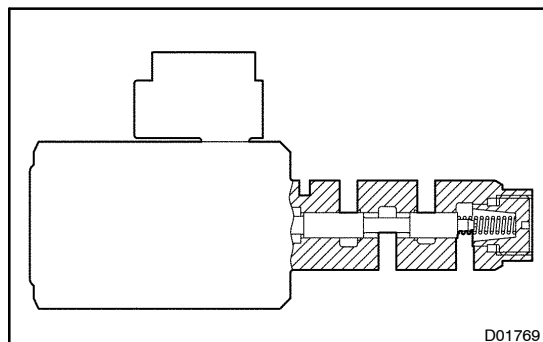


DTC	P2714	Pressure Control Solenoid "D" Performance (Shift Solenoid Valve SLT)
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SYSTEM DESCRIPTION

The ECM calculates the shifting condition by using the signals from the vehicle speed sensor, throttle position sensor, etc.. And compares this result with the signal that ECM sends to SLT to detect mechanical trouble of the shift solenoid valve SLT, valve body, torque converter clutch and automatic transmission assembly (clutch, brake or gear etc.).

DTC No.	DTC Detecting Condition	Trouble Area
P2714	ECM detects a malfunction on SLT (ON side) according to the revolution difference of the turbine and the output shaft, and also by the oil pressure.	• Shift solenoid valve SLT is stuck open or closed • Valve body blocked up or stuck • Automatic transmission assembly

MONITOR DESCRIPTION

The ECM sends (ED: delete "the") signals (Duty Ratio) to the shift solenoid valve SLT based on the information such as the signal from throttle position sensor and the vehicle speed sensor.

Based on the signal's duty-ratio, the shift solenoid valve SLT adjusts the hydraulic pressure to the primary regulator valve to an appropriate level. This function enables a smooth vehicle operation by adjusting the line hydraulic pressure to match the engine output and running condition.

The ECM calculates the "actual" transmission gear by comparing the signals from the input speed sensor and the output speed sensor. The ECM can detect many mechanical problems in the shift solenoids, valve body, and the transmission clutches, brakes, and gears. If the ECM detects that the actual gear position and the commanded gear position are different, it will illuminate the MIL and store the DTC.

MONITOR STRATEGY

Related DTCs	P2714	Shift solenoid valve SLT/ON malfunction
Required sensors/Components	Main	Shift solenoid valve SLT
	Sub	Valve body, ATF temperature sensor, Speed sensor (NT), Speed sensor (NO)
Frequency of operation	Continuous	
Duration	Immediate	
MIL operation	2 driving cycles	
Sequence of operation	None	

TYPICAL ENABLING CONDITIONS

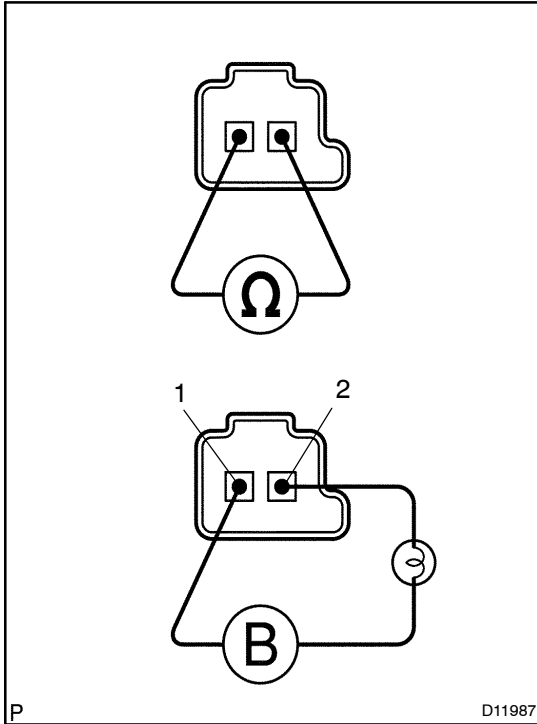
Item	Specification	
	Minimum	Maximum
The monitor will run whenever the following DTCs are not present.	See page DI-369	
Turbine speed sensor (NT) circuit	There is no malfunction in the circuits shown on the left.	
Output speed sensor (NO) circuit		
Transmission Fluid Temperature Sensor "A" circuit		
Shift solenoid "A" (S1) circuit		
Shift solenoid "B" (S2) circuit		
Shift solenoid "E" (SR) circuit		
Pressure control solenoid "A" (SL1) circuit		
Pressure control solenoid "B" (SL2) circuit		
Pressure control solenoid "D" (SLT) circuit		
ECT (Engine coolant temperature) sensor circuit		
KCS sensor circuit		
ETCS (Electric throttle control system)	Not system down	
Transmission shift position	"D"	
ECT	40°C (104°F) or more	–
Spark advance from Max. retard timing by KCS control	0° CA or more	–
Engine	Starting	
Transfer range	"HIGH"*1	
ATF temperature	10°C or more	–
Transfer range "HIGH" *1 (This condition is applied only 4WD)		
*1 Following conditions met		
Vehicle speed sensor "A" circuit	There is no malfunction in the circuits shown on the left.	
Output shaft speed sensor circuit		
Transfer output speed	143 rpm or more	–
NO/NOTf (Transfer input speed/Transfer output speed)	0.9 or more	Less than 1.1

TYPICAL MALFUNCTION THRESHOLDS

Detection criteria	Threshold
Summation of C1 clutch heat generations = $\sum (\text{Turbine speed} - \text{Output speed} \times \text{Temporary ratio})$	Specified value

INSPECTION PROCEDURE

1 Check shift solenoid valve SLT operation.

**PREPARATION:**

- (a) Jack up the vehicle.
- (b) Remove the oil pan.
- (c) Remove the shift solenoid valve SLT.

CHECK:

- (a) Measure the resistance between terminals 1 and 2 of solenoid connector.

Standard: 5.0 to 5.6 Ω at 20°C (68°F)

- (b) Connect the positive (+) lead with an 21 W bulb to terminal 2 of solenoid connector and negative (–) lead to terminal 1 of the solenoid valve connector, then check the movement of the valve.

Standard: Solenoid sounds operation noise.

OK:

Standard

NG

Replace the shift solenoid valve SLT
(See page [AT-8](#)).

OK

2 Check valve body (See page [DI-397](#)).

NG

Replace the valve body (See page [AT-8](#)).

OK

Repair or replace transmission (See page [AT-30](#)).