DTC	P2769	TORQUE CONVERTER CLUTCH SOLENOID CIRCUIT LOW (SHIFT SOLENOID VALVE DSL)

DTC	P2770	TORQUE CONVERTER CLUTCH SOLENOID CIRCUIT HIGH (SHIFT SOLENOID VALVE DSL)

CIRCUIT DESCRIPTION

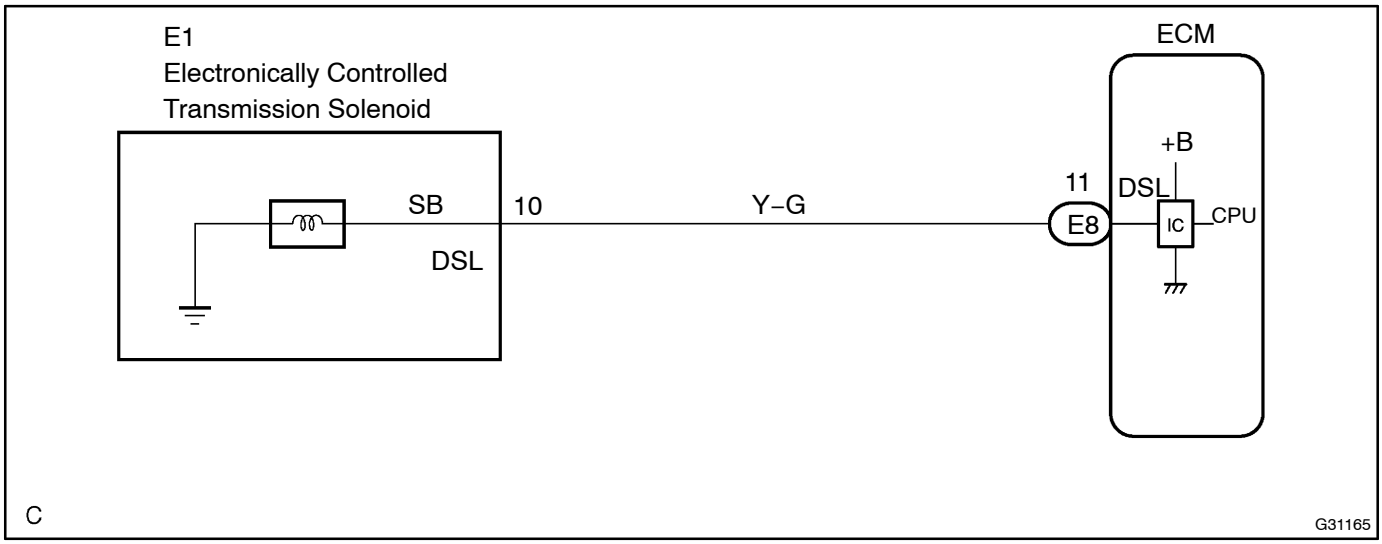
The shift solenoid valve DSL is turned ”ON” and ”OFF” by signals from the ECM in order to control the hydraulic pressure operation, the lock–up relay valve, which then the controls operation of the lock–up clutch.

DTC No.	DTC Detection Condition	Trouble Area
P2769	ECM detects short in solenoid valve DSL circuit (0.1 sec.) when solenoid valve DSL is operated (2–trip detection logic)	• Short in shift solenoid valve DSL circuit • Shift solenoid valve DSL • ECM
P2770	ECM detects open in solenoid valve DSL circuit (0.1 sec.) when solenoid valve DSL is not operated (2–trip detection logic)	• Open in shift solenoid valve DSL circuit • Shift solenoid valve DSL • ECM

