DI8D0–01

DTC	C1715 / 15 to C1717 / 17	Acceleration Sensor Circuit

DTC	C1791 / 91 to C1793 / 93	Acceleration Sensor Circuit

CIRCUIT DESCRIPTION

The acceleration sensor detects the up–down movement of the vehicle body. On the front side, one acceleration sensor, combined in the height control sensor, is installed in each of the right and left tire houses, and on the rear side in the trunk room. The piezoresistive system has been introduced in the sensor chip. The vehicle speed acceleration bends the beams of the sensor chip and changes the resistance value in accordance with the acceleration. The acceleration sensor converts the resistance value into the electric signal and outputs it in the suspension control ECU.

DTC No.	DTC Detecting Condition	Trouble Area
C1715 / 15 C1716 / 16 C1717 / 17	With the ignition switch ON, the deceleration sensor output continues to be 0.3 V or less, or 4.7 V or more for 1 sec. or more.	• Right front, left front, rear acceleration sensor • Each acceleration sensor circuit • Suspension control ECU
C1991 / 91 C1992 / 92 C1993 / 93	The acceleration sensor continues to detect vertical acceleration	• Right front, left front, rear acceleration sensor • Each acceleration sensor circuit • Suspension control ECU

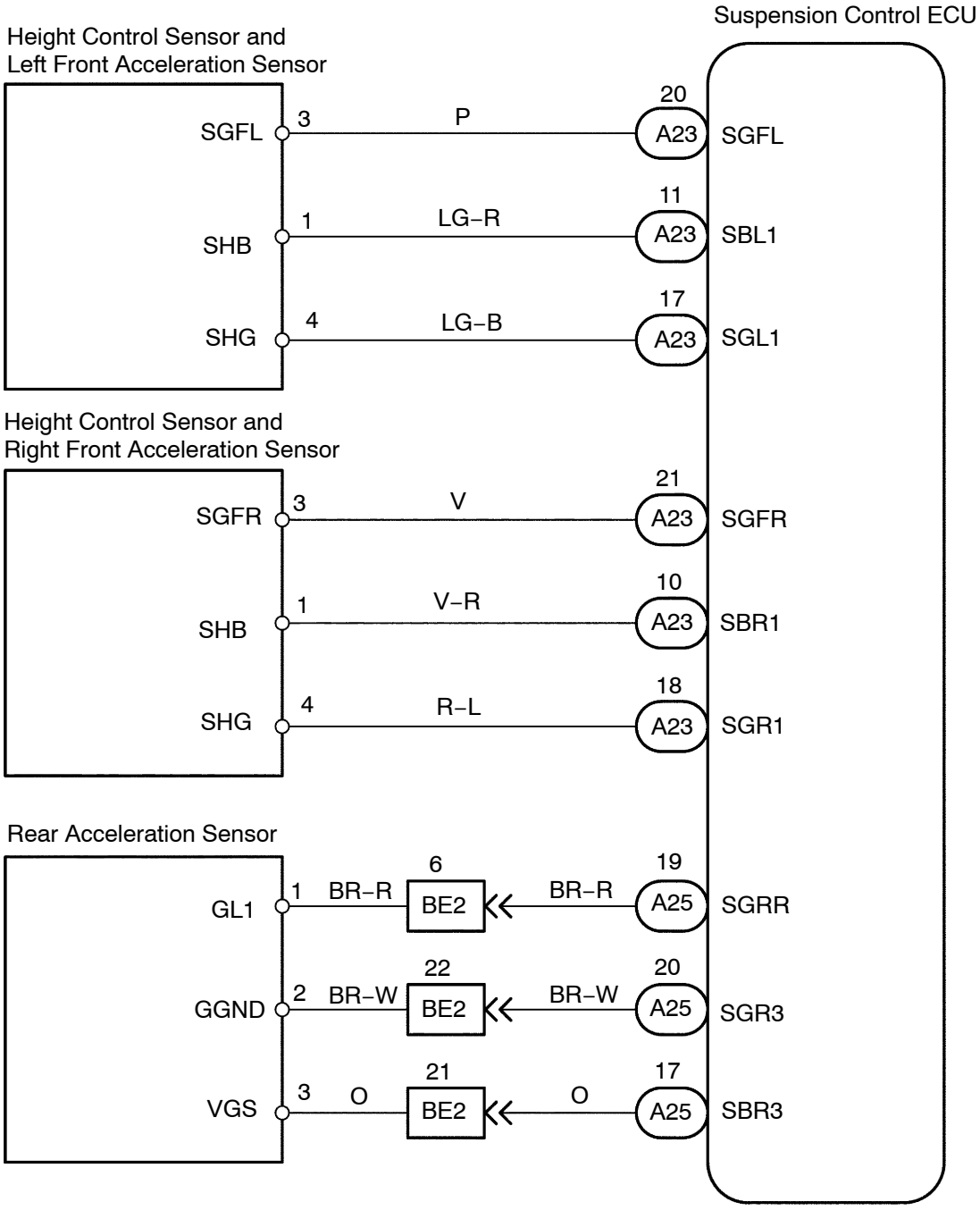
HINT:

