

41TES/42RLES/62TE

P1745 Line Pressure Too High w/ VLP

This DTC is an informational DTC to inform the technician that the transmission has been operating in an open-loop line pressure control caused by a malfunction in the Variable Line Pressure (VLP) control circuit(s) indicating a VLP DTC is present.

This DTC is intended to protect the transmission due to the transmission is not designed to operate in open-loop line pressure control for an extended period of time. It takes 3220 kilometers (2000 miles) or 1000 2-3 upshifts of vehicle operation in open-loop line pressure control for this DTC to mature.

If the DTC sets, the transmission controller will place the transmission into limp-in mode and illuminate the MIL. The DTC must be cleared using a DRB and the counters reset on the engine side only.

Perform the following steps prior to any diagnostic procedure(s).

1. Many transmission symptoms can be caused by a low fluid level. If the fluid level is low, locate and repair any leaks and fill the transmission to the proper fluid level. Refer to 62TE - SERVICE INFORMATION for the proper repair and fluid fill procedures.
2. Testing should only be performed with the battery fully charged to avoid false diagnosis.
3. With the scan tool, read Engine (PCM) DTC's. If Engine DTC's are present, refer to the driveability category and perform to the appropriate diagnostic procedure(s) before proceeding.
4. With the scan tool, read Transmission (TCM) DTC's. Record all Stored, Active, and pending DTC information. Diagnose any pending DTC as a matured DTC.
5. With the scan tool, read DTC EVENT DATA. Use this data to identify the conditions in which the DTC was set.
6. With the scan tool, perform the Shift Lever Position Test. If the test does not pass, refer to P0706-TRANSMISSION RANGE SENSOR RATIONALITY.
7. For Gear Ratio Error DTC's, use the scan tool to read and record the Clutch Volume Index (CVI) information.
8. Use the wiring diagram as a guide, inspect the wiring and connectors related to this circuit and repair as necessary.
9. Refer to the when monitored and set conditions for this DTC. DTC's can set at ignition on, at start up, driving under specific conditions, and after controller diagnostic monitors have run.
10. Refer to applicable Technical Service Bulletins (TSB's) for controller software update information. Some conditions can be corrected by upgrading the Engine (PCM) or Transmission (TCM) controller software.
11. Check for any service information tune-ups or service bulletins for any possible causes that may apply.

