

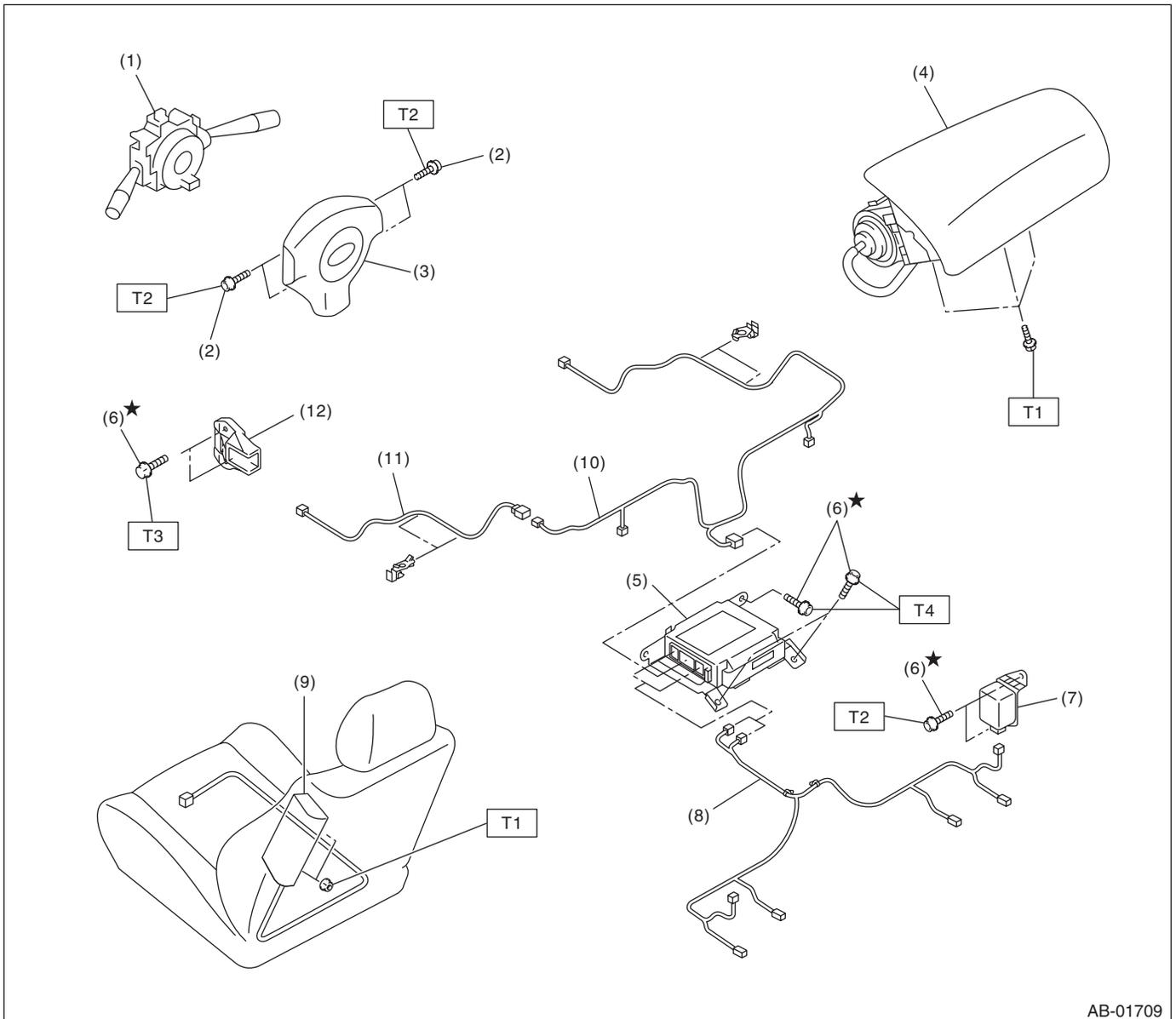
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NOT FOR RESALE

# AIRBAG SYSTEM

1. General Description

A: COMPONENT

1. SRS AIRBAG



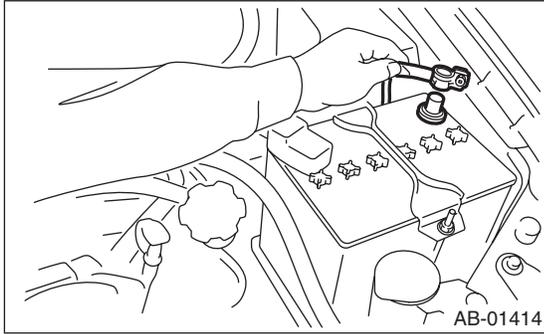
AB-01709

- |   |                               |
|---|-------------------------------|
| (1) Combination switch ASSY with roll connector | (7) Side airbag sensor        |
| (2) TORX® bolt T30                              | (8) Side airbag harness       |
| (3) Airbag module ASSY (Driver)                 | (9) Side airbag module        |
| (4) Airbag module ASSY (Passenger)              | (10) Airbag main harness      |
| (5) Airbag control module                       | (11) Front sub sensor harness |
| (6) Bolt (exclusive use)                        | (12) Front sub sensor         |

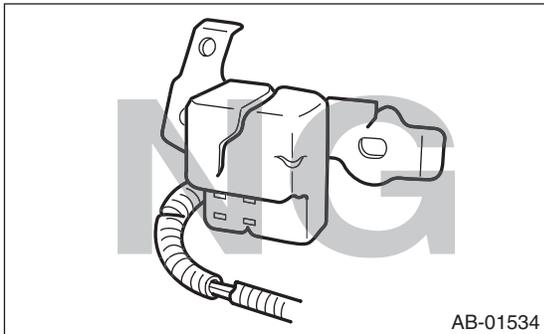
**Tightening torque: N·m (kgf·m, ft·lb)**  
**T1: 7.5 (0.76, 5.5)**  
**T2: 10 (1.0, 7.4)**  
**T3: 13 (1.3, 9.6)**  
**T4: 25 (2.5, 18.4)**

### B: CAUTION

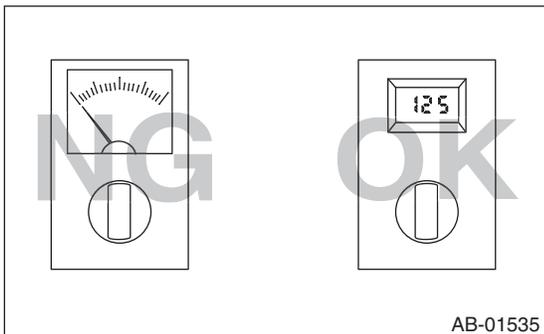
- When servicing a vehicle, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait for 20 seconds or more before starting work.
- The airbag system is fitted with a backup power source. After disconnecting the battery ground cable, be careful because the airbag may deploy if you do not wait for 20 seconds or more before starting airbag system servicing.



