

GENERIC · POWERTRAIN

# P0174

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

## P0174

### System Too Lean (Bank 2)

P0174 means the engine computer has detected a lean condition on bank 2, the side of the engine that does not contain cylinder number one. The oxygen sensor on that bank is reporting more oxygen in the exhaust than the computer expects, so the computer has already added extra fuel and still cannot bring the air-fuel ratio back to its target.

| SYSTEM     | CODE TYPE           | SEVERITY | FIX DIFFICULTY | AREA                  |
|------------|---------------------|----------|----------------|-----------------------|
| Powertrain | Generic (all makes) | Medium   | Intermediate   | Fuel and air metering |

### Symptoms you may notice

- Often no symptoms besides the warning light, especially in the early stages of the fault
- A noticeable hesitation or stumble when accelerating from a stop or under light load
- Rough idle quality or a slight shake at stoplights that was not there before
- Reduced fuel economy as the computer commands a richer mixture to compensate
- Occasional engine misfire codes or a flashing check engine light if the lean condition becomes severe
- A faint fuel smell or exhaust odor in some cases where the lean condition is caused by a vacuum leak

### Common causes, most likely first

- Unmetered air entering the intake through a cracked or disconnected vacuum hose, intake tube, or intake manifold gasket on bank 2
- A dirty or failing mass air flow sensor that under-reports the amount of air entering the engine
- A weak or failing fuel pump or clogged fuel filter that cannot deliver enough volume to the bank 2 fuel rail
- Leaking or clogged fuel injectors on bank 2, including a stuck-closed injector or a damaged injector O-ring
- An exhaust leak upstream of the bank 2 oxygen sensor that lets outside air reach the sensor and skew its reading
- A failing bank 2 oxygen sensor that reports a false lean condition even when the mixture is correct
- Low fuel pressure caused by a faulty fuel pressure regulator or a restricted fuel line on that bank



## How to diagnose and fix it

- 1 Inspect all intake and vacuum hoses on bank 2 for cracks, loose clamps, and disconnected fittings, using a smoke machine if available
- 2 Check fuel pressure at the rail and compare it to the manufacturer's specification, then inspect fuel volume and filter condition
- 3 Clean the mass air flow sensor with the correct cleaner and verify its live data reading against expected airflow at idle and under load
- 4 Use a scan tool to watch bank 2 short-term and long-term fuel trims while spraying a small amount of carb cleaner around suspect intake gaskets to confirm a vacuum leak
- 5 Test the bank 2 oxygen sensor response with a scan tool or oscilloscope, and check for exhaust leaks between the manifold and the sensor
- 6 Perform an injector balance test or remove the bank 2 injectors for flow testing and cleaning if fuel delivery is suspect
- 7 Repair the confirmed root cause, clear the codes, and drive the vehicle through a complete readiness cycle to verify the fuel trims return to normal

## What a lean bank 2 code really tells you

- A P0174 is almost never caused by the oxygen sensor itself; the sensor is usually reporting a real lean condition, so replacing it first wastes money and leaves the fault present.
- Bank 2 is the side of the engine opposite cylinder number one, and on V-shaped engines a vacuum leak or fuel delivery problem that affects only that bank is a strong clue to look at bank-specific intake gaskets and injectors.
- A dirty mass air flow sensor can set P0174 without setting P0171 because the computer may only exceed the lean threshold on one bank first, so always check airflow data before condemning bank-specific parts.
- Exhaust leaks upstream of the oxygen sensor pull in outside air and create a false lean reading, which is a common misdiagnosis trap on vehicles with rusty exhaust manifolds or failed gaskets.
- Fuel trims that are positive at idle but return near zero at higher rpm point to a vacuum leak, while trims that stay positive across the rpm range point more toward fuel delivery or a mass air flow sensor problem.

## Can I keep driving with P0174?

You can usually drive the vehicle short distances to a repair shop, but avoid hard acceleration and heavy loads because a severe lean condition raises combustion temperatures and can damage valves or the catalytic converter. If the check engine light starts flashing, stop driving and have the vehicle towed.



## Tools that help

- OBD-II scan tool with live fuel trim and mass air flow data
- Smoke machine for intake leak detection
- Fuel pressure gauge
- Vacuum gauge
- Digital multimeter
- Carburetor cleaner or propane for vacuum leak testing

## Reading P0174

|           |                                                                      |
|-----------|----------------------------------------------------------------------|
| <b>P</b>  | Powertrain: engine, transmission and emissions.                      |
| <b>0</b>  | Generic (SAE) code: it means the same thing on every OBD-II vehicle. |
| <b>1</b>  | Fuel and air metering.                                               |
| <b>74</b> | The exact fault within that area.                                    |

## Often seen with

**P0171** System Too Lean (Bank 1) · **P0172** System Too Rich (Bank 1) · **P0300** Random/Multiple Cylinder Misfire Detected · **P0302** Cylinder 2 Misfire Detected · **P0420** Catalyst System Efficiency Below Threshold (Bank 1)

## See it working

Watch the animated explainer [How a Gyroscope Works: Gimbals and Precession](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0174/>