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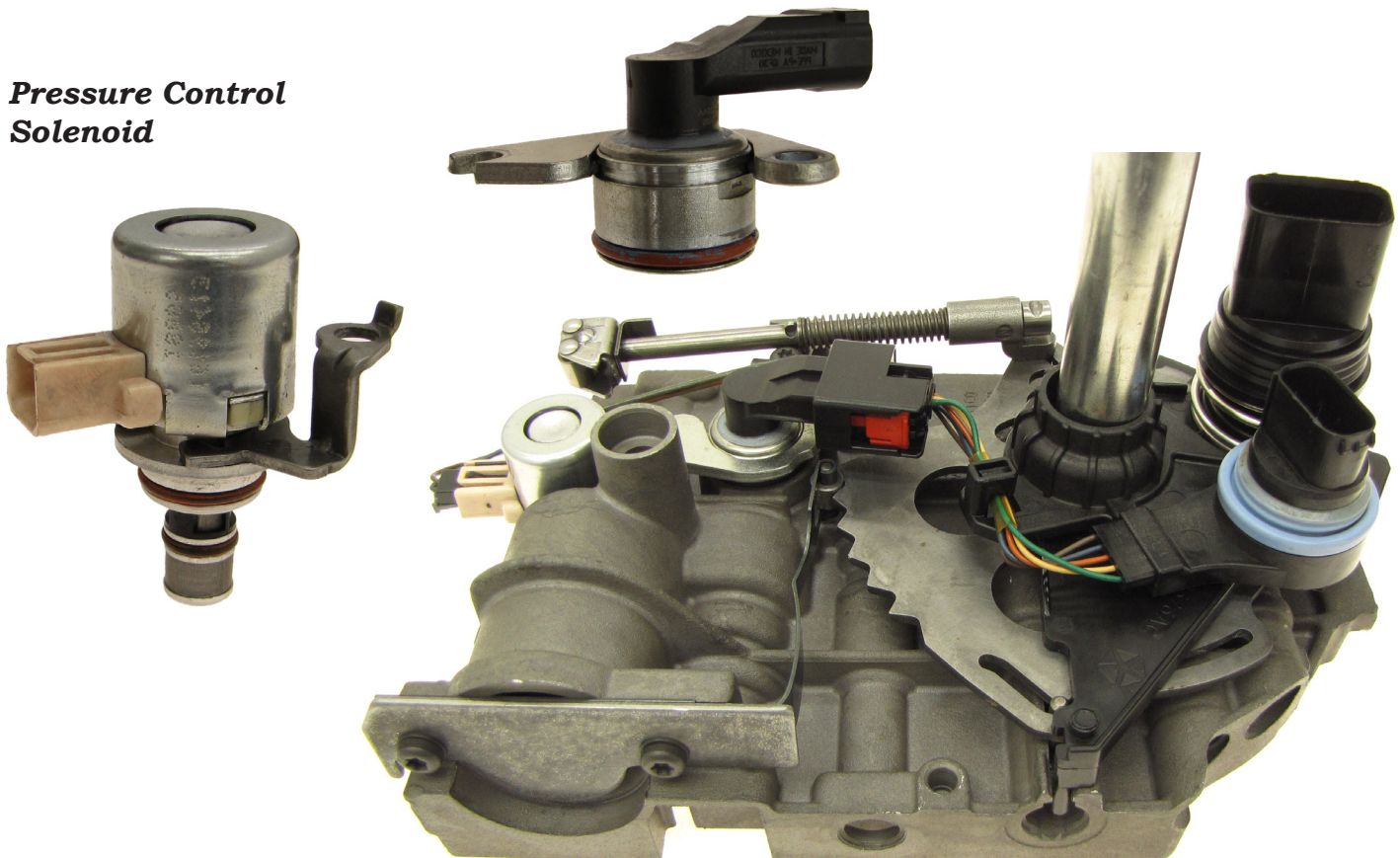
The pressure control solenoid is mounted on the top of the valve body, next to the line pressure transducer. The TCM utilizes a closed-loop system to control transmission line pressure.

The system contains a variable force style solenoid, the Pressure Control Solenoid. The solenoid is duty cycle controlled by the TCM to vent the unnecessary line pressure supplied by the oil pump back to the sump.

The system also contains a variable pressure style sensor, the Line Pressure Sensor, which is a direct input to the TCM. The line pressure solenoid monitors the transmission line pressure and completes the feed back loop to the TCM. The TCM uses this information to adjust its control of the pressure control solenoid to achieve the desired line pressure.

