DTC	C1733/33	GATE SOLENOID VALVE CIRCUIT

DTC	C1734/34	LEVELING SOLENOID VALVE CIRCUIT

DTC	C1735/35	EXHAUST SOLENOID VALVE CIRCUIT

DTC	C1744/44	TANK SOLENOID VALVE CIRCUIT

CIRCUIT DESCRIPTION

The suspension control ECU opens the height control valve to lead the compressed air to the pneumatic cylinder and raise the vehicle height.
When the vehicle height is lowered, the suspension control ECU opens the height control valve to store the compressed air in the low pressure tank temporarily, and then operates the exhaust solenoid valve to release the compressed air to the outside.
Further, the height control solenoid valve (gate solenoid valve) opens and closes the passage between the right and left pneumatic cylinder.
The height control valve is on the low pressure tank and consists of 3 valves in total, leveling solenoid valve, gate solenoid valve and tank solenoid valve.
The leveling solenoid valve opens and close the passage between the compressor and the pneumatic cylinder. The gate solenoid valve opens and close the passage between the right and left pneumatic cylinder.
The tank solenoid valve opens and closes the passage between pneumatic cylinder and the low pressure tank. The exhaust solenoid valve is on the compressor unit and has only one valve.

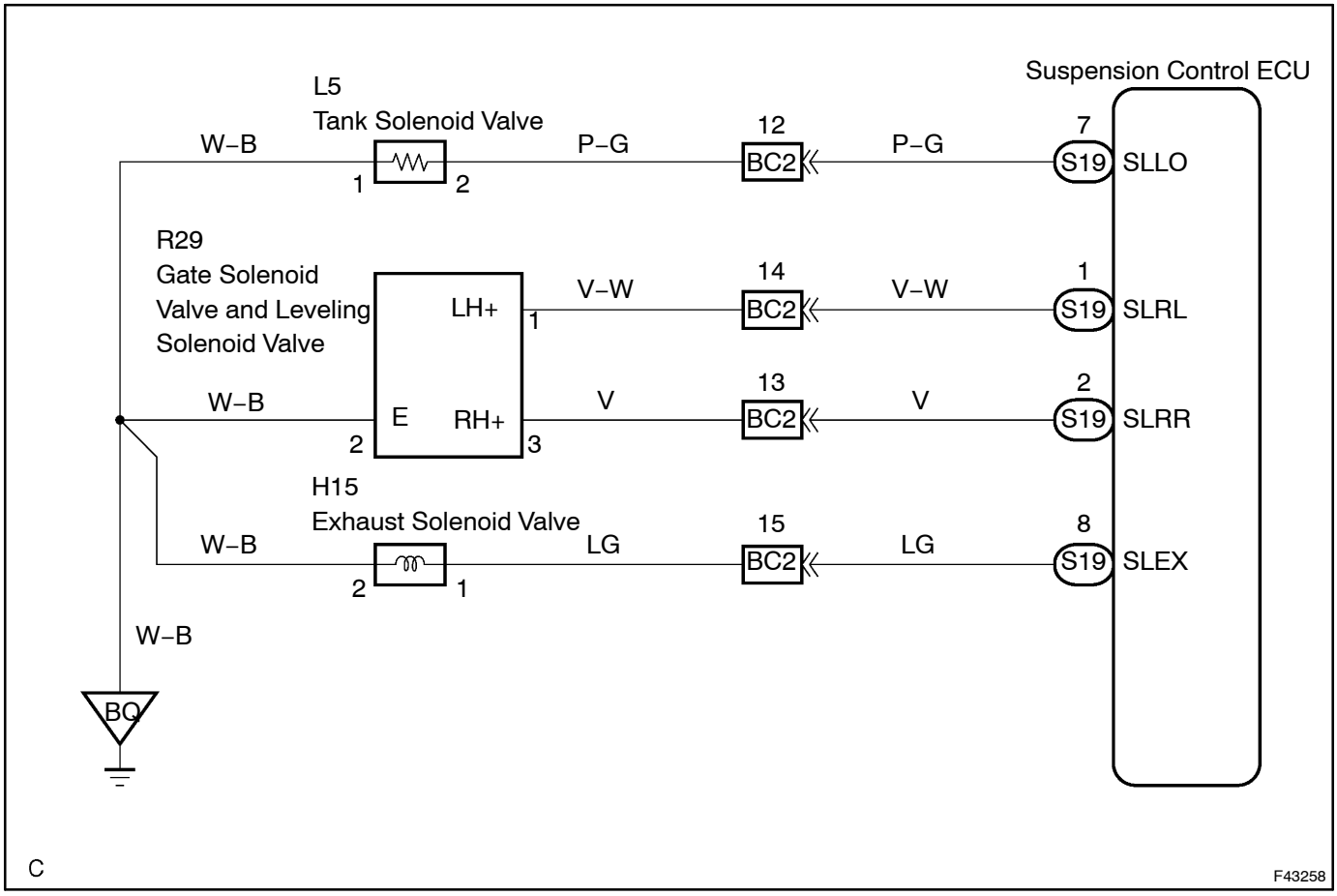
DTC No.	DTC Detecting Condition	Trouble Area
C1733/33	Either the condition 1 or 2. is detected: 1. With the height control solenoid valve (or exhaust solenoid valve) inactivated, an open signal of the height control solenoid valve is detected for 1 sec. or more. 2. With the height control solenoid valve (or exhaust solenoid valve) activated, a short signal of the valve is detected 8 times successively.	• Gate solenoid valve • Gate solenoid valve circuit • Suspension control ECU
C1734/34		• Leveling solenoid valve • Leveling solenoid valve circuit • Suspension control ECU
C1735/35		• Exhaust solenoid valve • Exhaust solenoid valve circuit • Suspension control ECU
C1744/44		• Tank solenoid valve • Tank solenoid valve circuit • Suspension control ECU

HINT:

- Once ECU stores DTC C1733/33, C1734/34, C1735/35 or C1744/44 in the memory, the vehicle height control is not carried out until a normal signal is input to ECU from the height control solenoid valves and the exhaust solenoid valve. However, the control is resumed if the ignition switch is turned OFF, then ON again.
- Malfunction in the gate solenoid valve and the leveling solenoid valve:
  The height control operation is suspended, and the height control indicator lamp dose not change by operating the height control switch.

