



P1517 · Ford

Intake Manifold Runner Control Input Error

P1517 on Ford vehicles indicates that the Powertrain Control Module (PCM) has detected an error in the input signal from the Intake Manifold Runner Control (IMRC) system, which manages airflow through the intake manifold's secondary runners. The PCM expects a specific voltage or position feedback from the IMRC actuator or sensor, and the signal is out of range or inconsistent with commanded operation.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Ford specific	Medium	Intermediate	Vehicle speed, idle control and auxiliary inputs

Symptoms you may notice

- Illumination of the Check Engine Light (CEL) with no other noticeable symptoms.
- Slight hesitation or stumble during acceleration, especially at lower engine speeds.
- Reduced engine power or sluggish performance when the IMRC system fails to open the runners.
- Rough idle or unstable engine operation in some cases.
- Poor fuel economy if the runners remain stuck in the closed position.
- In rare instances, the engine may enter limp mode, limiting RPM.

Common causes, most likely first

- 1 Faulty Intake Manifold Runner Control (IMRC) actuator or solenoid.
- 2 Damaged or disconnected vacuum lines leading to the IMRC actuator (on vacuum-operated systems).
- 3 Wiring issues such as open circuits, short circuits, or corroded connectors at the IMRC sensor or actuator.
- 4 Carbon buildup or mechanical binding in the intake manifold runner linkage, preventing proper movement.
- 5 Failed IMRC position sensor (if equipped) sending incorrect feedback to the PCM.
- 6 PCM software glitch or internal fault (less common).



How to diagnose and fix it

- 1 Perform a visual inspection of all vacuum lines and electrical connectors at the IMRC actuator and sensor; repair any cracks, splits, or loose connections.
- 2 Use a scan tool to command the IMRC actuator on and off while observing live data for the IMRC position or feedback voltage to verify operation.
- 3 Check the resistance of the IMRC actuator or solenoid against manufacturer specifications; replace if out of range.
- 4 Test the wiring harness between the IMRC component and the PCM for continuity, shorts to ground, and shorts to power; repair as needed.
- 5 Clean the intake manifold runner linkage and ensure it moves freely without binding; apply appropriate lubricant if necessary.
- 6 If all electrical and mechanical checks pass, suspect the PCM; reflash or replace only after confirming no other faults.

Common IMRC Misdiagnosis Traps

- A stuck-open or stuck-closed IMRC can set P1517 without any driveability complaint, leading owners to ignore a problem that may worsen emissions and fuel economy.
- Carbon buildup on the runner flaps is a frequent cause on high-mileage Ford engines, and simply cleaning the intake manifold often resolves the code without parts replacement.
- The IMRC system varies by engine family; some Ford engines use a vacuum-operated actuator while others use an electric motor, so diagnosis must match the specific configuration.
- P1517 can be triggered by a marginal battery or charging system issue that causes low voltage to the IMRC circuit, so always verify battery health before condemning components.
- Related codes such as P1516 or P1518 may also be present, indicating a broader IMRC circuit problem rather than a single component failure.

Can I keep driving with P1517?

You can generally continue driving with P1517, but avoid aggressive acceleration and heavy loads until the fault is repaired, as the engine may lack power and fuel economy may suffer. If the vehicle enters limp mode or runs poorly, seek service promptly.

Tools that help

- OBD-II scan tool with live data and bidirectional control capabilities
- Digital multimeter for electrical testing
- Hand vacuum pump for testing vacuum-operated actuators
- Basic hand tools (screwdrivers, socket set, pliers)
- Service manual or wiring diagram for the specific Ford model



Reading P1517

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (Ford): its meaning depends on the make.
- 5** Vehicle speed, idle control and auxiliary inputs.
- 17** The exact fault within that area.

Often seen with

P1519 Intake Camshaft Control Bank 1 Malfunction · **P1516** Intake Manifold Changeover Valve Circuit Open · **P1518** Main Relay Circuit Short To B+ · **P1516** Idle Air Control Solenoid Signal 4 Circuit Low Input · **P1518** Starter Switch Circuit Low Input · **P1519** IAC Valve Circuit Failure · **P1516** Gear Change Neutral Drive Fault · **P1516** Gear Change Neutral Drive Fault · **P1519** IAC Valve Circuit Failure · **P1516** Throttle Actuator Control (TAC) Module Throttle Actuator Pos · **P1518** Throttle Actuator Control (TAC) Module Serial Data Circuit · **P1519** Electronic Throttle Module Low Volts Communication Disable · **P1516** Intake Manifold Runner Control Input Error · **P1519** Intake Manifold Runner Control Stuck Open · **P1518** Intake Manifold Runner Control Fault Stuck Open · **P1519** Electronic Throttle Module Low Volts Communication Disable · **P1518** Throttle Actuator Control (TAC) Module Serial Data Circuit · **P1516** Throttle Actuator Control (TAC) Module Throttle Actuator Pos · **P1519** A Camshaft Position Actuator Bank 1 · **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 [Turbocharger Trainer: Boost, Wastegate and Intercooler](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/ford-p1517/>

