

GENERIC · POWERTRAIN

P01D6

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P01D6

Cylinder 6 Injection Timing Performance - Over Advanced

P01D6 indicates that the engine control module (ECM) has detected the fuel injection timing for cylinder 6 is more advanced than the commanded value during monitored operating conditions. The ECM expects the injector for cylinder 6 to fire at a specific moment, but the actual injection event is occurring too early, which can affect combustion efficiency and emissions.

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 engine misfire, particularly noticeable at low speeds
- Reduced engine performance or hesitation during acceleration
- Increased fuel consumption due to inefficient combustion
- Elevated emissions, which may be detected during an emissions test
- In some cases, the engine may enter limp mode to protect the powertrain

Common causes, most likely first

- 1 Faulty fuel injector for cylinder 6, such as a sticking or clogged nozzle
- 2 Wiring harness damage or poor electrical connection at the cylinder 6 injector
- 3 Failed injection timing sensor or camshaft position sensor providing incorrect data
- 4 Contaminated engine oil affecting variable valve timing (VVT) operation
- 5 ECM software calibration issue or internal fault
- 6 Mechanical wear in the high-pressure fuel pump or injector components



How to diagnose and fix it

- 1 Perform a visual inspection of the cylinder 6 injector and its wiring harness for damage or corrosion
- 2 Use a scan tool to check for related diagnostic trouble codes (DTCs) and freeze-frame data to confirm the fault conditions
- 3 Test the resistance and signal of the cylinder 6 injector with a multimeter and compare to manufacturer specifications
- 4 Check the camshaft position sensor and injection timing sensor for proper operation and signal integrity
- 5 Verify engine oil condition and level, as degraded oil can affect VVT and injection timing
- 6 If equipped, inspect and test the variable valve timing solenoid for proper function
- 7 Repair or replace faulty components as needed, then clear codes and perform a road test to verify the repair

Over-Advanced Timing Isn't Always the Injector

- A clogged oil control valve for the variable valve timing system can cause the camshaft to advance beyond command, leading to an over-advanced injection timing code for a specific cylinder.
The ECM may set P01D6 due to a faulty camshaft position sensor signal that is intermittent, even if the sensor passes a static resistance test.
- Wiring issues at the injector connector, such as a backed-out terminal or chafed wire, are common causes that are often overlooked in favor of replacing the injector itself.
- On some vehicles, a low battery or charging system issue can cause the ECM to misinterpret sensor signals and set false timing codes.

Always check for technical service bulletins (TSBs) specific to your vehicle, as some manufacturers have released software updates to address false P01D6 codes.

Can I keep driving with P01D6?

It is generally safe to drive with P01D6 if the engine is running smoothly and no other severe symptoms are present, but avoid aggressive acceleration or heavy loads. If the check engine light is flashing or the engine runs poorly, stop driving and seek professional diagnosis to prevent potential catalytic converter damage.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Fuel injector test light or noid light
- Oscilloscope for signal analysis
- Factory service information for specifications and procedures



Reading P01D6

- 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.
- D6** The exact fault within that area.

Often seen with

P0011 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P01D5** Cylinder 6 Injection Timing Performance - Over Retarded · **P01D7** Cylinder 7 Injection Timing Performance - Over Retarded · **P0206** Injector Circuit/Open - Cylinder 6 · **P0306** Cylinder 6 Misfire Detected

See it working

Watch the animated explainer [How a Refrigerator Works: The Cooling Cycle](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p01d6/>

