

NISSAN · POWERTRAIN

P1701

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1701 · Nissan

Fuel Trim

P1701 on Nissan vehicles indicates that the engine control module (ECM) has detected an abnormal fuel trim value, meaning the air-fuel mixture is either too rich or too lean beyond the correction range it can compensate for. The ECM monitors short-term and long-term fuel trim adjustments and sets this code when the total correction exceeds a calibrated threshold, typically around plus or minus 25 percent.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Nissan specific	Medium	Intermediate	Transmission

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or engine stumbling at stops
- Hesitation or flat spots during acceleration
- Reduced fuel economy compared to normal
- Black smoke or strong fuel odor from the exhaust in rich conditions
- Occasional engine surging or uneven power delivery

Common causes, most likely first

- 1 Vacuum leak from cracked intake hoses, intake manifold gaskets, or PCV lines
- 2 Dirty or failing mass air flow (MAF) sensor sending inaccurate air volume readings
- 3 Leaking or stuck-open fuel injector causing excessive fuel delivery
- 4 Weak fuel pump or clogged fuel filter reducing fuel pressure
- 5 Faulty oxygen sensor (O2 sensor) providing biased feedback to the ECM
- 6 Exhaust leak upstream of the oxygen sensor allowing outside air into the reading
- 7 Positive crankcase ventilation (PCV) valve stuck open or leaking



How to diagnose and fix it

- 1 Connect a scan tool and record live fuel trim data (short-term and long-term) at idle and at 2500 rpm to identify whether the mixture is rich or lean across the range.
- 2 Inspect all intake and vacuum hoses for cracks, loose clamps, or disconnected lines, and perform a smoke test to confirm leaks.
- 3 Clean the mass air flow sensor with dedicated MAF cleaner and verify its readings against Nissan specifications.
- 4 Check fuel pressure with a gauge and compare to the factory specification; inspect the fuel filter and pump operation.
- 5 Test each fuel injector for resistance, leakage, and spray pattern, and replace any that are out of specification.
- 6 Inspect the oxygen sensor signal and response time with a scan tool or oscilloscope, and check for exhaust leaks before the sensor.
- 7 After repairs, clear the code and drive the vehicle through a complete drive cycle to confirm fuel trim values return to normal and the code does not reset.

Fuel trim codes often misdiagnosed

- A dirty mass air flow sensor is one of the most common causes of P1701 on Nissan engines, yet many technicians replace oxygen sensors first because the code description mentions fuel trim.
- An exhaust leak between the cylinder head and the upstream oxygen sensor can pull in outside air and make the ECM think the mixture is lean, causing it to add fuel and eventually set P1701.
- Fuel trim problems can be intermittent and only appear during certain driving conditions, so a code that clears itself does not mean the underlying issue is gone.
- On some Nissan models, a weak battery or poor ground connection can cause erratic sensor readings that mimic fuel trim faults, so always verify charging system health before condemning sensors.
- P1701 can be set by a sticking PCV valve that allows unmetered air into the intake, a fault that is frequently overlooked during visual inspections.

Can I keep driving with P1701?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration, towing, or long trips because an excessively lean or rich mixture can damage the catalytic converter and spark plugs over time. If the engine is running rough or stalling, stop driving and arrange for a diagnosis.



Tools that help

- OBD-II scan tool with live data capability
- Smoke machine for intake leak testing
- Fuel pressure gauge
- Digital multimeter
- MAF sensor cleaner
- Vacuum gauge

Reading P1701

P	Powertrain: engine, transmission and emissions.
1	Manufacturer-specific code (Nissan): its meaning depends on the make.
7	Transmission.
01	The exact fault within that area.

Often seen with

P0101 Mass/Volume Air Flow Circuit Range/Performance · **P0130** O2 Sensor Circuit Malfunction (Bank 1 Sensor 1) · **P0171** System Too Lean (Bank 1) · **P0172** System Too Rich (Bank 1) · **P0442** EVAP System Leak Detected (Small)

See it working

Watch the animated explainer [How a Car Thermostat Works: Wax Pellet and Cooling Fan](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/nissan-p1701/>

