

VOLKSWAGEN · POWERTRAIN

P1106

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1106 · Volkswagen

Oxygen Sensor Circuit Bank 2 Sensor 1 Voltage Too Low/Air Leak

P1106 on Volkswagen vehicles indicates that the engine control module (ECM) has detected a voltage signal from the bank 2 sensor 1 oxygen sensor that is lower than expected, which often points to an air leak or a faulty sensor circuit. The ECM monitors the sensor's output and sets this code when the voltage stays below a calibrated threshold for a set period, indicating a lean condition or a wiring problem.

SYSTEM

Powertrain

CODE TYPE

**Volkswagen
specific**

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

**Fuel and air
metering**

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or hesitation during acceleration
- Reduced fuel economy due to the engine running lean
- Occasional misfire or stumbling, especially when cold
- A faint hissing or whistling sound from the engine bay if a vacuum leak is present
- Failed emissions test due to high nitrogen oxide (NOx) levels

Common causes, most likely first

- 1 Vacuum leak or unmetered air entering the intake system after the mass airflow sensor
- 2 Faulty bank 2 sensor 1 oxygen sensor (slow response or contaminated)
- 3 Damaged or corroded wiring or connector at the oxygen sensor
- 4 Exhaust leak before the oxygen sensor, allowing outside air to be drawn in
- 5 Leaking intake manifold gasket or cracked intake hose
- 6 Faulty positive crankcase ventilation (PCV) valve or hose
- 7 Low fuel pressure or clogged fuel injectors causing a lean condition



How to diagnose and fix it

- 1 Perform a visual inspection of all intake and vacuum hoses for cracks, loose clamps, or disconnected lines
- 2 Use a scan tool to check live data for bank 2 sensor 1 voltage and compare with bank 1 sensor 1 to identify inconsistencies
- 3 Smoke test the intake system to pinpoint any vacuum or air leaks
- 4 Check the oxygen sensor wiring and connector for damage, corrosion, or loose pins
- 5 Test the oxygen sensor heater circuit and signal voltage with a multimeter to verify sensor operation
- 6 Replace the bank 2 sensor 1 oxygen sensor if it is slow or unresponsive
- 7 Verify fuel pressure and inspect fuel injectors if no air leaks are found

Common Oversights in P1106 Diagnosis

- A loose or cracked oil filler cap or dipstick can create a vacuum leak that triggers this code, so always check these simple items first.
- The bank 2 sensor 1 oxygen sensor on Volkswagen engines is often located in a difficult-to-reach spot, and a faulty sensor may still produce a plausible voltage signal, so live data analysis is crucial.
- Exhaust leaks upstream of the oxygen sensor can cause a low voltage reading because outside air is drawn into the exhaust stream, mimicking a lean condition.
- A failing mass airflow sensor can cause a lean condition that affects both banks, but P1106 specifically points to bank 2, so comparing bank-to-bank fuel trims is essential.
- After repairs, the ECM may need to relearn the oxygen sensor adaptations, so clearing the code and performing a drive cycle is necessary to confirm the fix.

Can I keep driving with P1106?

It is generally safe to drive with P1106 for a short period, but avoid aggressive acceleration or heavy loads because a persistent lean condition can lead to elevated combustion temperatures and potential engine damage. Have the fault diagnosed promptly to prevent worsening performance and emissions.

Tools that help

- OBD-II scan tool with live data capability
- Smoke machine for leak detection
- Multimeter for electrical testing
- Socket set and wrenches for sensor removal
- Vacuum gauge for intake system testing



Reading P1106

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

Often seen with

P1107 Oxygen Sensor Heating Circuit Bank 2 Sensor 1 Short To B+ · **P1107** AIR System Diagnosis Solenoid Circuit Fault · **P1107** BARO Circuit Low Input · **P1107** BARO Circuit Low Input · **P1107** MAP Sensor Voltage Intermittent Low · **P1107** Dual Alternator Lower Circuit Malfunction · **P1107** MAP Sensor Circuit Intermittent Low Voltage · **P0130** O2 Sensor Circuit Malfunction (Bank 1 Sensor 1) · **P0136** O2 Sensor Circuit Malfunction (Bank 1 Sensor 2) · **P0171** System Too Lean (Bank 1) · **P0174** System Too Lean (Bank 2)

See it working

Watch the animated explainer [How an Oxygen Sensor Works: Live 3D Cutaway](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/volkswagen-p1106/>

