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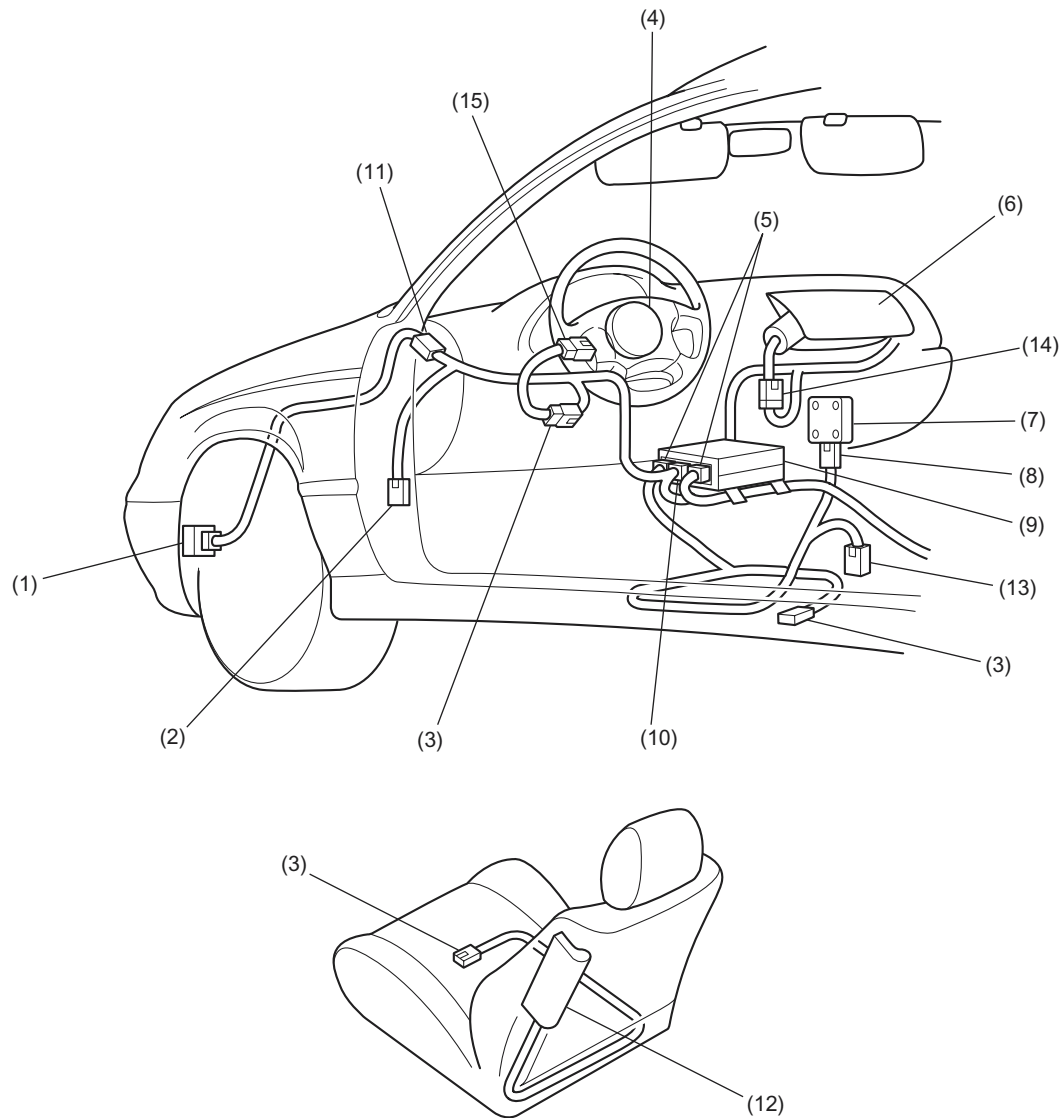
# AIRBAG SYSTEM

## AIRBAG SYSTEM

### AIRBAG SYSTEM

## 1. Airbag System

### A: CONSTRUCTION



AB-00599

- |                               |  |
|-------------------------------|--|
| (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)  |  |

