

GENERIC · POWERTRAIN

P20F9

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P20F9

Intake Manifold Runner Control Circuit Performance (Bank 2)

P20F9 means the powertrain control module (PCM) commanded the bank 2 intake manifold runner control (IMRC) actuator to a position, then checked the circuit's electrical feedback and found it did not behave as expected. The circuit is monitored for voltage or current that falls outside the range the PCM expects for the commanded position, so the fault is electrical or mechanical in the runner control path on the bank 2 side of the engine.

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

- Illuminated check engine light, often with no other symptoms besides the warning light
- Slightly rough idle or unstable idle quality when the runners are stuck in the wrong position
- Reduced low-end torque or sluggish acceleration because the runner path is not switching as designed
- A stumble or hesitation during light-throttle cruising
- Poor fuel economy if the runners remain in the high-rpm position at low engine speeds
- In some vehicles a limp-home or reduced-power mode is triggered by the PCM

Common causes, most likely first

- 1 Failed or sticking IMRC actuator motor or vacuum diaphragm on bank 2
- 2 Broken, disconnected or binding runner linkage, shaft or flap inside the intake manifold
- 3 Damaged, chafed or corroded wiring and connector pins in the bank 2 IMRC circuit
- 4 Open or shorted IMRC solenoid or motor winding
- 5 Blown fuse or faulty relay supplying the IMRC actuator
- 6 Carbon buildup or debris jamming the runner flaps in the intake tract
- 7 PCM driver fault or corrupted adaptive values for the runner control



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data to confirm P20F9 is active rather than history
- 2 Inspect the bank 2 IMRC connector, wiring harness and fuse for corrosion, chafing or an open circuit
- 3 Command the IMRC actuator with a bidirectional scan tool and watch whether the runner linkage actually moves
- 4 Measure resistance and supply voltage at the actuator and compare against the manufacturer's specification
- 5 Manually move the runner linkage to check for binding, carbon jamming or a broken shaft
- 6 Clean or replace the intake manifold runner components or actuator as indicated by the tests
- 7 Clear codes and run a drive cycle to verify the monitor completes without resetting the fault

What the runner control test really checks

- The PCM often judges the circuit by expected voltage or current for a commanded position, so a mechanically stuck flap can set an electrical code even when the wiring is perfect.
- A bank 2 code on a V engine frequently traces to the linkage on that specific bank, so comparing live runner position data between banks quickly isolates the faulty side.
- Carbon-fouled runner flaps are a common missed cause on higher-mileage engines, and cleaning the intake tract resolves the code without replacing any electronics.
- A weak or failing battery and poor grounds can produce intermittent IMRC circuit codes that disappear after a charging system repair.
- Replacing the actuator before confirming the linkage moves freely often leads to a repeat failure, because a binding flap overloads the new motor.

Can I keep driving with P20F9?

The vehicle usually remains drivable, but avoid hard acceleration and sustained high-rpm driving until the runner control is repaired, since a stuck runner can cause hesitation and reduced performance. If the engine runs rough or enters limp mode, keep speeds low and schedule diagnosis promptly.

Tools that help

- OBD-II scan tool with bidirectional control
- Digital multimeter
- Hand vacuum pump for vacuum-operated actuators
- Basic socket and wrench set
- Wiring diagram for the bank 2 IMRC circuit
- Carburetor or intake cleaner for carbon removal



Reading P20F9

- 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.
- F9** The exact fault within that area.

Often seen with

P0660 Intake Manifold Tuning Valve Control Circuit/Open (Bank 1) · **P2004** Intake Manifold Runner Control Stuck Open (Bank 1) · **P2005** Intake Manifold Runner Control Stuck Open (Bank 2) · **P2010** Intake Manifold Runner Control Circuit High (Bank 1) · **P20F8** Intake Manifold Runner Control Circuit Performance (Bank 1)

See it working

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

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p20f9/>

