



P1303 · Nissan

Cylinder 3 Misfire

P1303 on a Nissan means the engine control module (ECM) has detected a misfire specifically on cylinder 3, based on crankshaft speed fluctuations that indicate that cylinder is not contributing power evenly. The ECM monitors the crankshaft position sensor signal and flags this code when the misfire count for cylinder 3 exceeds a calibrated threshold, often within a specific engine speed and load window.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Nissan specific	Medium	Intermediate	Ignition system and misfire

Symptoms you may notice

- Check engine light illuminated, sometimes flashing if the misfire is severe enough to risk catalytic converter damage
- Noticeable engine shake or vibration at idle, often felt through the steering wheel or seat
- Rough running or hesitation during acceleration, particularly under load
- Reduced fuel economy and a noticeable loss of power compared to normal operation
- A sulfur or rotten egg smell from the exhaust if unburned fuel is reaching the catalytic converter
- Often no symptoms besides the warning light when the misfire is intermittent or mild

Common causes, most likely first

- 1 Worn or fouled spark plug on cylinder 3, including incorrect gap or a plug that has been damaged during installation
- 2 Failed ignition coil or coil-on-plug boot for cylinder 3, which is a common failure on Nissan engines
- 3 Faulty or clogged fuel injector on cylinder 3, causing a lean or rich condition specific to that cylinder
- 4 Vacuum leak at the intake manifold runner or injector seal affecting cylinder 3 disproportionately
- 5 Low engine compression on cylinder 3 from worn rings, a burned valve, or a failed head gasket
- 6 Mechanical valvetrain issue such as a collapsed lifter or worn cam lobe on cylinder 3
- 7 Wiring or connector fault in the ignition coil or injector circuit for cylinder 3, including chafed harnesses



How to diagnose and fix it

- 1 Scan all stored and pending codes with a capable scan tool and record freeze-frame data to confirm the misfire is isolated to cylinder 3
- 2 Inspect the spark plug on cylinder 3 for fouling, wear, or incorrect gap, and compare it to a known-good cylinder
- 3 Swap the ignition coil from cylinder 3 with another cylinder and recheck misfire counts to see if the fault follows the coil
- 4 Perform a fuel injector balance test or swap injectors between cylinders to isolate a faulty injector
- 5 Check for vacuum leaks at the intake manifold and injector seals using a smoke machine or carburetor cleaner
- 6 Run a compression test and, if low, a cylinder leak-down test on cylinder 3 to rule out mechanical failure
- 7 Inspect the ignition coil and injector wiring harness for chafing, corrosion, or loose connectors, and repair as needed

What Nissan techs check before replacing parts

- A P1303 code on a Nissan is often set by a failing ignition coil that tests fine when cold but breaks down under heat and load, so always swap coils and road-test rather than relying on a static bench test.
- Nissan engines are known for intake manifold vacuum leaks at the runner gaskets that can cause a single-cylinder misfire, and these leaks often do not set a lean code alongside P1303.
- A dirty or failing mass airflow sensor (MAF) can skew fuel trims and cause a misfire that the ECM attributes to cylinder 3, so check fuel trim data before condemning ignition or fuel components.
- Low compression on cylinder 3 from a burned exhaust valve is a common cause on higher-mileage Nissan four-cylinders, and a simple compression test will prevent unnecessary coil and injector replacement.
- The misfire counter for cylinder 3 can be triggered by a faulty crankshaft position sensor or reluctor wheel, so verify the crank signal is clean before chasing mechanical faults.

Can I keep driving with P1303?

You can drive a short distance to a repair shop if the check engine light is steady and the engine runs smoothly, but avoid heavy acceleration and sustained highway speeds. If the light is flashing or the engine shakes badly, stop driving immediately to prevent unburned fuel from overheating and destroying the catalytic converter.

Tools that help

- OBD-II scan tool with live misfire counter and freeze-frame capability
- Spark plug socket and torque wrench
- Compression tester
- Fuel injector balance tester or noid light
- Smoke machine for vacuum leak detection
- Digital multimeter for circuit testing



Reading P1303

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (Nissan): its meaning depends on the make.
- 3** Ignition system and misfire.
- 03** The exact fault within that area.

Often seen with

P0171 System Too Lean (Bank 1) · **P0300** Random/Multiple Cylinder Misfire Detected · **P0301** Cylinder 1 Misfire Detected · **P0303** Cylinder 3 Misfire Detected · **P0420** Catalyst System Efficiency Below Threshold (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/nissan-p1303/>

