

VOLKSWAGEN · POWERTRAIN

P1452

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1452 · Volkswagen

Secondary Air Injection System Circuit Open

P1452 on a Volkswagen means the engine control module (ECM) commanded the secondary air injection (SAI) pump on and detected an open circuit in the pump's electrical path, so no current flowed when it should have. The ECM monitors the SAI pump circuit for continuity and flags this code when the expected voltage or current signature is missing during the cold-start air injection phase.

SYSTEM

Powertrain

CODE TYPE

Volkswagen specific

SEVERITY

Low

FIX DIFFICULTY

Intermediate

AREA

Auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other symptoms besides the warning light
- A brief, audible absence of the secondary air pump's characteristic whine during cold starts
- Slightly elevated cold-start emissions that may not be noticeable to the driver
- In some cases, a stored pending code or a rough idle immediately after a cold start if the pump is inoperative
- No drivability complaints in most cases because the SAI system only operates for a short period after startup

Common causes, most likely first

- 1 Failed secondary air injection pump motor, typically due to water intrusion or seized bearings
- 2 Open or corroded wiring in the SAI pump power or ground circuit, often at the pump connector or along the harness near the exhaust
- 3 Blown fuse or failed relay in the SAI pump circuit, especially if the relay contacts have burned open
- 4 Loose or disconnected electrical connector at the SAI pump or at the ECM
- 5 Damaged wiring harness caused by rodent damage, chafing, or heat exposure near the exhaust manifold
- 6 Faulty ECM driver for the SAI pump circuit, although this is less common than pump or wiring failures



How to diagnose and fix it

- 1 Verify the code with a Volkswagen-specific scan tool and check for any related SAI codes before clearing anything
- 2 Inspect the SAI pump fuse and relay, testing the relay for proper operation and replacing if faulty
- 3 Visually inspect the SAI pump connector and wiring for corrosion, loose pins, or physical damage, repairing as needed
- 4 Measure resistance and voltage drop across the SAI pump motor and its ground circuit to confirm an open circuit
- 5 Command the SAI pump on with a scan tool and listen for operation while checking for power and ground at the pump connector
- 6 If the circuit tests good but the pump does not run, replace the secondary air injection pump
- 7 Clear the code and perform a cold-start drive cycle to confirm the repair and ensure the code does not return

What the open circuit really means

- An open circuit code does not always mean the pump itself has failed; corroded terminals at the pump connector are a frequent culprit on Volkswagens exposed to road salt and moisture.
- The SAI pump only runs for a short period after a cold start, so a failed pump often goes unnoticed by the driver and the only clue is the stored code.
- A blown fuse for the SAI pump can be caused by a failing pump drawing excessive current, so replacing the fuse without checking the pump may lead to a repeat failure.
- Volkswagen models with the SAI pump mounted low near the front bumper are prone to water ingestion, which can seize the pump and create an open circuit in the motor windings.
- The ECM may set P1452 even if the pump runs briefly, because the circuit monitor looks for a specific current profile and a weak pump motor can trigger the code without a complete failure.

Can I keep driving with P1452?

It is safe to continue driving with P1452 because the secondary air injection system only affects emissions during cold starts and does not impact engine performance or safety. Avoid extended idling after cold starts until the fault is repaired, as the system's purpose is to reduce emissions during warm-up.

Tools that help

- Volkswagen-specific scan tool or OBD-II scanner with bidirectional control
- Digital multimeter for voltage and resistance checks
- Test light for verifying power and ground at the pump connector
- Socket set and trim removal tools for accessing the SAI pump
- Wiring diagram for the specific Volkswagen model



Reading P1452

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (Volkswagen): its meaning depends on the make.
- 4** Auxiliary emission controls.
- 52** The exact fault within that area.

Often seen with

P1423 Secondary Air Injection System Bank 1 Flow Too Low · **P1423** EVAP Vent Control High Input · **P1423** Intake Air High Pressure Switch Circuit High Voltage · **P1423** Intake Air High Pressure Switch Circuit High Voltage · **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 Jet Engine Works: Two-Spool Turbofan](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/volkswagen-p1452/>

