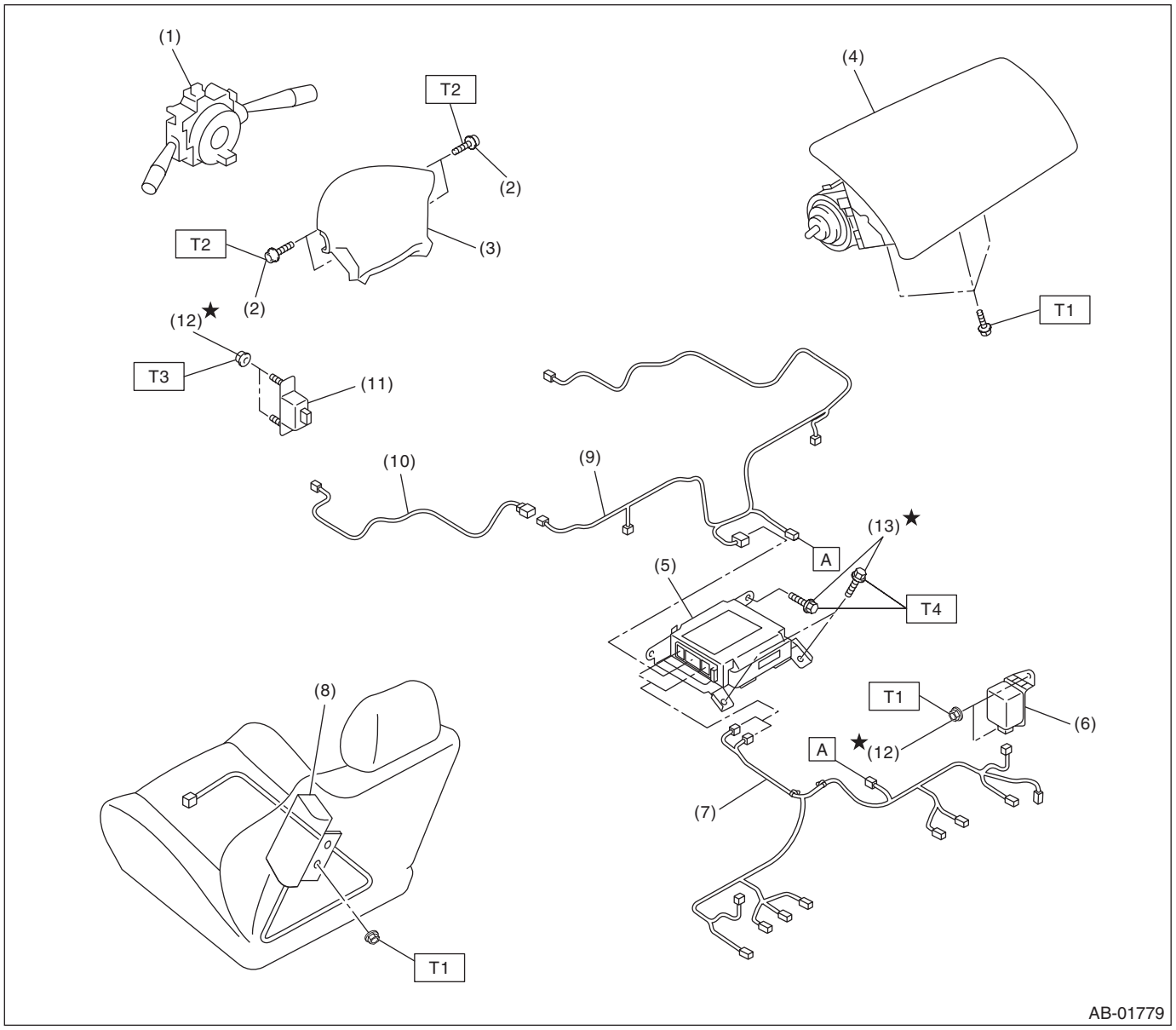
1. General Description

A: COMPONENT

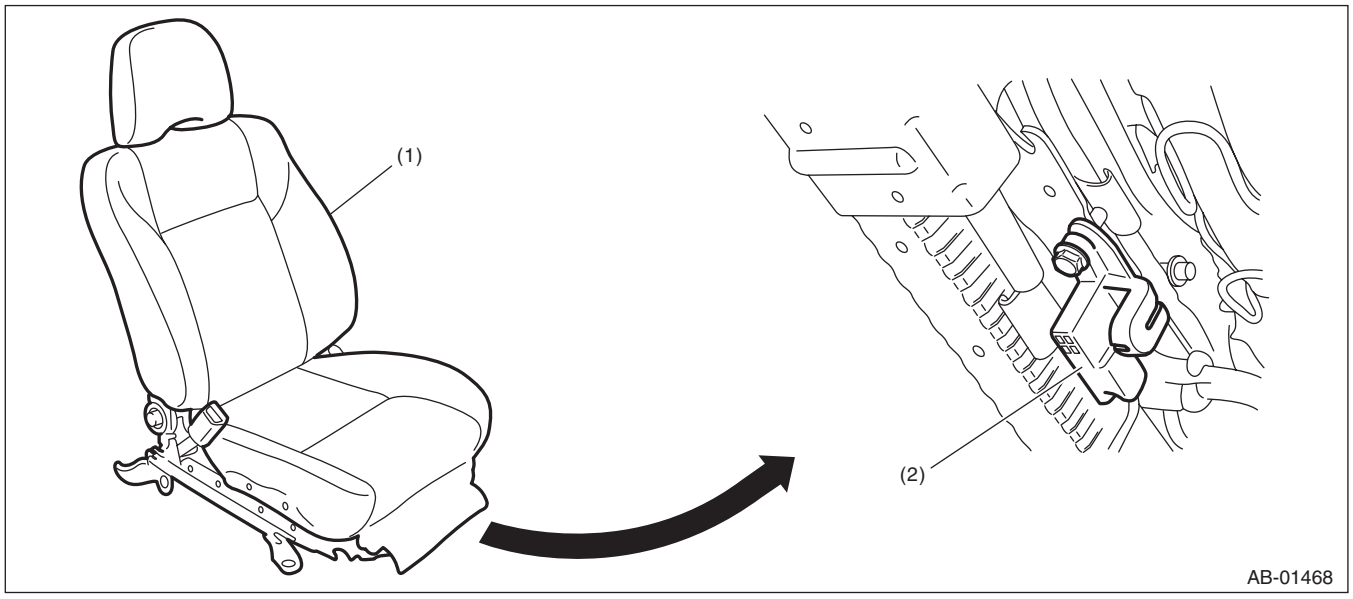
1. SRS AIRBAG



(1)	Combination switch ASSY with roll connector	(7)	Wiring harness rear
(2)	TORX® bolt T30	(8)	Side airbag module
(3)	Airbag module ASSY (Driver)	(9)	Wiring harness center
(4)	Airbag module ASSY (Passenger)	(10)	Wiring harness front
(5)	Airbag control module	(11)	Front sub sensor
(6)	Side airbag sensor	(12)	Nut
		(13)	Bolt

Tightening torque:N·m (kgf-m, ft-lb)
T1: 7.5 (0.8, 5.5)
T2: 10 (1.0, 7.2)
T3: 20 (2.0, 14.5)
T4: 25 (2.5, 18.1)

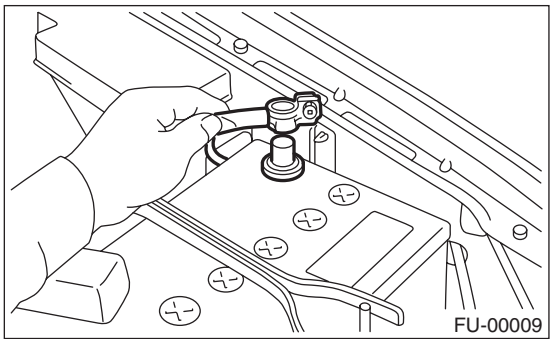
2. SEAT POSITION SENSOR



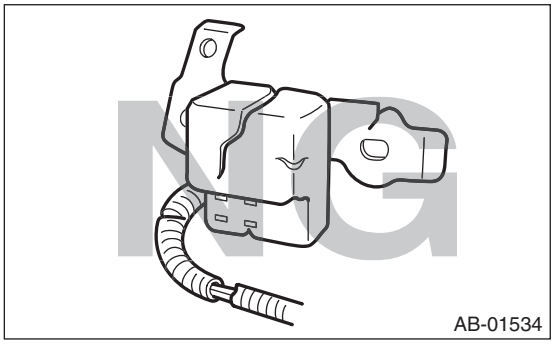
(1) Driver's seat
(2) Seat position sensor

B: CAUTION

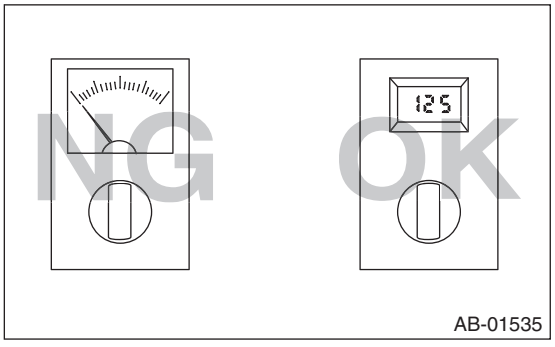
• When servicing a vehicle, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait for more than 20 seconds before starting work.
• The airbag system is fitted with a backup power source. After disconnecting the battery ground cable, the airbag may deploy if you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



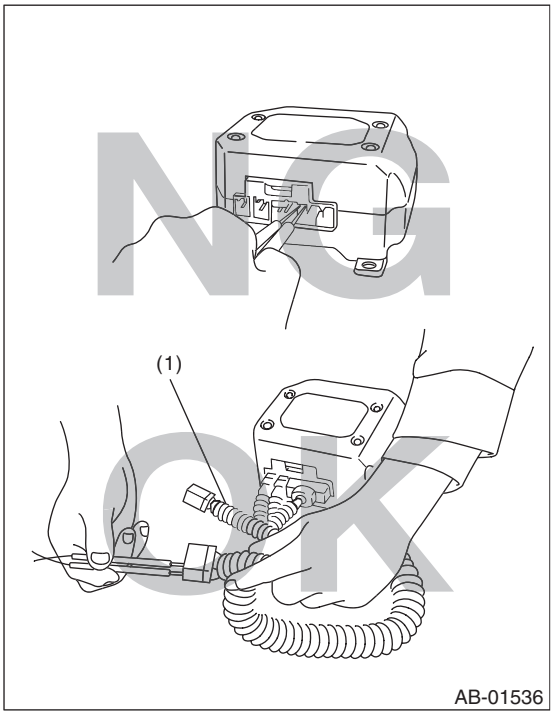
• If the airbag warning light illuminates, repair the vehicle immediately. Otherwise, the airbag or pretensioner may activate incorrectly, or not inflate in an actual collision.
• If sensors, airbag module, airbag control module, pretensioner or harness is deformed or damaged, replace with new parts.



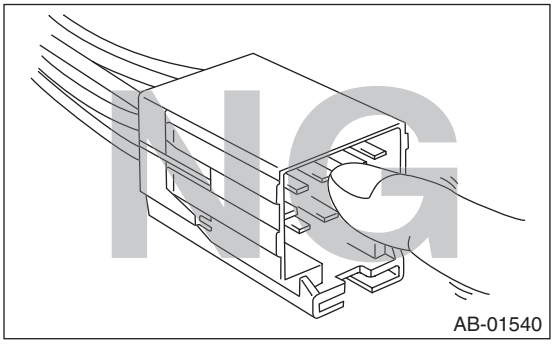
• When checking the airbag system, be sure to use a digital circuit tester. Use of an analog circuit tester may cause the airbag to activate erroneously due to a minimal current inside tester.



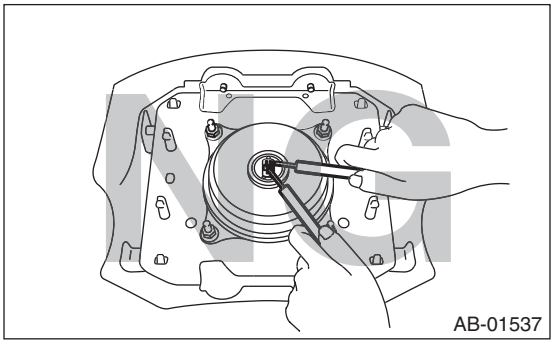
• When checking, use a test harness (1). Damage to connector terminal cause malfunction. Do not directly apply the tester probe to connector terminal of airbag.



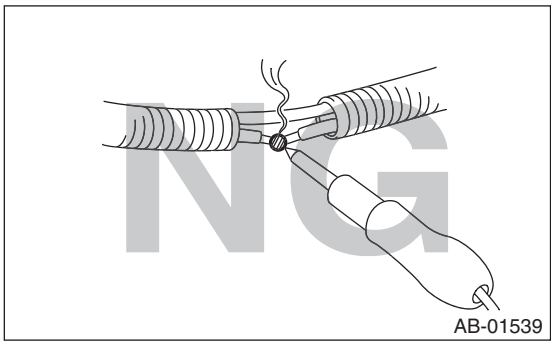
• Do not allow water or oil to come in contact with the connector terminals. Also, do not touch the connector terminals.



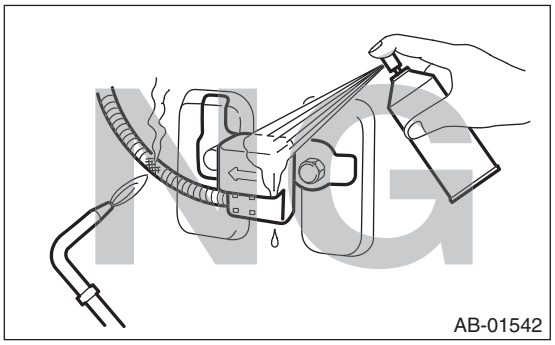
• Do not check continuity of the airbag modules for driver's side, passenger's side, or pretensioner.



• 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.

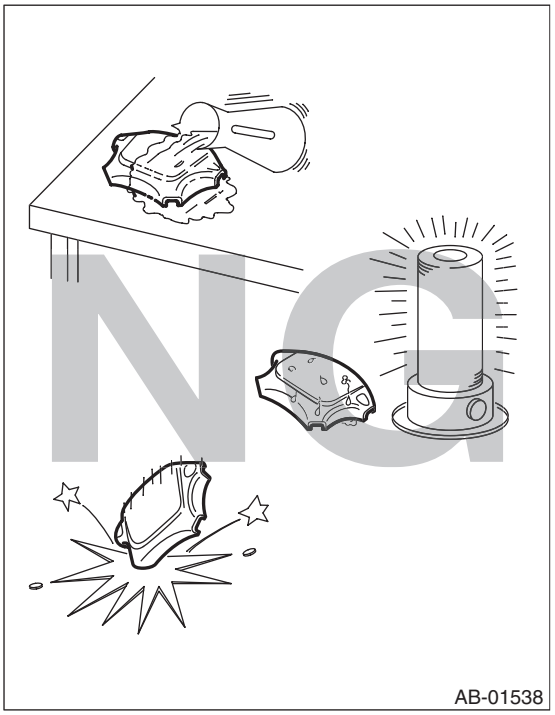


• When painting or performing sheet metal work on the front part of the vehicle, including the front wheel apron, front fender and front side frame, remove the front sub sensors and wiring harness of airbag system.
• When painting or performing sheet metal work on the side of the vehicle, including the side sill, center pillar and front and rear doors, remove the side airbag sensors and wiring harness of the airbag system.

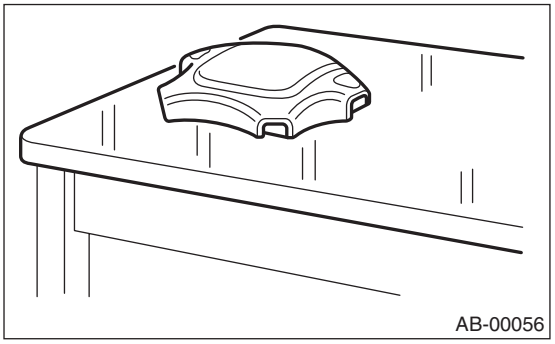


• Do not use the airbag or pretensioner parts from other vehicles. Always replace the defective parts with new parts.
• Never reuse a deployed airbag module and pretensioner.
• Do not discard an undeployed airbag module or pretensioner.
• When airbag control module, front sub sensor and side airbag sensor are removed, do not reuse the bolts and nuts. Always use new bolts and nuts.

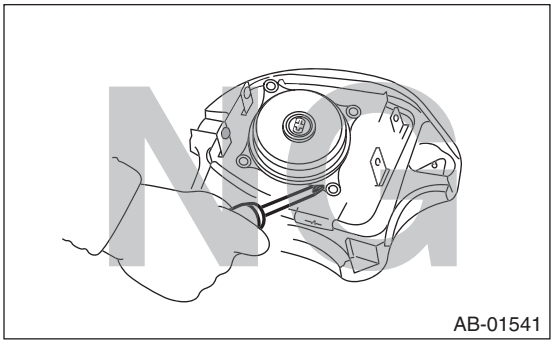
• Do not drop the each airbag module, airbag control module and each sensor or keep them at high temperature over 93°C (199°F), or let water, oil or grease get on them; the internal parts may be damaged and reliability greatly lowered.



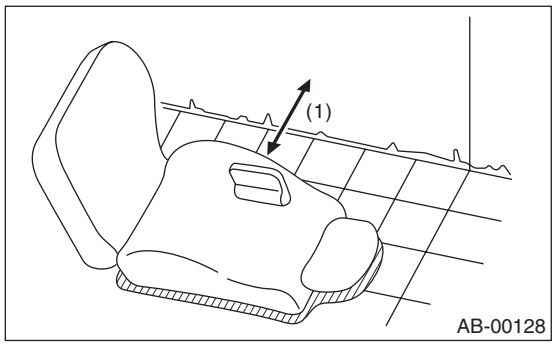
• After removing the parts of airbag system, keep them with the pad facing upward on a dry, clean, and flat surface away from heat and light sources, and moisture and dust.



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

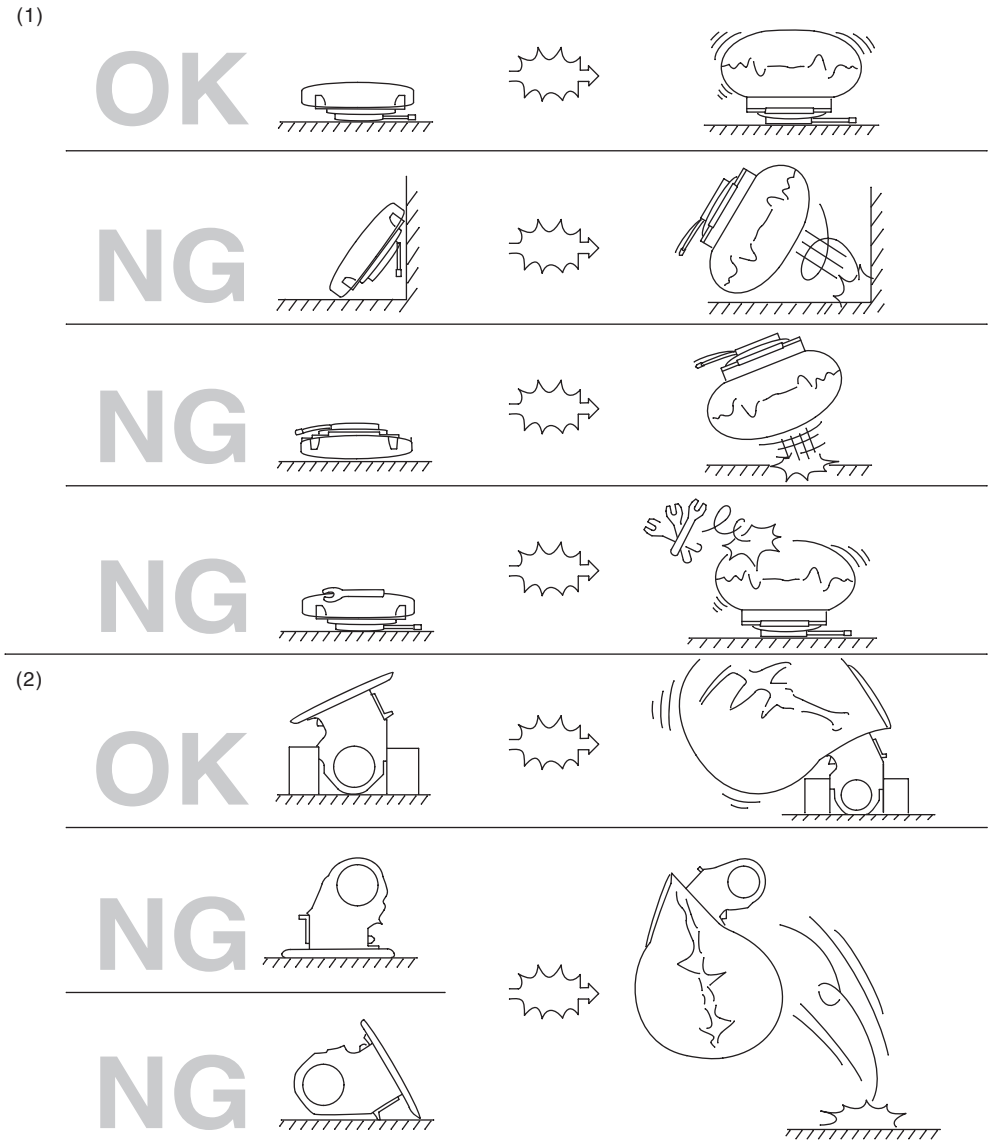


• When performing attachment of the steering wheel and steering roll connector, make sure to perform adjustment of the steering roll connector.
• The removed front seat with airbag module must be kept at least 200 mm (8 in) away from walls and other objects.



(1) 200 mm (8 in) or more

• When storing the removed airbag module, do not place with the pad side facing down. Do not place any objects on top of the airbag module. Do not stack other airbag modules on top of each other. If the airbag module pads are in contact with other objects, it may lead to a major accident when the airbag is deployed unexpectedly.



(1) Driver's airbag module (2) Passenger's airbag module

C: PREPARATION TOOL

1. GENERAL TOOL

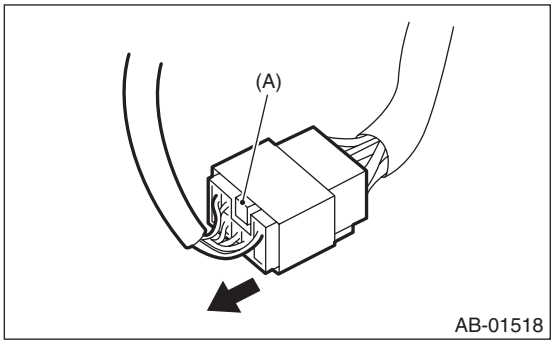
TOOL NAME	REMARKS
TORX® T30	Used for removal/installation of driver's airbag module.

2. Airbag Connector

A: PROCEDURE

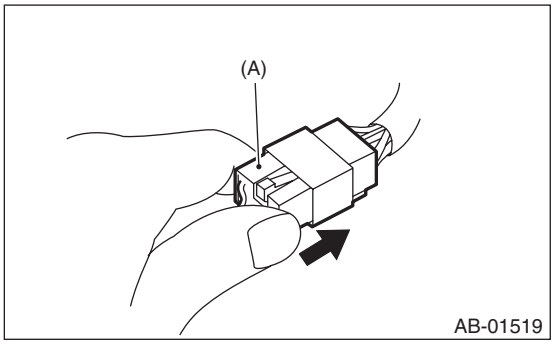
1. POWER SUPPLY

1) How to disconnect:
(1) With the lock arm (A) pushed in, move the connector in the direction of arrow.



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

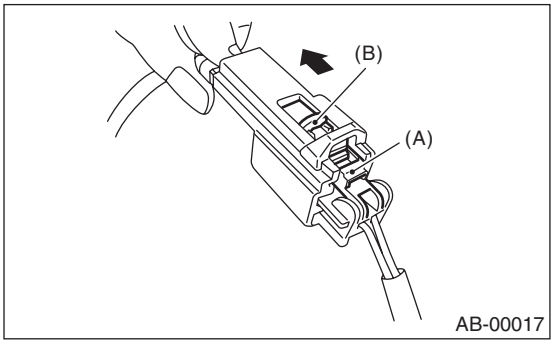
2) How to connect:
Holding the connector (A), and push it in carefully until a clicking sound is heard.



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

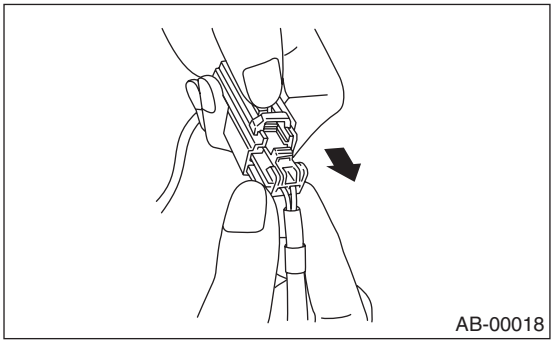
2. DRIVER'S AIRBAG (BETWEEN AIRBAG HARNESS AND ROLL CONNECTOR) AND SIDE AIRBAG

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.



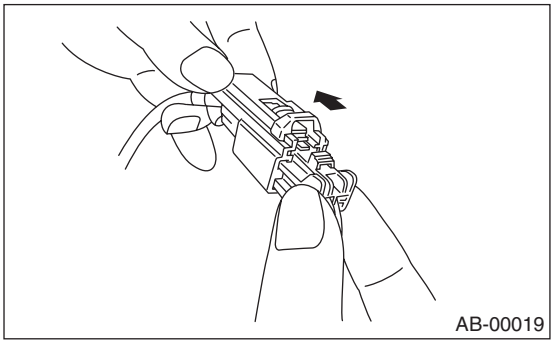
(3) With the slide lock pulled, release the lock arm (return to original position) and disconnect the connector.

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



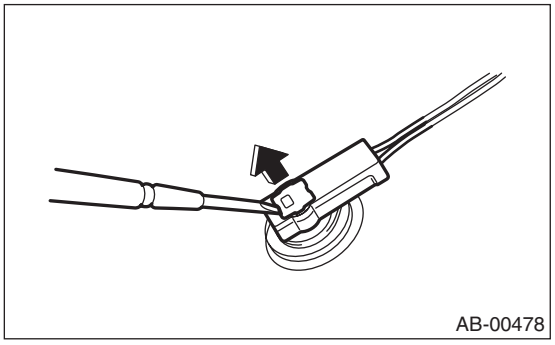
2) How to connect:
Holding the connector, push it in securely until a clicking sound is heard.

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

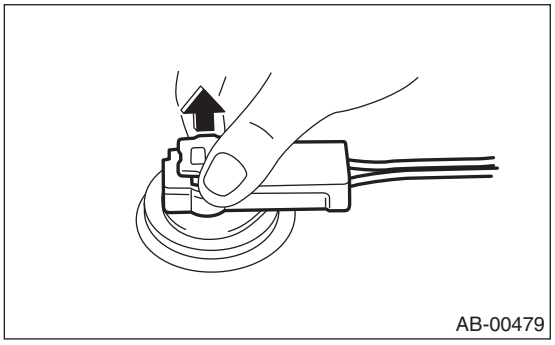


3. DRIVER'S AIRBAG MODULE AND PRETENSIONER

1) How to disconnect:
(1) Using a flat tip screwdriver, pull the push lock upward to unlock.

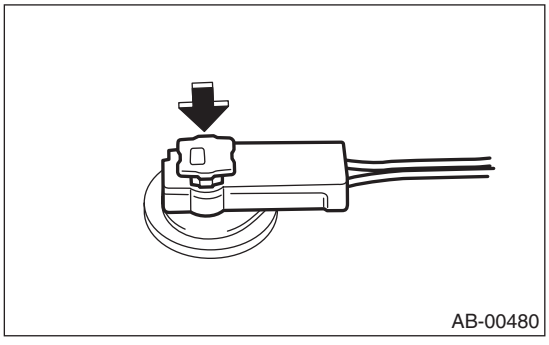


(2) Pull the connector to disconnect from driver's airbag module assembly or retractor assembly.



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.

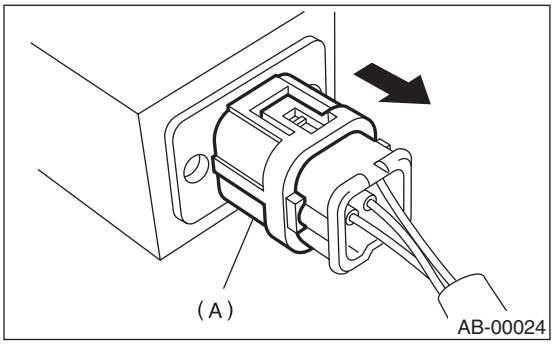
CAUTION:
• Be sure to insert the connector in until it is locked. Then pull it gently to make sure that it is locked.
• Be sure to push the push lock in securely.



4. FRONT SUB-SENSOR AND SIDE AIRBAG SENSOR

1) How to disconnect:
Holding outer part (A), pull it in the direction of arrow.

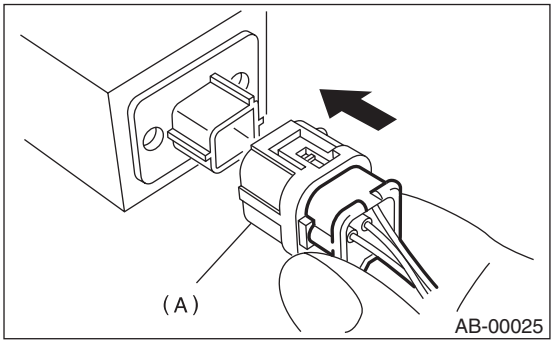
CAUTION:
When pulling the slide lock or disconnecting connector, be sure to hold the connector, not the harness.



2) How to connect:
Holding the connector, push it in securely until a clicking sound is heard.

NOTE:
You cannot connect the connector when the push lock is in the lock position. Move the push lock to the release position to connect the connector.

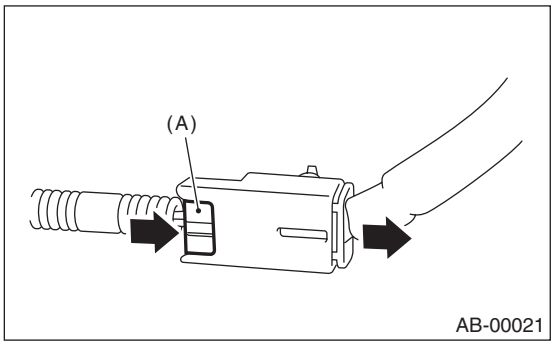
CAUTION:
• Do not touch the outer section since outer side (A) will move back.
• Be sure to insert the connector in until it is locked. Then pull it gently to make sure that it is locked.



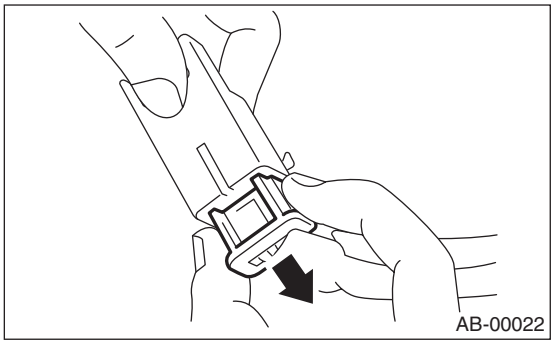
5. PASSENGER'S AIRBAG

1) How to disconnect:

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



(2) With the slide lock pushed, pull it in the direction of arrow and disconnect the connector.

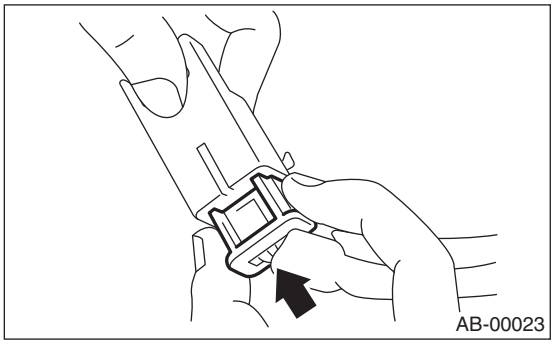


CAUTION:
When pulling the slide lock or disconnecting connector, be sure to hold the connector, not the harness.

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.



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) Occupant detection system and seat cushion pad

2. SIDE COLLISION

1) Airbag control module
2) Side airbag module (operating side seat back)
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 connector of 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) If deformation or cracks are seen in the seat cushion frame of the passenger's seat, replace the occupant detection system.
5) If there are tears or loosening in the passenger's seat cushion cover, it may interfere with the proper operation of the occupant detection system. Replace with a new cushion cover.
6) If the seat cushion cover is removed or replaced, make sure to perform occupant detection system adjustment after installing the seat. <Ref. to OD(diag)-17, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>
Failure to do so may cause improper activation of passenger's airbag.
7) Use the Subaru Select Monitor to check whether the driver's seat position sensor and the front left/right seat belt buckle switches are operating normally.

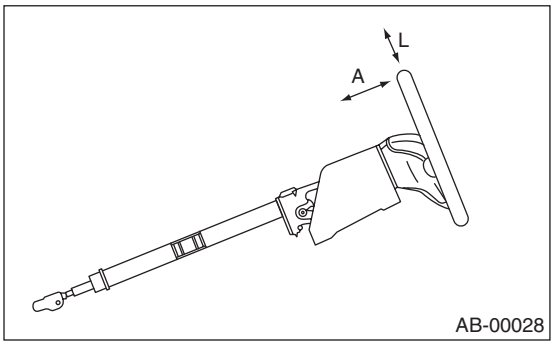
B: INSPECTION

If the vehicle is involved in a collision on any side, 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 the following. If necessary, install a new airbag module and steering wheel.
• 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.

Specification:
Axial deflection A
Less than 6 mm (0.24 in)
Vertical deflection L
Less than 17 mm (0.67 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

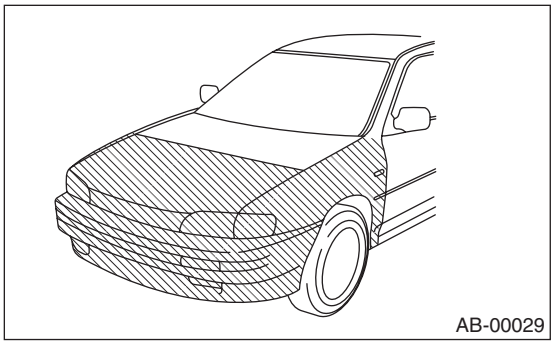
Check for the following, and replace the damaged parts with new parts.
• Front seat is damaged or deformed.
• Harness and/or connector is cracked, deformed or open.
• Harness wire is exposed.

4. AIRBAG CONTROL MODULE

Check for the following, and replace the damaged parts with new parts.
- Control unit is cracked or deformed.
- Mounting bracket is cracked or deformed.
- Connector is scratched or deformed.
- Airbag is deployed.
- Side airbag is deployed.

5. FRONT SUB SENSOR

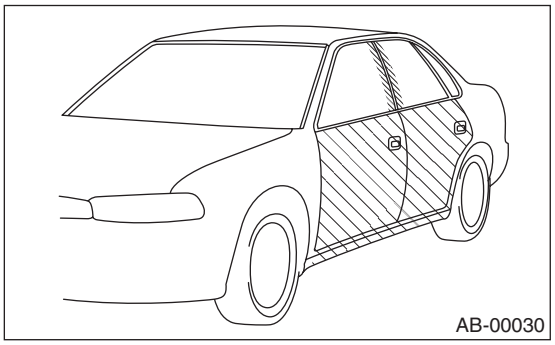
If the section of vehicle as shown in the figure is damaged, check the following items and replace the damaged parts with new parts.



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

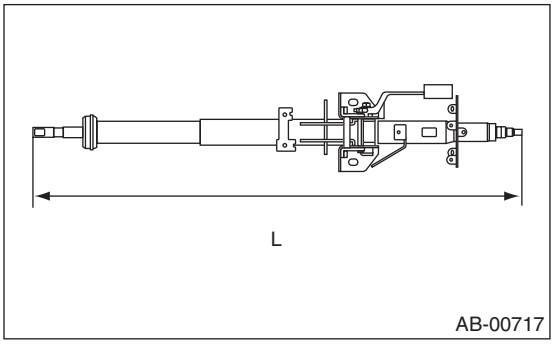
7. ROLL CONNECTOR

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.

Specification:
Overall length L
808.6±1.5 mm (31.83±0.06 in)



If necessary, replace it with new part.

9. DRIVER'S SEAT

Check for the following, and replace the damaged parts with new parts.
- Seat belt buckle switch or seat position sensor body/bracket is cracked or deformed.
- Harness and/or connector is cracked, deformed or open. Harness wire is exposed.

10.PASSENGER'S SEAT

1) Check for the following, and replace the damaged parts with new parts.
• Seat belt buckle body/bracket is scratched, cracked or deformed.
• Backrest frame for crack or deformation
• Headrest for deformation or play
• If the seat cushion cover and seat back cover is scratched or frayed, replace with a new cover and readjust the system. <Ref. to OD(diag)-17, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>

CAUTION:
Failure to do so may cause improper activation of passenger's airbag.

CAUTION:
If any of the following applies, replace the seat cushion pad and frame assembly. Do not disassemble.
• Cracks or deformation is found in the seat cushion frame or seat cushion pad.
• Scratches, cracks, or deformation is found on the occupant detection system pressure sensor hoses, occupant 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)-17, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>

CAUTION:
Failure to do so may cause improper activation of passenger's airbag.

11.BELT TENSION SENSOR

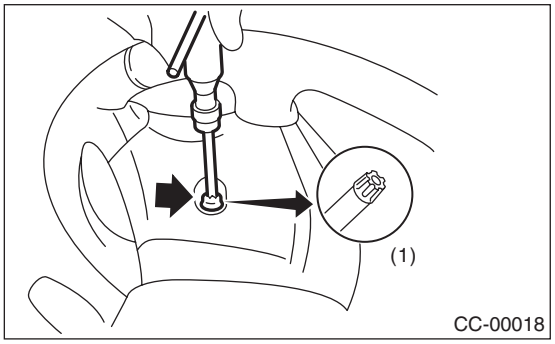
Check for the following, and replace the damaged parts with new parts.
• Belt tension sensor is scratched, cracked, or deformed.
• Harness and/or connector is cracked, deformed or open. Harness wire is exposed.

4. Driver's Airbag Module

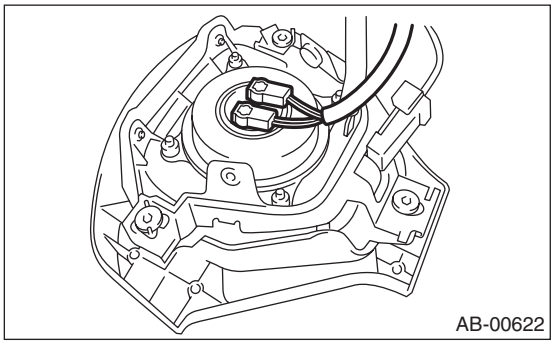
A: REMOVAL

CAUTION:
Refer to "CAUTION" of "General Description" before handling the airbag module. <Ref. to AB-4, CAUTION, General Description.>

1) Position the front wheels straight ahead. (After moving a vehicle more than 5 m (16 ft) 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® bit 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-8, PROCEDURE, Airbag Connector.>



7) Refer to "CAUTION" for handling of a removed airbag module. <Ref. to AB-4, CAUTION, General Description.>

B: INSTALLATION

CAUTION:
• Refer to "CAUTION" of "General Description" before handling the airbag module. <Ref. to AB-4, CAUTION, General Description.>
• To prevent the misconnection, the connector is colored. Connect the harness side connector to the same color of module side connector.
• Do not allow harness and connectors to interfere or get tangled up with other parts.
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

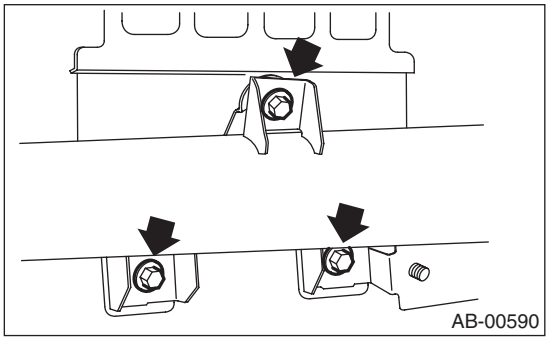
CAUTION:
Refer to "CAUTION" of "General Description" before handling the airbag module. <Ref. to AB-4, CAUTION, General Description.>

Check for the following, and replace the damaged parts with new parts.
• Airbag module, harness, connector and mounting bracket are damaged. <Ref. to AB-11, 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-4, 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-35, REMOVAL, Glove Box.>
4) Disconnect the airbag connector.
5) Remove the three bolts, and then carefully remove the airbag module.



6) Refer to "CAUTION" for handling of a removed airbag module. <Ref. to AB-4, CAUTION, General Description.>

B: INSTALLATION

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

CAUTION:
Refer to "CAUTION" of "General Description" before handling the airbag module. <Ref. to AB-4, 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-11, PASSENGER'S AIRBAG MODULE, INSPECTION, Inspection Locations After a Collision.>

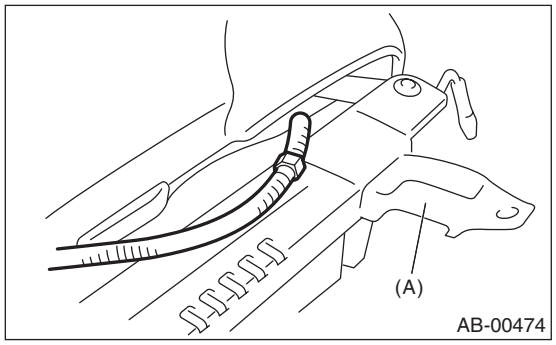
6. Side Airbag Module

A: REMOVAL

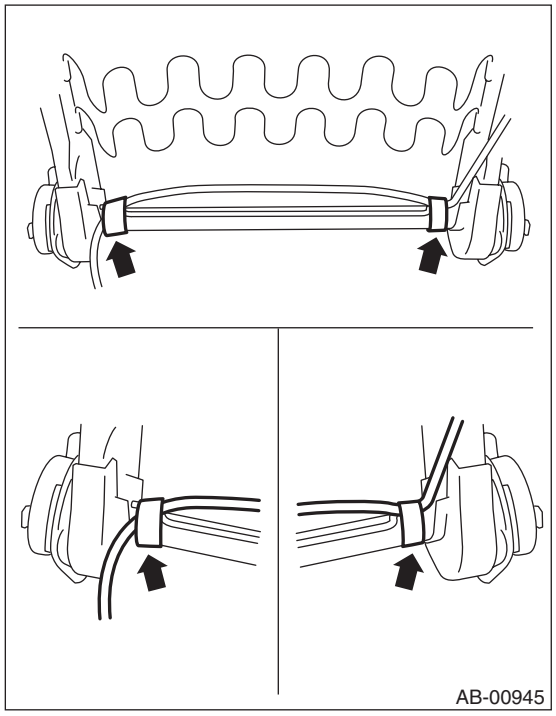
CAUTION:
Refer to "CAUTION" of "General Description" before handling the airbag module. <Ref. to AB-4, CAUTION, General Description.>

NOTE:
Remove the passenger's side by referring to driver's side.

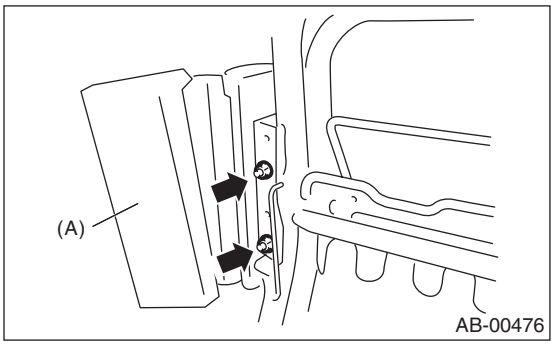
1) Turn the ignition switch to OFF.
2) Disconnect the ground cable from battery and wait for at least 20 seconds before starting work.
3) Remove the front seat. <Ref. to SE-7, REMOVAL, Front Seat.>
4) Remove the clip from reverse side of seat cushion assembly and slide rail IN (A), and then remove the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



5) Remove the backrest cover. <Ref. to SE-9, DISASSEMBLY, Front Seat.>
6) Remove the side airbag harness from backrest frame assembly.



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

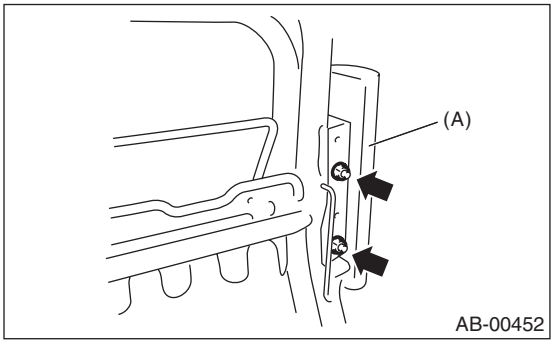


B: INSTALLATION

CAUTION:
• Refer to "CAUTION" of "General Description" before handling the airbag module. <Ref. to AB-4, CAUTION, General Description.>
• Be sure to perform the system calibration for occupant detection system after passenger's seat installation. <Ref. to OD(diag)-17, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>
• Failure to do so may cause improper activation of passenger's airbag.

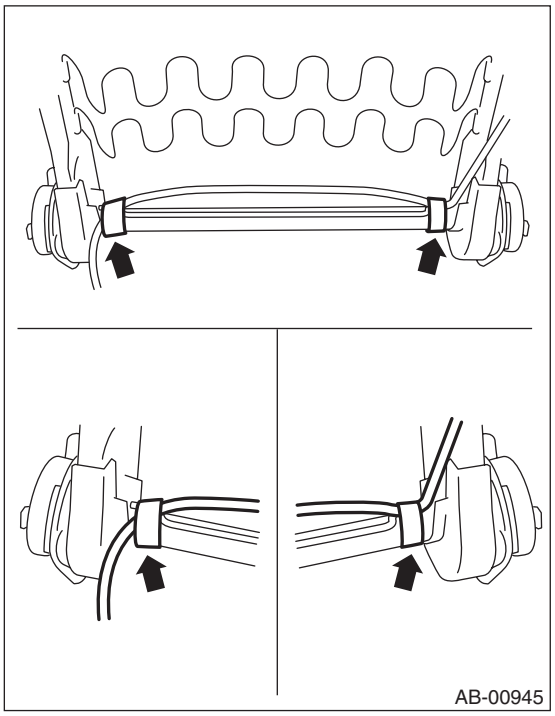
1) Make sure that there is no foreign matter on side airbag module.
2) Install the side airbag module (A) to backrest frame assembly.

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



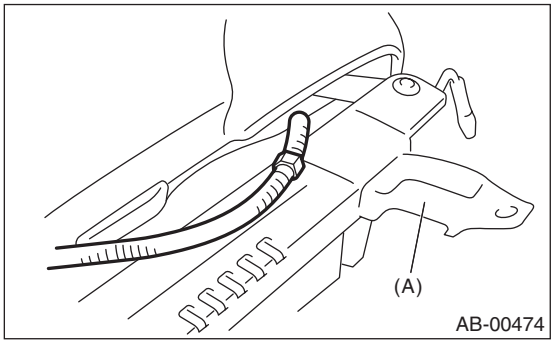
3) Install the side airbag harness to backrest frame assembly.

NOTE:
Secure the harness to its original position of seat.



4) Install the backrest cover. <Ref. to SE-16, ASSEMBLY, Front Seat.>

5) Install the side airbag harness to slide rail IN (A), then secure the connector to the bracket on the back side of the 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-4, 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 any damage is found by visual check
- Headrest assembly
- Bushing
- Slide rail OUT
- Slide rail IN
- Seat cushion frame assembly (Passenger's side)
- 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.

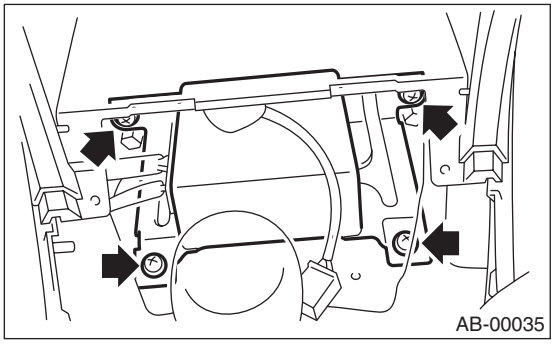
4) Without side collision (dirt and damage of cover)

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 damage from water is suspected, 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-37, REMOVAL, Console Box.>
4) Remove the center console panel. <Ref. to EI-38, REMOVAL, Instrument Panel Assembly.>
5) Disconnect the connector from airbag control module.
6) Remove the four bolts and remove the airbag control module.



B: INSTALLATION

CAUTION:
• Do not reuse the bolts and nuts.
• Always use new bolts and nuts.
• Be sure to put the water protection cover over the connector.
Install in the reverse order of removal.

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

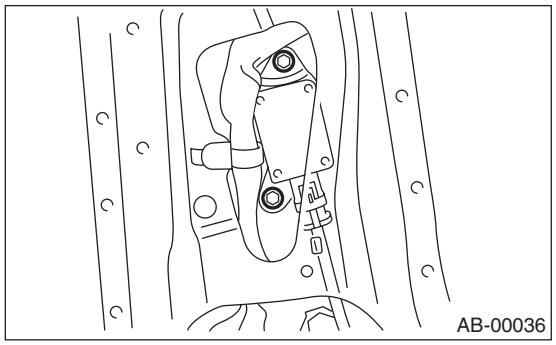
C: INSPECTION

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 belt. <Ref. to SB-10, FRONT OUTER BELT, REMOVAL, Front Seat Belt.>
4) Detach the side airbag sensor, and then disconnect the airbag connector.



B: INSTALLATION

CAUTION:
- **Do not reuse the bolts and nuts.**
- **Always use new bolts and nuts.**

Install in the reverse order of removal.

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

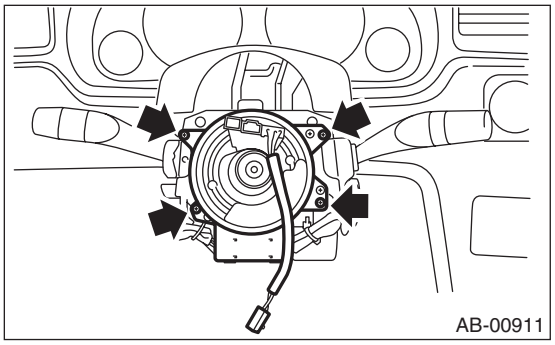
C: INSPECTION

Check for the following, and replace the damaged parts with new parts.
- Bracket connector for 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-14, Driver's Airbag Module.>
4) Remove the steering wheel. <Ref. to PS-13, REMOVAL, Steering Wheel.>
5) Remove the steering column cover.
6) Remove the screws, and then remove the roll connector.



B: INSTALLATION

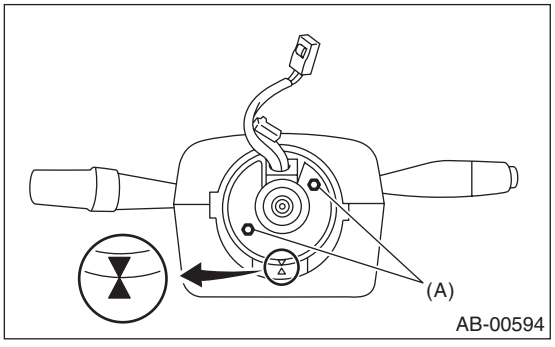
1) Install in the reverse order of removal.
2) Before installing steering wheel, be sure to adjust the direction of roll connector with steering. <Ref. to AB-20, ADJUSTMENT, Roll Connector.>

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

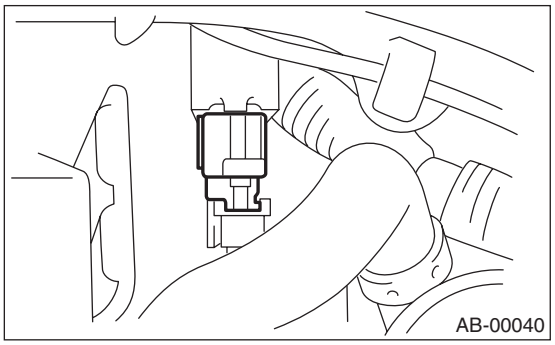
1) Check that front wheels are positioned in straight ahead direction.
2) Turn the roll connector pin (A) clockwise until it stops.
3) Turn the roll connector pins (A) approx. 3.25 turns until "▲" marks are aligned.



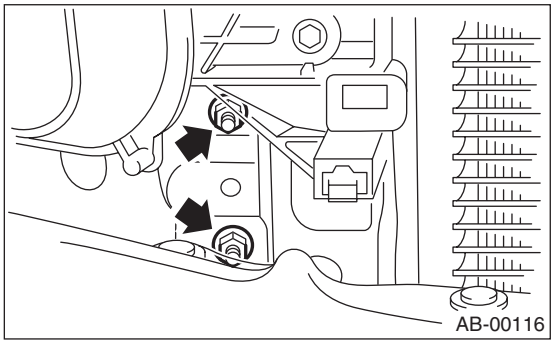
10.Front Sub Sensor

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 grille and the front grille side. <Ref. to EI-16, REMOVAL, Front Grille.>
4) Disconnect the connector from front sub sensor.



5) Loosen the nut and remove the front sub sensor.



B: INSTALLATION

Install in the reverse order of removal.

CAUTION:
- **Do not reuse the bolts and nuts.**
- **Always use new bolts and nuts.**

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, mounting bracket and connector are damaged.
- Airbag is deployed.

1. Basic Diagnostic Procedure

A: PROCEDURE

Step		Check	Yes	No
1	**CHECK AIRBAG WARNING LIGHT.** Turn the ignition switch to ON.	Does airbag warning light turn on?	Go to step **2**.	<Ref. to AB(diag)-36, Airbag Warning Light Failure.>Go to “Airbag Warning Light Failure”.
2	**READ DTC.** <Ref. to AB(diag)-28, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is the normal code being detected?	Finish the diagnosis.	Go to step **3**.
3	**PERFORM DIAGNOSIS.** 1) Judge the possible cause from “List of Diagnostic Trouble Code” <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>. 2) Inspect the DTC using “List of Diagnostic Trouble Code (DTC)”. 3) Repair the trouble cause. 4) Perform the Clear Memory Mode. <Ref. to AB(diag)-34, Clear Memory Mode.> 5) Perform the Inspection Mode. <Ref. to AB(diag)-33, Inspection Mode.> 6) Read any other DTCs displayed.	Is DTC being displayed?	Perform the procedure 1) to 5) in step 3.	Finish the diagnosis.

2. Check List for Interview

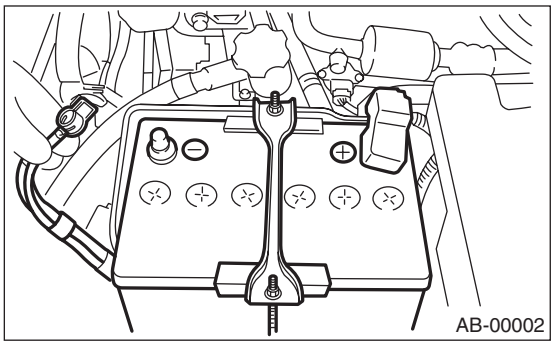
A: CHECK

Customer's name		Inspector's name	
Date vehicle brought in	/ /	Registration No.	
Odometer reading	km miles	V.I.N.	
Date Problem Occurred	/ /	Registration Year	/ /
Weather	❑ Fine ❑ Cloudy ❑ Rainy ❑ Snowy ❑ Others :		
Temperature	°C (°F)		
Road Condition	❑ Flat road ❑ Uphill ❑ Downhill ❑ Gravel road ❑ Others :		
Vehicle operation	❑ Starting ❑ Idling ❑ Driving ❑ Constant speed ❑ Accelerating ❑ Decelerating ❑ Turning ❑ Others:		
Details of problem			
Airbag warning light operation	❑ Normal (After turning the ignition switch to ON, illuminates for 6 seconds then goes off.) ❑ Remains ON ❑ Light OFF		
DTC output	❑ OK code ❑ DTC: (Code:)		

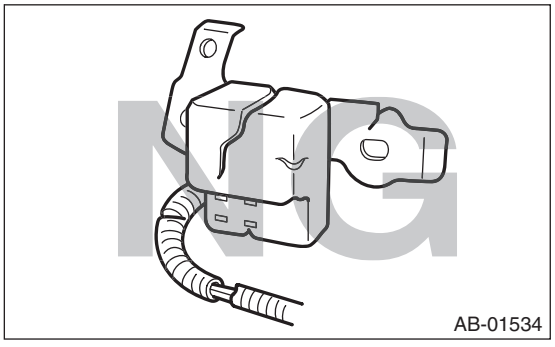
3. General Description

A: CAUTION

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

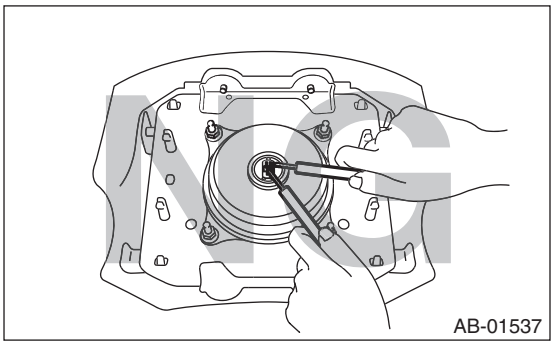

AB-00002

• If the airbag warning light illuminates, repair the vehicle immediately. Otherwise, the airbag or pretensioner may activate incorrectly, or not inflate in an actual collision.
• If sensors, airbag module, airbag control module, pretensioner or harness is deformed or damaged, replace with new part.
• Do not use the airbag system and pretensioners on other vehicles. When replacing parts, be sure to replace them with new parts.



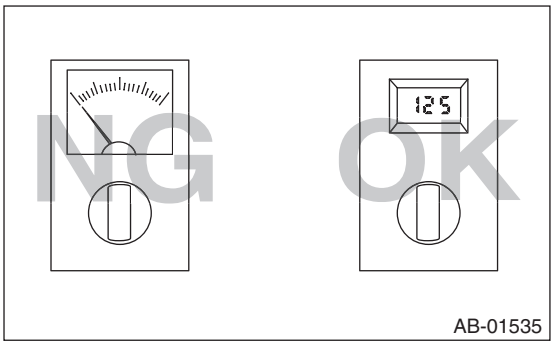
AB-01534

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



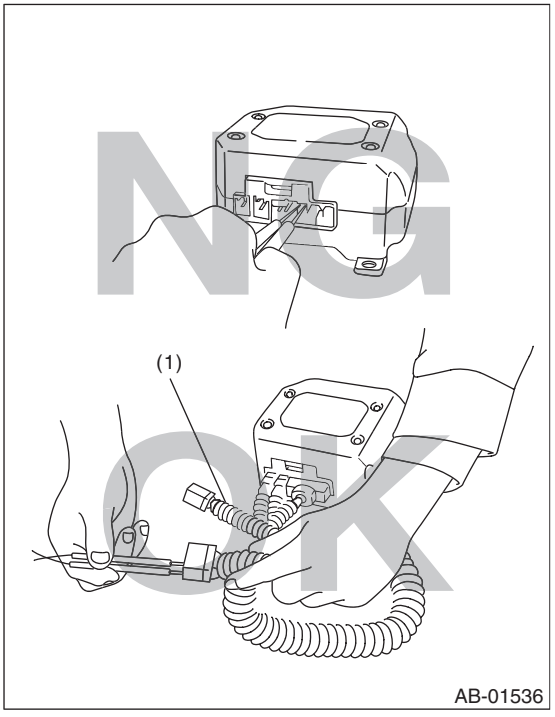
AB-01537

• 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.



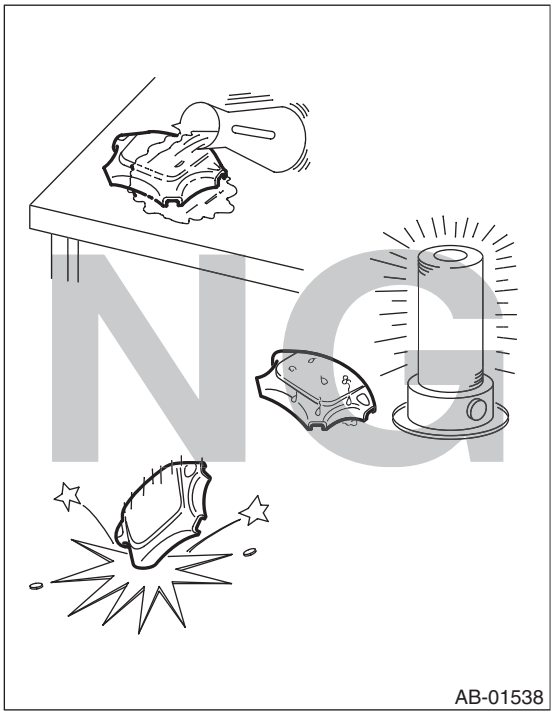
AB-01535

• When checking, use a test harness (1). Do not touch the tester probe directly to the airbag connector terminal.

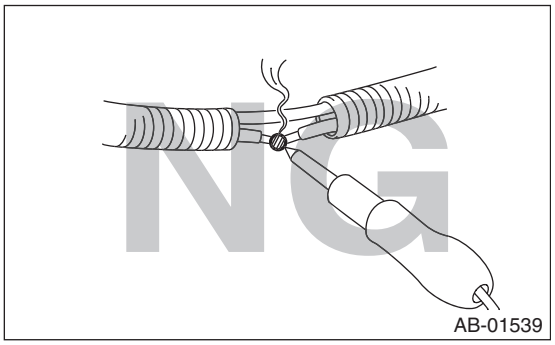


AB-01536

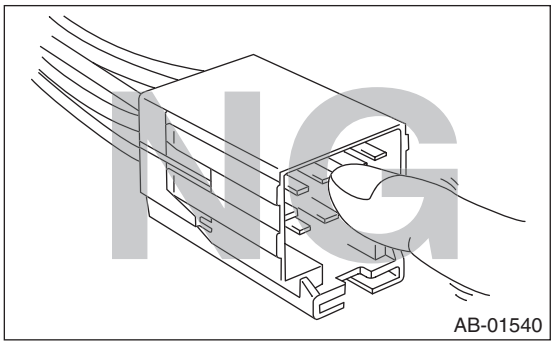
• Do not drop the airbag system parts, or keep them at high temperature over 93°C (199°F), or let water, oil or grease get on them; the internal parts may be damaged and reliability greatly lowered.



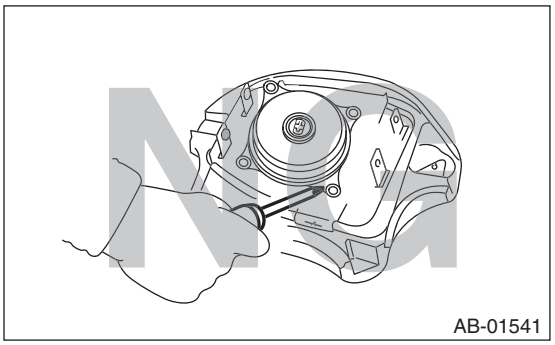
• If damage, open circuit or rust is found on airbag system wiring harness, do not use solder to repair. Replace the faulty harness with a new genuine part.



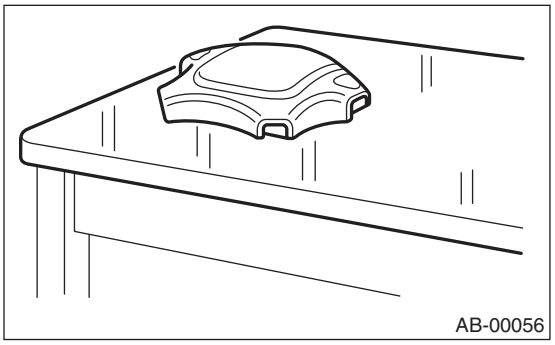
• Do not allow water or oil to come in contact with the connector terminals. Also, do not touch the connector terminals.



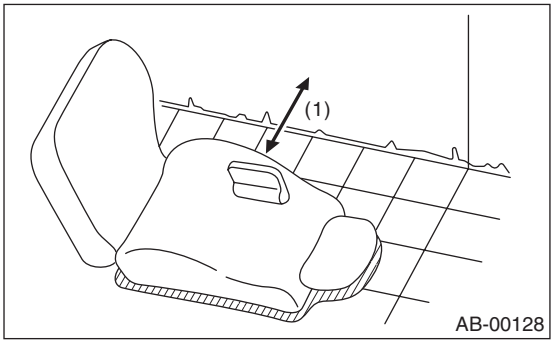
• Do not disassemble the airbag modules on the driver's side, passenger's side, or for the side airbag system.



• A deployed airbag module cannot be reused.
• After removal, keep the airbag module with the pad facing upward on a dry, clean, and flat surface away from heat and light sources, and moisture and dust.



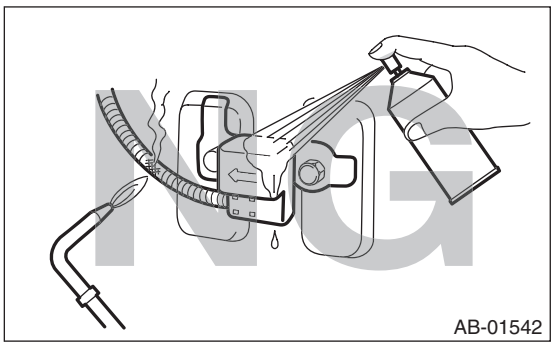
• The removed front seat with airbag module must be kept at least 200 mm (8 in) away from walls and other objects.



(1) 200 mm (8 in) or more

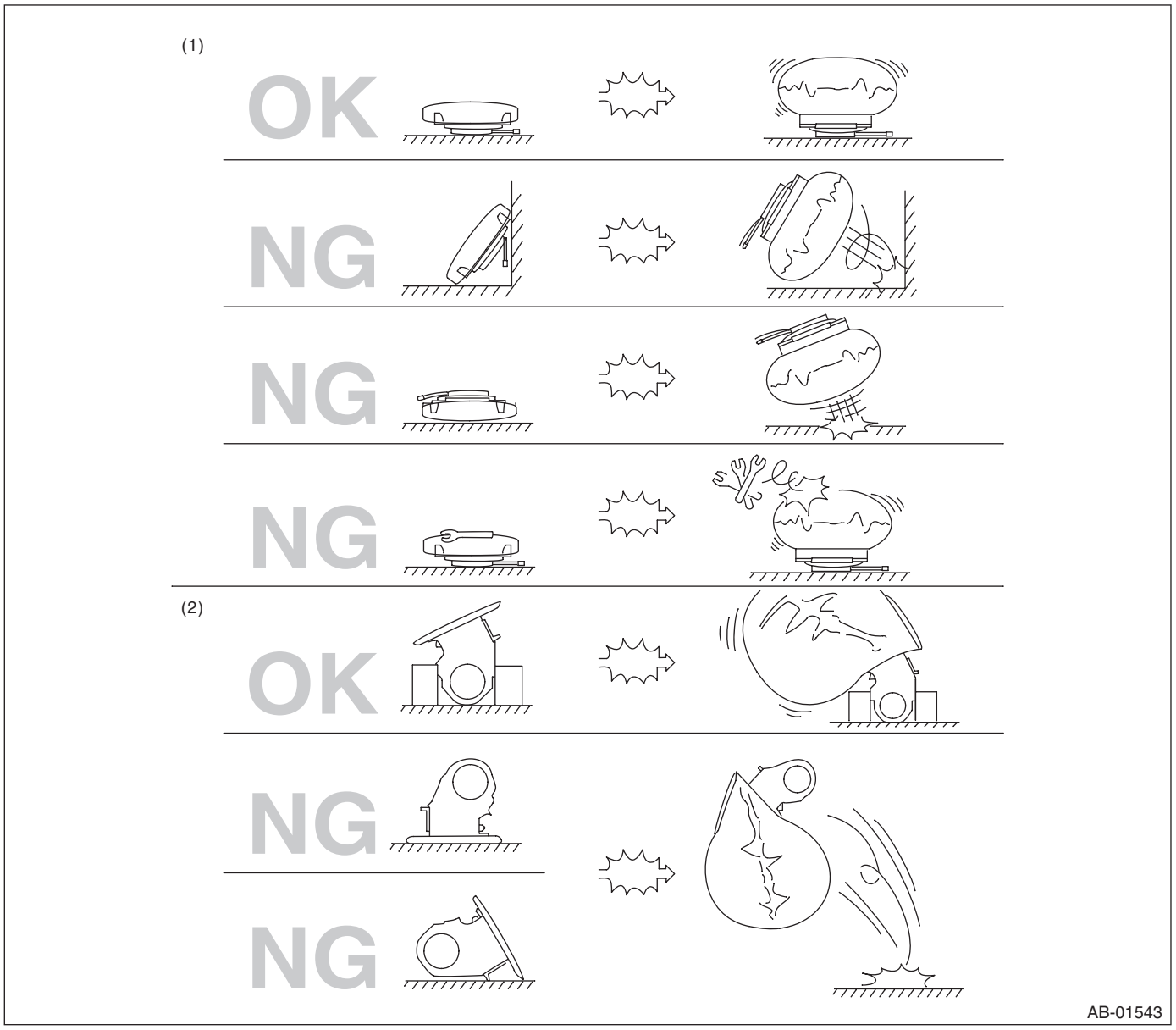
• When painting or performing sheet metal work on the front part of the vehicle, including the front wheel apron, front fender and front side frame, remove the front sub sensors and wiring harness of airbag system.

• 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 an undeployed airbag module. They could easily cause a serious accident if accidentally deployed.

• When storing a removed airbag module, do not place any objects on it or stack other airbag modules 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.



(1) Driver's airbag module (2) Passenger's airbag module

B: INSPECTION

Before diagnosing, check the following items that might be related to the engine problem:

1. BATTERY

Measure the battery voltage and check electrolyte.

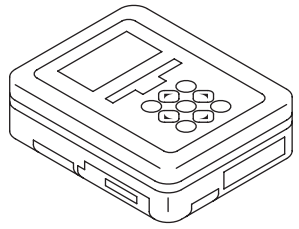
Standard voltage:
12 V

Specific gravity:
1.260 or more

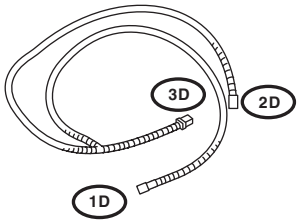
C: PREPARATION TOOL

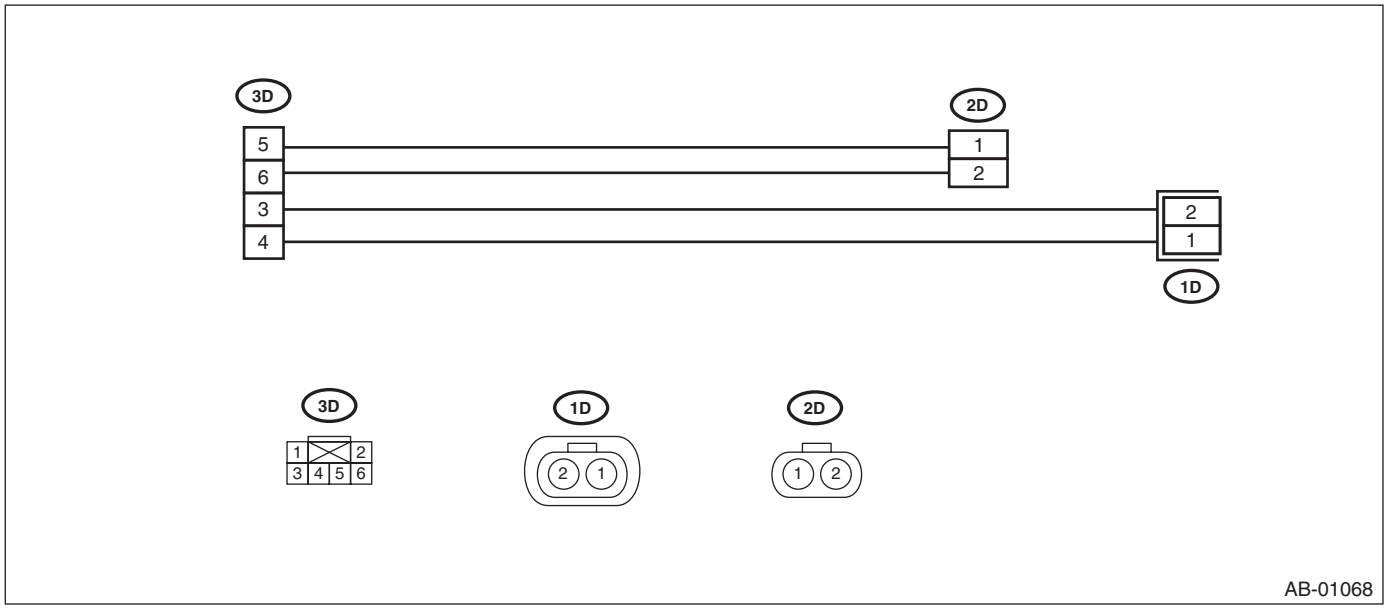
CAUTION:
To measure the voltage and resistance of airbag system component, be sure to use the specified test harness.

1. SPECIAL TOOL

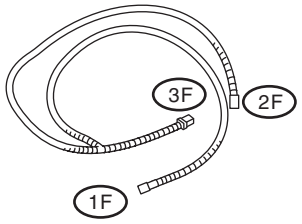
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST1B021XU0	1B021XU0	SUBARU SELECT MONITOR III KIT	Used for troubleshooting the electrical system.

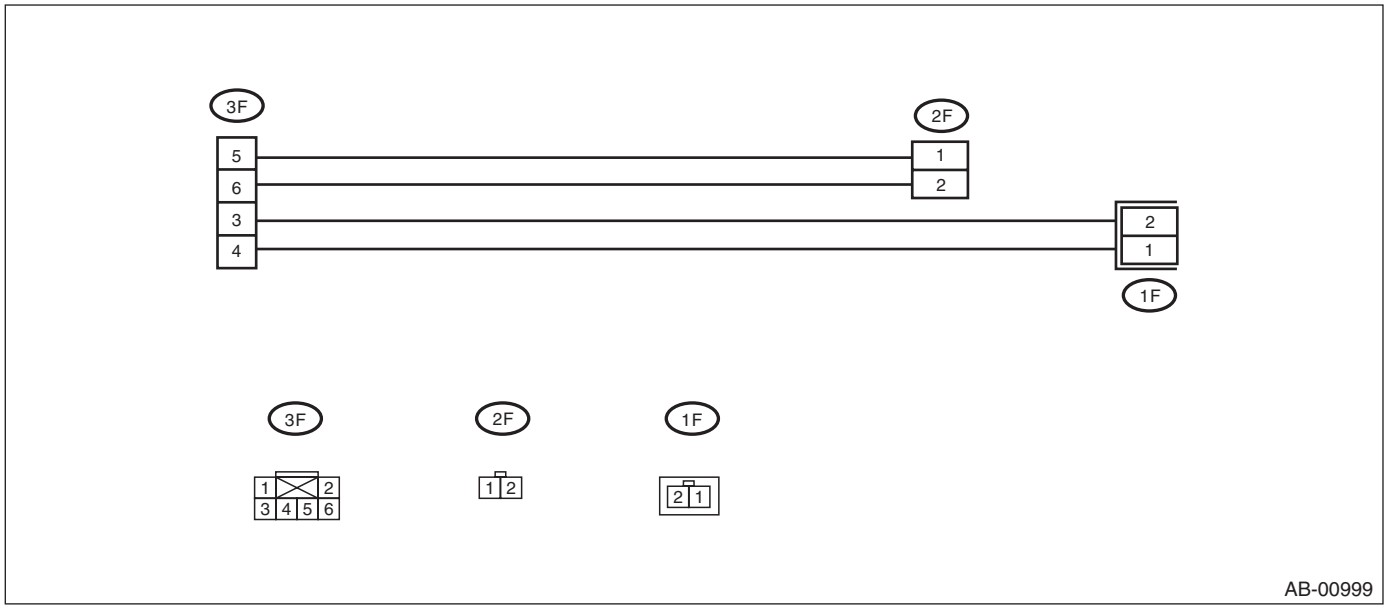
- TEST HARNESS D

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299AG060	98299AG060	TEST HARNESS D	Used when measuring voltage and resistance of front seat belt buckle switch.

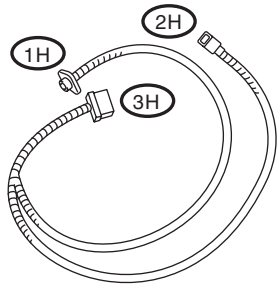


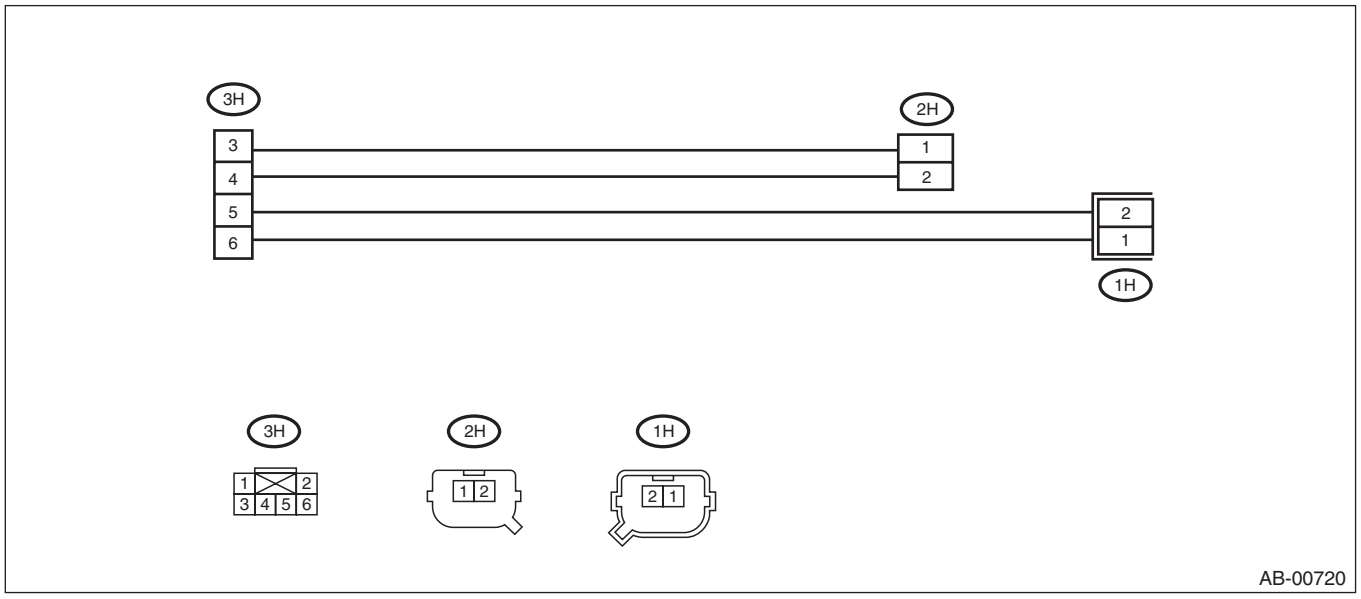
- TEST HARNESS F

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299FC010	98299FC010	TEST HARNESS F	Used when measuring voltage and resistance of airbag module harness.

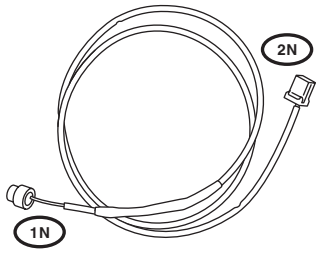


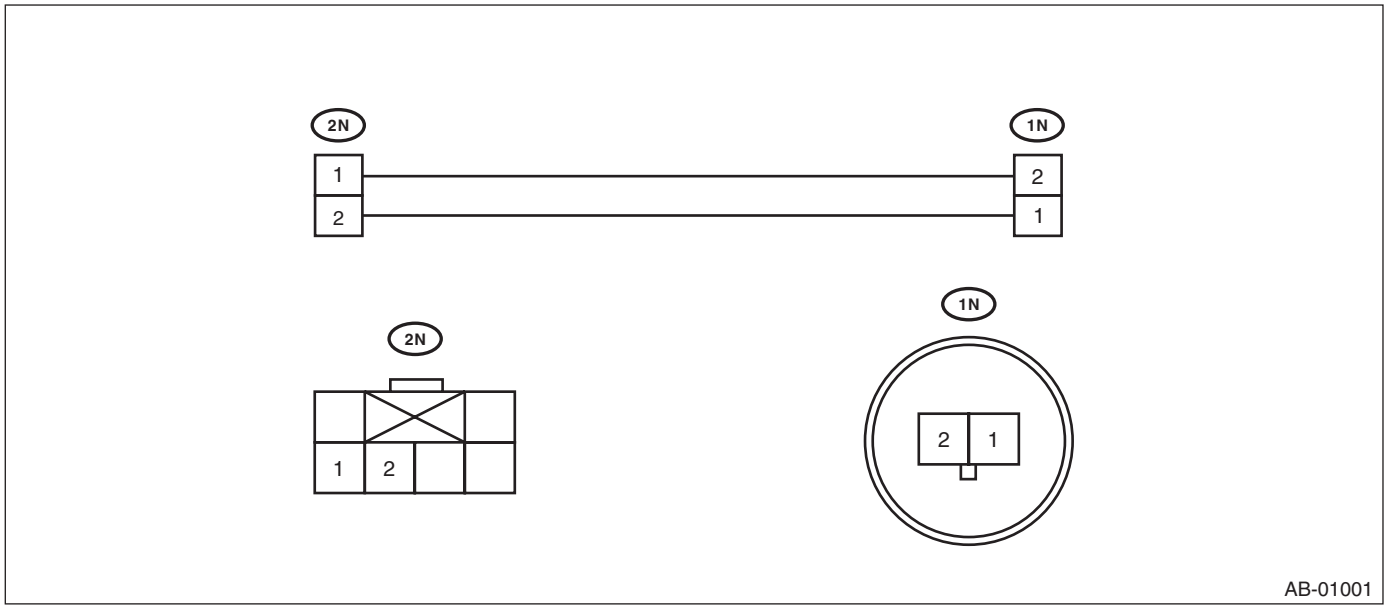
- TEST HARNESS H

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299FA030	98299FA030	TEST HARNESS H	Used when measuring voltage and resistance of front sub sensor.

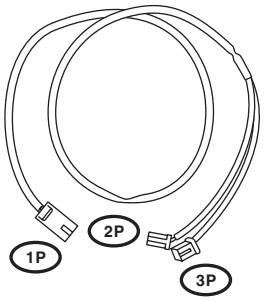


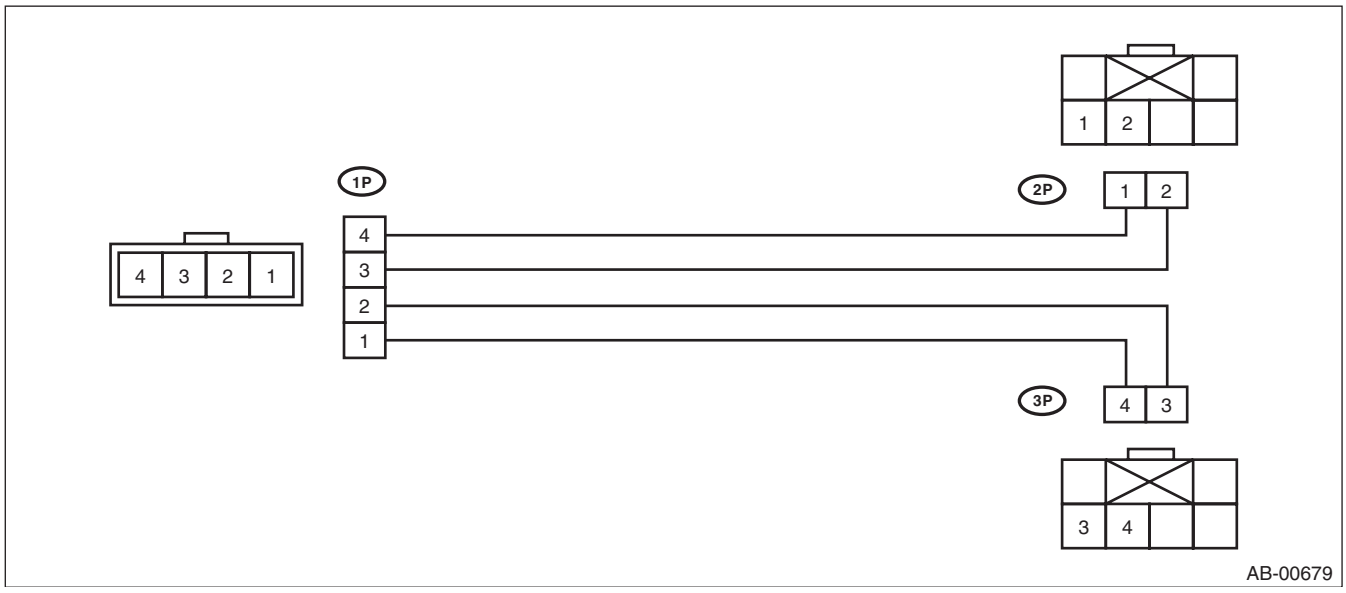
- TEST HARNESS N

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299SA000	98299SA000	TEST HARNESS N	Used when measuring voltage and resistance of driver's airbag module and seat belt pretensioner.

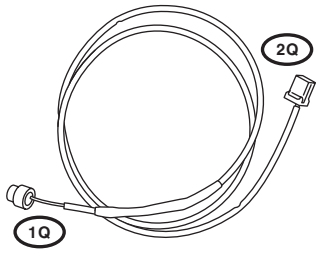


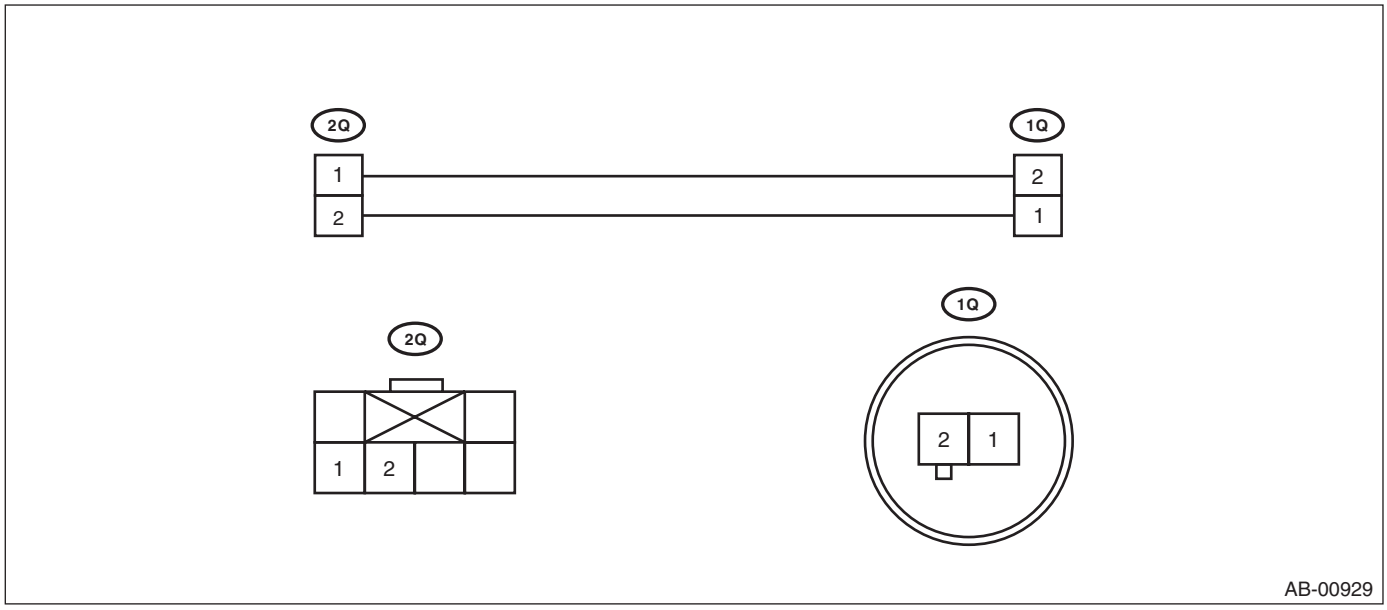
- TEST HARNESS P

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299SA020	98299SA020	TEST HARNESS P	Used when measuring voltage and resistance of driver's airbag module harness and passenger's airbag module harness.



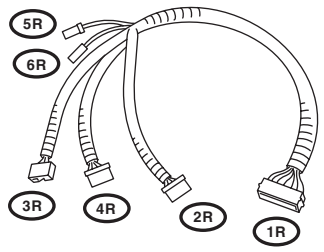
- TEST HARNESS Q

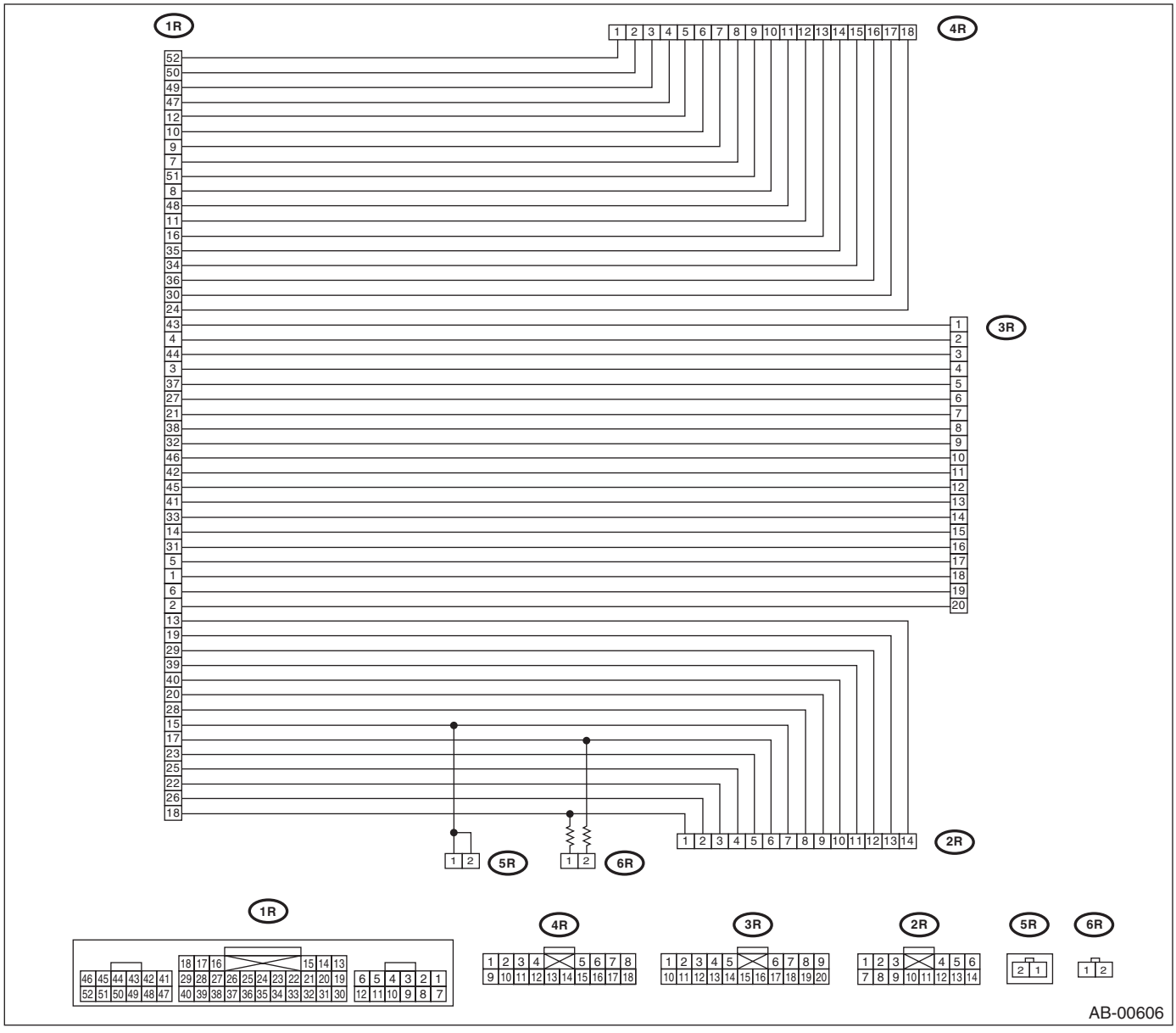
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299SA040	98299SA040	TEST HARNESS Q	Used when measuring voltage and resistance of driver's airbag module.



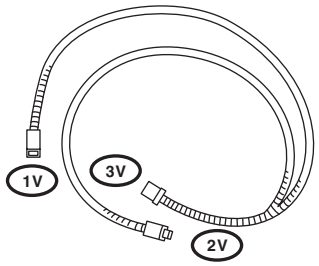
AB-00929

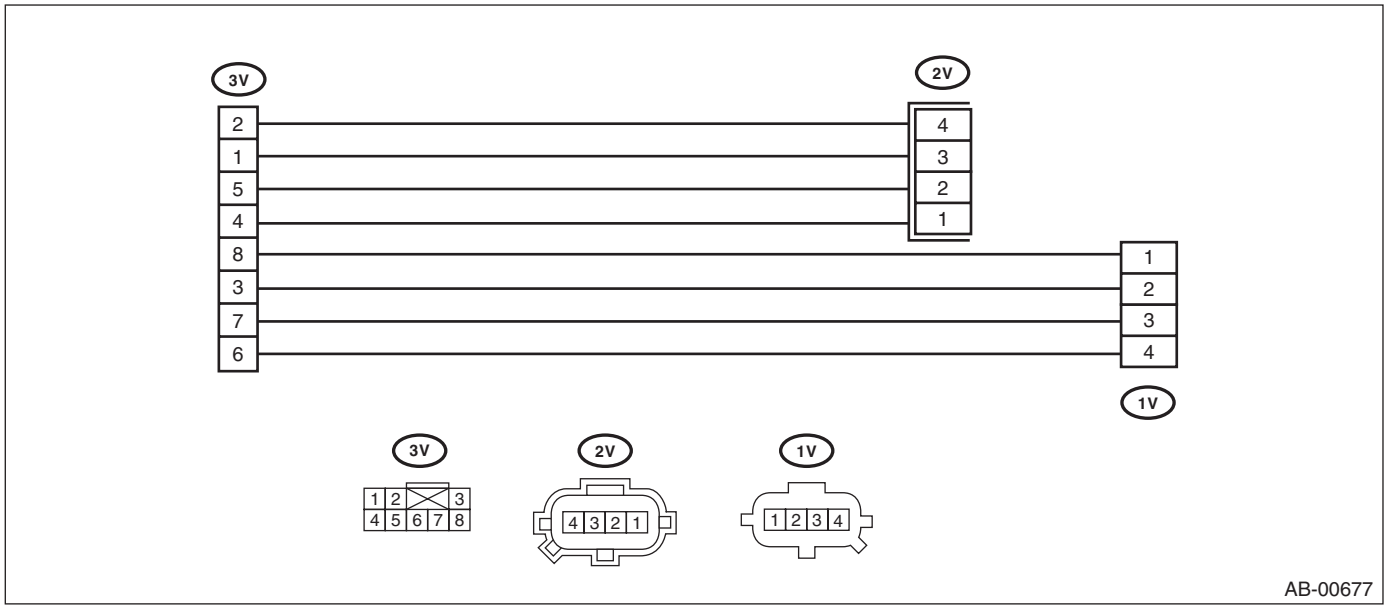
- TEST HARNESS R

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299FE030	98299FE030	TEST HARNESS R	Used when measuring voltage and resistance of airbag control module.



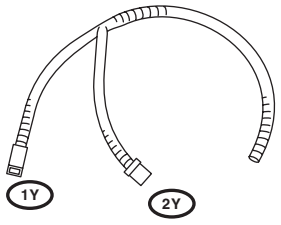
- TEST HARNESS V

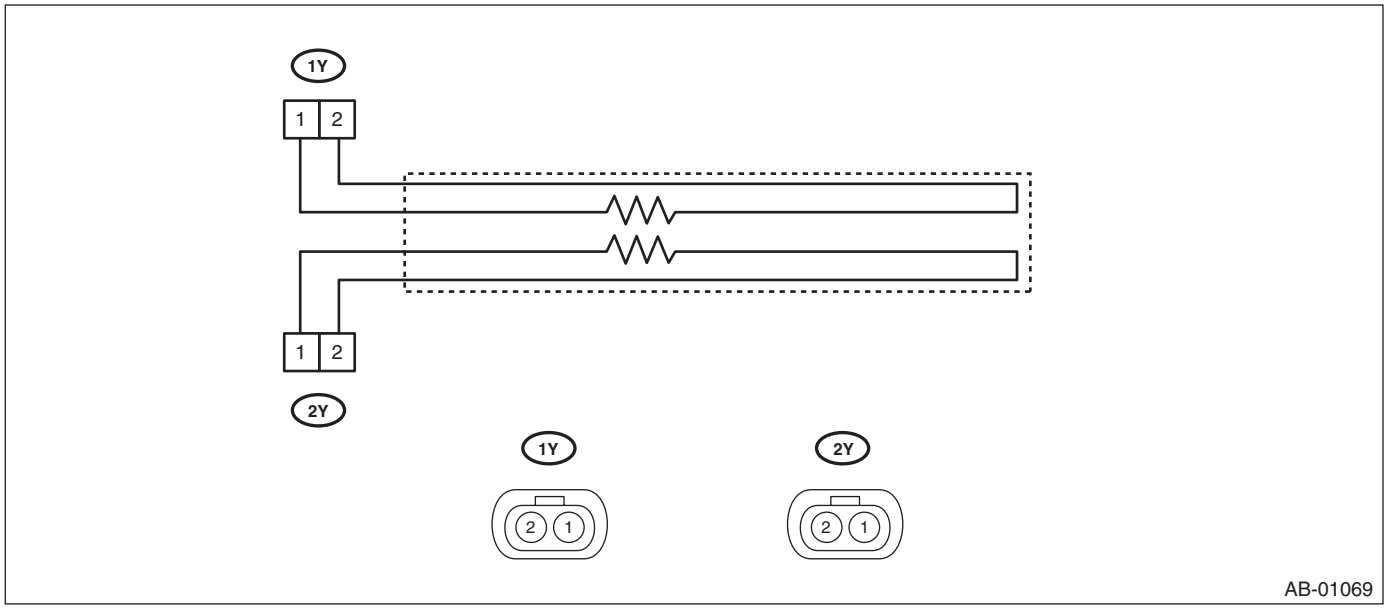
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299AG010	98299AG010	TEST HARNESS V	Used when measuring voltage and resistance of side airbag sensor.



AB-00677

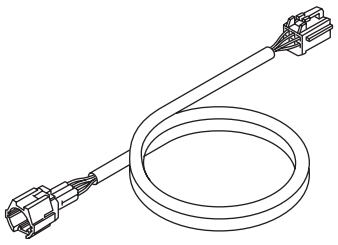
- TEST HARNESS Y

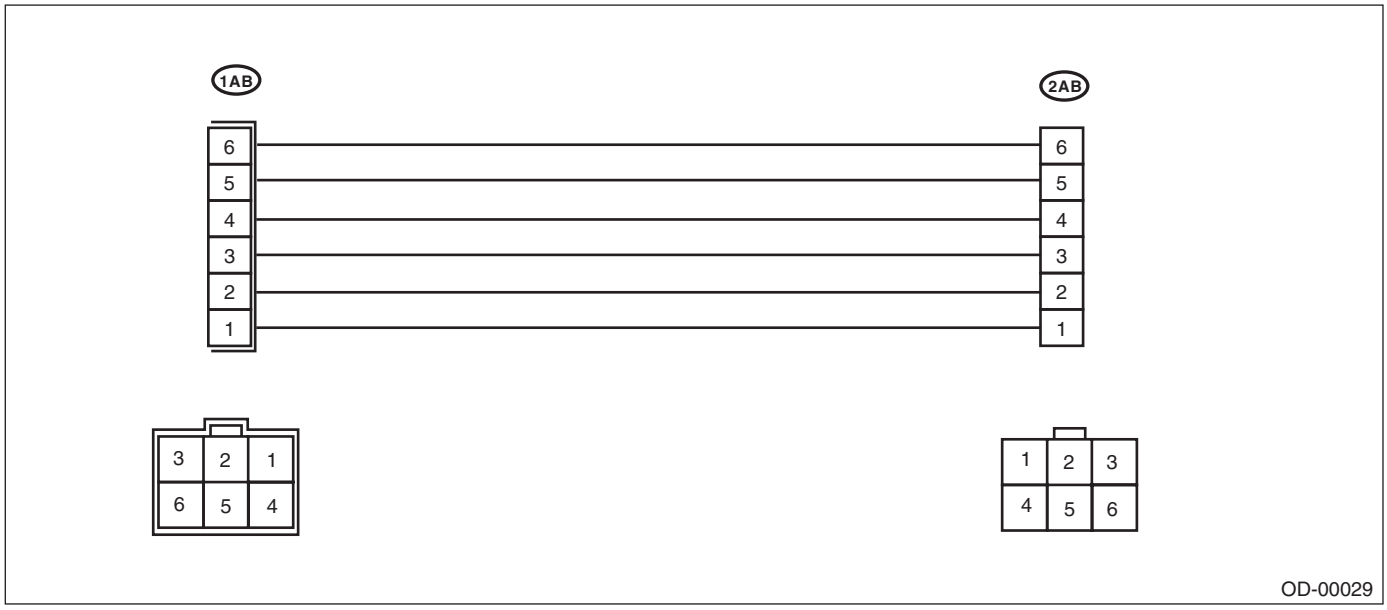
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299AG040	28299AG040	TEST HARNESS Y	Used for diagnosing seat belt buckle switch.



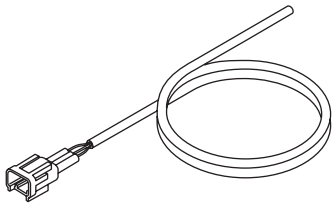
AB-01069

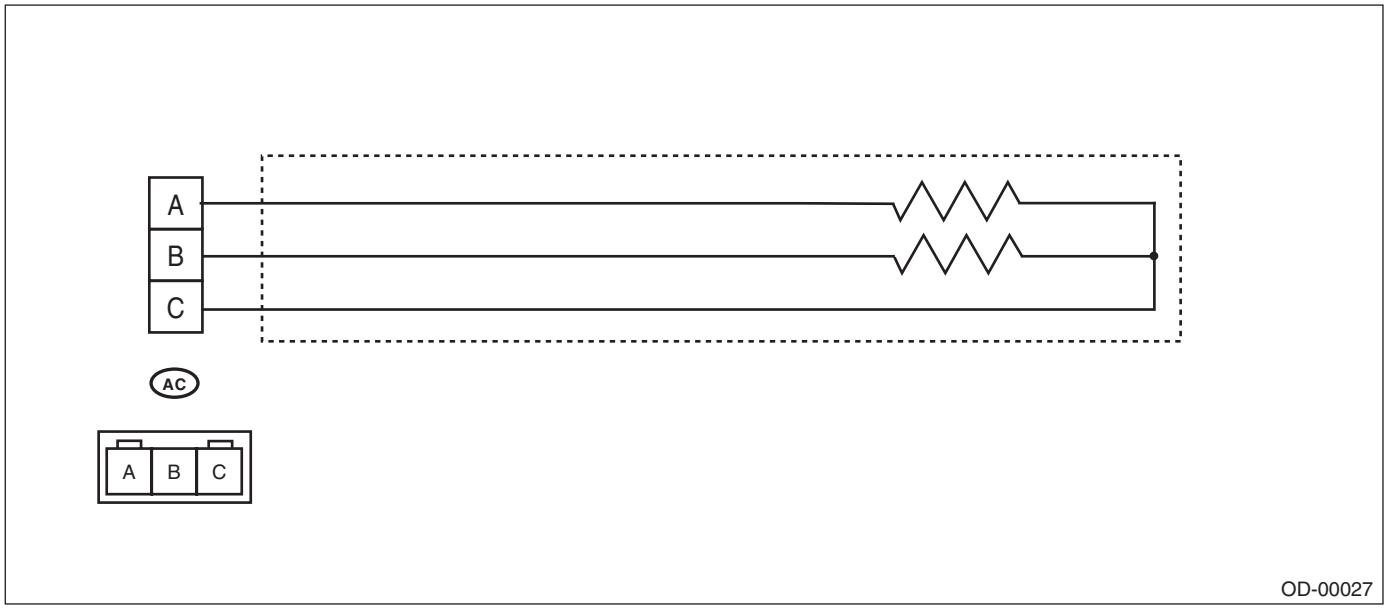
- TEST HARNESS AB

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299XA000	98299XA000	TEST HARNESS AB	Used when measuring voltage and resistance of occupant detection system.

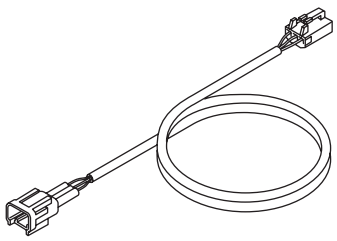


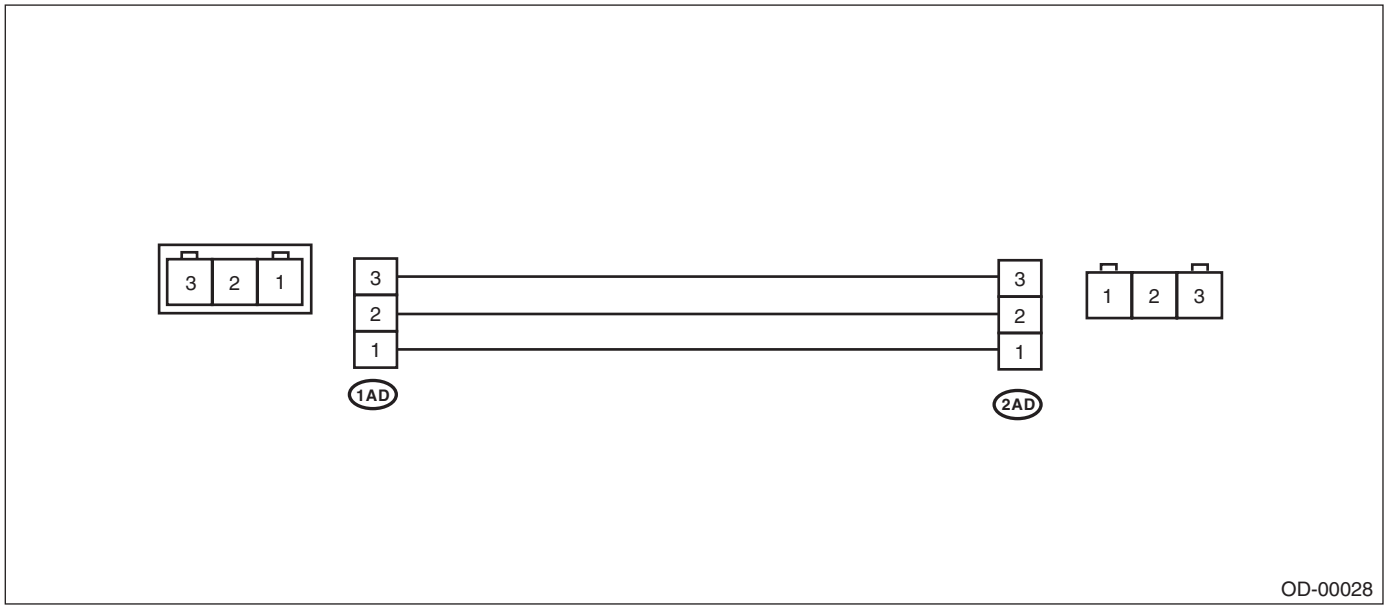
- TEST HARNESS AC

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299XA010	98299XA010	TEST HARNESS AC	Used for diagnosing seat belt tension sensor.

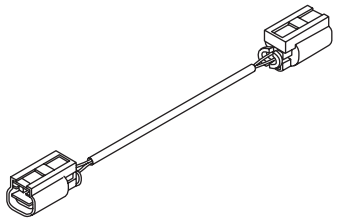


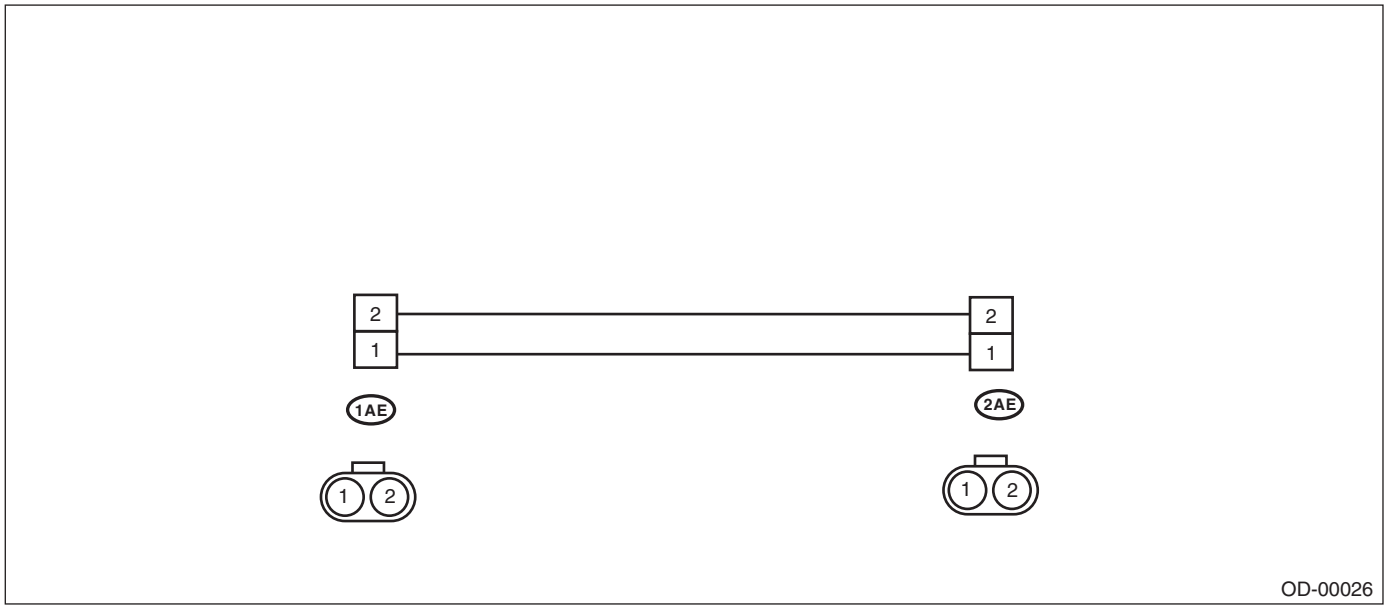
- TEST HARNESS AD

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299XA020	98299XA020	TEST HARNESS AD	Used when measuring voltage and resistance of seat belt tension sensor.

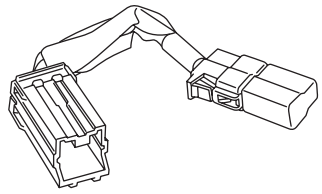


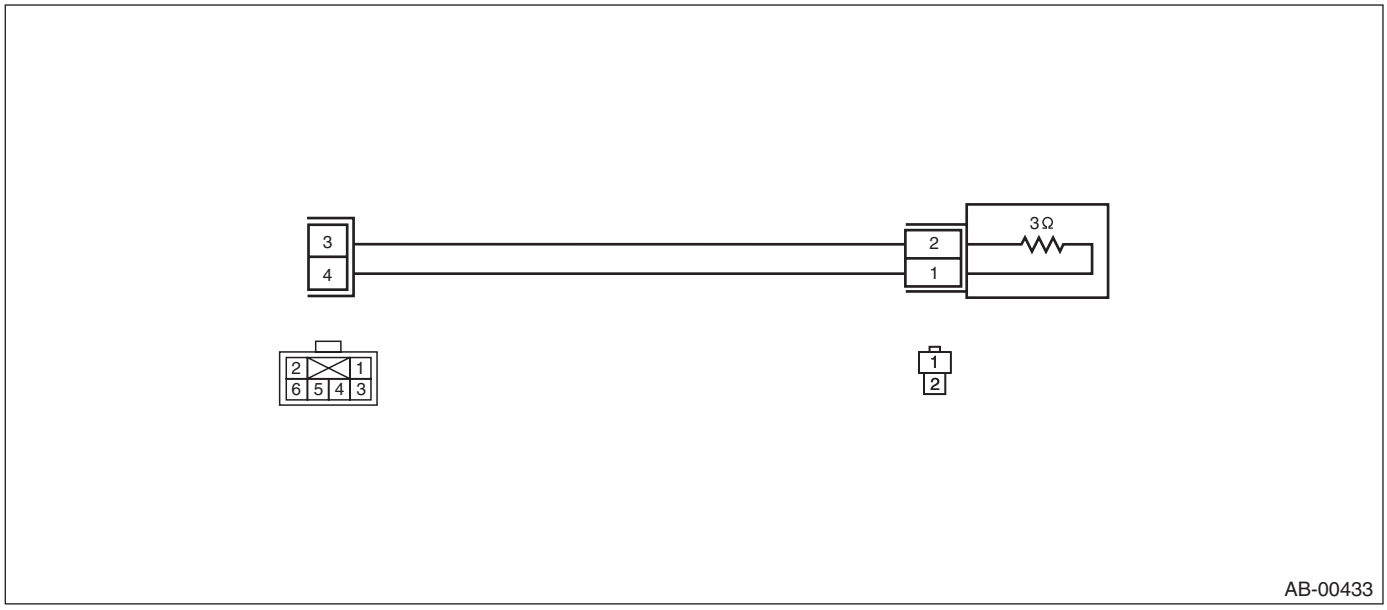
- TEST HARNESS AE

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299XA030	98299XA030	TEST HARNESS AE	• Used for diagnosing seat belt tension sensor. • Used together with test harness Y.



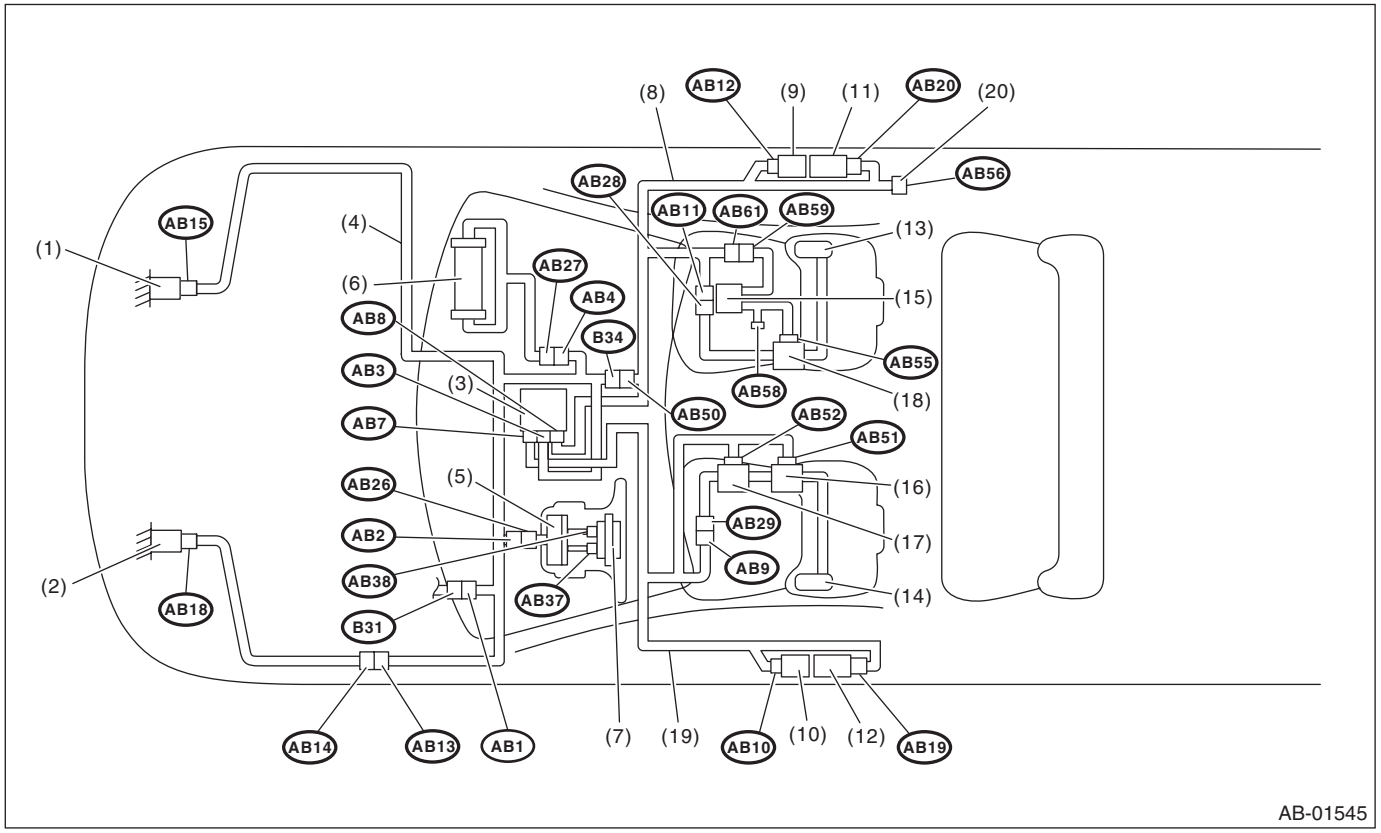
- AIRBAG RESISTOR

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299PA040	98299PA040	AIRBAG RESISTOR	This has the same resistance value as an airbag module, and is used in place of an airbag module.



4. Electrical Component Location

A: LOCATION



(1) Front sub sensor (RH)
(2) Front sub sensor (LH)
(3) Airbag control module with built-in safing and electric sensor
(4) Airbag main harness
(5) Roll connector
(6) Passenger's airbag inflator
(7) Driver's airbag inflator
(8) Airbag rear harness (RH)
(9) Side airbag sensor (RH)
(10) Side airbag sensor (LH)
(11) Seat belt pretensioner (RH)
(12) Seat belt pretensioner (LH)
(13) Side airbag inflator (RH)
(14) Side airbag inflator (LH)
(15) Occupant detection control module
(16) Buckle switch (LH)
(17) Seat position sensor (LH)
(18) Buckle switch (RH)
(19) Airbag rear harness (LH)
(20) Belt tension sensor (RH)

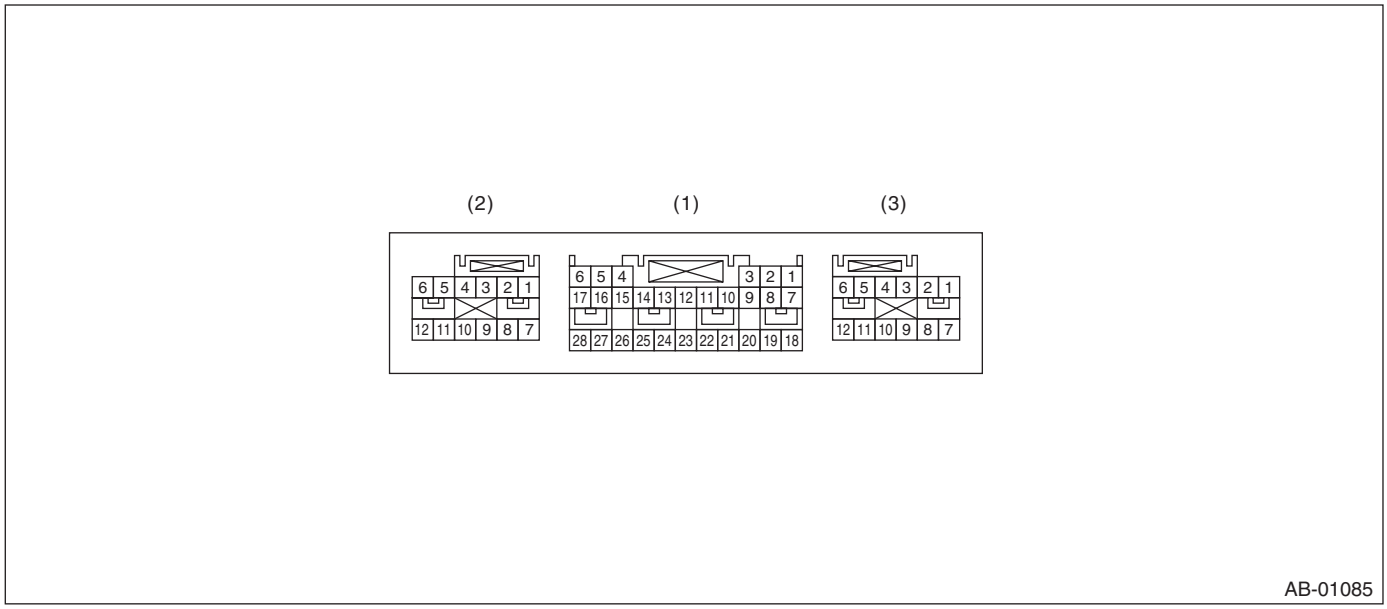
Connector No.	(AB1)	(AB2)	(AB3)	(AB4)	(AB7)	(AB8)	(AB9)	(AB10)	(AB11)	(AB12)	(AB13)	(AB14)
Pin	8	4	28	4	12	12	2	4	2	4	2	2
Color	White	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Male/Female	Male	Female	Female	Female	Female	Female	Female	Female	Female	Female	Female	Male

Connector No.	(AB15)	(AB18)	(AB19)	(AB20)	(AB26)	(AB27)	(AB28)	(AB29)	(AB37)	(AB38)	(AB50)	(AB51)
Pin	2	2	2	2	4	4	2	2	2	2	2	2
Color	Yellow	Yellow	Black	Black	Yellow	Yellow	Yellow	Yellow	Orange	Black	Yellow	Yellow
Male/Female	Female	Female	Female	Female	Male	Male	Male	Male	Female	Female	Male	Female

Connector No.	(AB52)	(AB55)	(AB56)	(AB58)	(AB59)	(AB61)	(AB62)					
Pin	2	2	3	3	6	6	18					
Color	Yellow	Black	Brown	Gray	Gray	Gray	White					
Male/Female	Female	Female	Female	Female	Male	Female	Female					

5. Airbag Control Module I/O Signal

A: ELECTRICAL SPECIFICATION



- Terminal numbers in airbag control module connector are shown in the figure.
- Airbag warning light illuminates when the connector is removed from airbag control module.

Item		Control module terminal No.
Data link connector		(1) - 12
Combination meter		(1) - 3
Battery power supply	Common use fuse	(1) - 6
	Dedicated fuse	(1) - 5
Passenger's airbag module level one	+	(1) - 10
	–	(1) - 11
Passenger's airbag module level two	+	(1) - 8
	–	(1) - 7
Driver's airbag module level one	+	(1) - 14
	–	(1) - 13
Driver's airbag module level two	+	(1) - 16
	–	(1) - 17
Front sub sensor LH	Power supply and communication	(1) - 15
	GND	(1) - 26
Front sub sensor RH	Power supply and communication	(1) - 9
	GND	(1) - 20
Ground line (GND)		(1) - 27
		(1) - 28
Passenger's airbag OFF indicator light		(1) - 1
Passenger's airbag ON indicator light		(1) - 18
Seat belt buckle switch LH	+	(2) - 11
	–	(2) - 8
Seat position sensor LH	+	(2) - 3
	–	(2) - 4
Seat belt pretensioner LH	+	(2) - 2
	–	(2) - 1
Side airbag sensor LH	Power supply and communication	(2) - 7
	GND	(2) - 9
	+	(2) - 10
	–	(2) - 12
Side airbag module LH	+	(2) - 6
	–	(2) - 5
Seat belt pretensioner RH	+	(3) - 5
	–	(3) - 6
Side airbag sensor RH	Power supply and communication	(3) - 12
	GND	(3) - 10
	+	(3) - 9
	–	(3) - 7
Side airbag module RH	+	(3) - 1
	–	(3) - 2
Occupant detection control module	+	(3) - 11
	–	(3) - 8

B: WIRING DIAGRAM

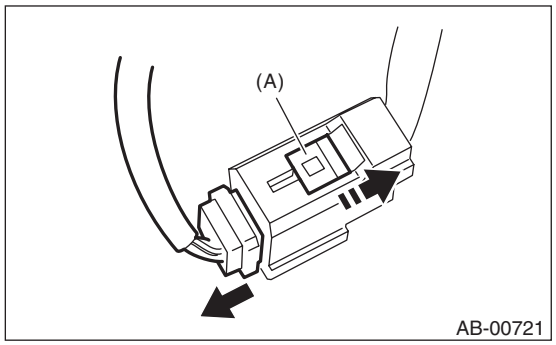
Refer to the WI section wiring diagram. <Ref. to WI-94, WIRING DIAGRAM, Airbag System.>

6. Airbag Connector

A: PROCEDURE

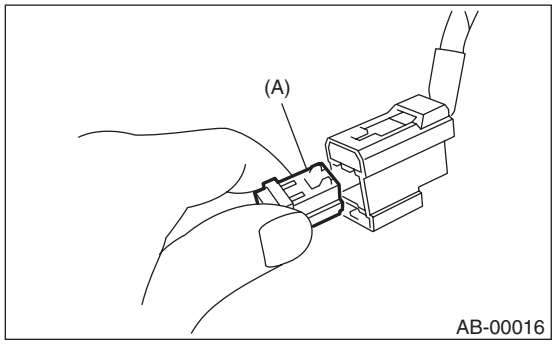
1. BUCKLE SWITCH AND OCCUPANT DETECTION CONTROL MODULE

1) How to disconnect:
(1) Move the slide lock (A) in the direction of arrow.
(2) With the slide lock (A) moved, disconnect the connector.



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

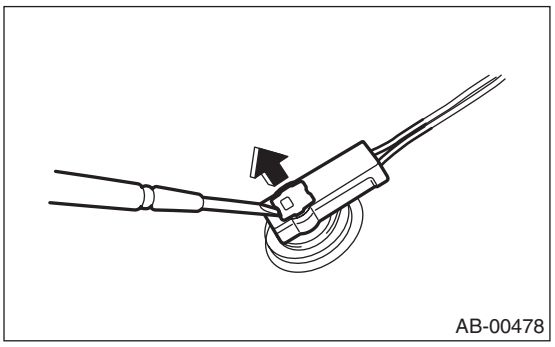
2) How to connect:
Holding the connector (A), and push it in carefully until a clicking sound is heard.



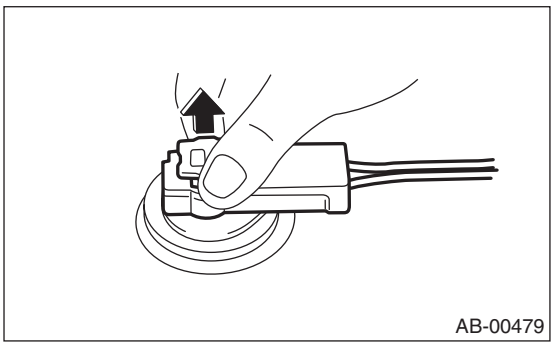
CAUTION:
Be sure to insert the connector in until it is locked. Then pull it gently to make sure that it is locked.

2. DRIVER'S AIRBAG MODULE AND PRETENSIONER

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

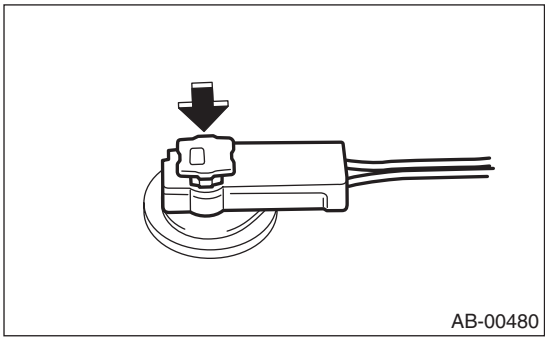


(2) Pull the connector to disconnect from driver's airbag module assembly or retractor assembly.



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.

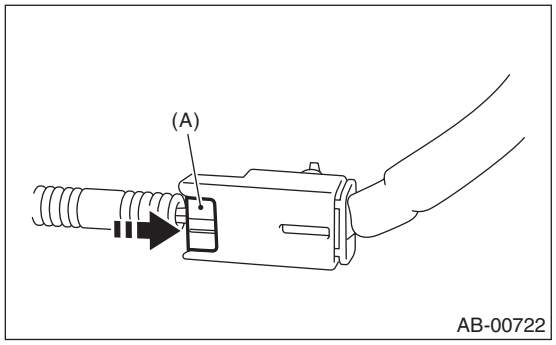
CAUTION:
- **Be sure to insert the connector in until it is locked. Then pull it gently to make sure that it is locked.**
- **Be sure to push the push lock in securely.**



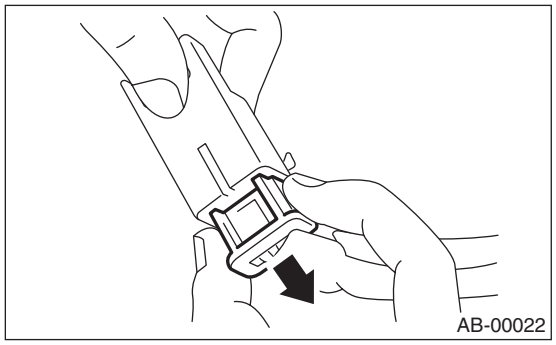
NOTE:
You cannot connect the connector when the push lock is in the lock position. Move the push lock to the release position to connect the connector.

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

1) How to disconnect:
(1) Push in the slide lock (A) in the direction of arrow.



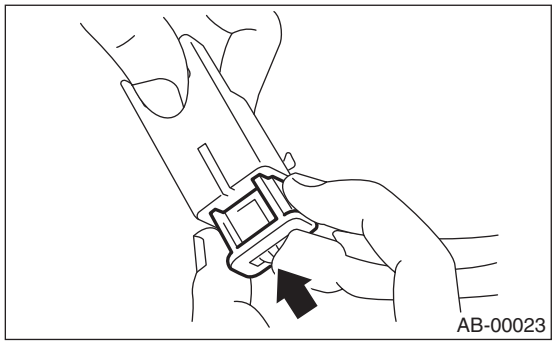
(2) With the slide lock pushed in, disconnect the connector.



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

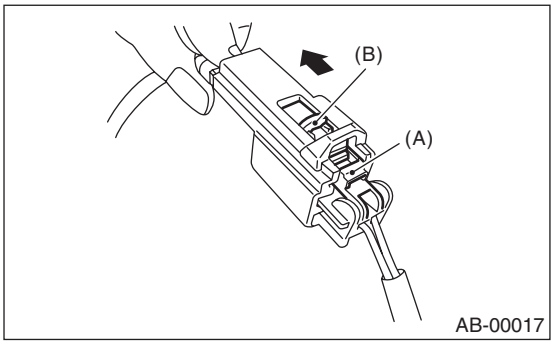
2) How to connect:
Holding the connector, push it in securely until a clicking sound is heard.

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



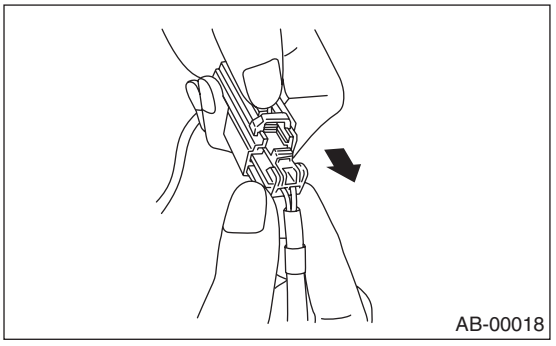
4. SIDE AIRBAG

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.

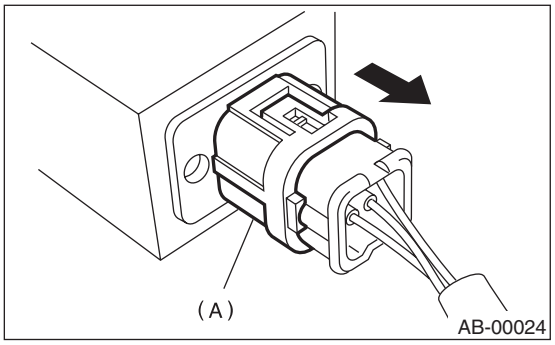
CAUTION:
When pulling the slide lock or disconnecting connector, be sure to hold the connector, not the harness.



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

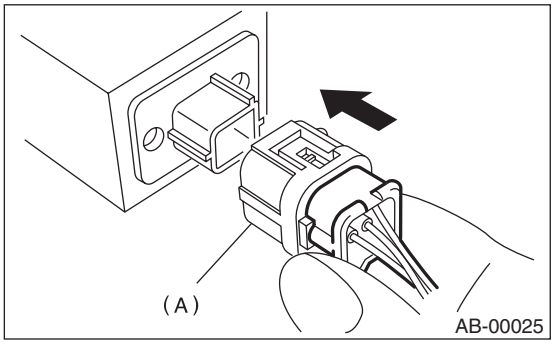
1) How to disconnect:
Holding outer part (A), pull it in the direction of arrow.

CAUTION:
When pulling the slide lock, 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 section since 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.



7. Subaru Select Monitor

A: OPERATION

1. READ DIAGNOSTIC TROUBLE CODE (DTC)

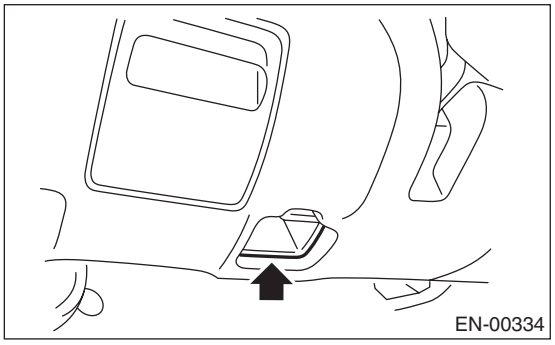
When malfunction of the airbag system occurs, the DTC stored in airbag control module will be read out.

1) Prepare the Subaru Select Monitor kit. <Ref. to AB(diag)-8, SPECIAL TOOL, PREPARATION TOOL, General Description.>

2) Connect the diagnosis cable to the Subaru Select Monitor.

3) Connect the Subaru Select Monitor to the data link connector.

(1) The data link connector is located in the lower portion of the instrument panel (on the driver's side).



(2) Connect the diagnosis cable to the data link connector.

CAUTION:
Do not connect the scan tools other than the Subaru Select Monitor.

4) Turn the ignition switch to ON (engine OFF) and run the Subaru Select Monitor.

5) On the «Main Menu» display screen, select {Each System Check}.

6) On the «System Selection Menu» display screen, select the {Airbag System}.

7) Select the [OK] after the {ABS} is displayed.

8) On the «Airbag System» screen, select the {DTC Display}.

NOTE:

- For details concerning the operation procedure, refer to the «help on PC application for Subaru Select Monitor».
- For details concerning DTCs, refer to List of Diagnostic Trouble Code (DTC). <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>

2. DISPLAY OF STATUS INFORMATION

Check the operating condition of each sensor in the event of malfunction in the seat belt buckle switch and seat position sensor, or when the seat belt buckle switch and seat position sensor has been replaced.
1) On the «Main Menu» display screen, select {Each System Check}.
2) On the «System Selection Menu» display screen, select the {Airbag System}.
3) On the «Airbag System» display screen, select the {Status Data}.
The following table is for support data.

Item	Display Contents
Seat position sensor LH	Front position *9/Rear position*10 /Other *11/Initial Setting *11 /—*2
Seat position sensor RH	—*2
Seat belt buckle switch LH	Belted *3/Unbelted*4 /Other *5/Initial Setting *1 /—*6
Seat belt buckle switch RH	Belted *3/Unbelted*4 /Other *5/Initial Setting *1 /—*6
Passenger's airbag status	ON *7/OFF *8 /Initial Setting *1

*1: Displayed when it is initial.
*2: Seat position sensor not supported
*3: Seat belt fastened
*4: Seat belt not fastened
*5: Displayed when data other than belt fastened or not fastened, (such as breakdowns) is entered.
*6: Seat belt buckle switch not supported
*7: Passenger's seat airbag operating state
*8: Passenger's seat airbag non-operating state
*9: Seat position is at the front end.
*10: Seat position is at the rear end.
*11: Displayed when data other than seat position (forward/rear), is entered (ie. breakdown data)

NOTE:
For details concerning the operation procedure, refer to the «PC application for Subaru Select Monitor».

3. CLEAR MEMORY MODE

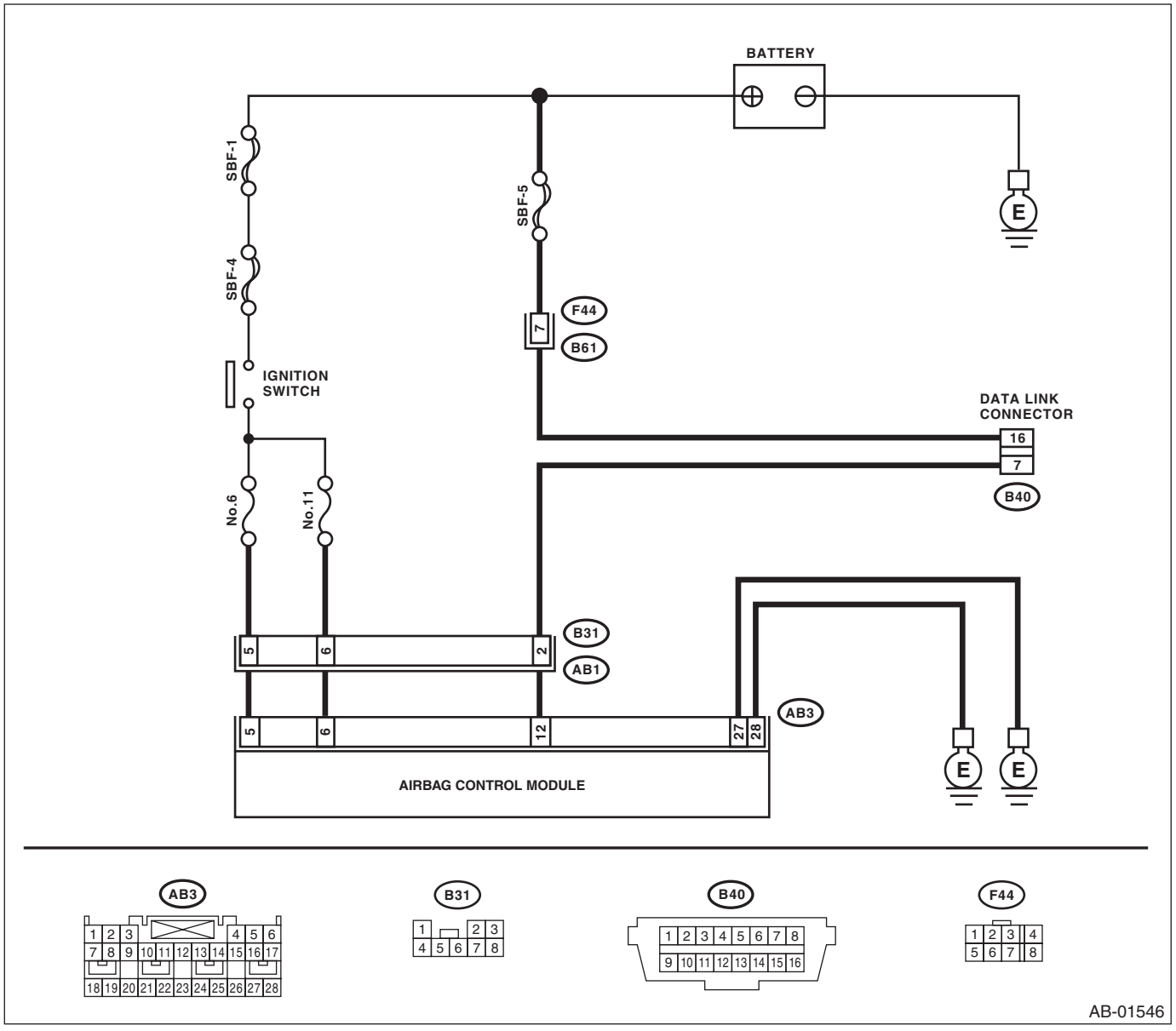
Clear the DTC stored in the airbag control module after repairing the airbag system. (After the breakdown is recovered, the breakdown code for completed recoveries are read out when the next breakdown occurs if the memory clear work is not performed.)
1) On the «Main Menu» display screen, select {Each System Check}.
2) On the «System Selection Menu» display screen, select the {Airbag System}.
3) On the {Airbag System} menu screen, select the {Clear Memory}.
4) When the "Clear Memory?" is shown on the screen, select the [OK].
5) When "Done" is displayed, close the Subaru Select Monitor.

NOTE:
For details concerning the operation procedure, refer to the «PC application for Subaru Select Monitor».

B: INSPECTION

1. COMMUNICATION FOR INITIALIZING IMPOSSIBLE

DETECTING CONDITION:
Defective harness connector
TROUBLE SYMPTOM:
Communication is impossible between the airbag control module and the Subaru Select Monitor.
WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK IGNITION SWITCH.**	Is the ignition switch ON?	Go to step **2**.	Turn the ignition switch to ON, and select the airbag mode using the Subaru Select Monitor.
2	**CHECK BATTERY.** 1) Turn the ignition switch to OFF. 2) Measure the battery voltage.	Is the voltage 11 V or more?	Go to step **3**.	Charge or replace the battery.
3	**CHECK BATTERY TERMINAL.**	Is there poor contact at the battery terminal?	Repair or tighten the battery terminal.	Go to step **4**.
4	**CHECK SUBARU SELECT MONITOR COMMUNICATION.** 1) Turn the ignition switch to ON. 2) Using the Subaru Select Monitor, check whether communication to other systems can be executed normally.	Is the system name displayed on Subaru Select Monitor?	Go to step **9**.	Go to step **5**.
5	**CHECK SUBARU SELECT MONITOR COMMUNICATION.** 1) Turn the ignition switch to OFF. 2) Disconnect the battery ground cable, and wait more than 20 seconds. 3) Disconnect the airbag control module connector. 4) Turn the ignition switch to ON. 5) Check whether communication to other systems can be executed normally.	Is the system name displayed on Subaru Select Monitor?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **6**.
6	**CHECK HARNESS CONNECTOR BETWEEN EACH CONTROL MODULE AND DATA LINK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the airbag control module, ABSCM&H/U, ECM and TCM. 3) Measure the resistance between data link connector and chassis ground. ***Connector & terminal*** ***(B40) No. 7 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **7**.	Repair the harness and connector between each control module and data link connector. (Replace the harness without repairing the airbag harness.)
7	**CHECK OUTPUT SIGNAL TO THE AIRBAG CONTROL MODULE.** 1) Turn the ignition switch to ON in the condition of step 6. 2) Measure the voltage between data link connector and chassis ground. ***Connector & terminal*** ***(B40) No. 7 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **8**.	Repair the harness and connector between each control module and data link connector. (Replace the harness without repairing the airbag harness.)

