



P1745 · Mazda

Line Pressure Solenoid

P1745 on Mazda vehicles indicates that the transmission control module (TCM) has detected an electrical fault in the line pressure solenoid circuit, which controls hydraulic pressure inside the automatic transmission. The TCM monitors the solenoid's current draw and expected response, and when the signal falls outside the programmed limits, it stores this code and typically illuminates the warning light.

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

Symptoms you may notice

- Illumination of the check engine light or transmission warning light, often with no other noticeable symptoms
- Harsh or delayed gear shifts, especially when engaging drive or reverse
- Transmission slipping or flaring between gears due to incorrect line pressure
- The transmission may enter limp mode, holding a single gear to protect internal components
- Poor fuel economy or unusual engine RPM behavior during acceleration

Common causes, most likely first

- 1 Faulty line pressure solenoid (also called the pressure control solenoid) internally shorted or open
- 2 Damaged or corroded wiring harness or connector at the transmission solenoid pack
- 3 Transmission fluid contaminated with debris or metal particles causing solenoid malfunction
- 4 Failed transmission control module (TCM) or internal driver circuit
- 5 Low or incorrect transmission fluid level affecting solenoid operation
- 6 Valve body wear or sticking valves that prevent the solenoid from regulating pressure correctly

How to diagnose and fix it

- 1 Check transmission fluid level and condition; top off or replace fluid if contaminated
- 2 Inspect the solenoid wiring harness and connector for chafing, corrosion, or loose pins
- 3 Measure the resistance of the line pressure solenoid with a multimeter and compare to factory specification
- 4 Test the solenoid circuit for short to ground or open circuit using a wiring diagram and multimeter
- 5 If resistance is out of spec, replace the line pressure solenoid, which may require removing the transmission pan
- 6 Clear the code and perform a road test to verify the repair; if the code returns, diagnose the TCM or internal valve body



Line Pressure Solenoid Faults Often Misdiagnosed

- A dirty or clogged transmission filter can starve the line pressure solenoid of fluid, causing it to set a code even though the solenoid itself is healthy.
- The line pressure solenoid is often part of the solenoid pack, and replacing the entire pack is sometimes more cost-effective than replacing just one solenoid.
- Intermittent wiring faults at the transmission connector can mimic a failed solenoid, so always wiggle-test the harness while monitoring live data.
- A failing transmission control module can command incorrect line pressure, setting P1745 without any fault in the solenoid itself.
- After replacing the solenoid, the TCM may need to relearn adaptive pressure values; failing to perform a relearn can cause harsh shifts and a repeat code.

Can I keep driving with P1745?

You can drive the vehicle short distances to a repair shop, but avoid aggressive acceleration or heavy loads because incorrect line pressure can cause internal transmission damage. If the transmission is in limp mode or shifting harshly, arrange a tow to prevent further wear.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Transmission fluid level dipstick or scan tool for fluid temperature
- Socket set and torque wrench
- Wiring diagram for the specific Mazda model

Reading P1745

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

Often seen with

P1746 Transmission Control Unit Relay Malfunction · **P1746** Electronic Pressure Control Solenoid Circuit Open · **P1746** Pressure Regulator 2 · **P1746** Electronic Pressure Control Solenoid A Open Circuit · **P1746** Transmission Control Module Output Stage · **P0740** Torque Converter Clutch Circuit Malfunction · **P0741** Torque Converter Clutch Circuit Performance or Stuck Off · **P0742** Torque Converter Clutch Circuit Stuck On · **P0743** Torque Converter Clutch Circuit Electrical



See it working

Watch the animated explainer [How a Six-Speed Manual Gearbox Works](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/mazda-p1745/>

