

# AIRBAG SYSTEM

**AB**

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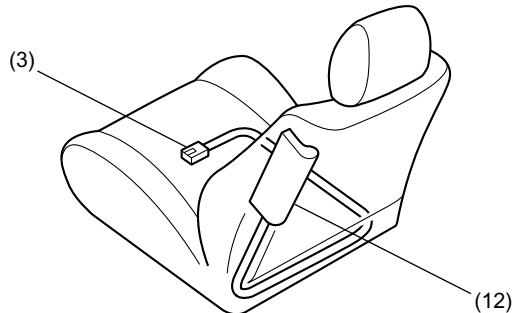
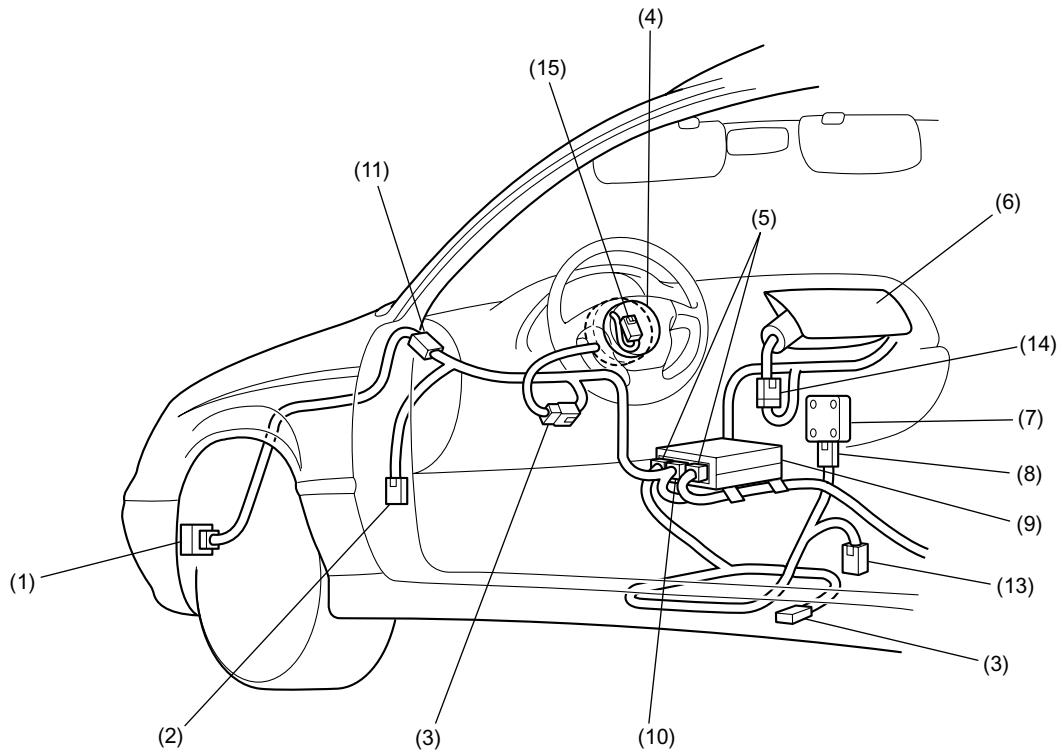
	<b>Page</b>
1. Airbag System .....	2
2. Construction .....	7

# AIRBAG SYSTEM

## AIRBAG SYSTEM

### 1. Airbag System

#### A: CONSTRUCTION



AB-00914

(1) Front sub sensor	(9) Airbag control module
(2) 6-pin connector (yellow)	(10) 28-pin connector (yellow)
(3) 2-pin connector (yellow)	(11) 2-pin connector (yellow)
(4) Airbag module (driver)	(12) Airbag module (side)
(5) 12-pin connector (yellow)	(13) 2-pin connector (black) (to seat belt pretensioner)
(6) Airbag module (passenger)	(14) 2-pin connector (yellow)
(7) Side airbag sensor	(15) 2-pin connector (black)
(8) 4-pin connector (yellow)	

