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

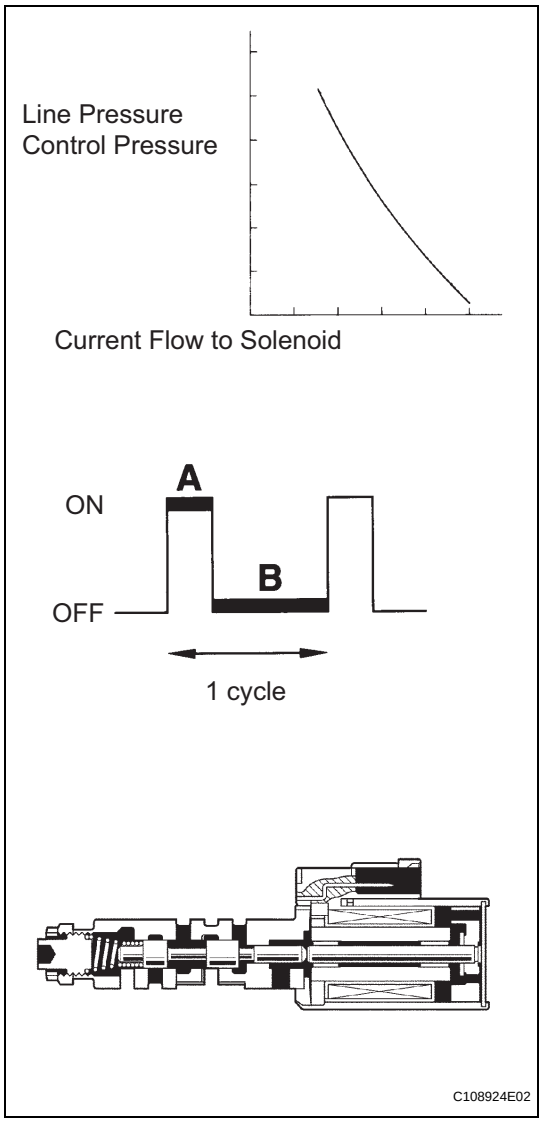
SYSTEM DESCRIPTION

The linear solenoid valve (SLT) controls the transmission line pressure for smooth transmission operation based on signals from the throttle position sensor and the vehicle speed sensor. The ECM adjusts the duty ratio (*) of the SLT solenoid valve to control hydraulic line pressure coming from the primary regulator valve. Appropriate line pressure assures smooth shifting with varying engine outputs.

(*): Duty Ratio

The duty ratio is the ratio of the period of continuity in one cycle. For example, if A is the period of continuity in one cycle, and B is the period of non-continuity, then

Duty Ratio=A/(A+B) x 100(%)



DTC No.	DTC Detection Condition	Trouble Area
P2714	ECM detects a malfunction on SLT (ON side) according to the revolution difference of the turbine, intermediate and the output shaft, and also by the oil pressure. (2-trip detection logic)	• Shift solenoid valve SLT remains closed • Valve body is blocked • Automatic transaxle (clutch, brake or gear, etc.)

MONITOR DESCRIPTION

In any forward position, when the difference between the revolutions of the turbine, Intermediate and output shaft exceeds the specified value (varies with Intermediate, output speed) determined by the ECM, the ECM illuminates the MIL and store the DTC.
When shift solenoid valve SLT remains on, the oil pressure goes down and the clutch engagement force decreases.
NOTICE:
If you continue driving under these conditions, the clutch will burn out and the vehicle will no longer be drivable.

