

FORD · POWERTRAIN

P1506

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1506 · Ford

Idle Air Control Over Speed Error

P1506 on Ford vehicles means the powertrain control module detected that engine idle speed is higher than the commanded target while the idle air control (IAC) valve is being told to reduce airflow. The computer has recognized an overspeed condition at idle, meaning the engine is pulling in more air than the IAC system can trim out.

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

Symptoms you may notice

- Engine idles noticeably high, often 1,200–2,000 RPM instead of the normal 700–900 RPM
- Idle speed hangs high after releasing the throttle or when coming to a stop
- Engine may surge or hunt at idle as the computer tries to correct the overspeed
- Often no symptoms besides the warning light if the overspeed is mild
- Poor fuel economy from the engine running above commanded idle
- Harsh or delayed engagement when shifting from park or neutral into gear

Common causes, most likely first

- Sticking or carbon-fouled idle air control (IAC) valve that cannot close far enough to reduce airflow
- Vacuum leak downstream of the throttle body, such as a cracked intake hose, failed gasket, or broken vacuum line
- Throttle plate held open by carbon buildup, a misadjusted throttle stop, or a binding throttle cable
- Dirty or faulty mass airflow (MAF) sensor reporting lower airflow than actual, causing the computer to under-trim idle
- Engine coolant temperature (ECT) sensor reading cold when the engine is warm, keeping idle elevated
- Wiring or connector fault at the IAC valve preventing the computer from commanding it closed



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data to confirm the overspeed condition and check for related codes
- 2 Inspect the intake tract and vacuum lines for leaks using a smoke machine or carb cleaner while watching idle speed
- 3 Remove and clean the IAC valve and throttle body, then recheck idle speed before replacing parts
- 4 Command the IAC valve with a scan tool and watch for a change in idle speed to verify the valve responds
- 5 Check IAC valve resistance and wiring continuity between the valve and powertrain control module
- 6 Verify engine coolant temperature sensor readings against actual engine temperature with an infrared thermometer
- 7 Replace the IAC valve only after confirming it is the source of the uncontrolled airflow

Why idle overspeed is rarely the IAC valve alone

- A vacuum leak that opens only when the engine is warm, such as a cracked plastic intake manifold, often sets P1506 without any other code because the leak is small enough to stay within fuel trim limits.
- A throttle body that was cleaned without a proper idle relearn can cause a temporary P1506 on Ford vehicles because the computer has to relearn the new closed-throttle position.
- A failing power brake booster or a leaking booster check valve lets unmetered air into the intake and is a commonly missed cause of high idle on Ford engines.
- P1506 does not always mean the IAC valve has failed; a dirty valve that still moves freely can set the code because it cannot close far enough to bring idle down to target.
- Aftermarket IAC valves with incorrect pintle travel are a frequent cause of repeat P1506 codes even when the original valve was genuinely faulty.

Can I keep driving with P1506?

You can usually drive the vehicle to a shop, but avoid long periods of idling and be ready for the engine to push the car forward when you select a gear. If idle speed is very high or the engine surges, stop driving and have it diagnosed to prevent brake and transmission strain.

Tools that help

- OBD-II scan tool with live data and bidirectional control
- Smoke machine for intake leak detection
- Digital multimeter for resistance and continuity checks
- Carburetor cleaner and shop rags for throttle body and IAC cleaning
- Infrared thermometer for coolant temperature verification



Reading P1506

- 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.
- 06** 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 Regenerative Braking Works in Electric Cars](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/ford-p1506/>

