

GENERIC · POWERTRAIN

P219D

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P219D

Cylinder 2 Air-Fuel Ratio Imbalance

P219D indicates that the powertrain control module has detected a significant air-fuel ratio imbalance on cylinder 2, meaning that cylinder is not contributing its share of combustion efficiency compared to the rest of the engine. The computer typically makes this determination by comparing crankshaft speed fluctuations or wideband oxygen sensor feedback against expected values for each cylinder.

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

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or a noticeable shake when the engine is cold or under load
- Slight hesitation or stumble during acceleration
- Decreased fuel economy over time
- Occasional misfire-like shudder that may not set a dedicated misfire code
- A faint fuel or exhaust odor from the tailpipe in severe cases

Common causes, most likely first

- 1 Faulty or clogged fuel injector on cylinder 2 delivering an incorrect amount of fuel
- 2 Vacuum leak at the intake manifold runner or injector O-ring specific to cylinder 2
- 3 Worn or improperly gapped spark plug on cylinder 2 causing incomplete combustion
- 4 Failed ignition coil or spark plug wire dedicated to cylinder 2
- 5 Mechanical issue such as low compression from a leaking valve or worn piston rings on cylinder 2
- 6 Contaminated or failing wideband oxygen sensor that skews the cylinder balance calculation
- 7 Exhaust leak near the cylinder 2 port affecting the oxygen sensor reading



How to diagnose and fix it

- 1 Perform a visual inspection of the cylinder 2 ignition components, checking the spark plug, coil boot, and wiring for damage or corrosion
- 2 Use a scan tool to review freeze-frame data and confirm the imbalance is present only on cylinder 2, then check for any stored misfire or fuel trim codes
- 3 Swap the ignition coil and spark plug from cylinder 2 to another cylinder and see if the imbalance follows, which isolates an ignition fault
- 4 Run a compression test and a cylinder leak-down test on cylinder 2 to rule out mechanical problems before replacing fuel or ignition parts
- 5 Check fuel injector operation with a noid light or injector balance test, and inspect the injector O-rings and intake runner for vacuum leaks
- 6 Clean or replace the cylinder 2 fuel injector if flow testing shows a mismatch, and verify fuel pressure and injector pulse width with a lab scope
- 7 Clear the code and perform a road test with live data to confirm the air-fuel ratio imbalance on cylinder 2 has been resolved

Why cylinder 2 imbalance is often misdiagnosed

- A dirty or failing mass airflow sensor can skew overall fuel delivery and make one cylinder appear imbalanced even when the injector and ignition are healthy, so always check fuel trims before condemning a single cylinder.
- Exhaust leaks upstream of the oxygen sensor, especially at the cylinder 2 exhaust port, can introduce outside air and cause the computer to misread that cylinder's air-fuel ratio as lean.
- A sticking or contaminated fuel injector often does not set a dedicated injector code, so P219D may be the only clue that cylinder 2 is running rich or lean compared to its neighbors.
- Low compression from a worn camshaft lobe or a tight valve clearance can cause an imbalance that mimics a fuel or ignition fault, and this mechanical cause is frequently overlooked during parts swapping.
- Some vehicles use cylinder-specific oxygen sensor strategies that are sensitive to aftermarket spark plugs with the wrong heat range, so always verify the correct plug specification before chasing wiring.

Can I keep driving with P219D?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration, towing, or prolonged idling because the imbalance can overheat the catalytic converter and worsen engine damage. If the check engine light begins flashing or you feel a strong misfire, stop driving and have the vehicle towed.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Compression gauge and cylinder leak-down tester
- Noid light or injector balance tester
- Digital multimeter and lab scope for ignition and injector signals
- Spark plug socket and torque wrench
- Vacuum gauge and smoke machine for intake leak detection

Reading P219D

P	Powertrain: engine, transmission and emissions.
2	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
1	Fuel and air metering.
9D	The exact fault within that area.

Often seen with

P0171 System Too Lean (Bank 1) · **P0302** Cylinder 2 Misfire Detected · **P219A** Bank 1 Air-Fuel Ratio Imbalance · **P219B** Bank 2 Air-Fuel Ratio Imbalance · **P219C** Cylinder 1 Air-Fuel Ratio Imbalance

See it working

Watch the animated explainer [Turbocharger Trainer: Boost, Wastegate and Intercooler](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p219d/>

