DTC P0756 Shift Solenoid "B" Performance (Shift Solenoid Valve S2)

for Preparation Click here

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, 5th or 6th 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 and automatic transmission (clutch, brake, gear, etc.).

DTC Code	DTC Detection Condition	Trouble Area
P0756	S2 stuck ON malfunction*1: Shifting to 3rd and 5th gears is impossible. The ECM determines there is a malfunction when the following conditions are both met (2-trip detection logic): (a) When the ECM directs the transmission to switch to 5th gear, the actual gear is shifted to 6th. (b) When the ECM directs the transmission to switch to 6th gear, the actual gear is shifted to 6th.	• Shift solenoid valve S2 remains closed • Valve body is blocked • Automatic transmission (clutch, brake, gear, etc.)
P0756	S2 stuck OFF malfunction*2: The vehicle starts in 3rd gear and shifting to 6th gear is impossible. The ECM determines there is a malfunction when the following conditions are both met (2-trip detection logic): (a) When the ECM directs the transmission to switch to 1st gear, the actual gear is shifted to 3rd. (b) When the ECM directs the transmission to switch to 6th gear, the actual gear is shifted to 5th.	• Shift solenoid valve S2 remains open • Shift solenoid valve SLT remains open or closed • Valve body is blocked • Automatic transmission (clutch, brake, gear, etc.)

HINT:

Gear positions in the event of a solenoid valve mechanical problem:

ECM gear shift command	1st	2nd	3rd	4th	5th	6th
*1: Actual gear position under S2 stuck ON malfunction	1st	2nd	2nd	4th	6th	6th
*2: Actual gear position under S2 stuck OFF malfunction	3rd	3rd	3rd	4th	5th	5th

MONITOR DESCRIPTION

This DTC indicates a "stuck ON malfunction" or "stuck OFF malfunction" of shift solenoid valve S2.
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

ACTIVE TEST

HINT:

Using the intelligent tester to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

a. Warm up the engine.

b. Turn the engine switch off.

c. Connect the intelligent tester to the DLC3.

d. Turn the engine switch on (IG).

e. Turn the intelligent tester on.

f. Enter the following menus: Powertrain / Engine and ECT / Active Test.

g. According to the display on the tester, perform the Active Test.

HINT:

While driving, the shift position can be forcibly changed with the intelligent tester.

Comparing the shift position commanded by the Active Test with the actual shift position enables you to confirm the problem (Click here).

Engine and ECT

Tester Display	Test Part	Control Range	Diagnostic Note
Control the Shift Position	Operate shift solenoid valves	• Press "→" button:	Possible to check operation of

	and set each shift position	• Shift up • Press "←" button: Shift down	the shift solenoid valves. [Vehicle Condition] 50 km/h (30 mph) or less

HINT:

- **This test can be conducted when the vehicle speed is 50 km/h (30 mph) or less.**
- **The 4th to 5th and 5th to 6th up-shifts must be performed with the accelerator pedal released.**
- **The 6th to 5th and 5th to 4th down-shifts 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 display on the tester.**
- **Shift solenoid valve S2 turns ON/OFF normally when the shift lever is in D.**

ECM gear shift command	1st	2nd	3rd	4th	5th	6th
Shift solenoid valve S2	ON	ON	OFF	OFF	OFF	ON

1.CHECK DTC OUTPUT (IN ADDITION TO DTC P0756)

a. Connect the intelligent tester to the DLC3.

b. Turn the engine switch on (IG).

c. Turn the intelligent tester on.

d. Enter the following menus: Powertrain / Engine and ECT / DTC.

e. Read the DTCs using the tester.

Result

Result	Proceed to
Only P0756 is output	A
P0756 and other DTCs are output	B

HINT:

If any other codes besides P0756 are output, perform troubleshooting for those DTCs first.

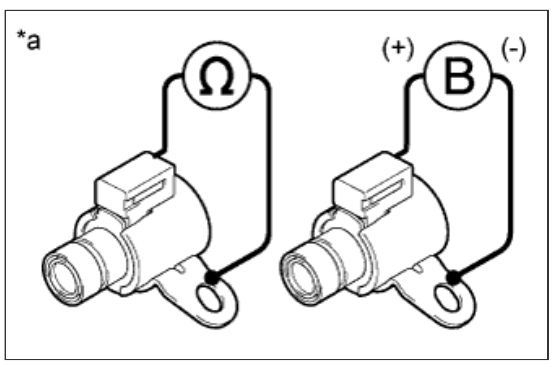
B → **GO TO DTC CHART (Click here)**

A

2.INSPECT SHIFT SOLENOID VALVE S2

a. Remove shift solenoid valve S2.

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



Standard Resistance:

Tester Connection	Condition	Specified Condition
Shift solenoid valve S2 connector terminal - Shift solenoid valve S2 body	20°C (68°F)	11 to 15 Ω

c. Apply 12 V battery voltage to the shift solenoid valve and check that the valve moves and makes an operating noise.

OK:

Measurement Condition	Specified Condition
• Battery positive (+) → Shift solenoid valve S2 connector • Battery negative (-) → Shift solenoid valve S2 body	Valve moves and makes an operating noise

Text in Illustration

*a	Component without harness connected (Shift Solenoid Valve S2)

NG → **REPLACE SHIFT SOLENOID VALVE S2 (Click here)**

OK

3.INSPECT TRANSMISSION VALVE BODY ASSEMBLY

a. Check the transmission valve body assembly.

OK:
There are no foreign objects on each valve.

NG → **REPAIR OR REPLACE TRANSMISSION VALVE BODY ASSEMBLY (Click here)**

OK

REPAIR OR REPLACE AUTOMATIC TRANSMISSION ASSEMBLY (Click here)