

MAZDA · POWERTRAIN

P1723

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1723 · Mazda

Gear 3 Incorrect Ratio

P1723 on a Mazda means the transmission control module (TCM) has calculated an incorrect gear ratio for third gear, comparing engine speed to output shaft speed and finding the actual ratio does not match the programmed value. The computer detects this when the slip across the transmission in third gear exceeds a calibrated threshold, indicating the transmission is not holding third gear as commanded.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Mazda specific	High	Professional	Transmission

Symptoms you may notice

- Check Engine Light or Automatic Transmission warning light illuminated on the dashboard
- Harsh or delayed shifts, especially when the transmission attempts to engage third gear
- Transmission may slip or flare during acceleration in third gear, with engine RPM rising without corresponding vehicle speed
- The transmission may enter limp mode, staying in a single gear or refusing to shift beyond second
- Often no symptoms besides the warning light, particularly if the fault is intermittent
- Poor fuel economy or unusual transmission noise during third-gear operation

Common causes, most likely first

- Low or degraded automatic transmission fluid (ATF), causing inadequate hydraulic pressure and clutch slip
- Worn or burnt third-gear clutch packs or brake bands inside the transmission
- Faulty shift solenoid or solenoid body causing incorrect hydraulic apply for third gear
- Sticking or leaking valve body components, including the third-gear shift valve
- Internal transmission seal failure leading to pressure loss at the third-gear apply circuit
- Faulty transmission speed sensor (input or output) sending inaccurate signals to the TCM
- Damaged wiring or connector at the transmission solenoid pack or speed sensors



How to diagnose and fix it

- 1 Check transmission fluid level and condition; top up or replace fluid if low or burnt
- 2 Scan all modules for stored and pending codes, and record freeze-frame data for P1723
- 3 Inspect transmission wiring harness and connectors at the solenoid pack and speed sensors for corrosion or damage
- 4 Test the shift solenoids and speed sensors with a multimeter or bidirectional scan tool
- 5 Perform a transmission line pressure test to verify hydraulic pressure in third gear
- 6 Remove the valve body for inspection and cleaning, checking for stuck valves or worn bores
- 7 If internal mechanical wear is confirmed, remove and rebuild or replace the transmission

Before you replace the transmission

- A low fluid level from a slow leak is the most common cause of P1723 on high-mileage Mazdas, and a simple fluid top-up often resolves the code without any internal repair.
- The TCM calculates gear ratio from input and output speed sensor signals, so a failing speed sensor can set P1723 even when the transmission is mechanically sound.
- Intermittent P1723 that appears only when cold often points to a sticking valve in the valve body rather than worn clutches, and a valve body cleaning or replacement is far cheaper than a rebuild.
- Some Mazda models store P1723 as a pending code after a single slip event and will not illuminate the warning light until the fault repeats on two consecutive drive cycles.
- A battery that has been disconnected or a TCM that has lost power can set false ratio codes until the adaptive learning strategy relearns, so clear the code and perform a relearn drive cycle before condemning the transmission.

Can I keep driving with P1723?

If the transmission is slipping or in limp mode, avoid driving further than necessary to reach a repair shop, as continued slipping can overheat and destroy the clutch packs. If the light is on but the transmission shifts normally, you can drive cautiously to a diagnostic appointment, but avoid heavy acceleration or towing.

Tools that help

- OBD-II scan tool with bidirectional control and transmission data streaming
- Digital multimeter for testing solenoids and sensors
- Transmission fluid level dipstick or scan tool with fluid temperature reading
- Transmission pressure gauge for line pressure testing
- Socket set and torque wrench for valve body removal



Reading P1723

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (Mazda): its meaning depends on the make.
- 7** Transmission.
- 23** 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 · **P0733** Gear 3 Incorrect Ratio · **P0741** Torque Converter Clutch Circuit Performance or Stuck Off

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/mazda-p1723/>