	Step	Check	Yes	No
8	**CHECK THE HARNESS BETWEEN THE AIRBAG CONTROL MODULE AND DATA LINK CONNECTOR.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect connector (AB3) from airbag control module. 3) Connect connector (1R) in the test harness R to the connector (AB3). 4) Measure resistance between connector (4R) in the test harness R and data link connector. ***Connector & terminal*** ***(4R) No. 18 — (B40) No. 7:***	Is the resistance less than 10 Ω?	Go to step **9**.	Repair the harness between the airbag control module and the data link connector. Or replace the airbag main harness along with the bulkhead harness.
9	**CHECK POWER SUPPLY CIRCUIT.** 1) Turn the ignition switch to ON. 2) Measure the voltage between connector (2R) in the test harness R and chassis ground. ***Connector & terminal*** ***(2R) No. 1 (+) — Chassis ground (–):*** ***(2R) No. 6 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **10**.	Repair the harness between the airbag control module and the battery. Or replace the airbag main harness along with the bulkhead harness.
10	**CHECK BETWEEN THE AIRBAG CONTROL MODULE AND CHASSIS GROUND.** 1) Turn the ignition switch to OFF. 2) Measure resistance between the connector (2R) in the test harness R and chassis ground. ***Connector & terminal*** ***(2R) No. 10 — Chassis ground:*** ***(2R) No. 11 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **11**.	Repair the harness between the airbag control module and the chassis ground. Or replace the airbag main harness along with the bulkhead harness.
11	**CHECK POOR CONTACT OF CONNECTOR.**	Is there poor contact in the control module power supply, ground circuit and data link connector?	Repair the connector. (For airbag system connectors, do not repair but replace the entire harness.)	Replace the only airbag control module. <Ref. to AB-18, REMOVAL, Airbag Control Module.>

2. WITHOUT DTC

DETECTING CONDITION:

- Defective combination meter
- Open circuit of harness

TROUBLE SYMPTOM:

- Airbag warning light remains on.
- “NO TROUBLE CODE” will be displayed on the Subaru Select Monitor.

For detailed operation procedures, refer to “Airbag Warning Light Failure”. <Ref. to AB(diag)-36, Airbag Warning Light Failure.>

NOTE:
When the airbag warning light is OFF and NO TROUBLE CODE is displayed on Subaru Select Monitor, the system is operating properly.

8. Inspection Mode

A: PROCEDURE

Recreate the condition by referring to the fault conditions described in the check list.

9. Clear Memory Mode

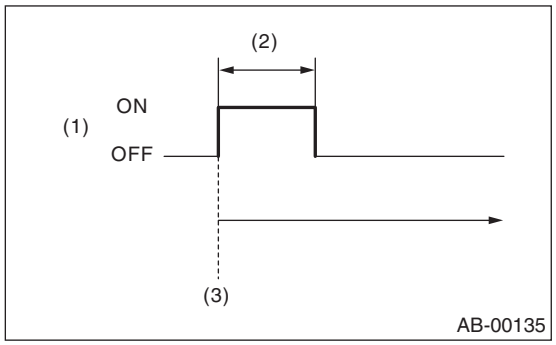
A: OPERATION

Clear the memory in the following steps after the malfunction is repaired.
For details concerning DTC clear operation, refer to “Subaru Select Monitor”. <Ref. to AB(diag)-29, CLEAR MEMORY MODE, OPERATION, Subaru Select Monitor.>

10. Airbag Warning Light Illumination Pattern

A: INSPECTION

Turn the ignition switch to ON, and confirm that the airbag warning light remains on for approx. 6 seconds then turns off afterwards.



(1) Airbag warning light
(2) Approx. 6 sec.
(3) Ignition switch ON

11.Airbag Warning Light Failure

A: AIRBAG WARNING LIGHT REMAINS ON

DETECTING CONDITION:

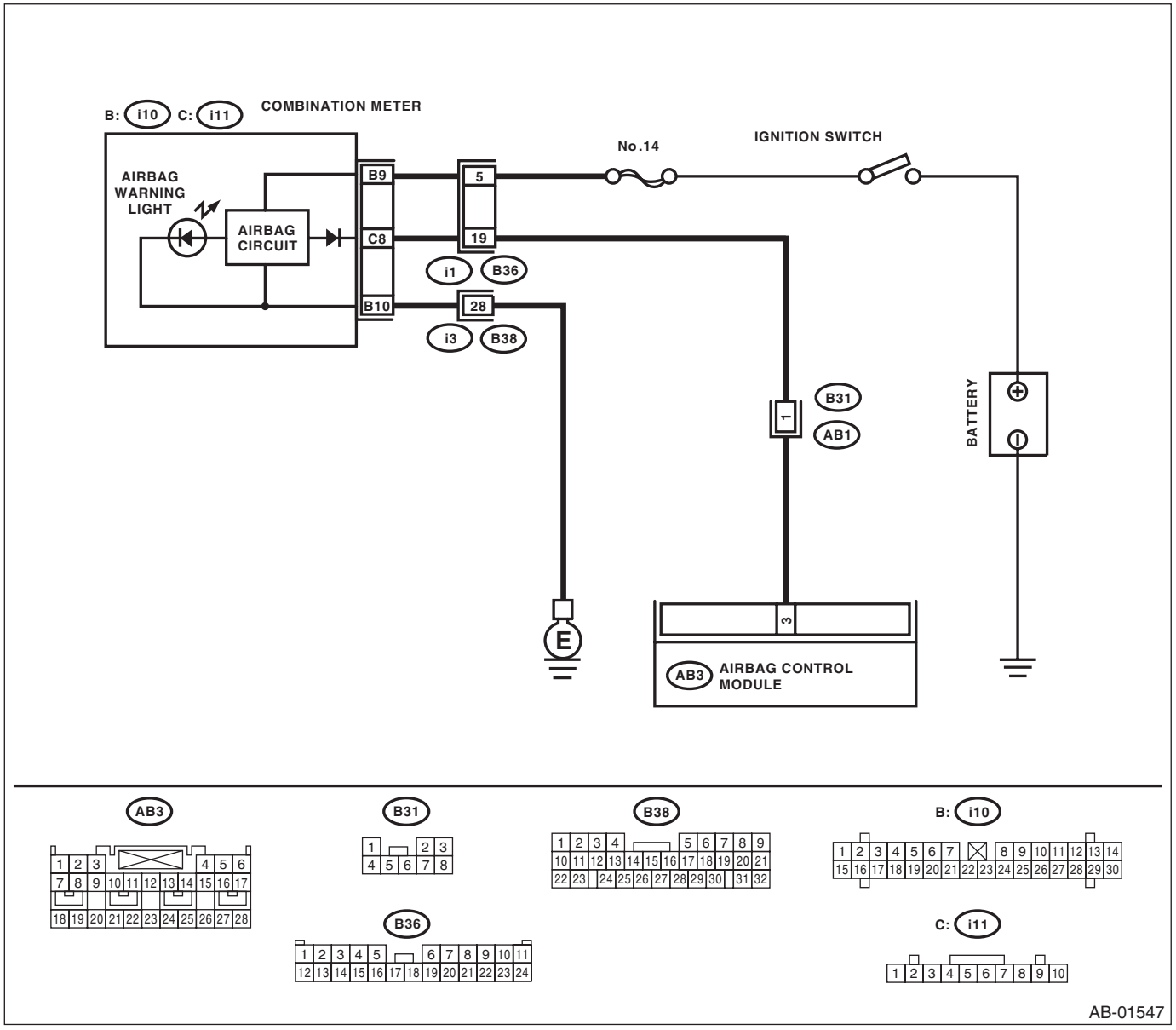
- Airbag warning light failure
- Airbag control module to airbag warning light circuit is shorted or open.
- Grounding circuit is faulty.
- Airbag control module is faulty.
- Improper connection of (AB1) and (B31)
- Improper connection of (AB3) to airbag control module

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.

• When inspecting the airbag main harness, disconnect the airbag module connectors of the driver's and passenger's seats for safety.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**READ DTC.** Read the DTC. <Ref. to AB(diag)-28, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is DTC displayed?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK POOR CONTACT.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Check that firm contact is secured between the airbag control module and the connector (AB3).	Is there poor contact in the connector (AB3)?	Replace the body harness along with airbag main harness or airbag control module, if it is not eliminated the poor contact of connectors. <Ref. to AB-18, Airbag Control Module.>	Go to step **3**.
3	**CHECK AIRBAG MAIN HARNESS.** 1) Remove the instrument panel lower cover, disconnect the connector (AB26) and (AB2). 2) Disconnect the connectors (AB27) and (AB4) of the passenger's airbag module. 3) Disconnect the connector (AB3) from airbag control module, and connect the connector (1R) in the test harness R. 4) Connect the battery ground terminal and turn the ignition switch to ON. 5) Connect two connectors, (5R) and (6R) in the test harness R. NOTE: After the problem has been eliminated, disconnect connectors (5R) and (6R).	Does the airbag warning light go off?	Go to step **4**.	Go to step **5**.
4	**CHECK GROUND CIRCUIT.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect connector (AB3) from airbag control module. 3) Connect connector (1R) in the test harness R to body harness connector (AB3). 4) Measure resistance between the connector (2R) in the test harness R and chassis ground. ***Connector & terminal*** ***(2R) No. 10 — Chassis ground:*** ***(2R) No. 11 — Chassis ground:***	Is the resistance less than 10 Ω?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Repair the chassis ground circuit.
5	**CHECK AIRBAG MAIN HARNESS AND BULKHEAD HARNESS.** 1) Disconnect the connector (5R) and (6R). 2) Remove the combination meter. 3) Measure resistance between connector (i11) in the test harness R and connector (2R). ***Connector & terminal*** ***(2R) No. 7 — (i11) No. 8:***	Is the resistance less than 10 Ω?	Check the combination meter.	Go to step **6**.
6	**CHECK POOR CONTACT OF CONNECTORS (AB1) AND (B31).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Confirm that firm contact is secured between connectors (AB1) and (B31).	Is there poor contact in connectors (AB1) and (B31)?	Repair the bulkhead harness or replace the airbag main harness along with the body harness.	Go to step **7**.
7	**CHECK AIRBAG MAIN HARNESS.** Check the airbag main harness for abnormalities.	Is anything unusual to airbag main harness?	Replace the airbag main harness along with the bulkhead harness.	Repair the bulkhead harness.

B: AIRBAG WARNING LIGHT REMAINS OFF

DETECTING CONDITION:

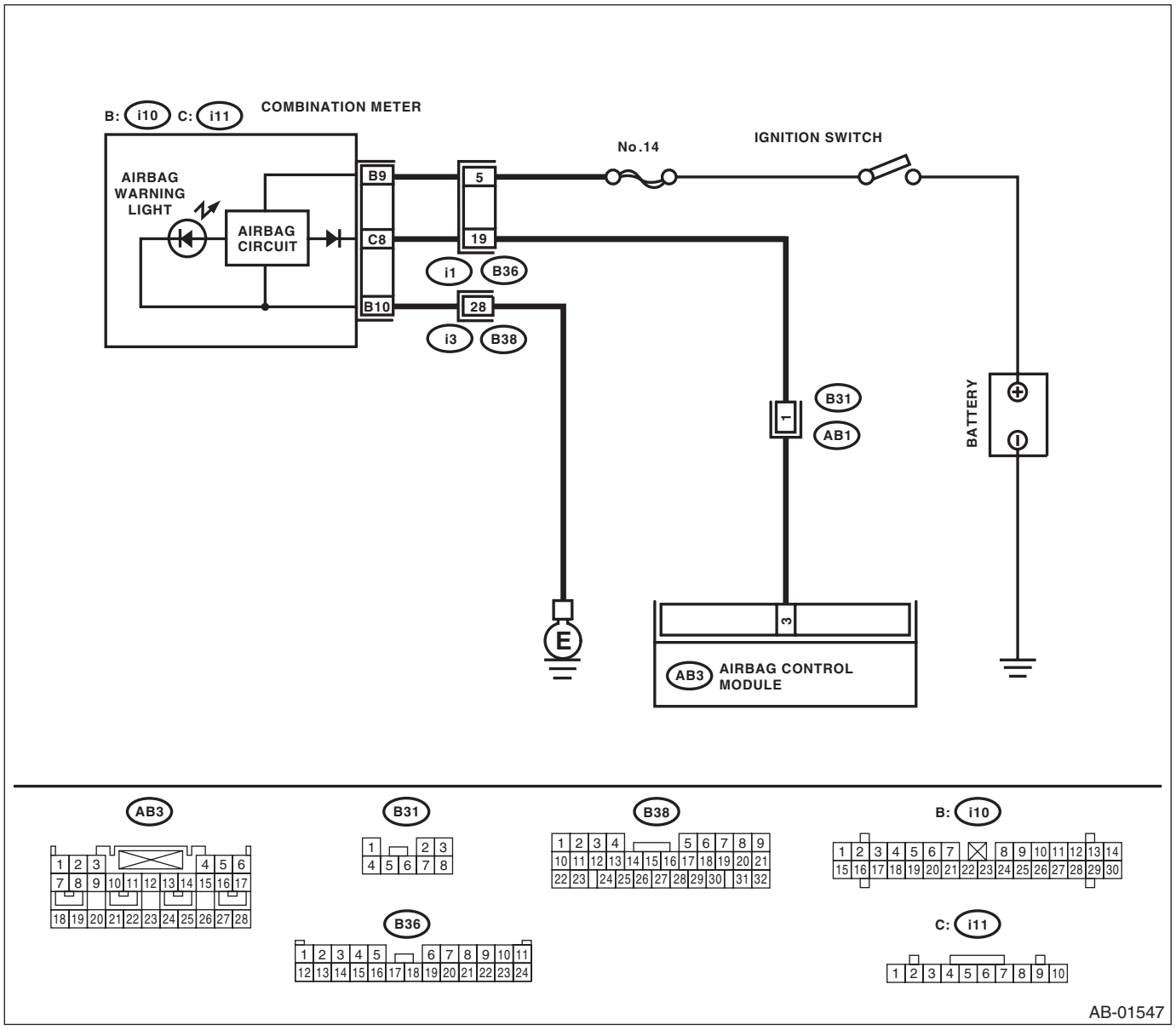
- Blown fuse No. 14 (in fuse box)
- Body harness is open.
- Airbag warning light failure
- Airbag main harness is faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.

• When inspecting the airbag main harness, disconnect the airbag module connectors of the driver's and passenger's seats for safety.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK COMBINATION METER.** Turn the ignition switch to ON, and confirm that warning light embedded in the combination meter is turned on.	Do the warning lights except for the airbag turn on?	Go to step **2**.	Check the combination meter. <Ref. to IDI-3, Combination Meter System.>
2	**CHECK DTC.** Read the DTC. <Ref. to AB(diag)-28, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is DTC displayed?	Perform the diagnosis according to DTC.	Go to step **3**.
3	**CHECK FUSE NO. 14 (IN MAIN FUSE BOX).** Remove the fuse No. 14 and perform visual inspection.	Is fuse No. 14 (in the main fuse box) blown out?	Replace the fuse No. 14. If fuse No. 14 is blown out again, go to step 4.	Go to step **4**.
4	**CHECK AIRBAG WARNING LIGHT CIRCUIT (IN COMBINATION METER).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB1) from (B31). 3) Connect the battery ground terminal and turn the ignition switch to ON.	Does airbag warning light turn on?	Go to step **5**.	Check the combination meter. <Ref. to IDI-10, Combination Meter.>
5	**CHECK AIRBAG MAIN HARNESS.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Connect the connector (AB1) to (B31). 3) Disconnect connector (AB3) from airbag control module. 4) Connect the battery ground terminal and turn the ignition switch to ON.	Does airbag warning light turn on?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Replace the airbag main harness along with the body harness.

12.List of Diagnostic Trouble Code (DTC)

A: LIST

DTC	Display	Content of diagnosis	Reference
11	Driver's Airbag failure	• Airbag main harness circuit is open, shorted or shorted to ground. • Airbag module harness (driver's side) circuit is open, shorted or shorted to ground. • Roll connector circuit is open, shorted or shorted to ground. • Airbag control module is faulty. • Driver's airbag module is faulty.	<Ref. to AB(diag)-44, DTC 11 DRIVER'S AIRBAG FAILURE, Diagnostic Chart with Trouble Code.>
12	Passenger's Airbag failure	• Airbag main harness circuit is open, shorted or shorted to ground. • Airbag module harness (passenger's side) circuit is open, shorted or shorted to ground. • Airbag control module is faulty. • Passenger's airbag module is faulty.	<Ref. to AB(diag)-47, DTC 12 PASSENGER'S AIRBAG FAILURE, Diagnostic Chart with Trouble Code.>
15	Driver's Airbag failure	• Airbag main harness circuit (driver's side) is shorted to power supply. • Airbag module harness circuit (driver's side) is shorted to power supply. • Roll connector is shorted to power supply. • Airbag control module is faulty. • Driver's airbag module is faulty.	<Ref. to AB(diag)-49, DTC 15 DRIVER'S AIRBAG FAILURE, Diagnostic Chart with Trouble Code.>
16	Passenger's Airbag failure	• Airbag main harness circuit (passenger's side) is shorted to power supply. • Airbag module harness circuit (passenger's side) is shorted to power supply. • Airbag control module is faulty. • Passenger's airbag module is faulty.	<Ref. to AB(diag)-52, DTC 16 PASSENGER'S AIRBAG FAILURE, Diagnostic Chart with Trouble Code.>
21	Airbag ECM failure	Airbag control module is faulty.	<Ref. to AB(diag)-54, DTC 21 AIRBAG ECM FAILURE, Diagnostic Chart with Trouble Code.>
22	Front Airbag Firing output	Front airbag module and seat belt pretensioner (LH/RH) are inflated.	<Ref. to AB(diag)-55, DTC 22 FRONT AIRBAG FIRING OUTPUT, Diagnostic Chart with Trouble Code.>
23	Connector to Airbag ECM failure	Improper connection of (AB3), (AB7) and (AB8) to airbag control module	<Ref. to AB(diag)-56, DTC 23 CONNECTOR TO AIRBAG ECM, Diagnostic Chart with Trouble Code.>
24	IG1 open	• Airbag control module is faulty. • Airbag main harness circuit is open. • Fuse No. 11 (in joint box) is blown. • Airbag rear harness circuit is open.	<Ref. to AB(diag)-57, DTC 24 IG1 OPEN, Diagnostic Chart with Trouble Code.>
25	IG2 open	• Airbag control module is faulty. • Airbag main harness circuit is open. • Fuse No. 6 (in joint box) is blown. • Airbag rear harness circuit is open.	<Ref. to AB(diag)-59, DTC 25 IG2 OPEN, Diagnostic Chart with Trouble Code.>

DTC	Display	Content of diagnosis	Reference
26	Passenger's Airbag Indicator Failure	• Passenger's airbag indicator is faulty. • Airbag control module is faulty. • Airbag main harness circuit is open, shorted or shorted to ground. • Body harness is open.	<Ref. to AB(diag)-61, DTC 26 PASSENGER'S AIRBAG INDICATOR FAILURE, Diagnostic Chart with Trouble Code.>
27	ODS Communication error	• Communication to the occupant detection control module is faulty. • Airbag rear harness circuit is open, shorted or shorted to ground, or shorted to power supply. • Occupant detection harness is faulty. • Airbag control module is faulty. • Occupant detection system is faulty.	<Ref. to AB(diag)-63, DTC 27 ODS COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>
29	ODS Failure	• Occupant detection sensor is faulty. • Occupant detection control module is faulty. • Occupant detection harness is faulty. • Fuse No. 6 (in joint box) is blown.	Refer to "Occupant Detection System" for DTC 29. <Ref. to AB(diag)-64, DTC 29 ODS FAILURE, Diagnostic Chart with Trouble Code.>
2A	ODS Calibration error	System calibration (Rezeroing) of the occupant detection system was not ended normally.	Refer to "Occupant Detection System" for DTC 2A. <Ref. to AB(diag)-64, DTC 2A ODS CALIBRATION ERROR, Diagnostic Chart with Trouble Code.>
2B	ODS system wrong parts	• Wrong airbag control module is installed. • Wrong occupant detection system is installed. • Occupant detection system is faulty.	Refer to "Occupant Detection System" for DTC 2B. <Ref. to AB(diag)-64, DTC 2B ODS SYSTEM WRONG PARTS, Diagnostic Chart with Trouble Code.>
2C	Belt Tension Sensor failure	• Passenger's seat belt tension sensor is faulty. • Occupant detection system is faulty. • Airbag rear harness circuit is open, shorted or shorted to ground, or shorted to power supply. • Occupant detection harness is faulty.	Refer to "Occupant Detection System" for DTC 2C. <Ref. to AB(diag)-64, DTC 2C BELT TENSION SENSOR FAILURE, Diagnostic Chart with Trouble Code.>
31	Front Sub Sensor RH failure	• Front sub sensor harness (RH) circuit is shorted. • Front sub sensor harness (RH) circuit is open. • Front sub sensor (RH) is faulty. • Airbag control module is faulty.	<Ref. to AB(diag)-65, DTC 31 FRONT SUB SENSOR RH FAILURE, Diagnostic Chart with Trouble Code.>
32	Front Sub Sensor LH failure	• Front sub sensor harness (LH) circuit is shorted. • Front sub sensor harness (LH) circuit is open. • Front sub sensor (LH) is faulty. • Airbag control module is faulty.	<Ref. to AB(diag)-67, DTC 32 FRONT SUB SENSOR LH FAILURE, Diagnostic Chart with Trouble Code.>
33	Front Sub Sensor RH failure	Front sub sensor (RH) is faulty.	<Ref. to AB(diag)-69, DTC 33 FRONT SUB SENSOR RH FAILURE, Diagnostic Chart with Trouble Code.>

DTC	Display	Content of diagnosis	Reference
34	Front Sub Sensor LH failure	Front sub sensor (LH) is faulty.	<Ref. to AB(diag)-69, DTC 34 FRONT SUB SENSOR LH FAILURE, Diagnostic Chart with Trouble Code.>
36	Seat Position Sensor LH Failure	• Driver's seat position sensor is faulty. • Airbag control module is faulty. • Airbag rear harness circuit is open, shorted or shorted to ground.	<Ref. to AB(diag)-70, DTC 36 SEAT POSITION SENSOR LH FAILURE, Diagnostic Chart with Trouble Code.>
37	Buckle Switch RH Failure	• Passenger's buckle switch circuit is open, shorted or shorted to ground. • Airbag rear harness circuit is open, shorted or shorted to ground. • Airbag control module is faulty. • Occupant detection control module is faulty.	Refer to "Occupant Detection System" for DTC 37. <Ref. to AB(diag)-71, DTC 37 BUCKLE SWITCH RH FAILURE, Diagnostic Chart with Trouble Code.>
38	Buckle Switch LH Failure	• Driver's buckle switch circuit is open, shorted or shorted to ground. • Airbag rear harness circuit is open, shorted or shorted to ground. • Airbag control module is faulty.	<Ref. to AB(diag)-72, DTC 38 BUCKLE SWITCH LH FAILURE, Diagnostic Chart with Trouble Code.>
41	Side Airbag RH failure	• Side airbag harness (RH) circuit is faulty. • Side airbag module (RH) is faulty. • Airbag control module is faulty.	<Ref. to AB(diag)-74, DTC 41 SIDE AIRBAG RH FAILURE, Diagnostic Chart with Trouble Code.>
42	Side Airbag LH failure	• Side airbag harness (LH) circuit is faulty. • Side airbag module (LH) is faulty. • Airbag control module is faulty.	<Ref. to AB(diag)-76, DTC 42 SIDE AIRBAG LH FAILURE, Diagnostic Chart with Trouble Code.>
45	Side Airbag RH failure	• Side airbag harness (RH) is shorted to power supply. • Airbag control module is faulty.	<Ref. to AB(diag)-78, DTC 45 SIDE AIRBAG RH FAILURE, Diagnostic Chart with Trouble Code.>
46	Side Airbag LH failure	• Side airbag harness (LH) is shorted to power supply. • Airbag control module is faulty.	<Ref. to AB(diag)-80, DTC 46 SIDE AIRBAG LH FAILURE, Diagnostic Chart with Trouble Code.>
51	Side Airbag Sensor RH failure	• Side airbag sensor (RH) is faulty. • Side airbag harness (RH) circuit is faulty. • Airbag control module is faulty.	<Ref. to AB(diag)-82, DTC 51 SIDE AIRBAG SENSOR RH FAILURE, Diagnostic Chart with Trouble Code.>
52	Side Airbag Sensor LH failure	• Side airbag sensor (LH) is faulty. • Side airbag harness (LH) circuit is faulty. • Airbag control module is faulty.	<Ref. to AB(diag)-84, DTC 52 SIDE AIRBAG SENSOR LH FAILURE, Diagnostic Chart with Trouble Code.>
53	Side Airbag Sensor RH failure	Side airbag sensor (RH) is faulty.	<Ref. to AB(diag)-86, DTC 53 SIDE AIRBAG SENSOR RH FAILURE, Diagnostic Chart with Trouble Code.>

DTC	Display	Content of diagnosis	Reference
54	Side Airbag Sensor LH failure	Side airbag sensor (LH) is faulty.	<Ref. to AB(diag)-86, DTC 54 SIDE AIRBAG SENSOR LH FAILURE, Diagnostic Chart with Trouble Code.>
55	Side Curtain Airbag Firing output	Side airbag module is deployed.	<Ref. to AB(diag)-86, DTC 55 SIDE CURTAIN AIRBAG FIRING OUTPUT, Diagnostic Chart with Trouble Code.>
61	Belt Pretensioner RH failure	• Seat belt pretensioner (RH) circuit is open, shorted or shorted to ground. • Airbag control module is faulty. • Pretensioner is faulty. • Pretensioner harness is faulty.	<Ref. to AB(diag)-87, DTC 61 BELT PRETENSIONER RH FAILURE, Diagnostic Chart with Trouble Code.>
62	Belt Pretensioner LH failure	• Seat belt pretensioner (LH) circuit is open, shorted or shorted to ground. • Airbag control module is faulty. • Pretensioner is faulty. • Pretensioner harness is faulty.	<Ref. to AB(diag)-89, DTC 62 BELT PRETENSIONER LH FAILURE, Diagnostic Chart with Trouble Code.>
65	Belt Pretensioner RH failure	• Seat belt pretensioner (RH) circuit is shorted to power supply. • Pretensioner is faulty. • Pretensioner harness is faulty. • Airbag control module is faulty.	<Ref. to AB(diag)-91, DTC 65 BELT PRETENSIONER RH FAILURE, Diagnostic Chart with Trouble Code.>
66	Belt Pretensioner LH failure	• Seat belt pretensioner (LH) circuit is shorted to power supply. • Pretensioner is faulty. • Pretensioner harness is faulty. • Airbag control module is faulty.	<Ref. to AB(diag)-93, DTC 66 BELT PRETENSIONER LH FAILURE, Diagnostic Chart with Trouble Code.>
71	Driver's Airbag failure	• Airbag main harness circuit is open, shorted or shorted to ground. • Airbag module harness (driver's side) circuit is open, shorted or shorted to ground. • Roll connector circuit is open, shorted or shorted to ground. • Airbag control module is faulty. • Driver's airbag module is faulty.	<Ref. to AB(diag)-95, DTC 71 DRIVER'S AIRBAG FAILURE, Diagnostic Chart with Trouble Code.>
72	Passenger's Airbag failure	• Airbag main harness circuit is open, shorted or shorted to ground. • Airbag module harness (passenger's side) circuit is open, shorted or shorted to ground. • Airbag control module is faulty. • Passenger's airbag module is faulty.	<Ref. to AB(diag)-98, DTC 72 PASSENGER'S AIRBAG FAILURE, Diagnostic Chart with Trouble Code.>
75	Driver's Airbag failure	• Airbag main harness circuit (driver's side) is shorted to power supply. • Airbag module harness circuit (driver's side) is shorted to power supply. • Roll connector is shorted to power supply. • Airbag control module is faulty. • Driver's airbag module is faulty.	<Ref. to AB(diag)-100, DTC 75 DRIVER'S AIRBAG FAILURE, Diagnostic Chart with Trouble Code.>
76	Passenger's Airbag failure	• Airbag main harness circuit (passenger's side) is shorted to power supply. • Airbag module harness circuit (passenger's side) is shorted to power supply. • Airbag control module is faulty. • Passenger's airbag module is faulty.	<Ref. to AB(diag)-103, DTC 76 PASSENGER'S AIRBAG FAILURE, Diagnostic Chart with Trouble Code.>

13.Diagnostic Chart with Trouble Code

A: DTC 11 DRIVER'S AIRBAG FAILURE

DTC DETECTING CONDITION:

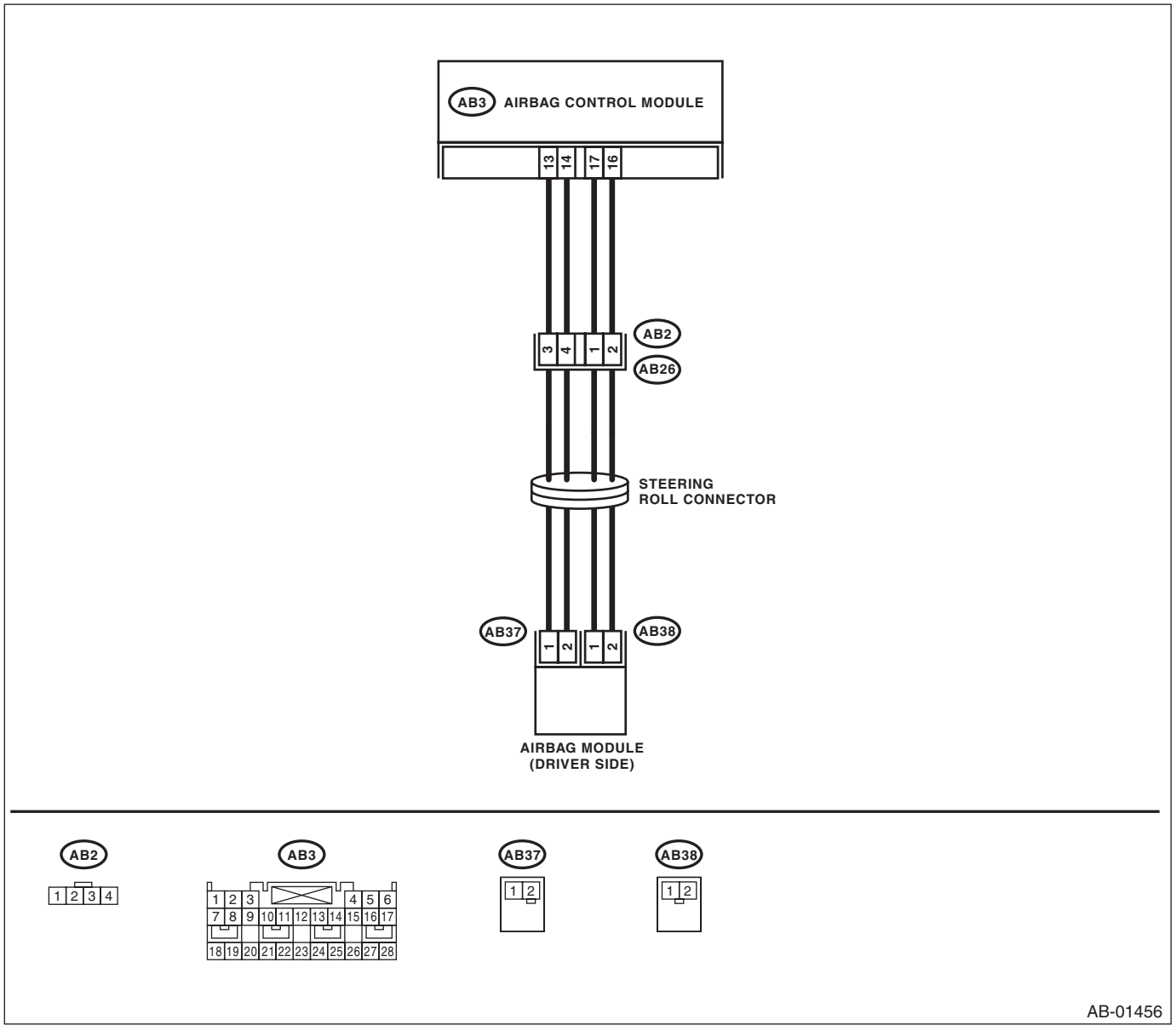
- Airbag harness is open, shorted or shorted to ground.
- Airbag module harness (driver's side) is open, shorted or shorted to ground.
- Roll connector circuit is open, shorted or shorted to ground.
- Driver's airbag module is faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.
• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety.

NOTE:
Before diagnosing, prepare the two airbag resistors (98299PA040).

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module and the driver's airbag module.	Is there poor contact?	Replace the airbag harness.	Go to step **2**.
2	**CHECK DRIVER'S AIRBAG MODULE.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Remove the driver's airbag module. 3) Connect connector (1N) in the test harness N to the connector (AB38). 4) Connect airbag resistor to connector (2N) in the test harness N. 5) Connect the connector (1Q) in the test harness Q to connector (AB37). 6) Connect the airbag resistor to the connector (2Q) in the test harness Q. 7) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Replace the driver's airbag module. <Ref. to AB-14, Driver's Airbag Module.>	Go to step **3**.
3	**CHECK ROLL CONNECTOR.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the test harness N from connector (AB38). 3) Disconnect the test harness Q from connector (AB37). 4) Remove the instrument panel lower cover, disconnect the connector (AB26) from (AB2). 5) Connect connector (1P) in the test harness P to connector (AB2). 6) Connect the airbag resistor to the connectors (2P) and (3P) in the test harness P. 7) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Replace the roll connector. <Ref. to AB-20, Roll Connector.>	Go to step **4**.
4	**CHECK AIRBAG MAIN HARNESS (DRIVER'S AIRBAG HARNESS).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from the connectors (2P) and (3P) in the test harness P. 3) Disconnect the connectors (AB4) and (AB27) from the passenger's airbag module. 4) Disconnect the connector (AB3) from airbag control module, and connect the connector (1R) in the test harness R. 5) Measure resistance between connector (2R) in the test harness R and connector (2P) and (3P) in the test harness P. ***Connector & terminal*** ***(2R) No. 2 — (2P) No. 1:*** ***(2R) No. 4 — (2P) No. 2:*** ***(2R) No. 8 — (3P) No. 3:*** ***(2R) No. 12 — (3P) No. 4:***	Is the resistance less than 10 Ω?	Go to step **5**.	Replace the airbag main harness along with the body harness.

	Step	Check	Yes	No
5	**CHECK AIRBAG MAIN HARNESS (DRIVER'S AIRBAG HARNESS).** Measure resistance between connector (2R) terminals in the test harness R. ***Connector & terminal*** ***(2R) No. 2 — (2R) No. 4:*** ***(2R) No. 4 — Chassis ground:*** ***(2R) No. 2 — Chassis ground:*** ***(2R) No. 8 — (2R) No. 12:*** ***(2R) No. 8 — Chassis ground:*** ***(2R) No. 12 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **6**.	Replace the airbag main harness along with the body harness.
6	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **7**.
7	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

B: DTC 12 PASSENGER'S AIRBAG FAILURE

DTC DETECTING CONDITION:

- Airbag harness is open, shorted or shorted to ground.
- Airbag module harness (passenger's side) is open, shorted or shorted to ground.
- Passenger's airbag module is faulty.
- Airbag control module is faulty.

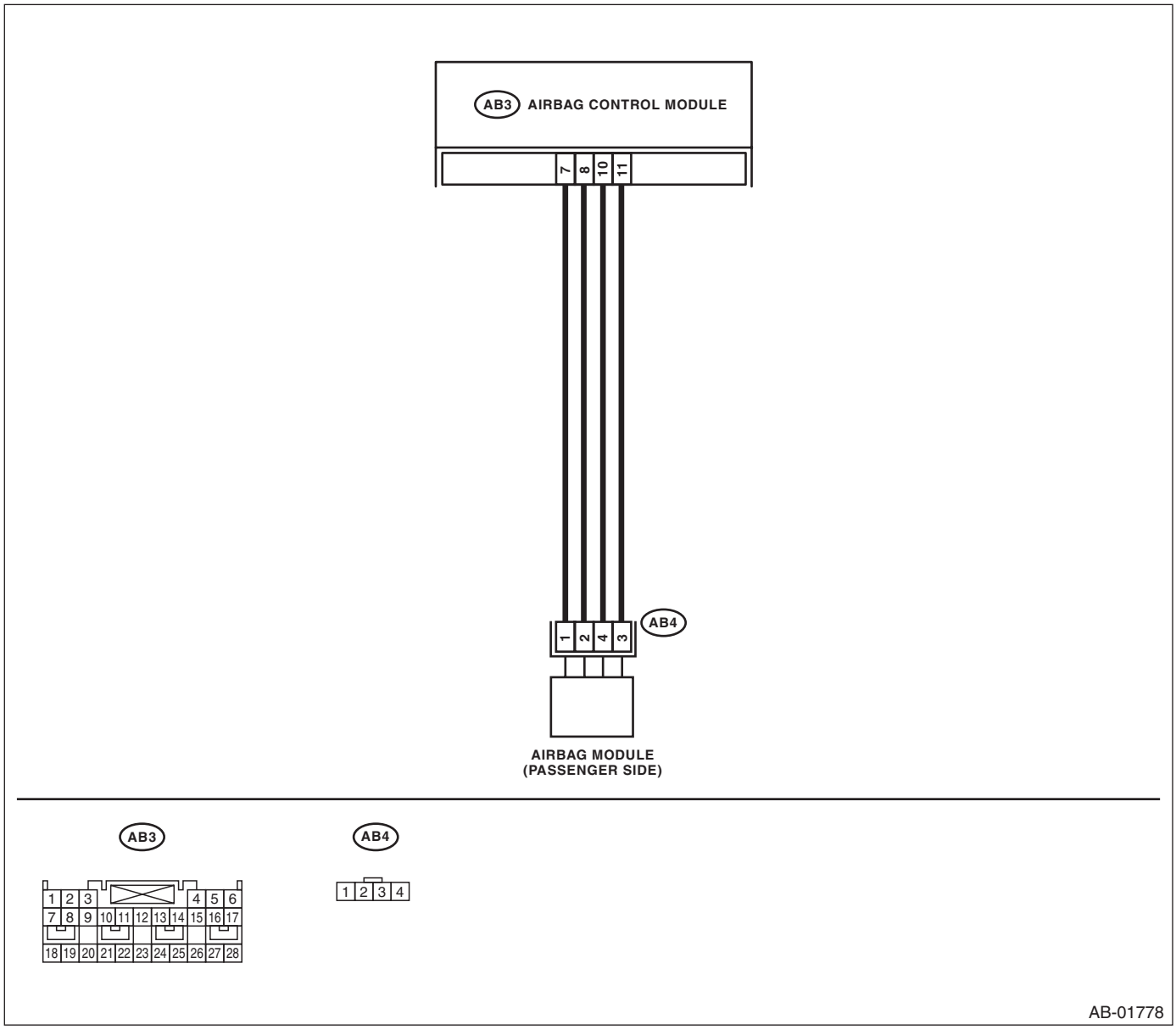
CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.

• When inspecting the airbag main harness, disconnect the airbag module connectors of the driver's and passenger's seats for safety.

NOTE:
Before diagnosing, prepare the two airbag resistors (98299PA040).

WIRING DIAGRAM:



Diagnostic Chart with Trouble Code

	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module and the passenger's airbag module.	Is there poor contact?	Replace the airbag harness.	Go to step **2**.
2	**CHECK PASSENGER'S AIRBAG MODULE.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connectors (AB27) from (AB4) of the passenger's airbag module. 3) Connect connector (1P) in the test harness P to connector (AB4). 4) Connect the airbag resistor to the connectors (2P) and (3P) in the test harness P. 5) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Replace the passenger's airbag module. <Ref. to AB-15, Passenger's Airbag Module.>	Go to step **3**.
3	**CHECK AIRBAG MAIN HARNESS (PASSENGER'S AIRBAG HARNESS).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from the connectors (2P) and (3P) in the test harness P. 3) Remove the instrument panel lower cover, disconnect the connector (AB26) from (AB2). 4) Disconnect the connector (AB3) from airbag control module, and connect the connector (1R) in the test harness R. 5) Measure resistance between connector (2R) in the test harness R and connector (2P) and (3P) in the test harness P. ***Connector & terminal*** ***(2R) No. 3 — (2P) No. 1:*** ***(2R) No. 5 — (2P) No. 2:*** ***(2R) No. 9 — (3P) No. 3:*** ***(2R) No. 13 — (3P) No. 4:***	Is the resistance less than 10 Ω?	Go to step **4**.	Replace the airbag main harness along with the body harness.
4	**CHECK AIRBAG MAIN HARNESS (PASSENGER'S AIRBAG HARNESS).** Measure resistance between terminals of connector (2R) in the test harness R, and between connector (2R) and chassis ground. ***Connector & terminal*** ***(2R) No. 3 — (2R) No. 5:*** ***(2R) No. 3 — Chassis ground:*** ***(2R) No. 5 — Chassis ground:*** ***(2R) No. 9 — (2R) No. 13:*** ***(2R) No. 9 — Chassis ground:*** ***(2R) No. 13 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **5**.	Replace the airbag main harness along with the body harness.
5	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **6**.
6	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

C: DTC 15 DRIVER'S AIRBAG FAILURE

DTC DETECTING CONDITION:

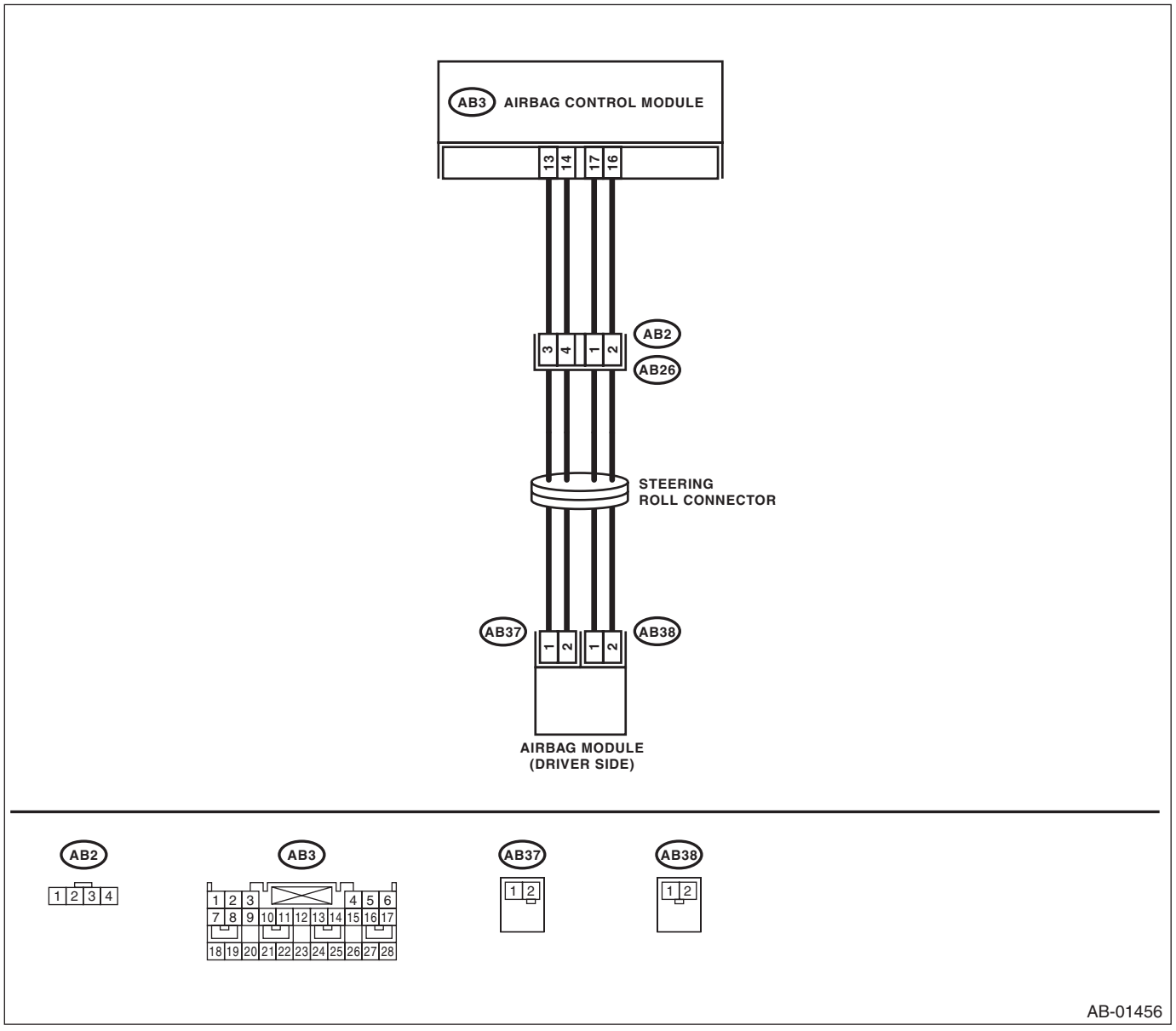
- Airbag harness (driver's side) is shorted to power supply.
- Airbag module harness (driver's side) is shorted to power supply.
- Roll connector is shorted to power supply.
- Driver's airbag module is faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.
• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety.

NOTE:
Before diagnosing, prepare the two airbag resistors (98299PA040).

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module and the driver's airbag module.	Is there poor contact?	Replace the airbag harness.	Go to step **2**.
2	**CHECK DRIVER'S AIRBAG MODULE.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Remove the driver's airbag module. 3) Connect the connector (AB38) to the connector (1N) in the test harness N. 4) Connect airbag resistor to connector (2N) in the test harness N. 5) Connect the connector (1Q) in the test harness Q to connector (AB37). 6) Connect the airbag resistor to the connector (2Q) in the test harness Q. 7) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Replace the driver's airbag module. <Ref. to AB-14, Driver's Airbag Module.>	Go to step **3**.
3	**CHECK ROLL CONNECTOR.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the test harness N from connector (AB38). 3) Disconnect the test harness Q from connector (AB37). 4) Remove the instrument panel lower cover, disconnect the connector (AB26) from (AB2). 5) Connect connector (1P) in the test harness P to connector (AB2). 6) Connect the airbag resistor to the connectors (2P) and (3P) in the test harness P. 7) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Replace the roll connector. <Ref. to AB-20, Roll Connector.>	Go to step **4**.
4	**CHECK AIRBAG MAIN HARNESS (DRIVER'S AIRBAG HARNESS).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from the connectors (2P) and (3P) in the test harness P. 3) Disconnect the connectors (AB27) and (AB4) of the passenger's airbag module. 4) Disconnect the connector (AB3) from airbag control module, and connect the connector (1R) in the test harness R. 5) Connect the battery ground terminal and turn the ignition switch to ON. (engine OFF) 6) Measure the voltage between connector (2R) in the test harness R and chassis ground. ***Connector & terminal*** ***(2R) No. 4 (+) — Chassis ground (–):*** ***(2R) No. 2 (+) — Chassis ground (–):*** ***(2R) No. 8 (+) — Chassis ground (–):*** ***(2R) No. 12 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **5**.	Replace the airbag main harness along with the body harness.

	Step	Check	Yes	No
5	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **6**.
6	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

D: DTC 16 PASSENGER'S AIRBAG FAILURE

DTC DETECTING CONDITION:

- Airbag harness (Passenger's side) is shorted to power supply.
- Airbag module harness (passenger's side) is shorted to power supply.
- Passenger's airbag module is faulty.
- Airbag control module is faulty.

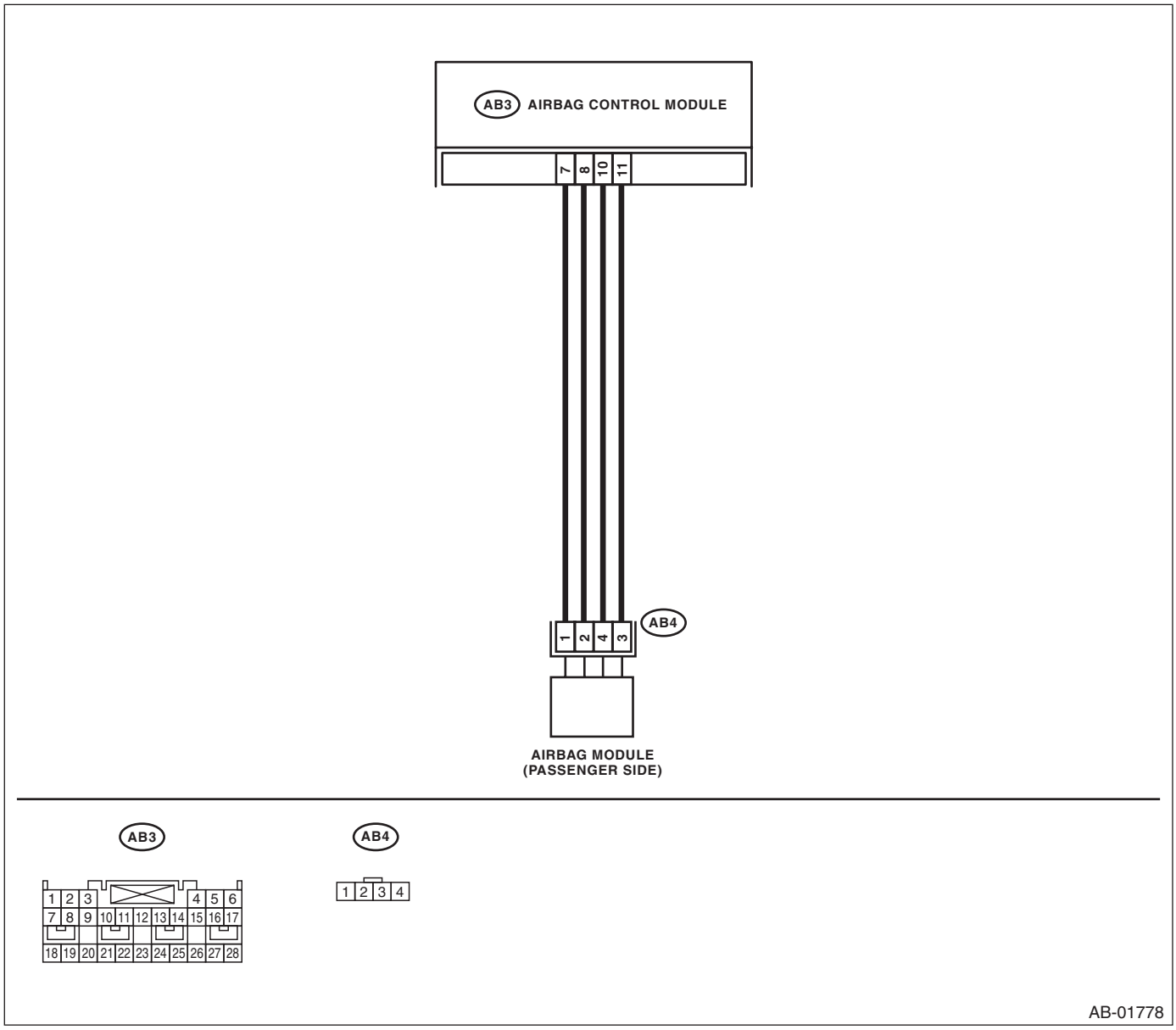
CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.

• When inspecting the airbag main harness, disconnect the airbag module connectors of the driver's and passenger's seats for safety.

NOTE:
Before diagnosing, prepare the two airbag resistors (98299PA040).

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module and the passenger's airbag module.	Is there poor contact?	Replace the airbag harness along with the body harness.	Go to step **2**.
2	**CHECK PASSENGER'S AIRBAG MODULE.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connectors (AB27) from (AB4) of the passenger's airbag module. 3) Connect connector (1P) in the test harness P to connector (AB4). 4) Connect the airbag resistor to the connectors (2P) and (3P) in the test harness P. 5) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Replace the passenger's airbag module. <Ref. to AB-15, Passenger's Airbag Module.>	Go to step **3**.
3	**CHECK AIRBAG MAIN HARNESS (PASSENGER'S AIRBAG HARNESS).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from the connectors (2P) and (3P) in the test harness P. 3) Remove the instrument panel lower cover, disconnect the connector (AB26) from (AB2). 4) Disconnect the connector (AB3) from airbag control module, and connect the connector (1R) in the test harness R. 5) Measure the voltage between connector (2R) in the test harness R and chassis ground. ***Connector & terminal*** ***(2R) No. 3 (+) — Chassis ground (–):*** ***(2R) No. 5 (+) — Chassis ground (–):*** ***(2R) No. 9 (+) — Chassis ground (–):*** ***(2R) No. 13 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **4**.	Replace the airbag main harness along with the body harness.
4	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **5**.
5	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

E: DTC 21 AIRBAG ECM FAILURE

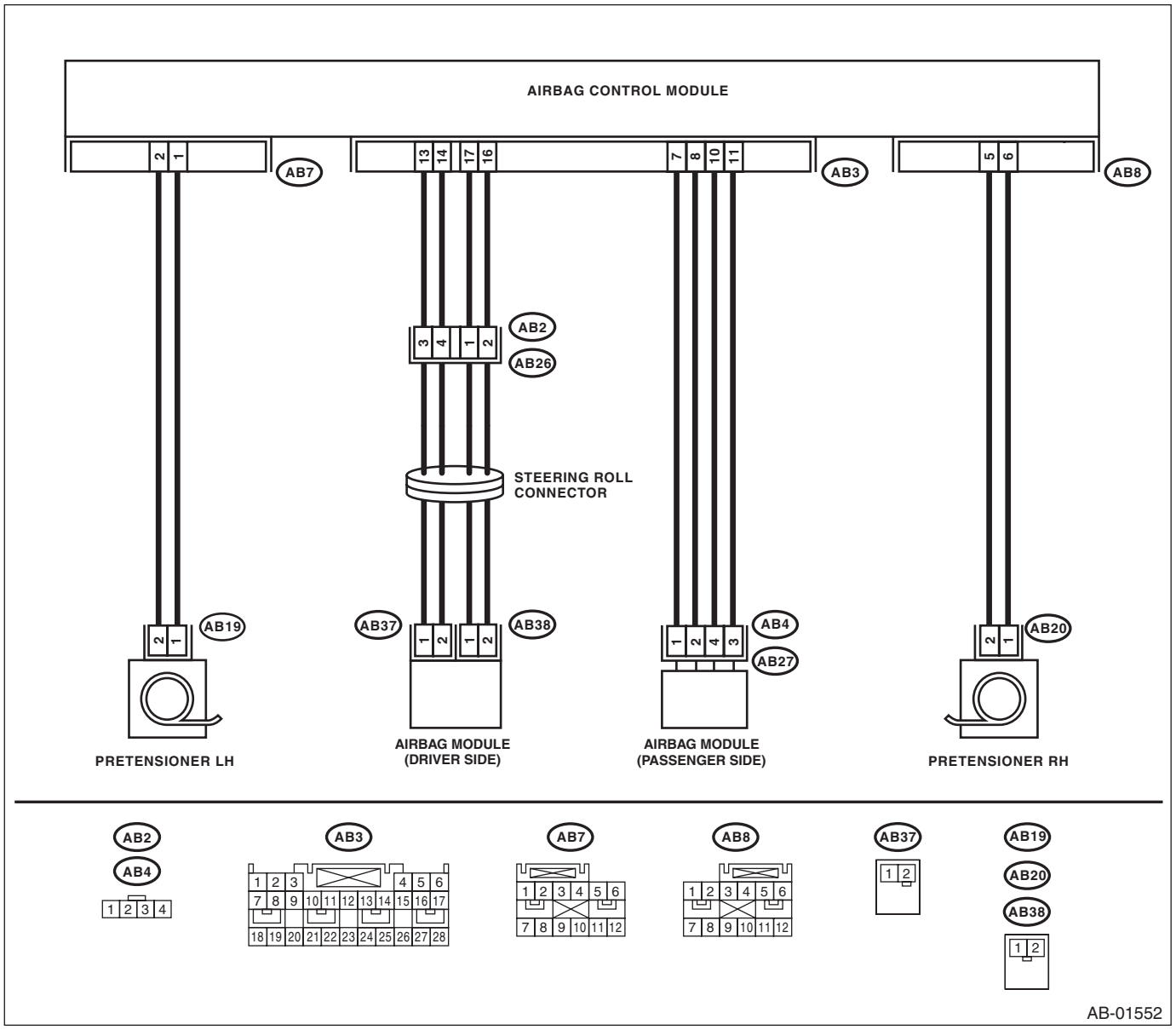
DTC DETECTING CONDITION:
Airbag control module is faulty.

CAUTION:
• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.
• When replacing the airbag module, seat belt pretensioner, roll connector, control module and sensor, reconnect each part and check that the warning light operates properly.

	Step	Check	Yes	No
1	**CHECK WHETHER DTC 21 IS INDICATED.** 1) Read the DTC. <Ref. to AB(diag)-28, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.> 2) Perform the Clear Memory Mode. <Ref. to AB(diag)-34, Clear Memory Mode.> 3) Read the DTC again.	Is DTC 21 displayed on Subaru Select Monitor?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Temporary poor contact occurs.

F: DTC 22 FRONT AIRBAG FIRING OUTPUT

WIRING DIAGRAM:



This code is indicated when the front airbag and pretensioner activates.
Once this code is displayed, the memory cannot be cleared. Therefore replace the following parts.

- Airbag Control Module <Ref. to AB-18, Airbag Control Module.>
- Driver's airbag module <Ref. to AB-14, Driver's Airbag Module.>
- Passenger's airbag module <Ref. to AB-15, Passenger's Airbag Module.>
- Front sub sensor of both sides <Ref. to AB-21, Front Sub Sensor.>
- Front seat belt outer with pretensioner of both sides. <Ref. to SB-10, Front Seat Belt.>
- Steering roll connector <Ref. to AB-20, Roll Connector.>
- Occupant detection system (passenger's seat cushion & frame assembly) <Ref. to SE-14, PASSENGER'S SEAT, DISASSEMBLY, Front Seat.>

G: DTC 23 CONNECTOR TO AIRBAG ECM

DTC DETECTING CONDITION:
Improper connection of (AB3), (AB7) and (AB8) to airbag control module

CAUTION:
Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.

	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS (AB3), (AB7) AND (AB8).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connectors (AB3), (AB7) and (AB8) from the airbag control module.	Is there rust or damage on the harness connector and the control module connector?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>Replace the airbag main harness along with the body harness. Replace the side airbag main harness along with the body harness.	Go to step **2**.
2	**CHECK POOR CONTACT OF CONNECTORS (AB3), (AB7) AND (AB8).** 1) Reconnect the connector securely. 2) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Go to step **3**.	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>
3	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **4**.
4	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using “List of Diagnostic Trouble Code (DTC)”. <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

H: DTC 24 IG1 OPEN

DTC DETECTING CONDITION:

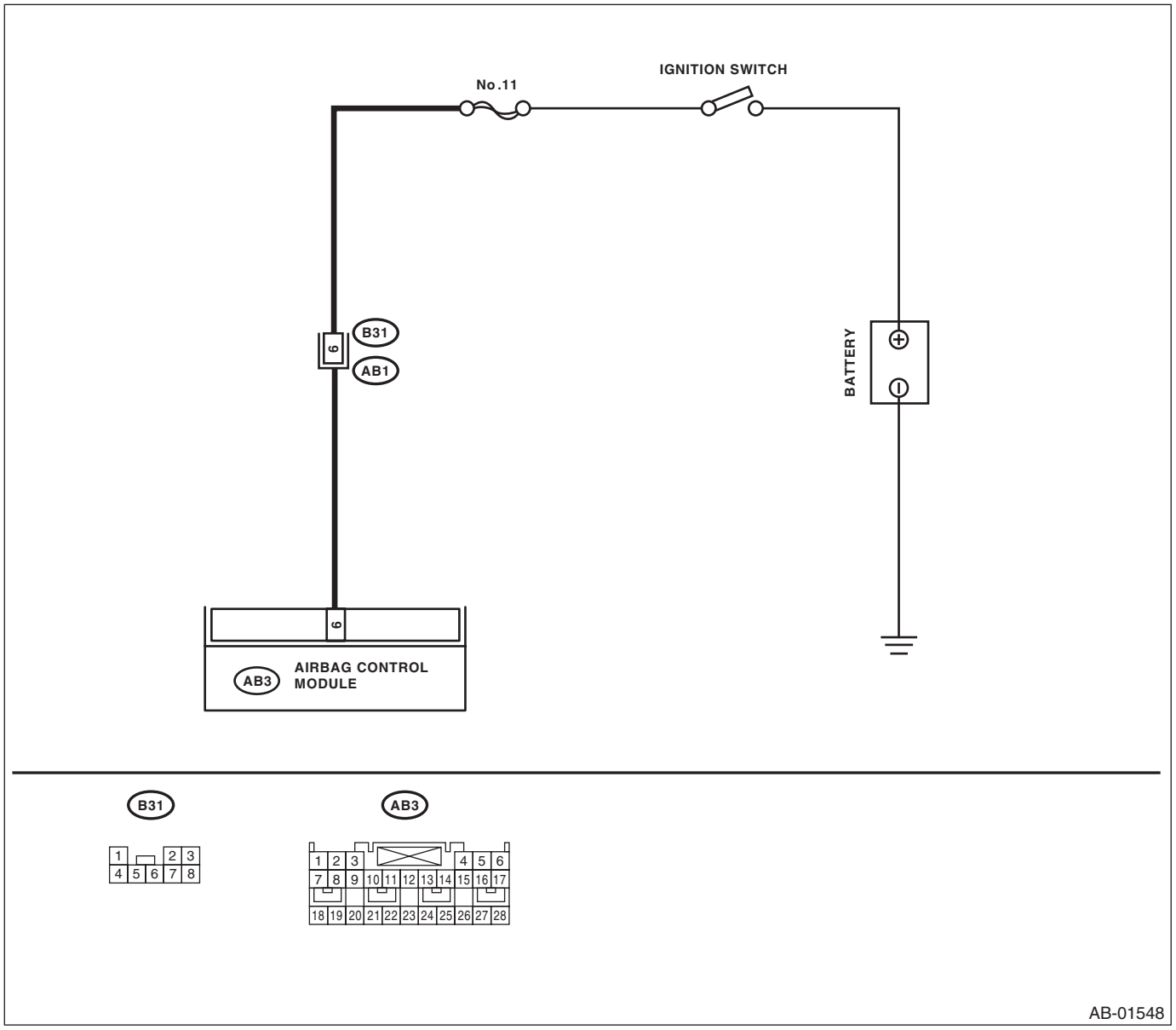
- Airbag control module is faulty.
- Airbag main harness is open.
- Fuse No. 11 (in joint box) is blown.
- Body harness is open.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety.

WIRING DIAGRAM:



Diagnostic Chart with Trouble Code

	Step	Check	Yes	No
1	**CHECK AIRBAG CONTROL MODULE.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect connector (AB3) from airbag control module. 3) Connect connector (1R) in the test harness R to the connector (AB3). 4) Connect the battery ground terminal and turn the ignition switch to ON. 5) Measure the voltage between connector (2R) in the test harness R and chassis ground. ***Connector & terminal*** ***(2R) No. 1 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **2**.
2	**CHECK FUSE NO. 11 (IN JOINT BOX).** 1) Confirm that the ignition switch is turned to OFF. 2) Remove and visually check the fuse No. 11 (in the joint box).	Is the fuse (No. 11) blown out?	Replace the fuse No. 11. If fuse No. 11 is blown out again, repair the body harness. Replace the airbag main harness along with the body harness.	Go to step **3**.
3	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **4**.
4	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using “List of Diagnostic Trouble Code (DTC)”. <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

I: DTC 25 IG2 OPEN

DTC DETECTING CONDITION:

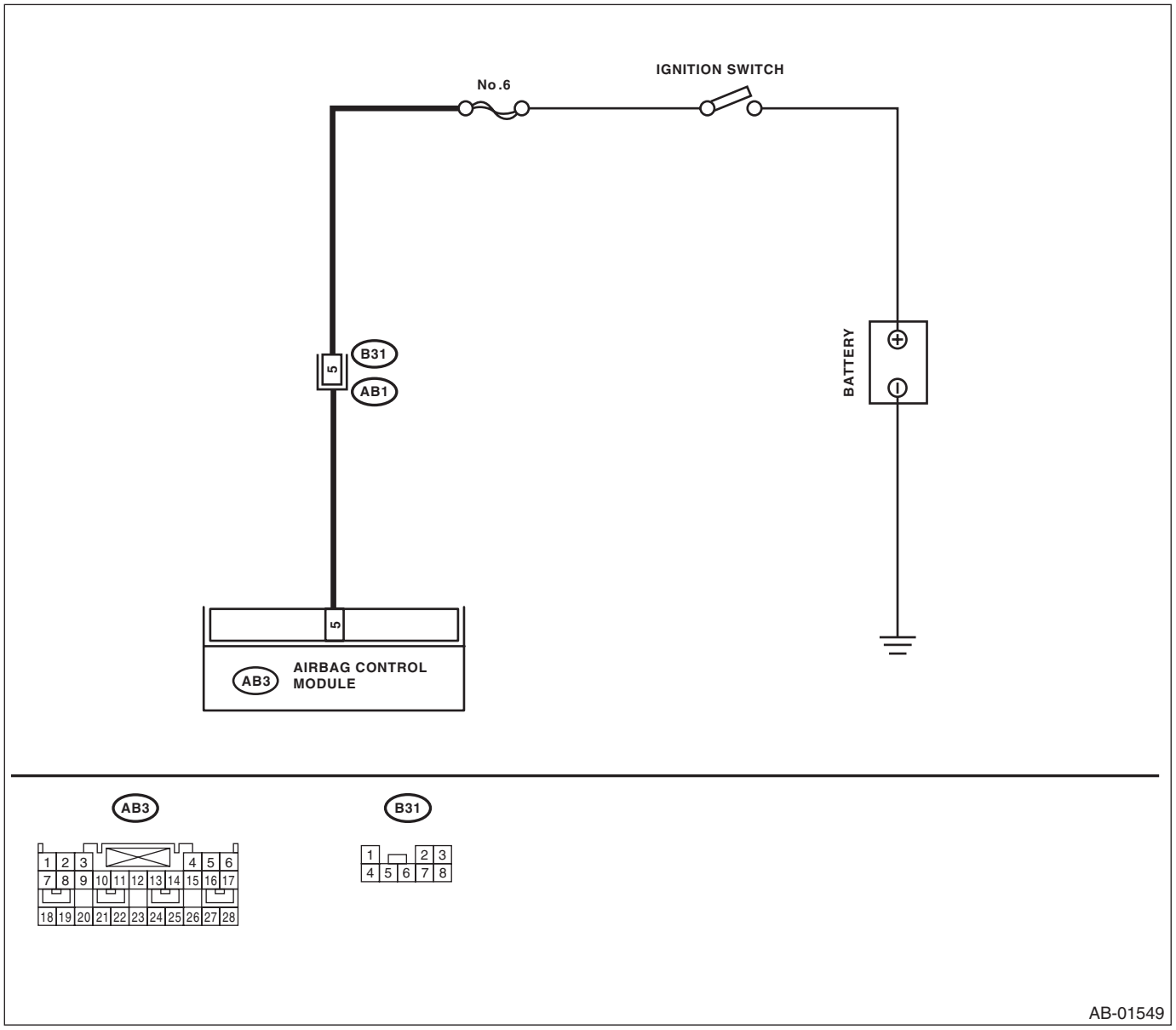
- Airbag control module is faulty.
- Airbag harness is open.
- Fuse No. 6 (in joint box) is blown.
- Body harness is open.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK AIRBAG CONTROL MODULE.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect connector (AB3) from airbag control module. 3) Connect connector (1R) in the test harness R to the connector (AB3). 4) Connect the battery ground terminal and turn the ignition switch to ON. 5) Measure the voltage between connector (2R) in the test harness R and chassis ground. ***Connector & terminal*** ***(2R) No. 6 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **2**.
2	**CHECK FUSE NO. 6 (IN JOINT BOX).** 1) Confirm that the ignition switch is turned to OFF. 2) Remove and visually check the fuse No. 6 (in the joint box).	Is the fuse (No. 6) blown out?	Replace the fuse No. 6. If fuse No. 6 is blown out again, repair the body harness. Or replace the airbag main harness along with the body harness.	Go to step **3**.
3	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **4**.
4	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using “List of Diagnostic Trouble Code (DTC)”. <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

J: DTC 26 PASSENGER'S AIRBAG INDICATOR FAILURE

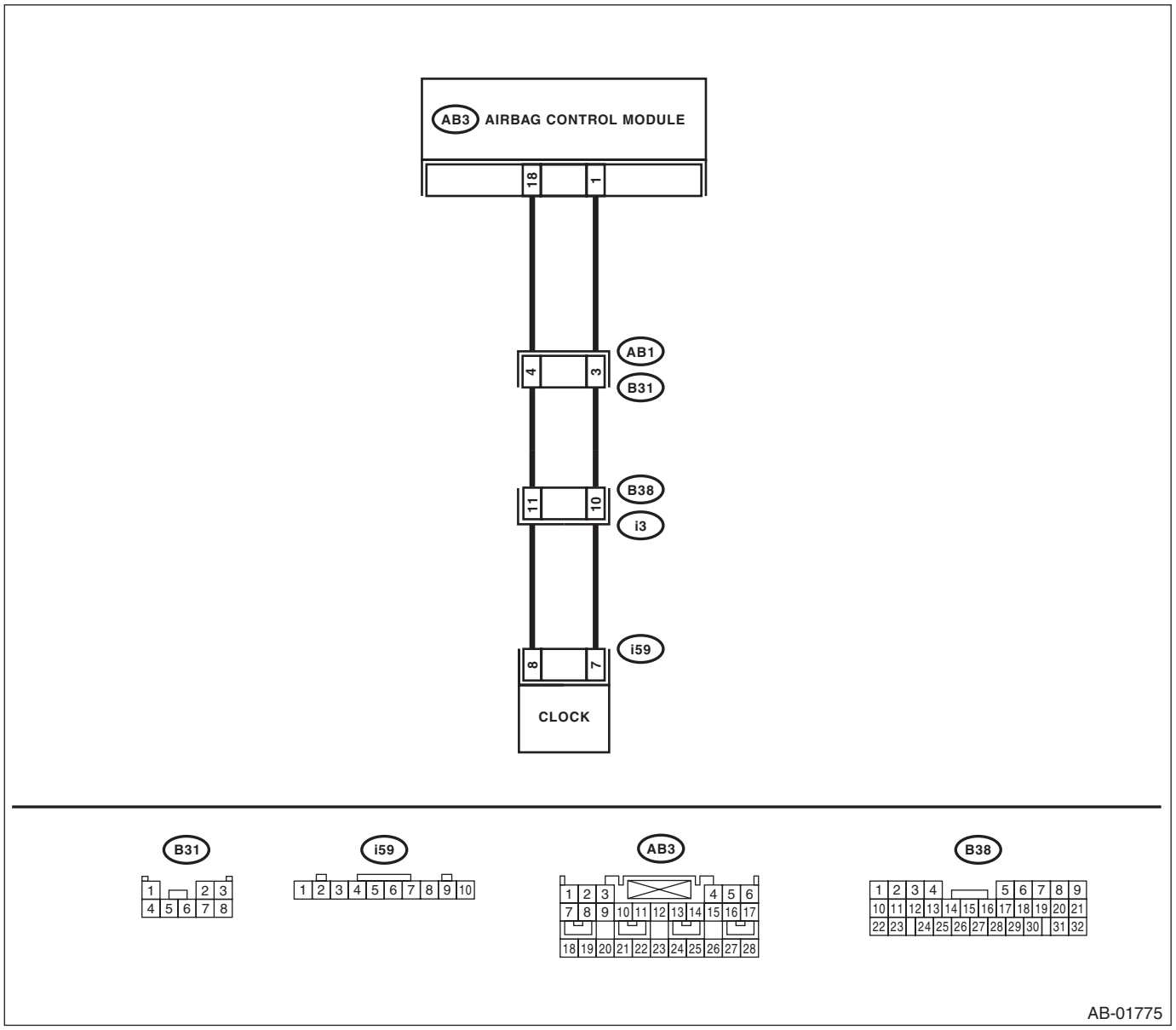
DTC DETECTING CONDITION:

- Passenger's airbag indicator is faulty.
- Airbag control module is faulty.
- Airbag main harness circuit is open.
- Body harness is open.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.
• When replacing the airbag module, seat belt pretensioner, roll connector, control module and sensor, reconnect each part and check that the warning light operates properly.
• When inspecting the airbag harness, disconnect the airbag module connector and seat belt pretensioner for safety.

WIRING DIAGRAM:



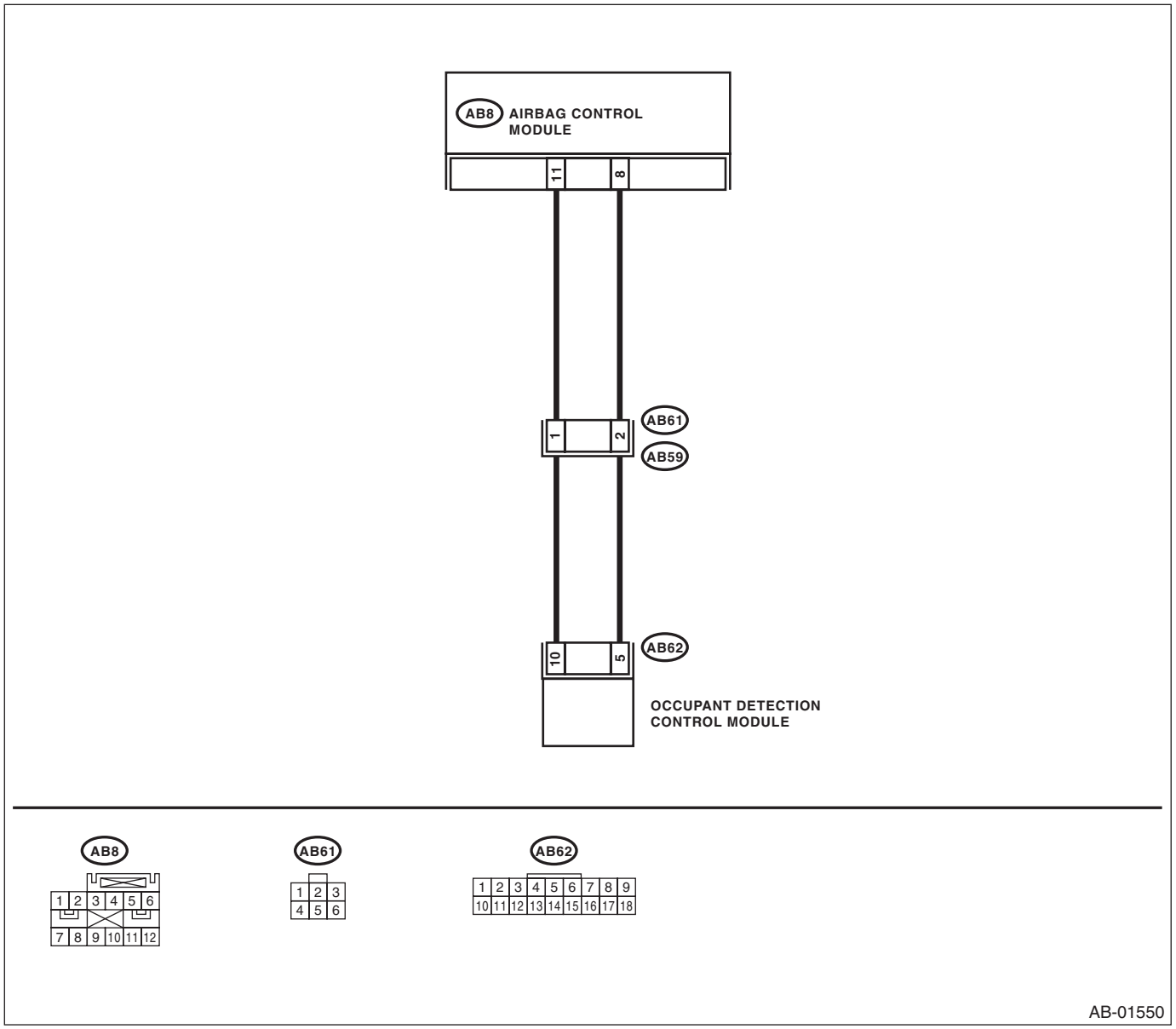
Diagnostic Chart with Trouble Code

	Step	Check	Yes	No
1	**CHECK POOR CONTACT.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Confirm that firm contact is secured for the connector between the airbag control module and clock.	Is there poor contact in any connector?	Replace the airbag harness connector.	Go to step **2**.
2	**CHECK AIRBAG MAIN HARNESS.** 1) Disconnect connector (AB3) from airbag control module. 2) Connect the battery ground terminal and turn the ignition switch to ON. NOTE: If normal, the indicator is not illuminated for both ON and OFF.	Is the passenger's airbag indicator turned on?	Go to step **3**.	Go to step **4**.
3	**CHECK AIRBAG MAIN HARNESS.** 1) Turn the ignition switch to OFF. 2) Remove the clock and then disconnect the connector (i59). 3) Connect connector (1R) in the test harness R to the connector (AB3). 4) Measure resistance between connectors (2R) and (4R) in the test harness R and chassis ground. ***Connector & terminal*** ***(2R) No. 14 — (4R) No. 17:*** ***(2R) No. 14 — Chassis ground:*** ***(4R) No. 17 — Chassis ground:***	Is the resistance 1 MΩ or more?	Replace the clock. <Ref. to IDI-17, Clock.>	Repair the bulkhead harness. Or replace the airbag main harness along with the body harness.
4	**CHECK AIRBAG HARNESS.** 1) Turn the ignition switch to OFF. 2) Connect connector (1R) in the test harness R to the connector (AB3). 3) Measure resistance between connectors (2R) and (4R) in the test harness R and connector (i59). ***Connector & terminal*** ***(2R) No. 14 — (i59) No. 7:*** ***(4R) No. 17 — (i59) No. 8:***	Is the resistance less than 10 Ω?	Go to step **5**.	Repair the bulkhead harness. Or replace the airbag main harness along with the body harness.
5	**CHECK BODY HARNESS.** 1) Turn the ignition switch to ON. 2) Measure the voltage between connector (i59) and chassis ground. ***Connector & terminal*** ***(i59) No. 3 — Chassis ground:***	Is the voltage 10 V or more?	Replace the clock. <Ref. to IDI-17, Clock.>	Repair the clock power supply line.

K: DTC 27 ODS COMMUNICATION ERROR

DTC DETECTING CONDITION:

- Communication to the occupant detection control module is faulty.
- Occupant detection harness (seat harness) is faulty.
- Occupant detection system is faulty.
- Airbag control module is faulty.
- Airbag rear harness circuit is open, shorted or shorted to ground, or shorted to power supply.



	Step	Check	Yes	No
1	**CHECK AIRBAG HARNESS.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect connector (AB8) from airbag control module. 3) Disconnect connector (AB59) from the connector (AB61) on the lower side of passenger's seat. 4) Connect connector (1R) in the test harness R to the connector (AB8). 5) Connect the connector (1AB) in the test harness AB to connector (AB61). 6) Measure resistance between connector (4R) in the test harness R and connector (2AB) in the test harness AB. ***Connector & terminal*** ***(4R) No. 12 — (2AB) No. 1:*** ***(4R) No. 10 — (2AB) No. 2:***	Is the resistance less than 10 Ω?	Go to step **2**.	Replace the airbag rear harness (RH) along with the body harness.
2	**CHECK AIRBAG HARNESS.** Measure resistance between the connector (4R) in the test harness R and chassis ground. ***Connector & terminal*** ***(4R) No. 12 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **3**.	Replace the airbag rear harness (RH) along with the body harness.
3	**CHECK OCCUPANT DETECTION SYSTEM.** 1) Connect connector (AB8) to airbag control module. 2) Connect connector (AB61) and connector (AB59). 3) Connect the battery ground cable. 4) Check the occupant detection system. <Ref. to OD(diag)-2, Basic Diagnostic Procedure.>	Is there a malfunction in the occupant detection system?	Repair the occupant detection system. <Ref. to OD(diag)-2, Basic Diagnostic Procedure.>	Finish the diagnosis.

L: DTC 29 ODS FAILURE

NOTE:
Refer to "Occupant Detection System" for DTC 29. <Ref. to OD(diag)-28, DTC 29 ODS FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

M: DTC 2A ODS CALIBRATION ERROR

NOTE:
Refer to "Occupant Detection System" for DTC 2A. <Ref. to OD(diag)-25, DTC 2A ODS CALIBRATION ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

N: DTC 2B ODS SYSTEM WRONG PARTS

NOTE:
Refer to "Occupant Detection System" for DTC 2B. <Ref. to OD(diag)-25, DTC 2B ODS SYSTEM WRONG PARTS, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

O: DTC 2C BELT TENSION SENSOR FAILURE

NOTE:
Refer to "Occupant Detection System" for DTC 2C. <Ref. to OD(diag)-26, DTC 2C BELT TENSION SENSOR FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

P: DTC 31 FRONT SUB SENSOR RH FAILURE

DTC DETECTING CONDITION:

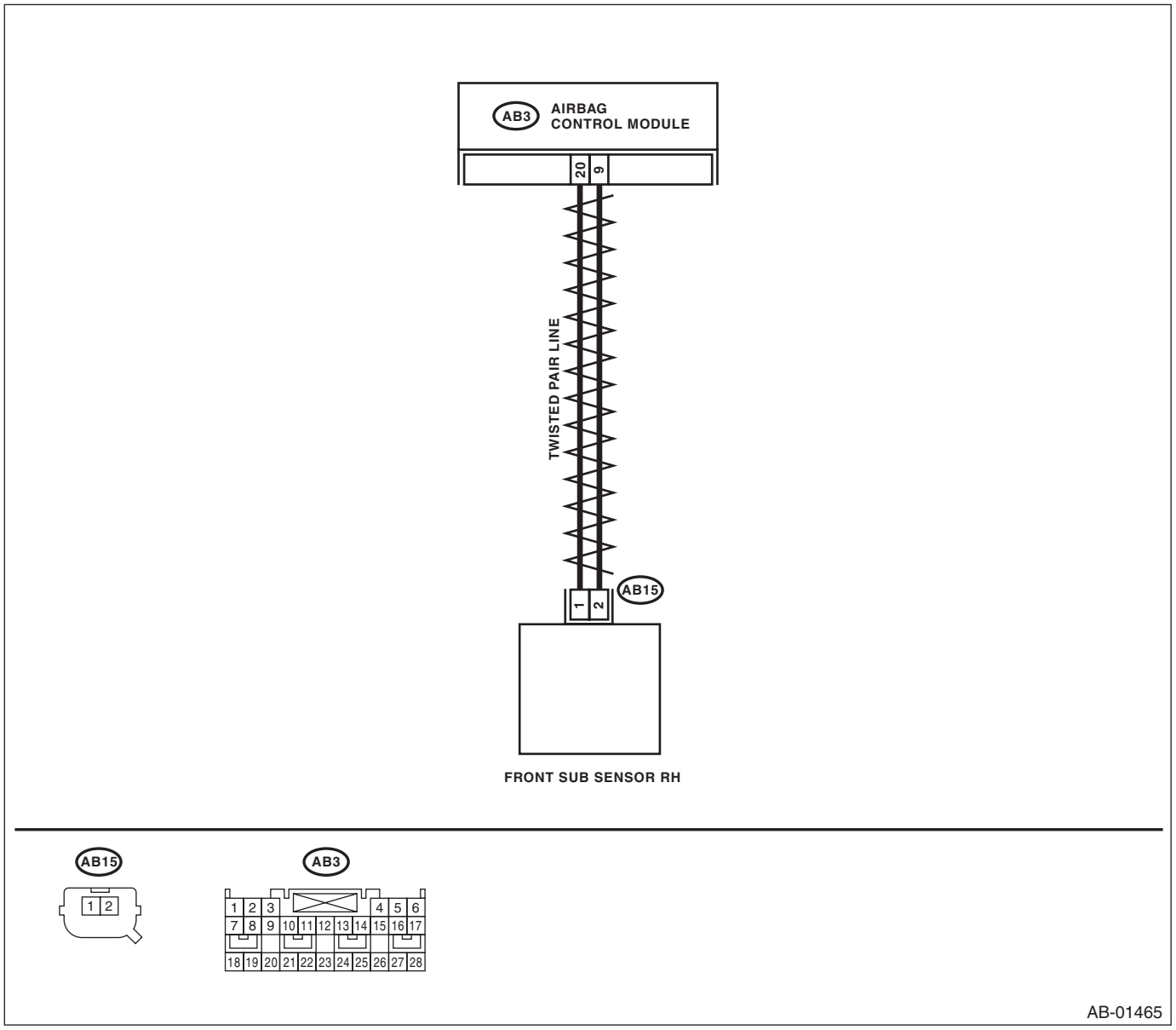
- Front sub sensor harness (RH) is shorted, open or shorted to power supply.
- Airbag harness is shorted, open or shorted to power supply.
- Front sub sensor (RH) is faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety.

WIRING DIAGRAM:



Diagnostic Chart with Trouble Code

	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module and the front sub sensor (RH).	Is there poor contact?	Repair the connector.	Go to step **2**.
2	**CHECK AIRBAG MAIN HARNESS AND FRONT SUB SENSOR HARNESS.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Remove the instrument panel lower cover, disconnect the connector (AB26) and (AB2). 3) Disconnect the connectors (AB27) and (AB4) of the passenger's airbag module. 4) Disconnect connector (AB3) from airbag control module. 5) Connect connector (1R) in the test harness R to the connector (AB3). 6) Disconnect the front sub sensor (RH), and connect the connector (1H) in test harness H to connector (AB15). 7) Measure resistance between connector (3R) in the test harness R and connector (3H) in the test harness H. ***Connector & terminal*** ***(3R) No. 7 — (3H) No. 5:*** ***(3R) No. 9 — (3H) No. 6:***	Is the resistance less than 10 Ω?	Go to step **3**.	Replace the airbag main harness along with the body harness.
3	**CHECK AIRBAG MAIN HARNESS (FRONT SUB SENSOR HARNESS RH).** Measure resistance between the connector (3R) in the test harness R and chassis ground. ***Connector & terminal*** ***(3R) No. 7 — Chassis ground:*** ***(3R) No. 9 — Chassis ground:***	Is the resistance 1 MΩ or more?	Replace the front sub sensor (RH). <Ref. to AB-21, Front Sub Sensor.> Replace the airbag control module if not operating normally even after replacing the sensor. <Ref. to AB-18, Airbag Control Module.>	Go to step **4**.
4	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **5**.
5	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

Q: DTC 32 FRONT SUB SENSOR LH FAILURE

DTC DETECTING CONDITION:

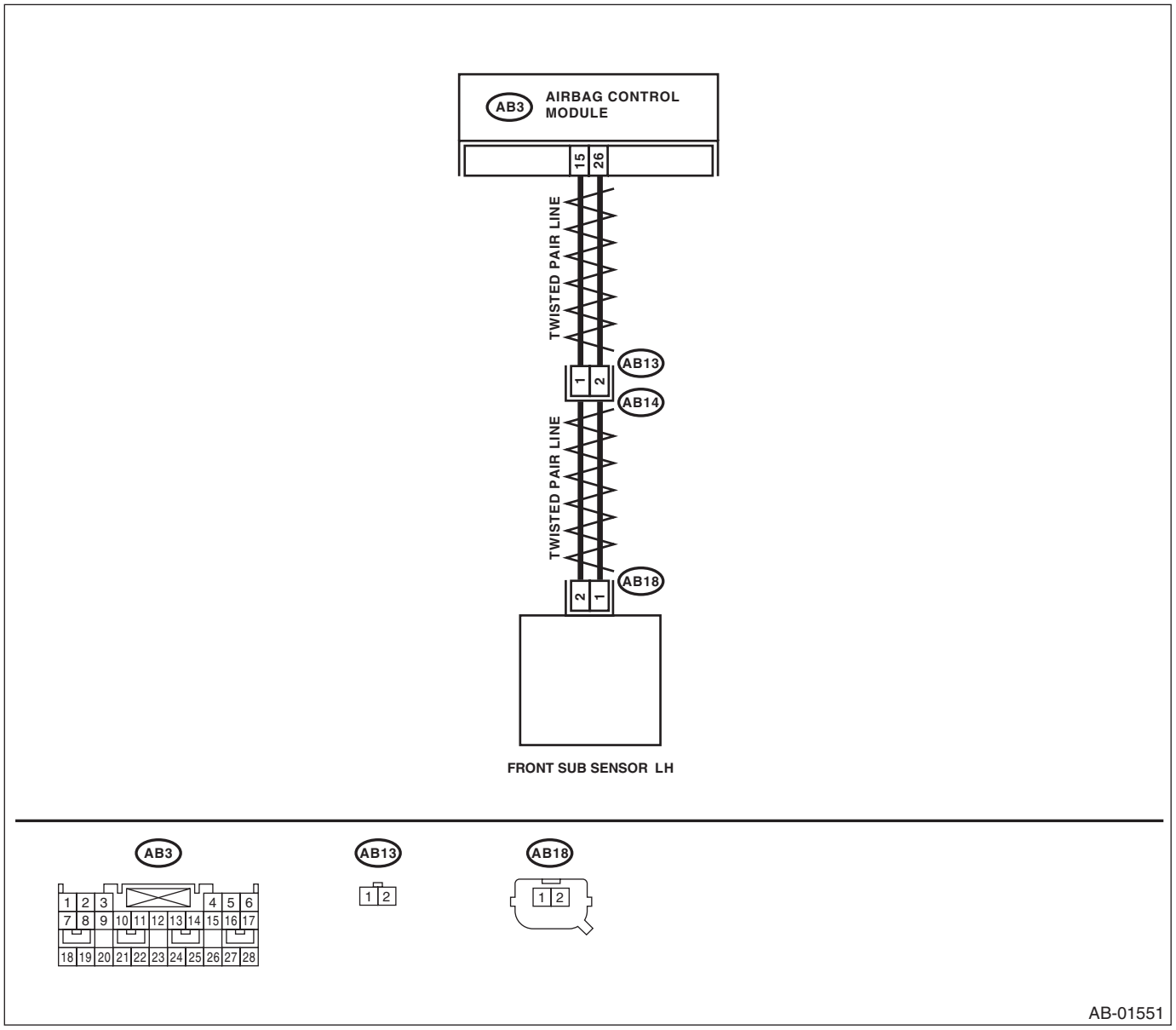
- Front sub sensor harness (LH) is shorted, open or shorted to power supply.
- Airbag harness is shorted, open or shorted to power supply.
- Front sub sensor (LH) is faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety.

WIRING DIAGRAM:



Diagnostic Chart with Trouble Code

	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module and the front sub sensor (LH).	Is there poor contact?	Replace the airbag main harness along with the body harness.	Go to step **2**.
2	**CHECK AIRBAG MAIN HARNESS (FRONT SUB SENSOR HARNESS LH).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Remove the instrument panel lower cover, disconnect the connector (AB26) and (AB2). 3) Disconnect the connectors (AB27) and (AB4) of the passenger's airbag module. 4) Disconnect connector (AB3) from airbag control module. 5) Connect connector (1R) in the test harness R to the connector (AB3). 6) Disconnect the front sub sensor (LH), and connect the connector (1H) in test harness H to connector (AB18). 7) Measure resistance between connector (3R) in the test harness R and connector (3H) in the test harness H. ***Connector & terminal*** ***(3R) No. 6 — (3H) No. 5:*** ***(3R) No. 8 — (3H) No. 6:***	Is the resistance less than 10 Ω?	Go to step **3**.	Replace the airbag main harness along with the body harness.
3	**CHECK AIRBAG MAIN HARNESS (FRONT SUB SENSOR HARNESS LH).** Measure resistance between the connector (3R) in the test harness R and chassis ground. ***Connector & terminal*** ***(3R) No. 6 — Chassis ground:*** ***(3R) No. 8 — Chassis ground:***	Is the resistance 1 MΩ or more?	Replace the front sub sensor (LH). <Ref. to AB-21, Front Sub Sensor.> Replace the airbag control module if not operating normally even after replacing the sensor. <Ref. to AB-18, Airbag Control Module.>	Go to step **4**.
4	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **5**.
5	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

R: DTC 33 FRONT SUB SENSOR RH FAILURE

DTC DETECTING CONDITION:

Front sub sensor (RH) is faulty.

If the DTC 33 is displayed, the circuit within the front sub sensor (RH) is faulty. Replace the front sub sensor (RH). <Ref. to AB-21, Front Sub Sensor.>

S: DTC 34 FRONT SUB SENSOR LH FAILURE

DTC DETECTING CONDITION:

Front sub sensor (LH) is faulty.

If the DTC 34 is displayed, the circuit within the front sub sensor (LH) is faulty. Replace the front sub sensor (LH). <Ref. to AB-21, Front Sub Sensor.>

T: DTC 36 SEAT POSITION SENSOR LH FAILURE

DTC DETECTING CONDITION:

- Driver's seat position sensor is faulty.
- Airbag control module is faulty.
- Airbag rear harness (LH) circuit is open, shorted or shorted to ground.

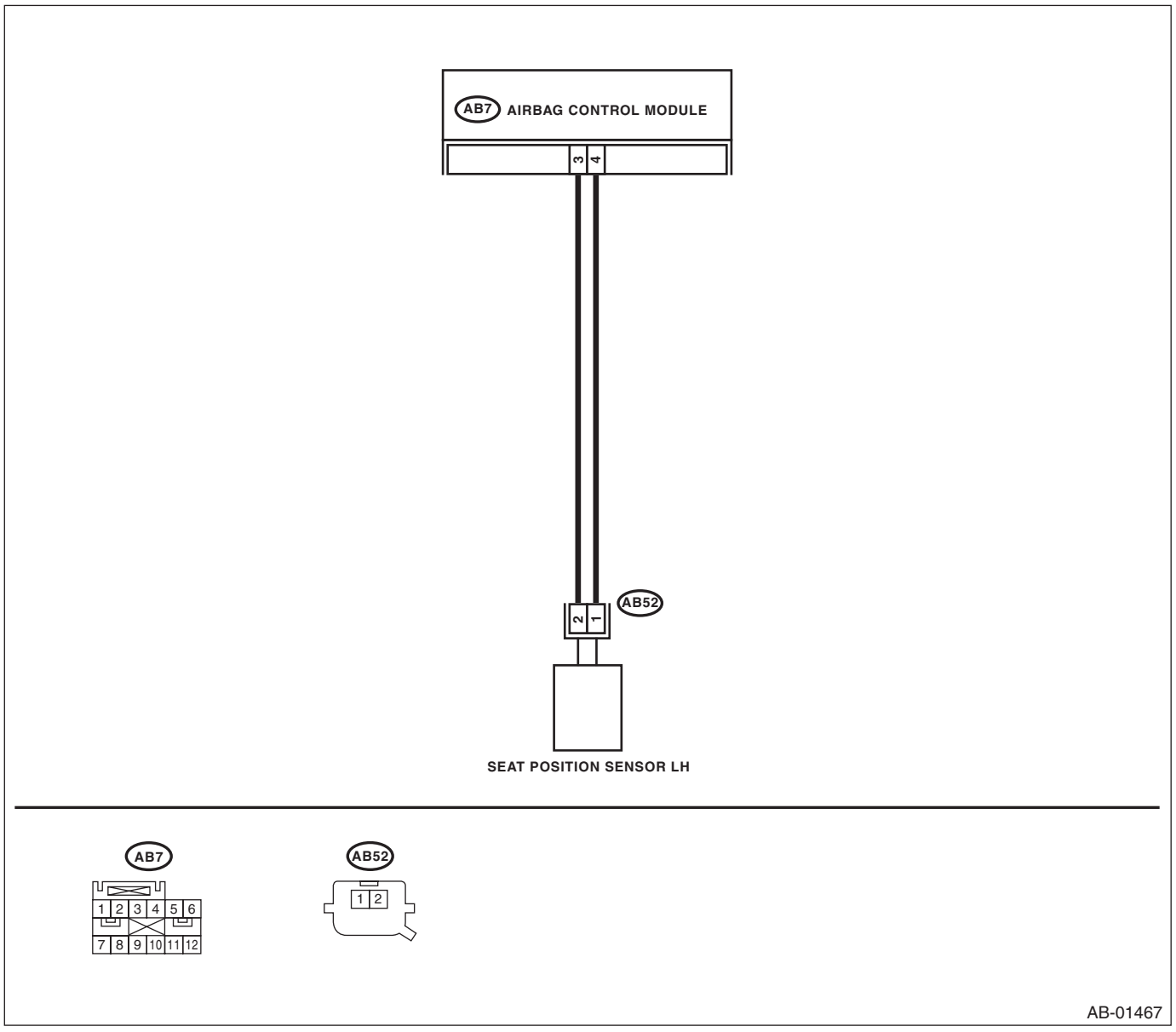
CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.

• When replacing the airbag module, seat belt pretensioner, roll connector, control module and sensor, reconnect each part and check that the warning light operates properly.

• When inspecting the airbag harness, disconnect the airbag module connector and seat belt pretensioner for safety.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module and the driver's airbag module.	Is there poor contact?	Replace the airbag main harness.	Go to step **2**.
2	**CHECK SEAT POSITION SENSOR (LH).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect connector (AB52) from seat position sensor (LH). 3) Connect connector (2Y) in the test harness Y to connector (AB52). 4) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Replace the seat position sensor (LH) along with the driver's slide rail assembly. <Ref. to SE-7, Front Seat.>	Go to step **3**.
3	**CHECK AIRBAG REAR HARNESS (SEAT POSITION SENSOR HARNESS (LH).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect connector (AB7) from airbag control module. 3) Connect connector (1R) in the test harness R to the connector (AB7). 4) Disconnect the seat position sensor (LH), and connect the connector (1H) in test harness H to connector (AB52). 5) Measure resistance between connector (3R) in the test harness R and connector (3H) in the test harness H. ***Connector & terminal*** ***(3R) No. 1 — (3H) No. 5:*** ***(3R) No. 3 — (3H) No. 6:***	Is the resistance less than 10 Ω?	Go to step **4**.	Replace the airbag rear harness (LH) along with the body harness.
4	**CHECK AIRBAG REAR HARNESS.** Measure resistance between the connector (3R) in the test harness R and chassis ground. ***Connector & terminal*** ***(3R) No. 1 — Chassis ground:***	Is the resistance less than 10 Ω?	Replace the airbag rear harness (LH) along with the body harness.	Go to step **5**.
5	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **6**.
6	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

U: DTC 37 BUCKLE SWITCH RH FAILURE

NOTE:
Refer to "Occupant Detection System" for DTC 37. <Ref. to OD(diag)-29, DTC 37 BUCKLE SWITCH RH FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

V: DTC 38 BUCKLE SWITCH LH FAILURE

DTC DETECTING CONDITION:

- Driver's buckle switch circuit is open, shorted or shorted to ground.
- Airbag rear harness (LH) circuit is open, shorted or shorted to ground.
- Airbag control module is faulty.

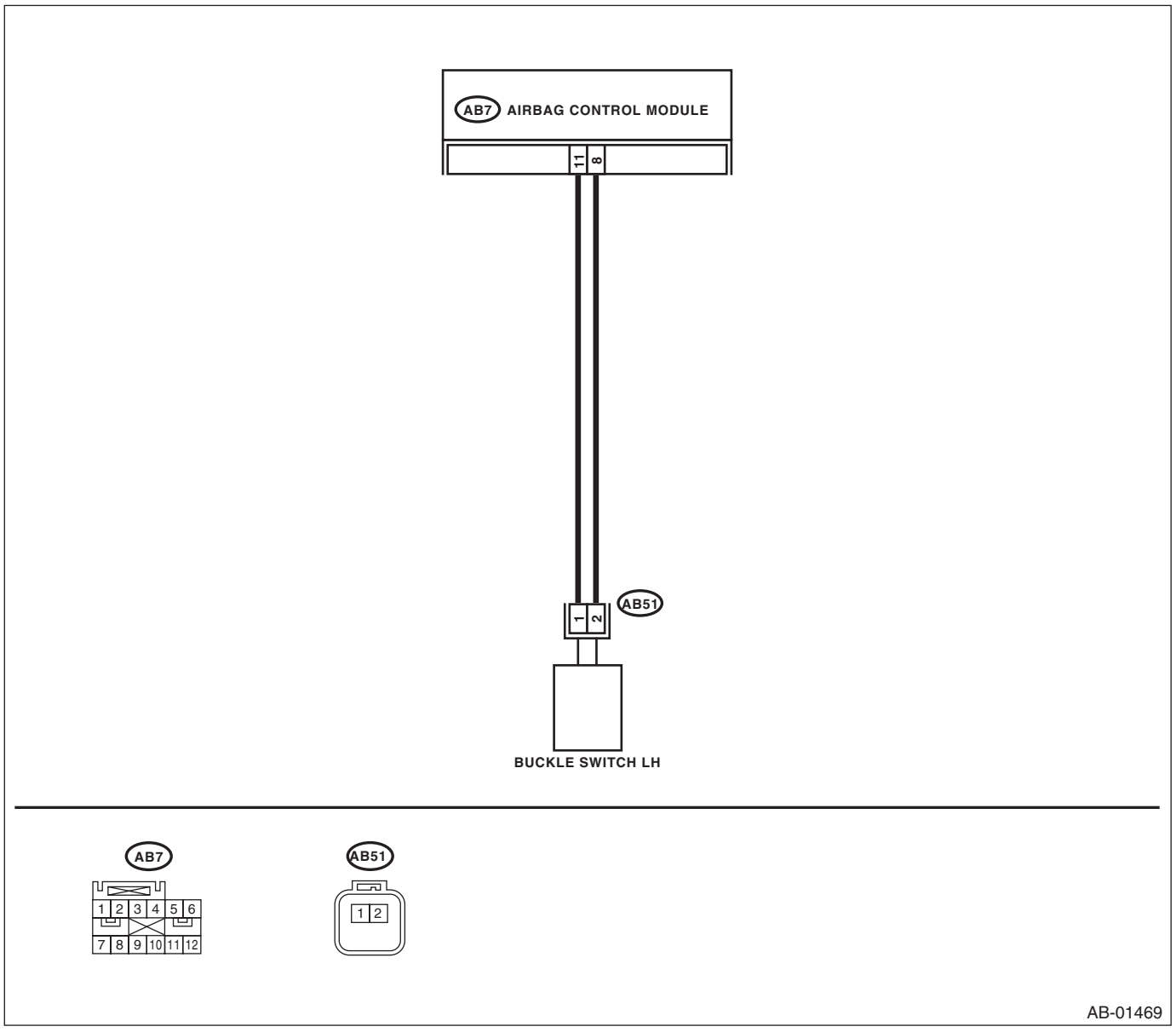
CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.

• When replacing the airbag module, seat belt pretensioner, roll connector, control module and sensor, reconnect each part and check that the warning light operates properly.

• When inspecting the airbag harness, disconnect the airbag module connector and seat belt pretensioner for safety.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module and the driver's airbag module.	Is there poor contact?	Replace the airbag main harness.	Go to step **2**.
2	**CHECK SEAT BELT BUCKLE SWITCH (LH).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB51) from buckle switch (LH). 3) Connect connector (1Y) in the test harness Y to connector (AB51). 4) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Replace the seat belt buckle switch (LH). <Ref. to SB-10, Front Seat Belt.>	Go to step **3**.
3	**CHECK AIRBAG REAR HARNESS (BUCKLE SWITCH HARNESS (LH)).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect connector (AB7) from airbag control module. 3) Connect connector (1R) in the test harness R to the connector (AB7). 4) Disconnect the seat belt buckle switch (LH), and connect the connector (1D) in test harness D to connector (AB51). 5) Measure resistance between connector (4R) in the test harness R and connector (3D) in the test harness D. ***Connector & terminal*** ***(4R) No. 11 — (3D) No. 3:*** ***(4R) No. 9 — (3D) No. 4:***	Is the resistance less than 10 Ω?	Go to step **4**.	Replace the airbag rear harness (LH) along with the body harness.
4	**CHECK AIRBAG REAR HARNESS.** Measure resistance between the connector (4R) in the test harness R and chassis ground. ***Connector & terminal*** ***(4R) No. 9 — Chassis ground:***	Is the resistance less than 10 Ω?	Replace the airbag rear harness (LH) along with the body harness.	Go to step **5**.
5	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **6**.
6	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

W: DTC 41 SIDE AIRBAG RH FAILURE

DTC DETECTING CONDITION:

- Side airbag harness (RH) is faulty.
- Side airbag module (RH) is faulty.
- Airbag control module is faulty.

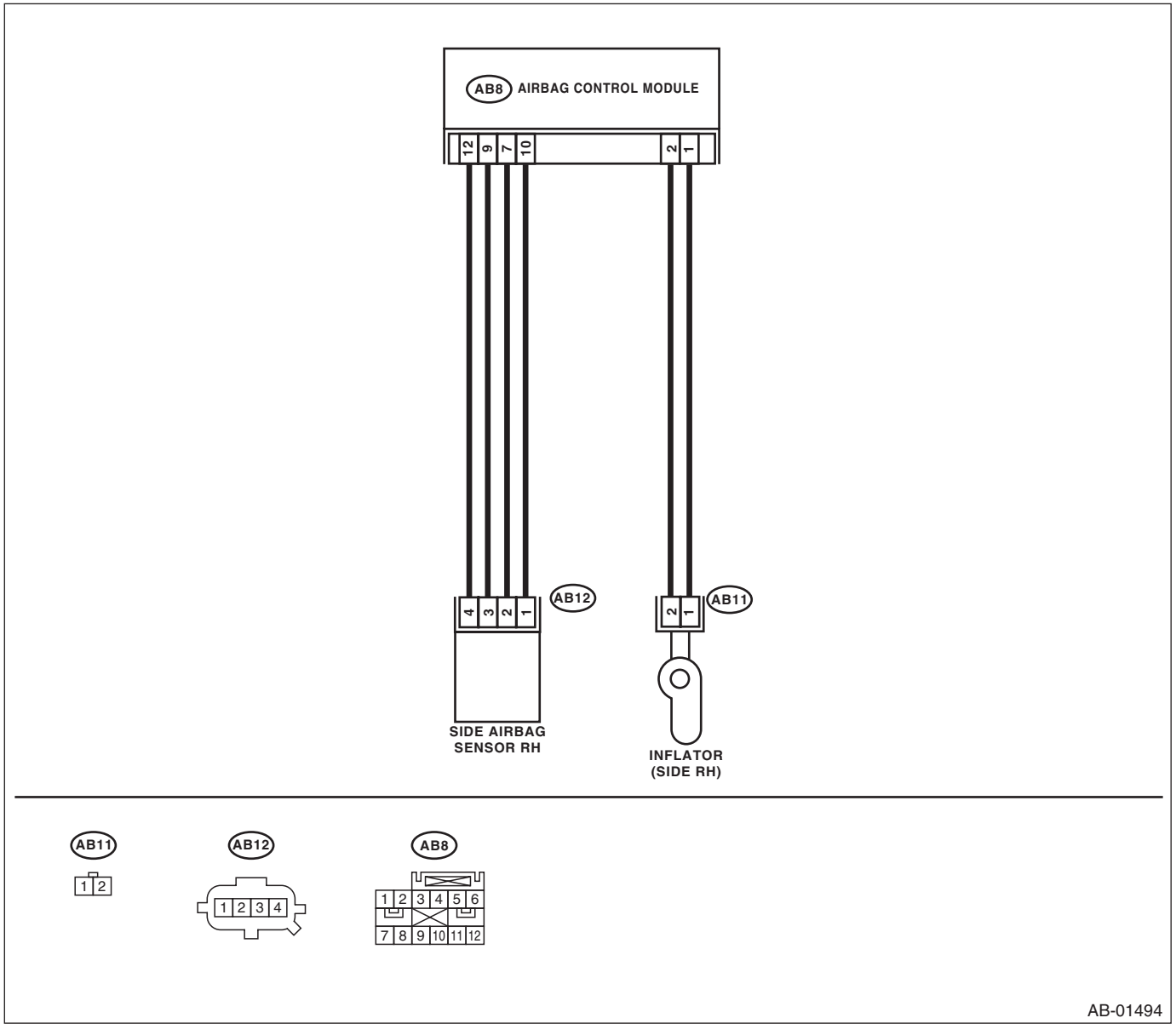
CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety.

• When inspecting the side airbag harness, disconnect the side airbag module connector, and seat belt pretensioner connector for safety.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module, side airbag module (RH) and the side airbag sensor (RH).	Is there poor contact?	Replace the airbag rear harness (RH) along with the body harness.	Go to step **2**.
2	**CHECK SIDE AIRBAG MODULE.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB11) from the side airbag module (RH), and connect the connector (1F) in test harness F to connector (AB11). 3) Connect airbag resistor to connector (3F) in the test harness F. 4) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Replace the side airbag module (RH). <Ref. to AB-16, REMOVAL, Side Airbag Module.>	Go to step **3**.
3	**CHECK SIDE AIRBAG HARNESS (RH).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB20) from the seat belt pretensioner (RH). 3) Disconnect the airbag resistor from test harness F. 4) Disconnect connector (AB8) from airbag control module. 5) Connect connector (1R) in the test harness R to the connector (AB8). 6) Measure resistance between connector (3R) in the test harness R and connector (3F) in the test harness F. ***Connector & terminal*** ***(3R) No. 18 — (3F) No. 4:*** ***(3R) No. 20 — (3F) No. 3:***	Is the resistance less than 10 Ω?	Go to step **4**.	Replace the side airbag harness along with the body harness.
4	**CHECK SIDE AIRBAG HARNESS (RH).** Measure resistance between connector (3R) terminals in the test harness R. ***Connector & terminal*** ***(3R) No. 18 — (3R) No. 20:***	Is the resistance 1 MΩ or more?	Go to step **5**.	Replace the side airbag harness along with the body harness.
5	**CHECK SIDE AIRBAG HARNESS (RH).** Measure resistance between the connector (3R) in the test harness R and chassis ground. ***Connector & terminal*** ***(3R) No. 18 — Chassis ground:*** ***(3R) No. 20 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **6**.	Replace the side airbag harness along with the body harness.
6	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **7**.
7	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

X: DTC 42 SIDE AIRBAG LH FAILURE

DTC DETECTING CONDITION:

- Side airbag harness (LH) is faulty.
- Side airbag module (LH) is faulty.
- Airbag control module is faulty.

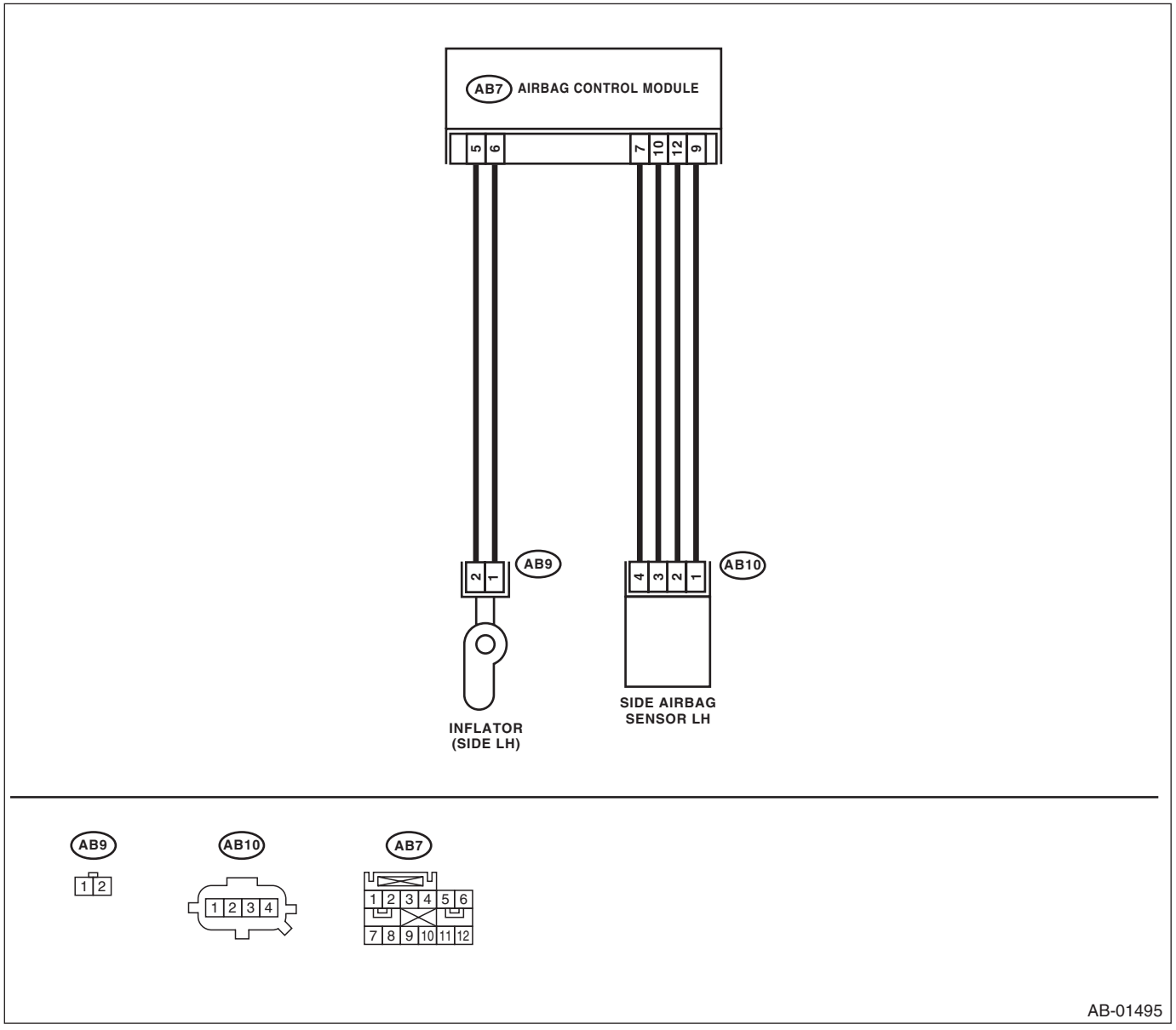
CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety.

• When inspecting the side airbag harness, disconnect the side airbag module connector, and seat belt pretensioner connector for safety.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK POOR CONTACT IN CONNECTORS.** Check for poor contact of the connectors between the airbag control module, side airbag module (LH) and the side airbag sensor (LH).	Is there poor contact?	Replace the airbag rear harness (LH) along with the body harness.	Go to step **2**.
2	**CHECK SIDE AIRBAG MODULE.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB9) from the side airbag module (LH), and connect the connector (1F) in test harness F to connector (AB9). 3) Connect airbag resistor to connector (3F) in the test harness F. 4) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Replace the side airbag module (LH). <Ref. to AB-16, REMOVAL, Side Airbag Module.>	Go to step **3**.
3	**CHECK SIDE AIRBAG HARNESS (LH).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB19) from the seat belt pretensioner (LH). 3) Disconnect the airbag resistor from test harness. 4) Disconnect connector (AB7) from airbag control module. 5) Connect connector (1R) in the test harness R to the connector (AB7). 6) Measure resistance between connector (3R) in the test harness R and connector (3F) in the test harness F. ***Connector & terminal*** ***(3R) No. 12 — (3F) No. 3:*** ***(3R) No. 10 — (3F) No. 4:***	Is the resistance less than 10 Ω?	Go to step **4**.	Replace the side airbag harness along with the body harness.
4	**CHECK SIDE AIRBAG HARNESS (LH).** Measure resistance between connector (3R) terminals in the test harness R. ***Connector & terminal*** ***(3R) No. 12 — (3R) No. 10:***	Is the resistance 1 MΩ or more?	Go to step **5**.	Replace the side airbag harness along with the body harness.
5	**CHECK SIDE AIRBAG HARNESS (LH).** Measure resistance between the connector (3R) in the test harness R and chassis ground. ***Connector & terminal*** ***(3R) No. 10 — Chassis ground:*** ***(3R) No. 12 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **6**.	Replace the side airbag harness along with the body harness.
6	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **7**.
7	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

Y: DTC 45 SIDE AIRBAG RH FAILURE

DTC DETECTING CONDITION:

- Side airbag harness is shorted to power supply.
- Side airbag module (RH) is faulty.
- Airbag control module is faulty.

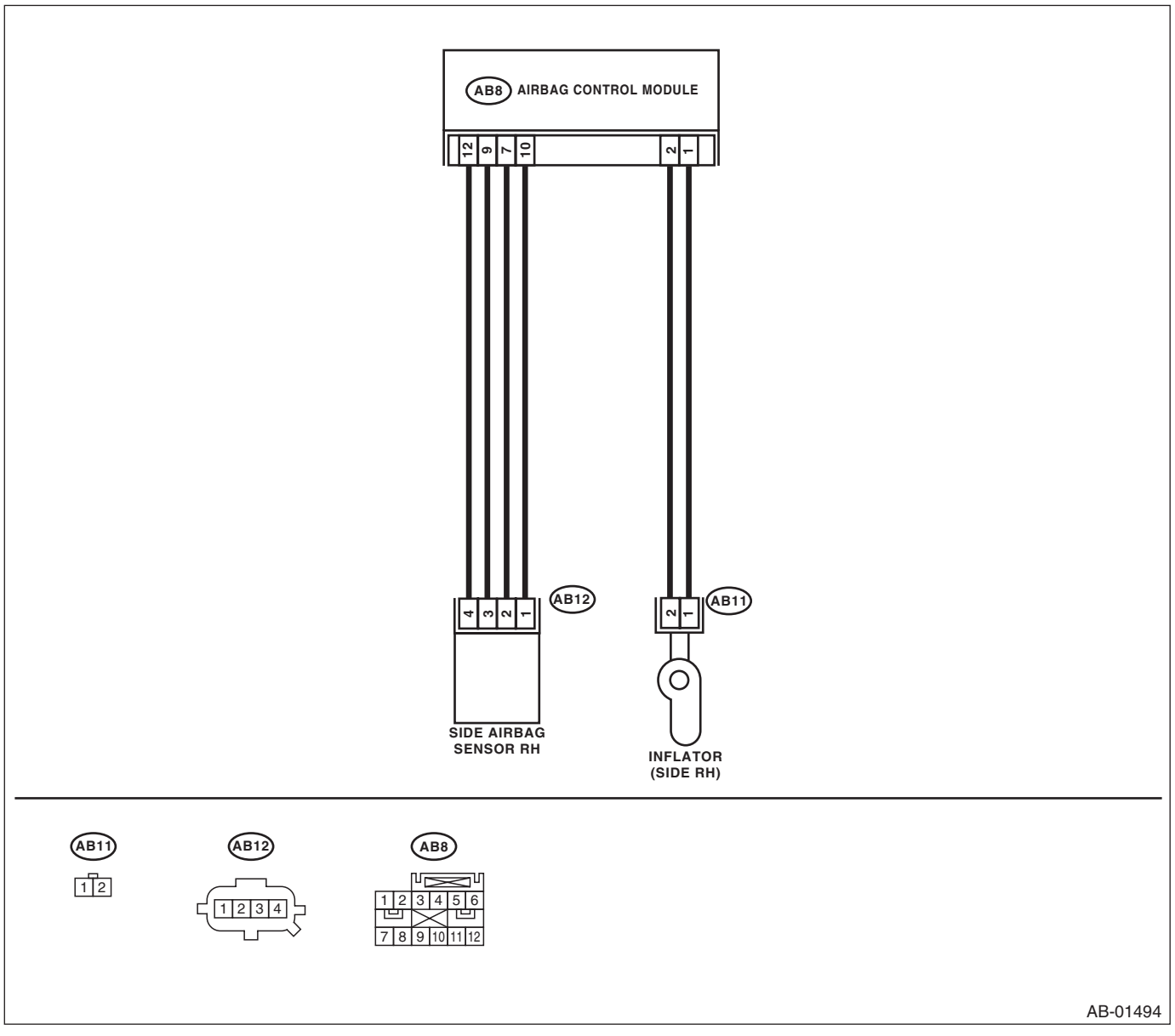
CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety.

• When inspecting the side airbag harness, disconnect the side airbag module connector, and seat belt pretensioner connector for safety.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module, side airbag module (RH) and the side airbag sensor (RH).	Is there poor contact?	Replace the airbag rear harness (RH) along with the body harness.	Go to step **2**.
2	**CHECK SIDE AIRBAG MODULE.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB11) from the side airbag module (RH), and connect the connector (1F) in test harness F to connector (AB11). 3) Connect airbag resistor to connector (3F) in the test harness F. 4) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Replace the side airbag module (RH). <Ref. to AB-16, REMOVAL, Side Airbag Module.>	Go to step **3**.
3	**CHECK SIDE AIRBAG HARNESS (RH).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB20) from the seat belt pretensioner (RH). 3) Disconnect the airbag resistor from test harness. 4) Disconnect connector (AB8) from airbag control module. 5) Connect connector (1R) in the test harness R to the connector (AB8). 6) Connect the battery ground terminal and turn the ignition switch to ON. 7) Measure the voltage between connector (3R) in the test harness R and chassis ground. ***Connector & terminal*** ***(3R) No. 18 (+) — Chassis ground (–):*** ***(3R) No. 20 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **4**.	Replace the side airbag harness along with the body harness.
4	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **5**.
5	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

Z: DTC 46 SIDE AIRBAG LH FAILURE

DTC DETECTING CONDITION:

- Side airbag harness is shorted to power supply.
- Side airbag module (LH) is faulty.
- Airbag control module is faulty.

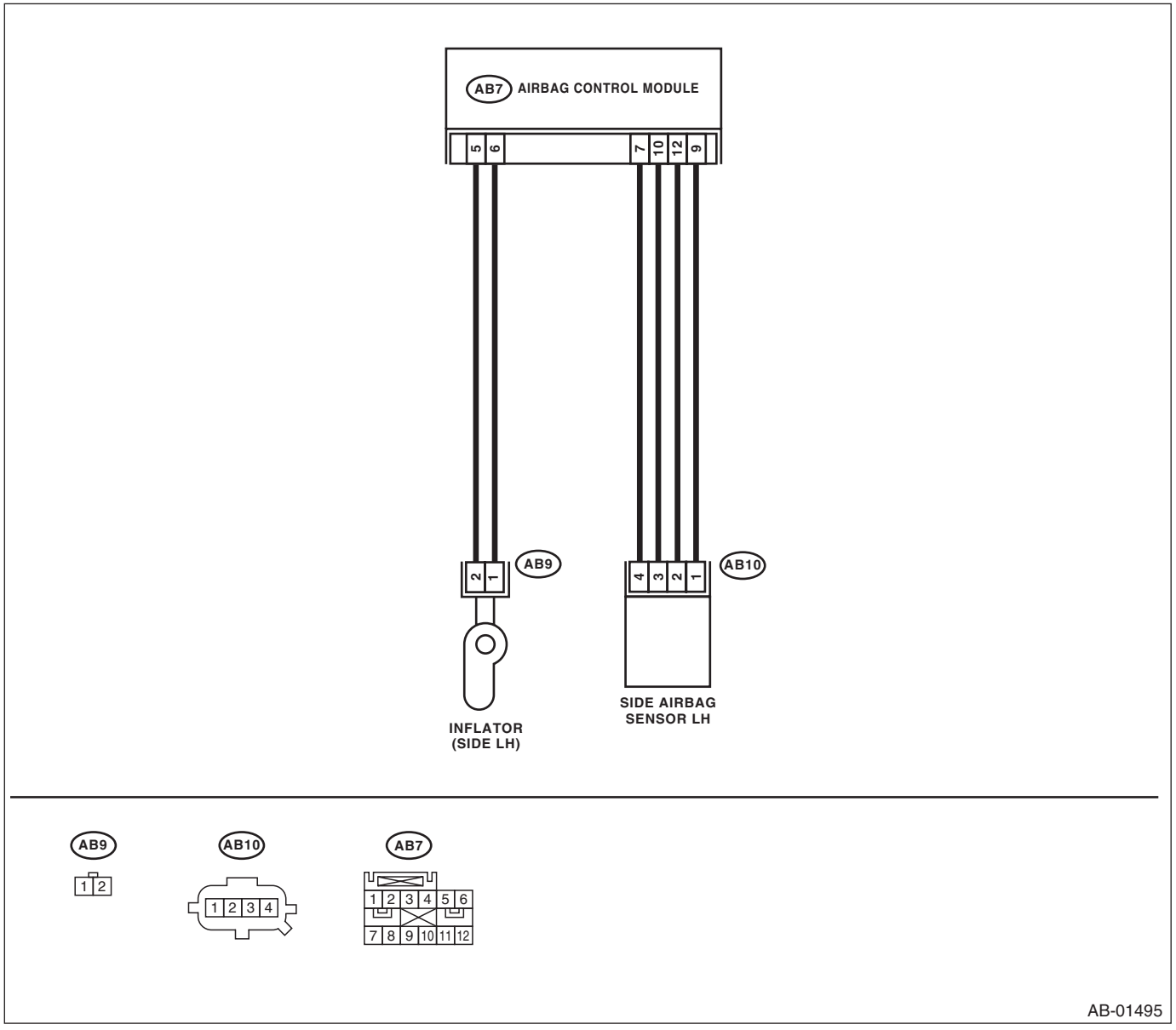
CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety.

• When inspecting the side airbag harness, disconnect the side airbag module connector, and seat belt pretensioner connector for safety.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module, side airbag module (LH) and the side airbag sensor (LH).	Is there poor contact?	Replace the airbag rear harness (LH) along with the body harness.	Go to step **2**.
2	**CHECK SIDE AIRBAG MODULE.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB9) from the side airbag module (LH), and connect the connector (1F) in test harness F to connector (AB9). 3) Connect airbag resistor to connector (3F) in the test harness F. 4) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Replace the side airbag module (LH). <Ref. to AB-16, REMOVAL, Side Airbag Module.>	Go to step **3**.
3	**CHECK SIDE AIRBAG HARNESS (LH).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB19) from the seat belt pretensioner (LH). 3) Disconnect the airbag resistor from test harness. 4) Disconnect connector (AB7) from airbag control module. 5) Connect connector (1R) in the test harness R to the connector (AB7). 6) Connect the battery ground terminal and turn the ignition switch to ON. 7) Measure the voltage between connector (3R) in the test harness R and chassis ground. ***Connector & terminal*** ***(3R) No. 10 (+) — Chassis ground (–):*** ***(3R) No. 12 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **4**.	Replace the side airbag harness along with the body harness.
4	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **5**.
5	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AA:DTC 51 SIDE AIRBAG SENSOR RH FAILURE

DTC DETECTING CONDITION:

- Side airbag sensor (RH) is faulty.
- Side airbag harness (RH) is faulty.
- Airbag control module is faulty.

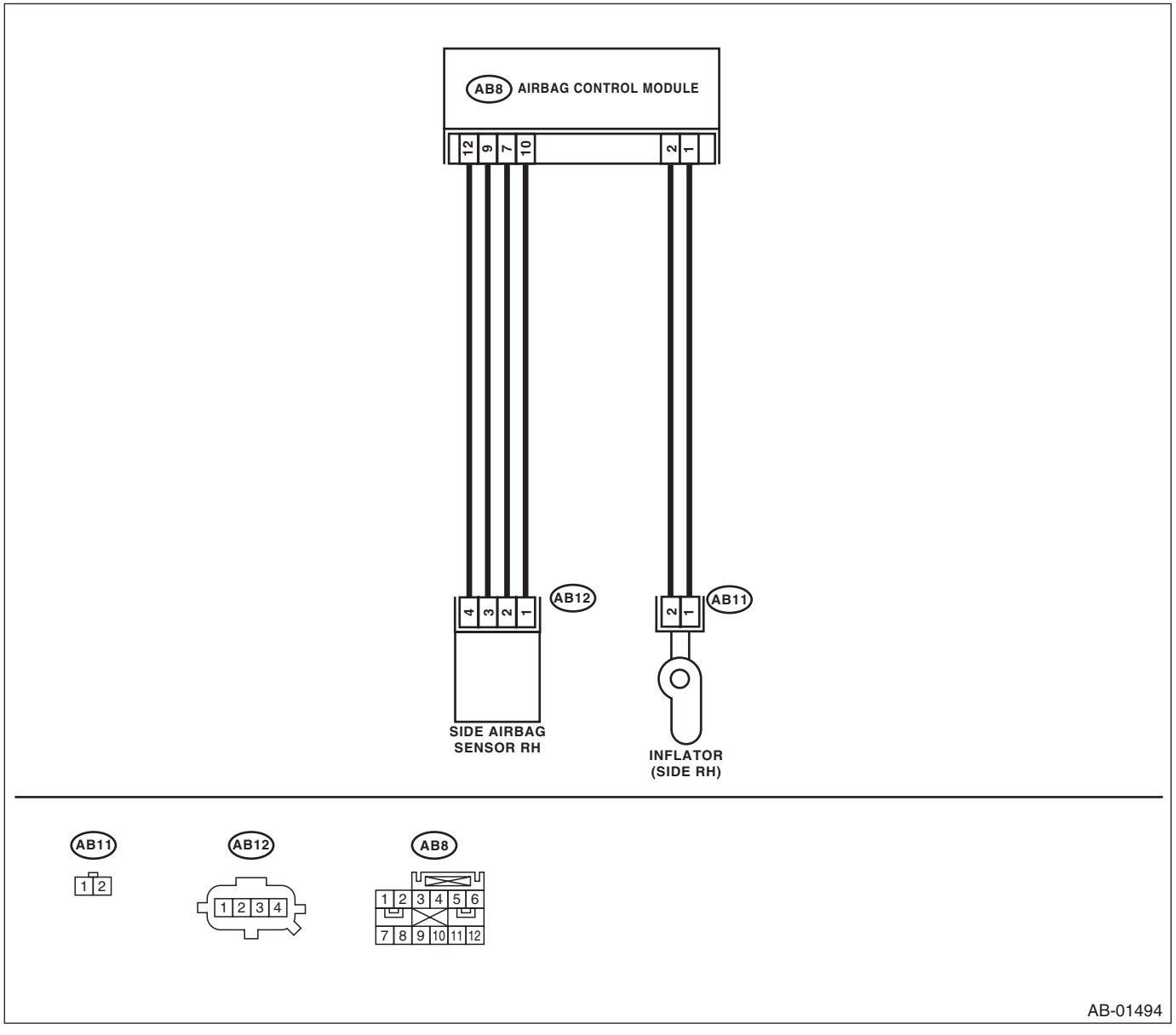
CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety.

• When inspecting the side airbag harness, disconnect the side airbag module connector, and seat belt pretensioner connector for safety.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module, side airbag module (RH) and the side airbag sensor (RH).	Is there poor contact?	Replace the airbag rear harness (RH) along with the body harness.	Go to step **2**.
2	**CHECK SIDE AIRBAG HARNESS (RH).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB20) from the seat belt pretensioner (RH). 3) Disconnect connector (AB11) from side airbag module (RH). 4) Disconnect connector (AB8) from airbag control module. 5) Connect connector (1R) in the test harness R to the connector (AB8). 6) Disconnect connector (AB12) from the side airbag sensor (RH), and connect connector (2V) in test harness V to connector (AB12). 7) Measure resistance between connector (4R) in the test harness R and connector (3V) in the test harness V. ***Connector & terminal*** ***(4R) No. 5 — (3V) No. 2:*** ***(4R) No. 6 — (3V) No. 4:*** ***(4R) No. 7 — (3V) No. 1:*** ***(4R) No. 8 — (3V) No. 5:***	Is the resistance less than 10 Ω?	Go to step **3**.	Replace the side airbag harness along with the body harness.
3	**CHECK SIDE AIRBAG HARNESS.** Measure resistance between connector (4R) in the test harness R, and the resistance between connector (4R) in the test harness R and chassis ground. ***Connector & terminal*** ***(4R) No. 5 — (4R) No. 7:*** ***(4R) No. 5 — (4R) No. 6:*** ***(4R) No. 5 — (4R) No. 8:*** ***(4R) No. 6 — (4R) No. 7:*** ***(4R) No. 6 — (4R) No. 8:*** ***(4R) No. 7 — (4R) No. 8:*** ***(4R) No. 5 — Chassis ground:*** ***(4R) No. 6 — Chassis ground:*** ***(4R) No. 7 — Chassis ground:*** ***(4R) No. 8 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **4**.	Replace the side airbag harness along with the body harness.
4	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the side airbag sensor (RH). <Ref. to AB-19, Side Airbag Sensor.>Replace the airbag control module if not operating normally even after replacing the sensor. <Ref. to AB-18, Airbag Control Module.>	Go to step **5**.
5	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AB:DTC 52 SIDE AIRBAG SENSOR LH FAILURE

DTC DETECTING CONDITION:

- Side airbag sensor (LH) is faulty.
- Side airbag harness (LH) is faulty.
- Airbag control module is faulty.

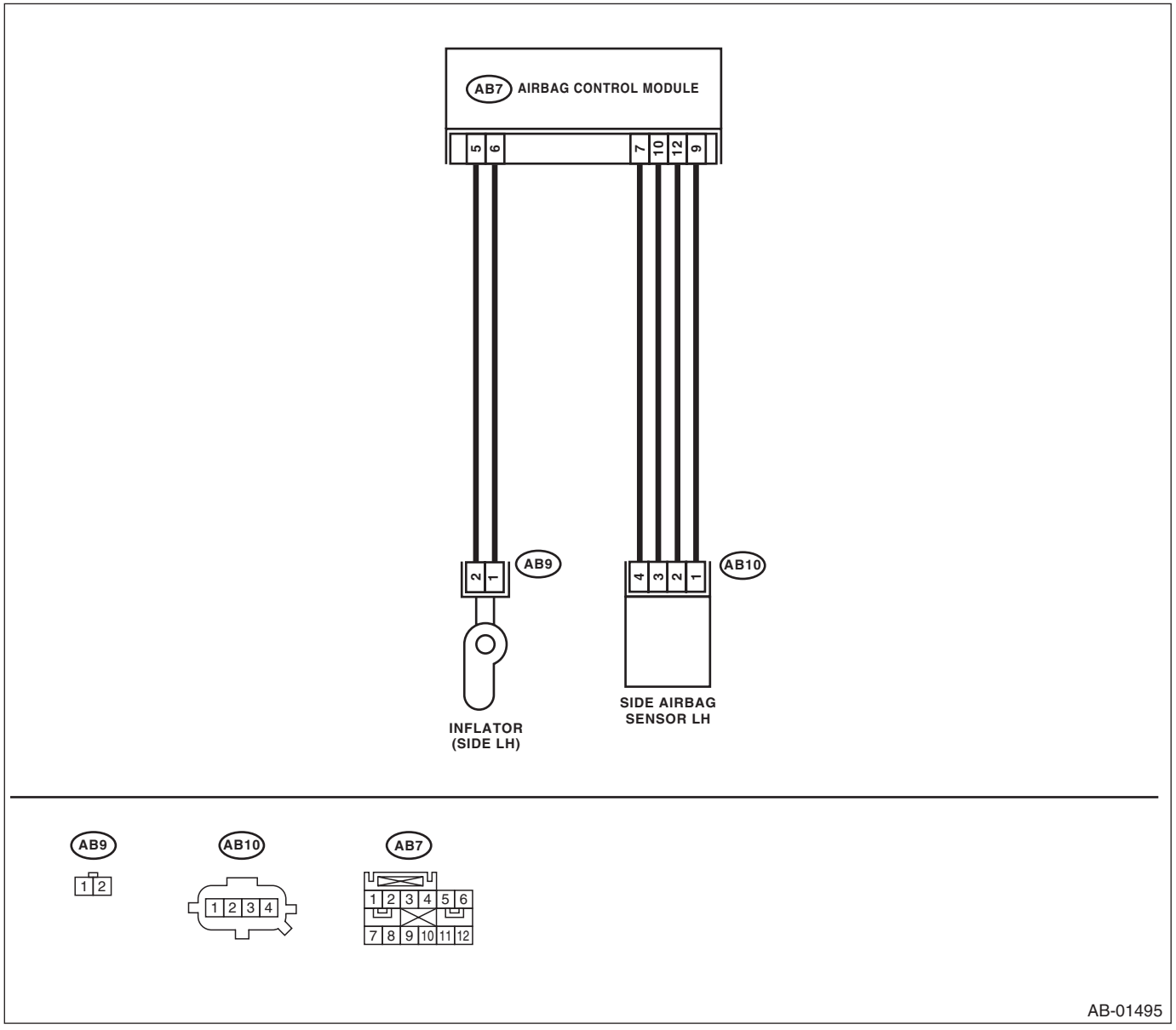
CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety.

• When inspecting the side airbag harness, disconnect the side airbag module connector, and seat belt pretensioner connector for safety.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module, side airbag module (LH) and the side airbag sensor (LH).	Is there poor contact?	Replace the airbag rear harness (LH) along with the body harness.	Go to step **2**.
2	**CHECK SIDE AIRBAG HARNESS (LH).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB19) from the seat belt pretensioner (LH). 3) Disconnect connector (AB9) from the side airbag module (LH). 4) Disconnect connector (AB7) from airbag control module. 5) Connect connector (1R) in the test harness R to the connector (AB7). 6) Disconnect connector (AB10) from the side airbag sensor (LH), and connect connector (2V) in test harness V to connector (AB10). 7) Measure resistance between connector (4R) in the test harness R and connector (3V) in the test harness V. ***Connector & terminal*** ***(4R) No. 4 — (3V) No. 2:*** ***(4R) No. 3 — (3V) No. 4:*** ***(4R) No. 2 — (3V) No. 1:*** ***(4R) No. 1 — (3V) No. 5:***	Is the resistance less than 10 Ω?	Go to step **3**.	Replace the side airbag harness along with the body harness.
3	**CHECK SIDE AIRBAG HARNESS (LH).** Measure resistance between connector (4R) in the test harness R, and the resistance between connector (4R) in the test harness R and chassis ground. ***Connector & terminal*** ***(4R) No. 4 — (4R) No. 3:*** ***(4R) No. 4 — (4R) No. 2:*** ***(4R) No. 4 — (4R) No. 1:*** ***(4R) No. 3 — (4R) No. 2:*** ***(4R) No. 3 — (4R) No. 1:*** ***(4R) No. 2 — (4R) No. 1:*** ***(4R) No. 4 — Chassis ground:*** ***(4R) No. 3 — Chassis ground:*** ***(4R) No. 2 — Chassis ground:*** ***(4R) No. 1 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **4**.	Replace the side airbag harness along with the body harness.
4	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the side airbag sensor (LH). <Ref. to AB-19, Side Airbag Sensor.>Replace the airbag control module if not operating normally even after replacing the sensor. <Ref. to AB-18, Airbag Control Module.>	Go to step **5**.
5	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AC:DTC 53 SIDE AIRBAG SENSOR RH FAILURE

DTC DETECTING CONDITION:

Side airbag sensor (RH) is faulty.

If the code 53 is displayed, the circuit within the side airbag sensor (RH) is faulty. Replace the side airbag sensor (RH).

<Ref. to AB-19, Side Airbag Sensor.>

AD:DTC 54 SIDE AIRBAG SENSOR LH FAILURE

DTC DETECTING CONDITION:

Side airbag sensor (LH) is faulty.

If the code 54 is displayed, the circuit within the side airbag sensor (LH) is faulty. Replace the side airbag sensor (LH).

<Ref. to AB-19, Side Airbag Sensor.>

AE:DTC 55 SIDE CURTAIN AIRBAG FIRING OUTPUT

This code is indicated when the side airbag and pretensioner activates.

When this code is displayed, the memory cannot be cleared. Replace the following parts.

- Airbag Control Module <Ref. to AB-18, Airbag Control Module.>
- Front seat with side airbag module (Operating side)<Ref. to SE-7, Front Seat.>
- Side airbag sensor (Operating side) <Ref. to AB-19, Side Airbag Sensor.>
- Front outer seat belt with pretensioner (Operating side)<Ref. to SB-10, Front Seat Belt.>

AF:DTC 61 BELT PRETENSIONER RH FAILURE

DTC DETECTING CONDITION:

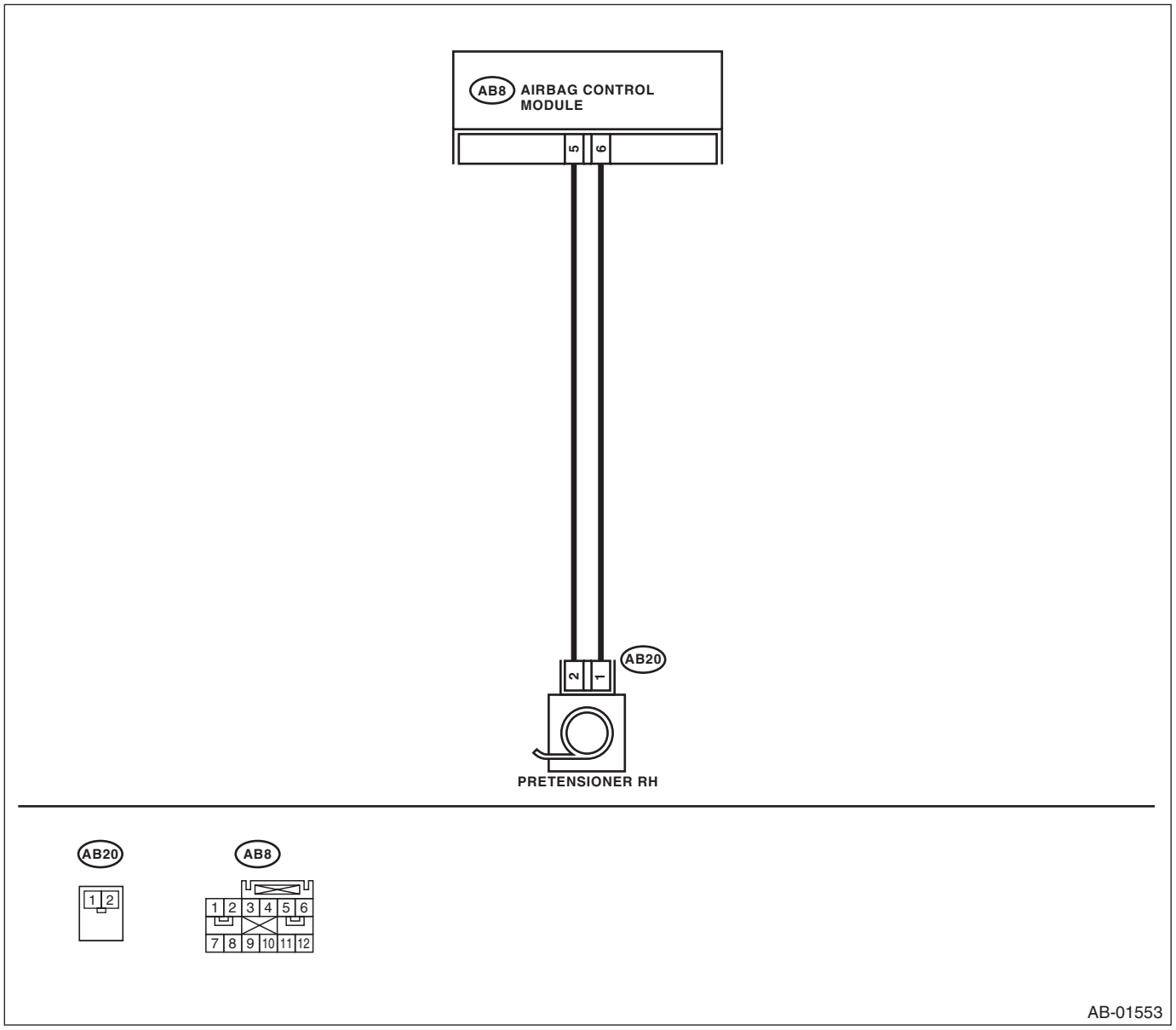
- Seat belt pretensioner (RH) circuit is open, shorted or shorted to ground.
- Airbag control module is faulty.
- Pretensioner is faulty.
- Airbag harness is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.

