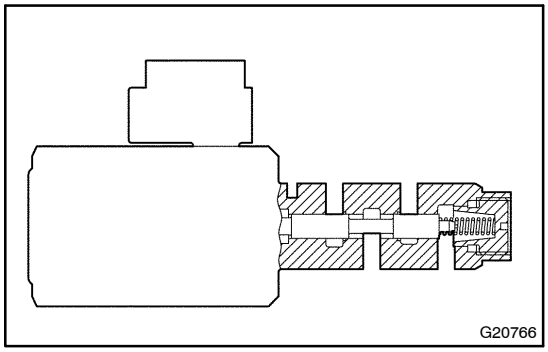
DTC	P2757	TORQUE CONVERTER CLUTCH PRESSURE CONTROL SOLENOID PERFORMANCE (SHIFT SOLENOID VALVE SLU)



SYSTEM DESCRIPTION

The ECM uses the signals from the throttle position sensor and air–flow meter to monitor the engagement condition of the lock–up clutch.

Then the ECM compares the engagement condition of the lock–up clutch with the lock–up schedule in the ECM memory to detect mechanical trouble of the shift solenoid valve SLU, valve body, torque converter clutch and automatic transmission assembly (clutch, brake or gear etc.).

DTC No.	DTC Detecting Condition	Trouble Area
P2757	Lock–up does not occur when driving in the lock–up range (normal driving at 80 km/h [50 mph]), or lock–up remains ON in the lock–up OFF range. (2–trip detection logic)	• Shift solenoid valve SLU is stuck open or closed • Valve body is blocked up or stuck • Lock–up clutch • Automatic transmission assembly

MONITOR DESCRIPTION

The ECM controls the oil pressure to the lock–up clutch based on engine–load information from the throttle position sensor, crankshaft position sensor, input speed sensor, and the oil pressure sensor for shift–solenoid SLU. The ECM commands the shift–solenoid SLU using a duty–cycle control signal. In turn, the shift solenoid operates the lock–up control valve and causes lock–up or flexible lock–up of the torque converter clutch.

To monitor the condition of the lock up clutch, the ECM monitors the signals from the input speed sensor, crank position sensor, the throttle position sensor, and air flow meter. The ECM uses this information to determine when the vehicle's torque converter clutch should be locked–up. 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 torque converter clutch locked below the minimum lock–up speed, it will illuminate the MIL and store the DTC.

MONITOR STRATEGY

Related DTCs	P2757: Shift solenoid valve SLU/OFF malfunction Shift solenoid valve SLU/ON malfunction
Required sensors/Components	Shift solenoid valve SLU, Valve body, Vehicle speed sensor, Throttle position sensor, Speed sensor (NT), Speed sensor (NO)
Frequency of operation	Continuous
Duration	OFF malfunction: 2 sec. ON malfunction: 1.8 sec.
MIL operation	2 driving cycles
Sequence of operation	None

TYPICAL ENABLING CONDITIONS

The following items are common to all conditions below: OFF malfunction and ON malfunction

The monitor will run whenever this DTC is not present.	See page 05–723
Turbine speed sensor (NT) circuit Output speed sensor (NO) circuit Shift solenoid ”A” (S1) circuit Shift solenoid ”B” (S2) circuit Shift solenoid ”E” (SR) circuit Pressure control solenoid ”B” (SL2) circuit Torque converter clutch pressure control solenoid circuit KCS sensor circuit 1 – 2 shift valve	There is no malfunction in the sensor circuits shown on the left
ETCS (Electric throttle control system)	Not system down
Transmission shift position	”D”
ECM selected gear	4th or 5th
ECT	40°C (104°F) or more
Spark advance from Max. retard timing by KCS control	0° CA or more
Engine	Running
Vehicle speed	25 km/h (16 mph) or more
Transfer neutral position switch	OFF
Transfer range	”High” *1

Transfer range ”HIGH” *1 (This condition is applied to only 4WD)

*1: Following conditions are met

Vehicle speed sensor ”A” circuit Output speed sensor circuit	There is no malfunction in the sensor circuits shown on the left
Transfer output speed	143 rpm or more
NO/NOtf (Transfer input speed/Transfer output speed)	0.93 or more and Less than 1.1

OFF malfunction

ECM lock – up command	ON (SLU pressure: 513 kPa or more)
Vehicle speed	Less than 100 km/h (62 mph)

ON malfunction

ECM lock – up command	OFF (SLU pressure: less than 4 kPa)
Throttle valve opening angle	9% or more
Vehicle speed	Less than 60 km/h (38 mph)

TYPICAL MALFUNCTION THRESHOLDS

OFF malfunction

Engine speed – Turbine speed	70 rpm or more

ON malfunction

2 detections are necessary per driving cycle:

1st detection; temporary flag ON

2nd detection; pending fault code ON

Vehicle speed must be under 10 km/h (6 mph) once before 2nd detection.

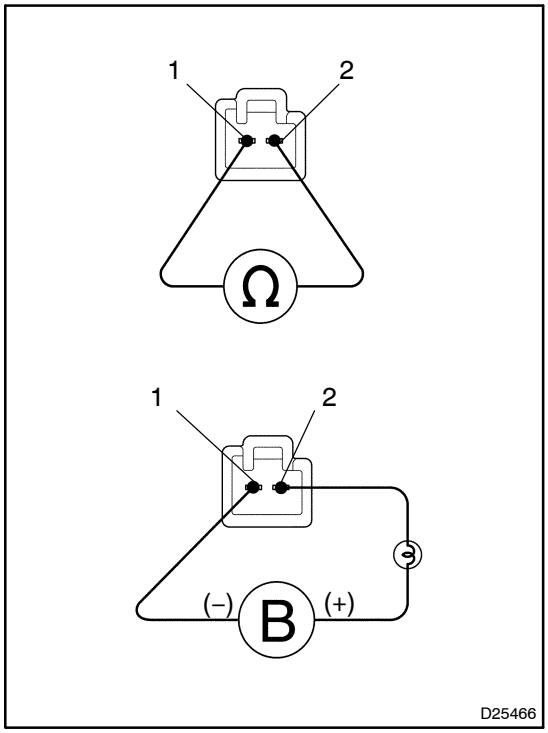
|Engine speed – Turbine speed|	Less than 35 rpm

COMPONENT OPERATING RANGE

Speed sensor (NT)	Input speed is equal to engine speed when lock–up is ON.

INSPECTION PROCEDURE

1 INSPECT SHIFT SOLENOID VALVE(SLU)



(a) Remove the shift solenoid valve SLU.
(b) Measure the resistance between terminals.
OK:
Resistance: 5.0 to 5.6 Ω at 20°C (68°F)
(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 noise.

NG → **REPLACE SHIFT SOLENOID VALVE (SLU) (See page 40–31)**

OK

2 INSPECT TRANSMISSION VALVE BODY ASSY (See page 40–31)

NG → **REPAIR OR REPLACE TRANSMISSION VALVE BODY ASSY (See page 40–31)**

OK

3 INSPECT TORQUE CONVERTER CLUTCH ASSY (See page 40–24)

OK → **REPAIR OR REPLACE AUTOMATIC TRANSMISSION ASSY (See page 40–13)**

NG

REPLACE TORQUE CONVERTER CLUTCH ASSY (See page 40–13)