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## AIRBAG SYSTEM

AIRBAG SYSTEM

### B: FUNCTION

#### 1. FRONT AIRBAG

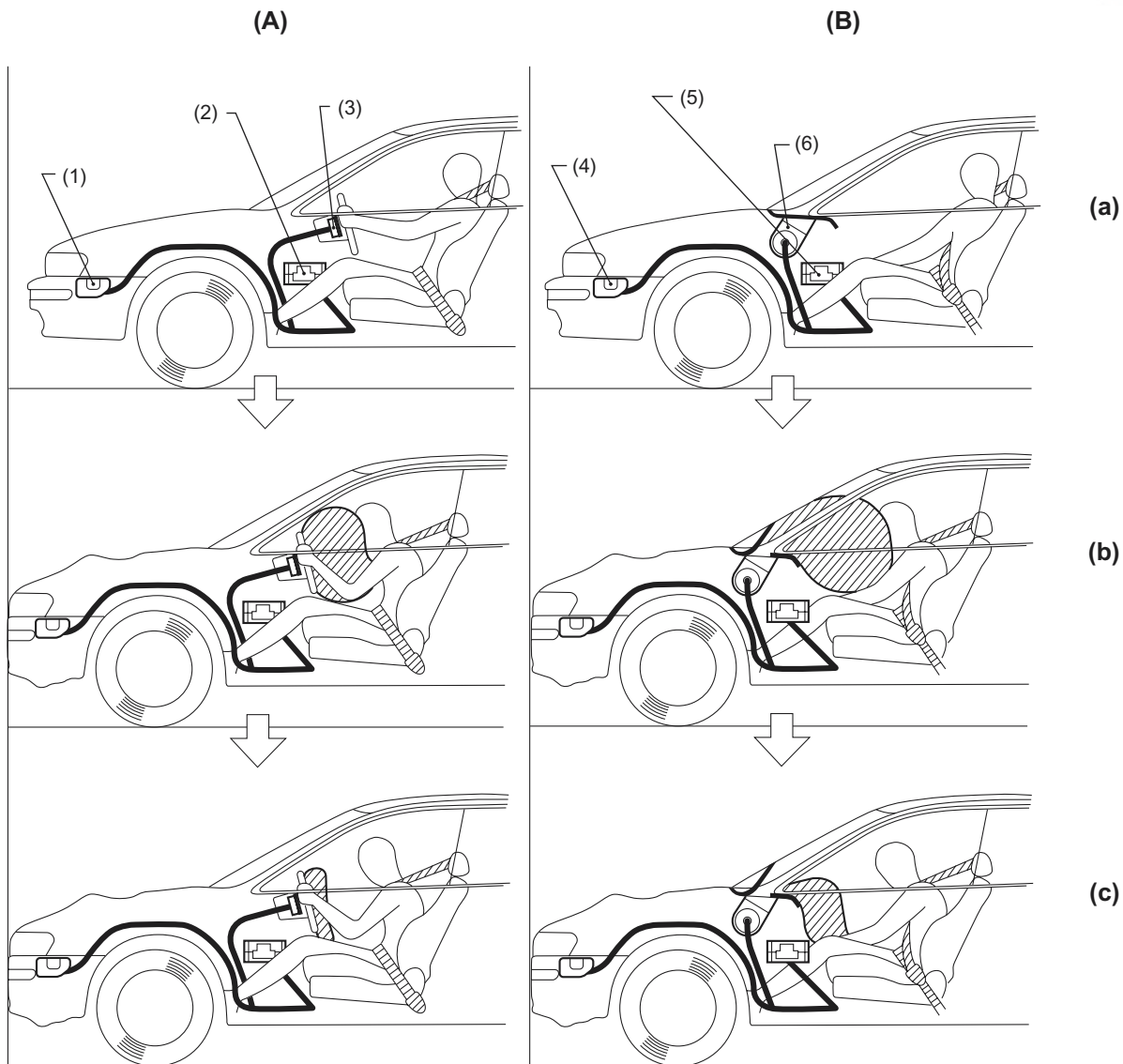
The airbag system is provided as a driver and front passenger restraint system supplementary to the seat belts. When an impact greater than a set level is applied to the front of the vehicle, the airbag control module activates the airbag modules in response to the signal from the sensor. The airbag 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.

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# AIRBAG SYSTEM

## AIRBAG SYSTEM

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AB-00090

- (A) Driver's side
- (B) Passenger's side

- (1) Front sub sensor
- (2) Safety sensor and electric sensor
- (3) Inflator