• When inspecting the side airbag harness, disconnect the side airbag module connector, and seat belt pretensioner connector for safety.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK POOR CONTACT IN CONNECTORS.** Check for poor contact of the connectors between the airbag control module and the seat belt pretensioner (RH).	Is there poor contact?	Replace the airbag rear harness (RH) along with the body harness.	Go to step **2**.
2	**CHECK SEAT BELT PRETENSIONER.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB20) from the seat belt pretensioner (RH). 3) Connect connector (1N) in the test harness N to the connector (AB20). 4) Connect airbag resistor to connector (2N) in the test harness N. 5) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Replace the seat belt pretensioner (RH). <Ref. to SB-10, Front Seat Belt.>	Go to step **3**.
3	**CHECK SIDE AIRBAG HARNESS (RH).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from test harness. 3) Disconnect connector (AB11) from side airbag module (RH). 4) Disconnect connectors (AB7) and (AB8) from airbag control module. 5) Connect connector (1R) in the test harness R to the connector (AB8). 6) Measure resistance between connector (3R) in the test harness R and connector (2N) in the test harness N. ***Connector & terminal*** ***(3R) No. 17 — (2N) No. 1:*** ***(3R) No. 19 — (2N) No. 2:***	Is the resistance less than 10 Ω?	Go to step **4**.	Replace the side airbag harness along with the body harness.
4	**CHECK SIDE AIRBAG HARNESS (RH).** Measure resistance between connector (3R) terminals in the test harness R. ***Connector & terminal*** ***(3R) No. 17 — (3R) No. 19:***	Is the resistance 1 MΩ or more?	Go to step **5**.	Replace the side airbag harness along with the body harness.
5	**CHECK SIDE AIRBAG HARNESS (RH).** Measure resistance between the connector (3R) in the test harness R and chassis ground. ***Connector & terminal*** ***(3R) No. 17 — Chassis ground:*** ***(3R) No. 19 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **6**.	Replace the side airbag harness along with the body harness.
6	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **7**.
7	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AG:DTC 62 BELT PRETENSIONER LH FAILURE

DTC DETECTING CONDITION:

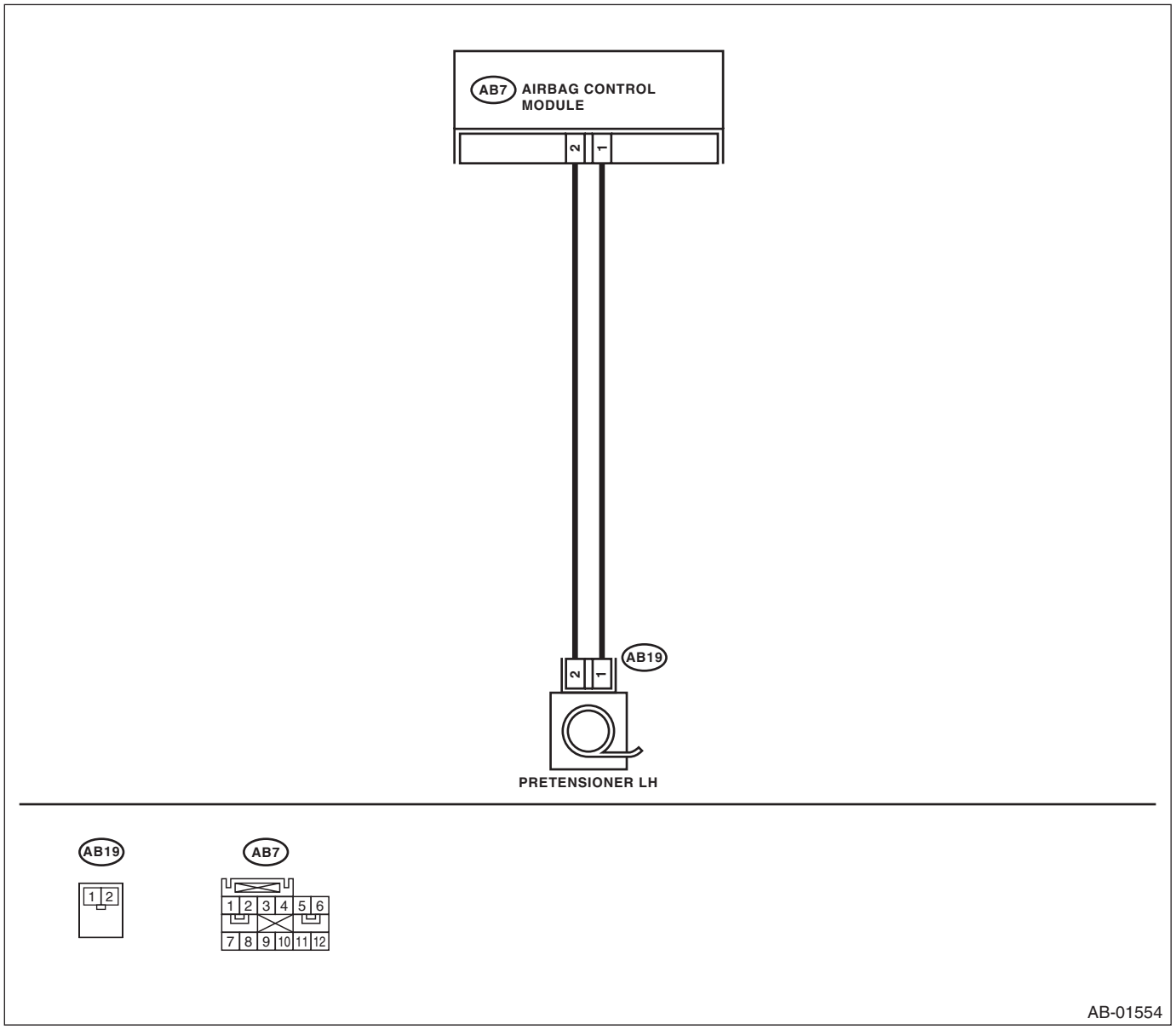
- Seat belt pretensioner (LH) circuit is open, shorted or shorted to ground.
- Airbag control module is faulty.
- Pretensioner is faulty.
- Airbag harness is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.

• When inspecting the side airbag harness, disconnect the side airbag module connector, and seat belt pretensioner connector for safety.

WIRING DIAGRAM:



Diagnostic Chart with Trouble Code

	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module and the seat belt pretensioner (LH).	Is there poor contact?	Replace the airbag rear harness (LH) along with the body harness.	Go to step **2**.
2	**CHECK SEAT BELT PRETENSIONER.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB19) from the seat belt pretensioner (LH). 3) Connect connector (1N) in the test harness N to the connector (AB19). 4) Connect airbag resistor to connector (2N) in the test harness N. 5) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Replace the seat belt pretensioner (LH). <Ref. to SB-10, Front Seat Belt.>	Go to step **3**.
3	**CHECK SIDE AIRBAG HARNESS (LH).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from test harness. 3) Disconnect connector (AB9) from the side airbag module (LH). 4) Disconnect connectors (AB7) and (AB8) from airbag control module. 5) Connect connector (1R) in the test harness R to the connector (AB7). 6) Measure resistance between connector (3R) in the test harness R and connector (2N) in the test harness N. ***Connector & terminal*** ***(3R) No. 11 — (2N) No. 2:*** ***(3R) No. 13 — (2N) No. 1:***	Is the resistance less than 10 Ω?	Go to step **4**.	Replace the side airbag harness along with the body harness.
4	**CHECK SIDE AIRBAG HARNESS (LH).** Measure resistance between connector (3R) terminals in the test harness R. ***Connector & terminal*** ***(3R) No. 11 — (3R) No. 13:***	Is the resistance 1 MΩ or more?	Go to step **5**.	Replace the side airbag harness along with the body harness.
5	**CHECK SIDE AIRBAG HARNESS (LH).** Measure resistance between the connector (3R) in the test harness R and chassis ground. ***Connector & terminal*** ***(3R) No. 11 — Chassis ground:*** ***(3R) No. 13 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **6**.	Replace the side airbag harness along with the body harness.
6	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **7**.
7	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AH:DTC 65 BELT PRETENSIONER RH FAILURE

DTC DETECTING CONDITION:

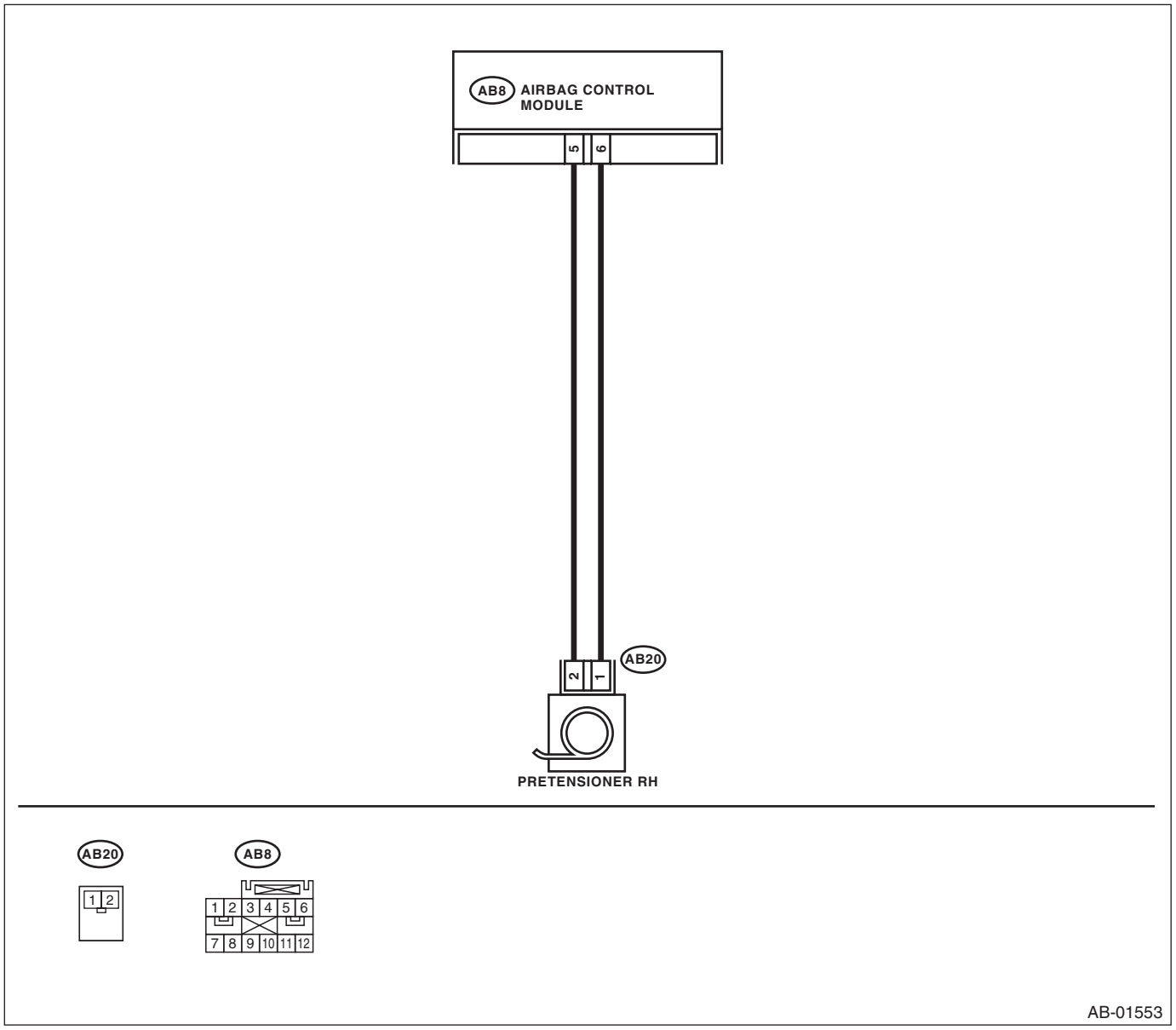
- Seat belt pretensioner (RH) circuit is shorted to power supply.
- Pretensioner is faulty.
- Airbag harness is faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.

• When inspecting the side airbag harness, disconnect the side airbag module connector, and seat belt pretensioner connector for safety.

WIRING DIAGRAM:



Diagnostic Chart with Trouble Code

	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module and the seat belt pretensioner (RH).	Is there poor contact?	Replace the airbag rear harness (RH) along with the body harness.	Go to step **2**.
2	**CHECK SEAT BELT PRETENSIONER.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB20) from the seat belt pretensioner (RH). 3) Connect connector (1N) in the test harness N to the connector (AB20). 4) Connect airbag resistor to connector (2N) in the test harness N. 5) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Replace the seat belt pretensioner (RH). <Ref. to SB-10, Front Seat Belt.>	Go to step **3**.
3	**CHECK SIDE AIRBAG HARNESS (RH).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from test harness. 3) Disconnect connector (AB11) from side airbag module (RH). 4) Disconnect connectors (AB7) and (AB8) from airbag control module. 5) Connect connector (1R) in the test harness R to the connector (AB8). 6) Connect the battery ground terminal and turn the ignition switch to ON. 7) Measure the voltage between connector (3R) in the test harness R and chassis ground. ***Connector & terminal*** ***(3R) No. 17 (+) — Chassis ground (–):*** ***(3R) No. 19 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **4**.	Replace the side airbag harness along with the body harness.
4	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **5**.
5	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AI: DTC 66 BELT PRETENSIONER LH FAILURE

DTC DETECTING CONDITION:

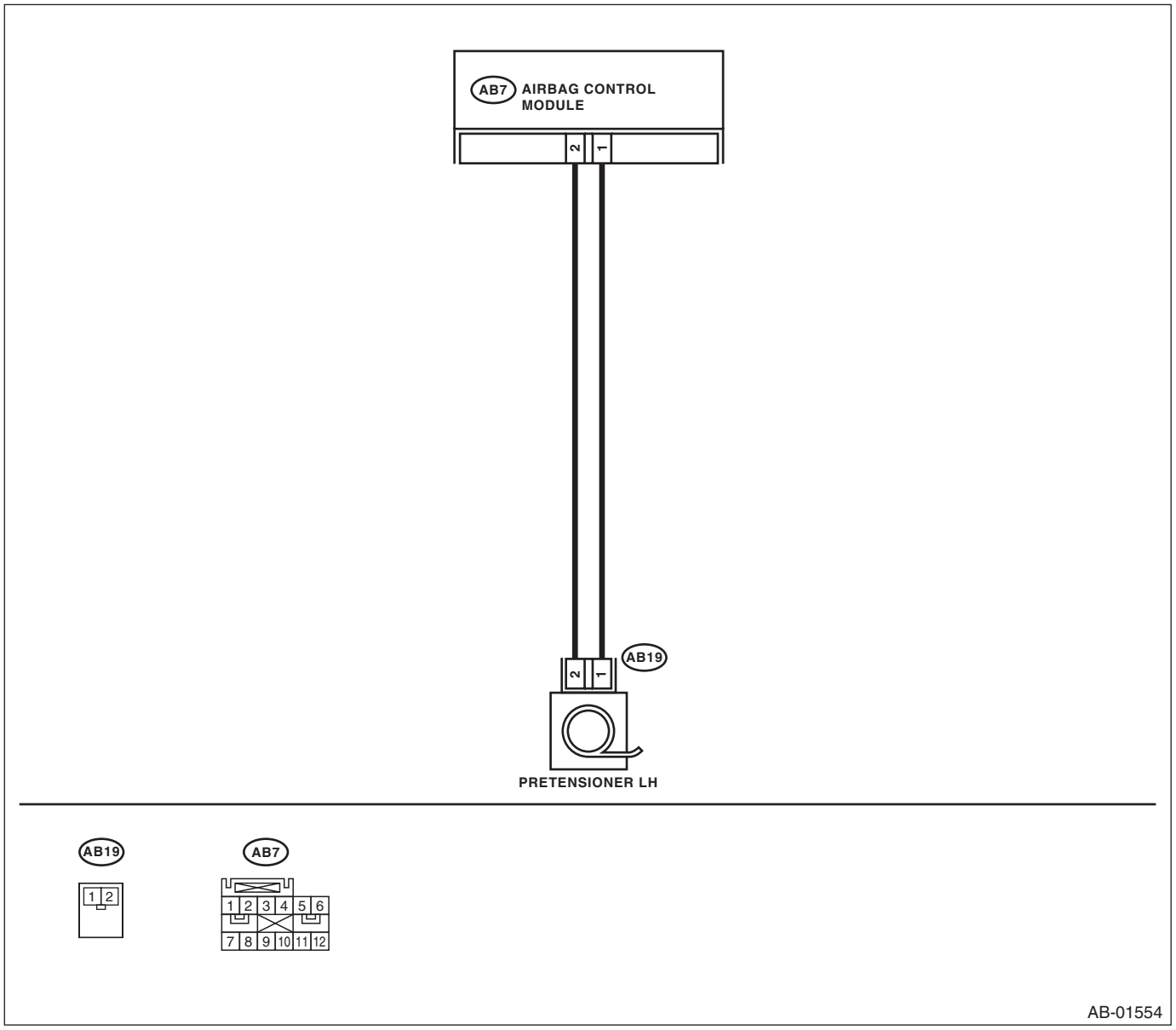
- Seat belt pretensioner (LH) circuit is shorted to power supply.
- Pretensioner is faulty.
- Airbag harness is faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.

• When inspecting the side airbag harness, disconnect the side airbag module connector, and seat belt pretensioner connector for safety.

WIRING DIAGRAM:



Diagnostic Chart with Trouble Code

	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module and the seat belt pretensioner (LH).	Is there poor contact?	Replace the airbag rear harness (LH) along with the body harness.	Go to step **2**.
2	**CHECK SEAT BELT PRETENSIONER.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB19) from the seat belt pretensioner (LH). 3) Connect connector (1N) in the test harness N to the connector (AB19). 4) Connect airbag resistor to connector (2N) in the test harness N. 5) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Replace the seat belt pretensioner (LH). <Ref. to SB-10, Front Seat Belt.>	Go to step **3**.
3	**CHECK SIDE AIRBAG HARNESS (LH).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from test harness. 3) Disconnect connector (AB9) from the side airbag module (LH). 4) Disconnect connectors (AB7) and (AB8) from airbag control module. 5) Connect connector (1R) in the test harness R to the connector (AB7). 6) Connect the battery ground terminal and turn the ignition switch to ON. 7) Measure the voltage between connector (3R) in the test harness R and chassis ground. ***Connector & terminal*** ***(3R) No. 11 (+) — Chassis ground (–):*** ***(3R) No. 13 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **4**.	Replace the side airbag harness along with the body harness.
4	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **5**.
5	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AJ:DTC 71 DRIVER'S AIRBAG FAILURE

DTC DETECTING CONDITION:

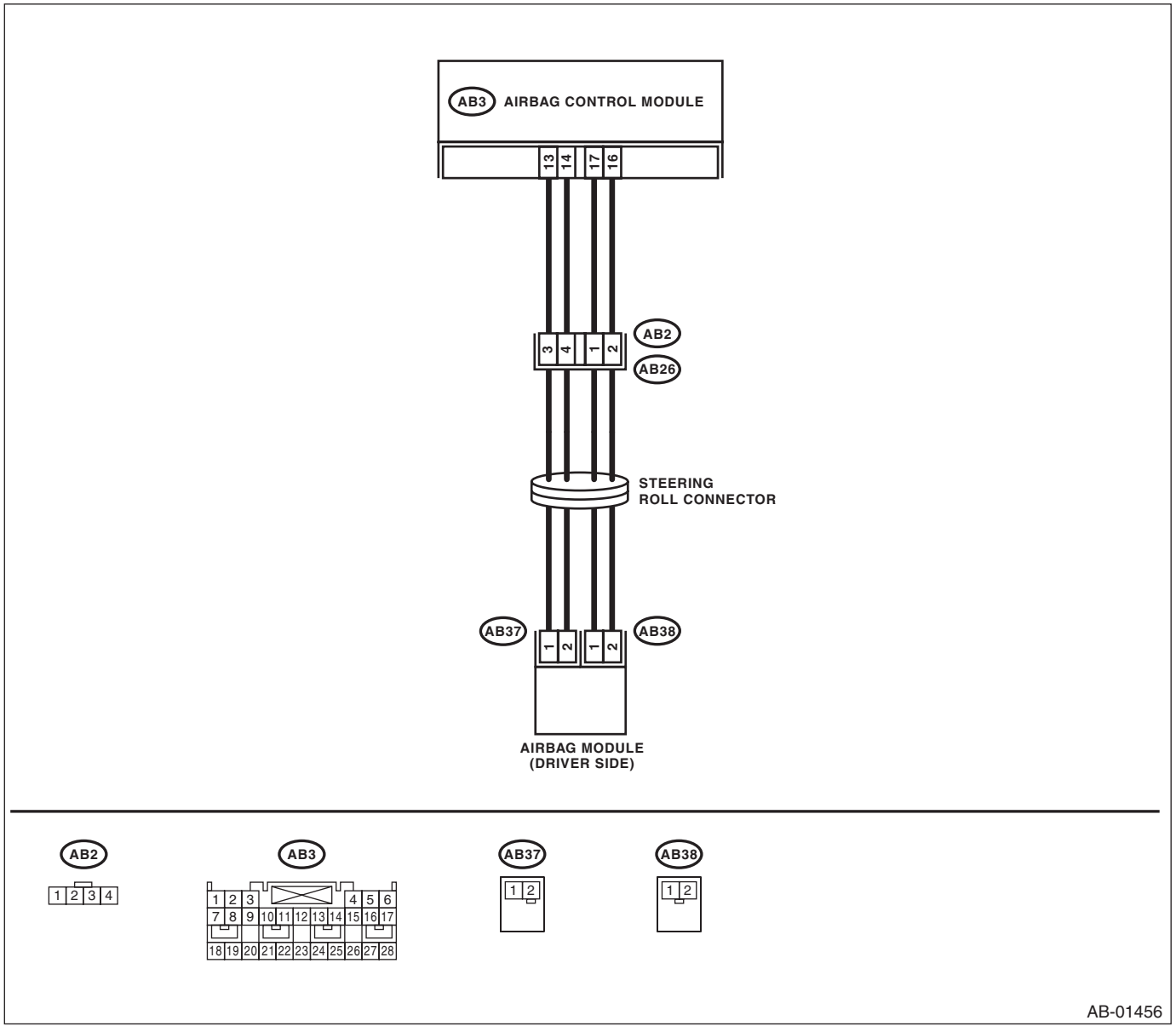
- Airbag main harness circuit is open, shorted or shorted to ground.
- Airbag module harness (driver's side) circuit is open, shorted or shorted to ground.
- Roll connector circuit is open, shorted or shorted to ground.
- Driver's airbag module is faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.
• When replacing the airbag module, seat belt pretensioner, roll connector, control module and sensor, reconnect each part and check that the warning light operates properly.
• When inspecting the airbag main harness, disconnect the airbag module connectors and seat belt pretensioner of the driver's and passenger's seats for safety.

NOTE:
Prior to starting diagnosis, prepare two airbag resistors (98299PA040).

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module and the driver's airbag module.	Is there poor contact?	Replace the airbag main harness along with the body harness.	Go to step **2**.
2	**CHECK DRIVER'S AIRBAG MODULE.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Remove the driver's airbag module. 3) Connect connector (1N) in the test harness N to the connector (AB38). 4) Connect airbag resistor to connector (2N) in the test harness N. 5) Connect the connector (1Q) in the test harness Q to connector (AB37). 6) Connect the airbag resistor to the connector (2Q) in the test harness Q. 7) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Replace the driver's airbag module. <Ref. to AB-14, Driver's Airbag Module.>	Go to step **3**.
3	**CHECK ROLL CONNECTOR.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the test harness N from connector (AB38). 3) Disconnect the test harness Q from connector (AB37). 4) Remove the instrument panel lower cover, disconnect the connector (AB26) from (AB2). 5) Connect connector (1P) in the test harness P to connector (AB2). 6) Connect the airbag resistor to the connectors (2P) and (3P) in the test harness P. 7) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Replace the roll connector. <Ref. to AB-20, Roll Connector.>	Go to step **4**.
4	**CHECK AIRBAG MAIN HARNESS (DRIVER'S AIRBAG HARNESS).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from the connectors (2P) and (3P) in the test harness P. 3) Disconnect the connectors (AB27) and (AB4) of the passenger's airbag module. 4) Disconnect the connector (AB3) from airbag control module, and connect the connector (1R) in the test harness R. 5) Measure resistance between connector (2R) in the test harness R and connector (2P) and (3P) in the test harness P. ***Connector & terminal*** ***(2R) No. 2 — (2P) No. 1:*** ***(2R) No. 4 — (2P) No. 2:*** ***(2R) No. 8 — (3P) No. 3:*** ***(2R) No. 12 — (3P) No. 4:***	Is the resistance less than 10 Ω?	Go to step **5**.	Replace the airbag main harness along with the body harness.

	Step	Check	Yes	No
5	**CHECK AIRBAG MAIN HARNESS (DRIVER'S AIRBAG HARNESS).** Measure resistance between terminals of connector (2R) in the test harness R, and between connector (2R) and chassis ground. ***Connector & terminal*** ***(2R) No. 2 — (2P) No. 4:*** ***(2R) No. 4 — Chassis ground:*** ***(2R) No. 2 — Chassis ground:*** ***(2R) No. 8 — (2P) No. 12:*** ***(2R) No. 8 — Chassis ground:*** ***(2R) No. 12 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **6**.	Replace the airbag main harness along with the body harness.
6	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **7**.
7	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AK:DTC 72 PASSENGER'S AIRBAG FAILURE

DTC DETECTING CONDITION:

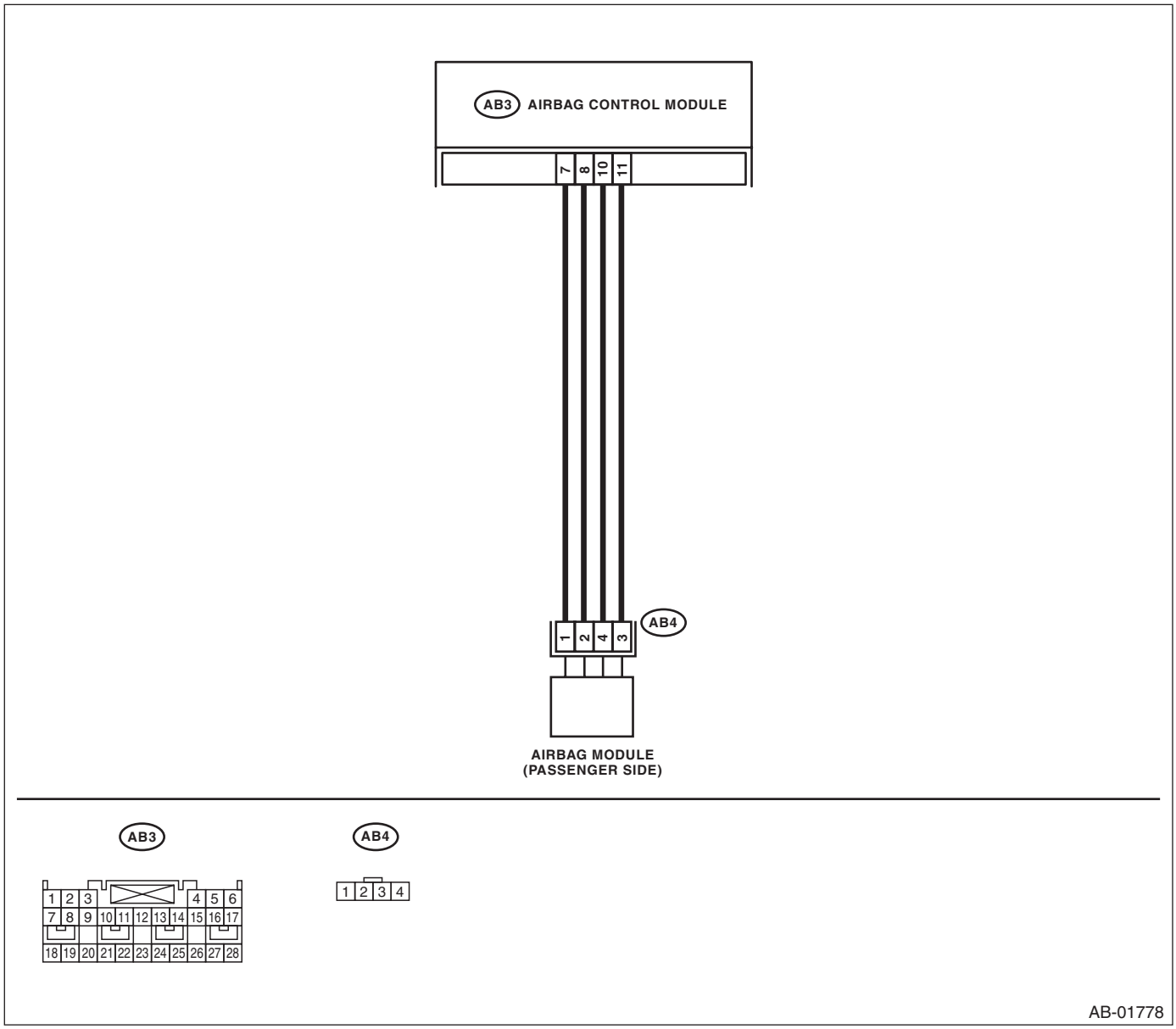
- Airbag harness circuit is open, shorted or shorted to ground.
- Airbag module (passenger's side) circuit is open, shorted or shorted to ground.
- Passenger's airbag module is faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.
• When inspecting the airbag main harness, disconnect the airbag modules of the driver's and the passenger's seats for safety.

NOTE:
Before diagnosing, prepare the two airbag resistors (98299PA040).

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module and the passenger's airbag module.	Is there poor contact?	Replace the airbag main harness along with the body harness.	Go to step **2**.
2	**CHECK PASSENGER'S AIRBAG MODULE.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Remove the glove box. 3) Disconnect the connectors (AB4) of the passenger's airbag module. 4) Connect connector (1P) in the test harness P to connector (AB4). 5) Connect the two airbag resistors to the connectors (2P) and (3P) in the test harness P. 6) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Replace the passenger's airbag module. <Ref. to AB-15, Passenger's Airbag Module.>	Go to step **3**.
3	**CHECK AIRBAG MAIN HARNESS.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the two airbag resistors to the connectors (2P) and (3P) in the test harness P. 3) Remove the lower cover, and disconnect the connector (AB2) from (AB26). 4) Disconnect the connector (AB3) from the airbag control module, and connect the connector (1R) in the test harness R. 5) Measure resistance between connector (2R) in the test harness R and connector (3P) in the test harness P. ***Connector & terminal*** ***(2R) No. 3 — (2P) No. 1:*** ***(2R) No. 5 — (2P) No. 2:*** ***(2R) No. 9 — (2P) No. 3:*** ***(2R) No. 13 — (2P) No. 4:***	Is the resistance less than 10 Ω?	Go to step **4**.	Replace the airbag main harness along with the body harness.
4	**CHECK AIRBAG MAIN HARNESS.** Measure resistance between the connectors (2R) of the test harness R. ***Connector & terminal*** ***(2R) No. 3 — (2R) No. 5:*** ***(2R) No. 3 — Chassis ground:*** ***(2R) No. 5 — Chassis ground:*** ***(2R) No. 9 — (2R) No. 13:*** ***(2R) No. 9 — Chassis ground:*** ***(2R) No. 13 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **5**.	Replace the airbag main harness along with the body harness.
5	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **6**.
6	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AL:DTC 75 DRIVER'S AIRBAG FAILURE

DTC DETECTING CONDITION:

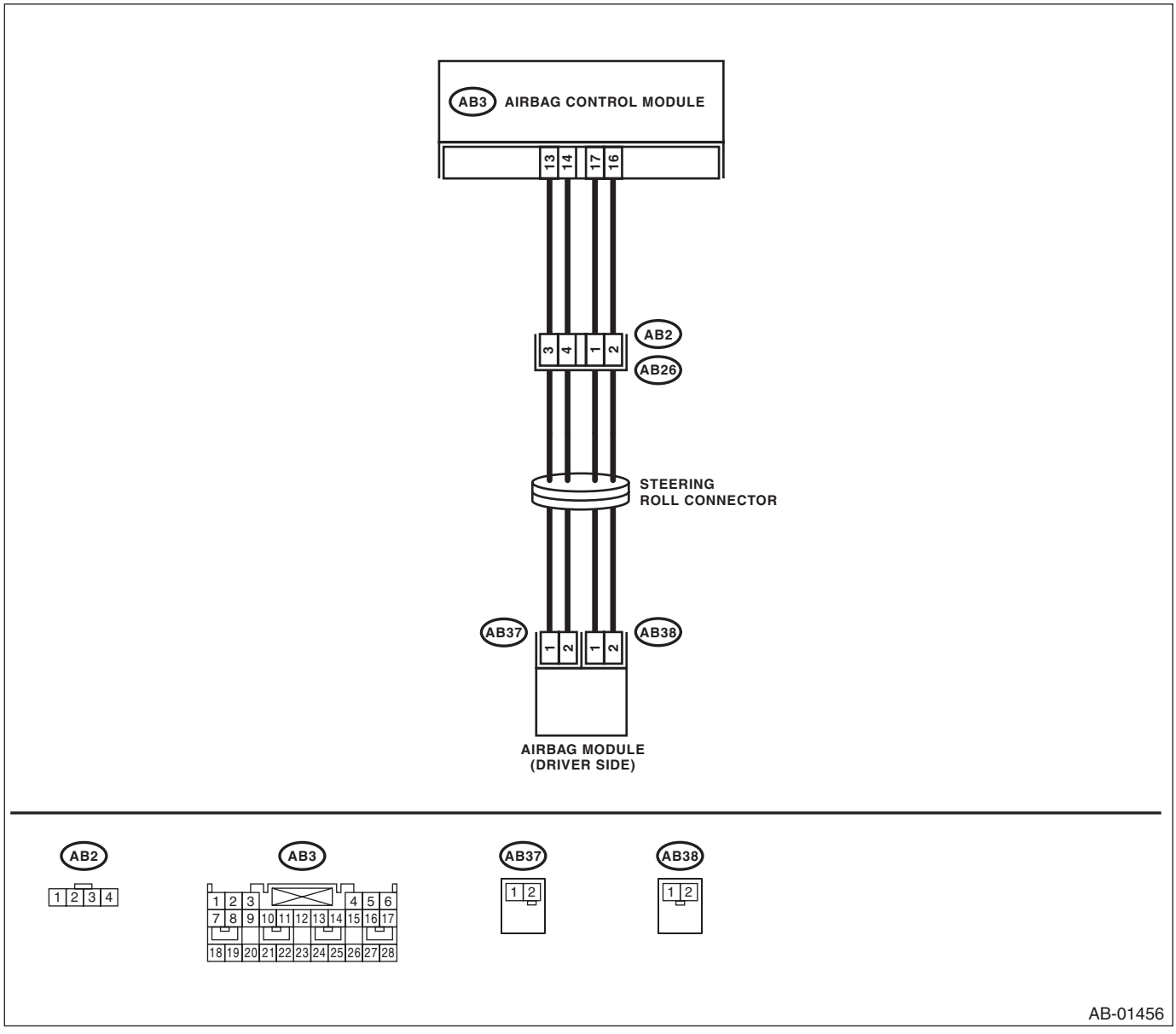
- Airbag main harness circuit (driver's side) is shorted to power supply.
- Airbag module harness circuit (driver's side) is shorted to power supply.
- Roll connector is shorted to power supply.
- Driver's airbag module is faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.
• When replacing the airbag module, seat belt pretensioner, roll connector, control module and sensor, reconnect each part and check that the warning light operates properly.
• When inspecting the airbag main harness, disconnect the airbag module connectors and seat belt pretensioner of the driver's and passenger's seats for safety.

NOTE:
Prior to starting diagnosis, prepare two airbag resistors (98299PA040).

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module and the driver's airbag module.	Is there poor contact?	Replace the airbag main harness along with the body harness.	Go to step **2**.
2	**CHECK DRIVER'S AIRBAG MODULE.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Remove the driver's airbag module. 3) Connect the connector (AB38) to the connector (1N) in the test harness N. 4) Connect airbag resistor to connector (2N) in the test harness N. 5) Connect the connector (1Q) in the test harness Q to connector (AB37). 6) Connect the airbag resistor to the connector (2Q) in the test harness Q. 7) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Replace the driver's airbag module. <Ref. to AB-14, Driver's Airbag Module.>	Go to step **3**.
3	**CHECK ROLL CONNECTOR.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the test harness N from connector (AB38). 3) Disconnect the test harness Q from connector (AB37). 4) Remove the instrument panel lower cover, disconnect the connector (AB26) from (AB2). 5) Connect connector (1P) in the test harness P to connector (AB2). 6) Connect the airbag resistor to the connectors (2P) and (3P) in the test harness P. 7) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Replace the roll connector. <Ref. to AB-20, Roll Connector.>	Go to step **4**.
4	**CHECK AIRBAG MAIN HARNESS (DRIVER'S AIRBAG HARNESS).** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from the connectors (2P) and (3P) in the test harness P. 3) Disconnect the connectors (AB27) and (AB4) of the passenger's airbag module. 4) Disconnect the connector (AB3) from airbag control module, and connect the connector (1R) in the test harness R. 5) Connect the battery ground terminal and turn the ignition switch to ON. (engine OFF) 6) Measure the voltage between connector (2R) in the test harness R and chassis ground. ***Connector & terminal*** ***(2R) No. 4 (+) — Chassis ground (–):*** ***(2R) No. 2 (+) — Chassis ground (–):*** ***(2R) No. 8 (+) — Chassis ground (–):*** ***(2R) No. 12 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **5**.	Replace the airbag main harness along with the body harness.

	Step	Check	Yes	No
5	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **6**.
6	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AM:DTC 76 PASSENGER'S AIRBAG FAILURE

DTC DETECTING CONDITION:

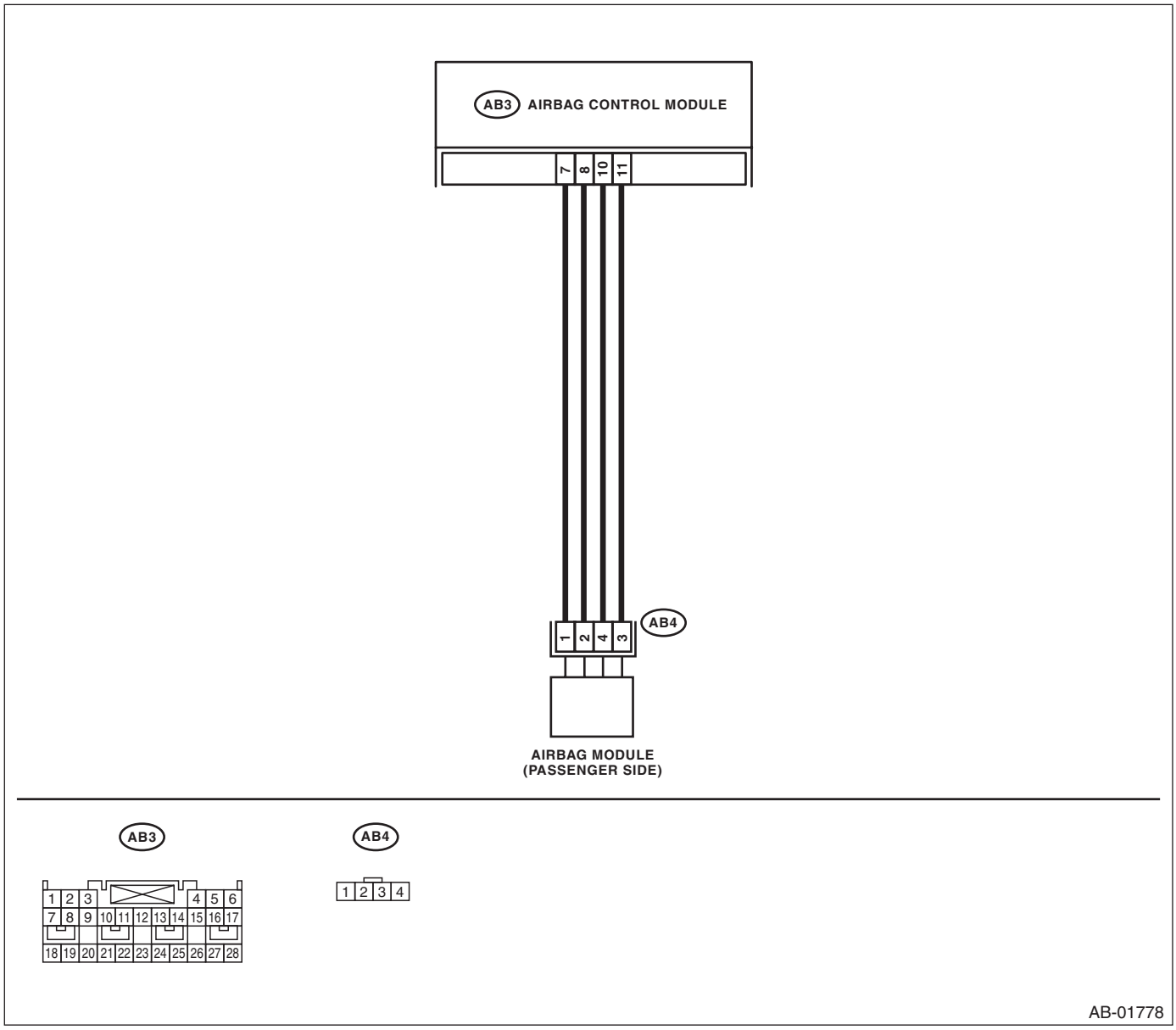
- Airbag main harness (Passenger's side) is shorted to power supply.
- Airbag module harness (passenger's side) is shorted to power supply.
- Passenger's airbag module is faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait more than 20 seconds before starting to work.
• When inspecting the airbag main harness, disconnect the airbag modules of the driver's and the passenger's seats for safety.

NOTE:
Before diagnosing, prepare the two airbag resistors (98299PA040).

WIRING DIAGRAM:



Diagnostic Chart with Trouble Code

	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module and the passenger's airbag module.	Is there poor contact?	Replace the airbag main harness along with the body harness.	Go to step **2**.
2	**CHECK PASSENGER'S AIRBAG MODULE.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Remove the glove box. 3) Disconnect connector (AB4) from the passenger's airbag module (LH). 4) Connect connector (1P) in the test harness P to connector (AB4). 5) Connect the two airbag resistors to the connectors (2P) and (3P) in the test harness P. 6) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds then turn off?	Replace the passenger's airbag module. <Ref. to AB-15, Passenger's Airbag Module.>	Go to step **3**.
3	**CHECK AIRBAG MAIN HARNESS.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the two airbag resistors to the connectors (2P) and (3P) in the test harness P. 3) Remove the lower cover, and disconnect the connector (AB2) from (AB26). 4) Disconnect the connector (AB3) from the airbag control module, and connect the connector (1R) in the test harness R. 5) Connect the battery ground terminal and turn the ignition switch to ON. 6) Measure the voltage between connector (2R) in the test harness R and chassis ground. ***Connector & terminal*** ***(2R) No. 3 (+) — Chassis ground (–):*** ***(2R) No. 5 (+) — Chassis ground (–):*** ***(2R) No. 9 (+) — Chassis ground (–):*** ***(2R) No. 13 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **4**.	Replace the airbag main harness along with the body harness.
4	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all the connectors. 2) Erase the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-18, Airbag Control Module.>	Go to step **5**.
5	**CHECK ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

1. General Description

A: PREPARATION TOOL

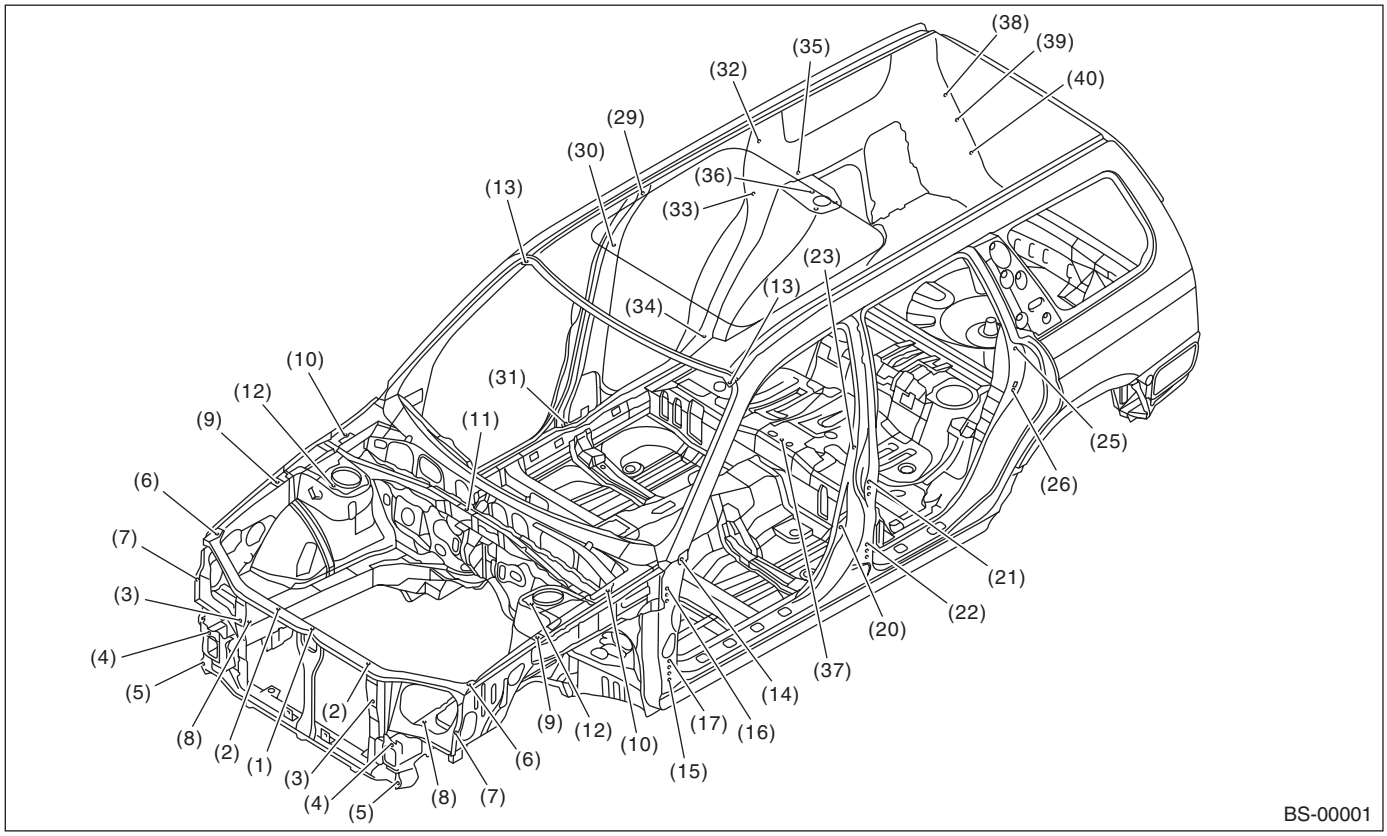
TOOL NAME	REMARKS
Tram tracking gauge	Used for measuring dimension.
Tape measure	Used for measuring dimension.

2. Datum Points

A: LOCATION

NOTE:
- Datum points are specified for body repair.
- Guide holes, locators, and indents are provided to facilitate panel replacement and to increase alignment accuracy.
- Both right and left reference points are symmetrical.

Datum Points



(1) Radiator panel gauge hole 6 mm (0.24 in) dia. (Vehicle center)

(2) Radiator attaching hole 12 mm (0.47 in) dia.

(3) Headlight attaching hole 7 mm (0.28 in) dia. (Symmetrical)

(4) Frame plate gauge hole 8 mm (0.31 in) dia. (Symmetrical)

(5) Bumper beam attaching hole 11 mm (0.43 in) dia. (Symmetrical)

(6) Fender attaching hole 7 mm (0.28 in) dia. (Symmetrical)

(7) Fender attaching hole 7 mm (0.28 in) dia. (Symmetrical)

(8) RH power steering tank attaching hole LH ATF cooler pipe attaching hole 9 mm (0.35 in) dia.

(9) Fender attaching hole 7 mm (0.28 in) dia. (Symmetrical)

(10) Fender attaching hole 7 mm (0.28 in) dia. (Symmetrical)

(11) Modular bracket gauge hole 8 mm (0.31 in) dia. (Vehicle center)

(12) Front strut attaching hole 9.5 mm (0.37 in) dia. (Symmetrical)

(13) Front glass attaching hole LH 6.5 × 10.5 mm (0.26 × 0.41 in) RH 6.5 × 7 mm (0.26 × 0.28 in)

(14) Fender attaching hole 10 mm (0.39 in) dia. (Symmetrical)

(15) Fender attaching hole 10 mm (0.39 in) dia. (Symmetrical)

(16) Front door hinge attaching hole 12 mm (0.47 in) dia. (Symmetrical)

(17) Front door hinge attaching hole 12 mm (0.47 in) dia. (Symmetrical)

(20) Front door switch attaching hole 4.1 mm (0.16 in) dia. (Symmetrical)

(21) Rear door hinge attaching hole 12 mm (0.47 in) dia. (Symmetrical)

(22) Rear door hinge attaching hole 12 mm (0.47 in) dia. (Symmetrical)

(23) Front weather strip attaching hole 5.2 mm (0.20 in) dia. (Symmetrical)

(25) Rear weather strip attaching hole 5.2 mm (0.20 in) dia. (Symmetrical)

(26) Rear door switch attaching hole 4.1 mm (0.16 in) dia. (Symmetrical)

(29) Trim attaching hole 8.5 mm (0.33 in) dia. (Symmetrical)

(30) Pad attaching hole 5 mm (0.20 in) dia. (Symmetrical)

(31) Harness attaching hole 7 mm (0.28 in) dia. (Symmetrical)

(32) Trim attaching hole 8.5 mm (0.33 in) dia. (Symmetrical)

(33) Trim attaching hole 7 mm (0.28 in) dia. (Symmetrical)

(34) Harness attaching hole 7 × 7 mm (0.28 × 0.28 in) (Symmetrical)

(35) Tonneau cover attaching hole 5.5 mm (0.22 in) dia. (Symmetrical)

(36) Rear strut attaching hole 10 mm (0.39 in) dia. (Symmetrical)

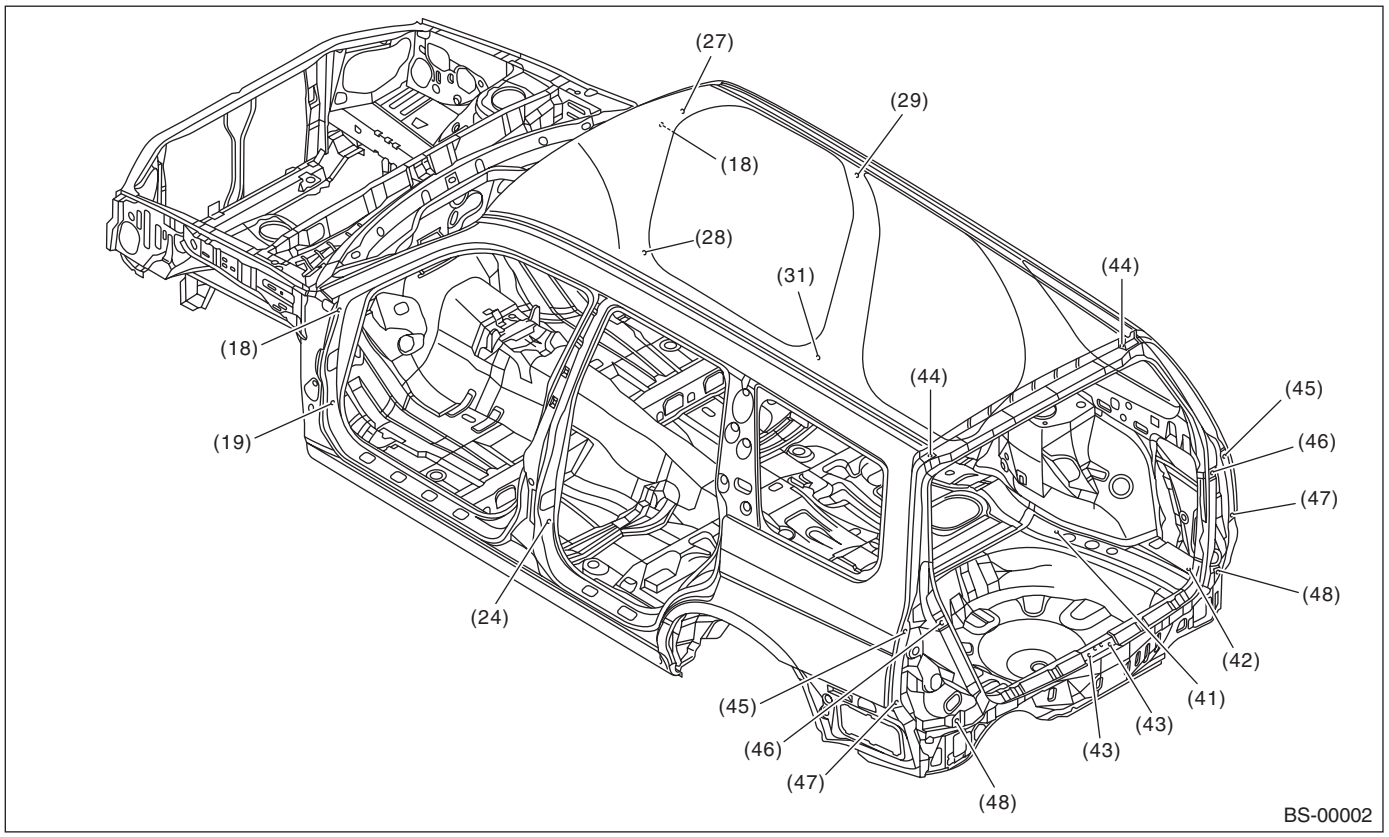
(37) Floor mat attaching hole 8 mm (0.31 in) dia. (Symmetrical)

(38) Trim attaching hole 9 × 9 mm (0.35 × 0.35 in) (Symmetrical)

(39) Trim attaching hole 8 mm (0.31 in) dia. (Symmetrical)

(40) Trim attaching hole 8 mm (0.31 in) dia. (Symmetrical)

Datum Points



(18) Front weather strip attaching hole 5.2 mm (0.20 in) dia. (Symmetrical)

(19) Trim attaching hole 7 mm (0.28 in) dia. (Symmetrical)

(24) Trim attaching hole 7 mm (0.28 in) dia. (Symmetrical)

(27) Front pillar gauge hole 12 mm (0.47 in) dia. (Symmetrical)

(28) Insulator attaching hole 8 mm (0.31 in) dia. (Symmetrical)

(29) Trim attaching hole 8.5 mm (0.33 in) dia. (Symmetrical)

(31) Harness attaching hole 7 mm (0.28 in) dia. (Symmetrical)

(41) Harness attaching hole 7.5 mm (0.30 in) dia.

(42) Assemblies hole 12 mm (0.47 in) dia.

(43) Striker gauge hole 5 mm (0.20 in) dia. (Symmetrical)

(44) Harness attaching hole 7 × 7 mm (0.28 × 0.28 in) dia. (Symmetrical)

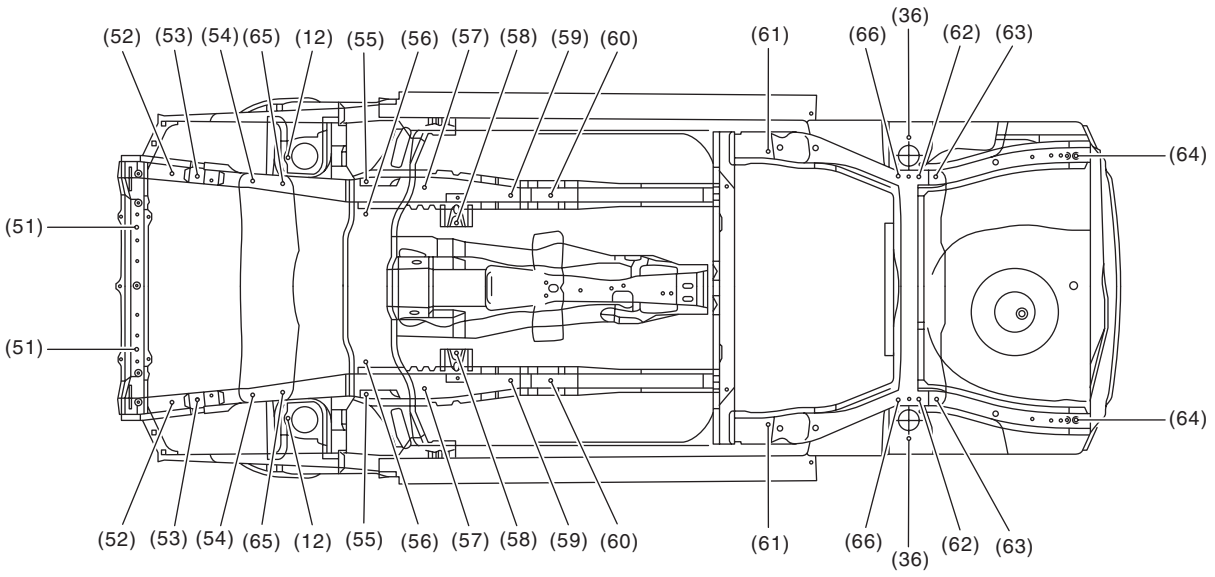
(45) Combination light mounting hole 9.5 mm (0.37 in) dia. (Symmetrical)

(46) Combination light mounting hole 7 mm (0.28 in) dia. (Symmetrical)

(47) Combination light mounting hole 8 × 15 mm (0.31 × 0.59 in) (Symmetrical)

(48) Bumper bracket attaching hole 7 mm (0.28 in) dia. (Symmetrical)

Datum Points



(12) Front strut attaching hole 9.5 mm (0.37 in) dia. (Symmetrical)

(36) Rear strut attaching hole 10 mm (0.39 in) dia. (Symmetrical)

(51) Radiator lower frame gauge hole 12 mm (0.47 in) dia. (Symmetrical)

(52) Side frame gauge hole 20 mm (0.79 in) dia. (Symmetrical)

(53) Subframe attaching hole 16 mm (0.63 in) dia. (Symmetrical)

(54) Front crossmember attaching hole 12.4 mm (0.49 in) dia. (Symmetrical)

(55) Transverse link attaching hole 17 mm (0.69 in) dia. (Symmetrical)

(56) Transverse link attaching hole 16 mm (0.63 in) dia. (Symmetrical)

(57) Subframe attaching hole 16 mm (0.63 in) dia. (Symmetrical)

(58) Transmission crossmember attaching hole 14 mm (0.55 in) dia. (Symmetrical)

(59) Rear side frame gauge hole 15 mm (0.59 in) dia. (Symmetrical)

(60) Rear side frame gauge hole 18 mm (0.71 in) dia. (Symmetrical)

(61) Rear differential attaching hole 16 mm (0.63 in) dia. (Symmetrical)

(62) Rear crossmember gauge hole 16 mm (0.63 in) dia. (Symmetrical)

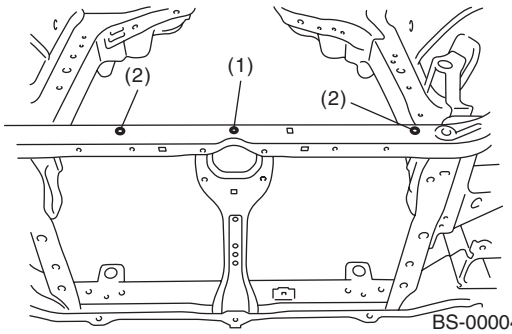
(63) Rear crossmember attaching hole 12 mm (0.47 in) dia. (Symmetrical)

(64) Rear bumper beam attaching hole RH 15 mm (0.57 in) LH 19 × 15 mm (0.75 × 0.59 in) dia.

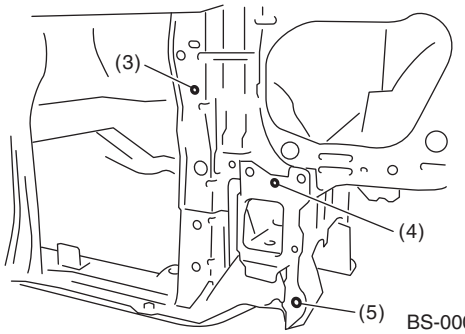
(65) Front crossmember attaching hole 12.4 mm (0.49 in) dia. (Symmetrical)

(66) Rear crossmember attaching hole 16 mm (0.63 in) dia. (Symmetrical)

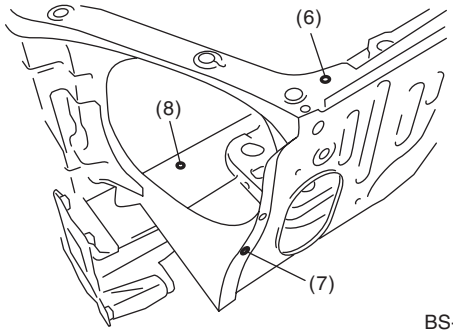
Datum Points



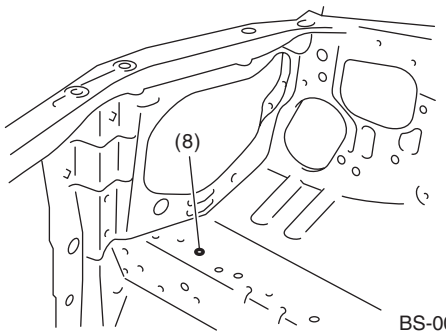
BS-00004



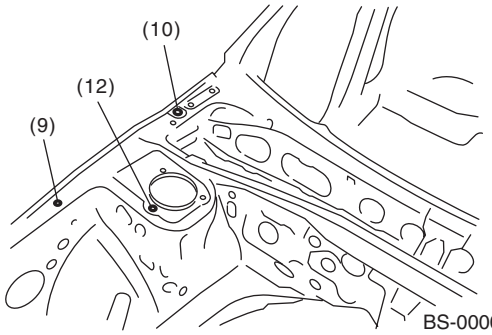
BS-00005



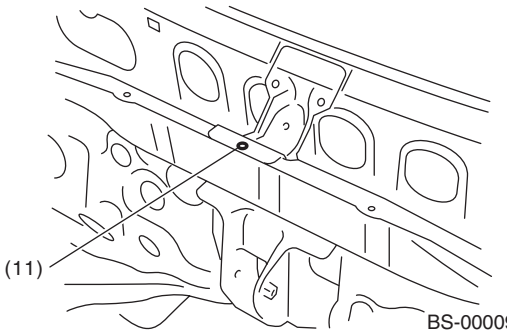
BS-01531



BS-00007



BS-00008



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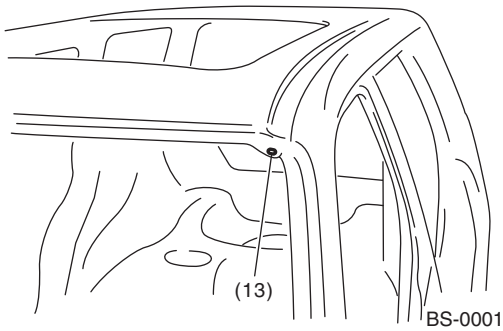

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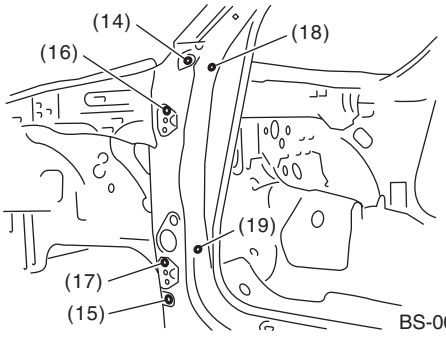

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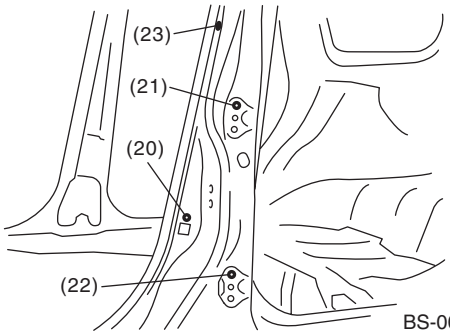

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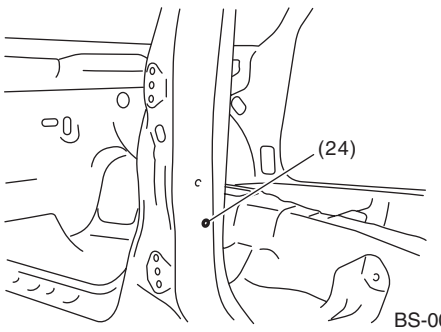
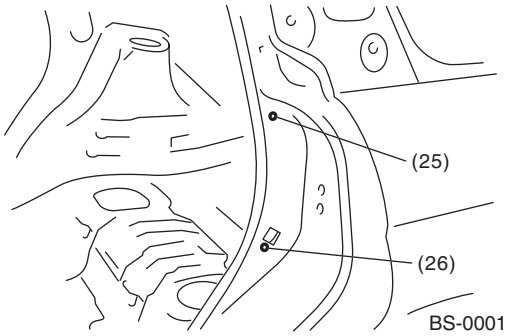
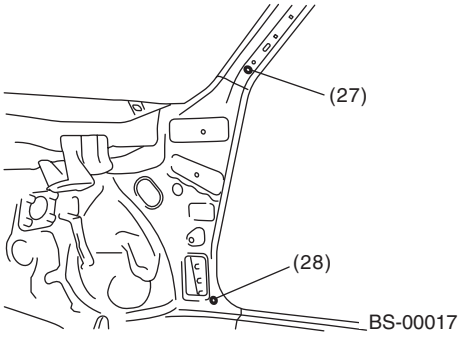
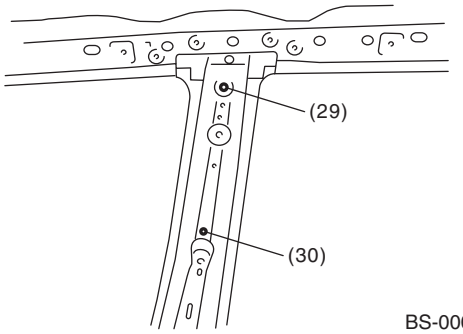


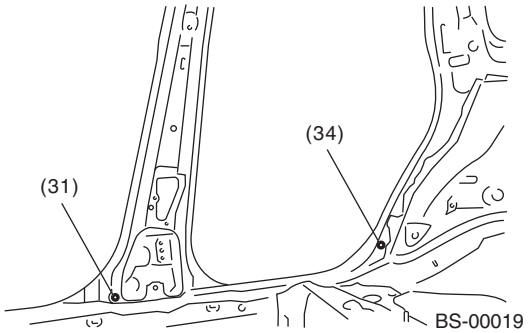
BS-00015

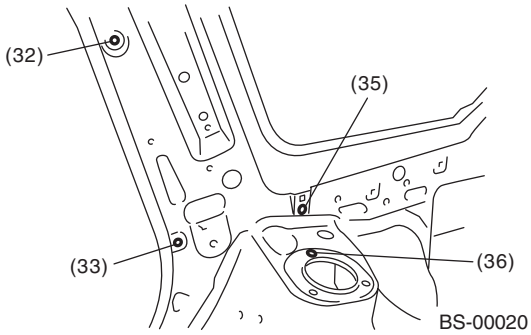
Datum Points

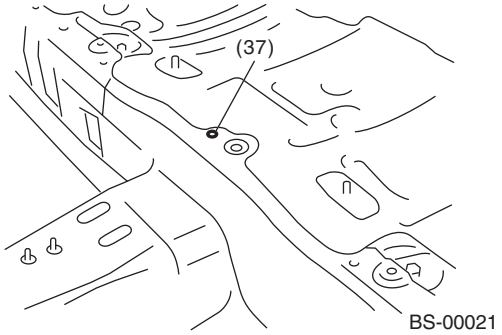


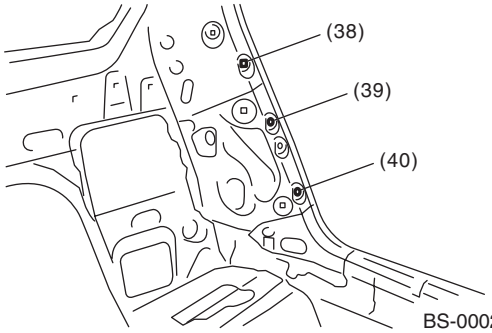


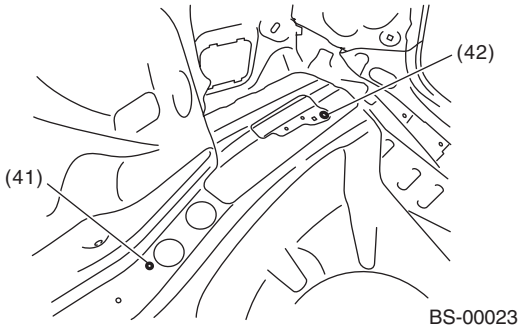


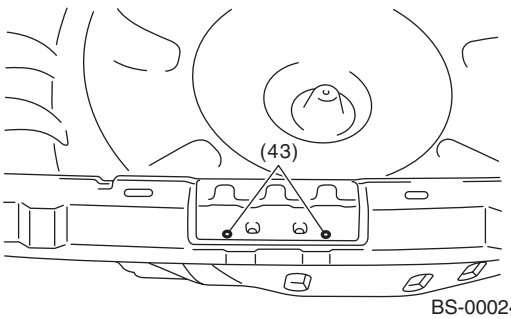


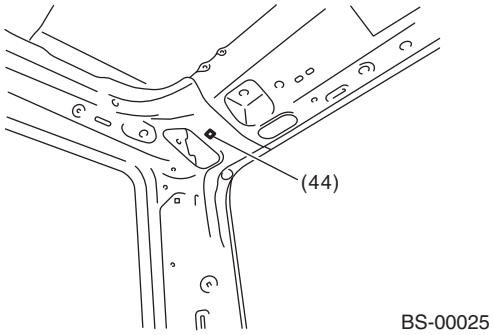


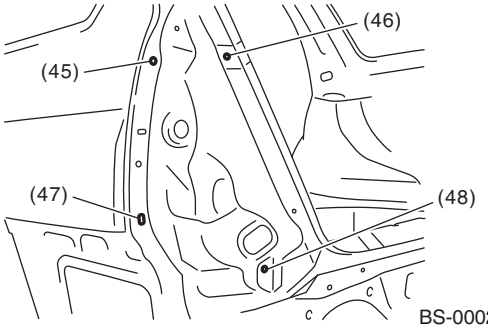




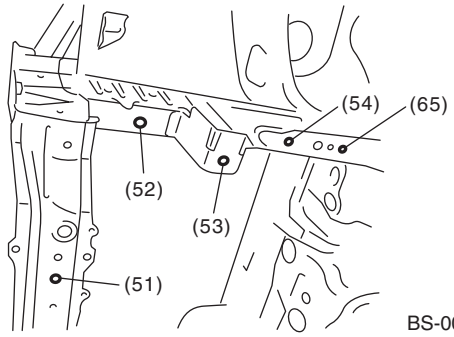




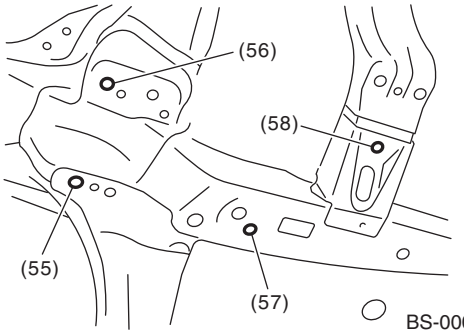




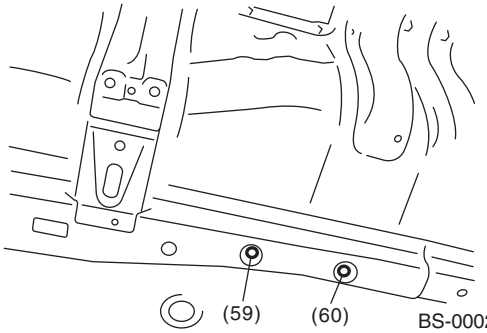
BS-00026



BS-00027



BS-00028



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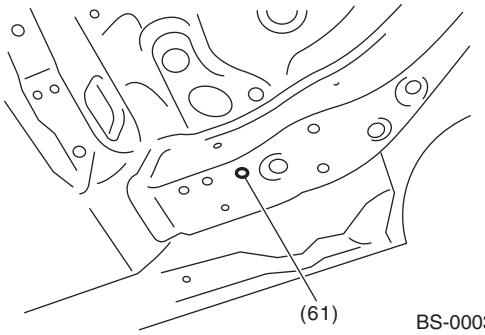
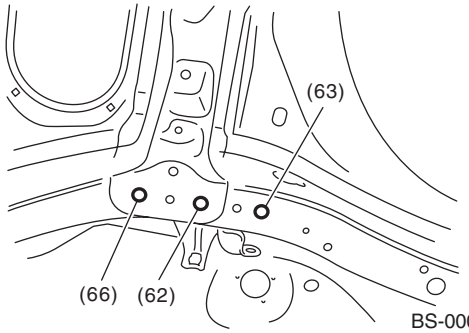
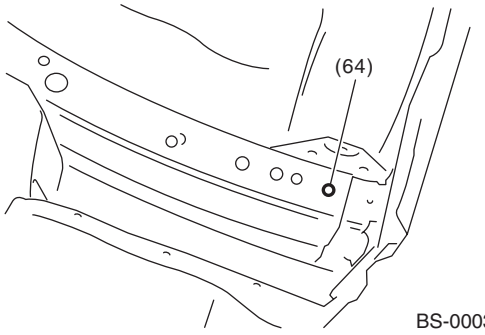


BS-00030



BS-00031



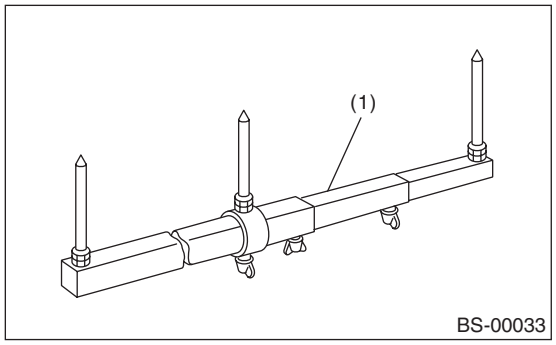
BS-00032

3. Datum Dimensions

A: MEASUREMENT

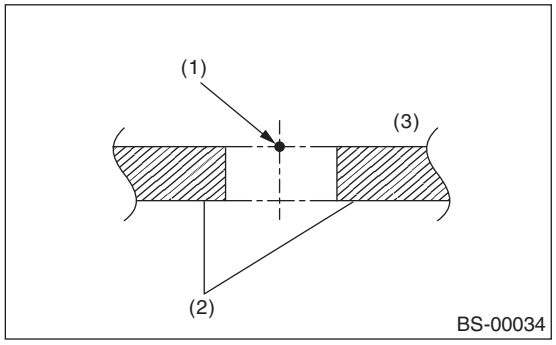
For details concerning points to measure, refer to “Position”. <Ref. to BS-3, LOCATION, Datum Points.>

NOTE:
• Using a tram tracking gauge, measure all the dimensions.
• When using a tape measure, carefully measure dimensions without letting the tape measure sag or twist.
• Measure the linear dimensions between cores of holes.
• Suffixes “RH” and “LH” indicate right-hand and left-hand.



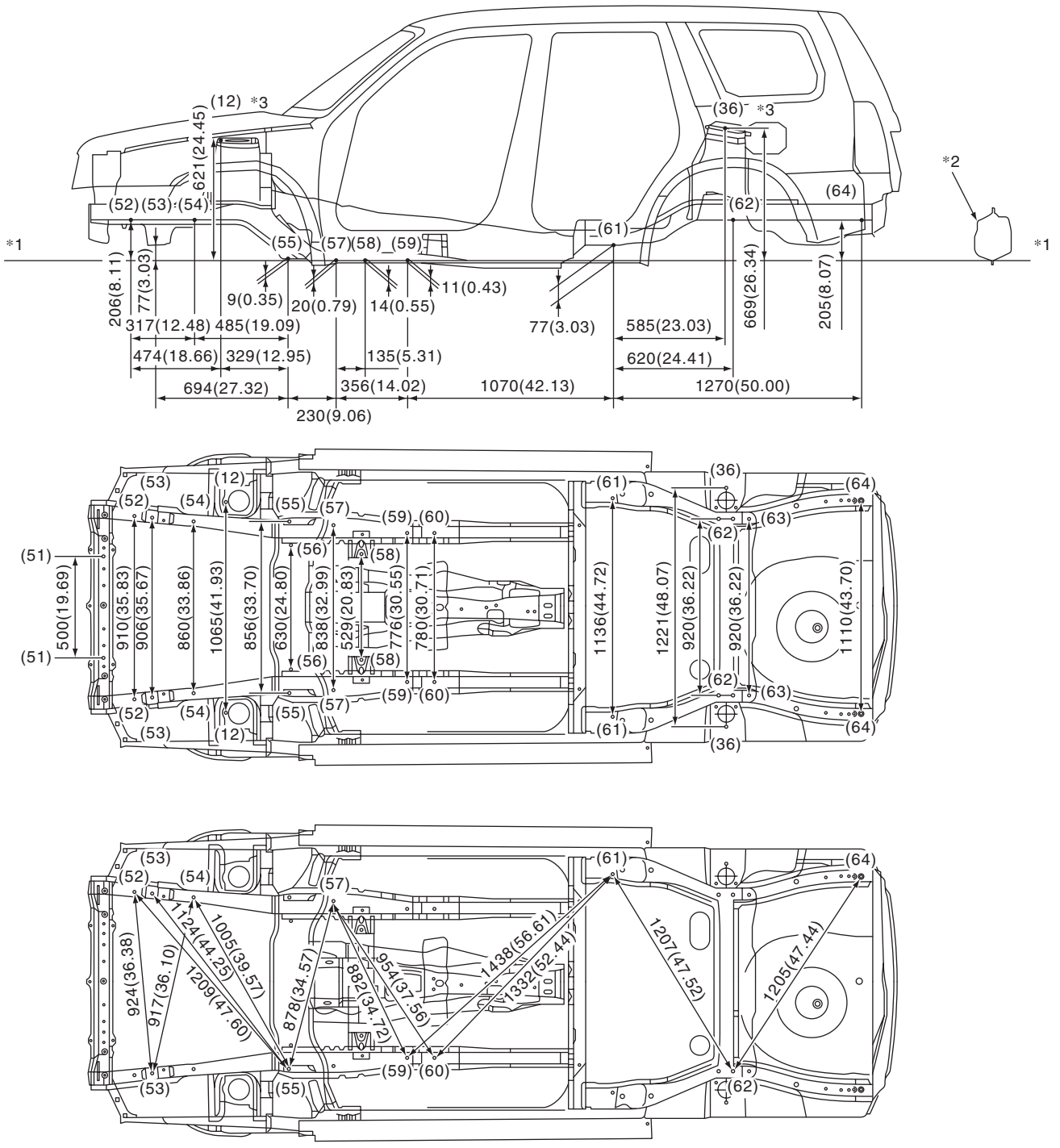
(1) Tram tracking gauge

• Measure at the center of the circle around the outside of the body panel.



(1) Datum points
(2) Body panel
(3) Outside

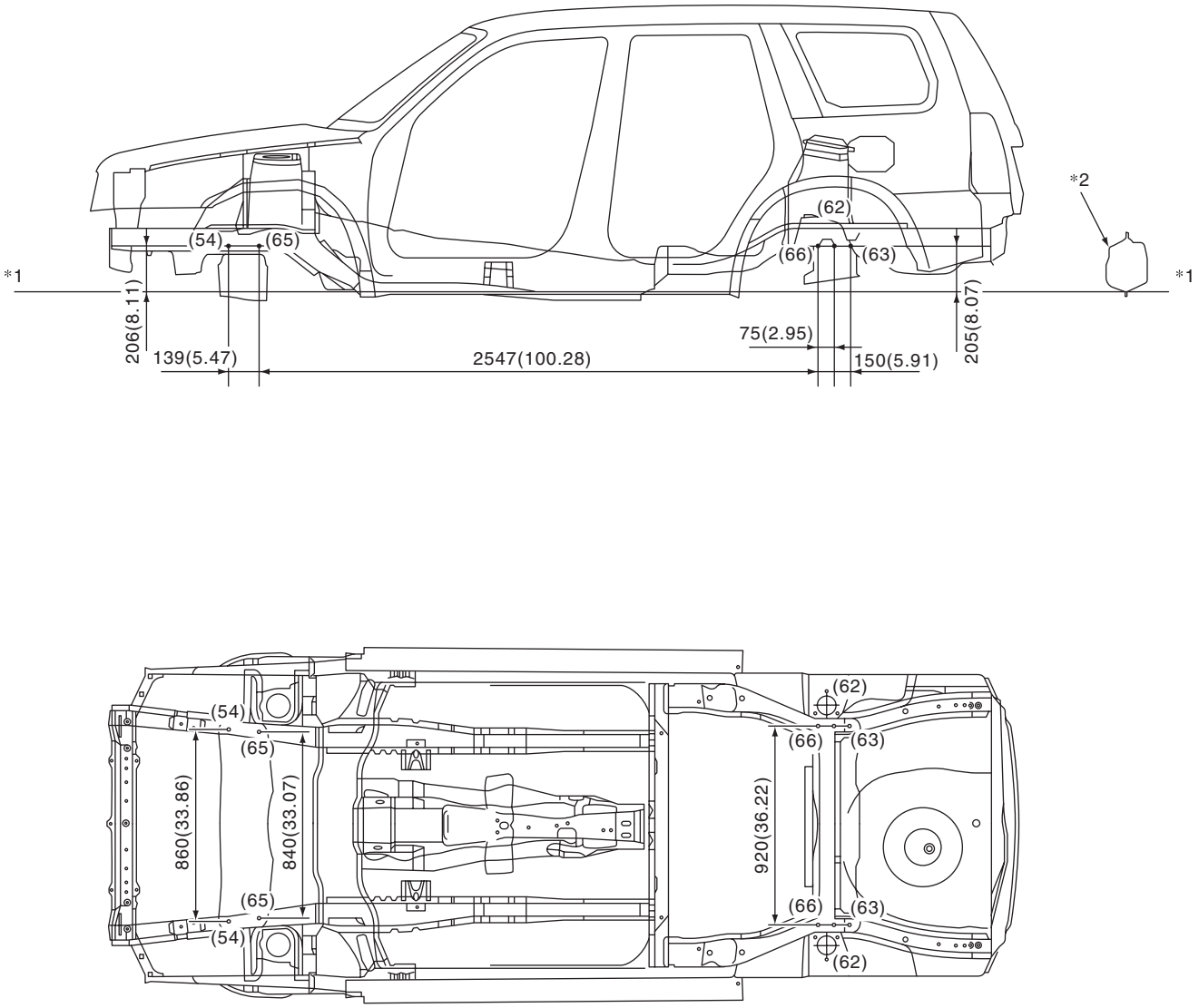
1. CENTER STRUCTURE



BS-00035

*1: Standard Line
*2: Side sill
*3: Upper surface
Unit: mm (in)

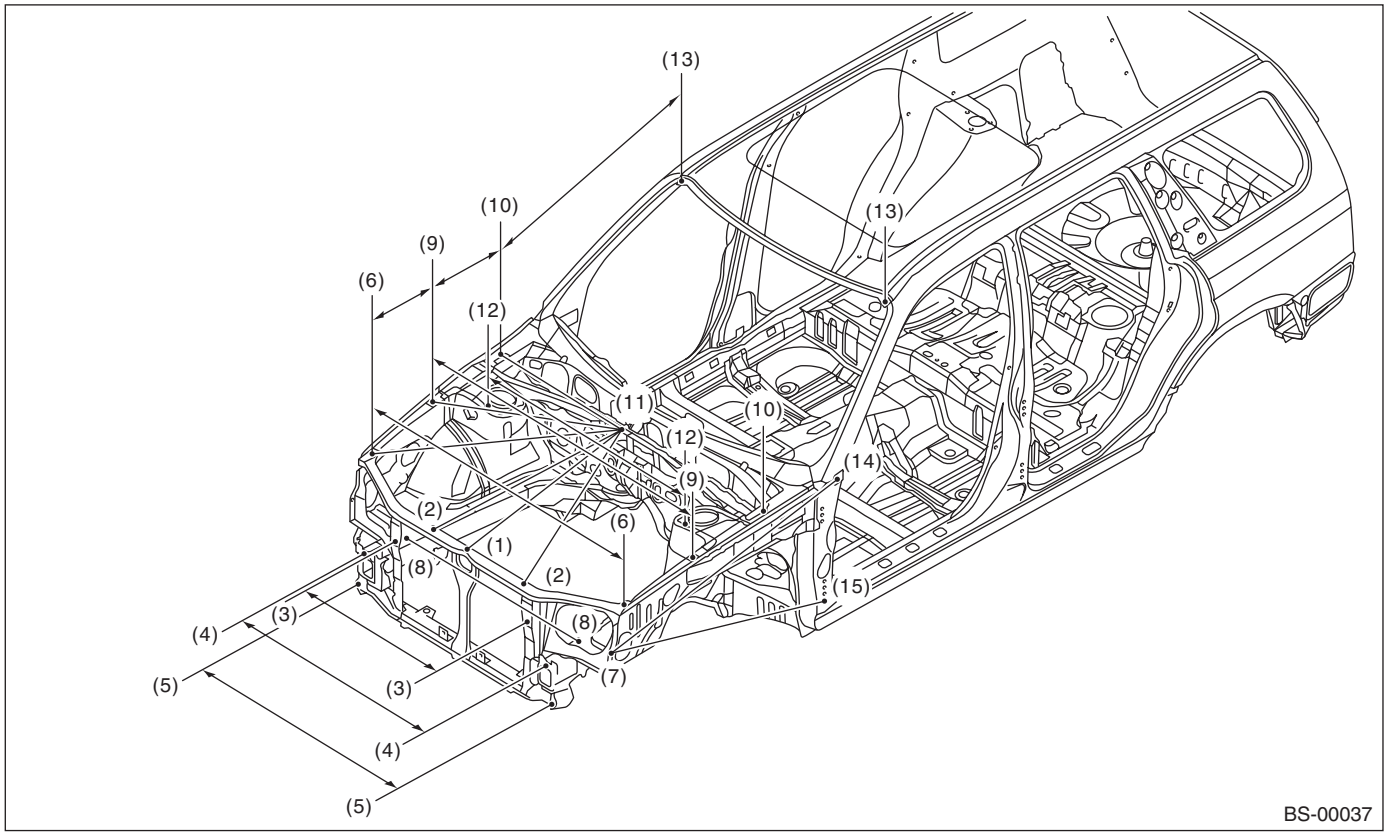
2. SUSPENSION CROSSMEMBER



BS-00036

*1: Standard Line
*2: Side sill
Unit: mm (in)

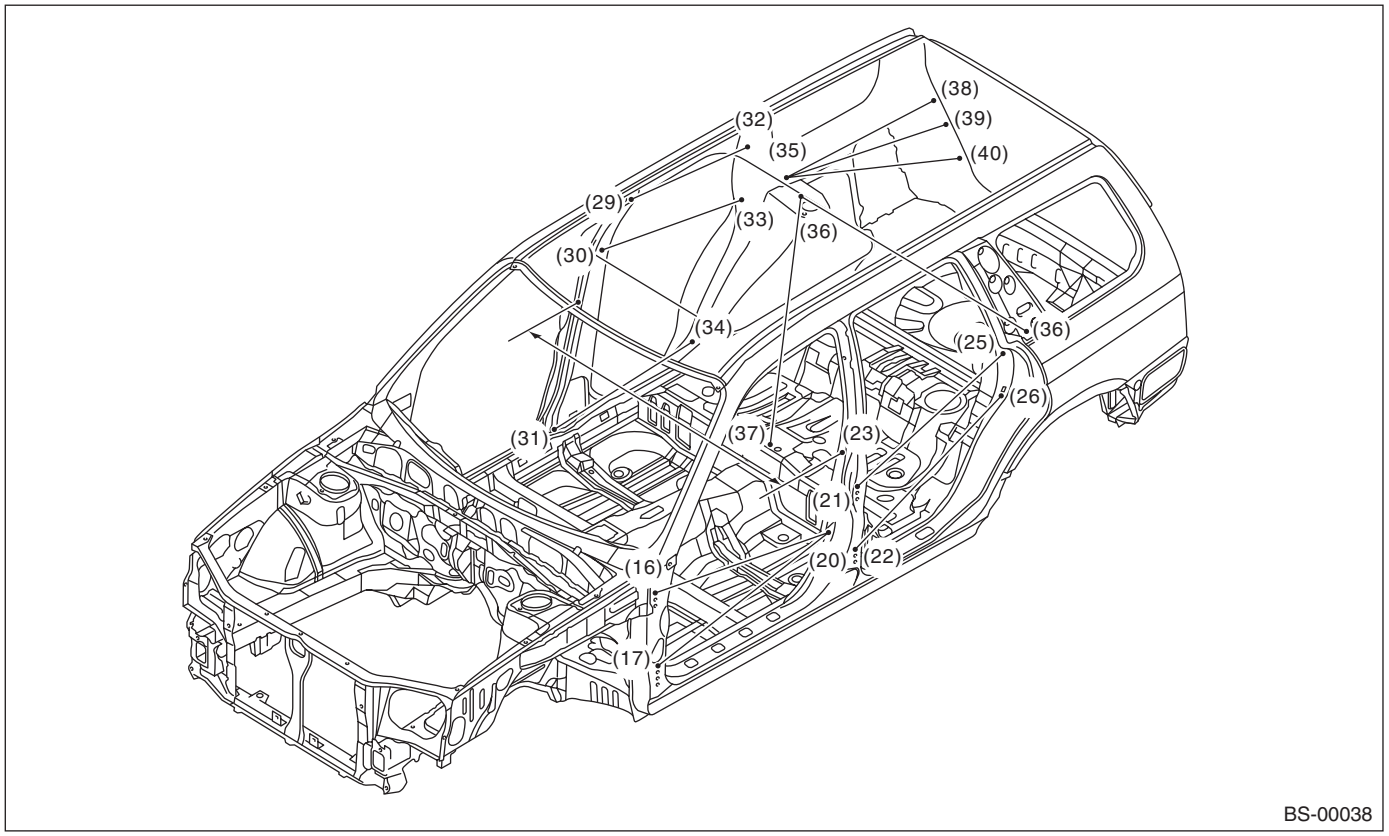
3. FRONT STRUCTURE



Unit: mm (in)

Point of measurement	Dimension	Point of measurement	Dimension
(1) to (11)	822 (32.36)	(7) LH to (15) LH	1,092 (42.99)
(2) RH to (11)	842 (33.15)	(8) RH to (8) LH	921 (36.26)
(2) LH to (11)	875 (34.45)	(9) RH to (9) LH	1,396 (54.96)
(3) RH to (3) LH	716 (28.19)	(9) RH to (10) RH	398 (15.67)
(4) RH to (4) LH	978 (38.50)	(9) LH to (10) LH	398 (15.67)
(5) RH to (5) LH	1,049 (41.30)	(9) RH to (11)	767 (30.20)
(6) RH to (6) LH	1,341 (52.80)	(9) LH to (11)	767 (30.20)
(6) RH to (9) RH	349 (13.74)	(10) RH to (11)	722 (28.43)
(6) LH to (9) LH	349 (13.74)	(10) LH to (11)	722 (28.43)
(6) RH to (11)	944 (37.17)	(10) RH to (13) RH	907 (35.71)
(6) LH to (11)	944 (37.17)	(10) LH to (13) LH	907 (35.71)
(7) RH to (14) RH	1,184 (46.61)	(11) to (12) RH	565 (22.24)
(7) LH to (14) LH	1,184 (46.61)	(11) to (12) LH	565 (22.24)
(7) RH to (15) RH	1,092 (42.99)	(12) RH to (12) LH	1,065 (41.93)

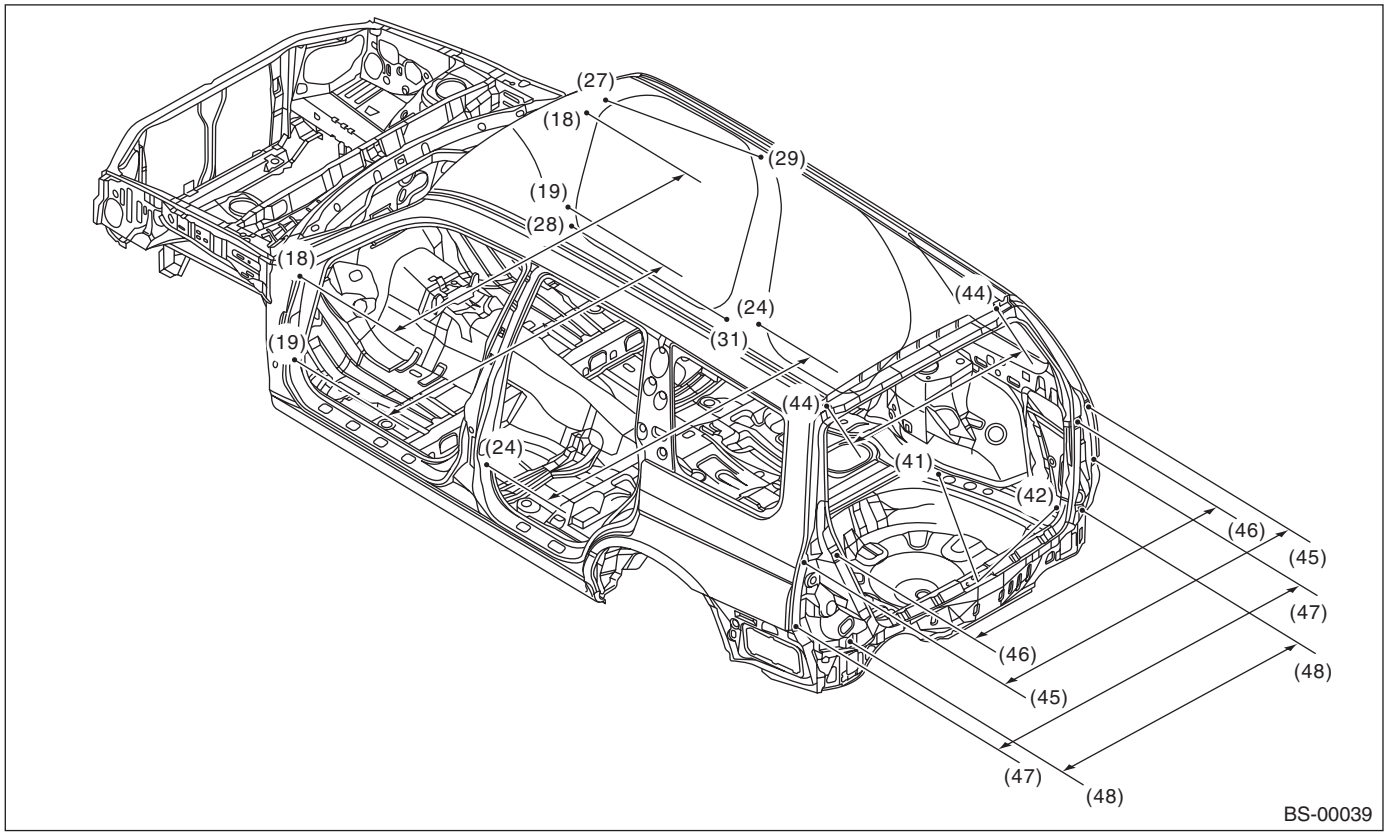
Datum Dimensions



Unit: mm (in)

Point of measurement	Dimension	Point of measurement	Dimension
(16) RH to (20) RH	980 (38.58)	(30) LH to (33) LH	796 (31.34)
(16) LH to (20) LH	980 (38.58)	(31) RH to (34) RH	759 (29.88)
(17) RH to (20) RH	982 (38.66)	(31) LH to (34) LH	759 (29.88)
(17) LH to (20) LH	982 (38.66)	(35) RH to (38) RH	665 (26.18)
(21) RH to (25) RH	853 (33.58)	(35) LH to (38) LH	665 (26.18)
(21) LH to (25) LH	853 (33.58)	(35) RH to (39) RH	711 (27.99)
(22) RH to (26) RH	895 (35.24)	(35) LH to (39) LH	711 (27.99)
(22) LH to (26) LH	895 (35.24)	(35) RH to (40) RH	784 (30.87)
(23) LH to (23) RH	1,429 (56.26)	(35) LH to (40) LH	784 (30.87)
(29) RH to (32) RH	674 (26.54)	(36) LH to (36) RH	1,221 (48.07)
(29) LH to (32) LH	674 (26.54)	(36) RH to (37) RH	1,067 (42.01)
(30) RH to (33) RH	796 (31.34)	(36) LH to (37) LH	1,067 (42.01)

4. REAR STRUCTURE



Unit: mm (in)

Point of measurement	Dimension	Point of measurement	Dimension
(18) RH to (18) LH	1,449 (57.05)	(41) RH to (43) RH	794 (31.26)
(19) RH to (19) LH	1,459 (57.44)	(41) LH to (43) LH	805 (31.69)
(27) RH to (29) RH	1,007 (39.65)	(42) RH to (42) LH	1,110 (43.70)
(27) LH to (29) LH	1,007 (39.65)	(44) RH to (44) LH	878 (34.57)
(28) RH to (31) RH	813 (32.01)	(45) RH to (45) LH	1,474 (58.03)
(28) LH to (31) LH	813 (32.01)	(46) RH to (46) LH	1,252 (49.29)
(24) RH to (24) LH	1,438 (56.61)	(47) RH to (47) LH	1,552 (61.10)
(41) RH to (41) LH	950 (37.40)	(48) RH to (48) LH	1,210 (47.64)

1. General Description

A: CAUTION

• Before disassembling or reassembling parts, always disconnect the battery ground cable from battery. When replacing the radio, control unit, and other parts provided with memory functions, record the memory contents before disconnecting the battery ground cable. Otherwise, the memory is cleared.
• Reassemble the parts in the reverse order of disassembly procedure unless otherwise indicated.
• Adjust parts to the given specifications.
• Connect the connectors and hoses securely during reassembly.
• After reassembly, make sure functional parts operate smoothly.

B: PREPARATION TOOL

1. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance and voltage.

2. Horn System

A: WIRING DIAGRAM

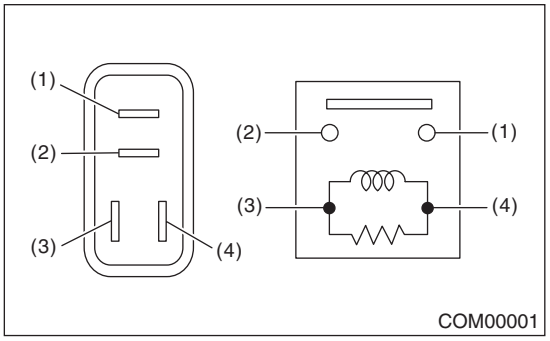
1. HORN

<Ref. to WI-137, WIRING DIAGRAM, Horn System.>

B: INSPECTION

1. HORN RELAY

Measure the security horn relay resistance between terminals (indicated in the table below) when connecting terminal No. 4 to battery positive terminal and terminal No. 3 to battery ground terminal.

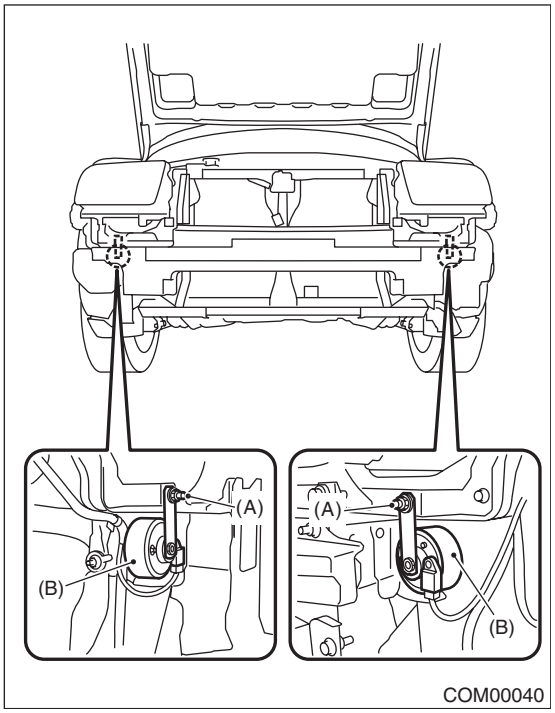


Continuity	Terminal No.	Standard
Yes	1 and 2	Less than 1 Ω
No		1 MΩ or more

3. Horn

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the front bumper. <Ref. to EI-20, REMOVAL, Front Bumper.>
3) Remove the horn bracket mounting bolt (A).
4) Disconnect the harness connector and remove the horn assembly (B).

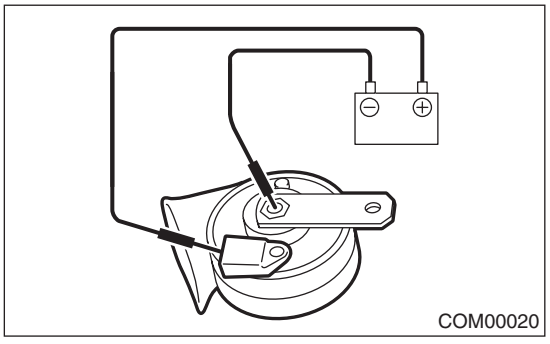


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

With 12 V direct current supply between horn terminal and case ground, check that the horn sounds properly.



4. Horn Switch

A: REMOVAL

WARNING:
Before servicing, be sure to read the notes in the AB section for proper handling of the driver's airbag module. <Ref. to AB-4, CAUTION, General Description.>

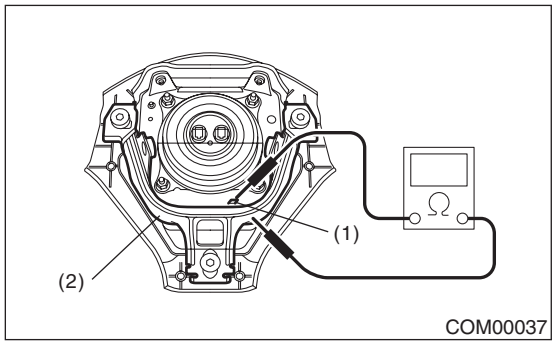
NOTE:
Horn switch is a unit with the driver's airbag module.
1) Disconnect the ground cable from battery and wait for at least 20 seconds before starting work.
2) Remove the driver's airbag module. <Ref. to AB-14, REMOVAL, Driver's Airbag Module.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the resistance between horn switch terminal and airbag module bracket.

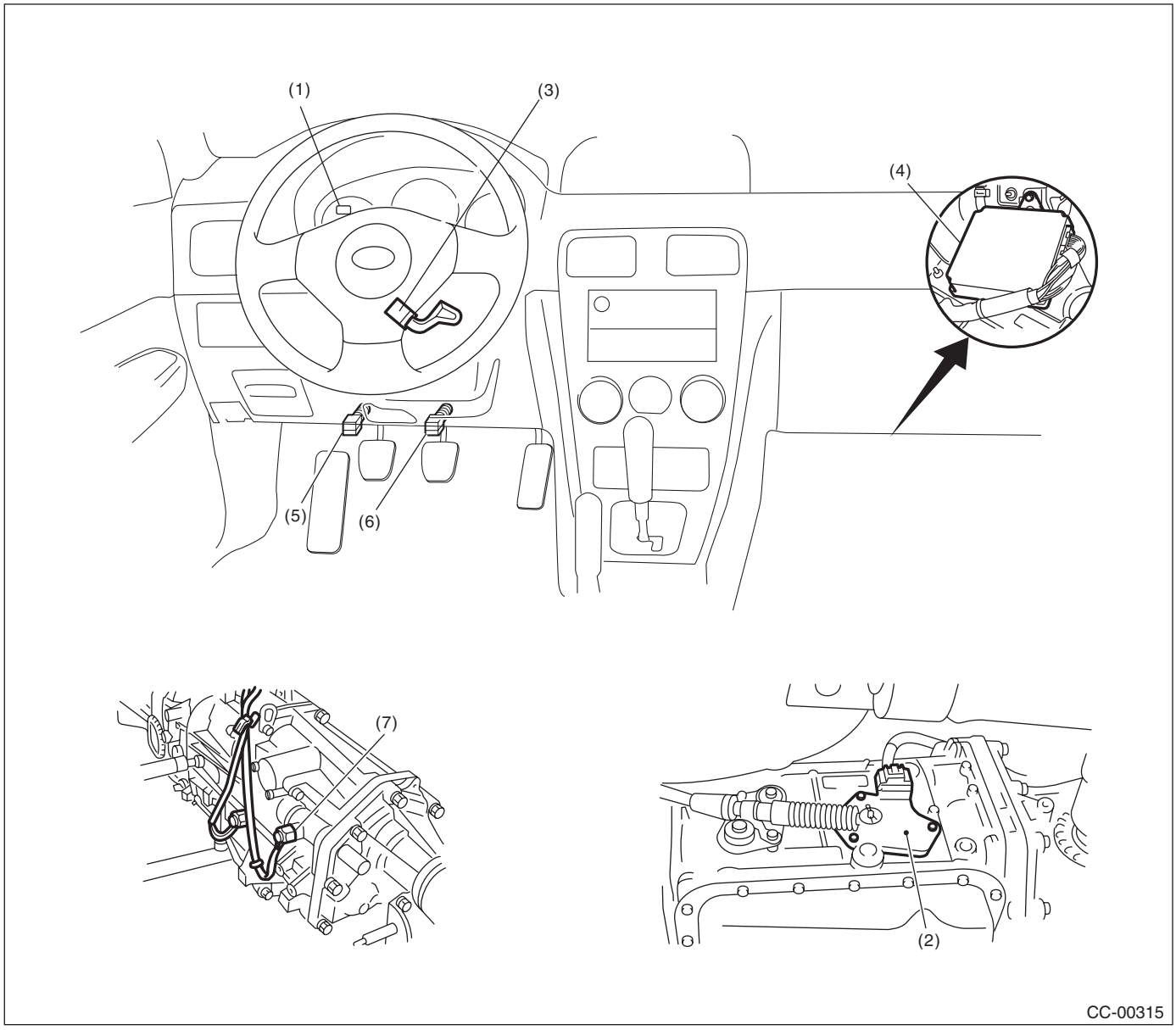


(1) Horn switch terminal
(2) Airbag module bracket

Switch position	Terminal No.	Resistance
When airbag module bracket is pushed	Horn switch terminal and airbag module bracket	Less than 1 Ω
When airbag module bracket is separated		1 MΩ or more

1. General Description

A: COMPONENT



(1) Cruise indicator and cruise set indicator light
(2) Inhibitor switch (AT model)
(3) Cruise control command switch
(4) Engine control module (ECM)
(5) Clutch switch (MT model)
(6) Stop light & brake switch
(7) Neutral position switch (MT model)

B: CAUTION

- Before disassembling or reassembling parts, always disconnect the battery ground cable from battery. When repairing the radio, control module, etc. which are provided with memory functions, record the memory contents before disconnecting the ground cable from battery. All memory is cleared.
- Reassemble the parts in the reverse order of disassembly unless otherwise indicated.
- Adjust the parts to specifications specified in this manual.
- Connect the connectors and hoses securely during reassembly.
- After reassembly, ensure functional parts operate properly.

C: PREPARATION TOOL

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance and voltage.
TORX® bit T30	Used for removing the cruise control command switch.

2. Cruise Control Unit

A: NOTE

The control of cruise control system is carried out in engine control module (ECM).

B: REMOVAL

- SOHC MODEL <Ref. to FU(H4SO)-41, REMOVAL, Engine Control Module (ECM).>
- DOHC MODEL <Ref. to FU(H4DOTC)-46, REMOVAL, Engine Control Module (ECM).>

C: INSTALLATION

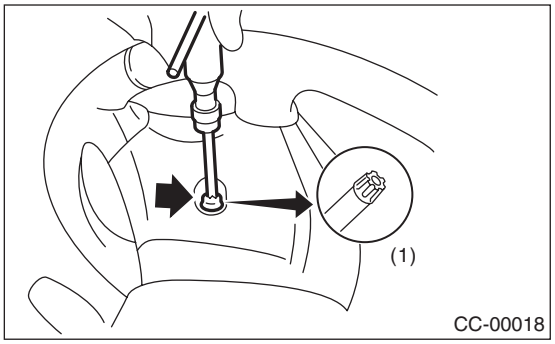
- SOHC MODEL <Ref. to FU(H4SO)-41, INSTALLATION, Engine Control Module (ECM).>
- DOHC MODEL <Ref. to FU(H4DOTC)-46, INSTALLATION, Engine Control Module (ECM).>

3. Cruise Control Command Switch

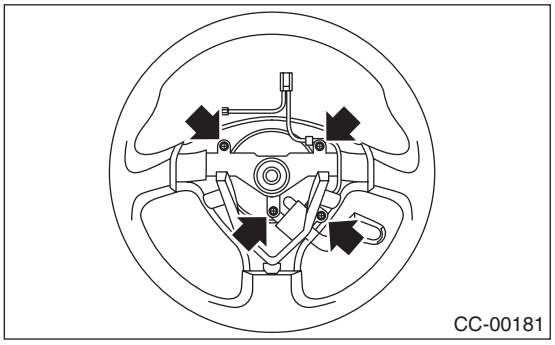
A: REMOVAL

WARNING:
Before servicing, be sure to read the notes in the "AB" section for proper handling of the driver's airbag module. <Ref. to AB-4, CAUTION, General Description.>

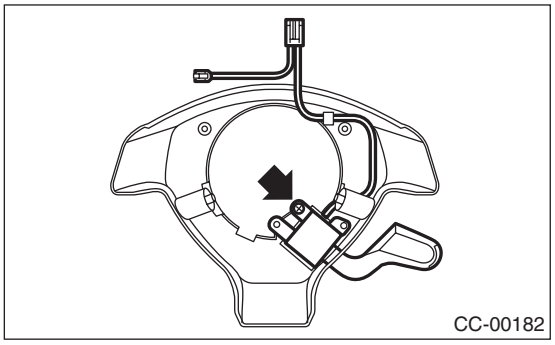
1) Set the front wheels in straight ahead position.
2) Turn the ignition switch to OFF.
3) Disconnect the ground cable from battery and wait for at least 20 seconds before starting work.
4) Using TORX® bit T30 (1), loosen the two TORX® bolts which secure driver's airbag module.



5) Disconnect the airbag module connector on back of the airbag module.
6) Remove the steering wheel. <Ref. to PS-13, REMOVAL, Steering Wheel.>
7) Remove the four screws to remove the lower cover from steering wheel.



8) Remove one screw to remove the cruise control command switch from lower cover.

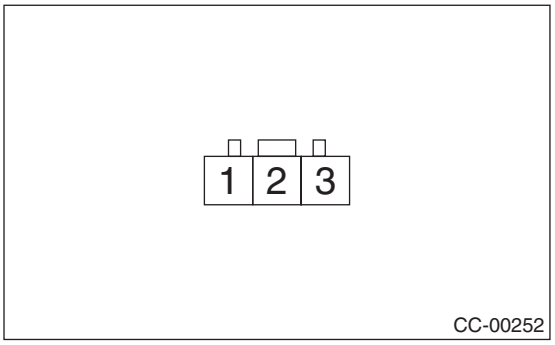


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the cruise control command switch resistance.



Switch	Position	Terminal No.	Standard value
CANCEL SET/COAST RESUME/ ACCEL	All OFF	2 and 3	Approx. 4 kΩ
CANCEL	ON	2 and 3	Less than 1 Ω
SET/COAST	ON	2 and 3	Approx. 250 Ω
RESUME/ ACCEL	ON	2 and 3	Approx. 1500 Ω
MAIN	OFF	1 and 2	1 MΩ or more
	ON	1 and 2	Less than 1 Ω

If NG, replace the cruise control command switch.

4. Stop Light & Brake Switch

A: NOTE

Refer to “BR section” for stop light & brake switch.
<Ref. to BR-52, Stop Light Switch.>

5. Clutch Switch

A: NOTE

Refer to “CL section” for clutch switch. <Ref. to CL-29, Clutch Switch.>

6. Inhibitor Switch

A: NOTE

Refer to “4AT section” for inhibitor switch. <Ref. to 4AT-47, Inhibitor Switch.>

7. Neutral Position Switch

A: NOTE

Refer to “5MT section” for neutral position switch.
<Ref. to 5MT-36, Switches and Harness.>

1. Basic Diagnostic Procedure

A: PROCEDURE

	Step	Check	Yes	No
1	**CHECK MALFUNCTION INDICATOR LIGHT.** Check that malfunction indicator light illuminates.	Does the malfunction indicator light illuminate?	Go to step **5**.	Go to step **2**.
2	**CHECK CRUISE INDICATOR LIGHT.** Make sure the cruise indicator light blinks.	Does the cruise indicator light blink?	Go to step **5**.	Go to step **3**.
3	**CHECK CRUISE CONTROL MAIN SWITCH OPERATION.** Check cruise control main switch operation. (Ensure the cruise indicator light illuminates.)	Is the cruise control main switch turned on? (Does the cruise indicator light illuminate?)	Go to step **4**.	Go to symptom 1. <Ref. to CC(ETC)(diag)-9, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
4	**CHECK CRUISE CONTROL SET OPERATION.** Check the cruise control set operation.	Can the cruise control be set while driving at more than 40 km/h (25 MPH)?	Go to step **6**.	Go to step **5**.
5	**PERFORM CRUISE CONTROL CANCEL CONDITIONS DIAGNOSIS.** Perform the cruise cancel conditions diagnosis.	Is DTC displayed?	Go to “List of Diagnostic Trouble Code (DTC).” <Ref. to CC(ETC)(diag)-13, List of Diagnostic Trouble Code (DTC).>	Go to symptom 2. <Ref. to CC(ETC)(diag)-9, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
6	**CHECK VEHICLE SPEED IS HELD WITHIN SET SPEED.** Make sure the vehicle speed is held within set speed.	Is the vehicle speed kept within setting speed ±3 km/h (±2 MPH) ? (Make sure that on a level road.)	Go to step **7**.	Go to symptom 3. <Ref. to CC(ETC)(diag)-9, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
7	**CHECK RESUME/ACCEL OPERATION.** Check the RESUME/ACCEL switch operation.	Does the vehicle speed increase or return to set speed after RESUME/ACCEL switch has been pressed?	Go to step **8**.	Go to symptom 4. <Ref. to CC(ETC)(diag)-9, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
8	**CHECK SET/COAST OPERATION.** Check the SET/COAST switch operation.	Does the vehicle speed decrease after SET/COAST switch has been pressed?	Go to step **9**.	Go to symptom 5. <Ref. to CC(ETC)(diag)-9, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>

	Step	Check	Yes	No
9	**CHECK CANCEL OPERATION.** Check the CANCEL switch operation.	Is the cruise control released after CANCEL switch has been pressed?	Go to step **10**.	Go to symptom 6. <Ref. to CC(ETC)(diag)-9, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
10	**CHECK CRUISE CONTROL RELEASE OPERATION.** Check the cruise control release operation.	Is the cruise control released after brake pedal has been depressed?	Go to step **11**.	Go to symptom 7. <Ref. to CC(ETC)(diag)-9, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
11	**CHECK CRUISE CONTROL RELEASE OPERATION.** Check the cruise control release operation.	Is the cruise control released after depressing the clutch pedal?	Go to step **12**.	Go to symptom 8. <Ref. to CC(ETC)(diag)-9, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
12	**CHECK CRUISE CONTROL RELEASE OPERATION.** Check the cruise control release operation.	Is the cruise control released after shifting to the neutral position?	Finish the diagnosis.	Go to symptom 9. <Ref. to CC(ETC)(diag)-9, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>

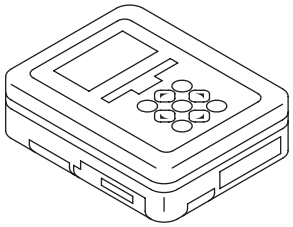
2. General Description

A: CAUTION

- Do not use electrical test equipment on all airbag system wiring harnesses and connector circuits.
- Be careful not to damage the airbag system wiring harness when servicing the cruise control command switch. Airbag system wiring harness is routed near the cruise control command switch.

B: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST1B021XU0	1B021XU0	SUBARU SELECT MONITOR III KIT	Troubleshooting for the electrical system.

2. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance, voltage and current.

C: INSPECTION

1. BATTERY

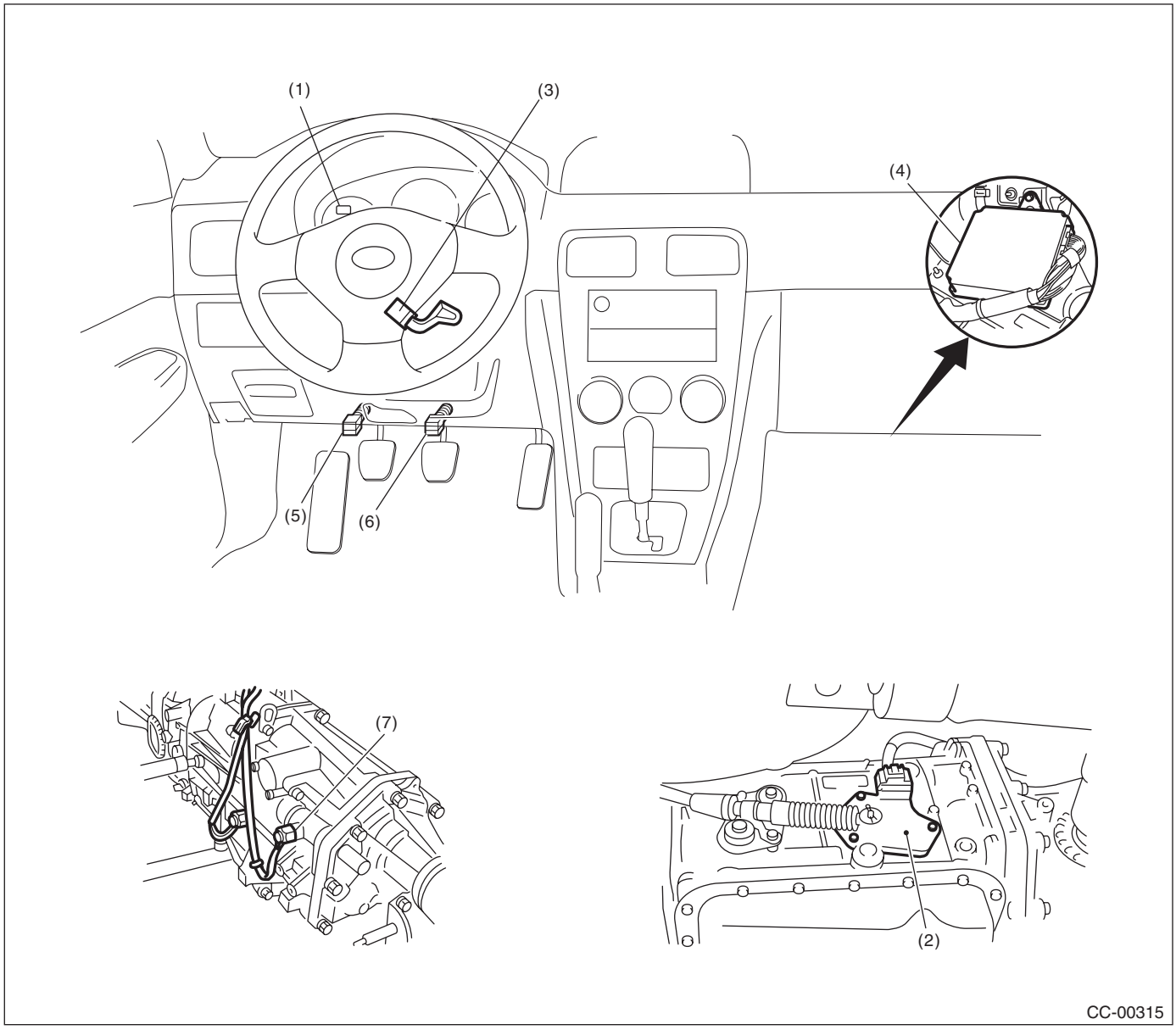
Measure the battery voltage and specific gravity of electrolyte.

Standard voltage:
12 V or more

Specific gravity:
1.260 or more

3. Electrical Component Location

A: LOCATION



(1) Cruise indicator light and cruise set indicator light
(2) Inhibitor switch (AT model)
(3) Cruise control command switch
(4) Engine control module (ECM)
(5) Clutch switch (MT model)
(6) Stop light & brake switch
(7) Neutral position switch (MT model)

4. Engine Control Module (ECM) I/O Signal

A: WIRING DIAGRAM

<Ref. to WI-99, NON-TURBO MODEL, WIRING DIAGRAM, Cruise Control System.>
<Ref. to WI-102, TURBO MODEL, WIRING DIAGRAM, Cruise Control System.>

5. Subaru Select Monitor

A: OPERATION

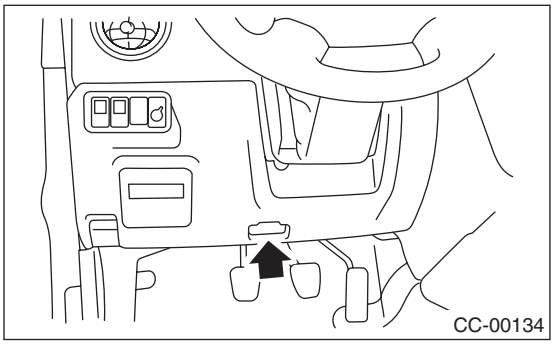
1. GENERAL DESCRIPTION

The on-board diagnosis function of the cruise control system uses Subaru Select Monitor.
The on-board diagnosis function operates in two categories, which are used depending on the type of problems;
1) Cruise Control Cancel Conditions Diagnosis:
(1) This category of diagnosis requires actual vehicle driving in order to determine the cause, as when cruise speed is cancelled during driving although cruise cancel condition is not entered.
(2) Cruise control memory in ECM stores the cancel condition (Code No.) which occurred during driving. When there are multiple cancel conditions (Code No.), they are shown on the Subaru Select Monitor.

CAUTION:
• The cruise control memory stores not only the cruise "cancel" which occurred (although "cancel" operation is not entered by the driver), but also the "cancel" condition input by the driver.
• The latest content of memory (current code) is cleared when ignition switch is turned to OFF. However, the content of memory for troubleshooting switches related to the system or cruise control, is stored as a diagnostic history (memory code) even after the ignition switch has been turned to OFF.
2) Real-time Diagnosis:
Real-time diagnosis function is used to determine whether or not the input signal system is in good order, according to signal emitted from switches, sensors, etc.
(1) Vehicle cannot be driven at cruise speed when the problem occurs in the cruise control system or relevant circuits.
(2) Monitor the signal conditions from switches and sensors.

2. CRUISE CONTROL CANCEL CONDITIONS DIAGNOSIS

1) Prepare the Subaru Select Monitor kit.
2) Connect the diagnosis cable to the Subaru Select Monitor.
3) Connect the Subaru Select Monitor to the data link connector.
(1) Data link connector is located in the lower portion of the instrument panel (on the driver's side).



(2) Connect the diagnosis cable to the data link connector.
4) Start the engine and turn the cruise control main switch to ON.
5) Run the Subaru Select Monitor.
6) Turn the Subaru Select Monitor switch to ON. On the «Main Menu» display screen, select the {2. Each System Check}.
On the system selection display screen, select the {Engine Control System}. Select the [OK] after the information of engine type is displayed.
7) Drive vehicle at 40 km/h (25 MPH) or more and set the cruise control.

CAUTION:
• When performing diagnosis, observe the legal speed limit on the road.
• DTC will also appear when cruise control is cancelled by the driver's operation. Do not confuse them.
• Make sure an assistant is present in order to support diagnosis while driving. Have the assistant operate the select monitor.

8) If the set cruise speed is canceled by itself (without any cancel operations) or if the cruise control cannot be set by performing the set operation, a DTC will appear on select monitor display when {Check Cancel Code} is selected on the engine malfunction diagnosis display screen.

NOTE:
The DTC has a {Current code} and {Memory code}. {Current code} displays the latest code that occurred in this check drive, and {Memory code} displays the code recorded in the previous driving condition. Also, DTC's for diagnosis of switches relating to the system and cruise control are listed in the {Memory code}.

9) Clear the engine DTC memory. <Ref. to EN(H4SO)(diag)-63, OPERATION, Clear Memory Mode.> <Ref. to EN(H4DOTC)(diag)-54, OPERATION, Clear Memory Mode.>
The DTC of system and cruise control switches are cleared by a memory clear operation for the engine.

NOTE:
DTC will be cleared by turning ignition switch to OFF.

3. REAL-TIME DIAGNOSIS

1) Connect the Subaru Select Monitor.
2) Turn the ignition switch and cruise control main switch to ON.
3) Run the Subaru Select Monitor.
4) Turn the Subaru Select Monitor switch to ON. On the «Main Menu» display screen, select the {2. Each System Check}.
5) On the «System Selection Menu» display screen, select the {Engine Control System} and select the [OK].
6) Select the [OK] after the information of engine type has been displayed.
7) On the «Engine Diagnosis» screen, select the {Current Data Display/Save}.
8) Make sure that normal indication is displayed when controls are operated as indicated below:
- Depress and release the brake pedal. (Stop light switch and brake switch are turned to ON.)
- Turn the «SET/COAST» switch to ON.
- Turn the «RESUME/ACCEL» switch to ON.
- Turn the «CANCEL» switch to ON. (The «SET/COAST» switch and «RESUME/ACCEL» switch are turned to ON at the same time.)
- Depress or release the clutch pedal.
- Place the shift lever in any position other than neutral.

NOTE:
- For details concerning the operation procedure, refer to the «PC application for Subaru Select Monitor».
- For the DTC, refer to the List of Diagnostic Trouble Code (DTC). <Ref. to CC(ETC)(diag)-13, List of Diagnostic Trouble Code (DTC).>

6. Diagnostics with Phenomenon

A: DIAGNOSTIC PROCEDURE WITH PHENOMENON

	Symptom	Repair area	Reference
1	Cruise control main switch is not turned to ON. (Cruise indicator light does not illuminate.)	(1) Check the cruise indicator light.	<Ref. to CC(ETC)(diag)-11, CHECK CRUISE INDICATOR LIGHT, Diagnostics with Phenomenon.>
		(2) Check the cruise control command switch.	<Ref. to CC(ETC)(diag)-15, DTC 11, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-22, DTC 15, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-23, DTC 21, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-24, DTC 24, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-25, DTC 65, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
2	Cruise control cannot be set.	(1) Check the cruise control command switch.	<Ref. to CC(ETC)(diag)-15, DTC 11, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-22, DTC 15, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-23, DTC 21, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-24, DTC 24, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-25, DTC 65, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(2) Check stop light switch and brake switch.	<Ref. to CC(ETC)(diag)-17, DTC 12, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-24, DTC 25, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-25, DTC 61, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(3) Check clutch switch.	<Ref. to CC(ETC)(diag)-19, DTC 13, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(4) Check the neutral switch.	<Ref. to CC(ETC)(diag)-21, DTC 14, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-25, DTC 62, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(5) Check vehicle speed sensor.	<Ref. to CC(ETC)(diag)-24, DTC 22, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-24, DTC 32, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-25, DTC 63, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
3	Vehicle speed is not held within set speed ±3 km/h (±2 MPH).	Check the vehicle speed sensor.	<Ref. to CC(ETC)(diag)-24, DTC 22, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-24, DTC 32, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-25, DTC 63, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

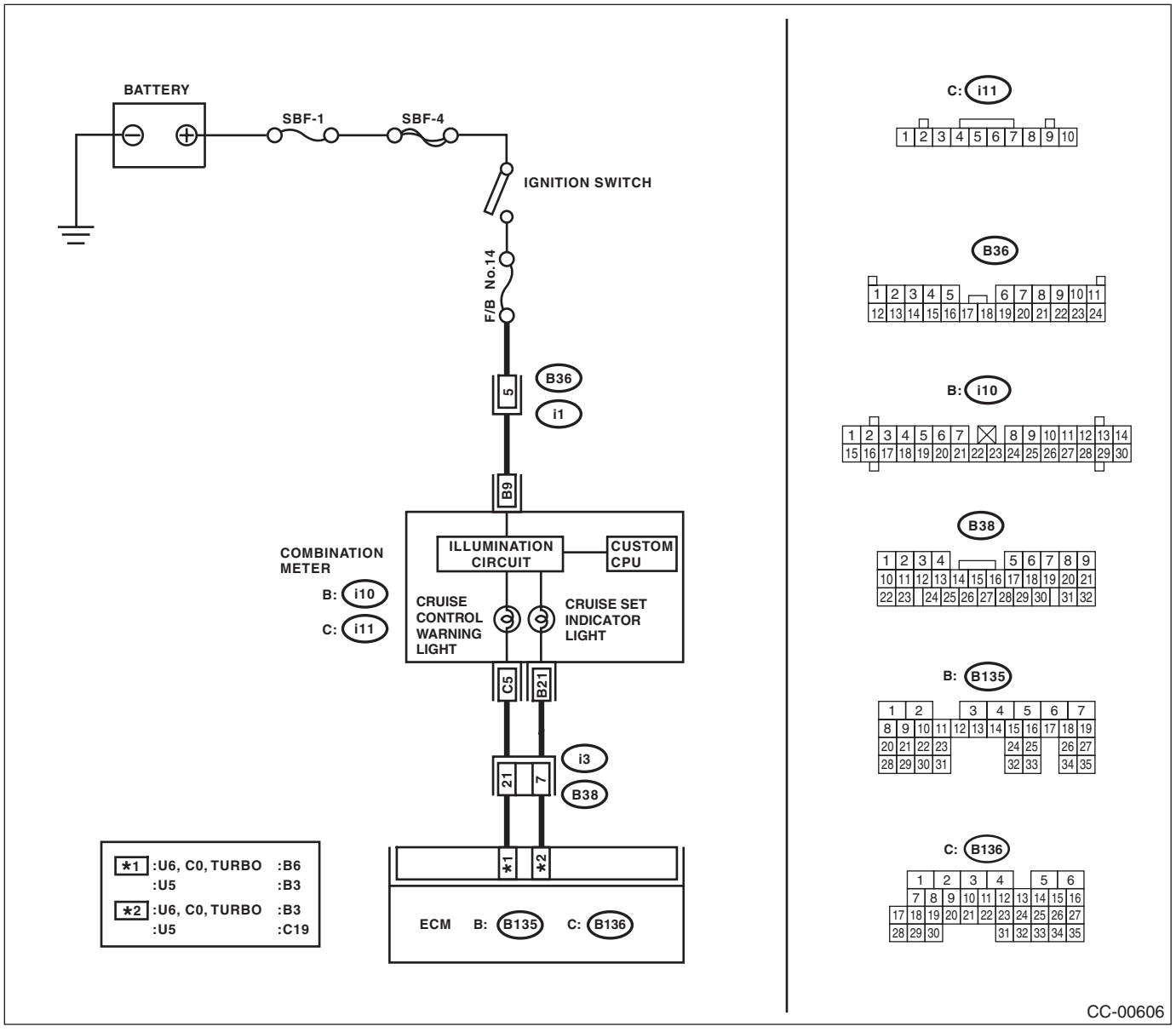
Symptom		Repair area	Reference
4	Vehicle speed does not increase or does not return to set speed after RESUME/ ACCEL switch has been pressed.	Check the RESUME/ACCEL switch.	<Ref. to CC(ETC)(diag)-15, DTC 11, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-22, DTC 15, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-23, DTC 21, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-24, DTC 24, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-25, DTC 65, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
5	Vehicle speed does not decrease after SET/COAST switch has been pressed.	Check the SET/COAST switch.	<Ref. to CC(ETC)(diag)-15, DTC 11, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-22, DTC 15, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-23, DTC 21, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-24, DTC 24, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-25, DTC 65, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
6	Cruise control is not released after CANCEL switch has been pressed.	Check the CANCEL switch.	<Ref. to CC(ETC)(diag)-15, DTC 11, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-22, DTC 15, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-23, DTC 21, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-24, DTC 24, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-25, DTC 65, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
7	Cruise control is not released after brake pedal has been depressed.	Check the stop light switch and brake switch.	<Ref. to CC(ETC)(diag)-17, DTC 12, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-24, DTC 25, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-25, DTC 61, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
8	Cruise control is not released after clutch pedal has been depressed.	Check the clutch switch.	<Ref. to CC(ETC)(diag)-19, DTC 13, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
9	Cruise control is not released after shifting to the neutral position.	Check the neutral switch.	<Ref. to CC(ETC)(diag)-21, DTC 14, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CC(ETC)(diag)-25, DTC 62, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

B: CHECK CRUISE INDICATOR LIGHT

TROUBLE SYMPTOM:

Cruise control can be set, but the cruise indicator light does not illuminate.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK CRUISE INDICATOR LIGHT CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of the combination meter. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(i10) No. 9 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **2**.	• Check fuse No. 14 (in fuse & relay box). • Check for open or shorted circuits between the combination meter and fuse & relay box.
2	**CHECK CRUISE INDICATOR LIGHT CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of ECM. 3) Measure the resistance between the ECM harness connector and the combination meter harness connector. ***Connector & terminal*** ***U6, C0, Turbo model*** ***(B135) No. 6 — (i11) No. 5:*** ***(B135) No. 3 — (i10) No. 21:*** ***U5 model*** ***(B135) No. 3 — (i11) No. 5:*** ***(B136) No. 19 — (i10) No. 21:***	Is the resistance less than 10 Ω?	Go to step **3**.	Repair the harness.
3	**CHECK CRUISE INDICATOR LIGHT CIRCUIT.** Connect the ECM harness connector terminal to ground using a suitable lead wire. ***Connector & terminal*** ***U6, C0, Turbo model*** ***(B135) No. 6 — Chassis ground:*** ***(B135) No. 3 — Chassis ground:*** ***U5 model*** ***(B135) No. 3 — Chassis ground:*** ***(B136) No. 19 — Chassis ground:***	Does the cruise indicator light illuminate?	Check the poor contact of ECM connector.	Replace the meter main assembly.

7. List of Diagnostic Trouble Code (DTC)

A: LIST

DTC	Item	Contents of diagnosis	Reference
11	Main switch	Main switch of cruise control command switch is turned to OFF, and then the cruise control is released.	This DTC is displayed without operating the main switch. <Ref. to CC(ETC)(diag)-15, DTC 11, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
12	Stop light & brake switch	Stop light switch or brake switch is turned to ON, and then the cruise control is released.	This DTC is displayed without depressing the brake pedal. <Ref. to CC(ETC)(diag)-17, DTC 12, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
13	Clutch switch	Clutch switch is turned to ON, and then the cruise control is released.	This DTC is displayed without depressing the clutch pedal. <Ref. to CC(ETC)(diag)-19, DTC 13, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
14	Neutral position switch	Neutral switch is turned to ON, and then the cruise control is released.	This DTC is displayed without shifting to neutral position. <Ref. to CC(ETC)(diag)-21, DTC 14, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
15	Cancel switch	Cancel switch is turned to ON, and then the cruise control is released.	This DTC is displayed without operating the cancel switch. <Ref. to CC(ETC)(diag)-22, DTC 15, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
16	Ignition switch	Ignition switch is turned to OFF, and then the cruise control is released.	This DTC is displayed without operating the ignition switch. <Ref. to CC(ETC)(diag)-23, DTC 16, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
21	Cruise control switch malfunction when ignition switch is turned to ON	When the ignition switch is turned to ON, each switch of cruise control command switch is already turned to ON.	This DTC is displayed because the ignition switch was turned ON without operating the cruse control switch. <Ref. to CC(ETC)(diag)-23, DTC 21, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
22	Vehicle speed variation is abnormal.	Malfunction of vehicle speed signal variation is detected.	<Ref. to CC(ETC)(diag)-24, DTC 22, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

DTC	Item	Contents of diagnosis	Reference
24	Cruise control-related switch is abnormal.	Open circuit in cruise control switch detected while driving in cruise. (Judged as a system without cruise control)	<Ref. to CC(ETC)(diag)-24, DTC 24, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
25	Brake switch input circuit is abnormal.	Malfunction of brake switch input circuit in ECM is detected.	<Ref. to CC(ETC)(diag)-24, DTC 25, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
31	Engine speed signal	• Abnormal increase of engine speed is detected. • Gear is placed in Neutral, 1st or Reverse position.	<Ref. to CC(ETC)(diag)-24, DTC 31, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
32	Out of vehicle speed range of cruise control operation	• The vehicle speed exceeded the controllable speed range while driving in cruise. • Set operation was performed at vehicle speed unavailable for setting. • RESUME operation was performed without memorized vehicle speed.	This DTC is displayed even though set operation was repeated after increasing vehicle speed to a cruise possible speed. <Ref. to CC(ETC)(diag)-24, DTC 32, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
34	Prohibition when accelerator position is continued to be large.	The vehicle has been driven at higher speed than set vehicle speed for an abnormally long time (approximately 10 minutes) during cruise driving.	<Ref. to CC(ETC)(diag)-24, DTC 34, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
35	Prohibition when vehicle speed feedback is impossible.	Set vehicle speed cannot be kept because of some reasons (steep uphill, parking brake, abnormal decrease of engine output, etc.) during cruise driving.	<Ref. to CC(ETC)(diag)-25, DTC 35, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
43	ABS/VDC malfunction	ABS is operated during cruise driving or cruise setting.	<Ref. to CC(ETC)(diag)-25, DTC 43, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
61	Brake switch malfunction	Stop light switch or brake switch malfunction is detected.	<Ref. to CC(ETC)(diag)-25, DTC 61, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
62	Neutral position switch malfunction	Neutral position switch malfunction is detected.	<Ref. to CC(ETC)(diag)-25, DTC 62, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
63	Vehicle speed variation malfunction 1	Malfunction of vehicle speed signal variation is detected.	<Ref. to CC(ETC)(diag)-25, DTC 63, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
64	Engine sensor related sensor malfunction 1	Malfunction related to the engine is detected.	<Ref. to CC(ETC)(diag)-25, DTC 64, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
65	Cruise control related switch malfunction 1	Cruise control command switch malfunction is detected. (While the switch is pressed ON for a long time (approximately two minutes), an ON stuck open circuit is detected.)	<Ref. to CC(ETC)(diag)-25, DTC 65, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
66	Cruise control computational malfunction	Malfunction of cruise control computer is detected.	<Ref. to CC(ETC)(diag)-25, DTC 66, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

8. Diagnostic Procedure with Diagnostic Trouble Code (DTC)

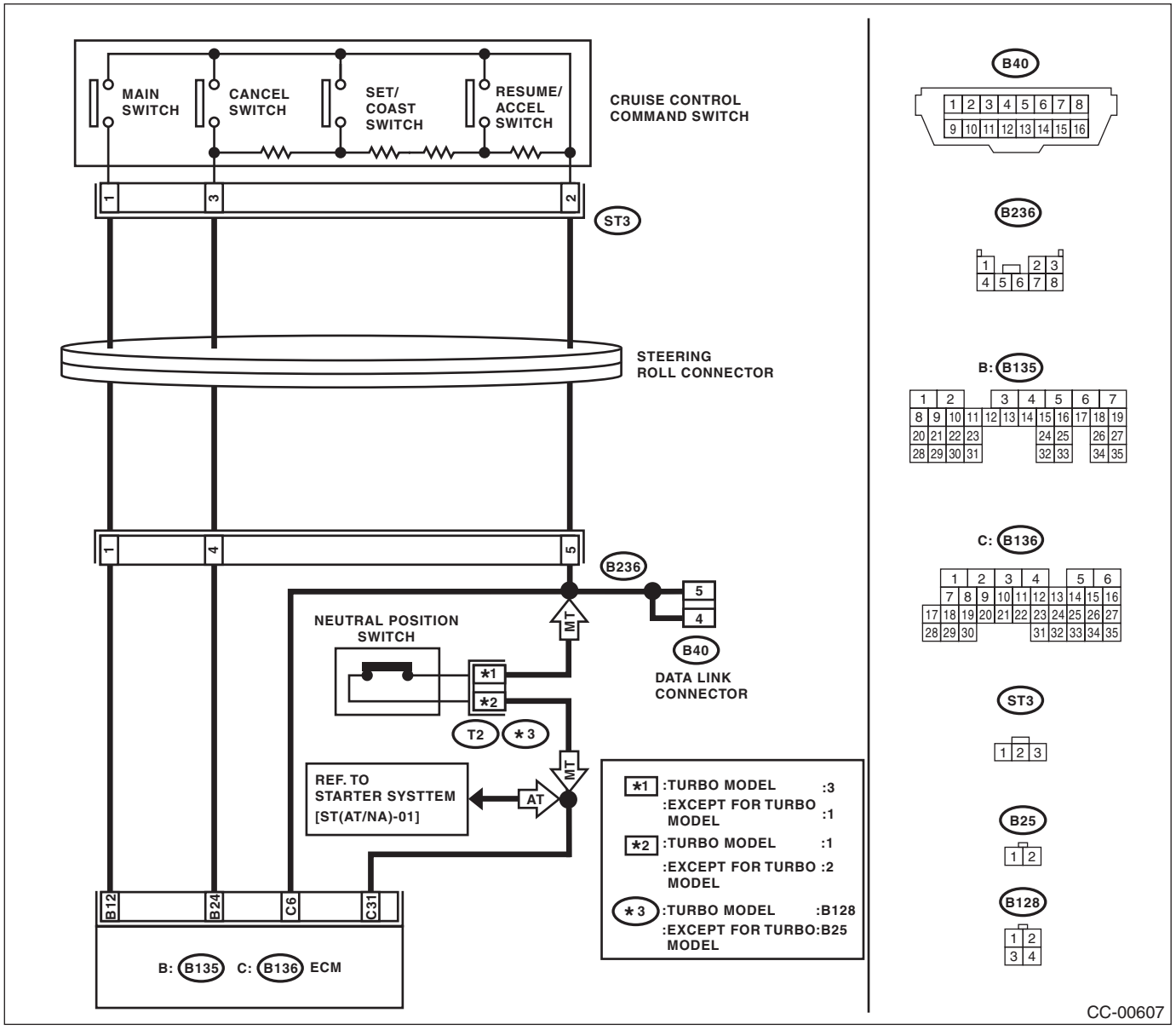
A: DTC 11

DTC for cruise control command switch.

