



P1715 · Mazda

Shift Solenoid 2 Mechanical Fault

P1715 on Mazda vehicles indicates that the transmission control module (TCM) has detected a mechanical fault within shift solenoid 2, which controls hydraulic pressure for a specific gear shift. The TCM monitors solenoid performance and sets this code when the solenoid's electrical or hydraulic response deviates from expected values, often resulting in harsh or delayed shifting.

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

Symptoms you may notice

- Harsh or delayed shifts, especially when engaging second or third gear
- Transmission may slip or fail to shift into certain gears
- Illuminated check engine light or transmission warning light
- Limp mode engagement with reduced power and limited gear selection
- Often no symptoms besides the warning light, especially in early stages

Common causes, most likely first

- 1 Faulty shift solenoid 2 (mechanical wear or sticking)
- 2 Contaminated transmission fluid causing solenoid blockage
- 3 Damaged or corroded wiring harness to the solenoid
- 4 Valve body wear or sticking valves affecting solenoid operation
- 5 TCM software glitch or internal fault (less common)
- 6 Low transmission fluid level due to leaks

How to diagnose and fix it

- 1 Check transmission fluid level and condition; top up or replace if contaminated
- 2 Perform a visual inspection of solenoid wiring and connectors for damage or corrosion
- 3 Use a scan tool to command solenoid 2 and observe its response and circuit resistance
- 4 Test solenoid 2 with a multimeter for resistance and compare to manufacturer specification
- 5 Remove and clean or replace shift solenoid 2 if tests indicate failure
- 6 Inspect valve body for wear or debris if solenoid replacement does not resolve the issue
- 7 Reprogram or replace the TCM if all mechanical and electrical checks pass



Before you replace the solenoid

- A sticking valve body or contaminated fluid can mimic a failed solenoid, so always verify fluid condition and pressure first.
- Wiring harness chafing near the transmission connector is a common cause that is often overlooked during diagnosis.
- The TCM may set P1715 even when the solenoid is electrically sound, if hydraulic pressure deviates due to internal leaks.
- After replacing the solenoid, the TCM may require a relearn procedure to clear adaptive learning and prevent repeat codes.
- In some cases, a low battery or charging system fault can cause erratic solenoid operation and set this code falsely.

Can I keep driving with P1715?

Driving with P1715 is possible but not recommended for extended periods, as harsh shifting can damage the transmission. Avoid aggressive acceleration and heavy loads, and have the vehicle inspected promptly to prevent further damage.

Tools that help

- OBD-II scan tool with bidirectional control
- Digital multimeter
- Transmission fluid level dipstick or gauge
- Socket and wrench set
- Factory service information for solenoid specifications

Reading P1715

P	Powertrain: engine, transmission and emissions.
1	Manufacturer-specific code (Mazda): its meaning depends on the make.
7	Transmission.
15	The exact fault within that area.

Often seen with

P1716 Wheel Speed Signal 2 Range Performance · **P1716** Shift Solenoid 3 Mechanical Fault · **P1716** SSC Inductive Signature Malfunction · **P0700** Transmission Control System Malfunction · **P0750** Shift Solenoid 'A' · **P0755** Shift Solenoid 'B' · **P0760** Shift Solenoid 'C'



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-p1715/>

