

GENERIC · POWERTRAIN

P01D4

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P01D4

Cylinder 5 Injection Timing Performance - Over Advanced

P01D4 indicates that the engine control module has detected the injection timing for cylinder 5 is more advanced than the commanded value during monitored operating conditions. The computer compares the actual injection event timing, often derived from crankshaft and camshaft position signals or injector current feedback, against the desired timing map and sets this code when the deviation exceeds a calibrated threshold.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Professional

AREA

Fuel and air metering

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or misfire-like shudder, especially when the engine is cold
- Reduced engine power or hesitation during acceleration
- Increased fuel consumption due to inefficient combustion
- Elevated exhaust gas temperatures or a burning smell from the exhaust
- Hard starting or extended cranking in some cases

Common causes, most likely first

- 1 Faulty or contaminated fuel injector for cylinder 5 causing delayed or erratic opening
- 2 Wiring harness damage or poor electrical connection at the cylinder 5 injector
- 3 Sticking or worn injection pump components affecting timing control on that cylinder
- 4 Camshaft or crankshaft position sensor signal interference or incorrect correlation
- 5 Engine control module software calibration issue or internal fault
- 6 Mechanical wear in the timing drive system, such as a stretched chain or worn belt
- 7 Low fuel pressure or air in the fuel system affecting injection timing consistency



How to diagnose and fix it

- 1 Connect a scan tool and verify the code is current, then check for any related pending or history codes
- 2 Inspect the cylinder 5 injector electrical connector and harness for corrosion, chafing, or loose pins
- 3 Measure the resistance of the cylinder 5 injector and compare it to the manufacturer's specification
- 4 Perform a fuel pressure and flow test to rule out low supply pressure or air intrusion
- 5 Use a lab scope to compare the injector command pulse and current ramp against a known-good cylinder
- 6 Check the camshaft and crankshaft position sensor signals for correlation errors or intermittent dropout
- 7 If all electrical and fuel checks pass, follow the manufacturer's diagnostic flow for injection timing adaptation and consider ECM reprogramming or replacement

Why cylinder 5 timing alone can mislead

- A single-cylinder injection timing code often traces back to that cylinder's injector or its wiring rather than a global pump or timing chain fault, so focus diagnostics on cylinder 5 first.
 - The ECM may set P01D4 based on calculated timing from crankshaft and camshaft signals, meaning a failing cam sensor or a jumped timing belt can mimic an injector problem without any injector fault at all.
 - Low fuel pressure or aerated fuel can cause the injection timing to appear over-advanced on one cylinder because the injector opening is delayed relative to the command, so always verify fuel supply quality before replacing parts.
 - After repairs, the ECM may require a relearn or adaptation reset for injection timing; skipping this step can leave the code returning even though the physical fault is fixed.
- This code is rarely set by a completely failed injector, which usually triggers a circuit or misfire code instead; an over-advanced timing code more often points to a partially restricted or sluggish injector.

Can I keep driving with P01D4?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration, towing, or sustained high-speed driving because over-advanced injection timing can raise combustion temperatures and stress the engine. If the check engine light flashes or you notice severe misfiring, stop driving and seek immediate service.

Tools that help

- OBD-II scan tool with live data and bidirectional control
- Digital multimeter for resistance and voltage checks
- Oscilloscope for injector current ramp and sensor signal analysis
- Fuel pressure gauge and flow test kit
- Factory service information for timing adaptation procedures



Reading P01D4

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 1** Fuel and air metering.
- D4** The exact fault within that area.

Often seen with

P0016 Crankshaft/Camshaft Position Correlation (Bank 1 Sensor A) · **P01D3** Cylinder 5 Injection Timing Performance - Over Retarded · **P01D5** Cylinder 6 Injection Timing Performance - Over Retarded · **P0205** Injector Circuit/Open - Cylinder 5 · **P0305** Cylinder 5 Misfire Detected

See it working

Watch the animated explainer [How a Supercharger Works: Roots Blower in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p01d4/>

