

GENERIC · POWERTRAIN

**P2B0E**

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

## P2B0E

# Cold Start Cylinder 7 Injection Pulse Performance

P2B0E means the engine computer detected an abnormal fuel injection pulse performance on cylinder 7 during a cold start, where the pulse width or injector response did not match the expected value for the cold-start enrichment phase. The powertrain control module monitors injector electrical response and combustion effect, and it flags this code when cylinder 7 fails to deliver the expected fuel contribution while the engine is cold.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Hybrid propulsion

## Symptoms you may notice

- Illuminated check engine light, often with no other symptoms besides the warning light
- Rough idle or misfire-like shaking during the first minute or two after a cold start
- Slight hesitation or stumble when accelerating away from a cold start
- Noticeable fuel smell from the exhaust during cold idle
- Occasional extended crank time before the engine fires when cold
- Poor cold-driveability that improves once the engine reaches operating temperature

## Common causes, most likely first

- 1 Faulty or clogged cylinder 7 fuel injector with restricted flow or a sticking pintle
- 2 Carbon buildup on the cylinder 7 intake valve or port causing poor cold-start fuel mixing
- 3 Wiring damage or corroded connector at the cylinder 7 injector harness
- 4 Weak ignition coil or worn spark plug on cylinder 7 causing incomplete combustion that mimics an injection fault
- 5 Low fuel pressure or a failing high-pressure fuel pump reducing cold-start enrichment across the rail
- 6 Engine coolant temperature sensor bias making the computer misjudge cold-start fuel demand
- 7 Internal engine mechanical issue such as low compression on cylinder 7 affecting cold-start combustion



## How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data for P2B0E, then check for related misfire or fuel trim codes before touching any parts
- 2 Inspect the cylinder 7 injector connector and harness for corrosion, chafing, or loose pins, and perform a wiggle test while watching injector pulse data
- 3 Measure the resistance of the cylinder 7 injector and compare it with the other injectors on the same bank to spot an outlier
- 4 Check fuel pressure and cold-start enrichment values with a gauge or scan tool to rule out a system-wide fuel delivery problem
- 5 Swap the cylinder 7 ignition coil and spark plug with a neighbouring cylinder to see whether the fault follows the component
- 6 Run a cold-start injector balance or cylinder contribution test to confirm whether cylinder 7 is genuinely under-fuelling
- 7 If electrical and ignition checks pass, remove and flow-test or replace the cylinder 7 injector, then clear the code and verify the repair on a true cold start

## Cold-start faults that fool good technicians

- A cold-start-only injection code is frequently caused by carbon buildup on the intake valve rather than a failed injector, so a top-end induction cleaning often resolves it without parts replacement.
- Technicians commonly replace the cylinder 7 injector only to find the real fault was a weak ignition coil or a spark plug gap that opened up, because a misfire on cold start can set an injection pulse performance code.
- The code can be set by a marginal engine coolant temperature sensor that reads a few degrees off, causing the computer to deliver the wrong cold-start fuel pulse without ever setting a coolant sensor code.
- A dirty mass airflow sensor or a small vacuum leak can skew cold-start fuel calculations enough to trip this code on one cylinder while leaving the others within tolerance.
- Because the fault is cold-start specific, a warm-engine scan tool session may show perfectly normal injector data, so the diagnosis must be repeated after an overnight cold soak.

## Can I keep driving with P2B0E?

You can usually drive the vehicle, but avoid hard acceleration and long trips until the fault is diagnosed because prolonged cold-start misfiring can damage the catalytic converter. If the check engine light begins flashing, stop driving and have the vehicle towed.



## Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter for injector resistance and harness testing
- Fuel pressure gauge
- Nozzle tester or injector balance tester
- Basic hand tools for coil and plug swapping
- Infrared thermometer for cold-start temperature checks

## Reading P2B0E

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

## Often seen with

**P0172** System Too Rich (Bank 1) · **P0207** Injector Circuit/Open - Cylinder 7 · **P0307** Cylinder 7 Misfire Detected · **P2B0D** Cold Start Cylinder 6 Injection Pulse Performance · **P2B0F** Cold Start Cylinder 8 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/p2b0e/>

