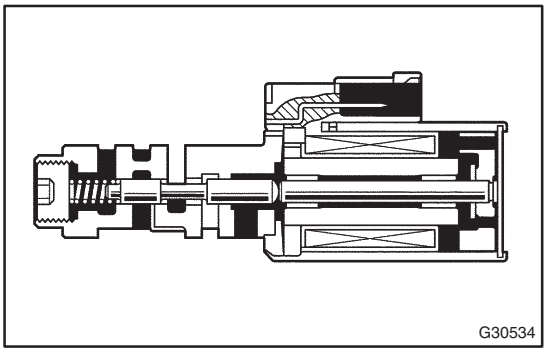
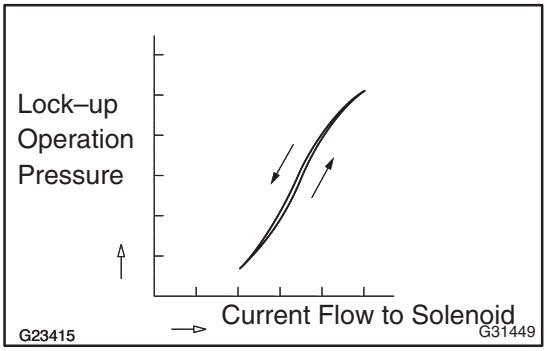
DTC	P2757	TORQUE CONVERTER CLUTCH PRESSURE CONTROL SOLENOID PERFORMANCE (SHIFT SOLENOID VALVE SLU)


G30534

SYSTEM DESCRIPTION

The ECM uses the signals from the throttle position sensor, Air–flow meter, turbine (input) speed sensor, output speed sensor and crankshaft position sensor 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 a mechanical problems of the shift solenoid valve SLU, valve body and torque converter clutch.



DTC No.	DTC Detection 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 remains open or closed • Valve body is blocked • Torque converter clutch • Automatic transmission (clutch, brake or gear, etc.) • Line pressure is too low

MONITOR DESCRIPTION

Torque converter lock–up is controlled by the ECM based on the turbine (input) speed sensor NT, output speed sensor SP2, engine rpm, engine load, engine temperature, vehicle speed, transmission temperature, and gear selection. The ECM determines the lock–up status of the torque converter by comparing the engine rpm (NE) to the input turbine rpm (NT). The ECM calculates the actual transmission gear by comparing input turbine rpm (NT) to output shaft rpm (SP2). When conditions are appropriate, the ECM requests ”lock–up” by applying control voltage to the shift solenoid SLU. When the SLU is turned on, it applies pressure to the lock–up relay valve and locks the torque converter clutch.

If the ECM detects no lock–up after lock–up has been requested or if it detects lock–up when it is not requested, the ECM interprets this as a fault in the shift solenoid valve SLU or lock–up system performance. The ECM will turn on the MIL and store the DTC.

Example:

When any of the following is met, the system judges it as a malfunction.

(a) There is a difference in rotation between the input side (engine speed) and output side (input turbine speed) of the torque converter when the ECM commands lock–up.
(Engine speed is at least 70 rpm greater than input turbine speed.)

(b) There is no difference in rotation between the input side (engine speed) and output side (input turbine speed) of the torque converter when the ECM commands lock–up off.
(The difference between engine speed and input turbine speed is less than 35 rpm.)

INSPECTION PROCEDURE

HINT:

Performing the Intelligent Tester II Active Test allows relay, Vacuum Switching Valve (VSV), actuator and other items to be operated without removing any parts. Performing the Active Test early in troubleshooting is one way to shorten labor time. The Data List can be displayed during the Active Test.

(a) Warm up the engine.
(b) Turn the ignition switch off.
(c) Connect the Intelligent Tester II to the DLC3.
(d) Turn the ignition switch to the ON position.
(e) Turn on the tester.
(f) Select the item ”Enter / Power train / Engine and ECT / Active Test”.
(g) Follow the instructions on the tester and read the Active Test.

Item	Test Details	Diagnostic Note
Control the Lock Up	[Test Details] Control the shift solenoid SLU to set the automatic transmission to the lock–up condition. [Vehicle Condition] • Throttle valve opening angle: Less than 35% • Vehicle Speed: 60 km/h (37 mph) or more	Possible to check the SLU operation.

