

GM · POWERTRAIN

P1214

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1214 · GM

Injection Pump Timing Offset

P1214 on a GM vehicle means the engine control module (ECM) has detected that the injection pump timing offset is outside the expected range, so the actual start of injection does not match the commanded timing. The ECM compares the camshaft and injection pump signals and sets this code when the offset exceeds its calibrated limit, which affects both fuel delivery and combustion quality.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	GM specific	High	Professional	Fuel and air metering (injector circuits)

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or a noticeable shake at stoplights
- Hard starting or extended cranking, especially when cold
- Reduced fuel economy or black smoke from the tailpipe
- Loss of power or sluggish acceleration under load
- Engine misfire or stalling shortly after startup

Common causes, most likely first

- 1 Worn or stretched timing chain, belt, or injection pump drive components
- 2 Injection pump timing incorrectly adjusted or the pump installed a tooth off
- 3 Faulty injection pump timing solenoid or internal pump advance mechanism
- 4 Failed crankshaft or camshaft position sensor giving erratic timing signals
- 5 Damaged or chafed wiring to the injection pump or timing sensors
- 6 Sticking or contaminated fuel injectors affecting cylinder balance
- 7 ECM calibration issue or corrupted adaptive timing learning values



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, then record freeze-frame data for P1214
- 2 Inspect the timing chain or belt and injection pump drive for wear, slack, or misalignment
- 3 Check crankshaft and camshaft sensor signals with an oscilloscope for consistency and glitches
- 4 Verify injection pump static timing with a timing light or scan tool bidirectional control
- 5 Test the injection pump timing solenoid and its wiring for resistance and shorts
- 6 Perform a fuel injector balance or return-flow test to rule out a weak cylinder
- 7 Relearn the injection pump timing offset with a factory scan tool and clear adaptive values

Timing offset faults that fool good technicians

- A stretched timing chain can set P1214 long before the engine jumps time, so always measure chain stretch rather than just checking marks.
- The injection pump timing solenoid can fail intermittently when hot, producing a P1214 that never appears during a cold shop test.
- A weak battery or poor ground can corrupt the crankshaft sensor signal and mimic a pump timing offset, so load-test the electrical system first.
- Replacing the injection pump without correcting a worn pump drive gear or keyway will set P1214 again within a few hundred miles.
- Some GM diesel platforms require a specific fuel temperature before the timing offset relearn will complete, so a failed relearn is not always a hard fault.

Can I keep driving with P1214?

Limit driving to short trips to a repair shop because continued operation with an incorrect injection pump timing offset can cause poor combustion, overheating, and expensive pump or engine damage. Avoid heavy loads and sustained high-speed driving until the fault is corrected.

Tools that help

- Factory-level scan tool with bidirectional control and timing relearn capability
- Oscilloscope for crankshaft and camshaft sensor signal analysis
- Digital multimeter for wiring and solenoid resistance checks
- Timing light or diesel timing adapter
- Fuel injector return-flow test kit



Reading P1214

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (GM): its meaning depends on the make.
- 2** Fuel and air metering (injector circuits).
- 14** The exact fault within that area.

Often seen with

P0016 Crankshaft/Camshaft Position Correlation (Bank 1 Sensor A) · **P0216** Injector/Injection Timing Control Circuit · **P0251** Injection Pump Fuel Metering Control 'A' (Cam/Rotor/Injector) · **P0335** Crankshaft Position Sensor A Circuit Malfunction · **P0340** Camshaft Position Sensor A Circuit Malfunction (Bank 1)

See it working

Watch the animated explainer [How Hydraulic Brakes Work: Pedal to Caliper](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1214/>

