DI5XS–01

DTC	15 – 17	Acceleration Sensor Circuit

CIRCUIT DESCRIPTION

The acceleration sensor detects vehicle vertical acceleration. The sensor has a piezoelectric ceramic disk supported at its center. When the vehicle accelerates, the ceramic disk flexes and the piezoelectric ceramic generates an electrical charge. The electrical circuit converts this electrical charge into voltage proportional to the acceleration, and outputs it to the ECU.

There is an acceleration sensor inside each front height control sensor, and one at the rear.

DTC No.	DTC Detecting Condition	Trouble Area
15 16 17	With the ignition switch ON, when a up and down acceleration signal of ± 9.8 m/s^2 (±1.0 G) is input successively twice for 1 sec. or more.	• Right front, left front, rear acceleration sensor • Each acceleration sensor circuit • Suspension control ECU

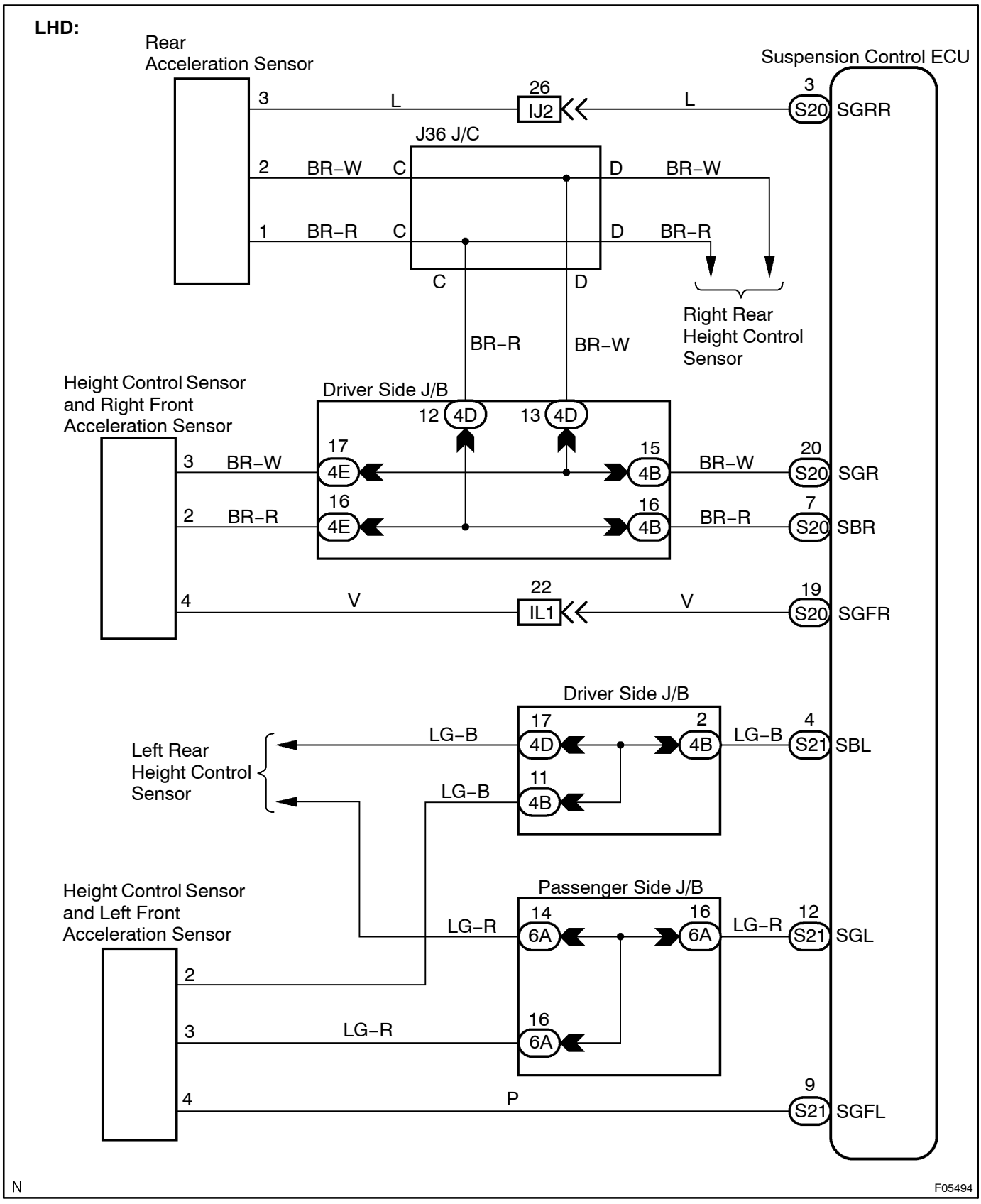
HINT:

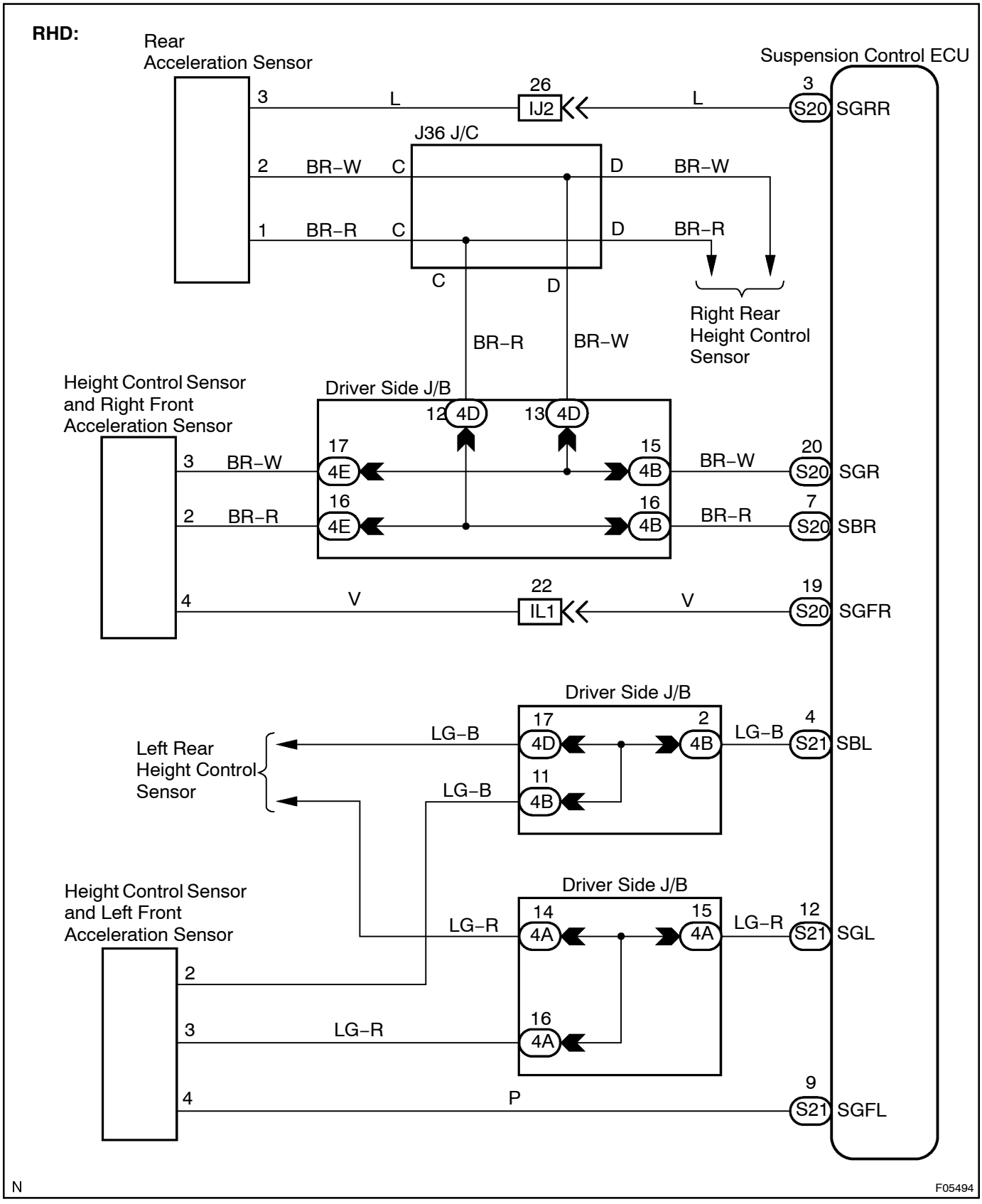
- Code 15 corresponds to the right front acceleration sensor circuit.
- Code 16 corresponds to the left front acceleration sensor circuit.
- Code 17 corresponds to the rear acceleration sensor circuit.

Once the ECU stores DTC 15, 16 or 17 in memory, damping force control is not carried out until a normal signal is input to the ECU from acceleration sensor.

However, control is resumed if the ignition switch is turned OFF then ON again.