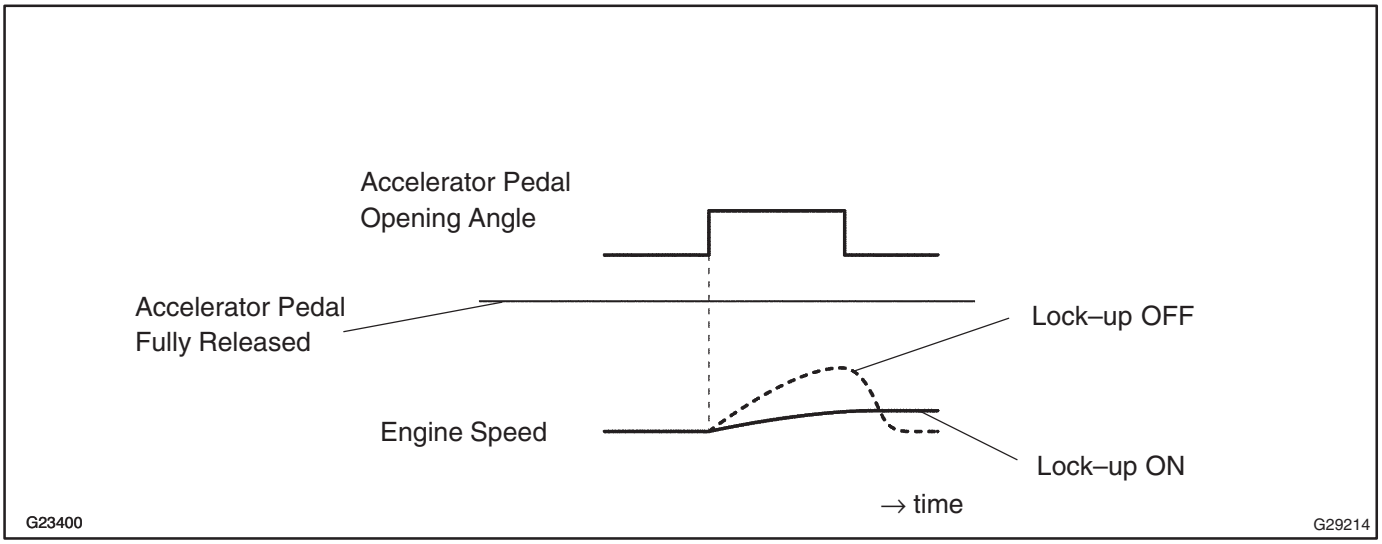
HINT:

- This test can be conducted when the vehicle speed is 60 km/h (37 mph) or more.
- This test can be conducted in the 5th gear.

(h) Lightly depress the accelerator pedal and check that the engine speed does not change abruptly.

HINT:

- When changing the accelerator pedal opening angle while driving, if the engine speed does not change, lock–up is on.
- Slowly release, but not fully, the accelerator pedal in order to decelerate. (Fully releasing the pedal will close the throttle valve and lock–up may be turned off automatically.)



1 CHECK OTHER DTCS OUTPUT(IN ADDITION TO DTC P2757)

(a) Connect the Intelligent Tester II to the DLC3.
(b) Turn the ignition switch to the ON position.
(c) Turn on the tester.
(d) Select the item ”Power train / Engine and ECT / DTC / Current or Pending”.
(e) Read the DTCs using the Intelligent Tester II.

Result:

Display (DTC output)	Proceed to
Only ”P2757” is output	A
”P2757” and other DTCs	B

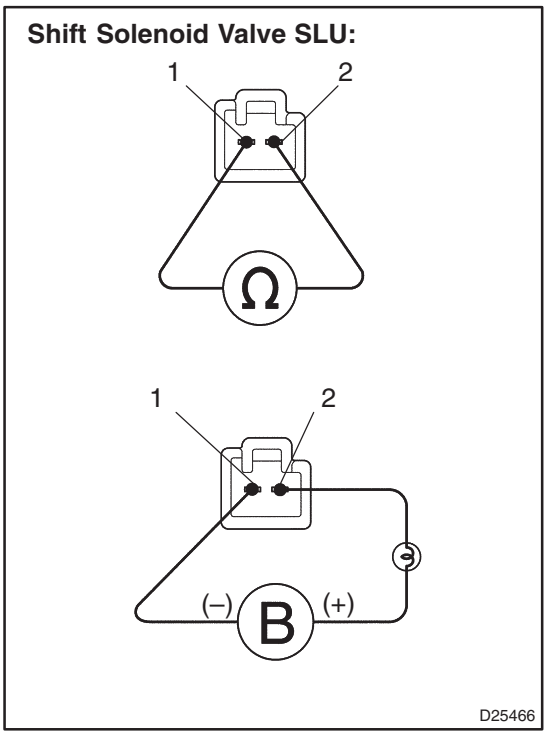
HINT:
If any other codes besides ”P2757” are output, perform troubleshooting for those DTCs first.

B → **GO TO DTC CHART (SEE PAGE 05–1052)**

A

2 INSPECT SHIFT SOLENOID VALVE(SLU)

Shift Solenoid Valve SLU:



(a) Remove the shift solenoid valve SLU.
(b) Measure the resistance according to the value(s) in the table below.

Standard:

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(SLU)**

OK

3	INSPECT TRANSMISSION VALVE BODY ASSY (SEE PAGE 40–71)

OK:

There are no foreign objects on each valve.

NG	REPAIR OR REPLACE TRANSMISSION VALVE BODY ASSY

OK

4	INSPECT TORQUE CONVERTER CLUTCH ASSY (SEE PAGE 40–64)

OK:

The torque converter clutch operates normally.

OK	REPAIR OR REPLACE AUTOMATIC TRANSMISSION ASSY (SEE PAGE 40–53)

NG

REPLACE TORQUE CONVERTER CLUTCH ASSY