Line Pressure Transducer

Pressure Control Solenoid

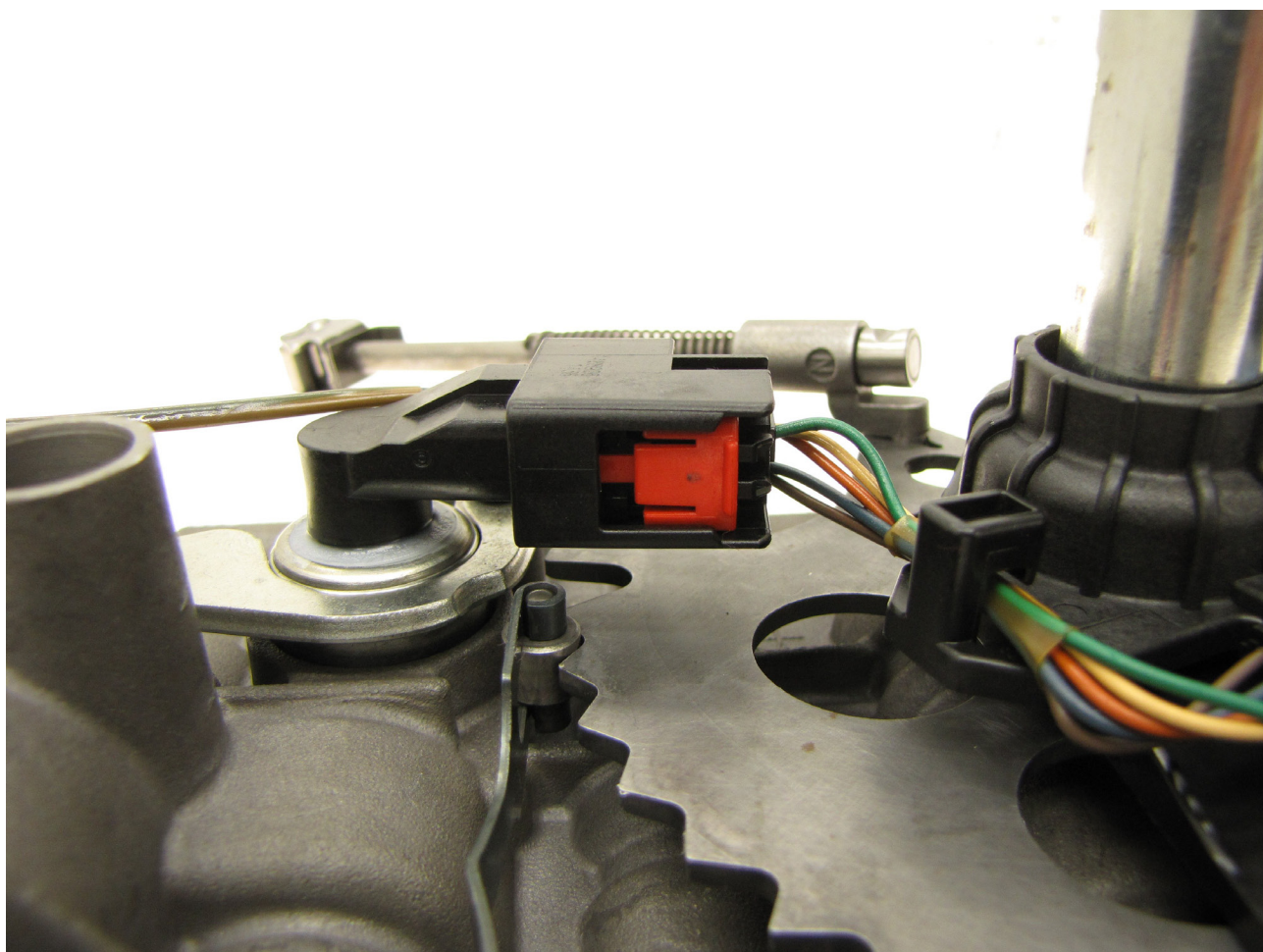


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The TCM varies the current for the PCS, which varies the pressure in the line pressure hydraulic circuit. When the current in the PCS is low, the pressure in the circuit is higher. At 0 current (0% duty cycle), the pressure is at the maximum value. Conversely, when the current is maximum (100% duty cycle), the pressure in the circuit is at the lowest.



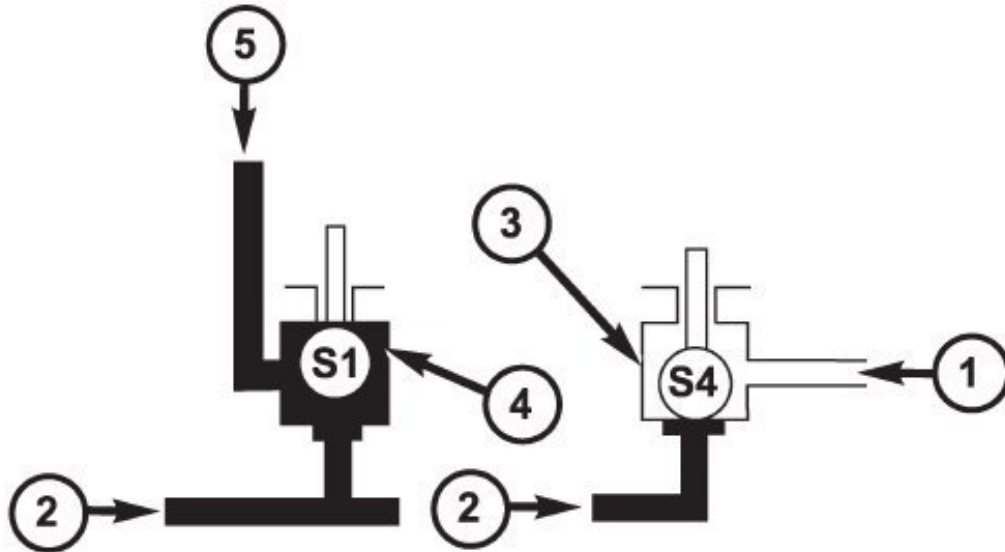
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The solenoids used in transmission applications are attached to valves which can be classified as normally open or normally closed. The normally open solenoid valve is defined as a valve which allows hydraulic flow when no current or voltage is applied to the solenoid. The normally closed solenoid valve is defined as a valve which does not allow hydraulic flow when no current or voltage is applied to the solenoid.

