

GENERIC · POWERTRAIN

P2E5D

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2E5D

Cylinder 5 Alternative Fuel Misfire Detected

P2E5D indicates that the powertrain control module has detected a misfire on cylinder 5 while the engine is running on an alternative fuel such as compressed natural gas, propane, or E85. The computer monitors crankshaft speed fluctuations and identifies that cylinder 5 is not contributing its fair share of power, which can be caused by ignition, fuel delivery, or mechanical issues specific to that cylinder or the alternative fuel system.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	High	Professional	Hybrid propulsion

Symptoms you may notice

- Illuminated check engine light, often flashing if the misfire is severe
- Noticeable engine shake or vibration, especially at idle or under light acceleration
- Reduced power and sluggish acceleration when running on the alternative fuel
- Rough idle or stalling when the engine is cold or under load
- Often no symptoms besides the warning light if the misfire is intermittent or mild
- Poor fuel economy or a strong fuel odor from the exhaust

Common causes, most likely first

- 1 Worn or fouled spark plug specific to cylinder 5, especially if alternative fuel burns hotter or leaves different deposits
- 2 Faulty ignition coil or spark plug wire for cylinder 5
- 3 Clogged or leaking alternative fuel injector on cylinder 5
- 4 Low alternative fuel pressure or contaminated fuel causing lean misfire on one cylinder
- 5 Vacuum leak at the intake manifold runner for cylinder 5
- 6 Mechanical issue such as low compression, worn valve seat, or faulty lifter on cylinder 5
- 7 Corroded or damaged wiring to the cylinder 5 injector or coil



How to diagnose and fix it

- 1 Scan all stored codes and freeze-frame data to confirm the misfire is isolated to cylinder 5 and note whether it occurs only in alternative fuel mode
- 2 Inspect the spark plug for cylinder 5 and compare its condition to the other cylinders; replace if worn, fouled, or gap is incorrect
- 3 Swap the ignition coil from cylinder 5 with a known-good cylinder and see if the misfire moves, confirming a coil fault
- 4 Check the alternative fuel injector for cylinder 5 by listening for a consistent click or performing a resistance test, and inspect the connector for corrosion
- 5 Measure fuel pressure at the alternative fuel rail and verify it meets specification, then check for contaminated fuel or a restricted filter
- 6 Perform a compression test and cylinder leak-down test on cylinder 5 to rule out mechanical faults such as a bad valve or piston ring
- 7 If the misfire persists only on alternative fuel, inspect the alternative fuel system for proper operation, including the fuel control module and injector pulse width

Alternative fuel misfires that fool technicians

- A misfire that appears only when switching to alternative fuel often points to a lean condition caused by a clogged alternative fuel injector or low fuel pressure, not a bad spark plug.
- Alternative fuels like E85 can degrade certain fuel system components over time, so a cylinder-specific misfire may be the first sign of a failing injector or fuel pump.
- Technicians sometimes replace all spark plugs and coils without checking cylinder 5 compression, missing a mechanical fault that only shows up under alternative fuel load.
- The code can be set by a vacuum leak at the intake manifold gasket near cylinder 5, which leans out that cylinder only and mimics a bad injector.
- A flashing check engine light with this code means the misfire is severe enough to damage the catalytic converter, so diagnosis should not be delayed.

Can I keep driving with P2E5D?

If the check engine light is flashing, stop driving as soon as it is safe to do so because a severe misfire can quickly overheat and destroy the catalytic converter. If the light is steady, you can drive cautiously to a repair shop, but avoid heavy acceleration and towing until the fault is diagnosed.



Tools that help

- OBD-II scan tool with live data and misfire counter capability
- Spark plug socket and gap gauge
- Ignition coil tester or known-good coil for swapping
- Compression gauge and cylinder leak-down tester
- Fuel pressure gauge for alternative fuel system
- Digital multimeter for checking injector resistance and wiring

Reading P2E5D

P	Powertrain: engine, transmission and emissions.
2	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
E	Hybrid propulsion.
5D	The exact fault within that area.

Often seen with

P0171 System Too Lean (Bank 1) · **P0300** Random/Multiple Cylinder Misfire Detected · **P0305** Cylinder 5 Misfire Detected · **P2E5C** Cylinder 4 Alternative Fuel Misfire Detected · **P2E5E** Cylinder 6 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/p2e5d/>

