



P2B0D

Cold Start Cylinder 6 Injection Pulse Performance

P2B0D indicates that the engine control module (ECM) has detected an abnormal fuel injection pulse performance specifically for cylinder 6 during a cold start. The ECM monitors the electrical characteristics and timing of the injector command, and when the expected response falls outside the programmed threshold while the engine is cold, it stores this code and may illuminate the check engine light.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Hybrid propulsion

Symptoms you may notice

- Check engine light illuminated, often with no other noticeable symptoms
- Rough idle or misfire shortly after a cold start that may improve as the engine warms
- Slight hesitation or stumble during the first few seconds of driving after a cold start
- Increased fuel consumption during warm-up
- Occasional engine vibration or shaking felt through the steering wheel or seat

Common causes, most likely first

- 1 Faulty or clogged fuel injector on cylinder 6
- 2 Wiring harness damage or poor electrical connection at the cylinder 6 injector
- 3 Contaminated fuel or fuel system deposits affecting injector performance
- 4 Low fuel pressure or a weak fuel pump that becomes more apparent during cold start enrichment
- 5 Engine control module (ECM) software calibration issue or internal fault
- 6 Mechanical engine problem such as low compression on cylinder 6 that mimics an injection fault



How to diagnose and fix it

- 1 Perform a visual inspection of the cylinder 6 injector connector and wiring for damage, corrosion, or loose pins
- 2 Check for any related technical service bulletins (TSBs) or software updates for the ECM that address cold start injection performance
- 3 Measure the resistance of the cylinder 6 injector and compare it to the manufacturer's specification
- 4 Use a noid light or oscilloscope to verify that the injector is receiving a proper command signal from the ECM during cranking and cold start
- 5 Test fuel pressure and compare it to the specification, especially during cold start conditions
- 6 Perform a cylinder balance test or compression test to rule out mechanical issues on cylinder 6
- 7 If electrical and fuel delivery tests pass, remove and flow-test the cylinder 6 injector, or swap it with a known-good injector to see if the code follows

Cold Start Injector Pulse Diagnostics

- This code often sets without any driveability complaint because the ECM detects a subtle deviation in injector response that is not yet severe enough to cause a noticeable misfire.
- A dirty or partially clogged injector can flow unevenly only when cold, so the fault may not appear during a warm engine diagnostic; always perform tests with the engine cold.
- Wiring issues at the injector connector are frequently overlooked, especially if the harness is routed near hot components that can cause intermittent opens.
- The ECM may set P2B0D as a result of a low fuel pressure condition that affects all cylinders, but cylinder 6 is the first to fall outside the cold-start pulse window due to its position in the fuel rail.
- Do not replace the ECM based solely on this code; verify the injector command signal and fuel delivery first, as ECM internal faults are rare.

Can I keep driving with P2B0D?

You can generally continue driving with this code, but avoid aggressive acceleration or heavy loads until the fault is diagnosed, as prolonged driving with a misfiring cylinder can damage the catalytic converter. Have the vehicle inspected by a qualified technician as soon as practical.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Noid light or oscilloscope
- Fuel pressure gauge
- Compression tester



Reading P2B0D

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- B** Hybrid propulsion.
- 0D** The exact fault within that area.

Often seen with

P0206 Injector Circuit/Open - Cylinder 6 · **P0306** Cylinder 6 Misfire Detected · **P2149** Fuel Injector Group 'B' Supply Voltage Circuit/Open · **P2B0C** Cold Start Cylinder 5 Injection Pulse Performance · **P2B0E** Cold Start Cylinder 7 Injection Pulse Performance

See it working

Watch the animated explainer [How an Oxygen Sensor Works: Live 3D Cutaway](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2b0d/>

