

GENERIC · POWERTRAIN

P0729

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0729

Gear 6 Incorrect Ratio

P0729 is a generic transmission code indicating that the powertrain control module (PCM) has detected an incorrect gear ratio for sixth gear. The PCM calculates the expected ratio by comparing transmission input shaft speed to output shaft speed and flags the code when the measured ratio deviates from the stored value beyond a calibrated threshold.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

High

FIX DIFFICULTY

Professional

AREA

Transmission

Symptoms you may notice

- Check Engine Light or Transmission Warning Light illuminated
- Transmission may fail to engage sixth gear or may slip when shifting into sixth
- Harsh or delayed shifts, especially during the 5-6 upshift
- Reduced fuel economy due to the transmission staying in a lower gear
- Transmission may enter limp mode, limiting vehicle speed and gear selection
- Often no symptoms besides the warning light, especially if the fault is intermittent

Common causes, most likely first

- 1 Low or degraded transmission fluid causing slipping and incorrect ratio calculations
- 2 Faulty transmission speed sensors (input or output) sending erratic signals
- 3 Sticking or worn shift solenoid or valve body issues preventing proper sixth gear engagement
- 4 Internal transmission mechanical wear, such as a slipping clutch pack or band
- 5 Wiring or connector problems in the transmission control circuit
- 6 PCM software calibration issue or faulty PCM (less common)
- 7 Incorrect tire size or axle ratio changes affecting output speed calculation

How to diagnose and fix it

- 1 Check transmission fluid level and condition; top off or replace fluid if contaminated
- 2 Inspect and test transmission speed sensors and their wiring for continuity and signal integrity
- 3 Use a scan tool to monitor input and output shaft speeds and compare to expected ratios in sixth gear
- 4 Perform a transmission adaptive learning reset and relearn procedure if applicable
- 5 Test shift solenoids and valve body operation; clean or replace faulty components
- 6 Inspect internal transmission components for wear if external checks pass; may require professional teardown
- 7 Reprogram or replace the PCM only after all other causes are ruled out



Before you replace the transmission

- A slipping torque converter clutch can mimic a gear ratio error, so verify lockup operation before condemning the transmission.
- Aftermarket tuners or incorrect tire sizes can alter the calculated ratio and set P0729 without any mechanical fault.
- Intermittent speed sensor signals often cause this code without any drivability symptoms, so a wiggle test on the harness is essential.
- Some vehicles require a relearn procedure after fluid service or battery replacement to avoid false ratio codes.
- P0729 can be stored alongside other gear ratio codes if the problem affects multiple gears, pointing to a common electrical or hydraulic issue.

Can I keep driving with P0729?

Driving with P0729 is not recommended because the transmission may slip or fail to engage sixth gear, leading to increased wear and potential damage. If you must drive, avoid heavy acceleration and highway speeds, and have the vehicle inspected by a qualified technician as soon as possible.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Transmission fluid level dipstick or scan tool for fluid level
- Jack and jack stands or a lift for under-vehicle inspection
- Wrench set for sensor and pan removal

Reading P0729

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
7	Transmission.
29	The exact fault within that area.

Often seen with

P0715 Input/Turbine Speed Sensor Circuit Malfunction · **P0725** Engine Speed Input Circuit Malfunction · **P0726** Engine Speed Input Circuit Range/Performance · **P0730** Incorrect Gear Ratio · **P0736** Reverse Incorrect Ratio



See it working

Watch the animated explainer [How an Automatic Transmission Works, Gear by Gear](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0729/>

