

DTC	15, 16, 17	Acceleration Sensor Circuit
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## 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 left rear. The deceleration of right rear is inferred from the data of the 3 sensors.

DTC No.	DTC Detecting Condition	Trouble Area
15, 16, 17	Open or short circuit in acceleration sensor circuit	<ul style="list-style-type: none"> <li>• Harness or connector between ECU and acceleration sensor</li> <li>• Acceleration sensor</li> <li>• ECU</li> </ul>

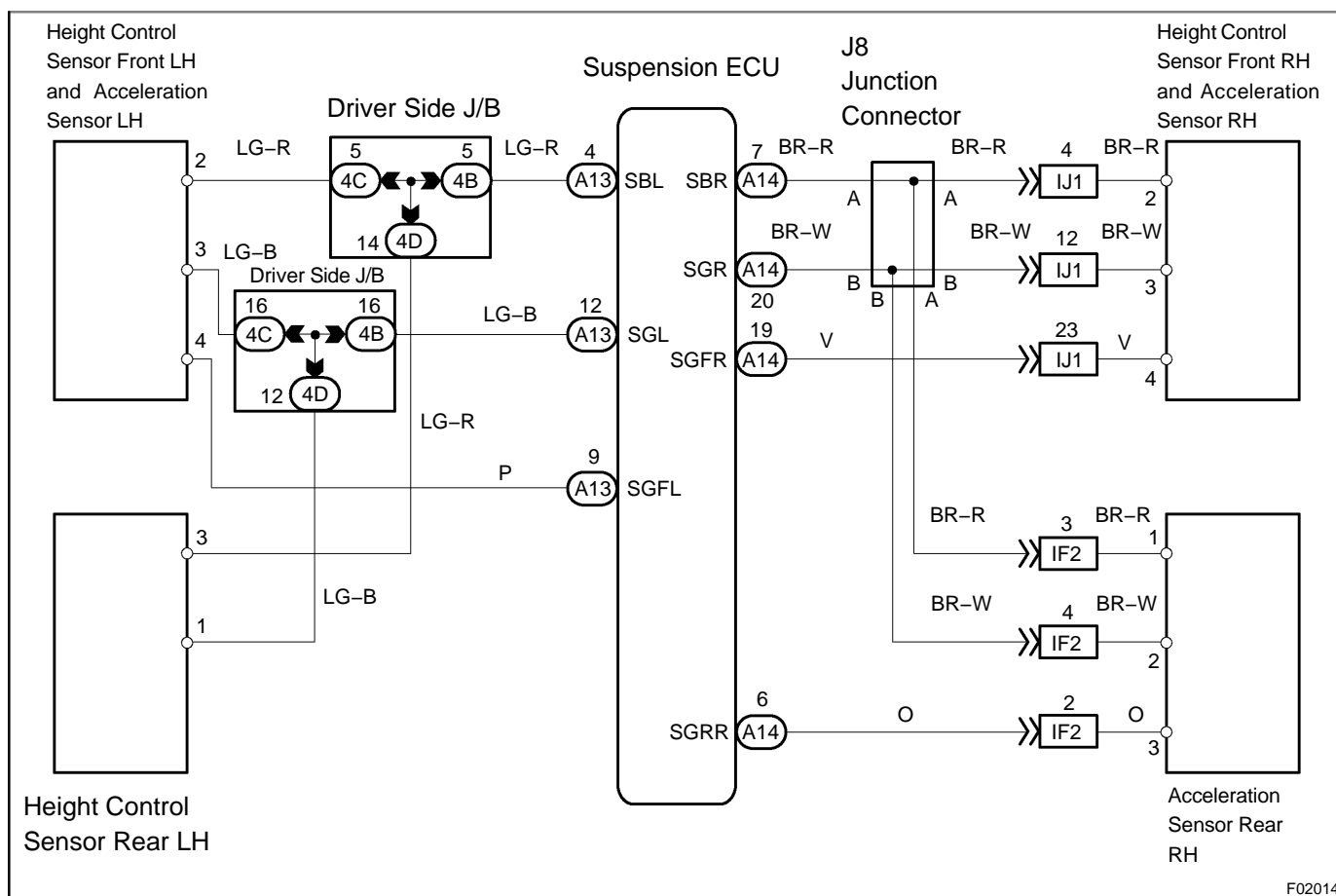
### HINT:

