

GENERIC · POWERTRAIN

P0664

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0664

Intake Manifold Tuning Valve Control Circuit Low (Bank 2)

P0664 means the powertrain control module (PCM) has detected an abnormally low voltage on the control circuit for the bank 2 intake manifold tuning valve, which is the valve that changes intake runner length or volume to optimize airflow at different engine speeds. The PCM commands the valve to move, but the circuit feedback indicates the voltage is below the expected threshold, so the valve may not be actuating or the wiring has a short to ground or open.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Computer and output circuits

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms.
- Slight hesitation or stumble during light acceleration or at a steady cruise.
- Reduced engine power or sluggish response when accelerating from low speed.
- Rough idle or unstable idle quality, especially when the engine is cold.
- A faint rattle or ticking noise from the intake manifold area when the valve is commanded.
- Poor fuel economy or increased emissions during normal driving.

Common causes, most likely first

- 1 Failed intake manifold tuning valve actuator (open or shorted internal coil).
- 2 Damaged or corroded wiring harness connector at the tuning valve.
- 3 Chafed or broken wire in the control circuit between the PCM and the valve.
- 4 Short to ground on the control wire, often from rubbing against a metal bracket.
- 5 Corroded or loose PCM connector pins for the affected circuit.
- 6 Internal fault in the PCM driver circuit for the tuning valve (rare).
- 7 Mechanical binding of the tuning valve flap, causing the actuator to draw excessive current and set a low-voltage code.



How to diagnose and fix it

- 1 Clear the code and road test the vehicle to confirm whether P0664 returns before replacing any parts.
- 2 Visually inspect the tuning valve connector and wiring for corrosion, chafing, or loose pins, and repair as needed.
- 3 Use a digital multimeter to measure resistance across the tuning valve actuator and compare to the manufacturer's specification.
- 4 Check for a short to ground on the control wire by disconnecting both the PCM and valve connectors and measuring resistance to chassis ground.
- 5 Command the tuning valve on and off with a scan tool while watching live data or listening for actuator movement to confirm the circuit responds.
- 6 If the circuit and actuator test good, substitute a known-good tuning valve and retest to rule out an intermittent actuator fault.
- 7 As a last step, check for a faulty PCM driver by back-probing the control circuit while commanding the valve and verifying the PCM output signal.

What the tuning valve code hides

- A low-voltage code on the tuning valve circuit is frequently caused by a short to ground in the harness where it rubs against the intake manifold or a bracket, not by a failed valve.
- Many vehicles set P0664 without any driveability complaint because the tuning valve only affects airflow at specific engine speeds, so the driver may never notice a change.
- A mechanically stuck tuning valve flap can cause the actuator to draw high current, which the PCM interprets as a low-voltage fault, so always check for free movement of the flap before condemning the electrical circuit.
- Corrosion inside the tuning valve connector is a common hidden cause, especially on vehicles driven in wet or salty conditions, and it can mimic a failed actuator.
- P0664 is often stored alongside other intake or emissions codes when a single wiring fault affects multiple circuits, so inspect the entire harness section rather than just the valve connector.

Can I keep driving with P0664?

You can usually continue driving with P0664 because the engine will default to a fixed intake tuning position, but you may notice reduced performance and fuel economy. Avoid heavy acceleration or towing until the fault is repaired, and have the circuit inspected soon to prevent a more serious driveability issue.

Tools that help

- OBD-II scan tool with live data and bidirectional control capability
- Digital multimeter (DMM)
- Wire piercing probes or back-probe kit
- Service manual or wiring diagram for the specific vehicle
- Basic hand tools (socket set, screwdrivers, trim removal tools)



Reading P0664

- 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.
- 64** The exact fault within that area.

Often seen with

P0660 Intake Manifold Tuning Valve Control Circuit/Open (Bank 1) · **P0663** Intake Manifold Tuning Valve Control Circuit/Open (Bank 2) · **P0665** Intake Manifold Tuning Valve Control Circuit High (Bank 2) · **P2004** Intake Manifold Runner Control Stuck Open (Bank 1) · **P2008** Intake Manifold Runner Control Circuit/Open (Bank 1)

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/p0664/>

