

VOLKSWAGEN · POWERTRAIN

P1152

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1152 · Volkswagen

Bank 1 Long Term Fuel Trim Range 2 Lower Lean Limit Exceeded

P1152 on Volkswagen vehicles means the engine control module has detected that the long-term fuel trim for bank 1 has exceeded its lower lean limit in range 2, indicating the engine is running too lean and the computer can no longer add enough fuel to compensate. The ECM monitors fuel trim over two operating ranges, and range 2 typically covers higher load or higher rpm conditions where the lean condition becomes most apparent.

SYSTEM

Powertrain

CODE TYPE

Volkswagen specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Hesitation or stumble during acceleration, especially under load
- Rough idle or misfire that may worsen when the engine is cold
- Reduced engine power and poor throttle response
- Occasional surging or lean misfire codes stored alongside P1152
- Poor fuel economy despite the lean condition, because the ECM may be adding maximum fuel

Common causes, most likely first

- 1 Vacuum leak from a cracked intake hose, intake manifold gasket, or PCV hose
- 2 Faulty mass air flow sensor under-reporting incoming air
- 3 Weak or failing fuel pump delivering insufficient volume at higher demand
- 4 Clogged fuel filter restricting fuel flow
- 5 Leaking or stuck-open fuel injector causing a lean condition on one cylinder
- 6 Exhaust leak upstream of the oxygen sensor allowing false lean readings
- 7 Faulty oxygen sensor or contaminated sensor element giving inaccurate feedback



How to diagnose and fix it

- 1 Connect a scan tool and record freeze-frame data and long-term fuel trim values in both ranges to confirm the lean condition
- 2 Perform a visual inspection of all intake and vacuum lines for cracks, loose clamps, or disconnected hoses
- 3 Smoke-test the intake system to pinpoint vacuum leaks that are not visible
- 4 Check fuel pressure and volume against Volkswagen specifications, especially under load
- 5 Inspect and clean the mass air flow sensor, then verify its readings against expected values
- 6 Check for exhaust leaks upstream of the oxygen sensor and repair as needed
- 7 Replace the oxygen sensor only after confirming the sensor is slow or biased, not merely responding to a real lean condition

What most technicians miss on P1152

- A lean code in range 2 often points to a fuel delivery problem that only appears under higher load, so a static fuel pressure test at idle can pass while the pump still fails on the road.
Volkswagen intake systems are prone to hidden cracks in the plastic intake boot and PCV breather hoses that open only when the engine moves under torque, making a visual inspection alone unreliable.
- A dirty mass air flow sensor on a Volkswagen can under-report air flow by enough to set P1152 without ever setting a mass air flow sensor code, so cleaning it is a valid first step.
- An exhaust leak before the oxygen sensor pulls in outside air and makes the sensor report a false lean condition, which can lead to unnecessary fuel system repairs.
Long-term fuel trim that is maxed out positive in range 2 but normal in range 1 often indicates a restriction in the fuel supply rather than a vacuum leak.

Can I keep driving with P1152?

You can drive the vehicle short distances to a repair shop, but avoid hard acceleration and heavy loads because a prolonged lean condition can overheat the catalytic converter and cause misfires. If the check engine light begins flashing, stop driving and have the vehicle towed.

Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Smoke machine for intake leak detection
- Fuel pressure gauge and volume test kit
- Digital multimeter for sensor and wiring checks
- Hand tools for intake and vacuum line inspection



Reading P1152

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

Often seen with

P1151 Bank 1 Long Term Fuel Trim Range 1 Lower Lean Limit Exceeded · **P1153** Air/Fuel Sensor Circuit Response Bank 1 Sensor 2 · **P1151** Rear Oxygen Sensor Heater Circuit High Input · **P1151** HO2S Bank 2 Sensor 1 Signal Below 0.45v AF Ratio Too Lean · **P1153** Bank 2 Fuel Control Shifted Lean FAOSC · **P1153** O2 Sensor Low Switching (Bank 2 Sensor 1) · **P1151** Lack of Upstream Heated Oxygen Sensor Switch Sensor Indicate · **P1153** Bank 2 Fuel Control Shifted Lean · **P1153** HO2S Insufficient Switching · **P1151** O2 Sensor Heater Circuit Signal Intermittent Bank 2 Sensor 1 · **P1153** O2 Sensor Heater Circuit High Voltage Bank 2 Sensor 1 · **P0171** System Too Lean (Bank 1) · **P0300** Random/Multiple Cylinder Misfire Detected · **P0420** Catalyst System Efficiency Below Threshold (Bank 1)

See it working

Watch the animated explainer [Engine Cooling System Trainer: How Engines Stay Cool](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/volkswagen-p1152/>