- Code 15 corresponds to the front RH acceleration sensor circuit.
- Code 16 corresponds to the front LH acceleration sensor circuit.
- Code 17 corresponds to the rear RH 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



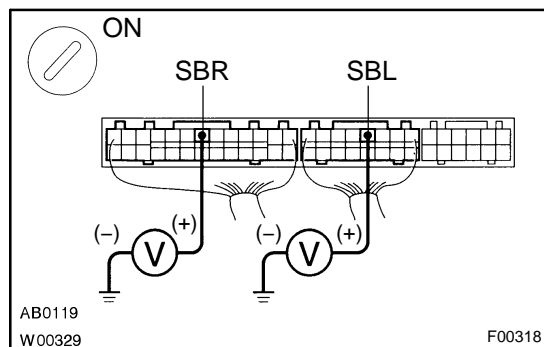
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## INSPECTION PROCEDURE

### HINT:

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

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



#### PREPARATION:

- Remove the instrument panel box assembly (See page [BO-83](#)).
- Turn the ignition switch ON.

#### CHECK:

Measure the voltage between terminals SBR and SBL of suspension ECU connector and body ground.

#### OK:

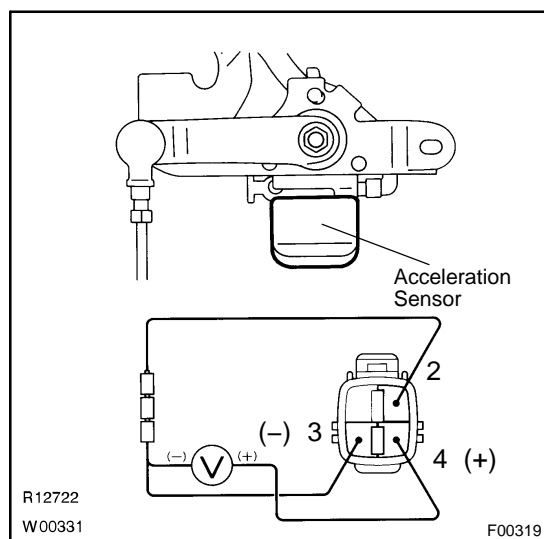
**Voltage: Approx. 5 V**

**NG**

**Check and replace suspension ECU.**

**OK**

### 2 Check acceleration sensor.



#### 1. FOR THE FRONT ACCELERATION SENSOR

##### PREPARATION:

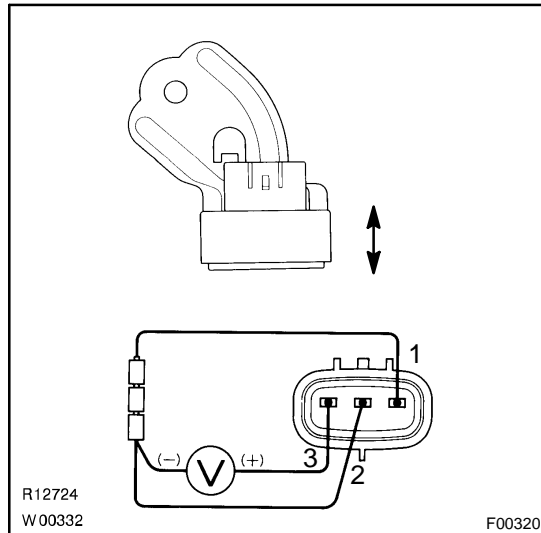
- Remove the front wheel and front fender liner.
- Disconnect the acceleration sensor (with height control sensor) connector.
- Remove the acceleration sensor (with height control sensor).

##### CHECK:

- Connect 3 dry batteries' of 1.5 V in series.
- 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.
- Check the voltage between terminals 4 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 vibration of the sensor is defined as movement of 30 cm and back completed in 1 second.

**2. FOR THE REAR ACCELERATION SENSOR****PREPARATION:**

- Remove the luggage compartment floor carpet.
- Disconnect the acceleration sensor connector.
- Remove the acceleration sensor.

**CHECK:**

- Connect 3 dry batteries' of 1.5 V in series.
- 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.
- Check the voltage between terminals 3 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.
- Up-and-down vibration of the sensor is defined as movement of 30 cm and back completed in 1 second.

**NG****Replace acceleration sensor.****OK****3****Check harness and connector between suspension 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-247](#)).**