- (4) Front sub sensor
- (5) Safety sensor and electric sensor
- (6) Inflator

- (a) • Collision occurs.
- (b) • Front sub sensor, electric sensor and safety sensor detect an impact greater than the set level.
  - Inflators is ignited.
  - Gas is generated.
  - Airbag inflation completes.
  - Gas is discharged.
- (c) • Airbags deflate.

## AIRBAG SYSTEM

AIRBAG SYSTEM

### 2. SIDE AIRBAG

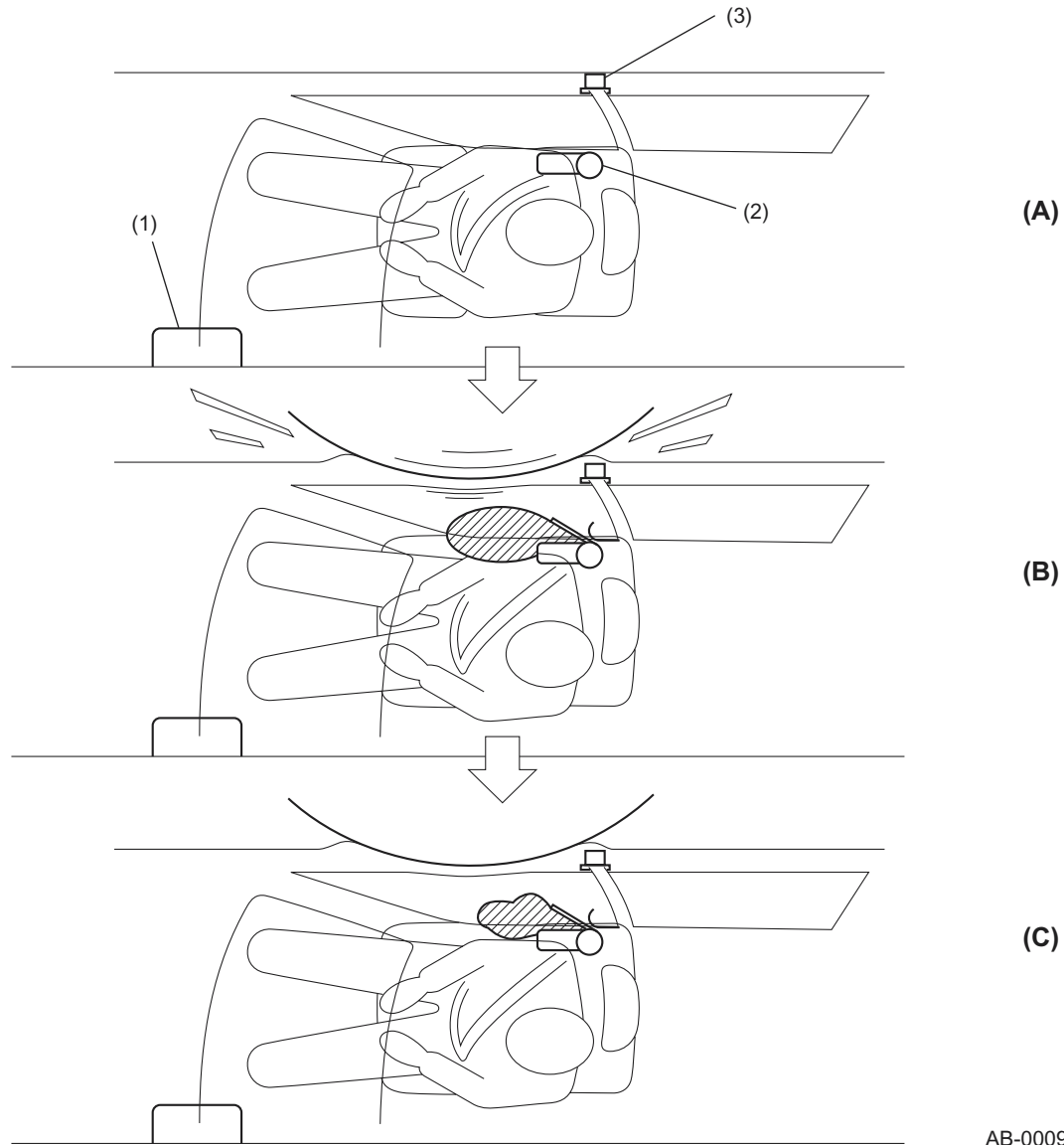
The side airbags provide the driver and front passenger with a restraint supplementary to that by the seat belts in the event of a side-on collision. When an impact greater than the set level is applied to either side of the vehicle, the airbag control module activates the corresponding side airbag module 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.

