

BMW · POWERTRAIN

P1634

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1634 · BMW

Throttle Valve Adaptation Spring Test Failed

P1634 on BMW vehicles means the engine control module (DME) commanded the electronic throttle valve through its full spring-return test and the measured response did not match the expected adaptation values. The computer detected that the throttle plate did not return to its default limp-home position within the expected time or current draw during the spring test, so it flags the adaptation as failed.

SYSTEM

Powertrain

CODE TYPE

BMW specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Computer and output circuits

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms besides the warning light
- Reduced engine power or limp-home mode with a message on the iDrive or instrument cluster
- A throttle pedal that feels unresponsive or delayed during the first few presses after startup
- Rough or fluctuating idle as the DME struggles to hold a stable throttle opening
- Intermittent hesitation or a sudden drop in power when accelerating from a stop
- A stored fault that returns immediately after clearing if the throttle body is mechanically binding

Common causes, most likely first

- 1 Carbon buildup or sludge on the throttle plate and bore preventing smooth spring return
- 2 Worn or sticking throttle body internal return spring or gear mechanism
- 3 Throttle body motor winding degradation causing excessive current draw during the spring test
- 4 Corroded or chafed wiring in the throttle body harness connector or pins
- 5 Failed throttle position sensor (TPS) inside the throttle body giving implausible feedback during adaptation
- 6 Low battery voltage or poor ground causing the DME to abort the adaptation test
- 7 DME software calibration issue requiring a software update or adaptation reset



How to diagnose and fix it

- 1 Read all stored and pending fault codes with a BMW-capable scan tool and record freeze-frame data before clearing anything
- 2 Check battery voltage and charging system output, then clear adaptations and rerun the throttle spring test
- 3 Remove the intake boot and inspect the throttle bore and plate for carbon; clean with throttle-body cleaner and a soft brush
- 4 Back-probe the throttle body connector and check for corrosion, pushed pins, and continuity to the DME
- 5 Command the throttle plate through its full range with the scan tool and watch for binding or a current spike
- 6 If cleaning and wiring checks pass, replace the electronic throttle body and perform the adaptation relearn procedure
- 7 After repair, clear codes, run the throttle adaptation test, and verify no pending faults return during a road test

Why throttle adaptation fails after cleaning

- A throttle body that was cleaned but not re-adapted will often set P1634 because the DME still holds the old carbon-compensated learned values and rejects the new spring-return timing.
- A weak battery is a common missed cause: the DME aborts the spring test if system voltage drops during the sweep, so the code appears even though the throttle body is healthy.
- P1634 does not always mean the throttle body is bad; a chafed harness section near the intake manifold can intermittently short the motor circuit and mimic a mechanical spring fault.
- On some BMW engines a failing accelerator pedal position sensor sets a companion code that triggers the same adaptation failure, so always check pedal codes before replacing the throttle body.
- After replacing the throttle body, the adaptation must be run with the engine off and the key on, and the test will fail again if the battery charger is not connected during the procedure.

Can I keep driving with P1634?

You can usually drive the car to a workshop, but expect reduced power and possible limp-home mode, so avoid hard acceleration and highway merging until the fault is repaired. If the throttle feels stuck or the engine surges, stop driving and have the vehicle towed.

Tools that help

- BMW-capable scan tool with throttle adaptation and actuation functions
- Digital multimeter for voltage and continuity checks
- Throttle body cleaner and soft brush
- Battery charger or power supply to hold voltage during adaptation
- Basic socket and Torx set for intake boot and throttle body removal



Reading P1634

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (BMW): its meaning depends on the make.
- 6** Computer and output circuits.
- 34** The exact fault within that area.

Often seen with

P1633 Accelerator Pedal Position Sensor 2 Signal Too Low · **P1635** Data Bus Powertrain Missing Message From Air Condition Contr · **P1633** ECM · **P1633** Battery Overcharge Fault · **P1633** Battery Overcharge · **P1633** Ignition Power Circuit Low Voltage · **P1635** 5V Reference Voltage to Sensors Low · **P1635** Tire Axle Ratio Out of Acceptable Range · **P1633** Throttle Valve Adaptation Limp Home Position · **P1635** Throttle Valve Adaptation Lower Mechanical Stop Not Adapted · **P0121** Throttle Position Sensor A Circuit Range/Performance · **P0122** Throttle Position Sensor A Circuit Low Input · **P0123** Throttle Position Sensor A Circuit High Input

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/bmw-p1634/>