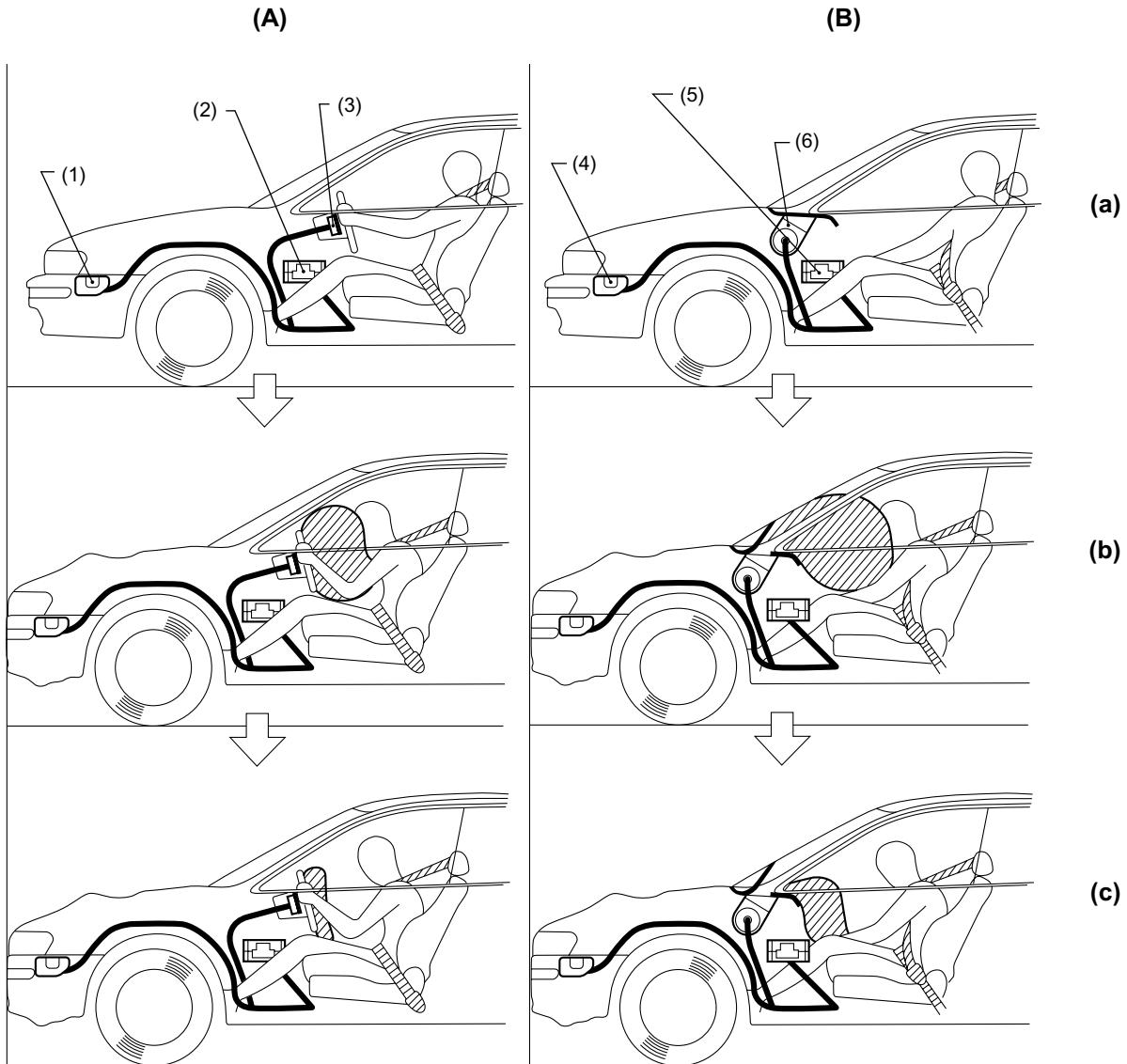
## B: FUNCTION

### 1. FRONT AIRBAG

The airbag system is provided as a driver and front passenger restraint system supplementary to the seat belts. When an impact greater than a set level is applied to the front of the vehicle, the airbag control module activates the airbag modules in response to the signal from the sensor. The airbag modules activate to inflate the airbags, thus preventing the driver's and passenger's upper bodies from directly hitting against the steering wheel, instrument panel and/or windshield.

# AIRBAG SYSTEM

## AIRBAG SYSTEM



AB-00090

(A) Driver's side

(1) Front sub sensor

(a) • Collision occurs.

(B) Passenger's side

(2) Safety sensor and electronic sensor

(b) • Front sub sensor, electronic sensor and safety sensor detect an impact greater than the set level.

(3) Inflator

• Inflators are ignited.

(4) Front sub sensor

• Gas is generated.

(5) Safety sensor and electronic sensor

• Airbag inflation completes.