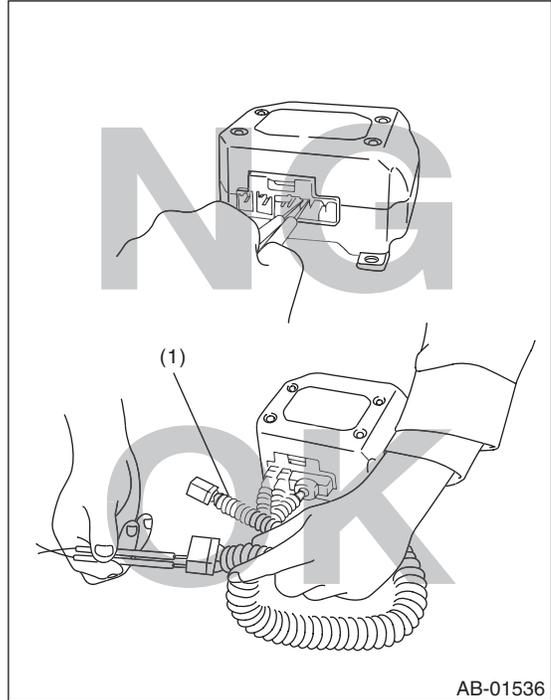
- If the airbag warning light illuminates, repair the vehicle immediately. Otherwise, the airbag or pretensioner may inflate incorrectly, or not inflate in collision.
- If sensors, airbag module, airbag control module, pretensioner or harness is deformed or damaged, replace with new parts.



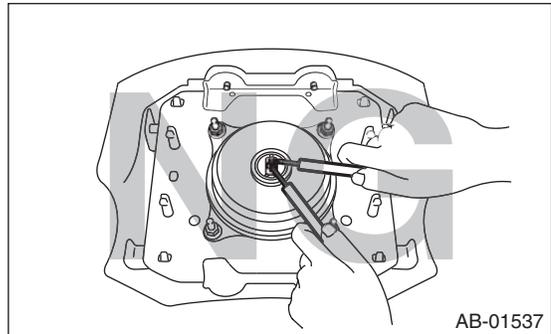
- When checking the airbag system, be sure to use a digital circuit tester. Use of an analog circuit tester may cause the airbag to activate erroneously due to a minimal current inside tester.



- When checking, use a test harness (1). Damage to connector terminal cause malfunction. Do not directly apply the tester probe to connector terminal of airbag.



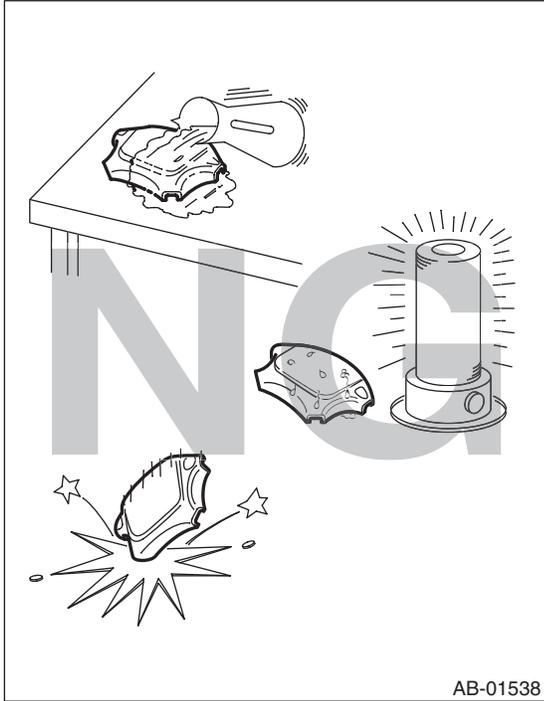
- Do not check continuity of the airbag modules for driver's side, passenger's side, or pretensioner.



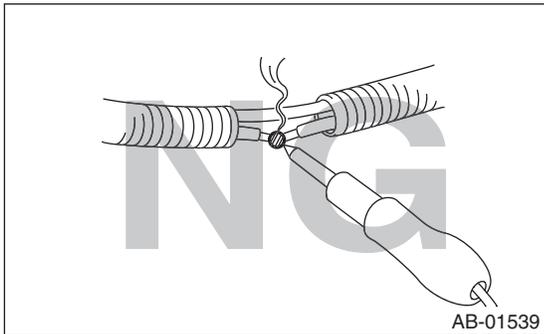
# General Description

## AIRBAG SYSTEM

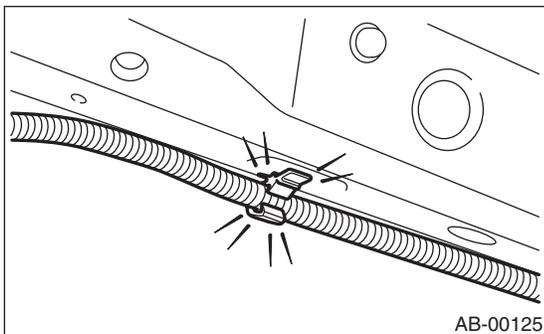
- Do not drop the airbag system parts, or keep them at high temperature of 93°C (199°F) or more, or let water, oil or grease get on them; the internal parts may be damaged and reliability greatly lowered.



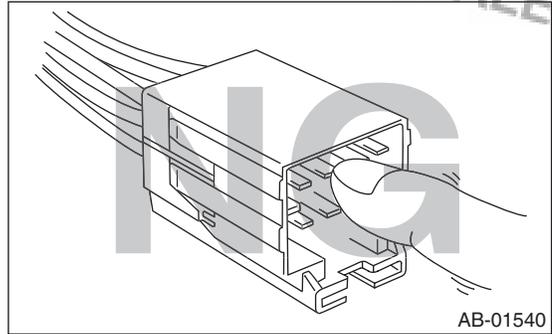
- If damage, open circuit or rust is found on airbag system wiring harness, do not use a soldering equipment to repair. Replace the faulty harness with a new genuine part.



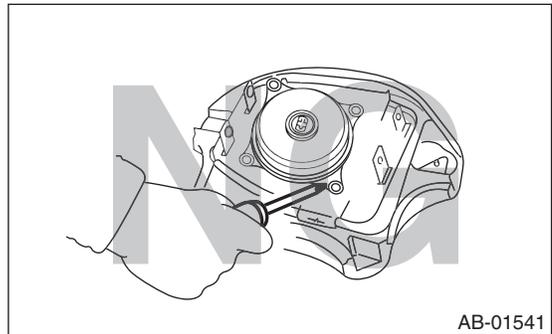
- Install the wiring harness securely with the specified clips to avoid interference or tangled with other parts.



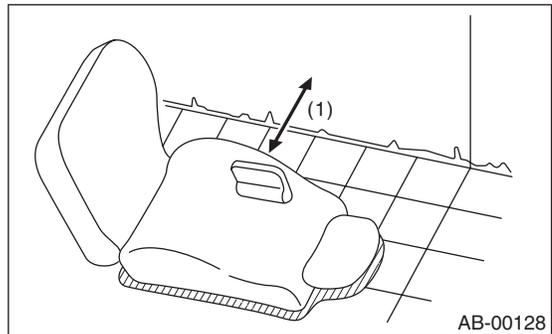
- Do not allow water or oil to come in contact with the connector terminals. Also, do not touch the connector terminals.



- Either of the airbag modules for driver's, passenger's and side or the pretensioner must not be disassembled.



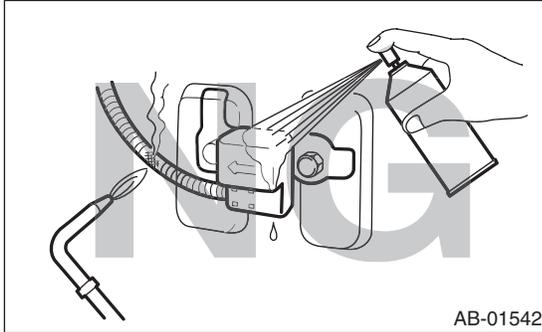
- The removed front seat with airbag module must be kept at least 200 mm (8 in) away from walls and other objects.



