

GENERIC · POWERTRAIN

P006D

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P006D

Barometric Pressure - Turbocharger/Supercharger Inlet Pressure Correlation Bank 1

P006D indicates that the powertrain control module (PCM) has detected a discrepancy between the barometric pressure (BARO) reading and the turbocharger or supercharger inlet pressure sensor reading when the engine is not under boost. The PCM expects these two pressures to closely match under certain conditions, and when the correlation falls outside a calibrated threshold, it stores this code and illuminates the check engine light.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering and auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light (malfunction indicator lamp) is the most common symptom, often with no noticeable drivability issues.
- Rough idle or stumbling, particularly if the pressure sensor is skewed and the PCM misjudges the air charge.
- Reduced engine performance or a lack of power, as the PCM may limit boost or adjust fueling incorrectly.
- Poor fuel economy due to incorrect air density calculations affecting the air-fuel ratio.
- In some cases, the engine may enter limp mode or exhibit hesitation during acceleration.
- A stored freeze-frame data showing the BARO and inlet pressure values at the time of fault detection.

Common causes, most likely first

- 1 A faulty turbocharger or supercharger inlet pressure sensor, which is the most common cause of this code.
- 2 Damaged, disconnected, or corroded wiring or connector at the inlet pressure sensor.
- 3 A restricted or leaking intake air path between the air filter and the turbocharger/supercharger inlet, affecting the pressure reading.
- 4 A faulty barometric pressure sensor (often integrated into the mass airflow sensor or PCM), providing an incorrect reference value.
- 5 A dirty or contaminated inlet pressure sensor due to oil residue or debris from the intake system.
- 6 A software issue or calibration error in the PCM, requiring a reflash or update.
- 7 In rare cases, a malfunctioning PCM that misinterprets the sensor signals.



How to diagnose and fix it

- 1 Use a scan tool to retrieve the freeze-frame data and compare the BARO and inlet pressure sensor readings with the key on, engine off (KOEO) to verify the discrepancy.
- 2 Visually inspect the inlet pressure sensor, its connector, and the wiring harness for damage, corrosion, or loose connections; repair as needed.
- 3 Check the intake air path for restrictions, leaks, or blockages between the air filter and the turbocharger/supercharger inlet, and clean or replace components as necessary.
- 4 Test the inlet pressure sensor with a multimeter or scan tool to verify its output voltage or pressure reading against a known good value or manufacturer specifications.
- 5 If the sensor is suspect, replace it with a quality part and clear the code to see if it returns.
- 6 Verify the BARO sensor reading by comparing it to a known good source or a separate barometer; replace the sensor if it is inaccurate.
- 7 If all sensors and wiring check out, consult the manufacturer's service information for any technical service bulletins (TSBs) or PCM calibration updates that address this code.

Common Misdiagnosis Traps for P006D

- A dirty or contaminated inlet pressure sensor is frequently overlooked because the sensor may still produce a plausible signal, but its accuracy drifts enough to set the correlation code.
- Technicians often replace the inlet pressure sensor without first checking the BARO sensor, which can be integrated into the mass airflow sensor (MAF) and may be the actual source of the mismatch.
- Intake system leaks or restrictions upstream of the turbocharger can cause the inlet pressure sensor to read incorrectly, mimicking a sensor failure.
- This code can be set by a low battery or charging system issue that causes voltage spikes or drops, affecting sensor reference voltages and leading to false correlations.
- After repairs, the PCM may require a relearn or drive cycle to confirm the fix, and simply clearing the code without verifying live data can lead to a comeback.

Can I keep driving with P006D?

The vehicle is generally safe to drive with this code because it typically does not cause an immediate safety risk, but you should avoid heavy acceleration or towing until the fault is repaired. Prolonged driving with an uncorrected issue may lead to reduced performance and fuel economy, and could potentially cause damage to the turbocharger or catalytic converter over time.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter
- Hand tools for intake system inspection
- Vacuum/pressure gauge or smoke machine for leak detection
- Manufacturer service information for sensor specifications and TSBs

Reading P006D

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 0** Fuel and air metering and auxiliary emission controls.
- 6D** The exact fault within that area.

Often seen with

P0068 MAP/MAF - Throttle Position Correlation · **P0069** Manifold Absolute Pressure - Barometric Pressure Correlation · **P0106** MAP/Barometric Pressure Circuit Range/Performance · **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/p006d/>

