

GENERIC · POWERTRAIN

P0313

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0313

Misfire Detected with Low Fuel

P0313 indicates the engine control module detected a misfire at the same time the fuel level was reported as low, typically below a quarter tank. The computer uses crankshaft speed fluctuations to identify which cylinder is misfiring and correlates that event with the fuel level sensor input to set this specific code.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Ignition system and misfire

Symptoms you may notice

- Check engine light illuminated, often flashing if the misfire is severe
- Engine hesitation or stumbling during acceleration, especially when fuel is low
- Rough idle or noticeable vibration felt through the steering wheel or seat
- Reduced power and poor throttle response when climbing hills or merging
- Often no symptoms besides the warning light if the misfire is intermittent
- Fuel gauge reading at or below one-quarter tank when the code sets

Common causes, most likely first

- 1 Low fuel level allowing the fuel pump to draw air or debris, causing lean misfire
- 2 Weak or failing fuel pump that cannot maintain pressure when the tank is low
- 3 Clogged fuel filter restricting flow, most noticeable at low fuel levels
- 4 Faulty fuel level sensor sending an inaccurate low-fuel signal to the computer
- 5 Dirty or failing fuel injectors delivering uneven fuel to one or more cylinders
- 6 Vacuum leak or intake air leak that leans out the mixture under low-fuel conditions
- 7 Ignition system weakness such as worn spark plugs or coils exposed by lean running

How to diagnose and fix it

- 1 Verify fuel level and add at least half a tank of fresh fuel, then clear the code and test drive
- 2 Check fuel pressure at the rail with a gauge, both at idle and under load, to confirm pump health
- 3 Inspect the fuel filter and replace it if flow is restricted or service history is unknown
- 4 Test the fuel level sensor resistance across its range to rule out a false low-fuel signal
- 5 Perform a cylinder balance or misfire counter test with a scan tool to identify the affected cylinder
- 6 Clean or replace fuel injectors if balance testing shows uneven contribution
- 7 Inspect spark plugs, coils, and intake gaskets for wear or leaks that worsen under lean conditions



Low fuel misfire is often a fuel delivery warning

- A P0313 code frequently appears when the tank is run below a quarter full because the in-tank fuel pump relies on fuel for cooling and lubrication, and low levels expose it to air and debris.
- Many technicians replace ignition coils or spark plugs first, but the code specifically ties the misfire to low fuel, so fuel pressure and volume testing should come before ignition parts.
- The fuel level sensor can report low fuel even when the tank is half full, causing the computer to set P0313 for a misfire that is actually unrelated to fuel level.
- A misfire that only occurs on cold starts or during hard acceleration with a low tank points to fuel starvation rather than a mechanical engine fault.
- P0313 can be stored alongside lean codes such as P0171 or P0174, and diagnosing those together often reveals a single fuel delivery root cause.

Can I keep driving with P0313?

You can drive cautiously to a fuel station or repair shop, but avoid hard acceleration, towing, or prolonged driving with a flashing check engine light. Refuel with at least half a tank as soon as possible and have the misfire diagnosed if the code returns.

Tools that help

- OBD-II scan tool with live data and misfire counter capability
- Fuel pressure gauge
- Digital multimeter for testing the fuel level sensor
- Basic hand tools for accessing spark plugs and fuel system components
- Fuel injector cleaning kit or professional injector testing service

Reading P0313

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
3	Ignition system and misfire.
13	The exact fault within that area.

Often seen with

P0087 Fuel Rail/System Pressure - Too Low · **P0171** System Too Lean (Bank 1) · **P0174** System Too Lean (Bank 2) · **P0300** Random/Multiple Cylinder Misfire Detected · **P0301** Cylinder 1 Misfire Detected



See it working

Watch the animated explainer **Four-Stroke Engine Cutaway: Intake to Exhaust** on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0313/>