(6) Inflator

• Gas is discharged.

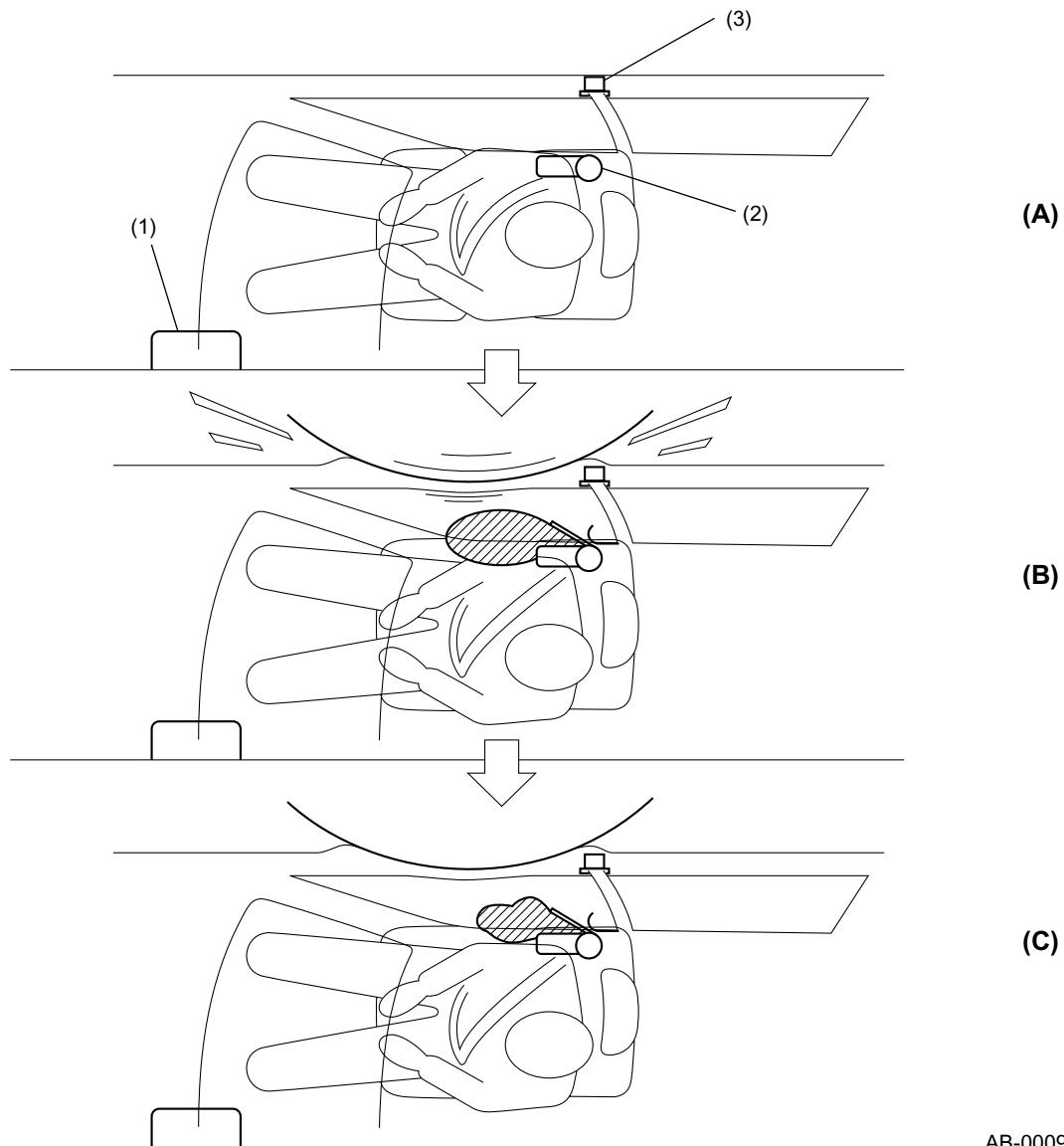
(c) • Airbags deflate.

## 2. SIDE AIRBAG

The side airbags provide the driver and front passenger with a restraint supplementary to that by the seat belts in the event of a side-on collision. When an impact greater than the set level is applied to either side of the vehicle, the airbag control module activates the corresponding side airbag module in response to the ignition signal sent from the side airbag sensor on the relevant side. The side airbag module operates to inflate the airbag, thus reducing the shock inflicted in the outside upper body (chest and head) of the driver or front passenger.