TROUBLE SYMPTOM:

- Cruise control cannot be set. (Cancelled immediately.)
- Cruise control cannot be released.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK CRUISE CONTROL COMMAND SWITCH CIRCUIT.** 1) Remove the driver's airbag module. <Ref. to AB-14, REMOVAL, Driver's Airbag Module.> 2) Disconnect the harness connector of cruise control command switch. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(ST3) No. 1 (+) — Chassis ground (–):*** ***(ST3) No. 3 (+) — Chassis ground (–):***	Is the voltage 5 V or more?	Go to step **2**.	Check the harness between cruise control command switch and ECM for open or shorted circuit.
2	**CHECK CANCEL SWITCH.** 1) Turn the ignition switch to OFF. 2) Remove the cruise control command switch. <Ref. to CC-5, REMOVAL, Cruise Control Command Switch.> 3) Measure the resistance between switch terminals when the CANCEL switch is pressed and not pressed. ***Terminals*** ***No. 2 — No. 3:***	Is the resistance approx. less than 1 Ω when the CANCEL switch is pressed? Is the resistance approx. 4 kΩ when the CANCEL switch is not pressed?	Go to step **3**.	Replace the cruise control command switch. <Ref. to CC-5, Cruise Control Command Switch.>
3	**CHECK SET/COAST SWITCH.** Measure the resistance between switch terminals when SET/COAST switch is pressed and not pressed. ***Terminals*** ***No. 2 — No. 3:***	Is the resistance approx. 250 Ω when SET/COAST switch is pressed? Is the resistance approx. 4 kΩ when SET/COAST switch is not pressed?	Go to step **4**.	Replace the cruise control command switch. <Ref. to CC-5, Cruise Control Command Switch.>
4	**CHECK RESUME/ACCEL SWITCH CIRCUIT.** Measure the resistance between switch terminals when RESUME/ACCEL switch is pressed and not pressed. ***Terminals*** ***No. 2 — No. 3:***	Is the resistance approx. 1,500 Ω when RESUME/ACCEL switch is pressed? Is the resistance approx. 4 kΩ when RESUME/ACCEL switch is not pressed?	Replace the ECM. <Ref. to FU(H4SO)-41, Engine Control Module (ECM).> <Ref. to FU(H4DOTC)-46, Engine Control Module (ECM).>	Replace the cruise control command switch. <Ref. to CC-5, Cruise Control Command Switch.>

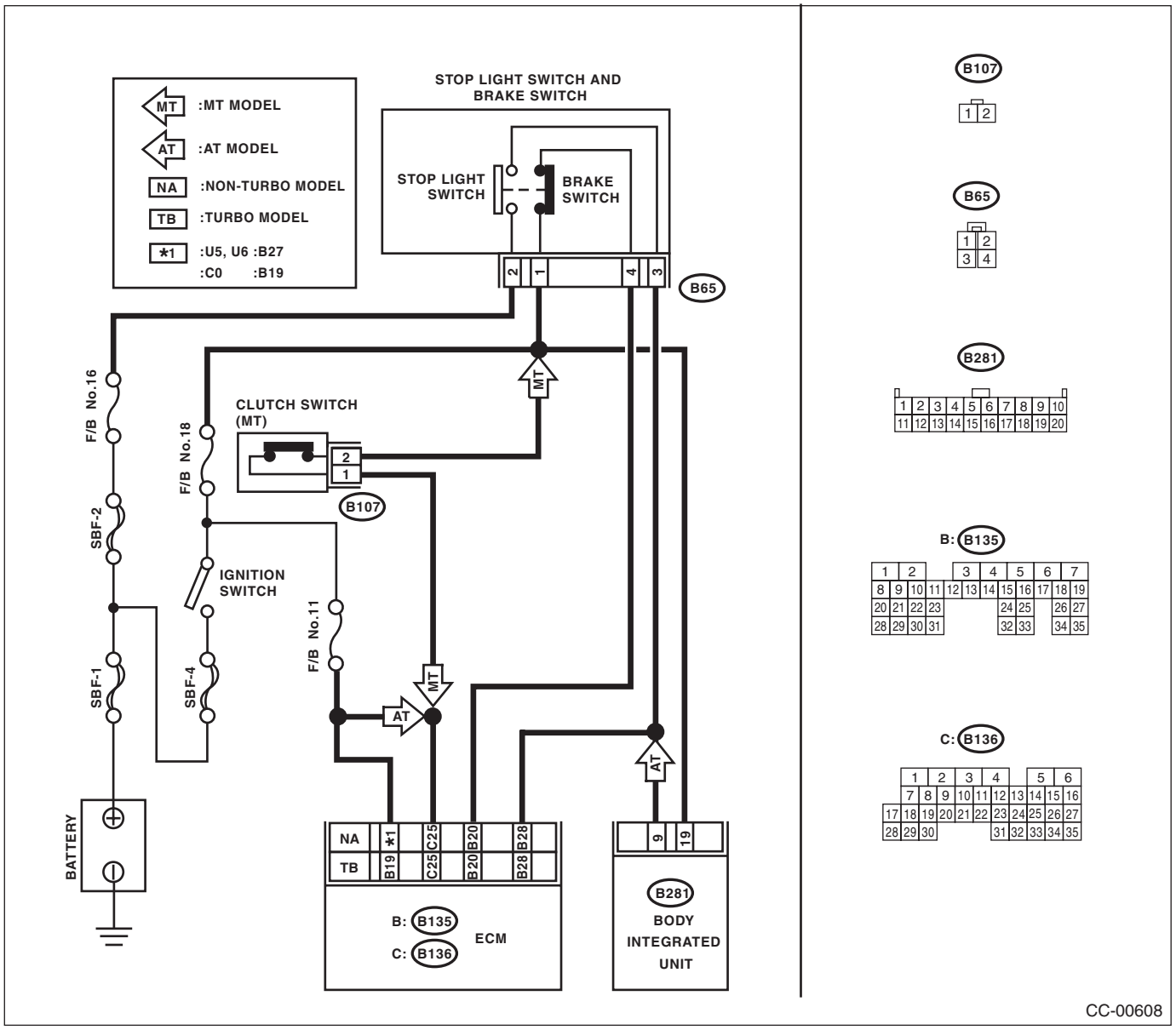
B: DTC 12

DTC for stop light switch and brake light switch.

TROUBLE SYMPTOM:

- Cruise control cannot be set.
- Cruise control cannot be released.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the stop light switch and brake switch harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B65) No. 2 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **2**.	• Check fuse No. 16 (in fuse & relay box). • Check for open or short in the harness between stop light/brake switch and fuse & relay box.
2	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.** Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B65) No. 1 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **3**.	• Check fuse No. 18 (in fuse & relay box). • Check for open or short in the harness between stop light/brake switch and fuse & relay box. • Check the clutch switch and circuit.
3	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of ECM. 3) Disconnect the harness connector of body integrated unit. 4) Measure the resistance between harness connector terminals of ECM and of body integrated unit, and between harness connector terminals of stop light switch and of brake switch. ***Connector & terminal*** ***(B281) No. 9 — (B65) No. 3:*** ***(B135) No. 20 — (B65) No. 4:***	Is the resistance less than 10 Ω?	Go to step **4**.	Repair the harness.
4	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH.** Remove and check the stop light switch and brake switch. <Ref. to CC-6, Stop Light & Brake Switch.>	Are the stop light switch and brake switch OK?	Stop light switch and brake switch circuit are OK.	Replace the stop light switch and brake switch.

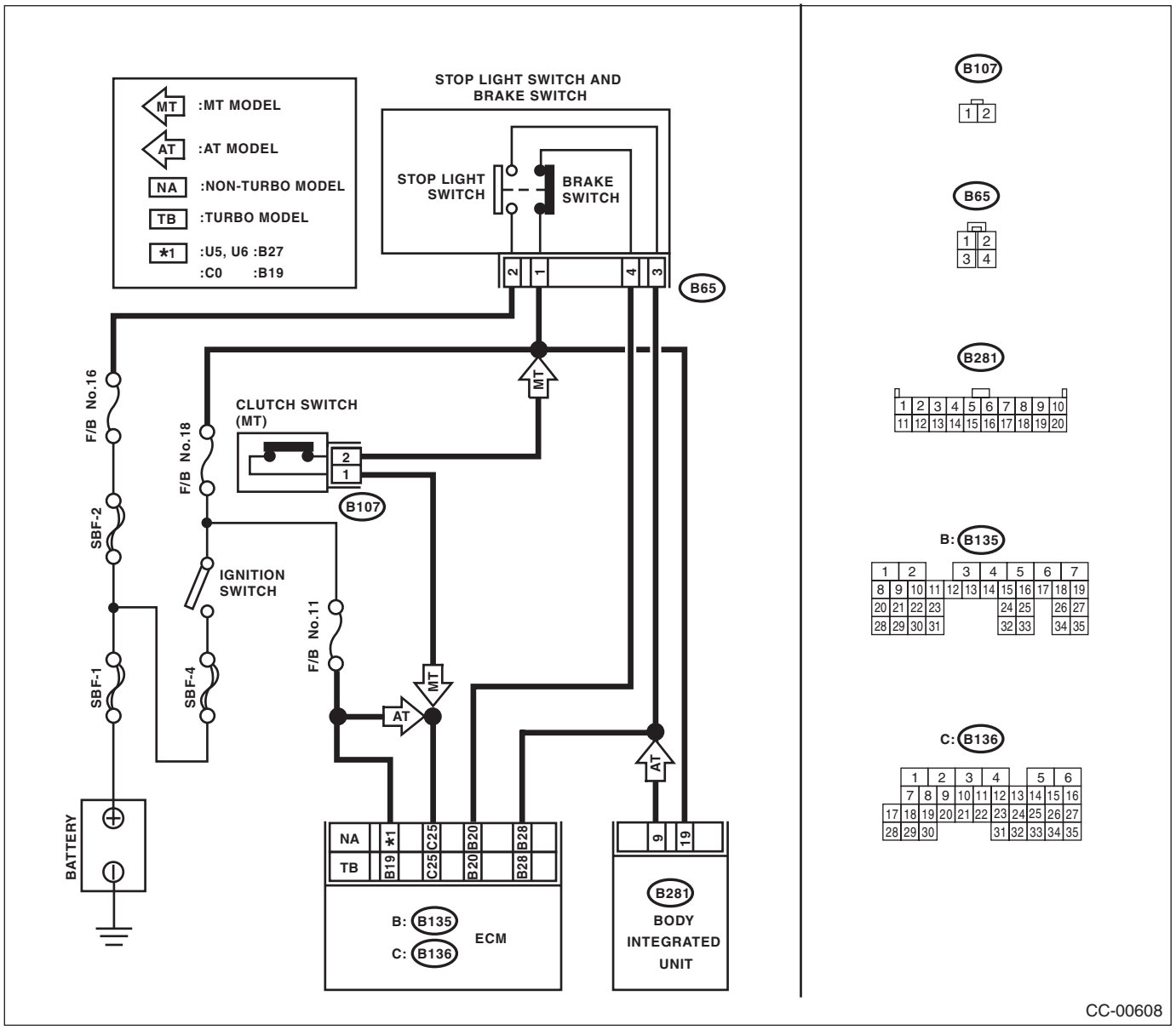
C: DTC 13

DTC for clutch switch.

TROUBLE SYMPTOM:

- Cruise control cannot be set.
- Cruise control cannot be released.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK CLUTCH SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the clutch switch harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B107) No. 2 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **2**.	• Check fuse No. 18 (in fuse & relay box). • Check open or shorted circuit of harness between clutch switch and fuse & relay box.
2	**CHECK CLUTCH SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of ECM. 3) Measure the resistance between clutch switch harness connector terminal and ECM harness connector terminal. ***Connector & terminal*** ***(B107) No. 1 — (B136) No. 25:***	Is the resistance less than 10 Ω?	Go to step **3**.	Repair the harness.
3	**CHECK CLUTCH SWITCH.** Remove and check the clutch switch. <Ref. to CC-7, Clutch Switch.>	Is clutch switch OK?	Clutch switch circuit is OK.	Replace the clutch switch.

D: DTC 14

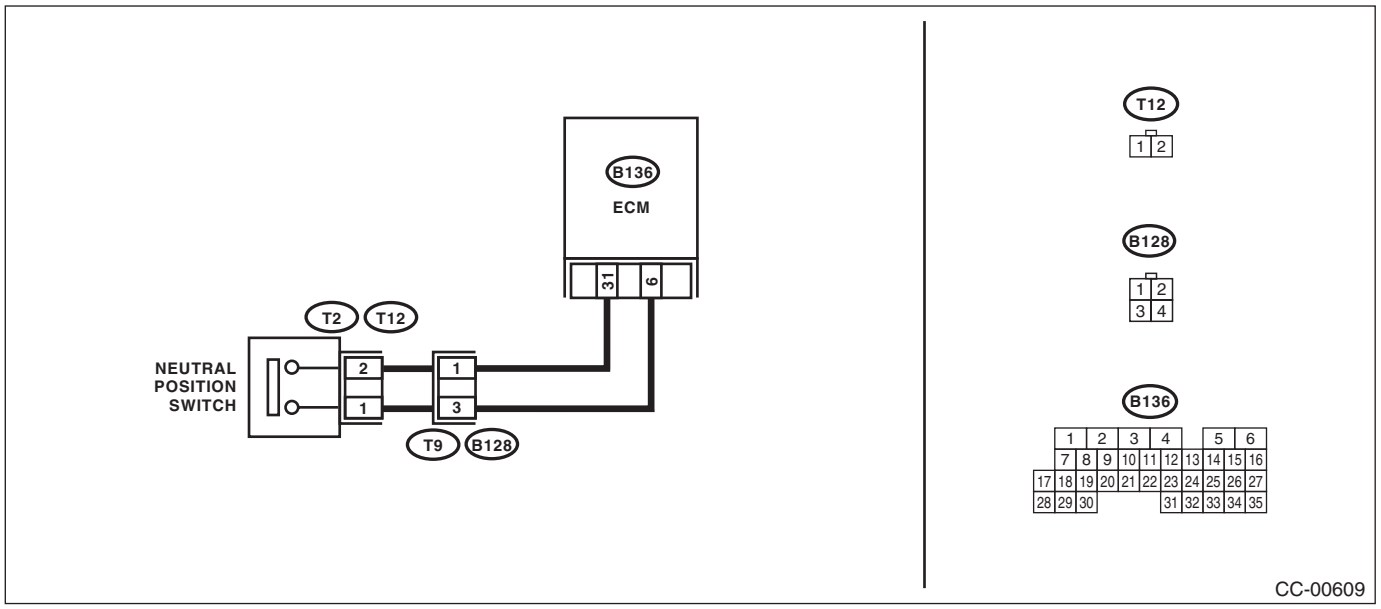
DTC for neutral position switch.

TROUBLE SYMPTOM:

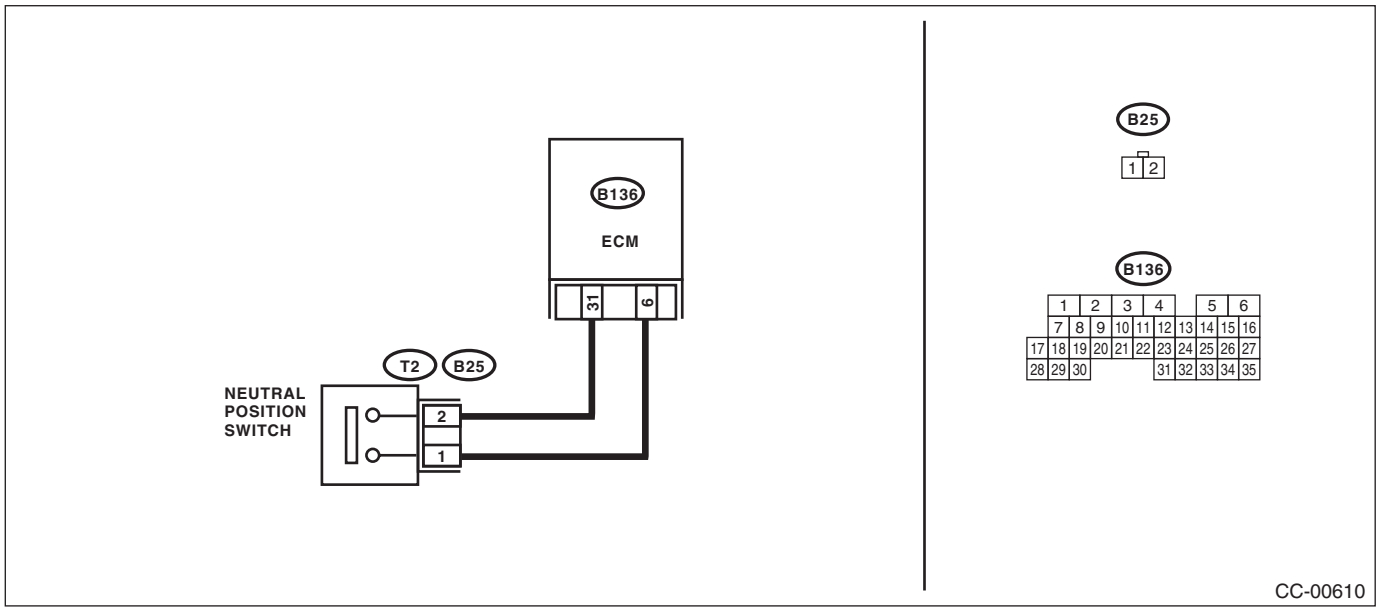
Cruise control cannot be set.

WIRING DIAGRAM:

- Turbo model



- Non-turbo model



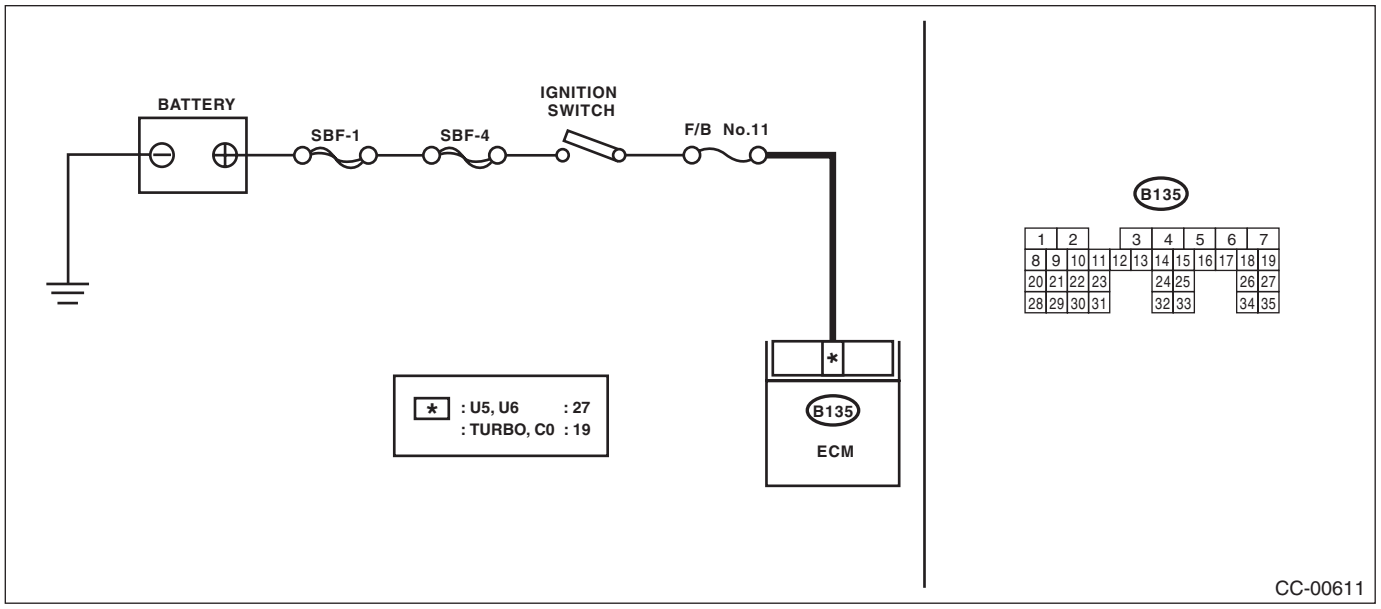
	Step	Check	Yes	No
1	**CHECK NEUTRAL POSITION SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the neutral position switch harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***Turbo model*** ***(B128) No. 1 (+) — Chassis ground (–):*** ***Non-turbo model*** ***(B25) No. 2 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **2**.	Check for open or short in the harness between neutral position switch and ECM.
2	**CHECK NEUTRAL POSITION SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Measure resistance between harness connector terminal of neutral position switch and chassis ground. ***Connector & terminal*** ***Turbo model*** ***(B128) No. 3 — Chassis ground:*** ***Non-turbo model*** ***(B25) No. 1 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **3**.	Repair the harness.
3	**CHECK NEUTRAL POSITION SWITCH.** Remove and check the neutral position switch.	Is the neutral position switch OK?	The neutral position switch circuit is working properly.	Replace the neutral position switch.

E: DTC 15

Malfunction of cancel switch is detected.
Refer to DTC 11 for diagnostic procedure.
<Ref. to CC(ETC)(diag)-15, DTC 11, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

F: DTC 16

DTC for ignition switch.
TROUBLE SYMPTOM:
Cruise control cannot be set.
WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK IGNITION SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the ECM harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***Turbo, C0 model*** ***(B135) No. 19 (+) — Chassis ground (–):*** ***U5, U6 model*** ***(B135) No. 27 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Check the poor contact of ECM connector.	• Check fuse No. 11 (in fuse & relay box). • Check the harness for open or short circuit between ignition switch and ECM.

G: DTC 21

Cruise control command switch malfunction is detected.
Refer to DTC 11 for diagnostic procedure.
<Ref. to CC(ETC)(diag)-15, DTC 11, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

H: DTC 22

DTC DETECTING CONDITION:
Open or shorted circuit in vehicle speed sensor system.
TROUBLE SYMPTOM:
Cruise control cannot be set. (Cancelled immediately.)
WIRING DIAGRAM:

	Step	Check	Yes	No
1	**CHECK ABS WARNING LIGHT.** 1) Turn the ignition switch to ON. 2) After the initial operation of combination meter is completed, check if the ABS warning light continues to illuminate.	Does the ABS warning continues to illuminate?	Check the ABSCM. <Ref. to ABS(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>	Go to step **2**.
2	**CHECK VEHICLE SPEED SENSOR SIGNAL.** 1) Connect the Subaru Select Monitor to the data link connector. 2) Turn the ignition switch to ON and run the Subaru Select Monitor. 3) Select {Engine} from the main menu. 4) Then select {Current Data Display & Save}. 5) Drive the vehicle and check the vehicle speed sensor signal.	Is the vehicle speed displayed on the Subaru Select Monitor?	Replace the ECM. <Ref. to FU(H4DOTC)-46, REMOVAL, Engine Control Module (ECM).>	Replace the vehicle speed sensor.

I: DTC 24

Malfunction of cruise control related switch is detected.
Refer to DTC 11 for diagnostic procedure.
<Ref. to CC(ETC)(diag)-15, DTC 11, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

J: DTC 25

Malfunction of brake switch input circuit is detected.
Refer to engine diagnostic procedure for diagnostic procedure.
<Ref. to EN(H4SO)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>
<Ref. to EN(H4DOTC)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

K: DTC 31

Malfunction of engine speed signal is detected.
Abnormal increase of engine speed is detected.
Gear is placed in 1st or Reverse position.
Set cruise again while driving in 2nd or higher gear. If a DTC is not detected, it is operating normally.

L: DTC 32

Out of system vehicle speed range detected.
Refer to DTC 22 for diagnostic procedure.
<Ref. to CC(ETC)(diag)-24, DTC 22, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

M: DTC 34

Malfunction of acceleration opening duration is detected.
The vehicle has been driven at higher speed than set vehicle speed for a long time (approximately 10 minutes) during cruise driving.
DTC is detected when driving for a long period of time at higher speed than the cruise set vehicle speed by operating the accelerator pedal.
Cancel the cruise setting. If the DTC is not detected again, it is normal.

N: DTC 35

Malfunction of acceleration opening duration is detected.
The vehicle has been driven at higher speed than set vehicle speed for a long time (approximately 10 minutes) during cruise driving.
DTC is detected when driving for a long period of time at higher speed than the cruise set vehicle speed by operating the accelerator pedal.
Cancel the cruise setting. If the DTC is not detected again, it is normal.

O: DTC 43

ABS/VDC malfunction is detected.
ABS malfunction is detected during cruise or during cruise setting.
Refer to ABS diagnostic procedure for diagnostic procedure.
<Ref. to ABS(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

P: DTC 61

Brake light switch malfunction is detected.
Refer to DTC 12 for diagnostic procedure.
<Ref. to CC(ETC)(diag)-17, DTC 12, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

Q: DTC 62

Neutral position switch malfunction is detected.
Refer to DTC 14 for diagnostic procedure.
<Ref. to CC(ETC)(diag)-21, DTC 14, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

R: DTC 63

Malfunction of vehicle speed signal variation is detected.
Refer to DTC 22 for diagnostic procedure.
<Ref. to CC(ETC)(diag)-24, DTC 22, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

S: DTC 64

Malfunction related to the engine is detected.
Refer to engine diagnostic procedure for diagnostic procedure.
<Ref. to EN(H4SO)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>
<Ref. to EN(H4DOTC)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

T: DTC 65

Cruise control command switch malfunction is detected.
While the command switch is pressed ON for a long time (approximately two minutes), an ON stuck open circuit is detected.
Refer to DTC 11 for diagnostic procedure.
<Ref. to CC(ETC)(diag)-15, DTC 11, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

U: DTC 66

Cruise control computational malfunction is detected.
Refer to engine diagnostic procedure for diagnostic procedure.
<Ref. to EN(H4SO)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>
<Ref. to EN(H4DOTC)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

1. General Description

A: CAUTION

• Before disassembling or reassembling parts, always disconnect the battery ground cable from battery. When replacing the radio, control unit, and other parts provided with memory functions, record the memory contents before disconnecting the battery ground cable. Otherwise, the memory is cleared.
• Reassemble the parts in the reverse order of disassembly procedure unless otherwise indicated.
• Adjust parts to the given specifications.
• Connect the connectors and hoses securely during reassembly.
• After reassembly, make sure functional parts operate smoothly.

B: PREPARATION TOOL

1. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance and voltage.
Conductive silver composition (DUPONT No. 4817 or equivalent)	Used for repairing antenna wire.

2. Radio System

A: WIRING DIAGRAM

1. RADIO BODY

<Ref. to WI-133, WIRING DIAGRAM, Audio System.>

B: INSPECTION

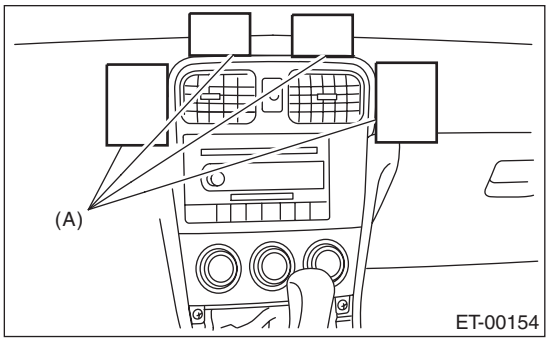
Symptom	Repair order
No power coming in. (No display and no sound from speakers)	1. Check the fuse and power supply for radio. 2. Check the radio ground. 3. Remove the radio for repair.
A specific speaker does not operate.	1. Check the speaker. 2. Check the output circuit between radio and speaker.
Radio generates noise with engine running.	1. Check the radio ground. 2. Check the generator. 3. Check the ignition coil. 4. Remove the radio for repair.
Volume is low in AM and FM modes or interference noise occurs.	1. Check the antenna. 2. Check the antenna amplifier. 3. Check the noise suppressor. 4. Check the radio ground. 5. Remove the radio for repair.

3. Radio Body

A: REMOVAL

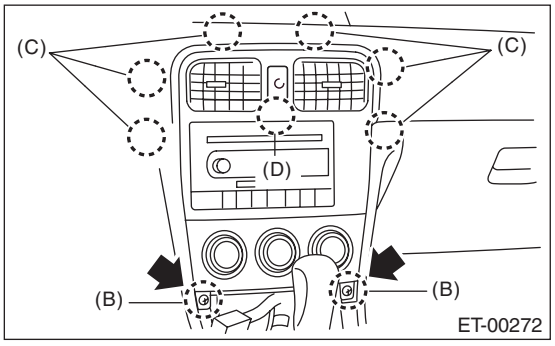
1) Disconnect the ground cable from the battery.
2) Remove the console front cover. <Ref. to EI-37, REMOVAL, Console Box.>
3) Affix the thick protective tape (A) to the instrument panel pad to protect the surface.

NOTE:
Affix the protective tape so that it covers the vertical wall in the back of the gap between the panel center and the pad.



4) Remove the screws (B).
5) Insert a flat tip screwdriver etc. into the portion (C) to remove the claw.

CAUTION:
Be very careful because it is possible to damage the instrument panel if the flat tip screwdriver is inserted into any other area than specified.



(B) Screw
(D) Clip

NOTE:
The claw can be easily removed by performing the work while pulling on the lower portion of the center console panel
6) Disconnect each connector.
7) Remove the fitting screws, and slightly pull the radio out from the center console.
8) Disconnect the harness connectors and antenna feeder cord.

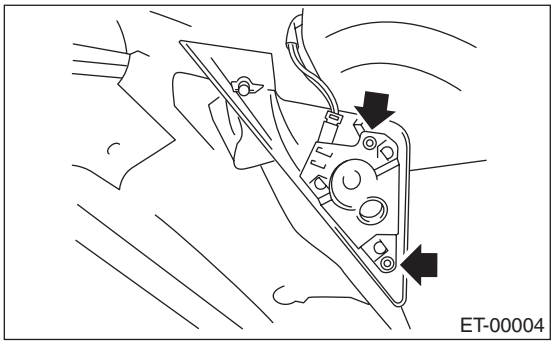
B: INSTALLATION

Install in the reverse order of removal.

4. Tweeter

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the gusset cover.
3) Remove the tweeter mounting screws.



4) Disconnect the harness connector and remove the tweeter.

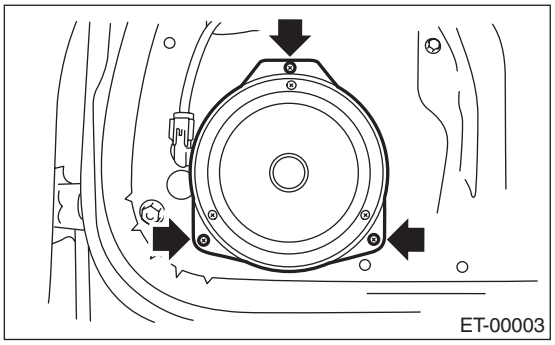
B: INSTALLATION

Install in the reverse order of removal.

5. Front Speaker

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the front door trim. <Ref. to EI-33, REMOVAL, Front Door Trim.>
3) Remove the front speaker mounting screws.



4) Disconnect the harness connector and remove the front speaker.

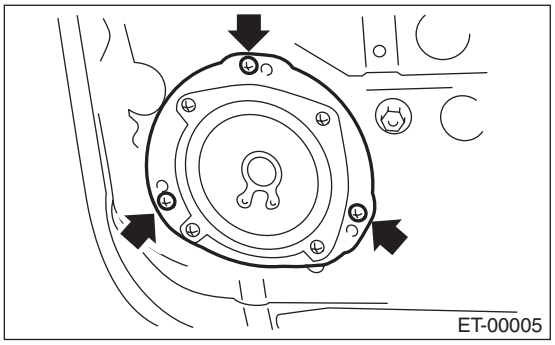
B: INSTALLATION

Install in the reverse order of removal.

6. Rear Speaker

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the rear door trim. <Ref. to EI-34, REMOVAL, Rear Door Trim.>
3) Remove the rear speaker mounting screws.



4) Disconnect the harness connector and remove the rear speaker.

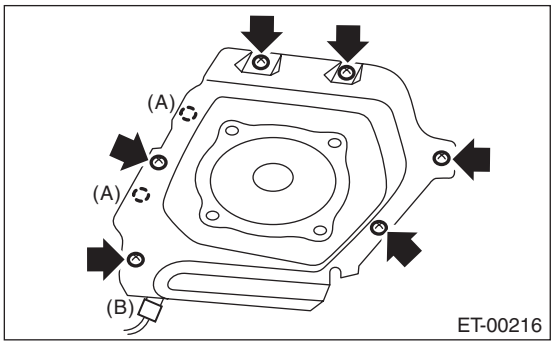
B: INSTALLATION

Install in the reverse order of removal.

7. Woofer

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the rear seat belt, rear seat, rear quarter upper, rear quarter lower, insulator and luggage floor mat.
3) Remove the woofer trim.
4) Remove the woofer mounting screws and clip (A).



5) Disconnect the harness connector (B) and detach the woofers.

B: INSTALLATION

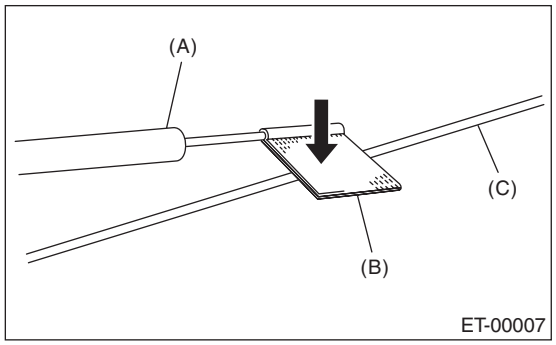
Install in the reverse order of removal.

8. Antenna

A: INSPECTION

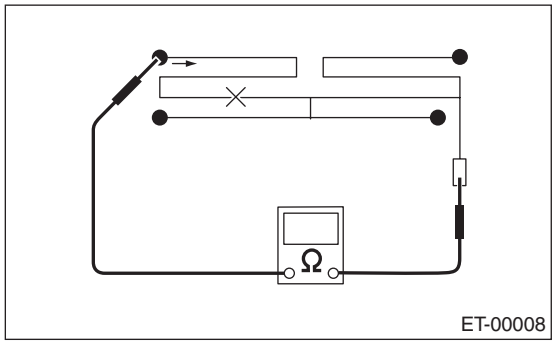
Measure the resistance between the antenna terminal and each antenna wire.
If an antenna wire is OK, resistance will be less than 1 Ω. If an antenna wire is broken, resistance will be more than 1 MΩ.

NOTE:
When checking the continuity, wrap a piece of aluminum foil around the tip of tester probe and press foil against wire with your finger.



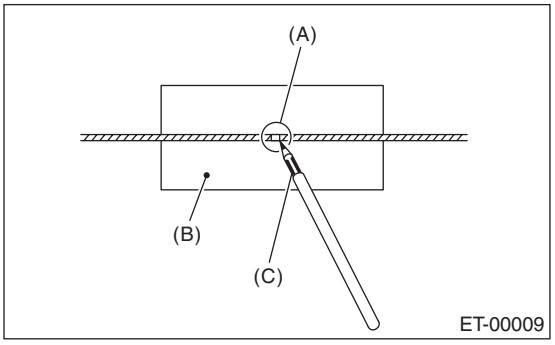
(A) Tester probe
(B) Aluminum foil
(C) Antenna wire

To locate the broken point, move the probe along antenna wire.



B: REPAIR

1) Clean the antenna wire and surrounding area with a cloth dampened by alcohol.
2) Paste a thin masking film on the glass along broken wire.
3) Apply the conductive silver composition (DUPONT No. 4817 or equivalent) on the broken portion with a drawing pen.



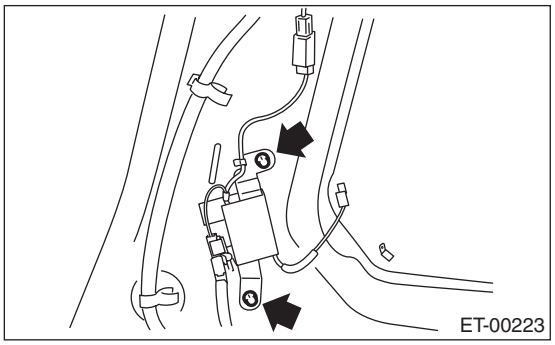
(A) Broken portion
(B) Masking film
(C) Conductive silver composition

4) Dry out the deposited portion.
5) After repair has been completed, measure the resistance in repaired wire.

9. Antenna Amplifier

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the rear quarter upper trim. <Ref. to EI-43, REMOVAL, Rear Quarter Trim.>
3) Disconnect the harness connectors and terminals.
4) Remove the mounting screw and detach the antenna amplifier.

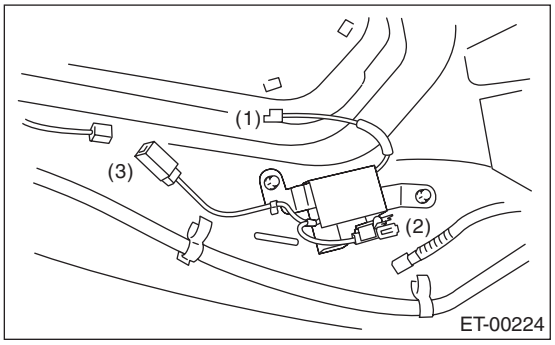


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the resistance of antenna amplifier.



1) Inspecting for poor insulation (shorting) of the cord crimping

Terminal No.	Standard
1 and Amplifier body	10 kΩ or more
2 and Amplifier body	10 kΩ or more
3 and Amplifier body	10 kΩ or more

2) Check antenna amp
Disconnect each connector, then measure the direct current value at the above locations using the tester checker.

Standard:
(+B = 13.5 V) ⇒ 50±10 mA

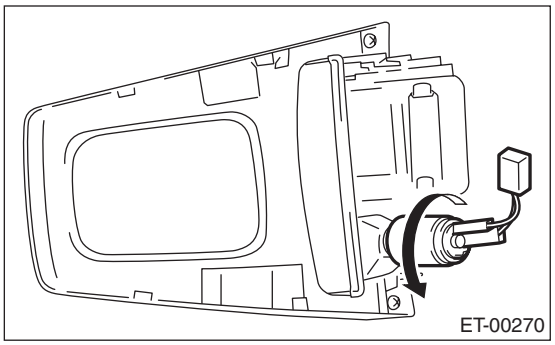
10.Front Accessory Power Supply Socket

A: WIRING DIAGRAM

<Ref. to WI-135, WIRING DIAGRAM, Front Accessory Power Supply Socket System.>

B: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the front cover. <Ref. to EI-37, REMOVAL, Console Box.>
3) Disconnect the harness connectors and remove the front accessory power supply socket.



C: INSTALLATION

Install in the reverse order of removal.

11.Rear Accessory Power Supply Socket

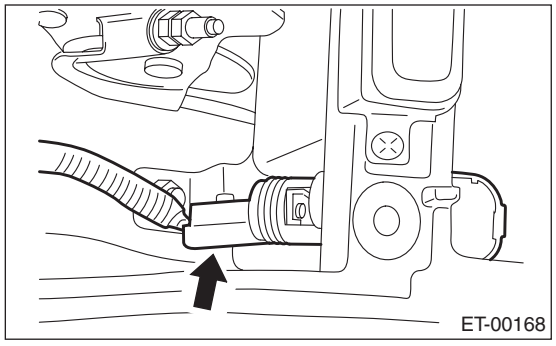
A: WIRING DIAGRAM

<Ref. to WI-136, WIRING DIAGRAM, Rear Accessory Power Supply Socket System.>

B: REMOVAL

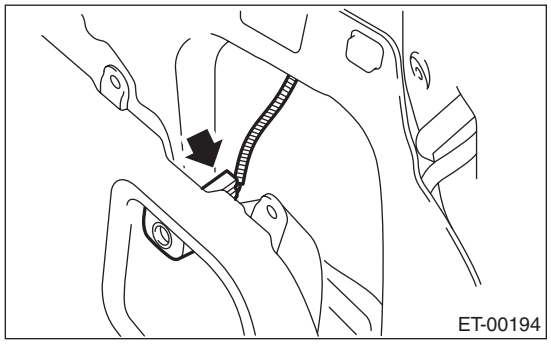
1. FRONT

1) Disconnect the ground cable from the battery.
2) Remove the console cover.
3) Disconnect the harness connector, and remove the accessory power supply socket.



2. REAR

1) Disconnect the ground cable from the battery.
2) Remove the rear quarter lower trim.
3) Disconnect the harness connector, and remove the accessory power supply socket.



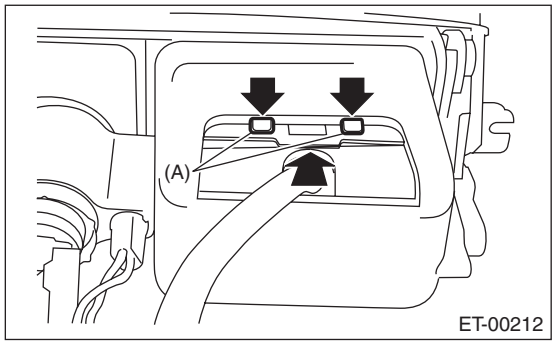
C: INSTALLATION

Install in the reverse order of removal.

12.AUX Input Terminal

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the console front cover.
3) Remove the tab (A), and remove AUX input terminal.

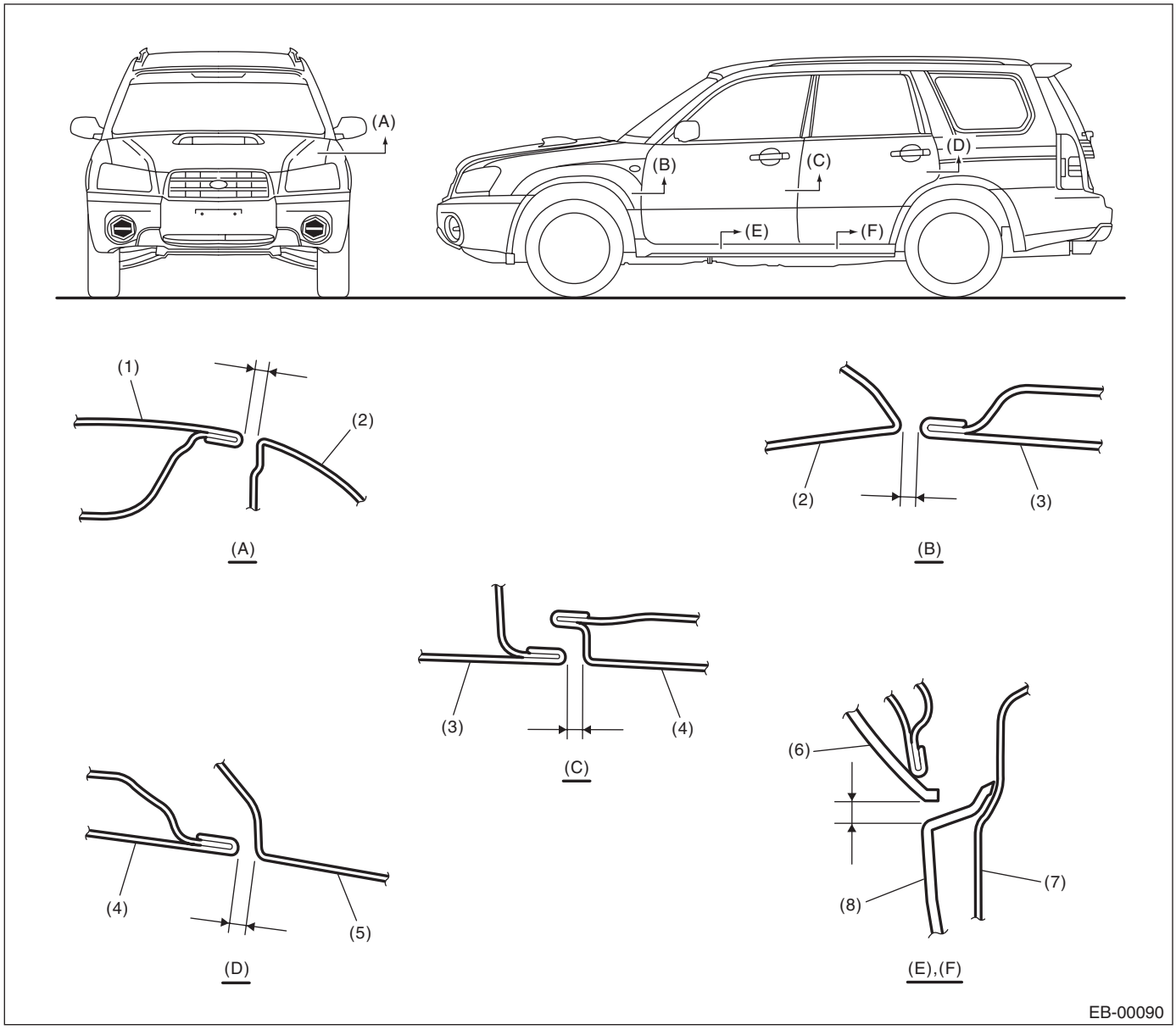


B: INSTALLATION

Install in the reverse order of removal.

1. General Description

A: SPECIFICATION

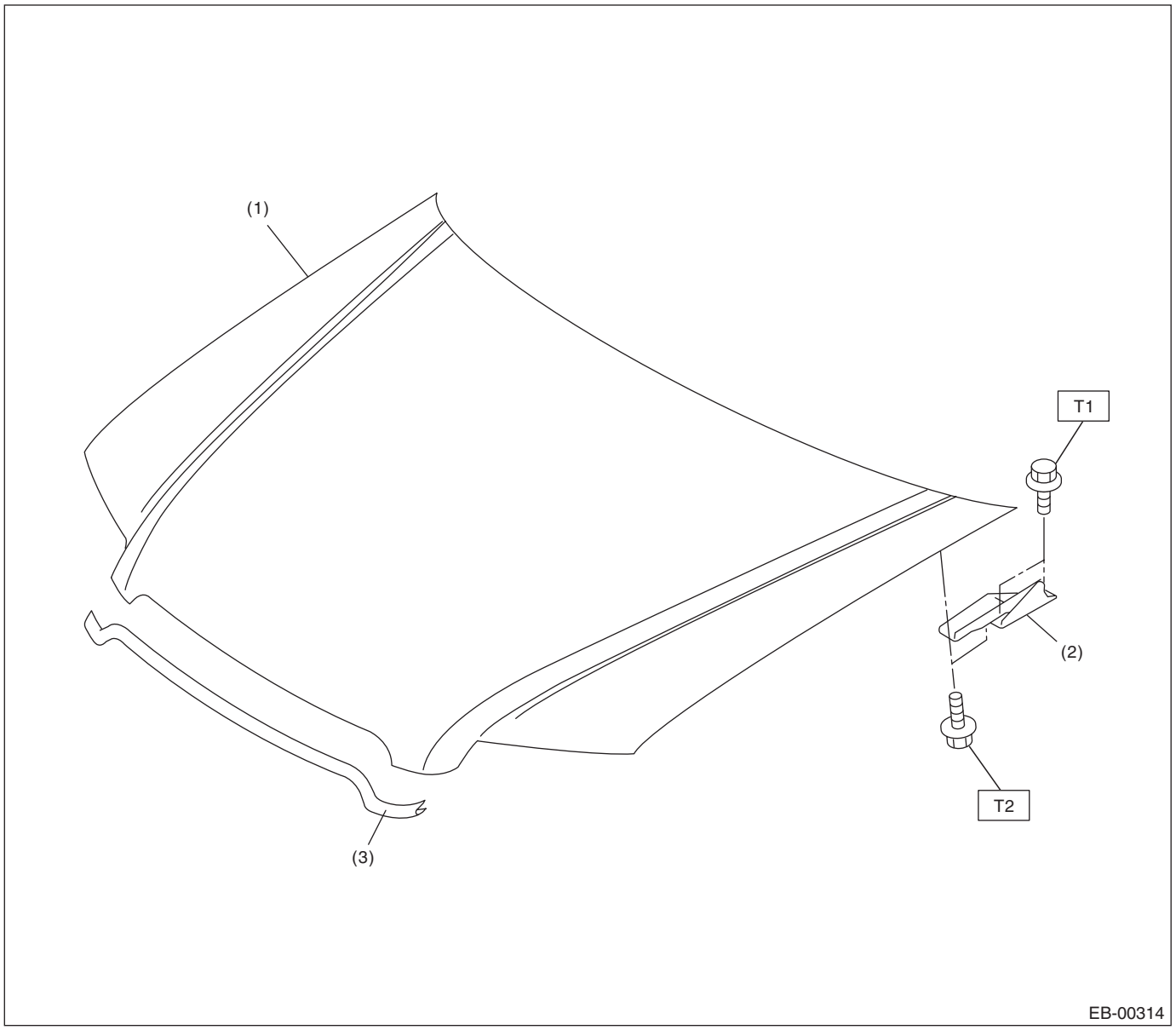


(1) Front hood panel
(2) Front fender panel
(3) Front door panel
(4) Rear door panel
(5) Rear quarter panel
(6) Door panel
(7) Side sill
(8) Side sill garnish

Section	Part	Standard
(A)	Front hood panel to Front fender panel	3.5±1.0 mm (0.14±0.04 in)
(B)	Front fender panel to Front door panel	4.7±1.0 mm (0.19±0.04 in)
(C)	Front door panel to Rear door panel	5.1±1.0 mm (0.20±0.04 in)
(D)	Rear door panel to Rear quarter panel	4.6±1.0 mm (0.18±0.04 in)
(E), (F)	Door panel to Side sill	7.0±1.5 mm (0.28±0.06 in)

B: COMPONENT

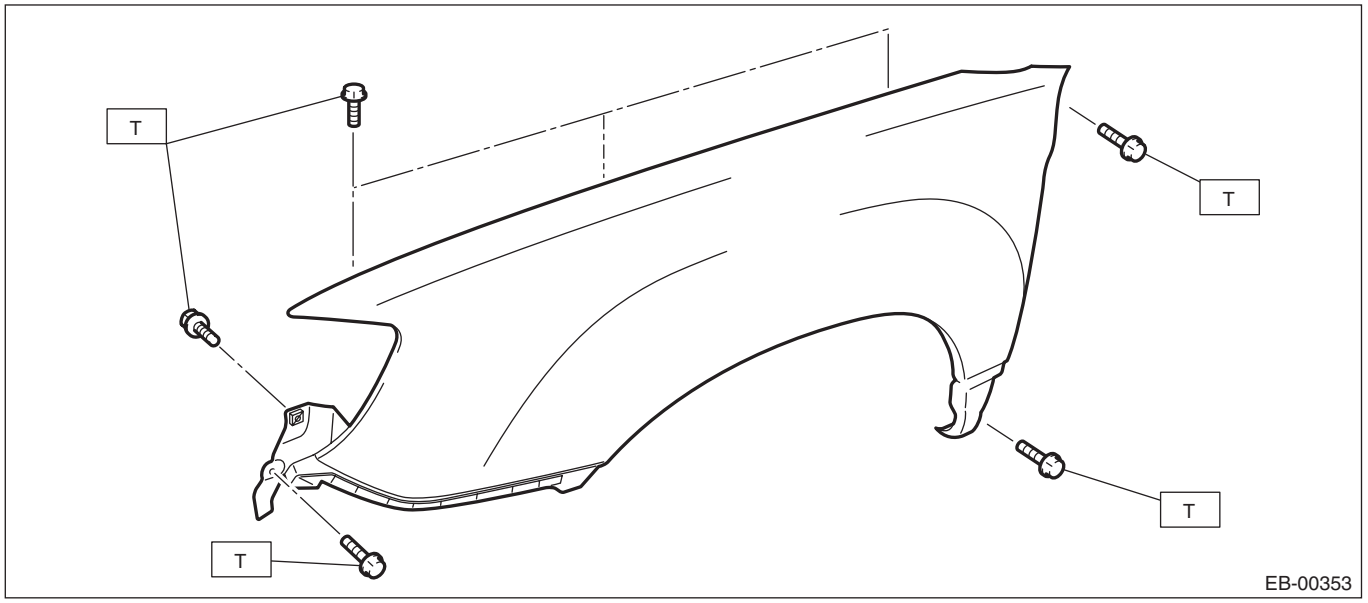
1. FRONT HOOD



(1) Front hood panel
(2) Hinge
(3) Seal

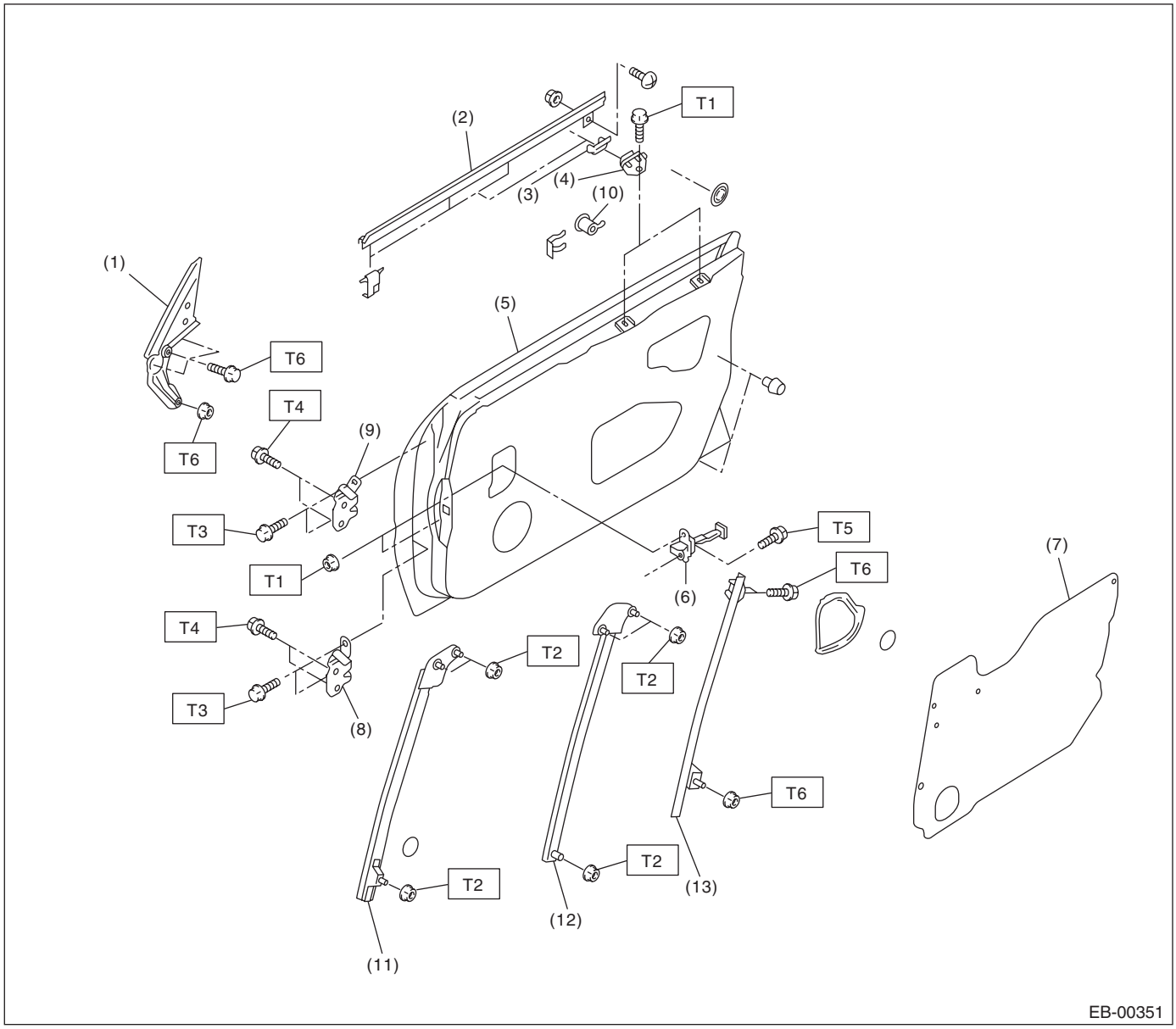
Tightening torque:N·m (kgf-m, ft-lb)
T1: 25 (2.5, 18)
T2: 37 (3.8, 27)

2. FRONT FENDER



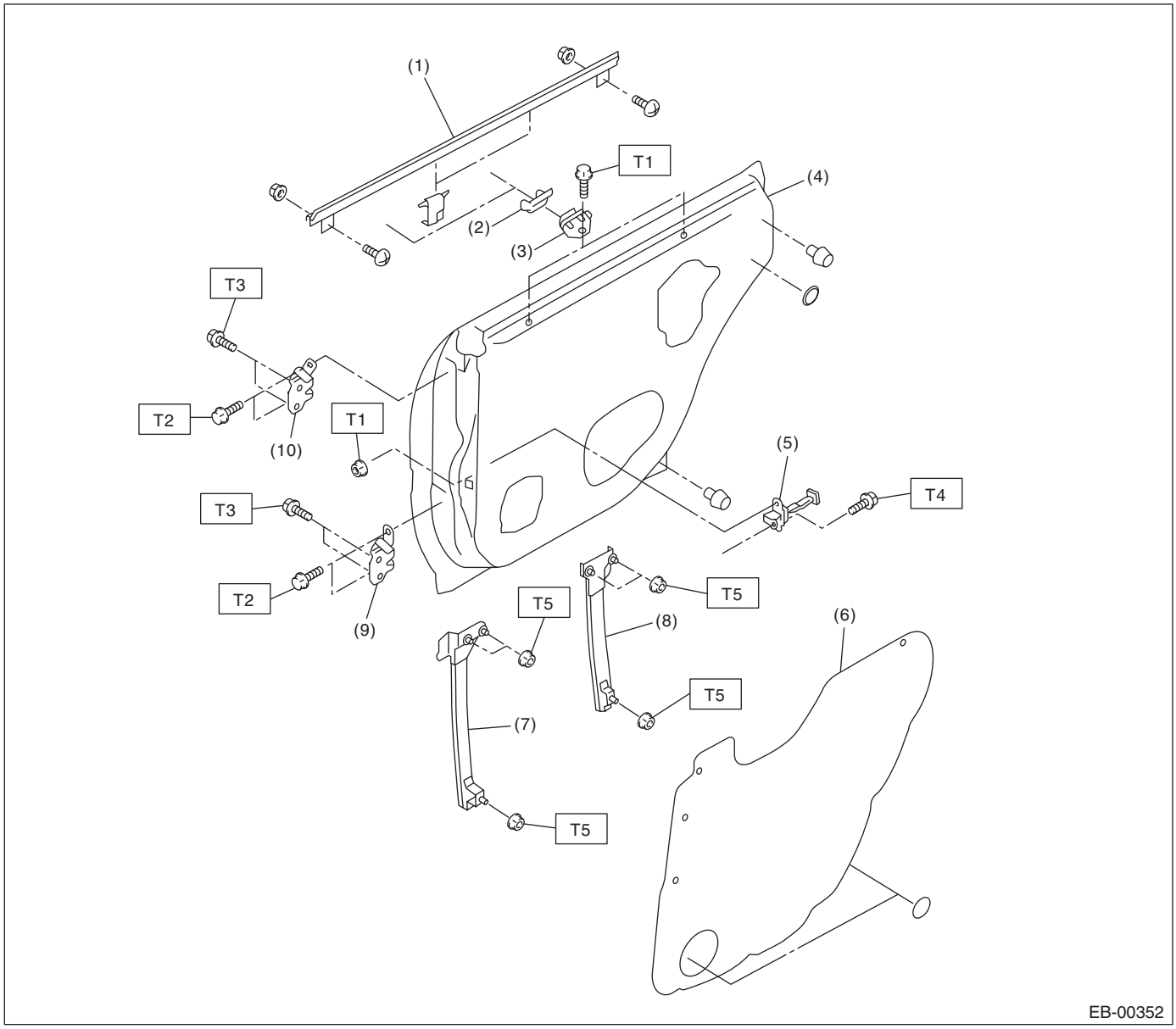
Tightening torque:N·m (kgf-m, ft-lb)
T: 7.5 (0.76, 5.5)

3. FRONT DOOR



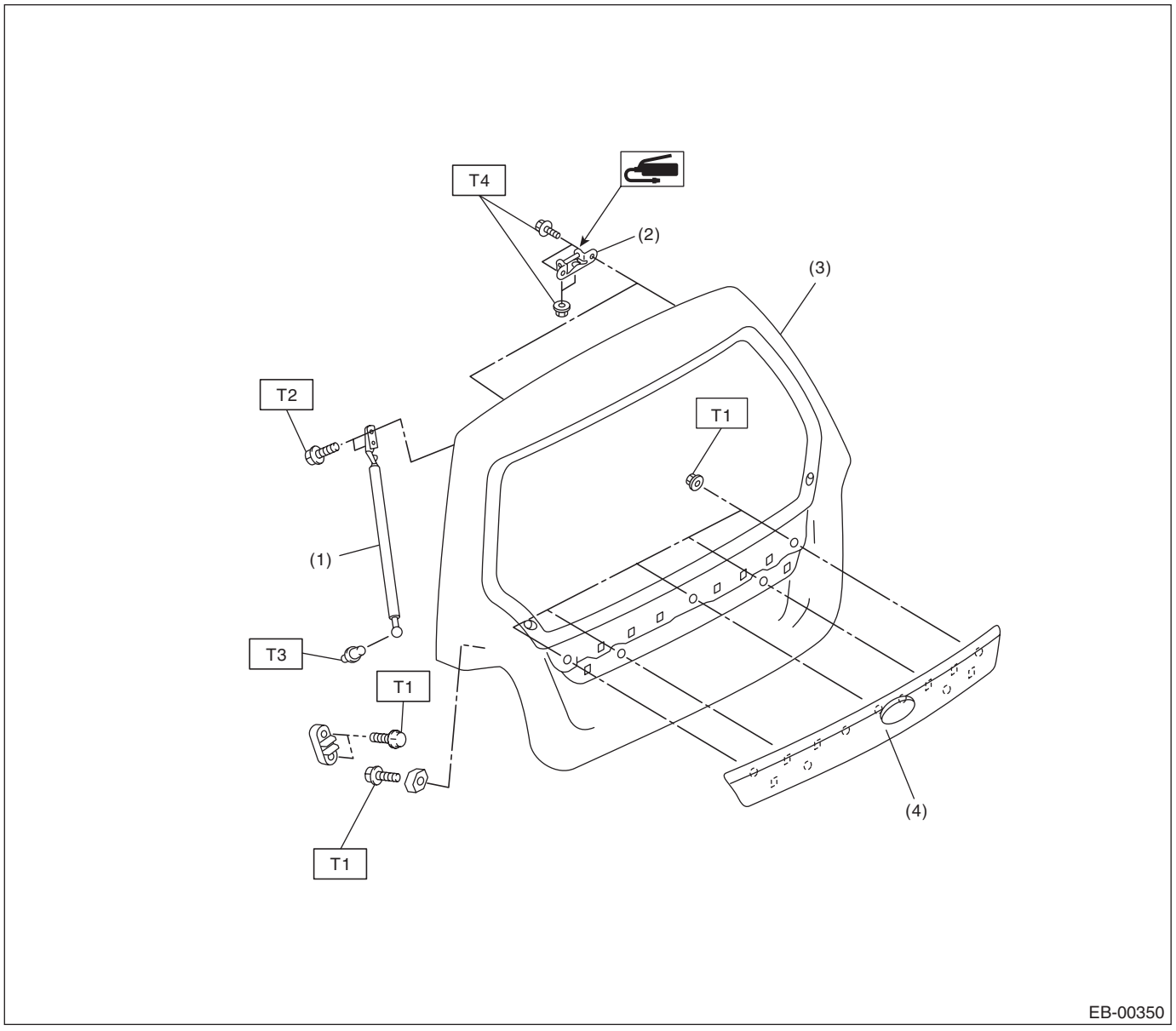
(1)	Gusset	(8)	Lower hinge	***Tightening torque:N·m (kgf-m, ft-lb)***
(2)	Weather strip	(9)	Upper hinge	***T1: 7.5 (0.76, 5.5)***
(3)	Stabilizer (outer)	(10)	Key cylinder (Driver's side only)	***T2: 14 (1.4, 10.3)***
(4)	Stabilizer (inner)	(11)	Front sash	***T3: 25 (2.5, 18.1)***
(5)	Door panel	(12)	Rear sash	***T4: 30 (3.1, 22)***
(6)	Checker	(13)	Guide rail	***T5: 33 (3.4, 24)***
(7)	Sealing cover			***T6: 6 (0.6, 4.4)***

4. REAR DOOR



(1)	Weather strip	(6)	Sealing cover	***Tightening torque:N·m (kgf-m, ft-lb)***
(2)	Stabilizer (outer)	(7)	Front sash	***T1: 7.5 (0.76, 5.5)***
(3)	Stabilizer (inner)	(8)	Rear sash	***T2: 25 (2.5, 18)***
(4)	Door panel	(9)	Lower hinge	***T3: 30 (3.1, 22)***
(5)	Checker	(10)	Upper hinge	***T4: 33 (3.4, 24)***
				T5: 14 (1.4, 10.3)

5. REAR GATE

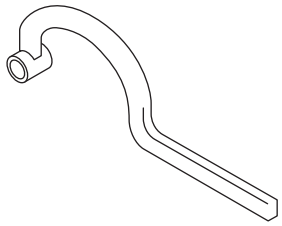


(1) Damper stay
(2) Hinge
(3) Rear gate panel
(4) Rear gate garnish

Tightening torque:N·m (kgf-m, ft-lb)
T1: 7.5 (0.76, 5.5)
T2: 10 (1.02, 7.4)
T3: 14 (1.4, 10.3)
T4: 25 (2.5, 18.1)

C: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-925610000	925610000	WRENCH	Used for removing and installing door hinge.

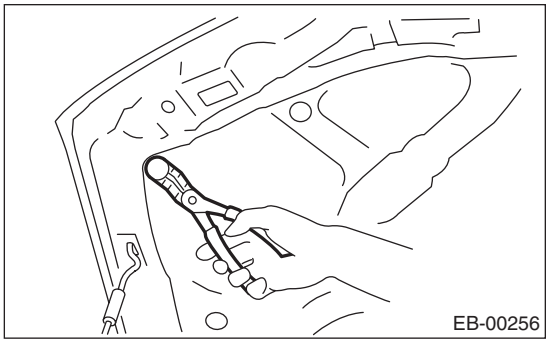
2. GENERAL TOOL

TOOL NAME	REMARKS
Support jack	Used for supporting door panel.
Support stand	Used for supporting the rear gate panel.

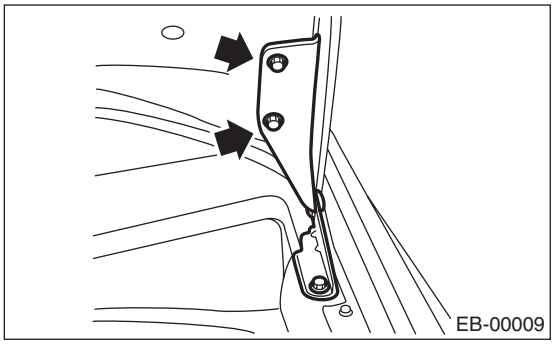
2. Front Hood

A: REMOVAL

1) Open the front hood to remove the washer nozzles.
2) Release the clips to remove the front hood insulator.



3) Remove the bolts to disconnect the hood from hinges.



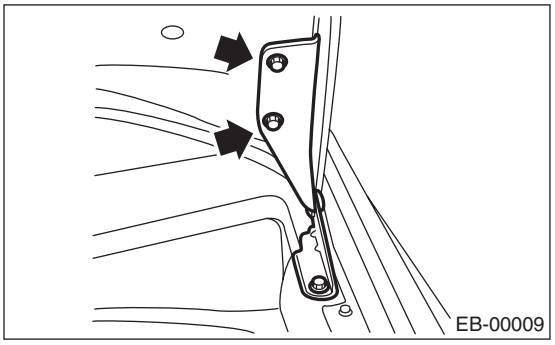
B: INSTALLATION

1) Install in the reverse order of removal.
2) Adjust the clearance between front hood panel and front fender panel. Clearance must be equal at both sides.

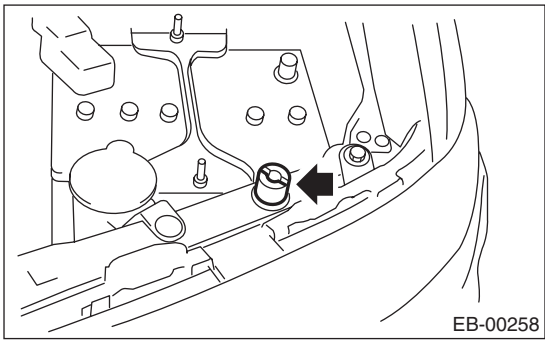
Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to EB-3, FRONT HOOD, COMPONENT, General Description.>

C: ADJUSTMENT

1) Use a hinge mounting holes to align the front hood longitudinally and laterally.



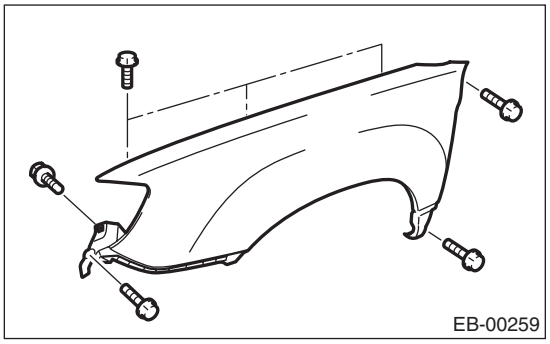
2) Adjust the height at the front end of front hood. <Ref. to SL-39, ADJUSTMENT, Front Hood Lock Assembly.>
3) Rotate the front hood buffer to adjust lateral height.



3. Front Fender

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the front bumper face. <Ref. to EI-20, REMOVAL, Front Bumper.>
3) Remove the mud guard. <Ref. to EI-29, REMOVAL, Mud Guard.>
4) Remove the side sill spoilers. <Ref. to EI-31, REMOVAL, Side Sill Spoiler.>
5) Remove the side protector. <Ref. to EI-32, REMOVAL, Side Garnish.>
6) Loosen the bolts and clips to remove the front fender panel.



B: INSTALLATION

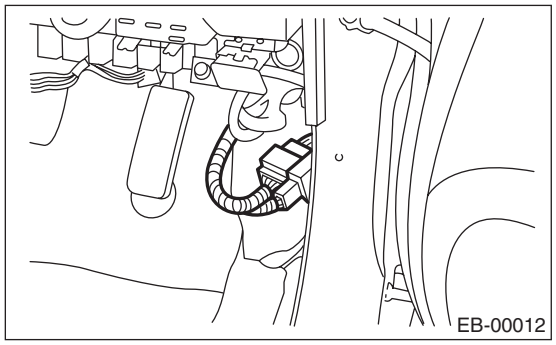
1) Install in the reverse order of removal.
2) When the front fender panel is installed, the clearance between front fender panel and front hood panel must be equal.

Tightening torque:
7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

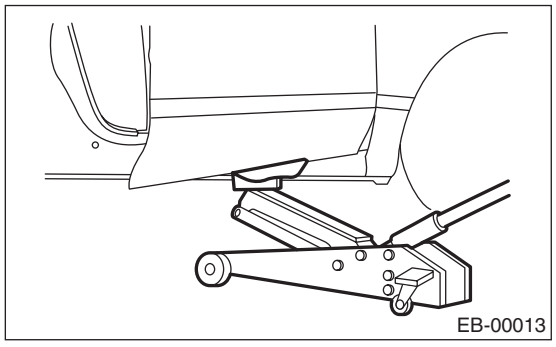
4. Front Door

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the front door trim. <Ref. to EI-33, REMOVAL, Front Door Trim.>
3) Remove the outer mirror assembly. <Ref. to GW-12, REMOVAL, Outer Mirror Assembly.>
4) Remove the front sealing cover. <Ref. to EB-13, REMOVAL, Front Sealing Cover.>
5) Remove the front door glass. <Ref. to GW-16, REMOVAL, Front Door Glass.>
6) Remove the front door regulator and motor. <Ref. to GW-20, REMOVAL, Front Regulator and Motor Assembly.>
7) Remove the front door latch assembly. <Ref. to SL-30, REMOVAL, Front Door Latch and Door Lock Actuator Assembly.>
8) Remove the front outer handle. <Ref. to SL-29, REMOVAL, Front Outer Handle.>
9) Remove the front pillar lower trim to disconnect connector from the body harness.

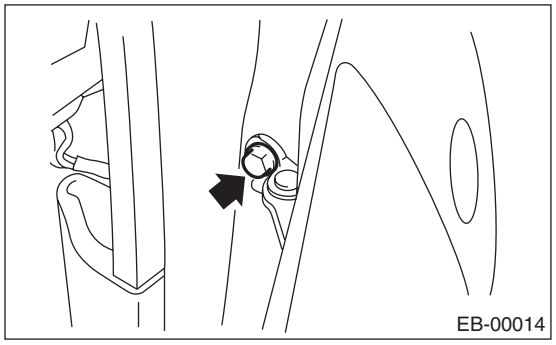

EB-00012

10) Put a wooden block on jack and place jack under the door. Support the door with a jack to protect it from damage.

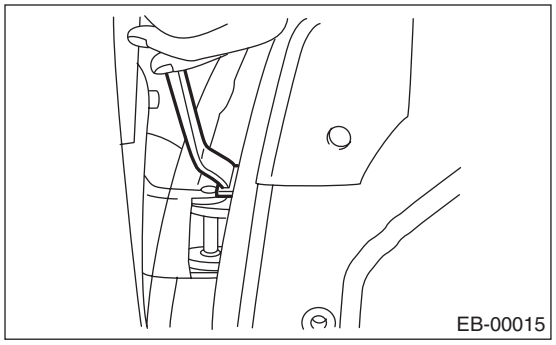

EB-00013

NOTE:
When supporting the door with jack, work carefully so that you do not deform the hinge portion of door during work.

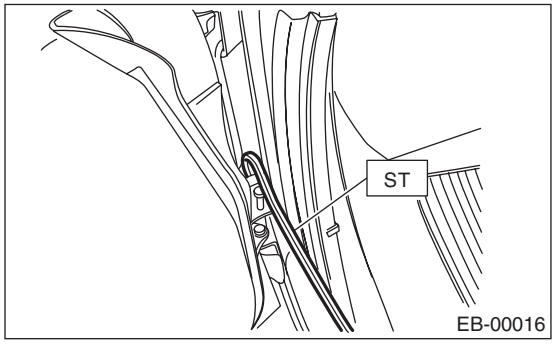
11) Remove the checker bolts.


EB-00014

12) Remove the door-side bolts for upper and lower hinges to remove front door panel.


EB-00015

13) Remove the attaching bolts (on the body side) for the upper and lower hinges using the ST to remove the door hinges.
ST 925610000 WRENCH



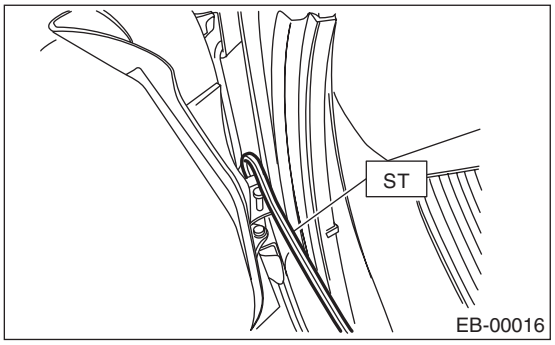
EB-00016

B: INSTALLATION

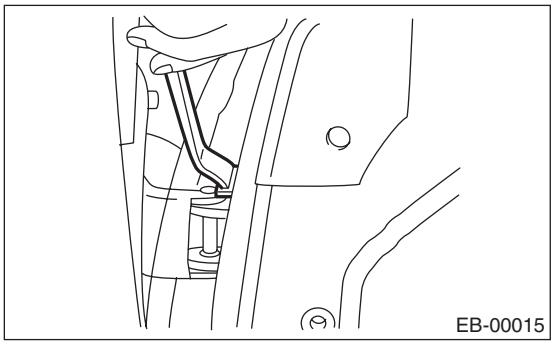
1) Install in the reverse order of removal.
2) Apply grease to the moving part of door hinges.
3) Refer to “COMPONENT” of “General Description” for tightening torque. <Ref. to EB-5, FRONT DOOR, COMPONENT, General Description.>

C: ADJUSTMENT

1) Using the ST, loosen the body-side bolts of the upper and lower hinges to align the position for vertical and horizontal direction of the front door panel.
ST 925610000 WRENCH

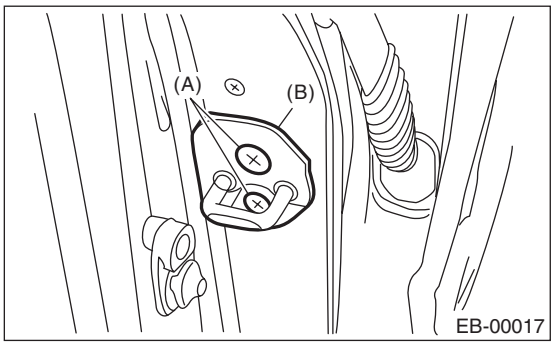


2) Loosen the door-side bolts of the upper and lower hinges to align the position for vertical and horizontal direction of front door panel on the front side.



3) Loosen the screws (A) and tap striker (B) using a plastic hammer to adjust the striker to align the position of front door panel vertically and laterally at the rear end.

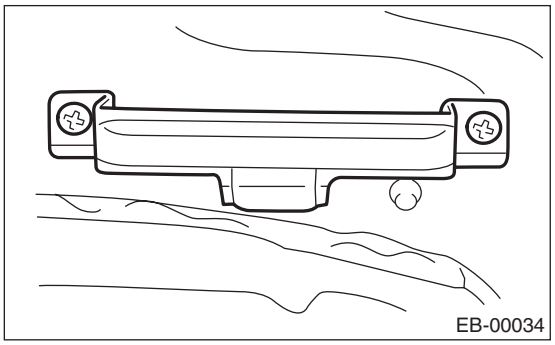
CAUTION:
Do not use an impact wrench. Welding area on the striker nut plate is easily broken.



5. Front Sealing Cover

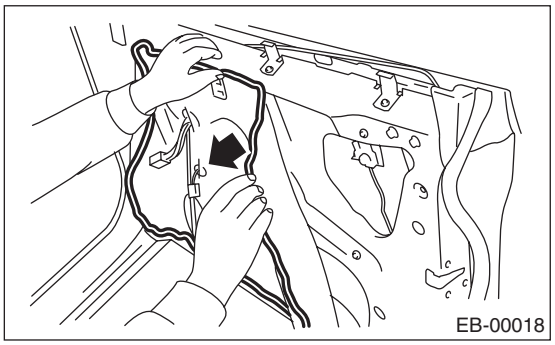
A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the front door trim. <Ref. to EI-33, REMOVAL, Front Door Trim.>
3) Remove the front speaker. <Ref. to ET-6, REMOVAL, Front Speaker.>
4) Remove the door trim bracket.



5) Remove the sealing cover.

NOTE:
• Carefully remove the butyl tape. Excessive force will easily break the cover.
• If cover gets broken, replace it with a new part.



B: INSTALLATION

1) Install in the reverse order of removal.
2) When replacing the sealing cover, use the butyl tape.
3) Press the butyl tape-applied area firmly to prevent any floating on surface.

Butyl tape:
3M8626 or equivalent

NOTE:
• Apply a uniform bead of butyl tape.
• Attach the sealing cover, keeping it from becoming wrinkled.
• Breaks in the bead will allow water leakage and contamination.

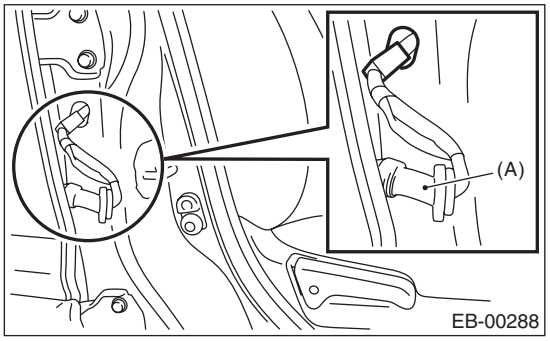
C: INSPECTION

If the sealing cover gets damaged, replace it with a new part.

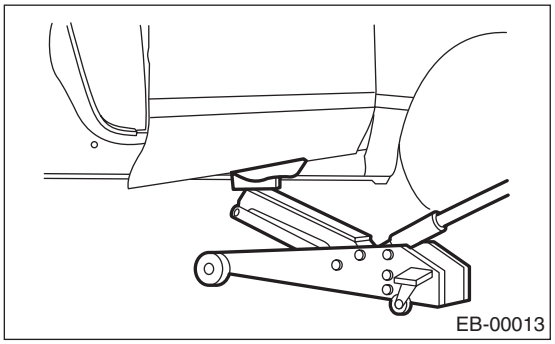
6. Rear Door

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the rear door trim. <Ref. to EI-34, REMOVAL, Rear Door Trim.>
3) Remove the rear sealing cover. <Ref. to EB-16, REMOVAL, Rear Sealing Cover.>
4) Remove the rear door glass. <Ref. to GW-21, REMOVAL, Rear Door Glass.>
5) Remove the rear regulator and motor. <Ref. to GW-23, REMOVAL, Rear Regulator and Motor Assembly.>
6) Remove the rear door latch. <Ref. to SL-34, REMOVAL, Rear Door Latch and Door Lock Actuator Assembly.>
7) Remove the rear outer handle. <Ref. to SL-33, REMOVAL, Rear Outer Handle.>
8) Remove the rubber duct (A) from center pillar, and disconnect the connector of the door harness.

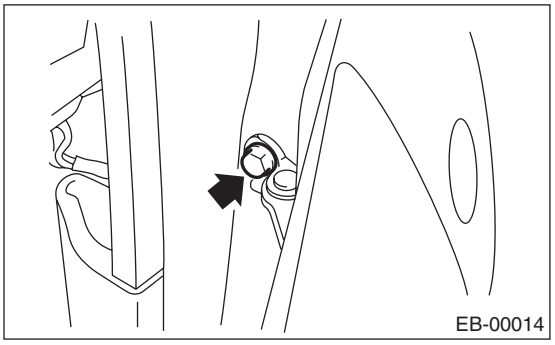


9) Put a wooden block on jack and place jack under the door. Support the door with a jack to protect it from damage.

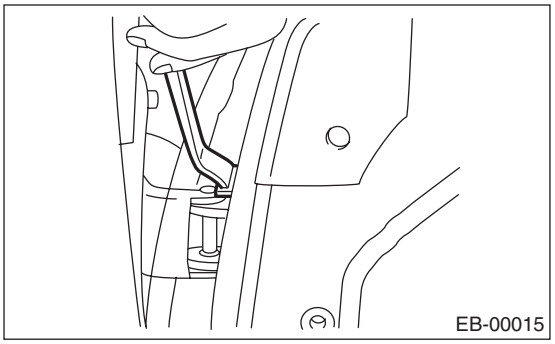


NOTE:
When supporting the door with jack, work carefully so that you do not deform the hinge portion of door during work.

10) Remove the checker bolts.



11) Remove the door-side bolts for upper and lower hinges to remove the rear door panel.



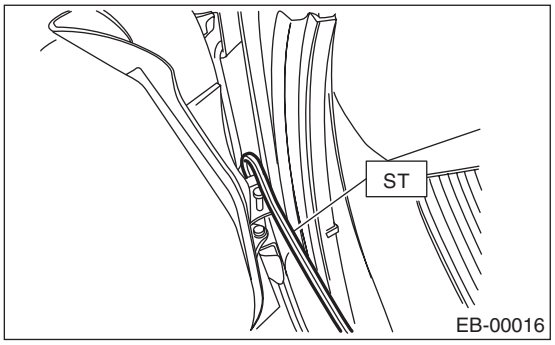
12) Remove the attaching bolts (on the body side) for the upper and lower hinges using the ST to remove the door hinges.
ST 925610000 WRENCH

B: INSTALLATION

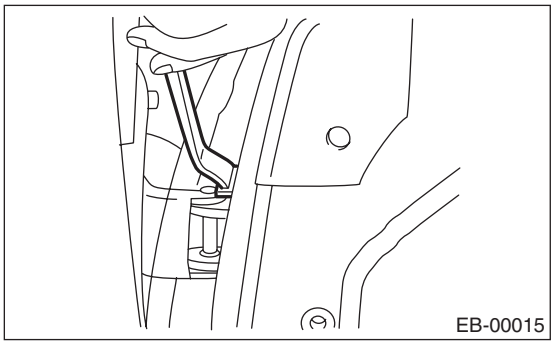
1) Install in the reverse order of removal.
2) Apply grease to the moving part of door hinges.
3) Refer to “COMPONENT” of “General Description” for tightening torque. <Ref. to EB-6, REAR DOOR, COMPONENT, General Description.>

C: ADJUSTMENT

1) Using the ST, loosen the body-side bolts of the upper and lower hinges to align the position for vertical and horizontal direction of the rear door panel.
ST 925610000 WRENCH

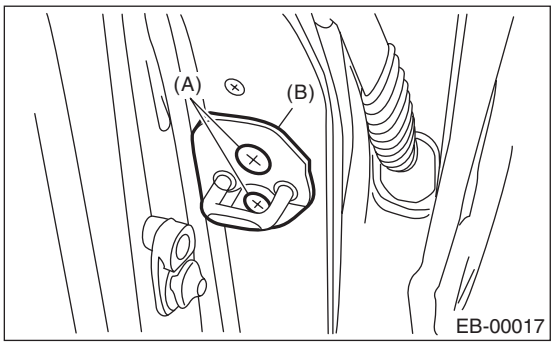


2) Loosen the door-side bolts of the upper and lower hinges to align the position for vertical and horizontal direction of rear door panel on the front side.



3) Loosen the screws (A) and tap the striker (B) using a plastic hammer to adjust the striker to align the position of rear door panel vertically and laterally at the rear end.

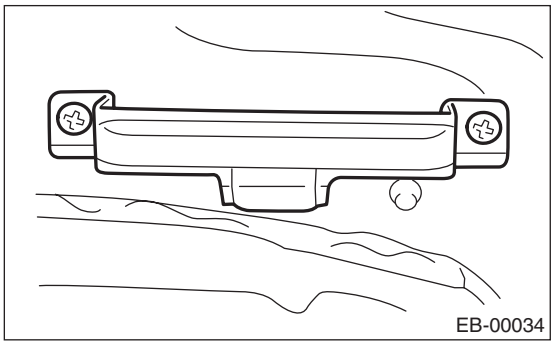
CAUTION:
Do not use an impact wrench. Welding area on the striker nut plate is easily broken.



7. Rear Sealing Cover

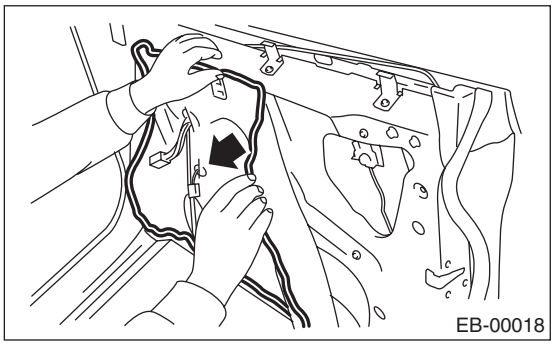
A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the rear door trim. <Ref. to EI-34, REMOVAL, Rear Door Trim.>
3) Remove the rear speaker. <Ref. to ET-7, REMOVAL, Rear Speaker.>
4) Remove the door trim bracket.



5) Remove the sealing cover.

NOTE:
• Carefully remove the butyl tape. Excessive force will easily break the cover.
• If cover gets broken, replace it with a new part.



B: INSTALLATION

1) Install in the reverse order of removal.
2) When replacing the sealing cover, use the butyl tape.
3) Press the butyl tape-applied area firmly to prevent any floating on surface.

Butyl tape:
3M8626 or equivalent

NOTE:
• Apply a uniform bead of butyl tape.
• Attach the sealing cover, keeping it from becoming wrinkled.
• Breaks in the bead will allow water leakage and contamination.

C: INSPECTION

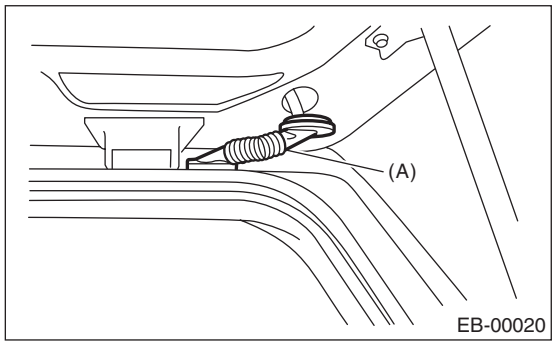
If the sealing cover gets damaged, replace it with a new part.

8. Rear Gate

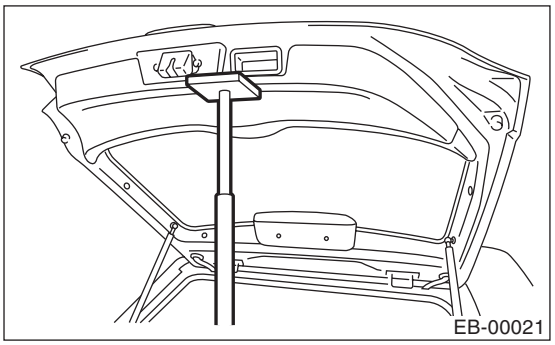
A: REMOVAL

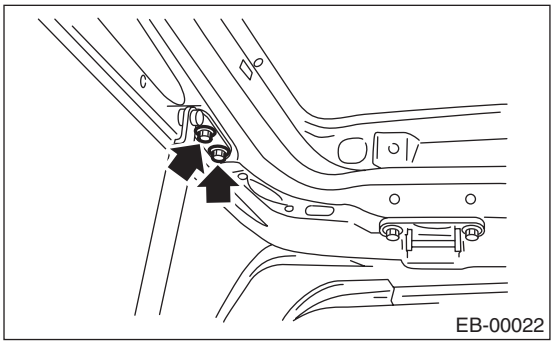
1. REAR GATE PANEL

1) Disconnect the ground cable from the battery.
2) Open the rear gate.
3) Remove the rear gate trim. <Ref. to EI-46, REMOVAL, Rear Gate Trim.>
4) Remove the rear wiper motor. <Ref. to WW-16, REMOVAL, Rear Wiper Motor.>
5) Remove the rear gate garnish assembly. <Ref. to EB-20, REMOVAL, Rear Gate Garnish.>
6) Remove the rear gate outer handle. <Ref. to SL-36, REMOVAL, Rear Gate Outer Handle.>
7) Remove the rear gate latch assembly. <Ref. to SL-37, REMOVAL, Rear Gate Latch Assembly.>
8) Disconnect the connectors of rear wiper, rear defogger, and other lighting devices.
9) Disconnect the washer hose.
10) Remove the rubber duct (A) connection, and pull out the harness and washer hose from the rear gate.

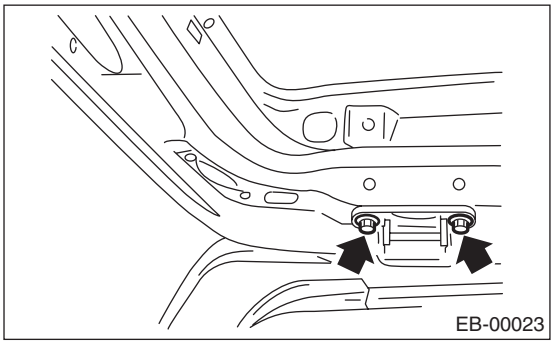


11) Support the rear gate using a support stand while removing the rear gate damper stay mounting bolts.



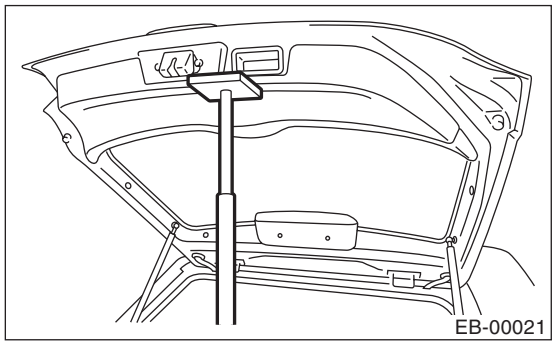


NOTE:
When the support stand that is supporting the rear gate is released, rear gate may hit and damage the body. To prevent this, place a shop cloth between body and rear gate.
12) Loosen the rear gate bolts to remove the rear gate.



2. REAR GATE DAMPER STAY

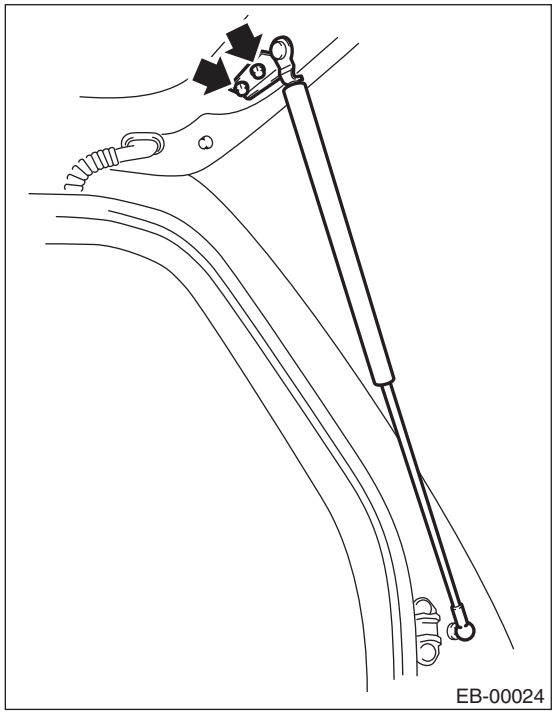
1) Open the rear gate. Support the rear gate using the support stand.



NOTE:
After the rear gate damper stay is removed, the rear gate cannot stay in the open position. Support the rear gate with a support stand when removing the bolts.

CAUTION:
- **Do not damage piston rods and oil seals.**
- **Never disassemble cylinders: They contain gas.**

2) Loosen the bolts to remove rear gate damper stay from the rear gate.



B: INSTALLATION

1. REAR GATE PANEL

1) Install in the reverse order of removal.
2) Install the rear gate panel with uniform clearance to the body.
3) Refer to “COMPONENT” of “General Description” for tightening torque. <Ref. to EB-7, REAR GATE, COMPONENT, General Description.>

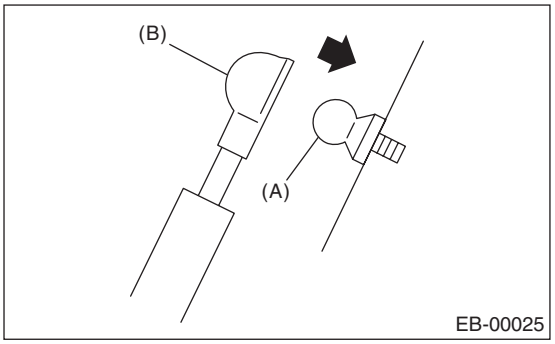
NOTE:
Support the rear gate with a support stand before starting the work.

2. REAR GATE DAMPER STAY

1) Install mounting bolt (A) to the rear gate panel and body.

Tightening torque:
14 N·m (1.4 kgf-m, 10.3 ft-lb)

2) Securely install the rear gate damper stay (B) to the mounting bolt (A).



3) Tighten the upper side bolt of the rear gate damper stay.

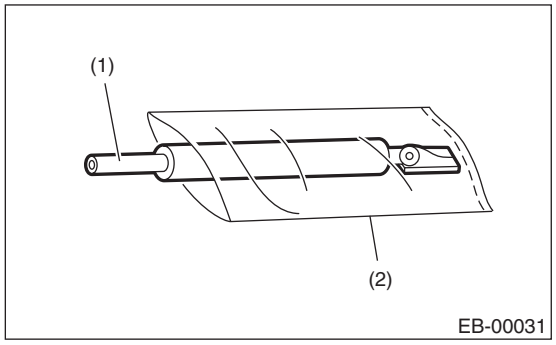
Tightening torque:
10 N·m (1.0 kgf-m, 7.2 ft-lb)

C: DISPOSAL

1. REAR GATE DAMPER STAY

CAUTION:
Gas is colorless, odorless, and harmless. However, gas pressure may spray cutting powder or oil. Be sure to wear dust-resistant goggles.

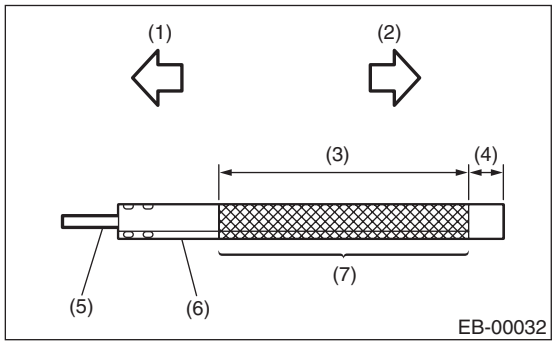
1) Cover with a vinyl sack as shown in the figure.



(1) Rear gate damper stay
(2) Vinyl sack

NOTE:
Prevent the vinyl sack from being caught by drill cutting edge

2) Lift the body side slightly with piston rods fully extended, and secure the body side on vise stand. Drill a hole in 2 to 3 mm (0.08 to 0.12 in) diameter at a point 10 to 200 mm (0.39 to 7.87 in) from door side, and bleed rear gate damper stay gas stay completely.



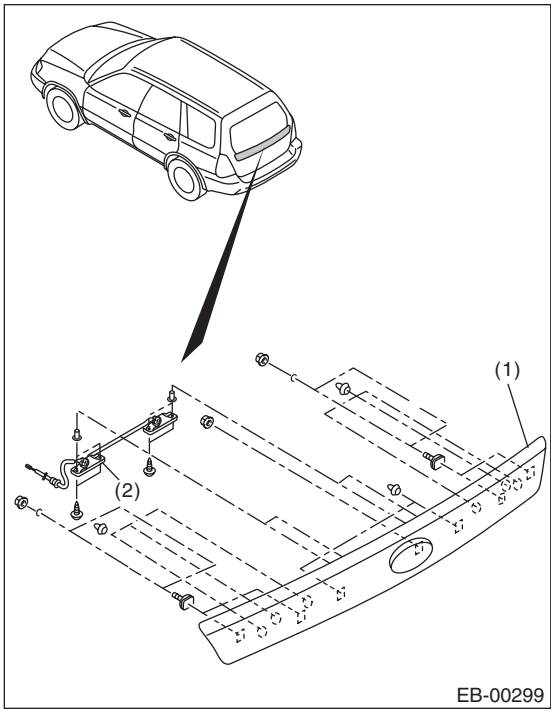
(1) Body side
(2) Door side
(3) 190 mm (7.48 in)
(4) 10 mm (0.39 in)
(5) Piston rod
(6) Cylinder
(7) Portion to be drilled

9. Rear Gate Garnish

A: REMOVAL

1) Remove the rear gate trim. <Ref. to EI-46, REMOVAL, Rear Gate Trim.>
2) Remove the 5 flange nuts from the rear gate panel inner side (vehicle side).
3) Remove the license plate light assembly connector from the rear gate panel inner side (luggage compartment side).
4) Close the gate and then remove the rear gate garnish assembly by pulling it manually.

CAUTION:
Be careful not to pull by force. It may damage the clip and license plate light harness.



(1) Rear garnish ASSY
(2) License plate light

B: INSTALLATION

Install in the reverse order of removal.

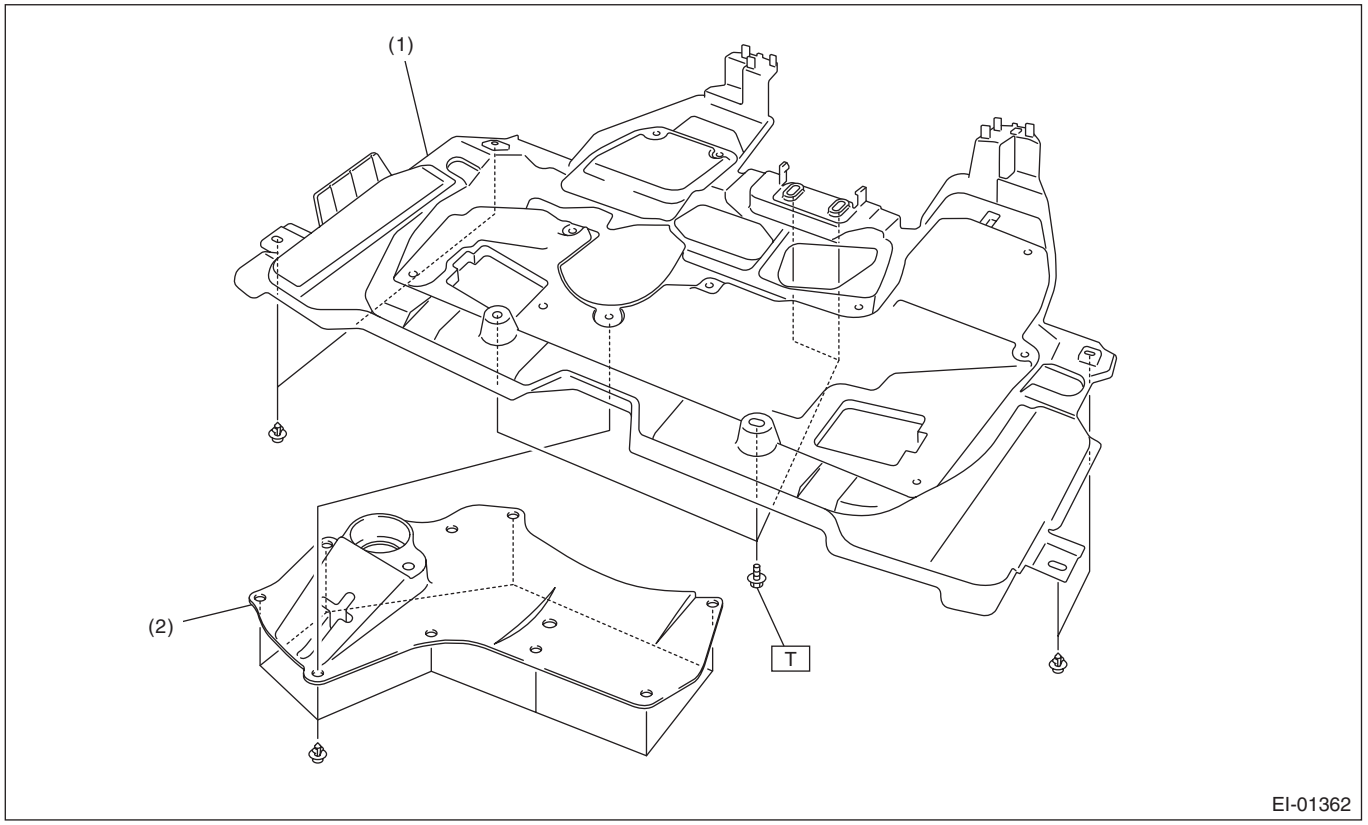
C: INSPECTION

Make sure the rear gate garnish is not greatly scratched or cracked.

1. General Description

A: COMPONENT

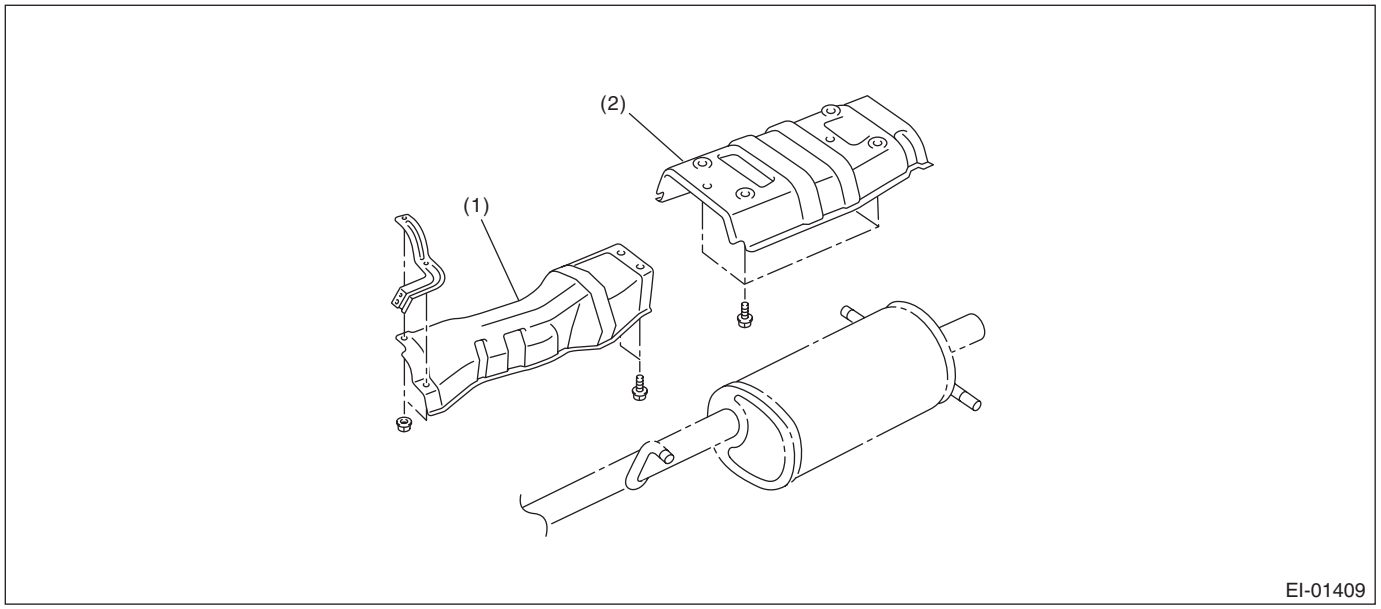
1. UNDER COVER



(1) Front under cover
(2) Service hole cover

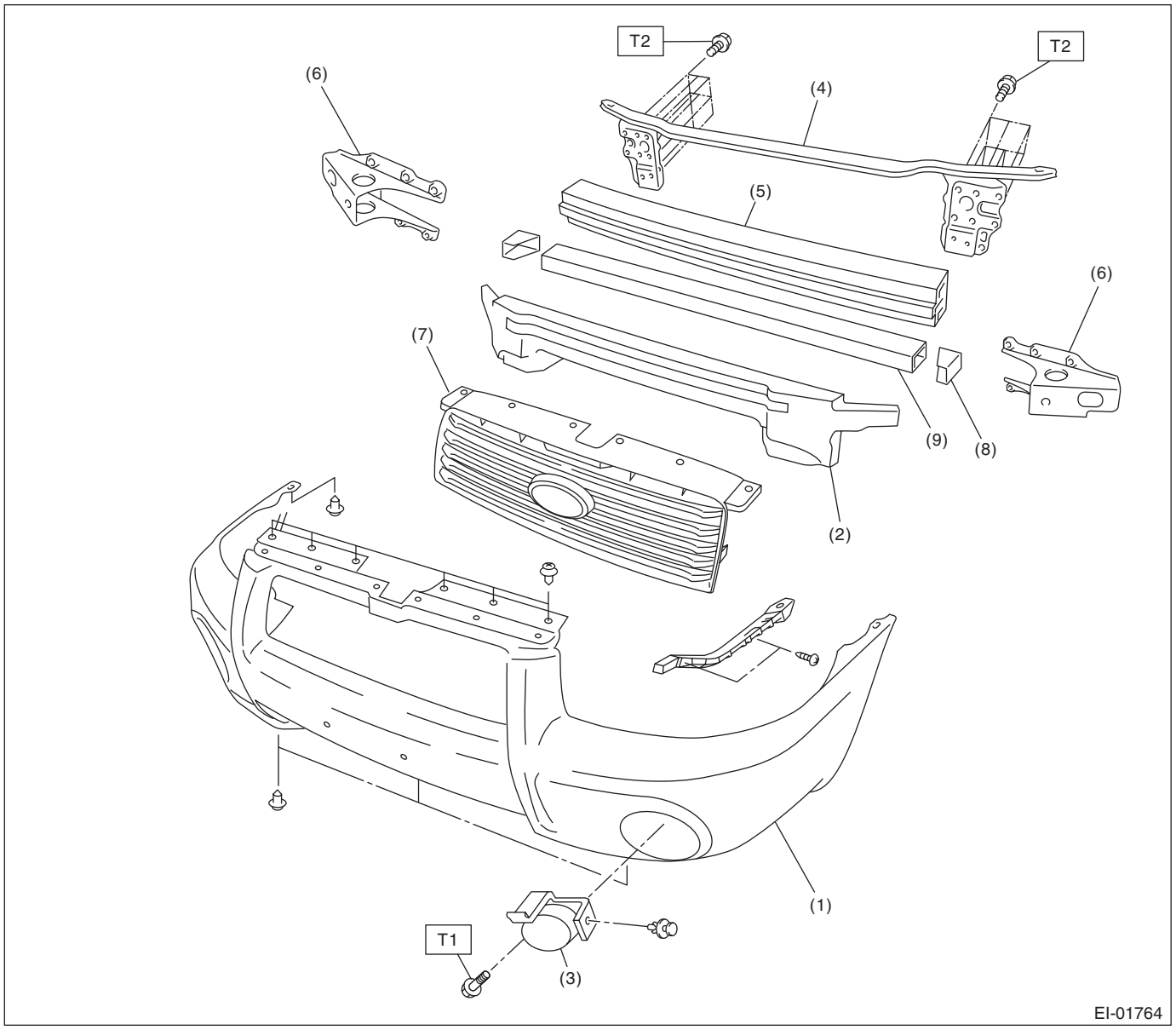
Tightening torque:N·m (kgf-m, ft-lb)
T: 18 (1.84, 13.3)

2. HEAT SHIELD COVER



(1) Center heat shield cover
(2) Rear heat shield cover

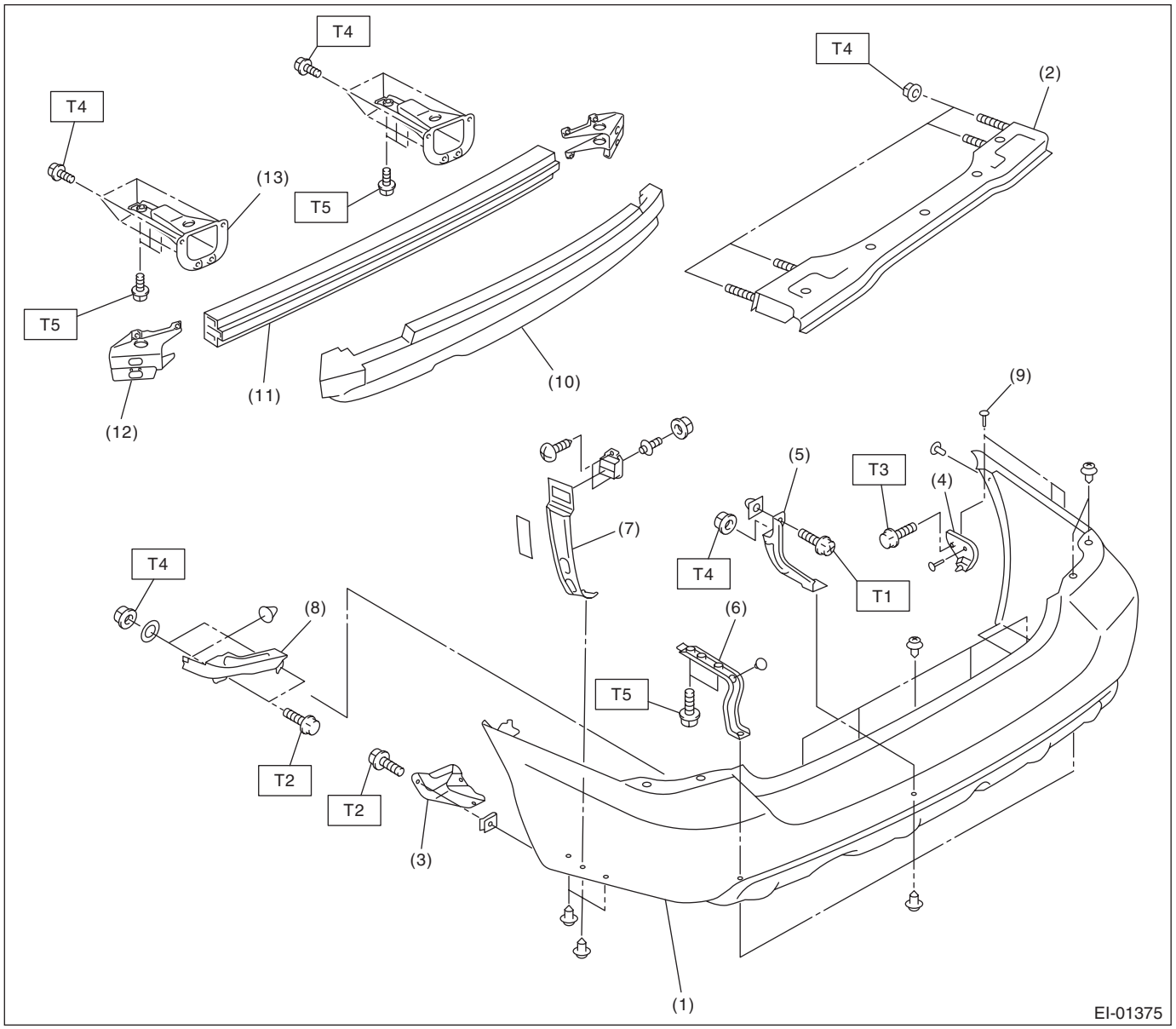
3. FRONT BUMPER



(1) Bumper face
(2) E/A foam
(3) Fog light
(4) Upper beam
(5) Main beam
(6) Side bracket
(7) Front grille
(8) Lower beam reinforcement
(9) Lower beam

Tightening torque:N·m (kgf-m, ft-lb)
T1: 7.5 (0.76, 5.53)
T2: 70 (7.1, 51)

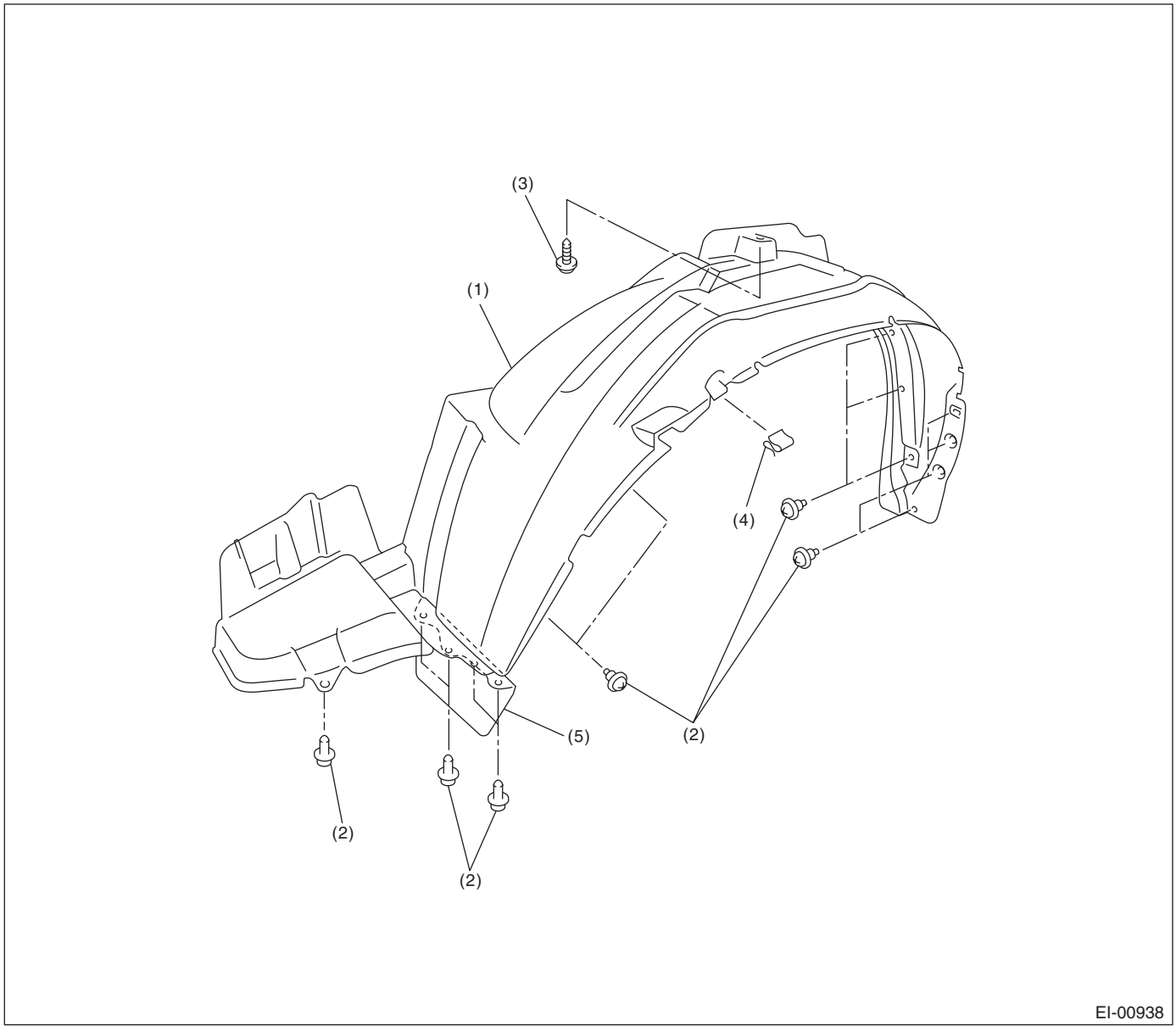
4. REAR BUMPER



(1)	Bumper face	(8)	Rear bumper upper beam side
(2)	Rear bumper upper beam	(9)	Rivet
(3)	Cover rear arch	(10)	E/A foam
(4)	Bracket side rear bumper front	(11)	Main beam
(5)	Bracket center	(12)	Side bracket
(6)	Stay COMPL	(13)	Bumper stay
(7)	Bracket bumper side rear ASSY		

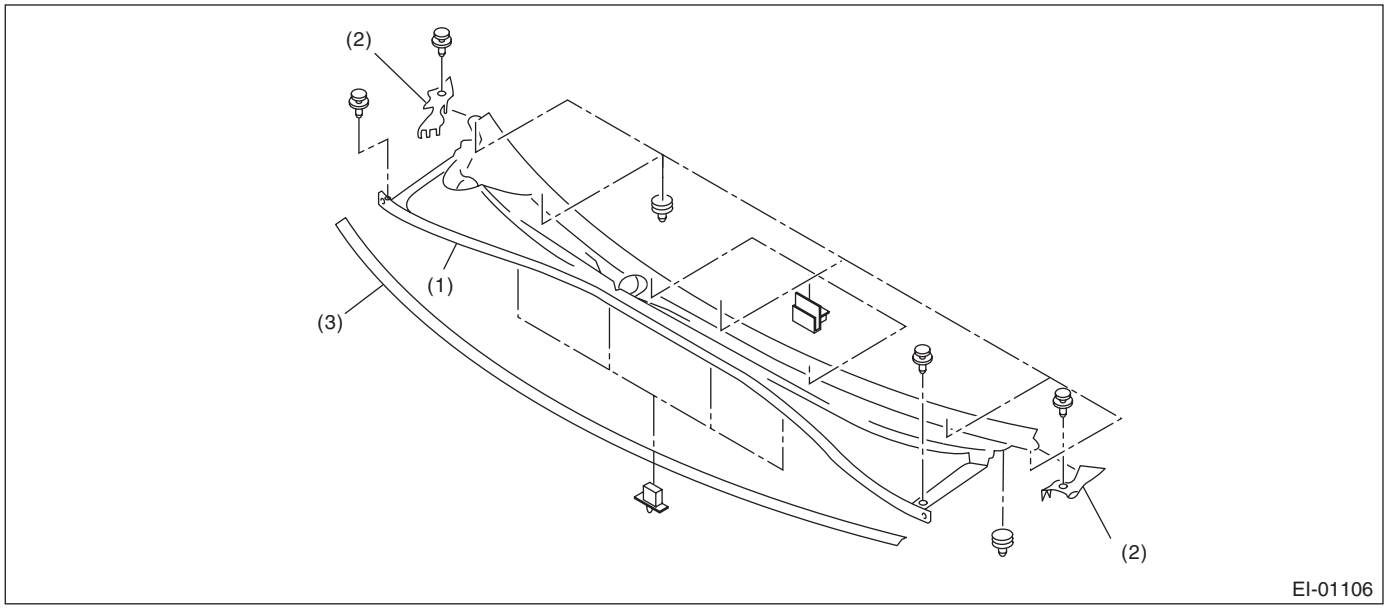
Tightening torque:N·m (kgf-m, ft-lb)
T1: 1.8 (0.18, 1.3)
T2: 4.4 (0.45, 3.26)
T3: 7.4 (0.75, 5.46)
T4: 32 (3.3, 24)
T5: 93 (9.5, 68.7)

5. MUD GUARD



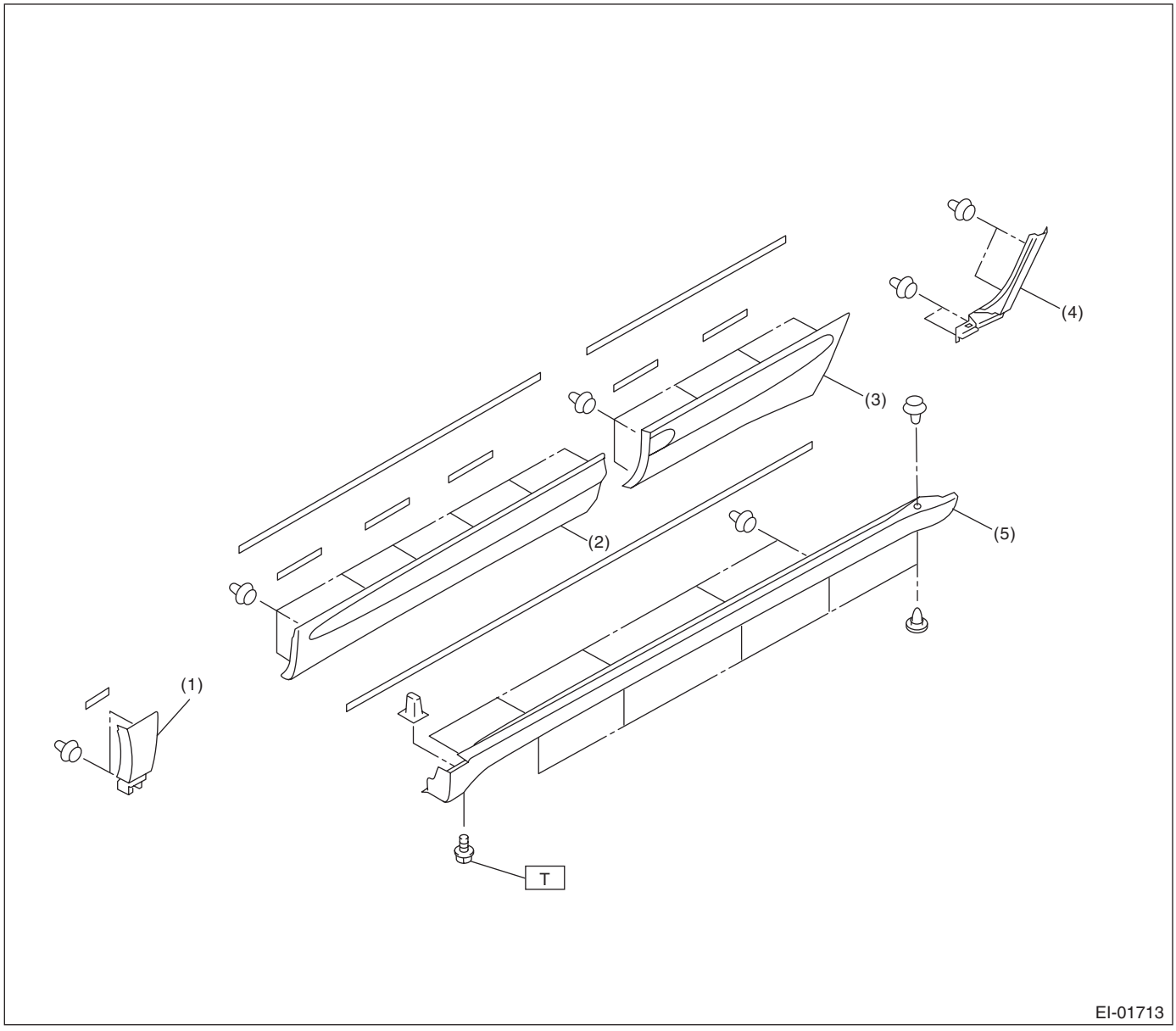
(1) Mud guard
(2) Clip
(3) Screw
(4) Clip (S-shaped)
(5) Air flap

6. COWL PANEL



(1) Cowl panel
(2) Cowl panel side
(3) Seal

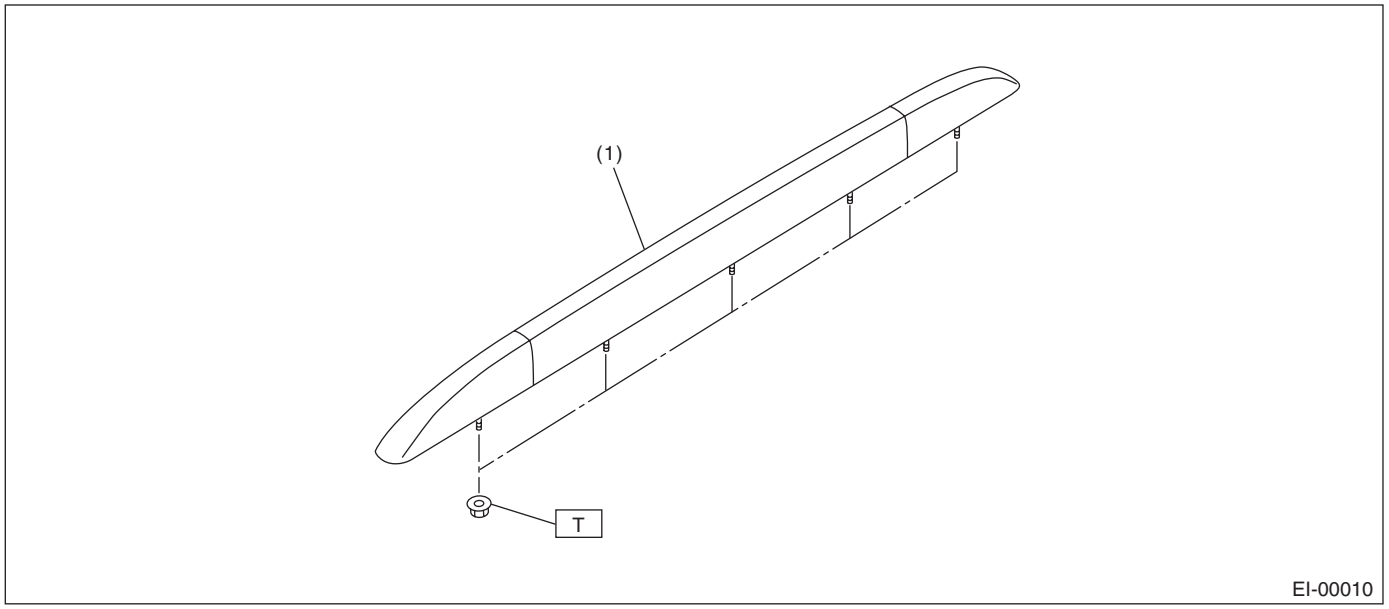
7. SIDE SILL SPOILER



(1) Side garnish (Front fender)
(2) Side garnish (Front door)
(3) Side garnish (Rear door)
(4) Side garnish (Rear quarter)
(5) Side garnish (Side sill)

Tightening torque:N·m (kgf-m, ft-lb)
T: 2 (0.20, 1.46)

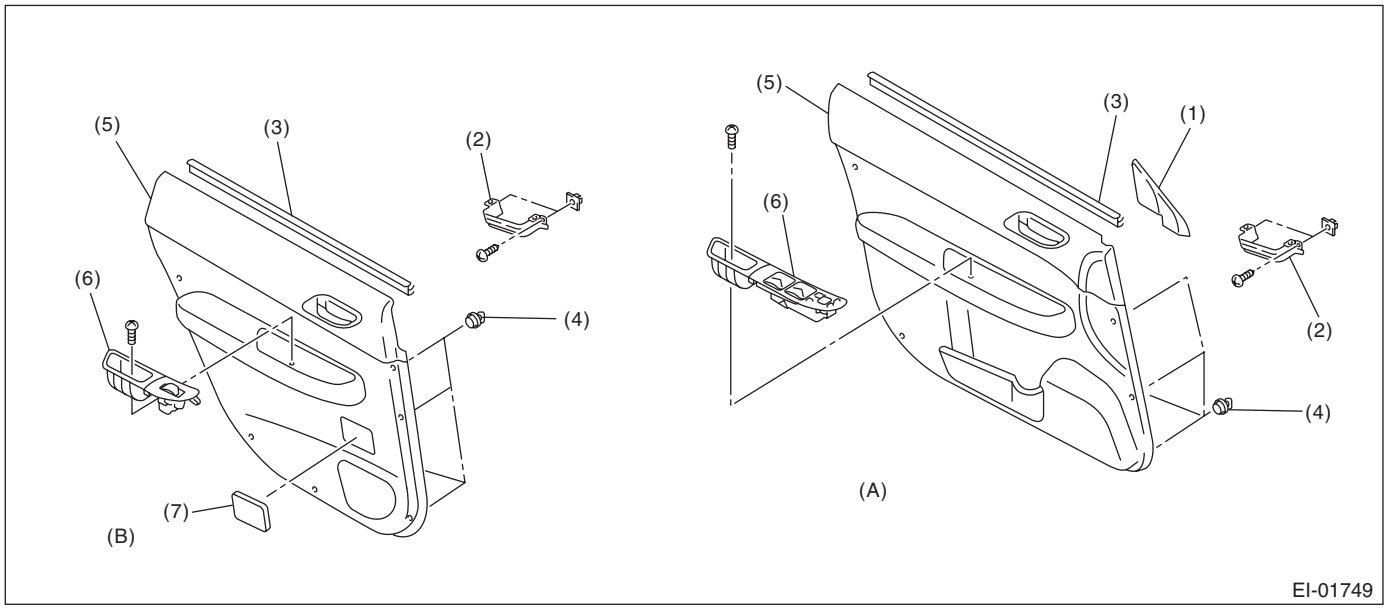
8. ROOF RAIL



(1) Roof rail

Tightening torque:N·m (kgf-m, ft-lb)
T: 7.5 (0.76, 5.53)

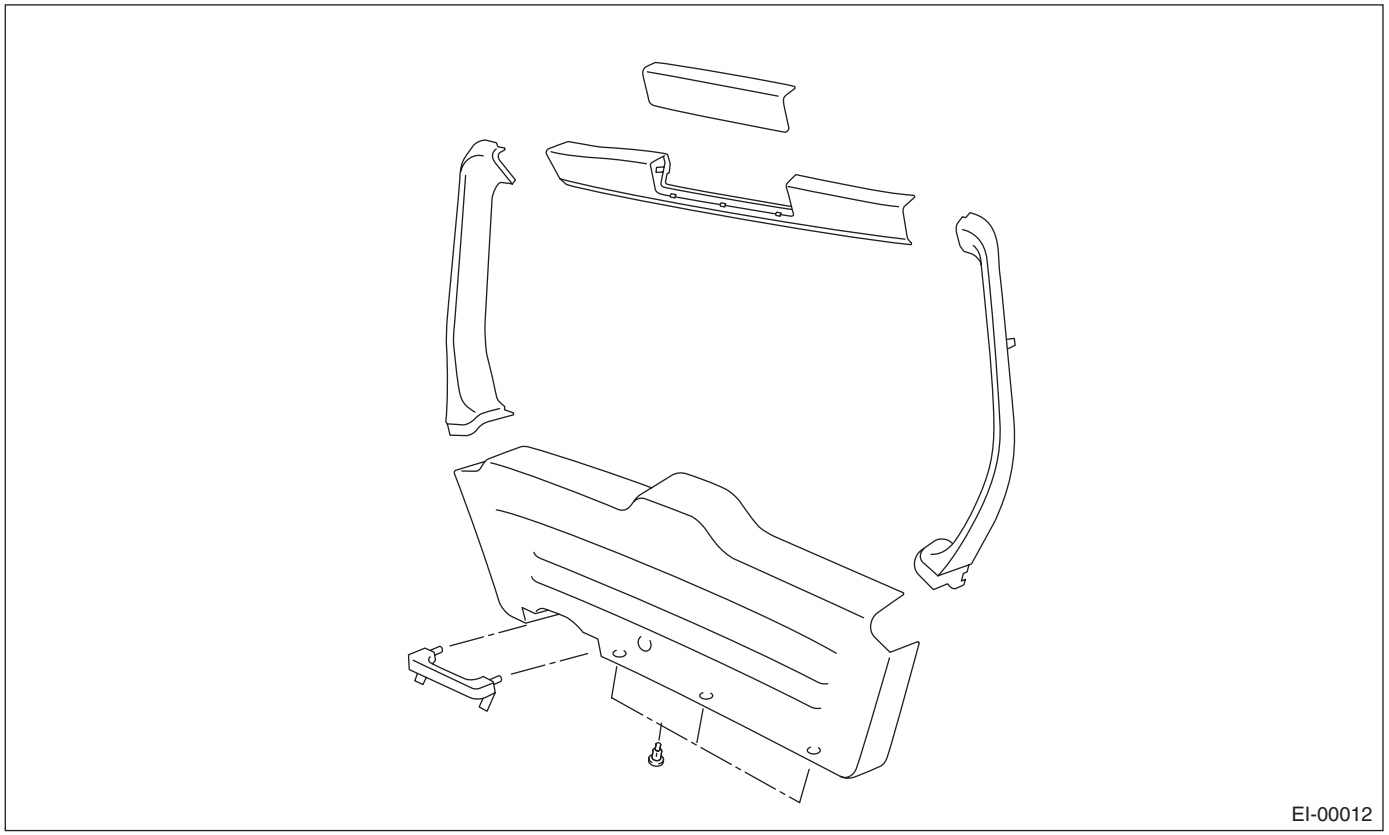
9. DOOR TRIM



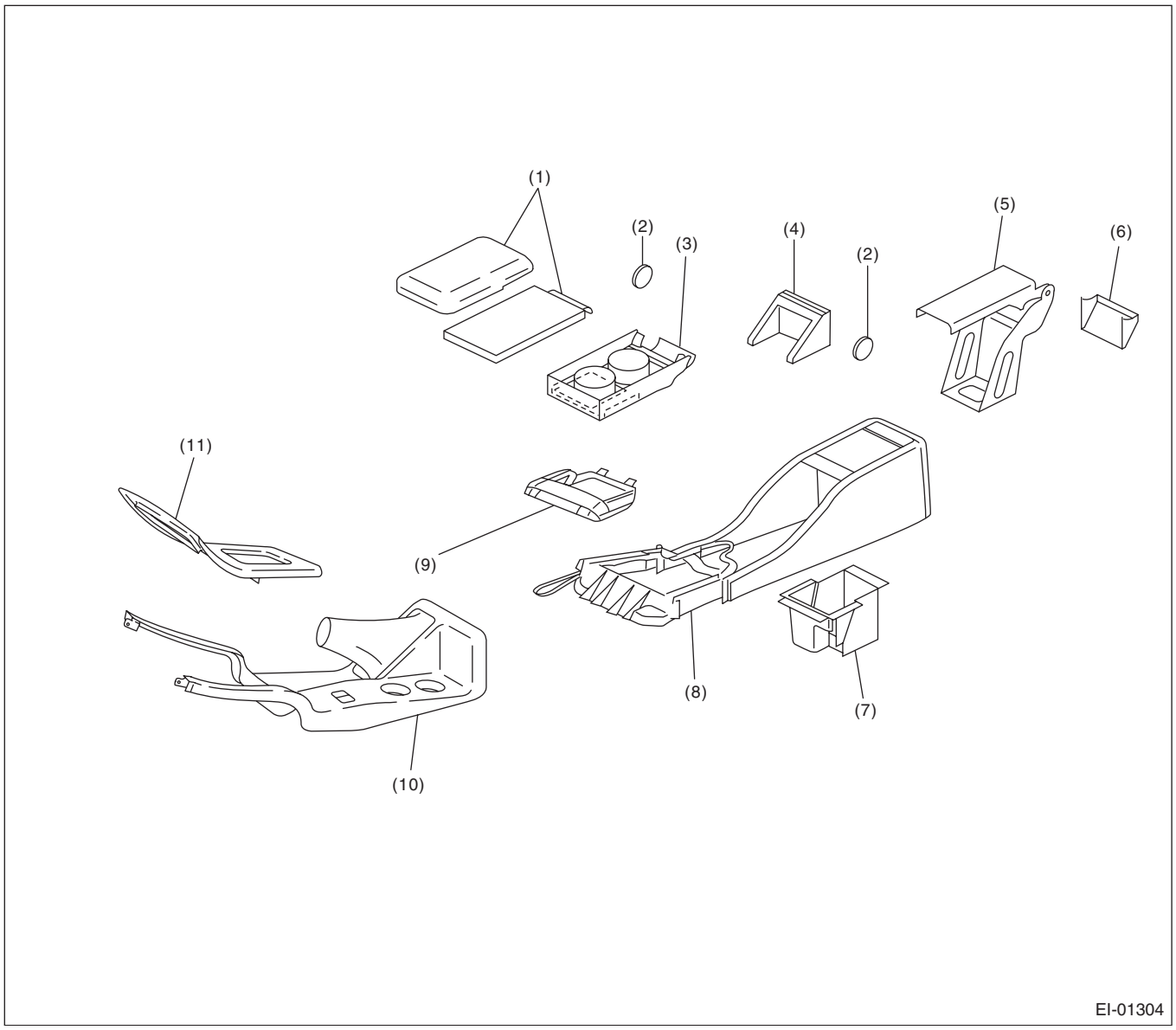
(A) Front door trim
(B) Rear door trim

(1) Gusset cover
(2) Bracket
(3) Upper weather strip
(4) Clip
(5) Trim panel
(6) Power window switch cover
(7) Cover

10.REAR GATE TRIM

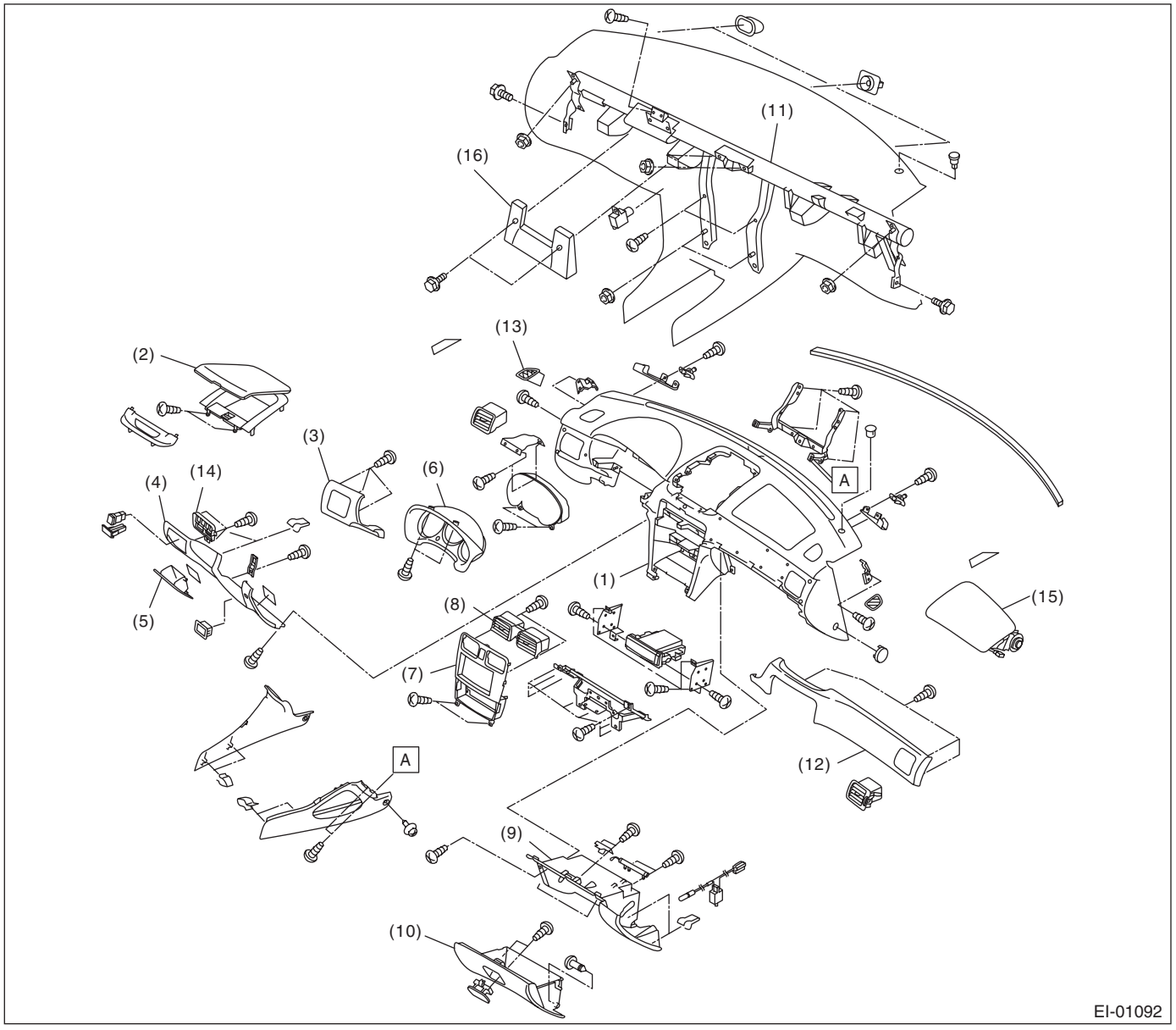


11.CONSOLE BOX



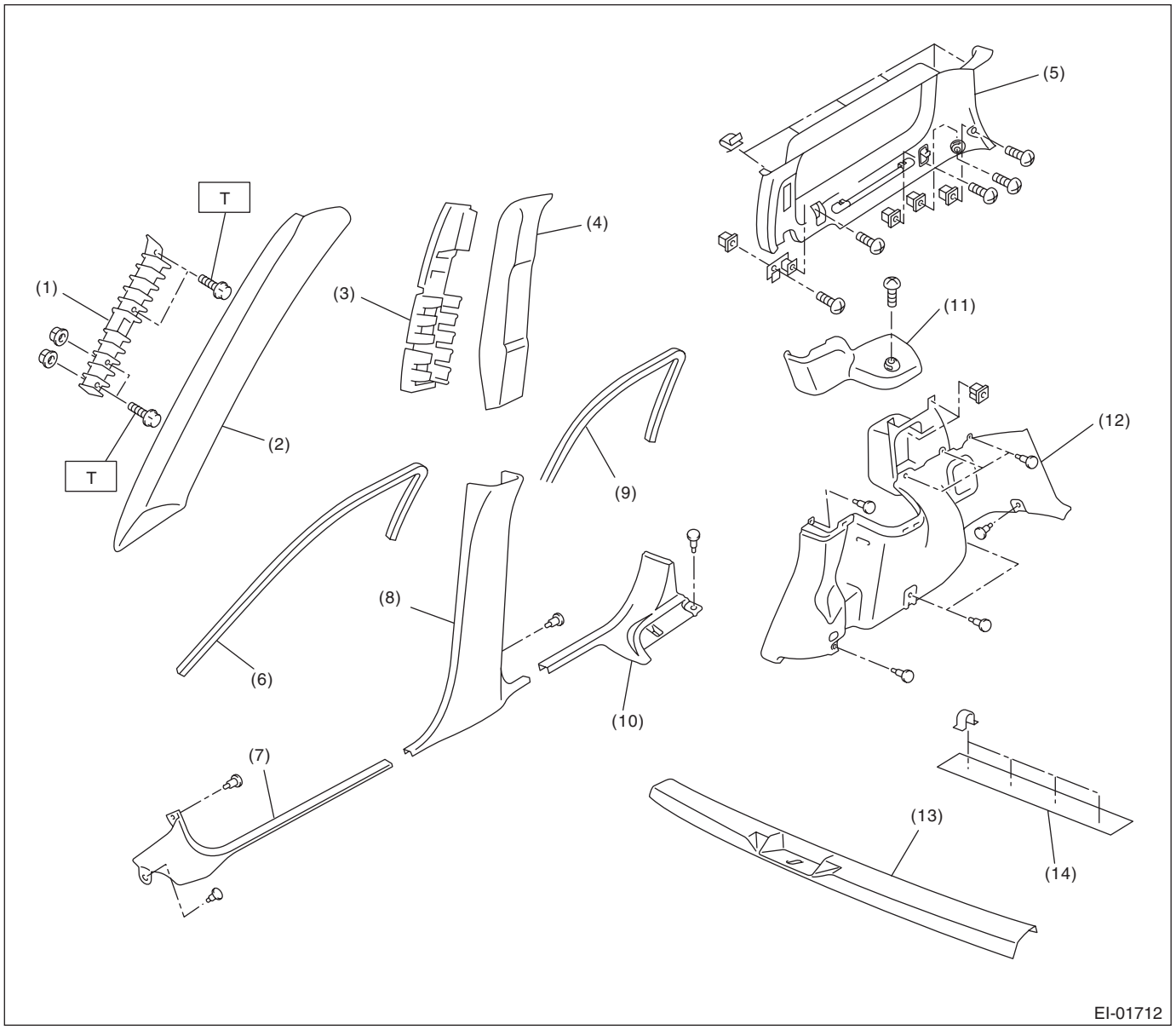
(1) Arm cover
(2) Hinge cover
(3) Cup holder
(4) Hinge front cover
(5) Armrest frame
(6) Hinge rear cover
(7) Console pocket
(8) Console box
(9) Console lid and tray
(10) Console cover
(11) Front cover

12.INSTRUMENT PANEL



(1) Pad and frame
(2) Center compartment (Model without navigation system)
(3) Grille cover
(4) Lower cover
(5) Coin box
(6) Meter visor
(7) Center panel
(8) Air vent grille
(9) Glove box panel
(10) Glove box lid
(11) Steering beam
(12) Grille cover
(13) Air vent grille (Defroster)
(14) Switch panel
(15) Passenger's airbag module
(16) Knee guard panel

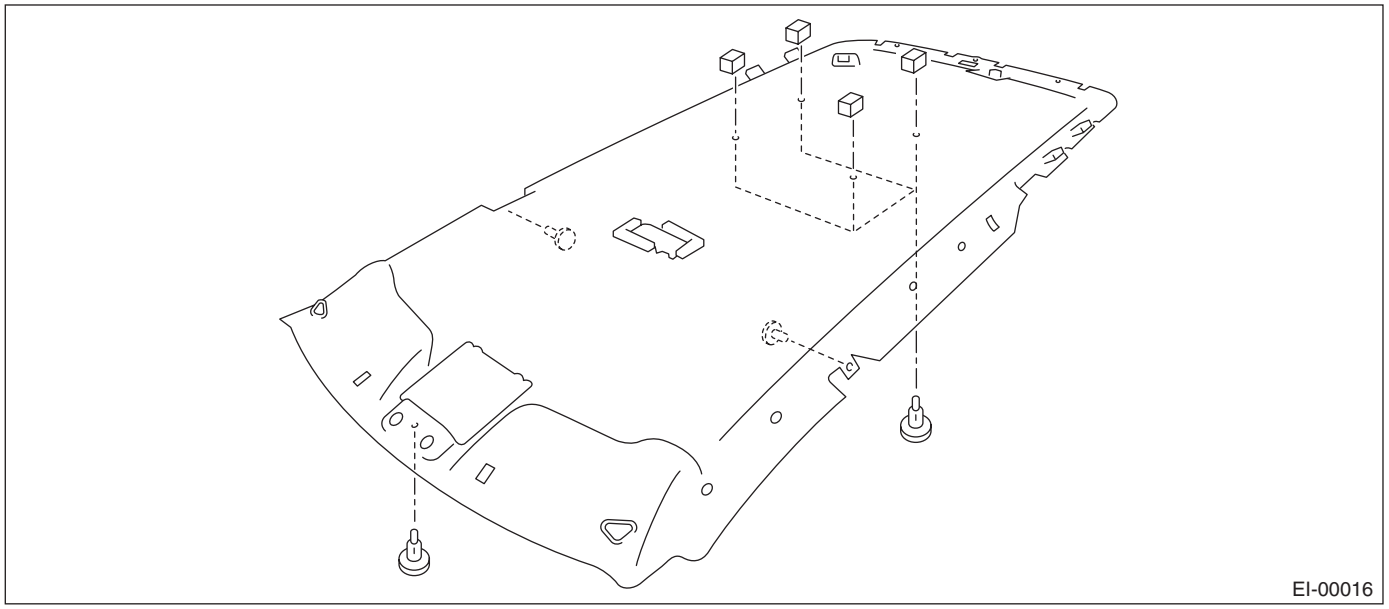
13.INNER TRIM



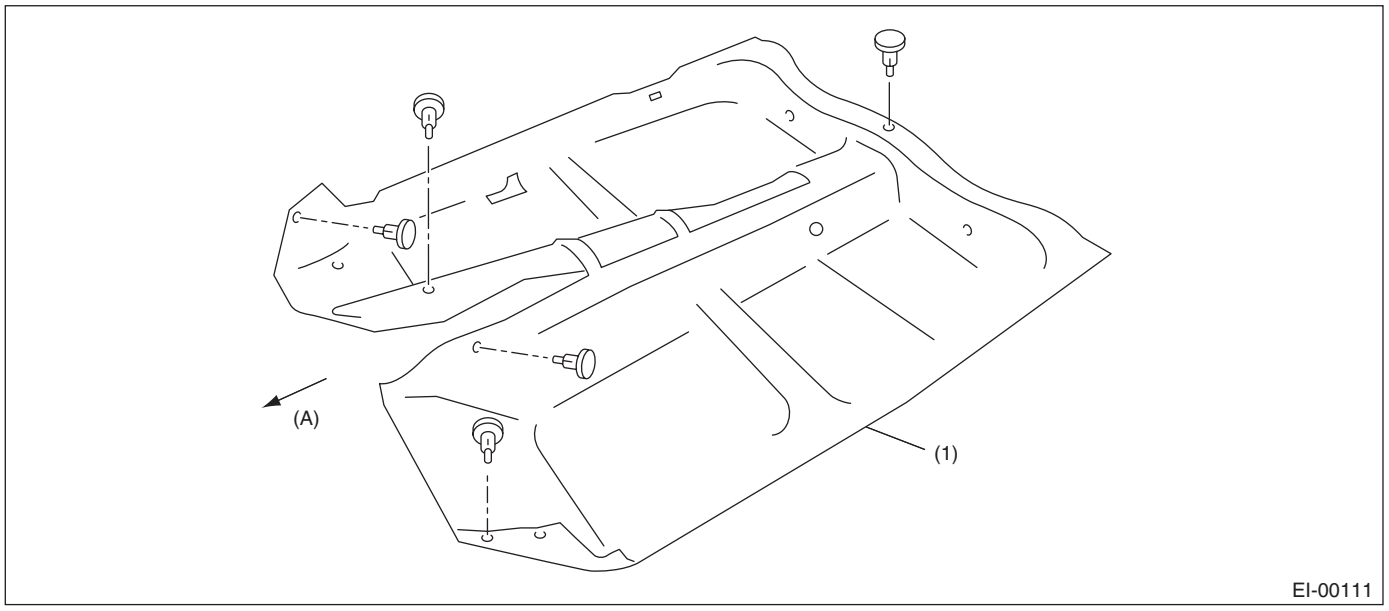
(1) Front pillar inner rib
(2) Front pillar upper trim
(3) Center pillar inner rib
(4) Center pillar upper trim
(5) Rear pillar upper trim
(6) Front garnish
(7) Side sill front cover
(8) Center pillar lower trim
(9) Rear garnish
(10) Side sill rear cover
(11) Strut cap
(12) Rear quarter lower trim
(13) Rear skirt trim
(14) Rear rail trim

Tightening torque:N·m (kgf-m, ft-lb)
T: 2 (0.20, 1.46)

14.ROOF TRIM



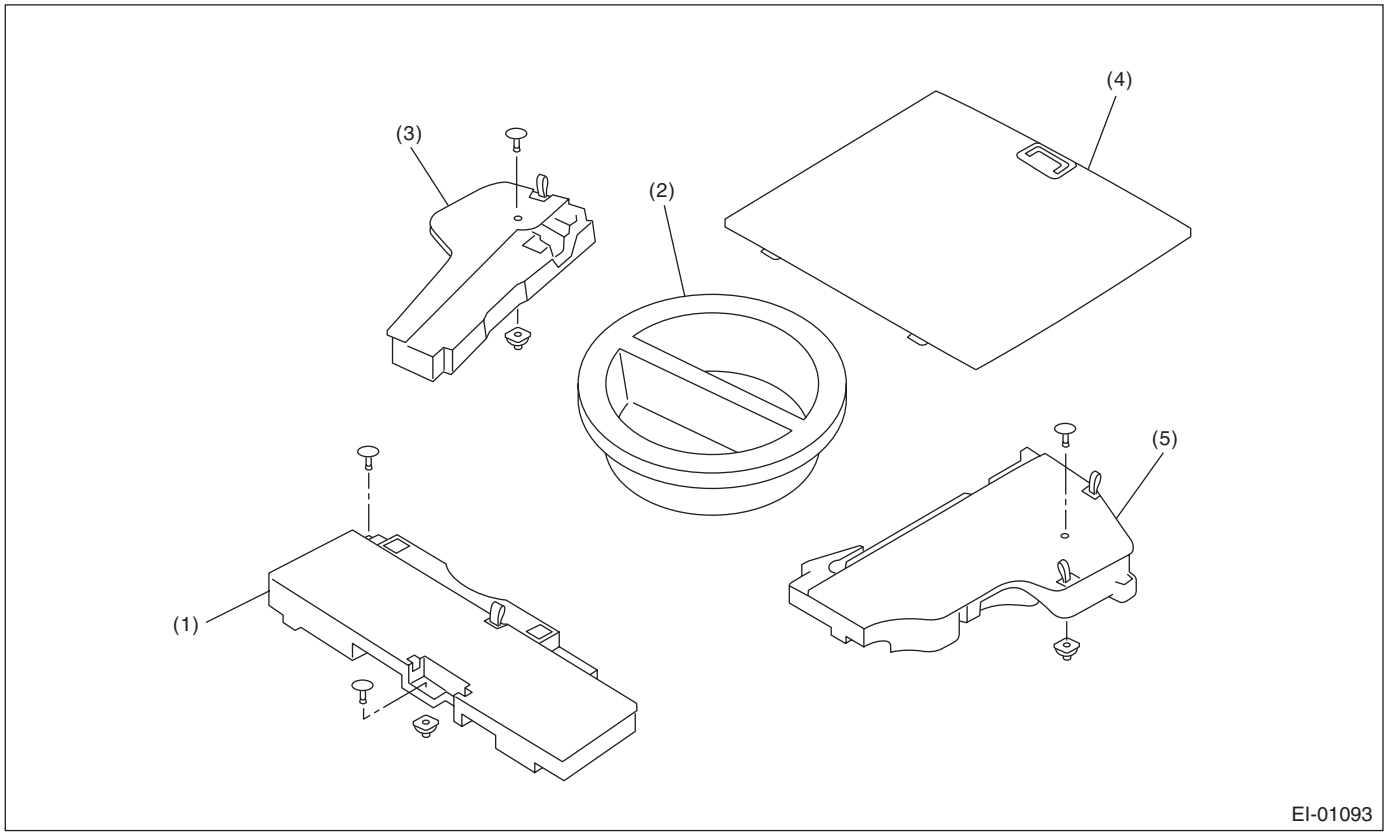
15.FLOOR MAT



(A) Front side of vehicle

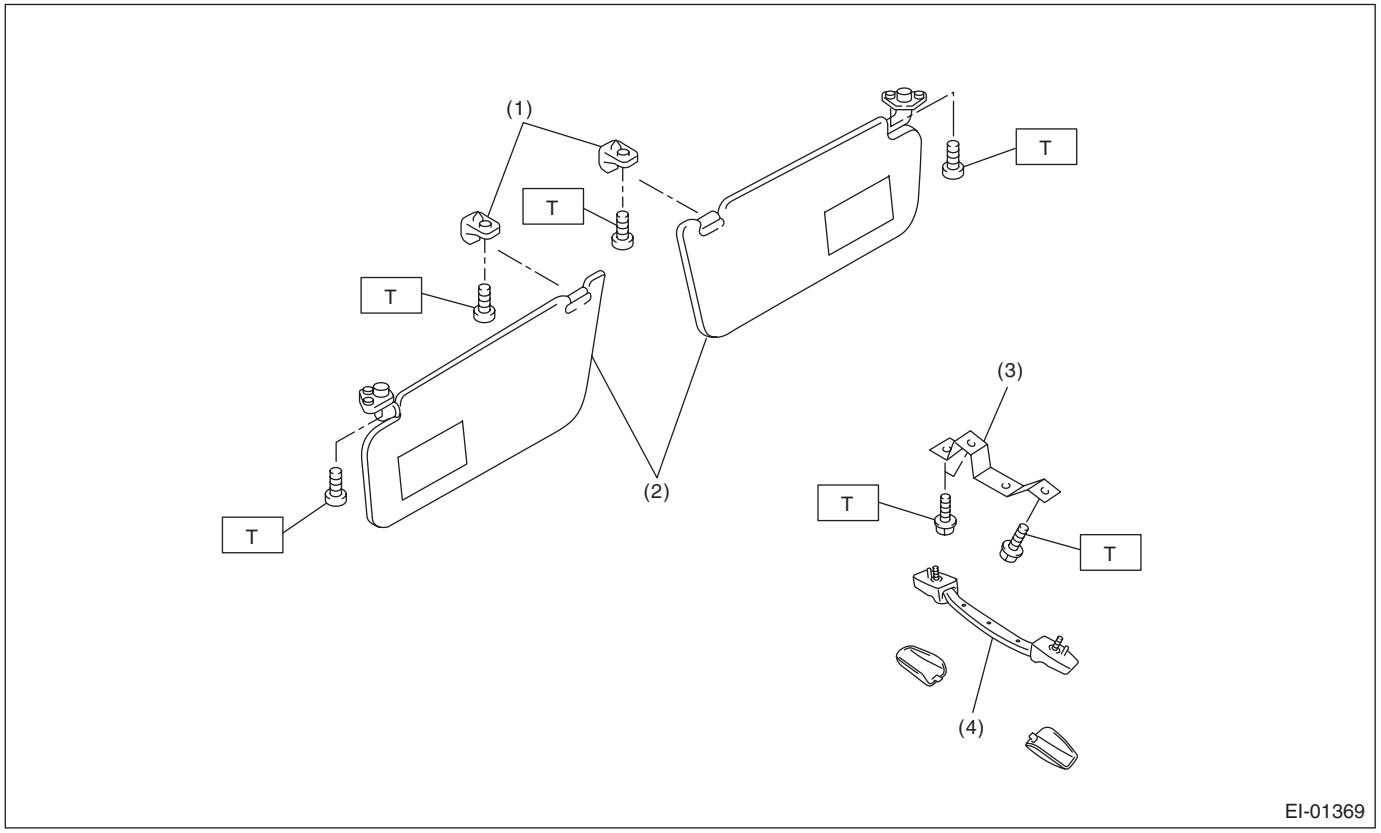
(1) Floor mat

16.LUGGAGE FLOOR MAT



(1) Front floor mat
(2) Floor box
(3) Side floor mat RH
(4) Center floor mat
(5) Side floor mat LH

17.COMPARTMENT ACCESSORIES



(1) Hook
(2) Sun Visor
(3) Assist rail bracket
(4) Assist grip (Retractable)

Tightening torque:N·m (kgf-m, ft-lb)
T: 2 (0.20, 1.46)

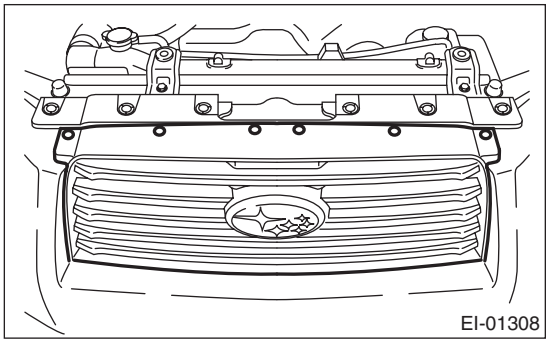
B: PREPARATION TOOL

TOOL NAME	REMARKS
Clip remover	Used for removing trim.
Clip clamp pliers	Used for removal of various clips and clamps.

