

GENERIC · POWERTRAIN

P0083

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0083

Intake Valve Control Solenoid Circuit High (Bank 2)

P0083 is a generic powertrain code indicating that the engine control module (ECM) has detected a high-voltage condition on the intake valve control solenoid circuit for bank 2. This solenoid, often part of a variable valve timing (VVT) system, is commanded by the ECM to adjust intake valve timing, and a high voltage reading suggests an open circuit, short to power, or a faulty solenoid.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering and auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms.
- Rough idle or engine misfire, particularly at low speeds.
- Reduced engine performance and poor fuel economy.
- Unusual engine noises, such as ticking or rattling from the valve train.
- In some cases, the engine may enter limp mode to protect itself.

Common causes, most likely first

- 1 Faulty intake valve control solenoid (open winding or internal short).
- 2 Damaged or corroded wiring harness or connector at the solenoid.
- 3 Short to voltage in the control circuit between the ECM and solenoid.
- 4 Poor electrical connection at the ECM connector.
- 5 Failed ECM driver for the solenoid circuit (less common).
- 6 Oil sludge or debris obstructing the solenoid, causing electrical irregularities.



How to diagnose and fix it

- 1 Perform a visual inspection of the solenoid, wiring, and connectors for damage or corrosion.
- 2 Use a scan tool to command the solenoid on and off and observe if the circuit responds.
- 3 Measure resistance across the solenoid terminals and compare to manufacturer specifications.
- 4 Check for voltage on the control circuit with the solenoid disconnected to detect a short to power.
- 5 Inspect the ECM connector and wiring for continuity and shorts to ground or power.
- 6 If the solenoid fails electrical tests, replace it and clear the code.
- 7 If the circuit tests good but the code persists, diagnose the ECM driver or replace the ECM as a last resort.

Common Misdiagnosis Traps for P0083

- A high voltage code often results from an open circuit rather than a shorted solenoid, so checking resistance and continuity is crucial before replacing parts.
- Oil sludge or debris can cause the solenoid to stick and draw abnormal current, mimicking an electrical fault, so inspecting oil condition and screen filters is wise.
- The ECM may set this code if the solenoid circuit is disconnected, so always check for loose connectors or broken wires before condemning the solenoid.
- Bank 2 refers to the side of the engine opposite cylinder number one, so confirm which bank is bank 2 on the specific vehicle to avoid testing the wrong solenoid.
- In some vehicles, the intake valve control solenoid is part of the variable valve timing system, and a fault here can affect camshaft timing, leading to driveability issues that may be misattributed to other systems.

Can I keep driving with P0083?

It is generally safe to drive with P0083, but avoid aggressive acceleration or heavy loads, as the engine may not perform optimally and could enter limp mode. Have the vehicle diagnosed promptly to prevent potential damage to the valve train or catalytic converter.

Tools that help

- OBD-II scan tool with bidirectional control
- Digital multimeter
- Wire probe set
- Service manual for wiring diagrams and specifications
- Basic hand tools for connector and component access



Reading P0083

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

Often seen with

P0011 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P0021** 'A' Camshaft Position - Timing Over-Advanced or System Perfo · **P0081** Intake Valve Control Solenoid Circuit (Bank 2) · **P0082** Intake Valve Control Solenoid Circuit Low (Bank 2) · **P0084** Exhaust Valve Control Solenoid Circuit (Bank 2)

See it working

Watch the animated explainer [Four-Stroke Engine Cutaway: Intake to Exhaust](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0083/>