# AIRBAG SYSTEM

## AIRBAG SYSTEM



AB-00091

- (1) Airbag control module
- (2) Inflator
- (3) Side airbag sensor

- (A)
  - Collision occurs.
- (B)
  - The side airbag sensor detects an impact greater than the set level.
  - Inflators is ignited.
  - Gas is generated.
  - Airbag inflation completes.
  - Gas is discharged.
- (C)
  - Airbags deflate.

## 2. Construction

### A: GENERAL

- The airbag system consists of an airbag control module, left and right front sub sensors, an electronic sensor and safety sensor built into the control module, driver's and passenger's airbag modules each containing an inflator and airbag, and side airbag sensors and left and right side airbag modules each containing an inflator and airbag.

- Front airbag system:

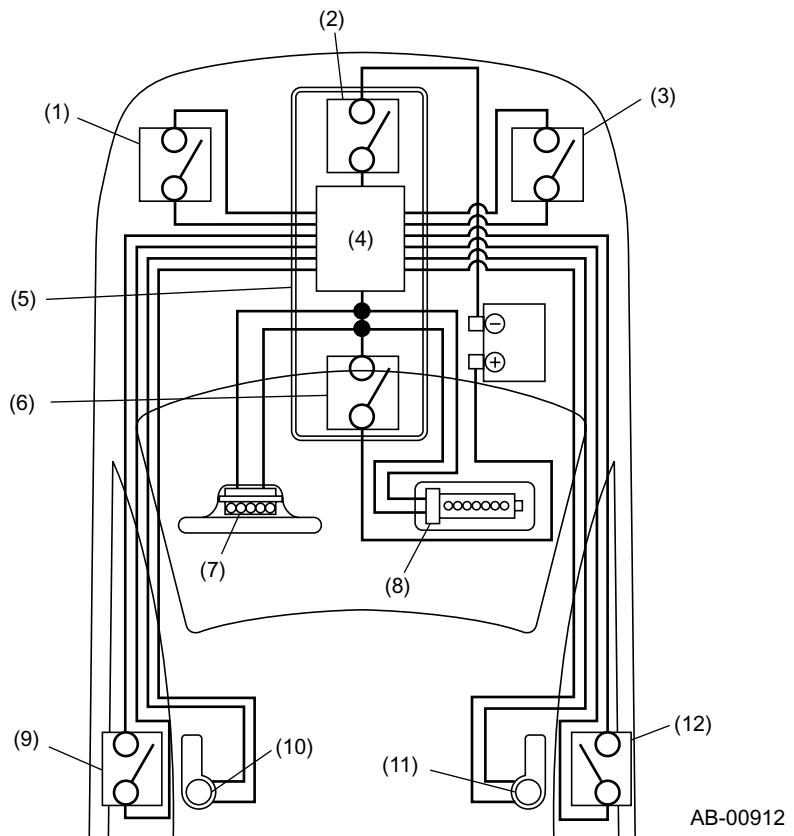
A frontal impact exceeding the set level causes the safety sensor, electronic sensor and one or both front sub sensors to input impact signals to the CPU. The CPU determines whether the airbags should be inflated or not based on these signals.

- Side airbag system:

Input of a side impact signal showing shock energy greater than the set level causes the airbag on the corresponding side to inflate.

# CONSTRUCTION

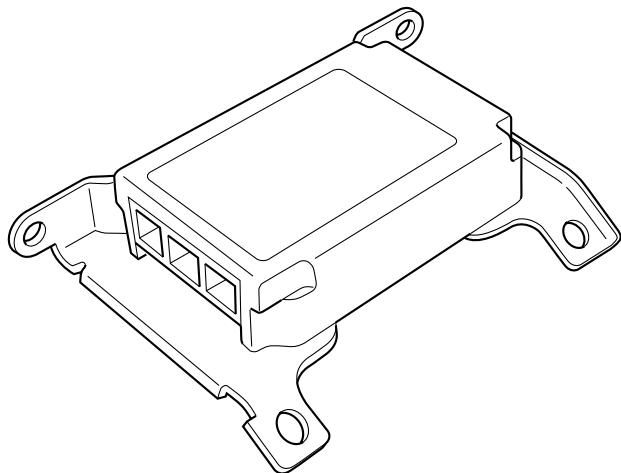
## AIRBAG SYSTEM



(1) Front sub sensor LH	(5) Airbag control module	(9) Side airbag sensor LH
(2) Safety sensor	(6) Electronic sensor and safety sensor	(10) Side inflator LH
(3) Front sub sensor RH	(7) Inflator (driver's seat)	(11) Side inflator RH
(4) CPU	(8) Inflator (passenger's seat)	(12) Side airbag sensor RH