MONITOR STRATEGY

Related DTCs	P2714: Shift solenoid valve SLT/ON malfunction
Required sensors/Components	Shift solenoid valve SLT, Speed sensor (NT), Speed sensor (NC), Crankshaft position sensor (NE)
Frequency of operation	Continuous
Duration	0.5 sec.
MIL operation	2 driving cycles
Sequence of operation	None

TYPICAL ENABLING CONDITIONS

ON malfunction:

The monitor will run whenever this DTC is not present.	None
Transmission range	"D"
TFT (Transmission fluid temperature)	-20°C (-4°F) or more
TFT sensor circuit	Not circuit malfunction
Turbine speed sensor circuit	Not circuit malfunction
Intermediate shaft speed sensor circuit	Not circuit malfunction
Output speed sensor circuit	Not circuit malfunction
Shift solenoid valve SL1 circuit	Not circuit malfunction
Shift solenoid valve SL2 circuit	Not circuit malfunction
Shift solenoid valve SL3 circuit	Not circuit malfunction
Shift solenoid valve S4 circuit	Not circuit malfunction
Shift solenoid valve SR circuit	Not circuit malfunction
Shift solenoid valve DSL circuit	Not circuit malfunction
Shift solenoid valve SLT circuit	Not circuit malfunction
Electronic throttle system	Not circuit malfunction

ON malfunction (A):

ECM selected gear	1st
Temporary MAIN gear	1st or 2nd or 3rd or 4th
NT - NC x Temporary MAIN gear ratio NT: Input (turbine) speed NC: Intermediate shaft speed	100 rpm or more at Intermediate shaft speed 1,000 rpm
Temporary U/D gear	Low
NC - NO x Temporary U/D gear ratio NO: Output speed	300 rpm or more at Output speed 1,000 rpm
TT TT: Turbine Torque	900 Nm or more
NT	250 rpm or more
NC	250 rpm or more
NO	250 rpm or more

ON malfunction (B):

ECM selected gear	2nd
Temporary MAIN gear	1st or 2nd or 3rd or 4th
NT - NC x Temporary MAIN gear ratio NT: Input (turbine) speed NC: Intermediate shaft speed	100 rpm or more at Intermediate shaft speed 1,000 rpm
Temporary U/D gear	Low
NC - NO x Temporary U/D gear ratio NO: Output speed	300 rpm or more at Output speed 1,000 rpm
TT TT: Turbine Torque	192 Nm or more
NT	250 rpm or more
NC	250 rpm or more
NO	250 rpm or more

ON malfunction (C):

ECM selected gear	3rd
Temporary MAIN gear	1st or 2nd or 3rd or 4th
NT - NC x Temporary MAIN gear ratio NT: Input (turbine) speed NC: Intermediate shaft speed	100 rpm or more at Intermediate shaft speed 1,000 rpm
Temporary U/D gear	Low
NC - NO x Temporary U/D gear ratio NO: Output speed	300 rpm or more at Output speed 1,000 rpm
TT TT: Turbine Torque	900 Nm or more
NT	250 rpm or more
NC	250 rpm or more
NO	250 rpm or more

ON malfunction (D):

ECM selected gear	4th
Temporary MAIN gear	1st or 2nd or 3rd or 4th
NT - NC x Temporary MAIN gear ratio NT: Input (turbine) speed NC: Intermediate shaft speed	100 rpm or more at Intermediate shaft speed 1,000 rpm
Temporary U/D gear	Low
NC - NO x Temporary U/D gear ratio NO: Output speed	300 rpm or more at Output speed 1,000 rpm
TT TT: Turbine Torque	189 Nm or more
NT	250 rpm or more
NC	250 rpm or more
NO	250 rpm or more

ON malfunction (E):

ECM selected gear	5th
Temporary MAIN gear	1st or 2nd or 3rd or 4th
NT - NC x Temporary MAIN gear ratio NT: Input (turbine) speed NC: Intermediate shaft speed	100 rpm or more at Intermediate shaft speed 1,000 rpm
Temporary U/D gear	High
NC - NO x Temporary U/D gear ratio NO: Output speed	300 rpm or more at Output speed 1,000 rpm
TT TT: Turbine Torque	189 Nm or more
NT	250 rpm or more

NC	250 rpm or more
NO	250 rpm or more

TYPICAL MALFUNCTION THRESHOLDS

[ON malfunction]
Detection condition: Total accumulated time of ON malfunctions (a), (b), (c), (d) and (e) is 0.5 second or more

ON malfunction (A):

NT - NC x 1st gear ratio	100 rpm or more at Intermediate shaft speed 1,000 rpm
NC - NO x Low gear ratio	300 rpm or more at Output speed 1,000 rpm
Duration	1 sec. or more
Shift Solenoid valve SL1 Performance	Not performance malfunction