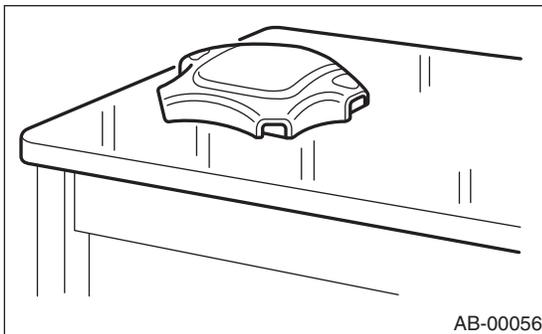
(1) 200 mm (8 in) or more

- Do not use the airbag or pretensioner parts from other vehicles. Always replace the defective parts with new parts.
- Never reuse a deployed airbag and pretensioner.
- When painting or performing sheet metal work on the front part of the vehicle, including the front wheel apron, front fender and front side frame, remove the front sub sensors and wiring harness of airbag system.

- When painting or performing sheet metal work on the side of the vehicle, including the side sill, center pillar and front and rear doors, remove the side airbag sensors and wiring harness of the airbag system.



- Do not discard undeployed airbag module or pretensioner.
- After removing all the parts of airbag system, keep the airbag module with the pad side facing upward on a dry, clean and flat surface away from heat, light sources, moisture and dust.

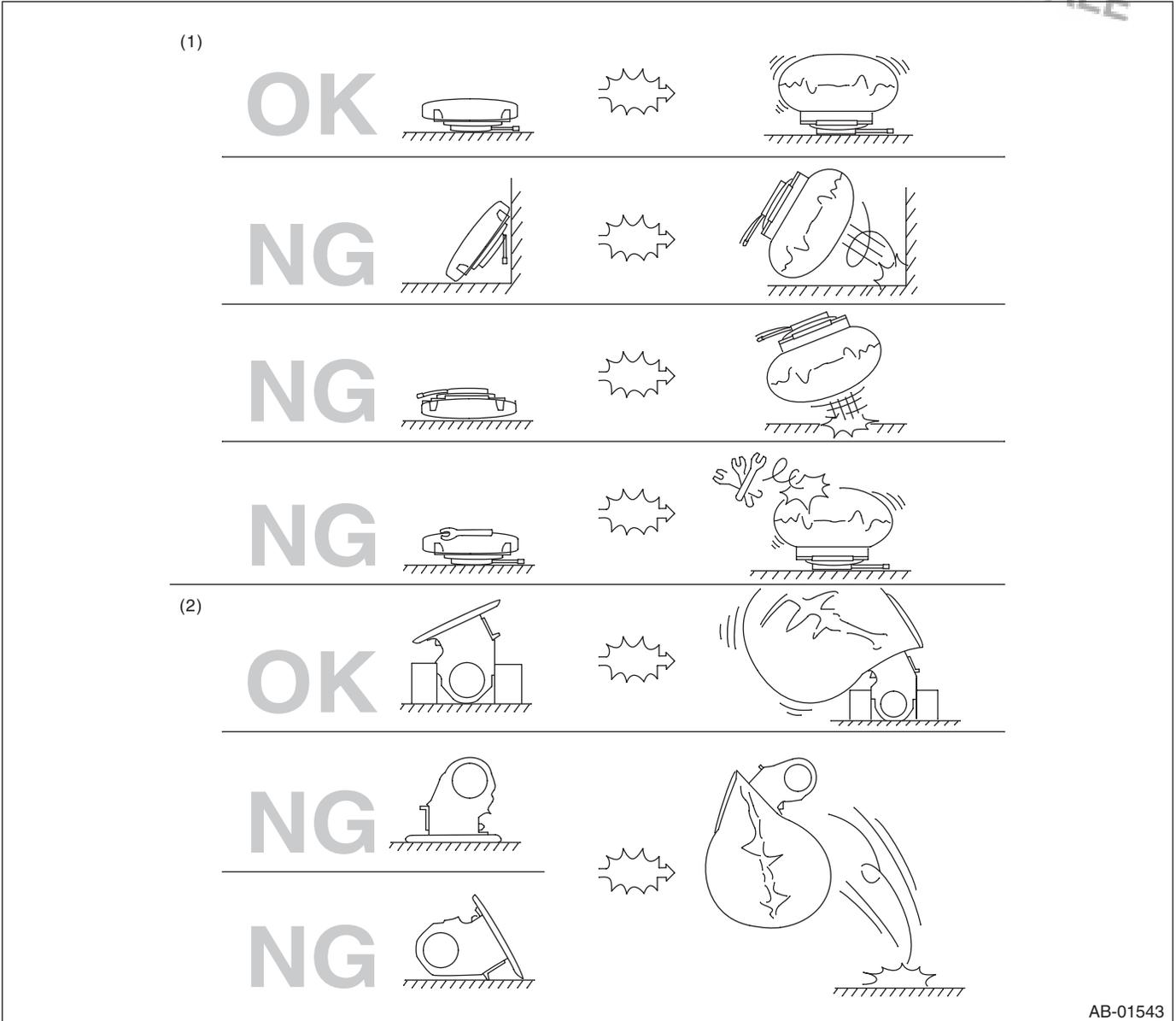


- When airbag control module, front sub sensor and side airbag sensor are removed, do not reuse the bolts and nuts. Always use new bolts and nuts for them.

# General Description

## AIRBAG SYSTEM

- When storing a removed airbag module, do not place any objects on the module or stack them on top of each other. If the airbag inflates for some reason when it is placed with its pad side facing downward or under any object, a serious accident may result.



AB-01543

(1) Driver's airbag module

(2) Passenger's airbag module

## C: PREPARATION TOOL

### 1. GENERAL TOOL

TOOL NAME	REMARKS
TORX® T30	Used for removal/installation of driver's airbag module

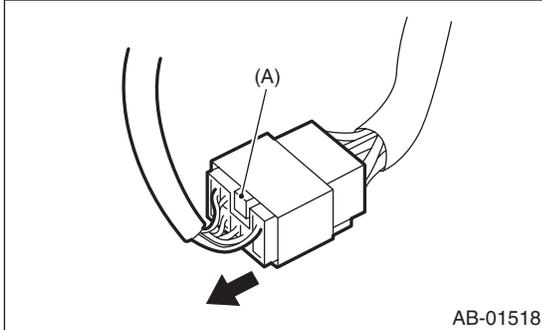
## 2. Airbag Connector

### A: PROCEDURE

#### 1. POWER SUPPLY

1) How to disconnect:

(1) With the lock arm (A) pushed in, pull the connector in the direction of arrow.

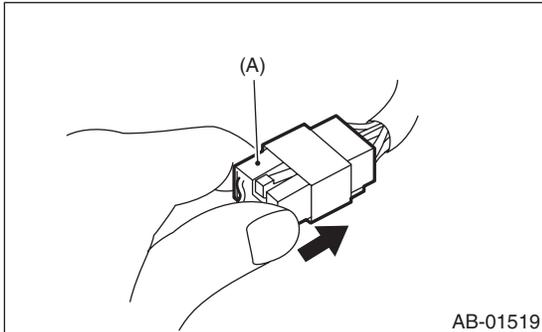


**CAUTION:**

When pulling the lock arm or disconnecting connector, be sure to hold the connector, not the harness.

2) How to connect:

Holding the connector (A), and push it in carefully until a clicking sound is heard.



