

GENERIC · CHASSIS

C0146

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

C0146

Left Front ABS Outlet Solenoid Circuit

C0146 indicates that the antilock braking system (ABS) control module has detected an electrical fault in the outlet solenoid circuit for the left front wheel. The outlet solenoid is responsible for releasing hydraulic pressure from that wheel during ABS operation, and the module monitors the circuit for open, short, or excessive resistance conditions. When the fault is confirmed, the ABS is disabled and the warning light is illuminated.

SYSTEM

Chassis

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Brakes, steering and suspension

Symptoms you may notice

- The ABS warning light is illuminated on the dashboard, often with no other noticeable symptoms.
- The traction control system (TCS) or stability control (ESC) warning light may also turn on if those systems share the ABS components.
- During hard braking, the ABS may not activate, leading to wheel lockup and reduced steering control.
- A soft or spongy brake pedal may be felt if the solenoid circuit fault affects hydraulic pressure modulation.
- In some vehicles, the brake pedal may feel unusually firm or unresponsive during ABS operation.
- The ABS may engage erratically or not at all, increasing stopping distance on slippery surfaces.

Common causes, most likely first

- 1 Damaged or corroded wiring harness or connector at the left front ABS solenoid, often due to road debris or moisture intrusion.
- 2 Open or shorted solenoid coil inside the ABS hydraulic control unit, typically from internal failure or contamination.
- 3 Failed ABS control module, which may have internal driver circuitry faults affecting the solenoid output.
- 4 Blown fuse or relay in the ABS circuit that supplies power to the solenoid, though this often affects multiple solenoids.
- 5 Poor ground connection for the ABS system, causing voltage drops that trigger the code.
- 6 Corrosion or pin fit issues at the ABS module connector, leading to intermittent or permanent circuit faults.



How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related ABS codes to confirm the fault is isolated to the left front outlet solenoid circuit.
- 2 Inspect the wiring harness and connector at the left front ABS solenoid for damage, corrosion, or loose pins; repair or replace as needed.
- 3 Check the ABS fuse and relay, and test for power and ground at the solenoid connector with a multimeter.
- 4 Measure the resistance of the left front outlet solenoid coil and compare to the manufacturer's specification; replace the ABS hydraulic unit if out of range.
- 5 Perform a voltage drop test on the ground circuit and power supply to the ABS module to rule out excessive resistance.
- 6 If all external circuits test good, suspect the ABS control module; replace or reprogram it as required, following the manufacturer's procedure.
- 7 Clear the codes and perform a road test to verify the repair, ensuring the ABS light stays off and the system functions correctly.

What Most Techs Overlook on C0146

- A faulty wheel speed sensor or tone ring on the left front wheel can sometimes set a solenoid circuit code indirectly, so always check live wheel speed data before condemning the solenoid.
- The ABS module may store C0146 as a history code after a low-voltage event such as a weak battery or jump start, so clearing and rechecking after a battery service is a wise first step.
- Corrosion inside the ABS module connector is a common hidden cause, especially in vehicles driven in salty or humid climates, and it can mimic a failed solenoid.
- Some vehicles use a shared power feed for multiple solenoids, so a single blown fuse may set codes for several solenoids; always check for additional codes before replacing parts.
- The outlet solenoid circuit is only active during ABS operation, so a fault may not appear until the system is triggered; a static resistance test may pass while a dynamic test fails.

Can I keep driving with C0146?

You can usually drive the vehicle with the ABS light on, but the antilock braking system is disabled, so avoid hard braking or slippery conditions where wheel lockup could occur. Have the fault diagnosed promptly to restore full braking safety.

Tools that help

- OBD-II scan tool with ABS capability
- Digital multimeter
- Wiring diagram for the ABS circuit
- Socket set and trim removal tools
- Brake fluid and bleeding kit if hydraulic unit replacement is needed



Reading C0146

- C** Chassis: brakes, steering and suspension.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 1** Brakes, steering and suspension.
- 46** The exact fault within that area.

Often seen with

C0035 Left Front Wheel Speed Sensor Circuit Range/Performance · **C0040** Left Rear Wheel Speed Sensor Circuit · **C0110** ABS Pump Motor Circuit Malfunction

See it working

Watch the animated explainer [How ABS Works: Anti-Lock Brakes in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/c0146/>

