

GENERIC · POWERTRAIN

P2B14

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2B14

Cylinder 3 Injection Pulse Offset Not Learned

P2B14 indicates that the engine control module (ECM) has not successfully learned the injection pulse offset for cylinder 3, which is a calibration value used to fine-tune fuel delivery. The ECM detects this when the learning process fails to complete, often due to a mechanical or electrical issue preventing the expected feedback signal.

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

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or misfire, particularly when the engine is cold
- Slight hesitation or stumble during acceleration
- Decreased fuel economy due to incorrect fuel delivery
- In rare cases, a noticeable loss of power under load

Common causes, most likely first

- 1 Faulty fuel injector on cylinder 3, such as a clogged nozzle or internal leak
- 2 Wiring or connector issues at the cylinder 3 injector, including corrosion or damaged pins
- 3 Low fuel pressure or volume from a weak fuel pump or restricted filter
- 4 Carbon buildup on intake valves or injector tips affecting spray pattern
- 5 Engine mechanical problems like low compression or valve sealing issues on cylinder 3
- 6 ECM software calibration issues or internal fault preventing learning
- 7 Contaminated fuel or incorrect fuel type affecting injector performance



How to diagnose and fix it

- 1 Inspect the cylinder 3 injector connector and wiring for damage, corrosion, or loose pins, and repair as needed
- 2 Check fuel pressure and volume against the manufacturer's specifications to rule out a weak pump or clogged filter
- 3 Perform a cylinder balance test or injector cut-off test to compare cylinder 3 contribution with others
- 4 Remove and inspect the cylinder 3 injector for clogging or damage, and test its spray pattern and resistance
- 5 Clean or replace the cylinder 3 injector if it fails inspection or flow testing
- 6 Check for carbon buildup on intake valves and perform a decarbonization service if necessary
- 7 Verify compression on cylinder 3 to rule out mechanical issues, and repair as required
- 8 Relearn the injection pulse offset using a scan tool after repairs, and clear the code

Before you replace the cylinder 3 injector

- A dirty or failing mass airflow sensor can skew fuel trim and prevent the ECM from learning the injection pulse offset, so check its readings before condemning the injector.
- The code can set intermittently due to a loose ground connection at the engine block, which affects injector driver operation and learning.
- After any injector replacement, the ECM must be commanded to relearn the offset; simply clearing the code will not complete the learning process.
- Exhaust leaks upstream of the oxygen sensor can introduce false air and disrupt fuel control, leading to a failure to learn the offset.
- On some vehicles, a weak battery or charging system issue can cause the ECM to abort the learning procedure, so verify battery voltage and charging system health.

Can I keep driving with P2B14?

You can generally continue driving with this code, but avoid heavy acceleration or towing until it is diagnosed, as prolonged driving with an uncorrected offset may lead to poor fuel economy or catalytic converter damage.

Tools that help

- OBD-II scan tool with bidirectional control and relearn capabilities
- Fuel pressure gauge
- Digital multimeter
- Injector test light or noid light
- Compression tester
- Basic hand tools



Reading P2B14

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

Often seen with

P0171 System Too Lean (Bank 1) · **P0203** Injector Circuit Malfunction - Cylinder 3 · **P0303** Cylinder 3 Misfire Detected · **P2B13** Cylinder 2 Injection Pulse Offset Exceeded Learning Limit · **P2B15** Cylinder 3 Injection Pulse Offset Exceeded Learning Limit

See it working

Watch the animated explainer [How the EVAP System Works: Fuel Vapour and Leak Test](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2b14/>

