

GENERIC · POWERTRAIN

P0639

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0639

Throttle Actuator Control Range/Performance (Bank 2)

This code indicates that the powertrain control module (PCM) has detected a range or performance problem with the throttle actuator control (TAC) system on bank 2 of the engine. The PCM commands a specific throttle plate angle and monitors the actual position through a sensor; when the two do not match within a calibrated tolerance for a set time, it stores this code.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

High

FIX DIFFICULTY

Intermediate

AREA

Computer and output circuits

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms.
- Reduced engine power or limp mode, where the vehicle may be limited to a low speed.
- A throttle pedal that feels unresponsive or requires more effort to accelerate.
- Rough idle or stalling when coming to a stop.
- Inconsistent engine speed or surging during acceleration.
- A warning message on the dashboard such as 'Engine Power Reduced' or 'Service Throttle'.

Common causes, most likely first

- 1 Carbon buildup or contamination on the throttle plate and bore, restricting movement.
- 2 A faulty throttle position sensor (TPS) or accelerator pedal position (APP) sensor on bank 2.
- 3 Wiring damage, corrosion, or loose connectors in the TAC motor or sensor circuits.
- 4 A failing throttle actuator motor or its internal gears.
- 5 A PCM software issue or internal fault in the throttle control driver.
- 6 Mechanical binding in the throttle body linkage or return spring.
- 7 Extreme temperatures or voltage drops affecting the TAC system performance.



How to diagnose and fix it

- 1 Inspect the throttle body for carbon buildup and clean it with a throttle body cleaner and a soft brush.
- 2 Check all wiring and connectors at the throttle body, pedal sensor, and PCM for damage or corrosion; repair as needed.
- 3 Use a scan tool to monitor throttle position sensor voltages and compare commanded versus actual throttle angle; look for erratic or non-linear readings.
- 4 Perform a throttle body relearn or calibration procedure with a scan tool after cleaning or replacement.
- 5 Test the throttle actuator motor with a bidirectional scan tool to command the throttle plate open and closed while observing movement.
- 6 If the throttle body is faulty, replace it with a quality unit and perform the relearn procedure.
- 7 Verify the repair by clearing codes and test-driving the vehicle under various conditions to ensure the code does not return.

Common Misdiagnosis Traps for P0639

- A dirty throttle body is the most frequent cause of this code, yet many technicians replace the entire throttle body without first attempting a thorough cleaning and relearn.
- The code can be set by a weak battery or charging system issue that causes voltage spikes, so always check battery health and ground connections before condemning components.
- Bank 2 designation on a V6 or V8 engine often refers to the throttle body that feeds the even-numbered cylinders, but on some engines it may refer to a specific throttle plate in a dual-throttle system; consult the service manual for the exact layout.
- After replacing or cleaning the throttle body, a relearn procedure is mandatory; skipping it will cause the code to reset immediately even if the repair was successful.
- Intermittent wiring faults can mimic a failed throttle body, so wiggle-test the harness while monitoring live data to catch poor connections.

Can I keep driving with P0639?

This fault can cause the vehicle to enter limp mode with severely reduced power, which is unsafe in traffic. Avoid driving until the issue is diagnosed; if you must move the vehicle, do so at low speed and be prepared for sudden power loss.

Tools that help

- OBD-II scan tool with bidirectional control and live data capability
- Digital multimeter
- Throttle body cleaner and soft brush
- Socket set and screwdrivers
- Wiring diagram for the specific vehicle



Reading P0639

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

Often seen with

P0121 Throttle Position Sensor A Circuit Range/Performance · **P0221** Throttle Position Sensor B Circuit Range/Performance · **P0638** Throttle Actuator Control Range/Performance (Bank 1) · **P0640** Intake Air Heater Control Circuit · **P2135** Throttle/Pedal Position Sensor A/B Voltage Correlation

See it working

Watch the animated explainer [How a Supercharger Works: Roots Blower in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0639/>