- Code C1715 / 15 corresponds to the right front acceleration sensor circuit.
- Code C1716 / 16 corresponds to the left front acceleration sensor circuit.
- Code C1717 / 17 corresponds to the rear acceleration sensor circuit.
- Code C1991 / 91 corresponds to the right front acceleration sensor circuit.
- Code C1992 / 92 corresponds to the left front acceleration sensor circuit.
- Code C1993 / 93 corresponds to the rear acceleration sensor circuit.

Once the ECU stores DTC C1715 / 15, C1716 / 16 or C1717 / 17 in memory, damping force control is not carried out until a normal signal is input to the ECU from the acceleration sensor.
The control is resumed, however, if the ignition switch is turned OFF, then ON again.

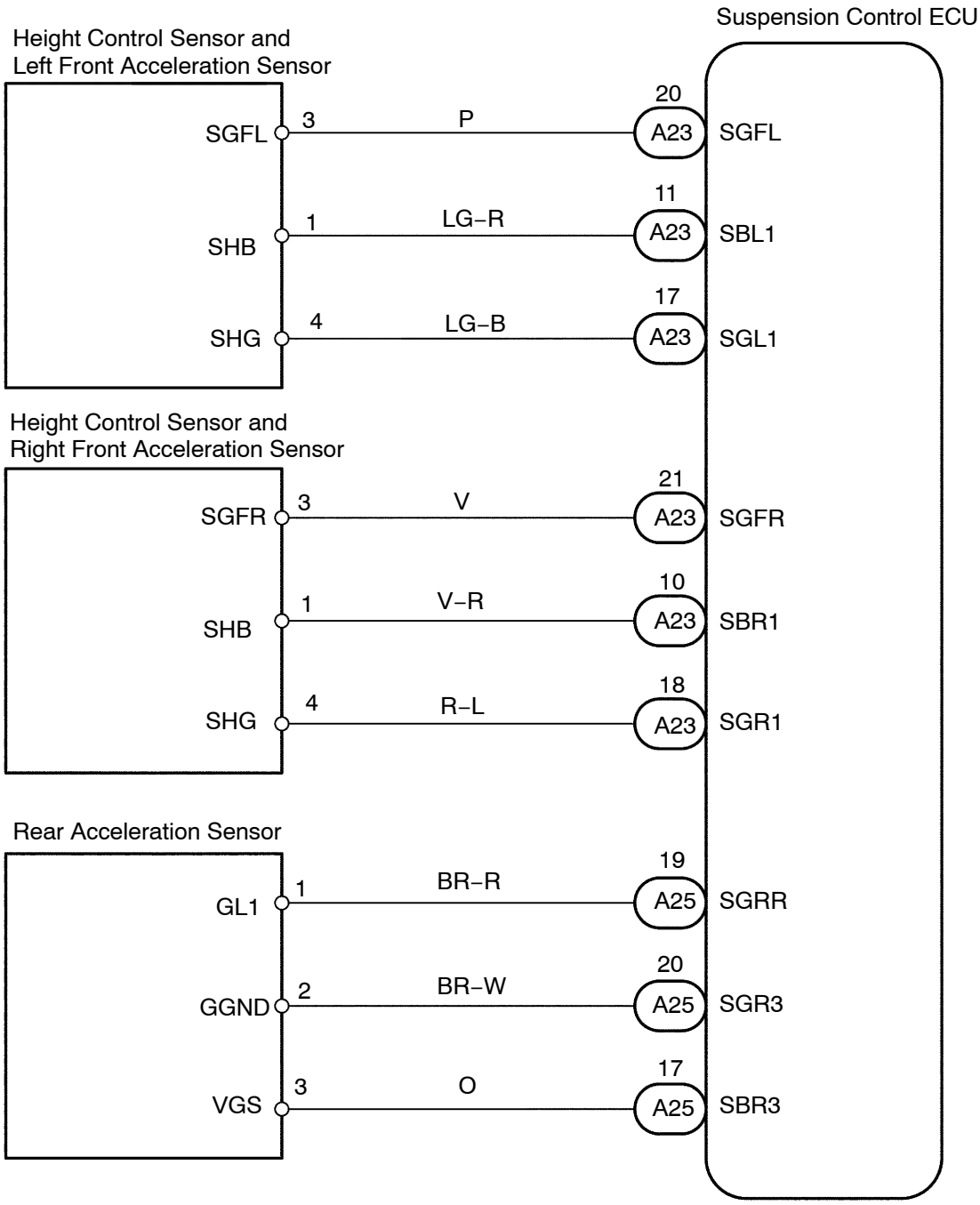
WIRING DIAGRAM

LHD:



P F10601

RHD:


Suspension Control ECU
Height Control Sensor and
Left Front Acceleration Sensor
SGFL
3
P
20
A23
SGFL
SHB
1
LG–R
11
A23
SBL1
SHG
4
LG–B
17
A23
SGL1
Height Control Sensor and
Right Front Acceleration Sensor
SGFR
3
V
21
A23
SGFR
SHB
1
V–R
10
A23
SBR1
SHG
4
R–L