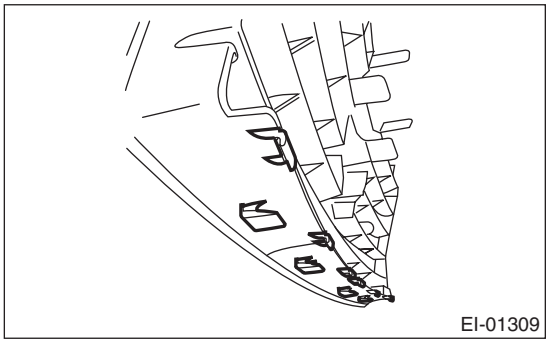
2. Front Grille

A: REMOVAL

1) Open the front hood.
2) Remove the upper six clips of front grille.

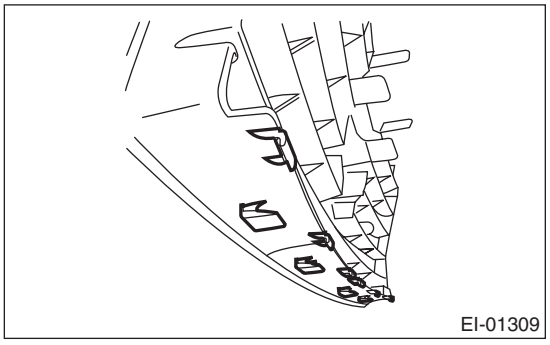


3) Pull the front grille out toward the front of the vehicle.



B: INSTALLATION

1) Install in the reverse order of removal.

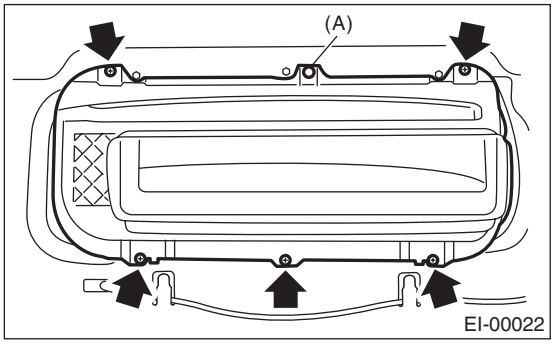


NOTE:
Be careful with the hook position.

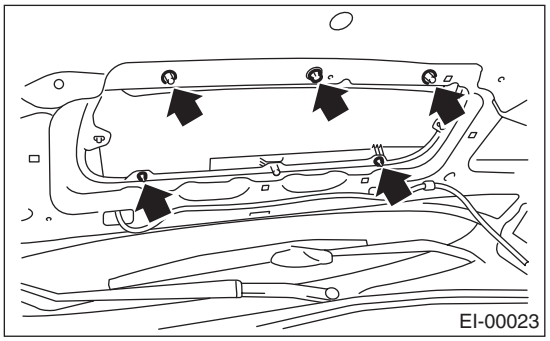
3. Front Hood Grille

A: REMOVAL

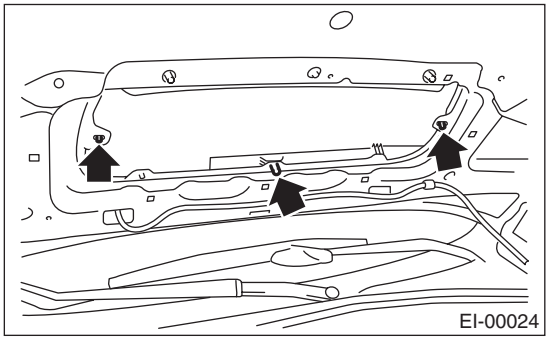
1) Remove five screws and clip (A) to remove the front hood duct.



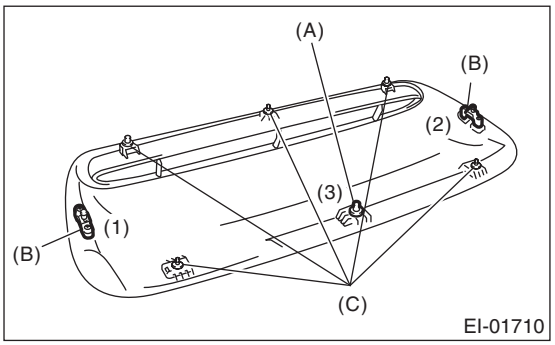
2) Remove the five nuts.



3) Remove three black clips and remove the front hood grille.

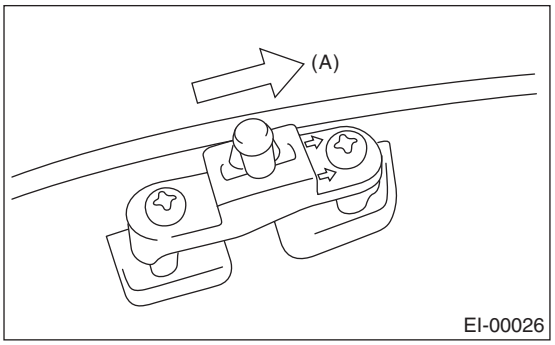


B: INSTALLATION



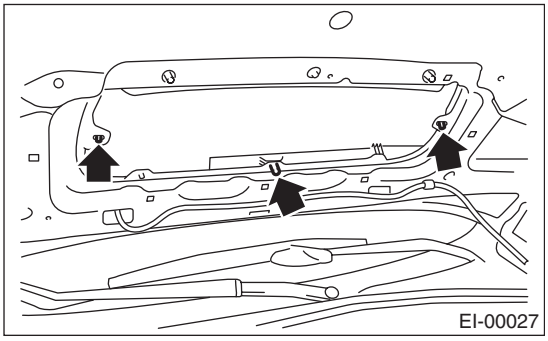
(A) Black clip
(B) Black clip
(C) Bolt

1) Replace the black clips (1) and (2) with new parts. Install the clip with arrow mark facing the front side of grille (A).



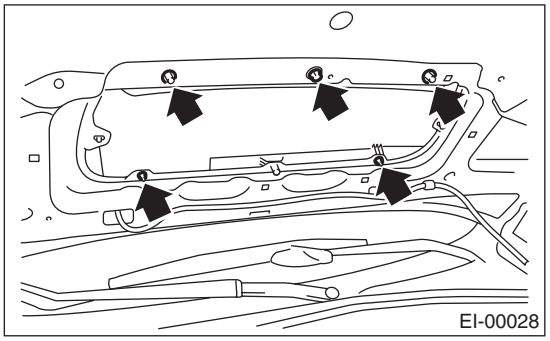
2) Replace the black clips (3) with a new part.
3) Insert the front hood grille clip and engage the three clips.

NOTE:
Make sure that the anchor portion of each clip is firmly engaged.

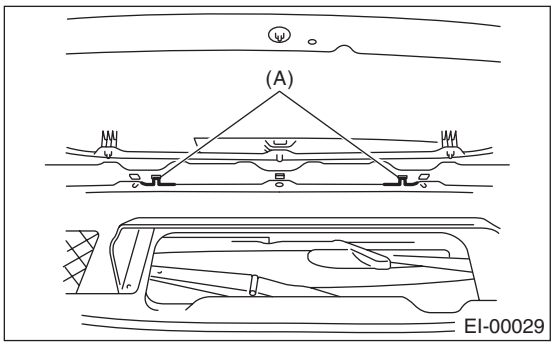


4) Install the five nuts.

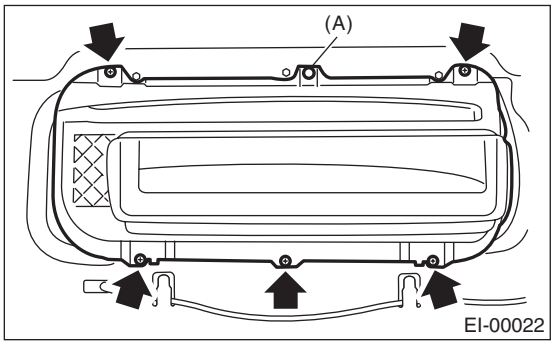
Tightening torque:
4.4 N·m (0.45 kgf-m, 3.25 ft-lb)



5) Hook the two hooks (A) of hood duct to the hood holes.



6) Install the front hood duct with the five screws and clip (A).



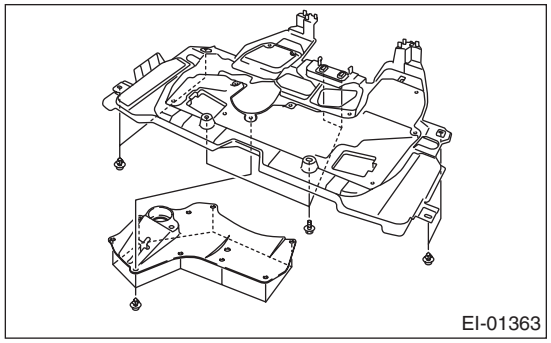
C: INSPECTION

Make sure that the clip is firmly engaged.
Make sure that there is no abnormal gap at whole periphery of hood grille.
Check that there is no damage on the front hood grille.

4. Front Under Cover

A: REMOVAL

1) Lift up the vehicle.
2) Loosen the bolts, then remove the clip and under cover.



B: INSTALLATION

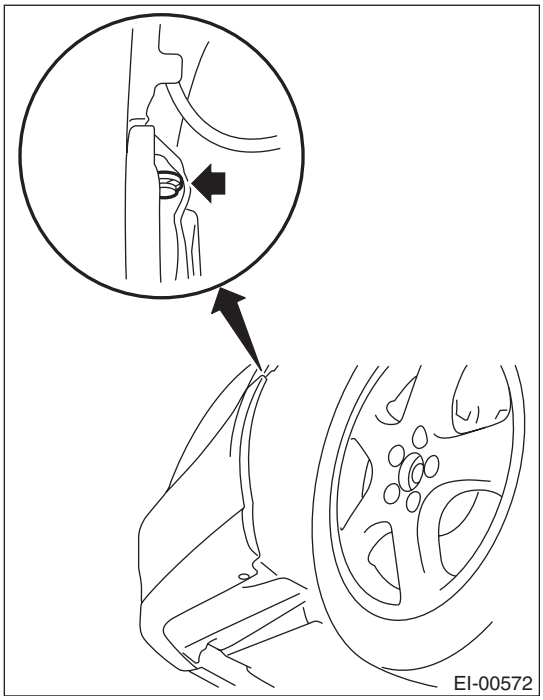
Install in the reverse order of removal.

Tightening torque:
18 N·m (1.84 kgf-m, 13.3 ft-lb)

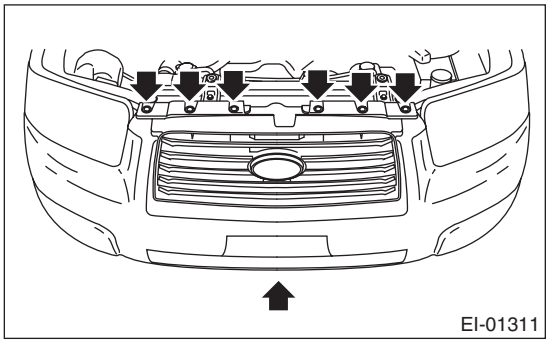
5. Front Bumper

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the six clips from underside of the bumper (both left and right).
3) Turn over the mud guard, and remove one inside clip that secure the front bumper to the fender.



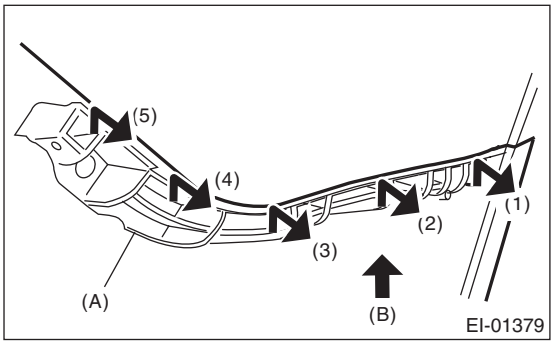
4) Turn over the mud guard and disconnect the fog light connector.
5) Remove the seven clips.



6) Remove the bumper face side claws from guide bracket (A), and remove the bumper face.

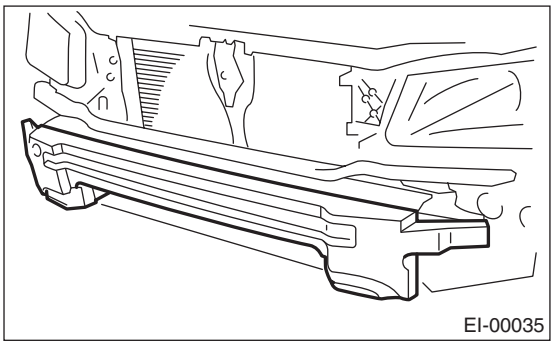
CAUTION:
Do not pull them by force. The bumper face side claws can be damaged.

NOTE:
The bumper can be easily pulled out by removing in the order of (1) — (5) from the fender side while lifting the bumper face upward (B).

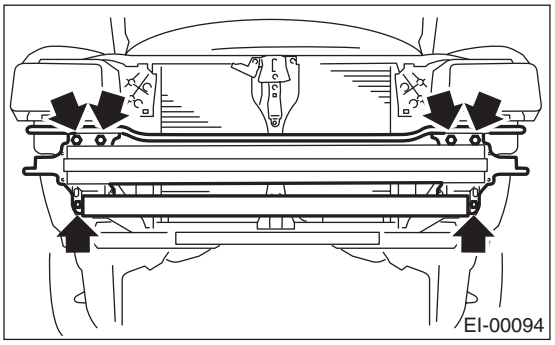


7) Remove the E/A foam from bumper beam.

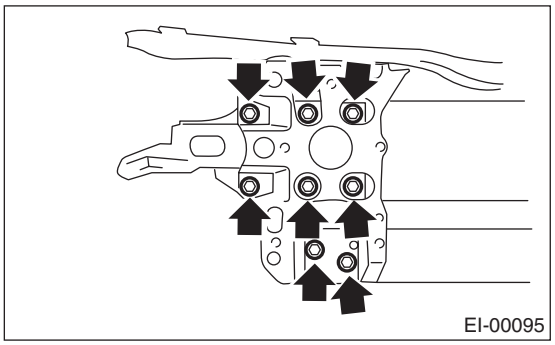
NOTE:
Do not apply excessive force to remove the E/A foam because it is easily damaged.



8) Remove the bumper beam.



9) Remove the 8 bolts and disassemble the front bumper beam.



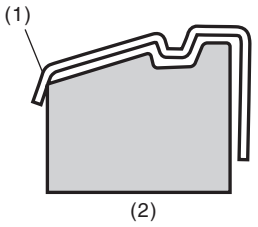
B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
Refer to "COMPONENT" of "General Description".
<Ref. to EI-3, FRONT BUMPER, COMPONENT, General Description.>

C: REPAIR

1. COATING METHOD FOR PP BUMPER

Process No.	Process name	Job contents	
1	Bumper installation	Place the bumper on a paint worktable as required. Use the paint worktable conforming to inner shape of bumper if possible.	 EI-00038 (1) Bumper (2) Set bumper section
2	Masking	Mask specified part (black base) with masking tape. Use masking tape for PP (For example, Nichiban No. 533, etc.).	
3	Degreasing/cleaning	Clean all parts to be painted with white gasoline, normal alcohol, etc. to remove dirt, oil, fat, etc.	
4	Primer paint	Apply primer one to all parts to be painted, using air gun. Use primer (clear).	
5	Drying	Dry at normal temperature [10 to 15 min. at 20°C (68°F)]. In half-dried condition, PP primer paint is dissolved by solvent, e.g. thinner, etc. Therefore, if dust or dirt must be removed, use ordinary alcohol etc.	
6	Top coat paint (I)	Solid paint	Metallic paint
		Use section (block) paint for top coat. • Paint to be used (for each color): Solid paint Hardener PB Thinner T-301 • Mixture ratio: Main agent : Hardener = 4 : 1 • Viscosity: 10 to 13 seconds/20°C (68°F) • Film thickness: 35 — 45 µ • Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kg/cm^2, 36 — 50 psi)	Use section (block) paint for top coat. • Paint to be used (for each color): Metallic paint Hardener PB Thinner T-306 • Mixture ratio: Main agent : Hardener = 10 : 1 • Viscosity: 10 to 13 seconds/20°C (68°F) • Film thickness: 15 — 20 µ • Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kg/cm^2, 36 — 50 psi)
7	Drying	Not required.	Dry at normal temperature [at least 10 min. at 20°C (68°F)]. In half-dried condition, avoid dust, dirt.
8	Top coat paint (II)	Not required.	Apply a clear coat to parts with top coat paint (I), three times, at 5 — 7 minutes intervals. • Paint to be used: Metallic paint Hardener PB Thinner T-301 • Mixture ratio: Clear coat : Hardener = 6 : 1 • Viscosity: 14 to 16 seconds/20°C (68°F) • Film thickness: 25 — 30 µ • Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kg/cm^2, 36 — 50 psi)
9	Drying	60°C (140°F), 60 min. or 80°C (176°F), 30 min. If higher than 80°C (176°F), PP may be deformed. Keep maximum temperature of 80°C (176°F).	
10	Inspection	Check paint.	
11	Removal of masking	Remove the masking tape applied in procedure 2.	

2. REPAIR INSTRUCTIONS FOR COLORED PP BUMPER

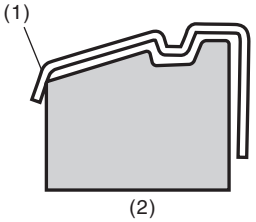
NOTE:
All PP bumpers are provided with a grained surface, and if the surface is damaged, it cannot normally be restored to its former condition. Damages limited to the shallow scratches that cause only a change in the luster of the base material or coating, can be almost fully restored. Before repairing a damaged area, explain this point to the customer and obtain an understanding about the matter. Repair methods are outlined below, based on a classification of the extent of damage.
1) Minor damage causing only a change in the luster of the bumper due to a light touch
Almost restorable.

<table>
<tr><th>Process No.</th><th>Process name</th><th colspan="2">Job contents</th></tr>
<tr><td>1</td><td>Cleaning</td><td colspan="2">Clean the area to be repaired using water.</td></tr>
<tr><td>2</td><td>Sanding</td><td colspan="2">Grind the repairing area with #500 sand paper in a “feathering” motion.</td></tr>
<tr><td rowspan="3">3</td><td rowspan="3">Finish</td><td>Resin section</td><td>Coated section</td></tr>
<tr><td>Repeatedly apply wax to the affected area using soft cloth (such as flannel). Recommended wax: NITTO KASEI Soft 99 TIRE WAX BLACK, or equivalent.</td><td rowspan="2">Perform either the same process as for the resin section or process No. 18 and subsequent in the 3) section, depending on the degree and nature of damage.</td></tr>
<tr><td>Polish the waxed area with clean cloth after 5 — 10 minutes.</td></tr>
</table>

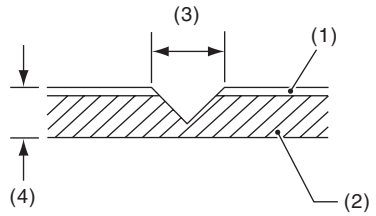
2) Deep damage caused by scratching with fences etc.
A dent cannot be repaired but a whitened or swelled part can be removed.

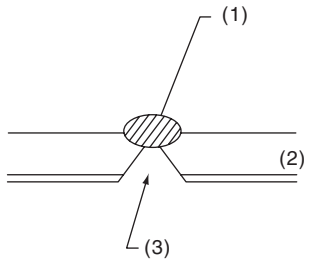
<table>
<tr><th>Process No.</th><th>Process name</th><th colspan="2">Job contents</th></tr>
<tr><td>1</td><td>Cleaning</td><td colspan="2">Clean the damaged area with water.</td></tr>
<tr><td>2</td><td>Removal of damaged area</td><td colspan="2">Cut off protruding area, if any, due to collision, using a putty knife.</td></tr>
<tr><td>3</td><td>Sanding</td><td colspan="2">Grind the affected area with #100 — #500 sand paper.</td></tr>
<tr><td rowspan="2">4</td><td rowspan="2">Finish</td><td>Resin section</td><td>Coated section</td></tr>
<tr><td>Same as Process No. 3 in the “1)” section.</td><td>Perform Process No. 12 and subsequent operations in the “3)” section.</td></tr>
</table>

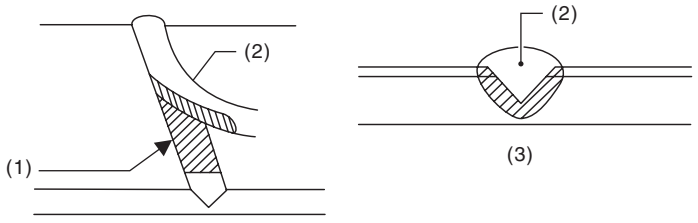
3) Deep damage such as a break or hole that requires filling
Much of the peripheral grained surface must be sacrificed for repair. The degree of restoration is not really worth the expense. (The surface, however, will become almost flush with adjacent areas.)
Recommended repair kit: PP Part Repair Kit (NRM)

<table>
<tr><th>Process No.</th><th>Process name</th><th colspan="2">Job contents</th></tr>
<tr><td>1</td><td>Bumper removal</td><td colspan="2">Remove the bumper as required.</td></tr>
<tr><td>2</td><td>Removal of parts</td><td colspan="2">Remove the parts built into bumper as required.</td></tr>
<tr><td>3</td><td>Bumper placement</td><td>Place the bumper on a paint worktable as required.
It is recommended to use the paint worktable conforming to internal shape of bumper.</td><td> 

EI-00038
(1) Bumper
(2) Set bumper section</td></tr>
<tr><td>4</td><td>Surface preparation</td><td colspan="2">Remove dust, oil, etc. from areas to be repaired and surrounding areas, using a suitable solvent (NRM No. 900 Precleno, white gasoline, or alcohol, etc.).</td></tr>
</table>

<table>
<tr><th>Process No.</th><th>Process name</th><th colspan="2">Job contents</th></tr>
<tr><td>5</td><td>Cutting</td><td>If nature of damage are cracks or holes, cut a guide slit of 20 to 30 mm (0.79 to 1.18 in) in length along the crack or hole up to the bumper's base surface. Next, use a knife or grinder to carve a V-shaped groove in the area for repair.</td><td> 

EI-00235
(1) Paint surface
(2) PP base surface
(3) 20 — 30 mm (0.79 — 1.18 in)
(4) 3 mm (0.12 in)</td></tr>
<tr><td>6</td><td>Sanding (I)</td><td colspan="2">Grind beveled surface with sand paper (#40 — #60) to smooth finish.</td></tr>
<tr><td>7</td><td>Cleaning</td><td colspan="2">Clean the sanded surface with the same solvent as used in Procedure 4.</td></tr>
<tr><td rowspan="2">8</td><td rowspan="2">Temporary welding</td><td colspan="2">Grind the side just opposite the beveled area with sand paper (#40 — #60) and clean using a solvent.
Temporarily spot-weld the side, using PP welding rod and heater gun.</td></tr>
<tr><td colspan="2"> 

EI-00236
(1) Welded point (Use heater gun and PP welding rod)
(2) PP base surface
(3) Beveled section
NOTE:
• Do not melt welding rod until it flows out. This results in reduced strength.
• Leave the welded spot unattended until it cools completely.</td></tr>
<tr><td rowspan="2">9</td><td rowspan="2">Welding</td><td colspan="2">Using a heater gun and PP welding rod, weld the beveled spot while melting the rod and damaged area.</td></tr>
<tr><td colspan="2"> 

EI-00237
(1) Melt hatched area
(2) Welding rod
(3) Section
NOTE:
• Melt the sections indicated by hatched area.
• Do not melt the welding rod until it flows out, in order to provide strength.
• Always keep the heater gun 1 to 2 cm (0.4 to 0.8 in) away from the welding spot.
• Leave the welded spot unattended until it cools completely.</td></tr>
</table>

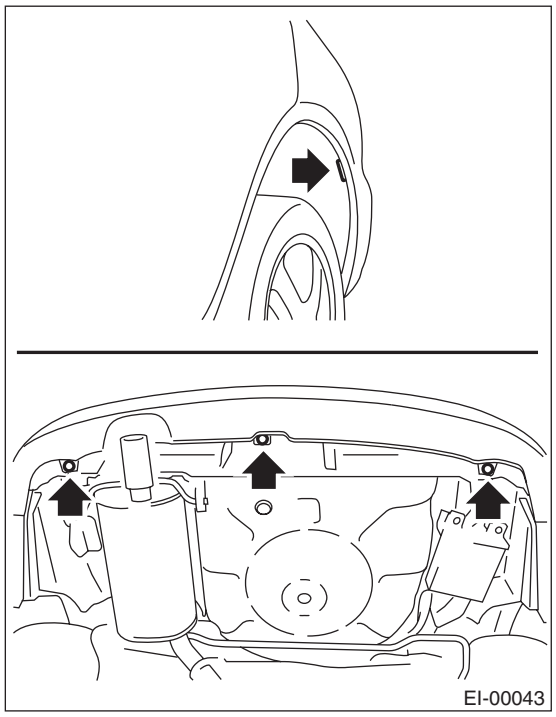
<table>
<tr><th>Process No.</th><th>Process name</th><th colspan="2">Job contents</th></tr>
<tr><td rowspan="3">10</td><td rowspan="3">Sanding (II)</td><td colspan="2">Remove excess part of weld with a putty knife. If a drill or disc wheel is used instead of the knife, operate it at a rate lower than 1,500 rpm and grind the excess part little by little. A higher rpm will cause the PP substrate to melt from the heat.</td></tr>
<tr><td colspan="2">
EI-00042</td></tr>
<tr><td colspan="2">Sand the welded spot smooth with #240 sand paper.</td></tr>
<tr><td>11</td><td>Masking</td><td colspan="2">Mask the black substrate section using masking tape.
Recommended masking tape: Nichiban No. 533 or equivalent</td></tr>
<tr><td>12</td><td>Cleaning/degreasing</td><td colspan="2">Completely clean the entire coated area, using solvent similar to that used in Procedure 4.</td></tr>
<tr><td>13</td><td>Primer coating</td><td colspan="2">Apply a coat of primer to the repaired surface and its surrounding areas. Mask these areas, if necessary.
Recommended primer: Mp/364 PP primer
NOTE:
Always use a spray gun with spraying pressure of 245 to 343 kPa (2.5 to 3.5 kg/cm^2, 36 to 50 psi) for primer coating.</td></tr>
<tr><td>14</td><td>Leave unattended</td><td colspan="2">Leave the repaired area unattended at 20°C (68°F) for 10 to 15 minutes until primer is half-dry.
NOTE:
If dirt or dust comes in contact with the coated area, wipe it off with a cloth dampened with alcohol. (Do not use thinner since the coated area tends to melt.)</td></tr>
<tr><td>15</td><td>Primer surfacer coating</td><td colspan="2">Apply primer surfacer to the repaired area two or three times at an interval of 3 — 5 minutes.
Recommended surfacer:
• UPS 300 Flex Primer
• No. 303 UPS 300 Exclusive hardener
• NPS 725 Exclusive Reducer (thinner)
• Mixture ratio: 2 : 1 (UPS 300: No. 303)
• Viscosity: 12 to 14 seconds/20°C (68°F)
• Coating film thickness: 40 — 50 µ</td></tr>
<tr><td>16</td><td>Drying</td><td colspan="2">Allow the coated surface to dry for 20 minutes at 20°C (68°F) [or 30 minutes at 60°C (140°F)].</td></tr>
<tr><td>17</td><td>Sanding (III)</td><td colspan="2">Sand the coated surface and its surrounding areas using #400 sand paper and water.</td></tr>
<tr><td>18</td><td>Cleaning/degreasing</td><td colspan="2">Same as Process No. 12.</td></tr>
<tr><td rowspan="2">19</td><td rowspan="2">Top coat (I)</td><td>Solid paint</td><td>Metallic paint</td></tr>
<tr><td>Use a “block” coating method.
• Recommended paint:
Suncryl (SC)
No. 307 Flex Hardener
SC Reducer (thinner)
• Mixture ratio: 3:1
Suncryl (SC) : No. 307 Flex Hardener
• Viscosity: 11 to 13 seconds/20°C (68°F)
• Coating film thickness: 40 — 50 µ
• Spraying pressure: 245 — 343 kPa
(2.5 — 3.5 kg/cm^2, 36 — 50 psi)</td><td>Use a “block” coating method.
• Recommended paint:
Suncryl (SC)
No. 307 Flex Hardener
SC Reducer (thinner)
• Mixture ratio: 3:1
Suncryl (SC) : No. 307 Flex Hardener
• Viscosity: 11 to 13 seconds/20°C (68°F)
• Coating film thickness: 20 — 30 µ
• Spraying pressure: 245 — 343 kPa
(2.5 — 3.5 kg/cm^2, 36 — 50 psi)</td></tr>
<tr><td>20</td><td>Leave unattended</td><td>Not required.</td><td>Leave unattended at 20°C (68°F) for at least 10 minutes until the topcoated area is half-dry.
NOTE:
Be careful to keep dust or dirt from coming in contact with the affected area.</td></tr>
</table>

Process No.	Process name	Job contents	
21	Top coat (II)	Not required.	Apply a clear coat three times at an interval of 3 to 5 minutes. • Recommended paint: SC710 Overlay Clear No. 307 Flex Hardener SC Reducer (thinner) • Mixture ratio: 3:1 Suncryl (SC) : No. 307 Flex Hardener • Viscosity: 10 to 13 seconds/20°C (68°F) • Coating film thickness: 20 — 30 μ • Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kg/cm^2, 36 — 50 psi)
22	Drying	Allow the coated surface to dry for two hours at 20°C (68°F) [or 30 minutes at 60°C (140°F)]. NOTE: Do not allow the temperature to exceed 80°C (176°F) since this will deform the PP substrate.	
23	Inspection	Carefully check the condition of the repaired area.	
24	Removal of masking	Remove the masking tape applied in Process No. 11 and 13.	
25	Parts installation	Install parts on the bumper in reverse order of removal.	
26	Bumper installation	Install the bumper.	

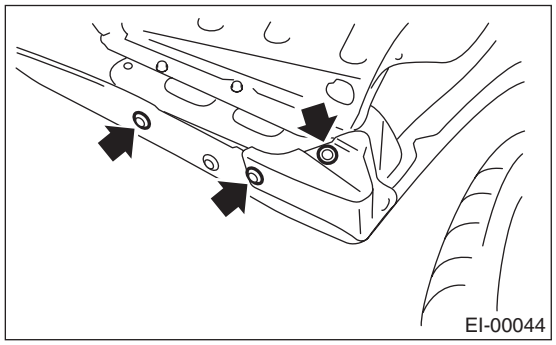
6. Rear Bumper

A: REMOVAL

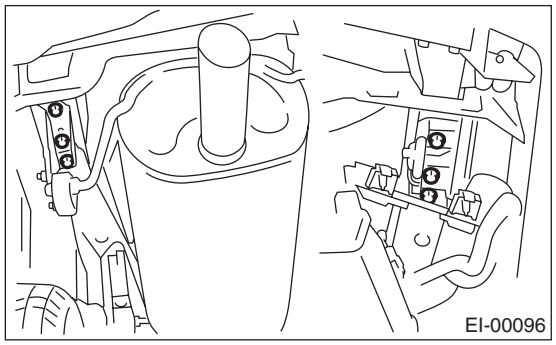
1) Disconnect the ground cable from the battery.
2) Remove the bolts and clips.



3) Remove the clips from the bumper and bracket.

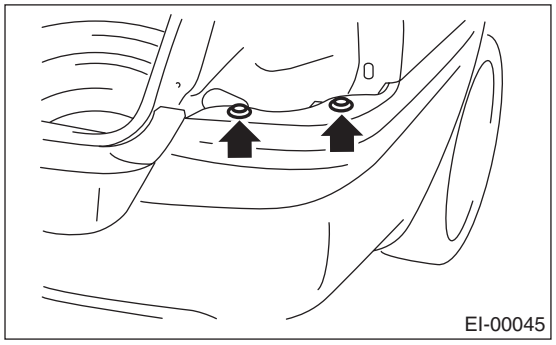


4) When removing the rear bumper beam assembly, remove the six bolts from bumper stay.

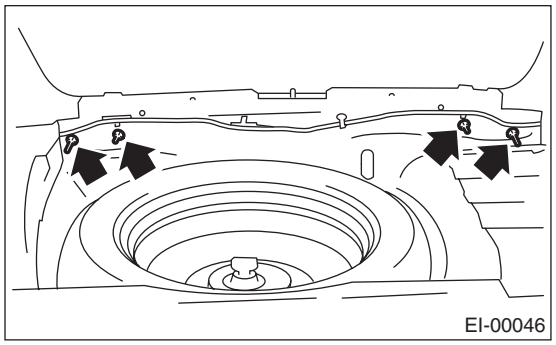


5) Remove the rear combination light assembly on both sides. <Ref. to LI-22, REMOVAL, Rear Combination Light Assembly.>

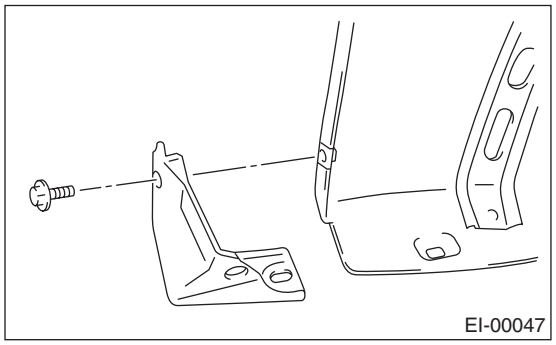
6) Remove the two clips on both sides.



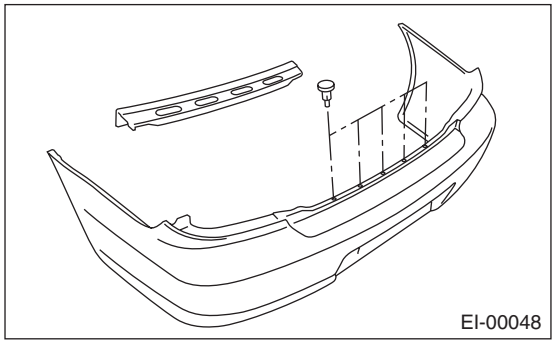
7) Remove the floor box.
8) Remove the rear skirt trim.
9) Remove four nuts to remove the rear bumper.



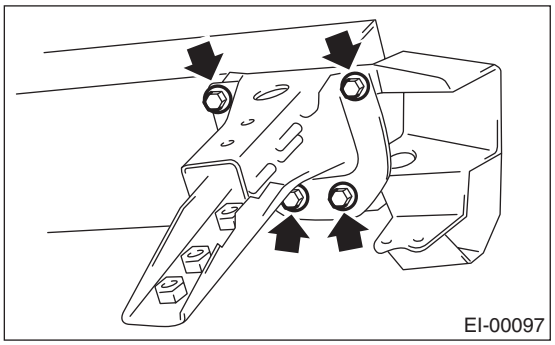
NOTE:
Rear bumper beam assembly is heavy. When removing the rear bumper beam assembly, two persons are necessary to do the work.
10) Remove the bolts, and then remove the bracket from bumper.



11) Remove the clips to remove the bumper upper beam.



12) Remove the four bolts, and then remove the side bracket and bumper stay.



B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
Refer to "COMPONENT" of "General Description".
<Ref. to EI-4, REAR BUMPER, COMPONENT, General Description.>

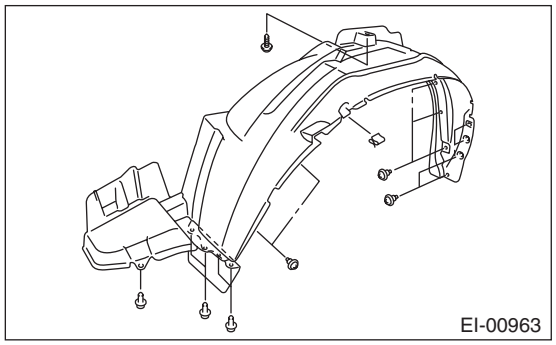
C: REPAIR

Refer to front bumper repair. <Ref. to EI-22, REPAIR, Front Bumper.>

7. Mud Guard

A: REMOVAL

1) Jack-up the vehicle.
2) Remove the wheels. <Ref. to WT-6, REMOVAL, Steel Wheel.> or <Ref. to WT-7, REMOVAL, Aluminum Wheel.>
3) Remove the clips to remove the air flap.
4) Remove the screws and clips to remove the mud guard.



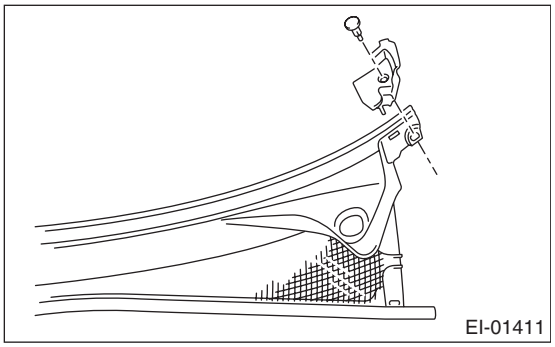
B: INSTALLATION

Install in the reverse order of removal.

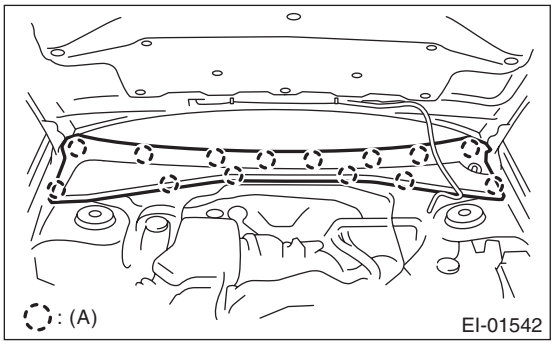
8. Cowl Panel

A: REMOVAL

1) Open the front hood.
2) Remove the wiper arm. <Ref. to WW-11, REMOVAL, Front Wiper Arm.>
3) Remove the clip and remove the cowl side panel.



4) Loosen the clips to remove the cowl panel.



(A) Clip

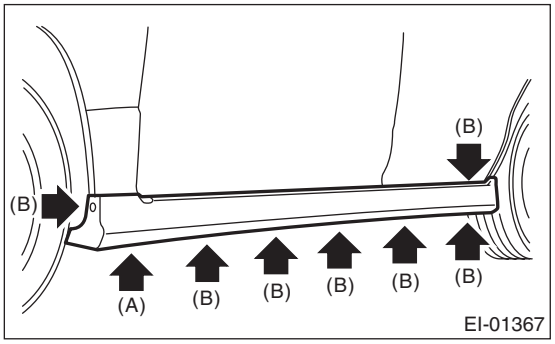
B: INSTALLATION

Install in the reverse order of removal.

9. Side Sill Spoiler

A: REMOVAL

Remove the screw (A) and clips (B), and remove the side spoiler.



B: INSTALLATION

Install in the reverse order of removal.

10.Side Garnish

A: REMOVAL

1) Make a cut in the edge of the garnish using a cutter, then manually remove the garnish by pulling it.

NOTE:
Be careful because the garnish and clip can be damaged if you pull unnecessarily hard on them.
2) Apply masking tape around the position where the double-sided tape is affixed on the side garnish.
3) Apply solvent (SUMITOMO 3M 4000 or the equivalent) to the position where the double-sided tape is affixed.

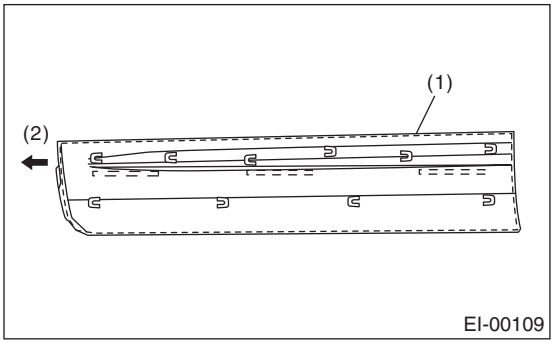
NOTE:
• Wipe immediately when the solvent is applied to the garnish surface.
• Do not use solvent to the body which has been repaired with lacquer paint.
4) Cover the area where solvent is applied using plastic wrap, and then heat the double-sided tape for 5 to 15 minutes in 40 — 60°C (104 — 140°F) using a heat light.
5) Peel the double-sided tape on the side garnish using steps 3 and 4.

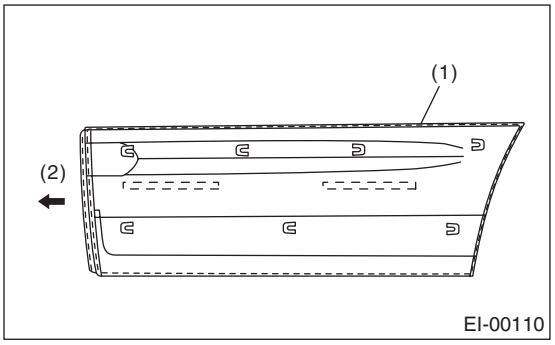
NOTE:
If the double-sided tape does not come completely off using the steps outlined above, use a scraper.

B: INSTALLATION

1) Affix the double-sided tape (SUMITOMO 3M 5305 or the equivalent) after applying the primer (SUMITOMO 3M K-500 or the equivalent) widely around the area where the double-sided tape is affixed.

NOTE:
Use the double-sided tape with 1 mm (0.04 in) thickness and 5 mm (0.2 in) width.





(1) Double-sided tape
(2) Front side

2) Heat the vehicle to 40 to 60°C (104 — 140°F), and the garnish 20 to 30°C (68 — 86°F) using a heat light.
3) Peel the backing paper off the double-sided tape and position the clip with the body hole. Be careful not to let air enter the adhesive surface. Manually push on the tape with approximately 69 — 98 N (7 — 10 kgf, 15 — 22 lbf) of force.

NOTE:
• To keep the adhesion, do not wash the vehicle within 24 hours from installation.
• Be careful not to move it up or down after application.

C: INSPECTION

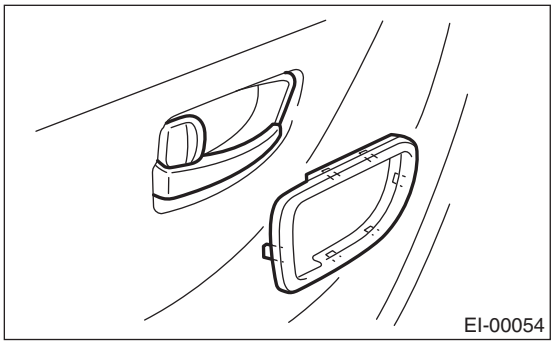
• Make sure the side garnish is not greatly scratched or cracked.
• Make sure the clip is not damaged.

11.Front Door Trim

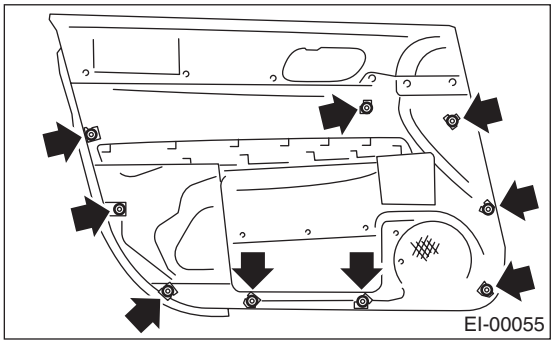
A: REMOVAL

CAUTION:
Do not apply excessive force to the clip. There is the possibility of the clip being damaged.

1) Disconnect the ground cable from the battery.
2) Remove the gusset cover.
3) Pull up the inner remote cover to remove upper hook. Pull down the inner remote cover to remove lower hook. Remove the inner remote cover.



4) Remove the power window control switch. <Ref. to GW-8, REMOVAL, Power Window Control Switch.>
5) Remove the clips of trim panel using clip remover to remove the trim panel.



B: INSTALLATION

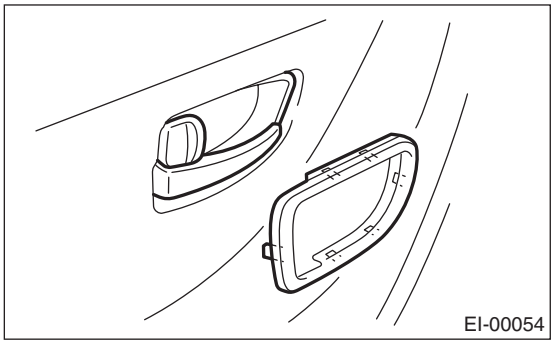
Install in the reverse order of removal.

12.Rear Door Trim

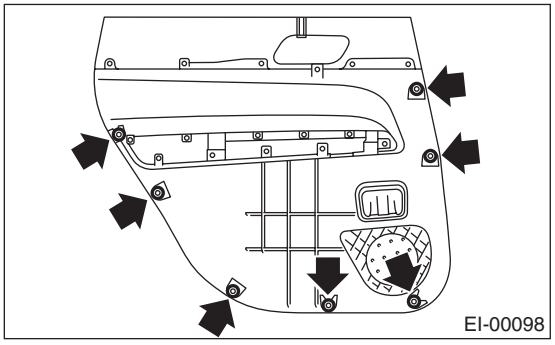
A: REMOVAL

CAUTION:
Do not apply excessive force to the clip. There is the possibility of the clip being damaged.

1) Disconnect the ground cable from the battery.
2) Pull up the inner remote cover to remove upper hook. Pull down the inner remote cover to remove lower hook. Remove the inner remote cover.



3) Remove the power window control switch. <Ref. to GW-8, REMOVAL, Power Window Control Switch.>
4) Remove the clips of trim panel using clip remover to remove the trim panel.



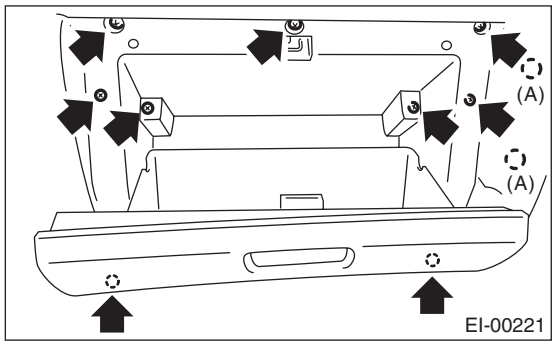
B: INSTALLATION

Install in the reverse order of removal.

13.Glove Box

A: REMOVAL

1) Open the glove box.
2) Loosen the screws to remove glove box.



(A) Clip

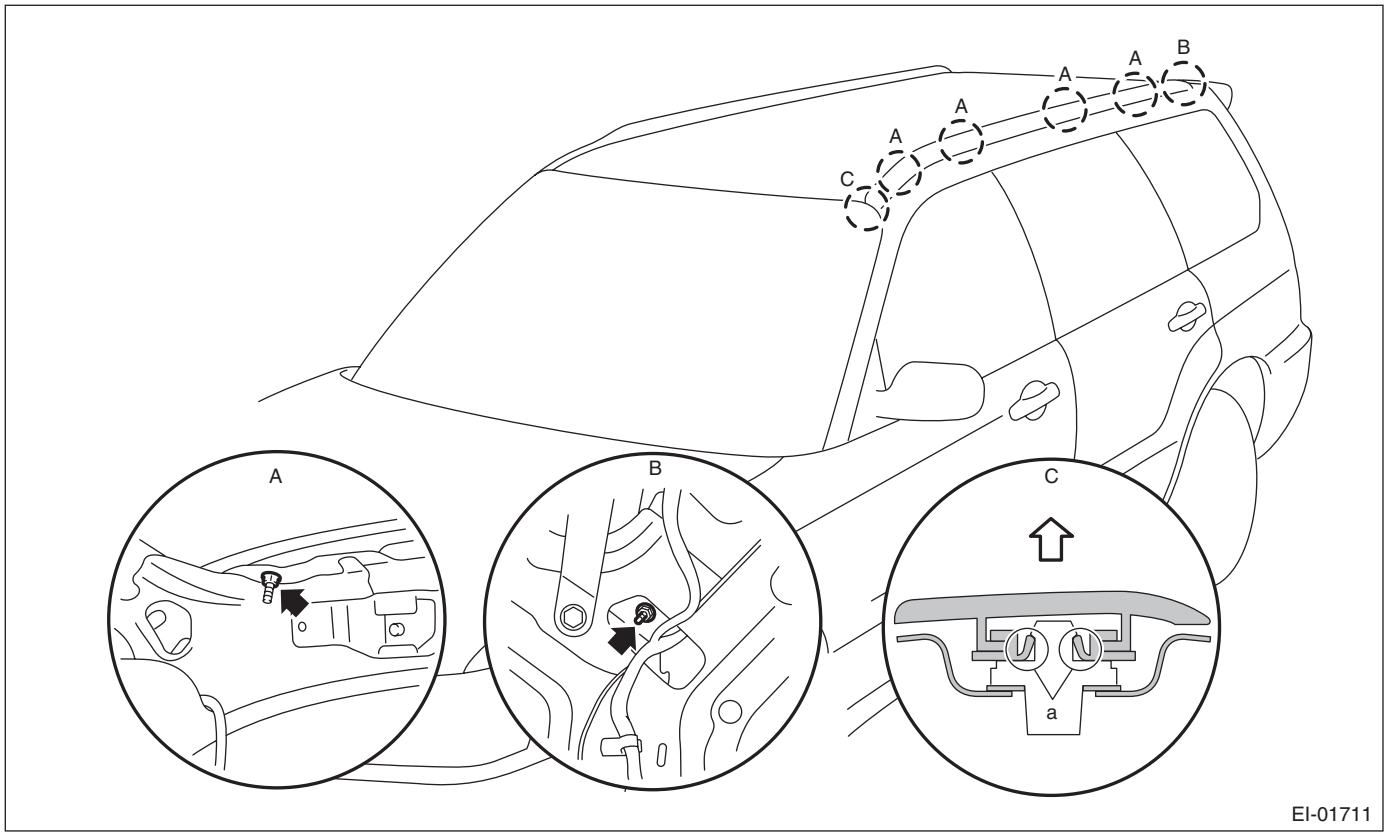
B: INSTALLATION

Install in the reverse order of removal.

14.Roof Rail

A: REMOVAL

1) Remove the roof trim. <Ref. to EI-45, REMOVAL, Roof Trim.>
2) Remove the five installing nuts.
3) Carefully remove the clip on the front end in the horizontal direction, then remove the roof rail in the upward direction.



NOTE:
When removing the C clip, apply force to it in the horizontal direction and then remove in the upward direction while bending the a section side claw out of the way.

B: INSTALLATION

Install in the reverse order of removal.

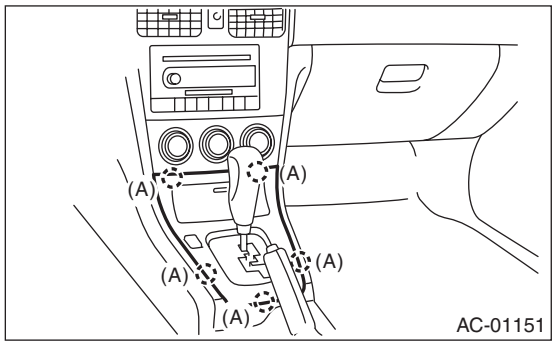
CAUTION:
When removing or installing the roof rail, be careful not to scratch the body panel with the stud bolt of roof rail.

Tightening torque:
7.5 N·m (0.76 kgf-m, 5.53 ft-lb)

15.Console Box

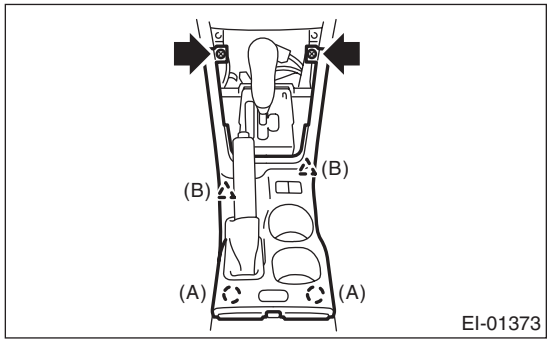
A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the console front cover.



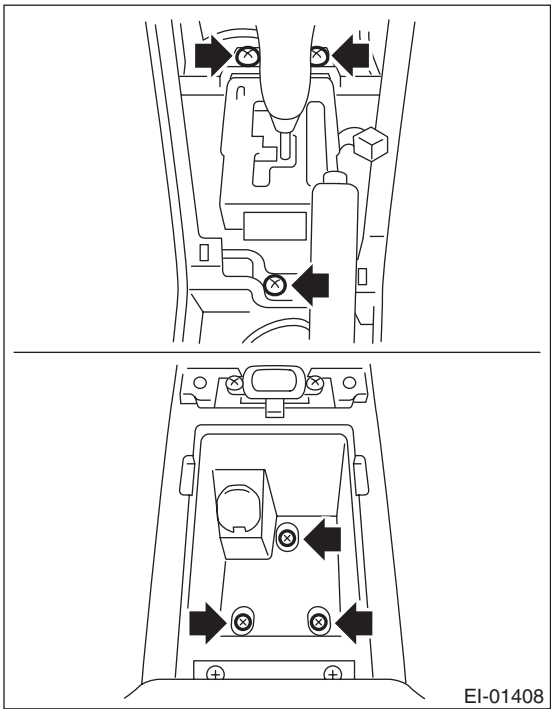
(A) Hook

3) Remove the shift knob. (MT model)
4) Loosen the screws to remove console cover.

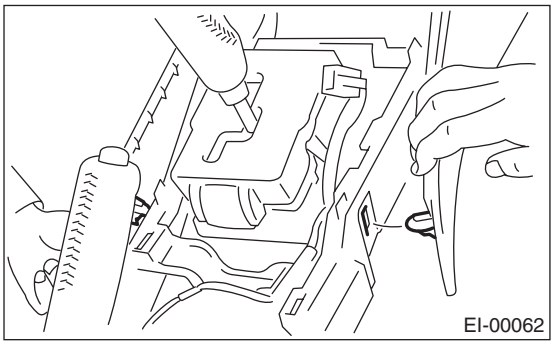


(A) Clip
(B) Clip

5) Loosen the screws.



6) Remove the console side panel hooks to remove the console box.



B: INSTALLATION

Install in the reverse order of removal.

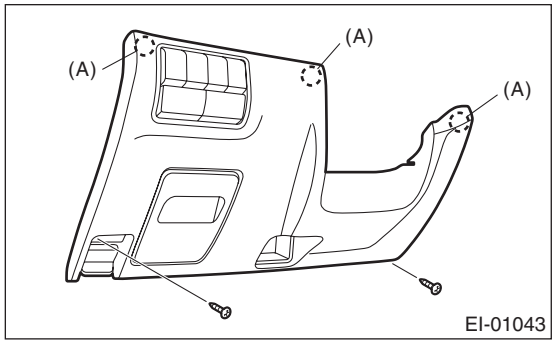
16.Instrument Panel Assembly

A: REMOVAL

CAUTION:
• All airbag system wiring harnesses and connectors are yellow. Do not use the electrical test equipment on these circuits.
• Be careful not to damage the airbag system harness when servicing the instrument panel.

1. REMOVING ONLY THE INSTRUMENT PANEL

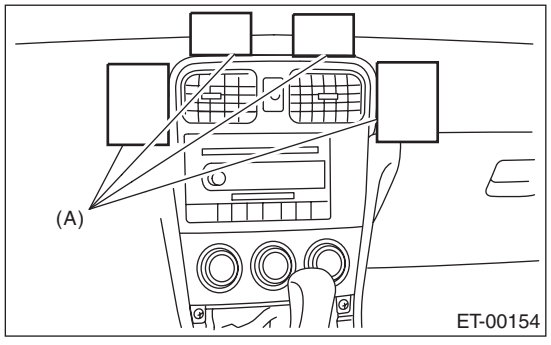
1) Disconnect the ground cable from the battery.
2) Loosen the screws to remove lower cover.



(A) Clip

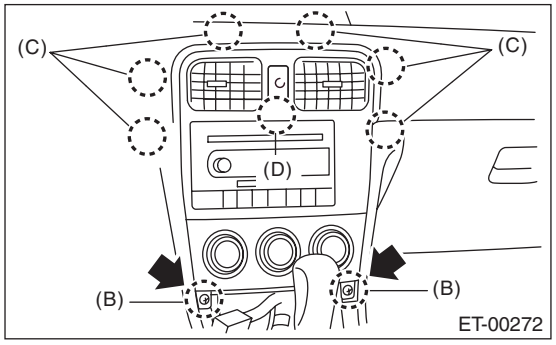
3) Disconnect the in-vehicle sensor hose and connector.
4) Remove the console front cover and console cover. <Ref. to EI-37, REMOVAL, Console Box.>
5) Affix the thick protective tape (A) to the instrument panel pad to protect the surface.

NOTE:
Affix the protective tape so that it covers the vertical wall in the back of the gap between the panel center and the pad.



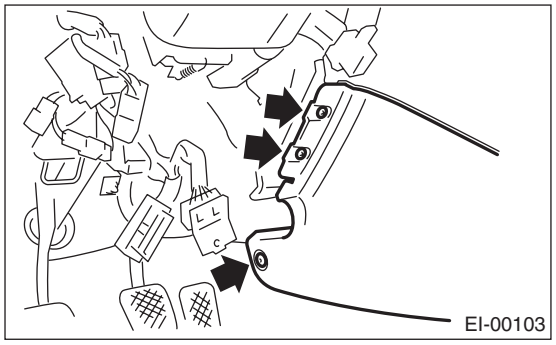
6) Remove the screw (B).
7) Insert a flat tip screwdriver into the portion (C) to remove the panel center claw.

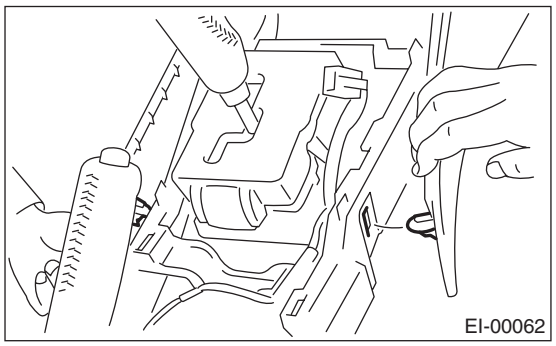
CAUTION:
Be very careful because it is possible to damage the instrument panel if the flat tip screwdriver is inserted into any other area than specified.



(B) Screw
(D) Clip

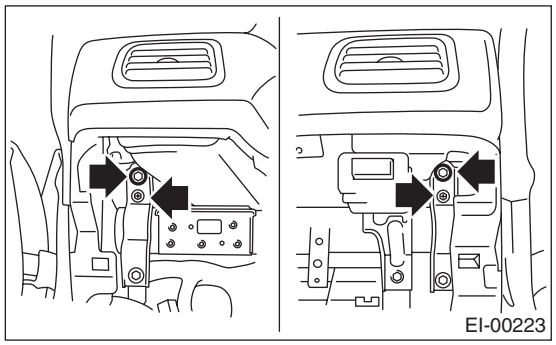
NOTE:
The center console panel can be easily pulled out while pulling the lower portion.
8) Disconnect the A/C control panel and hazard switch connectors.
9) Remove the screws and clips to remove the side console panel.





10) Remove the passenger airbag module. <Ref. to AB-15, REMOVAL, Passenger's Airbag Module.>
11) Remove the two bolts which secure steering column. <Ref. to PS-16, REMOVAL, Tilt Steering Column.>

12) Loosen the four bolts that secure the instrument panel. (The lower bolt should not be removed as it is used for alignment.)



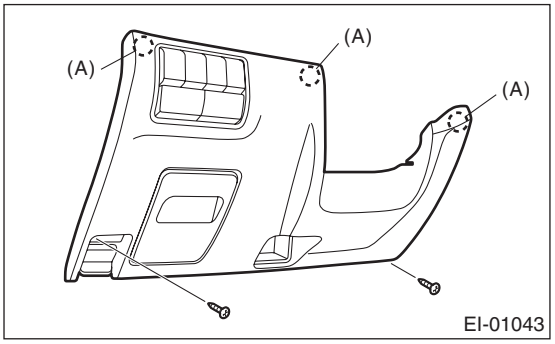
13) Remove the combination meter assembly. <Ref. to IDI-10, REMOVAL, Combination Meter.>
14) Loosen the instrument panel attaching screws.
15) Remove the instrument panel center compartment. <Ref. to EI-49, REMOVAL, Instrument Panel Center Compartment.>
16) Remove the radio. <Ref. to ET-4, REMOVAL, Radio Body.>
17) Remove the instrument panel side cover (both sides), the loosen the two bolts.
18) Remove the instrument panel assembly.

NOTE:
Remove the front pillar upper trim as required. <Ref. to EI-41, REMOVAL, Upper Inner Trim.>
19) Disconnect the harness connector of the combination meter.

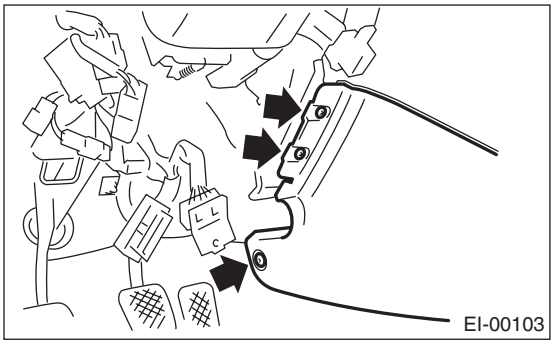
CAUTION:
Do not pull the harness when disconnecting connector.

2. REMOVAL OF INSTRUMENT PANEL WITH THE STEERING BEAM

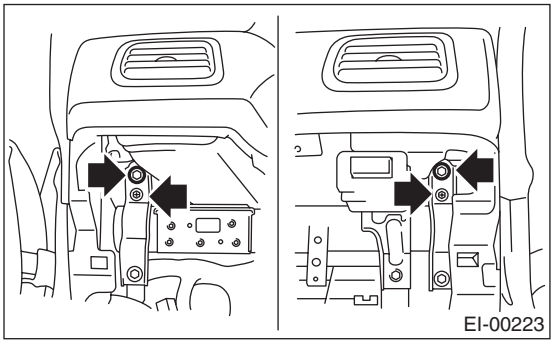
1) Disconnect the ground cable from the battery.
2) Loosen the screws and clips (A) to remove the lower cover.



3) Remove the console front cover and console cover. <Ref. to EI-37, REMOVAL, Console Box.>
4) Loosen the screws and clip to remove the side console panel.



5) Remove the steering column.
6) Loosen the four bolts that secure the instrument panel.

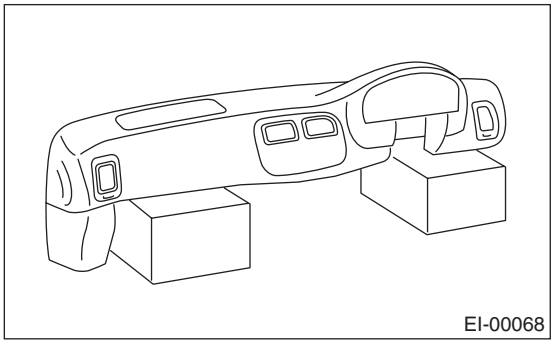


7) Remove the driver's and passenger's side airbag modules. <Ref. to AB-14, REMOVAL, Driver's Airbag Module.> <Ref. to AB-15, REMOVAL, Passenger's Airbag Module.>
8) Loosen the steering beam bolts.
9) Loosen the brake pedal attaching bolts. <Ref. to BR-49, REMOVAL, Brake Pedal.>
10) Remove the two clips on the leading end of the instrument panel assembly.

11) Remove the instrument panel assembly.

CAUTION:
Do not pull the harness when disconnecting connector.

NOTE:
• If necessary, make alignment marks for easy re-assembly.
• When storing the removed instrument panel, place it standing up on the floor.

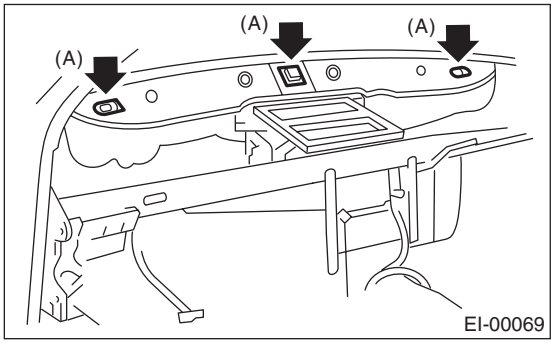


B: INSTALLATION

Install in the reverse order of removal.

CAUTION:
- **Be careful not to snag the harness.**
- **Make sure to connect the harness connector.**

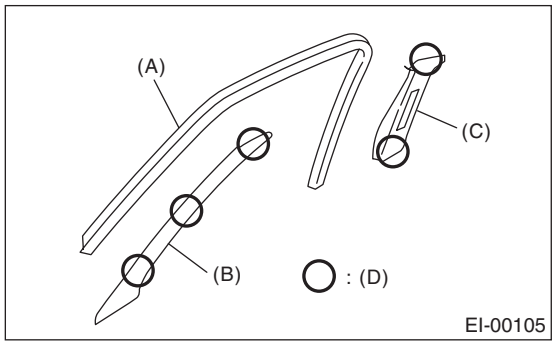
NOTE:
When setting the instrument panel into position, push the hook into grommet (A) on the body panel.



17.Upper Inner Trim

A: REMOVAL

1) Remove the lower inner trim. <Ref. to EI-42, REMOVAL, Lower Inner Trim.>
2) Remove the front moulding (A).
3) Remove the front pillar upper trim (B).
4) Detach the front seat belt shoulder anchor, then remove the center pillar upper trim (C).



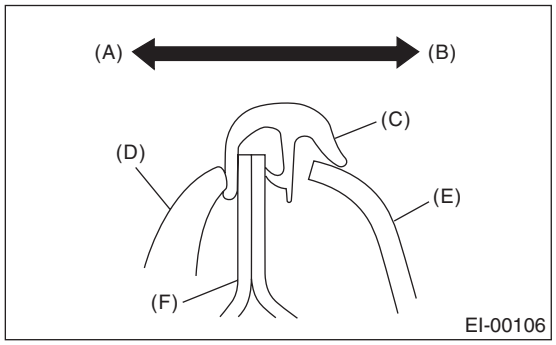
(D) Clip

B: INSTALLATION

Install in the reverse order of removal.

CAUTION:
Be sure to securely hook claws of inner trim panel to body flange.

NOTE:
When installing the center pillar upper trim and the front pillar upper trim, be sure to set the front moulding as shown in figure.

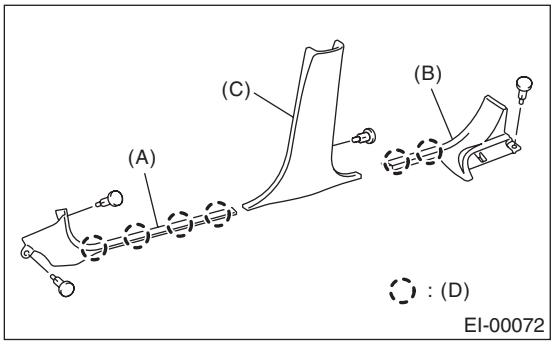


(A) Outside
(B) Inside
(C) Molding
(D) Weather strip
(E) Trim
(F) Body

18.Lower Inner Trim

A: REMOVAL

1) Remove the side sill front cover (A).
2) Remove the rear seat cushion <Ref. to SE-17, REMOVAL, Rear Seat.>, and then remove the side sill rear cover (B).
3) Remove the center pillar lower trim (C).



(D) Clip

B: INSTALLATION

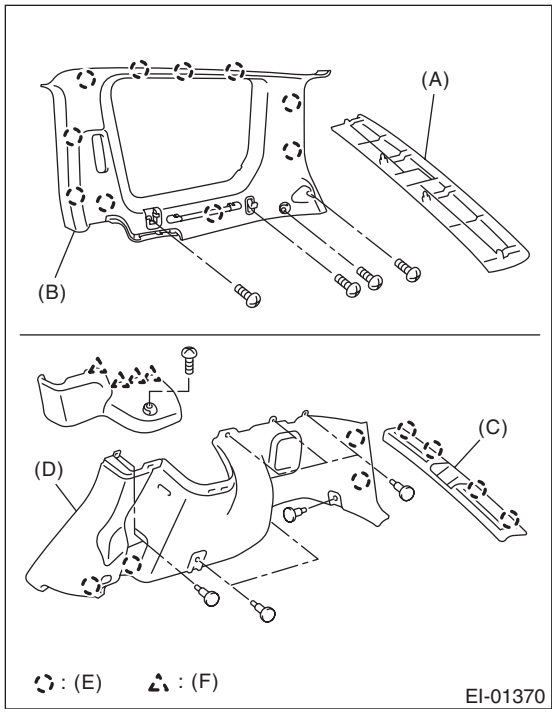
Install in the reverse order of removal.

CAUTION:
Be sure to securely hook claws of inner trim panel to body flange.

19.Rear Quarter Trim

A: REMOVAL

1) Remove the rear seat. <Ref. to SE-17, REMOVAL, Rear Seat.>
2) Remove the side sill rear cover.
3) Remove the rear rail trim (A).
4) Loosen the screws to remove the strut cap.
5) Remove the rear seat belt shoulder anchor.
6) Loosen the screws and clips to remove the rear quarter upper trim (B).
7) Remove the rear skirt trim (C).
8) Loosen the screws and clips to remove the rear quarter lower trim (D).



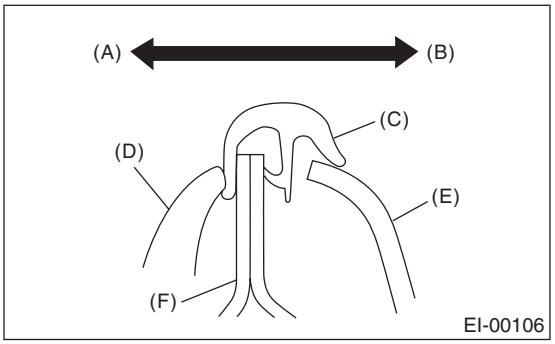
(E) Clip
(F) Hook

B: INSTALLATION

Install in the reverse order of removal.

CAUTION:
Be sure to securely hook claws of inner trim panel to body flange.

NOTE:
When installing the rear quarter upper trim, be sure to set the rear molding as shown in the figure.

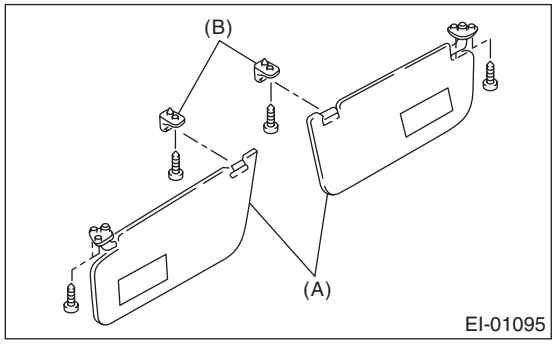


(A) Outside
(B) Inside
(C) Molding
(D) Weather strip
(E) Trim
(F) Body

20.Sun Visor

A: REMOVAL

Remove the mounting screws and detach the sun visor (A) and hook (B).



B: INSTALLATION

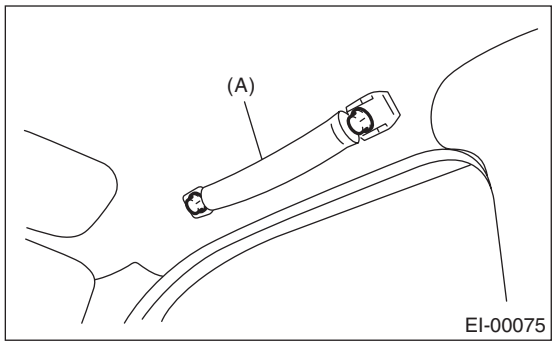
Install in the reverse order of removal.

21.Roof Trim

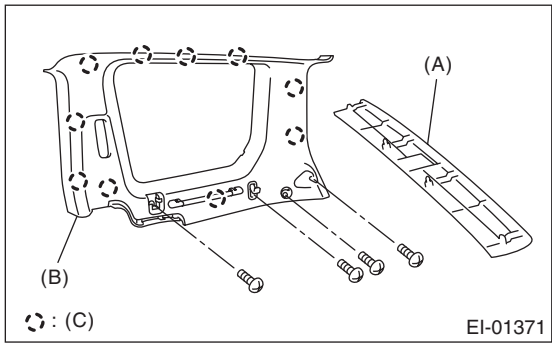
A: REMOVAL

CAUTION:
When removing the clip, use great care not to damage the roof trim.

1) Disconnect the ground cable from the battery.
2) Remove the overhead console. (Model with sunroof) <Ref. to SR-9, REMOVAL, Sunroof Switch.>
3) Remove the room light. <Ref. to LI-30, REMOVAL, Room Light.>
4) Remove the sun visor and hook on both sides. <Ref. to EI-44, REMOVAL, Sun Visor.>
5) Remove the assist grip cap, and remove the assist grip (A).

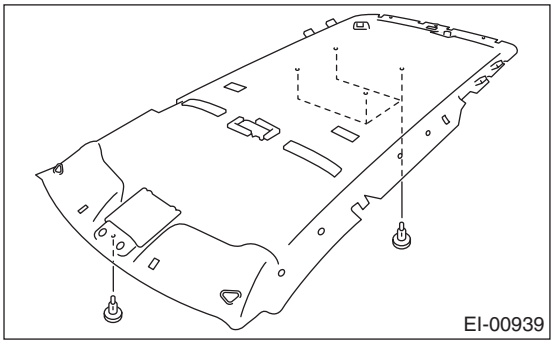


6) Remove the upper inner trim. <Ref. to EI-41, REMOVAL, Upper Inner Trim.>
7) Remove the rear quarter upper trim shown in the figure. <Ref. to EI-43, REMOVAL, Rear Quarter Trim.>
(1) Remove the rear rail trim (A).
(2) Remove the rear quarter upper trim (B) of both sides.



(C) Clip

8) Remove the clips, and then remove the roof trim.



B: INSTALLATION

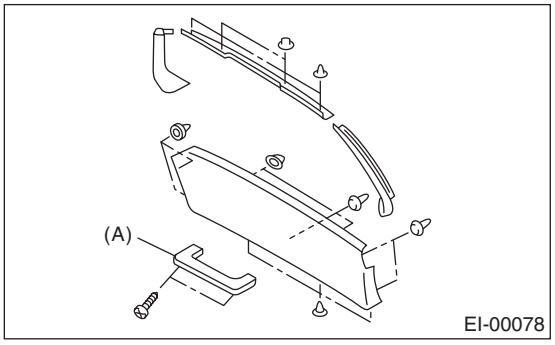
Install in the reverse order of removal.

22.Rear Gate Trim

A: REMOVAL

CAUTION:
Be careful not to damage the clips or their holes.

Remove the rear gate inner handle (A) from the rear gate, and remove the trim panel.



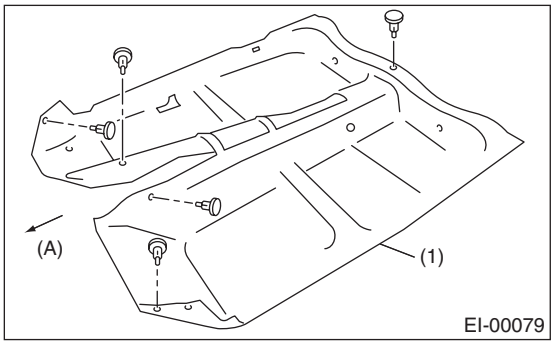
B: INSTALLATION

Install in the reverse order of removal.

23.Floor Mat

A: REMOVAL

1) Remove the front seats. <Ref. to SE-7, REMOVAL, Front Seat.>
2) Remove the rear seat cushion. <Ref. to SE-17, REMOVAL, Rear Seat.>
3) Remove the console box. <Ref. to EI-37, Console Box.>
4) Remove the side sill front cover, side sill rear cover and center pillar lower trim. <Ref. to EI-42, REMOVAL, Lower Inner Trim.>
5) Remove the footrest and clip from the floor mat.
6) Remove the mat hook.
7) Remove the mat from toe board area.
8) Remove the mat from rear heater duct.
9) Roll the mat, and then take it out of opened rear door.



(A) Front side of vehicle
(1) Floor mat

B: INSTALLATION

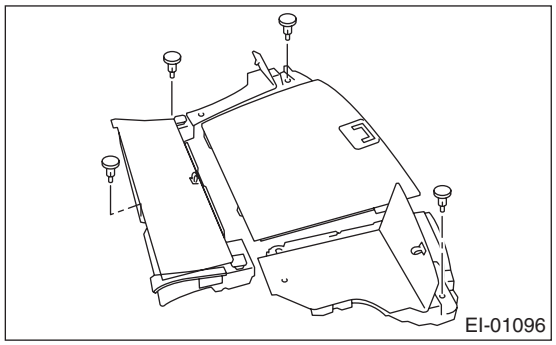
Install in the reverse order of removal.

NOTE:
- Secure the mat firmly with hook and Velcro tape.
- Insert the mat edge firmly into the groove of side sill cover.

24.Luggage Floor Mat

A: REMOVAL

1) Remove the backside mat from the rear seat backrest.
2) Remove the clips, then detach the rear floor mats and boxes.



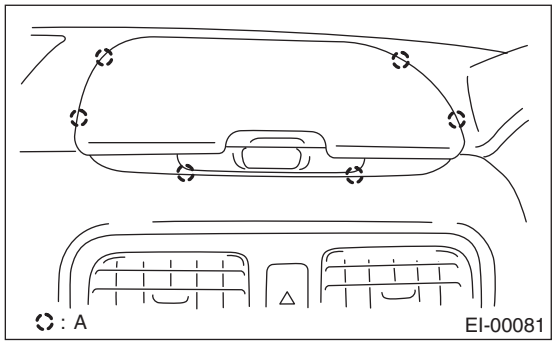
B: INSTALLATION

Install in the reverse order of removal.

25.Instrument Panel Center Compartment

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Use a flat tip screwdriver to pry off the clip.



(A) Clip

3) Remove the instrument panel center compartment from the instrument panel.
4) Disconnect the clock connector.

B: INSTALLATION

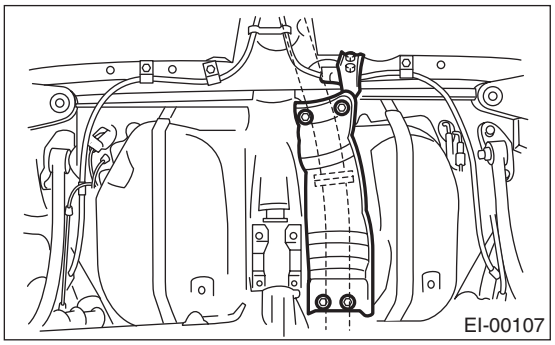
Install in the reverse order of removal.

26.Heat Shield Cover

A: REMOVAL

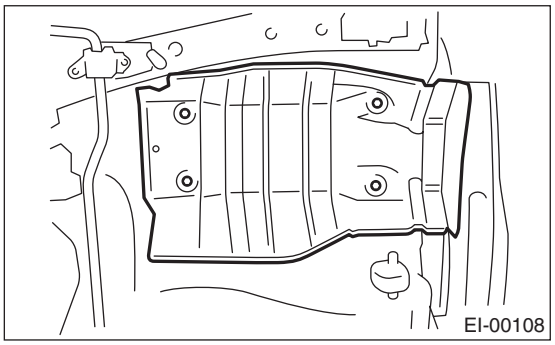
1. CENTER HEAT SHIELD COVER

Loosen four bolts to remove the center heat shield cover.



2. REAR HEAT SHIELD COVER

1) Remove the muffler. <Ref. to EX(H4SO)-10, REMOVAL, Muffler.>
2) Loosen the four bolts to remove the rear heat shield cover.



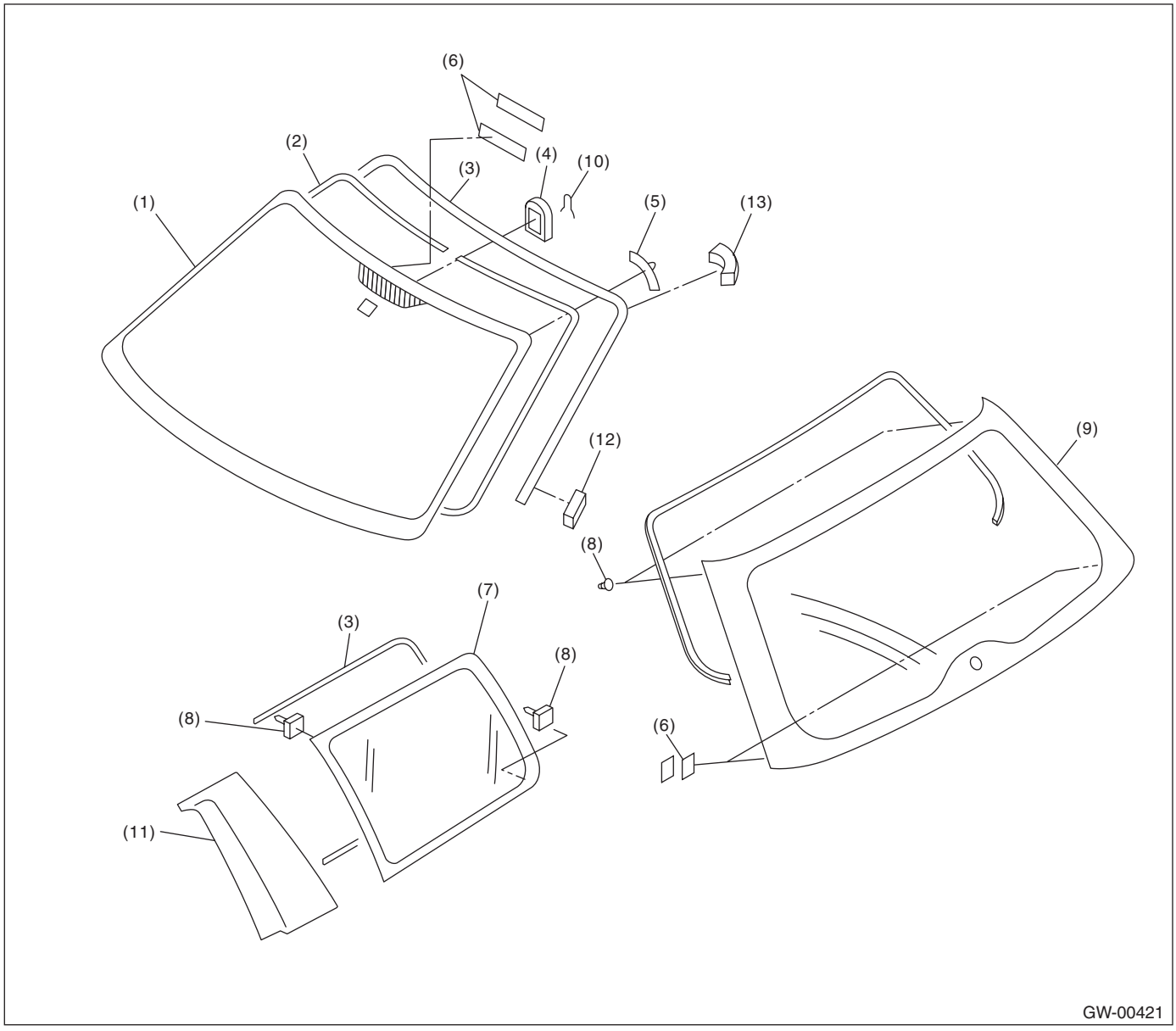
B: INSTALLATION

Install in the reverse order of removal.

1. General Description

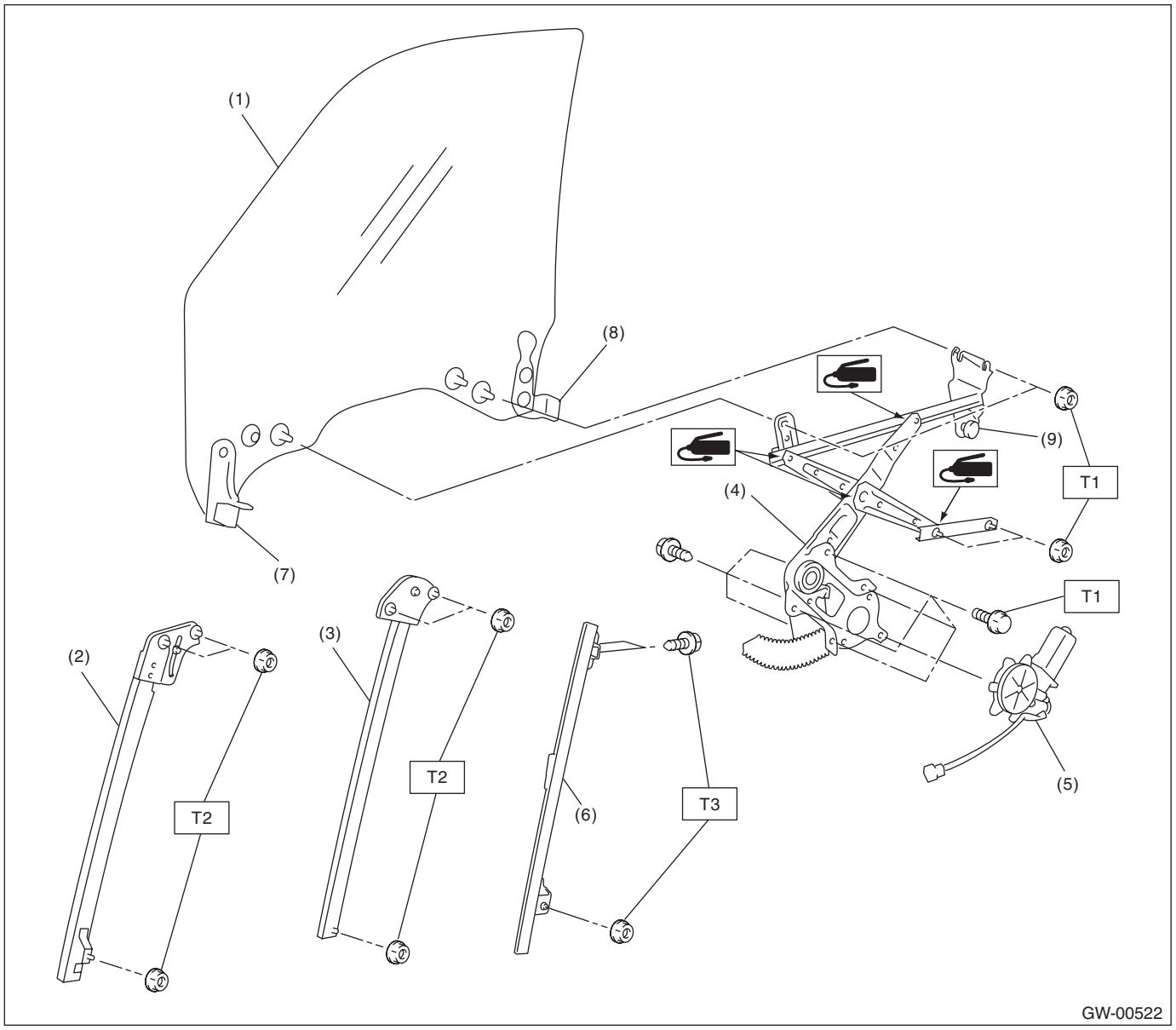
A: COMPONENT

1. FIXED GLASS



(1) Windshield glass
(2) Dam rubber
(3) Molding
(4) Rearview mirror mount
(5) Locating pin
(6) Fastener
(7) Rear quarter glass
(8) Locating pin
(9) Rear gate glass
(10) Spring
(11) Cover C pillar
(12) Seal A
(13) Seal B

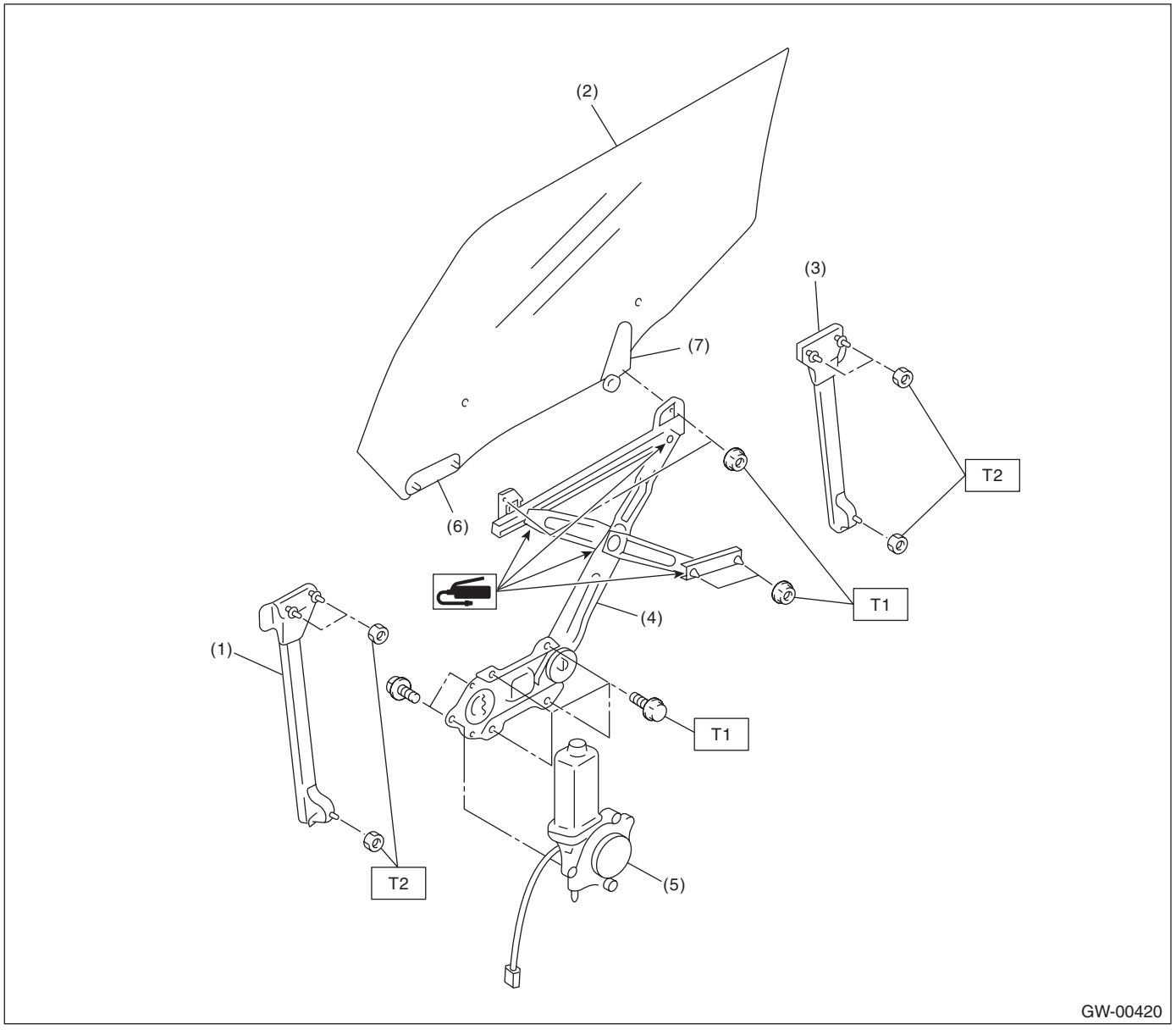
2. FRONT DOOR GLASS



(1) Glass
(2) Door sash (Front)
(3) Door sash (Rear)
(4) Regulator ASSY
(5) Motor ASSY
(6) Guide rail
(7) Holder (Front)
(8) Holder guide
(9) Slider

Tightening torque:N·m (kgf-m, ft-lb)
T1: 7.5 (0.75, 5.4)
T2: 14 (1.4, 10.3)
T3: 6 (0.6, 4.3)

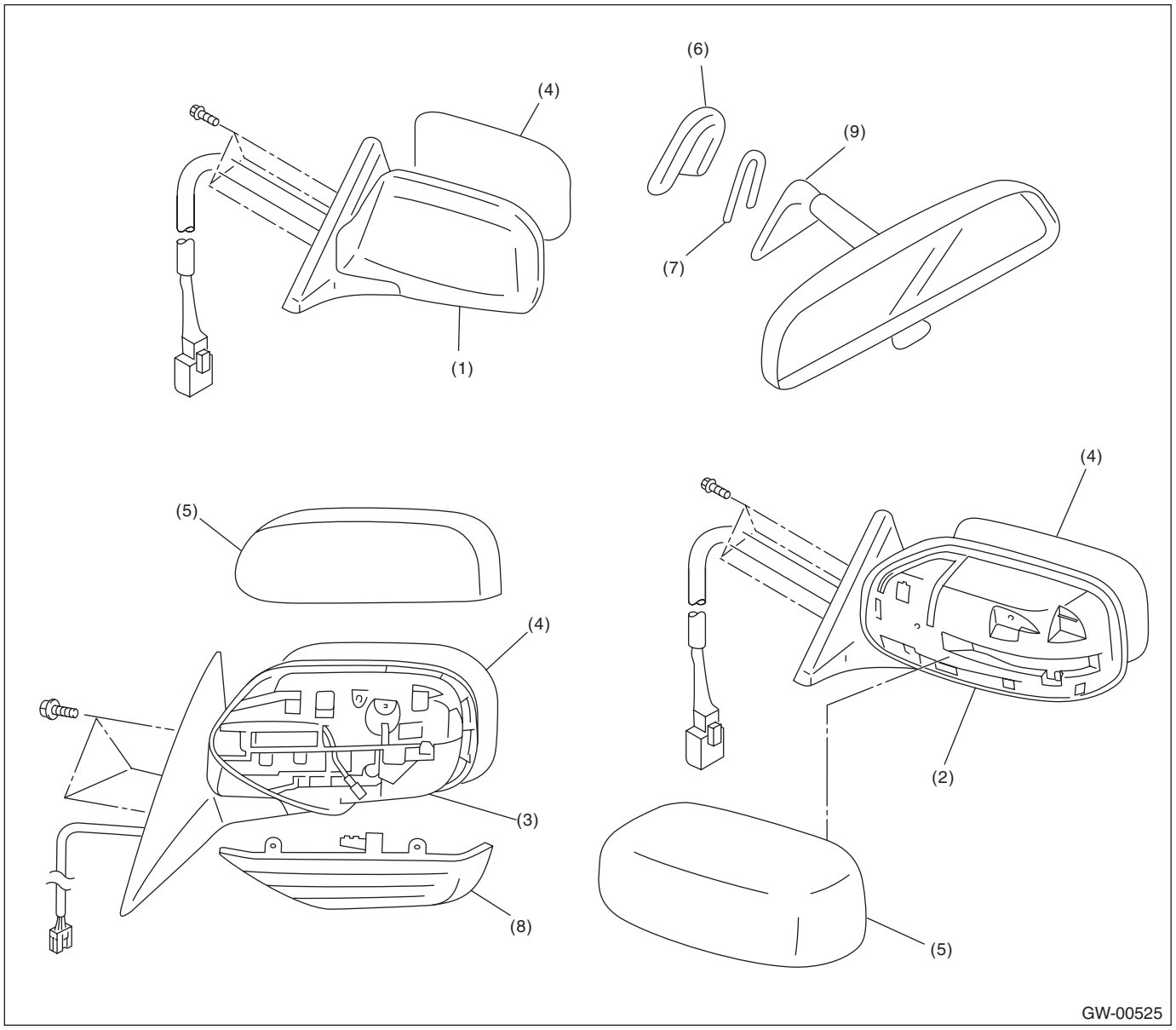
3. REAR DOOR GLASS



(1) Door sash (Front)
(2) Glass
(3) Door sash (Rear)
(4) Regulator ASSY
(5) Motor ASSY
(6) Holder (Front)
(7) Holder (Rear)

Tightening torque:N·m (kgf-m, ft-lb)
T1: 7.5 (0.75, 5.4)
T2: 14 (1.4, 10.3)

4. MIRROR



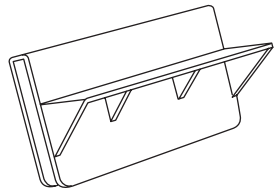
(1) Outer mirror (Large size)
(2) Outer mirror (Standard size)
(3) Outer mirror (with side turn signal light)
(4) Mirror
(5) Scalp cap
(6) Mount
(7) Spring
(8) Side turn signal light
(9) Rearview mirror

B: CAUTION

- When electrical connectors are disconnected, always conduct an operational check after connecting them again.
- Avoid impact and damage to the glass.

C: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST61299AE000	61299AE000	SPACER	Used for adjusting the upper end position of door glass. (Glass thickness: 5 mm (0.197 in))

2. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for checking voltage and continuity.
Piano wire	Used for removing the window glass.
Windshield glass knife	Used for removing the window glass.

2. Power Window System

A: WIRING DIAGRAM

<Ref. to WI-138, WIRING DIAGRAM, Power Window System.>

B: INSPECTION

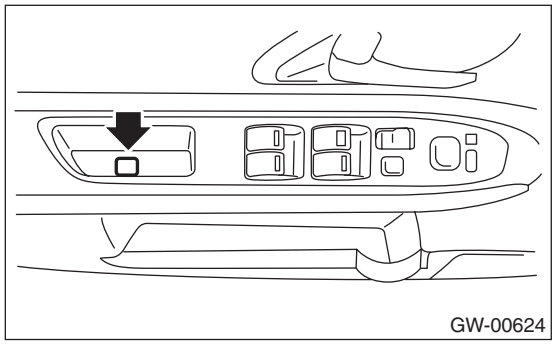
Symptom	Repair order
All power windows do not operate.	1. Fuse (SBF-6) (F/B No. 18) 2. Power window circuit breaker 3. Power window relay 4. Wiring harness
Particular window does not operate.	1. Power window main switch 2. Power window sub-switch 3. Power window motor 4. Wiring harness
“Window Lock” does not operate.	Power window main switch

3. Power Window Control Switch

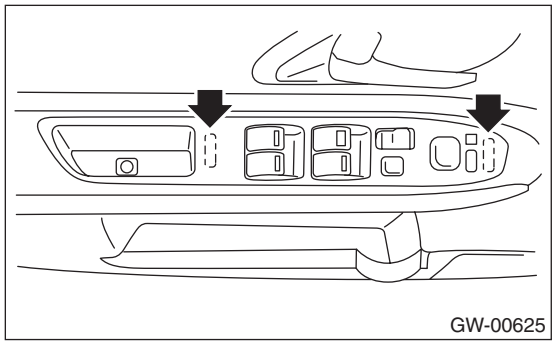
A: REMOVAL

1. MAIN SWITCH

1) Disconnect the ground cable from the battery.
2) Remove the screw cover and loosen the inner screws by using a flat tip screwdriver or similar tools.


GW-00624

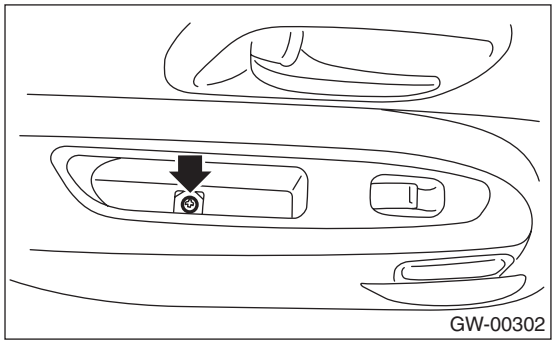
3) Detach the hook of the switch panel, and remove the power window main switch assembly.


GW-00625

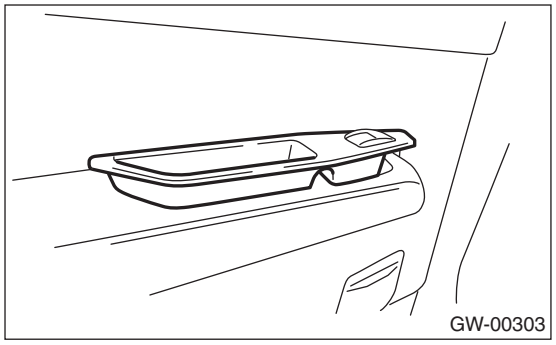
4) Disconnect the connector.
5) Detach the screw on the backside of the switch panel, and remove the power window switch.

2. SUB-SWITCH

1) Disconnect the ground cable from the battery.
2) Remove the screw securing the switch panel.


GW-00302

3) Remove the switch panel.


GW-00303

4) Disconnect the connector.
5) Detach the screw on the backside of the switch panel, and remove the power window switch.

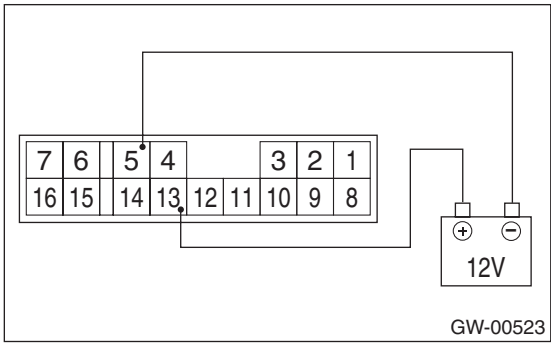
B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

1. MAIN SWITCH

1) Remove the main switch. <Ref. to GW-8, MAIN SWITCH, REMOVAL, Power Window Control Switch.>
2) Turn the window lock switch to UNLOCK.
3) Connect the battery and the main switch as shown in the following figure.



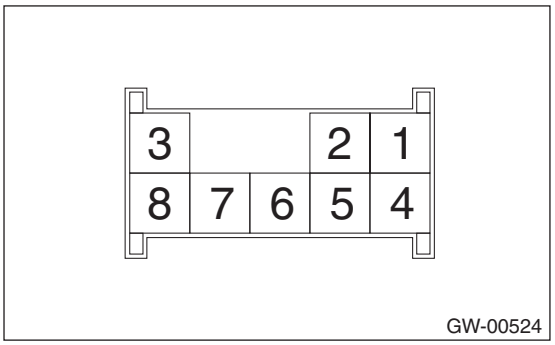
4) Measure the main switch resistance.

	Switch position	Terminal No.	Standard
Driver's side	UP	13 and 2 1 and 5	Less than 1 Ω
	OFF	1 and 5 2 and 5	Less than 1 Ω
	DOWN	13 and 1 2 and 5	Less than 1 Ω
	AUTO DOWN	13 and 1 2 and 5	Less than 1 Ω
Passen-ger's side	UP	13 and 6 7 and 5	Less than 1 Ω
	OFF	5 and 6 5 and 7	Less than 1 Ω
	DOWN	13 and 7 6 and 5	Less than 1 Ω
Rear LH	UP	11 and 13 10 and 5	Less than 1 Ω
	OFF	5 and 11 5 and 10	Less than 1 Ω
	DOWN	13 and 11 10 and 5	Less than 1 Ω
Rear RH	UP	13 and 16 15 and 5	Less than 1 Ω
	OFF	5 and 15 5 and 16	Less than 1 Ω
	DOWN	13 and 15 16 and 5	Less than 1 Ω

5) Replace the main switch if faulty.

2. SUB-SWITCH

1) Remove the sub-switch. <Ref. to GW-8, SUB-SWITCH, REMOVAL, Power Window Control Switch.>
2) Measure the sub-switch resistance.



	Switch position	Terminal No.	Standard
Passen-ger's side, rear	UP	8 and 5 4 and 7	Less than 1 Ω
	OFF	6 and 5 4 and 7	Less than 1 Ω
	DOWN	8 and 7 6 and 5	Less than 1 Ω

3) Replace the sub-switch if faulty.

4. Remote Control Mirror System

A: WIRING DIAGRAM

<Ref. to WI-143, WIRING DIAGRAM, Remote Control Mirror System.>

B: INSPECTION

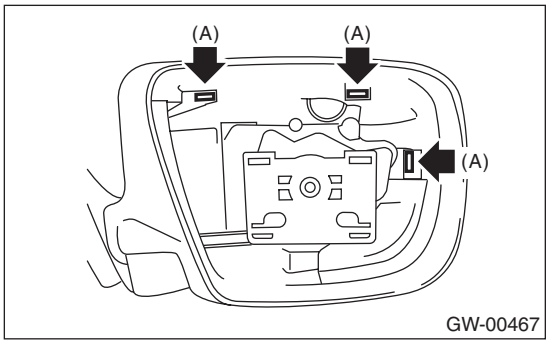
Symptom	Repair order
All function does not operate.	1. Fuse (F/B No. 4) (F/B No. 13) (F/B No. 17) (F/B No. 18) 2. Mirror switch 3. Wiring harness
One side of the mirror motor does not operate.	1. Mirror switch 2. Mirror motor 3. Wiring harness
Mirror heater does not operate.	1. Mirror switch 2. Mirror heater 3. Wiring harness

5. Scalp Cap

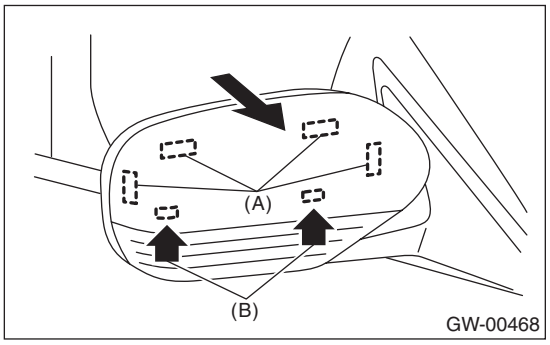
A: REPLACEMENT

1. OUTER MIRROR WITH SIDE TURN SIGNAL LIGHT

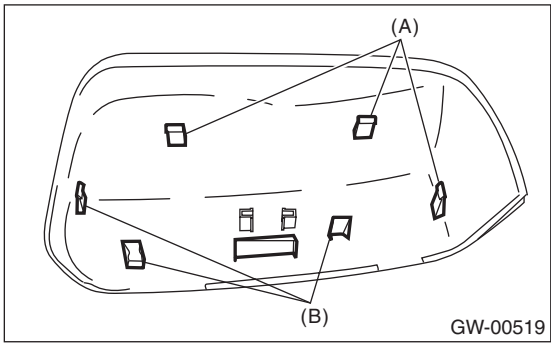
1) Remove the mirror. <Ref. to GW-14, REPLACEMENT, Outer Mirror.>
2) Press-in the upper side clips (A) from inside of outer mirror.



3) Pull the scalp cap frontward of outer mirror, remove the upper side clips (A) and lower side hooks (B), and then remove the scalp cap.



4) Insert the lower hooks (B) of scalp cap to the outer mirror and push the upper clips (A) in.

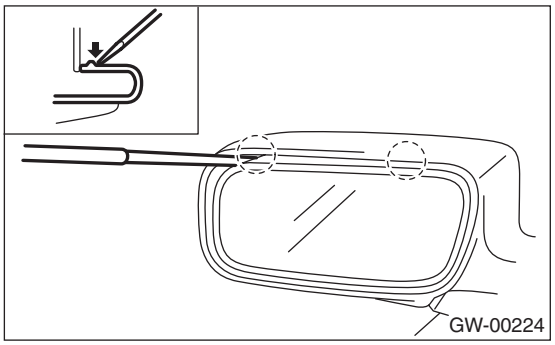


5) Install the scalp cap securely.

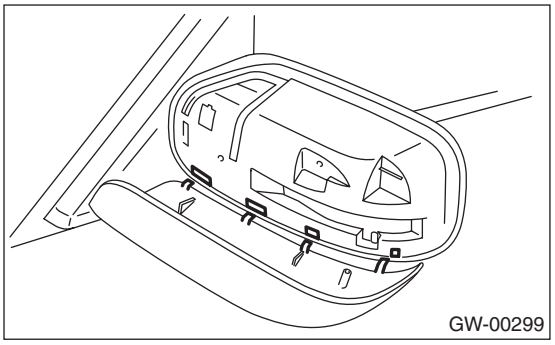
CAUTION:
Do not remove the scalp cap forcibly. The lower hooks may be damaged.

2. STANDARD SIZE OUTER MIRROR

1) Put the mirror side down.
2) Insert a thin screw driver, push the clip part of scalp cap, and then remove the scalp cap.



3) Insert the claw at the lower side of scalp cap to the door mirror.

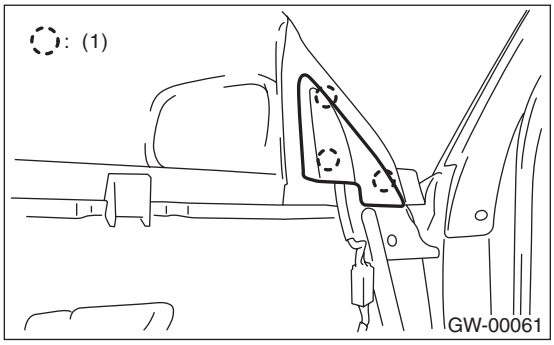


4) Install the scalp cap securely.

6. Outer Mirror Assembly

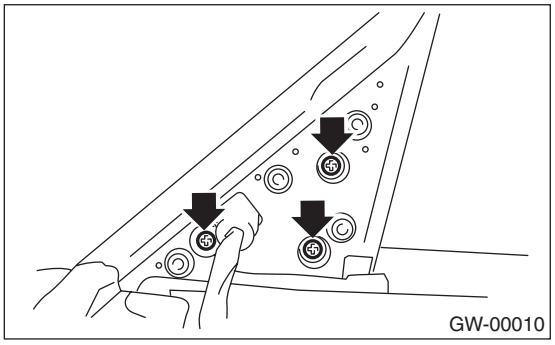
A: REMOVAL

1) Remove the door trim. <Ref. to EI-33, REMOVAL, Front Door Trim.>
2) Remove the mirror gusset cover.



(1) Hook

3) Disconnect the outer mirror connector.
4) Remove the grommet, and loosen the screws to remove the outer mirror assembly.



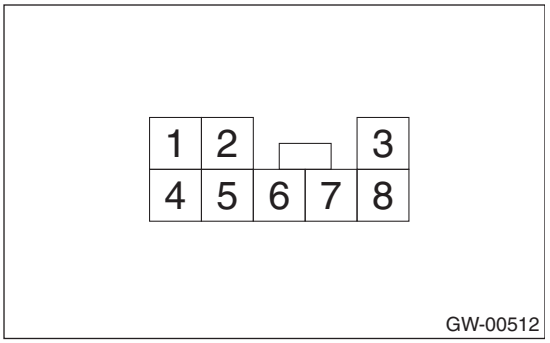
B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

1. OUTER MIRROR WITH SIDE TURN SIGNAL LIGHT (MODEL WITHOUT MIRROR HEATER)

1) Check to ensure that the outer mirror moves properly when the battery voltage is applied to terminals.

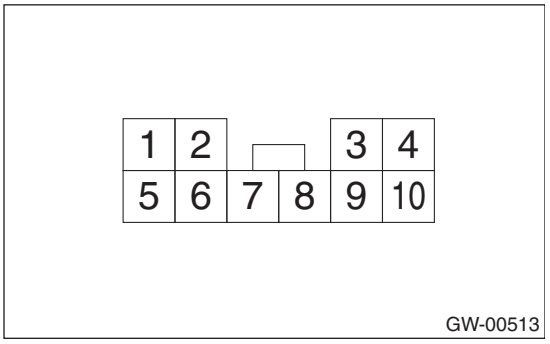


Switch position	Terminal No.
OFF	—
UP	6 (+) and 3 (–)
DOWN	3 (+) and 6 (–)
LEFT	7 (+) and 8 (–)
RIGHT	8 (+) and 7 (–)

2) Replace the mirror if defective.

2. OUTER MIRROR WITH SIDE TURN SIGNAL LIGHT (MODEL WITH MIRROR HEATER)

1) Check to ensure that the outer mirror moves properly when the battery voltage is applied to terminals.

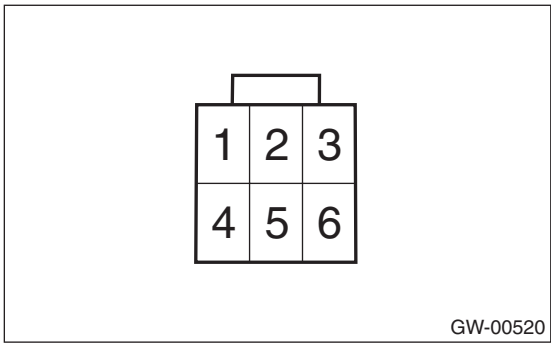


Switch position	Terminal No.
OFF	—
UP	7 (+) and 3 (–)
DOWN	3 (+) and 7 (–)
LEFT	8 (+) and 9 (–)
RIGHT	9 (+) and 8 (–)

2) Replace the mirror if defective.

3. STANDARD SIZE OUTER MIRROR (MODEL WITHOUT MIRROR HEATER)

1) Check to ensure that the outer mirror moves properly when the battery voltage is applied to terminals.

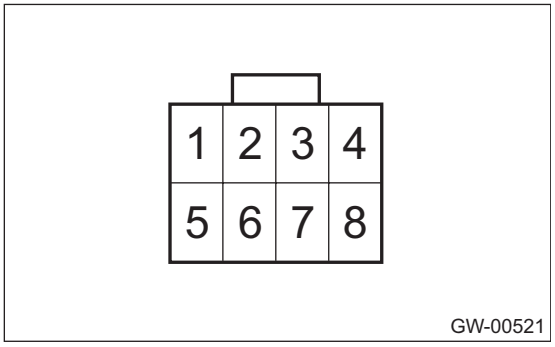


Switch position	Terminal No.
OFF	—
UP	1 (+) and 3 (–)
DOWN	3 (+) and 1 (–)
LEFT	2 (+) and 3 (–)
RIGHT	3 (+) and 2 (–)

2) Replace the mirror if defective.

4. STANDARD SIZE OUTER MIRROR (MODEL WITH MIRROR HEATER)

1) Check to ensure that the outer mirror moves properly when the battery voltage is applied to terminals.



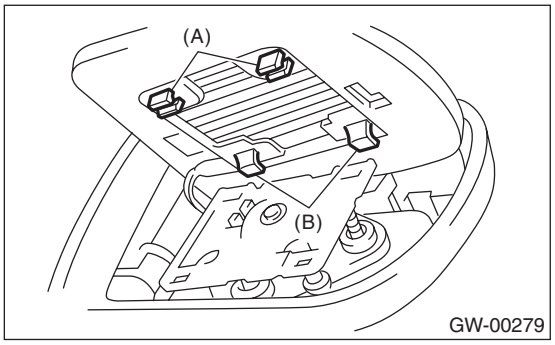
Switch position	Terminal No.
OFF	—
UP	2 (+) and 4 (–)
DOWN	4 (+) and 2 (–)
LEFT	3 (+) and 4 (–)
RIGHT	4 (+) and 3 (–)

2) Replace the mirror if defective.

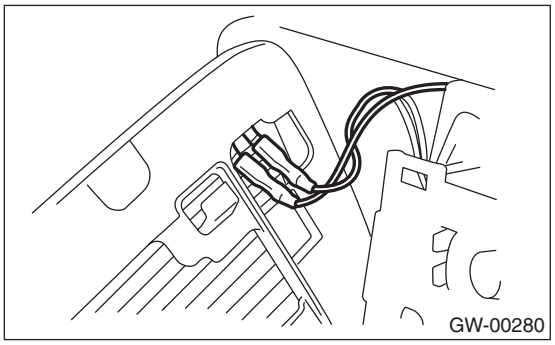
7. Outer Mirror

A: REPLACEMENT

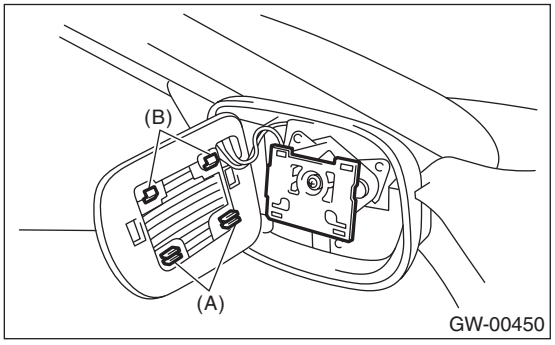
1) Face the mirror upward.
2) Use a flat tip screwdriver or similar tools to remove clip (A).
3) Lift the mirror lower part to remove hooks (B).



4) Disconnect the mirror heater connector from the end part of the mirror. (Model with mirror heater)



5) Catch the hooks (B) and install clips (A).



CAUTION:
• When removing the mirror, be careful not to damage the back surface of mirror with a flat tip screwdriver or similar tools.
• When installing the mirror, insert the hook and clip securely.

8. Remote Control Mirror Switch

A: REMOVAL

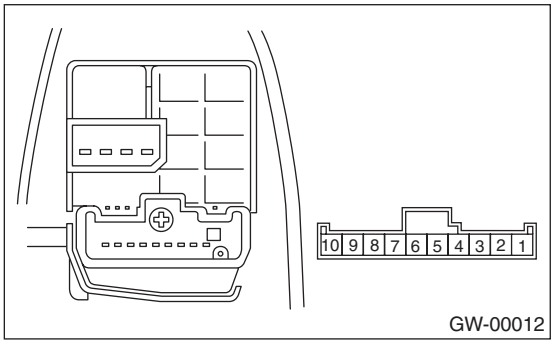
Refer to Power Window Control Switch because the remote control mirror switch is unitized with the power window control switch. <Ref. to GW-8, REMOVAL, Power Window Control Switch.>

B: INSTALLATION

Refer to Power Window Control Switch because the remote control mirror switch is unitized with the power window control switch. <Ref. to GW-8, INSTALLATION, Power Window Control Switch.>

C: INSPECTION

Move the remote control mirror switch to each position and check continuity between terminals.



Switch the change over switch to the right side:

Switch position	Terminal No.	Standard
OFF	—	1 MΩ or more
UP	8 and 3, 6 and 7	Less than 1 Ω
DOWN	8 and 6, 3 and 7	Less than 1 Ω
LEFT	8 and 2, 6 and 7	Less than 1 Ω
RIGHT	8 and 6, 2 and 7	Less than 1 Ω

Switch the change over switch to the left side:

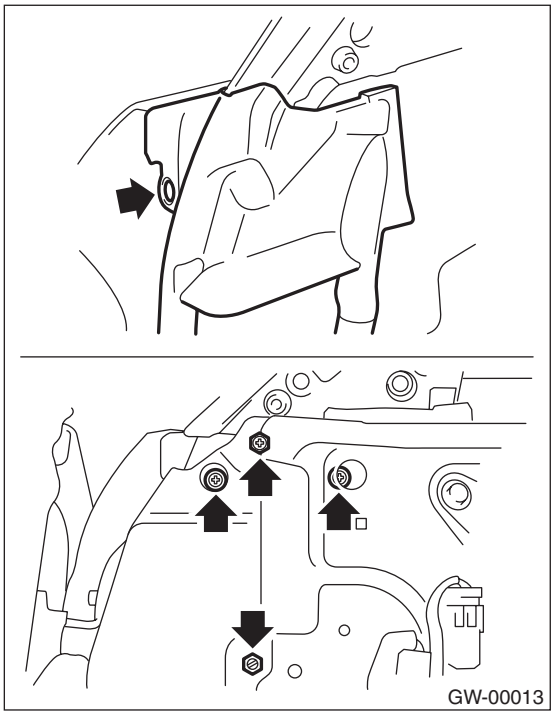
Switch position	Terminal No.	Standard
OFF	—	1 MΩ or more
UP	8 and 4, 6 and 7	Less than 1 Ω
DOWN	8 and 6, 4 and 7	Less than 1 Ω
LEFT	8 and 5, 6 and 7	Less than 1 Ω
RIGHT	8 and 6, 5 and 7	Less than 1 Ω

If NG, replace the switch.

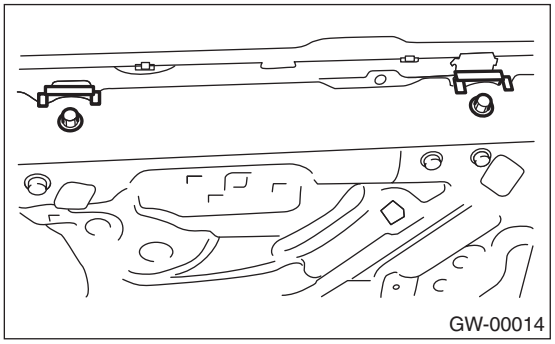
9. Front Door Glass

A: REMOVAL

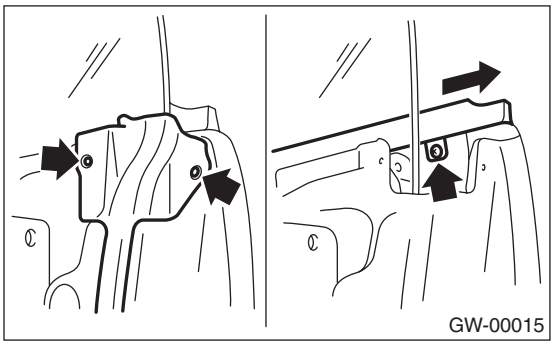
1) Remove the front door trim. <Ref. to EI-33, REMOVAL, Front Door Trim.>
2) Remove the front speaker. <Ref. to ET-6, REMOVAL, Front Speaker.>
3) Remove the sealing cover. <Ref. to EB-13, REMOVAL, Front Sealing Cover.>
4) Remove the outer mirror assembly. <Ref. to GW-12, REMOVAL, Outer Mirror Assembly.>
5) Remove the front end of door weather strip and gusset.



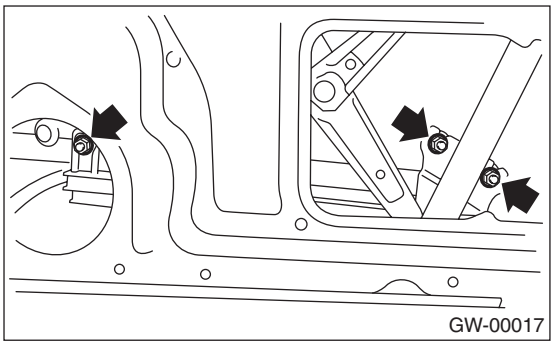
6) Remove the stabilizers.



7) Remove the rear end of door weather strip and weather strip outer.



8) Operate the power window switch to move glass to position shown in the figure, and then remove the three nuts from the service holes.



9) Remove the door glass.

CAUTION:
• Since the gear may be disengaged, do not turn regulator in the closing direction after removing glass.
• Avoid impact and damage to the glass.

B: INSTALLATION

1) Install in the reverse order of removal.

CAUTION:
Make sure that glass holder (front), holder guide, and slider of the regulator are placed securely in sash.
2) Adjust the front door glass. <Ref. to GW-17, ADJUSTMENT, Front Door Glass.>

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to GW-3, FRONT DOOR GLASS, COMPONENT, General Description.>

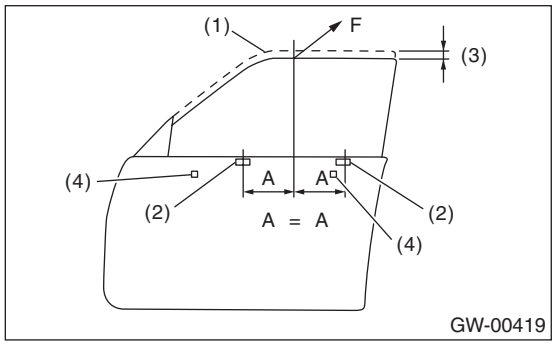
C: ADJUSTMENT

NOTE:
Before adjustment, ensure that all adjusting nuts of stabilizer, upper stopper and sash are loose, and door glass rises up to the point that it comes in contact with weather strip.

1) Temporarily tighten the adjusting nut on one side of rear sash at the midpoint of slotted hole in the inner panel.

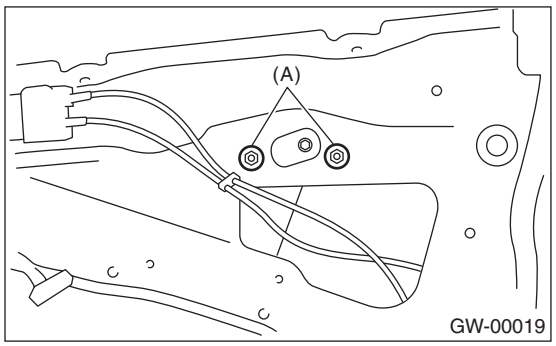
2) Temporarily tighten the regulator B channel at the top position of slotted hole.

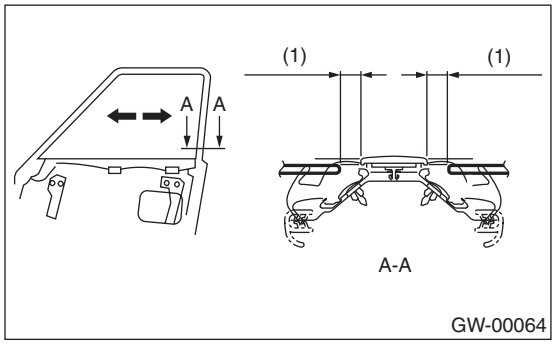
3) Lower the door glass 10 — 15 mm (0.39 — 0.59 in) from fully closed position. While applying an outward pressure (F) of 45.0±5 N (4.6±0.5 kgf, 10.1±1.1 lb) to the upper edge of glass above midpoint of two outer stabilizers, press the inner stabilizer to the glass at a pressure of 25±5 N (2.5±0.5 kgf, 5.5±1.1 lb) to secure it.



(1) Fully closed position
(2) Stabilizer
(3) 10 — 15 mm (0.39 — 0.59 in)
(4) Upper stopper

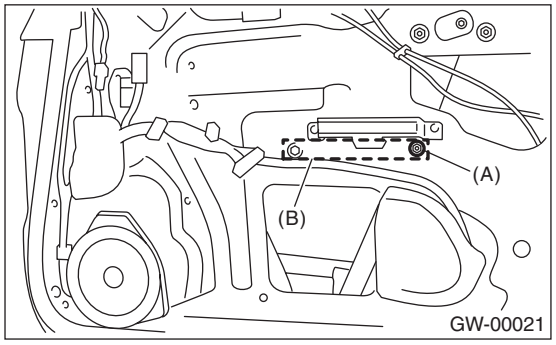
4) To adjust the clearance between front glass and center pillar cover, loosen the nuts (A), and move the rear sash back and forward until clearance becomes the value shown. (Difference up and down: Within 1.5 mm (0.059 in))



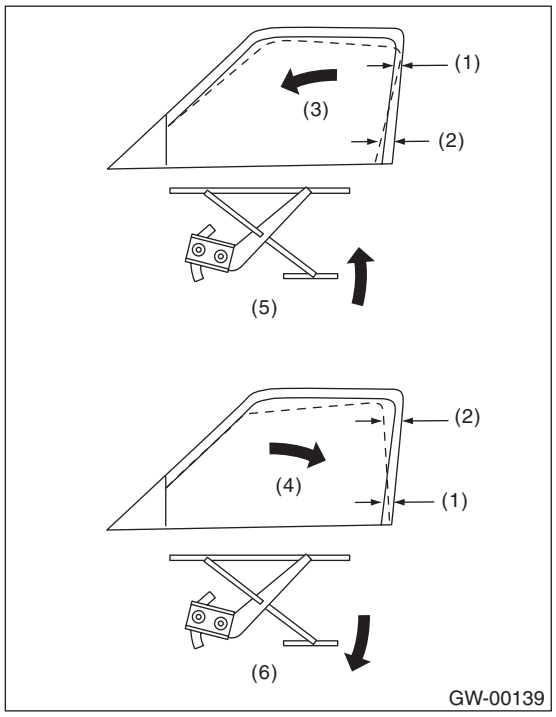


(1) 12±1 mm (0.472±0.039 in)

5) For adjustment of the upper and lower ends of center pillar, loosen the adjusting nut (A) of B-channel (B).

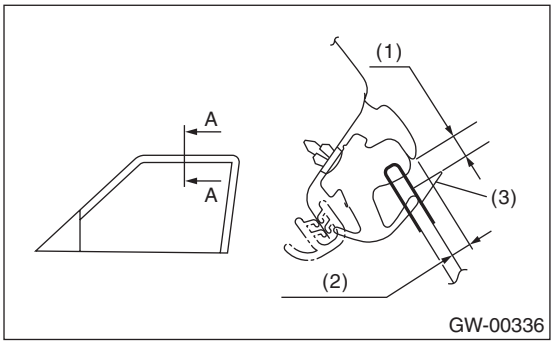


6) Adjust so that the upper and lower ends of center pillar are the same size.



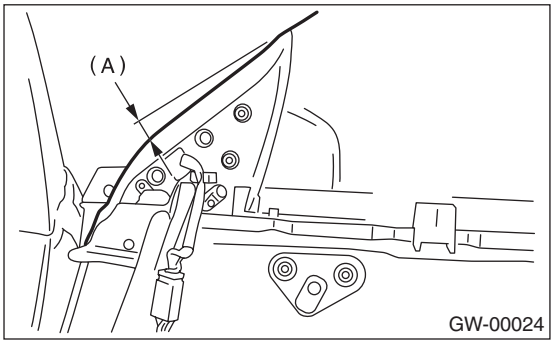
(1) Narrow
(2) Wide
(3) Glass tilts too far rearward.
(4) Glass tilts too far forward.
(5) Raise B channel
(6) Lower B channel

7) For glass stroke adjustment, attach special tool to the glass, close door, and raise the glass to the top edge using regulator until positional relationship between glass and weather strip becomes as shown. And secure the glass so that the upper stopper touches the glass holder without fail.
ST 61299AE000 SPACER (Glass thickness: 5 mm (0.197 in) for door glass)



(1) 2.2 — 3.8 mm (0.087±0.150 in)
(2) When reusing the weather strip:
8.5 — 10.5 mm (0.335 — 0.413 in)
When replacing the weather strip:
7.5 — 9.5 mm (0.295 — 0.374 in)
(3) ST

For preventing wind noise, adjust the glass at the position where tip of gusset is raised up a little.



