

GENERIC · POWERTRAIN

P021B

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P021B

Cylinder 8 Injection Timing

P021B is a generic powertrain code indicating that the engine control module (ECM) has detected an out-of-range condition in the injection timing circuit for cylinder number 8. The ECM monitors the commanded injection timing versus the actual feedback signal from the injector or the camshaft position sensor, and it sets this code when the timing deviates beyond a calibrated threshold. This code is specific to the eighth cylinder and does not directly affect other cylinders unless the root cause is shared.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering (injector circuits)

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or misfire sensation, especially noticeable at low speeds
- Reduced engine power or sluggish acceleration
- Increased fuel consumption due to inefficient combustion
- Occasional engine hesitation or stumble during acceleration
- Possible black smoke from the exhaust if the injector is over-fuelling

Common causes, most likely first

- 1 Faulty fuel injector for cylinder 8 (internal solenoid or nozzle issues)
- 2 Damaged or corroded wiring harness or connector at the cylinder 8 injector
- 3 Failed camshaft position sensor or crankshaft position sensor providing inaccurate timing signals
- 4 Sticking or contaminated injector causing incorrect injection timing
- 5 ECM software calibration issue or internal fault in the injector driver circuit
- 6 Low fuel pressure or restricted fuel flow affecting injection timing
- 7 Mechanical issues such as a worn camshaft lobe or lifter affecting valve timing



How to diagnose and fix it

- 1 Use an OBD-II scanner to verify the code and check for related codes (e.g., misfire, camshaft/crankshaft sensor codes).
- 2 Inspect the wiring and connector at the cylinder 8 fuel injector for damage, corrosion, or loose pins; repair or replace as needed.
- 3 Test the fuel injector resistance and compare to specification; replace if out of range.
- 4 Check fuel pressure and volume to ensure the system meets manufacturer specifications.
- 5 Perform a injector balance test or use a lab scope to observe the injector pulse width and timing signal.
- 6 Inspect the camshaft and crankshaft position sensors for proper signal and mounting; replace if faulty.
- 7 If all else fails, reprogram or replace the ECM after confirming no other faults exist.

Cylinder 8 timing faults often misdiagnosed

- A dirty or failing injector for cylinder 8 can cause timing deviations without setting a misfire code, so injector cleaning or replacement is often the fix.
Wiring harness chafing near the cylinder 8 injector is common on engines with tight routing, and a visual inspection may reveal rubbed insulation.
- The code can be set by a weak camshaft position sensor that only misbehaves when hot, so testing the sensor when cold may miss the fault.
- Low fuel pressure from a tired fuel pump can affect injection timing on one cylinder more than others, especially under load.
Replacing the ECM without first verifying the injector driver circuit and wiring is a costly mistake that rarely solves the problem.

Can I keep driving with P021B?

You can drive the vehicle short distances to a repair shop, but avoid heavy acceleration or towing because continued driving with incorrect injection timing can damage the catalytic converter or cause engine misfire. If the check engine light flashes, stop driving immediately and seek professional diagnosis.

Tools that help

- OBD-II scanner with live data capability
- Digital multimeter
- Fuel pressure gauge
- Lab scope (oscilloscope) for injector and sensor signals
- Basic hand tools (sockets, wrenches, screwdrivers)



Reading P021B

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 2** Fuel and air metering (injector circuits).
- 1B** The exact fault within that area.

Often seen with

P0208 Injector Circuit/Open - Cylinder 8 · **P0219** Engine Overspeed Condition · **P0308** Cylinder 8 Misfire Detected · **P0335** Crankshaft Position Sensor A Circuit Malfunction · **P0340** Camshaft Position Sensor A Circuit Malfunction (Bank 1)

See it working

Watch the animated explainer [How a Padlock Works: Pin Tumbler Lock in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p021b/>