MONITOR DESCRIPTION

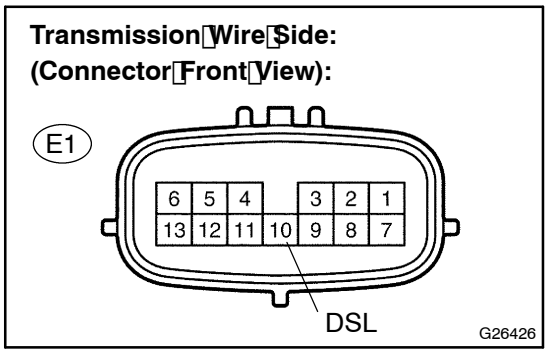
Torque converter lock–up is controlled by the ECM based on engine rpm, engine load, engine temperature, vehicle speed, transmission temperature, and shift range selection. The ECM determines the lock–up status of the torque converter by comparing the engine rpm (NE) to the input turbine rpm (NT). The ECM calculates the actual transmission gear by comparing input turbine rpm (NT) to counter gear rpm (NC). When conditions are appropriate, the ECM requests ”lock–up” by applying control voltage to shift solenoid DSL. When the DSL is opened, solenoid DSL applies pressure to the lock–up relay valve and locks the torque converter clutch. If the ECM detects an open or short in the DSL solenoid circuit, the ECM interprets this as a fault in the DSL solenoid or circuit. The ECM will turn on the MIL and store the DTC.

WIRING DIAGRAM



INSPECTION PROCEDURE

1 INSPECT TRANSMISSION WIRE(DSL)



(a) Disconnect the transmission wire connector from the transaxle.

(b) Measure the resistance according to the value(s) in the table below.

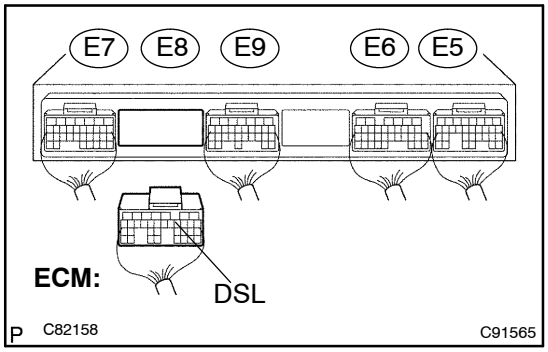
Standard:

Tester Connection	Specified Condition 20°C (68°F)
10 – Body ground	11 to 13 Ω

NG → **Go to step 3**

OK

2 CHECK HARNESS AND CONNECTOR(TRANSMISSION WIRE – ECM)



(a) Connect the transmission wire connector.

(b) Disconnect the ECM connector.

(c) Measure the resistance according to the value(s) in the table below.

Standard:

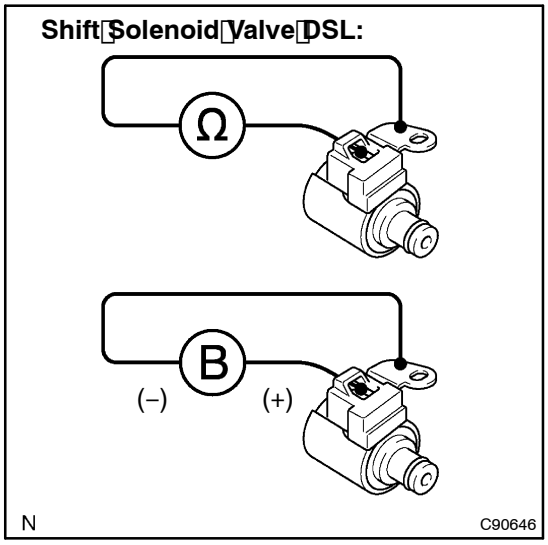
Tester Connection	Specified Condition 20°C (68°F)
E8 – 11 (DSL) – Body ground	11 to 13 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR (SEE PAGE 01–33)**

OK

REPLACE ECM (SEE PAGE 10–13)

3 INSPECT SHIFT SOLENOID VALVE (DSL)



(a) Remove the shift solenoid valve (DSL).

(b) Measure the resistance according to the value(s) in the table below.

Standard:

Tester Connection	Specified Condition 20°C (68°F)
Solenoid Connector (DSL) – Solenoid Body (DSL)	11 to 13 Ω

(c) Connect positive (+) lead to the terminal of solenoid connector, negative (–) lead to the solenoid body.

OK:

The solenoid valve makes an operating noise.

NG → **REPLACE SHIFT SOLENOID VALVE (DSL)**

OK

REPAIR OR REPLACE TRANSMISSION WIRE (SEE PAGE 40–21)