



P1491 · Nissan

Vacuum Cut Valve Bypass Valve

P1491 on Nissan vehicles indicates that the engine control module (ECM) has detected a fault in the vacuum cut valve bypass valve circuit or its operation. The ECM monitors the valve during the evaporative emission (EVAP) system self-test and sets this code when the valve does not respond as expected, often due to a mechanical binding or an electrical circuit problem.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Nissan specific	Low	Intermediate	Auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light (malfunction indicator lamp) on the dashboard.
- Often no symptoms besides the warning light, especially if the valve fails in a position that does not affect driveability.
- A slight fuel odor may be noticed around the rear of the vehicle if the valve stuck open and allows excessive vapor flow.
- Rough idle or hesitation in rare cases where the valve affects purge flow during certain operating conditions.
- Failed state emissions inspection due to the stored trouble code and pending EVAP monitor status.
- In some instances, a faint clicking or ticking noise from the engine bay may be heard if the valve is commanded on and off rapidly.

Common causes, most likely first

- 1 Faulty vacuum cut valve bypass valve (sticking, seized, or electrically failed solenoid).
- 2 Damaged or disconnected vacuum hose between the intake manifold and the bypass valve.
- 3 Corroded, loose, or damaged electrical connector at the bypass valve.
- 4 Open or shorted wire in the bypass valve control circuit (power or ground side).
- 5 Failed engine control module (ECM) driver for the bypass valve circuit, though this is less common.
- 6 Clogged EVAP canister or restricted vapor line causing the valve to operate outside expected parameters.
- 7 Carbon buildup or debris inside the valve preventing proper sealing or movement.



How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related EVAP or engine performance codes that might indicate a different root cause.
- 2 Inspect the vacuum hoses connected to the bypass valve for cracks, splits, or disconnection, and replace any damaged hoses.
- 3 Check the electrical connector at the bypass valve for corrosion, tightness, and proper pin fit; clean or repair as needed.
- 4 Test the bypass valve solenoid with a multimeter for correct resistance (consult the factory service manual for the specification) and compare to a known-good value.
- 5 Apply battery voltage and ground to the valve terminals to confirm it clicks and allows vacuum to pass when energized; replace the valve if it does not operate smoothly.
- 6 Inspect the EVAP canister and lines for blockage or damage that could cause excessive pressure or vacuum at the valve.
- 7 If all mechanical and electrical checks pass, perform a thorough circuit test from the ECM to the valve to rule out wiring faults before condemning the ECM.

What Nissan Techs Check First for P1491

- A sticking bypass valve is far more common than a failed ECM, so always test the valve mechanically and electrically before suspecting the module.
- The vacuum cut valve bypass valve often fails intermittently, so a valve that tests good when cold may still be faulty when hot; consider testing it at operating temperature.
- A dirty or clogged EVAP canister can cause the bypass valve to see abnormal pressures, leading to a false P1491; do not overlook the canister during diagnosis.
- Some aftermarket scan tools misreport P1491 as a different EVAP code on Nissans, so confirm the code with a factory-level tool or consult the service manual for the exact definition.
- The bypass valve is part of the EVAP system, and a leak elsewhere (such as a loose gas cap) can sometimes trigger related codes, so perform a full EVAP system check if the valve tests good.

Can I keep driving with P1491?

The vehicle is generally safe to drive with P1491 because it primarily affects the evaporative emission system and does not compromise engine performance or safety. However, avoid ignoring the code for extended periods, as a persistent EVAP fault can lead to increased emissions and may cause other related codes to set.



Tools that help

- OBD-II scan tool with Nissan-specific software or a generic tool capable of reading manufacturer codes
- Digital multimeter
- Hand vacuum pump with gauge
- Factory service manual or reliable repair information for circuit specifications
- Basic hand tools (screwdrivers, pliers, socket set)

Reading P1491

P	Powertrain: engine, transmission and emissions.
1	Manufacturer-specific code (Nissan): its meaning depends on the make.
4	Auxiliary emission controls.
91	The exact fault within that area.

Often seen with

P0440 Evaporative Emission Control System Malfunction · **P0442** EVAP System Leak Detected (Small) · **P0443** EVAP Purge Control Valve Circuit Malfunction · **P0444** EVAP Purge Control Valve Circuit Open · **P0455** EVAP System Leak Detected (Large)

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-p1491/>

