

GENERIC · POWERTRAIN

P0081

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0081

Intake Valve Control Solenoid Circuit (Bank 2)

P0081 indicates that the powertrain control module has detected an electrical fault in the intake valve control solenoid circuit for bank 2, which is the side of the engine that does not contain cylinder number one. The computer monitors the solenoid's command signal and return circuit for abnormal voltage or current, and it sets this code when the circuit does not behave as expected during key-on or running conditions.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	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 when the engine is cold
- Reduced engine power or sluggish acceleration due to incorrect valve timing
- Poor fuel economy or increased emissions
- Unusual engine noise or vibration from the affected bank
- In some cases, the engine may enter limp mode to protect the catalytic converter

Common causes, most likely first

- 1 Faulty intake valve control solenoid on bank 2
- 2 Damaged or corroded wiring harness or connector at the solenoid
- 3 Open or short circuit in the solenoid control circuit
- 4 Failed powertrain control module driver for the solenoid circuit
- 5 Oil sludge or debris blocking the solenoid or its oil passages
- 6 Low engine oil level or pressure affecting variable valve timing operation



How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related codes in other systems
- 2 Inspect the solenoid connector and wiring for damage, corrosion, or loose pins
- 3 Measure the solenoid resistance with a multimeter and compare to the manufacturer's specification
- 4 Check for battery voltage and ground signals at the solenoid connector with the key on
- 5 Test the control circuit from the powertrain control module to the solenoid for continuity and shorts
- 6 Clean or replace the intake valve control solenoid if electrically faulty or clogged
- 7 Clear the code and perform a road test to confirm the repair, reprogramming the module if required

What the P0081 code does not always mean

- A P0081 code is often set by a dirty or clogged solenoid screen rather than a failed solenoid, so cleaning the screen and checking oil condition can resolve the issue without parts replacement.
- The bank 2 designation refers to the side of the engine opposite cylinder number one, and on transverse V6 engines this bank is often at the rear, making visual inspection difficult and increasing the chance of misdiagnosis.
- Wiring harness damage from heat, chafing, or rodent activity is a common cause that is frequently overlooked when technicians jump straight to replacing the solenoid.
- A low oil level or degraded oil can trigger this code because variable valve timing solenoids rely on clean, pressurized oil to operate, so always check the oil dipstick and service history first.
- The code can be intermittent and may not reappear immediately after clearing, so a thorough circuit test with a graphing multimeter is more reliable than a simple resistance check.

Can I keep driving with P0081?

You can usually drive the vehicle with this code, but avoid aggressive acceleration and heavy loads because incorrect valve timing can cause misfires and damage the catalytic converter over time. Have the fault diagnosed promptly, especially if the engine runs rough or loses power.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Test light
- Wiring diagram for the specific vehicle
- Socket set and torx bits for solenoid removal
- Oil pressure gauge



Reading P0081

- 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.
- 81** 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 · **P0080** Exhaust Valve Control Solenoid Circuit High (Bank 1) · **P0082** Intake Valve Control Solenoid Circuit Low (Bank 2) · **P0300** Random/Multiple Cylinder Misfire Detected

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/p0081/>

