

GENERIC · POWERTRAIN

P2E59

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2E59

Cylinder 1 Alternative Fuel Misfire Detected

P2E59 means the engine computer has detected a misfire on cylinder 1 while the engine is running on its alternative fuel, such as compressed natural gas, propane, or E85. The computer monitors crankshaft speed fluctuations and flags this code when cylinder 1's contribution to power drops beyond an acceptable threshold specifically during alternative-fuel operation.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Hybrid propulsion

Symptoms you may notice

- Check engine light illuminated, often flashing if the misfire is severe
- Noticeable engine shake or rough idle, especially when running on the alternative fuel
- Reduced power and sluggish acceleration under load
- Poor fuel economy on the alternative fuel source
- A fuel smell or sulfur odor from the exhaust in some cases
- Often no symptoms besides the warning light when the misfire is intermittent

Common causes, most likely first

- 1 Worn or fouled spark plug specific to cylinder 1, with gap or heat range unsuitable for the alternative fuel
- 2 Failed ignition coil or spark plug wire on cylinder 1
- 3 Clogged or leaking alternative fuel injector on cylinder 1
- 4 Low alternative fuel pressure or contaminated alternative fuel
- 5 Vacuum leak at the intake port for cylinder 1
- 6 Mechanical fault such as low compression, a bad valve, or a failed head gasket on cylinder 1
- 7 Corroded or damaged wiring to the cylinder 1 injector or ignition coil



How to diagnose and fix it

- 1 Scan all stored codes and freeze-frame data to confirm the misfire is isolated to cylinder 1 and occurs only in alternative-fuel mode
- 2 Inspect the spark plug on cylinder 1 for fouling, wear, or incorrect gap, and replace it if needed
- 3 Swap the ignition coil from cylinder 1 with a known-good cylinder and see if the misfire follows the coil
- 4 Check the alternative fuel injector on cylinder 1 for clogging, leaks, or electrical resistance out of specification
- 5 Perform a compression test and cylinder leak-down test on cylinder 1 to rule out mechanical faults
- 6 Smoke-test the intake system for vacuum leaks at the cylinder 1 port
- 7 Verify alternative fuel pressure and quality, and inspect the fuel supply components for contamination

Why alternative-fuel misfires fool good technicians

- A P2E59 can set even when the engine runs perfectly on gasoline, because the alternative fuel's higher octane or different burn characteristics expose weak ignition components that gasoline masks.
- Technicians often replace all spark plugs and coils without isolating cylinder 1, but the code specifically flags that cylinder, so swapping components one at a time is the faster diagnostic path.
- Alternative fuel injectors are prone to clogging from fuel impurities and can fail gradually, so a flow test or injector balance test is more revealing than a simple resistance check.
- A vacuum leak at the intake manifold gasket near cylinder 1 can cause a lean misfire only under alternative-fuel operation because the fuel trim strategy differs between fuels.
- The code does not always mean the alternative fuel system is at fault; a marginal ignition component or mechanical issue on cylinder 1 can trigger it when the engine switches to the alternative fuel map.

Can I keep driving with P2E59?

You can drive the vehicle short distances to a repair shop, but avoid heavy acceleration and sustained high-speed driving because a persistent misfire can overheat the catalytic converter. If the check engine light is flashing, stop driving and have the vehicle towed.

Tools that help

- OBD-II scan tool with live data and misfire counter capability
- Spark plug socket and gap gauge
- Compression tester
- Vacuum gauge or smoke machine
- Digital multimeter for coil and injector testing
- Fuel pressure gauge suitable for the alternative fuel system



Reading P2E59

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- E** Hybrid propulsion.
- 59** The exact fault within that area.

Often seen with

P0171 System Too Lean (Bank 1) · **P0300** Random/Multiple Cylinder Misfire Detected · **P0301** Cylinder 1 Misfire Detected · **P2E58** Alternative Fuel Random/Multiple Cylinder Misfire Detected · **P2E5A** Cylinder 2 Alternative Fuel Misfire Detected

See it working

Watch the animated explainer [Four-Stroke Engine Cutaway: Intake to Exhaust](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2e59/>

