

GM · POWERTRAIN

P1689

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1689 · GM

Delivered Torque Circuit Fault

P1689 on a GM vehicle means the powertrain control module (PCM) has detected a fault in the delivered torque signal circuit, which is the data line the PCM uses to report calculated engine torque to other control modules. The PCM monitors the circuit for opens, shorts, or implausible signal values and sets this code when the delivered torque message is missing or out of range.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	GM specific	Medium	Intermediate	Computer and output circuits

Symptoms you may notice

- Illumination of the check engine light or service vehicle soon message, often with no other symptoms
- Reduced engine power or limp mode in some cases
- Harsh or erratic automatic transmission shifts because the transmission control module relies on delivered torque data
- Traction control or stability control warning lights on vehicles that share the torque signal
- Poor fuel economy or sluggish acceleration if the PCM defaults to a calculated torque value

Common causes, most likely first

- 1 Damaged or corroded wiring in the delivered torque signal circuit between the PCM and other modules
- 2 Failed PCM, especially after water intrusion or voltage spikes
- 3 Poor ground connection at the PCM or engine block
- 4 Faulty transmission control module (TCM) or body control module (BCM) that receives the torque signal
- 5 Aftermarket electronic accessories improperly tapped into the data bus
- 6 Loose or damaged connector pins at the PCM or intermediate harness connectors

How to diagnose and fix it

- 1 Connect a scan tool and record all stored codes and freeze-frame data to confirm P1689 is the only torque-related fault
- 2 Inspect the PCM connectors and harness for corrosion, chafing, or loose pins, especially near the engine and transmission
- 3 Check the PCM ground connections for tightness and clean any corrosion
- 4 Perform a voltage drop test on the delivered torque signal circuit to check for excessive resistance
- 5 Verify the signal circuit is not shorted to ground or power using a digital multimeter
- 6 If wiring and grounds are good, test or swap the PCM with a known-good unit to confirm the fault
- 7 Clear codes and road test to verify the repair, monitoring live torque data on the scan tool



Delivered torque circuit misdiagnosis traps

- A weak or corroded ground at the PCM can mimic a failed PCM and set P1689 without any wiring damage, so always check grounds before condemning the module.
- Aftermarket remote starters or alarm systems tapped into the data bus often corrupt the delivered torque signal and trigger this code.
- P1689 can be stored intermittently by a low battery or charging system fault that causes voltage spikes, so check battery health and alternator output first.
- On some GM vehicles, a failing transmission control module can pull the delivered torque signal low and set P1689 even though the PCM is fine.
- The delivered torque signal is a calculated value, not a direct sensor reading, so engine performance faults like a dirty mass airflow sensor can cause implausible torque messages.

Can I keep driving with P1689?

You can usually drive the vehicle with P1689 set, but avoid heavy acceleration or towing because the transmission may shift harshly or the engine may enter reduced power mode. If the check engine light is flashing or the vehicle enters limp mode, stop driving and have it diagnosed promptly.

Tools that help

- OBD-II scan tool with live data and bidirectional controls
- Digital multimeter
- Wiring diagram for the specific GM vehicle
- Test light
- Terminal pick and electrical contact cleaner

Reading P1689

P	Powertrain: engine, transmission and emissions.
1	Manufacturer-specific code (GM): its meaning depends on the make.
6	Computer and output circuits.
89	The exact fault within that area.

Often seen with

P1688 Metering Oil Pump Stepping Motor Cont Circuit · **P1688** Internal Fuel Injection Pump Controller Failure · **P1688** Internal Fuel Injection Pump Controller Failure · **P0601** Internal Control Module Memory Checksum Error · **P0606** PCM Processor Fault · **P0700** Transmission Control System Malfunction · **U0100** Lost Communication With ECM/PCM A



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/gm-p1689/>

