

MAZDA · POWERTRAIN

P1516

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1516 · Mazda

Gear Change Neutral Drive Fault

P1516 on Mazda vehicles indicates that the powertrain control module (PCM) has detected an implausible signal from the neutral switch or gear position sensor circuit during a gear change, specifically when the transmission is expected to be in neutral. The PCM compares the expected neutral status with the actual voltage from the switch and sets the code when the two disagree for a calibrated period.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Mazda specific	Medium	Intermediate	Vehicle speed, idle control and auxiliary inputs

Symptoms you may notice

- Illumination of the check engine light or malfunction indicator lamp (MIL) on the dashboard.
- Often no symptoms besides the warning light, especially if the fault is intermittent.
- Rough or delayed engagement when shifting from neutral to drive or reverse.
- Unexpected engine idle fluctuations when the transmission is in neutral.
- In rare cases, the transmission may default to a limp mode with harsh shifting.
- Difficulty starting the engine if the PCM incorrectly believes the car is in gear.

Common causes, most likely first

- 1 Faulty neutral safety switch or gear position sensor on the transmission.
- 2 Damaged or corroded wiring harness connector at the switch.
- 3 Open or short circuit in the signal wire between the switch and the PCM.
- 4 Poor ground connection for the switch or PCM.
- 5 Internal PCM software glitch or faulty PCM (least likely).
- 6 Mechanical wear in the shift linkage causing the switch to misalign.



How to diagnose and fix it

- 1 Connect a scan tool and verify P1516 is the only code; check freeze frame data for conditions when it set.
- 2 Inspect the neutral switch connector and wiring for corrosion, chafing, or loose pins.
- 3 Test the switch with a multimeter for continuity in neutral and open circuit in gear, following Mazda service information.
- 4 Check the switch adjustment and shift linkage for proper alignment; adjust or replace as needed.
- 5 Perform a voltage drop test on the ground circuit to ensure less than 0.1 volts.
- 6 If wiring and switch test good, substitute a known-good PCM and retest before replacement.
- 7 Clear codes and perform a road test with several gear changes to confirm the repair.

Neutral switch faults that mimic transmission failure

- A misadjusted neutral switch can cause P1516 without any driveability complaint, so always check adjustment before condemning parts.
- Corrosion inside the connector is a common cause on older Mazdas, even when the switch itself tests fine.
- The code can set intermittently due to vibration, so wiggle-test the harness while monitoring switch status on a scan tool.
- Replacing the PCM without verifying the switch circuit is an expensive misdiagnosis trap.
- Some Mazda models use a combined neutral and backup light switch; a failure in the backup light circuit can affect neutral signal.

Can I keep driving with P1516?

The vehicle is generally safe to drive with P1516, but avoid aggressive gear changes and have the fault diagnosed soon, as a misreported neutral signal can affect starting and idle quality.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Mazda service information or wiring diagrams
- Socket set and screwdrivers
- Jumper wires for testing



Reading P1516

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (Mazda): its meaning depends on the make.
- 5** Vehicle speed, idle control and auxiliary inputs.
- 16** The exact fault within that area.

Often seen with

P1517 Main Relay Circuit Electrical Malfunction · **P1518** Main Relay Circuit Short To B+ · **P1517** Idle Air Control Solenoid Signal 4 Circuit High Input · **P1518** Starter Switch Circuit Low Input · **P1517** Cranking Neutral Drive Fault · **P1517** Cranking Neutral Drive Fault · **P1517** Throttle Actuator Control (TAC) Module Performance · **P1518** Throttle Actuator Control (TAC) Module Serial Data Circuit · **P1517** Intake Manifold Runner Control Input Error · **P1518** Intake Manifold Runner Control Fault Stuck Open · **P1517** Throttle Actuator Control (TAC) Module Performance · **P1518** Throttle Actuator Control (TAC) Module Serial Data Circuit · **P0705** Transmission Range Sensor Circuit Malfunction · **P0706** Transmission Range Sensor Circuit Range/Performance · **P0850** Park/Neutral Switch Input Circuit

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-p1516/>

