

GENERIC · POWERTRAIN

P020C

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P020C

Cylinder 3 Injection Timing

P020C indicates that the powertrain control module has detected an abnormal condition in the injection timing circuit or performance specifically for cylinder 3. The computer monitors the injector command and feedback signals and sets this code when the actual injection event does not match the commanded timing within calibrated limits.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Fuel and air metering (injector circuits)

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or misfire sensation, especially noticeable at low engine speeds
- Reduced engine power or hesitation during acceleration
- Increased fuel consumption due to inefficient combustion
- Possible shaking or vibration from the engine bay
- In some cases, the engine may enter limp mode to protect the catalytic converter

Common causes, most likely first

- 1 Faulty fuel injector for cylinder 3, such as a sticking nozzle or internal electrical failure
- 2 Damaged or corroded wiring harness or connector at the cylinder 3 injector
- 3 Poor electrical connection at the powertrain control module connector
- 4 Failed injector driver inside the powertrain control module
- 5 Restricted fuel supply to cylinder 3, such as a clogged fuel rail or injector screen
- 6 Mechanical issue with the engine affecting cylinder 3, such as low compression or a faulty lifter

How to diagnose and fix it

- 1 Perform a visual inspection of the cylinder 3 injector connector and wiring for damage or corrosion
- 2 Use a scan tool to check for related codes and freeze frame data to confirm the fault conditions
- 3 Measure the resistance of the cylinder 3 injector and compare it to the manufacturer's specification
- 4 Test the injector control circuit for continuity and short to ground or power using a multimeter
- 5 Swap the cylinder 3 injector with a known-good injector from another cylinder to see if the code follows
- 6 Check fuel pressure and inspect the fuel rail for restrictions or debris
- 7 If electrical and fuel delivery tests pass, perform a compression test and cylinder balance test to rule out mechanical faults



Injector Timing Faults Often Misdiagnosed

- A P020C code can be set by a faulty injector even when the injector coil resistance tests within specification, because the internal nozzle may be sticking mechanically.
- Wiring harness chafing near the cylinder head or under the intake manifold is a common cause that is frequently overlooked during visual inspections.
- The powertrain control module may set this code intermittently due to a poor ground connection at the engine block, which affects multiple injector circuits.
- Replacing the injector without checking the fuel rail for contamination can lead to repeat failures if debris from the tank reaches the new injector.
- This code does not always indicate a failed injector; a faulty camshaft position sensor or crankshaft position sensor can disrupt injection timing signals and trigger P020C.

Can I keep driving with P020C?

Driving with P020C is generally not recommended because continued operation with a misfiring cylinder can damage the catalytic converter and cause poor fuel economy. If the vehicle must be moved, avoid heavy acceleration and have it inspected by a professional as soon as possible.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Fuel pressure gauge
- Noid light or injector pulse tester
- Compression tester
- Basic hand tools and socket set

Reading P020C

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).
0C	The exact fault within that area.

Often seen with

P0201 Injector Circuit Malfunction - Cylinder 1 · **P0202** Injector Circuit Malfunction - Cylinder 2 · **P0203** Injector Circuit Malfunction - Cylinder 3 · **P0300** Random/Multiple Cylinder Misfire Detected · **P0303** Cylinder 3 Misfire Detected



See it working

Watch the animated explainer [How Push-Button Start Works: Keyless Ignition](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p020c/>

