

GENERIC · POWERTRAIN

P0789

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0789

Shift/Timing Solenoid Intermittent

P0789 indicates that the transmission control module (TCM) has detected an intermittent electrical fault in the shift/timing solenoid circuit, which controls hydraulic pressure for shift timing and quality. The TCM monitors the solenoid's current draw and response, and when the signal drops out or behaves erratically, it stores this code and may default to a limp-home mode.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Transmission

Symptoms you may notice

- Harsh or delayed shifts, especially when the transmission is cold or under load
- The transmission may slip or fail to engage a gear from a stop
- Intermittent loss of power or a sudden downshift while driving
- The check engine light or transmission warning light illuminates
- Often no symptoms besides the warning light, especially if the fault is momentary

Common causes, most likely first

- Faulty shift/timing solenoid (worn coil or sticking valve)
- Damaged or corroded wiring harness or connector at the solenoid
- Low or contaminated transmission fluid causing solenoid malfunction
- Internal transmission debris blocking the solenoid valve
- Failing transmission control module (TCM) or poor ground connection
- Loose or damaged pins in the solenoid electrical connector

How to diagnose and fix it

- Check transmission fluid level and condition; top off or replace if contaminated
- Inspect the solenoid wiring harness and connector for chafing, corrosion, or loose pins
- Measure solenoid resistance with a multimeter and compare to manufacturer specification
- Perform a voltage drop test on the solenoid circuit while wiggling the harness to catch intermittent faults
- Remove and clean or replace the shift/timing solenoid if resistance is out of spec or the valve sticks
- Clear the code and test-drive the vehicle under various conditions to confirm the repair
- If the code persists, diagnose the TCM and its grounds, and consider reprogramming or replacement



Intermittent solenoid faults often misdiagnosed

- A solenoid that tests good cold can fail when hot; always test resistance and function after the transmission reaches operating temperature.
- Debris in the valve body can cause the solenoid to stick intermittently, so flushing the fluid and inspecting the pan for clutch material is critical before replacing parts.
- The TCM may set P0789 from a momentary voltage spike or drop caused by a poor ground, not a failed solenoid, so check grounds and power feeds first.
- On many vehicles, the shift/timing solenoid shares a circuit with other solenoids, so a short in a neighboring solenoid can trigger this code.
- After replacing the solenoid, the TCM may require a relearn or adaptation reset to restore proper shift quality, which is often overlooked.

Can I keep driving with P0789?

You can usually drive the vehicle to a repair shop, but avoid aggressive acceleration or heavy towing because the transmission may shift harshly or slip. If the transmission enters limp-home mode or refuses to shift, stop driving and seek professional diagnosis.

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 Torx bits for valve body access
- Wiring diagram for the solenoid circuit

Reading P0789

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
7	Transmission.
89	The exact fault within that area.

Often seen with

P0740 Torque Converter Clutch Circuit Malfunction · **P0750** Shift Solenoid 'A' · **P0787** Shift/Timing Solenoid Low · **P0788** Shift/Timing Solenoid High · **P0790** Normal/Performance Switch 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/p0789/>