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# AIRBAG SYSTEM

## AIRBAG SYSTEM

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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.

AB-6

## CONSTRUCTION

AIRBAG SYSTEM

### 2. Construction

#### A: GENERAL

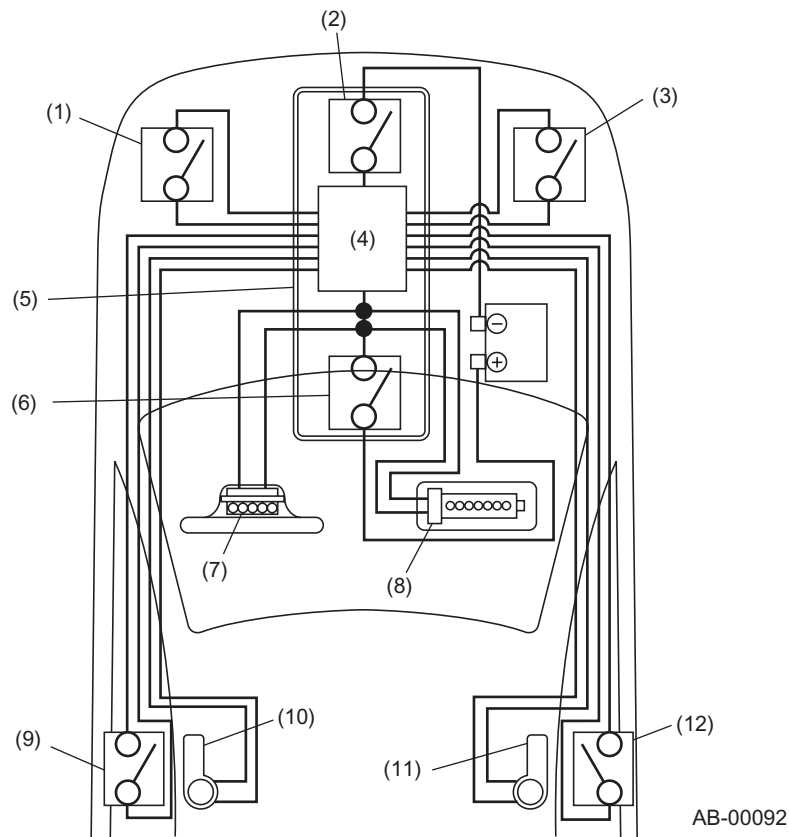
- The airbag system consists of an airbag control module, left and right front sub sensors, an electric sensor and safety sensor built into the control module, driver's and passenger's airbag modules each containing an inflator and airbag, and side airbag sensors and modules each containing an inflator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

- **Front airbag system:**

A frontal impact exceeding the set level causes the safety sensor, electric 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.



- |                         |                                 |                            |
|-------------------------|---------------------------------|----------------------------|
| (1) Front sub sensor LH | (5) Airbag control module       | (9) Side airbag sensor LH  |
| (2) Safety sensor       | (6) Electric 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 |

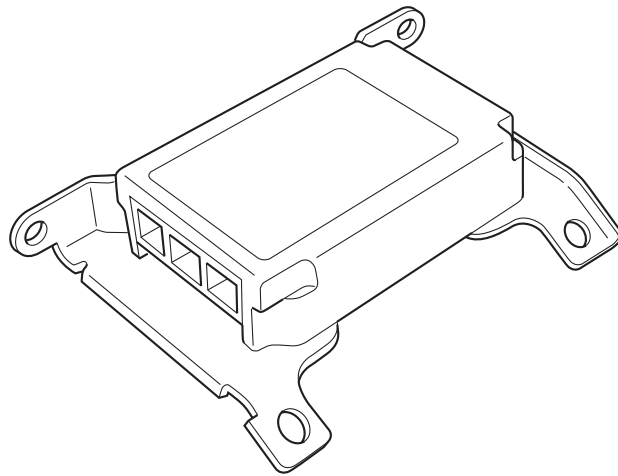
AB-7

## CONSTRUCTION

### AIRBAG SYSTEM

#### 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 electric 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

#### AB-8



## CONSTRUCTION

AIRBAG SYSTEM

### C: AIRBAG SENSOR

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

The electric 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.

