

GENERIC · POWERTRAIN

P2004

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2004

Intake Manifold Runner Control Stuck Open (Bank 1)

P2004 indicates that the intake manifold runner control (IMRC) system for bank 1 is stuck in the open position, meaning the butterfly valve that alters intake runner length is not moving as commanded. The powertrain control module (PCM) commands the valve to close under certain conditions and monitors the actual position via a sensor; when the sensor signal remains in the open range despite a close command, the PCM sets this code.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Low	Intermediate	Fuel and air metering and auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms.
- Reduced engine performance at low to mid RPM, such as sluggish acceleration or poor throttle response.
- Rough idle or idle instability, especially when the engine is cold.
- Decreased fuel economy due to incorrect intake tuning.
- In some cases, a slight hesitation or stumble during light acceleration.
- An audible rattle or clicking from the intake manifold area if the actuator linkage is loose.

Common causes, most likely first

- 1 Carbon buildup or sludge on the intake manifold runner butterfly valve or linkage, preventing it from closing fully.
- 2 Failed or disconnected IMRC actuator vacuum motor or electric solenoid, leaving the valve stuck open.
- 3 Broken or binding linkage between the actuator and the runner valve.
- 4 Faulty intake manifold runner position sensor or its wiring, sending an incorrect open signal to the PCM.
- 5 Vacuum leak or clogged vacuum passage in a vacuum-operated IMRC system, reducing actuator force.
- 6 PCM software issue or faulty PCM driver for the IMRC solenoid (less common).
- 7 Mechanical damage to the intake manifold runner assembly, such as a bent shaft or worn bushings.



How to diagnose and fix it

- 1 Inspect the IMRC linkage and butterfly valve for free movement and clean any carbon deposits with intake cleaner.
- 2 Check the actuator operation by commanding the IMRC with a scan tool and observing the valve movement and sensor feedback.
- 3 Test the vacuum supply and solenoid (if vacuum-operated) or the electrical connector and resistance (if electric) for proper function.
- 4 Verify the intake manifold runner position sensor signal with a multimeter or scan tool, comparing commanded versus actual position.
- 5 Repair any damaged wiring, vacuum lines, or linkage components found during inspection.
- 6 Replace the faulty IMRC actuator, solenoid, or sensor as needed, following the manufacturer's diagnostic procedure.
- 7 Clear the code and perform a road test to confirm the repair and ensure the monitor runs without resetting the code.

Common IMRC Misdiagnosis Traps

- A stuck-open IMRC valve often causes no driveability symptoms, so technicians may replace the actuator unnecessarily when the real issue is carbon buildup on the valve.
- The code can be set by a faulty position sensor even when the valve moves freely, so always verify actual valve movement against the sensor signal before condemning the actuator.
- On vacuum-operated systems, a small leak in the vacuum reservoir or a cracked hose can mimic a failed actuator, so inspect all vacuum lines thoroughly.
- Some vehicles use a single IMRC solenoid for both banks; a failure can set P2004 and a bank 2 code simultaneously, so check for multiple codes before replacing parts.
- After repairs, the IMRC system may require a relearn or adaptation procedure with a scan tool to avoid a repeat code.

Can I keep driving with P2004?

The vehicle is generally safe to drive with P2004 because the engine remains operational, but you may notice reduced performance and fuel economy. Avoid heavy acceleration or towing until the fault is repaired, and address the issue promptly to prevent potential carbon buildup or further damage to the intake system.

Tools that help

- OBD-II scan tool with bidirectional control capability
- Vacuum pump and gauge
- Digital multimeter
- Intake cleaner and brush
- Basic hand tools (screwdrivers, wrenches, pliers)



Reading P2004

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

Often seen with

P2005 Intake Manifold Runner Control Stuck Open (Bank 2) · **P2006** Intake Manifold Runner Control Stuck Closed (Bank 1) · **P2007** Intake Manifold Runner Control Stuck Closed (Bank 2) · **P2008** Intake Manifold Runner Control Circuit/Open (Bank 1) · **P2009** Intake Manifold Runner Control Circuit Low (Bank 1)

See it working

Watch the animated explainer [How an Automatic Transmission Works, Gear by Gear](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2004/>

