

FORD · POWERTRAIN

**P1293**

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

**P1293 · Ford**

## Injector High Side Open Bank 1

P1293 on Ford vehicles means the powertrain control module (PCM) has detected an open circuit on the high side of one or more fuel injectors in bank 1, which is the side of the engine containing cylinder number one. The PCM commands the injector on and expects to see a corresponding voltage drop or current flow, but the circuit remains open, so the injector cannot fire and that cylinder receives no fuel.

SYSTEM

**Powertrain**

CODE TYPE

**Ford specific**

SEVERITY

**Medium**

FIX DIFFICULTY

**Intermediate**

AREA

**Fuel and air  
metering (injector  
circuits)**

### Symptoms you may notice

- Often no symptoms besides the warning light, especially if the open is intermittent or affects only one injector at light load
- Rough idle or a noticeable miss that is worse when the engine is cold or under load
- Loss of power and sluggish acceleration because bank 1 is running lean or dead on one cylinder
- Shaking or vibration felt through the steering wheel and floor pan at idle
- A rich exhaust smell or black smoke if the PCM over-fuels the remaining cylinders trying to compensate
- Possible misfire codes or a flashing check engine light if the dead cylinder loads the catalytic converter

### Common causes, most likely first

- 1 Broken or chafed injector harness wire on the high side between the PCM and the bank 1 injectors, often at the valve cover or intake manifold rub points
- 2 Corroded or backed-out terminal in the injector connector or the PCM connector
- 3 Failed fuel injector with an open internal coil on the high side
- 4 Damaged injector pigtail that was stretched or pinched during previous engine service
- 5 PCM driver circuit fault, though this is far less common than wiring and connector problems
- 6 Rodent damage to the injector harness on top of the engine



## How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data to confirm P1293 is current and not a history code from an old repair
- 2 Inspect the bank 1 injector harness visually from the PCM connector to each injector, looking for chafing, heat damage, and rodent chew marks
- 3 Disconnect each bank 1 injector and check for corrosion, spread terminals, and proper pin fit at the high-side terminal
- 4 Measure injector coil resistance with a digital multimeter and compare bank 1 injectors to each other and to bank 2 specifications
- 5 Perform a voltage drop test on the high-side circuit while cranking or running to find a high-resistance open that a simple continuity check misses
- 6 Wiggle-test the harness and connectors while watching injector pulse width and misfire counters on a scan tool to expose an intermittent open
- 7 Repair or replace the faulty harness section or injector, clear the code, and verify the repair with a road test and a misfire monitor reset

## What a high-side open really means on Ford

- The high side is the power feed from the PCM or the injector driver, so an open there kills the injector completely, while a short or open on the low side often sets a different code and behaves differently.
- A common misdiagnosis is replacing the injector when the real fault is a stretched pigtail at the valve cover that only opens when the engine torques under load.
- P1293 can be set by a single bad injector connector on bank 1 even though the code reads as a bank-wide fault, so check each cylinder individually rather than condemning the whole bank.
- Ford injector harnesses routed over the intake often rub through on a bracket or heat shield, and the damage is hidden until you pull the loom back and flex it.
- A failing PCM driver can mimic a wiring open, so always verify the circuit with a loaded test light before condemning the computer.

## Can I keep driving with P1293?

You can drive a short distance to a repair shop if the engine still runs smoothly enough, but avoid heavy throttle and towing because a dead bank 1 cylinder can overheat the catalytic converter. If the check engine light is flashing or the engine is shaking badly, stop driving and have it towed.



## Tools that help

- OBD-II scan tool with live data and misfire counters
- Digital multimeter with min/max and voltage drop capability
- Injector noid light or loaded test light
- Back probe pins and wiring diagram for the bank 1 injector circuit
- Basic hand tools for removing the engine cover and intake plumbing

## Reading P1293

**P** Powertrain: engine, transmission and emissions.

**1** Manufacturer-specific code (Ford): its meaning depends on the make.

**2** Fuel and air metering (injector circuits).

**93** The exact fault within that area.

## Often seen with

**P0171** System Too Lean (Bank 1) · **P0201** Injector Circuit Malfunction - Cylinder 1 · **P0202** Injector Circuit Malfunction - Cylinder 2 · **P0203** Injector Circuit Malfunction - Cylinder 3 · **P0301** Cylinder 1 Misfire Detected

## See it working

Watch the animated explainer [How Coil-on-Plug Ignition Works: Coil and Spark Plug](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/ford-p1293/>

