



P1306 · Nissan

Cylinder 6 Misfire

P1306 on Nissan vehicles indicates that the engine control module has detected a misfire specifically on cylinder 6, typically by monitoring crankshaft speed fluctuations that occur when that cylinder fails to contribute power. The code is stored when the misfire count for cylinder 6 exceeds the manufacturer's threshold, which can range from a single event to a continuous misfire depending on driving conditions.

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

Symptoms you may notice

- Check engine light illuminated, often flashing if the misfire is severe enough to risk catalytic converter damage
- Noticeable engine vibration or shaking at idle that may smooth out at higher RPM
- Reduced engine power and sluggish acceleration, especially under load or when climbing hills
- Rough running with a distinct rhythmic stumble that matches the firing order of cylinder 6
- Often no symptoms besides the warning light when the misfire is intermittent or only occurs under specific conditions
- Poor fuel economy or a strong raw fuel smell from the exhaust if the misfire is constant

Common causes, most likely first

- 1 Worn or fouled spark plug on cylinder 6, often due to oil seepage or extended service intervals
- 2 Failed ignition coil or coil-on-plug boot for cylinder 6, which is a common failure on Nissan V6 engines
- 3 Faulty fuel injector for cylinder 6, including clogged nozzles or electrical winding failure
- 4 Vacuum leak at the intake manifold runner or gasket near cylinder 6, causing a lean misfire
- 5 Low compression on cylinder 6 from worn rings, valve seat recession, or a head gasket breach
- 6 Damaged wiring or connector at the cylinder 6 coil or injector, often from heat or rodent damage
- 7 Mechanical valvetrain issue such as a collapsed lifter or worn cam lobe affecting cylinder 6



How to diagnose and fix it

- 1 Perform a visual inspection of the cylinder 6 ignition coil, spark plug, and injector connector for damage, corrosion, or oil contamination
- 2 Swap the ignition coil from cylinder 6 with a known-good coil from another cylinder and see if the misfire moves, confirming coil failure
- 3 Remove and inspect the spark plug from cylinder 6 for wear, fouling, or incorrect gap, and replace it if questionable
- 4 Run a compression test and a cylinder leak-down test on cylinder 6 to rule out mechanical faults before replacing ignition or fuel parts
- 5 Use a noid light or oscilloscope to check the injector pulse signal at cylinder 6, and perform an injector balance test if equipped
- 6 Smoke-test the intake system to locate vacuum leaks near cylinder 6, and repair any leaking gaskets or hoses
- 7 If ignition and fuel delivery are confirmed good, perform a relative compression test or cranking compression comparison across all cylinders to assess mechanical health

Cylinder 6 misfire traps on Nissan V6 engines

- A P1306 code on Nissan V6 engines frequently results from a failed ignition coil that tests fine when cold but breaks down under heat, so always swap coils and test under load rather than trusting a static resistance check.
- Oil leaking from a worn valve cover gasket or spark plug tube seal can fill the cylinder 6 spark plug well, causing a misfire that returns shortly after replacing the plug unless the leak is fixed.
- A misfire on cylinder 6 alone can be caused by a failing fuel injector that still clicks audibly, so listening for injector operation is not a reliable diagnostic test without measuring fuel delivery.
- Nissan engines with variable valve timing can set a single-cylinder misfire code when the camshaft phaser or timing chain has jumped slightly, affecting cylinder 6 more than others due to oil passage routing.
- A P1306 code does not always mean the ignition coil is bad; a vacuum leak at the intake manifold runner for cylinder 6 can lean out that cylinder and trigger the same misfire counter without any ignition fault.

Can I keep driving with P1306?

Avoid driving with a flashing check engine light or a constant misfire, because unburned fuel can overheat and destroy the catalytic converter within a short distance. If the light is steady and the misfire is intermittent, drive gently and only to a repair shop, keeping engine load low and avoiding hard acceleration.



Tools that help

- OBD-II scan tool with live misfire counter and freeze-frame data capability
- Spark tester or ignition coil test tool
- Compression gauge and cylinder leak-down tester
- Noid light or automotive oscilloscope for injector pulse testing
- Smoke machine for intake leak detection
- Basic hand tools including spark plug socket, ratchet set, and torque wrench

Reading P1306

P Powertrain: engine, transmission and emissions.

1 Manufacturer-specific code (Nissan): its meaning depends on the make.

3 Ignition system and misfire.

06 The exact fault within that area.

Often seen with

P1320 Knock Sensor 2 Circuit Short To Ground · **P1310** Igniter Circuit Malfunction No 3 · **P1320** Igniter Circuit Malfunction No 5 · **P1320** Ignition Signal · **P1310** Ignition Coil 3 Primary Feedback Circuit · **P1320** Distributorless Ignition 4X Signal Intermittent · **P1310** Ignition Coil 3 Primary Feedback Circuit · **P1320** IC Module 4X Ref Circuit Intermittent No Pulses · **P0171** System Too Lean (Bank 1) · **P0300** Random/Multiple Cylinder Misfire Detected · **P0306** Cylinder 6 Misfire Detected

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-p1306/>

