DTC	P0771	SHIFT SOLENOID ”E” PERFORMANCE (SHIFT SOLENOID VALVE SR)

SYSTEM DESCRIPTION

The ECM uses signals from the output shaft speed sensor and input speed sensor to detect the actual gear position (1st, 2nd, 3rd, 4th or 5th gear).
Then the ECM compares the actual gear with the shift schedule in the ECM memory to detect mechanical problems of the shift solenoid valves, valve body or automatic transmission (clutch, brake or gear, etc.).

DTC No.	DTC Detection Condition	Trouble Area
P0771	The gear required by the ECM does not match the actual gear when driving (2–trip detection logic)	• Shift solenoid valve SR remains open or closed • Shift solenoid valve SL1 remains open or closed • Valve body is blocked • Automatic transmission (clutch, brake or gear, etc.)

MONITOR DESCRIPTION

This DTC indicates ”stuck ON malfunction” or ”stuck OFF malfunction” of the shift solenoid valve SR or SL1. The ECM commands gear shifts by turning the shift solenoid valves ”ON/OFF”. When the gear position commanded by the ECM and the actual gear position are not the same, the ECM illuminates the MIL and stores the DTC.

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.

HINT:

While driving, the shift position can be forcibly changed with the Intelligent Tester II.

Comparing the shift position commanded by the ACTIVE TEST with the actual shift position enables you to confirm the problem (see page 05–1045).

Item	Test Details	Diagnostic Note
Control the Shift Position	[Test Details] Operate the shift solenoid valve and set the each shift position by yourself. [Vehicle Condition] • IDL: ON • Less than 50 km/h (31 mph) [Others] • Press ”→” button: Shift up • Press ”←” button: Shift down	Possible to check the operation of the shift solenoid valves.

HINT:

- This test can be conducted when the vehicle speed is 50 km/h (31 mph) or less.
- The 4th to 5th up–shiftings must be performed with the accelerator pedal released.
- The 5th to 4th down–shiftings must be performed with the accelerator pedal released.
- Do not operate the accelerator pedal for at least 2 seconds after shifting and do not shift successively.
- The shift position commanded by the ECM is shown in the DATA LIST (Shift Status) display on the Intelligent Tester II.
- The shift solenoid valve SR and SL1 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 SR	OFF	OFF	OFF	OFF	ON
Shift solenoid valve SL1	OFF	OFF	OFF	OFF	ON

1 CHECK OTHER DTCS OUTPUT(IN ADDITION TO DTC P0771)

(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:

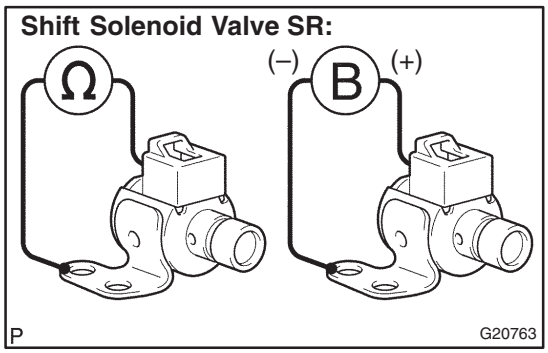
Display (DTC output)	Proceed to
Only ”P0771” is output	A
”P0771” and other DTCs	B

HINT:
If any other codes besides ”P0771” are output, perform troubleshooting for those DTCs first.

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

A

2 INSPECT SHIFT SOLENOID VALVE(SR)



(a) Remove the shift solenoid valve S2.
(b) Measure the resistance according to the value(s) in the table below.

Standard:

Tester Connection	Specified Condition 20°C (68°F)
Solenoid Connector (SR) – Solenoid Body (SR)	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:

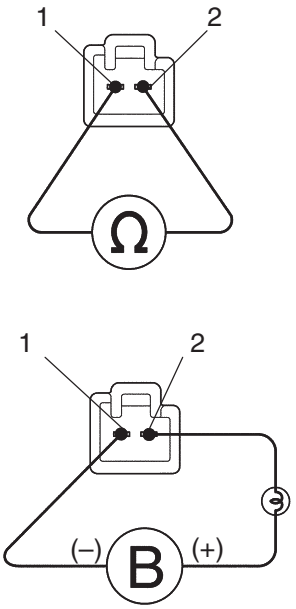
The solenoid makes an operating sound.

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

OK

3 INSPECT SHIFT SOLENOID VALVE(SL1)

Shift Solenoid Valve SL1:



(a) Remove the shift solenoid valve SL1.

(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(SL1)**

OK

4 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

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