DTC P0770/64 SL SOLENOID VALVE MALFUNCTION

SYSTEM DESCRIPTION

The ECM uses the signals from the throttle position sensor, Air–flow meter 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 trouble of the shift solenoid valve DSL, valve body and torque converter clutch.

DTC No.	DTC Detection Condition	Trouble Area
P0770/64	Lock–up does not occur when driving in lock–up range (normal driving at 80 km/h [50 mph]), or lock–up remains ON in lock–up OFF range (2 trip detection logic)	• Open or short in shift solenoid valve DSL circuit • Shift solenoid valve DSL • Valve body blocked or stuck • Lock–up clutch • ECM

INSPECTION PROCEDURE

HINT:
Start the inspection from step 1 in case of using the hand–held tester and start from step 2 in case of not using hand–held tester.

1	PERFORM ACTIVE TEST BY HAND–HELD TESTER

(a) Warm up the engine.
(b) Turn the ignition switch OFF.
(c) Connect the Hand–held tester to the DLC3.
(d) Turn the ignition switch ON and push the Hand–held tester main SW ON.
(e) Select the item ”LOCK UP” in the ACTIVE TEST and operate the Lock–up solenoid valves on the Hand–held tester.

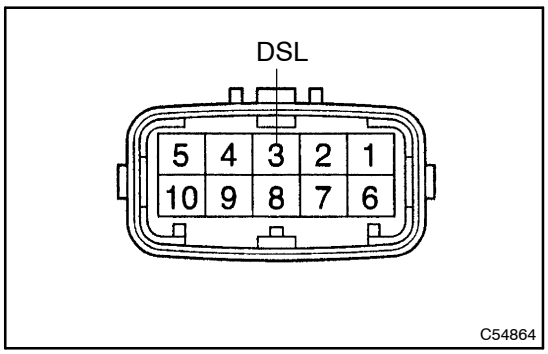
NOTICE:
The values given below for ”Normal Condition” are representative values, so a vehicle may still be normal even if its value differs from those listed here. Do not depend solely on the ”Normal Condition” here when deciding whether or not the part is faulty.

Item	Test Details	Diagnostic Note
LOCK UP	[Test Details] Control the shift solenoid DSL to set the ATM to the lock–up condition. [Vehicle Condition] Vehicle Speed: 58 km/h (36 mph) or more	Possible to check the DSL operation.

OK → CHECK AND REPLACE ECM(See page 01–31)

NG

2	INSPECT TRANSMISSION WIRE(DSL)

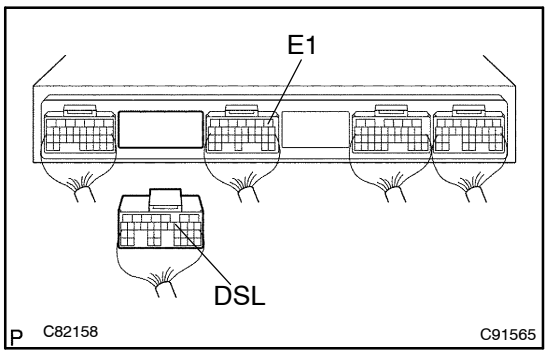


(a) Disconnect the solenoid connector from the transaxle.
(b) Measure resistance between the terminal 3 and the body ground.
OK:
Resistance: 11 – 13 Ω at 20 °C (68 °F)

NG → **Go to step 4**

OK

3	CHECK HARNESS AND CONNECTOR(TRANSMISSION WIRE – ECM)



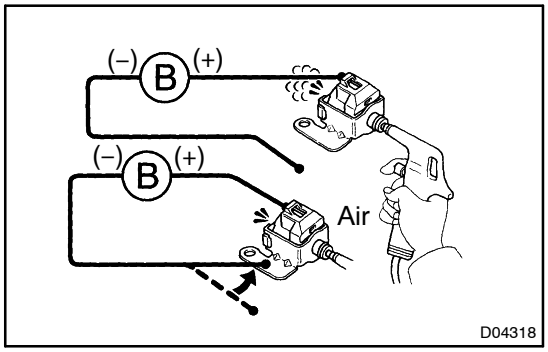
(a) Connect the transmission wire connector.
(b) Disconnect the ECM connector.
(c) Measure the resistance between terminals DSL and E1.
OK:
Resistance: 11 – 13 Ω at 20 °C (68 °F)

OK → **Go to step 4**

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR(See page 01–31)

4 INSPECT SHIFT SOLENOID VALVE DSL



(a) Remove the shift solenoid valve DSL.

(b) Applying 490 kPa (5 kgf/cm^2, 71 psi) of compressed air, check that the solenoid valve does not leak the air.

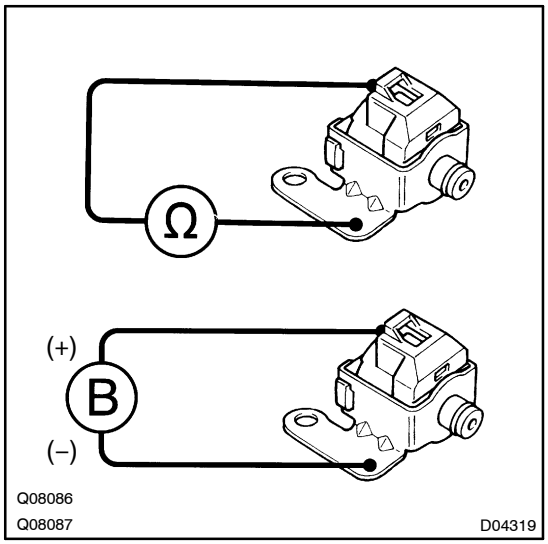
OK:

Solenoid valve does not leak air.

(c) When battery voltage is supplied to the shift solenoid valve, check that the valve opens.

OK:

Solenoid valve opens.



(d) Measure the resistance between the terminal DSL of shift solenoid valve and the solenoid body.

OK:

Resistance: 11 – 13 Ω at 20 °C (68 °F)

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

OK:

The solenoid valve makes operation noise.

NG → **REPLACE SHIFT SOLENOID VALVE DSL**

OK

5 CHECK TRANSMISSION WIRE(See page 01–31)

NG → **REPAIR OR REPLACE TRANSMISSION WIRE (See page 40–32)**

OK

6 INSPECT TRANSMISSION VALVE BODY ASSY

NG → **REPAIR OR REPLACE TRANSMISSION VALVE BODY ASSY(See page 40–35)**

OK

7	INSPECT TORQUE CONVERTER CLUTCH ASSY(See page 40–26)

NG → REPLACE TORQUE CONVERTER CLUTCH ASSY

OK

REPAIR AUTOMATIC TRANSAXLE ASSY(See page 40–8, 40–14 or 40–20)