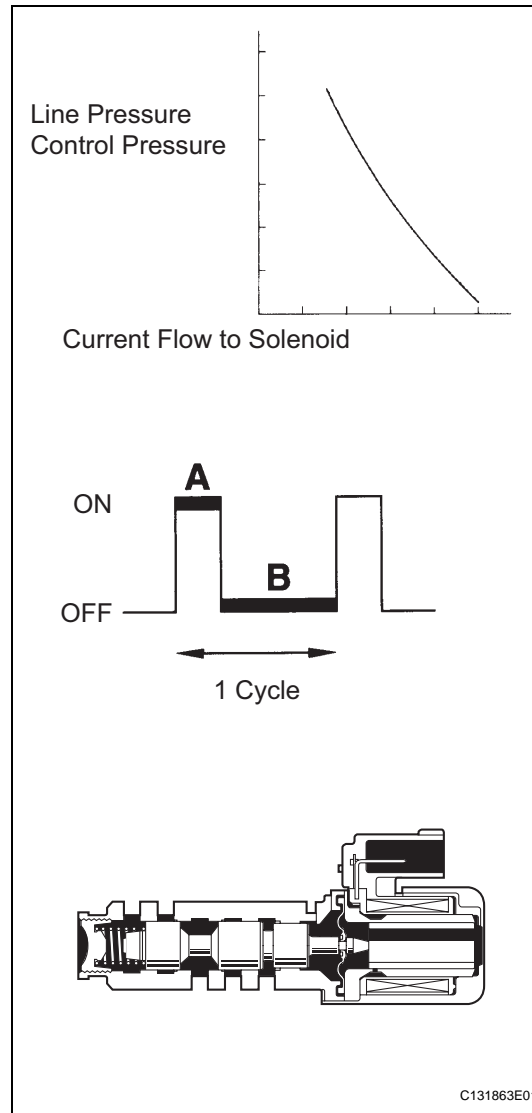


DTC

P2714

## Pressure Control Solenoid "D" Performance (Shift Solenoid Valve SLT)

### DESCRIPTION



The throttle pressure that is applied to the primary regulator valve (which modulates the line pressure) causes the solenoid valve SLT, under electronic control, to precisely modulate and generate the line pressure according to the extent that the accelerator pedal is depressed or the output of engine power. This controls the line pressure and provides smooth shifting characteristics.

Upon receiving a signal of the throttle valve opening angle, the ECM controls the line pressure by sending a predetermined duty ratio\* to the solenoid valve, modulating the line pressure and generating throttle pressure.

HINT:

\*: The duty ratio is the ratio of the current ON time (A) to the total of the current ON and OFF time (A + B).  
 Duty Ratio (%) =  $A / (A + B) \times 100$

DTC No.	DTC Detection Condition	Trouble Area
P2714	ECM detects malfunction on SLT (ON side) according to difference in revolutions of turbine (input) and output shaft (2 trip detection logic)	<ul style="list-style-type: none"> <li>Shift solenoid valve SLT remains open or closed</li> <li>Valve body is blocked</li> <li>Torque converter clutch</li> <li>Automatic transaxle (clutch, brake or gear etc.)</li> <li>ECM</li> </ul>

### MONITOR DESCRIPTION

In any forward position, when the difference between the revolutions of the turbine and output shaft exceeds the specified value (varies with output speed) determined by the ECM, the ECM illuminates the MIL and outputs the DTC. When shift solenoid valve SLT remains on, the oil pressure goes down and the clutch engagement force decreases.

### MONITOR STRATEGY

Related DTCs	P2714: Shift solenoid valve SLT/ON malfunction
Required sensors/Components	Shift solenoid valve SLT, Speed sensor (NT), Speed sensor (SPD)
Frequency of operation	Continuous
Duration	1 second
MIL operation	2 driving cycles
Sequence of operation	None

### TYPICAL ENABLING CONDITIONS

The following conditions are common to ON malfunctions (a), (b), (c) and (d).

The monitor runs whenever the following DTCs are not present	None
Transmission shift position	D
Time after shifting N to D	4.5 seconds or more
ATF (Automatic Transmission Fluid) temperature	-10°C (14°F) or more
ATF temperature sensor (TFT sensor) circuit	No circuit malfunction
Electronic Throttle Control System (if applicable)	No circuit malfunction
Shift solenoid valve S1 circuit	No circuit malfunction
Shift solenoid valve S2 circuit	No circuit malfunction
Shift solenoid valve SLU circuit	No circuit malfunction
Shift solenoid valve SLT circuit	No circuit malfunction
Speed sensor (NT) circuit	No circuit malfunction
Speed sensor (SPD) circuit	No circuit malfunction

#### ON malfunction (a):

ECM gearshift command	1st
Input (turbine) speed	300 rpm or more
Output speed	300 rpm or more