### B: AIRBAG CONTROL MODULE

The airbag control module is installed in front of the front floor tunnel. It detects the vehicle's deceleration by receiving electrical signals from its inside safety and electronic sensors as well as the front sub sensors and judges whether to inflate the airbags. This control module has a built-in self-diagnosis function. If a fault occurs inside the system, it lights up the airbag warning light in the combination meter. The fault data is stored in the control module. A back-up power supply is provided for possible damage to the battery during an accident, and a boosting circuit is built into the control module in case of a battery voltage drop.



AB-00093

## CONSTRUCTION

### AIRBAG SYSTEM

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#### C: AIRBAG SENSOR

The airbag control module and side airbag sensor contain an electronic sensor and a safety sensor.

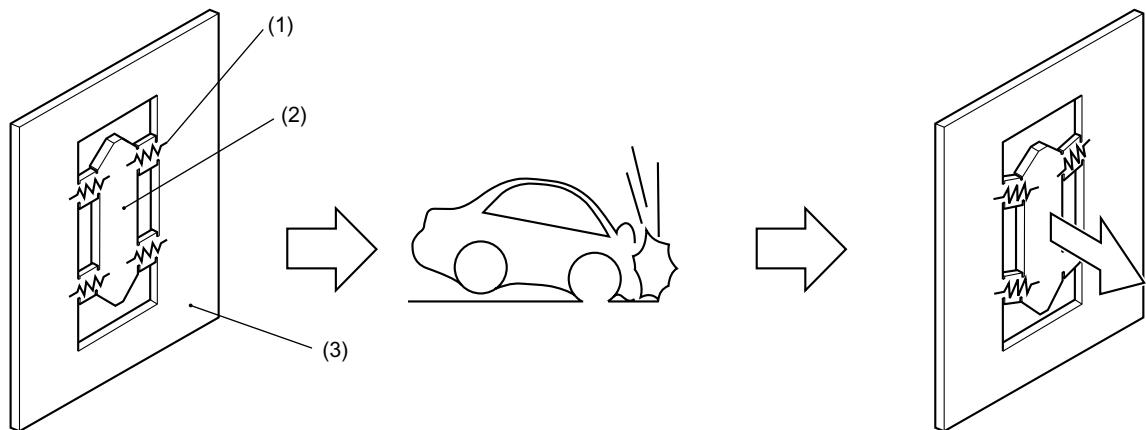
The electronic sensor consists of a semiconductor type sensor which senses the deceleration caused by collision in terms of change in the electrical resistance of the impact sensing circuit.

The safety sensor is a pendulum type sensor. If the sensor receives a frontal or side impact exceeding a certain limit, the mass in the sensor moves in the direction opposite to the impact direction to turn the switch ON.

