■AIRBAG FOR FRONTAL COLLISION

1. General

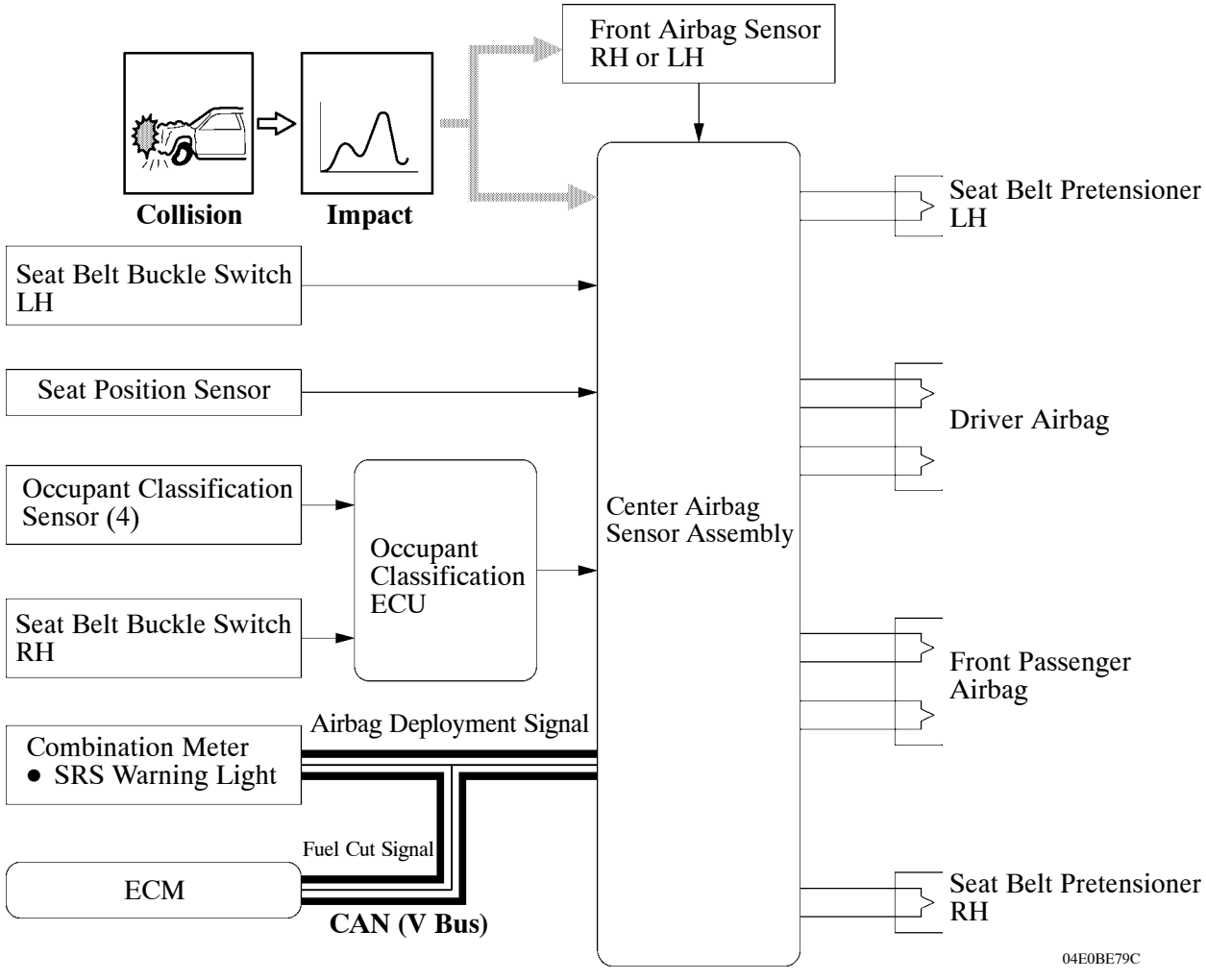
There are 2 airbags for frontal collisions: driver and front passenger. These airbags deploy simultaneously. The SRS driver and front passenger airbags use a dual-stage control.

