

GENERIC · POWERTRAIN

P207B

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P207B

Intake Manifold Tuning (IMT) Valve Position Sensor/Switch Circuit Range/Performance (Bank 2)

P207B means the powertrain control module (PCM) has detected that the intake manifold tuning (IMT) valve position sensor on bank 2 is reporting a position that is out of range or not performing as expected during commanded movement. The PCM commands the IMT valve to change the effective intake runner length for better low- and high-rpm breathing, and it cross-checks the sensor signal against the commanded position; when the two disagree beyond a calibrated threshold, this code is stored.

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, often with no other noticeable symptoms
- A slight hesitation or flat spot during light acceleration at lower engine speeds
- Reduced engine power or sluggish throttle response, especially under load
- Rough idle quality or mild surging when the engine is cold
- A noticeable change in intake sound or a rattle from the intake manifold area
- Poor fuel economy over time if the valve remains stuck in one position

Common causes, most likely first

- 1 A faulty IMT valve position sensor or a contaminated sensor connector
- 2 A stuck, carbon-fouled, or mechanically binding IMT valve assembly
- 3 A damaged or disconnected vacuum actuator linkage or rod on the IMT valve
- 4 Wiring damage such as an open, short, or high-resistance fault in the sensor signal or reference circuit
- 5 A failed IMT valve actuator solenoid or vacuum control solenoid that prevents commanded movement
- 6 A PCM software calibration issue or, less commonly, an internal PCM driver fault
- 7 Engine vacuum leaks or carbon buildup in the intake manifold affecting valve operation



How to diagnose and fix it

- 1 Use a scan tool to read the freeze-frame data and command the IMT valve through its full range while watching the position sensor voltage or percentage to confirm the fault is active.
- 2 Visually inspect the IMT valve, linkage, and actuator for binding, disconnected rods, or obvious carbon buildup, and clean or repair as needed.
- 3 Check the sensor connector and harness for corrosion, pushed pins, or chafed wires, and perform a wiggle test while monitoring the sensor signal.
- 4 Measure the sensor reference voltage and ground at the connector, then check the signal circuit for opens or shorts to ground or power.
- 5 Test the IMT valve actuator solenoid for correct resistance and verify it receives command voltage and vacuum when activated.
- 6 If the sensor signal is erratic but the valve moves freely, replace the position sensor or the complete IMT valve assembly as required by the manufacturer.
- 7 Clear the codes and perform a road test with several commanded valve cycles to confirm the repair and ensure the code does not return.

What the IMT sensor range code hides

- A sticking IMT valve is far more common than a failed sensor, so technicians who replace the sensor without checking valve movement often see the code return within a few drive cycles.
- Carbon buildup on the intake tuning flaps can hold the valve slightly off its commanded position, which sets a range/performance code without any hard failure of the sensor or actuator.
- The PCM may set P207B only during specific driving conditions such as a cold start or a hard acceleration, so a simple idle test can miss the fault entirely.
- A vacuum leak or a weak actuator can prevent the IMT valve from reaching its commanded position, making the sensor look faulty when the real problem is elsewhere in the vacuum circuit.
- Some vehicles use a single IMT valve for both banks, so a bank 2 code can appear even when the mechanical fault is shared and affects both sides.

Can I keep driving with P207B?

The vehicle is generally safe to drive with P207B because the fault mainly affects intake tuning and does not cause an immediate safety risk, but you should avoid heavy acceleration and towing until it is repaired. Prolonged driving with a stuck valve can worsen fuel economy and may lead to carbon fouling or damage to the actuator, so schedule diagnosis soon.



Tools that help

- OBD-II scan tool with bidirectional control and live data capability
- Digital multimeter for circuit and sensor testing
- Hand vacuum pump with gauge for actuator testing
- Basic hand tools such as sockets, wrenches, and screwdrivers
- Wiring diagram or service information for the specific vehicle
- Carburetor or intake cleaner for removing carbon deposits

Reading P207B

P	Powertrain: engine, transmission and emissions.
2	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
0	Fuel and air metering and auxiliary emission controls.
7B	The exact fault within that area.

Often seen with

P2004 Intake Manifold Runner Control Stuck Open (Bank 1) · **P2008** Intake Manifold Runner Control Circuit/Open (Bank 1) · **P2015** Intake Manifold Runner Position Sensor/Switch Circuit Range/ · **P207A** Intake Manifold Tuning (IMT) Valve Position Sensor/Switch Ci · **P207C** Intake Manifold Tuning (IMT) Valve Position Sensor/Switch Ci

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/p207b/>

