DTC	C1715/15	RIGHT FRONT ACCELERATION SENSOR CIRCUIT

DTC	C1716/16	LEFT FRONT ACCELERATION SENSOR CIRCUIT

DTC	C1717/17	REAR ACCELERATION SENSOR CIRCUIT

DTC	C1791/91	RIGHT FRONT ACCELERATION SENSOR CIRCUIT

DTC	C1792/92	LEFT FRONT ACCELERATION SENSOR CIRCUIT

DTC	C1793/93	REAR ACCELERATION SENSOR CIRCUIT

CIRCUIT DESCRIPTION

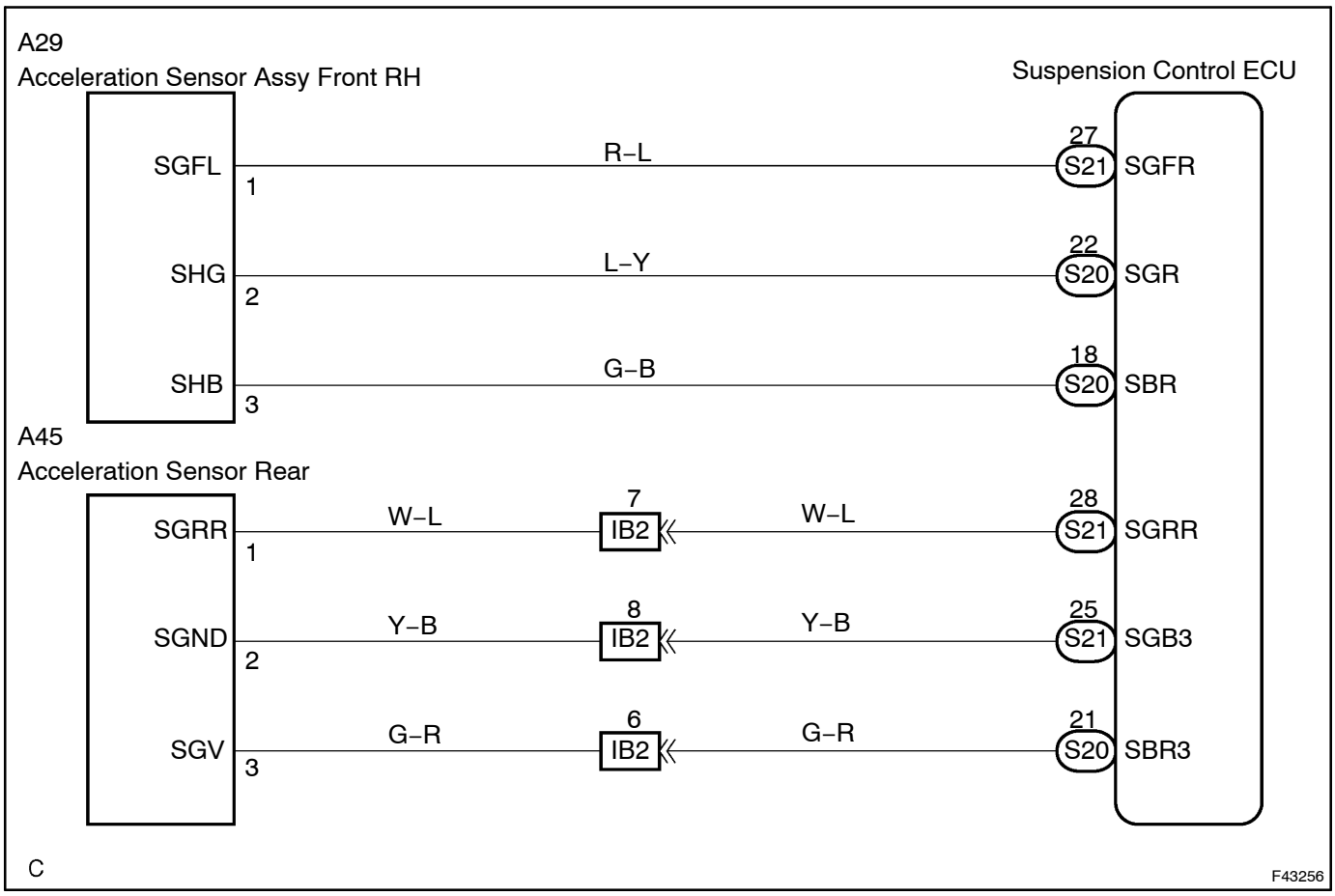
The acceleration sensor detect the up–and–down acceleration of the vehicle. The acceleration sensor 3 in total are mounted in the suspension control ECU, at the LH side of the cowl and in the rear quarter, and detect the up–and down acceleration of the vehicle, respectively. The acceleration sensor convert the resistance into electrical signal and output to the suspension control ECU.