#### ON malfunction (b):

ECM gearshift command	2nd
Input (turbine) speed	300 rpm or more
Output speed	300 rpm or more

#### ON malfunction (c):

ECM gearshift command	3rd
Input (turbine) speed	300 rpm or more
Output speed	300 rpm or more

**ON malfunction (d):**

ECM gearshift command	4th
Input (turbine) speed	300 rpm or more
Output speed	300 rpm or more

**TYPICAL MALFUNCTION THRESHOLDS**

**[ON malfunction]**

Detection condition: Total accumulated time of ON malfunctions (a), (b), (c) and (d) is 1 second or more

**ON malfunction (a):**

NT - NC x 1st gear ratio (without counter gear and under drive gear) NT: Input (turbine) speed NC: Counter gear speed	More than 300 rpm at counter gear speed of 1,000 rpm (Conditions vary with counter gear speed)
Duration	0.85 seconds or more

**ON malfunction (b):**

NT - NC x 2nd gear ratio (without counter gear and under drive gear)	More than 300 rpm at counter gear speed of 1,000 rpm (Conditions vary with counter gear speed)
Duration	0.85 seconds or more

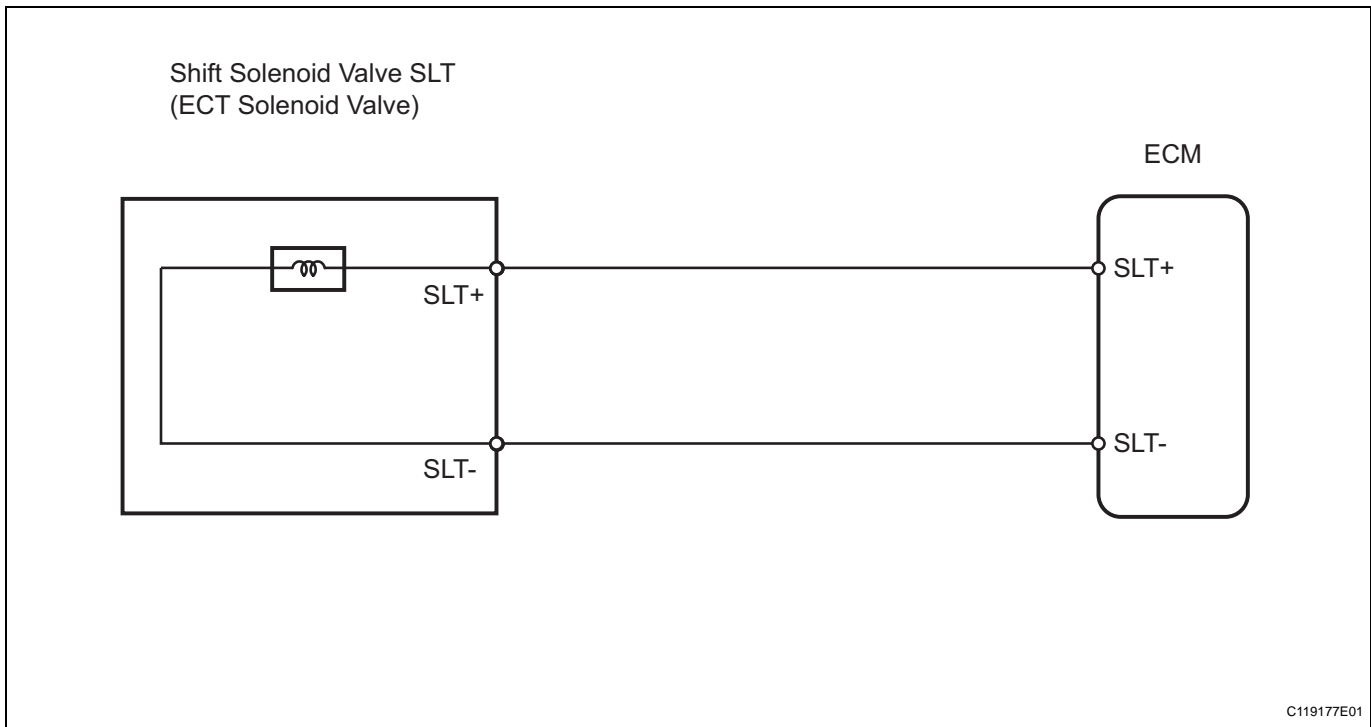
**ON malfunction (c):**

NT - NC x 3rd gear ratio (without counter gear and under drive gear)	More than 300 rpm at counter gear speed of 1,000 rpm (Conditions vary with counter gear speed)
Duration	0.85 seconds or more

**ON malfunction (d):**

NC - NO x Counter gear ratio x under drive gear ratio (Low or High)	More than 300 rpm at output speed of 1,000 rpm (Conditions vary with output speed)
Duration	0.85 seconds or more

**WIRING DIAGRAM**



## INSPECTION PROCEDURE

**HINT:**

Performing the intelligent tester's ACTIVE TEST allows relay, VSV, actuator and other items to be operated without removing any parts. Performing the ACTIVE TEST early in troubleshooting is one way to save time.