18
A23
SGR1
Rear Acceleration Sensor
GL1
1
BR–R
19
A25
SGRR
GGND
2
BR–W
20
A25
SGR3
VGS
3
O
17
A25
SBR3

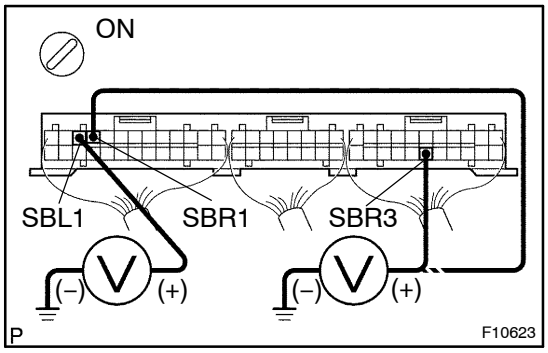
P F10602

INSPECTION PROCEDURE

HINT:

- When DTC C1715 / 15 is displayed, check the right front acceleration sensor circuit.
- When DTC C1716 / 16 is displayed, check the left front acceleration sensor circuit.
- When DTC C1717 / 17 is displayed, check the rear acceleration sensor circuit.
- When DTC C1991 / 91 is displayed, check the right front acceleration sensor circuit.
- When DTC C1992 / 92 is displayed, check the left front acceleration sensor circuit.
- When DTC C1993 / 93 is displayed, check the rear acceleration sensor circuit.

1	**Check voltage between each of terminals SBR1, SBL1 and SBR3 of suspension control ECU connector and body ground.**



PREPARATION:

Remove the suspension control ECU with the connectors still connected.

CHECK:

(a) Turn the ignition switch ON.

(b) Measure voltage between each of terminals SBR1, SBL1 and SBR3 of the suspension control ECU connector and body ground.