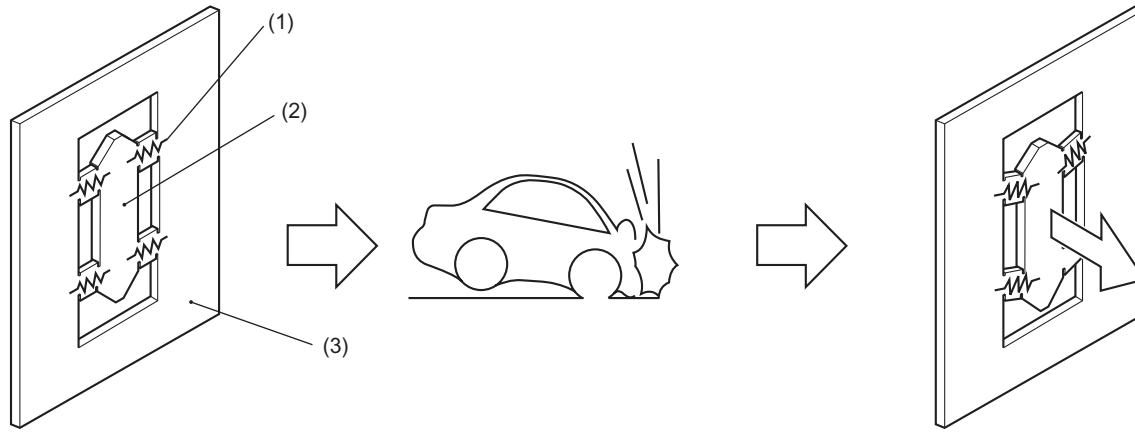
AB-9

# CONSTRUCTION

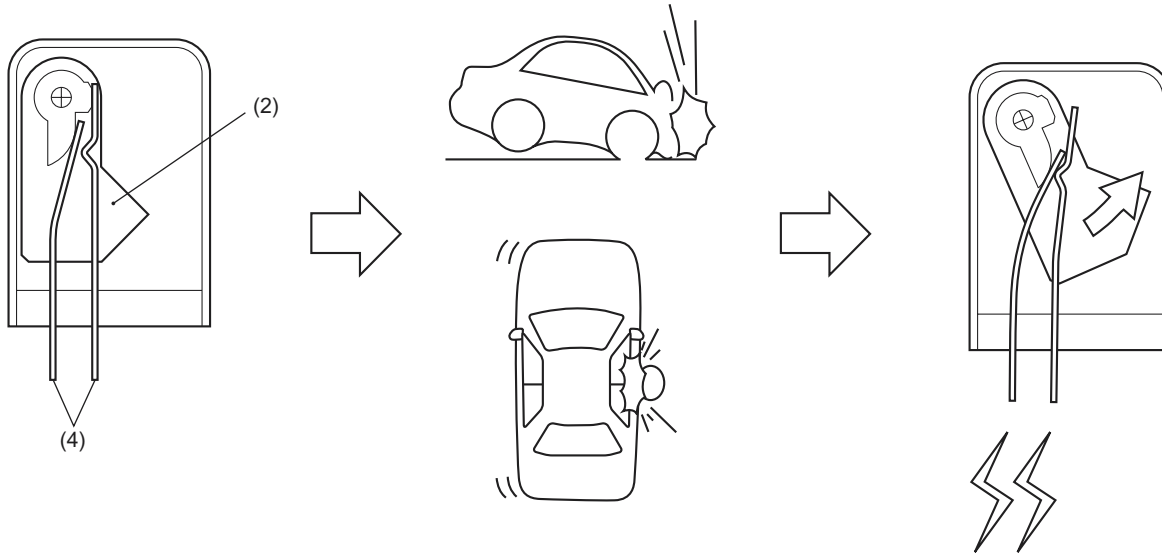
## AIRBAG SYSTEM

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(A)



(B)



AB-00094

(A) Electric sensor  
(B) Safety sensor

(1) Electrical resistance  
(2) Mass  
(3) Semiconductor  
(4) Switch contacts

### AB-10

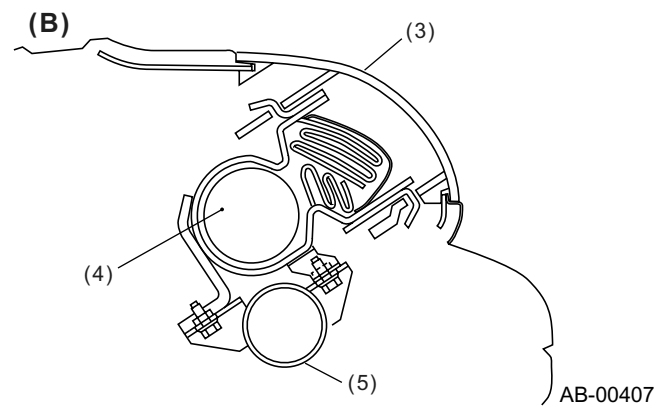
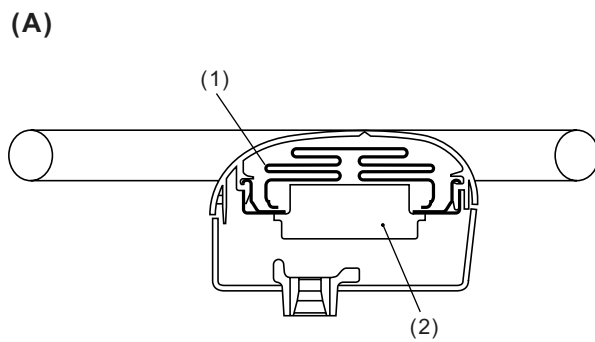
## CONSTRUCTION