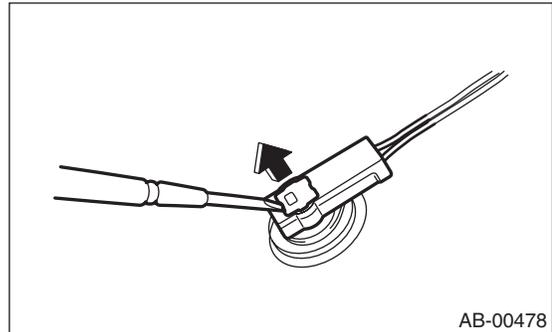
**CAUTION:**

Be sure to insert the connector in until it is locked. Then pull it gently to make sure that it is locked.

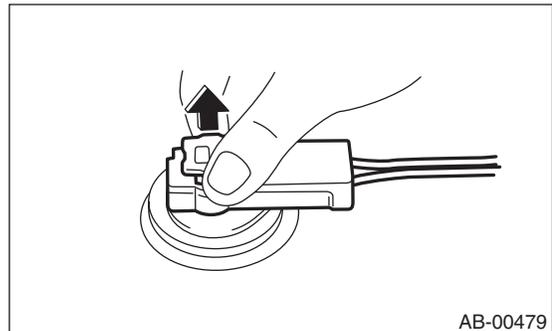
#### 2. DRIVER'S AIRBAG MODULE AND PRE-TENSIONER

1) How to disconnect

(1) Using a flat tip screwdriver, pry the push lock upward to unlock.



(2) Pull the connector to disconnect from the driver's airbag module assembly or the retractor assembly.

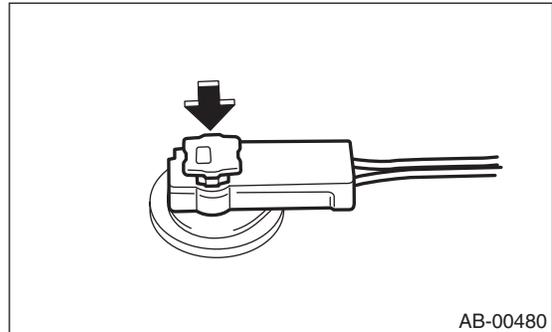


2) How to connect

Connect the connector in the reverse order of disconnecting. At this time, be sure to insert the push lock until a clicking sound is heard.

**CAUTION:**

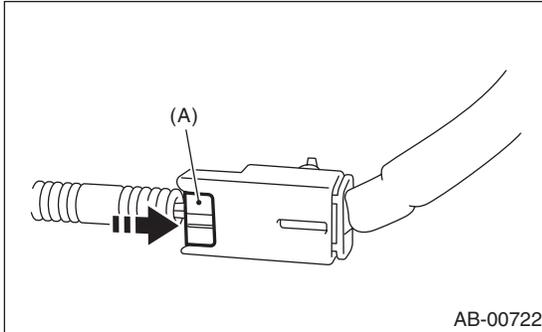
- Be sure to insert the connector in until it is locked. Then pull it gently to make sure that it is locked.
- Be sure to push the push lock in securely.



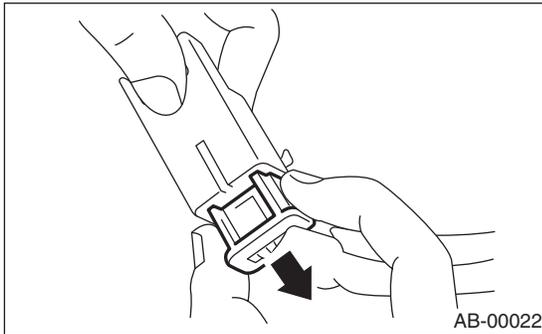
### 3. DRIVER'S AIRBAG (BETWEEN AIRBAG MAIN HARNESS AND ROLL CONNECTOR) AND PASSENGER'S AIRBAG

#### 1) How to disconnect

- (1) Push the slide lock (A) in the direction of arrow.



- (2) With the slide lock pushed, disconnect the connector.



#### CAUTION:

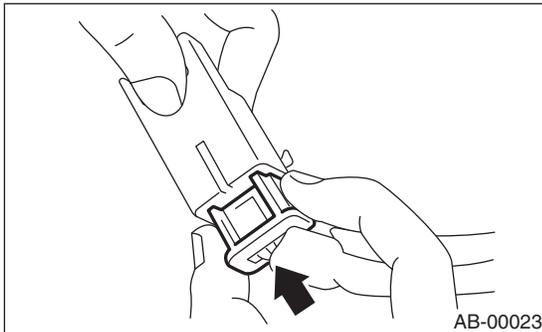
When pulling the slide lock or disconnecting connector, be sure to hold the connector, not the harness.

#### 2) How to connect

Holding the connector, push it in securely until a clicking sound is heard.

#### CAUTION:

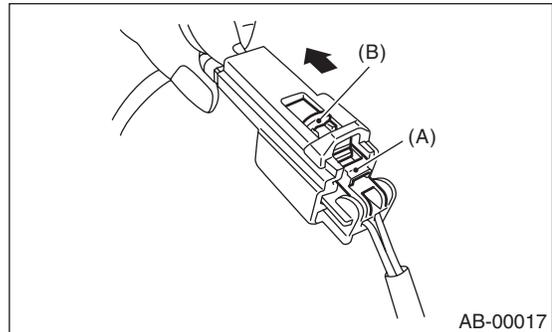
Be sure to insert the connector in until it is locked. Then pull it gently to make sure that it is locked.



### 4. SIDE AIRBAG

#### 1) How to disconnect

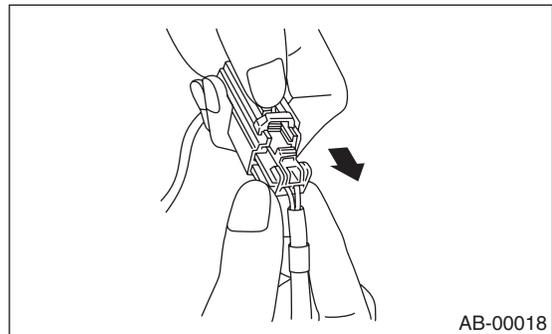
- (1) Push the lock arm (A).
- (2) With the lock arm (A) pushed in, move the slide lock (B) in the direction of arrow.



- (3) With the slide lock moved, release the lock arm (return to original position) and disconnect the connector.

#### CAUTION:

When pulling the slide lock or disconnecting connector, be sure to hold the connector, not the harness.

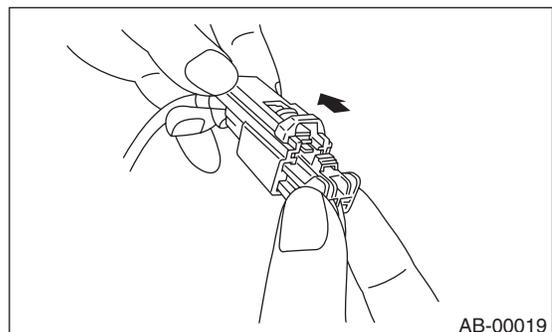


#### 2) How to connect

Holding the connector, push it in securely until a clicking sound is heard.

#### CAUTION:

Be sure to insert the connector in until it is locked. Then pull it gently to make sure that it is locked.





