

GENERIC · POWERTRAIN

P0730

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0730

Incorrect Gear Ratio

P0730 means the transmission control module (TCM) has calculated a gear ratio that does not match the ratio expected for the gear it commanded, based on engine speed and output shaft speed. The computer is not pointing to a specific sensor or solenoid; it is reporting that the actual mechanical ratio across the gearbox is wrong for the commanded gear.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

High

FIX DIFFICULTY

Professional

AREA

Transmission

Symptoms you may notice

- Illumination of the check engine light or transmission warning light, often with no other symptoms besides the warning light
- Harsh or delayed shifts, or the transmission slipping before it engages
- The transmission stuck in a single gear or defaulting to limp-home mode
- Abnormal engine speed for a given road speed, such as revving too high or too low
- Shuddering, flaring, or a neutral condition during acceleration
- Reduced fuel economy and poor acceleration

Common causes, most likely first

- 1 Low or degraded automatic transmission fluid (ATF) causing slipping and incorrect ratio calculation
- 2 A faulty shift solenoid or solenoid pack preventing the commanded gear from engaging
- 3 Internal transmission wear, such as burnt clutch packs or a failing band, allowing slip under load
- 4 A sticking or failed valve body, including a stuck shift valve or pressure regulator
- 5 A faulty transmission speed sensor or output shaft speed sensor sending an incorrect signal
- 6 Wiring or connector damage between the TCM and the transmission solenoids or sensors
- 7 A software or calibration issue in the TCM, or a TCM that is misreporting the commanded gear



How to diagnose and fix it

- 1 Check the transmission fluid level, condition, and color, and top up or replace fluid only if it is clearly degraded
- 2 Scan all modules for stored and pending codes, and record freeze-frame data for P0730 and any companion codes
- 3 Verify the commanded gear versus the calculated ratio using a scan tool while road testing, and compare engine speed to output shaft speed
- 4 Inspect the transmission wiring harness and connectors for chafing, corrosion, or loose pins at the solenoids and speed sensors
- 5 Test the shift solenoids and the transmission speed sensors electrically, and replace any that fail specification
- 6 Perform a transmission pressure test and inspect the valve body for sticking valves if electrical checks pass
- 7 If internal mechanical wear is confirmed, remove and rebuild or replace the transmission, then clear codes and verify the ratio is correct

What P0730 does not tell you

- P0730 is a calculated ratio fault, so it does not identify which clutch, band, or solenoid has failed; a technician must use live data and pressure testing to isolate the cause.
- A low fluid level or a clogged transmission filter can set this code without any internal damage, so fluid condition and level should always be checked before condemning the transmission.
- Some vehicles set P0730 when the TCM has been reflashed or the battery has been disconnected, and the code clears after a relearn drive cycle if no mechanical fault exists.
- A failing engine coolant temperature sensor or a misreported throttle position can alter shift scheduling and produce a ratio error that looks like a transmission fault.
- After a repair, the TCM often requires a adaptive relearn or a specific drive cycle before P0730 will stay cleared, so a code that returns immediately may be a relearn issue rather than a new failure.

Can I keep driving with P0730?

Do not continue driving normally with P0730 because the transmission may be slipping or stuck in limp mode, which can cause further internal damage and leave you stranded. Limit driving to moving the vehicle to a safe location or a short trip to a repair shop, and avoid heavy acceleration or towing.

Tools that help

- OBD-II scan tool with live transmission data and bidirectional control
- Transmission fluid level dipstick or fluid inspection kit
- Digital multimeter for solenoid and sensor circuit testing
- Transmission pressure gauge
- Factory service information for ratio specifications and relearn procedures



Reading P0730

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

Often seen with

P0700 Transmission Control System Malfunction · **P0715** Input/Turbine Speed Sensor Circuit Malfunction · **P0720** Output Speed Sensor Circuit Malfunction · **P0731** Gear 1 Incorrect Ratio · **P0740** Torque Converter Clutch Circuit Malfunction

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/p0730/>

