DTC	P0973	SHIFT SOLENOID ”A” CONTROL CIRCUIT LOW (SHIFT SOLENOID VALVE S1)

DTC	P0974	SHIFT SOLENOID ”A” CONTROL CIRCUIT HIGH (SHIFT SOLENOID VALVE S1)

CIRCUIT DESCRIPTION

Shifting from 1st to 5th is performed in combination with ”ON” and ”OFF” operation of the shift solenoid valves SL1, SL2, S1, S2 and SR which are controlled by the ECM. If an open or short circuit occurs in either of the shift solenoid valves, the ECM controls the remaining normal shift solenoid valves to allow the vehicle to be operated smoothly (see page 05–1045).

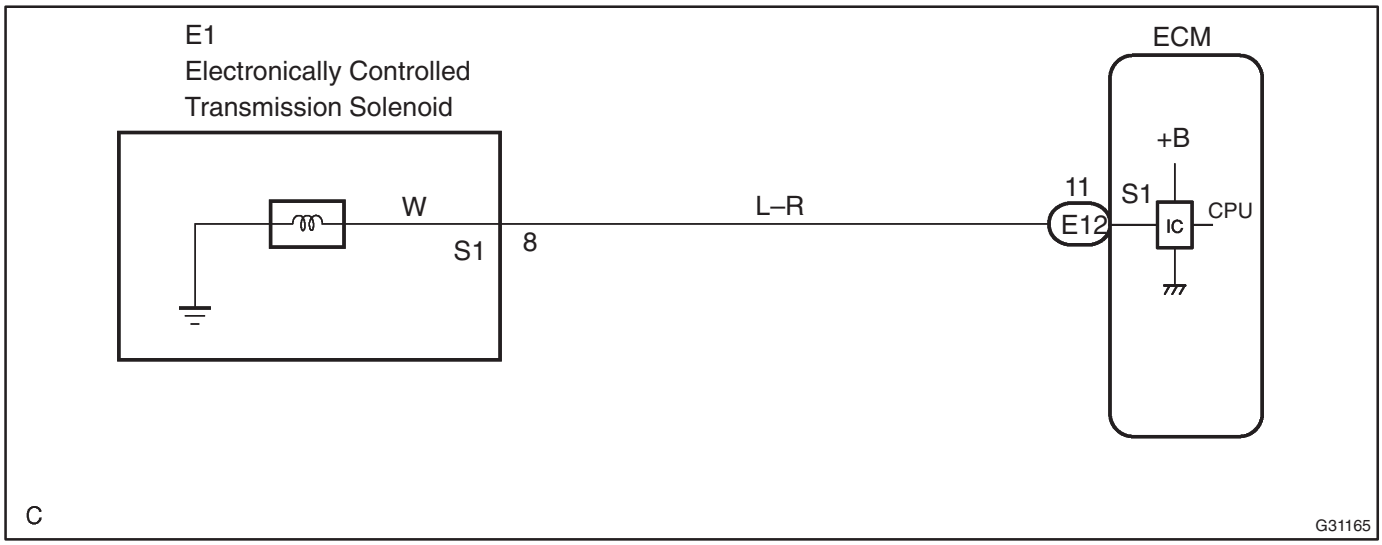
DTC No.	DTC Detection Condition	Trouble Area
P0973	ECM detects short in solenoid valve S1 circuit 2 times when solenoid valve S1 is operated (1–trip detection logic)	• Short in shift solenoid valve S1 circuit • Shift solenoid valve S1 • ECM
P0974	ECM detects open in solenoid valve S1 circuit 2 times when solenoid valve S1 is not operated (1–trip detection logic)	• Open in shift solenoid valve S1 circuit • Shift solenoid valve S1 • ECM

MONITOR DESCRIPTION

These DTCs indicate an open or short in the shift solenoid valve S1 circuit. When there is an open or short circuit in any shift solenoid valve circuit, the ECM detects the problem and illuminates the MIL and stores the DTC. When the shift solenoid valve S1 is on, if resistance is 8 Ω or less, the ECM determines there is a short in the shift solenoid valve S1 circuit.

When the shift solenoid valve S1 is off, if resistance is 100 kΩ or more, the ECM determines there is an open in the shift solenoid valve S1 circuit (see page 05–1045).

WIRING DIAGRAM



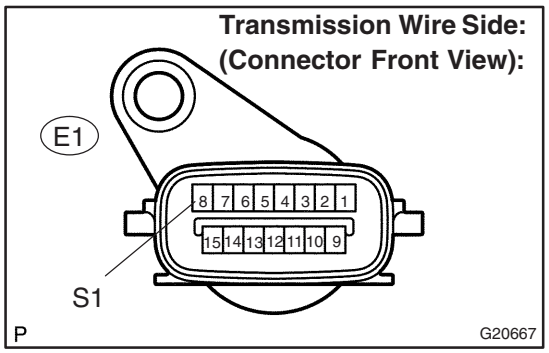
INSPECTION PROCEDURE

HINT:

- The shift solenoid valve S1 is turned on/off normally when the shift lever is in the D position:

ECM command gearshift	1st	2nd	3rd	4th	5th
Shift solenoid valve S1	ON	ON	OFF	OFF	OFF

1 INSPECT TRANSMISSION WIRE(S1)



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

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

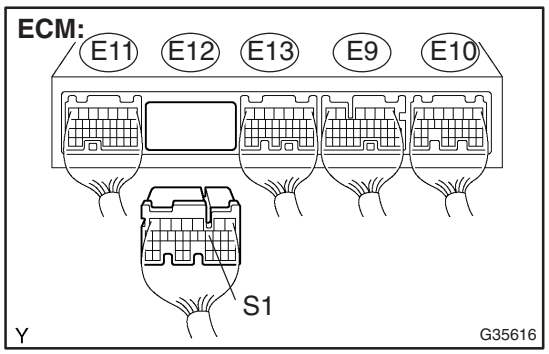
Standard:

Tester Connection	Specified Condition 20°C (68°F)
8 – Body ground	11 to 15 Ω

NG → **Go to step 3**

OK

2 CHECK HARNESS AND CONNECTOR(TRANSMISSION WIRE – ECM)



(a) Connect the transmission connector to the transmission.

(b) Disconnect the connector from the ECM.

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

Standard:

Tester Connection	Specified Condition 20°C (68°F)
E12 – 11 (S1) – Body ground	11 to 15 Ω

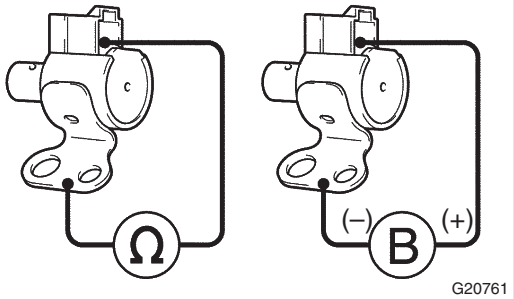
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR (SEE PAGE 01–36)**

OK

REPLACE ECM

3 INSPECT SHIFT SOLENOID VALVE(S1)

Shift Solenoid Valve S1:



(a) Remove the shift solenoid valve S1.

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

Standard:

Tester Connection	Specified Condition 20°C (68°F)
Solenoid Connector (S1) – Solenoid Body (S1)	11 to 15 Ω

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

OK:

The solenoid makes an operating sound.

NG → **REPLACE SHIFT SOLENOID VALVE(S1)**

OK

REPAIR OR REPLACE TRANSMISSION WIRE (SEE PAGE 40–68)