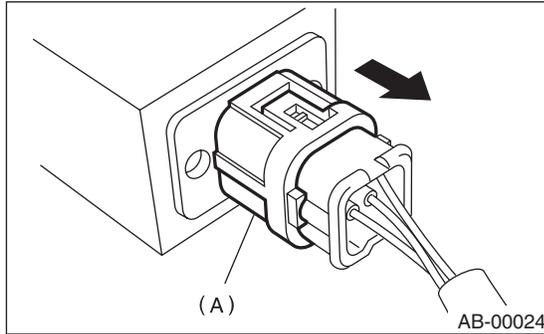
## 5. FRONT SUB SENSOR, SIDE AIRBAG SENSOR AND SEAT POSITION SENSOR

### 1) How to disconnect

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

#### CAUTION:

When pulling the slide lock or disconnecting connector, be sure to hold the connector, not the harness.

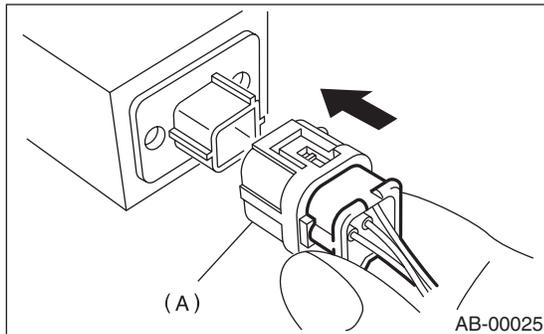


### 2) How to connect

Holding the connector, push it in securely until a clicking sound is heard.

#### CAUTION:

- Do not touch the outer side section or else the outer side (A) will move back.
- Be sure to insert the connector in until it is locked. Then pull it gently to make sure that it is locked.



# Inspection Locations After a Collision

## AIRBAG SYSTEM

### 3. Inspection Locations After a Collision

#### A: REPLACEMENT

Replace the following parts when the airbag is deployed.

##### 1. FRONT COLLISION

- 1) Driver's airbag module
- 2) Passenger's airbag module
- 3) Driver's seat belt (Pretensioner)
- 4) Passenger's seat belt (Pretensioner)
- 5) Airbag control module
- 6) Front sub sensor
- 7) Roll connector
- 8) Passenger's side seat cushion pad and frame assembly

##### 2. SIDE COLLISION

- 1) Airbag control module
- 2) Side airbag module (operating side seat backrest)
- 3) Side airbag sensor (operating side)

##### 3. INSPECTION OF OTHER PARTS

Check for the following parts, and replace the damaged parts with new parts.

- 1) Steering wheel and steering shaft  
Check the steering shaft for mounting conditions and deflection of front and rear, upward and downward directions, and deflection of front and rear direction with tilt lever released. (After a collision, absorbing part of steering shaft may have been operated.)
- 2) Check the direct type connector of driver's airbag module, pretensioner, etc. for damage, and also check each harness for pinch and connector damage. Replace the harness as a unit if damage is found.
- 3) Check the seat cushion frame, backrest, seat rail and headrest for deformation, distortion, crack, and installing condition and play.
- 4) For the passenger's seat, replace the seat cushion pad frame assembly with a new part if the seat cushion frame assembly is deformed or cracked.
- 5) If there are tears or loosening in the passenger side seat cushion cover, it may interfere with the proper operation of the passenger detection system. Replace with a new cushion cover.
- 6) Be sure to perform the system calibration for the occupant detection system after removing or replacing the passenger seat cushion cover. Failure to do so may cause improper operation of the occupant detection system. <Ref. to OD(diag)-18, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>

7) Use the Subaru Select Monitor to check whether the driver's seat position sensor and the driver's and the front left/right seat belt buckle switches are operating normally.

#### B: INSPECTION

If the vehicle is involved in a collision, even if it is a slight collision, be sure to check the following systems.

##### 1. DRIVER'S AIRBAG MODULE

- 1) Check for the following, and replace the damaged parts with new parts.
  - Airbag module is cracked or deformed.
  - Harness and/or connector is cracked, deformed or open. Harness wire is exposed.
  - The module surface is fouled with grease, oil, water or cleaning solvent.
- 2) When installing a new driver's airbag module, check for the following, and replace the damaged parts with new parts.
  - The steering wheel is in the way, making it difficult to install the airbag module.
  - The clearance between the driver's airbag module and steering wheel is not constant.
  - When steering wheel deformation in axial and vertical directions exceed limits.

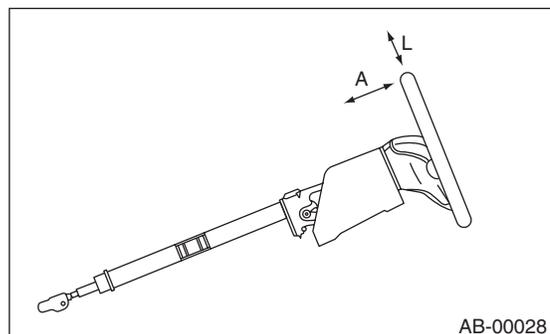
##### Standard:

##### *Axial deflection A*

*Less than 6 mm (0.24 in)*

##### *Vertical deflection L*

*Less than 7 mm (0.28 in)*



##### 2. PASSENGER'S AIRBAG MODULE

Check for the following, and replace the damaged parts with new parts.

- Airbag module is cracked or deformed.
- Harness and/or connector is cracked, deformed or open. Harness wire is exposed.
- Mounting bracket is cracked or deformed.

### 3. SIDE AIRBAG MODULE

Check for the following, and replace the damaged parts with new parts.

- Front seat, airbag module and mounting bracket are damaged or deformed.
- Harness and/or connector is cracked, deformed or open. Harness wire is exposed.

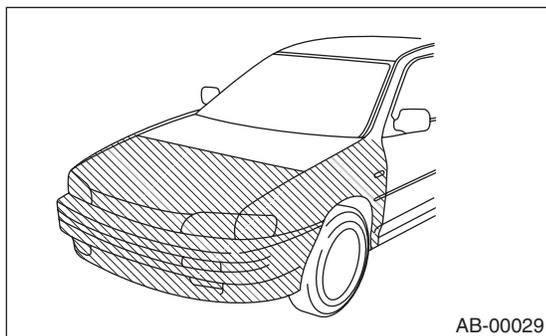
### 4. AIRBAG CONTROL MODULE

Check for the following, and replace the damaged parts with new parts.

- Control module is cracked or deformed.
- Mounting bracket is cracked or deformed.
- Connector is scratched, cracked or deformed.
- Airbag is deployed.
- Side airbag is deployed.

### 5. FRONT SUB SENSOR

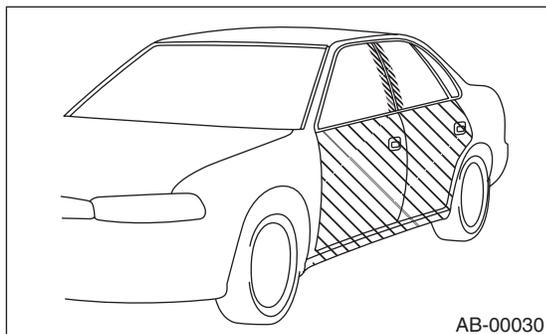
If the section of vehicle as shown in the figure is damaged, check the following items and replace the damaged parts with new parts.



- Front sub sensor is cracked or deformed.
- Mounting bracket is cracked or deformed.
- Connector is scratched, cracked or deformed.
- Airbag is deployed.

### 6. SIDE AIRBAG SENSOR

If the section of vehicle as shown in the figure is damaged, check the following items and replace the damaged parts with new parts.