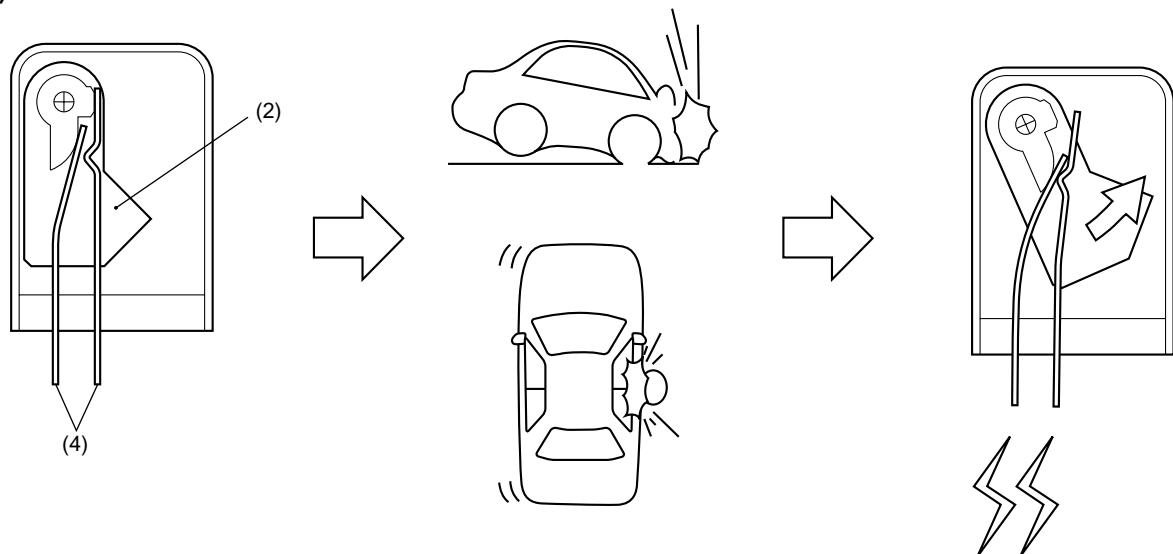
# CONSTRUCTION

## AIRBAG SYSTEM

(A)



(B)



AB-00094

(A) Electronic sensor

(B) Safety sensor

(1) Electrical resistance

(2) Mass

(3) Semiconductor

(4) Switch contacts

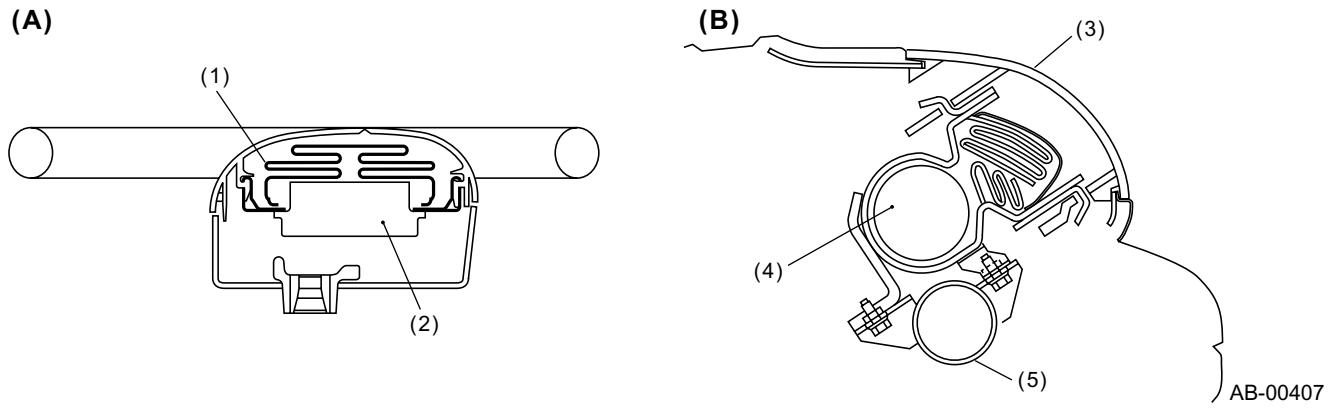
# CONSTRUCTION

## AIRBAG SYSTEM

### D: AIRBAG MODULE

#### 1. FRONT AIRBAG

The driver's airbag module is located at the center of the steering wheel and the passenger's airbag module is located at upper portion of instrument panel. Each module contains an airbag and an inflator. If a collision occurs, the inflator produces a large volume of gas to inflate the airbag in a very short time.



**(A)** Driver's module

(1) Air bag

(2) Inflator (Driver's seat)

