

SUBARU · POWERTRAIN

P1086

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1086 · Subaru

Tumble Generator Valve #2 LH Position Sensor Circuit Low Input

P1086 is a Subaru-specific code indicating that the engine control module (ECM) has detected a low input voltage on the left-hand (LH) tumble generator valve (TGV) position sensor circuit for TGV #2. The TGV system uses butterfly valves in the intake ports to create turbulence at low engine speeds for better combustion; the sensor reports the valve's position, and a low signal means the ECM sees a voltage below the expected range, typically near 0 volts.

SYSTEM

Powertrain

CODE TYPE

Subaru specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Fuel and air metering and auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light (CEL) on the dashboard.
- Often no symptoms besides the warning light, especially if the TGV valve remains stuck in the open position.
- Rough idle or stumbling when the engine is cold, due to improper air tumble.
- Hesitation or lack of power during acceleration at low RPM.
- Poor fuel economy or increased emissions in some cases.
- In rare instances, the engine may enter limp mode, limiting performance.

Common causes, most likely first

- 1 Faulty TGV position sensor #2 on the left-hand side, internally shorted or open.
- 2 Damaged or corroded wiring harness connector at the TGV sensor or ECM.
- 3 Broken, chafed, or shorted wire in the sensor circuit (signal, ground, or reference).
- 4 Poor electrical connection at the ECM connector, such as loose pins or corrosion.
- 5 Failed TGV actuator motor causing the valve to stick, which may affect sensor reading.
- 6 Carbon buildup or mechanical binding of the TGV valve, preventing proper movement and sensor signal.
- 7 Rarely, a malfunctioning ECM (engine control module) itself.



How to diagnose and fix it

- 1 Perform a visual inspection of the TGV sensor #2 connector and wiring for damage, corrosion, or loose pins.
- 2 Use a scan tool to check live data for TGV sensor voltage and compare with the specified range; also check for other stored codes.
- 3 Measure resistance and voltage on the sensor circuit according to the factory service manual; check for opens, shorts to ground, or shorts to power.
- 4 Test the TGV position sensor with a multimeter for smooth resistance change through its range; replace if faulty.
- 5 Inspect the TGV valve for carbon buildup or mechanical binding; clean or replace the TGV assembly if necessary.
- 6 Check the TGV actuator motor operation and wiring; repair or replace as needed.
- 7 Clear the code and perform a road test to verify the repair; if the code returns, recheck the circuit and consider ECM diagnosis.

TGV Sensor Circuit Low Input Pitfalls

- A low input code often results from a short to ground in the signal wire, which can be caused by a pinched harness near the intake manifold or a rubbed-through wire insulation.
- Technicians sometimes replace the TGV sensor only to find the connector terminals are corroded or spread, causing a poor connection that mimics a failed sensor.
- The TGV position sensor shares a reference voltage and ground with other sensors; a fault in those shared circuits can set multiple codes, so check for companion codes before condemning the sensor.
- Carbon buildup on the TGV valve can cause it to stick, leading to a sensor signal that is out of range; cleaning the valve may resolve the code without parts replacement.
- On some Subaru models, the TGV sensor is integrated into the TGV assembly and cannot be replaced separately, requiring replacement of the entire unit if the sensor fails.

Can I keep driving with P1086?

You can generally drive the vehicle with this code, but avoid aggressive acceleration and heavy loads until repaired, as the engine may lack power and fuel economy may suffer. If the check engine light flashes or the engine runs very poorly, stop driving and seek service immediately.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Factory service manual or wiring diagrams
- Basic hand tools (screwdrivers, socket set)
- Electrical contact cleaner and dielectric grease



Reading P1086

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

Often seen with

P1087 Tumble Generator Valve #2 LH Position Sensor Circuit High In · **P1085** Fuel Control Mixture Lean Bank 2 Sensor 1 · **P1087** O2 Sensor Circuit Slow Response in Lean Control Range Bank 1 · **P2004** Intake Manifold Runner Control Stuck Open (Bank 1) · **P2005** Intake Manifold Runner Control Stuck Open (Bank 2) · **P2006** Intake Manifold Runner Control Stuck Closed (Bank 1)

See it working

Watch the animated explainer [Four-Stroke Engine Cutaway: Intake to Exhaust](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/subaru-p1086/>

