

SUBARU · POWERTRAIN

P1107

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1107 · Subaru

AIR System Diagnosis Solenoid Circuit Fault

P1107 on a Subaru means the engine control module (ECM) has detected an electrical fault in the circuit that controls the AIR (Air Injection Reaction) system diagnosis solenoid. This solenoid is used by the ECM to test the secondary air injection system, and the code sets when the solenoid's electrical current or voltage falls outside the expected range during the system's self-test.

SYSTEM

Powertrain

CODE TYPE

Subaru specific

SEVERITY

Low

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms.
- A slight hesitation or stumble during the first few seconds after a cold start, if the AIR system is not functioning correctly.
- In rare cases, a rough idle or poor driveability when the engine is cold.
- The code may be intermittent, appearing only during certain driving conditions or temperature ranges.
- No noticeable change in performance or fuel economy in most cases.

Common causes, most likely first

- 1 Failed AIR system diagnosis solenoid, often due to an open or shorted internal coil.
- 2 Damaged or corroded wiring or connector at the solenoid or ECM.
- 3 A blown fuse that supplies power to the solenoid circuit.
- 4 A faulty ECM driver for the solenoid circuit, though this is less common.
- 5 Vacuum line or hose connected to the solenoid that is cracked, disconnected, or blocked, causing the solenoid to overheat or fail.
- 6 Contamination or debris inside the solenoid valve, preventing proper operation and causing an electrical fault.



How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related codes in the AIR system or engine management.
- 2 Inspect the wiring harness and connector at the AIR system diagnosis solenoid for damage, corrosion, or loose pins.
- 3 Check the fuse that supplies power to the solenoid circuit and replace if blown.
- 4 Measure the resistance of the solenoid coil with a multimeter and compare to the manufacturer's specification; replace the solenoid if out of range.
- 5 Test the solenoid by applying 12 volts directly and listening for a click; no click indicates a failed solenoid.
- 6 Check the vacuum hoses connected to the solenoid for cracks, blockages, or disconnections and repair as needed.
- 7 If all components test good, perform a continuity test on the wires between the solenoid and the ECM to rule out an open or short circuit.

Don't overlook the AIR solenoid's vacuum supply

- A cracked or disconnected vacuum hose at the AIR diagnosis solenoid can cause the solenoid to fail electrically because it overheats when stuck in one position, so always inspect the hoses before condemning the solenoid.
- The AIR system diagnosis solenoid is often confused with the AIR switching valve or the AIR pump, but P1107 specifically points to the diagnosis solenoid circuit, not the pump or valve.
- On some Subaru models, the AIR system diagnosis solenoid is only active during the first few minutes after a cold start, so a fault may not set during a warm-engine test drive.
- A weak battery or poor ground connection can cause intermittent P1107 codes because the solenoid circuit is sensitive to voltage drops, so check battery and ground integrity first.
- Replacing the solenoid without checking the ECM driver can lead to repeat failures if the ECM is internally damaged and sending incorrect signals.

Can I keep driving with P1107?

You can generally continue driving with P1107 because it rarely affects engine performance or safety, but have it diagnosed soon to prevent potential AIR system damage and to ensure the check engine light is not masking another issue.

Tools that help

- OBD-II scan tool
- Digital multimeter
- Hand tools for hose and connector removal
- Vacuum pump and gauge
- Wiring diagram for the specific Subaru model



Reading P1107

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (Subaru): its meaning depends on the make.
- 1** Fuel and air metering.
- 07** The exact fault within that area.

Often seen with

P0410 Secondary Air Injection System Malfunction · **P0411** Secondary Air Injection System Incorrect Flow · **P0413** Secondary Air Injection System Switching Valve 'A' Circuit O · **P0414** Secondary Air Injection System Switching Valve 'A' Circuit S · **P0418** Secondary Air Injection System Control 'A' Circuit

See it working

Watch the animated explainer [How a Catalytic Converter Works: 3D Cutaway](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/subaru-p1107/>