(3) Airbag module lid

**(B)** Passenger's module

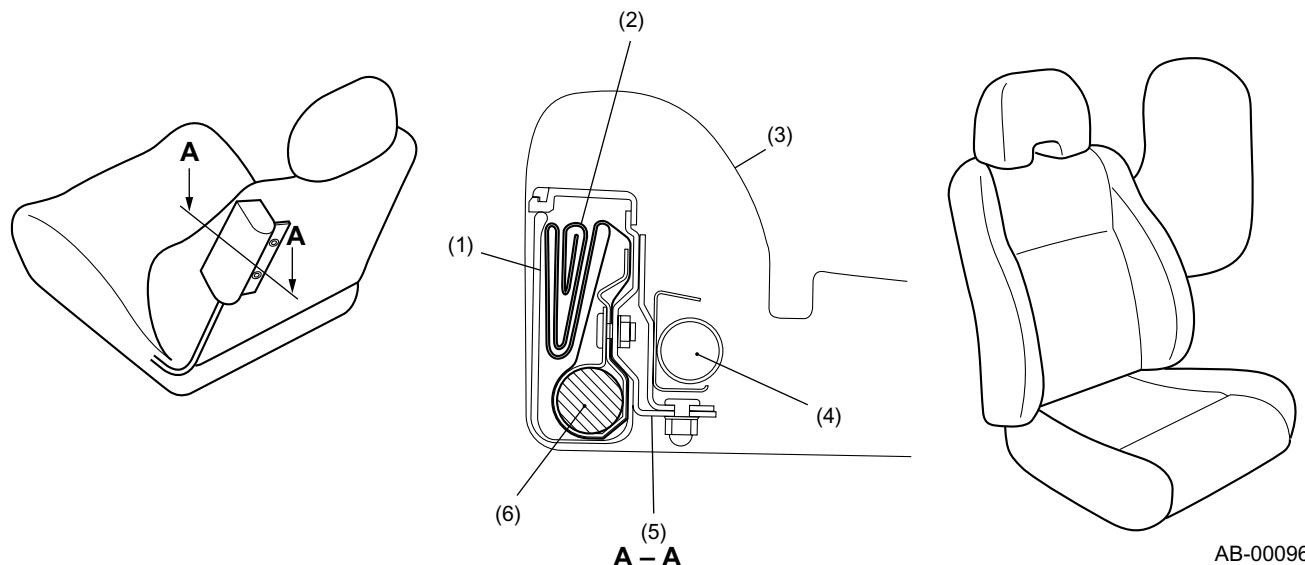
(4) Inflator (passenger)

(5) Steering support beam

### 2. SIDE AIRBAG

A side airbag module is located at the outer side of each front seat backrest, and it contains an airbag and an inflator.

If a side-on collision occurs, the inflator produces a large volume of gas to inflate the airbag in a very short time.



AB-00096

- (1) Cover
- (2) Air bag
- (3) Seat upholstery

- (4) Seat frame
- (5) Bracket
- (6) Inflator

# CONSTRUCTION

## AIRBAG SYSTEM

### E: AIRBAG CONNECTORS

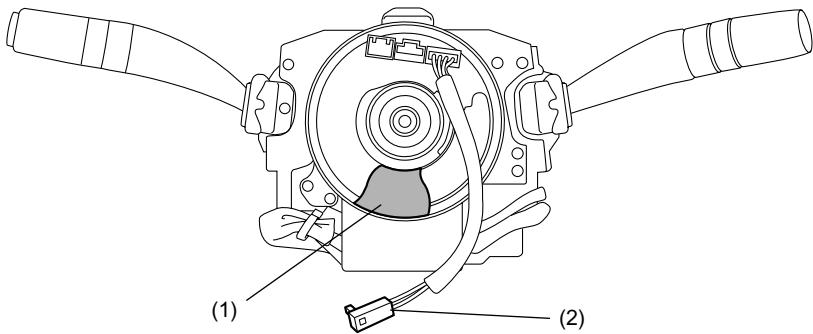
#### 1. GENERAL

The airbag system uses connectors with a double lock mechanism and an incomplete coupling detection mechanism for enhanced reliability. If coupling is incomplete, the airbag warning light comes on in the combination meter.

### F: STEERING ROLL CONNECTOR

The steering roll connector is located in between the steering column and the steering wheel. The roll connector contains a spirally wound flat cable.

The flat cable maintains connection between the airbag module on the steering wheel and the airbag harness even when the steering wheel is turned. Ignition signal from the airbag control module is sent through the roll connector to the driver's seat airbag module.



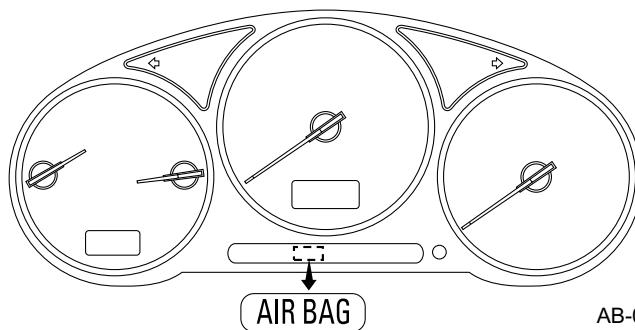
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(1) Flat cable

(2) Airbag module connector

### G: AIRBAG WARNING LIGHT

The airbag warning light is located inside the combination meter. It illuminates if a poor connection in the airbag circuit occurs, or if the airbag control module detects an abnormal condition. When the airbag system is normal, this light comes on when the ignition switch is turned ON and then goes out about 6 seconds later.