- Side airbag sensor is cracked or deformed.
- Mounting bracket is cracked or deformed.
- Connector is scratched, cracked or deformed.
- Side airbag is deployed. (operating side)

### 7. ROLL CONNECTOR

Check for the following, and replace the damaged parts with new parts.

- Combination switch or steering roll connector is cracked or deformed.

### 8. STEERING SHAFT

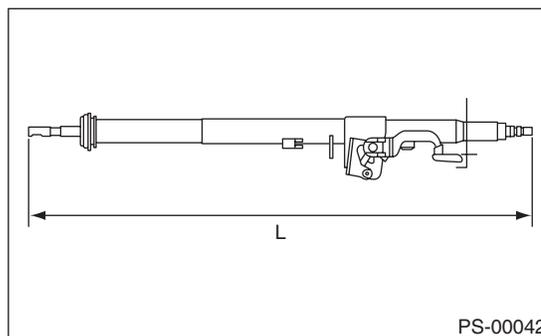
Check for the following, and replace the damaged parts with new parts.

- Overall length of steering column should be within specification.

**Standard:**

**Overall length L**

**818.7±1.5 mm (32.23±0.06 in)**



### 9. DRIVER'S SEAT

Check for the following, and replace the damaged parts with new parts.

- Seat belt buckle or seat position sensor body/bracket is cracked or deformed.
- Harness and/or connector is cracked, deformed or open. Harness wire is exposed.

**CAUTION:**

**Do not remove the seat position sensor from the seat rail.**

# Inspection Locations After a Collision

## AIRBAG SYSTEM

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### 10.PASSENGER'S SEAT

1) Check for the following, and replace the damaged parts with new parts.

- Seat belt buckle body or bracket is scratched, cracked or deformed.
- Backrest frame for crack or deformation
- Headrest for deformation or play
- If the seat cushion cover and seat backrest cover is scratched or coming loose, replace with a new cover and readjust the system. <Ref. to OD(diag)-18, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>

#### **CAUTION:**

**If any of the following applies, replace the seat cushion pad and frame assembly. Do not disassemble.**

- **Cracks or deformation found in the seat cushion frame or seat cushion pad.**
- **Scratches, cracks, or deformation found on the passenger detection system pressure sensor hoses or passenger detection control module, or attachment brackets of the control module.**
- **Harness and/or connector is cracked, deformed or open. Harness wire is exposed.**

2) After checking the installing condition of passenger's seat, perform the system calibration of occupant detection system. <Ref. to OD(diag)-18, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>

### 11.BELT TENSION SENSOR

Check for the following, and replace the damaged parts with new parts.

- Belt tension sensor is scratched, cracked, or deformed.
- Harness and/or connector is cracked, deformed or open. Harness wire is exposed.

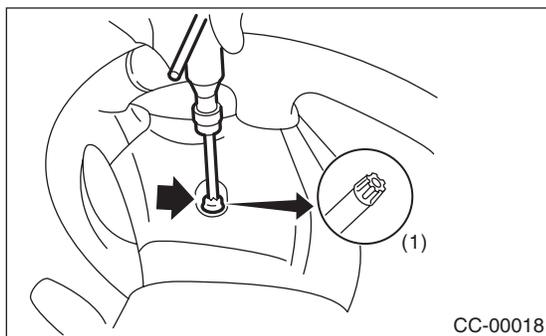
## 4. Driver's Airbag Module

### A: REMOVAL

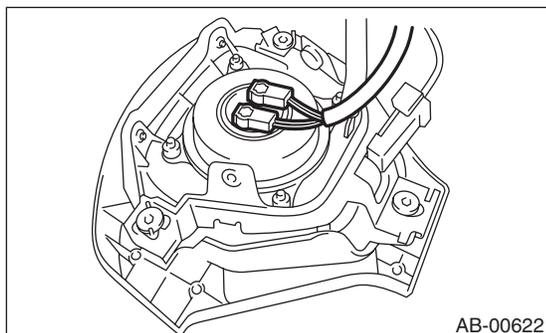
#### CAUTION:

Refer to "CAUTION" of "General Description" before handling the airbag module. <Ref. to AB-3, CAUTION, General Description.>

- 1) Position the front wheels straight ahead. (After moving a vehicle 5 m (16 ft) or more with front wheels positioned straight ahead, make sure that the vehicle moves straight ahead.)
- 2) Turn the ignition switch to OFF.
- 3) Disconnect the ground cable from battery and wait for at least 20 seconds before starting work.
- 4) Using TORX® bit T30 (1), remove the two TORX® bolts on the side of steering wheel.



- 5) Disconnect the horn harness.
- 6) Disconnect the airbag connector on the back of airbag module, and then remove the airbag module. <Ref. to AB-7, PROCEDURE, Airbag Connector.>



- 7) Refer to "CAUTION" for handling of a removed airbag module. <Ref. to AB-3, CAUTION, General Description.>

### B: INSTALLATION

Install in the reverse order of removal.

#### CAUTION:

- Refer to "CAUTION" of "General Description" before handling the airbag module. <Ref. to AB-3, CAUTION, General Description.>
- Do not allow harness and connectors to interfere or get tangled up with other parts.

#### Tightening torque:

Refer to "COMPONENT" of "General Description". <Ref. to AB-2, SRS AIRBAG, COMPONENT, General Description.>

### C: INSPECTION

#### CAUTION:

Refer to "CAUTION" of "General Description" before handling the airbag module. <Ref. to AB-3, CAUTION, General Description.>

Check for the following, and replace the damaged parts with new parts.

- Airbag module, harness, connector and mounting bracket are damaged. <Ref. to AB-10, DRIVER'S AIRBAG MODULE, INSPECTION, Inspection Locations After a Collision.>

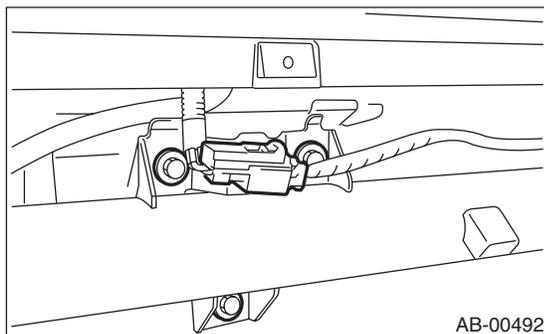
### 5. Passenger's Airbag Module

#### A: REMOVAL

##### CAUTION:

Refer to "CAUTION" of "General Description" before handling the airbag module. <Ref. to AB-3, CAUTION, General Description.>

- 1) Turn the ignition switch to OFF.
- 2) Disconnect the ground cable from battery and wait for at least 20 seconds before starting work.
- 3) Remove the glove box. <Ref. to EI-43, REMOVAL, Glove Box.>
- 4) Detach the airbag connector from support beam bracket, and then disconnect the airbag connector.



- 5) Remove the three bolts, and then carefully remove the passenger's airbag module.
- 6) Refer to "CAUTION" for handling of a removed airbag module. <Ref. to AB-3, CAUTION, General Description.>

#### B: INSTALLATION

Install in the reverse order of removal.

##### CAUTION:

Do not allow harness and connectors to interfere or get tangled up with other parts.

##### *Tightening torque:*

Refer to "COMPONENT" of "General Description". <Ref. to AB-2, SRS AIRBAG, COMPONENT, General Description.>

#### C: INSPECTION

##### CAUTION:

Refer to "CAUTION" of "General Description" before handling the airbag module. <Ref. to AB-3, CAUTION, General Description.>

Check for the following, and replace the damaged parts with new parts.