The DATA LIST can be displayed during the ACTIVE TEST.

1. Warm up the engine.
2. Turn the ignition switch OFF.
3. Connect the intelligent tester to the CAN VIM. Then connect the CAN VIM to the DLC3.
4. Turn the ignition switch ON and turn the tester ON.
5. Enter the following menus: DIAGNOSIS / ENHANCED OBD II / ACTIVE TEST.
6. Perform the ACTIVE TEST.

Item	Test Details	Diagnostic Note
SOLENOID (SLT)*	[Test Details] Operate shift solenoid SLT and raise line pressure [Vehicle Condition] <ul style="list-style-type: none"> <li>• Vehicle stopped</li> <li>• IDL: ON</li> </ul> HINT: OFF: Line pressure up (when Active Test "SOLENOID (SLT)" is performed, ECM commands SLT solenoid to turn OFF) ON: No action (normal operation)	-

**HINT:**

\*: "SOLENOID (SLT)" in the ACTIVE TEST is performed to check the line pressure changes by connecting SST to the automatic transaxle, which is used in the HYDRAULIC TEST (see page AX-16) as well. Please note that the pressure values in the ACTIVE TEST and HYDRAULIC TEST are different.

**1 CHECK OTHER DTCS OUTPUT (IN ADDITION TO DTC P2714)**

- (a) Connect the intelligent tester to the CAN VIM. Then connect the CAN VIM to the DLC3.
- (b) Turn the ignition switch ON and turn the tester ON.
- (c) Enter the following menus: DIAGNOSIS / ENHANCED OBD II / DTC INFO / CURRENT CODES.
- (d) Read the DTCs using the tester.

**Result**

Display (DTC output)	Proceed to
Only P2714 is output	A
P2714 and other DTCs are output	B

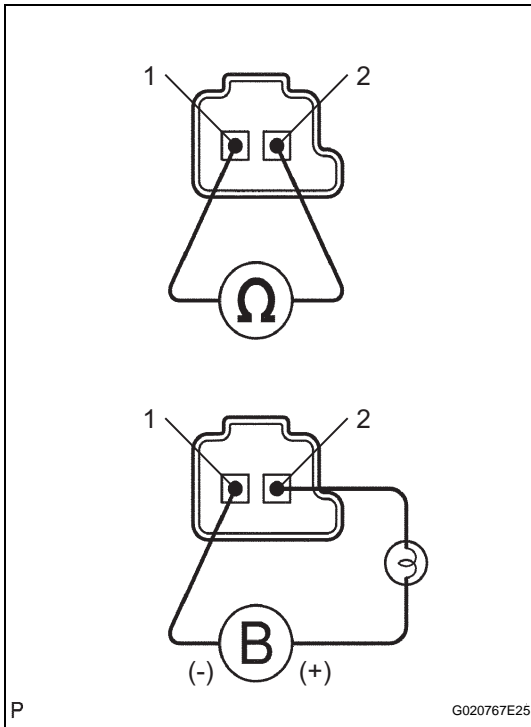
**HINT:**

If any other codes besides P2714 are output, perform troubleshooting for those DTCs first.

**B**

**GO TO DTC CHART**

**A**

**2 INSPECT SHIFT SOLENOID VALVE SLT**

- (a) Remove the shift solenoid valve SLT.  
 (b) Measure the resistance of the solenoid valve.  
**Standard resistance:**  
**5.0 to 5.6  $\Omega$  at 20°C (68°F)**  
 (c) Connect the battery's positive (+) lead with a 21 W bulb to terminal 2 and the negative (-) lead to terminal 1 of the solenoid valve connector. Then check that the valve moves and makes an operating noise.

**OK:**

Valve moves and makes operating noise.

**NG****REPLACE SHIFT SOLENOID VALVE SLT****OK****3 INSPECT TRANSMISSION VALVE BODY ASSEMBLY**

- (a) Check the transmission valve body assembly.

**OK:**

There are no foreign objects on each valve.

**NG****REPAIR OR REPLACE TRANSMISSION VALVE BODY ASSEMBLY****OK****4 INSPECT TORQUE CONVERTER CLUTCH ASSEMBLY**

- (a) Check the torque converter clutch assembly (see page [AX-153](#)).

**OK:**

The torque converter clutch operates normally.

**NG****REPLACE TORQUE CONVERTER CLUTCH ASSEMBLY****OK****REPAIR OR REPLACE AUTOMATIC TRANSAXLE ASSEMBLY**