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

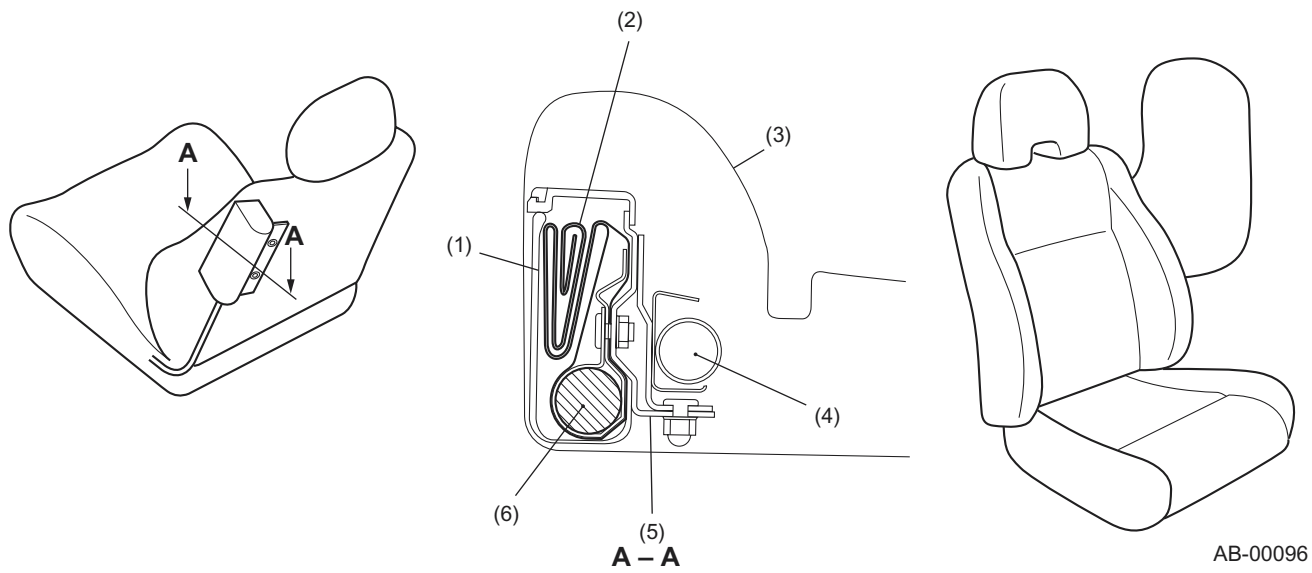
## CONSTRUCTION

### AIRBAG SYSTEM

#### 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.



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

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

AB-12

## CONSTRUCTION

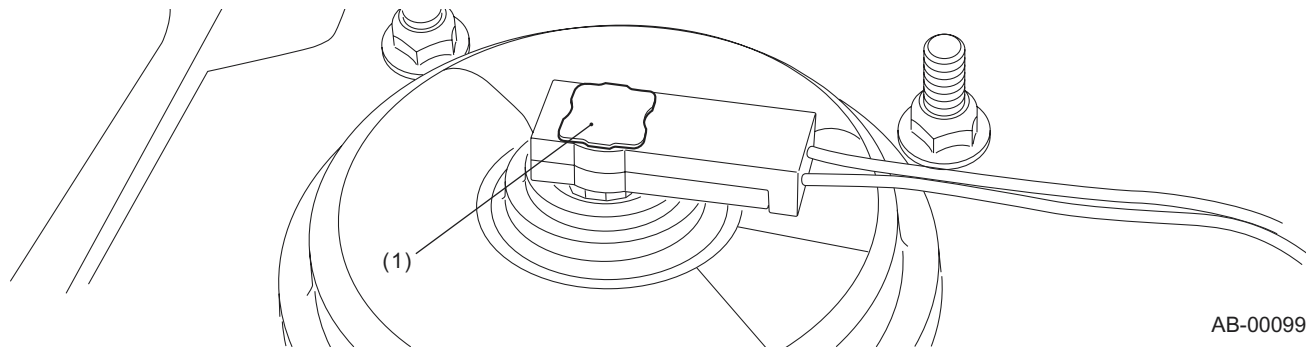
AIRBAG SYSTEM

### 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.

#### 2. DRIVER'S AIRBAG MODULE-TO-ROLL CONNECTOR HARNESS CONNECTOR

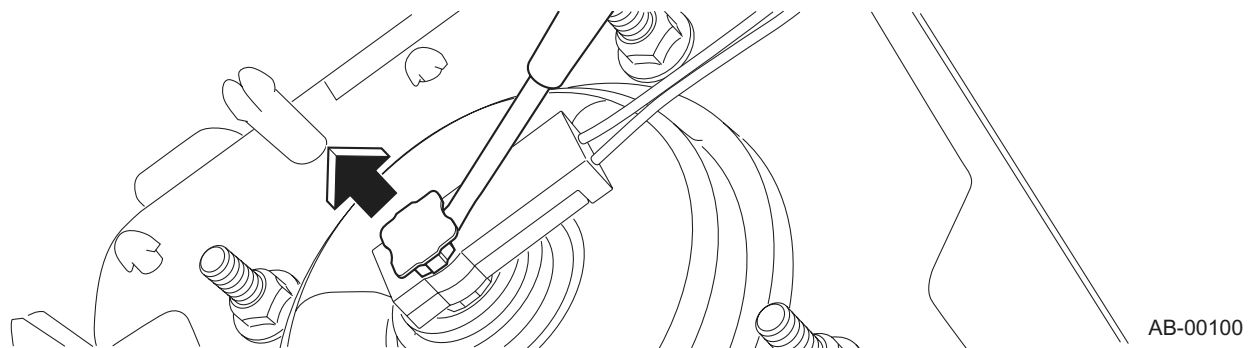


AB-00099

(1) Lock button

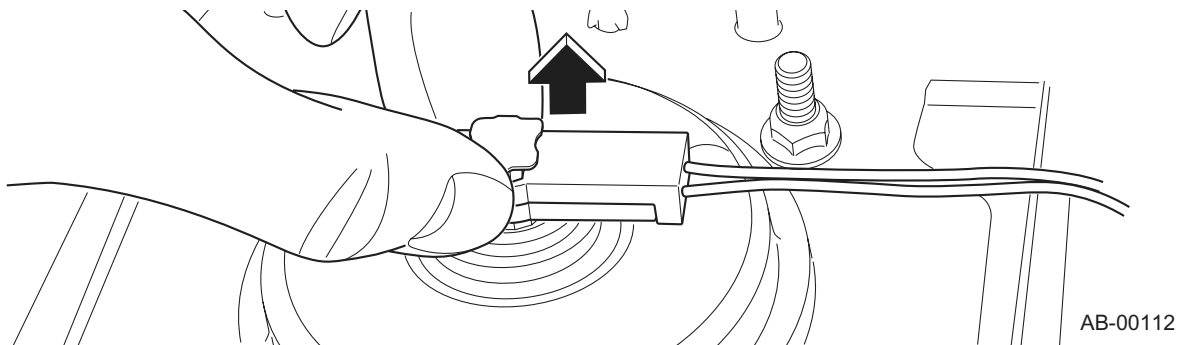
#### Disconnection:

1) Lift the lock button using a thin tipped tool like a miniature screwdriver.



AB-00100

2) Pull the connector out from the airbag module.



AB-00112

#### Connection:

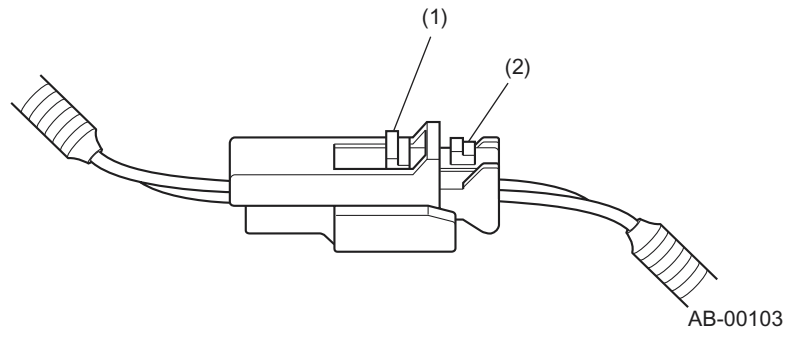
Carefully insert the connector into the airbag module. Push the connector until a "click" is heard from the lock button.

