

GENERIC · POWERTRAIN

P2146

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2146

Fuel Injector Group 'A' Supply Voltage Circuit/Open

P2146 indicates that the engine control module has detected an open circuit or abnormal voltage supply on the power feed to a group of fuel injectors, typically one bank on a V-style engine. The computer monitors the injector supply voltage and sets this code when the voltage falls outside the expected range, often because the circuit is broken or has excessive resistance.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Rough idle or misfire, especially if multiple injectors on one bank lose power
- Engine stumble or hesitation during acceleration
- Reduced engine power or limp mode in some vehicles
- Difficulty starting or stalling shortly after start-up
- Poor fuel economy due to incomplete combustion

Common causes, most likely first

- 1 Broken or chafed wire in the injector supply circuit, often near the engine harness
- 2 Corroded or loose electrical connector at the injector group or main harness
- 3 Blown fuse or faulty relay that feeds power to the injector group
- 4 Failed engine control module driver for the injector supply voltage
- 5 Short to ground or short to voltage in the supply circuit
- 6 Damaged injector pigtail or internal injector fault affecting the shared supply

How to diagnose and fix it

- 1 Check the fuse and relay that supply power to the injector group, replacing any blown fuse or faulty relay
- 2 Inspect the injector harness and connectors for corrosion, loose pins, or chafed wires, repairing as needed
- 3 Measure voltage at the injector supply circuit with the key on and engine off, comparing to battery voltage
- 4 Perform a voltage drop test on the supply circuit to locate excessive resistance
- 5 Check for shorts to ground or voltage on the supply wire using a multimeter and wiring diagram
- 6 If the circuit tests good, test the engine control module output or substitute a known-good module for diagnosis
- 7 Clear the code and perform a road test to confirm the repair, monitoring live data for injector supply voltage

What most technicians overlook on P2146

- A loose or corroded ground connection for the engine control module or injector group can mimic a supply voltage fault, so always verify ground integrity before condemning the module.
- The code can set intermittently due to vibration or heat, so a wiggle test of the harness while monitoring live data often reveals the fault when a static test does not.
- On some vehicles, a failed injector with an internal short can pull down the shared supply voltage and set P2146 without any visible wiring damage.
- P2146 does not always mean the injectors themselves are faulty; the supply circuit, fuse, relay, and module driver are all common culprits that must be ruled out first.
- Aftermarket accessories or poor previous repairs tapping into the injector harness can introduce voltage drops that trigger this code, so inspect for non-factory wiring.

Can I keep driving with P2146?

You can often drive with P2146 if the engine runs smoothly, but avoid heavy acceleration or long trips until the fault is repaired. If the engine misfires, stalls, or loses power, stop driving and have the vehicle towed to prevent catalytic converter damage or unsafe driving conditions.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Test light or noid light set
- Fuse puller and relay tester
- Electrical contact cleaner and dielectric grease

Reading P2146

P	Powertrain: engine, transmission and emissions.
2	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
1	Fuel and air metering.
46	The exact fault within that area.

Often seen with

P0200 Injector Circuit Malfunction · **P0261** Cylinder 1 Injector Circuit Low · **P2147** Fuel Injector Group 'A' Supply Voltage Circuit Low · **P2148** Fuel Injector Group 'A' Supply Voltage Circuit High · **P2149** Fuel Injector Group 'B' Supply Voltage Circuit/Open



See it working

Watch the animated explainer [Excavator Simulator: Hydraulics You Can Operate](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2146/>

