

MAZDA · POWERTRAIN

# P1716

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

## P1716 · Mazda

### Shift Solenoid 3 Mechanical Fault

P1716 on Mazda vehicles indicates that the transmission control module (TCM) has detected a mechanical fault within shift solenoid 3, which is responsible for controlling a specific clutch or band inside the automatic transmission. The TCM monitors solenoid performance and circuit feedback, and when the expected hydraulic response does not match the commanded state, it stores this code and typically illuminates the check engine light.

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

### Symptoms you may notice

- Harsh or delayed shifts, especially when the transmission attempts to engage third or overdrive gears
- Transmission may slip or flare during acceleration as the affected clutch fails to apply properly
- The check engine light illuminates, often accompanied by a flashing or solid transmission warning light
- The vehicle may enter limp mode, limiting speed and gear selection to protect the transmission
- Often no symptoms besides the warning light, particularly if the fault is intermittent or only occurs under specific conditions

### Common causes, most likely first

- Shift solenoid 3 itself has failed mechanically, such as a stuck plunger or worn internal bore
- Contaminated transmission fluid (ATF) causing solenoid valves to stick or bind
- Wiring harness damage or poor electrical connection at the solenoid 3 connector
- Valve body wear or debris blocking the hydraulic passage controlled by solenoid 3
- Internal transmission mechanical wear, such as a worn clutch pack or band, increasing load on the solenoid
- TCM software calibration issue or faulty TCM driver circuit (less common)

### How to diagnose and fix it

- Check transmission fluid level and condition; top off or replace fluid if contaminated or burnt
- Inspect the wiring harness and connector at shift solenoid 3 for corrosion, chafing, or loose pins
- Perform a resistance test on shift solenoid 3 and compare to Mazda specifications
- Use a scan tool to command solenoid 3 on and off while monitoring transmission data to verify mechanical response
- Remove the transmission pan and valve body to inspect solenoid 3 for debris or mechanical binding
- Replace shift solenoid 3 if it fails electrical or mechanical testing
- Clear the code and perform a relearn drive cycle to confirm the repair



## Don't overlook fluid condition and wiring

- A sticking solenoid 3 is often caused by degraded transmission fluid rather than a failed solenoid, so a fluid service can resolve the code without parts replacement.
- The code can set intermittently due to a poor electrical connection at the solenoid connector, which may pass a static resistance test but fail under vibration or heat.
- Mechanical wear inside the transmission, such as a worn clutch pack, can mimic a solenoid fault by causing the TCM to see an unexpected slip when solenoid 3 is commanded.
- Some Mazda models require a TCM software update to correct false P1716 triggers, so check for technical service bulletins before replacing hardware.
- A faulty valve body or blocked hydraulic passage can prevent solenoid 3 from applying the correct pressure, leading to a mechanical fault code even when the solenoid itself is good.

## Can I keep driving with P1716?

Driving with P1716 is not recommended because the transmission may slip or fail to shift properly, which can cause further internal damage and leave you stranded. If you must drive, avoid heavy acceleration and have the vehicle inspected by a transmission specialist as soon as possible.

## Tools that help

- OBD-II scan tool with transmission data capabilities
- Digital multimeter for resistance and voltage testing
- Transmission fluid level gauge and drain pan
- Factory service information for solenoid specifications and torque values
- Mechanic's tool set including socket wrenches and screwdrivers

## Reading P1716

|           |                                                                      |
|-----------|----------------------------------------------------------------------|
| <b>P</b>  | Powertrain: engine, transmission and emissions.                      |
| <b>1</b>  | Manufacturer-specific code (Mazda): its meaning depends on the make. |
| <b>7</b>  | Transmission.                                                        |
| <b>16</b> | The exact fault within that area.                                    |

## Often seen with

**P1715** PNP Switch Circuit Fault · **P1717** AT Drive Range Signal Circuit Fault · **P1715** Pulse Generator Assembly · **P1715** Shift Solenoid 2 Mechanical Fault · **P1717** Shift Solenoid 4 Mechanical Fault · **P1715** SSB Inductive Signature Malfuction · **P1717** SSD Inductive Signature Malfuction · **P0700** Transmission Control System Malfuction · **P0750** Shift Solenoid 'A' · **P0755** Shift Solenoid 'B'



## 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-p1716/>

