

FORD · POWERTRAIN

P1505

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1505 · Ford

Idle Air Control System at Adaptive Clip

P1505 on Ford vehicles means the powertrain control module (PCM) has detected that the idle air control (IAC) valve's adaptive learning has hit its programmed limit, so the computer can no longer adjust idle speed within its normal range. The PCM monitors how much it must command the IAC valve to open or close to maintain the target idle, and when that correction stays at the maximum or minimum clip for a calibrated time, it stores this code.

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

Symptoms you may notice

- Often no symptoms besides the warning light, especially if the clip is only slightly exceeded.
- Rough or rolling idle, sometimes stalling when coming to a stop or when the engine is cold.
- Idle speed that hangs high and does not drop quickly when you release the throttle.
- Engine may idle too low and shudder, particularly with the air conditioning on or in gear.
- Occasional surging or fluctuating idle as the PCM tries to compensate at the adaptive limit.

Common causes, most likely first

- Carbon buildup or sludge on the IAC valve pintle and its seat, restricting airflow and forcing the adaptive strategy to its clip.
- A sticking or failed IAC valve solenoid that no longer moves freely through its full range.
- Vacuum leaks from cracked intake hoses, a leaking intake manifold gasket, or a faulty PCV hose that upset the idle air balance.
- A dirty or failing mass air flow (MAF) sensor sending inaccurate airflow readings, causing the PCM to overcorrect idle air.
- A restricted or dirty throttle body bore and plate that change the base airflow the IAC valve must trim.
- Wiring faults in the IAC valve circuit, such as chafed wires, corroded connectors, or a poor ground, that prevent proper valve control.
- A PCM calibration issue or adaptive memory that has not been reset after a repair, leaving the learned values at the clip.



How to diagnose and fix it

- 1 Connect a scan tool and read live data for idle air control counts, target idle, and adaptive fuel trims to confirm the clip condition before touching parts.
- 2 Inspect the IAC valve and throttle body for carbon deposits, then clean the valve pintle and seat and the throttle bore with an approved intake cleaner.
- 3 Check for vacuum leaks by visually inspecting hoses and intake gaskets and by using a smoke machine or propane enrichment test.
- 4 Test the IAC valve electrically for correct resistance and verify it moves when commanded with the scan tool; replace it if it sticks or fails the test.
- 5 Clean or test the MAF sensor with a proper MAF cleaner and compare its readings to expected values for engine speed and load.
- 6 Repair any wiring or connector faults in the IAC circuit, then clear the adaptive memory and perform an idle relearn drive cycle.
- 7 Clear the code and verify the repair by confirming idle air control counts return to the normal range and the code does not reset after a road test.

What the adaptive clip really tells you

- A P1505 does not automatically mean the IAC valve is bad; a vacuum leak or a dirty throttle body can push the adaptive value to its clip while the valve itself is still functional.
- Ford's adaptive idle strategy can mask a small vacuum leak for a long time, so the code often appears only after the leak has grown or after a battery disconnect cleared the learned values.
- Technicians who replace the IAC valve without cleaning the throttle body and checking for leaks frequently see the code return because the underlying airflow error was never corrected.
- A dirty mass air flow sensor on Ford engines can skew idle airflow enough to clip the IAC adaptive without setting a mass air flow code, so live data review is essential.
- After any repair, the PCM must relearn idle; skipping the idle relearn procedure can leave the adaptive values at the clip and falsely suggest the fix failed.

Can I keep driving with P1505?

You can usually drive the vehicle to a repair shop, but avoid long periods of idling in traffic and be ready for a possible stall when coming to a stop. If the engine stalls repeatedly or idles extremely rough, stop driving and have it diagnosed promptly.



Tools that help

- OBD-II scan tool with live data and bidirectional control capability
- Digital multimeter for circuit and resistance testing
- Smoke machine or propane enrichment kit for vacuum leak detection
- Approved intake and throttle body cleaner plus lint-free shop rags
- Basic hand tools including screwdrivers, sockets, and pliers

Reading P1505

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

Often seen with

P0171 System Too Lean (Bank 1) · **P0174** System Too Lean (Bank 2) · **P0505** Idle Control System Malfunction · **P0506** Idle Control System RPM Lower Than Expected · **P0507** Idle Control System RPM Higher Than Expected

See it working

Watch the animated explainer [How an Oxygen Sensor Works: Live 3D Cutaway](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/ford-p1505/>

