

GENERIC · POWERTRAIN

P2078

OBD-II TROUBLE CODE

P2078

Intake Manifold Tuning (IMT) Valve Position Sensor/Switch Circuit High

P2078 means the engine computer has detected an abnormally high voltage signal from the intake manifold tuning (IMT) valve position sensor, which reports how far the tuning valve has moved. The computer expects the sensor voltage to stay within a calibrated range, and a high reading usually points to an open circuit, a short to voltage, or a sensor that has failed.

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 symptoms
- A noticeable loss of low-end torque or poor acceleration because the tuning valve stays in one position
- Rough idle or unstable engine speed when the valve is stuck open or closed
- Reduced fuel economy as the computer loses the ability to optimize intake runner length
- In some vehicles, a limp-home mode that limits engine power or disables certain features

Common causes, most likely first

- 1 A faulty IMT valve position sensor that internally shorts to voltage or fails to return a proper signal
- 2 Damaged or corroded wiring between the sensor and the engine computer, including an open signal wire or a short to battery voltage
- 3 A stuck or binding IMT valve actuator that prevents the sensor from sweeping through its normal range
- 4 A poor electrical connection at the sensor or computer connector, such as backed-out pins or water intrusion
- 5 A failed engine computer driver circuit, though this is less common than sensor or wiring faults
- 6 Aftermarket or incorrect sensor installed previously that does not match the vehicle's calibration



How to diagnose and fix it

- 1 Connect a scan tool and read the live data for the IMT valve position sensor to confirm the high voltage reading and check for related codes
- 2 Visually inspect the sensor, connector, and wiring harness for damage, corrosion, or loose pins, and repair as needed
- 3 Disconnect the sensor and measure reference voltage and ground at the connector to verify the computer is supplying the correct signals
- 4 Check the signal wire for continuity to the computer and for a short to voltage using a multimeter, repairing any fault found
- 5 Manually operate the IMT valve to ensure it moves freely and does not bind, replacing the actuator if it is stuck
- 6 If wiring and actuator check out, substitute a known-good sensor and recheck live data to confirm the fix
- 7 Clear the codes and perform a road test to verify the repair and ensure the monitor runs without resetting the code

What a high IMT sensor reading really tells you

- A high voltage code often appears when the sensor signal wire is open, because the computer pulls the circuit up to a reference voltage and reads that as a high position.
- Technicians sometimes replace the sensor only to find the real problem is a chafed harness near the intake manifold where heat and vibration damage insulation.
- The IMT valve may be commanded by the computer but mechanically stuck, so the sensor reports a high voltage because the valve never reaches the expected position.
- This code can set intermittently due to a loose ground connection at the engine block, which affects the sensor's return path and skews the voltage reading.
- Do not assume the sensor is defective until you have verified the reference voltage and ground at the connector with a meter, because a bad computer ground can mimic a sensor failure.

Can I keep driving with P2078?

You can usually drive the vehicle with this code, but expect reduced performance and fuel economy, and avoid heavy acceleration or towing until it is repaired. If the engine runs roughly or enters limp mode, keep driving to a minimum and have it diagnosed promptly.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wire probing kit or back-probe pins
- Service information for connector pinouts and voltage specifications
- Basic hand tools for removing intake components if needed



Reading P2078

- 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.
- 78** 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/ · **P2077** Intake Manifold Tuning (IMT) Valve Position Sensor/Switch Ci · **P2079** 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/p2078/>