ON malfunction (B):

NT - NC x 2nd gear ratio	100 rpm or more at Intermediate shaft speed 1,000 rpm
NC - NO x Low gear ratio	300 rpm or more at Output speed 1,000 rpm
Duration	1 sec. or more
Shift Solenoid valve SL1 Performance	Not performance malfunction

ON malfunction (C):

NT - NC x 3rd gear ratio	100 rpm or more at Intermediate shaft speed 1,000 rpm
NC - NO x Low gear ratio	300 rpm or more at Output speed 1,000 rpm
Duration	1 sec. or more
Shift Solenoid valve SL1 Performance	Not performance malfunction

ON malfunction (D):

NT - NC x 4th gear ratio	100 rpm or more at Intermediate shaft speed 1,000 rpm
NC - NO x Low gear ratio	300 rpm or more at Output speed 1,000 rpm
Duration	1 sec. or more
Shift Solenoid valve SL1 Performance	Not performance malfunction

ON malfunction (E):

NT - NC x 4th gear ratio	100 rpm or more at Intermediate shaft speed 1,000 rpm
NC - NO x High gear ratio	300 rpm or more at Output speed 1,000 rpm
Duration	1 sec. or more
Shift Solenoid valve SL1 Performance	Not performance malfunction

AX

INSPECTION PROCEDURE

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

(a) Connect the OBD II scan tool or intelligent tester together with the CAN VIM (controller area network vehicle interface module) to the DLC3.
(b) Turn the ignition switch to the ON position and turn the OBD II scan tool or the intelligent tester main switch ON.
(c) When you use intelligent tester:
Select the item "DIAGNOSIS / ENHANCED OBD II / DTC INFO / CURRENT CODES"
(d) Read the DTCs using the OBD II scan tool or the intelligent tester.

Result

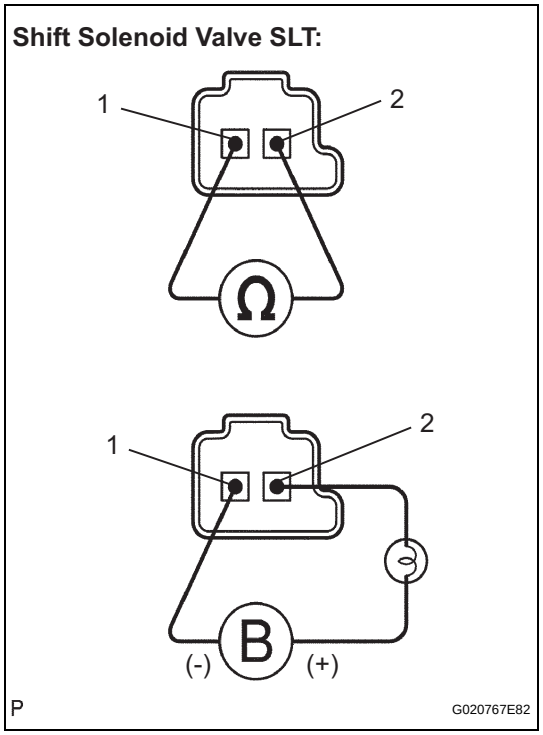
Result	Proceed to
P2714	A
P2714 and other DTCs	B

HINT:
If any other codes besides "P2714" are output, perform the 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 according to the value(s) in the table below.
Standard resistance

Tester Connection	Specified Condition 20°C (68°F)
1-2	5.0 to 5.6 Ω

(c) Connect the positive (+) lead with a 21 W bulb to terminal 2 and the negative (-) lead to terminal 1 of the solenoid valve connector, then check the movement of the valve.
OK:
The solenoid makes an operating sound.

NG → **REPLACE SHIFT SOLENOID VALVE SLT**

OK

3 INSPECT 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

OK:
The torque converter clutch operates normally.

AX

NG → **REPLACE TORQUE CONVERTER CLUTCH ASSEMBLY**

OK

REPAIR OR REPLACE AUTOMATIC TRANSAXLE ASSEMBLY