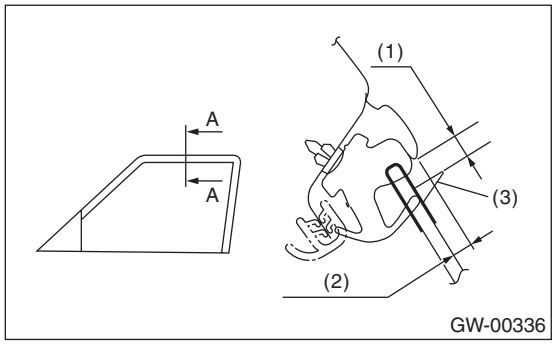
(A) 0 — 1.5 mm (0 — 0.059 in)

8) After stabilizer adjustment, carry out glass cohesion adjustment. First, visually ensure positional relationship between retainer & molding and glass of the roof side, and then begin with rear sash adjustment. Adjust two adjusting bolts alternately step by step to obtain dimensions shown below (cross-section A).

NOTE:
If two nuts are loosened at the same time, the sash moves back and forth. Therefore, when one nut is adjusted, secure the other.

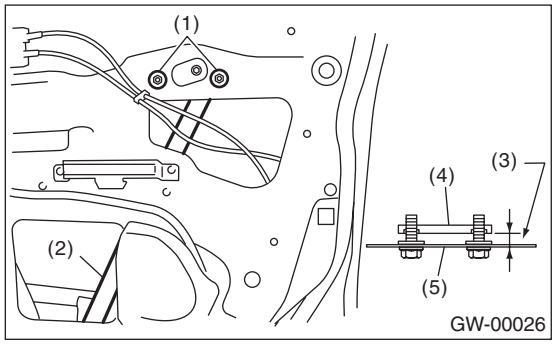
9) Make the same adjustment of two adjusting bolts of rear sash.

ST 61299AE000 SPACER (Glass thickness: 5 mm (0.197 in) for door glass)



(1) 2.2 — 3.8 mm (0.087±0.150 in)
(2) When reusing the weather strip: 8.5 — 10.5 mm (0.335 — 0.413 in) When replacing the weather strip: 7.5 — 9.5 mm (0.295 — 0.374 in)
(3) ST

NOTE:
Do not tilt the sash bracket to inner panel during adjustment. If tilting, the regulator does not operate smoothly.



(1) Sash bracket
(2) Rear sash
(3) Adjust the lines parallel
(4) Rear sash
(5) Inner panel

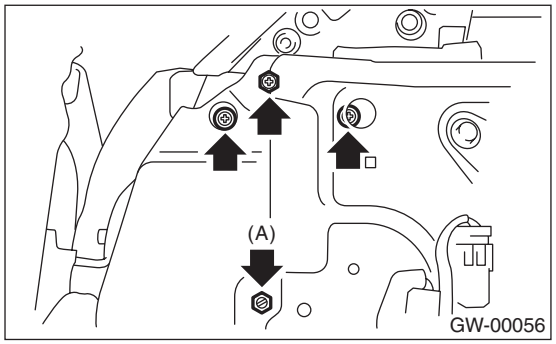
10) Make adjustment of front sash in the same manner as that of rear sash.

NOTE:
Although front and rear sashes must, as a rule, be adjusted in the same manner, in some door installation, the adjustment in a different manner may be required. However, adjustment of one sash to the maximum amount and the other to the minimum amount is not permitted. Such adjustment may result in applying excessive load against regulator.

11) After adjustments, tighten the nuts.

12) After adjustment of the glass, close the door. If there is a gap between outer lip of gusset and glass surface, adjust the gap with adjusting nut (A) in lower fitting part of gusset to prevent generation of wind noise.

13) During adjustment, loosen the other three clamping screws.

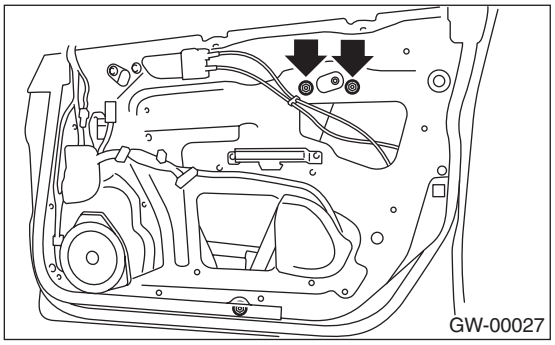


14) After adjustment, tighten the bolts and nuts.

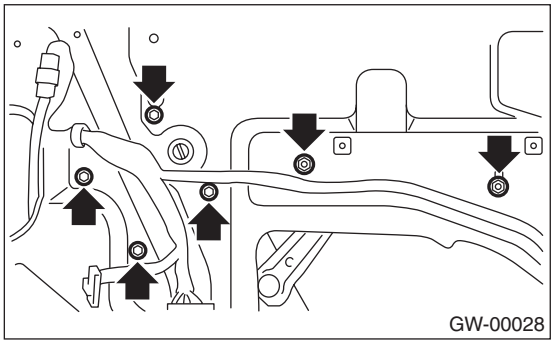
10.Front Regulator and Motor Assembly

A: REMOVAL

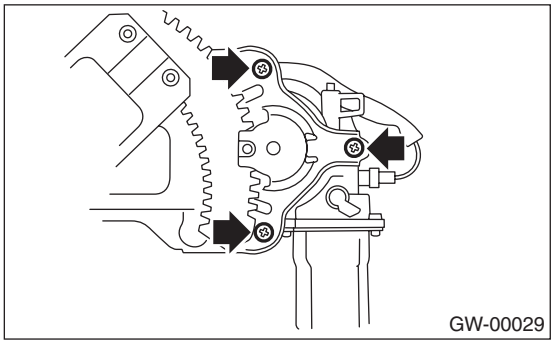
1) Remove the door glass. <Ref. to GW-16, REMOVAL, Front Door Glass.>
2) Loosen the nuts to remove the rear sash.



3) Disconnect the motor connector.
4) Loosen four bolts and two nuts to remove regulator assembly.



5) Loosen screws to remove motor assembly.



B: INSTALLATION

1) Install in the reverse order of removal.
2) Adjust the front door glass. <Ref. to GW-17, ADJUSTMENT, Front Door Glass.>

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to GW-3, FRONT DOOR GLASS, COMPONENT, General Description.>

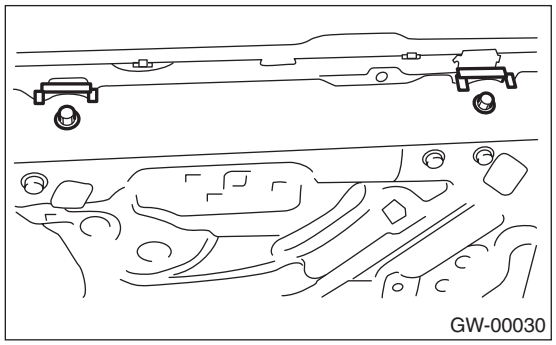
C: INSPECTION

1) Make sure that the power window motor rotates properly when the battery voltage is applied to the terminals of motor connector.
2) Change polarity of battery connection to terminals to ensure that the motor rotates in reverse direction.

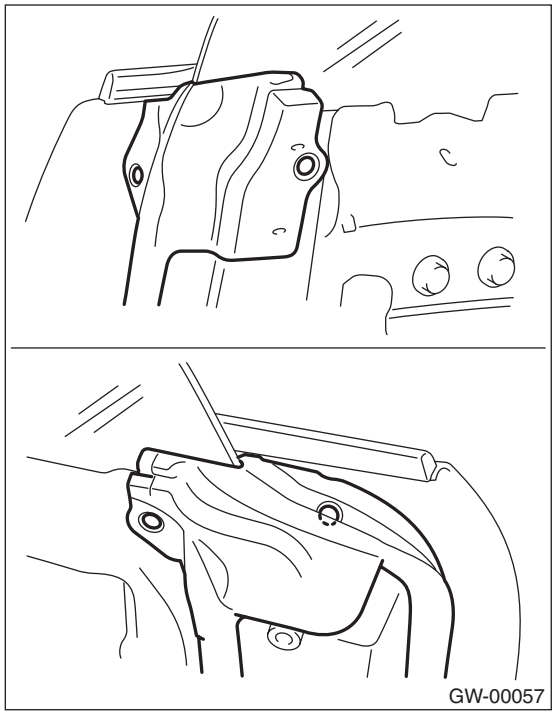
11.Rear Door Glass

A: REMOVAL

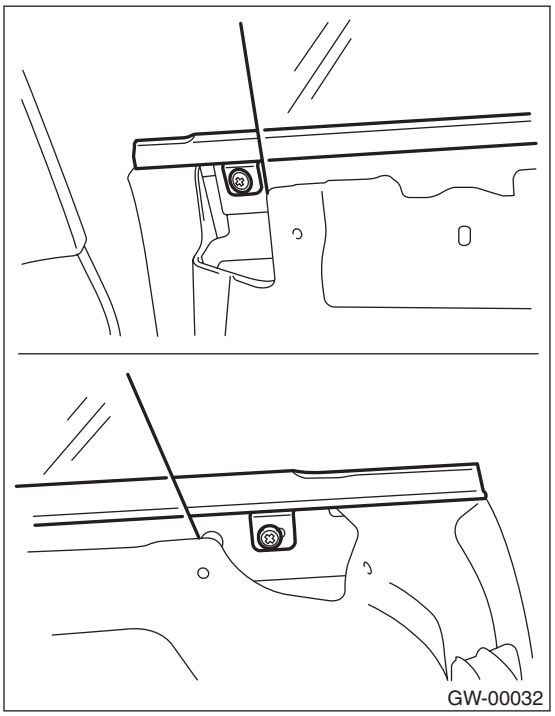
1) Remove the rear door trim. <Ref. to EI-34, REMOVAL, Rear Door Trim.>
2) Remove the front speaker. <Ref. to ET-6, REMOVAL, Front Speaker.>
3) Remove the sealing cover. <Ref. to EB-16, REMOVAL, Rear Sealing Cover.>
4) Remove the stabilizers.


GW-00030

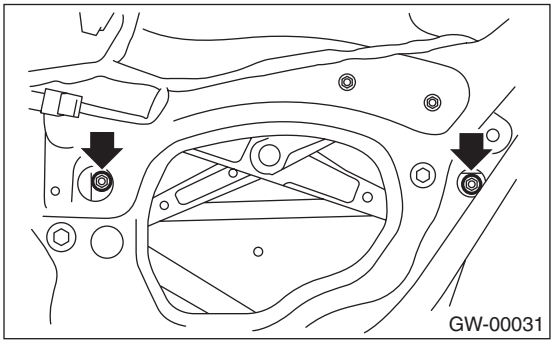
5) Remove the door weather strip.


GW-00057

6) Loosen two screws to remove the weather strip outer.


GW-00032

7) Operate the power window switch to move the glass to the position as shown in the figure, and remove two nuts.


GW-00031

8) Take out the door glass.

CAUTION:
Avoid impact and damage to the glass.

B: INSTALLATION

1) Install in the reverse order of removal.

CAUTION:
Make sure that glass holder (front) and holder (rear) are placed securely in sash.

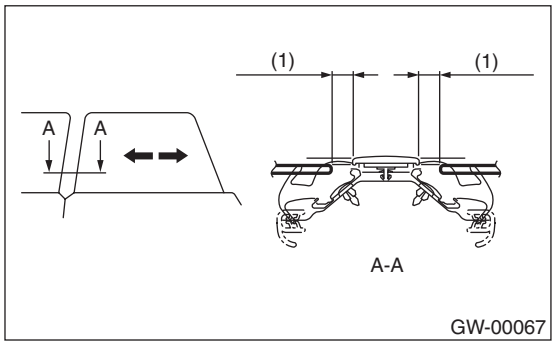
2) Adjust the rear door glass. <Ref. to GW-22, ADJUSTMENT, Rear Door Glass.>

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to GW-4, REAR DOOR GLASS, COMPONENT, General Description.>

C: ADJUSTMENT

NOTE:
The rear door glass, as a rule, is adjusted in the same manner as front glass, although they are different in dimension.

1) Adjust the glass position using the following dimensions as a guide line. (Difference up and down: Within 1.5 mm (0.059 in))

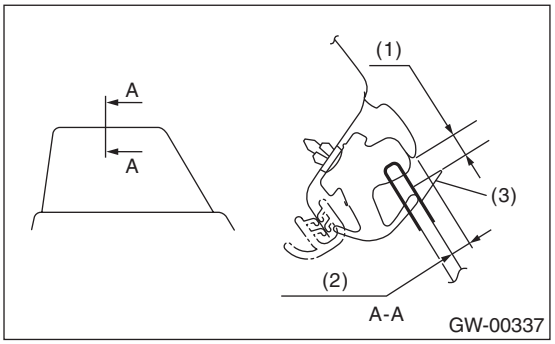


(1) 12±1 mm (0.472±0.039 in)

NOTE:
• If dimensions are smaller than the given dimensions, glass may get caught in weather strip during lifting/lowering operation and may not be fully open.
• After adjustment, move the glass up and down to check whether it is caught.

2) Attach the special tool to the glass, and adjust the glass adhesion until the dimensional value becomes as shown below.

ST 61299AE000 SPACER (Glass thickness: 5 mm (0.197 in) for door glass)



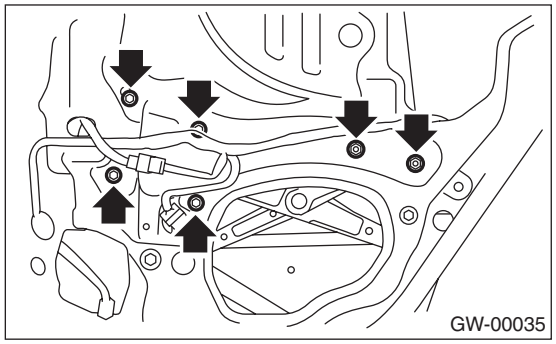
(1) 2.2 — 3.8 mm (0.087 — 0.150 in)
(2) When reusing the weather strip:
8.5 — 10.5 mm (0.335 — 0.413 in)
When replacing the weather strip:
7.5 — 9.5 mm (0.295 — 0.374 in)
(3) ST

NOTE:
• If rear glass adhesion is higher than necessary, glass may get caught in weather strip of center pillar corner, resulting in early wear of weather strip. Care should be taken for adjustment.
• After adjustment, move the glass up and down to check whether it is caught.

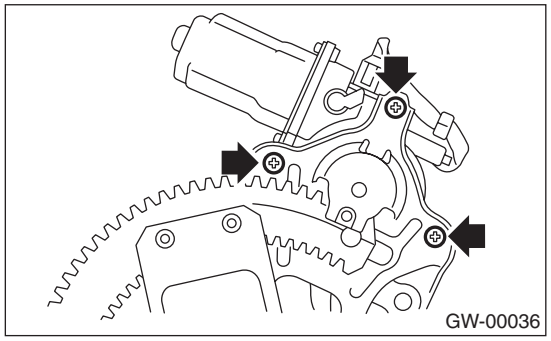
12. Rear Regulator and Motor Assembly

A: REMOVAL

1) Remove the rear door glass. <Ref. to GW-21, REMOVAL, Rear Door Glass.>
2) Remove the front sash.
3) Disconnect the motor connector.
4) Loosen four bolts and two nuts to remove regulator assembly.



5) Loosen screws to remove motor assembly.



B: INSTALLATION

1) Install in the reverse order of removal.
2) Adjust the rear door glass. <Ref. to GW-22, ADJUSTMENT, Rear Door Glass.>

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to GW-4, REAR DOOR GLASS, COMPONENT, General Description.>

C: INSPECTION

1) Make sure that the power window motor rotates properly when the battery voltage is applied to the terminals of motor connector.
2) Change polarity of battery connection to terminals to ensure that the motor rotates in reverse direction.

13.Windshield Glass

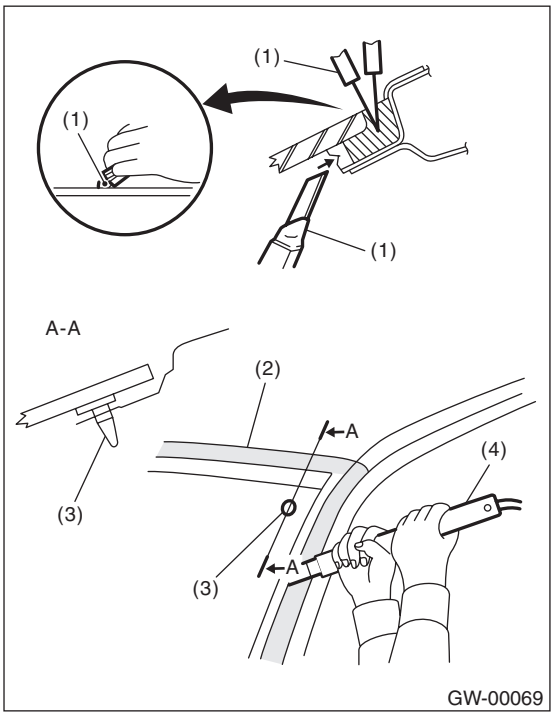
A: REMOVAL

1. WHEN USING THE WINDSHIELD GLASS KNIFE

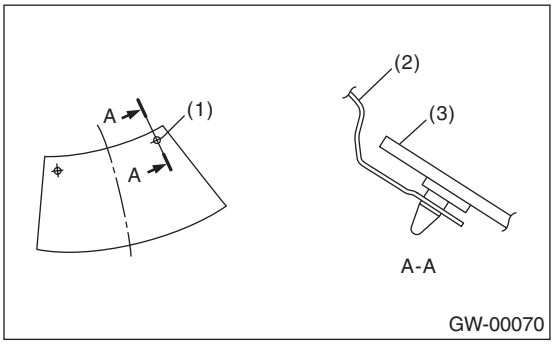
1) Remove the cowl panel. <Ref. to EI-30, REMOVAL, Cowl Panel.>
2) Remove the front molding.
3) Tape the body panel around the windshield glass for protection.
4) Apply sufficient amount of soapy water to the adhesive part.
5) Make a cut in the adhesive part using a putty knife so that windshield glass knife can be inserted easily.
6) Insert the windshield glass knife into adhesive part.
7) While holding the knife edge and windshield glass edge at a right angle, move the windshield glass knife in parallel to the windshield glass edge along the surface and edge of windshield glass to cut the adhesive part.

NOTE:
- Do not twist the windshield glass knife.
- Cutting of adhesive part shall be started with wider gap between windshield glass and body.
- Because the locating pins are bonded to the corners of glass, use piano wire to cut the pin.

8) For model with wiper deicer, detach the front pillar trim, then disconnect the harness connector.



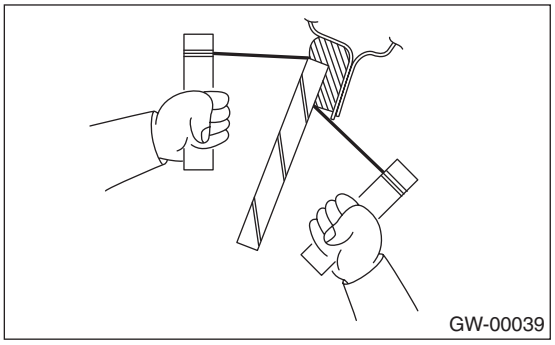
(1) Putty knife
(2) Tape for protection
(3) Locating pin
(4) Windshield glass knife



(1) Locating pin
(2) Body panel
(3) Glass

2. USING PIANO WIRE

1) Remove the cowl panel. <Ref. to EI-30, REMOVAL, Cowl Panel.>
2) Remove the front molding.
3) Tape the body panel around the windshield glass.
4) Make a hole in the adhesive part using drill or knife.
5) Pass the piano wire through the hole, and attach securely both the wire ends to pieces of wood.



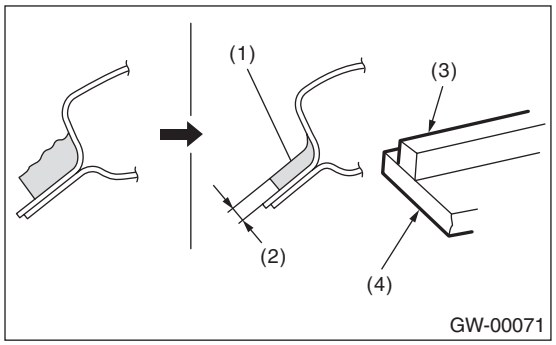
6) Pull the wire ends alternately to cut off the adhesive part.

CAUTION:
• Do not tightly pull the piano wire against the windshield glass edge.
• Be careful not to damage interior and exterior parts.
• When removal is made with area close to instrument panel, place a protection plate over it. Pay particular attention to the removal.
• Do not cross piano wires. Otherwise they may be cut.

B: INSTALLATION

1) Clean the external circumference of windshield glass with alcohol or white gasoline.
2) Remove the adhesive layer on the body using cutter knife to obtain smooth face of 2 mm (0.08 in) thick.

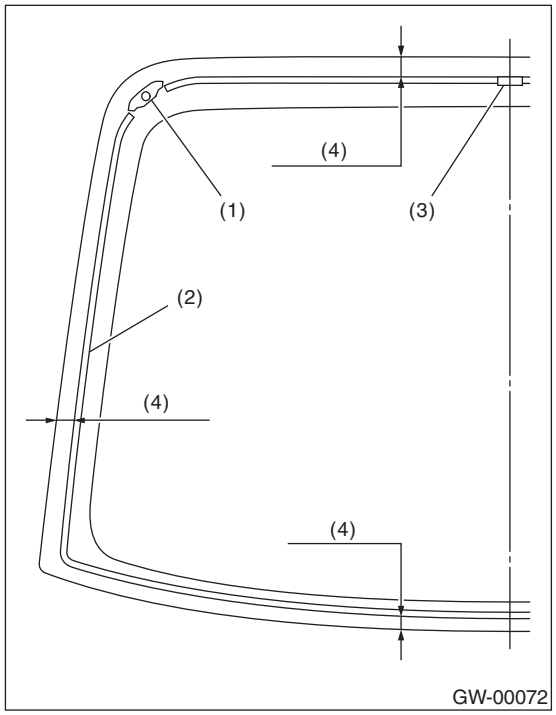
CAUTION:
Be careful not to damage the body and paint surface.



(1) Adhesive
(2) 2 mm (0.08 in)
(3) Dam rubber
(4) Glass

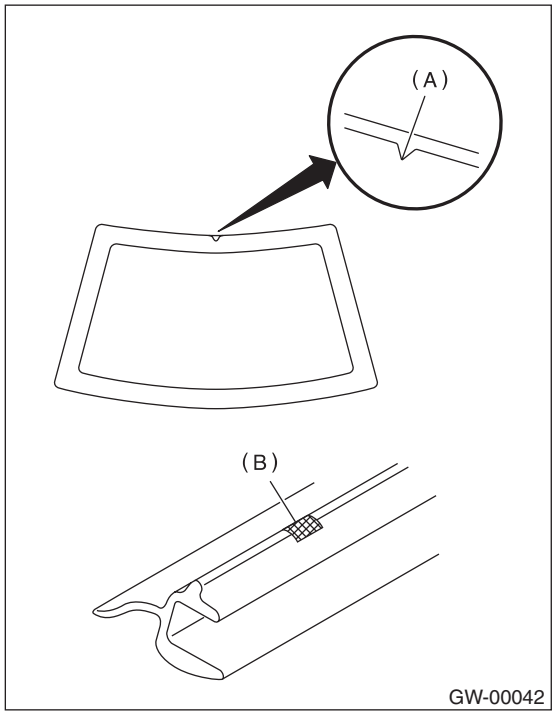
3) Clean the body with alcohol or white gasoline to eliminate cutting powder, dust and dirt completely from body.

4) Adhere the dam rubber to the glass back surface.

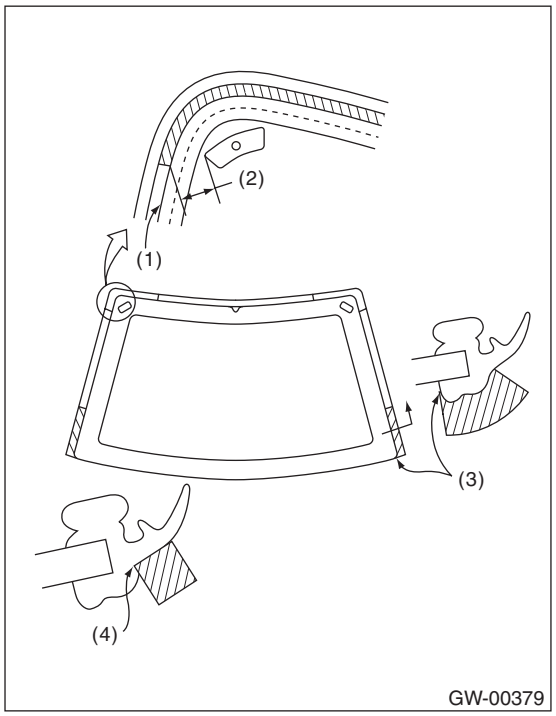


(1) Locating pin
(2) Dam rubber
(3) Fastener
(4) 13 mm (0.51 in)

5) Peel away the backing paper of the double-sided tape. Align the molding mark (B) with the notch (A), affix the molding to the entire circumference of the edge of the glass, and press uniformly.



6) Install the seal A and seal B to the molding back side.



(1) Back surface lip root R stopper line
(2) 73 mm (2.87 in)
(3) Reference position (edge) when affixing the seal A
(4) Reference position (lip root R stopper) when affixing the seal B

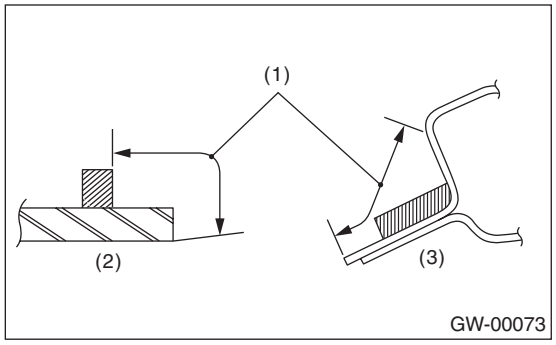
7) Apply the primer to the adhesive surface of glass using sponge.

Glass primer:
Dow Automotive
U-401 and U-402

8) Apply the primer to the adhesive surface of body.

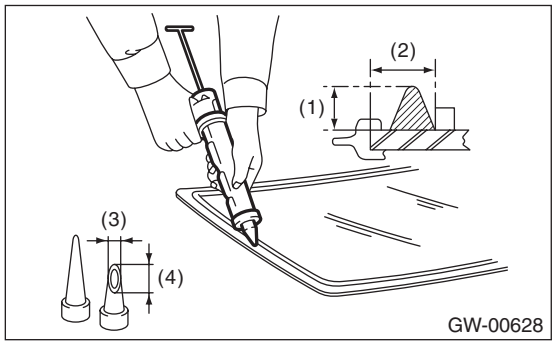
Painted surface primer:
Dow Automotive
U-413

NOTE:
• Primer once attached to the painted surface of the body and the internal trim is hard to wipe off. Mask the circumference of such area.
• Let primer dry for about ten minutes before installing the glass.
• Do not touch the surface coated with primer.



(1) Application of primer
(2) Glass side
(3) Body side

9) Cut off the cartridge nozzle tip as shown and set it in sealant gun.

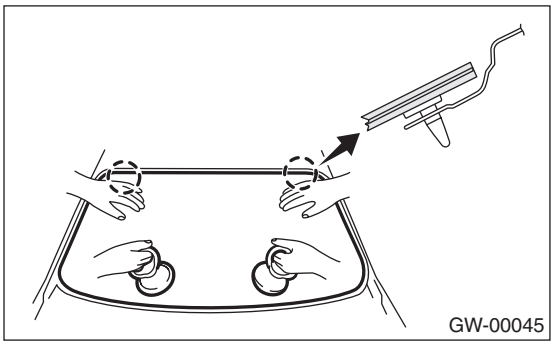


(1) 10 — 13 mm (0.39 — 0.51 in)
(2) 13 mm (0.51 in)
(3) 10 mm (0.39 in)
(4) 15 mm (0.59 in)

10) Apply adhesive to the glass end surface as shown.

Adhesive:
Dow Automotive
ESSEX U-400 HV

11) Fit the locating pins using suction rubber cup to install windshield glass.



12) Lightly press the windshield glass for tight fit.
13) Make flush the adhesive surface jutted out using spatula.
14) After completion of all work, allow the vehicle to stand for about 24 hours.

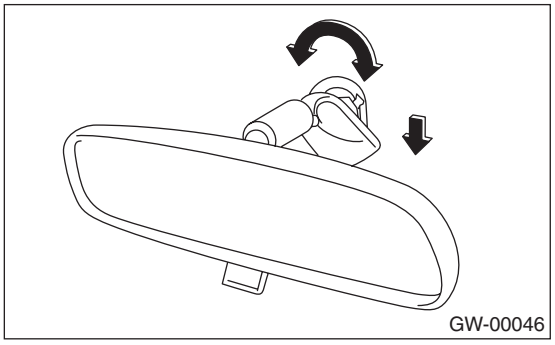
NOTE:
• When door is opened/closed after glass is bonded, always lower the door glass first, and then open/close it carefully.
• Move the vehicle slowly.
• For minimum drying time and vehicle standing time before driving after bonding, follow instructions or instruction manual from the adhesive manufacturer.
15) After curing of adhesive, pour the water on external surface of vehicle to check that there are no water leaks.

NOTE:
When a vehicle is returned to the user, tell him or her that the vehicle should not be subjected to heavy impact for at least three days.
16) Install the cowl panel. <Ref. to EI-30, INSTALLATION, Cowl Panel.>

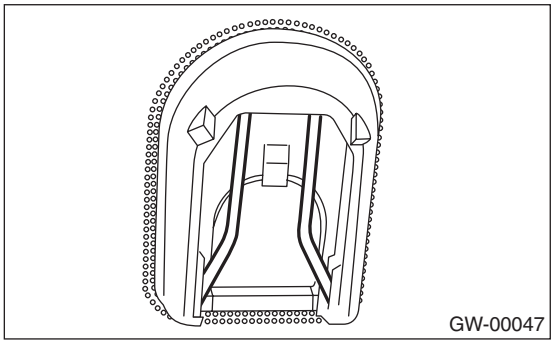
14.Rearview Mirror

A: REMOVAL

NOTE:
Never reuse the spring. Prepare a new spring before removal.
1) Turn the mirror base 90° clockwise or counterclockwise to remove it.


GW-00046

2) Remove the spring from the mirror base.


GW-00047

CAUTION:
Be careful not to damage the mirror surface.
3) When the mirror base is damaged, use the piano wire or spatula to remove.

CAUTION:
Be careful not to damage the windshield glass.

B: INSTALLATION

1) When the mirror base is removed, clean the old adhesive, and align the windshield glass mark to install.

Adhesive:
REPAIR KIT IN MR (Part No. 65029FC000)
2) Make sure the mirror base is securely attached and then install the spring to it.
3) Install in the reverse order of removal.

C: INSPECTION

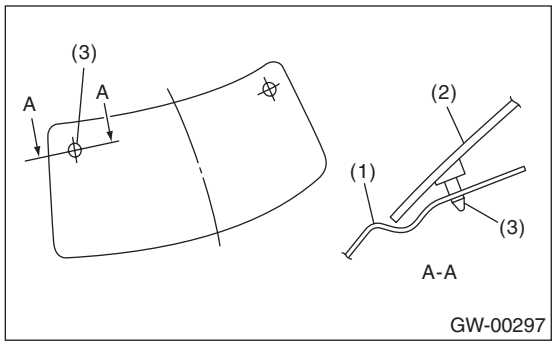
Check that the mirror is not damaged.
Check that the spring is not damaged.

15.Rear Gate Glass

A: REMOVAL

1) Remove the rear gate garnish. <Ref. to EB-20, REMOVAL, Rear Gate Garnish.>
2) Disconnect the electrical connectors from rear defogger terminal.
3) Remove the glass in the same procedure as for windshield glass. <Ref. to GW-24, REMOVAL, Windshield Glass.>

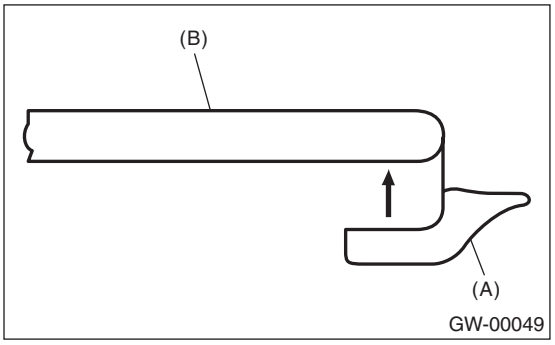
NOTE:
The locating pin is adhered to the corner portion on the vehicle's indoor side of the glass. Use the piano wire to cut each pin.



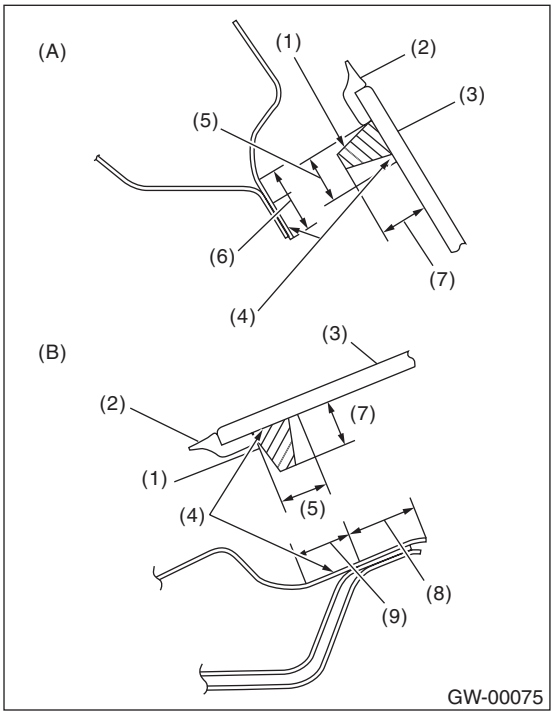
(1) Body panel
(2) Glass
(3) Locating pin

B: INSTALLATION

1) Install a new rubber strip (A) in position with the edge (B) of the rear gate glass.



2) Install the glass in the same procedure as for windshield glass.



(A) Upside
(B) Left side and right side
(1) Adhesive
(2) Strip rubber
(3) Glass
(4) Primer
(5) 12 mm (0.47 in)
(6) 14 mm (0.55 in)
(7) 10 — 13 mm (0.39 — 0.51 in)
(8) 8 mm (0.31 in)
(9) 12 mm (0.47 in)

3) About one hour after installation, inspect for leaks.

4) After completion of all work, allow the vehicle to stand for about 24 hours.

NOTE:
• When door is opened/closed after glass is bonded, always lower the door glass first, and then open/close it carefully.
• Move the vehicle slowly.
• For minimum drying time and vehicle standing time before driving after bonding, follow instructions or instruction manual from the adhesive manufacturer.
• When a vehicle is returned to the user, tell him or her that the vehicle should not be subjected to heavy impact for at least three days.

5) Connect the rear defogger terminals.
6) Install the rear gate garnish. <Ref. to EB-20, INSTALLATION, Rear Gate Garnish.>

16.Rear Window Defogger System

A: WIRING DIAGRAM

<Ref. to WI-142, WIRING DIAGRAM, Rear Defogger System.>

B: INSPECTION

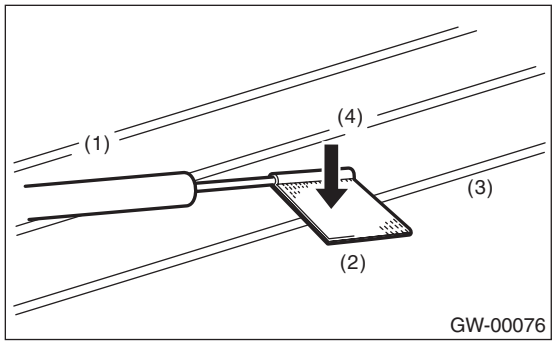
Symptom	Repair order
Rear window defogger does not operate.	1. Fuse (M/B No. 1) (F/B No. 17) 2. Rear defogger relay 3. Rear defogger timer 4. Defogger switch 5. Rear defogger condenser 6. Defogger wire 7. Wiring harness

17.Rear Window Defogger

A: INSPECTION

CAUTION:
When wiping off the stain on glass with cloth, use a dry and soft cloth and move it in the direction of the heat wire extension to avoid damage to the heat wire.

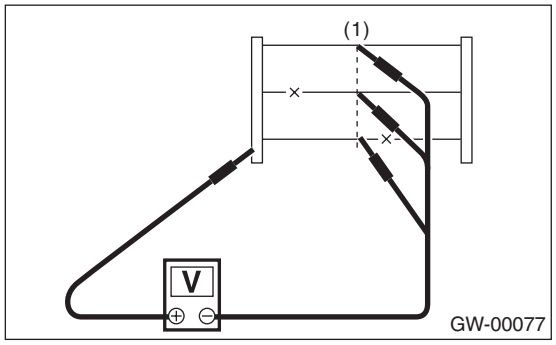
1) Turn the ignition switch to ON.
2) Turn the defogger switch to ON.
3) Wrap the tips of tester probe with aluminum foil to avoid damage to heat wire.



(1) Tester probe
(2) Aluminum foil
(3) Heat wire
(4) Press

4) Measure the voltage at heat wire center (1) with DC voltmeter.

Standard voltage:
Approx. 6 V



(1) Center of heat wire

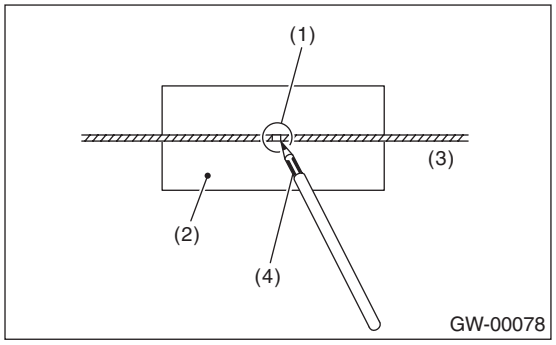
Voltage	Criteria
Approx. 6 V	Normal
Approx. 12 V or 0 V	Open

NOTE:
• If the measured value is 12 V, the circuit is open between heat wire center and positive (+) terminal of tester probe.
• If it is 0 V, the circuit is open between heat wire center and ground.

5) Connect the tester probe of positive lead of voltmeter to positive terminal of heat wire and move tester probe of negative lead along the heat wire up to the negative terminal end. If voltage changes from zero to several volts during movement of tester probe, heat wire is open at the voltage change point.

B: REPAIR

1) Clean the broken portion with alcohol or white gasoline.
2) Mask both side of wire with thin film.
3) Apply the conductive silver composition (DUPONT No. 4817) to the broken point.



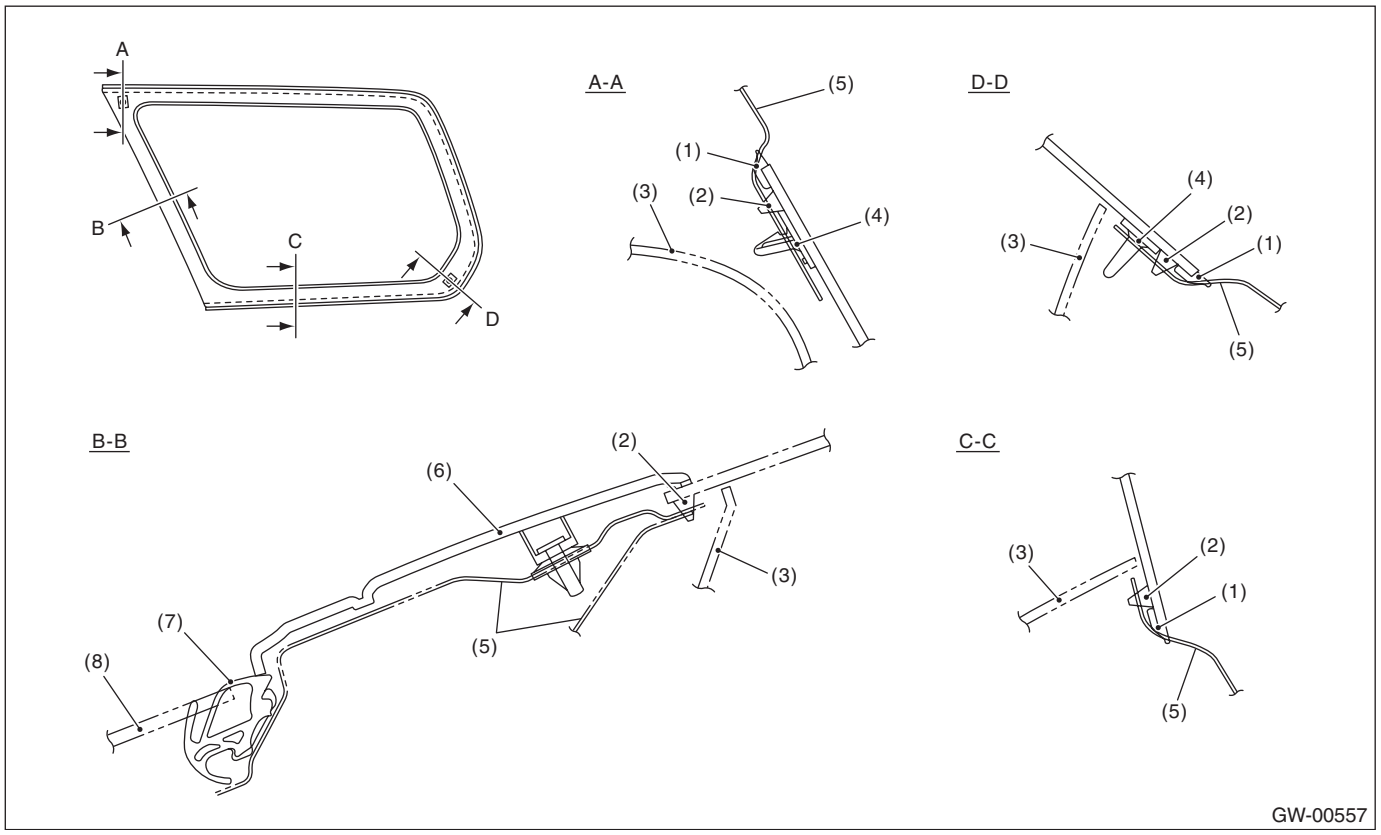
(1) Broken portion
(2) Thin film
(3) Broken wire
(4) Conductive silver composition (DUPONT No. 4817)

4) After repair, check the wire.

18.Rear Quarter Glass

A: REMOVAL

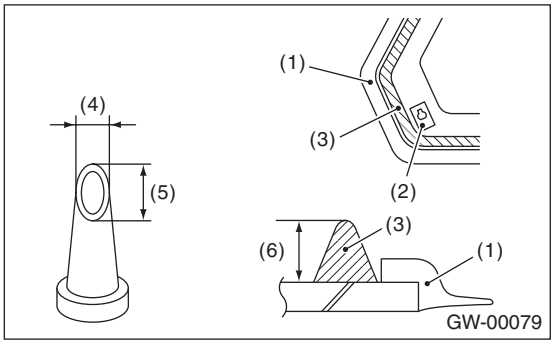
Remove the glass in the same procedure as for windshield glass. <Ref. to GW-24, REMOVAL, Windshield Glass.>



(1) Molding
(2) Adhesive
(3) Compartment trim
(4) Locating pin
(5) Vehicle body
(6) Cover C pillar
(7) Weather strip
(8) Rear door glass

B: INSTALLATION

1) Cut off the nozzle tip as shown in the figure.



(1) Molding
(2) Locating pin
(3) Adhesive
(4) 10 mm (0.39 in)
(5) 15 mm (0.59 in)
(6) 10 — 13 mm (0.39 — 0.51 in)

2) Install the glass in the same procedure as for windshield glass. <Ref. to GW-25, INSTALLATION, Windshield Glass.>
3) After completion of all work, allow the vehicle to stand for about 24 hours.

NOTE:
• When door is opened/closed after glass is bonded, always lower the door glass first, and then open/close it carefully.
• Move the vehicle slowly.
• For minimum drying time and vehicle standing time before driving after bonding, follow instructions or instruction manual from the adhesive manufacturer.
4) After curing of adhesive, pour the water on external surface of vehicle to check that there are no water leaks.

NOTE:
When a vehicle is returned to the user, tell him or her that the vehicle should not be subjected to heavy impact for at least three days.

19.Sunroof Glass

A: PROCEDURE

For the removal, installation and adjustment method of sunroof glass, refer to the Sunroof section.

- REMOVAL <Ref. to SR-5, REMOVAL, Sunroof Lid.>
- INSTALLATION <Ref. to SR-5, INSTALLATION, Sunroof Lid.>
- ADJUSTMENT <Ref. to SR-5, ADJUSTMENT, Sunroof Lid.>

1. Basic Diagnostic Procedure

A: PROCEDURE

	Step	Check	Yes	No
1	**START INSPECTIONS.** 1) Perform the pre-inspection. <Ref. to AC(diag)-3, INSPECTION, General Description.> 2) Perform the self-diagnosis. <Ref. to AC(diag)-9, OPERATION, Diagnostic Chart for Self-diagnosis.>	Does the self-diagnosis operate?	Go to step **2**.	<Ref. to AC(diag)-12, A/C OR SELF-DIAGNOSIS SYSTEMS DO NOT OPERATE, Diagnostics for A/C System Malfunction.>
2	**IDENTIFY MALFUNCTION PART.** Identify the malfunction part with self-diagnosis.	Can the malfunction part be confirmed?	Repair the malfunctioning part in accordance with each diagnostic chart.	Go to step **3**.
3	**CHECK COMPARTMENT TEMPERATURE.** 1) Turn on the A/C switch. 2) Turn the temperature control dial at maximum cool position. 3) Check the compartment temperature change.	Does the compartment temperature change?	Go to step **4**.	<Ref. to AC(diag)-16, COMPARTMENT TEMPERATURE DOES NOT CHANGE, OR A/C SYSTEM DOES NOT RESPOND PROMPTLY, Diagnostics for A/C System Malfunction.>
4	**CHECK A/C SYSTEM RESPONSE.** Change the temperature setting, and check the response of A/C system.	Does the A/C system respond quickly?	A/C system is normal.	<Ref. to AC(diag)-16, COMPARTMENT TEMPERATURE DOES NOT CHANGE, OR A/C SYSTEM DOES NOT RESPOND PROMPTLY, Diagnostics for A/C System Malfunction.>

2. General Description

A: CAUTION

1) Never connect the battery in reverse polarity.
• Doing so may immediately damage the auto A/C control module.
2) Do not disconnect the battery terminals while the engine is running.
• A large counter electromotive force will be generated in the generator, and this voltage may damage electronic parts such as auto A/C control module etc.
3) Before disconnecting the connectors of sensors and the auto A/C control module, be sure to turn off the ignition switch.
• Otherwise, the auto A/C control module may be damaged.
4) Every A/C-related part is a precision part. Do not drop them.
5) The airbag system wiring harness is routed near the A/C control panel (auto A/C control module) and junction box.

CAUTION:
• The airbag system wiring harnesses and connectors are all yellow in color. Do not use the electrical test equipment on these circuits.
• Be careful not to damage the airbag system wiring harness when servicing the A/C control panel (auto A/C control module) and junction box.

B: INSPECTION

Before performing the diagnosis, check the following items which may cause problems in the A/C system.

1. BATTERY

1) Measure the battery voltage and check electrolyte.

Standard voltage:
12 V

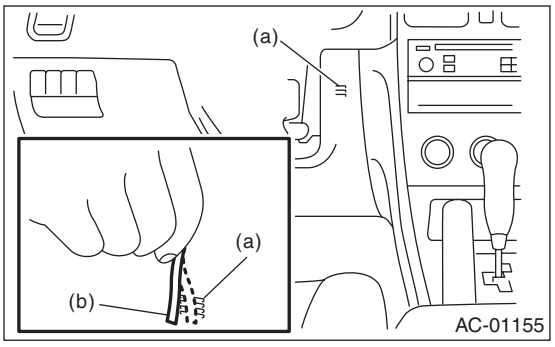
Specific gravity:
1.260 or more

2) Check the condition of the fuses for A/C system power supply and other fuses.
3) Check the condition of harness and harness connector connections.

2. ASPIRATOR HOSE

1) Turn the ignition switch to ON.
2) Turn the temperature control dial at maximum hot position.
3) Set the air flow control dial to the DEF position.
4) Turn the fan speed control dial to the maximum position.
5) Approach a strip of paper (b) in front of the in-vehicle sensor suction port (a) of the auto A/C control module, and check that air is being sucked into the port by seeing the paper moving towards the port.

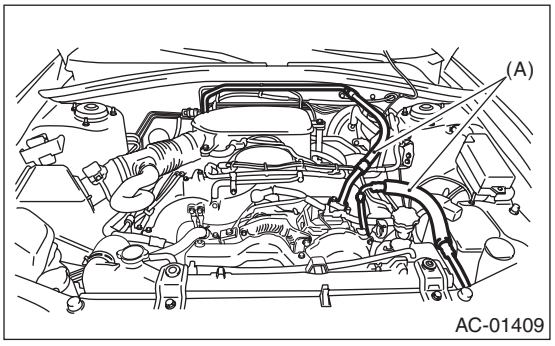
NOTE:
• Be careful not to let the paper get sucked into the port.
• Hold the paper approx. 5 mm (0.02 in) away from port when the suction force is not very strong.



6) If the paper does not move at all, remove the lower cover <Ref. to AC-30, REMOVAL, Control Unit.> and check for improper connection of the aspirator hose, lower cover, and heater unit, and fix them if necessary.

3. REFRIGERANT LINE

Check the connection for A/C line (A) and high-pressure pipe.



4. CONTROL LINKAGE

1) Check the state of mode door linkage.
2) Check the state of air mix door linkage.
3) Check the state of FRESH/RECIRC door linkage.

5. CONTROL SWITCHES

Start the engine and warm-up completely.

1) Inspection using switches

No.	Point to check	Switch operation	Judgment standard
1	Air flow control dial	Turn the dial to the right.	Outlet opening switches in order to AUTO → VENT → BILEVEL → HEAT → DEF/HEAT → DEF each time the dial is turned.
2	Fan speed control dial	Turn the dial to the right.	Fan speeds switch OFF → AUTO → 1st → 2nd → 3rd → 4th → 5th → 6th → 7th each time the dial is turned.
3	FRESH/RECIRC switch	Press the FRESH/RECIRC switch.	Inlet opening switches RECIRC → FRESH → RECIRC each time the switch is pressed. (The LED lights for RECIRC.)
		Press the FRESH/RECIRC switch for a longer period of time. (1 second or more)	The LED blinks twice and the system switches to AUTO.
4	A/C switch	Turn the A/C switch to ON with the fan speed control dial is set to other than OFF position.	The LED lights and the compressor operates.
		Press the FRESH/RECIRC switch for a longer period of time. (1 second or more)	The LED blinks twice and the system switches to AUTO.
5	Auto function Operate in order from 1).	1) Set the following dial and switch to AUTO. • Air flow control dial • Fan speed control dial • FRESH/RECIRC switch • A/C switch 2) Turn the temperature control dial completely to the left, and set to the maximum cool position.	• Outlet air temperature: COOL • Fan speed: Max. • Outlet opening: VENT • Inlet opening: RECIRC • Compressor: AUTO
		3) Turn the temperature control dial to the right slowly up to the maximum warm position.	• Outlet air temperature: COOL → HOT • Fan speed: AUTO • Outlet opening: AUTO • Inlet opening: AUTO • Compressor: AUTO
		4) Turn the temperature control dial fully to the right, to the maximum hot position.	• Outlet air temperature: HOT • Fan speed: Max. • Outlet opening: HEAT • Inlet opening: FRESH • Compressor: AUTO
6	Defroster Interlock Function	Set the air flow control dial to the DEF or the DEF/HEAT position.	• Outlet opening: AUTO • Fan speed: AUTO • Outlet opening: DEF or DEF/HEAT • Inlet opening: FRESH • Compressor: ON
7	Rear defogger switch	Press the rear defogger switch.	The LED lights.

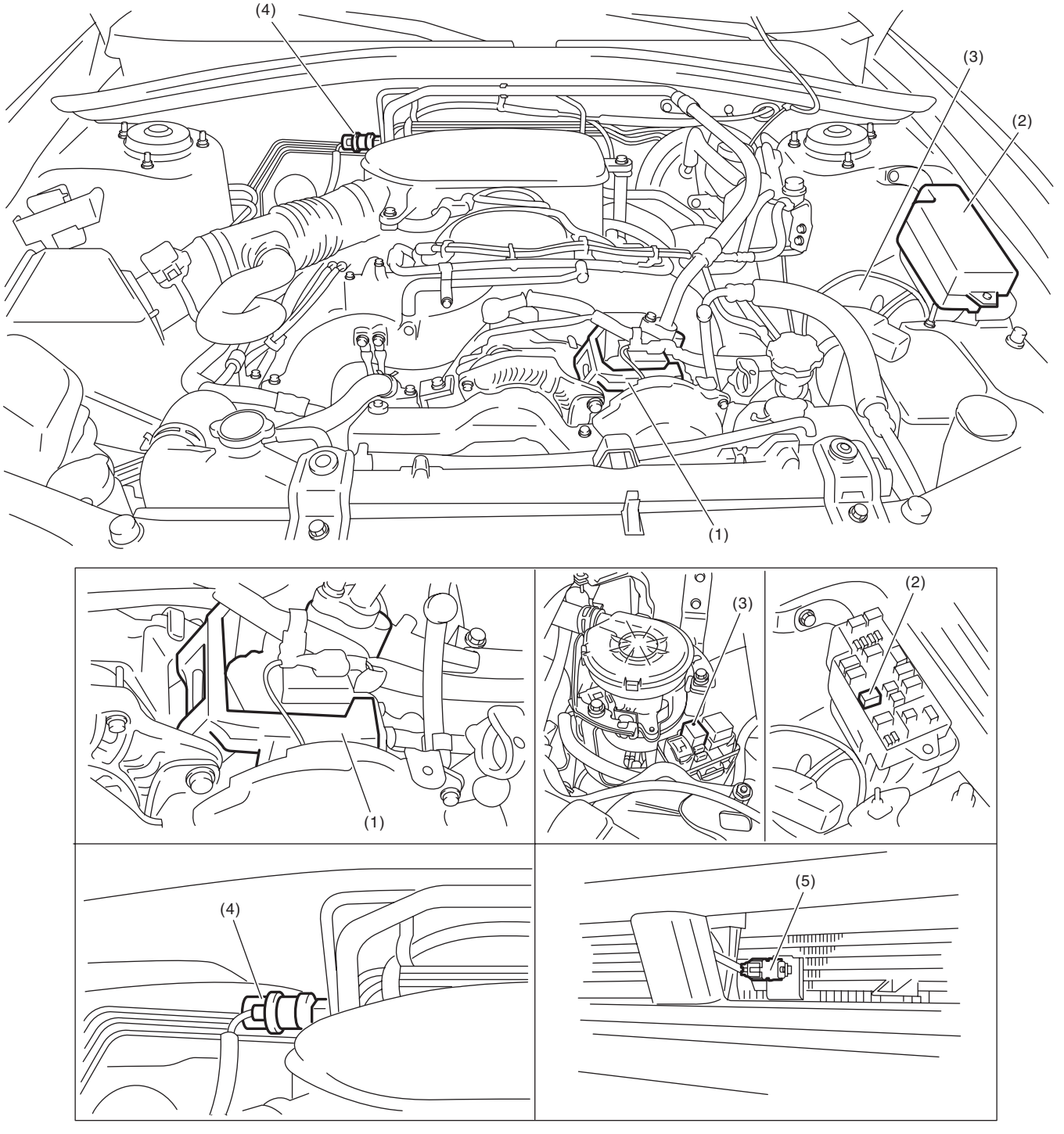
2) Inspection of illumination control

No.	Point to check	Switch operation	Judgment standard
1	Illumination	Turn the lighting switch ON.	Illumination comes on. If the LED lights, the LED will dim.

3. Electrical Component Location

A: LOCATION

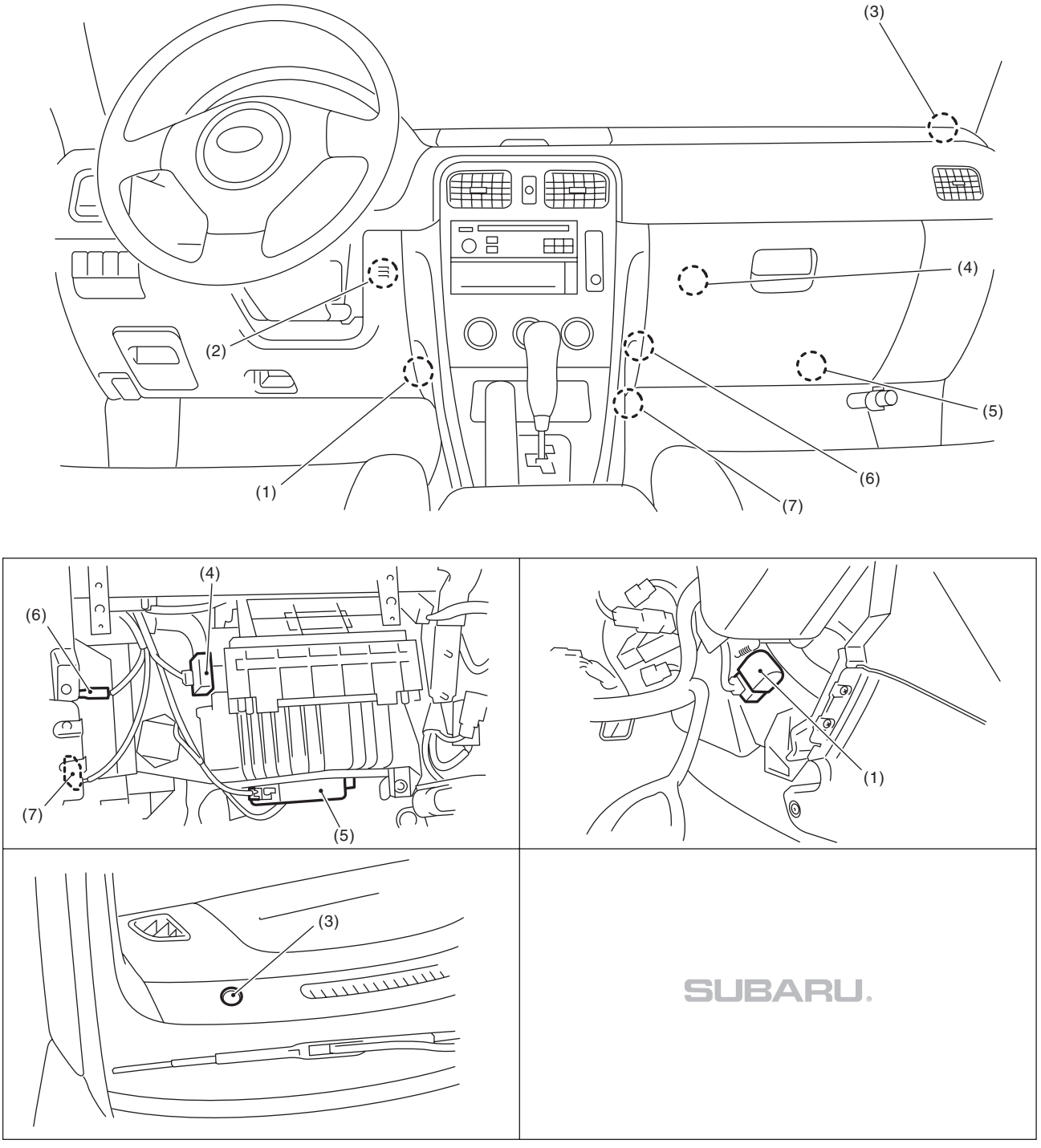
1. ENGINE COMPARTMENT



AC-01368

(1) A/C compressor
(2) A/C relay (Non-turbo model)
(3) A/C relay (Turbo model)
(4) Pressure switch
(5) Ambient sensor

2. PASSENGER COMPARTMENT

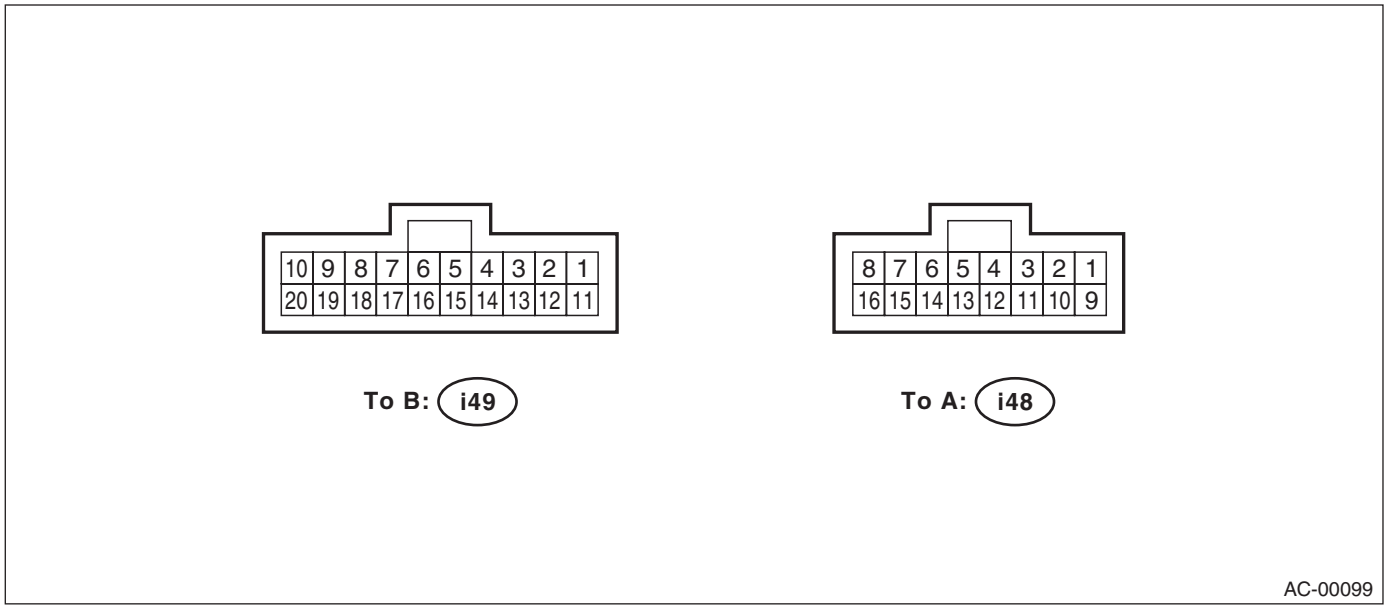


AC-01189

(1) Mode door actuator
(2) In-vehicle sensor
(3) Sunload sensor
(4) Intake door actuator
(5) Blower motor
(6) Evaporator sensor
(7) Air mix door actuator

4. Auto A/C Control Module I/O Signal

A: ELECTRICAL SPECIFICATION



Connector & Terminal No.	Content	Measuring condition		Specified value
B9	Mode door actuator	Switch the outlet opening to VENT → DEF.		*2
B8		Switch the outlet opening to DEF → VENT.		
B7	Air mix door actuator	Switching the air mix door from COOL → HOT		*1
B6		Switching the air mix door from HOT → COOL		
B5	Ignition power supply	Ignition switch: ON		Battery voltage
B4	Battery power supply	Ignition switch: OFF, ACC, ON		Battery voltage
B3	Sunload sensor	Ignition switch: ON, With Normal Sunload (No sunload: 5 V)		3 V
B2	Evaporator sensor	Ignition switch: ON		5 V or less
B1	Air mix door actuator PBR signal	Air mix door: COOL position		0.5 V
		Air mix door: HOT position		4.5 V
B20	Intake door actuator signal	Inlet opening: FRESH (Other positions: 12 V)		0 V
B19		Inlet opening: MIX (Other positions: 12 V)		0 V
B18		Inlet opening: RECIRC (Other positions: 12 V)		0 V
B17	A/C ON signal	A/C: ON (A/C OFF: 0 V)		8 — 10 V
B16	Blower motor control	*3		*3
B15	Blower fan ON signal	When blower fan is rotating (Not rotating: 12 V)		0 V
B13	Engine coolant temperature sensor	When the engine coolant temperature is 49°C (120°F).		8.9 V
B12	In-vehicle sensor	—		—
B11	Ground	Continuity to chassis ground		0 Ω
A7	Air mix door actuator PBR specified voltage	Ignition switch: ON		5 V
A5	Mode door actuator position detection signal	Outlet opening	BI-LEVEL, DEF	5 V
			VENT, HEAT, DEF/HEAT	0 V
A4	Mode door actuator position detection signal	Outlet opening	HEAT, DEF/HEAT, DEF	5 V
			VENT, BI-LEVEL	0 V
A1	Illumination power supply	Ignition switch: ON, Light switch: ON		Battery voltage
		Ignition switch: ON, Light switch: OFF		0 V
A16	Sensor ground circuit	Continuity to chassis ground		0 Ω
A14	Combination meter (Ambient temperature signal)	*3		*3
A13	Mode door actuator position detection signal	Outlet opening	VENT, BI-LEVEL, HEAT	5 V
			DEF/HEAT, DEF	0 V
A12	Mode door actuator position detection signal	Outlet opening	VENT, DEF/HEAT	5 V
			BI-LEVEL, HEAT, DEF	0 V
A10	A/C cut signal	A/C: ON		Battery voltage
		Pressure switch operated		0 V
A9	Illumination ground	Continuity to chassis ground		0 Ω

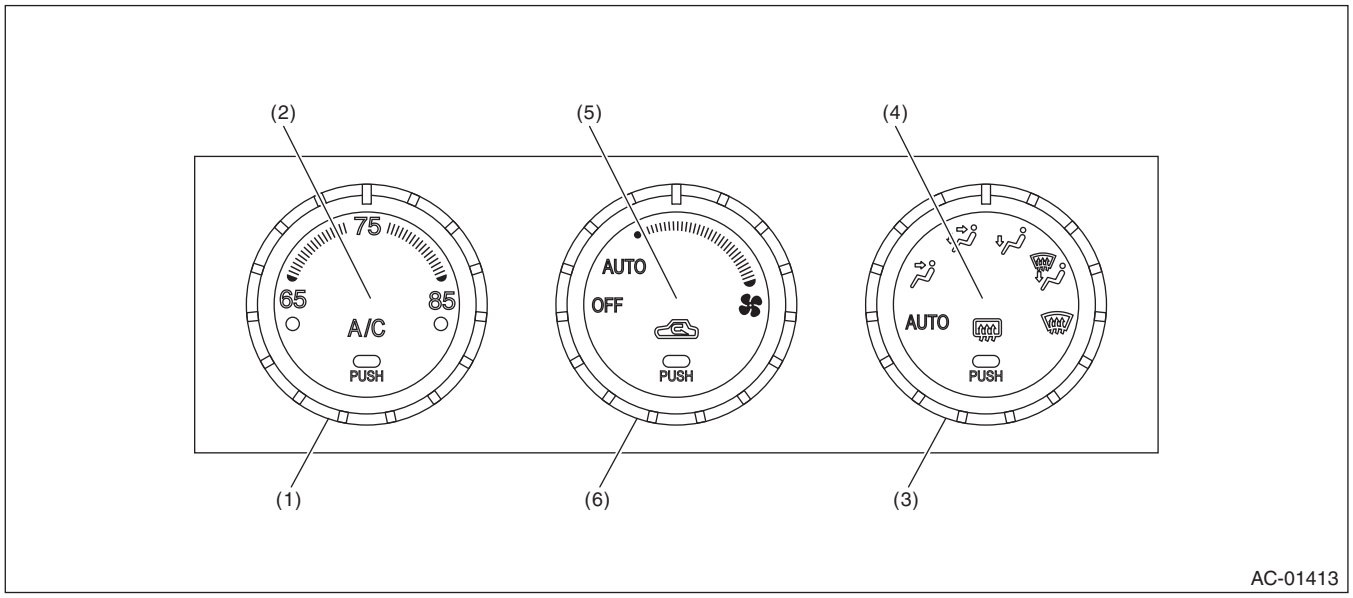
*1: Shows the battery voltage while the motor is running. When stopped, it will output 0 V, or the pulse signals of the battery voltage.
*2: Shows the battery voltage while the motor is running. When stopped, it shows 0 V.
*3: Unable to measure the voltage because it is a pulse signal.

B: WIRING DIAGRAM

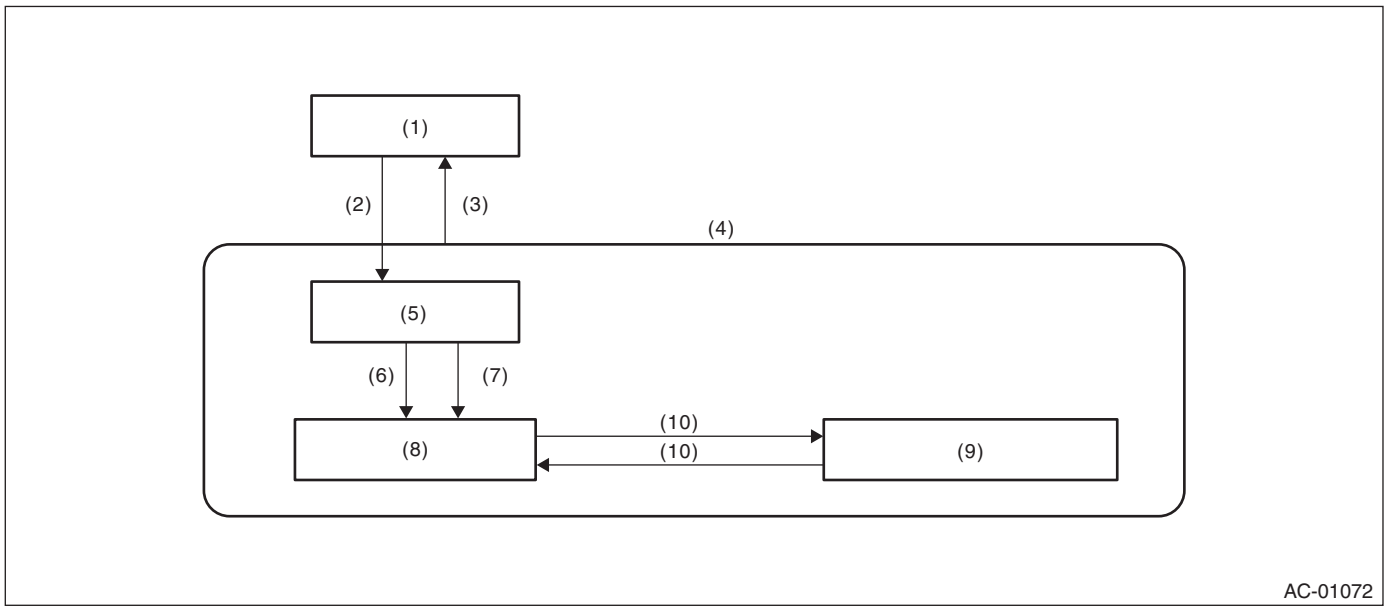
<Ref. to WI-88, WIRING DIAGRAM, Air Conditioning System.>

5. Diagnostic Chart for Self-diagnosis

A: OPERATION



(1) Temperature control dial
(2) A/C switch
(3) Air flow control dial
(4) Rear defogger switch
(5) FRESH/RECIRC switch
(6) Fan speed control dial



(1) Normal operation
(2) Set the air flow control dial to the AUTO position, and the fan speed control dial to the AUTO position. Then, turn the ignition switch from OFF to ON while holding down the FRESH/RECIRC switch and the A/C switch.
(3) Turn the fan speed control dial switch to the OFF position, or the ignition switch from ON to OFF.
(4) Self-diagnosis function
(5) Display check
(6) After completing the display check (approximately 8 seconds)
(7) Press the rear defogger switch.
(8) Sensor check (Step operation)
(9) Output device operation (Step operation)
(10) Press the A/C switch.

Diagnostic Chart for Self-diagnosis

	Step	Check	Yes	No
1	**SET SELF-DIAGNOSIS MODE BY OPERATING CONTROL PANEL.** 1) Turn the ignition switch to OFF. 2) Set the air flow control dial to the AUTO position. 3) Set the fan speed control dial to the AUTO position. 4) Turn the ignition switch to ON while pressing the FRESH/RECIRC switch and the A/C switch. 5) The A/C control panel LED will blink.	Does the self-diagnosis function operate?	Go to step **2**.	<Ref. to AC(diag)-12, A/C OR SELF-DIAGNOSIS SYSTEMS DO NOT OPERATE, Diagnostics for A/C System Malfunction.>
2	**CHECK THE LIGHTING OF THE LED.** Check whether the A/C control panel LED blinks. (Lighting and extinguishing repeated 8 times.)	Are all LEDs blinking?	Go to step **3**.	Go to step **5**.
3	**SENSOR MALFUNCTION CHECK.** 1) The A/C switch LED turns off and the sensor inspection is started, after the LED check is completed or when the rear defogger switch is pressed. 2) Switch the air flow control dial to check the sensors. 3) If there is no problem with the sensors, the FRESH/RECIRC switch LED will light, regardless of the position of the air flow control dial. NOTE: At this time, the rear defogger LED will light if there are previous failures. For current failures, it will turn off. It is possible to judge whether there is an open or short circuit by using the blinking patterns of the FRESH/RECIRC switch.	Does the LED of the FRESH/RECIRC switch illuminate?	Go to step **4**.	Check the relationship of the air flow control dial position and sensors using the sensor check list, and check/repair sensors that have failed. <Ref. to AC(diag)-11, SENSOR CHECK TABLE, OPERATION, Diagnostic Chart for Self-diagnosis.>
4	**OPERATION CHECK OF ACTUATORS, COMPRESSOR AND FAN MOTOR.** 1) Press the A/C switch. (At this time, the A/C switch LED illuminates.) 2) Operate the fan speed control dial to check the operations of each of the actuator, compressor and fan motor. <Ref. to AC(diag)-11, OPERATING MODE TABLE, OPERATION, Diagnostic Chart for Self-diagnosis.> NOTE: Switching the fan speed control dial position enables the individual check of each step.	Do the actuators, compressor, and fan motor operate according to the operating mode table? <Ref. to AC(diag)-11, OPERATING MODE TABLE, OPERATION, Diagnostic Chart for Self-diagnosis.>	Either turn the fan control dial to the OFF position, or turn the ignition switch to the OFF position to quit the self-diagnosis function.	Refer to each of the diagnostics for the actuator, compressor and fan motor to repair the areas that have malfunctioned. <Ref. to AC(diag)-12, Diagnostics for A/C System Malfunction.> <Ref. to AC(diag)-21, Diagnostic Procedure for Actuators.>
5	**CHECK POOR CONTACT.** Check poor contact of auto A/C control module connector.	Is there poor contact in the auto A/C control module connector?	Repair the poor contact in the auto A/C control module connector.	Replace the auto A/C control module.

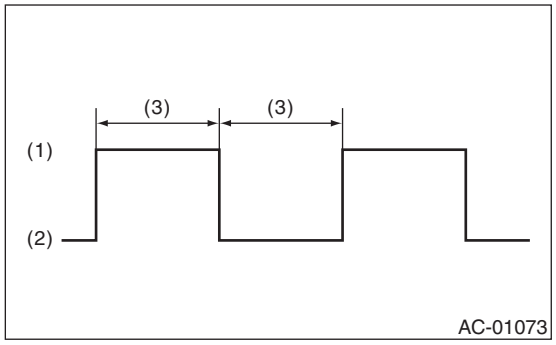
1. SENSOR CHECK TABLE

NOTE:
When checking the sunload sensor indoor or in the shade, an open circuit might be indicated. Always check the sunload sensor at a location exposed to direct sunlight.

No.	Target for inspection	Air flow control dial position
1	In-vehicle sensor	AUTO
2	Ambient sensor	VENT
3	Evaporator sensor	B/L
4	Sunload sensor *1	HEAT
5	Air mix door actuator PBR	D/H
6	Meter communication	DEF

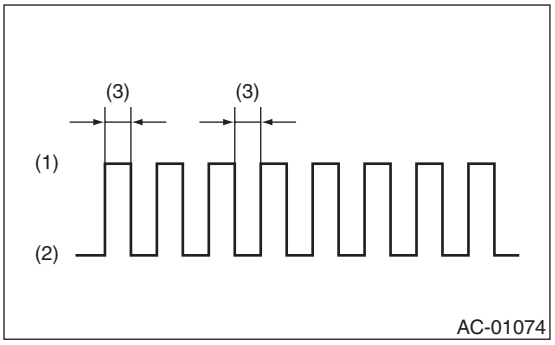
*1: For a sunload sensor open circuit, only the current malfunction is displayed. (However, it is possible to display past failures for short circuits.)

- The LED blinking pattern for open circuit failures



(1) Light ON
(2) Light OFF
(3) Approx. 1 sec.

- The LED blinking pattern for short circuit failures



(1) Light ON
(2) Light OFF
(3) Approx. 0.2 sec.

2. OPERATING MODE TABLE

Step	1	2	3	4	5	6	7	8
Fan control dial position	AUTO	1st	2nd	3rd	4th	5th	6th	7th
Fan speed (%)	24.0	24.0	34.0	45.0	42.0	59.0	71.0	100.0
Mode door actuator	VENT	VENT	VENT	B/L	HEAT	HEAT	D/H	DEF
Intake door actuator	FRE	REC	REC	FRE	FRE	FRE	FRE	FRE
Air mix door actuator	Maximum cool (0%)	Maximum cool (0%)	Maximum cool (0%)	Mid (50%)	Mid (50%)	Maximum hot (100%)	Maximum hot (100%)	Maximum hot (100%)
Compressor (Magnet clutch)	OFF	ON	ON	ON	ON	ON	ON	ON

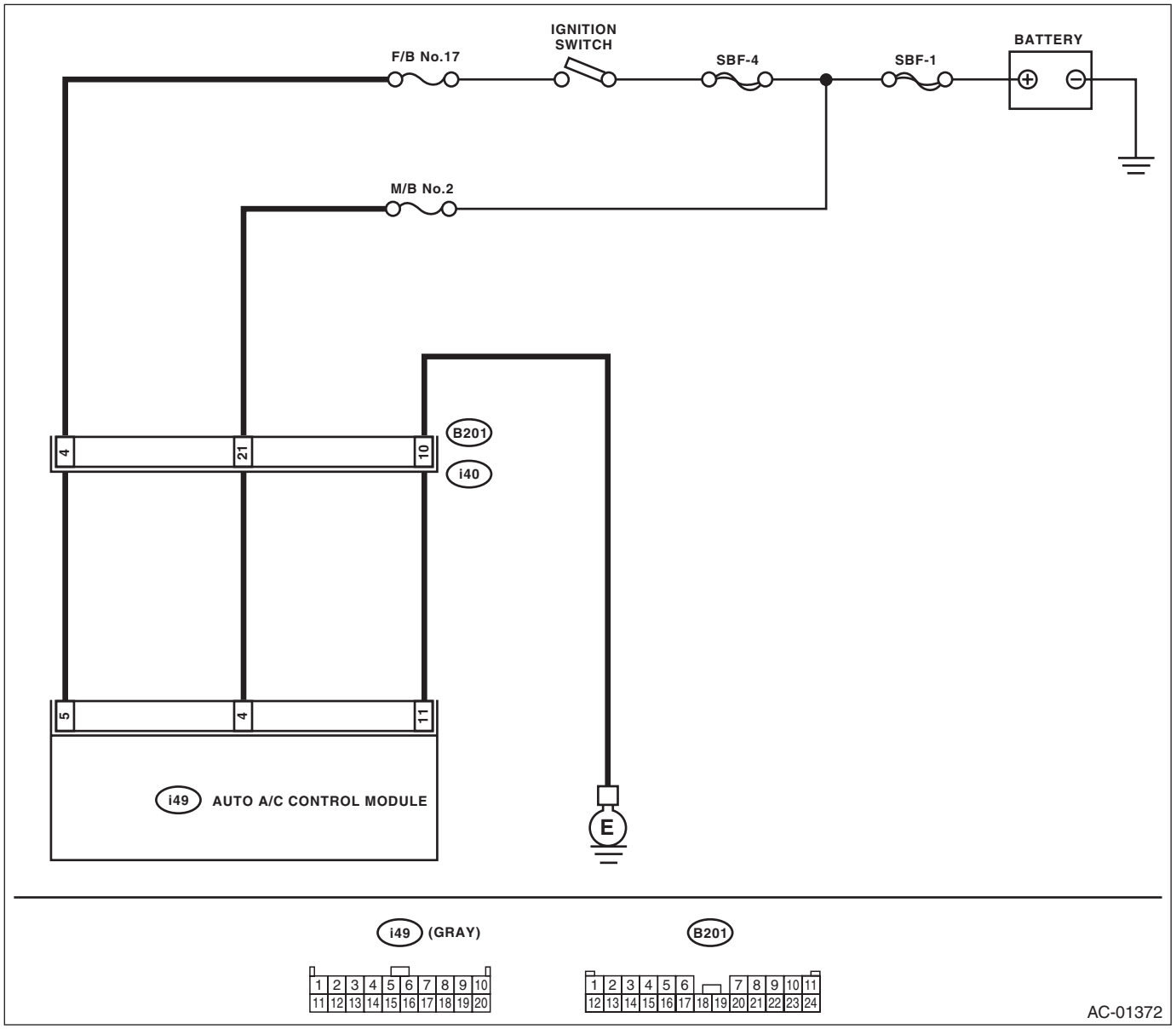
6. Diagnostics for A/C System Malfunction

A: A/C OR SELF-DIAGNOSIS SYSTEMS DO NOT OPERATE

TROUBLE SYMPTOM:

- Set temperature is not indicated on the display, switch LEDs are faulty or switches do not operate.
- Self-diagnosis system does not operate.

WIRING DIAGRAM:



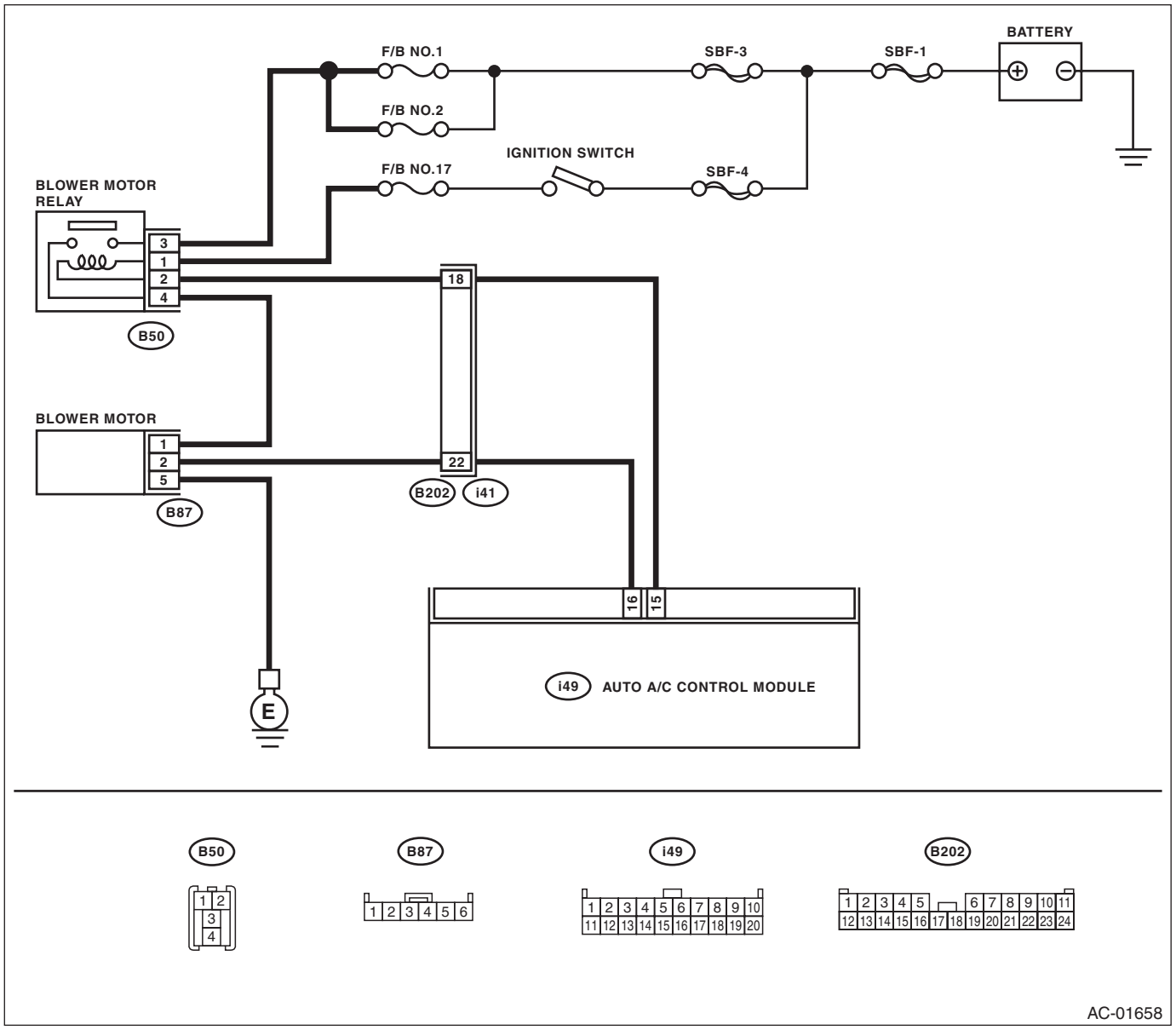
	Step	Check	Yes	No
1	**CHECK FUSE.** 1) Turn the ignition switch to OFF. 2) Remove the fuse No. 2 from main fuse box. 3) Check the condition of fuse.	Is the fuse blown out?	Replace the fuse.	Go to step **2**.
2	**CHECK FUSE.** 1) Turn the ignition switch to OFF. 2) Remove the fuse No. 17 from fuse & relay box. 3) Check the condition of fuse.	Is the fuse blown out?	Replace the fuse.	Go to step **3**.
3	**CHECK AUTO A/C CONTROL MODULE POWER CIRCUIT.** 1) Pull out the auto A/C control module connector. 2) Measure the voltage between auto A/C control module connector terminal and chassis ground after turning the ignition switch OFF. ***Connector & terminal*** ***(i49) No. 4 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **4**.	Repair the short circuit in harness for power supply line.
4	**CHECK AUTO A/C CONTROL MODULE POWER CIRCUIT.** Measure the voltage between auto A/C control module connector terminal and chassis ground after turning the ignition switch to the ON position. ***Connector & terminal*** ***(i49) No. 5 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **5**.	Repair the short circuit in harness for power supply line.
5	**CHECK AUTO A/C CONTROL MODULE GROUND CIRCUIT.** Measure the resistance of harness between auto A/C control module and chassis ground after turning the ignition switch to the ON position. ***Connector & terminal*** ***(i49) No. 11 — Chassis ground:***	Is the resistance less than 1 Ω?	Go to step **6**.	Repair the short circuit in harness for ground line.
6	**CHECK POOR CONTACT.** Check poor contact of auto A/C control module connector.	Is there poor contact in the connector?	Repair the connector.	Replace the auto A/C control module.

B: BLOWER FAN DOES NOT ROTATE

TROUBLE SYMPTOM:

- Blower motor does not rotate.
- Blower motor does not change speeds.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK FUSE.** 1) Remove fuse No. 1, 2 and 17 from fuse & relay box. 2) Check the condition of fuse.	Is any of the fuses blown out?	Replace the fuse.	Go to step **2**.
2	**CHECK POWER SUPPLY FOR BLOWER MOTOR.** 1) Turn the ignition switch to ON. 2) Turn the fan speed control dial to the right. 3) Measure the voltage between blower motor and chassis ground. ***Connector & terminal*** ***(B87) No. 1 (+) — Chassis ground (–):***	Is the voltage 8 V or more (at normal temperature)?	Go to step **3**.	Repair the open circuit of blower motor power supply line harness.
3	**CHECK BLOWER MOTOR RELAY.** 1) Turn the ignition switch to OFF. 2) Remove the blower motor relay. 3) Connect the battery positive (+) terminal to terminal No. 1 of blower motor connector, and negative (–) terminal to terminal No. 3. 4) Measure the resistance between terminals No. 2 and 4. ***Terminals*** ***No. 2 — No. 4:***	Is the resistance less than 1 Ω?	Go to step **4**.	Replace the blower motor relay.
4	**CHECK BLOWER MOTOR.** 1) Disconnect the connector from the blower motor. 2) Connect the battery positive (+) terminal to terminal No. 1 of the blower motor connector, and negative (–) terminal to terminals No. 2 and 5. 3) Make sure the blower motor runs.	Does the blower motor run?	Go to step **5**.	Replace the blower motor.
5	**CHECK POOR CONTACT.** Check poor contact of auto A/C control module connector.	Is there poor contact in the connector?	Repair the connector.	Replace the auto A/C control module.

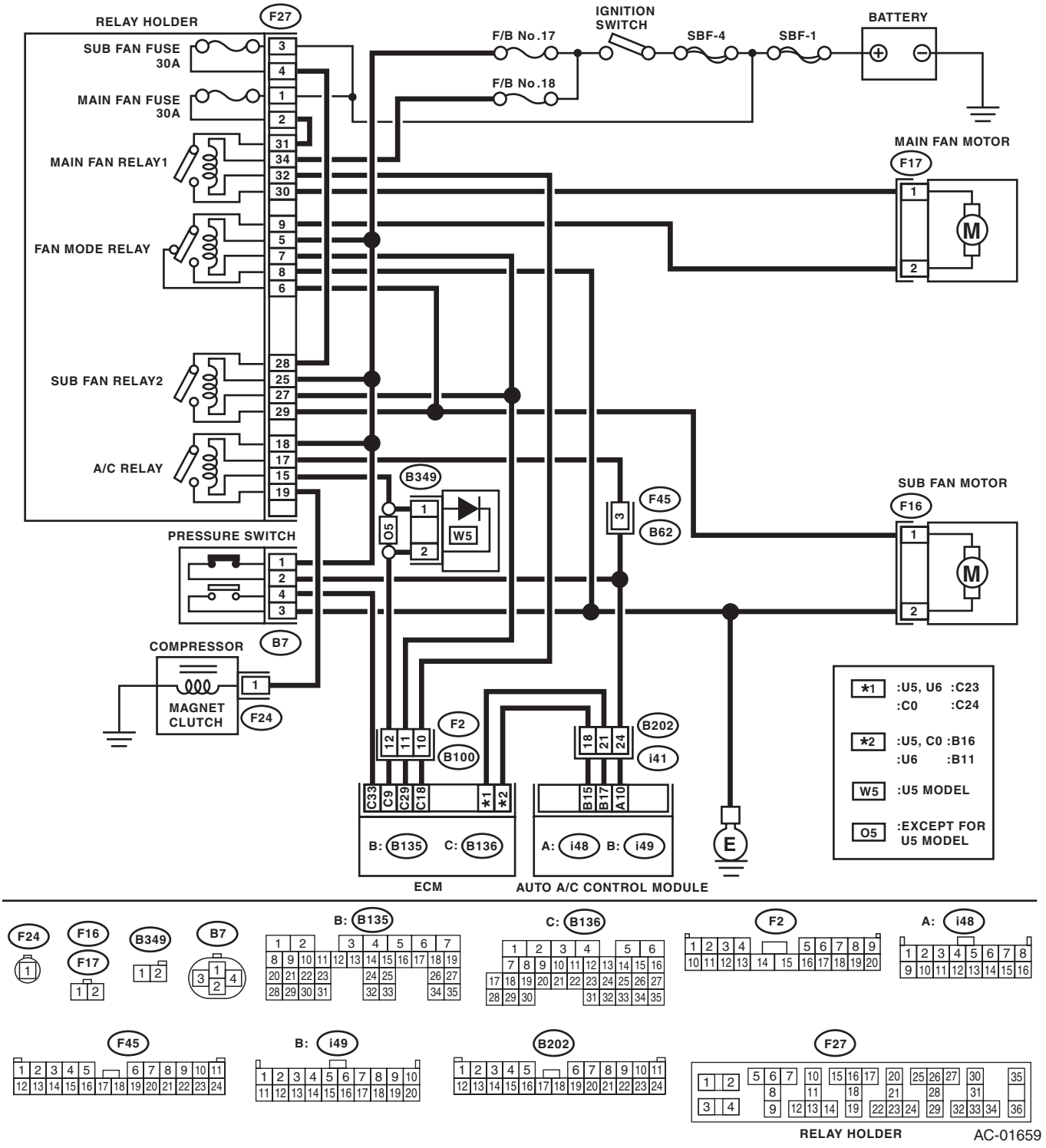
C: COMPARTMENT TEMPERATURE DOES NOT CHANGE, OR A/C SYSTEM DOES NOT RESPOND PROMPTLY

TROUBLE SYMPTOM:

- Compartment temperature does not change.
- A/C system does not respond quickly.

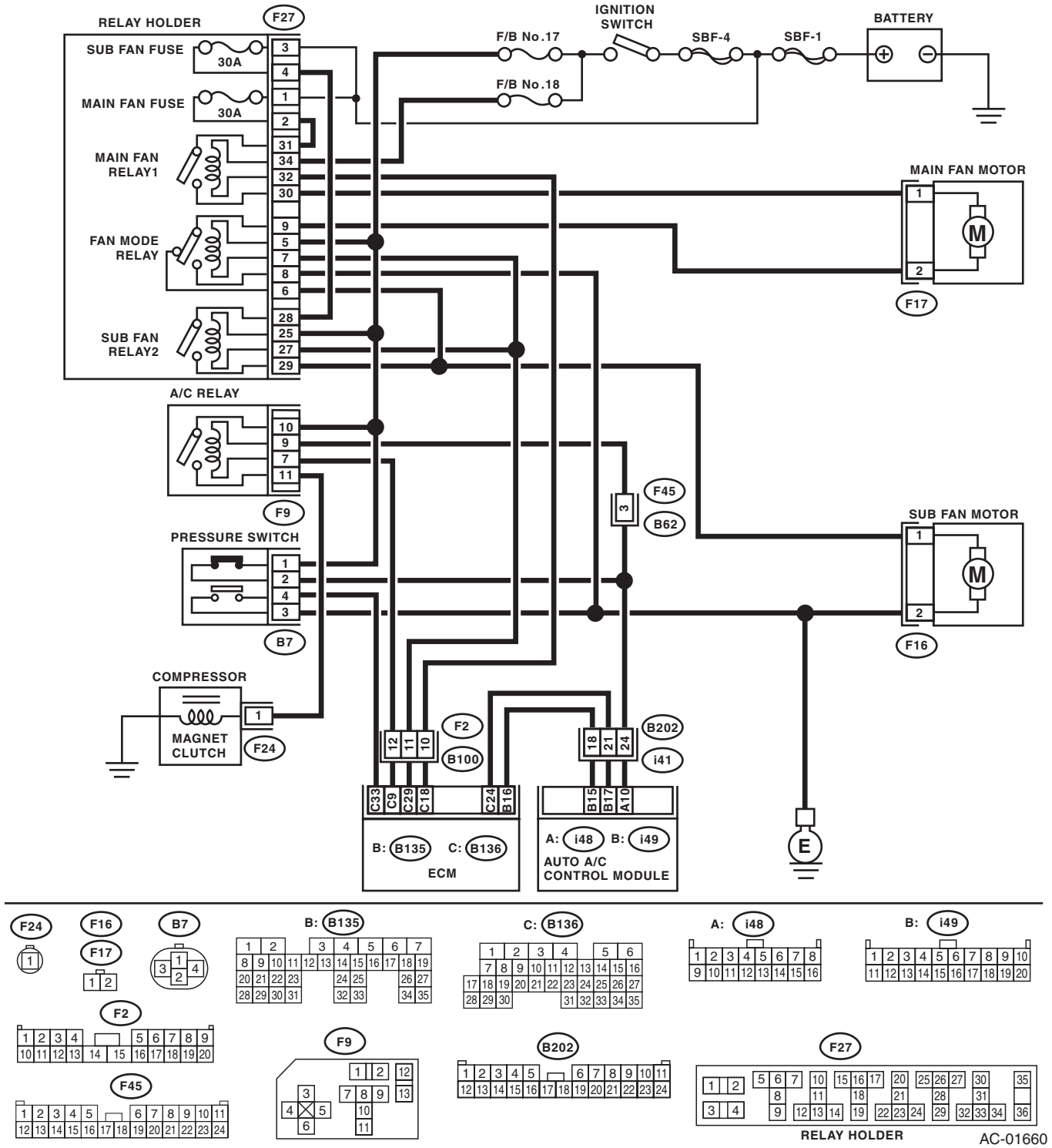
WIRING DIAGRAM:

- Non-turbo model



AC-01659

- Turbo model


RELAY HOLDER
F27
SUB FAN FUSE
30A
MAIN FAN FUSE
30A
MAIN FAN RELAY1
FAN MODE RELAY
SUB FAN RELAY2
A/C RELAY
F9
PRESSURE SWITCH
B7
COMPRESSOR
MAGNET CLUTCH
F24
IGNITION SWITCH
F/B No.17
F/B No.18
SBF-4
SBF-1
BATTERY
MAIN FAN MOTOR
F17
F45
B62
SUB FAN MOTOR
F16
F2
B100
B202
i41
B: B135
C: B136
ECM
A: i48
B: i49
AUTO A/C CONTROL MODULE
E
F24
F16
F17
B7
B: B135
C: B136
A: i48
B: i49
F2
F45
F9
B202
F27
RELAY HOLDER
AC-01660

	Step	Check	Yes	No
1	**CHECK FUSE.** 1) Turn the ignition switch to OFF. 2) Remove the main fan fuse and sub fan fuse of the main fuse box. 3) Check the condition of fuse.	Is the fuse blown out?	Replace the fuse.	Go to step **2**.
2	**CHECK POWER SUPPLY FOR PRESSURE SWITCH.** 1) Disconnect the connector from the pressure switch. 2) Turn the ignition switch to ON. 3) Measure the voltage between pressure switch harness connector and chassis ground. ***Connector & terminal*** ***(B7) No. 1 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **3**.	Repair the open circuit in harness of pressure switch power supply circuit.
3	**CHECK HARNESS BETWEEN PRESSURE SWITCH AND A/C RELAY.** 1) Turn the ignition switch to OFF. 2) Remove the A/C relay of the fuse box. 3) Measure the resistance of the A/C relay and pressure switch connector. ***Connector & terminal*** ***Non-turbo model*** ***(F27) No. 17 — (B7) No. 2:*** ***Turbo model*** ***(F9) No. 7 — (B7) No. 2:***	Is the resistance less than 1 Ω?	Go to step **4**.	Repair the open circuit of the harness between the A/C relay and pressure switch.
4	**CHECK PRESSURE SWITCH.** Measure the resistance between the pressure switch terminals. ***Terminals*** ***No. 1 — No. 2:***	Is the resistance less than 1 Ω?	Go to step **5**.	Replace the pressure switch.
5	**CHECK A/C CUT SIGNAL CIRCUIT.** 1) Disconnect the connector from the auto A/C control module. 2) Measure the resistance between the auto A/C control module and the pressure switch connector. ***Connector & terminal*** ***(i48) No. 10 — (B7) No. 2:***	Is the resistance less than 1 Ω?	Go to step **6**.	Repair the open circuit of the harness between auto A/C control module and pressure switch.
6	**CHECK A/C ON SIGNAL CIRCUIT.** 1) Disconnect the connectors from ECM. 2) Measure the resistance between the ECM and the auto A/C control module connector. ***Connector & terminal*** ***Non-turbo model*** ***(B136) No. 23 — (i49) No. 17:*** ***Turbo model*** ***(B136) No. 24 — (i49) No. 17:***	Is the resistance less than 1 Ω?	Go to step **7**.	Repair the open circuit of the harness between auto A/C control module and ECM.
7	**CHECK A/C RELAY.** 1) Remove the A/C relay of the fuse box. 2) Check the A/C relay. <Ref. to AC-37, INSPECTION, Relay and Fuse.>	Does the relay operate normally?	Go to step **8**.	Replace the A/C relay.

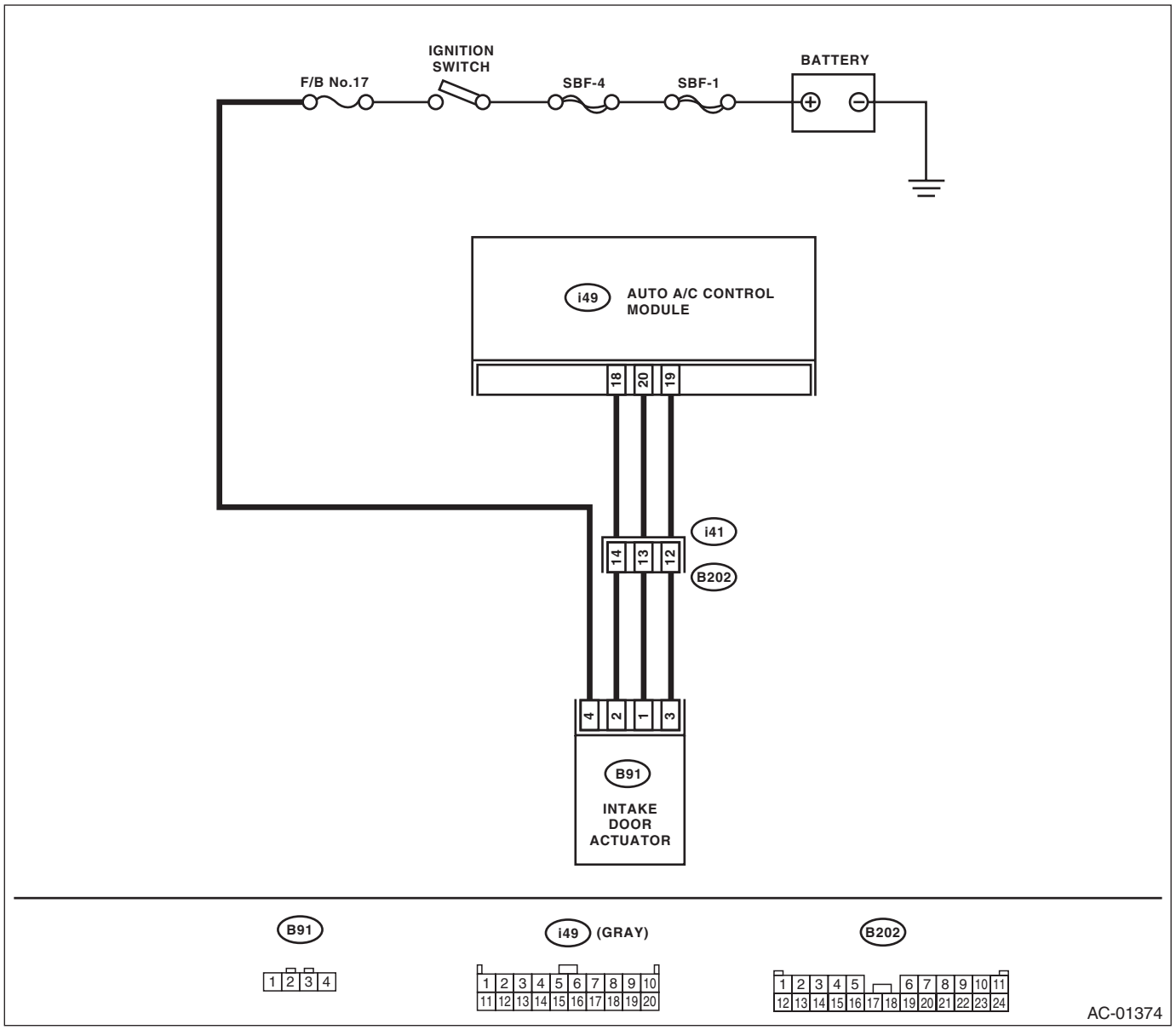
	Step	Check	Yes	No
8	**CHECK POWER SUPPLY TO MAGNET CLUTCH OF A/C COMPRESSOR.** 1) Turn the ignition switch to OFF, and connect the A/C relay and all disconnected connectors. 2) Start the engine and turn the A/C switch ON. 3) Turn the temperature control dial at maximum cool position. 4) Measure the voltage between magnet clutch connector and chassis ground. ***Connector & terminal*** ***(F24) No. 1 (+) — Chassis ground (–):***	Is the voltage 10.5 V or more (at normal temperature)?	Go to step **9**.	Repair the open circuit in harness of the A/C compressor power circuit.
9	**CHECK MAIN FAN MOTOR OPERATION.** 1) Start the engine. 2) Turn on the A/C switch. 3) Check the operation of the main fan motor.	Does the main fan motor operate normally?	Go to step **14**.	Go to step **10**.
10	**CHECK POWER SUPPLY TO MAIN FAN MOTOR.** **CAUTION:** **Be careful not to overheat the engine during repair.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the main fan motor. 3) Start the engine, and warm it up until engine coolant temperature increases over 100°C (212°F). 4) Stop the engine and turn the ignition switch to ON. 5) Measure the voltage between main fan motor connector and chassis ground. ***Connector & terminal*** ***(F17) No. 1 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **11**.	Repair the open circuit in harness of main fan motor power supply circuit.
11	**CHECK MAIN FAN MOTOR GROUND CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Measure the resistance between main fan motor connector and chassis ground. ***Connector & terminal*** ***(F17) No. 2 — Chassis ground:***	Is the resistance less than 1 Ω?	Go to step **12**.	Repair the open circuit in harness of main fan motor ground circuit.
12	**CHECK MAIN FAN MOTOR.** Connect the positive terminal (+) of the battery to No. 1 terminal of the main fan motor connector, and the negative (–) terminal to No. 2 terminal. Check that the main fan motor is running.	Is the main fan motor rotating?	Go to step **13**.	Replace the main fan motor with a new one.
13	**CHECK POOR CONTACT OF THE MAIN FAN MOTOR CONNECTOR.** Check poor contact of main fan motor connector.	Is there poor contact in the connector?	Go to step **14**.	Repair the poor contact of main fan motor connector.
14	**CHECK SUB FAN MOTOR OPERATION.** 1) Start the engine and turn the A/C switch ON. 2) Check the operation of the sub fan motor.	Does the sub fan motor operate normally?	Go to step **19**.	Go to step **15**.

	Step	Check	Yes	No
15	**CHECK POWER SUPPLY TO SUB FAN MOTOR.** **CAUTION:** **Be careful not to overheat the engine during repair.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the sub fan motor. 3) Start the engine, and warm it up until engine coolant temperature increases over 100°C (212°F). 4) Stop the engine and turn the ignition switch to ON. 5) Measure the voltage between sub fan motor connector and chassis ground. ***Connector & terminal*** ***(F16) No. 1 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **16**.	Repair the open circuit in the harness of the sub fan motor power supply circuit.
16	**CHECK SUB FAN MOTOR GROUND CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Measure the resistance between the sub fan motor connector and chassis ground. ***Connector & terminal*** ***(F16) No. 2 — Chassis ground:***	Is the resistance less than 1 Ω?	Go to step **17**.	Repair the open circuit in the harness of sub fan motor ground circuit.
17	**CHECK SUB FAN MOTOR.** Connect the positive terminal (+) of the battery to No. 1 terminal of the sub fan motor connector, and the negative (–) terminal to No. 2 terminal. Check that the sub fan motor is running.	Does the sub fan motor rotate?	Go to step **18**.	Replace the sub fan motor with a new one.
18	**CHECK POOR CONTACT OF THE SUB FAN MOTOR CONNECTOR.** Check for poor contact of sub fan motor connector.	Is there poor contact in the connector?	Repair the poor contact of sub fan motor connector.	Go to step **19**.
19	**CHECK FOR POOR CONTACT OF THE AUTO A/C CONTROL MODULE CONNECTOR.** Check poor contact of auto A/C control module connector.	Is there poor contact in the connector?	Repair the connector.	Replace the auto A/C control module.

7. Diagnostic Procedure for Actuators

A: INTAKE DOOR ACTUATOR

TROUBLE SYMPTOM:
FRESH/RECIRC mode is not changed.
WIRING DIAGRAM:

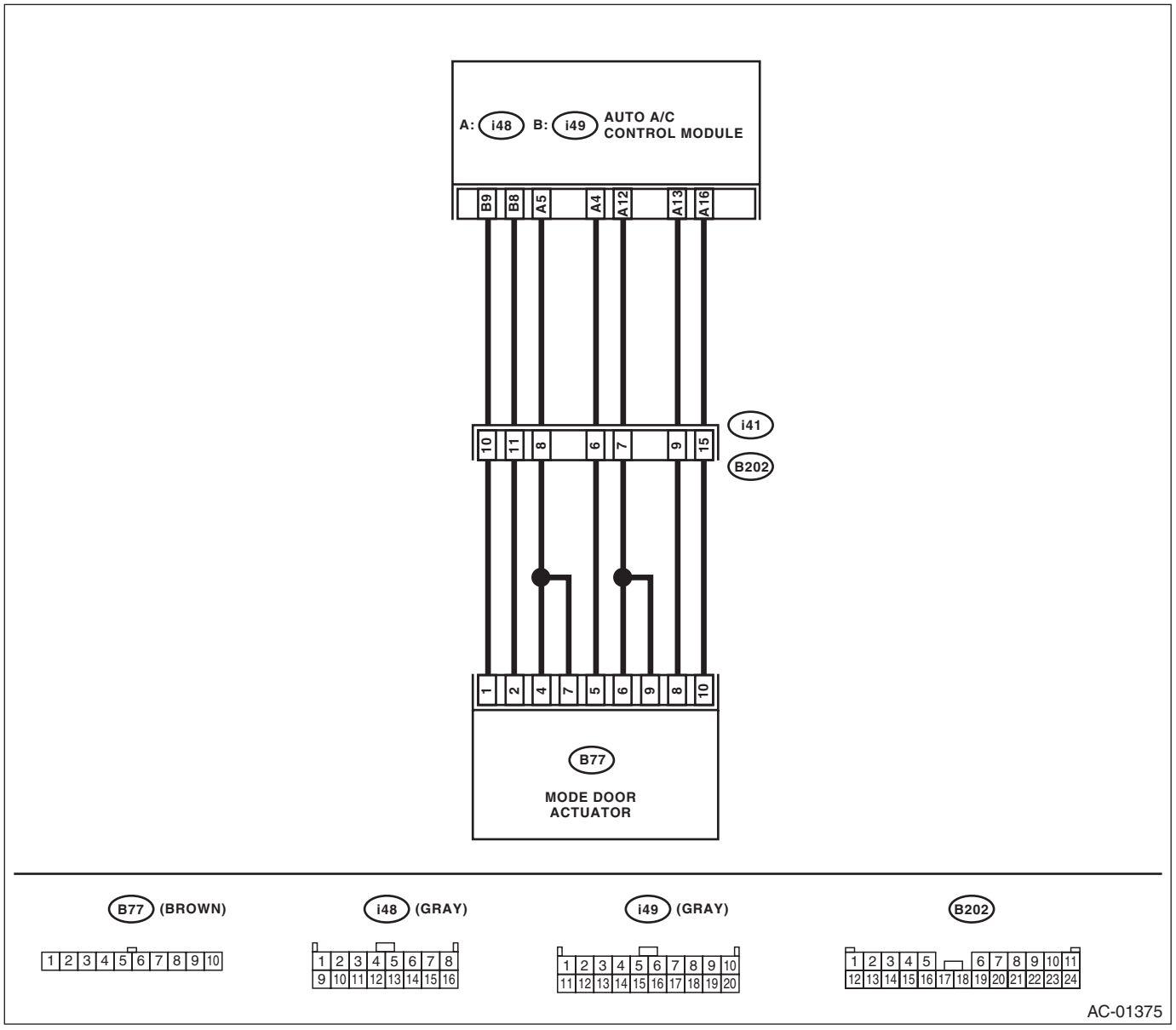


Diagnostic Procedure for Actuators

	Step	Check	Yes	No
1	**CHECK POWER SUPPLY FOR INTAKE DOOR ACTUATOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the intake door actuator connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between intake door actuator connector and chassis ground. ***Connector & terminal*** ***(B91) No. 4 (+) — Chassis ground (–):***	Is the voltage 7 V or more (at normal temperature)?	Go to step **2**.	Check for open or short circuit in the harness between intake door actuator and fuse.
2	**CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND INTAKE DOOR ACTUATOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the auto A/C control module connector. 3) Measure the resistance between intake door actuator connector and auto A/C control module connector. ***Connector & terminal*** ***(i49) No. 18 — (B91) No. 2:*** ***(i49) No. 20 — (B91) No. 1:*** ***(i49) No. 19 — (B91) No. 3:***	Is the resistance less than 1 Ω?	Go to step **3**.	Repair the open circuit in harness between auto A/C control module and intake door actuator.
3	**CHECK OPERATION OF INTAKE DOOR ACTUATOR.** 1) Connect the intake door actuator connector. 2) Ground the auto A/C control module connector with a suitable wire. 3) Turn the ignition switch to ON, and check the operation of intake door actuator. ***Connector & terminal*** ***(i49) No. 20 — Chassis ground:***	Is the intake door actuator moved to FRESH?	Go to step **4**.	Replace the intake door actuator.
4	**CHECK OPERATION OF INTAKE DOOR ACTUATOR.** 1) Turn the ignition switch to OFF. 2) Ground the auto A/C control module connector with a suitable wire. 3) Turn the ignition switch to ON, and check the operation of intake door actuator. ***Connector & terminal*** ***(i49) No. 18 — Chassis ground:***	Is the intake door actuator moved to RECIRC?	Replace the auto A/C control module.	Replace the intake door actuator.

B: MODE DOOR ACTUATOR

TROUBLE SYMPTOM:
Air flow outlet is not changed.
WIRING DIAGRAM:



Diagnostic Procedure for Actuators

	Step	Check	Yes	No
1	**CHECK THE POWER SUPPLY OF THE AUTO A/C CONTROL MODULE.** 1) Turn the ignition switch to ON. 2) Set the air flow control dial to the VENT position. 3) Press the defroster switch and measure the voltage between the auto A/C control module and the chassis ground when switching from VENT to DEF. ***Connector & terminal*** ***(i49) No. 9 (+) — Chassis ground (–):***	Is the voltage 12 V or more?	Go to step **2**.	Replace the auto A/C control module.
2	**CHECK THE POWER SUPPLY OF THE ACTUATOR.** 1) Set the air flow control dial to the VENT position. 2) Press the defroster switch and measure the voltage between the mode door actuator harness connector terminal and the chassis ground when switching from VENT to DEF. ***Connector & terminal*** ***(B77) No. 1 (+) — Chassis ground (–):***	Is the voltage 7 V or more (at normal temperature)?	Go to step **3**.	Repair the open circuit of harness between the auto A/C control module and mode door actuator.
3	**CHECK AUTO A/C CONTROL MODULE SIGNALS.** 1) Press the defroster switch. 2) Turn the air flow control dial to VENT and measure the voltage between the auto A/C control module and the chassis ground when switching from DEF to VENT. ***Connector & terminal*** ***(i49) No. 8 (+) — Chassis ground (–):***	Is the voltage 12 V or more?	Go to step **4**.	Replace the auto A/C control module.
4	**CHECK THE SIGNALS OF THE ACTUATOR.** 1) Press the defroster switch. 2) Turn the air flow control dial to the VENT position and measure the voltage between the mode door actuator harness connector terminal and the chassis ground when switching from DEF to VENT. ***Connector & terminal*** ***(B77) No. 2 (+) — Chassis ground (–):***	Is the voltage 7 V or more (at normal temperature)?	Go to step **5**.	Repair the open circuit of harness between the auto A/C control module and mode door actuator.
5	**CHECK THE ACTUATOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the mode door actuator. 3) Connect the positive terminal (+) of the battery to No. 1 terminal of the mode door actuator, and the negative (–) terminal to No. 2 terminal. Check whether the actuator is running. 4) Connect the negative (–) terminal of the battery to No. 1 and the positive terminal (+) to No. 2 terminal and check whether the actuator is running.	Does the motor operate normally?	Go to step **6**.	Replace the mode door actuator.
6	**CHECK AUTO A/C CONTROL MODULE SIGNAL VOLTAGE.** 1) Turn the ignition switch to ON. 2) Turn the air flow control dial and measure the voltage between auto A/C control module harness connector terminal and chassis ground for each mode. ***Connector & terminal*** ***(i48) No. 4 (+) — Chassis ground (–):***	Is the voltage approx. 5 V at the HEAT, D/H and DEF positions; and approx. 0 V at the VENT and BI-LEVEL positions?	Go to step **9**.	Go to step **7**.

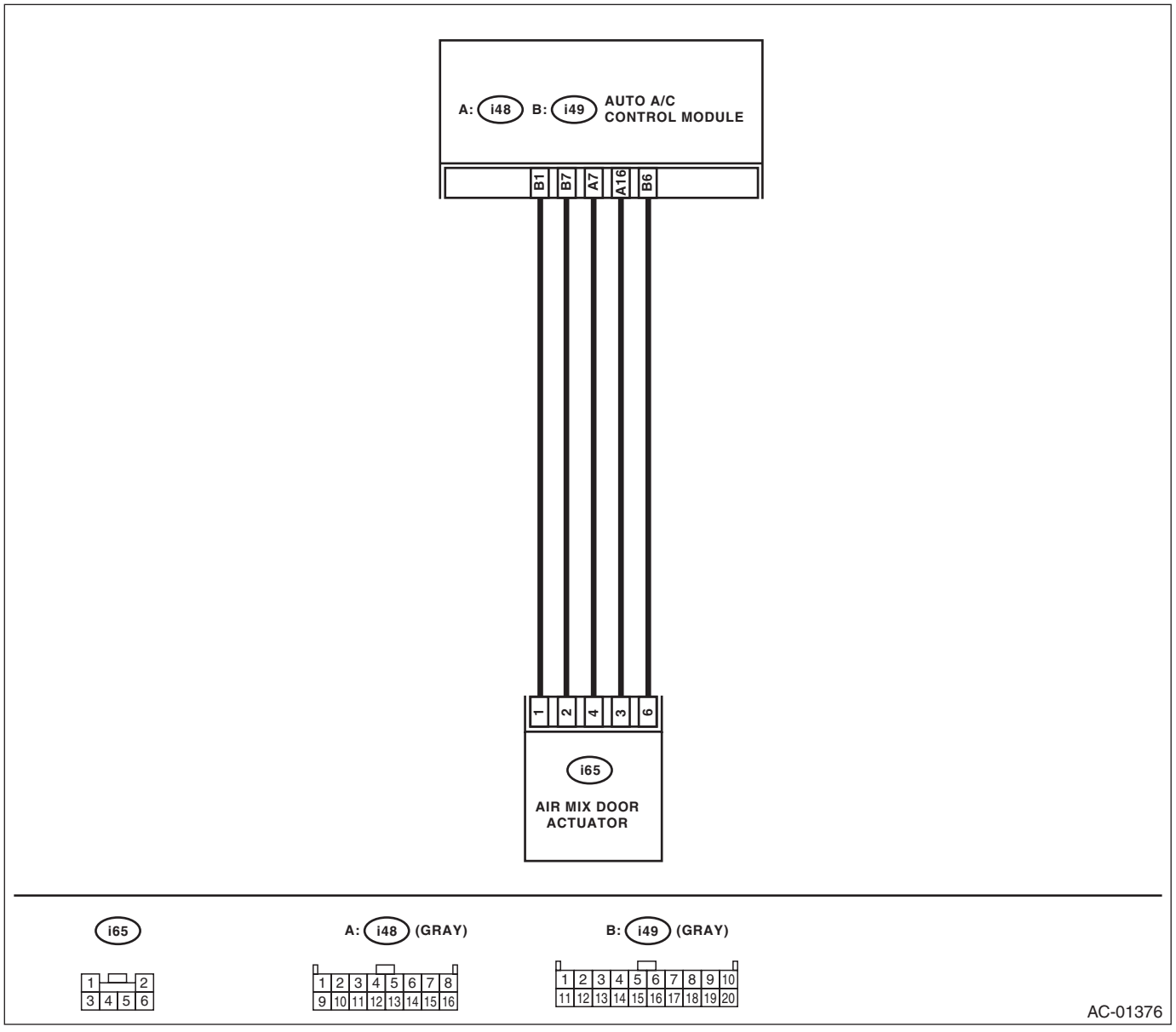
	Step	Check	Yes	No
7	**CHECK AUTO A/C CONTROL MODULE SIGNAL POWER.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the mode door actuator. 3) Turn the ignition switch to ON. 4) Measure the voltage between the mode door actuator harness connector terminal and chassis ground. ***Connector & terminal*** ***(B77) No. 5 (+) — Chassis ground (–):***	Is the voltage approx. 5 V?	Go to step **9**.	Go to step **8**.
8	**CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND MODE DOOR ACTUATOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the auto A/C control module and mode door actuator. 3) Measure the resistance of the harness between the auto A/C control module and mode door actuator. ***Connector & terminal*** ***(i48) No. 4 — (B77) No. 5:***	Is the resistance less than 1 Ω?	Replace the auto A/C control module.	Repair the open circuit of harness between the auto A/C control module and mode door actuator.
9	**CHECK AUTO A/C CONTROL MODULE SIGNAL VOLTAGE.** 1) Turn the ignition switch to ON. 2) Turn the air flow control dial and measure the voltage between auto A/C control module harness connector terminal and chassis ground for each mode. ***Connector & terminal*** ***(i48) No. 12 (+) — Chassis ground (–):***	Is the voltage approx. 5 V at the VENT position; and approx. 0 V at the BI-LEVEL, HEAT and DEF positions?	Go to step **12**.	Go to step **10**.
10	**CHECK AUTO A/C CONTROL MODULE SIGNAL POWER.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the mode door actuator. 3) Turn the ignition switch to ON. 4) Measure the voltage between the mode door actuator harness connector and chassis ground. ***Connector & terminal*** ***(B77) No. 6 (+) — Chassis ground (–):*** ***(B77) No. 9 (+) — Chassis ground (–):***	Is the voltage approx. 5 V?	Go to step **12**.	Go to step **11**.
11	**CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND MODE DOOR ACTUATOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the auto A/C control module and mode door actuator. 3) Measure the resistance of the harness between the auto A/C control module and mode door actuator. ***Connector & terminal*** ***(i48) No. 12 — (B77) No. 6:*** ***(i48) No. 12 — (B77) No. 9:***	Is the resistance less than 1 Ω?	Replace the auto A/C control module.	Repair the open circuit of harness between the auto A/C control module and mode door actuator.

	Step	Check	Yes	No
12	**CHECK AUTO A/C CONTROL MODULE SIGNAL VOLTAGE.** 1) Turn the ignition switch to ON. 2) Turn the air flow control dial and measure the voltage between auto A/C control module harness connector and chassis ground for each mode. ***Connector & terminal*** ***(i48) No. 5 (+) — Chassis ground (–):***	Is the voltage approx. 5 V at the BI-LEVEL and DEF positions; and approx. 0 V at the VENT, HEAT and D/H positions?	Go to step **15**.	Go to step **13**.
13	**CHECK AUTO A/C CONTROL MODULE SIGNAL POWER.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the mode door actuator. 3) Turn the ignition switch to ON. 4) Measure the voltage between the mode door actuator harness connector terminal and chassis ground. ***Connector & terminal*** ***(B77) No. 4 (+) — Chassis ground (–):*** ***(B77) No. 7 (+) — Chassis ground (–):***	Is the voltage approx. 5 V?	Go to step **15**.	Go to step **14**.
14	**CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND MODE DOOR ACTUATOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the auto A/C control module and mode door actuator. 3) Measure the resistance of the harness between the auto A/C control module and mode door actuator. ***Connector & terminal*** ***(i48) No. 5 — (B77) No. 4:*** ***(i48) No. 5 — (B77) No. 7:***	Is the resistance less than 1 Ω?	Replace the auto A/C control module.	Repair the open circuit of harness between the auto A/C control module and mode door actuator.
15	**CHECK AUTO A/C CONTROL MODULE SIGNAL VOLTAGE.** 1) Turn the ignition switch to ON. 2) Turn the air flow control dial and measure the voltage between auto A/C control module harness connector terminal and chassis ground for each mode. ***Connector & terminal*** ***(i48) No. 13 (+) — Chassis ground (–):***	Is the voltage approx. 5 V at the VENT, BI-LEVEL and HEAT positions; and approx. 0 V at the D/H and DEF positions?	Go to step **19**.	Go to step **16**.
16	**CHECK AUTO A/C CONTROL MODULE SIGNAL POWER.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the mode door actuator. 3) Turn the ignition switch to ON. 4) Measure the voltage between mode door actuator. ***Connector & terminal*** ***(B77) No. 8 (+) — Chassis ground (–):***	Is the voltage approx. 5 V?	Go to step **18**.	Go to step **17**.

	Step	Check	Yes	No
17	**CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND MODE DOOR ACTUATOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the auto A/C control module and mode door actuator. 3) Measure the resistance of the harness between the auto A/C control module and mode door actuator. ***Connector & terminal*** ***(i48) No. 13 — (B77) No. 8:***	Is the resistance less than 1 Ω?	Replace the auto A/C control module.	Repair the open circuit of harness between the auto A/C control module and mode door actuator.
18	**CHECK ACTUATOR GROUND CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the auto A/C control module. 3) Measure the resistance of the harness between the auto A/C control module and mode door actuator. ***Connector & terminal*** ***(i48) No. 16 — (B77) No. 10:***	Is the resistance less than 1 Ω?	Replace the mode door actuator.	Repair the open circuit of harness between the auto A/C control module and mode door actuator.
19	**CHECK POOR CONTACT.** Check poor contact of auto A/C control module connector.	Is there poor contact in the connector?	Repair the connector.	Replace the auto A/C control module.

C: AIR MIX DOOR ACTUATOR

TROUBLE SYMPTOM:
Outlet air temperature does not change.
WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK POWER SUPPLY FOR AIR MIX DOOR ACTUATOR PBR.** 1) Turn the ignition switch to OFF. 2) Disconnect the air mix door actuator connector. 3) Turn the ignition switch and AUTO switch ON. 4) Measure the voltage between auto A/C control module connector terminals. ***Connector & terminal*** ***(i48) No. 7 (+) — (i48) No. 16 (–):***	Is the voltage approx. 5 V?	Go to step **2**.	Replace the auto A/C control module.
2	**CHECK POWER SUPPLY FOR AIR MIX DOOR ACTUATOR.** Measure the voltage between auto A/C control module connector terminal and chassis ground after turning the temperature control dial to maximum COOL position. ***Connector & terminal*** ***(i49) No. 6 (+) — Chassis ground (–):***	Is the voltage 7 V or more (at normal temperature)?	Go to step **3**.	Replace the auto A/C control module.
3	**CHECK POWER SUPPLY FOR AIR MIX DOOR ACTUATOR.** Measure the voltage between auto A/C control module connector terminal and chassis ground after turning the temperature control dial to maximum HOT position. ***Connector & terminal*** ***(i49) No. 7 (+) — Chassis ground (–):***	Is the voltage 7 V or more (at normal temperature)?	Go to step **4**.	Replace the auto A/C control module.
4	**CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND AIR MIX DOOR ACTUATOR.** 1) Turn the A/C and ignition switch to OFF. 2) Disconnect the auto A/C control module connector. 3) Measure the resistance between auto A/C control module and air mix door actuator connector. ***Connector & terminal*** ***(i65) No. 1 — (i49) No. 1:*** ***(i65) No. 2 — (i49) No. 7:*** ***(i65) No. 3 — (i48) No. 16:*** ***(i65) No. 4 — (i48) No. 7:*** ***(i65) No. 6 — (i49) No. 6:***	Is the resistance less than 1 Ω?	Go to step **5**.	Repair the open circuit of harness between auto A/C control module and air mix door actuator.
5	**CHECK AIR MIX DOOR ACTUATOR PBR SIGNAL.** 1) Connect the auto A/C control module and air mix door actuator connector. 2) Turn the ignition switch and AUTO switch ON. 3) Check the voltage between auto A/C control module connector terminals while changing the setting temperature between maximum COOL and maximum HOT. ***Connector & terminal*** ***(i49) No. 1 (+) — (i48) No. 16 (–):***	Is the voltage 0.5 (Max. COOL) — 4.5 (Max. HOT) V?	Go to step **6**.	Replace the air mix door actuator.
6	**CHECK POOR CONTACT.** Check poor contact of auto A/C control module and connector.	Is there poor contact in the connector?	Repair the connector.	Replace the auto A/C control module.

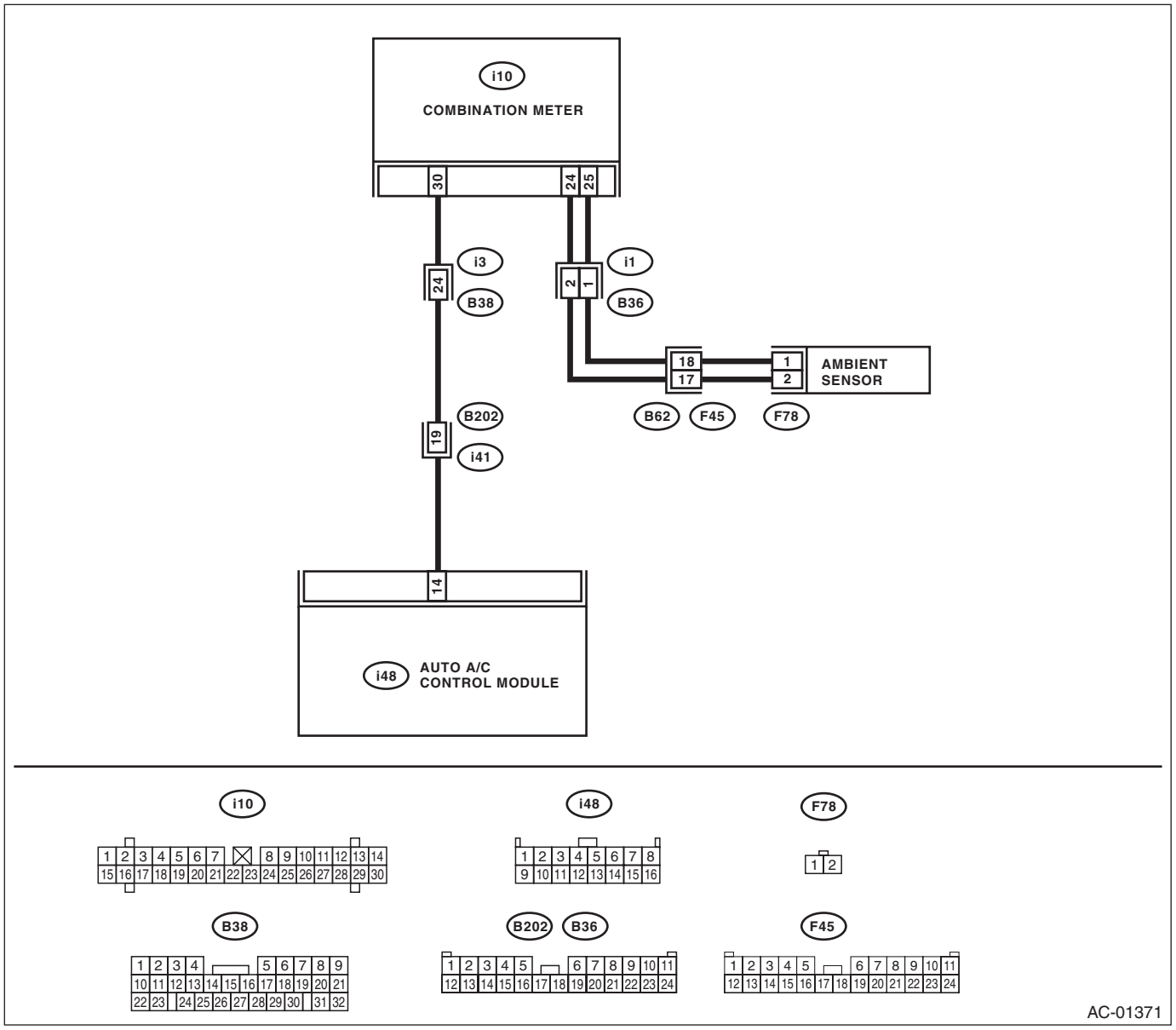
8. Diagnostic Procedure for Sensors

A: AMBIENT SENSOR

TROUBLE SYMPTOM:

- Fan speed is not switched when the fan speed control dial is in AUTO position.
- Failure related to the ambient sensor is indicated in self-diagnosis.

WIRING DIAGRAM:

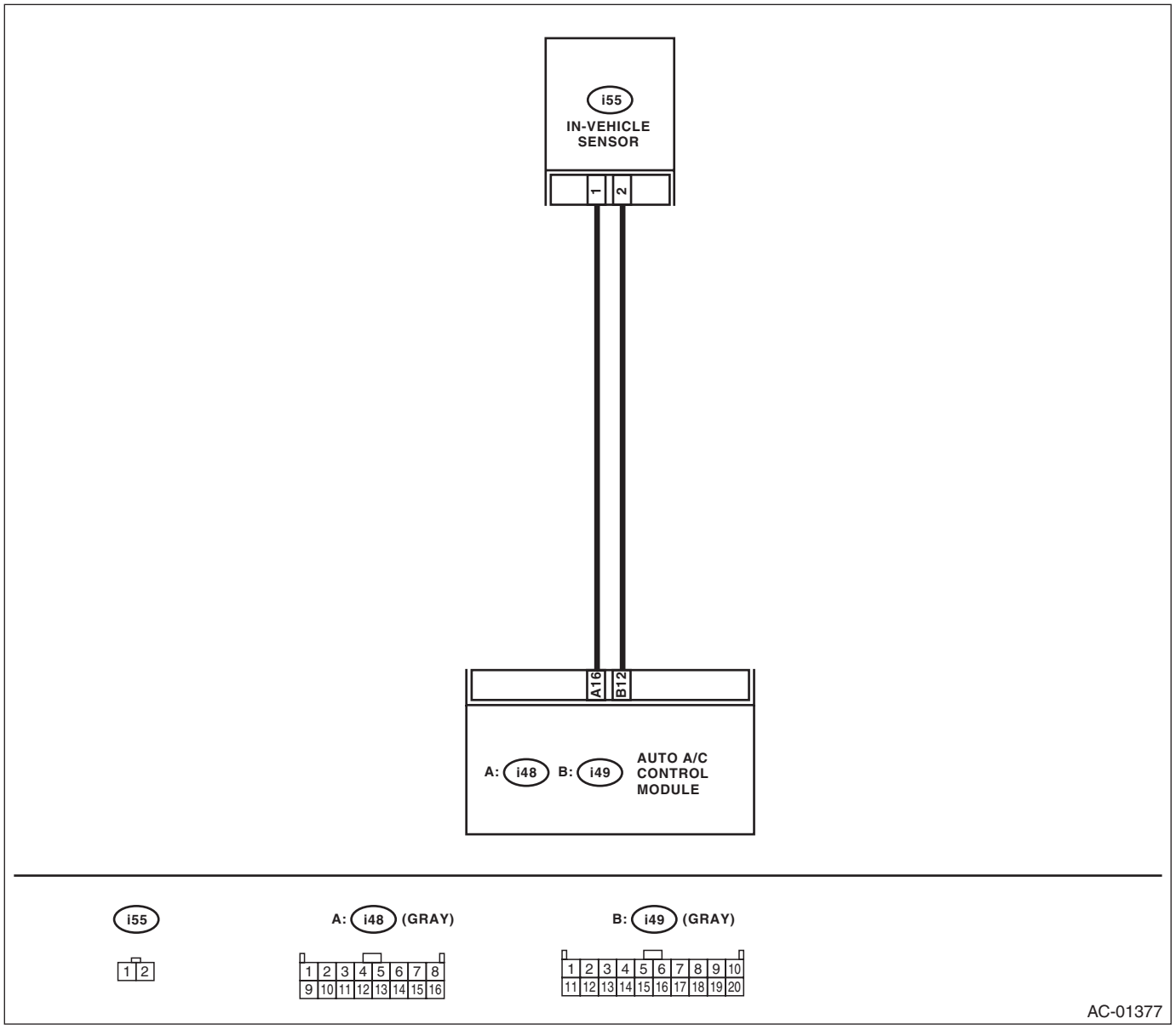


	Step	Check	Yes	No
1	**CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND COMBINATION METER.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from auto A/C control module and the combination meter. 3) Measure the resistance of harness between the auto A/C control module and combination meter. ***Connector & terminal*** ***(i10) No. 30 — (i48) No. 14:***	Is the resistance less than 1 Ω?	Go to step **2**.	Repair the open circuit of the harness between auto A/C control module and combination meter.
2	**CHECK AMBIENT SENSOR CIRCUIT.** Check the ambient sensor circuit. <Ref. to IDI-9, CHECK OUTSIDE TEMPERATURE INDICATOR, INSPECTION, Combination Meter System.>	Is the ambient sensor circuit normal?	Go to step **3**.	Repair the ambient sensor circuit.
3	**CHECK POOR CONTACT.** Check poor contact of auto A/C control module connector.	Is there poor contact in the connector?	Repair the connector.	Replace the auto A/C control module.

B: IN-VEHICLE SENSOR

TROUBLE SYMPTOM:

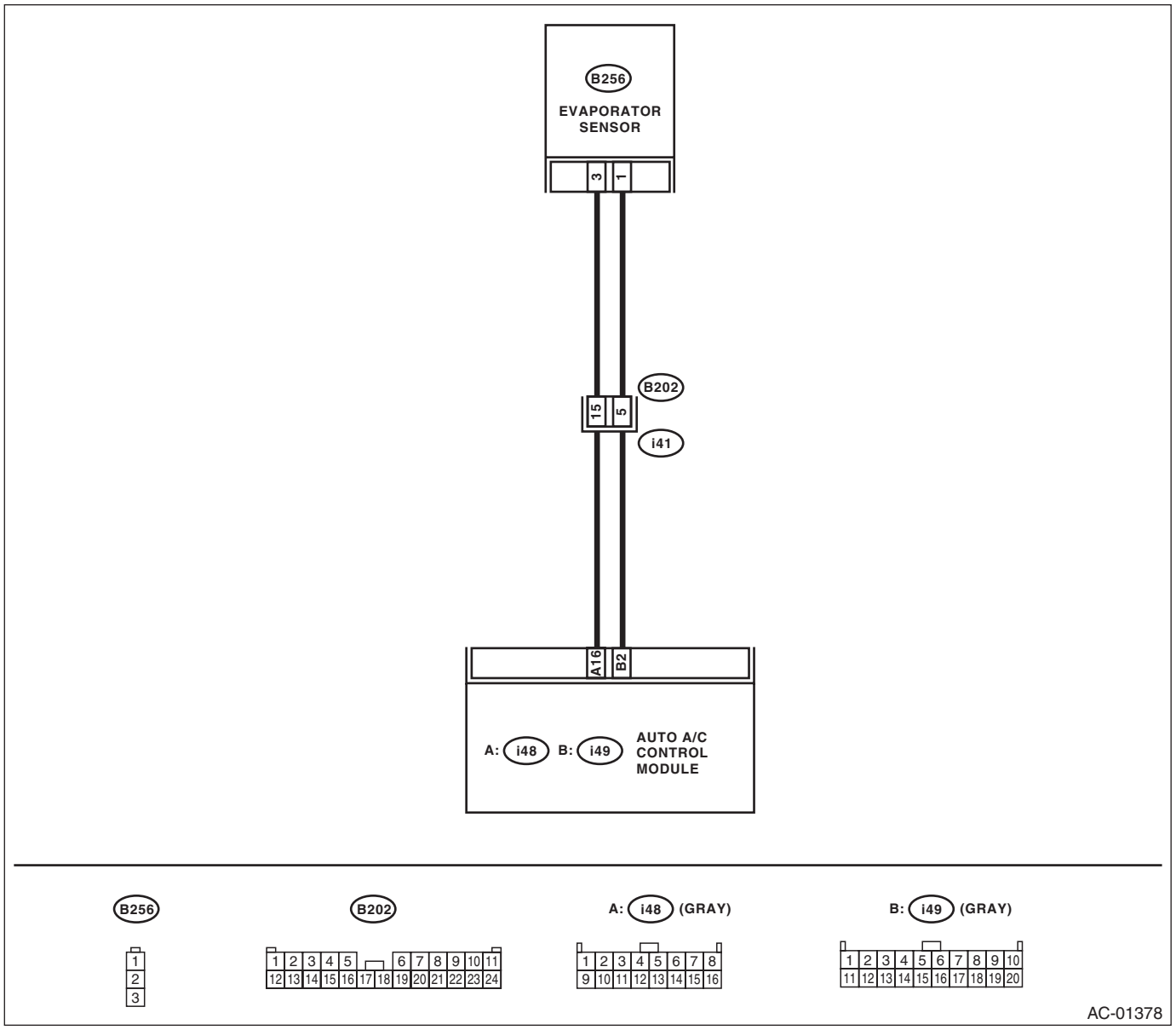
- Blower fan speed, outlet port and inlet port do not change after turning the AUTO switch ON
- Failure related to the in-vehicle sensor is indicated in self-diagnosis.



	Step	Check	Yes	No
1	**CHECK IN-VEHICLE SENSOR.** 1) Turn the ignition switch to OFF. 2) Remove the driver side lower cover. 3) Disconnect the connector from in-vehicle sensor. 4) Measure the resistance between connector terminals of in-vehicle sensor. ***Terminals*** ***No. 1 — No. 2:***	Is the resistance approximately 2.7 kΩ at 20°C (68°F)?	Go to step **2**.	Replace the in-vehicle sensor.
2	**CHECK INPUT SIGNAL FOR IN-VEHICLE SENSOR.** 1) Turn the ignition switch to ON. 2) Measure the voltage between in-vehicle sensor harness connector terminal and chassis ground. ***Connector & terminal*** ***(i55) No. 2 (+) — Chassis ground (–):***	Is the voltage approx. 5 V?	Go to step **5**.	Go to step **3**.
3	**CHECK AUTO A/C CONTROL MODULE OUTPUT SIGNAL.** 1) Turn the ignition switch to OFF. 2) Pull out the auto A/C control module. 3) Turn the ignition switch to ON. 4) Measure the voltage between connector terminals of auto A/C control module. ***Connector & terminal*** ***(i49) No. 12 (+) — (i48) No. 16 (–):***	Is the voltage approx. 5 V?	Go to step **4**.	Go to step **6**.
4	**CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND IN-VEHICLE SENSOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the auto A/C control module. 3) Measure the resistance of harness between auto A/C control module and in-vehicle sensor. ***Connector & terminal*** ***(i55) No. 2 — (i49) No. 12:***	Is the resistance less than 1 Ω?	Go to step **5**.	Repair the open circuit of the harness between auto A/C control module and in-vehicle sensor.
5	**CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND IN-VEHICLE SENSOR.** Measure the resistance of harness between auto A/C control module and in-vehicle sensor. ***Connector & terminal*** ***(i55) No. 1 — (i48) No. 16:***	Is the resistance less than 1 Ω?	Go to step **6**.	Repair the open circuit of the harness between auto A/C control module and in-vehicle sensor.
6	**CHECK POOR CONTACT.** Check poor contact of auto A/C control module connector.	Is there poor contact in the connector?	Repair the connector.	Replace the auto A/C control module.

