

GENERIC · POWERTRAIN

P021A

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P021A

# Cylinder 7 Injection Timing

P021A indicates that the powertrain control module has detected an injection timing fault specifically for cylinder 7, meaning the commanded fuel delivery event is not occurring at the expected moment relative to the engine's combustion cycle. The computer monitors crankshaft and camshaft position signals to calculate injection timing and sets this code when the measured timing for cylinder 7 deviates beyond a calibrated threshold.

|                                         |                                                     |                                       |                                                   |                                                                      |
|-----------------------------------------|-----------------------------------------------------|---------------------------------------|---------------------------------------------------|----------------------------------------------------------------------|
| <div>SYSTEM</div> <div>Powertrain</div> | <div>CODE TYPE</div> <div>Generic (all makes)</div> | <div>SEVERITY</div> <div>Medium</div> | <div>FIX DIFFICULTY</div> <div>Professional</div> | <div>AREA</div> <div>Fuel and air metering (injector circuits)</div> |
|-----------------------------------------|-----------------------------------------------------|---------------------------------------|---------------------------------------------------|----------------------------------------------------------------------|

## Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or misfire sensation, especially when the engine is cold
- Reduced engine power or sluggish acceleration under load
- Increased fuel consumption due to inefficient combustion
- Occasional engine stumble or hesitation during steady-speed driving
- Hard starting or extended cranking time in some cases

## Common causes, most likely first

- 1 Faulty or contaminated fuel injector for cylinder 7
- 2 Wiring harness damage or poor electrical connection at the cylinder 7 injector
- 3 Failed camshaft or crankshaft position sensor sending erratic signals
- 4 Sticking or worn injection pump components affecting timing control
- 5 Engine control module software calibration issue or internal fault
- 6 Mechanical timing chain or belt wear causing slight camshaft retard



## How to diagnose and fix it

- 1 Connect a scan tool and record freeze-frame data to confirm when the code sets and check for related pending codes
- 2 Inspect the cylinder 7 injector connector and wiring for corrosion, chafing, or loose pins
- 3 Perform a resistance and pulse test on the cylinder 7 injector using a noid light or oscilloscope
- 4 Verify camshaft and crankshaft sensor signals for consistency and check for timing chain stretch with a scope
- 5 Run a compression test and cylinder contribution test to rule out mechanical issues on cylinder 7
- 6 Check for technical service bulletins or software updates for the engine control module
- 7 Replace the faulty injector or repair wiring as needed, then clear codes and verify the repair with a road test

## Cylinder 7 timing faults often misdiagnosed

- A dirty or failing injector on cylinder 7 is frequently the root cause, but technicians often replace sensors first without testing injector pulse quality.
- Wiring harness chafing near the cylinder 7 injector is a common hidden cause, especially on engines with high vibration or after previous repairs.
- This code can set intermittently due to a marginal camshaft sensor signal that only breaks down when hot, so a cold-only diagnosis may miss it.
- Mechanical timing chain wear on the camshaft drive can retard timing slightly across all cylinders, but cylinder 7 may be the first to exceed the threshold.
- Do not assume the injector itself is defective until you have verified power and ground at the connector with a load test, as a poor ground can mimic an injector failure.

## Can I keep driving with P021A?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy throttle or towing because prolonged misfire 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 circuit and resistance testing
- Oscilloscope for injector pulse and sensor signal analysis
- Noid light set to verify injector pulse
- Compression gauge for mechanical health checks
- Factory service information for wiring diagrams and timing specifications



### Reading P021A

- 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).
- 1A** The exact fault within that area.

### Often seen with

**P0016** Crankshaft/Camshaft Position Correlation (Bank 1 Sensor A) · **P0207** Injector Circuit/Open - Cylinder 7 · **P0219** Engine Overspeed Condition · **P021B** Cylinder 8 Injection Timing · **P0307** Cylinder 7 Misfire Detected

### See it working

Watch the animated explainer [How Airbags Work: A 50 km/h Crash in Slow Motion](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p021a/>

