

GENERIC · POWERTRAIN

P0299

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0299

Turbo/Supercharger Underboost

P0299 indicates that the engine control module (ECM) has detected a lower-than-expected boost pressure from the turbocharger or supercharger during a commanded boost condition. The ECM compares the actual manifold pressure, measured by the manifold absolute pressure (MAP) sensor, against the desired pressure and sets the code when the shortfall exceeds a calibrated threshold for a set time.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering (injector circuits)

Symptoms you may notice

- Illuminated check engine light, often with no other symptoms besides the warning light
- Noticeable lack of power or sluggish acceleration, especially during hard acceleration or when climbing hills
- Reduced fuel economy due to the engine operating in a less efficient rich condition
- Audible whistling, hissing, or rushing air sound from the engine bay under boost, indicating a leak
- Black smoke from the exhaust or a strong fuel odor, caused by over-fueling from the rich condition
- Transmission may hold gears longer or downshift abruptly as the ECM tries to compensate for low power

Common causes, most likely first

- 1 Leaking or disconnected charge air cooler (intercooler) hose, clamp, or piping
- 2 Faulty or stuck-open turbocharger wastegate or bypass valve
- 3 Malfunctioning boost control solenoid (also called the turbo control valve or N75 valve)
- 4 Restricted or clogged air intake or air filter
- 5 Failed or leaking intercooler
- 6 Faulty MAP sensor or a wiring issue in the MAP sensor circuit
- 7 Worn or damaged turbocharger compressor wheel or turbine



How to diagnose and fix it

- 1 Inspect all charge air hoses, clamps, and intercooler connections for cracks, looseness, or oil residue that indicates a leak
- 2 Check the air filter and intake tract for restrictions or blockages
- 3 Test the boost control solenoid for proper operation and resistance, and verify it receives the correct vacuum or pressure signal
- 4 Inspect the wastegate actuator and bypass valve for freedom of movement and correct operation
- 5 Use a scan tool to command the wastegate or boost control and observe actual versus desired boost pressure to confirm the fault
- 6 Perform a smoke test on the intake system to find small leaks that are not visible
- 7 If all external components check out, remove and inspect the turbocharger for compressor or turbine damage

Before you replace the turbocharger

- A loose or cracked charge air hose is the most common cause of P0299, yet many people replace the turbocharger first without checking the simple clamps and hoses.
- The boost control solenoid can fail intermittently, so a bench test may pass while the solenoid still sticks under heat or vibration; a live data test during a road test is more reliable.
- A dirty or failing MAP sensor can report lower boost than actual, causing the ECM to set P0299 even when the turbocharger is producing correct pressure.
- On some vehicles, a clogged diesel particulate filter (DPF) or a restricted exhaust can limit turbo boost and set P0299 without any fault in the turbo system itself.
- P0299 can be set by a software calibration issue in the ECM, so check for technical service bulletins (TSBs) and software updates before replacing hardware.

Can I keep driving with P0299?

You can usually drive the vehicle with P0299, but avoid heavy acceleration and sustained high-speed driving because the engine is not producing full power and may run rich, which can damage the catalytic converter over time. Have the fault diagnosed soon to prevent further damage.

Tools that help

- OBD-II scan tool with live data capability
- Smoke machine for intake leak detection
- Vacuum pump and gauge
- Digital multimeter
- Basic hand tools (screwdrivers, wrenches, socket set)



Reading P0299

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 2** Fuel and air metering (injector circuits).
- 99** The exact fault within that area.

Often seen with

P0101 Mass/Volume Air Flow Circuit Range/Performance · **P0171** System Too Lean (Bank 1) · **P0234** Engine Overboost Condition · **P0235** Turbocharger Boost Sensor A Circuit Malfunction · **P0236** Turbocharger Boost Sensor A Circuit Range/Performance

See it working

Watch the animated explainer [Turbocharger Trainer: Boost, Wastegate and Intercooler](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0299/>