C: EVAPORATOR SENSOR

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK EVAPORATOR SENSOR.** 1) Turn the ignition switch to OFF. 2) Remove the glove box. 3) Disconnect the connector from evaporator sensor. 4) Measure the resistance between connector terminals of the evaporator sensor. ***Terminals*** ***No. 1 — No. 3:***	Is the resistance approximately 2.7 kΩ at 20°C (68°F)?	Go to step **2**.	Replace the evaporator sensor.
2	**CHECK INPUT SIGNAL FOR EVAPORATOR SENSOR.** 1) Turn the ignition switch to ON. 2) Measure the voltage between evaporator sensor harness connector terminal and chassis ground. ***Connector & terminal*** ***(B256) No. 1 (+) — Chassis ground (–):***	Is the voltage approx. 5 V?	Go to step **5**.	Go to step **3**.
3	**CHECK AUTO A/C CONTROL MODULE OUTPUT SIGNAL.** 1) Turn the ignition switch to OFF. 2) Pull out the auto A/C control module. 3) Turn the ignition switch to ON. 4) Measure the voltage between connector terminals of auto A/C control module. ***Connector & terminal*** ***(i49) No. 2 (+) — (i48) No. 16 (–):***	Is the voltage approx. 5 V?	Go to step **4**.	Go to step **6**.
4	**CHECK HARNESS CONNECTOR BETWEEN AUTO A/C CONTROL MODULE AND EVAPORATOR SENSOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the auto A/C control module. 3) Measure the resistance of harness between auto A/C control module and evaporator sensor. ***Connector & terminal*** ***(B256) No. 1 — (i49) No. 2:***	Is the resistance less than 1 Ω?	Go to step **5**.	Repair the open circuit of harness between auto A/C control module and evaporator sensor.
5	**CHECK HARNESS CONNECTOR BETWEEN AUTO A/C CONTROL MODULE AND EVAPORATOR SENSOR.** Measure the resistance of harness between auto A/C control module and evaporator sensor. ***Connector & terminal*** ***(B256) No. 3 — (i48) No. 16:***	Is the resistance less than 1 Ω?	Go to step **6**.	Repair the open circuit of harness between auto A/C control module and evaporator sensor.
6	**CHECK POOR CONTACT.** Check poor contact of auto A/C control module connector.	Is there poor contact in the connector?	Repair the connector.	Replace the auto A/C control module.

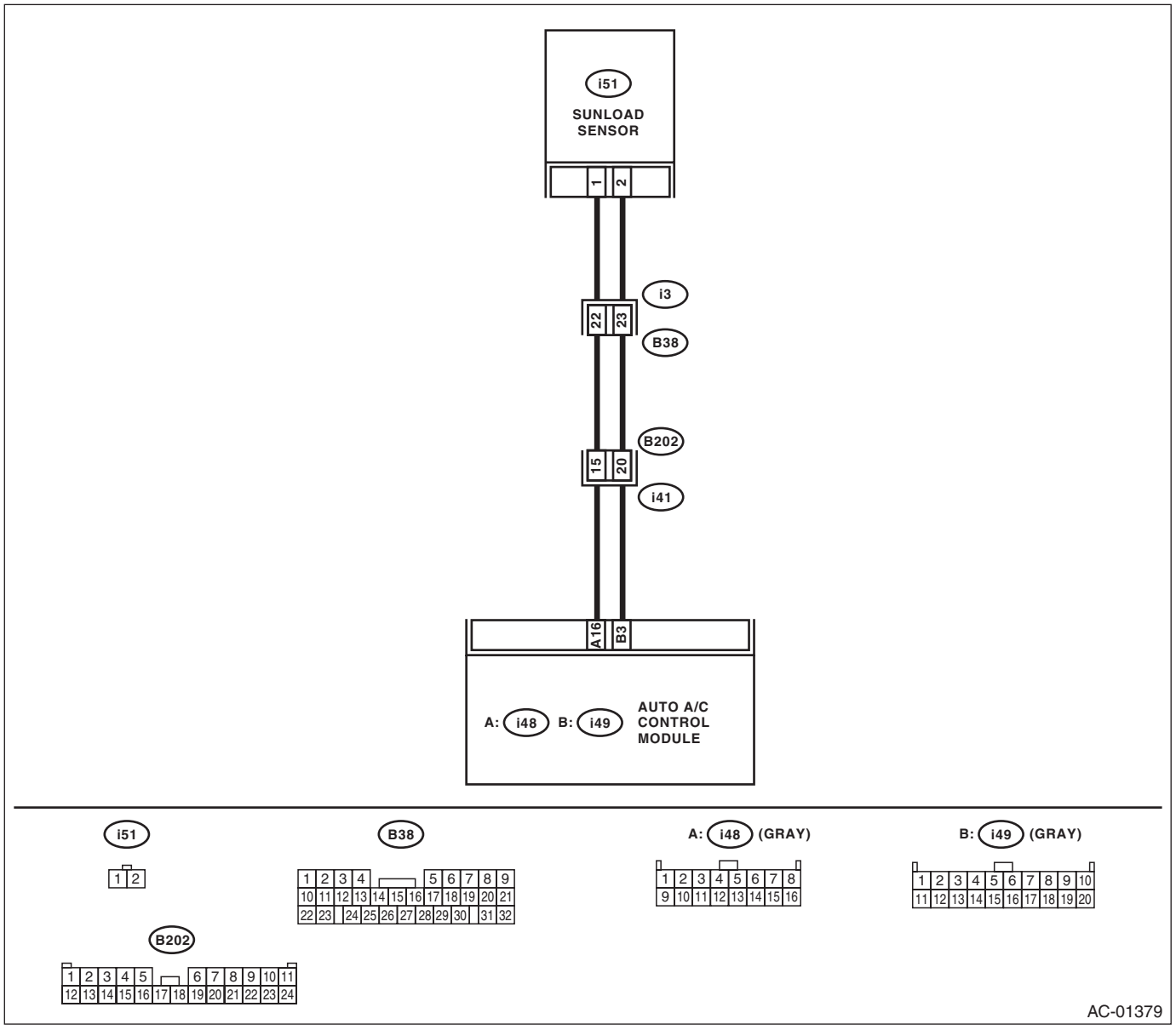
D: SUNLOAD SENSOR

TROUBLE SYMPTOM:

- Sensor identifies that sunlight is at maximum. Then, A/C system is controlled to COOL side.
- Sensor identifies that sunlight is at minimum. Then, A/C system is controlled to HOT side.

NOTE:
When the sunload sensor is checked indoors or in the shade, an open circuit might be indicated. Always check the sunload sensor at a location exposed to direct sunlight.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK INPUT VOLTAGE TO SUNLOAD SENSOR.** 1) Turn the ignition switch to ON. 2) Measure the input voltage to sunload sensor. ***Connector & terminal*** ***(i51) No. 2 (+) — Chassis ground (–):***	Is the voltage approx. 5 V?	Go to step **3**.	Go to step **2**.
2	**CHECK HARNESS CONNECTOR BETWEEN AUTO A/C CONTROL MODULE AND SUNLOAD SENSOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the auto A/C control module. 3) Measure the resistance of the harness between the auto A/C control module and sunload sensor. ***Connector & terminal*** ***(i51) No. 2 — (i49) No. 3:***	Is the resistance less than 1 Ω?	Go to step **5**.	Repair the harness between auto A/C control module and sunload sensor.
3	**CHECK HARNESS CONNECTOR BETWEEN AUTO A/C CONTROL MODULE AND SUNLOAD SENSOR.** Measure the resistance of the harness between the auto A/C control module and sunload sensor. ***Connector & terminal*** ***(i51) No. 1 — (i48) No. 16:***	Is the resistance less than 1 Ω?	Go to step **4**.	Repair the harness between auto A/C control module and sunload sensor.
4	**CHECK INPUT VOLTAGE FOR AUTO A/C CONTROL MODULE.** 1) Connect the auto A/C control module connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between connector terminals of auto A/C control module. ***Connector & terminal*** ***(i49) No. 3 (+) — (i48) No. 16 (–):***	Is the voltage approx. 2.5 V?	Go to step **5**.	Replace the sunload sensor.
5	**CHECK POOR CONTACT.** Check poor contact of auto A/C control module connector.	Is there poor contact of the connector?	Repair the connector.	Replace the auto A/C control module.

9. Diagnostics with Phenomenon

A: INSPECTION

Symptom	Problem parts
A/C system fails to operate.	• Fuse • Connector (Poor contact) • Ground • Auto A/C control module • Blower fan motor • Blower fan relay • A/C relay • Compressor (Magnet clutch) • Evaporator sensor
Fuse is blown out.	• Fuse • Connector (Poor contact)
Illumination cannot dim.	• Fuse • Connector (Poor contact) • Auto A/C control module
Blower fan does not rotate or fan speed cannot be controlled.	• Fuse • Connector (Poor contact) • Ground • Auto A/C control module • Blower fan motor • Blower fan relay
Unable to switch suction vents.	• Connector (Poor contact) • Auto A/C control module • Intake door actuator
Unable to switch vents.	• Connector (Poor contact) • Auto A/C control module • Mode door actuator
The compartment temperature does not rise. (Warm air does not come out.)	• Connector (Poor contact) • Auto A/C control module • Air mix door actuator • In-vehicle sensor, ambient sensor, evaporator sensor and sunload sensor • In-vehicle sensor aspirator hose
The compartment temperature does not lower. (Cold air does not come out.)	• Connector (Poor contact) • Auto A/C control module • Air mix door actuator • A/C relay • Compressor (Magnet clutch) • Radiator fan motor • Radiator fan relay • In-vehicle sensor, ambient sensor, evaporator sensor and sunload sensor • In-vehicle sensor aspirator hose
Compartment temperature is higher or lower than setting temperature.	• Auto A/C control module • Air mix door actuator • In-vehicle sensor, ambient sensor, evaporator sensor and sunload sensor • In-vehicle sensor aspirator hose
Compartment temperature does not quickly respond to setting temperature.	• Air mix door actuator • In-vehicle sensor, ambient sensor, evaporator sensor and sunload sensor • In-vehicle sensor aspirator hose
Radiator fan does not rotate during A/C operation.	• Radiator fan motor • Radiator fan relay

1. General Description

A: SPECIFICATION

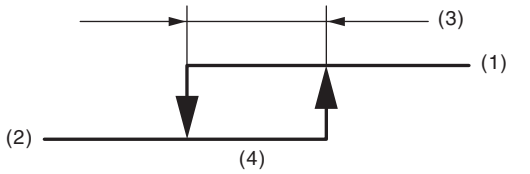
1. HEATER SYSTEM

Item		Specifications	Condition
Heating capacity		5.0 kW (4,300 kcal/h, 17,062 BTU/h) or more	• Mode selector switch: HEAT • Temperature control switch: FULL HOT • Temperature difference between hot water and inlet air: 65°C (149°F) • Hot water flow rate: 360 ℓ (95.1 US gal, 79.2 Imp gal)/h
Air flow rate		280 m^3 (9,888 cu ft)/h	Heat mode (FRESH), FULL HOT at 12.5 V
Max air flow rate		480 m^3 (16,951 cu ft)/h	• Temperature control switch: FULL COLD • Blower fan speed: 4th position • Mode selector lever: Recirculation
Heater core size (height × length × width)		134.1 × 224.3 × 32 mm (5.28 × 8.83 × 1.26 in)	—
Blower motor	Type	Auto A/C (Brushless motor) 230 W or less	12.5 V
		Manual A/C (Cylinder motor) 260 W or less	12.5 V
	Fan type and size (diameter × width)	Sirocco fan type 150 × 75 mm (5.91 × 2.95 in)	—

2. A/C SYSTEM

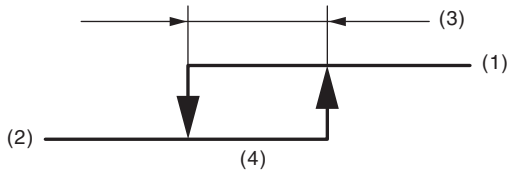
- Auto A/C model

Item			Specifications
Type of air conditioner			Reheat air-mix type
Cooling capacity			5.0 kW (4,300 kcal/h, 17,064 BTU/h)
Refrigerant			HFC-134a (CH_2FCF_3) [600±50 g (1.32±0.11 lb)]
Compressor		Type	Vane rotary, fix volume (DKV-10R)
		Discharge	105 cm^3 (6.41 cu in)/rev
		Max. permissible speed	7,700 rpm
Magnet clutch		Type	Dry, single-disc type
		Power consumption	38 W (DC12 V-25°C)
		Type of belt	V-belt 4 PK
		Pulley dia. (effective dia.)	100 mm (3.94 in)
		Pulley ratio	1.33
Condenser		Type	Corrugated fin (Sub cool type)
		Core face area	0.247 m^2 (2.69 sq ft)
		Core thickness	16 mm (0.63 in)
		Radiation area	5.9 m^2 (63.51 sq ft)
Receiver drier		Effective inner capacity	220 cm^3 (13.42 cu in)
Expansion valve		Type	External average pressure equation
Evaporator		Type	Single tank
		Dimension (height × length × width)	176.5 × 266 × 60 mm (6.95 × 10.47 × 2.36 in)
Blower fan		Fan type	Sirocco fan
		Outer diameter × width	150 × 75 mm (5.91 × 2.95 in)
		Power consumption	230 W or less at 12.5 V
Condenser fan (Sub fan)		Motor type	Magnet
		Power consumption	120 W at 12 V
		Fan outer diameter	320 mm (12.6 in)
Radiator fan (Main fan)		Motor type	Magnet
		Power consumption	120 W at 12 V
		Fan outer diameter	320 mm (12.6 in)
Idling speed (A/C ON)			800±100 rpm
Triple switch (Pressure switch)	Low-pressure switch working pressure	ON → OFF	177±25 kPa (1.80±0.25 kg/cm^2, 25.60±3.56 psi)
		OFF → ON	206±30 kPa (2.10±0.31 kg/cm^2, 29.86±4.41 psi)
	High-pressure switch working pressure	ON → OFF	2,940±200 kPa (29.98±2.03 kg/cm^2, 426.32±28.87 psi)
		Difference	590±200 kPa (6.02±2.03 kg/cm^2, 85.6±28.87 psi)
	Middle-pressure switch operating pressure	ON → OFF	1,370±120 kPa (13.97±1.22 kg/cm^2, 198.65±17.35 psi)
		OFF → ON	1,770±100 kPa (18.05±1.02 kg/cm^2, 256.81±14.50 psi)

Item	Specifications
Thermo-control amplifier working temperature (Evaporator outlet air)	 AC-00601 (1) ON (2) OFF (3) 1.5±0.3°C (37±0.4°F) (4) 1.0±0.5°C (35±0.9°F)

- Manual A/C model

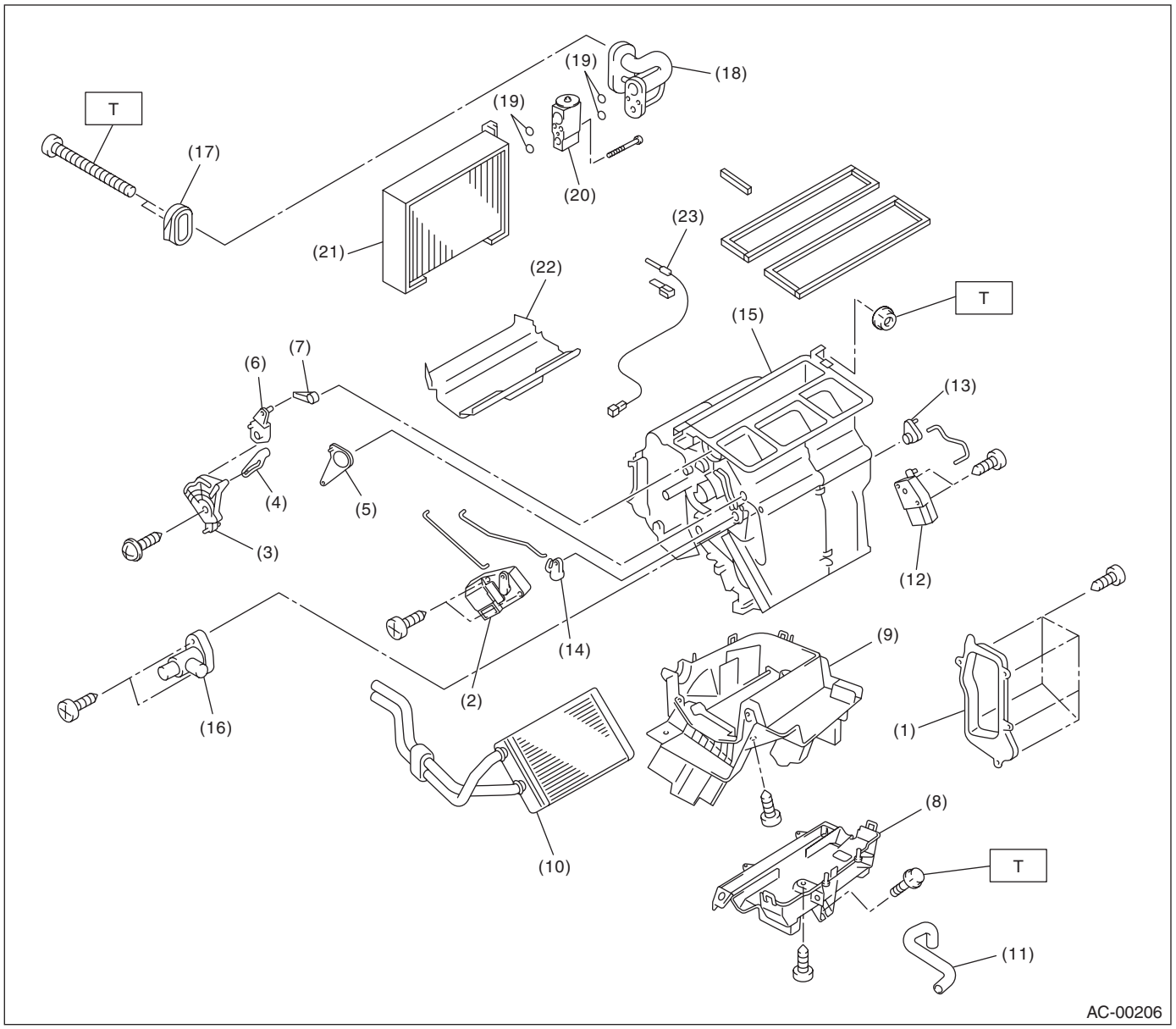
Item			Specifications
Type of air conditioner			Reheat air-mix type
Cooling capacity			5.0 kW (4,300 kcal/h, 17,064 BTU/h)
Refrigerant			HFC-134a (CH_2FCF_3) [600±50 g (1.32±0.11 lb)]
Compressor		Type	Vane rotary, fix volume (DKV-10R)
		Discharge	105 cm^3 (6.41 cu in) per rotation
		Max. permissible speed	7,700 rpm
Magnet clutch		Type	Dry, single-disc type
		Power consumption	38 W (DC12 V-25°C)
		Type of belt	V-belt 4 PK
		Pulley dia. (effective dia.)	100 mm (3.94 in)
		Pulley ratio	1.33
Condenser		Type	Corrugated fin (Sub cool type)
		Core face area	0.247 m^2 (2.69 sq ft)
		Core thickness	16 mm (0.63 in)
		Radiation area	5.9 m^2 (63.51 sq ft)
Receiver drier		Effective inner capacity	220 cm^3 (13.42 cu in)
Expansion valve		Type	External average pressure equation
Evaporator		Type	Single tank
		Dimensions (W × H × T)	176.5 × 266 × 60 mm (6.95 × 10.47 × 2.36 in)
Blower fan		Fan type	Sirocco fan
		Outer diameter × width	150 × 75 mm (5.91 × 2.95 in)
		Power consumption	260 W or less at 12.5 V
Condenser fan (Sub fan)		Motor type	Magnet
		Power consumption	120 W at 12 V
		Fan outer diameter	320 mm (12.6 in)
Radiator fan (Main fan)		Motor type	Magnet
		Power consumption	120 W at 12 V
		Fan outer diameter	320 mm (12.6 in)
Idling speed (A/C ON)		MPFI model	800±100 rpm
Triple switch (Pressure switch)	Low-pressure switch working pressure	ON → OFF	177±25 kPa (1.80±0.25 kg/cm^2, 25.60±3.56 psi)
		OFF → ON	206±30 kPa (2.10±0.31 kg/cm^2, 29.86±4.41 psi)
	High-pressure switch working pressure	ON → OFF	2,940±200 kPa (29.98±2.03 kg/cm^2, 426.32±28.87 psi)
		Difference	590±200 kPa (6.02±2.03 kg/cm^2, 85.6±28.87 psi)
	Middle-pressure switch operating pressure	ON → OFF	1,370±120 kPa (13.97±1.22 kg/cm^2, 198.65±17.35 psi)
		OFF → ON	1,770±100 kPa (18.05±1.02 kg/cm^2, 256.81±14.50 psi)

Item	Specifications
Thermo control amplifier working temperature (Evaporator outlet air)	 AC-00601 (1) ON (2) OFF (3) 1.5±0.3°C (37±0.4°F) (4) 1.0±0.5°C (35±0.9°F)

B: COMPONENT

1. HEATER COOLING UNIT

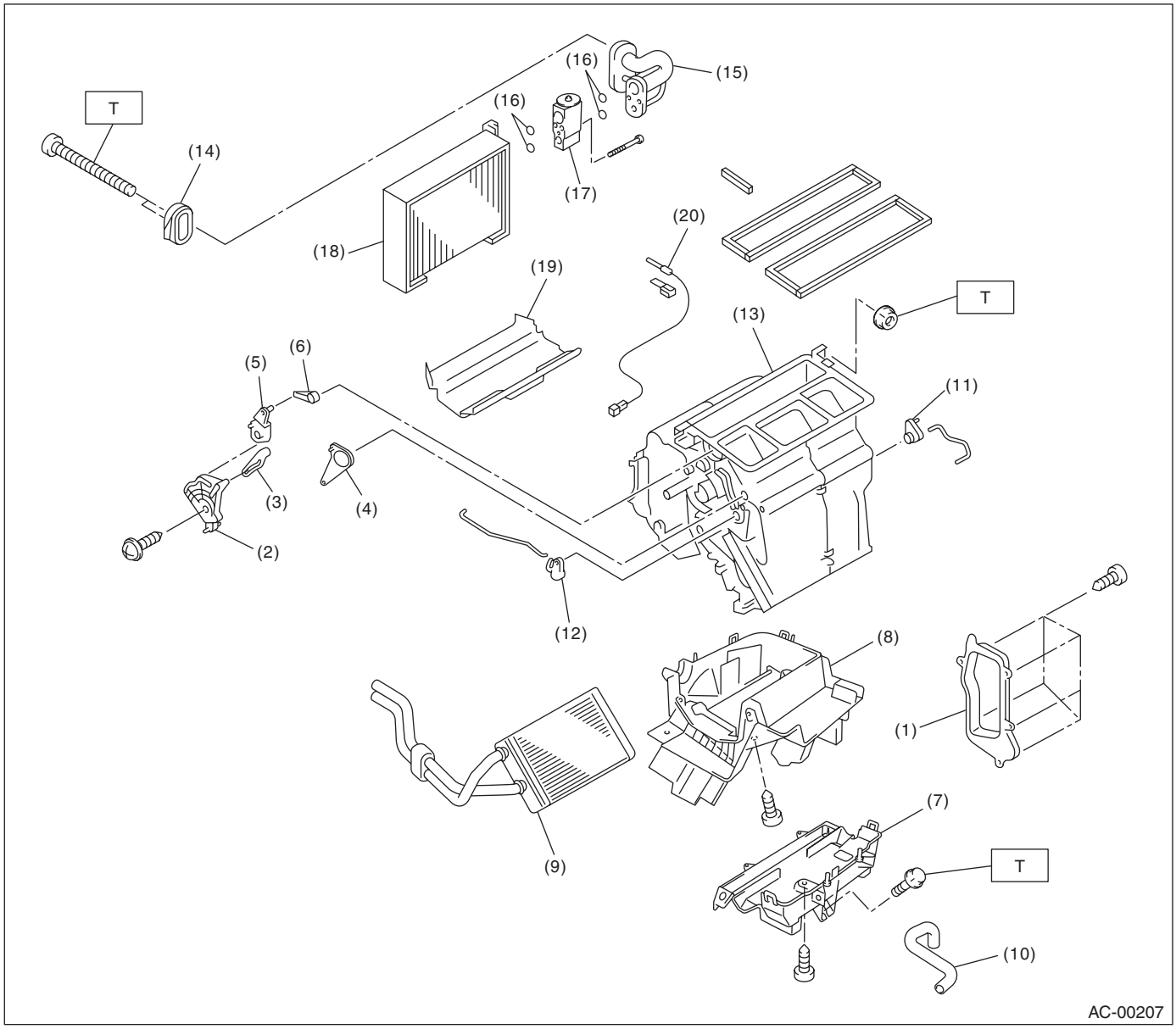
- Auto A/C model



(1) Evaporator cover
(2) Mode actuator
(3) Mode main lever
(4) Vent door lever
(5) Foot door lever
(6) Mode actuator link
(7) Defroster lever
(8) Foot duct
(9) Lower case
(10) Heater core
(11) Drain hose
(12) Mix actuator
(13) Mix door lever
(14) Foot door lever (B)
(15) Upper case
(16) Aspirator
(17) Packing
(18) Cooling unit pipe
(19) O-ring
(20) Expansion valve
(21) Evaporator
(22) Evaporator lining
(23) Evaporator sensor

Tightening torque:N·m (kgf-m, ft-lb)	
T:	*7.5 (0.76, 5.5)*

- Manual A/C model

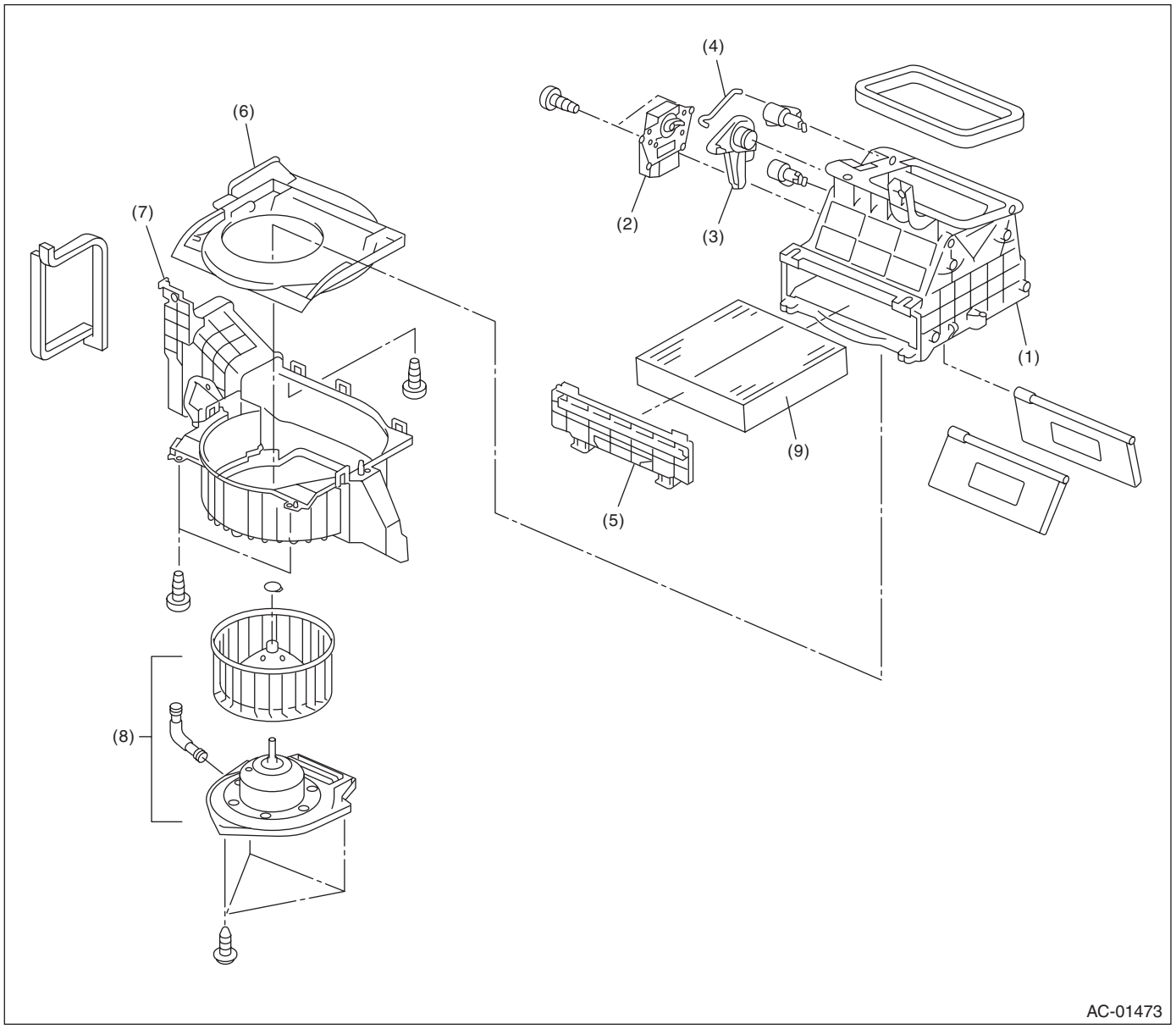


(1) Evaporator cover
(2) Mode main lever
(3) Vent door lever
(4) Foot door lever
(5) Mode actuator link
(6) Defroster lever
(7) Foot duct
(8) Lower case
(9) Heater core
(10) Drain hose
(11) Mix actuator lever
(12) Foot door lever
(13) Upper case
(14) Packing
(15) Cooling unit pipe
(16) O-ring
(17) Expansion valve
(18) Evaporator
(19) Evaporator lining
(20) Evaporator sensor

Tightening torque:N·m (kgf-m, ft-lb)
T: 7.5 (0.76, 5.5)

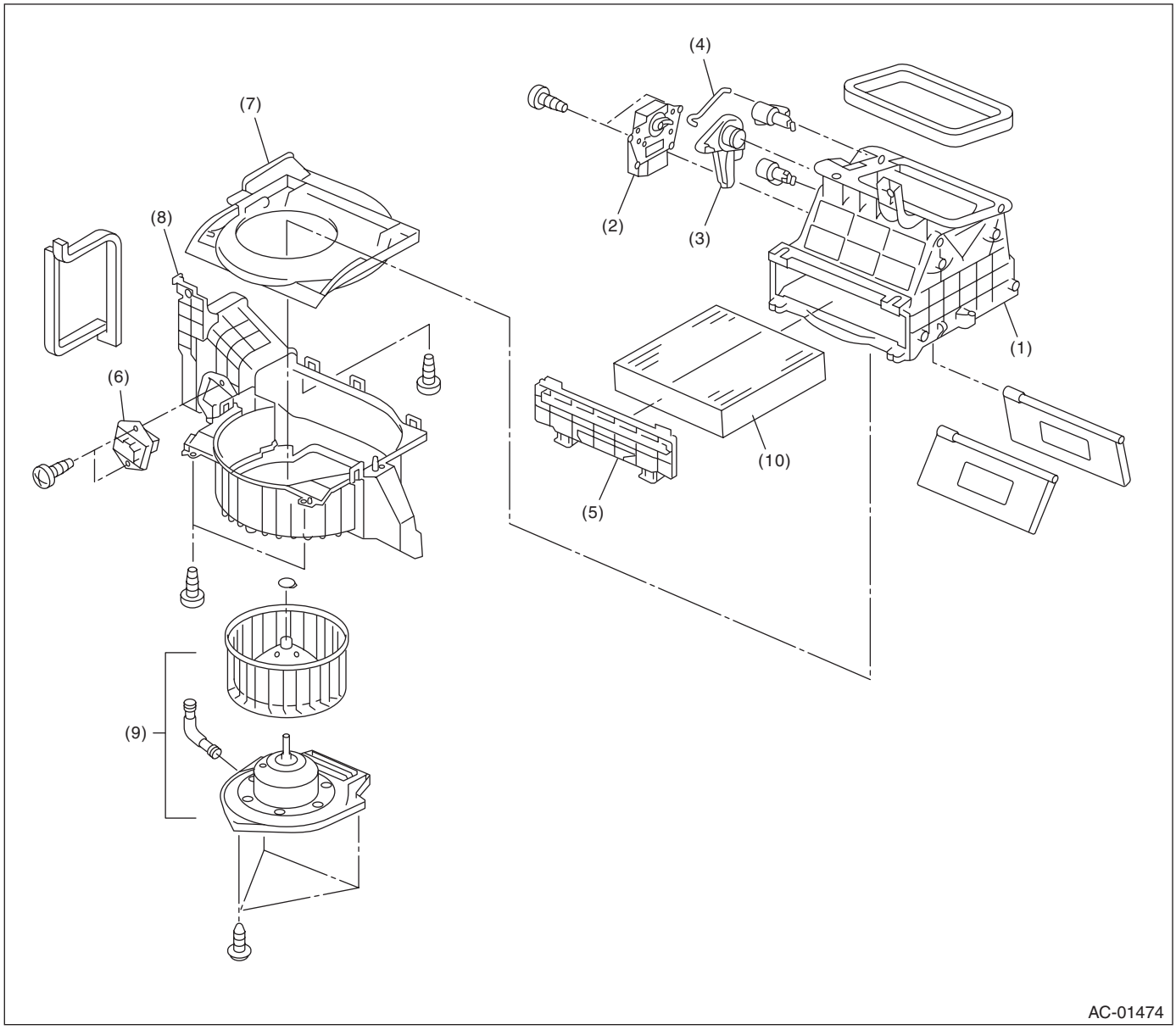
2. BLOWER MOTOR UNIT

- Auto A/C model



(1)	Upper case	(4)	Link lever	(7)	Lower case
(2)	Intake door actuator	(5)	Filter cover	(8)	Blower motor ASSY
(3)	FRESH/RECIRC link	(6)	Cover	(9)	Air conditioner filter

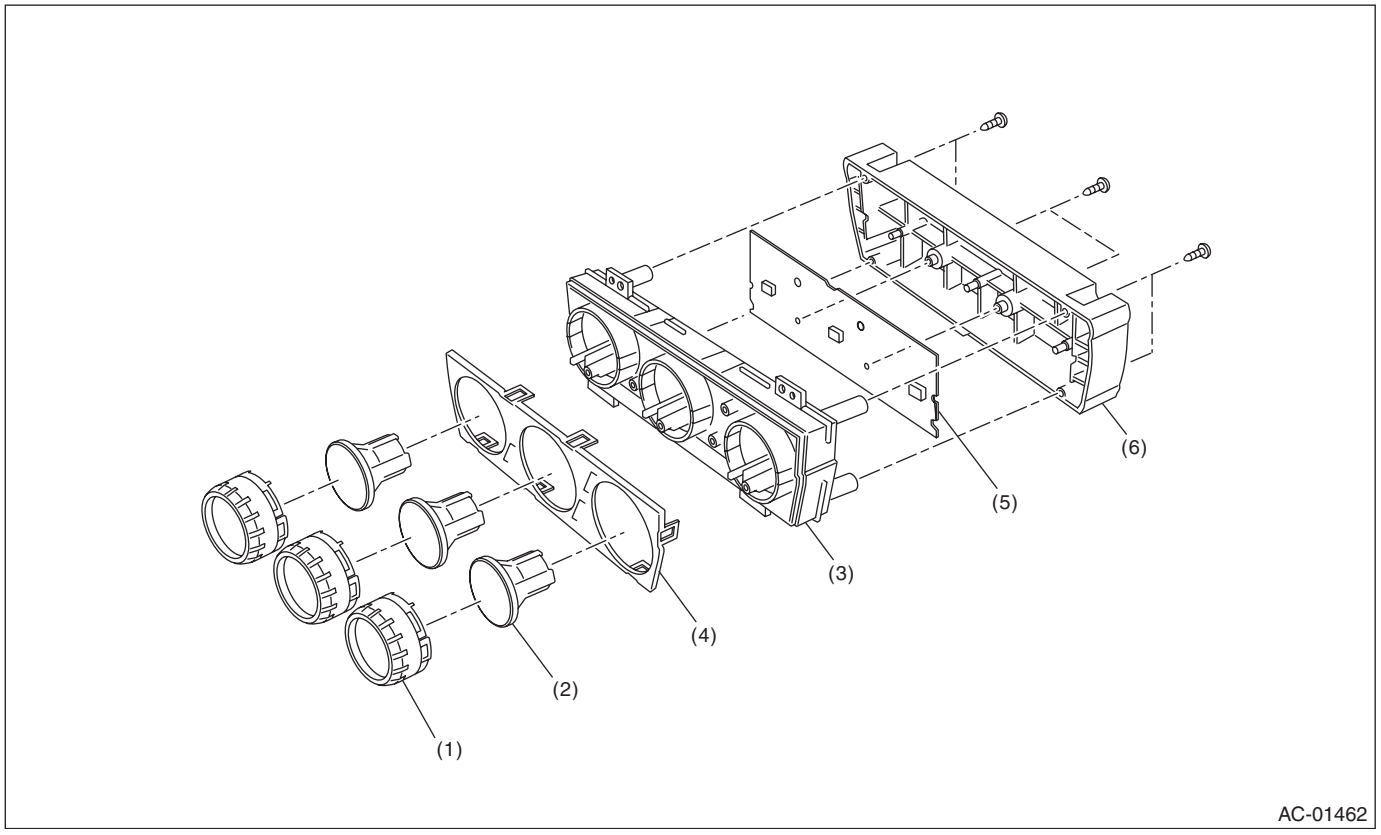
- Manual A/C model



(1) Upper case
(2) Intake door actuator
(3) FRESH/RECIRC link
(4) Link rod
(5) Filter cover
(6) Blower resistor
(7) Cover
(8) Lower case
(9) Blower motor ASSY
(10) Air conditioner filter

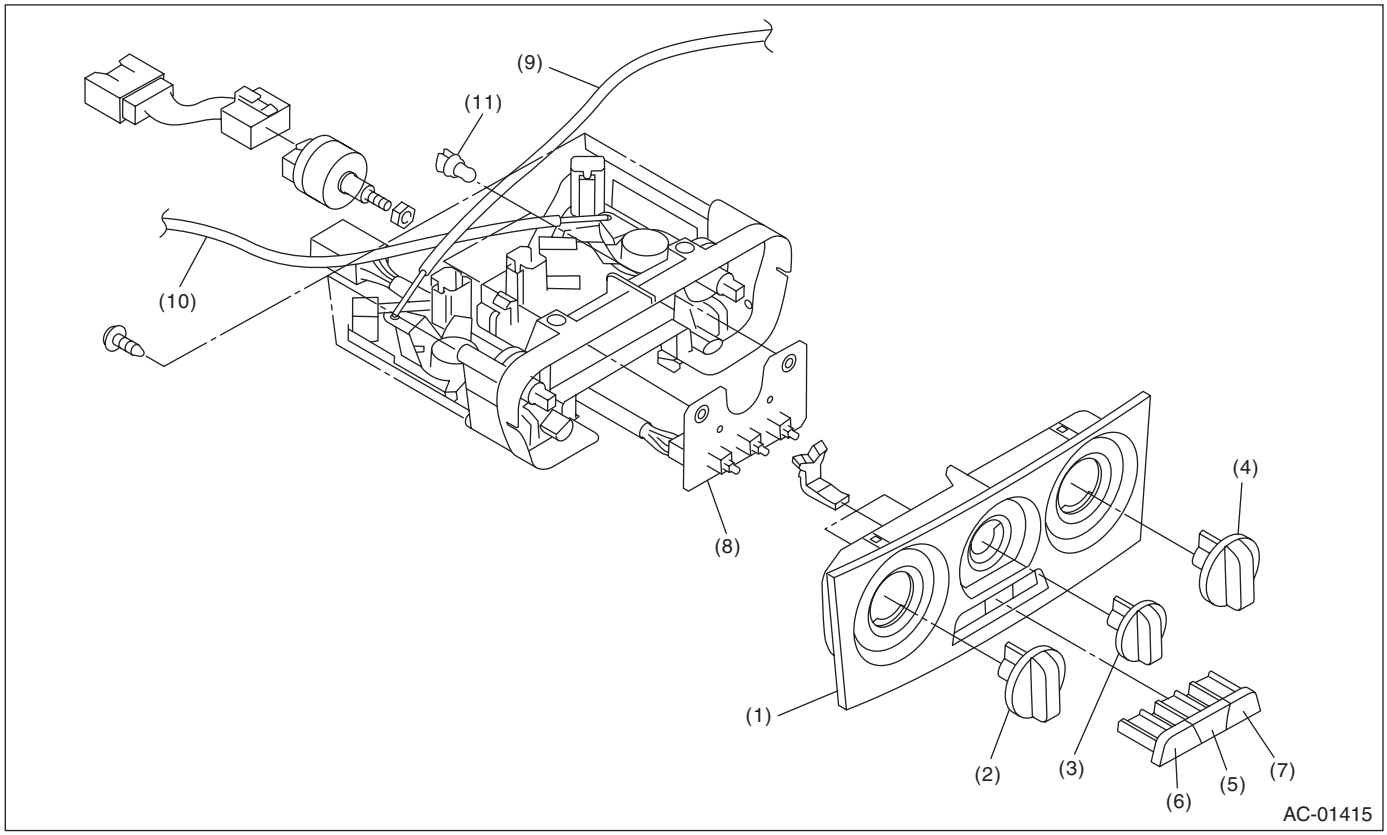
3. CONTROL UNIT

- Auto A/C model



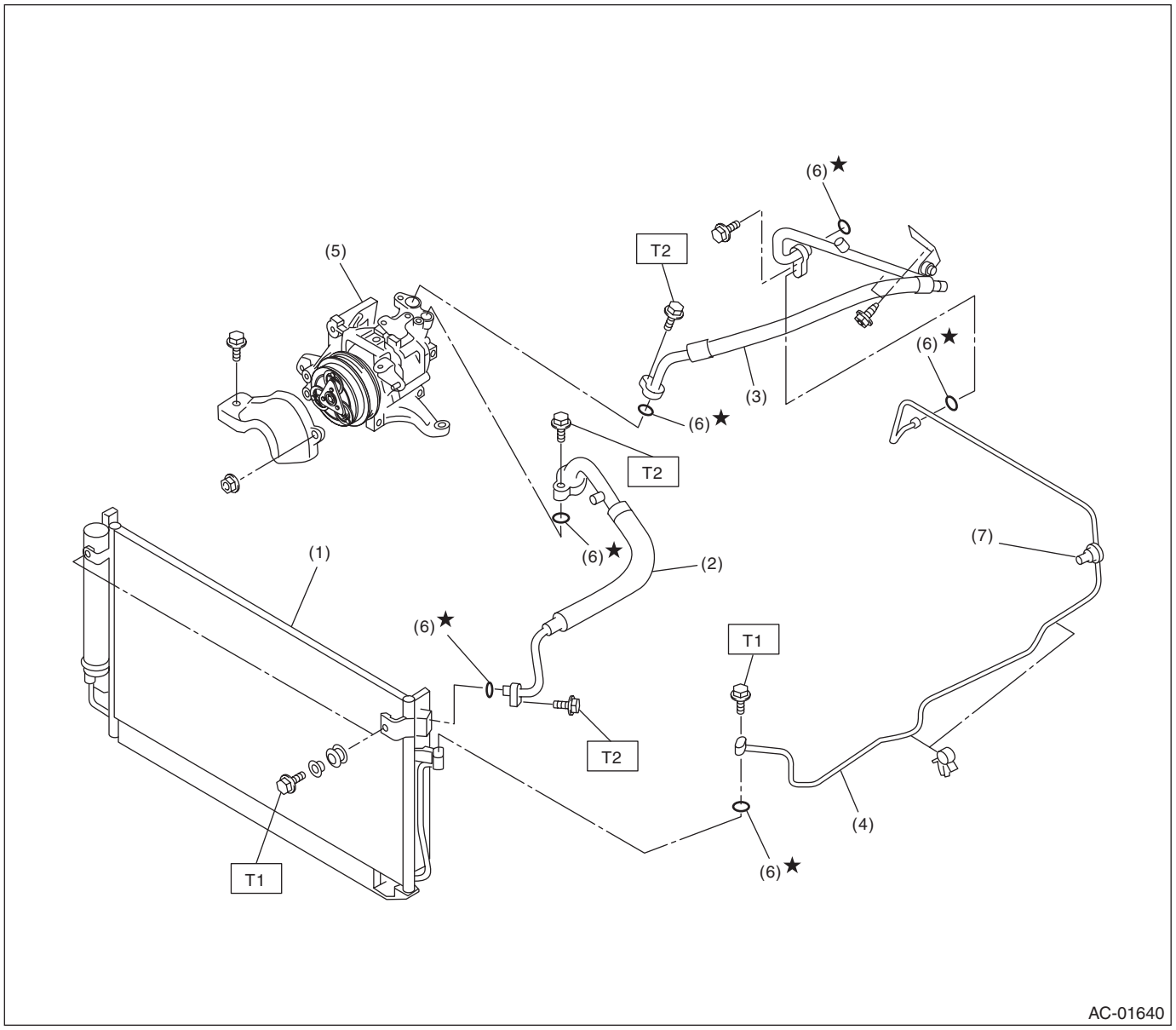
(1) Control dial
(2) Switch
(3) Control case (front)
(4) Front cover
(5) Control unit circuit
(6) Control case (rear)

- Manual A/C model



(1) Panel
(2) Temperature adjustment dial
(3) Fan speed control dial
(4) Mode switch dial
(5) A/C switch
(6) FRESH/RECIRC switch
(7) Rear defogger switch
(8) Switch board
(9) Mode switch cable
(10) Temperature adjustment cable
(11) Valve

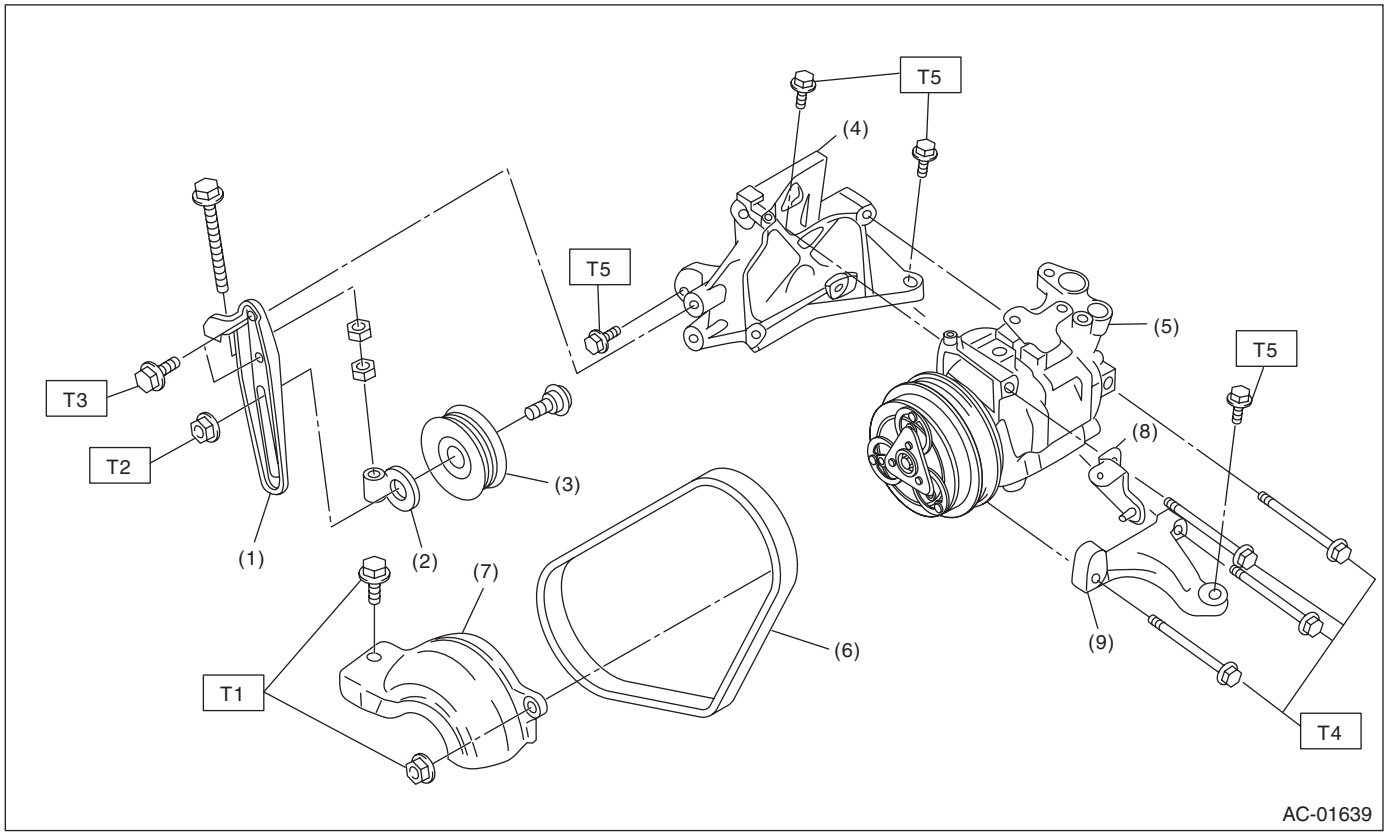
4. AIR CONDITIONING UNIT



(1) Condenser
(2) High-pressure hose
(3) Low-pressure hose
(4) Pipe
(5) Compressor
(6) O-ring
(7) Triple pressure switch

Tightening torque:N·m (kgf-m, ft-lb)
T1: 7.4 (0.75, 5.4)
T2: 15 (1.5, 10.8)

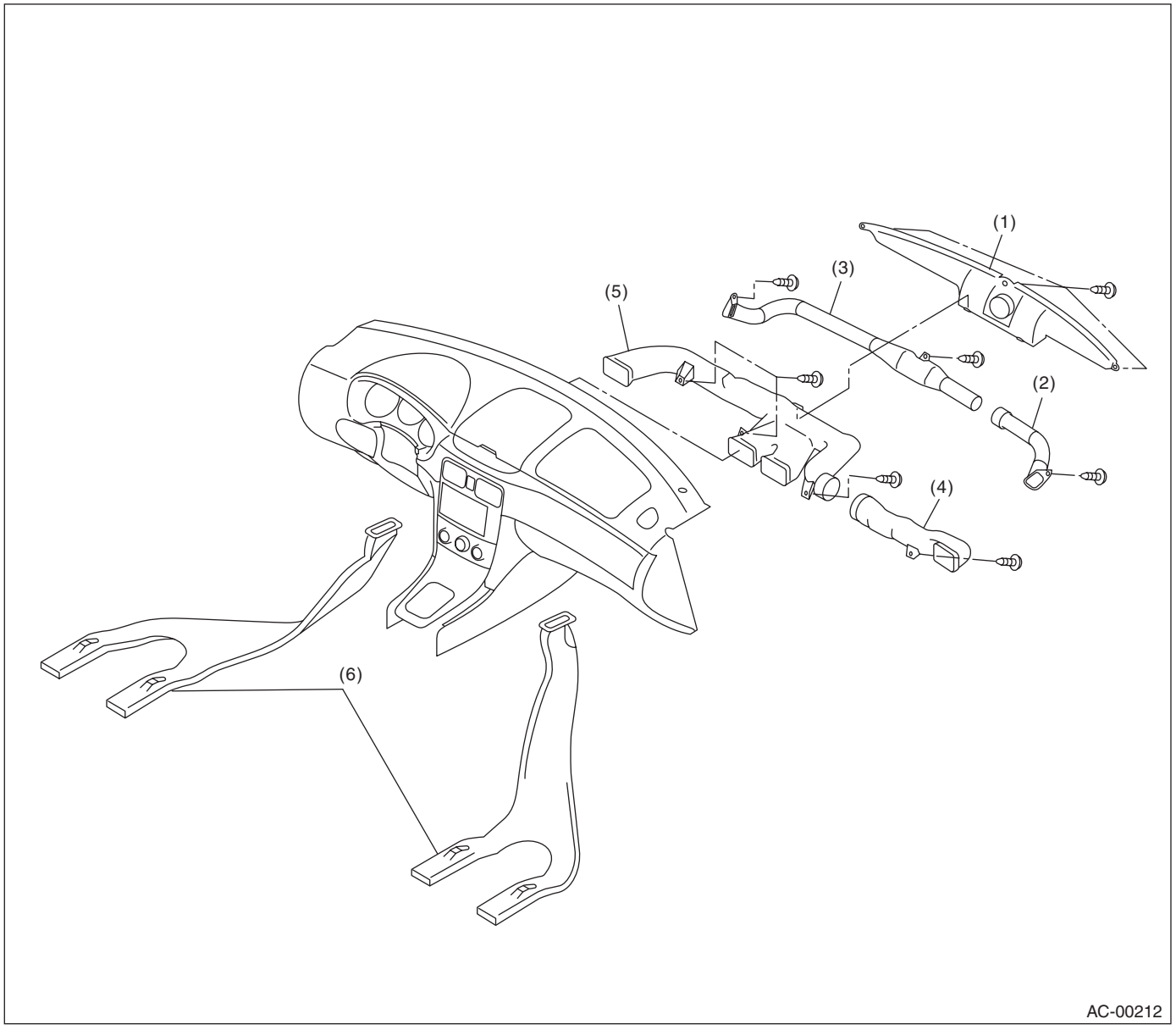
5. COMPRESSOR



(1) Idler pulley bracket
(2) Idler pulley adjuster
(3) Idler pulley
(4) Compressor bracket (A)
(5) Compressor
(6) V-belt
(7) Compressor belt cover (Non-turbo model)
(8) Belt cover bracket
(9) Compressor bracket (B)

Tightening torque:N·m (kgf-m, ft-lb)
T1: 4.0 (0.40, 2.95)
T2: 22.6 (2.3, 16.6)
T3: 23.0 (2.35, 17.0)
T4: 28.9 (2.95, 21.3)
T5: 35 (3.6, 26)

6. HEATER DUCT

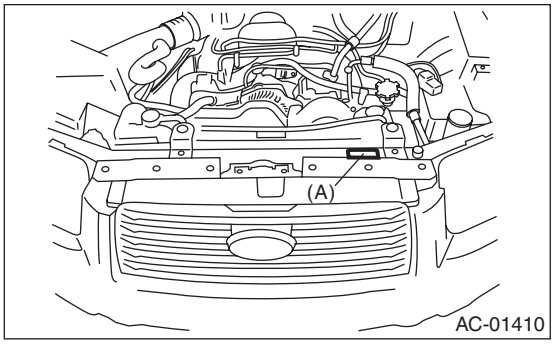


(1) Front defroster nozzle
(2) Side defroster duct (LH)
(3) Side defroster duct (RH)
(4) Side ventilation duct (LH)
(5) Side ventilation duct (RH)
(6) Rear heater duct

C: CAUTION

1. HFC-134A A/C SYSTEM

• The cooling system components for the HFC-134a system such as the refrigerant and compressor oil are different from the conventional CFC-12 system components and they are incompatible with each other.
• Vehicles with the HFC-134a system can be identified by the label (A) attached to the vehicle.
Before maintenance, check which A/C system is installed to the vehicle.



2. COMPRESSOR OIL

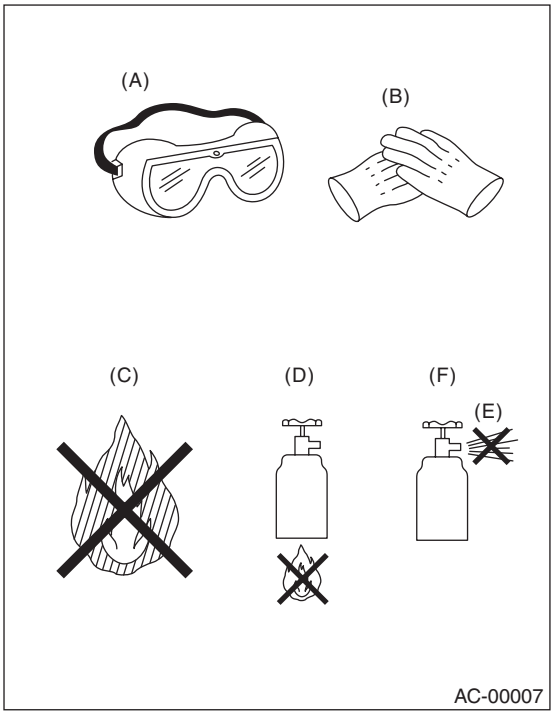
• HFC-134a compressor oil has no compatibility with that for CFC-12 system.
• Use only the manufacturer-authorized compressor oil for the HFC-134a system; only use ZXL200PG.
• Do not mix multiple compressor oils.
If CFC-12 compressor oil is used in the HFC-134a A/C system, the compressor may become stuck due to poor lubrication, or the refrigerant may leak due to swelling of rubber parts.
On the other hand, if HFC-134a compressor oil is used in a CFC-12 A/C system, the durability of the A/C system will be lowered.
• HFC-134a compressor oil is very hygroscopic. When replacing or installing/removing A/C parts, immediately isolate the oil from atmosphere using a plug or tape. In order to avoid moisture, store the oil in a container with its cap tightly closed.

3. REFRIGERANT

• The CFC-12 refrigerant cannot be used in the HFC-134a A/C system. The HFC-134a refrigerant also cannot be used in the CFC-12 A/C system.
• If an incorrect or no refrigerant is used, it will result in poor lubrication and the compressor itself may be damaged.

4. HANDLING OF REFRIGERANT

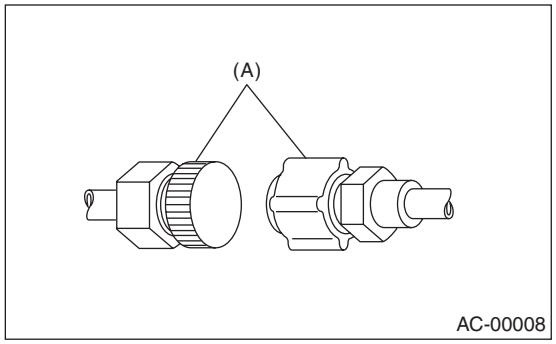
• The refrigerant boils at approx. –30°C (–22°F). When handling it, be sure to wear protective goggles and protective gloves. Direct contact of the refrigerant with skin may cause frostbite.
If the refrigerant gets into your eye, avoid rubbing your eyes with your hands. Wash your eye with plenty of water, and receive medical treatment from an eye doctor.
• Do not heat a service can. If a service can is directly heated, or put into boiling water, the inside pressure will become extremely high. This may cause the can to explode. If a service can must be warmed up, use hot water in 40°C (104°F) max.
• Do not drop or impact a service can. (Observe the precautions and operation procedure described on the refrigerant can.)
• When the engine is running, do not open the high-pressure valve of manifold gauge. The high-pressure gas will back-flow resulting in an explosion of the can.
• Provide good ventilation and do not work in a closed area.
• In order to prevent from global warming, avoid releasing HFC-134a into the atmosphere. Using a refrigerant recovery system, discharge and reuse it.



(A) Goggles
(B) Gloves
(C) Avoid open flame
(D) No direct heat on container
(E) Do not discharge
(F) Loosen

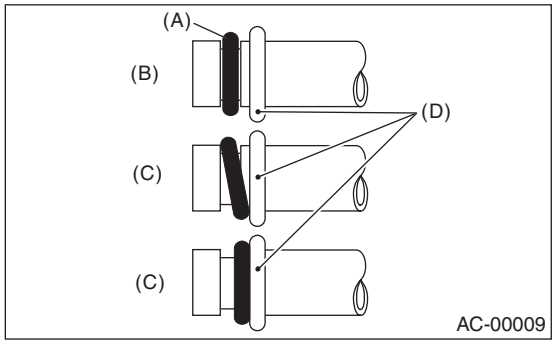
5. O-RING CONNECTIONS

- Always use a new O-ring.
- In order to keep the O-rings free of lint which will cause a refrigerant gas leak, perform operations without gloves and cloth.
- Apply compressor oil to O-rings to avoid sticking, before installation.
- Use a torque wrench to tighten the O-ring fittings. Over-tightening will damage the O-ring and tube end distortion.
- If the operation is interrupted before completing a pipe connection; recap the tubes, components and fittings with a plug or tape to prevent dirt from entering.



(A) Seal

- Visually check the surfaces and mating surfaces of O-rings, threads and connecting points. If a failure is found, replace the applicable parts.
- Install the O-rings straight against the groove of the tube.

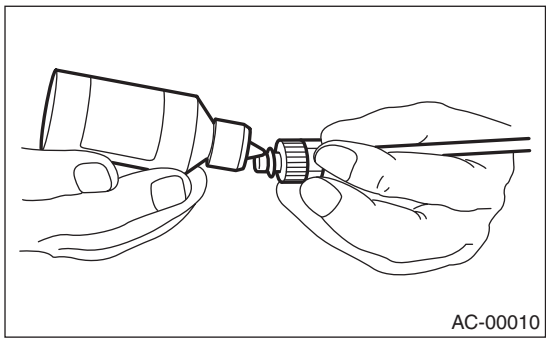


(A) O-ring
(B) OK
(C) NG
(D) Groove

- Use oil specified in the service manual to lubricate the O-rings.

Apply oil to the top and sides of O-rings before installation.

Apply the oil to the area including the O-rings and tube beads.

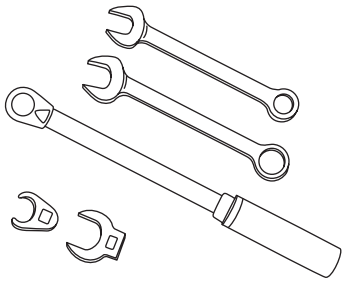
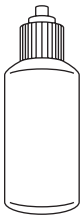
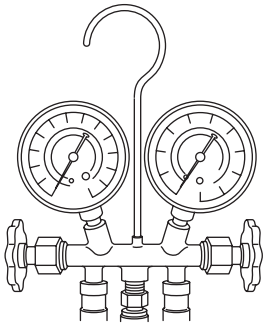
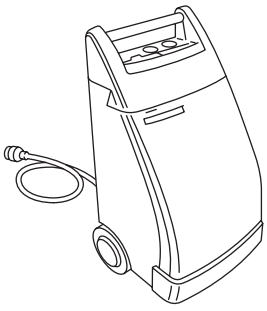


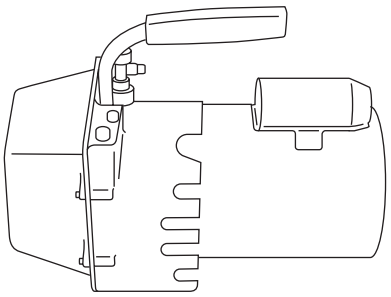
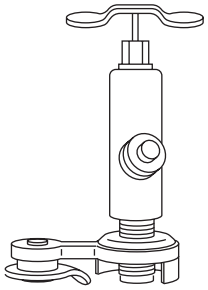
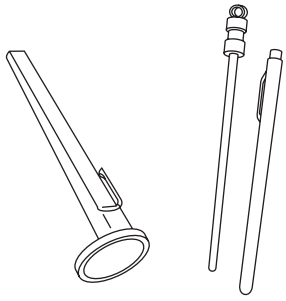
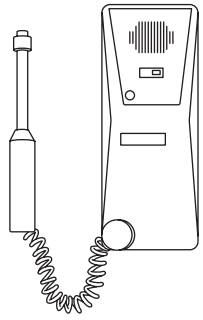
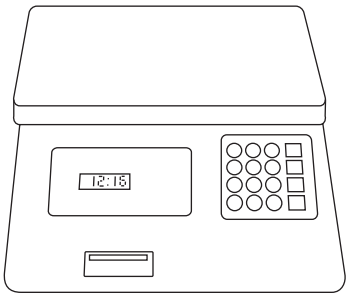
- After tightening, use a clean cloth to remove the excess oil from the connections and any oil which may have run on the vehicle body or other parts.
- If any leakage is suspected after tightening, do not further tighten the connections, but disconnect the connections, remove the O-rings, and check the O-rings, threads, and connections.

D: PREPARATION TOOL

CAUTION:
When working on vehicles with HFC-134a system, only use HFC-134a specified tools and parts. Do not mix with those of CFC-12. If HFC-134a and CFC-12 refrigerant or compressor oil is mixed, it will result in poor lubrication and the compressor itself may be destroyed.
In order to prevent the mixture of HFC-134a and CFC-12 parts and liquid, the tool and screw type and the type of service valves used are different. The gas leak detectors for the HFC-134a and CFC-12 systems must also not be interchanged.

	HFC-134a	CFC-12
Tool & screw type	Millimeter size	Inch size
Valve type	Quick joint type	Screw-in type

Description	Tools and Equipment
 AC-00213	Wrench Various **WRENCHES** will be required to service any A/C system. 7 — 40 N·m (0.7 to 4.1 kgf-m, 5 to 30 ft-lb) torque wrench and various crow-foot wrenches will be needed. Open end or flare nut wrenches will be needed to hold the tube and hose fittings.
 AC-00012	Applicator bottle A small **APPLICATOR BOTTLE** is recommended to apply refrigerant oil to the various parts. It can be available at a hardware or drug store.
 AC-00013	Manifold gauge set A **MANIFOLD GAUGE SET** (with hoses) can be obtained at either a refrigerant supplier or an automotive equipment supplier.
 AC-00014	Refrigerant recovery system A **REFRIGERANT RECOVERY SYSTEM** is used for the recovery and reuse of A/C system refrigerant after contaminants and moisture have been removed from the refrigerant.
AC-00015	Syringe A graduated plastic **SYRINGE** will be needed to add oil into the system again. A syringe can be available at a pharmacy or drug store.

Description	Tools and Equipment
 AC-00016	Vacuum pump A **VACUUM PUMP** (in good working condition) is necessary, and may be obtained from either a refrigerant supplier or an automotive equipment supplier.
 AC-00017	Can tap A **CAN TAP** for the 397 g (14 oz.) can is available at an automotive equipment supplier.
 AC-00018	Thermometer Pocket **THERMOMETERS** are available from either industrial hardware stores or commercial refrigeration supply houses.
 AC-00019	Electronic leak detector An **ELECTRONIC LEAK DETECTOR** can be available at either a specialty tool supplier or an A/C equipment supplier.
 AC-00020	Weight scale A **WEIGHT SCALE** such as an electronic charging scale or a bathroom scale with digital display will be needed, if a 13.6 kg (30 lb) refrigerant container is used.

2. Refrigerant Pressure with Manifold Gauge Set

A: PROCEDURE

1) Place the vehicle in the shade and windless condition.
2) Open the front hood.
3) Connect the manifold gauge set.
4) Open all windows and close all doors.
5) Increase the engine to 1,500 rpm.
6) Turn on the A/C switch.
7) Turn the temperature control switch to MAX COOL.
8) Put in RECIRC position.
9) Turn the blower control switch to HI.
10) Read the gauge.

Standard:
Low pressure:
127 — 196 kPa (1.3 — 2.0 kg/cm^2, 18 — 28 psi)
High pressure:
1,471 — 1,667 kPa (15 — 17 kg/cm^2, 213 — 242 psi)
Ambient temperature:
30 — 35°C (86 — 95°F)

B: INSPECTION

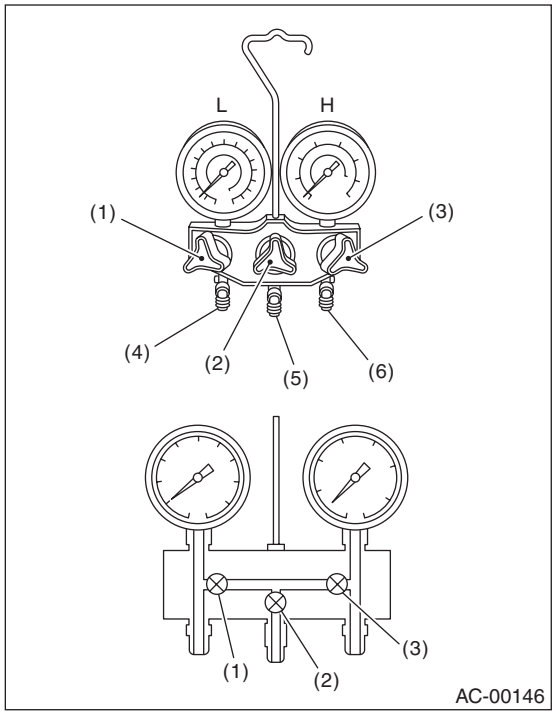
Symptom	Probable cause	Repair order
High-pressure side is unusually high.	• Defective condenser fin motor • Clogged condenser fin • Too much refrigerant • Air inside the system • Defective receiver dryer	• Replace the fan motor. • Clean the condenser fin. • Discharge refrigerant. • Replace the receiver dryer. • After evacuating again, charge an appropriate amount of refrigerant.
High-pressure side is unusually low.	• Defective compressor • Not enough refrigerant • Clogged expansion valve • Expansion valve frozen temporarily by moisture.	• Replace the compressor. • Check for leaks. • Replace the expansion valve. • Fully evacuate the expansion valve.
Low-pressure side is unusually high.	• Defective compressor • Defective expansion valve • Too much refrigerant	• Replace the compressor. • Replace the expansion valve. • Discharge refrigerant.
Low-pressure side is unusually low.	• Not enough refrigerant • Clogged expansion valve • Expansion valve frozen temporarily by moisture. • Saturated receiver dryer	• Check for leaks. • Replace the expansion valve. • Replace the receiver dryer.

3. Refrigerant Recovery Procedure

A: PROCEDURE

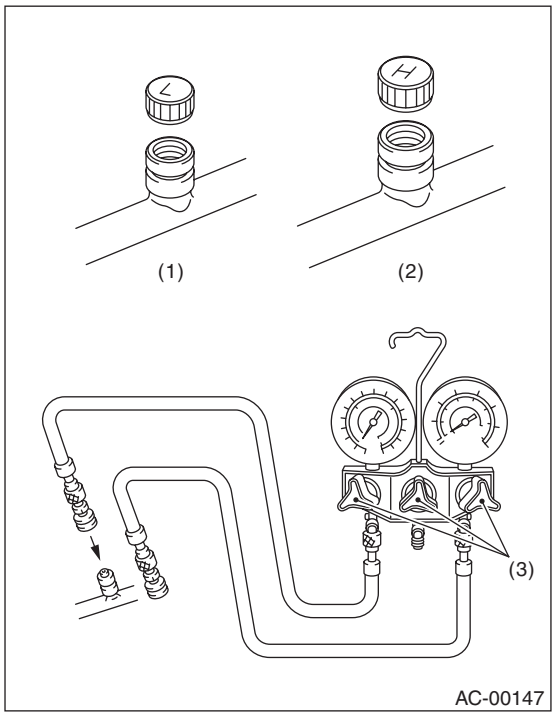
CAUTION:
• During operation, be sure to wear protective goggles and protective gloves.
• Connect the refrigerant recovery system with the manifold gauge set to discharge the refrigerant from the A/C system and reuse it.
• When reusing the discharged refrigerant, keep service cans on hand. Because the recovery rate with the recovery system is approx. 90%, service cans are necessary to charge the refrigerant.
• Follow the detailed operation procedure described in the operation manual attached to the refrigerant recovery system.

1) Perform the compressor oil return operation. <Ref. to AC-26, PROCEDURE, Compressor Oil.>
2) Stop the engine.
3) Make sure the valves on low-/high-pressure sides of manifold gauge set are fully closed.



L: Low-pressure gauge
H: High-pressure gauge
(1) Low-pressure valve
(2) Vacuum pump valve
(3) High-pressure valve
(4) For low pressure
(5) For vacuum pump
(6) For high pressure

4) Install the low-/high-pressure hoses to the service ports on the low-/high-pressure sides of the vehicle respectively.



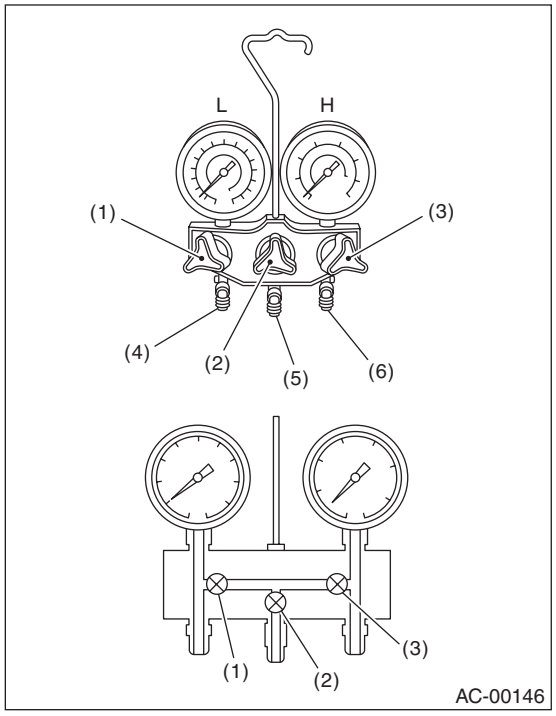
(1) Low-pressure side service port
(2) High-pressure side service port
(3) Close

5) Connect the center hose to the refrigerant recovery system.
6) Follow the operation manual to activate the refrigerant recovery system.

4. Refrigerant Charging Procedure

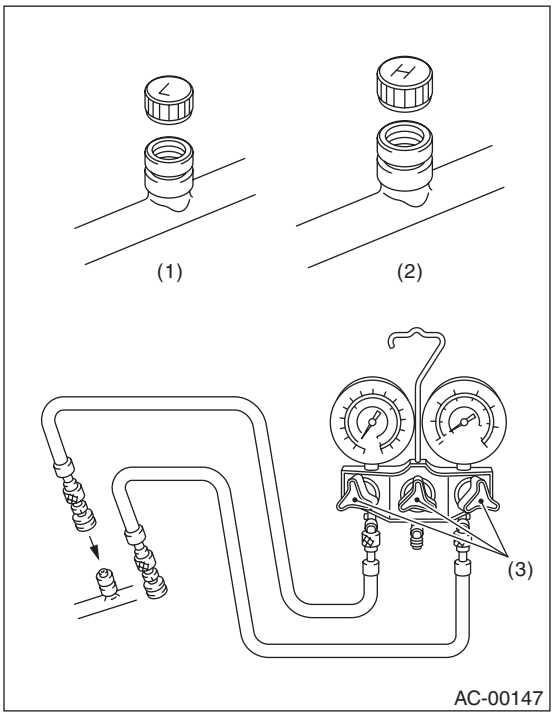
A: PROCEDURE

CAUTION:
• During operation, be sure to wear safety goggles and protective gloves.
• If air is mixed in refrigeration cycle, poor cooling may result, and also if moisture is mixed in refrigeration cycle, clogging (freezing) or rust may result.
Before charging the refrigerant, evacuate the system using vacuum pump to remove air and moisture in the system. Moisture can be evaporated and removed easily even at normal temperature, if the system is evacuated using vacuum pump.
1) Close all valves of the manifold gauge.



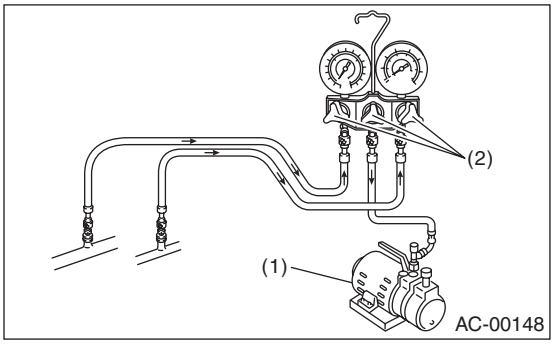
L: Low-pressure gauge
H: High-pressure gauge
(1) Low-pressure valve
(2) Vacuum pump valve
(3) High-pressure valve
(4) For low pressure
(5) For vacuum pump
(6) For high pressure

2) Install the low-/high-pressure hoses to the service ports on the vehicle.



(1) Low-pressure side service port
(2) High-pressure side service port
(3) Close

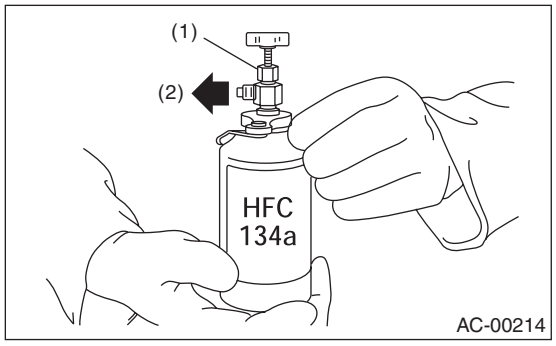
CAUTION:
Be sure that the hoses are securely connected.
3) Connect the center manifold hose of the manifold gauge to the vacuum pump.
4) Operate the vacuum pump, then open the low-/high-pressure sides of the valve. Next, open the center manifold hose valve to begin vacuuming.



(1) Vacuum pump
(2) Open

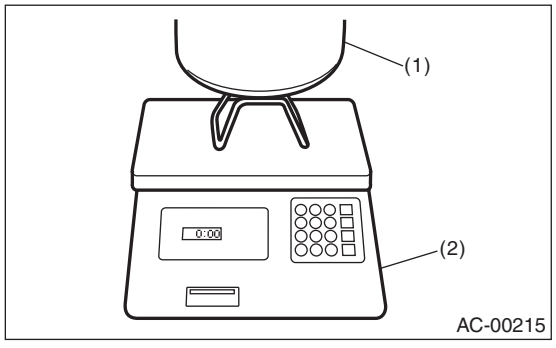
CAUTION:
Be sure to evacuate the system using vacuum pump.

5) After 5 minutes of evacuation, when the reading of the low pressure gauge is 100.0 kPa (750 mmHg, 29.5 inHg) or higher, close the valves on the center manifold hose and stop the vacuum pump.
6) Keep the status for 5 to 10 minutes after closing both the low pressure side and high pressure side valves, then check if there is any change in the low pressure gauge indicator. When the gauge indicator changes, it is a sign of leakage. Check and repair the connections of the pipe and hose. After repairing fault, repeat from step 1).
7) If there is a leak, continue vacuuming for another 20 to 30 minutes.
8) Close all the valves and stop the vacuum pump.
9) Following the can tap operation manual to install it to the refrigerant can.



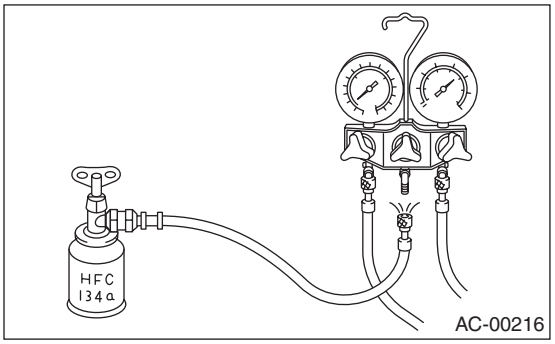
(1) Tap valve
(2) Center manifold hose

10) Disconnect the center manifold hose from the vacuum pump, and connect the hose to the tap valve.
11) When a refrigerant recovery container is used, measure the refrigerant amount in use using a weight scale. Then, connect with the center manifold hose.

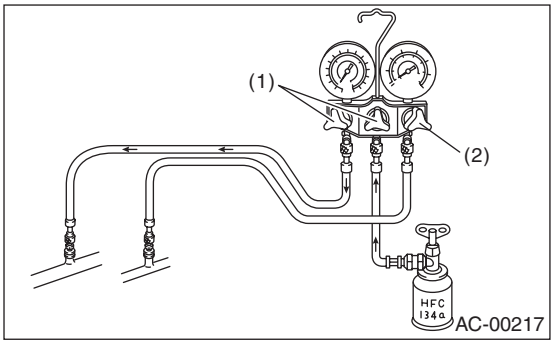


(1) Refrigerant recovery container
(2) Weight scale

12) Open the valve on the HFC-134a source.
13) Loosen the center manifold hose connection on the manifold gauge set (if applicable, press a purge valve on the manifold gauge) only for a couple of seconds to allow the air in the center manifold hose to be bled by the refrigerant pressure.



14) Open the high pressure side valve and the low pressure side valve on the manifold gauge and fill the coolant.



(1) Open
(2) Open

CAUTION:
When starting the engine and filling, do not open the high pressure side valve. Always make sure to fill from the lower pressure side.
15) Close all valves when the gauge indicator reaches 200 kPa (1,500 mmHg, 59.1 inHg).
16) Using a leak tester, check the system for coolant leaks.
17) After checking for coolant leaks, fill the coolant to the prescribed level.
18) If the HFC-134a source is empty, close all valves, close the valve on the can tap, and replace the empty source with a new part. After replacing HFC-134a source with a new part, and purging the air, restart the work.
19) If the filling efficiency of the coolant worsens, close all valves.
20) Check that the valves on low-/high-pressure sides are closed. Start the engine with the A/C switch OFF.
21) To prevent damaging the compressor, turn the A/C switch ON and OFF several times quickly.

22) Set up the vehicle to the following status:

CAUTION:
When starting the engine and filling, do not open the high pressure side valve. Always make sure to fill from the lower pressure side.

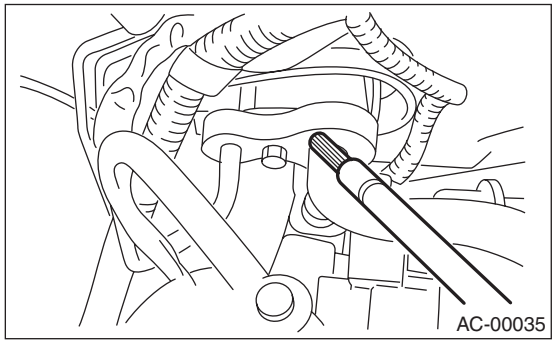
- A/C switch ON
- Engine running at 1,500 rpm
- Blower speed setting to “HI”
- Temperature setting to “MAX COOL”
- Air inlet setting to “RECIRC”
- Window open

23) Open the low pressure side valve and fill the coolant to the prescribed level.
24) After filling the coolant, close all valves and remove the hose from the service port.
25) Mount the cap to the service port.

5. Refrigerant Leak Check

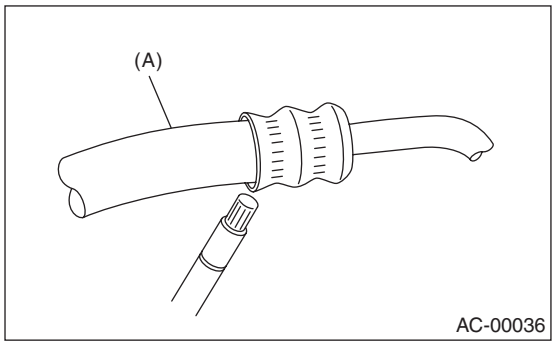
A: INSPECTION

1) Operate the A/C system for approx. 10 minutes, and check that the high-side pressure shows at least 690 kPa (7.03 kg/cm^2, 100 psi). Then stop the engine to start the leak test.
2) Starting from the connection between high-pressure pipe and evaporator, check the system for leaks along the high-pressure side through the compressor. The following items must be checked thoroughly.
3) Check the joint and seam between pressure switch (triple pressure switch) and high-pressure pipe.
4) Check the connections between condenser and pipes, and welded joints on the condenser.
The leak tester may detect the oil on the condenser fins as a leak.
5) Check the joint between compressor and hoses.
6) Check the machined area of compressor and other joints on the compressor.
7) Check the compressor shaft seal at the area near the center of compressor clutch pulley.
Some shaft seals show a slight amount of leakage about 10 g (0.4 oz) per year. This is not a problem.
8) Starting from the connection between low-pressure pipe and evaporator, check the system for leakage along the low-pressure side through the compressor. The following items must be checked thoroughly.
- Connection between 2 parts
- Connection between pipe and plate


AC-00035

9) Visually check the rubber area of the flexible hose for cracks.
Check the entire length of the flexible hose, especially the connection with the metal hose end.

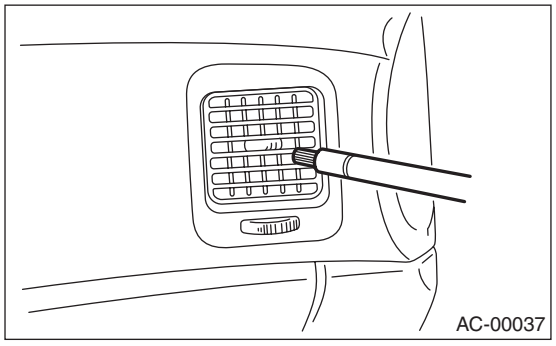
CAUTION:
Carefully check the external surface of hoses and tubes at approx. 25 mm (0.98 in) per second.



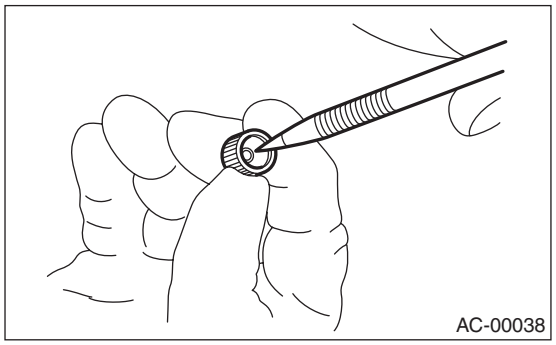
AC-00036

(A) Flexible hose

10) Disconnect the drain hose from heater case, and check the hose end for at least 10 seconds.
After the test is finished, reconnect the drain hose.
11) Turn the ignition key to the ON position, and run the blower at high speed for approx. 1 minute. Stop the blower to check the ventilation grille on the instrument panel. While moving the tester closer to the grille, run the blower for 1 or 2 seconds, then stop it. Check the grille at that point for at least 10 seconds.


AC-00037

12) Check the valve in the service port.
13) Visually check the rubber seal in the service port cap.


AC-00038

6. Compressor Oil

A: PROCEDURE

NOTE:
Before making repairs, conduct the oil return operation to return the compressor oil to the compressor in circulation with the refrigerant.
1) Increase the engine to 1,500 rpm.
2) Turn on the A/C switch.
3) Turn the temperature control switch to MAX COOL.
4) Put in RECIRC position.
5) Turn the blower control switch to HI.
6) Leave in this condition for 10 minutes.

B: REPLACEMENT

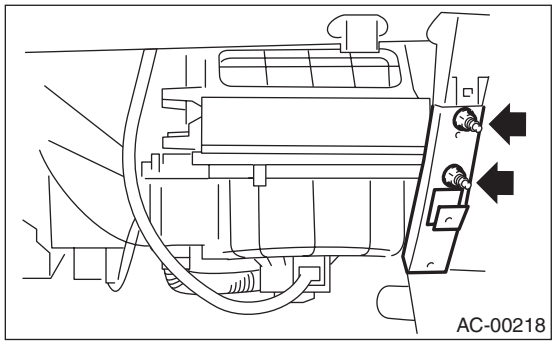
NOTE:
• After replacing the component, add an appropriate amount of compressor oil (same as the amount of remaining oil in removed component).
• When replacing the compressor, the new compressor will already have the specified amount of oil in it. Install the new compressor after removing the oil so that the amount of oil is same as the amount of remaining oil in the removed compressor.

Replacement parts	Amount of oil replenishment
Evaporator	Approximately 35 m ℓ (1.2 US fl oz, 1.2 Imp fl oz)
Condenser (with receiver drier)	Approximately 15 m ℓ (0.5 US fl oz, 0.5 Imp fl oz)
Receiver drier	Approximately 10 m ℓ (0.4 US fl oz, 0.4 Imp fl oz)
Hose layout	Approximately 5 m ℓ (0.2 US fl oz, 0.2 Imp fl oz)

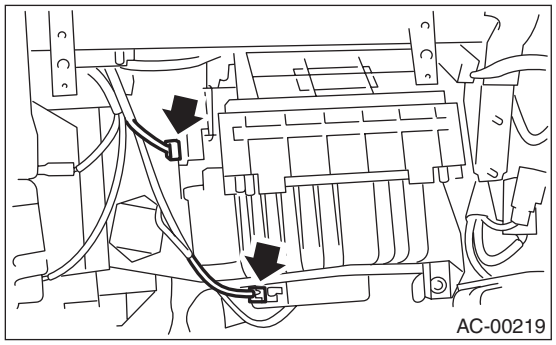
7. Blower Motor Unit Assembly

A: REMOVAL

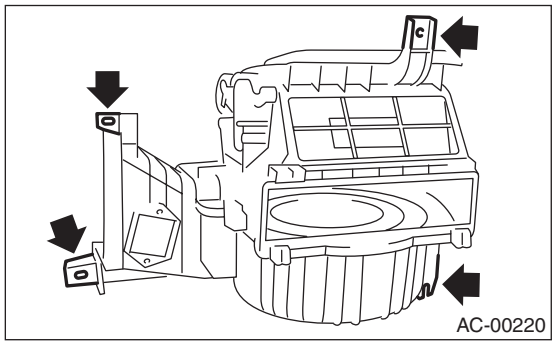
1) Disconnect the ground cable from the battery.
2) Remove the glove box. <Ref. to EI-35, REMOVAL, Glove Box.>
3) Loosen the nut to remove support beam stay.



4) Disconnect the connectors of the blower motor and intake actuator register.



5) Loosen the bolt and nut to remove blower motor unit assembly.



B: INSTALLATION

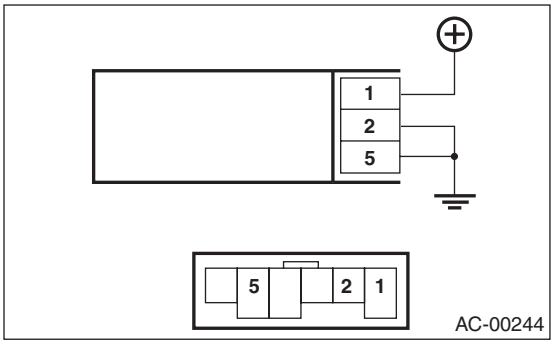
Install in the reverse order of removal.

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to AC-7, HEATER COOLING UNIT, COMPONENT, General Description.> <Ref. to AC-9, BLOWER MOTOR UNIT, COMPONENT, General Description.>

C: INSPECTION

Inspection of auto A/C brushless motor operation.

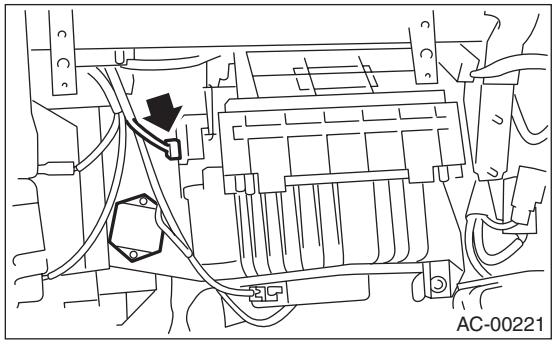
Connect the motor connector terminal 1 from the battery to the positive (+) lead and terminals 2 and 5 at the same time to the negative (–) lead. Make sure the motor runs smoothly.



8. Blower Resistor (Manual A/C Model)

A: REMOVAL

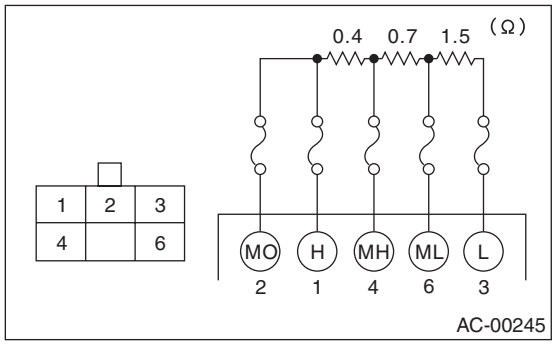
1) Remove the glove box. <Ref. to EI-35, REMOVAL, Glove Box.>
2) Disconnect the blower resistor connector.
3) Loosen the two screws and remove the blower resistor.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION



Measure the blower resistor resistance.

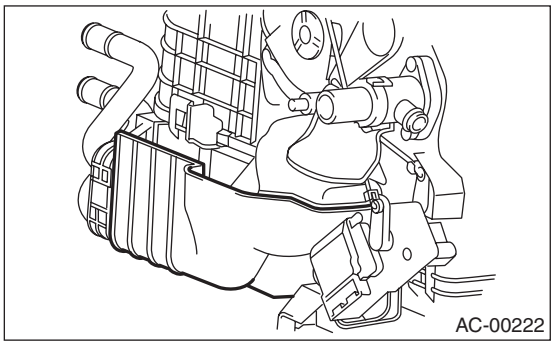
Terminal No.	Standard
2 — 1	Approximately 0 Ω
2 — 4	Approximately 0.4 Ω
2 — 6	Approximately 1.1 Ω
2 — 3	Approximately 2.6 Ω

If NG, replace the blower resistor.

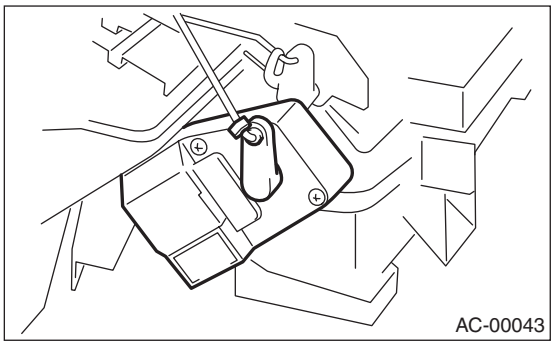
9. Heater Core

A: REMOVAL

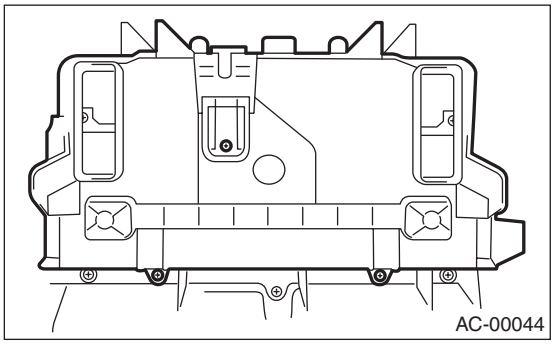
1) Remove the heater and cooling unit. <Ref. to AC-34, REMOVAL, Heater and Cooling Unit.>
2) Open the heater core pipe cover.


AC-00222

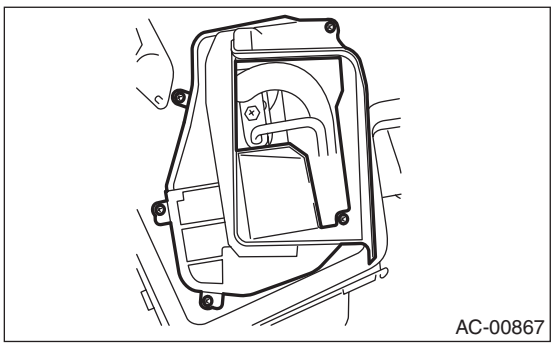
3) Loosen the screws to remove the mode actuator.


AC-00043

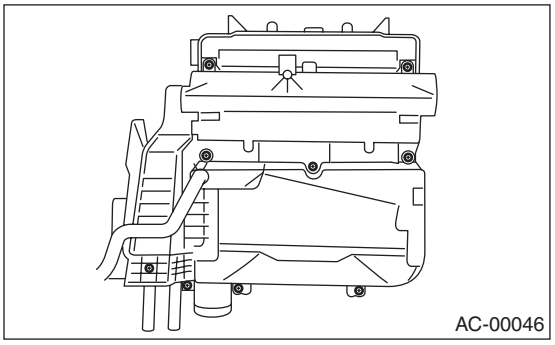
4) Loosen the screws to remove the foot duct.


AC-00044

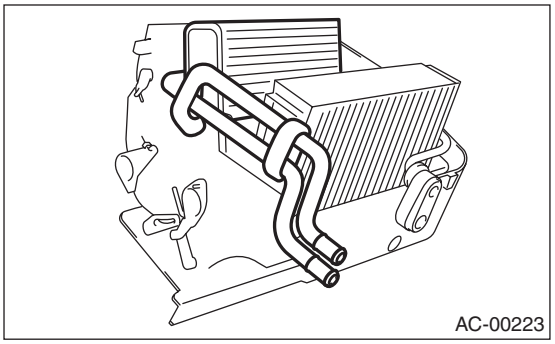
5) Loosen the screws to remove evaporator cover.


AC-00867

6) Loosen the screws to remove lower case.


AC-00046

7) Remove the heater core.


AC-00223

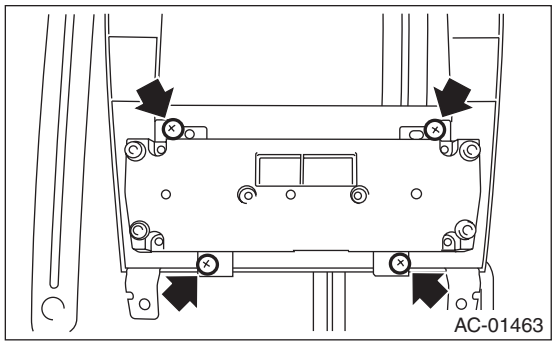
B: INSTALLATION

Install in the reverse order of removal.

10.Control Unit

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) For manual A/C, remove the mode cable and air mix cable from the each link of the heater unit.
3) Remove the console front cover. <Ref. to EI-38, REMOVAL, Instrument Panel Assembly.>
4) Loosen the four screws on the backside of the center console panel and remove the control unit.



B: INSTALLATION

Install in the reverse order of removal.

11.Compressor

A: INSPECTION

1. MAGNETIC CLUTCH CLEARANCE

Check the clearance of entire circumference around the drive plate and pulley.

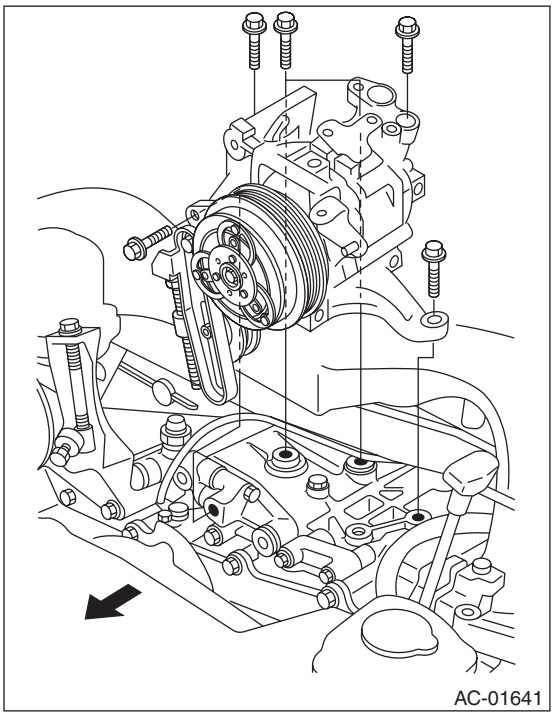
Standard:
0.3 — 0.6 mm (0.0118 — 0.0236 in)

2. MAGNETIC CLUTCH OPERATION

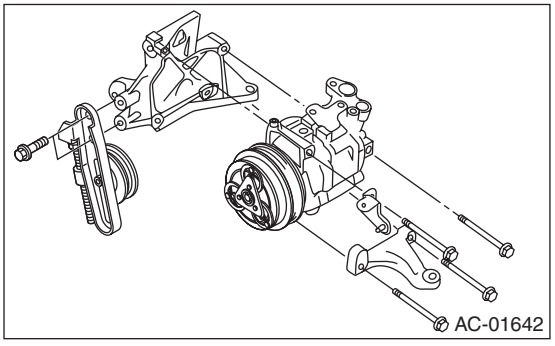
1) Disconnect the compressor connector.
2) Connect the battery positive (+) terminal to the terminal of the compressor connector.
3) Confirm the magnet clutch engagement.
If NG, replace the compressor.

B: REMOVAL

1) Perform the compressor oil return operation. <Ref. to AC-26, PROCEDURE, Compressor Oil.>
2) Turn the A/C switch to OFF and stop the engine.
3) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-21, PROCEDURE, Refrigerant Recovery Procedure.>
4) Disconnect the ground cable from the battery.
5) Remove the V-belts. <Ref. to ME(H4SO)-41, REMOVAL, V-belt.> <Ref. to ME(H4DOTC)-39, REMOVAL, V-belt.>
6) Remove the generator. <Ref. to SC(H4SO)-14, REMOVAL, Generator.>
7) Remove the low-pressure hose and high-pressure hose from the compressor.
8) Disconnect the compressor harness from body harness.
9) Remove the bolts and then remove the compressor bracket.


AC-01641

10) Remove the bolts, then remove the bracket from the compressor.


AC-01642

C: INSTALLATION

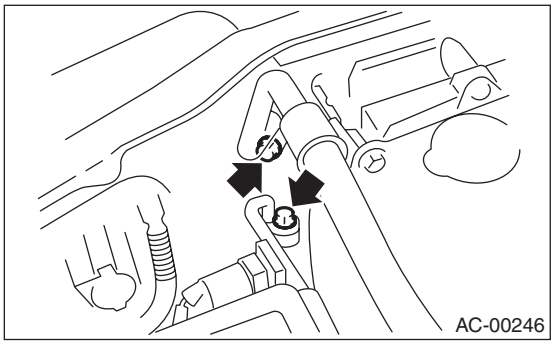
1) Install in the reverse order of removal.
2) Replace the O-rings on low-/high-pressure hoses with new parts, then apply compressor oil.
3) After replacing the compressor, adjust amount of compressor oil. <Ref. to AC-26, PROCEDURE, Compressor Oil.>
4) Charge refrigerant. <Ref. to AC-22, PROCEDURE, Refrigerant Charging Procedure.>

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to AC-13, AIR CONDITIONING UNIT, COMPONENT, General Description.> <Ref. to AC-14, COMPRESSOR, COMPONENT, General Description.>

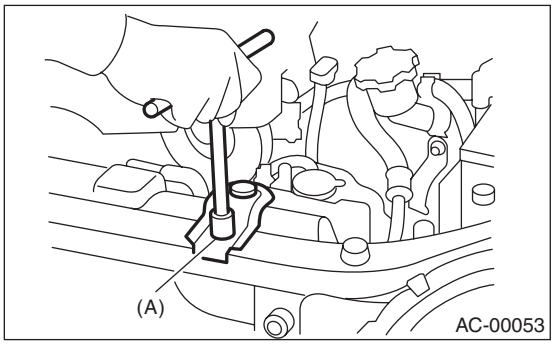
12.Condenser

A: REMOVAL

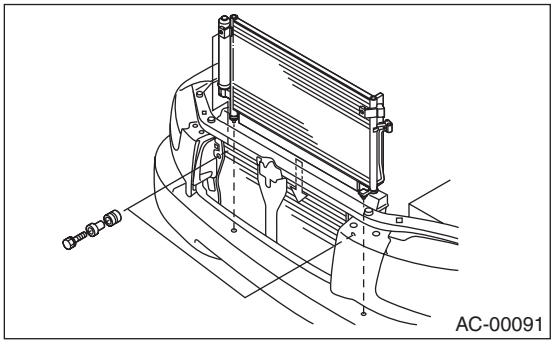
1) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-21, PROCEDURE, Refrigerant Recovery Procedure.>
2) Disconnect the ground cable from the battery.
3) Disconnect the pressure hose and pipe from the condenser.



4) Remove the radiator bracket (A).



5) Remove two bolts. While lifting condenser, pull it out through space between the radiator and the radiator panel.

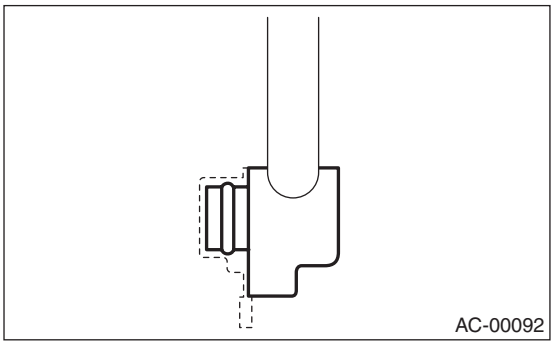


CAUTION:
Be careful not to damage the radiator fins and condenser fins. If a damaged fin is found, repair it using a thin screwdriver.
If the condenser is replaced, add appropriate amount of compressor oil to the compressor. <Ref. to AC-26, REPLACEMENT, Compressor Oil.>

B: INSTALLATION

1) Install in the reverse order of removal.

CAUTION:
Replace the O-rings on hoses or pipes with new parts, and then apply compressor oil. Confirm that lower guide of condenser fits into holes on radiator panel.



2) Charge refrigerant. <Ref. to AC-22, PROCEDURE, Refrigerant Charging Procedure.>

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to AC-13, AIR CONDITIONING UNIT, COMPONENT, General Description.> <Ref. to CO(H4SO)-6, RADIATOR AND ELECTRIC FAN, COMPONENT, General Description.>

C: INSPECTION

1) Confirm that no dust or insects are found on the condenser fins. Air-blow or flush fins with water as needed.
2) Confirm that no oil leakage from the condenser. If a failure is found, replace the condenser with a new part.

13.Condenser (Sub Fan)

A: REMOVAL

<Ref. to CO(H4SO)-32, REMOVAL, Radiator Main Fan and Fan Motor.>

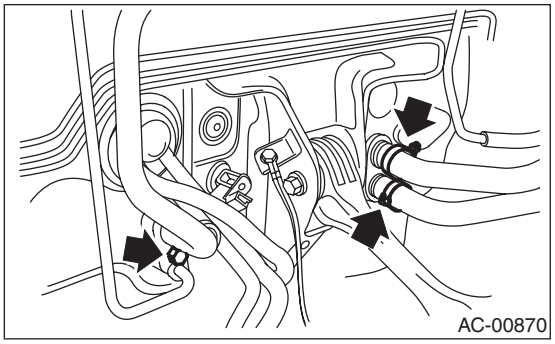
B: INSTALLATION

<Ref. to CO(H4SO)-35, INSTALLATION, Radiator Main Fan and Fan Motor.>

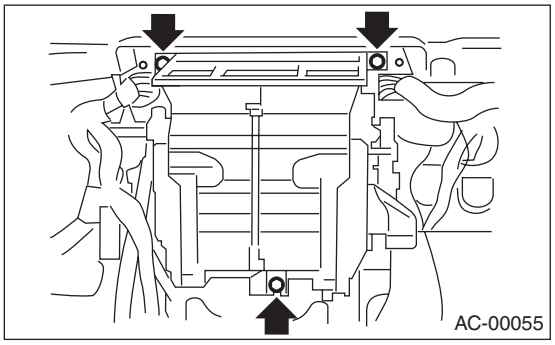
14.Heater and Cooling Unit

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-21, PROCEDURE, Refrigerant Recovery Procedure.>
3) Drain LLC from the radiator.
4) Remove the bolts securing expansion valve and pipe in engine compartment. Release the heater hose clamps in engine compartment to disconnect the hoses.


AC-00870

5) Remove the instrument panel. <Ref. to EI-38, REMOVAL, Instrument Panel Assembly.>
6) Remove the support beam.
7) Remove the blower motor unit assembly. <Ref. to AC-27, REMOVAL, Blower Motor Unit Assembly.>
8) Disconnect the servo motor connector.
9) Loosen the bolt and nuts and remove the heater and cooling unit.


AC-00055

B: INSTALLATION

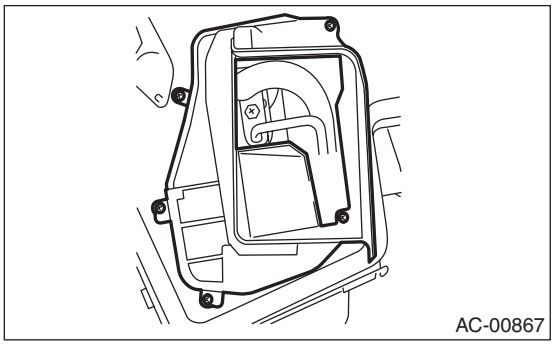
1) Install in the reverse order of removal.
2) Charge refrigerant. <Ref. to AC-22, PROCEDURE, Refrigerant Charging Procedure.>

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to AC-7, HEATER COOLING UNIT, COMPONENT, General Description.>

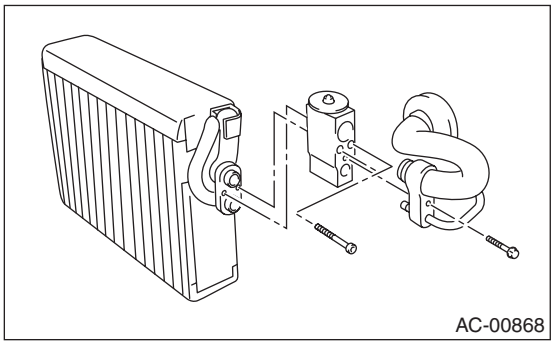
15.Evaporator

A: REMOVAL

1) Disconnect the refrigerant recovery & toe board A/C pipe. <Ref. to AC-21, PROCEDURE, Refrigerant Recovery Procedure.>
2) Remove the glove box.
3) Remove the blower motor unit assembly. <Ref. to AC-27, REMOVAL, Blower Motor Unit Assembly.>
4) Loosen the screws to remove evaporator cover.


AC-00867

5) Remove the auto A/C hose in the unit.
6) Rotate the evaporator core top portion to the front of the vehicle and the bottom portion to lay over into the compartment, then pull out the heater case to the left side.
7) Loosen the two bolts to remove the expansion valve.


AC-00868

CAUTION:
If the evaporator is replaced, add an appropriate amount of compressor oil to evaporator. <Ref. to AC-26, REPLACEMENT, Compressor Oil.>

B: INSTALLATION

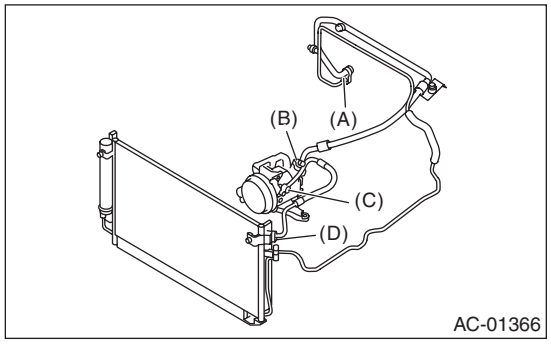
Install in the reverse order of removal.

NOTE:
Replace the O-rings on the pipes with new parts, and then apply compressor oil.

16.Hose and Tube

A: REMOVAL

CAUTION:
• When disconnecting/connecting hoses, do not apply an excessive force to them. Confirm that no torsion and excessive tension is charged after installing.
• Seal the disconnected hose with a plug or vinyl tape to prevent dirt from entering.
1) Disconnect the ground cable from the battery.
2) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-21, PROCEDURE, Refrigerant Recovery Procedure.>
3) Remove the evaporator unit attaching bolts (A).
4) Remove the low-pressure hose attaching bolts (B).
5) Disconnect the low-pressure hose from evaporator unit.
6) Disconnect the low-pressure hose from compressor.
7) Remove the low-pressure hose from vehicle.
8) Remove the high-pressure hose attaching bolts (C).
9) Disconnect the high-pressure hose from compressor.
10) Disconnect the high-pressure hose from condenser.
11) Remove the high-pressure hose from vehicle.
12) Remove the high-pressure tube attaching bolt (D).
13) Remove the high-pressure tube from vehicle.



B: INSTALLATION

CAUTION:
• When disconnecting/connecting hoses, do not apply an excessive force to them. Confirm that no torsion and excessive tension is charged after installing.
• Seal the disconnected hose with a plug or vinyl tape to prevent dirt from entering.
• Replace the O-rings on the hoses or pipes with new parts, and then apply compressor oil.
1) Install in the reverse order of removal.
2) Charge refrigerant. <Ref. to AC-22, PROCEDURE, Refrigerant Charging Procedure.>

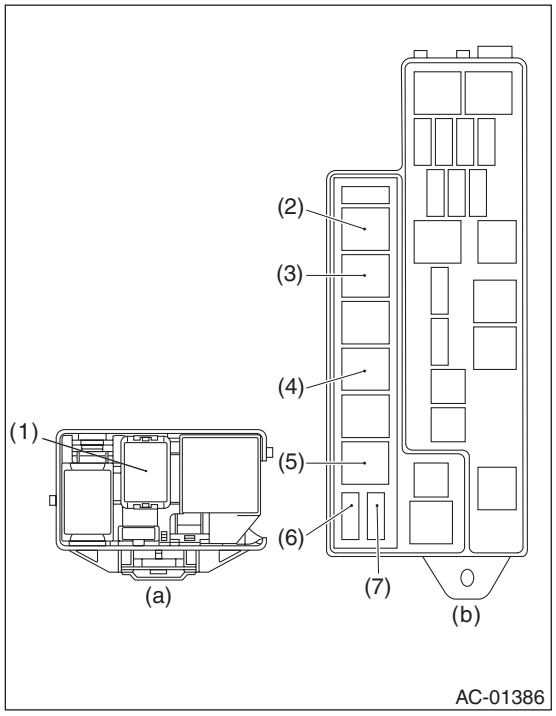
Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to AC-13, AIR CONDITIONING UNIT, COMPONENT, General Description.>

C: INSPECTION

NOTE:
If any cracks, damage, or expansion are found in the hose, replace it with new parts.

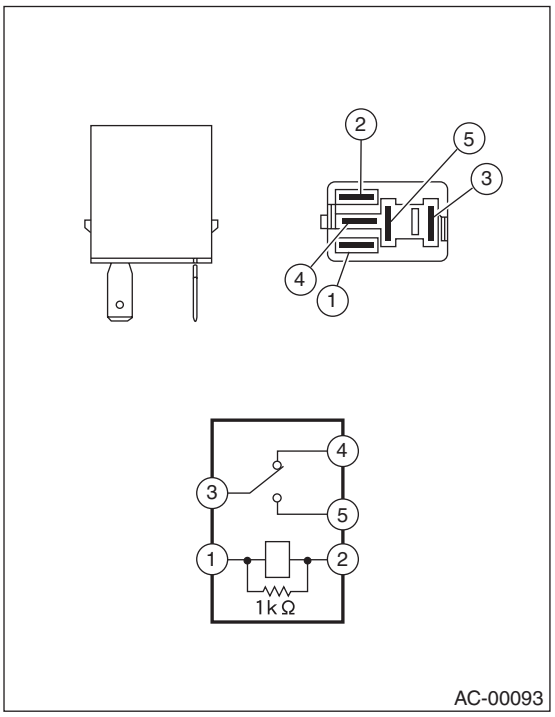
17.Relay and Fuse

A: LOCATION



(a) Relay holder (Turbo model)
(b) Main fuse box
(1) A/C relay (Turbo model)
(2) Main fan relay
(3) Sub fan relay
(4) A/C relay (Non-turbo model)
(5) Fan mode relay
(6) Main fan 30A fuse
(7) Sub fan 30A fuse

B: INSPECTION

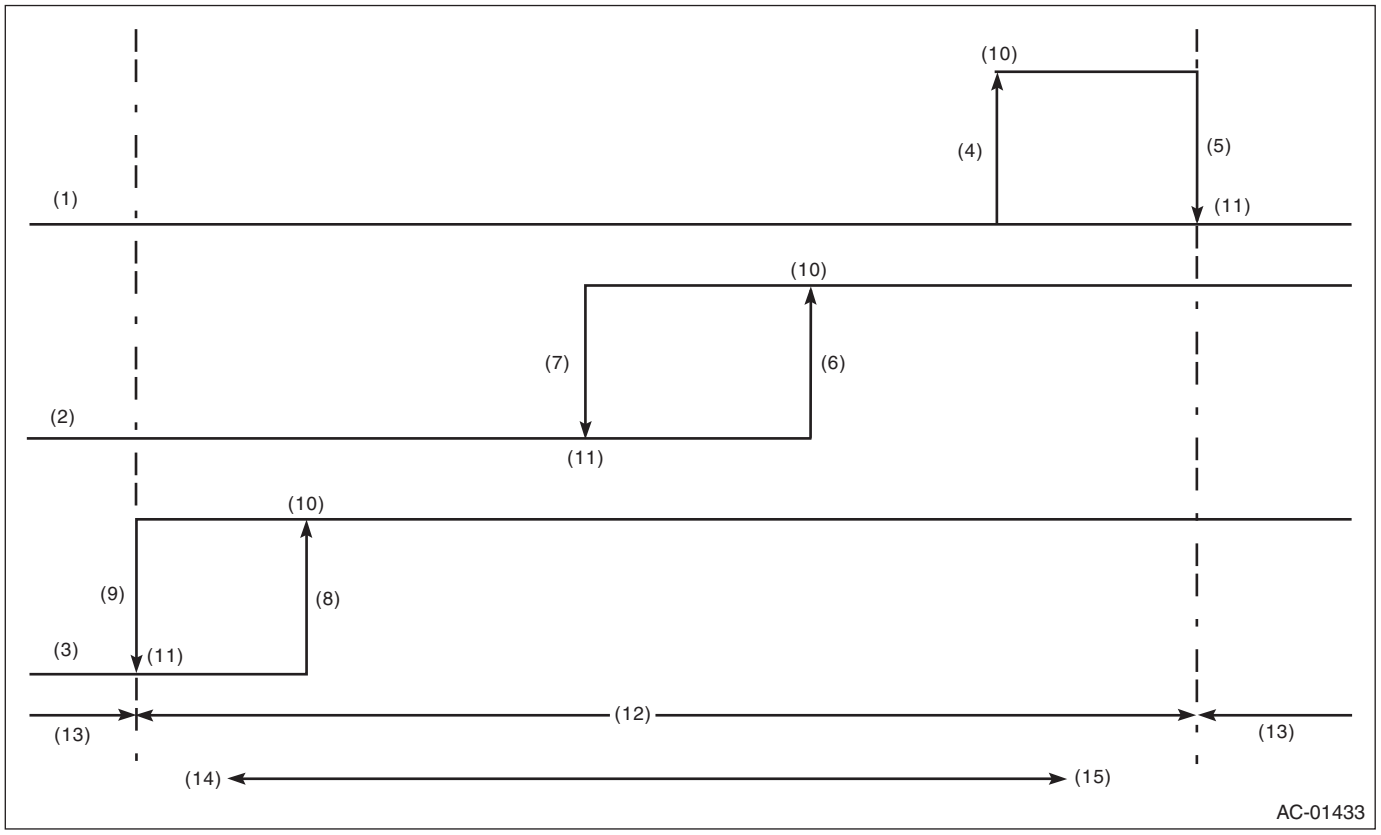


(1) — (2): Continuity exists.
(3) — (4): Continuity exists.
(3) — (5): Continuity does not exist.
While applying battery voltage to the terminal between (1) and (2), check continuity between (3) and (5).
If no continuity exists, replace the relay with a new part.

18.Pressure Switch (Triple Pressure Switch)

A: INSPECTION

1) Connect the manifold gauge to the service valve on the high-pressure side.
2) Start the air conditioner, and check the operating pressure of switch by turning the compressor (magnet clutch) to ON/OFF. Operation of each switch is as follows.



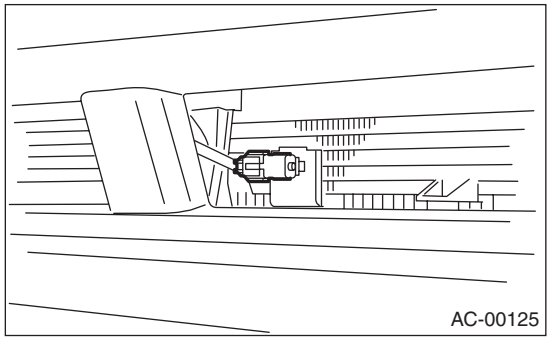
(1) High pressure switch
(2) Middle pressure switch
(3) Low pressure switch
(4) 2,350±200 kPa (24±2 kg/cm^2, 341±28 psi)
(5) 2,940±200 kPa (30.0±2 kg/cm^2, 427±28 psi)
(6) 1,770±100 kPa (18±1 kg/cm^2, 256±14 psi)
(7) 1,370±120 kPa (14±1 kg/cm^2, 199±14 psi)
(8) 206±30 kPa (2.1±0.3 kg/cm^2, 30±4 psi)
(9) 177±25 kPa (1.8±0.3 kg/cm^2, 26±4 psi)
(10) ON
(11) OFF
(12) Operative range of compressor
(13) Inoperative range of compressor
(14) Pressure is low
(15) Pressure is high

NOTE:
• High pressure switch turns the compressor (magnet clutch) to OFF when the refrigerant pressure becomes extremely high, in order to prevent the evaporator, air conditioner piping and expansion valve from getting damaged or frozen.
• Middle pressure switch effectively controls the radiator fan output by judging high load/low load in normal pressure range.
• Low pressure switch turns the compressor (magnet clutch) to OFF, judging as low refrigerant level when the refrigerant pressure becomes extremely low, in order to prevent the possible seizure when the compressor rotates.

19.Ambient Sensor (Auto A/C Model)

A: REMOVAL

1) Open the front hood.
2) Disconnect the ground cable from the battery.
3) Disconnect the ambient sensor connector.
4) Remove the ambient sensor from the radiator lower panel.



B: INSTALLATION

Install in the reverse order of removal.

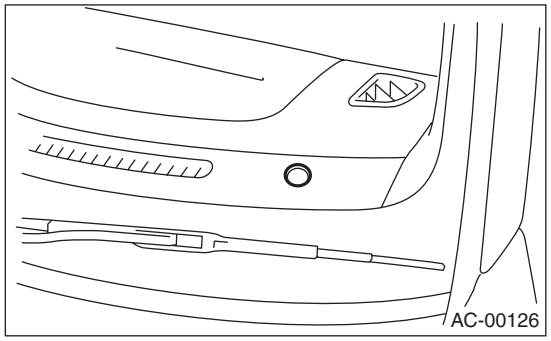
C: INSPECTION

<Ref. to AC(diag)-30, AMBIENT SENSOR, Diagnostic Procedure for Sensors.>

20.Sunload Sensor (Auto A/C Model)

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Disconnect the sunload sensor connector.



CAUTION:
Be careful not to damage the sensors and interior trims when removing.

B: INSTALLATION

Install in the reverse order of removal.

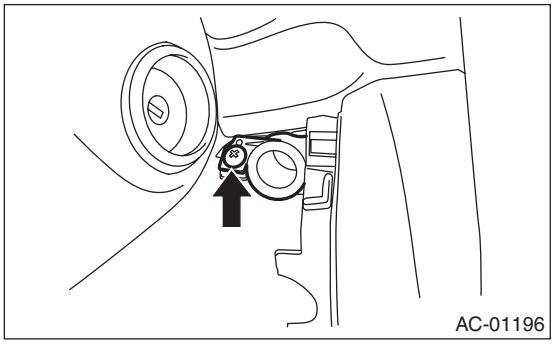
C: INSPECTION

<Ref. to AC(diag)-36, SUNLOAD SENSOR, Diagnostic Procedure for Sensors.>

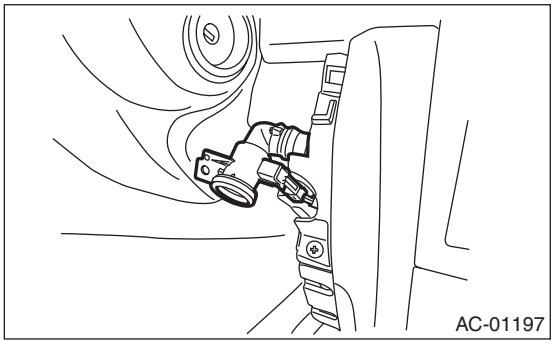
21.In-vehicle Sensor (Auto A/C Model)

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the instrument panel lower cover. <Ref. to EI-38, REMOVAL, Instrument Panel Assembly.>
3) Remove the in-vehicle sensor from the instrument panel.



4) Disconnect the connector and aspirator hose.



CAUTION:
Be careful not to damage the sensors and interior trims when removing.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

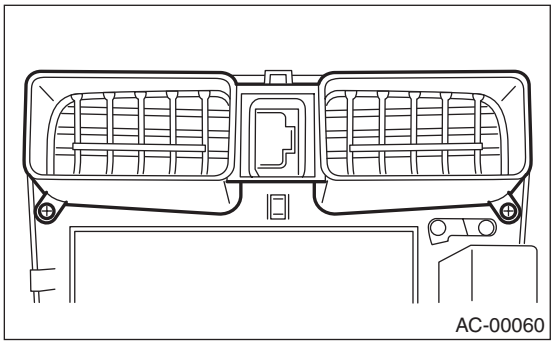
<Ref. to AC(diag)-32, IN-VEHICLE SENSOR, Diagnostic Procedure for Sensors.>

22.Air Vent Grille

A: REMOVAL

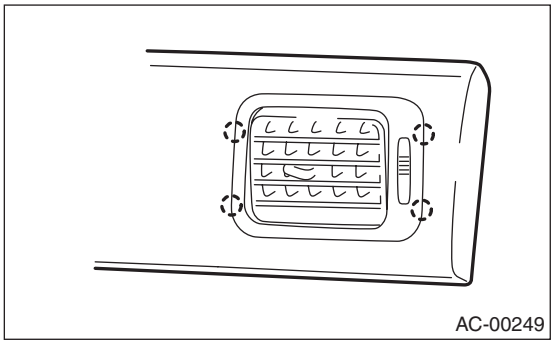
1. CENTER GRILLE

1) Disconnect the ground cable from the battery.
2) Remove the center console panel. <Ref. to EI-38, REMOVAL, Instrument Panel Assembly.>
3) Loosen two screws to remove the center air vent grille.


AC-00060

2. SIDE GRILLE

Remove the side vent grill by prying four points.


AC-00249

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

The direction and amount of air should be adjusted smoothly.
The adjustment should be maintained in each position.

23.Heater Duct

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the front seats.
3) Remove the front side sill cover. <Ref. to SE-7, REMOVAL, Front Seat.>
4) Turn over the floor mat and remove the cover of the part engaging the heater unit, then remove the heater duct.

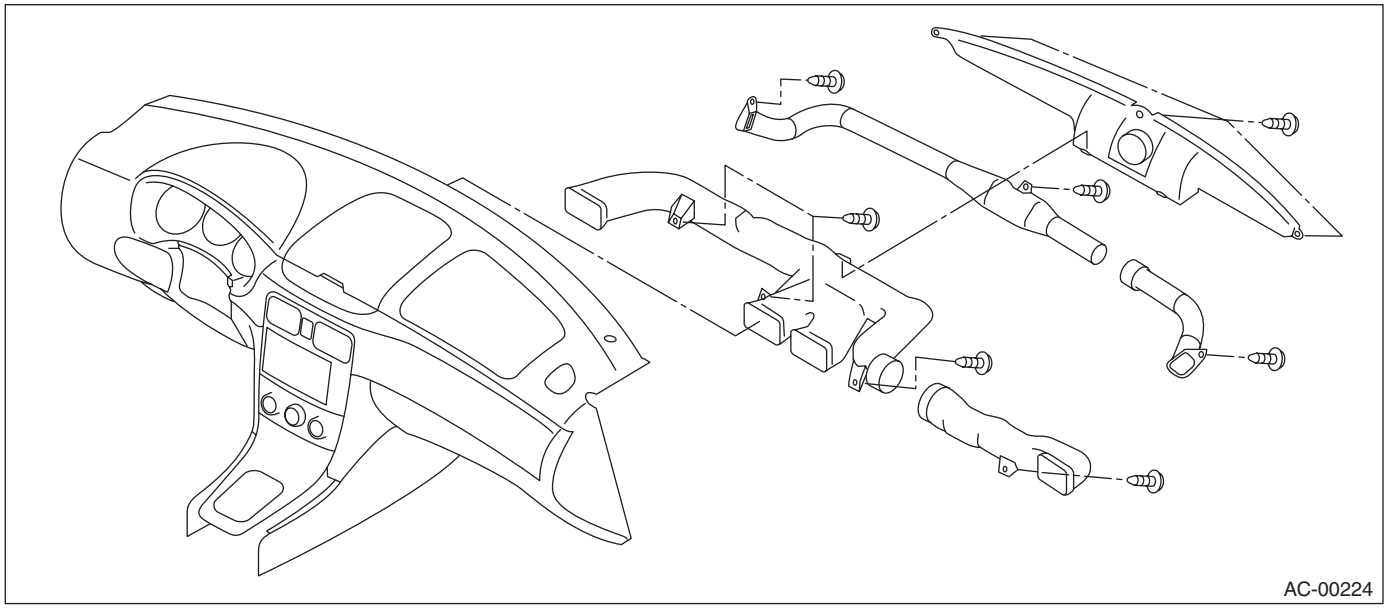
B: INSTALLATION

Install in the reverse order of removal.

24.Heater Vent Duct

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the instrument panel. <Ref. to EI-38, REMOVAL, Instrument Panel Assembly.>
3) Remove the screws.
4) Remove the heater vent duct.



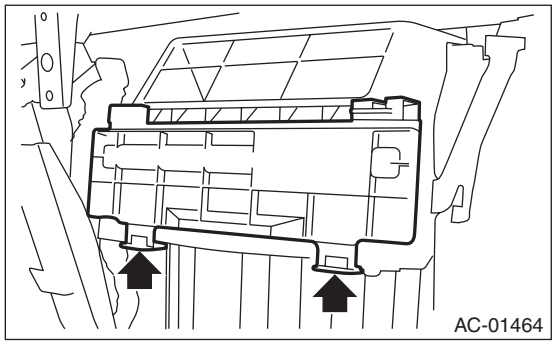
B: INSTALLATION

Install in the reverse order of removal.

25.A/C Filter

A: REPLACEMENT

1) Disconnect the ground cable from the battery.
2) Remove the glove box.
3) Remove the A/C filter cover and remove the A/C filter.



4) Install in the reverse order of removal.

26.General Diagnostic Table

A: INSPECTION

Symptom		Repair order
Blower motor	Does not run.	Fuse
		Blower motor relay
		Wiring harness
		Blower motor
		Blower motor register (Manual A/C model)
		Blower switch
	Noise	Blower motor
Compressor	Does not run.	Refrigerant
		Fuse
		Air conditioning relay
		Wiring harness
		Magnet clutch
		Compressor
		Pressure switch
		A/C switch
		Blower switch
	Noise	V-belt
		Magnet clutch
		Compressor
Condenser fan	Does not run.	Fuse
		Sub fan relay
		Wiring harness
	Noise	Condenser fan motor
Cold air not emitted.		Refrigerant
		V-belt
		Magnet clutch
		Compressor
		Pressure switch
		Blower fan relay, blower motor
		A/C switch
		Blower switch
		Wiring harness
		Heater duct
		Heater vent duct
		Control unit
		Expansion valve
		Evaporator
		Air mix actuator (Auto A/C), Temperature adjustment cable (Manual A/C)
Warm air not emitted.		Engine coolant
		Aspirator hose
		Blower switch
		Air mix actuator (Auto A/C), Temperature adjustment cable (Manual A/C)
		Heater core

Symptom	Repair order
Temperature of air from vents does not change.	Wiring harness
	Air mix actuator (Auto A/C), Temperature adjustment cable (Manual A/C)
	Temperature adjustment switch
Unable to switch blow vents.	Wiring harness
	Mode actuator (Auto A/C), Mode switch cable (Manual A/C)
	MODE switch
Unable to switch suction vents.	Wiring harness
	FRESH/RECIRC actuator
	FRESH/RECIRC switch

1. Basic Diagnostic Procedure

A: PROCEDURE

	Step	Check	Yes	No
1	**CHECK ILLUMINATION OF SECURITY INDICATOR LIGHT.** 1) Turn the ignition switch to OFF or ACC position. 2) Wait at least 60 seconds.	Does the security indicator light blink?	Go to step **2**.	Check the security indicator light circuit. <Ref. to IM(diag)-10, CHECK SECURITY INDICATOR LIGHT CIRCUIT, INSPECTION, Diagnostics Chart for Security Indicator Light.>
2	**CHECK ILLUMINATION OF SECURITY INDICATOR LIGHT.** Remove the key from ignition switch.	Does the security indicator light begin to blink within 1 second after the key is removed?	Go to step **3**.	Check the ignition switch circuit. <Ref. to SL-41, INSPECTION, Ignition Key Lock.>
3	**CHECK ENGINE START.** Turn the ignition switch to the START position.	Does the engine start?	Go to step **4**.	Go to step **5**.
4	**CHECK ILLUMINATION OF SECURITY INDICATOR LIGHT.** Turn the ignition switch to ON.	Does the security indicator light illuminate?	Check the security indicator light circuit. <Ref. to IM(diag)-10, CHECK SECURITY INDICATOR LIGHT CIRCUIT, INSPECTION, Diagnostics Chart for Security Indicator Light.>	Immobilizer system is normal.
5	**CHECK INDICATION OF DTC ON SCREEN.** 1) Turn the ignition switch to OFF. 2) Connect the Subaru Select Monitor to the data link connector. <Ref. to IM(diag)-7, Subaru Select Monitor.> 3) Turn the ignition switch to ON and run the Subaru Select Monitor. 4) Read any DTC on the display.	Are DTCs indicated on display?	Go to step **6**.	Repair the related parts.
6	**PERFORM DIAGNOSIS.** 1) Inspect using the “Diagnostic Procedure with Diagnostic Trouble Code (DTC)”. <Ref. to IM(diag)-13, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> 2) Repair the trouble cause. 3) Perform the Clear Memory Mode. 4) Read any DTC again.	Are DTCs indicated on display?	Inspect using the “Diagnostic Procedure with Diagnostic Trouble Code (DTC)”. <Ref. to IM(diag)-13, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

2. General Description

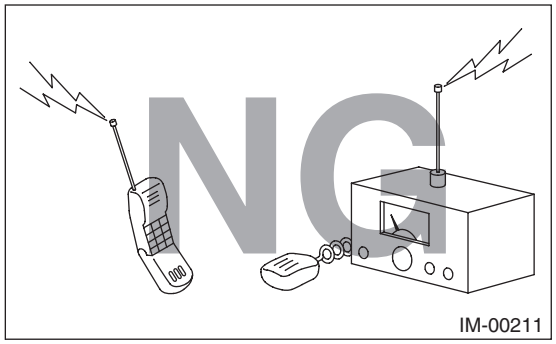
A: CAUTION

CAUTION:

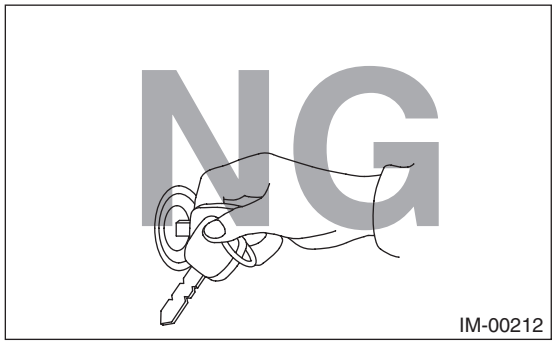
• The airbag system wiring harness is routed near the immobilizer control unit. Do not use the electrical test equipment on all the airbag system wiring harnesses circuits.

• Be careful not to damage the airbag system wiring harness when servicing the immobilizer control module.

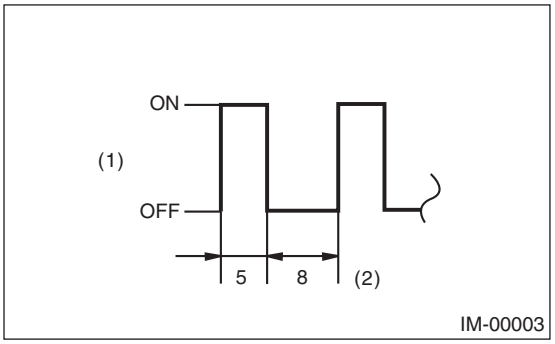
• While diagnostic items are being checked, do not operate radios, portable telephones, etc. which emit electromagnetic waves near or inside the vehicle.



• When the ignition switch is being turned ON or OFF while diagnostic items are being checked, do not allow keys with different ID codes be close to the ignition switch. If the ignition key is on a key holder, remove it from the key holder before carrying out diagnoses.



• When repeatedly turning the ignition switch to ON or OFF while diagnostic items are being checked, it should be switched in cycles of "ON" for at least 5 seconds → "OFF" for at least 8 seconds.



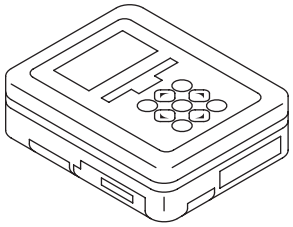
(1) Ignition switch position
(2) Sec.

• If the engine fails to start with a registered ignition key, detach the ignition key from ignition switch and wait for approx. 1 second until security indicator light begins to flash. And then start the engine again.

• Before checking the diagnostic items, obtain all keys and security ID for the vehicle to be checked possessed by owner.

B: PREPARATION TOOL

1. SPECIAL TOOL

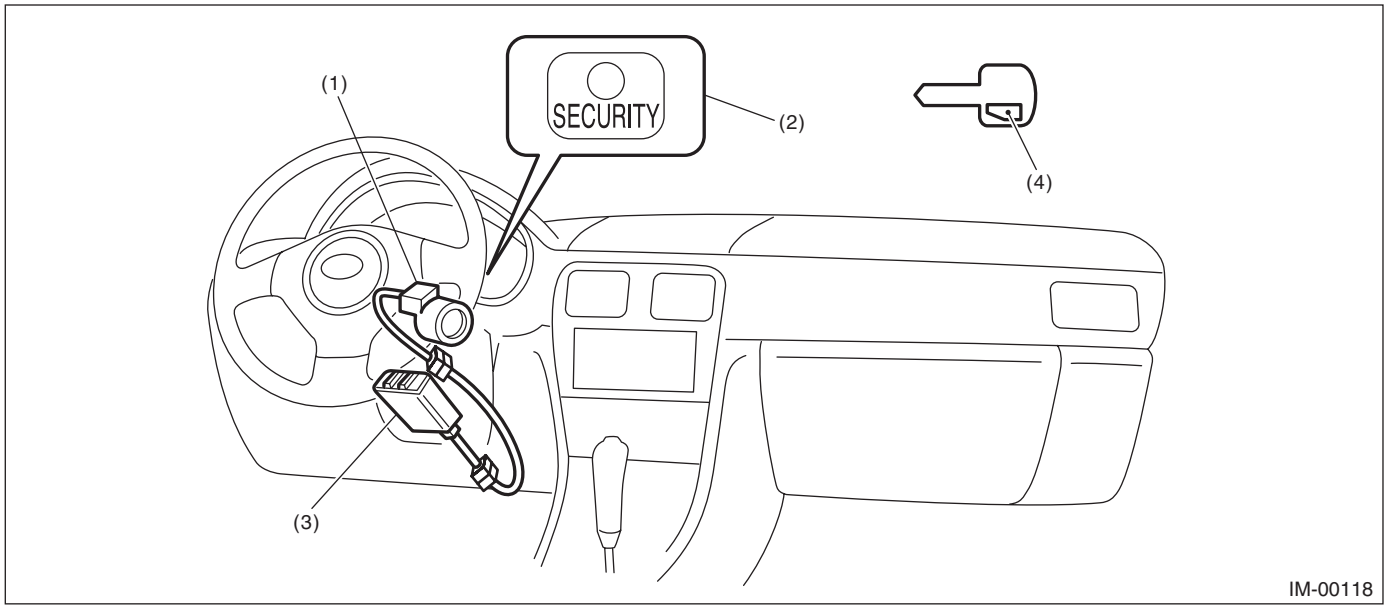
ILLUSTRATION	TOOL NUMBER	Description	REMARKS
 ST1B021XU0	1B021XU0	SUBARU SELECT MONITOR III KIT	Used for diagnosing the electrical system.

2. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance, voltage and current.

3. Electrical Component Location

A: LOCATION



(1) Antenna
(2) Security indicator light (LED bulb)
(3) Immobilizer control module (IMM ECM)
(4) Transponder

4. Immobilizer Control Module I/O Signal

A: WIRING DIAGRAM

1. IMMOBILIZER

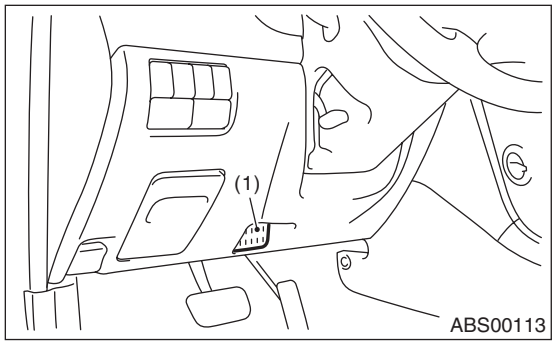
<Ref. to WI-98, WIRING DIAGRAM, Immobilizer System.>

5. Subaru Select Monitor

A: OPERATION

1. HOW TO USE THE SUBARU SELECT MONITOR

1) Prepare the Subaru Select Monitor kit.
2) Connect the diagnosis cable to Subaru Select Monitor.
3) Connect the Subaru Select Monitor to the data link connector.
(1) Data link connector is located in the lower portion of the instrument panel (on the driver's side).



(1) Data link connector

(2) Connect the diagnosis cable to data link connector.

CAUTION:
Do not connect the scan tools other than the Subaru Select Monitor.
4) Turn the ignition switch to ON (engine OFF) and run the Subaru Select Monitor.
5) Using the Subaru Select Monitor, call up DTCs and various data, then record them.

2. READ DIAGNOSTIC TROUBLE CODE (DTC) FOR THE ENGINE

Refer to "Read Diagnostic Trouble Code" for information about how to display a DTC. <Ref. to IM(diag)-8, Read Diagnostic Trouble Code (DTC).>

3. COMMUNICATION LINE CHECK

NOTE:
The communication line between ECM and immobilizer control unit can be checked in "System Operation Check Mode". This is referred to as "Communication line check".
1) Connect the Subaru Select Monitor.
2) On the «Each system check» display, select the {Engine Control System}.
3) Start the communication line check.
4) Is «OK» displayed on screen?
If displayed, go to step 5).
If not, go to step 6).
5) After diagnostic results, it is determined that the circuit is not shorted. Finish the communication line check.
6) If a problem is detected, repair the trouble cause. <Ref. to IM(diag)-14, DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

6. Read Diagnostic Trouble Code (DTC)

A: OPERATION

1) On the «Main Menu» display screen, select {Each System Check}.
2) On the «System Selection Menu» display screen, select the {Engine Control System}.
3) Select the [OK] after the information of engine type is displayed.
4) On the «Engine Diagnosis» display screen, select the {DTC Display}.
5) On the «DTC Display» display screen, select {Current Diagnostic Code(s)} or {History Diagnostic Code(s)}.

NOTE:
• For detailed operation procedure, refer to the “PC application help for Subaru Select Monitor”.
• For detailed concerning DTC, refer to the List of Diagnostic Trouble Codes (DTC). <Ref. to IM(diag)-12, LIST, List of Diagnostic Trouble Code (DTC).>

7. Clear Memory Mode

A: OPERATION

1) On the «Main Menu» display screen, select {Each System Check}.
2) On the «System Selection Menu» display screen, select the {Engine Control System}.
3) Select the [OK] after the information of engine type is displayed.
4) On the «Engine Diagnosis» display screen, select the {Clear Memory}.
5) When «Done» and «Turn ignition switch to OFF» is shown on the display screen, turn the ignition switch to OFF and finish the Subaru Select Monitor.