AB-13

## CONSTRUCTION

### AIRBAG SYSTEM

#### 3. AIRBAG HARNESS-TO-AIRBAG HARNESS CONNECTOR



(1) Slide lock

(2) Lock arm

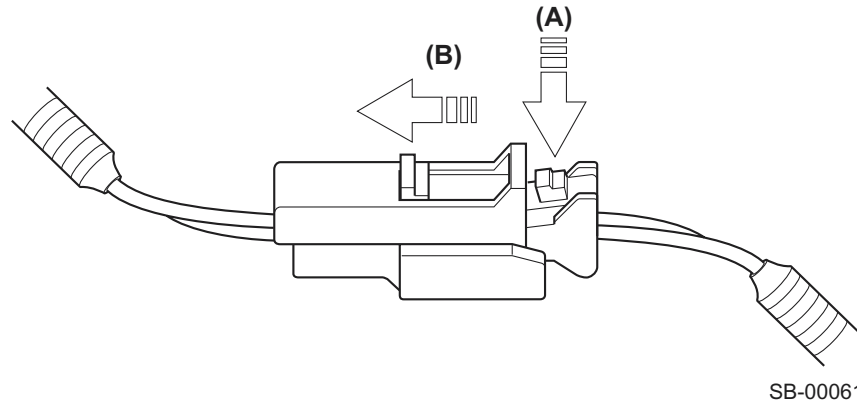
AB-14

## CONSTRUCTION

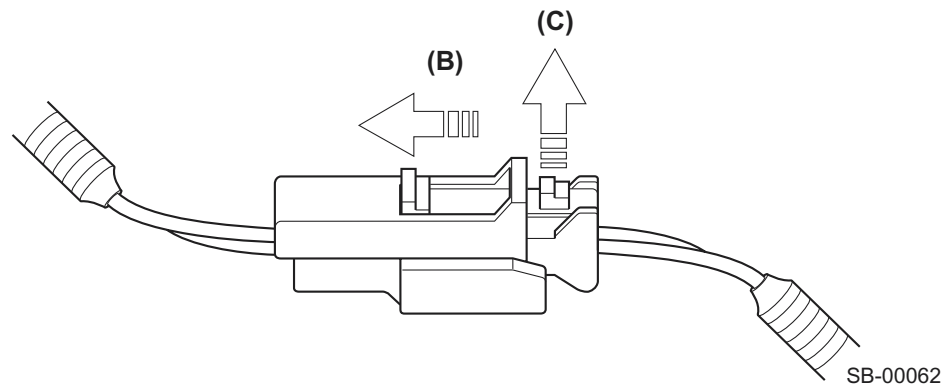
AIRBAG SYSTEM

### Disconnection:

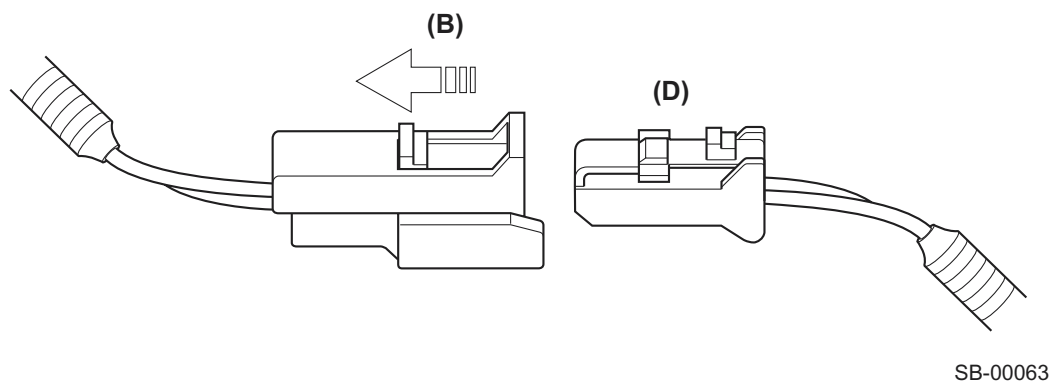
1)



2)



3)



- (A) Step 1: Push
- (B) Step 2: Slide and hold
- (C) Step 3: Release
- (D) Step 4: Disconnect

### Connection:

Insert the female side connector half into the other until a "click" is heard.

AB-15

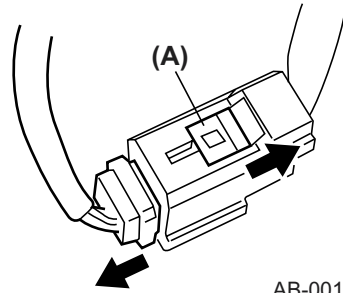
## CONSTRUCTION

### AIRBAG SYSTEM

#### 4. AIRBAG HARNESS-TO-BODY HARNESS CONNECTOR AND AIRBAG HARNESS TO FRONT SUB SENSOR HARNESS CONNECTOR

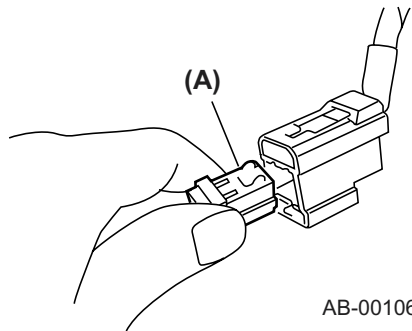
**Disconnection:**

Hold slide lock (A) moved in the direction of the arrow, then pull the female connector in the direction of the arrow.



**Connection:**

Push the connector (A) into the male connector carefully until a “click” is heard.



**AB-16**



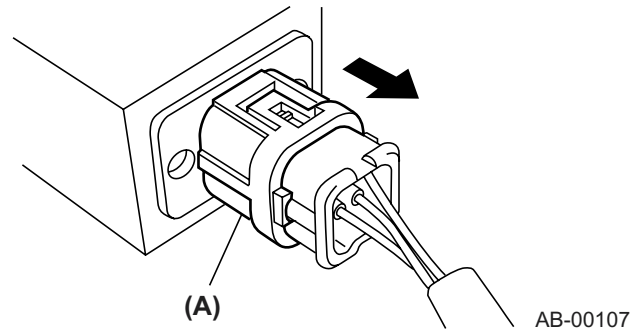
## CONSTRUCTION

AIRBAG SYSTEM

### 5. FRONT SUB SENSOR AND SIDE AIRBAG SENSOR CONNECTORS

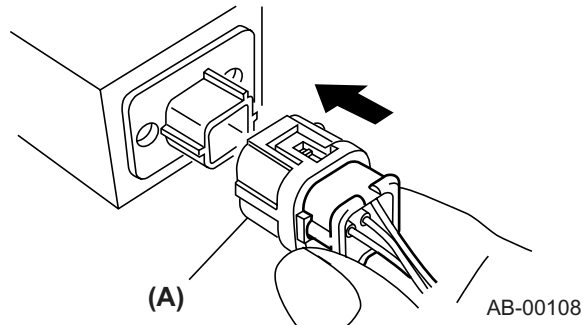
#### Disconnection:

Holding the outer part (A), pull the connector in the direction of the arrow.



#### Connection:

Holding the inner part, push the connector into the socket carefully until a “click” is heard. Do not hold the outer part (A) as it moves back during connection of the connector.



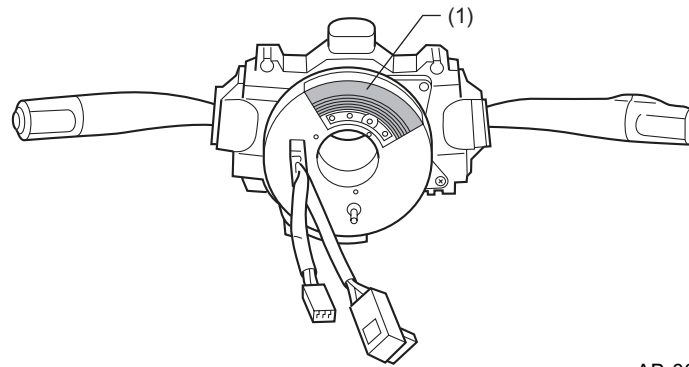
AB-17

## CONSTRUCTION

### AIRBAG SYSTEM

#### F: STEERING ROLL CONNECTOR

The steering roll connector is located between the steering column and steering wheel. The connector contains a spirally wound flat cable. The cable can follow rotational movements of the steering wheel and ensures connection between the airbag module in the steering wheel and the airbag harness through which electrical signals are transmitted from the airbag control module.

