

GENERIC · POWERTRAIN

P0078

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0078

Exhaust Valve Control Solenoid Circuit (Bank 1)

P0078 indicates that the powertrain control module (PCM) has detected an electrical fault in the circuit controlling the exhaust valve control solenoid on bank 1. This solenoid is used on engines with variable valve timing or cylinder deactivation to alter exhaust valve operation for improved efficiency and emissions, and the PCM monitors the circuit for expected voltage or current behavior.

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 misfire under light load if the exhaust valve remains in an unfavorable position
- Reduced engine power or sluggish acceleration due to incorrect valve timing
- Poor fuel economy as the engine management strategy reverts to a default mode
- Intermittent operation where the fault appears only when the engine is cold or hot
- Audible clicking or ticking from the solenoid area if the armature is stuck or the circuit is shorted

Common causes, most likely first

- 1 Faulty exhaust valve control solenoid with an open or shorted internal coil
- 2 Damaged or corroded wiring harness and connector pins at the solenoid or PCM
- 3 Blown fuse or relay supplying power to the solenoid circuit
- 4 Engine oil sludge or debris blocking the solenoid screen and causing mechanical binding
- 5 PCM internal driver failure, though this is less common than wiring or solenoid issues
- 6 Aftermarket or incorrect solenoid installed that does not meet electrical specifications



How to diagnose and fix it

- 1 Perform a visual inspection of the solenoid connector and wiring for chafing, corrosion, or loose pins
- 2 Check the fuse and relay that supply power to the exhaust valve control solenoid circuit
- 3 Measure the solenoid resistance with a multimeter and compare to the manufacturer's specification
- 4 Backprobe the solenoid connector to verify power and ground signals from the PCM while commanding the solenoid on and off
- 5 Test the circuit for shorts to ground or voltage that could damage the PCM driver
- 6 Replace the exhaust valve control solenoid if electrical tests confirm it is faulty
- 7 Clear the diagnostic trouble codes and perform a road test to verify the repair and ensure the monitor runs

What the P0078 code does not tell you

- A P0078 code does not automatically mean the solenoid is defective; a simple chafed wire or corroded connector often mimics a failed solenoid.
- On many engines, the exhaust valve control solenoid shares a power feed with other solenoids, so a blown fuse may cause multiple codes and mislead diagnosis.
- Oil sludge and varnish buildup inside the solenoid screen can cause intermittent sticking that only appears when the engine is cold, leading to a false replacement.
- The PCM may set P0078 when the solenoid circuit is mechanically stuck, even if the electrical coil tests good, because the driver detects an unexpected current profile.
- Replacing the solenoid without checking for oil pressure or sludge issues can lead to repeat failure if the root cause is contaminated engine oil.

Can I keep driving with P0078?

You can usually drive the vehicle with P0078, but avoid heavy acceleration and towing until the fault is repaired, as the engine may enter a reduced-power mode and fuel economy will suffer. If the check engine light begins flashing or you notice severe misfiring, stop driving and seek professional diagnosis.

Tools that help

- OBD-II scan tool with bidirectional control capability
- Digital multimeter
- Test light
- Wire repair kit with crimpers and heat shrink
- Socket and ratchet set
- Manufacturer service information for circuit specifications



Reading P0078

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

Often seen with

P0075 Intake Valve Control Solenoid Circuit (Bank 1) · **P0076** Intake Valve Control Solenoid Circuit Low (Bank 1) · **P0077** Intake Valve Control Solenoid Circuit High (Bank 1) · **P0079** Exhaust Valve Control Solenoid Circuit Low (Bank 1) · **P0080** Exhaust Valve Control Solenoid Circuit High (Bank 1)

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/p0078/>