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### H: WIRE HARNESS

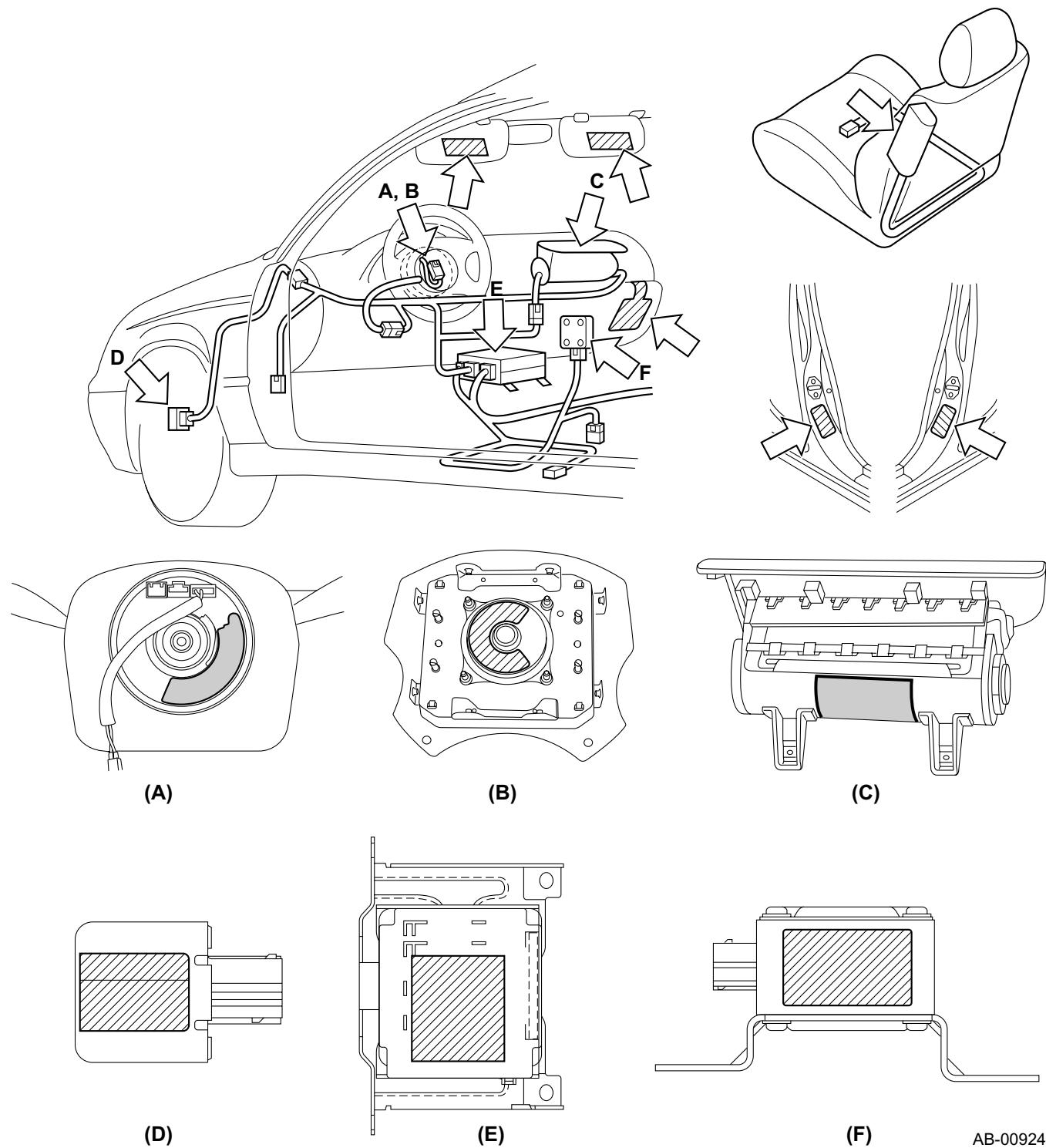
The airbag harnesses are integrated into the body harness as follows:

- Front sub sensor harness: integrated into the front harness.
- Airbag main harness: integrated into the bulkhead harness.
- Pretensioner and side airbag harnesses: integrated into the rear harness.

# CONSTRUCTION

## AIRBAG SYSTEM

### I: LOCATIONS OF WARNING AND CAUTION LABELS



AB-00924