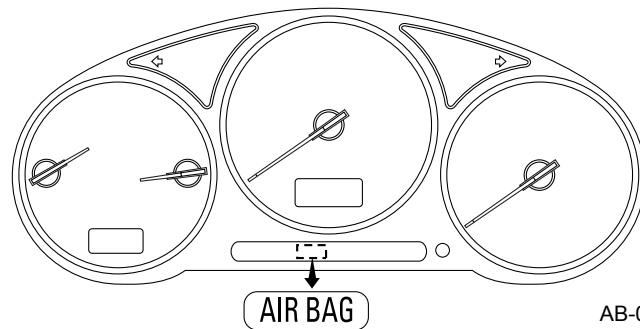


AB-00608

(1) Flat cable

#### 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 7 seconds later.



AB-00412

#### 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.

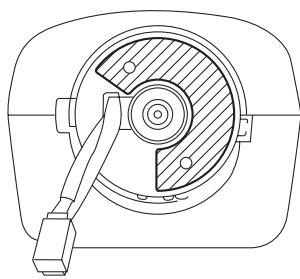
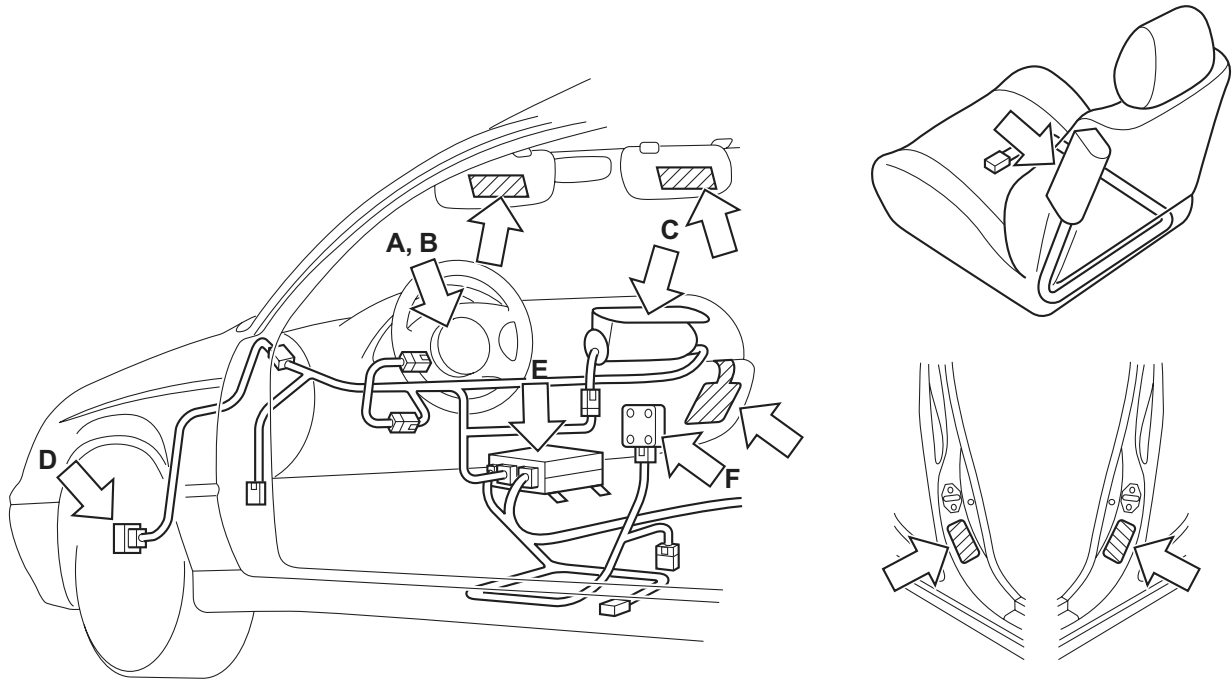
**AB-18**

# CONSTRUCTION

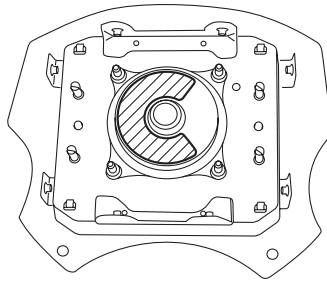
AIRBAG SYSTEM

## I: LOCATIONS OF WARNING AND CAUTION LABELS

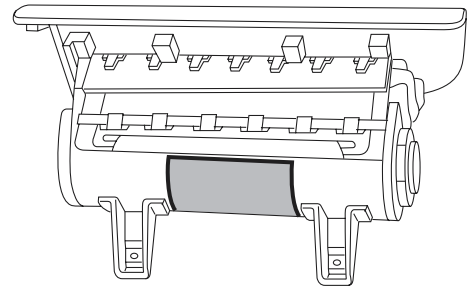
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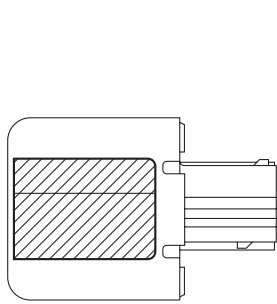
(A)



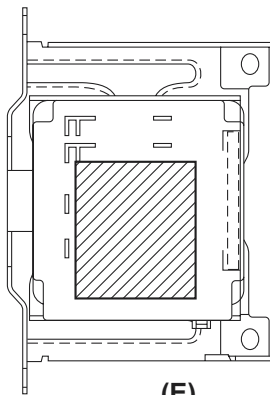
(B)



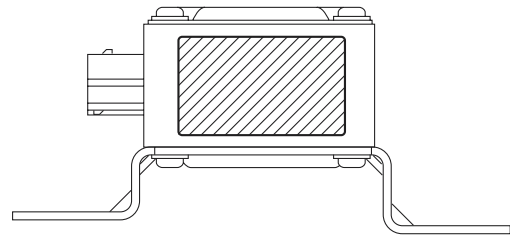
(C)



(D)



(E)



(F)

AB-00609

# CONSTRUCTION

AIRBAG SYSTEM

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