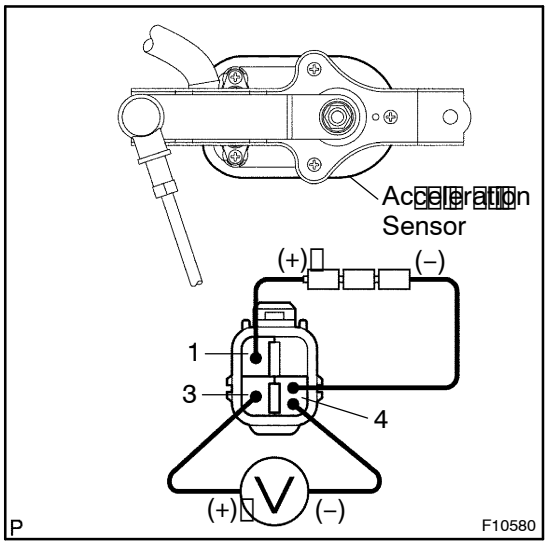
OK:

Voltage: 4.5 – 5.5 V

NG → **Check and replace suspension control ECU.**

OK

2	Check acceleration sensor.



Front acceleration sensor:

PREPARATION:

(a) Remove the front wheel and front fender liner.

(b) Disconnect the acceleration sensor with the height control sensor connector.

(c) Remove the acceleration sensor with the height control sensor (See page SA–133).

CHECK:

(a) Connect 3 dry batteries of 1.5 V in series.

(b) Connect terminal 1 to the batteries' positive (+) terminal, and terminal 4 to the batteries' negative (–) terminal, then apply voltage about 4.5 V between terminals 1 and 4.

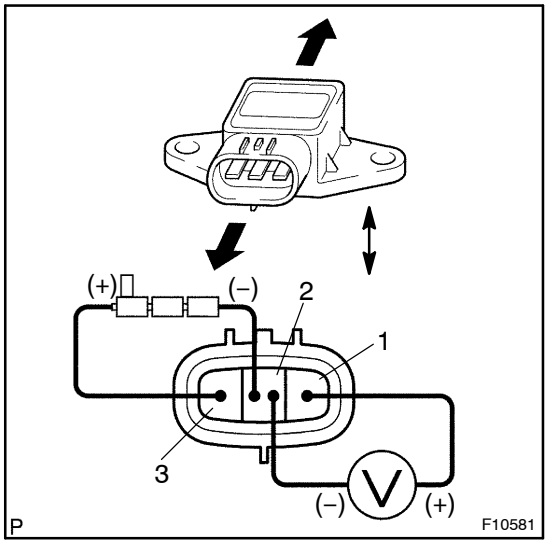
(c) Check voltage between terminals 3 and 4 for the following conditions.

OK:

Sensor condition	Voltage
Sensor stationary	Approx. 2.5 V
Sensor vibrating vertically	Change between approx. 0.5 – 4.5 V

HINT:

- "Sensor stationary" means that the lower surface of the sensor is parallel with the road surface.
- Sensor vibrating vertically indicates the speed when the sensor moves 30 cm (11.81 in.) back and forth in 1 sec.



Rear acceleration sensor:

PREPARATION:

(a) Remove the luggage compartment floor carpet.
(b) Disconnect the acceleration sensor connector.
(c) Remove the acceleration sensor (See page SA–139).

CHECK:

(a) Connect 3 dry batteries of 1.5 V in series.
(b) Connect terminal 3 to the batteries' positive (+) terminal, and terminal 2 to the batteries' negative (–) terminal, then apply voltage about 4.5 V between terminals 2 and 3.
(c) Check voltage between terminals 1 and 2 for the following conditions.

OK:

Sensor condition	Voltage
Sensor stationary	Approx. 2.5 V
Sensor vibrating vertically	Change between approx. 0.5 – 4.5 V

HINT:

- "Sensor stationary" means that the lower surface of the sensor is parallel with the road surface.
- Sensor vibrating vertically indicates the speed when the sensor moves 30 cm (11.81 in.) back and forth in 1 sec.

NG → **Replace acceleration sensor.**

OK

3	**Check for open and short circuit in harness and connector between suspension control ECU and acceleration sensor (See page IN–35).**

NG → **Repair or replace harness or connector.**

OK

Proceed to next circuit inspection shown on problem symptoms table (See page DI–263).