- The center airbag sensor assembly detects the information indicated below from various sources in order to activate the dual-stage control:

▶ Information for Dual-stage Control ◀

Airbag	Information	Source
Driver	Extent of Impact	● Front Airbag Sensor RH or LH ● Center Airbag Sensor Assembly
	Driver Seat Position	Seat Position Sensor
	Seat Belt Condition	Seat Belt Buckle Switch (Non-contact Type)
Front Passenger	Extent of Impact	● Front Airbag Sensor RH or LH ● Center Airbag Sensor Assembly
	Occupant Classification	Occupant Classification Sensors (4) (Through Occupant Classification ECU)
	Seat Belt Condition	Seat Belt Buckle Switch (Non-contact Type) (Through Occupant Classification ECU)

2. System Diagram



BE

3. SRS Driver and Front Passenger Airbags

The SRS driver and front passenger airbags each contain a set of 2 initiators and propellants. The center airbag sensor assembly helps optimize the airbag inflation output by controlling the inflation timing of these initiators.

4. Front Airbag Sensor

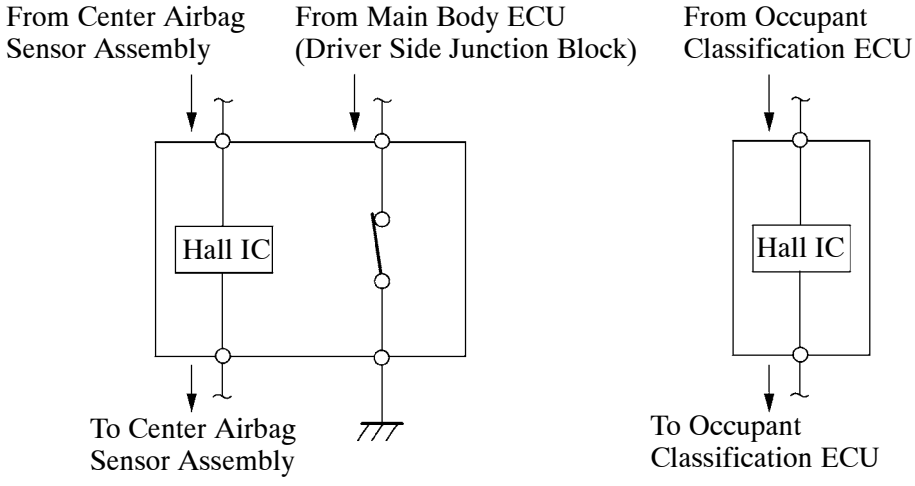
The front airbag sensor uses an electrical type deceleration sensor. Based on the deceleration of the vehicle during a front collision, a distortion is created in the sensor and converted into an electrical signal. Accordingly, the extent of the initial collision can be detected in detail.

5. Seat Belt Buckle Switch

The seat belt buckle switch determines that the seat belt is fastened.

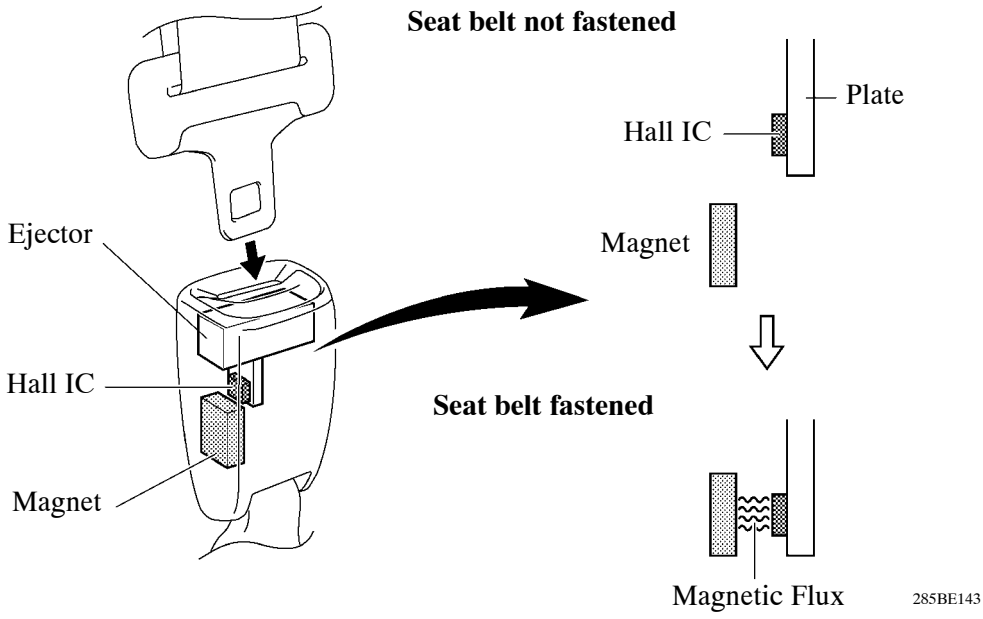
- A contact type switch and a non-contact type switch are built into the seat belt buckle on the driver side. The contact type switch is for the seat belt warning system and the non-contact type switch is for the SRS airbag system.
- A non-contact type switch is built into the seat belt buckle on the front passenger side.
- The non-contact type switch contains a Hall IC and 2 magnets, installed into the front seat inner belt assembly.