- Malfunction in the exhaust solenoid valve:
  The vehicle height is lowered to the normal height within 30 sec., and then the height control operation is suspended. The height control indicator lamp ”N” comes on or blinks, and that of ”HI” and ”LO” do not come on by operating the height control switch ”UP” and ”DOWN”.
- Abnormality of the tank solenoid valve:
  Although the height control is still possible, the lowering speed may be slower.

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

- Proceed to troubleshooting following the flow chart, regardless of whether or not DTC C1733/33, C1734/34, C1735/35 or C1744/44 is displayed.
- If DTC C1761/61 (ECU malfunction) and/or C1774/74 (power source circuit) is displayed, perform the inspection necessary for DTC C1761/61 (See page 05–630) and/or C1774/74 (See page 05–632) first.
  (If DTC C1761/61 the and C1774/74 are output at the same time, perform the inspection necessary for DTC C1774/74 first.)
- Start the inspection from step 1 the in case of using the hand–held tester, and start from step 2 in the case of not using the hand–held tester.
- Since the exhaust solenoid valve cannot be tested in ACTIVE TEST, start the inspection from step 2.

1	PERFORM ACTIVE TEST BY HAND–HELD TESTER

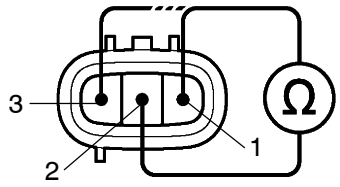
(a) Connect the hand–held tester to DLC3.
(b) Turn the ignition switch to ON, and turn the hand–held tester main switch to ON.
(c) Select the item ”LEVEL SOL REAR”, ”GATE SOL REAR”, ”LOW PRS TNK SOL” in the ACTIVE TEST, and operate it with the hand–held tester.
(d) Check whether the solenoid makes sound.
(e) Check whether the height control solenoid valve has a continuity (having vibration).
Standard:
The solenoid makes sound, and the height control solenoid valve has a continuity (having vibration).

OK → **CHECK AND REPLACE SUSPENSION CONTROL ECU (See page 01–36)**

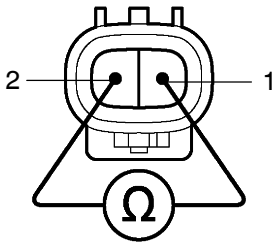
NG

2 INSPECT HEIGHT CONTROL SOLENOID VALVE OR EXHAUST SOLENOID VALVE

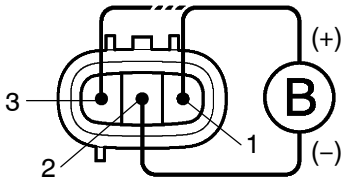
Gate Solenoid Valve:
Leveling Solenoid Valve:



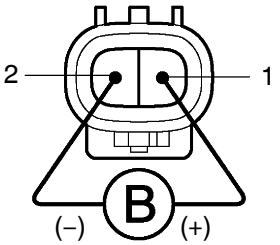
Exhaust Solenoid Valve:
Tank Solenoid Valve:



Gate Solenoid Valve:
Leveling Solenoid Valve:



Exhaust Solenoid Valve:
Tank Solenoid Valve:



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(a) Disconnect the valve connector.
(b) Measure resistance between terminals.

Standard:

Solenoid valve	Tester connection	Resistance
Gate solenoid valve	1 – 2	17.5 – 21.5 Ω
Leveling solenoid valve	2 – 3	10 – 14 Ω
Exhaust solenoid valve	1 – 2	10 – 14 Ω
Tank solenoid valve	1 – 2	10 – 14 Ω

HINT:
The height control solenoid valve has 2 connectors.

- The gate solenoid valve and the leveling solenoid valve have a 3–pole connector.
- Tank solenoid valve connector has a 2–pole connector.

(c) Check the operating sound of the valves when battery positive voltage is applied to the terminals as shown below.

Solenoid valve	Battery positive	Battery negative
Gate solenoid valve	1	2
Leveling solenoid valve	3	2
Exhaust solenoid valve	1	2
Tank solenoid valve	2	1

Standard:
It make an operating sound (click).

HINT:

- When a malfunction is found on the gate solenoid valve, the leveling valve or the tank solenoid valve, replace the height control reservoir assy.
- When a malfunction is found on the exhaust solenoid valve, replace the height control dryer assy.

NG → **REPLACE HEIGHT CONTROL RESERVOIR ASSY**

NG → **REPLACE HEIGHT CONTROL DRYER ASSY**

OK

3	CHECK HARNESS AND CONNECTOR(HEIGHT CONTROL SOLENOID VALVE OR EXHAUST SOLENOID VALVE – SUSPENSION CONTROL ECU)

(a) Check for open and short circuit in the harness and the connector between the height control solenoid valve or the exhaust solenoid valve and the suspension control ECU (See page 01–36).

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

CHECK AND REPLACE SUSPENSION CONTROL ECU (See page 01–36)