- Airbag module, harness, connector and mounting bracket are damaged. <Ref. to AB-10, PASSENGER'S AIRBAG MODULE, INSPECTION, Inspection Locations After a Collision.>

## 6. Side Airbag Module

### A: REMOVAL

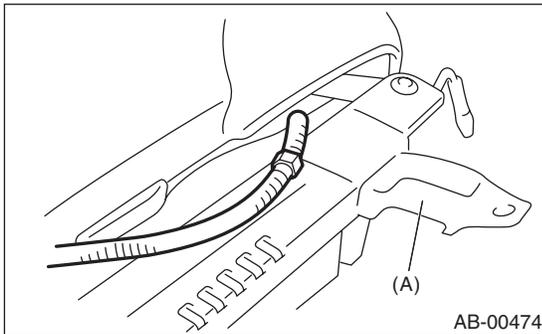
**CAUTION:**

Refer to “CAUTION” of “General Description” before handling the airbag module. <Ref. to AB-3, CAUTION, General Description.>

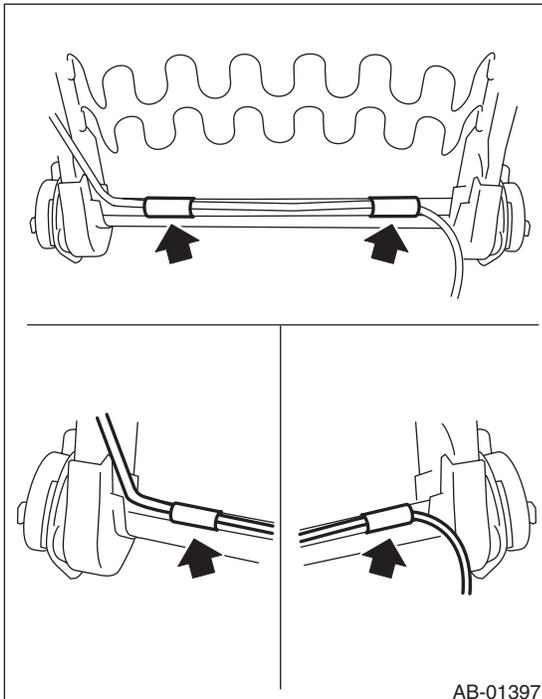
**NOTE:**

Remove the passenger’s side by referring to driver’s side.

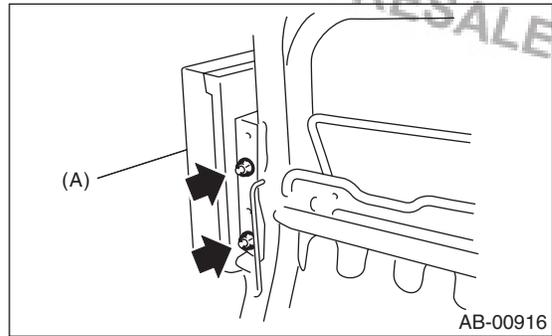
- 1) Turn the ignition switch to OFF.
- 2) Disconnect the ground cable from battery and wait for at least 20 seconds before starting work.
- 3) Remove the front seats. <Ref. to SE-7, REMOVAL, Front Seat.>
- 4) Remove the clip from reverse side of seat cushion assembly and slide rail IN (A), and then remove the side airbag harness.



- 5) Remove the backrest cover. <Ref. to SE-8, DISASSEMBLY, Front Seat.>
- 6) Remove the side airbag harness from backrest frame assembly.



- 7) Remove the side airbag module (A) from backrest frame assembly.



### B: INSTALLATION

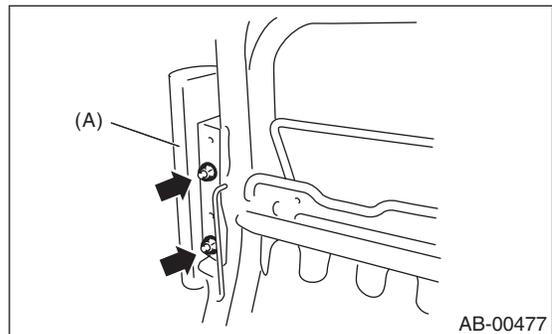
**CAUTION:**

- Refer to “CAUTION” of “General Description” before handling the airbag module. <Ref. to AB-3, CAUTION, General Description.>
- Be sure to perform the system calibration for occupant detection system after passenger’s seat installation. <Ref. to OD(diag)-18, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>

- 1) Make sure that there is no foreign matter on side airbag module.
- 2) Install the side airbag module (A) to backrest frame assembly.

**Tightening torque:**

**7.5 N·m (0.76 kgf-m, 5.5 ft-lb)**

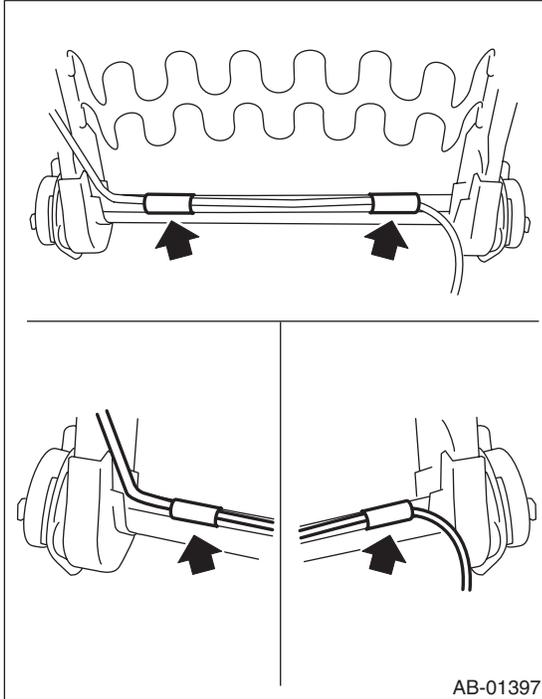


## AIRBAG SYSTEM

3) Install the side airbag harness to backrest frame assembly.

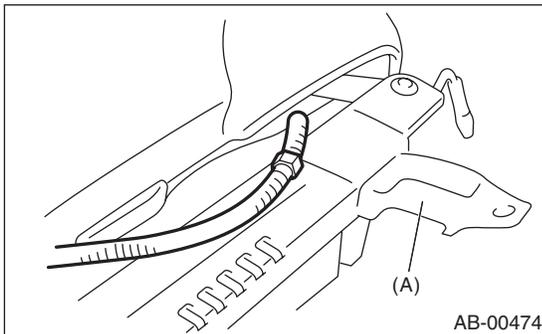
### NOTE:

Secure the harness to its original position of seat.



4) Install the backrest cover. <Ref. to SE-12, ASSEMBLY, Front Seat.>

5) Install side airbag harness to the slide rail IN (A), and fix the connector to the bracket on the reverse side of seat cushion assembly.



6) Recline the seat or slide it backward and forward, and check there is no contact between the seat backrest assembly, cushion cover assembly and side airbag harness.

## C: INSPECTION

### CAUTION:

Refer to “CAUTION” of “General Description” before handling the airbag module. <Ref. to AB-3, CAUTION, General Description.>

Check for the following, and replace the damaged parts with new parts. <Ref. to AB-11, SIDE AIRBAG MODULE, INSPECTION, Inspection Locations After a Collision.>

1) With side collision (when side airbag is deployed)

- Side airbag module assembly
- Backrest pad assembly
- Backrest frame assembly
- Backrest cover assembly

2) When damage is found by visual check

- Headrest assembly
- Bushing
- Slide rail OUT
- Slide rail IN
- Seat hinge cover
- Seat lifter lever
- Reclining lever
- Side airbag harness and connector on body side

3) With side collision (when side airbag is not deployed)

Check the seat and airbag module visually, and then replace them with new parts if damaged or cracked.