DTC No.	DTC Detecting Condition	Trouble Area
C1715/15	After turning the ignition switch to ON, acceleration sensor voltage is continuously output for 1 sec. at 0.3 V or less or at 4.7 V or more.	• Acceleration sensor assy front RH • Right front acceleration sensor circuit • Suspension control ECU
C1716/16		• Suspension control ECU (Acceleration sensor front LH is a built–in equipment)
C1717/17		• Acceleration sensor rear • Rear acceleration sensor circuit • Suspension control ECU

HINT:

- When DTC C1791/91 is output, follow the same procedure as DTC C1715/15.
- When DTC C1793/93 is output, follow the same procedure as DTC C1717/17.
- Since the acceleration sensor front LH is built–in the suspension control ECU, replace it when DTC C1716/16 and C1792/92 are output.

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

- 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 and C1774/74 are output at the same time, perform the inspection necessary for DTC C1774/74 first.)
- Start the inspection from the step 1 in the case of using hand–held tester, and start from step 2 in the case of not using hand–held tester.

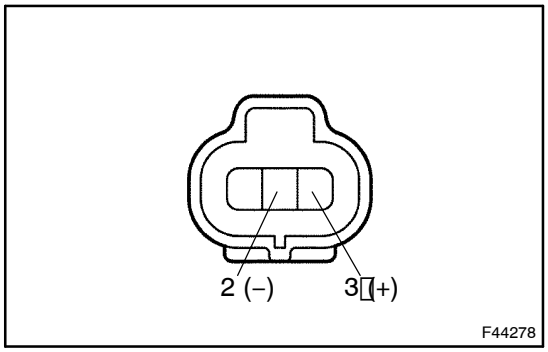
1	READ VALUE OF HAND–HELD TESTER

(a) Connect the hand–held tester to the DLC3.
(b) Turn the ignition switch to ON, and turn the hand–held tester main switch to ON.
(c) Select the item "G (UP & DOWN) FR" or "G (UP & DOWN) R" in the DATA LIST, and read its value displayed on the hand–held tester.
(d) Check that the acceleration value of the acceleration sensor observed on the hand–held tester changes while bouncing the vehicle.
Standard:
Acceleration value changes.

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

NG

2	CHECK HARNESS AND CONNECTOR(ACCELERATION SENSOR POWER SOURCE)



(a) Disconnect the acceleration sensor connector.
(b) Turn the ignition switch to ON, and measure voltage between terminal 2 and 3 of the acceleration sensor wire harness side connector.
Standard:
4.5 – 5.5 V

OK	Go to step 4

NG

3	CHECK HARNESS AND CONNECTOR (ACCELERATION SENSOR – SUSPENSION CONTROL ECU)

Acceleration sensor assy front RH:

(a) Check for open and short circuit in the harness and the connector between terminal 2 (SHG) of the acceleration sensor front RH and the S20–22 (SGR) of the suspension control ECU (See page 01–36).

(b) Check for open and short circuit in the harness and the connector between terminal 3 (SHB) of the acceleration sensor front RH and the S20–18 (SBR) of the suspension control ECU (See page 01–36).

Acceleration sensor rear:

(a) Check for open and short circuit in the harness and the connector between terminal 2 (SGND) of the acceleration sensor rear and the S21–25 (SGB3) of the suspension control ECU (See page 01–36).

(b) Check for open and short circuit in the harness and the connector between terminal 3 (SGV) of the acceleration sensor rear and the S20–21 (SBR3) of the suspension control ECU (See page 01–36).

NG	REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4	CHECK HARNESS AND CONNECTOR (ACCELERATION SENSOR – SUSPENSION CONTROL ECU)

Acceleration sensor assy front RH:

(a) Check for open and short circuit in the harness and the connector between terminal 1 (SGFL) of the acceleration sensor front RH and the S21–27 (SGFR) of the suspension control ECU (See page 01–36).

