets as a lean condition, but the computer may overcorrect and eventually set a rich code.
- A sticking purge solenoid that allows fuel tank vapor to flow constantly into the intake is a commonly overlooked cause of rich codes on Ford vehicles, especially after a fill-up.
- Replacing the oxygen sensor without checking fuel pressure and injector balance is a frequent misdiagnosis; the sensor is often the messenger, not the cause.

Can I keep driving with P1134?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration and long trips because the rich condition can foul spark plugs and damage the catalytic converter over time. If the engine runs rough or you smell raw fuel, stop driving and have it towed to prevent safety hazards.



Tools that help

- OBD-II scan tool with live data and graphing capability
- Fuel pressure gauge
- Digital multimeter
- Oscilloscope for oxygen sensor signal analysis
- Smoke machine for intake and exhaust leak testing
- Injector balance tester or cylinder contribution tester

Reading P1134

P	Powertrain: engine, transmission and emissions.
1	Manufacturer-specific code (Ford): its meaning depends on the make.
1	Fuel and air metering.
34	The exact fault within that area.

Often seen with

P1133 Oxygen Sensor Heating Circuit Bank 1 + 2 Sensor 1 Electrical · **P1152** Bank 1 Long Term Fuel Trim Range 2 Lower Lean Limit Exceeded · **P1133** Air/Fuel Sensor Circuit Response Bank 1 Sensor 1 · **P1133** Bank 1 Fuel Control Shifted Lean · **P1152** HO2S Bank 2 Sensor 1 Signal Above 0.45v AF Ratio Too Rich · **P1133** O2 Sensor Insufficient Switching (Bank 1 Sensor 1) · **P1133** Bank 1 Fuel Control Shifted Lean · **P1152** Lack of Upstream Heated Oxygen Sensor Switch Sensor Indicate · **P1133** HO2S Insufficient Switching · **P1133** O2 Sensor Heater Control Circuit Bank 2 Sensor 1 · **P1152** O2 Sensor Heater Circuit Low Voltage Bank 2 Sensor 1 · **P0172** System Too Rich (Bank 1) · **P0175** System Too Rich (Bank 2) · **P2196** O2 Sensor Signal Stuck Rich (Bank 1 Sensor 1)

See it working

Watch the animated explainer [How an Automatic Transmission Works, Gear by Gear](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/ford-p1134/>

