

GENERIC · POWERTRAIN

P2CD5

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2CD5

Turbocharger/Supercharger Bypass Valve C Stuck

P2CD5 indicates that the powertrain control module has detected a fault with the 'C' circuit of the turbocharger or supercharger bypass valve, often finding the valve stuck in one position. The computer monitors the bypass valve actuator's electrical circuit and its effect on boost pressure, and it sets this code when the commanded position does not match the actual response.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Reduced engine power or a limp-home mode due to disabled boost control
- Poor acceleration or sluggish throttle response from a lack of boost
- Rough idle or stalling if the valve is stuck open and causing a vacuum leak
- Audible hissing or fluttering noises from the turbocharger area during acceleration
- Increased fuel consumption because the engine is not operating at optimal boost

Common causes, most likely first

- 1 Faulty bypass valve actuator or solenoid that is stuck or has failed electrically
- 2 Damaged or disconnected wiring in the bypass valve control circuit, including open or short circuits
- 3 Corroded or loose electrical connector at the bypass valve
- 4 Vacuum or boost leak in the hose or diaphragm that operates the bypass valve
- 5 Mechanical binding or carbon buildup on the bypass valve itself, preventing movement
- 6 Failed turbocharger boost pressure sensor providing inaccurate feedback to the PCM
- 7 PCM software issue or internal fault in the bypass valve driver circuit



How to diagnose and fix it

- 1 Perform a visual inspection of the bypass valve, its connector, and associated vacuum hoses for damage or disconnection
- 2 Use a scan tool to command the bypass valve open and closed while watching live data to verify actuator movement and circuit response
- 3 Check the resistance and continuity of the bypass valve actuator and its wiring against manufacturer specifications
- 4 Test for vacuum or boost leaks using a smoke machine or pressure test on the intake system
- 5 Clean or replace the bypass valve if it is mechanically stuck or electrically failed
- 6 Repair any damaged wiring or connectors in the bypass valve control circuit
- 7 Clear the code and perform a road test to confirm the repair, reprogramming the PCM if required

Bypass valve faults that mimic other codes

- A stuck bypass valve often sets companion codes like P0299 for low boost, so technicians who only chase the boost code may replace the turbo unnecessarily.
- The 'C' circuit designation refers to a specific control channel, and on some vehicles it is the ground-side driver, so a short to ground can be missed if only the power side is checked.
- Carbon buildup on the valve pintle is a common cause of sticking that does not show up in electrical tests, so a mechanical inspection is essential.
- A faulty boost pressure sensor can report false values that make the PCM think the bypass valve is stuck when it is actually working correctly.
- After replacing the bypass valve, some vehicles require a relearn procedure or a drive cycle to re-enable boost control and clear the code permanently.

Can I keep driving with P2CD5?

You can usually drive the vehicle with this code, but expect reduced power and avoid heavy acceleration or towing until it is repaired. Prolonged driving with a stuck bypass valve can lead to overboost or underboost conditions that may damage the turbocharger over time.

Tools that help

- OBD-II scan tool with live data and bidirectional control
- Digital multimeter
- Hand vacuum pump
- Smoke machine for leak detection
- Basic hand tools and socket set



Reading P2CD5

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- C** Hybrid propulsion.
- D5** The exact fault within that area.

Often seen with

P0234 Engine Overboost Condition · **P0243** Turbocharger Wastegate Solenoid A Malfunction · **P0299** Turbo/Supercharger Underboost · **P2CD4** A/C Refrigerant Pressure Sensor A/B Correlation · **P2CD6** Turbocharger/Supercharger Boost Sensor D Circuit

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/p2cd5/>

