

GENERIC · POWERTRAIN

P2B08

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2B08

Cold Start Cylinder 1 Injection Pulse Performance

P2B08 indicates that the engine control module (ECM) has detected an abnormal fuel injection pulse performance specifically for cylinder 1 during a cold start. The ECM monitors the injector's electrical response and the resulting combustion effect, and it sets this code when the pulse width or current profile falls outside the expected range only when the engine is cold.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Professional

AREA

Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or misfire immediately after a cold start, improving as the engine warms
- Slight hesitation or stumble during the first few seconds of driving from a cold start
- Occasional hard starting when the engine is cold
- Reduced fuel economy or a rich/lean smell from the exhaust during warm-up

Common causes, most likely first

- 1 Faulty or clogged fuel injector for cylinder 1
- 2 Wiring harness damage or poor electrical connection at the cylinder 1 injector
- 3 Contaminated or degraded engine oil affecting cold-start injector performance
- 4 Low fuel pressure or a weak fuel pump that cannot deliver adequate volume during cold start
- 5 Carbon buildup on the intake valve or injector tip for cylinder 1
- 6 Faulty engine coolant temperature (ECT) sensor sending incorrect cold-start signals to the ECM
- 7 ECM software calibration issue or internal driver fault for the cylinder 1 injector circuit



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, and record freeze-frame data to confirm the fault occurs only during cold starts
- 2 Inspect the cylinder 1 injector connector and wiring for corrosion, chafing, or loose pins, and perform a wiggle test while monitoring injector pulse
- 3 Measure the resistance of the cylinder 1 injector and compare it to the manufacturer's specification and to other injectors
- 4 Check fuel pressure and volume during a cold start, and verify that the fuel pump delivers the specified pressure within the required time
- 5 Perform an injector balance test or cylinder contribution test to compare cylinder 1 to the others
- 6 Remove and inspect the cylinder 1 spark plug for signs of rich or lean running, and check compression and valve operation if the injector tests normal
- 7 If all electrical and fuel delivery tests pass, reflash or replace the ECM only after confirming the injector driver circuit is faulty

Cold-start injector faults often misdiagnosed

- Many technicians replace the cylinder 1 injector without first checking the engine coolant temperature sensor, which can skew cold-start enrichment and set this code even when the injector is healthy.
- A dirty mass airflow sensor or a small vacuum leak can lean out the mixture during cold start and cause the ECM to flag cylinder 1 injection pulse performance, so those should be ruled out before condemning the injector.
- This code can be set by a failing fuel pump check valve that allows pressure to bleed down overnight, causing a lean cold start that the ECM interprets as poor injector performance.
- In some vehicles, a low battery or poor ground can cause the injector driver circuit to behave erratically only during the high-current cold-start phase, so battery and ground integrity should always be verified.
- P2B08 is often stored alongside misfire codes for cylinder 1, but the presence of a misfire code does not confirm the injector is at fault; the root cause may be ignition or mechanical.

Can I keep driving with P2B08?

You can generally drive the vehicle, but avoid heavy acceleration and prolonged idling until the fault is diagnosed, because a persistent cold-start injection issue can lead to misfires, increased emissions, and potential catalytic converter damage over time. Have the vehicle inspected soon if the check engine light is flashing or if drivability worsens.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter for resistance and voltage checks
- Fuel pressure gauge
- Noid light or injector pulse tester
- Mechanic's stethoscope for listening to injector operation
- Hand tools for accessing injectors and wiring

Reading P2B08

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

Often seen with

P0171 System Too Lean (Bank 1) · **P0201** Injector Circuit Malfunction - Cylinder 1 · **P0301** Cylinder 1 Misfire Detected · **P2B09** Cold Start Cylinder 2 Injection Pulse Performance · **P2B0A** Cold Start Cylinder 3 Injection Pulse Performance

See it working

Watch the animated explainer [How a Six-Speed Manual Gearbox Works](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2b08/>

