

GENERIC · POWERTRAIN

P2606

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2606

Intake Air Heater 'B' Circuit Range/Performance

P2606 indicates that the engine control module has detected an out-of-range or performance fault in the intake air heater 'B' circuit, which is a secondary heating element used on some diesel engines to warm incoming air for easier cold starting and reduced white smoke. The computer monitors the circuit's voltage or current and flags the code when the signal does not match expected values during the heater's self-test or commanded operation.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Low

FIX DIFFICULTY

Intermediate

AREA

Computer and output circuits

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Hard starting or rough idle when the engine is cold, especially in low ambient temperatures
- Excessive white smoke from the exhaust after a cold start
- Longer than normal warm-up period or poor heater performance in the cabin
- In rare cases, a slight electrical drain or blown fuse affecting the heater circuit

Common causes, most likely first

- 1 Failed intake air heater element 'B' (open or shorted internal winding)
- 2 Damaged or corroded wiring harness or connector at the heater 'B' circuit
- 3 Blown fuse or faulty relay dedicated to the intake air heater 'B' circuit
- 4 Poor ground connection for the heater circuit, causing high resistance
- 5 Faulty intake air temperature sensor or related wiring giving false feedback to the module
- 6 Engine control module software issue or internal driver fault (less common)



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, then clear codes and verify whether P2606 returns after a cold-start cycle
- 2 Visually inspect the intake air heater 'B' element, its connector, and the wiring for signs of overheating, corrosion, or chafing
- 3 Check the dedicated fuse and relay for the heater 'B' circuit, replacing any that are blown or suspect
- 4 Measure resistance across the heater element 'B' and compare to the manufacturer's specification; replace the element if out of range
- 5 Perform a voltage drop test on the power and ground sides of the circuit while the heater is commanded on
- 6 Test the intake air temperature sensor signal for rationality and compare with ambient temperature after a cold soak
- 7 If all external circuits and components test good, follow the manufacturer's diagnostic flow for module internal driver testing before replacing the engine control module

What most technicians overlook on P2606

- A heater element that tests good with an ohmmeter can still fail under load due to a partial open that only appears when the circuit is energized and hot.
- The intake air heater 'B' circuit is often confused with the primary heater circuit, so verify which heater the code refers to before condemning parts.
- Corroded ground points on the engine block or chassis are a frequent hidden cause that mimics a failed heater element and are easily missed during a quick visual check.
- On some vehicles, a weak battery or charging system fault can cause the module to set this code because the heater self-test is voltage-sensitive.
- Replacing the heater element without checking the relay can lead to a repeat failure if the relay contacts are pitted and cause intermittent voltage spikes.

Can I keep driving with P2606?

The vehicle is generally safe to drive with P2606 because the intake air heater is an emissions and cold-start aid, not a critical operational system. Avoid extended idling in cold weather and address the fault before winter to prevent hard starting and excessive white smoke.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter with resistance and voltage drop functions
- Test light or fused jumper wire for circuit testing
- Basic hand tools and socket set
- Manufacturer service information for circuit specifications



Reading P2606

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 6** Computer and output circuits.
- 06** The exact fault within that area.

Often seen with

P2604 Intake Air Heater 'A' Circuit Range/Performance · **P2605** Intake Air Heater 'A' Circuit/Open · **P2607** Intake Air Heater 'B' Circuit Low · **P2608** Intake Air Heater 'B' Circuit High · **P2609** Intake Air Heater System Performance

See it working

Watch the animated explainer [Disc Brake Trainer: How Car Brakes Stop a Wheel](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2606/>

