DTC P0740: TCC SOLENOID ELECTRICAL MALFUNCTION

NOTE: Perform ON-BOARD DIAGNOSTIC (OBD) SYSTEM CHECK prior to performing diagnostic procedures. For wire circuit ID, see WIRING DIAGRAMS.

Circuit Description

In conjunction with TCC PWM solenoid, TCC solenoid is used to control fluid flow acting on TCC valve. TCC valve controls apply and release of TCC. Solenoid is a normally-open on/off device. Solenoid is attached to transmission case and extends into oil pump cover. PCM monitors TP voltage, vehicle speed and other input devices in order to determine when to energize TCC solenoid. Ignition voltage is supplied directly to solenoid through fused circuit. PCM commands solenoid on or off through ground circuit. DTC P0740 is set if PCM detects a continuous open or short to ground in TCC solenoid circuit.

Conditions For Setting DTC P0740

DTC will set under the following conditions:

- Ignition is on.
- System voltage is 10-17 volts.
- Engine is not in fuel cutoff mode.
- Engine speed is more than 450 RPM for 8 seconds.
- PCM commands solenoid on and voltage remains high (battery voltage).
- PCM commands solenoid off and voltage remains low (zero volts).
- All conditions are met for 5 seconds.

Action Taken By PCM

PCM performs the following if DTC is set:

- Will light MIL at first failure signal.
- Inhibits TCC engagement.
- Inhibits 4th gear if in hot mode.
- Freezes shift adapts from being updated.
- DTC P0740 will be stored in PCM history.

Diagnostic Procedure

1. Connect scan tool to DLC. Turn ignition switch to ON position. DO NOT start engine. Using scan tool, record freeze frame and failure records for reference. Data will be lost when DTCs are cleared later in this test.
2. If DTCs P0740, P0753, P0758, P0785 and P1860 are not present, go to next step. If DTCs P0740, P0753, P0758, P0785 and P1860 are present, remove appropriate TCC solenoid ignition feed circuit fuse from instrument panel fuse block and inspect fuse. See **WIRING DIAGRAMS**. Replace fuse if necessary, and check for short to ground in wiring harness between transmission 20-pin connector and

fuse. Repair wiring as necessary, then go to step 10). If fuse is okay, check for open in wiring harness between transmission 20-way connector and fuse. Repair wire as necessary, then go to step 10).

3. Turn ignition off. Disconnect transmission 20-pin connector. Install Jumper Harness (J-39775) to PCM side of transmission 20-pin connector. Connect test light between ground and TCC solenoid ignition feed circuit at transmission 20-pin connector. Turn ignition switch to ON position. DO NOT start engine.
4. If test light does not light, check for open or short to ground in ignition feed circuit of TCC solenoid. Repair as necessary, then go to step 10). If test light lights, connect test light between TCC solenoid ground circuit and ignition feed circuit at transmission 20-pin connector. Using scan tool, command TCC solenoid on and off 3 times.
5. If test light cycles on and off, go to next step. If test light does not cycle on and off 3 times, check TCC solenoid ground circuit for open or short to ground. Repair circuit as necessary, then go to step 10). If circuit is okay, inspect wiring for poor connections at PCM connector. Check for bent, backed out, deformed or damaged terminals. Repair as necessary, then go to step 10). If connections and terminals are okay, replace PCM, then go to step 10).
6. Turn ignition off. Disconnect jumper harness from PCM side of transmission 20-pin connector and install harness to transmission side of 20-pin connector. Connect ohmmeter between TCC solenoid ground circuit and ignition feed circuit at transmission 20-pin connector.
7. If resistance is 21-33 ohms, go to next step. If resistance is not 21-33 ohms, disconnect TCC solenoid connector. Measure resistance between TCC solenoid terminals. If resistance is 21-33 ohms, check for open circuit in transmission wiring harness. Repair as necessary, then go to step 10). If resistance is not 21-33 ohms, replace TCC solenoid, then go to step 10).
8. Turn ignition off. Connect ohmmeter between ground and TCC solenoid ground circuit, and between ground and TCC solenoid ignition feed circuit at transmission 20-pin connector. If resistance is more than 250 k/ohms, see DIAGNOSTIC AIDS. If resistance is less than 250 k/ohms, go to next step.
9. Disconnect TCC solenoid connector. Measure resistance between ground and each solenoid terminal. If resistance is more than 250k/ohms, check for short to ground in transmission wiring harness. Repair as necessary, then go to next step. If resistance is less than 250 k/ohms, replace TCC solenoid, then go to next step.
10. After repair is complete, select DTC on scan tool. Select "Clear Info" function. Test drive vehicle. Ensure voltage decreases to zero when TCC solenoid is commanded on, and voltage increases to battery voltage when commanded off. Conditions must be met for 5 seconds. Select "Specific DTC" and enter DTC "P0740". If DTC P0740 is not present, repair is complete. If DTC P0740 is still present, repeat test.

Diagnostic Aids

Inspect wiring for poor connections at PCM and transmission 20-pin connector. Check for bent, backed out, deformed or damaged terminals. Check for weak terminal tension. Check for chafed wire that could short to bare metal or other wiring. Check for broken wire inside insulation. If diagnosing for intermittent short or open condition, move wiring harness while observing scan tool for value change.