▶ Electrical Circuit ◀



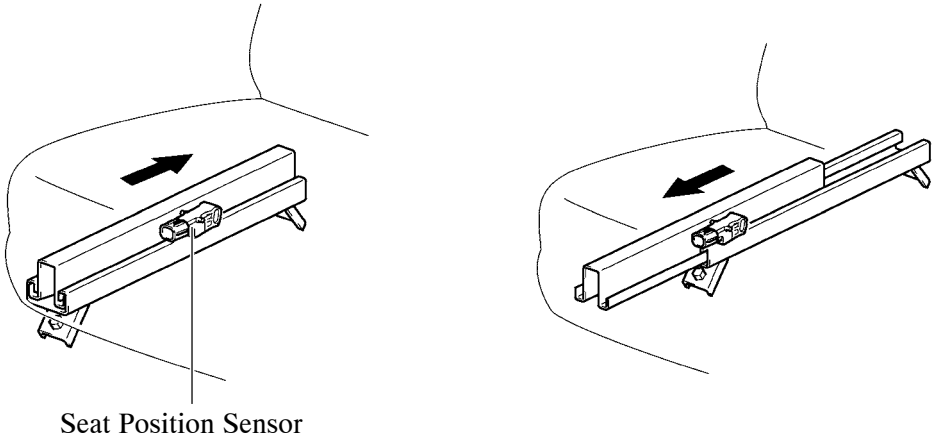
285BE101

- The ejector inside the front seat inner belt assembly and the plate installed to the ejector move when the seat belt is removed or inserted. The movement of the plate changes the magnetic flux density of the magnet.
- The Hall IC detects changes in the magnetic flux density. These changes indicate that the seat belt is either fastened or unfastened, and the Hall IC outputs a signal to the center airbag sensor assembly (for driver) or occupant classification ECU (for front passenger).



6. Seat Position Sensor

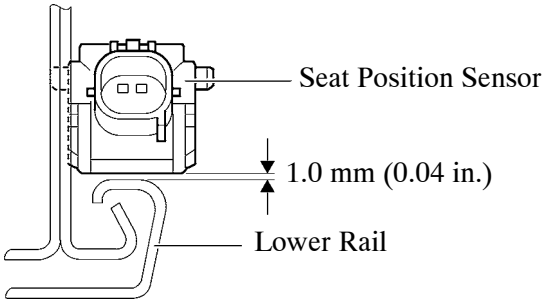
The seat position sensor detects the slide position of the driver seat. This sensor, which uses a Hall IC, detects changes in the magnetic flux that occur due to the movement of the upper rail.



Service Tip

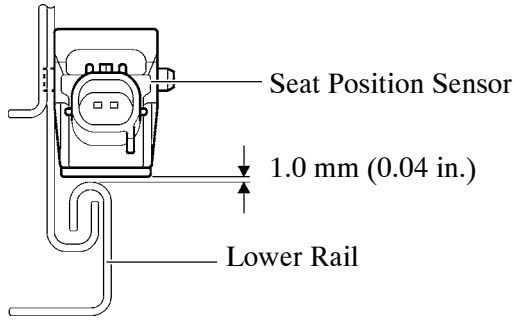
Follow the procedure indicated below to install the seat position sensor.
1) Insert a 1.0 mm (0.04 in.) feeler gauge between the seat position sensor and the lower rail portion.
2) Tighten the mounting bolt to the specified torque with the seat position sensor pushed down as shown below.

For details, refer to the SEQUOIA Repair Manual (Pub. No. RM11Y0E).



For Manual Seat

03U0NF12C



For Power Seat

04E0BE80C