WIRING DIAGRAM



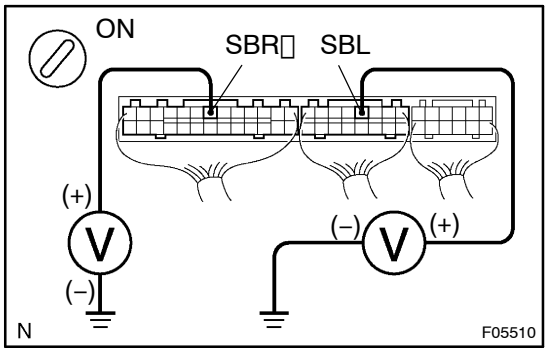

RHD:
Rear
Acceleration Sensor
Suspension Control ECU
3
L
26
IJ2
L
3
S20
SGRR
J36 J/C
2
BR–W
C
D
BR–W
1
BR–R
C
D
BR–R
C
D
Right Rear
Height Control
Sensor
BR–R
BR–W
Height Control Sensor
and Right Front
Acceleration Sensor
Driver Side J/B
12
4D
13
4D
17
4E
15
4B
BR–W
20
S20
SGR
3
BR–W
16
4E
16
4B
BR–R
7
S20
SBR
2
BR–R
4
V
22
IL1
V
19
S20
SGFR
Driver Side J/B
Left Rear
Height Control
Sensor
17
4D
2
4B
LG–B
4
S21
SBL
LG–B
11
4B
LG–B
Height Control Sensor
and Left Front
Acceleration Sensor
Driver Side J/B
14
4A
15
4A
LG–R
12
S21
SGL
LG–R
2
3
LG–R
16
4A
4
P
9
S21
SGFL
N
F05494

INSPECTION PROCEDURE

HINT:

- When DTC 15 is displayed, check right front acceleration sensor circuit.
- When DTC 16 is displayed, check left front acceleration sensor circuit.
- When DTC 17 is displayed, check rear acceleration sensor circuit.

1	**Check voltage between terminals SBR and SBL of suspension control ECU connector and body ground.**



PREPARATION:

(a) LHD:
Remove the RH scuff plate, instrument panel under cover No. 2, glove compartment and CD changer (See page BO–96).

(b) RHD:
Remove the RH scuff plate, instrument panel under cover No. 1, instrument panel lower pad and heater to register duct No. 2 (See page BO–96).

CHECK:

(a) Turn the ignition switch ON.

(b) Measure the voltage between terminals SBR and SBL of suspension control ECU connector and body ground.

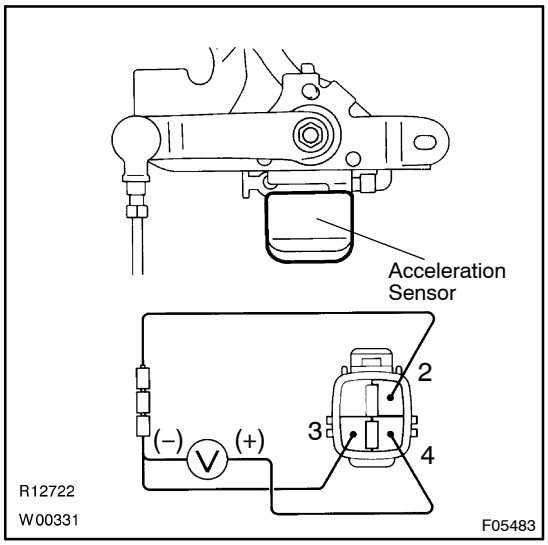
OK:

Voltage: 4.75 – 5.25 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 height control sensor connector.

(c) Remove the acceleration sensor with height control sensor (See page SA–129).

CHECK:

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

(b) Connect terminal 2 to the batteries' positive (+) terminal, and terminal 3 to the batteries' negative (–) terminal, then apply voltage about 4.5 V between terminals 2 and 3.

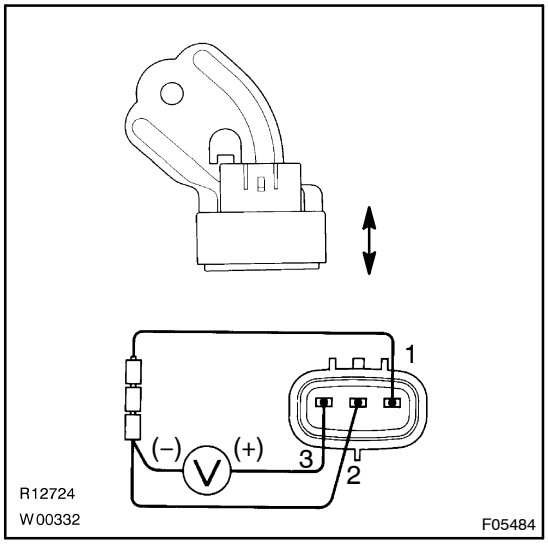
(c) Check the voltage between terminals 3 and 4 for the following conditions.

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.
- Up–and–down vibvation of the sensor is the speed that the sensor goes 30 cm (11.81 in.) back and forth in 1 sec.



Rear acceleration sensor:

PREPARATION:

(a) Remove the luggage compartment floor mat.

(b) Disconnect the acceleration sensor connector.

(c) Remove the acceleration sensor (See page SA–135).

CHECK:

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

(b) Connect terminal 1 to the batteries' positive (+) terminal, and terminal 2 to the batteries' negative (–) terminal, then apply voltage about 4.5 V between terminals 1 and 2.

(c) Check the voltage between terminals 2 and 3 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.
- Up–and–down vibvation of the sensor is the speed that the sensor goes 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–30).

NG → Repair or replace harness or connector.

OK

Proceed to next circuit inspection shown on problem symptoms table (See page DI–79).