HINT:

If the harness and connector is normal, go to step A.

Acceleration sensor rear:

(a) Check for open and short circuit in the harness and the connector between terminal 1 (SGRR) of the acceleration sensor front RH and the S21–28 (SGRR) of the suspension control ECU (See page 01–36).

HINT:

If the harness and connector is normal, go to step B.

A	Go to step 5

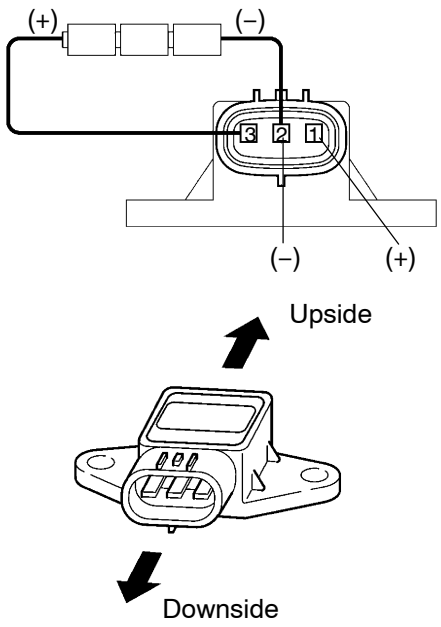
B	Go to step 6

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

5	INSPECT ACCELERATION SENSOR ASSY (FRONT RH)

Acceleration Sensor Front RH:



C91693
C65181
F41635

(a) Remove the acceleration sensor assy front RH.
(b) Connect 3 dry batteries of 1.5 V in series.
(c) Connect the terminal 3 (SHB) to the batteries' positive (+) terminal, and terminal 2 (SHG) to the batteries' negative (–) terminal, then apply voltage of approximately 4.5 V between terminals 1 (SGFL) and 2 (SHB) for the following conditions.

Standard:

Sensor condition	Voltage
Sensor stationary	Approx. 2.3 V
Sensor vibrating vertically	Change between approx. 1.0 – 4.0 V

NOTICE:

- **Do not apply more than 6 V.**
- **Do not drop the acceleration sensor assy. If it is dropped, replace it with a new one.**
- **Never place the acceleration sensor assy removed from the vehicle upside down.**

HINT:
When the acceleration sensor assy is tilted, it may output a different value.

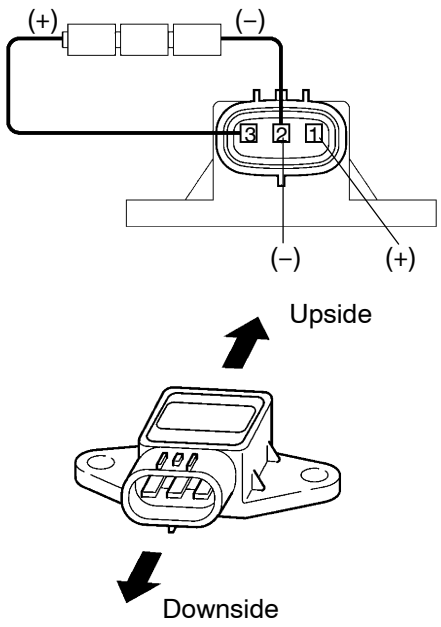
NG → **REPLACE ACCELERATION SENSOR ASSY**

OK

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

6 INSPECT ACCELERATION SENSOR(REAR)

Acceleration Sensor Rear:



C91693
C65181
F41635

(a) Remove the acceleration sensor rear.
(b) Connect 3 dry batteries of 1.5 V in series.
(c) Connect the terminal 3 (SGV) to the batteries' positive (+) terminal, and terminal 2 (SGMD) to the batteries' negative (–) terminal, then apply voltage of approximately 4.5 V between terminals 1 (SGRR) and 2 (SGMD) for the following conditions.

Standard:

Sensor condition	Voltage
Sensor stationary	Approx. 2.3 V
Sensor vibrating vertically	Change between approx. 1.0 – 4.0 V

NOTICE:

- **Do not apply more than 6 V.**
- **Do not drop the acceleration sensor. If it is dropped, replace it with a new one.**
- **Never place the acceleration sensor assy removed from the vehicle upside down.**

HINT:
When the acceleration sensor is tilted, it may output the different value.

NG → **REPLACE ACCELERATION SENSOR**

OK

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