Specially inspect the damage of airbag module body, mounting bracket and harness connector.

4) Without side collision (dirt and damage of cover)  
Replace the corresponding part with a new part.



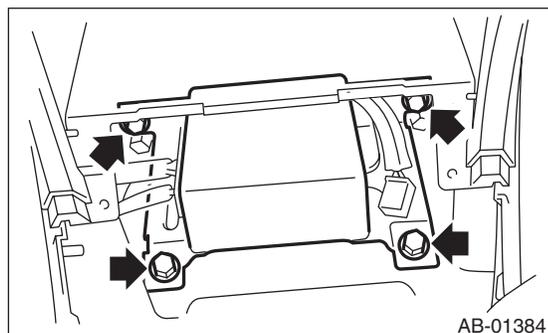
## 7. Airbag Control Module

### A: REMOVAL

#### CAUTION:

- Do not disassemble the airbag control module.
- If the airbag control module is deformed or if the fault occurs by water, replace the airbag control module with a new part.
- Do not drop the airbag control module.
- After removal, keep the airbag control module on a dry, clean surface away from moisture, heat and dust.

- 1) Turn the ignition switch to OFF.
- 2) Disconnect the ground cable from battery and wait for at least 20 seconds before starting work.
- 3) Remove the console cover. <Ref. to EI-46, REMOVAL, Console Box.>
- 4) Remove the center console panel. <Ref. to EI-47, REMOVAL, Instrument Panel Assembly.>
- 5) Disconnect the connector from airbag control module.
- 6) Remove the four bolts and remove airbag control module.



### B: INSTALLATION

#### CAUTION:

**Be sure to use the new bolts (exclusive use for airbag control module) during installation.**

Install in the reverse order of removal.

#### *Tightening torque:*

*Refer to "COMPONENT" of "General Description". <Ref. to AB-2, SRS AIRBAG, COMPONENT, General Description.>*

### C: INSPECTION

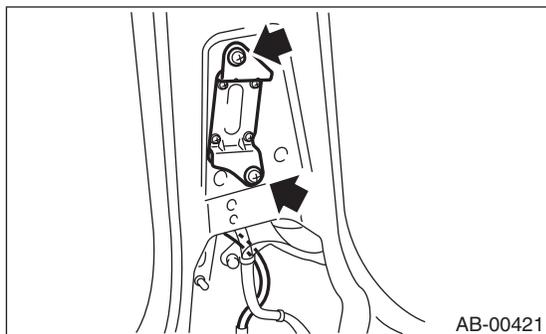
Check for the following, and replace the damaged parts with new parts.

- Control module, connector, and mounting bracket are damaged.
- Airbag is deployed.
- Side airbag is deployed.

### 8. Side Airbag Sensor

#### A: REMOVAL

- 1) Turn the ignition switch to OFF.
- 2) Disconnect the ground cable from battery and wait for at least 20 seconds before starting work.
- 3) Remove the front outer seat belt. <Ref. to SB-10, OUTER SEAT BELT ASSEMBLY, REMOVAL, Front Seat Belt.>
- 4) Detach the side airbag sensor, and then disconnect the airbag connector.



#### B: INSTALLATION

Install in the reverse order of removal.

#### *Tightening torque:*

*Refer to “COMPONENT” of “General Description”. <Ref. to AB-2, SRS AIRBAG, COMPONENT, General Description.>*

#### C: INSPECTION

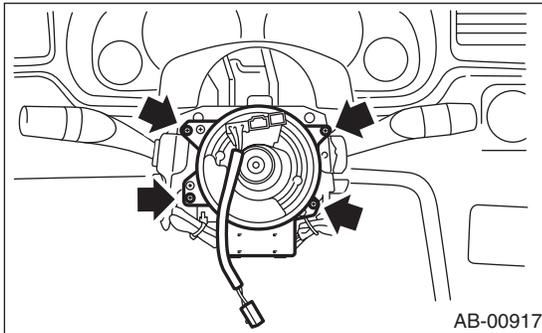
Check for the following, and replace the damaged parts with new parts.

- Mounting bracket or connector of side airbag sensor is damaged.
- Side airbag is deployed.

## 9. Roll Connector

### A: REMOVAL

- 1) Turn the ignition switch to OFF.
- 2) Disconnect the ground cable from battery and wait for at least 20 seconds before starting work.
- 3) Remove the driver's airbag module. <Ref. to AB-13, Driver's Airbag Module.>
- 4) Remove the steering wheel. <Ref. to PS-18, REMOVAL, Steering Wheel.>
- 5) Remove the steering column cover.
- 6) Remove the screws, and then remove the roll connector.



### B: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Before installing the steering wheel, be sure to adjust the direction of roll connector with steering. <Ref. to AB-19, ADJUSTMENT, Roll Connector.>

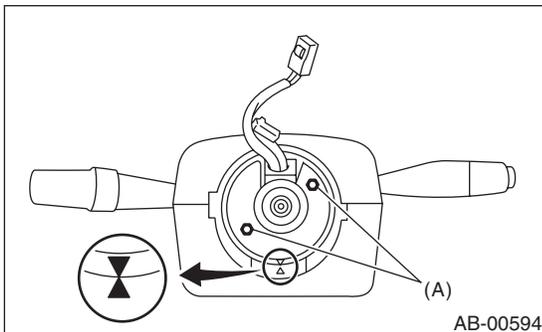
### C: INSPECTION

Check for the following, and replace the damaged parts with new parts.

- Combination switch and roll connector are cracked or deformed.

### D: ADJUSTMENT

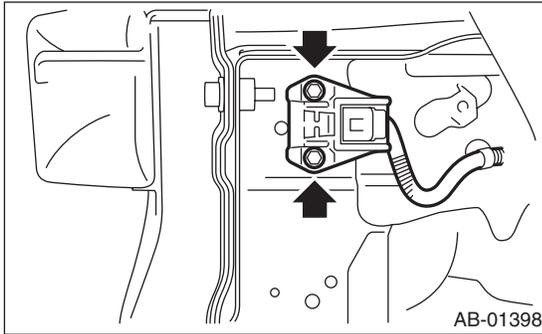
- 1) Check that front wheels are positioned in straight ahead direction.
- 2) Turn the roll connector pin (A) clockwise until it stops.
- 3) Turn the roll connector pins (A) approx. 3.25 turns until "▲" marks are aligned.



## 10. Front Sub Sensor

### A: REMOVAL

- 1) Turn the ignition switch to OFF.
- 2) Disconnect the ground cable from battery and wait for at least 20 seconds before starting work.
- 3) Remove the front bumper. <Ref. to EI-24, REMOVAL, Front Bumper.>
- 4) Remove the bolt, and then detach the front sub sensor.



- 5) Disconnect the connector from front sub sensor.

### B: INSTALLATION

Install in the reverse order of removal.

#### *Tightening torque:*

*Refer to "COMPONENT" of "General Description". <Ref. to AB-2, SRS AIRBAG, COMPONENT, General Description.>*

### C: INSPECTION

Check for the following, and replace the damaged parts with new parts.

- Front sub sensor and connector are damaged.
- Airbag is deployed.