These valves perform hydraulic control functions for the transmission and must therefore be durable and tolerant of dirt particles. For these reasons, the valves have hardened steel poppets and ball valves. The solenoids operate the valves directly, which means that the solenoids must have very high outputs to close the valves against the sizable flow areas. Fast response time is also necessary to ensure accurate control of the transmission.



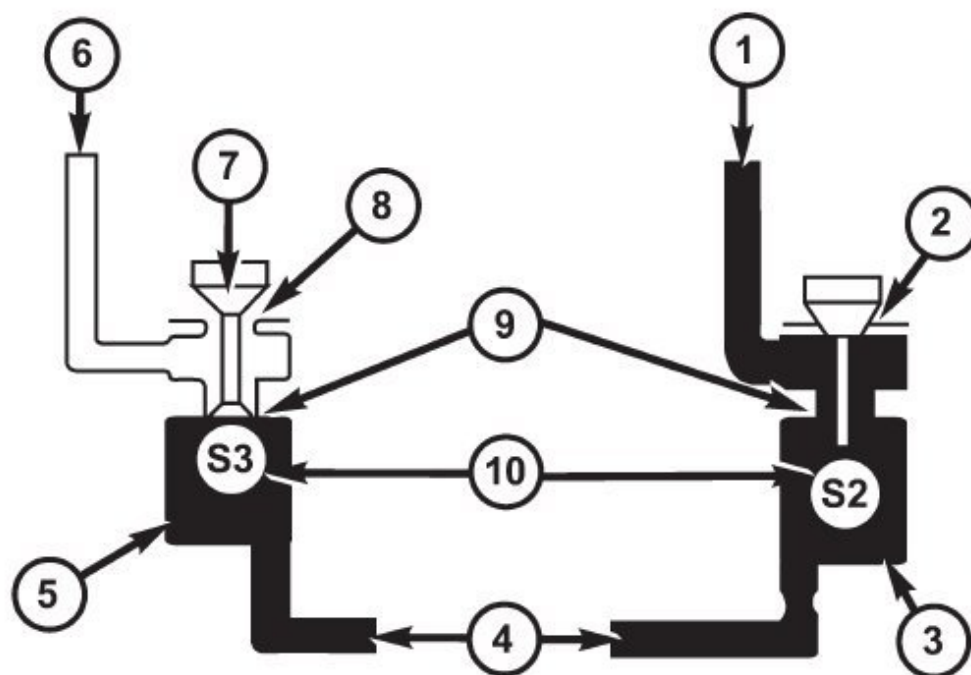
- 1 - MANUAL VALVE
- 2 - LINE PRESSURE
- 3 - 2/4 - LOW REVERSE SOLENOID ENERGIZED
- 4 - UNDERDRIVE SOLENOID DE-ENERGIZED
- 5 - UNDERDRIVE CLUTCH

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When an electrical current is applied to the solenoid coil, a magnetic field is created which produces an attraction to the plunger, causing the plunger to move and work against the spring pressure and the load applied by the fluid the valve is controlling. The plunger is normally directly attached to the valve which it is to operate. When the current is removed from the coil, the attraction is removed and the plunger will return to its original position due to spring pressure.



- 1 - OVERDRIVE CLUTCH
- 2 - NO VENT
- 3 - OVERDRIVE SOLENOID ENERGIZED
- 4 - MANUAL VALVE
- 5 - LOW REVERSE/CONVERTER CLUTCH SOLENOID DE-ENERGIZED
- 6 - SOLENOID SWITCH VALVE
- 7 - TAPER
- 8 - VENT TO SUMP
- 9 - ORIFICE
- 10 - CHECK BALL