

GENERIC · POWERTRAIN

P0252

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0252

Injection Pump Fuel Metering Control 'A' Range/Performance (Cam/Rotor/Injector)

P0252 indicates that the engine control module (ECM) has detected an out-of-range or performance fault in the fuel metering control circuit for injection pump control 'A', which is often associated with the cam ring, rotor, or injector timing components on diesel injection pumps. The ECM monitors the expected versus actual fuel delivery or timing and sets this code when the signal does not match the commanded value during specific operating conditions.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Professional

AREA

Fuel and air metering (injector circuits)

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or engine misfire, especially when cold
- Reduced engine power or limp mode activation
- Poor fuel economy or increased fuel consumption
- Hard starting or extended cranking before the engine fires
- Excessive black smoke or unusual exhaust odor from incomplete combustion

Common causes, most likely first

- 1 Faulty fuel metering control solenoid or its electrical connector
- 2 Wiring damage (shorts, opens, or corrosion) in the control circuit between the ECM and injection pump
- 3 Sticking or worn fuel metering valve inside the injection pump
- 4 Contaminated or degraded diesel fuel causing internal pump component wear
- 5 Failed cam ring or rotor position sensor within the injection pump
- 6 ECM software calibration issue or internal ECM fault (less common)
- 7 Restricted fuel supply (clogged filter or weak lift pump) causing erratic metering pressure



How to diagnose and fix it

- 1 Connect a scan tool and verify P0252 is active, then check for related codes and freeze-frame data to understand the operating conditions.
- 2 Inspect the fuel metering control solenoid connector and wiring for corrosion, chafing, or loose pins; repair as needed.
- 3 Measure the resistance of the fuel metering solenoid and compare to the manufacturer's specification to rule out an open or shorted coil.
- 4 Check fuel quality and replace the fuel filter if contamination or restriction is suspected, then clear codes and retest.
- 5 Perform a fuel pressure and volume test to ensure the low-pressure supply is adequate for proper metering control.
- 6 If electrical and fuel supply checks pass, remove and inspect the injection pump for internal wear or sticking metering components, replacing or rebuilding as necessary.
- 7 After repairs, clear codes and perform a road test with a scan tool to confirm the fuel metering control operates within range and no pending codes return.

What the fuel metering code hides

- A loose or corroded connector at the fuel metering solenoid is a frequent culprit that mimics a failed injection pump, so always wiggle-test the harness while watching live data.
- Low fuel pressure from a clogged filter or weak lift pump can cause the ECM to set P0252 even when the injection pump itself is healthy, so verify supply pressure first.
- On some systems, the cam ring or rotor position sensor shares a circuit with other sensors, and a fault in a related component can trigger P0252 as a secondary code.
- The code can be set intermittently by air intrusion in the fuel system after a filter change or low-tank operation, so check for air bubbles in clear return lines.
- Replacing the injection pump without first checking the ECM calibration and wiring is a costly misdiagnosis; always perform a full circuit test before condemning the pump.

Can I keep driving with P0252?

You can usually drive the vehicle to a repair shop, but avoid heavy acceleration, towing, or long trips because the fault can worsen and lead to limp mode or stalling. If the engine runs rough or loses power, limit driving to essential trips only.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter for circuit and resistance testing
- Fuel pressure test gauge set
- Hand tools for connector and component access
- Factory service information for wiring diagrams and specifications

Reading P0252

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

Often seen with

P0087 Fuel Rail/System Pressure - Too Low · **P0093** Fuel System Leak Detected - Large Leak · **P0251** Injection Pump Fuel Metering Control 'A' (Cam/Rotor/Injector) · **P0253** Injection Pump Fuel Metering Control 'A' Low (Cam/Rotor/Injector) · **P0254** Injection Pump Fuel Metering Control 'A' High (Cam/Rotor/Injector)

See it working

Watch the animated explainer [How a Helicopter Flies: Rotor and Tail in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0252/>

