

GENERIC · POWERTRAIN

P039E

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P039E

Cylinder 1 Combustion Performance

P039E is a generic powertrain code indicating that the engine control module has detected a combustion performance problem specifically on cylinder number one, typically by monitoring crankshaft speed fluctuations or ionisation current. The computer compares the expected power contribution of cylinder one against the other cylinders and flags this code when the deviation exceeds a calibrated threshold.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Ignition system and misfire

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or a noticeable shake that worsens when the engine is cold
- Misfire-like shudder or hesitation during acceleration
- Reduced fuel economy and a faint raw fuel smell from the exhaust
- Intermittent flashing check engine light under load, indicating a catalyst-damaging misfire

Common causes, most likely first

- 1 Worn or fouled spark plug on cylinder one
- 2 Faulty ignition coil or spark plug boot for cylinder one
- 3 Leaking or clogged fuel injector on cylinder one
- 4 Vacuum leak or intake manifold gasket leak near cylinder one
- 5 Low compression from worn piston rings, valves, or head gasket on cylinder one
- 6 Carbon buildup on intake valves or combustion chamber of cylinder one
- 7 Wiring or connector fault in the cylinder one injector or coil circuit



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data to confirm the fault is isolated to cylinder one
- 2 Inspect the spark plug and ignition coil on cylinder one, swapping the coil to another cylinder to see if the misfire follows
- 3 Perform a cylinder contribution or power balance test to verify which cylinder is weak
- 4 Check fuel injector operation with a noid light or injector balance test, and inspect the connector and wiring
- 5 Run a compression test and, if low, a cylinder leak-down test to assess mechanical condition
- 6 Smoke-test the intake system for vacuum leaks near cylinder one
- 7 Replace the confirmed faulty component and clear the code, then verify with a road test and live misfire counter

Cylinder one misfire traps to avoid

- A P039E can be set by a mechanical fault such as a burnt valve or worn cam lobe that no amount of ignition or fuel parts will fix, so compression testing is essential before throwing parts at it.
Technicians often overlook a swapped coil or plug from another cylinder during diagnosis, which can move the misfire and create a false sense of repair if the code returns on a different cylinder.
- The code may appear only under specific conditions such as cold start or high load, so a simple idle scan can miss it; reviewing freeze-frame data is critical.
- A leaking intake manifold gasket or a cracked vacuum hose near cylinder one can lean out that cylinder and trigger P039E without any ignition or fuel component being faulty.
On engines with direct injection, carbon buildup on the intake valves of cylinder one is a common cause that does not show up in a standard fuel pressure or injector test.

Can I keep driving with P039E?

You can usually drive cautiously to a repair shop if the check engine light is steady, but avoid heavy acceleration or towing. If the light flashes, stop driving soon because a persistent misfire can overheat and destroy the catalytic converter.

Tools that help

- OBD-II scan tool with live misfire and freeze-frame data
- Spark plug socket and torque wrench
- Compression gauge
- Cylinder leak-down tester
- Noid light or injector balance tester
- Smoke machine for vacuum leaks



Reading P039E

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 3** Ignition system and misfire.
- 9E** The exact fault within that area.

Often seen with

P0300 Random/Multiple Cylinder Misfire Detected · **P0301** Cylinder 1 Misfire Detected · **P039B** Cylinder 1 Pressure Too High · **P039C** Cylinder 1 Pressure Variation Low · **P039D** Cylinder 1 Pressure Variation High

See it working

Watch the animated explainer [How a Jet Engine Works: Two-Spool Turbofan](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p039e/>