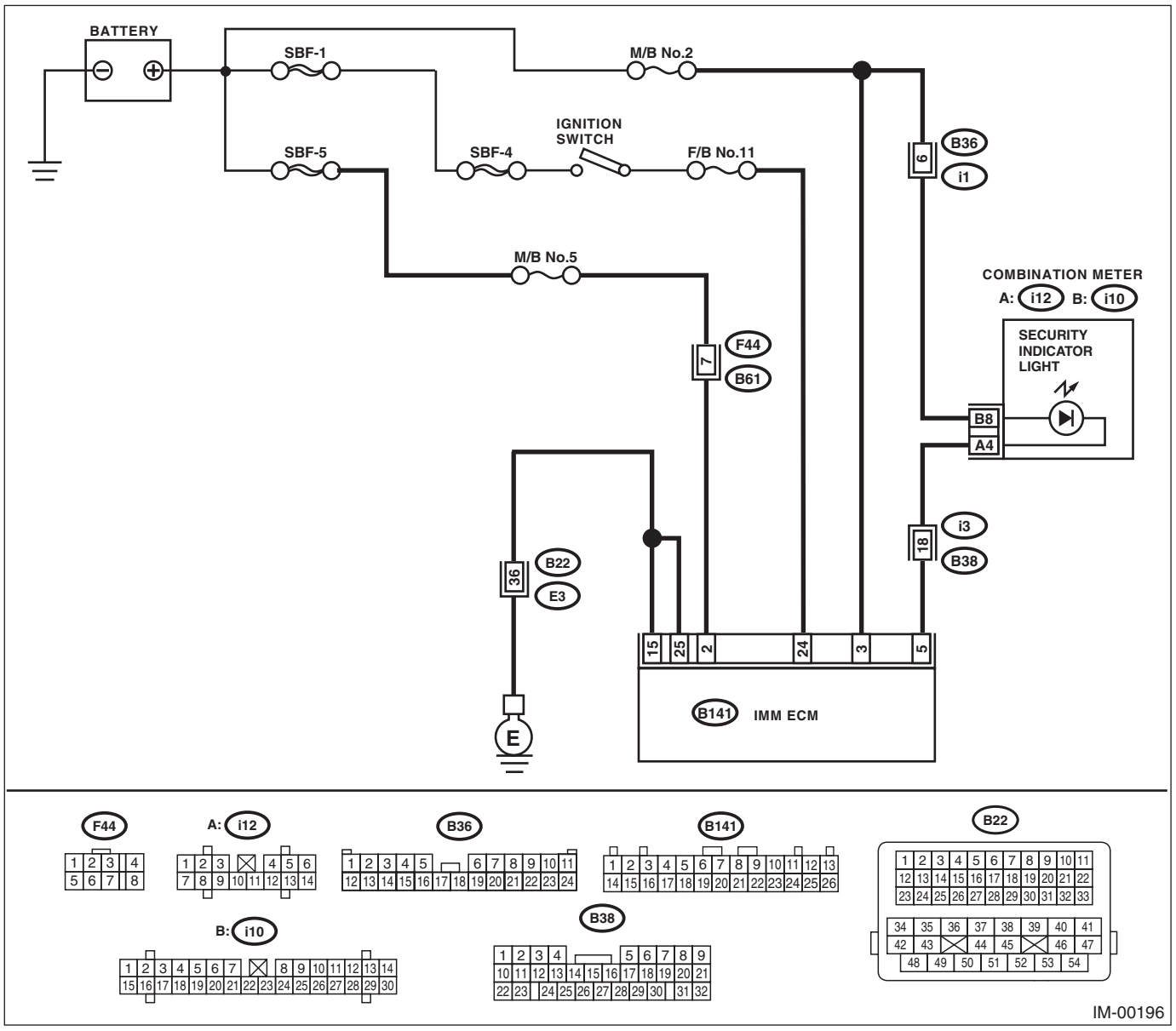
NOTE:
• After the memory has been cleared, the idle air control solenoid valve must be initialized. To execute this procedure, turn the ignition switch to ON. Wait for 3 seconds before starting the engine.
• For detailed operation procedure, refer to the “PC application help for Subaru Select Monitor”.

8. Diagnostics Chart for Security Indicator Light

A: INSPECTION

1. CHECK SECURITY INDICATOR LIGHT CIRCUIT

WIRING DIAGRAM:



Diagnostics Chart for Security Indicator Light

	Step	Check	Yes	No
1	**CHECK SECURITY INDICATOR LIGHT.** 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from IMM ECM. 3) Connect a resistor (100 Ω) between IMM ECM harness connector terminal No. 5 and chassis ground.	Does the security indicator light illuminate?	Go to step **2**.	Go to step **5**.
2	**CHECK IMM ECM GROUND CIRCUIT.** Measure the resistance between IMM ECM harness connector terminal and chassis ground. ***Connector & terminal*** ***(B141) No. 15 — Chassis ground:*** ***(B141) No. 25 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **3**.	Repair the open circuit of IMM ECM ground circuit.
3	**CHECK IMM ECM IGNITION CIRCUIT.** 1) Turn the ignition switch to ON. (Engine OFF) 2) Measure the voltage between IMM ECM harness connector terminal and chassis ground. ***Connector & terminal*** ***(B141) No. 24 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **4**.	Check the harness for open or short between IMM ECM and ignition switch.
4	**CHECK IMM ECM POWER SUPPLY CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Measure the voltage between IMM ECM harness connector terminal and chassis ground. ***Connector & terminal*** ***(B141) No. 2 (+) — Chassis ground (–):*** ***(B141) No. 3 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Replace the IMM ECM <Ref. to SL-50, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".	Check the harness for open or short between IMM ECM and fuse.
5	**CHECK COMBINATION METER CIRCUIT.** 1) Remove the combination meter. <Ref. to IDI-10, Combination Meter.> 2) Measure the voltage between combination meter harness connector terminal and chassis ground. ***Connector & terminal*** ***(i10) No. 8 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **6**.	Check the harness for open or short between combination meter and fuse.
6	**CHECK COMBINATION METER CIRCUIT.** Measure the resistance between IMM ECM harness connector terminal and the combination meter harness connector terminal. ***Connector & terminal*** ***(B141) No. 5 — (i12) No. 4:***	Is the resistance less than 10 Ω?	Faulty LED. Replace the combination meter print circuit. <Ref. to IDI-11, DISASSEMBLY, Combination Meter.>	Repair the harness or connector.

9. List of Diagnostic Trouble Code (DTC)

A: LIST

DTC	Item	Contents of diagnosis	Index No.
P1571	Reference Code Incompatibility	Reference code incompatibility between IMM ECM and ECM	<Ref. to IM(diag)-13, DTC P1571 REFERENCE CODE INCOMPATIBILITY, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P1572	IMM Circuit Failure (Expect Antenna Circuit)	Communication failure between IMM ECM and ECM	<Ref. to IM(diag)-14, DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P1574	Key Communication Failure	Failure of IMM ECM to verify key (transponder) ID code or transponder key failure	<Ref. to IM(diag)-17, DTC P1574 KEY COMMUNICATION FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0513	Incorrect Immobilizer Key	Incorrect immobilizer key (Use of unregistered key in IMM ECM)	<Ref. to IM(diag)-18, DTC P0513 INCORRECT IMMOBILIZER KEY, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P1576	EGI Control Module EEPROM	ECM malfunctioning	<Ref. to IM(diag)-18, DTC P1576 EGI CONTROL MODULE EEPROM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P1577	IMM Control Module EEPROM	IMM ECM malfunctioning	<Ref. to IM(diag)-19, DTC P1577 IMM CONTROL MODULE EEPROM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P1570	Antenna	Faulty antenna	<Ref. to IM(diag)-20, DTC P1570 ANTENNA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

NOTE:
Perform the engine DTC when a DTC other than immobilizer DTC is detected. <Ref. to EN(H4DOTC)(diag)-76, List of Diagnostic Trouble Code (DTC).>

10.Diagnostic Procedure with Diagnostic Trouble Code (DTC)

A: DTC P1571 REFERENCE CODE INCOMPATIBILITY

DTC DETECTING CONDITION:

Reference code incompatibility between IMM ECM and ECM

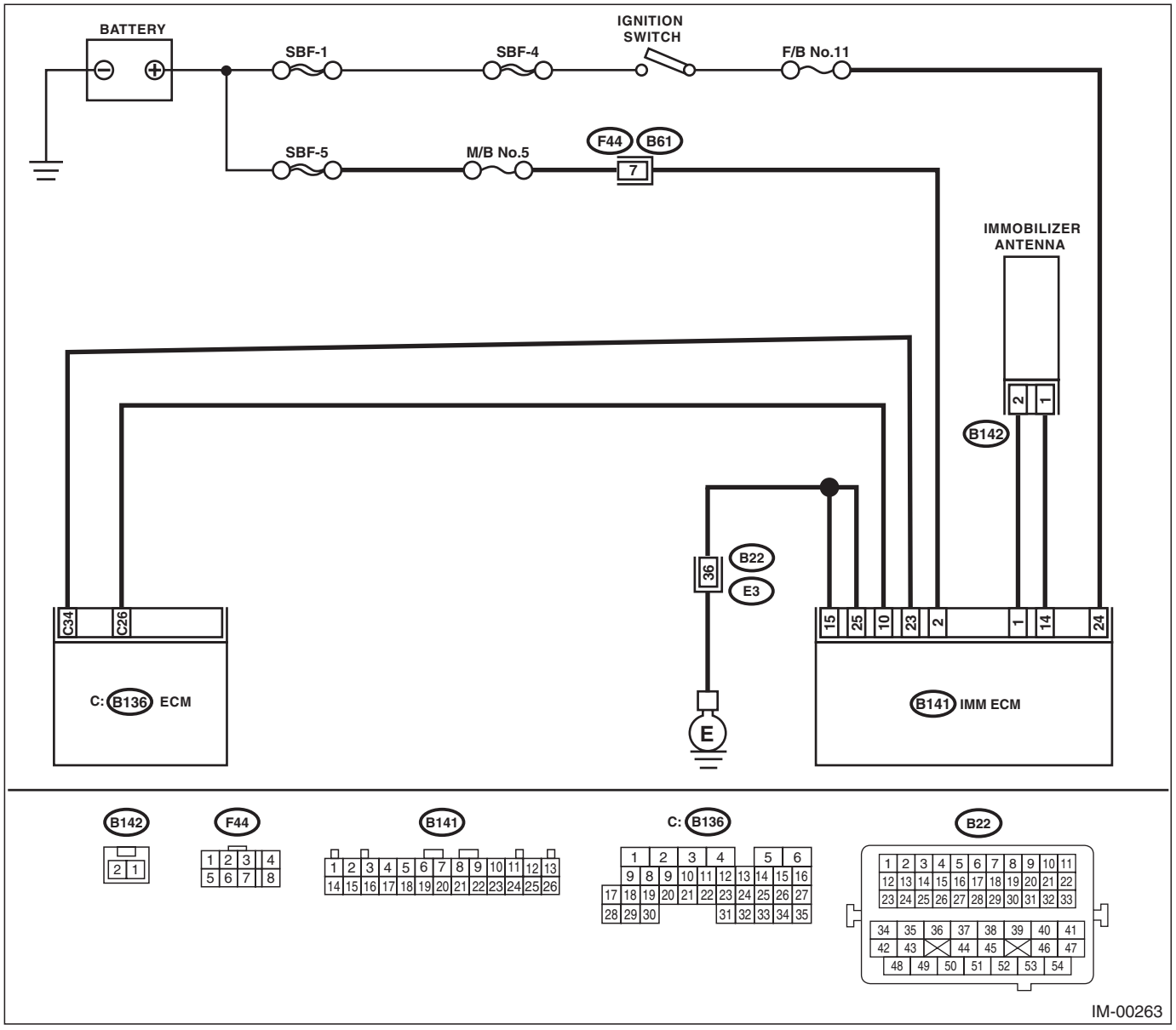
	Step	Check	Yes	No
1	**PERFORM TEACHING OPERATION ON IGNITION KEY.** Perform teaching operation on all keys of the vehicle. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.	Is teaching operation for all keys completed?	END	Go to step **2**.
2	**CHECK DTC.**	Is there any DTC related to immobilizer except DTC P1571?	Eliminate the cause of DTC other than DTC P1571, and perform the teaching operation again.	Replace the ECM and IMM ECM <Ref. to FU(H4DOTC)-46, Engine Control Module (ECM).> <Ref. to SL-50, Immobilizer Control Module.>, and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.

B: DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT)

DTC DETECTING CONDITION:

Communication failure between IMM ECM and ECM

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK IMM ECM POWER SUPPLY CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from IMM ECM. 3) Measure the voltage between IMM ECM harness connector terminal and chassis ground. ***Connector & terminal*** ***(B141) No. 2 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **2**.	Check the harness for open or short between IMM ECM and fuse.
2	**CHECK IGNITION SWITCH CIRCUIT.** 1) Turn the ignition switch to ON. (Engine OFF) 2) Measure the voltage between IMM ECM harness connector terminal and chassis ground. ***Connector & terminal*** ***(B141) No. 24 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **3**.	Check the harness for open or short between IMM ECM and ignition switch.
3	**CHECK IMM ECM GROUND CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Measure the resistance between IMM ECM harness connector terminal and chassis ground. ***Connector & terminal*** ***(B141) No. 15 — Chassis ground:*** ***(B141) No. 25 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **4**.	Repair the open circuit of IMM ECM ground circuit.
4	**CHECK HARNESS BETWEEN IMM ECM AND ECM.** 1) Disconnect the harness connector from the ECM and IMM ECM. 2) Measure the resistance between IMM ECM harness connector terminal and ECM harness connector terminal. ***Connector & terminal*** ***(B141) No. 10 — (B136) No. 26:***	Is the resistance less than 10 Ω?	Go to step **5**.	Repair the open circuit of harness between IMM ECM and ECM.
5	**CHECK HARNESS BETWEEN IMM ECM AND ECM.** Measure the resistance between IMM ECM harness connector terminal and ECM harness connector terminal. ***Connector & terminal*** ***(B141) No. 23 — (B136) No. 34:***	Is the resistance less than 10 Ω?	Go to step **6**.	Repair the open circuit of harness between IMM ECM and ECM.
6	**CHECK HARNESS OF COMMUNICATION LINE.** 1) Turn the ignition switch to ON. (Engine OFF) 2) Measure the voltage between IMM ECM harness connector terminal and chassis ground. ***Connector & terminal*** ***(B141) No. 10 (+) — Chassis ground (–):*** ***(B141) No. 23 (+) — Chassis ground (–):***	Is the voltage 0 V?	Go to step **7**.	There is a short circuit in the battery voltage circuit or ignition switch "ON" circuit. Repair the harness between IMM ECM and ECM.
7	**CHECK HARNESS OF COMMUNICATION LINE.** Measure the voltage between ECM harness connector terminal and engine ground. ***Connector & terminal*** ***(B136) No. 26 (+) — Engine ground (–):*** ***(B136) No. 34 (+) — Engine ground (–):***	Is the voltage 0 V?	Go to step **8**.	There is a short circuit in the battery voltage circuit or ignition switch "ON" circuit. Repair the harness between IMM ECM and ECM.

	Step	Check	Yes	No
8	**CHECK ECM BY COMMUNICATION LINE CHECK.** 1) Connect the harness connector to ECM. 2) Disconnect the harness connector from IMM ECM. 3) Perform communication line check. <Ref. to IM(diag)-7, COMMUNICATION LINE CHECK, OPERATION, Subaru Select Monitor.>	Does “Communication Line not Shorted” appear on the screen?	Replace the IMM ECM <Ref. to SL-50, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.	Replace the ECM. <Ref. to FU(H4DOTC)-46, Engine Control Module (ECM).>Then perform teaching operation. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.

C: DTC P1574 KEY COMMUNICATION FAILURE

DTC DETECTING CONDITION:

Failure of IMM ECM to verify key (transponder) ID code or transponder key failure

	Step	Check	Yes	No
1	**CHECK IMM ECM FUNCTION.** Insert the key to ignition switch (LOCK position), then measure changes in voltage between antenna connector. ***Connector & terminal*** ***(B142) No. 1 (+) — Chassis ground (–):***	Is the voltage –30 — 30 V (Approximately 0.1 seconds after key was inserted)? Is the voltage 0 V (Approximately 1 seconds after key was inserted)?	Go to step **2**.	Replace the IMM ECM <Ref. to SL-50, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".
2	**CHECK IGNITION KEY (TRANSPONDER).** 1) Remove the key from ignition switch. 2) Start the engine using other keys that have undergone the teaching operation.	Does the engine start?	Replace the ignition key (including the transponder). Then perform teaching operation. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".	Replace the IMM ECM <Ref. to SL-50, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".

D: DTC P0513 INCORRECT IMMOBILIZER KEY

DTC DETECTING CONDITION:

Incorrect immobilizer key (Use of unregistered key in IMM ECM)

	Step	Check	Yes	No
1	**PERFORM TEACHING OPERATION ON IGNITION KEY.** Perform teaching operation on all keys of the vehicle. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.	Is teaching operation for all keys completed?	END	Replace all ignition keys (including the transponder). Go to step **2**.
2	**PERFORM TEACHING OPERATION ON IGNITION KEY.** Perform teaching operation on all keys of the vehicle. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.	Is teaching operation for all keys completed?	END	Replace the IMM ECM <Ref. to SL-50, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.

E: DTC P1576 EGI CONTROL MODULE EEPROM

DTC DETECTING CONDITION:

- ECM malfunctioning
- Inaccessible ROM in ECM during key registration

	Step	Check	Yes	No
1	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.	Is registration for all keys completed?	Verify that the engine starts with all registered keys and finish the diagnosis.	Go to step **2**.
2	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.	Is registration for all keys completed?	Verify that the engine starts with all registered keys and finish the diagnosis.	Go to step **3**.
3	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.	Is registration for all keys completed?	Verify that the engine starts with all registered keys and finish the diagnosis.	Replace the ECM. <Ref. to FU(H4DOTC)-46, Engine Control Module (ECM).>

F: DTC P1577 IMM CONTROL MODULE EEPROM

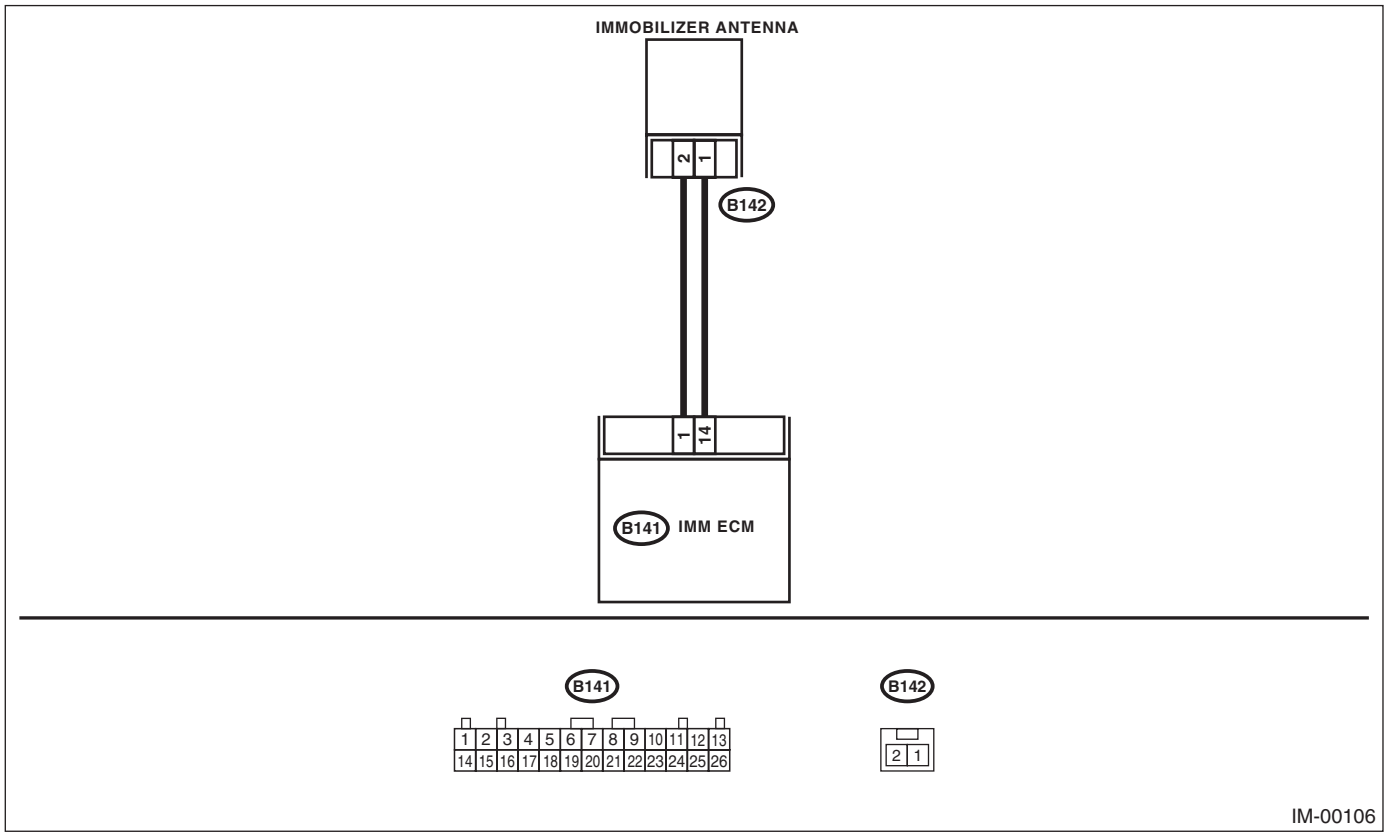
DTC DETECTING CONDITION:

- IMM ECM malfunctioning
- Inaccessible ROM in IMM ECM.

	Step	Check	Yes	No
1	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.	Is registration for all keys completed?	Verify that the engine starts with all registered keys and finish the diagnosis.	Go to step **2**.
2	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.	Is registration for all keys completed?	Verify that the engine starts with all registered keys and finish the diagnosis.	Go to step **3**.
3	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.	Is registration for all keys completed?	Verify that the engine starts with all registered keys and finish the diagnosis.	Replace the IMM ECM. <Ref. to SL-50, REMOVAL, Immobilizer Control Module.>Replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.

G: DTC P1570 ANTENNA

DTC DETECTING CONDITION:
Faulty antenna
WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK ANTENNA CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the harness antenna connector from the IMM ECM. <Ref. to SL-51, Immobilizer Antenna.> 3) Measure the resistance of the antenna circuit. ***Connector & terminal*** ***(B141) No. 1 — No. 14:***	Is the resistance less than 10 Ω?	Go to step **2**.	Replace the antenna. <Ref. to SL-51, Immobilizer Antenna.>
2	**CHECK ANTENNA CIRCUIT.** Measure the resistance between antenna harness connector and chassis ground. ***Connector & terminal*** ***(B141) No. 1 — Chassis ground:***	Is the resistance less than 10 Ω?	Replace the antenna. <Ref. to SL-51, Immobilizer Antenna.>	Go to step **3**.
3	**CHECK ANTENNA CIRCUIT.** Measure the resistance between antenna harness connector and chassis ground. ***Connector & terminal*** ***(B141) No. 14 — Chassis ground:***	Is the resistance less than 10 Ω?	Replace the antenna. <Ref. to SL-51, Immobilizer Antenna.>	Go to step **4**.
4	**CHECK ANTENNA CIRCUIT.** 1) Turn the ignition switch to ON. (Engine OFF) 2) Measure the voltage between antenna harness connector and chassis ground. ***Connector & terminal*** ***(B141) No. 1 (+) — Chassis ground (–):***	Is the voltage 0 V?	Go to step **5**.	Replace the antenna. <Ref. to SL-51, Immobilizer Antenna.>

	Step	Check	Yes	No
5	**CHECK ANTENNA CIRCUIT.** Measure the voltage between antenna harness connector and chassis ground. ***Connector & terminal*** ***(B141) No. 14 (+) — Chassis ground (–):***	Is the voltage 0 V?	Go to step **6**.	Replace the antenna. <Ref. to SL-51, Immobilizer Antenna.>
6	**CHECK IMM ECM FUNCTION.** 1) Turn the ignition switch to OFF. 2) Connect the antenna harness connector to IMM ECM. 3) Insert the key to ignition switch, then measure changes in voltage between antenna harness connector. ***Connector & terminal*** ***(B141) No. 1 (+) — Chassis ground (–):***	Is the voltage –30 — 30 V (Approximately 0.1 seconds after key was inserted)? Is the voltage 0 V (Approximately 1 seconds after key was inserted)?	Go to step **7**.	Replace the IMM ECM <Ref. to SL-50, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.
7	**CHECK IGNITION KEY (TRANSPONDER).** 1) Remove the key from ignition switch. 2) Start the engine using other keys that have undergone the teaching operation.	Does the engine start?	Replace the ignition key (including the transponder). Then perform teaching operation. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER ”.	Replace the IMM ECM <Ref. to SL-50, Immobilizer Control Module.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.

1. General Description

A: SPECIFICATION

Combination meter	Speedometer	Electric pulse type
	Engine coolant temperature gauge	Cross coil type
	Fuel gauge	Cross coil type
	Tachometer	Electric pulse type
	Turn signal indicator light	14 V — 2 W
	Charge indicator light	14 V — 1.4 W
	Oil pressure warning light	LED
	ABS warning light	14 V — 1.4 W
	Malfunction indicator light	LED
	HI-beam indicator light	14 V — 2 W
	Door open warning light	LED
	Seat belt warning light	LED
	Brake warning light	14 V — 2 W
	AWD warning light	LED
	Airbag warning light	LED
	Meter illumination light	14 V — 3.4 W, 14 V — 2 W
	AT OIL TEMP warning light	LED
	Cruise indicator light	14 V — 1.4 W
	Low fuel warning light	LED
	Security indicator light	LED
	Select indicator	LCD
	LCD back light	14 V — 1.4 W
	Cruise set indicator light	14 V — 1.4 W
	Vehicle dynamics control (VDC) indicator light	14 V — 3 W
	Vehicle dynamics control (VDC) warning light	LED
	Tire pressure warning light	14 V — 2 W

B: CAUTION

- Be careful not to damage the meters and instrument panel.
- Be careful not to damage the meter glass.
- Make sure the electrical connector is connected securely.
- After installation, make sure that each meter operates normally.
- Use gloves to avoid damage and getting fingerprints on the glass surface and meter surfaces.
- Do not apply excessive force to the printed circuit.
- Do not drop or otherwise apply impact.

C: PREPARATION TOOL

1. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance and voltage.

2. Combination Meter System

A: WIRING DIAGRAM

1. COMBINATION METER

<Ref. to WI-145, WIRING DIAGRAM, Combination Meter.>

2. OUTSIDE TEMPERATURE INDICATOR

<Ref. to WI-153, WIRING DIAGRAM, Outside Temperature Display System.>

B: INSPECTION

CAUTION:
When measuring the voltage and resistance of the ECM, TCM and each sensor, use a tapered pin with a diameter of less than 0.64 mm (0.025 in) in order to avoid poor contact. Do not insert the pin more than 2 mm (0.08 in).

1. SYMPTOM CHART

Symptom	Repair order	NOTE
Combination meter assembly does not operate.	1. Power supply 2. Ground circuit	<Ref. to IDI-4, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Combination Meter System.>
Speedometer does not operate.	1. Vehicle speed sensor (MT model) TCM (AT model) 2. Harness 3. Speedometer	MT model: <Ref. to IDI-5, CHECK VEHICLE SPEED SENSOR, INSPECTION, Combination Meter System.>
		AT model: <Ref. to IDI-6, CHECK OF TRANSMISSION CONTROL MODULE (TCM), INSPECTION, Combination Meter System.>
Tachometer does not operate.	1. ECM 2. Harness 3. Tachometer	<Ref. to IDI-6, CHECK ENGINE CONTROL MODULE (ECM), INSPECTION, Combination Meter System.>
Fuel gauge does not operate.	1. Fuel level sensor 2. Harness 3. Fuel gauge	<Ref. to IDI-7, CHECK FUEL LEVEL SENSOR, INSPECTION, Combination Meter System.>
Engine coolant temperature gauge does not operate.	1. Engine coolant temperature sensor 2. Harness 3. Engine coolant temperature gauge	<Ref. to IDI-8, CHECK ENGINE COOLANT TEMPERATURE SENSOR, INSPECTION, Combination Meter System.>
Outside temperature indicator does not operate.	1. Ambient sensor 2. Harness 3. Combination meter	<Ref. to IDI-9, CHECK OUTSIDE TEMPERATURE INDICATOR, INSPECTION, Combination Meter System.>

2. CHECK POWER SUPPLY AND GROUND CIRCUIT

	Step	Check	Yes	No
1	**CHECK POWER SUPPLY FOR COMBINATION METER.** 1) Remove the combination meter. <Ref. to IDI-10, REMOVAL, Combination Meter.> 2) Disconnect the combination meter harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between combination meter connector and chassis ground. ***Connector & terminal*** ***(i10) No. 9 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **2**.	Check the harness for open or short between the ignition switch and combination meter.
2	**CHECK POWER SUPPLY FOR COMBINATION METER.** Measure the voltage between combination meter connector and chassis ground. ***Connector & terminal*** ***(i10) No. 8 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **3**.	Check the harness for open or short between the fuse and combination meter.
3	**CHECK GROUND CIRCUIT OF COMBINATION METER.** 1) Turn the ignition switch to OFF. 2) Measure the resistance of harness between combination meter connector and chassis ground. ***Connector & terminal*** ***(i10) No. 10 — Chassis ground:***	Is the resistance less than 10 Ω?	Replace the combination meter printed circuit.	Repair the wiring harness.

3. CHECK VEHICLE SPEED SENSOR

	Step	Check	Yes	No
1	**CHECK VEHICLE SPEED SENSOR.** 1) Lift up the vehicle and support it with rigid racks. 2) Remove the combination meter with harness connector. 3) Drive the vehicle faster than 20 km/h (12 MPH). **WARNING:** **Be careful not to get caught in the running wheels.** 4) Measure the voltage between combination meter connector and chassis ground. ***Connector & terminal*** ***(i10) No. 12 (+) — Chassis ground (–):***	Is the voltage 1 ←→ 5 V?	Check the speedometer. <Ref. to IDI-12, REMOVAL, Speedometer.>	Go to step **2**.
2	**CHECK VEHICLE SPEED SENSOR POWER SUPPLY.** 1) Turn the ignition switch to OFF. 2) Disconnect the vehicle speed sensor harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between the speed sensor connector and the engine ground. ***Connector & terminal*** ***(B17) No. 3 (+) — Engine ground (–):***	Is the voltage 10 V or more?	Go to step **3**.	Check the harness for open or short between the ignition switch and vehicle speed sensor.
3	**CHECK HARNESS BETWEEN VEHICLE SPEED SENSOR AND ENGINE GROUND.** 1) Turn the ignition switch to OFF. 2) Measure the resistance between the speed sensor connector and the engine ground. ***Connector & terminal*** ***(B17) No. 2 — Engine ground:***	Is the resistance less than 10 Ω?	Go to step **4**.	Repair the wiring harness.
4	**CHECK HARNESS BETWEEN VEHICLE SPEED SENSOR AND COMBINATION METER.** 1) Disconnect the connector from the combination meter. 2) Measure the resistance between the speed sensor harness connector and combination meter. ***Connector & terminal*** ***(B17) No. 1 — (i10) No. 12:***	Is the resistance less than 10 Ω?	Replace the vehicle speed sensor.	Repair the wiring harness.

4. CHECK OF TRANSMISSION CONTROL MODULE (TCM)

	Step	Check	Yes	No
1	**CHECK TCM SIGNAL.** 1) Lift up the vehicle and support it with rigid racks. 2) Drive the vehicle faster than 10 km/h (6 MPH). **WARNING:** **Be careful not to get caught in the running wheels.** 3) Measure the voltage between TCM connector and chassis ground. ***Connector & terminal*** ***(B55) No. 21 (+) — Chassis ground (–):***	Is the voltage 1 ←→ 5 V?	Go to step **2**.	Check the TCM. <Ref. to 4AT(diag)-2, Basic Diagnostic Procedure.>
2	**CHECK THE HARNESS BETWEEN TCM AND COMBINATION METER.** 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and combination meter. 3) Measure the resistance between TCM harness connector and combination meter harness connector. ***Connector & terminal*** ***(B55) No. 21 — (i10) No. 12:***	Is the resistance less than 10 Ω?	Check the speedometer. <Ref. to IDI-12, REMOVAL, Speedometer.>	Repair the wiring harness.

5. CHECK ENGINE CONTROL MODULE (ECM)

	Step	Check	Yes	No
1	**CHECK ECM SIGNAL.** 1) Start the engine. 2) Measure the voltage between ECM connector and engine ground. ***Connector & terminal*** ***(B136) No. 22 (+) — Engine ground (–):***	Is the voltage 0 ← →14 V?	Go to step **2**.	Inspect the ECM. <Ref. to EN(H4SO)(diag)-2, Basic Diagnostic Procedure.> <Ref. to EN(H4DOTC)(diag)-2, Basic Diagnostic Procedure.>
2	**CHECK HARNESS BETWEEN COMBINATION METER AND ECM.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ECM and combination meter. 3) Measure the resistance between ECM harness connector and combination meter harness connector. ***Connector & terminal*** ***(B136) No. 22 (+) — (i10) No. 11:***	Is the resistance less than 10 Ω?	Check the tachometer. <Ref. to IDI-13, REMOVAL, Tachometer.>	Repair the wiring harness.

6. CHECK FUEL LEVEL SENSOR

	Step	Check	Yes	No
1	**CHECK FUEL LEVEL SENSOR.** 1) Remove the fuel level sensor. <Ref. to FU(H4SO)-55, REMOVAL, Fuel Level Sensor.> 2) Measure the resistance between fuel level sensor terminals when the float is in FULL or EMPTY position. ***Terminals*** ***No. 2 — No. 3:***	Is the resistance 0.5 to 2.5 Ω (FULL) and 50 to 52 Ω (EMPTY)?	Go to step **2**.	Replace the fuel level sensor.
2	**CHECK FUEL SUB LEVEL SENSOR.** 1) Remove the fuel sub level sensor. <Ref. to FU(H4SO)-56, REMOVAL, Fuel Sub Level Sensor.> 2) Measure the resistance between fuel sub level sensor terminals when the float is in FULL or EMPTY position. ***Terminals*** ***No. 1 — No. 2:***	Is the resistance 0.5 to 2.5 Ω (FULL) and 42 to 44 Ω (EMPTY)?	Go to step **3**.	Replace the fuel sub level sensor.
3	**CHECK HARNESS BETWEEN FUEL SUB LEVEL SENSOR AND COMBINATION METER.** 1) Disconnect the connector from the combination meter. 2) Measure the resistance between the fuel sub level sensor harness connector terminal and combination meter harness connector terminal. ***Connector & terminal*** ***(R59) No. 1 — (i11) No. 1:***	Is the resistance less than 10 Ω?	Go to step **4**.	Repair the wiring harness.
4	**CHECK HARNESS BETWEEN FUEL LEVEL SENSOR AND FUEL SUB LEVEL SENSOR.** Measure the resistance between fuel level sensor harness connector terminal and fuel sub level sensor harness connector terminal. ***Connector & terminal*** ***(R58) No. 3 — (R59) No. 2:***	Is the resistance less than 10 Ω?	Go to step **5**.	Repair the wiring harness.
5	**CHECK FUEL LEVEL SENSOR GROUND CIRCUIT.** Measure the resistance between fuel level sensor harness connector terminal and chassis ground. ***Connector & terminal*** ***(R58) No. 2 — Chassis ground:***	Is the resistance less than 10 Ω?	Inspect the fuel gauge. <Ref. to IDI-14, REMOVAL, Fuel Gauge.>	Repair the wiring harness.

7. CHECK ENGINE COOLANT TEMPERATURE SENSOR

Step		Check	Yes	No
1	**CHECK ENGINE COOLANT TEMPERATURE SENSOR.** Check the engine coolant temperature sensor. <Ref. to EN(H4SO)(diag)-2, Basic Diagnostic Procedure.>	Is the engine coolant temperature sensor OK?	Go to step **2**.	Replace the engine coolant temperature sensor.
2	**CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND COMBINATION METER.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the engine coolant temperature sensor and combination meter. 3) Measure the resistance between the engine coolant temperature sensor harness connector and combination meter harness connector. ***Connector & terminal*** ***(E8) No. 3 — (i11) No. 10:***	Is the resistance less than 10 Ω?	Go to step **3**.	Repair the wiring harness.
3	**CHECK ENGINE COOLANT TEMPERATURE GAUGE GROUND CIRCUIT.** Measure the resistance between the combination meter harness connector terminal and chassis ground. ***Connector & terminal*** ***(i11) No. 9 — Chassis ground:***	Is the resistance less than 10 Ω?	Inspect the engine coolant temperature gauge. <Ref. to IDI-15, REMOVAL, Engine Coolant Temperature Gauge.>	Repair the wiring harness.

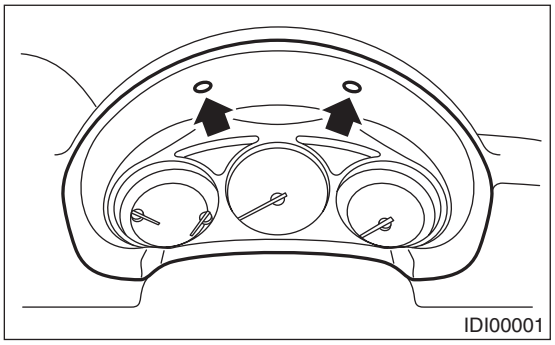
8. CHECK OUTSIDE TEMPERATURE INDICATOR

	Step	Check	Yes	No
1	**CHECK POWER SUPPLY FOR AMBIENT SENSOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ambient sensor. 3) Turn the ignition switch to ON. 4) Measure the voltage between ambient sensor harness connector terminal and chassis ground. ***Connector & terminal*** ***(F78) No. 2 (+) — Chassis ground (–):***	Is the voltage 4 V or more?	Go to step **3**.	Go to step **2**.
2	**CHECK HARNESS BETWEEN AMBIENT SENSOR AND COMBINATION METER.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the combination meter. 3) Measure the resistance between the ambient sensor harness connector terminal and combination meter harness connector terminal. ***Connector & terminal*** ***(F78) No. 1 — (i10) No. 25:*** ***(F78) No. 2 — (i10) No. 24:***	Is the resistance less than 10 Ω?	Replace the combination meter printed circuit.	Repair the wiring harness.
3	**CHECK AMBIENT SENSOR.** 1) Remove the ambient sensor. 2) Check the ambient sensor. <Ref. to IDI-16, INSPECTION, Ambient Sensor.>	Is the ambient sensor OK?	Go to step **4**.	Replace the ambient sensor.
4	**CHECK OUTSIDE TEMPERATURE INDICATOR.** 1) Connect the combination meter harness connector. 2) Connect a resistor (3 kΩ) between the terminals of ambient sensor harness connector. 3) Turn the ignition switch to ON and check the outside temperature indicator display.	Is the outside temperature indicator indicating 25°C (77°F)?	Repair the poor contact of ambient sensor harness connector.	Replace the combination meter print circuit.

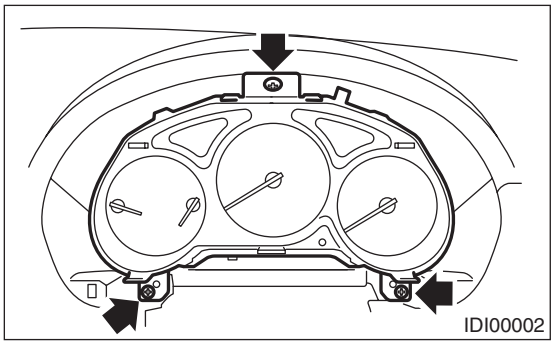
3. Combination Meter

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Set the tilt steering at the lowest position.
3) Remove the screws and detach the meter visor.



4) Remove the screws of combination meter and pull out the meter.



5) Disconnect the connector in the upper area of combination meter to remove the meter.

CAUTION:
• Be careful not to damage the meter or instrument panel.
• Be careful not to damage the meter glass.

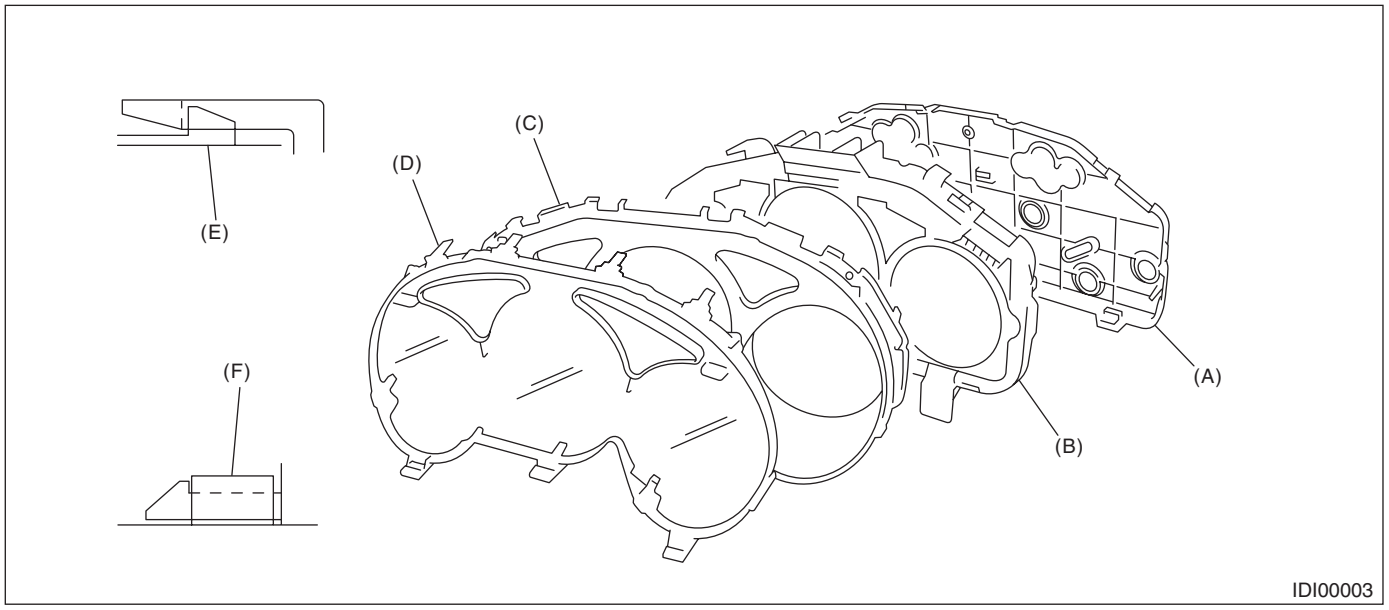
B: INSTALLATION

Install in the reverse order of removal.

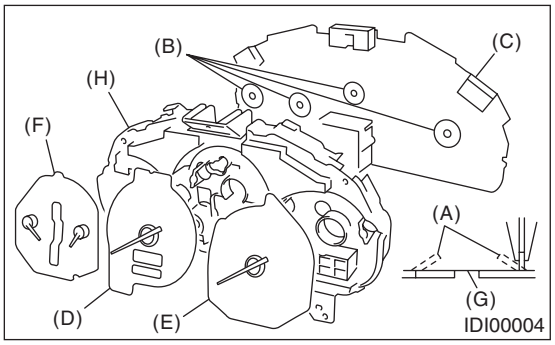
CAUTION:
• Make sure the electrical connector is connected securely.
• Make sure that each meter operates normally.

C: DISASSEMBLY

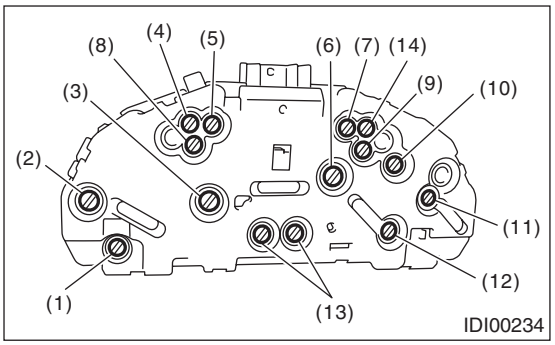
CAUTION:
Use gloves to avoid damage and getting fingerprints on the glass surface and meter surfaces.
1) Disengage the claw (E) to remove case (B) from back cover (A).
2) Disengage claw (F) to remove meter glass (D) and reflector (C) from the inner case.



3) Pull up claw (A) in portion (B) of combination meter printed circuit (C) with combination pliers. Push out the speedometer (D) and tachometer (E) and engine coolant temperature gauge & fuel gauge assembly (F) using the hole (G).
4) Pull up the claw in the center of the combination meter printed circuit (C), and remove the printed circuit from case (H).



1. BULB REPLACEMENT



(1) Charge indicator light
(2) Tachometer
(3) Speedometer and tachometer
(4) HI-beam indicator light
(5) Turn signal indicator light (Right)
(6) Speedometer
(7) Turn signal indicator light (Left)
(8) Vehicle dynamics control (VDC) indicator
(9) Brake warning light
(10) ABS warning light
(11) Fuel gauge
(12) Engine coolant temperature gauge
(13) LCD (Outside temperature display, odometer/ tripmeter, and select indicator)
(14) Tire pressure warning light

D: ASSEMBLY

Assemble in the reverse order of disassembly.

4. Speedometer

A: REMOVAL

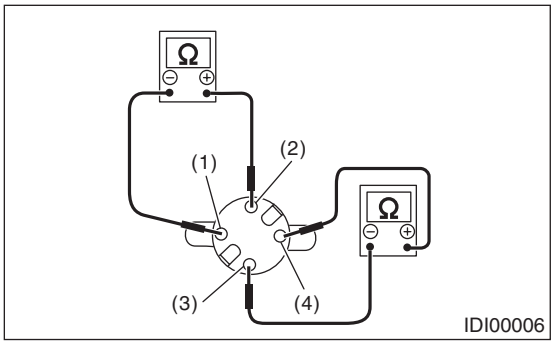
Disassemble the combination meter, and then remove the speedometer. <Ref. to IDI-11, DISASSEMBLY, Combination Meter.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the speedometer resistance.



(1) COS–
(2) COS+
(3) SIN–
(4) SIN+

Terminals	Specified resistance
SIN+ and SIN– terminal	200±8 Ω
COS+ and COS– terminal	200±8 Ω

If defective, replace the speedometer.
If OK, replace the combination meter printed circuit.

5. Tachometer

A: REMOVAL

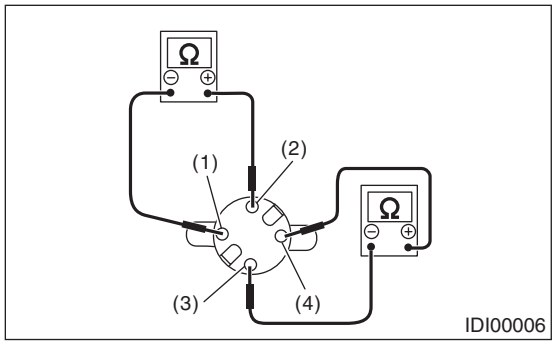
Disassemble the combination meter, and then remove the tachometer. <Ref. to IDI-11, DISASSEMBLY, Combination Meter.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the tachometer resistance.



(1) COS–
(2) COS+
(3) SIN–
(4) SIN+

Terminals	Specified resistance
SIN+ and SIN– terminal	200±8 Ω
COS+ and COS– terminal	200±8 Ω

If defective, replace the tachometer.
If OK, replace the combination meter printed circuit.

6. Fuel Gauge

A: REMOVAL

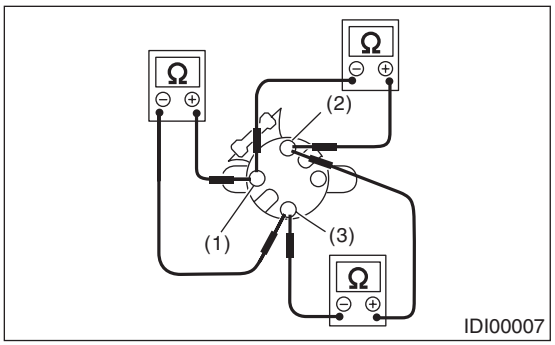
Disassemble the combination meter, and then remove the engine coolant temperature gauge & fuel gauge assembly. <Ref. to IDI-11, DISASSEMBLY, Combination Meter.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the fuel gauge resistance.



(1) UNIT
(2) IGN
(3) GND

Terminals	Specified resistance
IGN and GND terminal	170±10 Ω
IGN and UNIT terminal	35±10 Ω
UNIT and GND terminal	136±10 Ω

Replace the engine coolant temperature gauge & fuel gauge assembly if defective.
If OK, replace the combination meter printed circuit.

7. Engine Coolant Temperature Gauge

A: REMOVAL

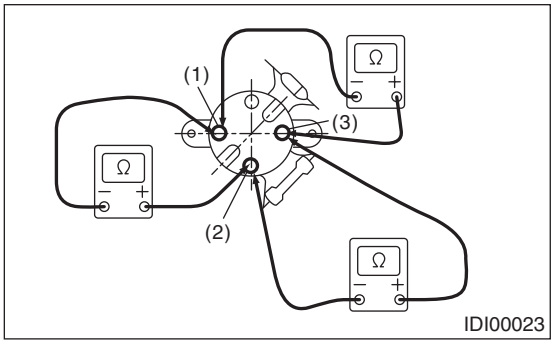
Disassemble the combination meter, and then remove the engine coolant temperature gauge & fuel gauge assembly. <Ref. to IDI-11, DISASSEMBLY, Combination Meter.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the engine coolant temperature gauge resistance.



(1) GND
(2) IGN
(3) UNIT

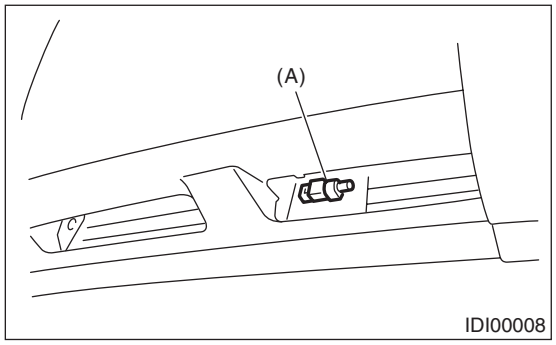
Terminals	Specified resistance
IGN and GND terminal	208±10 Ω
IGN and UNIT terminal	56±10 Ω
UNIT and GND terminal	264±10 Ω

Replace the engine coolant temperature gauge & fuel gauge assembly if defective.
If OK, replace the combination meter printed circuit.

8. Ambient Sensor

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Disconnect the ambient sensor connector.
3) Remove the ambient sensor (A) from the radiator lower panel.

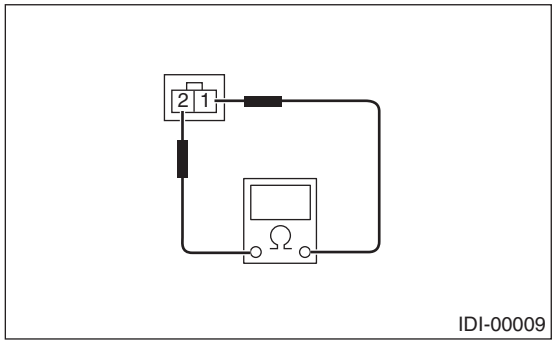


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the ambient sensor resistance.



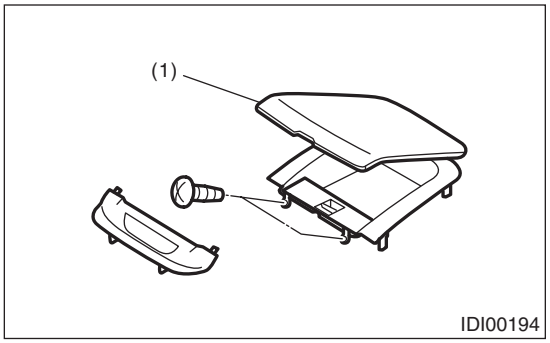
Terminals	Specified resistance
1 and 2	3 kΩ/25°C (77°F)

If NG, replace the ambient sensor.

9. Clock

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the center compartment. <Ref. to EI-49, REMOVAL, Instrument Panel Center Compartment.>
3) Remove the clock from the center compartment.



(1) Center compartment

B: INSTALLATION

Install in the reverse order of removal.

1. General Description

A: SPECIFICATION

Headlight		12 V — 55 W/60 W (Halogen) D2R 35 W/60 W (HID)
Front turn signal light		12 V — 21 W
Clearance light		12 V — 5 W
Front side marker light		12 V — 5 W
Front fog light		12 V — 51 W
Rear combination light	Tail/stop light	12 V — 5/21 W
	Turn signal light	12 V — 21 W
	Back-up light	12 V — 16 W
License plate light		12 V — 5 W
High-mounted stop light	Standard type	12 V — 13 W
	Rear spoiler built-in type	12 V — 1.3 W
Room light		12 V — 8 W
Spot map light		12 V — 8 W
Luggage room light		12 V — 5 W

B: CAUTION

• Before removing or installing parts, always disconnect the battery ground cable from battery. When replacing the radio, control unit, and other parts provided with memory functions, record the memory contents before disconnecting the battery ground cable. Otherwise, the memory is cleared.
• Reassemble the parts in the reverse order of disassembly procedure unless otherwise indicated.
• Adjust parts to the given specifications.
• Connect the connectors and hoses securely during reassembly.
• After reassembly, make sure functional parts operate smoothly.

WARNING:

• The airbag system wiring harness is routed near electrical parts and switches. All airbag system wiring harnesses and connectors are yellow. Do not use the electrical test equipment on these circuits.

• Be careful not to damage the airbag system wiring harness when servicing electrical parts and switches.

C: PREPARATION TOOL

1. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance and voltage.

2. Headlight and Tail Light System

A: WIRING DIAGRAM

1. HEADLIGHT

<Ref. to WI-114, WIRING DIAGRAM, Headlight System.>

2. CLEARANCE LIGHT AND ILLUMINATION LIGHT

<Ref. to WI-123, WIRING DIAGRAM, Clearance Light and Illumination Light System.>

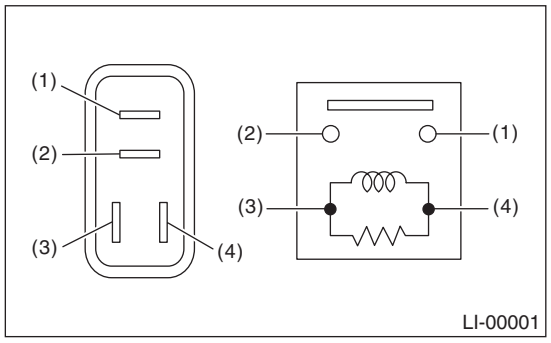
B: INSPECTION

1. HEADLIGHT SWITCH

<Ref. to LI-9, INSPECTION, Combination Switch (Light).>

2. HEADLIGHT RELAY

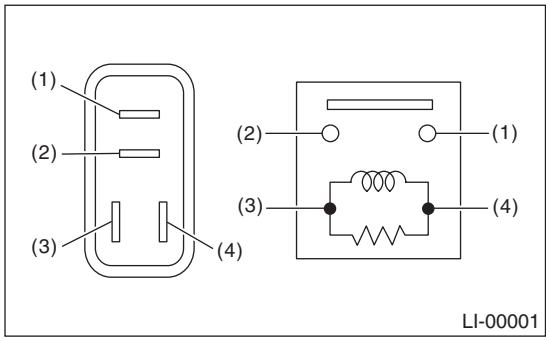
Measure the headlight relay resistance between terminals when connecting terminal No. 4 to the battery positive terminal and terminal No. 3 to the battery ground terminal.



Continuity	Terminal No.	Standard
Yes	1 and 2	Less than 1 Ω
No		1 MΩ or more

3. TAIL AND ILLUMINATION RELAY

Measure the resistance between tail and illumination relay terminals when connecting terminal No. 4 to the battery positive terminal and terminal No. 3 to the battery ground terminal.



Continuity	Terminal No.	Standard
Yes	1 and 2	Less than 1 Ω
No		1 MΩ or more

3. Front Fog Light System

A: WIRING DIAGRAM

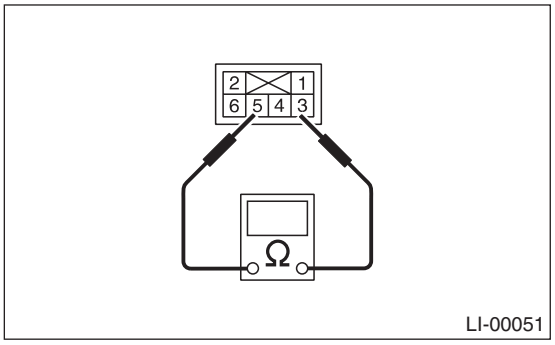
1. FRONT FOG LIGHT

<Ref. to WI-120, WIRING DIAGRAM, Front Fog Light System.>

B: INSPECTION

1. FRONT FOG LIGHT SWITCH

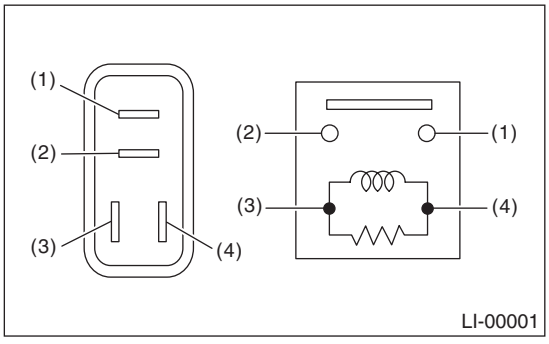
Measure the front fog light switch resistance.



Switch position	Terminal No.	Standard
OFF	3 and 5	1 MΩ or more
ON		Less than 1 Ω

2. FRONT FOG LIGHT RELAY

Connect terminal No. 4 to battery positive terminal and terminal No. 3 to battery ground terminal, and measure the front fog light relay resistance between terminals.



Continuity	Terminal No.	Standard
Yes	1 and 2	Less than 1 Ω
No		1 MΩ or more

4. Turn Signal Light and Hazard Light System

A: WIRING DIAGRAM

1. TURN SIGNAL LIGHT AND HAZARD LIGHT

<Ref. to WI-126, WIRING DIAGRAM, Turn Signal Light and Hazard Light System.>

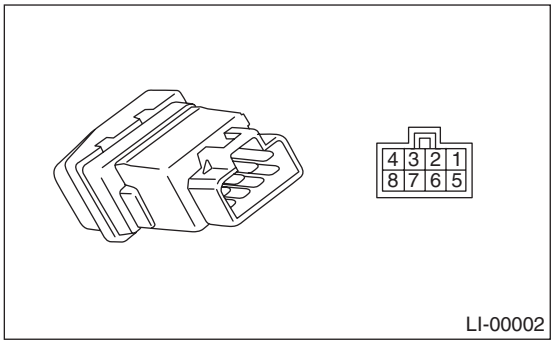
B: INSPECTION

1. TURN SIGNAL SWITCH

<Ref. to LI-9, INSPECTION, Combination Switch (Light).>

2. HAZARD SWITCH

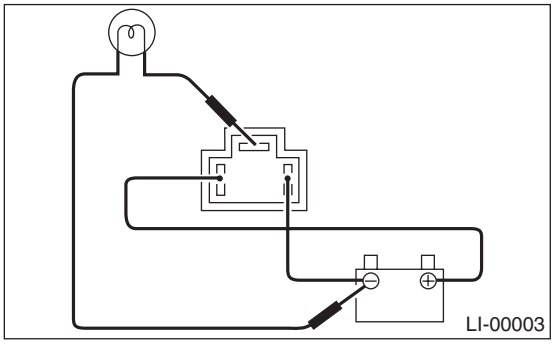
Measure the hazard switch resistance.



Switch position	Terminal No.	Standard
OFF	6 and 7	Less than 1 Ω
ON	1, 3 and 4	Less than 1 Ω
	7 and 8	Less than 1 Ω

3. TURN SIGNAL AND HAZARD MODULE

Connect the battery and the turn signal light bulb to the module, as shown in the figure. The module is properly functioning if it blinks when power is supplied to the circuit.



5. Back-up Light System

A: WIRING DIAGRAM

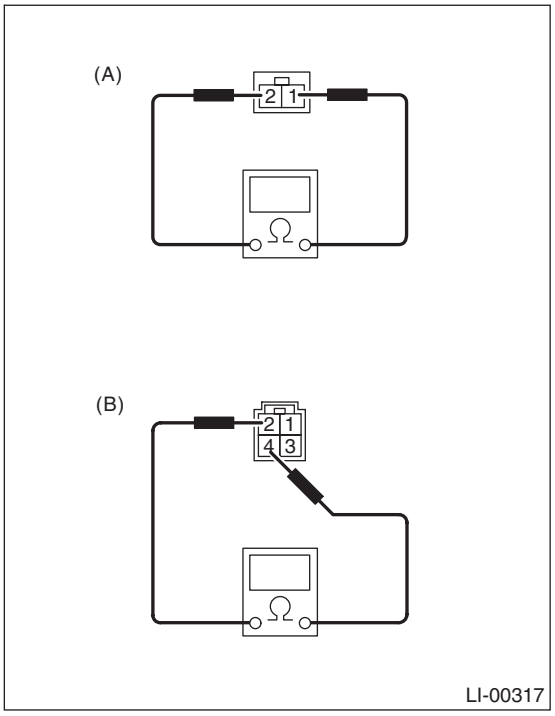
1. BACK-UP LIGHT

<Ref. to WI-121, WIRING DIAGRAM, Back-up Light System.>

B: INSPECTION

1. BACK-UP LIGHT SWITCH (MT MODEL)

Measure the back-up light switch resistance.

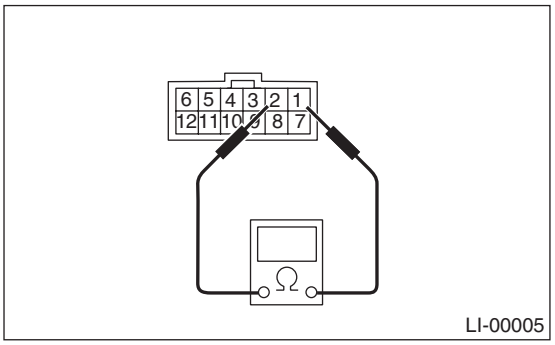


(A) Non-turbo model
(B) Turbo model

Switch position	Terminal No.	Standard
When shift lever is set in reverse position	Non-turbo model: 1 and 2 Turbo model: 2 and 4	Less than 1 Ω
Other positions		1 MΩ or more

2. INHIBITOR SWITCH (AT MODEL)

Measure the inhibitor switch resistance.



Switch position	Terminal No.	Standard
When the shift lever is in "R" range	1 and 2	Less than 1 Ω
Other positions		1 MΩ or more

6. Stop Light System

A: WIRING DIAGRAM

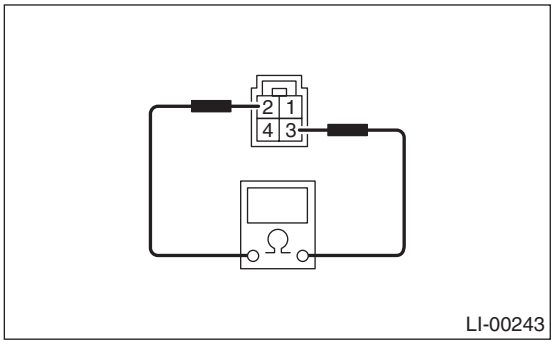
1. STOP LIGHT

<Ref. to WI-122, WIRING DIAGRAM, Stop Light System.>

B: INSPECTION

1. STOP LIGHT SWITCH

Measure the stop light switch resistance.



Switch position	Terminal No.	Standard
When brake pedal is depressed	2 and 3	Less than 1 Ω
When brake pedal is released		1 MΩ or more

7. Room Light System

A: WIRING DIAGRAM

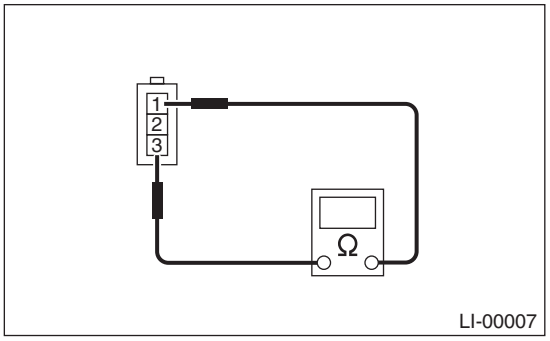
1. ROOM LIGHT

<Ref. to WI-128, WIRING DIAGRAM, Interior Light System.>

B: INSPECTION

1. DOOR SWITCH

Measure the door switch resistance.



Switch position	Terminal No.	Standard
When door is opened	1 and 3	Less than 1 Ω
When door is closed		1 MΩ or more

2. REAR GATE LATCH SWITCH

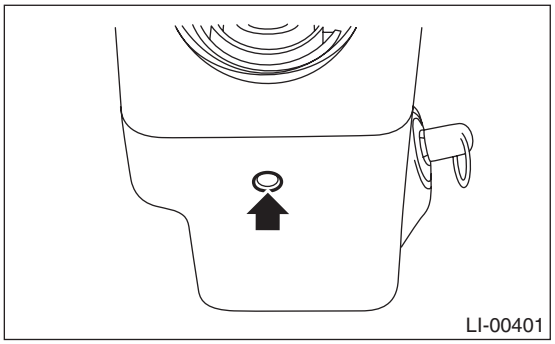
Measure the rear gate latch switch resistance.

Switch position	Terminal No.	Standard
When rear gate is opened	1 and 2	Less than 1 Ω
When rear gate is closed		1 MΩ or more

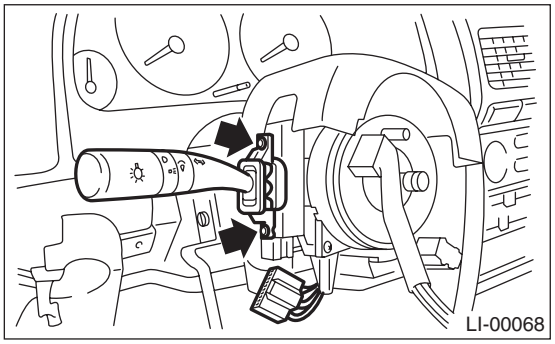
8. Combination Switch (Light)

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the instrument panel lower cover. <Ref. to EI-38, REMOVAL, Instrument Panel Assembly.>
3) Remove the screws which secure upper column cover to lower column cover.



4) Disconnect the connector from combination switch.
5) Remove the screws which secure the switch, then remove the switch.

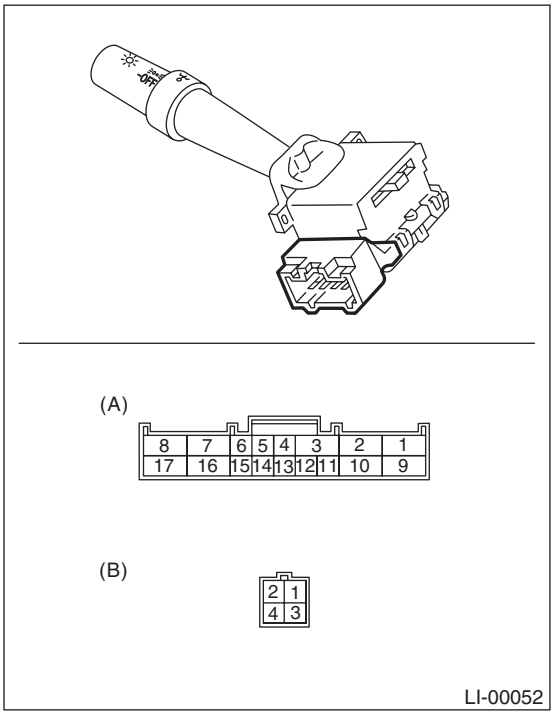


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the combination switch resistance.



(A) Lighting switch and turn signal switch connector
(B) Parking switch connector

1. LIGHTING SWITCH

Switch position	Terminal No.	Standard
OFF	—	1 MΩ or more
Tail	14 and 16	Less than 1 Ω
Head	13, 14 and 16	Less than 1 Ω

2. DIMMER AND PASSING SWITCH

Switch position	Terminal No.	Standard
Passing	7, 8 and 16	Less than 1 Ω
Low beam	16 and 17	Less than 1 Ω
High beam	7 and 16	Less than 1 Ω

3. TURN SIGNAL SWITCH

Switch position	Terminal No.	Standard
Left	1 and 2	Less than 1 Ω
Neutral	—	1 MΩ or more
Right	2 and 3	Less than 1 Ω

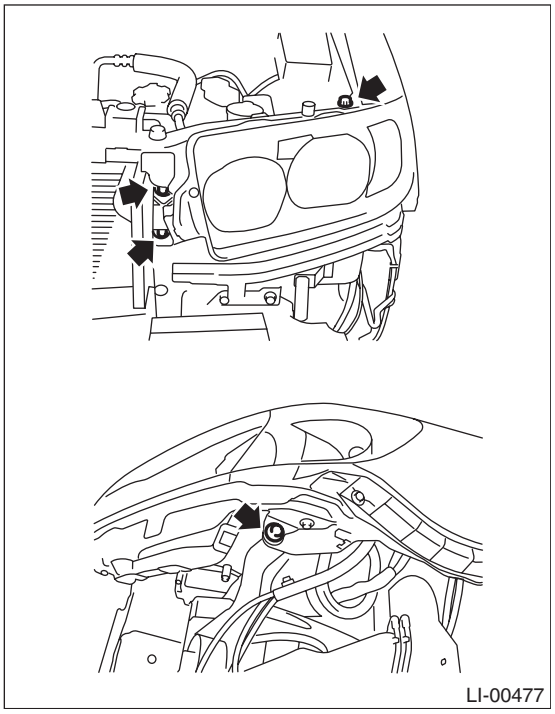
4. PARKING SWITCH

Switch position	Terminal No.	Standard
OFF	2 and 4	Less than 1 Ω
ON	1 and 4	Less than 1 Ω

9. Headlight Assembly

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the air intake duct. (when right side headlight is removed) <Ref. to IN(H4SO)-5, REMOVAL, Air Cleaner Case.>
3) Remove the front bumper. <Ref. to EI-20, REMOVAL, Front Bumper.>
4) Remove the four bolts and disconnect the connectors, and then detach the headlight assembly.


LI-00477

B: INSTALLATION

Install in the reverse order of removal.

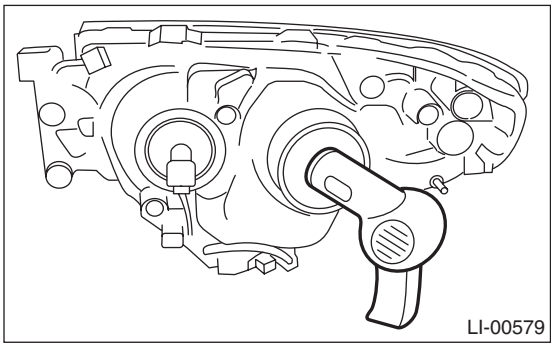
C: DISASSEMBLY

1. LENS

CAUTION:
- **Do not touch the bulb glass portion.**
- **Do not touch inside the lens (extension portion) or reflector portion.**
- **Replace the packing with a new part.**

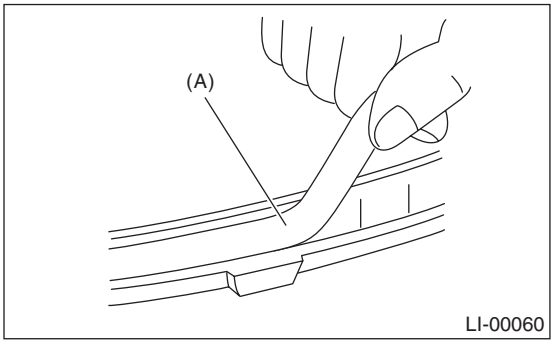
1) Remove the headlight assembly. <Ref. to LI-10, REMOVAL, Headlight Assembly.>
2) Disconnect the headlight bulb connector.
3) Remove the back cover and then remove the bulb.
4) Use a drier to warm up the area around the seal through the bulb installation hole.

CAUTION:
Avoid heating one specific point of the seal portion and heating the headlight assembly to 120°C (248°F) or more.


LI-00579

5) Remove the hook, and then take the lens off the headlight assembly.
6) Remove the packing (A) from seal groove.

CAUTION:
Completely remove the packing not to leave any residue behind.



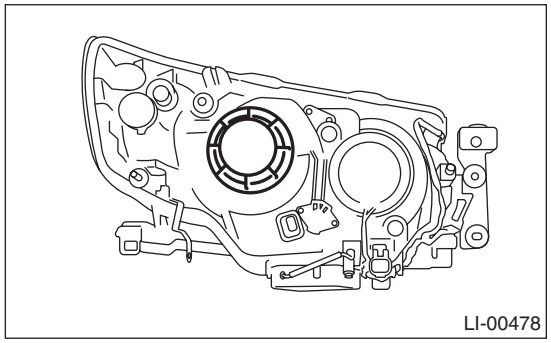
LI-00060

(A) Packing

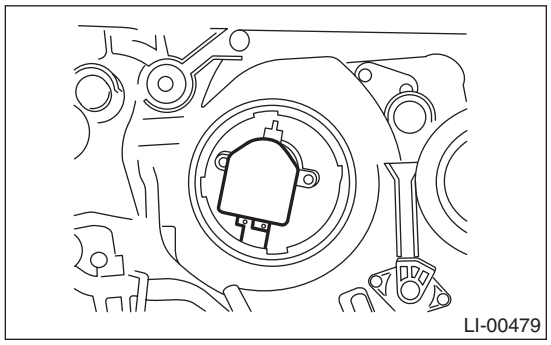
2. HID HEADLIGHT BALLAST

CAUTION:
• Do not operate with wet hands.
• As the lightening circuit on the HID headlights uses high voltage, be sure to confirm that the power supply is turned off before working on it.
• Do not leave the headlight without a ballast for a long time. Dust, moisture, etc. entering the headlight may affect its performance.

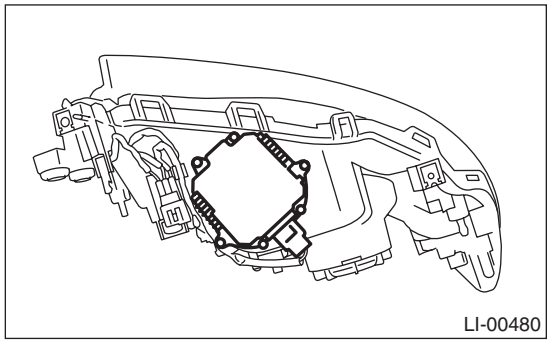
1) Disconnect the ground cable from the battery.
2) Remove the headlight assembly. <Ref. to LI-10, REMOVAL, Headlight Assembly.>
3) Remove the back cover.


LI-00478

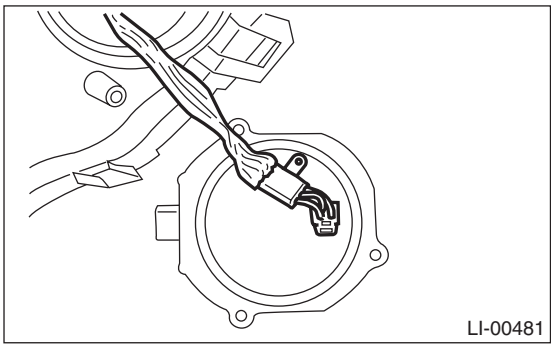
4) Disconnect the harness connector.


LI-00479

5) Loosen the screws to remove ballast.


LI-00480

6) Disconnect the connector from the headlight ballast.


LI-00481

CAUTION:
Be careful because the notch is easily bent.

7) Turn the beam adjustment screw so that the beam is facing upward, then create space for the socket portion to pass through the inside of the light.

CAUTION:
The reflector should not interfere with the extension case.

8) Place the socket portion toward the front side of the reflector bracket.
9) Turn the beam adjustment screw so that the beam is facing downward, then create space for the socket portion to pass under the reflector bracket.

CAUTION:
The reflector should not interfere with the extension case.

10) Remove the socket from headlight from below the housing.

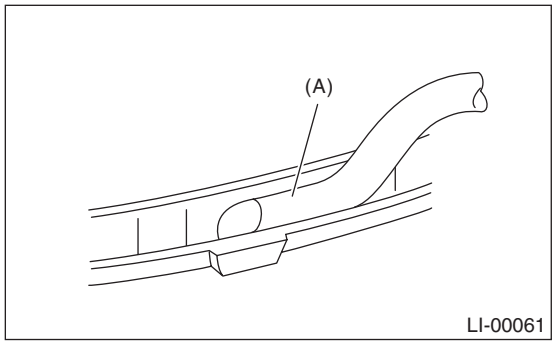
CAUTION:
The socket should not get sandwiched between the reflector and the light housing.

D: ASSEMBLY

1. LENS

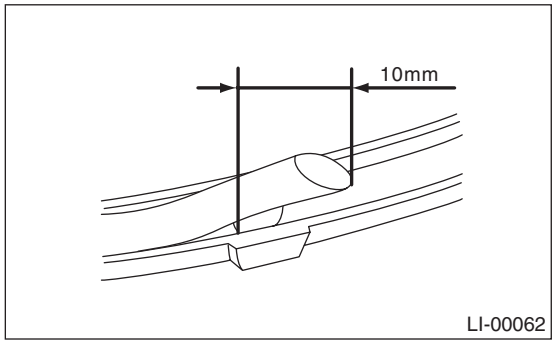
1) Cut the tip of packing (A) at an angle of 45°.
2) With the cut end facing upward, insert packing (A) into the seal groove.

CAUTION:
• If the packing protrudes, slowly take it off the groove.
• Do not stretch the packing. If the packing is stretched, seal fails.



(A) Packing

3) After making a round of the seal, cut its tip at an angle of 45°, with its length 10 mm (0.39 in) longer than the circumference of seal so that the tip overlaps the other. Then, press it onto the seal, using a screwdriver.



4) Match the positions of the lens and headlight assembly, and then insert the lens into the headlight assembly.
5) Engage the hooks.
6) Put the seal portion of headlight assembly into the water and check that water does not enter inside the headlight.

CAUTION:
Be sure that water does not enter inside the headlight through the bulb socket and ventilation hole.

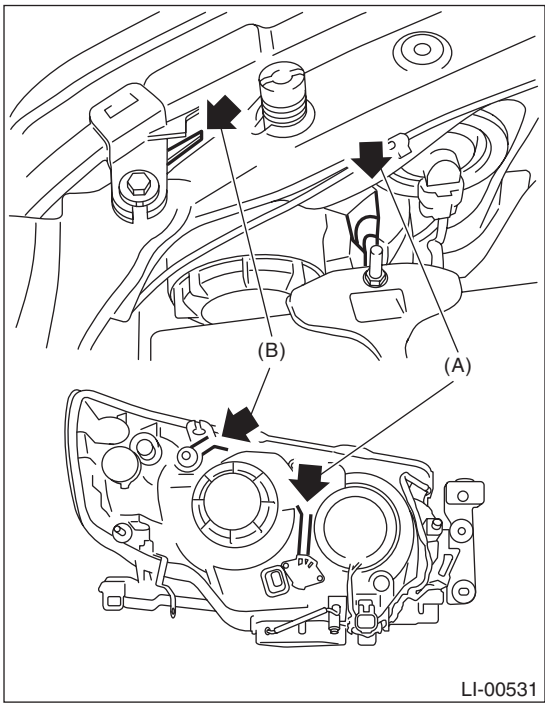
E: ADJUSTMENT

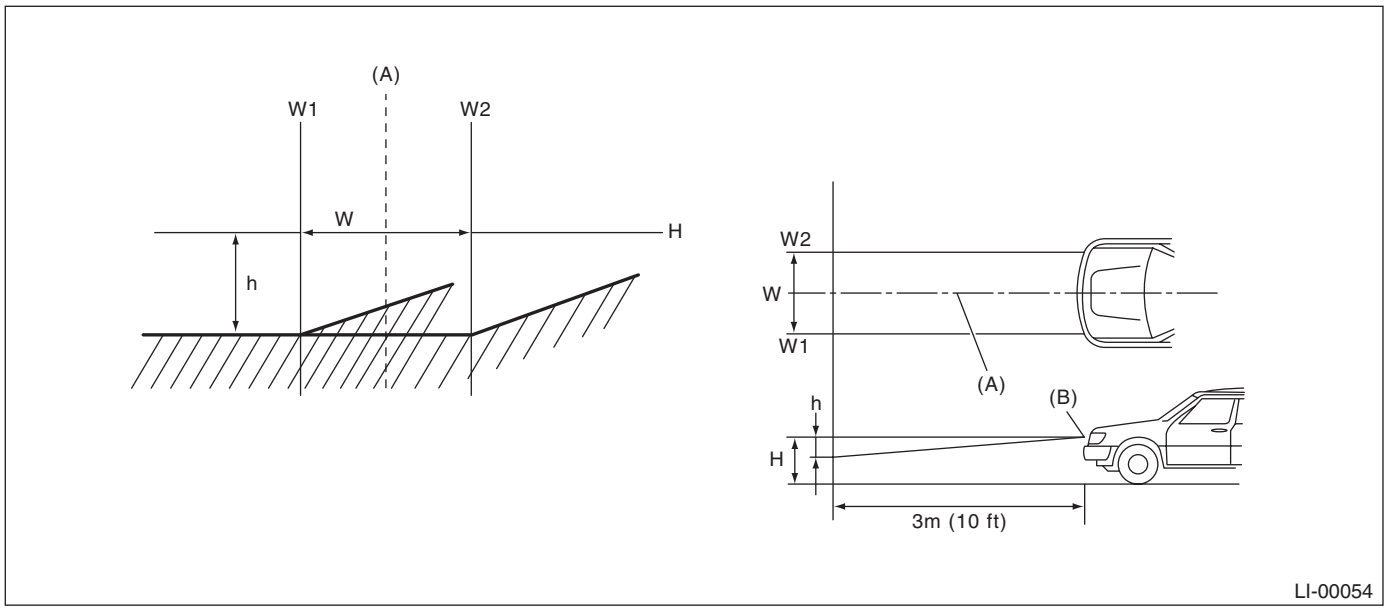
1. HEADLIGHT AIMING

CAUTION:
Turn off the light before adjusting the headlight aiming. If it is necessary to inspect the aiming, do not turn on the light for more than two minutes.

NOTE:
Before checking the headlight beam level, be sure of the following:
• The area around the headlight does not have any scratch, damage or other type of deformation.
• Vehicle is parked on a level surface.
• The inflation pressure of tires is correct.
• Vehicle's fuel tank is full.
1) Bounce the vehicle several times to normalize the suspension.
2) Make certain that someone is seated in the driver's seat.
3) Measure the distance between the low beam valve centers and the height of the valve center.
4) Cover the headlight that is not being adjusted with a cloth.
5) Turn the headlights on and then adjust the low beam while displaying the beam on the screen.

NOTE:
Adjust the vertical beam level (A) first, then horizontal beam level (B) using a screwdriver.





(A) Vehicle center (B) Bulb center marking

h mm (in) at 3 m (10 ft)	21 (0.83)

10.Headlight Bulb

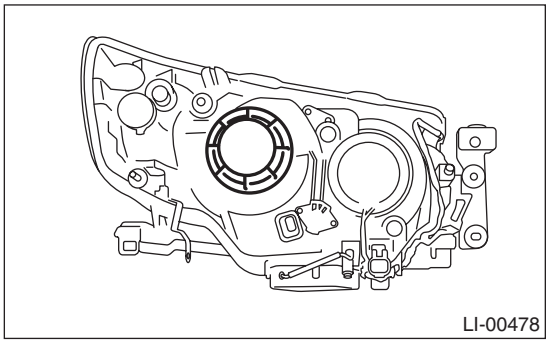
A: REMOVAL

1. HALOGEN TYPE

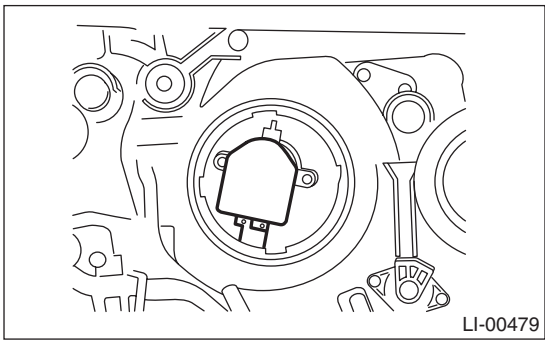
CAUTION:
• Because the halogen bulb operates at a high temperature, dirt and oil on the bulb surface reduces the bulb's service life. Hold the flange portion when replacing the bulb and never touch the glass portion.
• The entering of dust, moisture, etc. into the headlight may affect its performance. Therefore, never leave the headlight without a bulb for extended periods of time.
1) Disconnect the ground cable from the battery.
2) Remove the air intake duct. (when right side headlight is removed) <Ref. to IN(H4SO)-5, REMOVAL, Air Cleaner Case.>
3) Remove the back cover.
4) Disconnect the harness connector.
5) Remove the light bulb retaining spring to remove the bulb.

2. HID TYPE

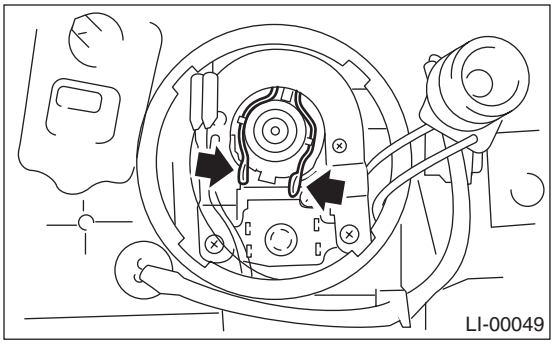
CAUTION:
• Do not operate with wet hands.
• As the lightening circuit uses high voltage, be sure to confirm that the power supply is turned off before working on it.
• When replacing the bulb, hold the flange portion and never touch the glass portion.
• Do not leave the headlight without a bulb for a long time. Dust, moisture, etc. entering the headlight may affect its performance.
1) Disconnect the ground cable from the battery.
2) Remove the headlight assembly. <Ref. to LI-14, HID TYPE, REMOVAL, Headlight Bulb.>
3) Remove the back cover.

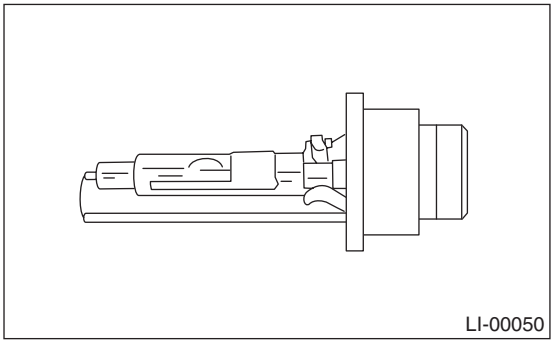

LI-00478

4) Disconnect the harness connector.


LI-00479

5) Remove the light bulb retaining spring to remove the bulb.


LI-00049


LI-00050

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

1. HALOGEN TYPE

1) Visually check the bulb for blow out.
2) Check the bulb specification.
<Ref. to LI-2, SPECIFICATION, General Description.>
3) If NG, replace the bulb with a new part.

2. HID TYPE

CAUTION:
• Do not operate with wet hands.
• Do not touch the harness, inner headlight, or any metallic portion of the headlight when the light is illuminated (when the lighting switch is turned on).
• When performing a lighting test, make sure that the headlight is mounted on the vehicle, and the power supply is connected to the connector on the vehicle's side.
1) Check the bulb specification.
<Ref. to LI-2, SPECIFICATION, General Description.>
2) Install a specified HID bulb for headlight lighting test.
3) If the headlight does not illuminate, replace the bulb with a new part.
4) Check the HID ballast.
Check the ballast in the following methods and judge if it can be reused or not.

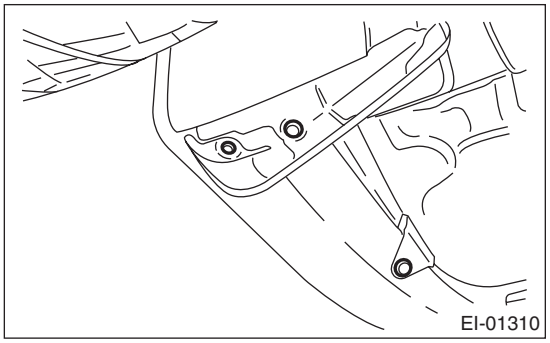
(1) Perform the cold start (turning on the lights after the headlights is gone off for more than 10 minutes) and hot start (turning on the headlights for more than 15 minutes → turning off the lights for one minute → turning on the lights again) several times and check if the headlights are lit surely.
(2) Check the lighting condition from immediately after the cold start until the stable condition (approx. 5 min.), to make sure that the unstable condition (flicker etc.) does not occur.
(3) Attach the two bulbs having been used for the same period of time to the right and left headlights and keep the headlights for approx. 30 minutes lit. Check the difference of brightness between right and left headlights.

5) If NG, replace the ballast with a new part.

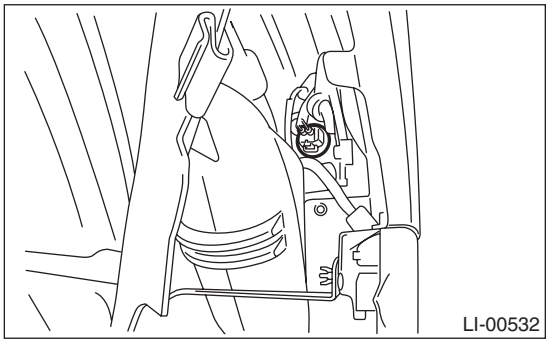
11.Front Turn Signal Light Bulb

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the three clips holding the mud guard.



3) Turn over the mud guard and turn the socket and then remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

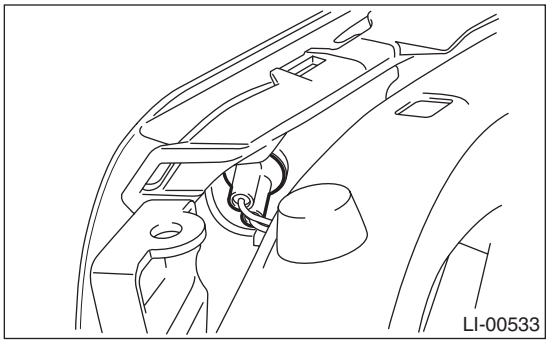
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification.
<Ref. to LI-2, SPECIFICATION, General Description.>
3) If NG, replace the bulb with a new part.

12.Clearance/Parking Light Bulb

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the six clips holding the upper part of bumper face and turn over the upper part of bumper face.
3) Turn the socket and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

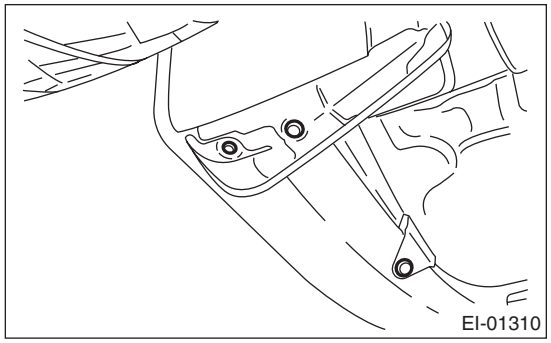
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification.
<Ref. to LI-2, SPECIFICATION, General Description.>
3) If NG, replace the bulb with a new part.

13.Front Side Marker Light Bulb

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the three clips holding the mud guard.



3) Turn over the mud guard, turn the socket and then remove the bulb.

B: INSTALLATION

Install in the reverse order of removal.

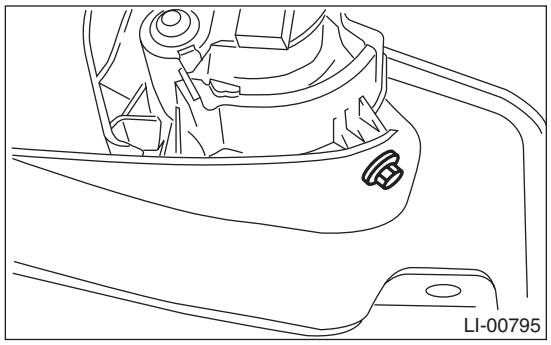
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification.
<Ref. to LI-2, SPECIFICATION, General Description.>
3) If NG, replace the bulb with a new part.

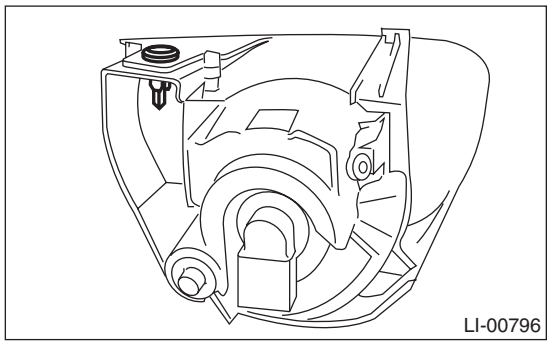
14.Front Fog Light Assembly

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the front bumper. <Ref. to EI-20, REMOVAL, Front Bumper.>
3) Remove the lower side bolt.



4) Remove the upper side clip, and then detach the fog light assembly.



B: INSTALLATION

Install in the reverse order of removal.

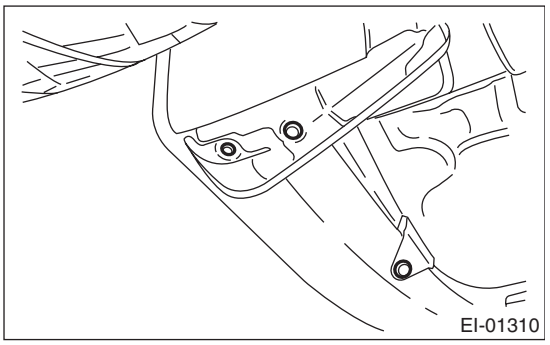
C: ADJUSTMENT

Fog light aiming

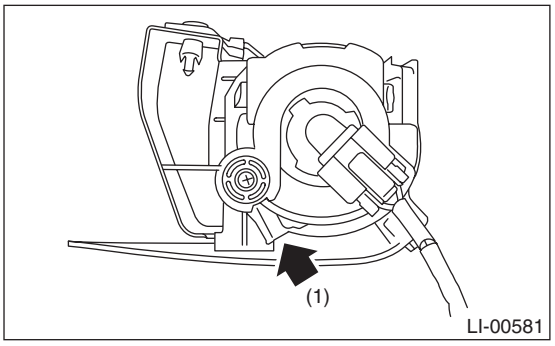
NOTE:
Before checking the fog light beam level, be sure of the following:

- The area around the fog light does not have any scratch, damage or other type of deformation.
- Vehicle is parked on a level surface.
- The inflation pressure of tires is correct.
- Vehicle's fuel tank is full.

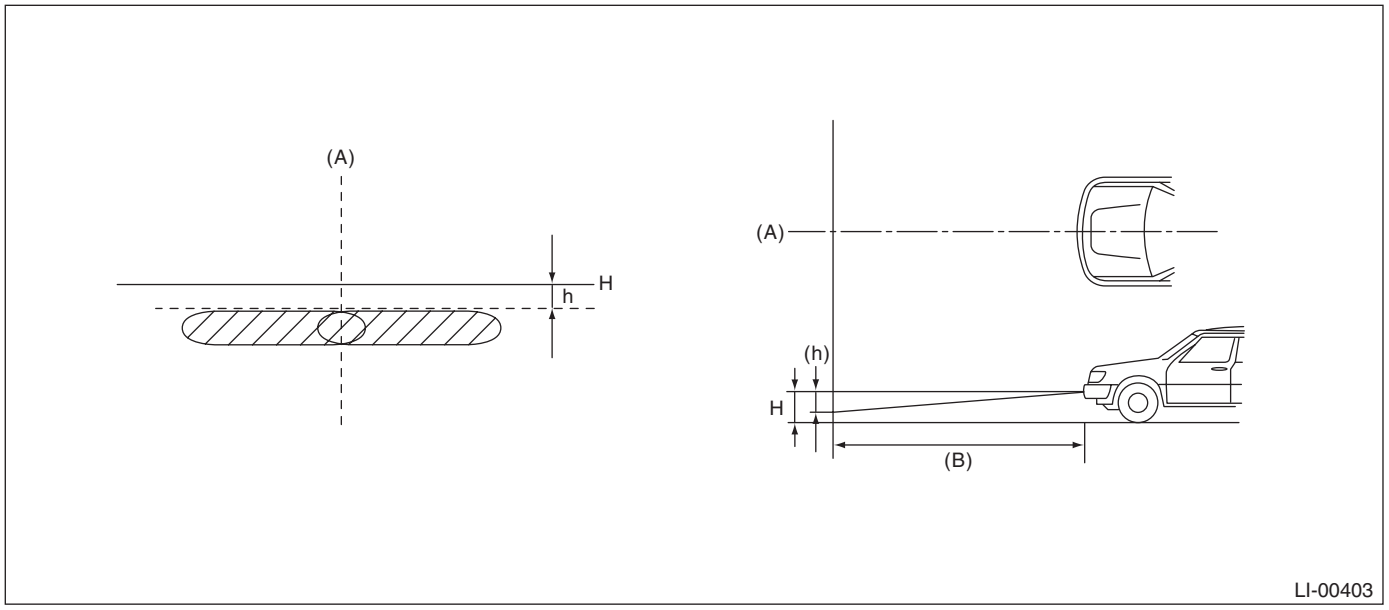
1) Bounce the vehicle several times to normalize the suspension.
2) Make certain that someone is seated in the driver's seat.
3) Measure the height of fog light center.
4) Disengage the three clips, and then turn over the mud guard.



5) Adjust the front fog light pattern by inserting a Phillips screwdriver to the adjusting hole.



(1) Adjusting hole



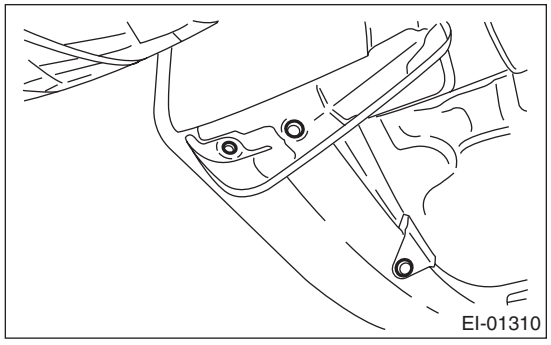
(A) Vehicle center (B) 3 m (10 ft) (H) Height of fog light center (mm)

h dimension mm (in)	39 (1.6)

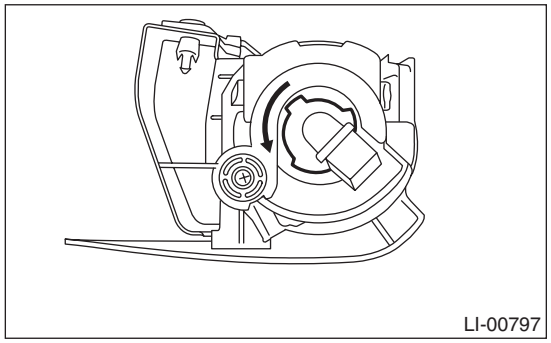
15.Front Fog Light Bulb

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Disengage the three clips, and then turn over the mud guard.



3) Remove the connector then detach the fog light bulb.



B: INSTALLATION

Install in the reverse order of removal.

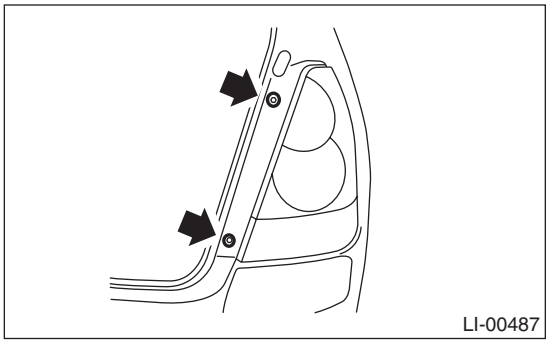
C: INSPECTION

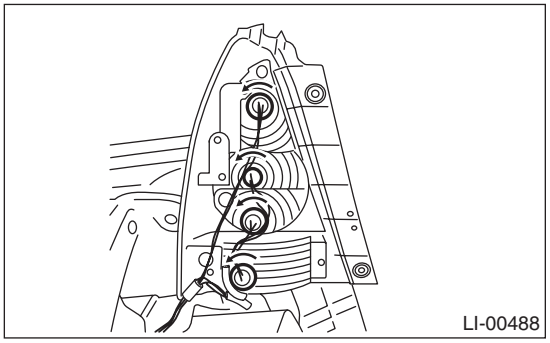
1) Visually check the bulb for blow out.
2) Check the bulb specification.
<Ref. to LI-2, SPECIFICATION, General Description.>
3) If NG, replace the bulb with a new part.

16. Rear Combination Light Assembly

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the two bolts, and then detach the rear combination light after disconnecting the connector.





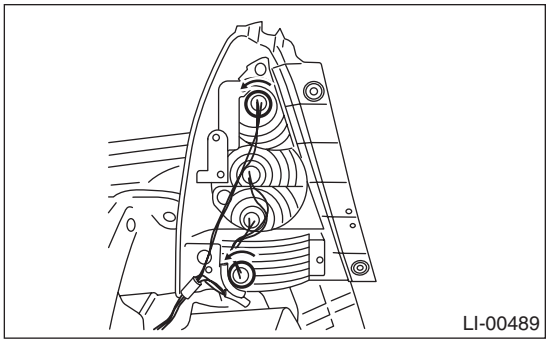
B: INSTALLATION

Install in the reverse order of removal.

17.Tail/Stop Light Bulb

A: REMOVAL

1) Remove the rear combination light assembly. <Ref. to LI-22, REMOVAL, Rear Combination Light Assembly.>
2) Turn the socket and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

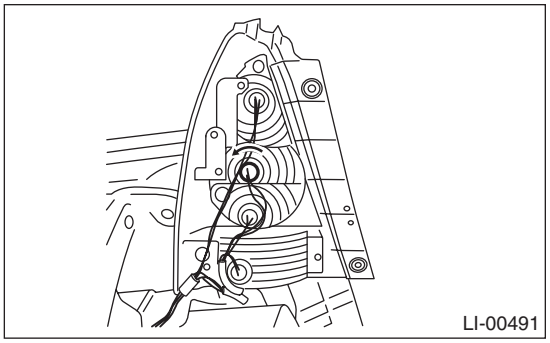
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification.
<Ref. to LI-2, SPECIFICATION, General Description.>
3) If NG, replace the bulb with a new part.

18.Back-up Light Bulb

A: REMOVAL

1) Remove the rear combination light assembly. <Ref. to LI-22, REMOVAL, Rear Combination Light Assembly.>
2) Turn the socket and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

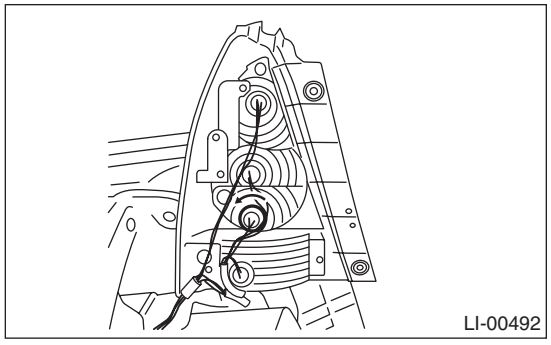
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification.
<Ref. to LI-2, SPECIFICATION, General Description.>
3) If NG, replace the bulb with a new part.

19.Rear Turn Signal Light Bulb

A: REMOVAL

1) Remove the rear combination light assembly. <Ref. to LI-22, REMOVAL, Rear Combination Light Assembly.>
2) Turn the socket and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

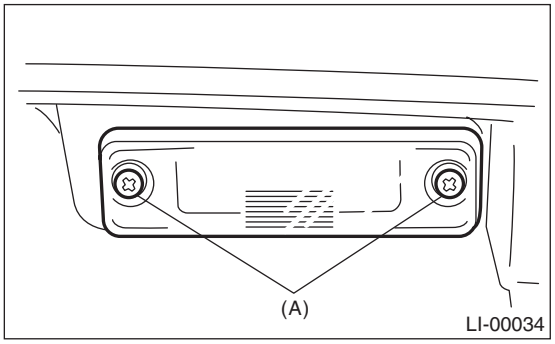
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification.
<Ref. to LI-2, SPECIFICATION, General Description.>
3) If NG, replace the bulb with a new part.

20.License Plate Light

A: REMOVAL

1) Remove the license plate light mounting screw (A) and then remove the lens.



2) Remove the bulb.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

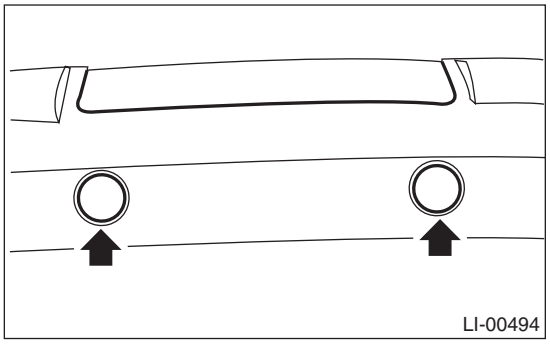
1) Visually check the bulb for blow out.
2) Check the bulb specification.
<Ref. to LI-2, SPECIFICATION, General Description.>
3) If NG, replace the bulb with a new part.

21.High-mounted Stop Light

A: REMOVAL

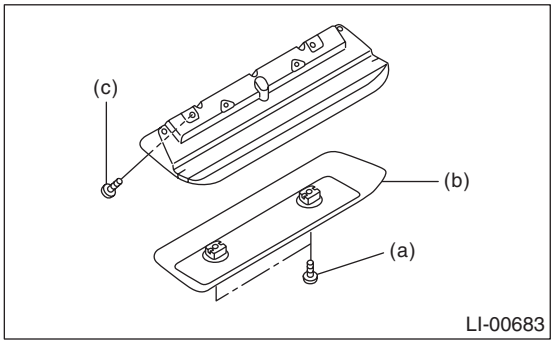
1. REAR SPOILER BUILT-IN TYPE

1) Disconnect the ground cable from the battery.
2) For model with roof spoiler, remove the roof spoiler.
3) Unpeel the tape on the backside of the high-mounted stop light and remove the nuts, to remove the high-mounted stop light.



2. STANDARD TYPE

1) Disconnect the ground cable from the battery.
2) Remove the screws (a) and then detach the cover (b).
3) Remove the screws (c) and then detach the high-mounted stop light while disconnecting the connector.



B: INSTALLATION

Install in the reverse order of removal.

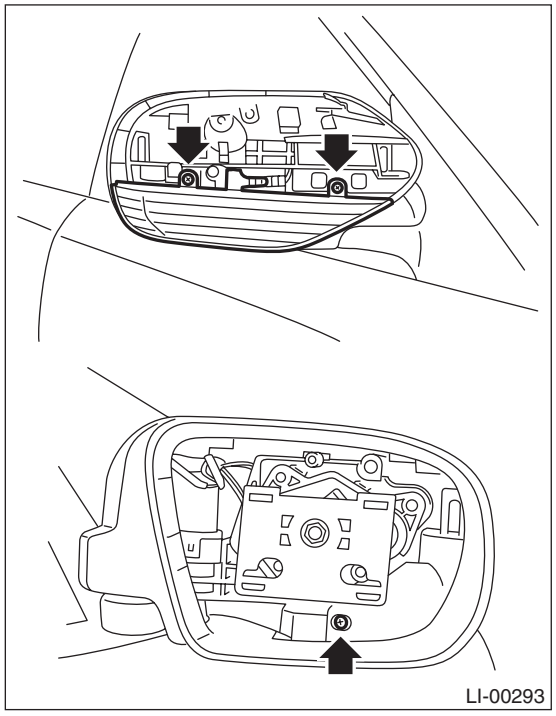
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification.
<Ref. to LI-2, SPECIFICATION, General Description.>
3) If NG, replace the bulb with a new part.

22.Side Turn Signal Light Assembly

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the scalp cap. <Ref. to GW-11, REPLACEMENT, Scalp Cap.>
3) Disconnect the harness connector, remove the 3 mounting screws and then remove the side turn signal light assembly.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

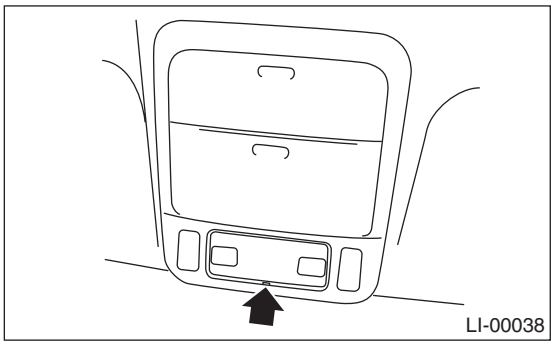
1) Install the side turn signal light assembly and check that it blinks normally.
2) If it does not blink normally, replace the side turn signal light assembly with a new part.

NOTE:
Since a LED (Light Emitting Diode) is used for the side turn signal light, replace the side turn signal light assembly if the LED does not turn on.

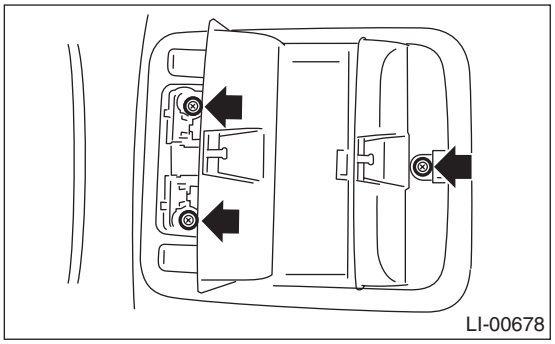
23.Spot Map Light

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Insert a flat tip screwdriver into the notch on the lens and remove it by prying.



3) Remove the spot map light mounting screw.



4) Disconnect the harness connectors and remove the spot map light.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

1. SPOT MAP LIGHT BULB

1) Visually check the bulb for blow out.
2) Check the bulb specification.
<Ref. to LI-2, SPECIFICATION, General Description.>
3) If NG, replace the bulb with a new part.

2. SPOT MAP LIGHT SWITCH

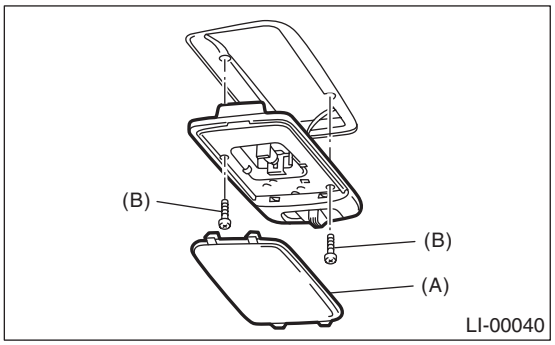
Measure the spot map light switch resistance.

Switch position	Terminal No.	Standard
OFF	—	1 MΩ or more
ON	1 and 2	18±5.4 Ω

24.Room Light

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the lens (A) and mounting screws (B).



3) Disconnect the harness connector and remove the room light.

B: INSTALLATION

Install in the reverse order of removal.

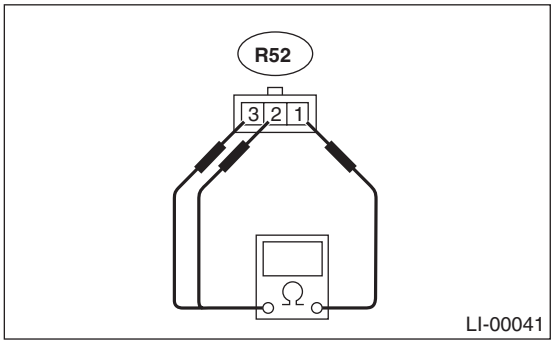
C: INSPECTION

1. ROOM LIGHT BULB

1) Visually check the bulb for blow out.
2) Check the bulb specification.
<Ref. to LI-2, SPECIFICATION, General Description.>
3) If NG, replace the bulb with a new part.

2. ROOM LIGHT SWITCH

Measure the room light switch resistance.

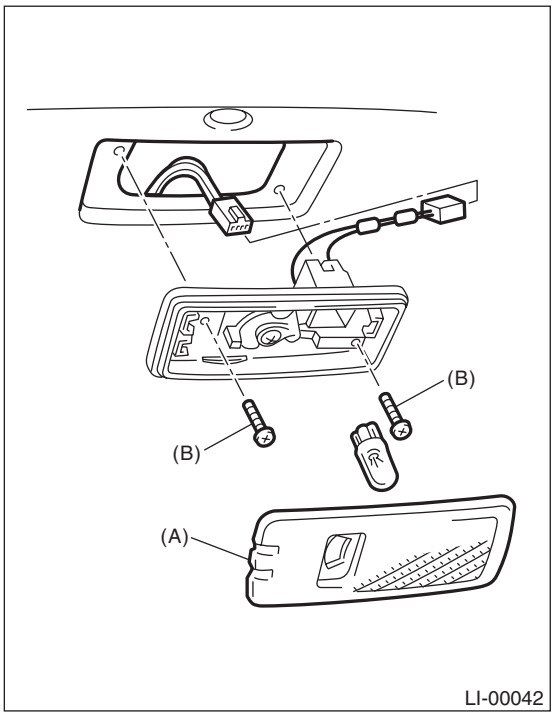


Switch position	Terminal No.	Standard
OFF	—	1 MΩ or more
ON	1 and 3	1.5±0.5 Ω
DOOR	1 and 2	1.5±0.5 Ω

25.Luggage Room Light

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the lens (A) and mounting screws (B) of the luggage room light.



3) Disconnect the harness connectors and remove the luggage room light.

B: INSTALLATION

Install in the reverse order of removal.

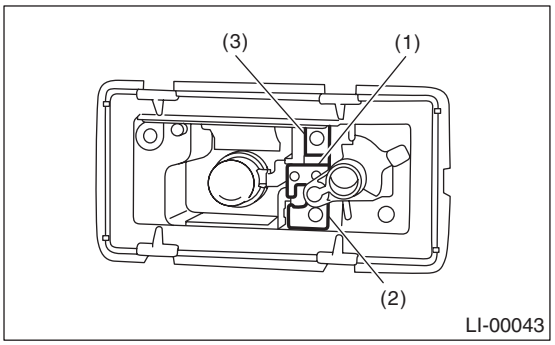
C: INSPECTION

1. LUGGAGE ROOM LIGHT BULB

1) Visually check the bulb for blow out.
2) Check the bulb specification.
<Ref. to LI-2, SPECIFICATION, General Description.>
3) If NG, replace the bulb with a new part.

2. LUGGAGE ROOM LIGHT SWITCH

Measure the luggage room light switch resistance.



Switch position	Terminal No.	Standard
OFF	—	1 MΩ or more
ON	1 and 3	1.5±0.5 Ω
DOOR	1 and 2	1.5±0.5 Ω

1. Basic Diagnostic Procedure

A: PROCEDURE

Step		Check	Yes	No
1	**CHECK WARNING LIGHT.** Check whether the airbag warning light in combination meter illuminates.	Does the airbag warning light illuminate?	Go to step **2**.	Perform the diagnosis according to DTC.
2	**CHECK INDICATION OF DTC.** 1) Turn the ignition switch to OFF. 2) Connect the Subaru Select Monitor to the data link connector. 3) Turn the ignition switch to ON and run the Subaru Select Monitor. 4) Read the DTC. <Ref. to OD(diag)-19, OPERATION, Read Diagnostic Trouble Code (DTC).> NOTE: If the communication function of the Subaru Select Monitor cannot be executed normally, check the communication circuit. <Ref. to OD(diag)-18, COMMUNICATION FOR INITIALIZING IMPOSSIBLE, INSPECTION, Subaru Select Monitor.> 5) Record all DTCs and freeze frame data.	Is DTC displayed?	Go to step **3**.	<Ref. to AB(diag)-36, Airbag Warning Light Failure.> Go to “Airbag Warning Light Failure”.
3	**PERFORM DIAGNOSIS.** 1) Judge the possible cause from “List of Diagnostic Trouble Code” <Ref. to OD(diag)-24, List of Diagnostic Trouble Code (DTC).>. 2) Inspect the DTC using “Chart of Diagnostic Trouble Code (DTC)”. 3) Correct the cause of trouble. 4) Perform the Clear Memory Mode. <Ref. to OD(diag)-21, OPERATION, Clear Memory Mode.> 5) Perform the Inspection Mode. <Ref. to OD(diag)-20, PROCEDURE, Inspection Mode.> 6) Read any other DTCs displayed.	Is DTC displayed?	Perform the procedure 1) to 5) in step 3.	Finish the diagnosis.

2. General Description

A: CAUTION

1) If the seat cushion cover is removed or replaced, make sure to perform occupant detection system adjustment after installing the seat to the vehicle. <Ref. to OD(diag)-17, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>
Failure to do so may cause improper operation of the occupant detection system.
2) As the occupant detection control module and the occupant detection sensor of occupant detection system (passenger's seat only) is securely fixed to the seat cushion frame, never remove the occupant detection control module and pressure sensor from the seat cushion frame.
3) Do not replace the seat cushion pad by itself. Be sure to replace the seat cushion pad & frame assembly as a unit. The seat cushion pad and cushion frame are adjusted as a set at the time of manufacture. If parts from other vehicles or cushion pad and cushion frame of other set is used, the occupant detection system will not function properly.
4) If the seat cushion cover is removed, always replace the wires of the seat cushion cover with new wires.
5) Never connect the battery in reverse polarity. Failure to do so may immediately damage the occupant detection system.
6) Do not disconnect the battery terminals while the engine is running. A large counter electromotive force will be generated in the generator, and this voltage may damage electronic parts such as occupant detection control module etc.
7) Before disconnecting the connectors of each sensor and control module, be sure to turn the ignition switch to OFF and wait for 20 seconds or more. Occupant detection control module may be damaged.
8) Every part relating to occupant detection system is a precision part. Do not drop them.

CAUTION:
• Do not use the electrical test equipment on the airbag system circuits.
• Be careful not to damage the airbag system wiring harness when servicing the occupant detection system.
• Refer to cautions on airbag system when repairing occupant detection system. <Ref. to AB-4, CAUTION, General Description.>

B: INSPECTION

Measure the battery voltage and specific gravity of electrolyte, and check the electrolyte amount.

Standard voltage: 12 V or more

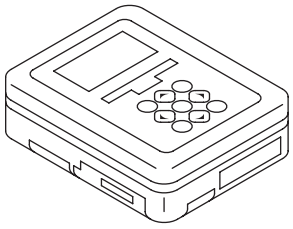
Specific gravity: 1.260 or more

Electrolyte: between the upper level and lower level

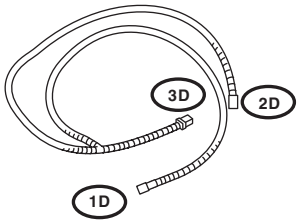
C: PREPARATION TOOL

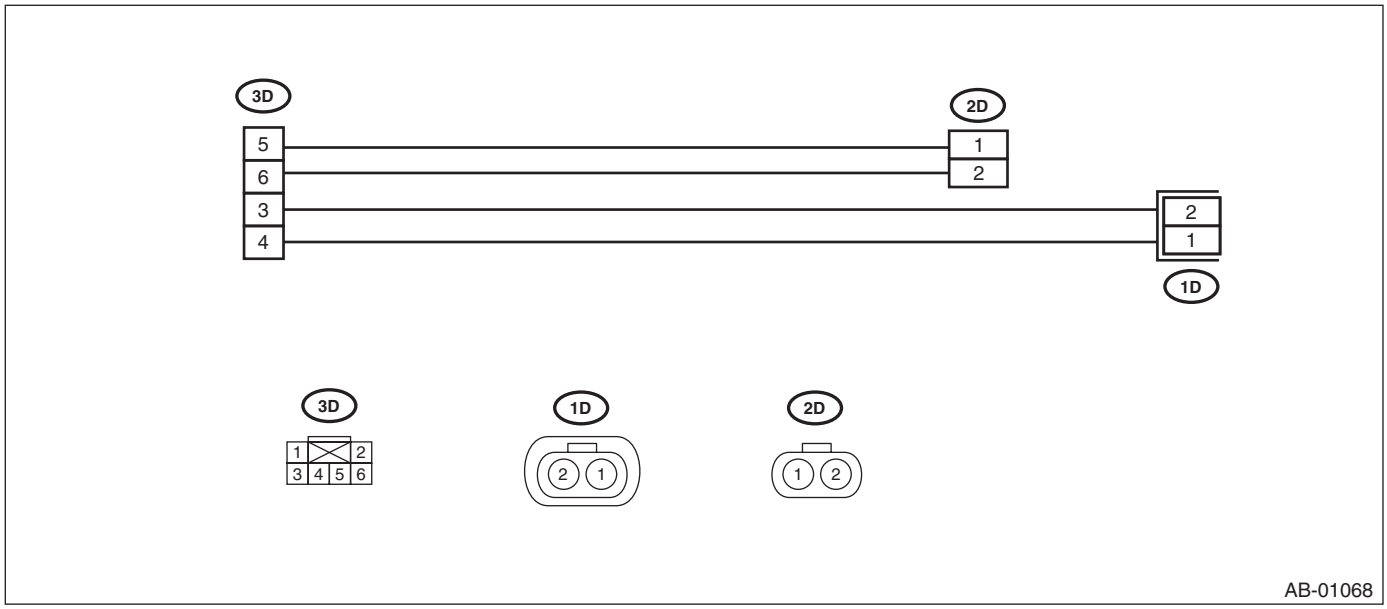
CAUTION:
To measure the voltage and resistance of airbag system component and occupant detection system component, be sure to use the specified test harness.

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST1B021XU0	1B021XU0	SUBARU SELECT MONITOR III KIT	Used for troubleshooting the electrical system.

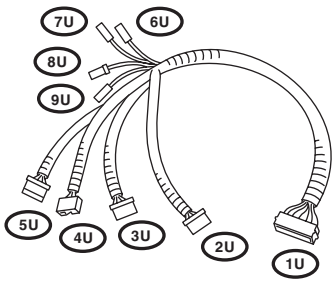
TEST HARNESS D

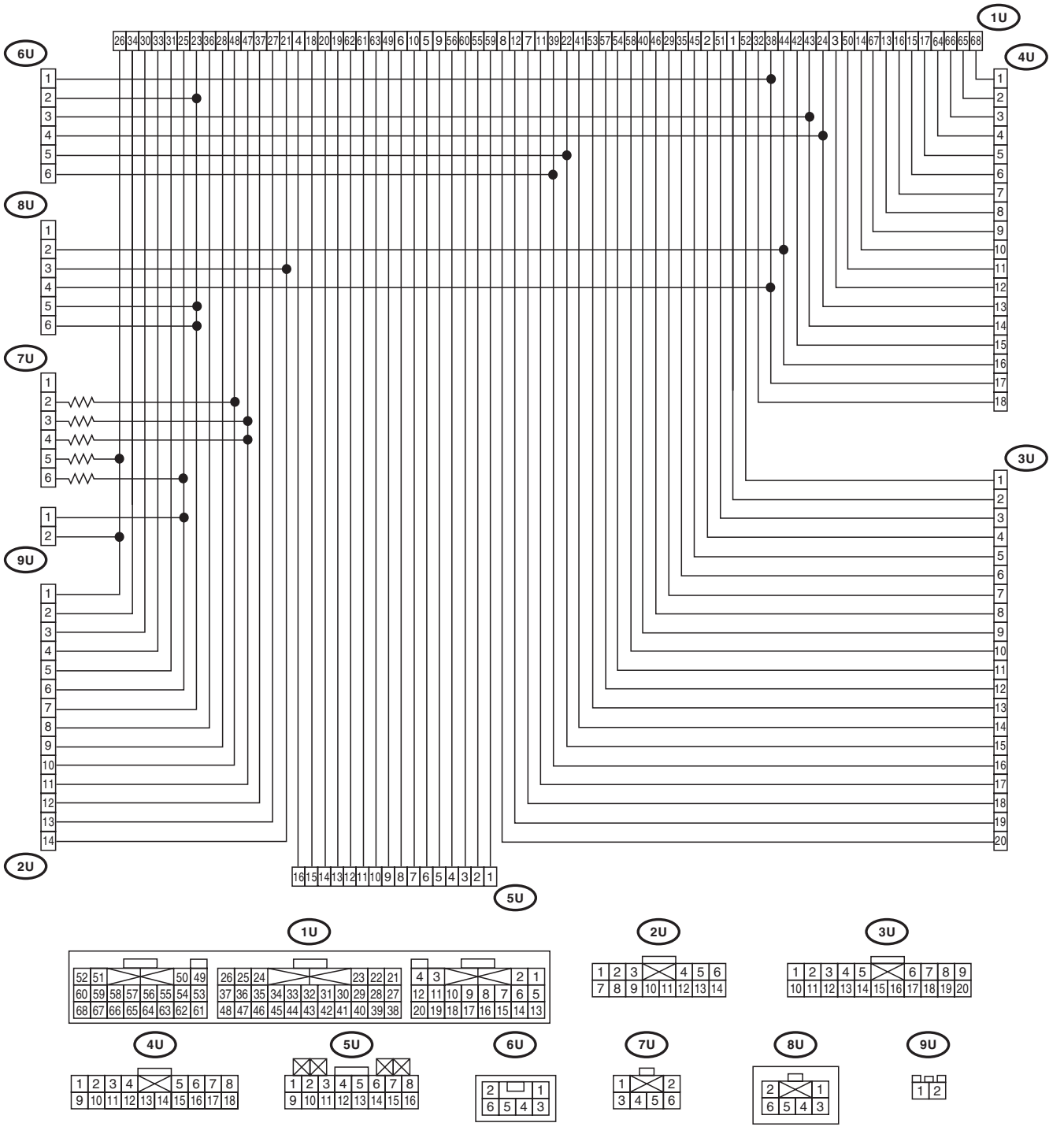
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299AG060	98299AG060	TEST HARNESS D	Used when measuring voltage and resistance of front seat belt buckle switch.



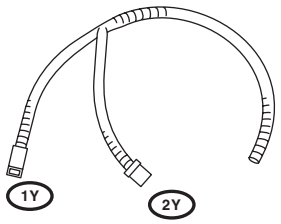
AB-01068

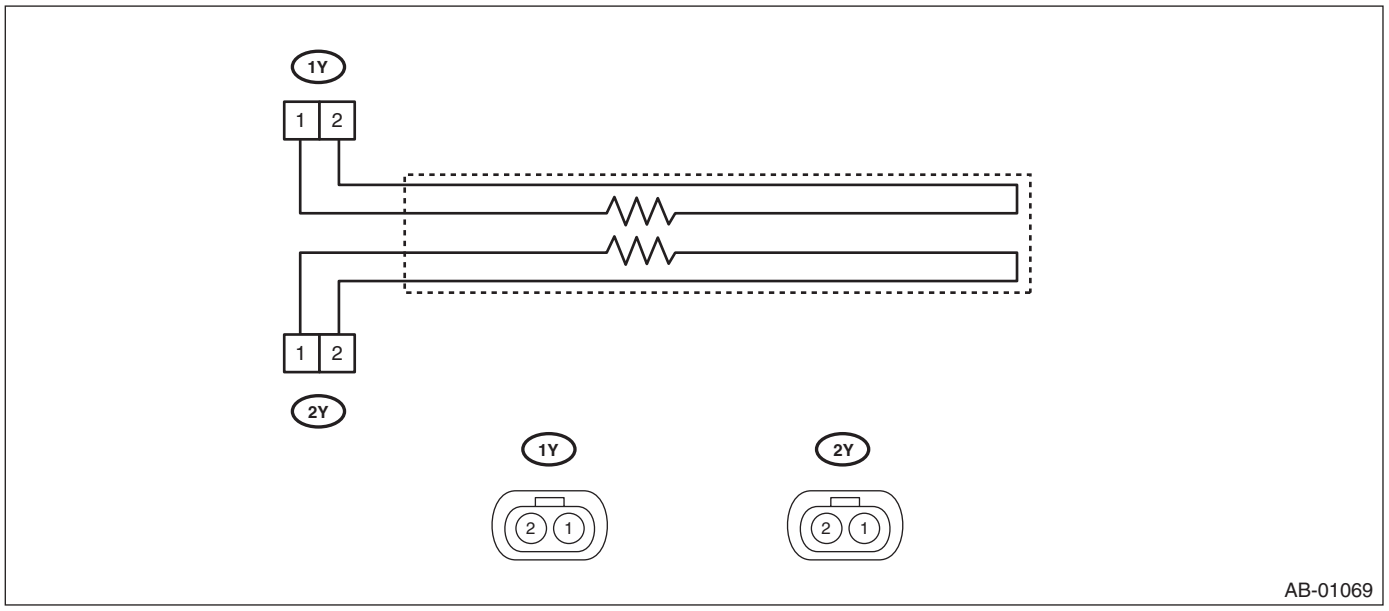
TEST HARNESS U

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299AG000	98299AG000	TEST HARNESS U	Used when measuring voltage and resistance of airbag control module.

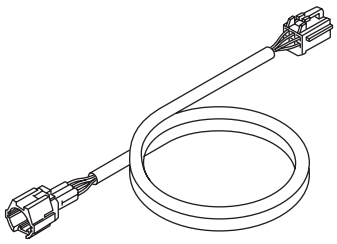

1U
2U
3U
4U
5U
6U
7U
8U
9U
AB-00930

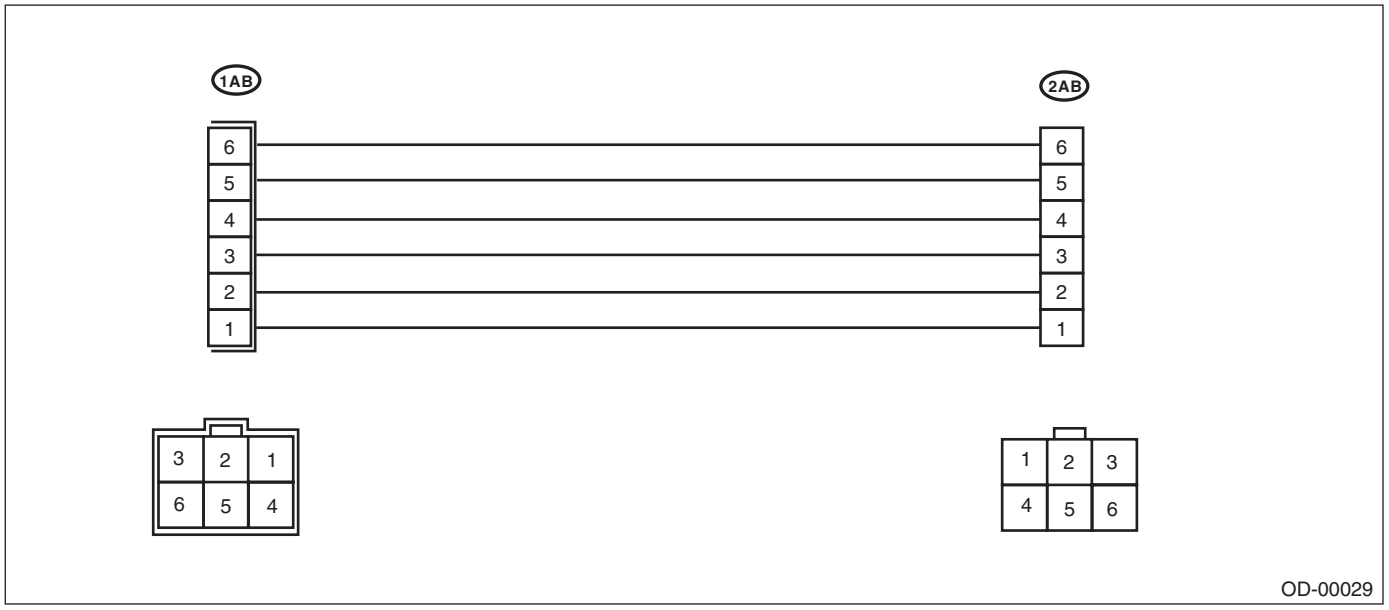
TEST HARNESS Y

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299AG040	98299AG040	TEST HARNESS Y	Used for diagnosing seat belt buckle switch.

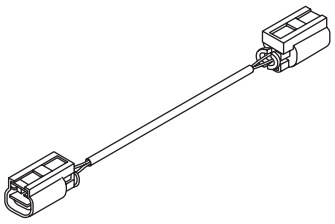


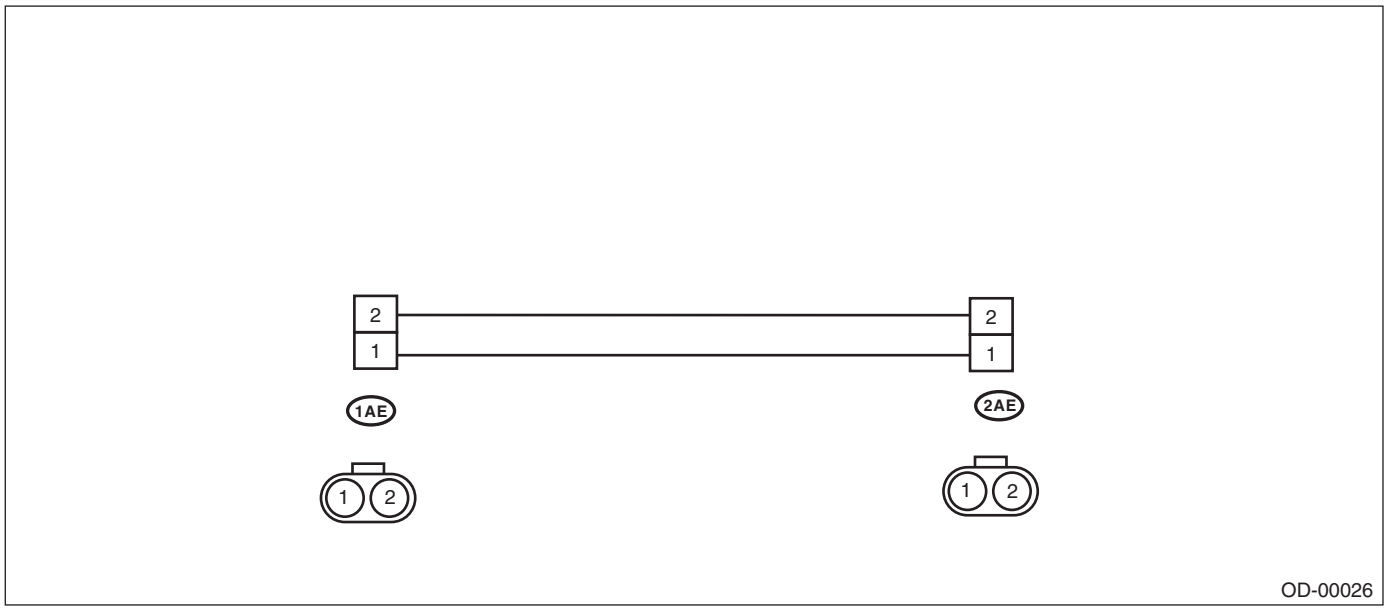
TEST HARNESS AB

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299XA000	98299XA000	TEST HARNESS AB	Used when measuring voltage and resistance of occupant detection system.

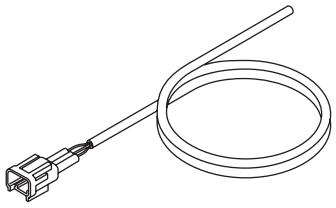


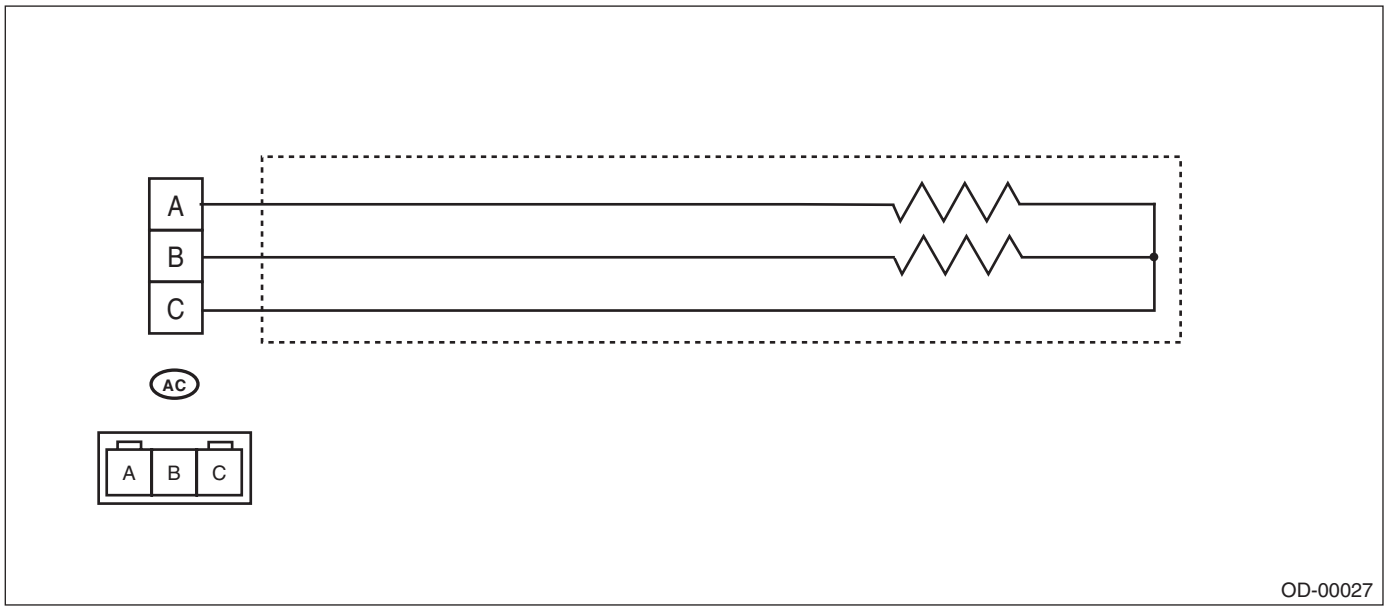
TEST HARNESS AE

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299XA030	98299XA030	TEST HARNESS AE	Adapter harness of TEST HARNESS Y Used for diagnosing seat belt buckle switch.

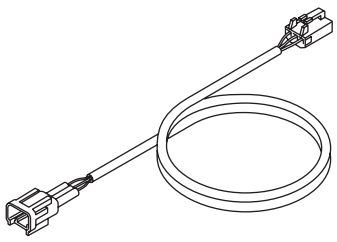


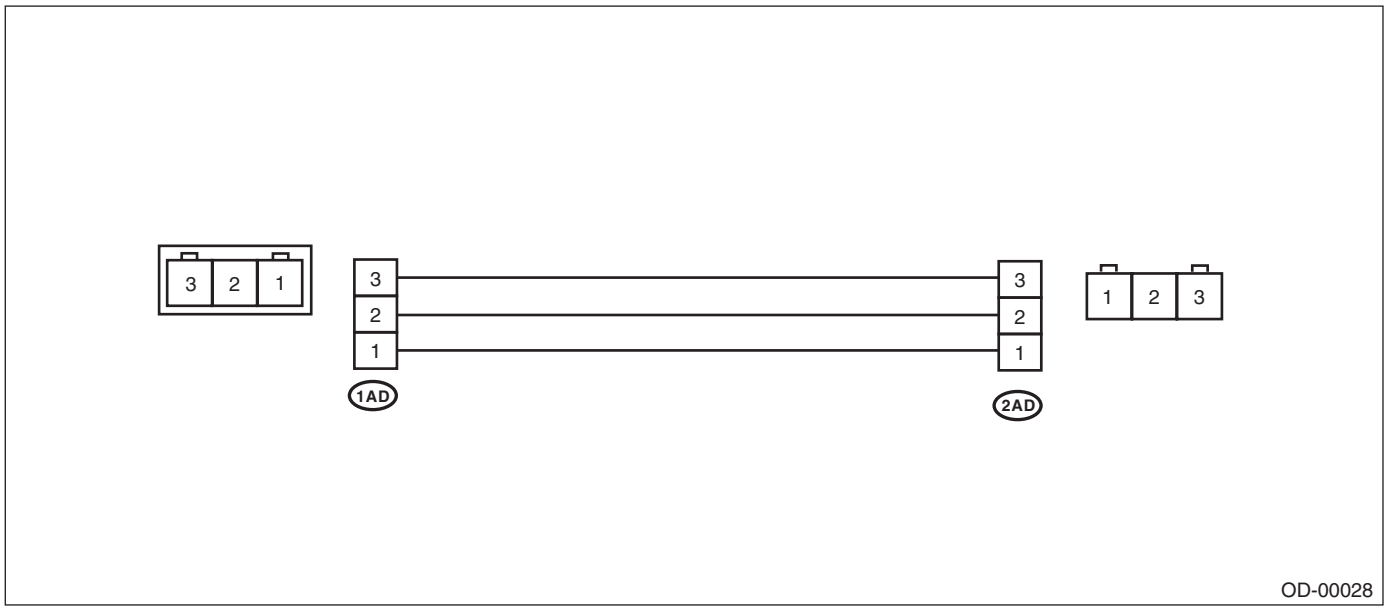
TEST HARNESS AC

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299XA010	98299XA010	TEST HARNESS AC	Used for diagnosing seat belt tension sensor.



TEST HARNESS AD

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299XA020	98299XA020	TEST HARNESS AD	Used for measuring voltage and resistance of seat belt tension sensor.

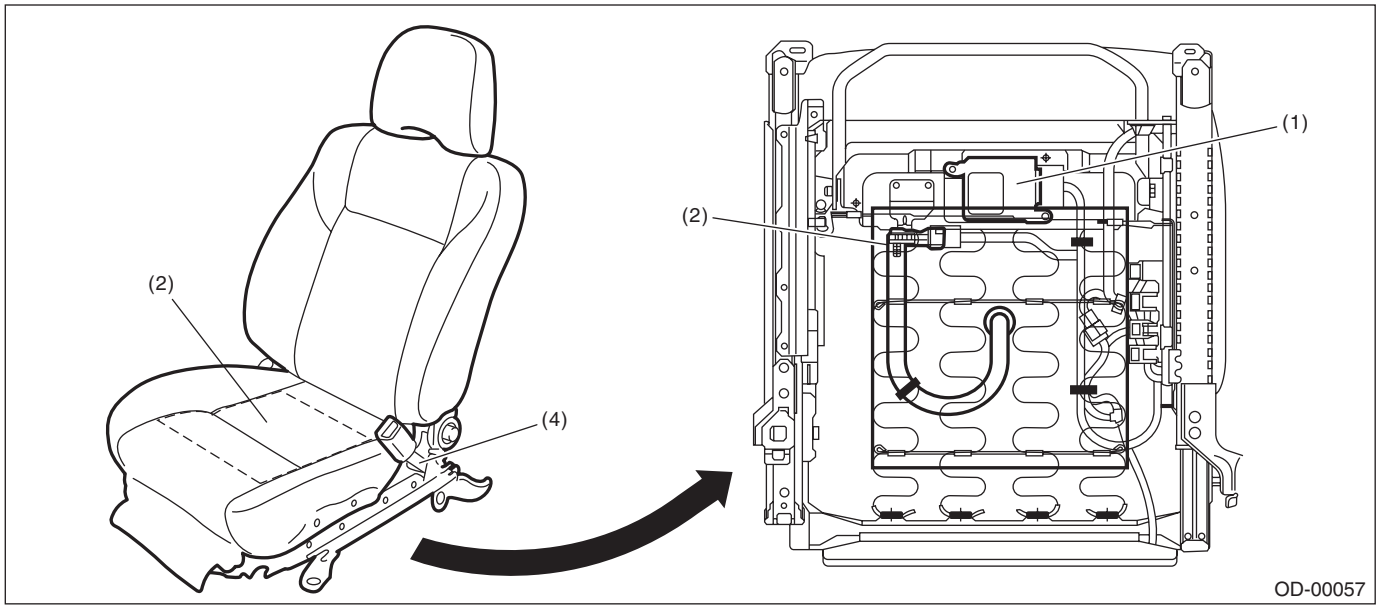


2. GENERAL TOOL

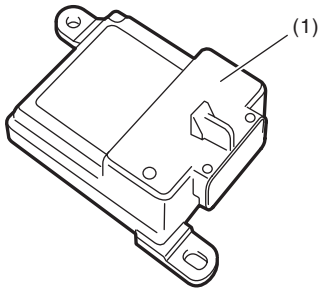
TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance, voltage and current.

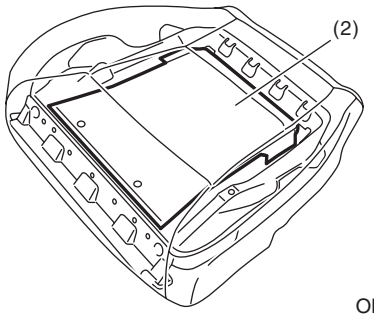
3. Electrical Component Location

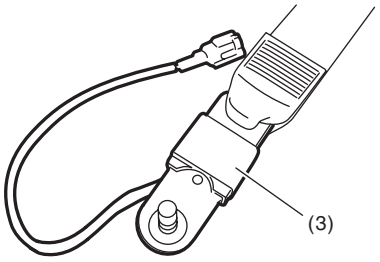
A: LOCATION

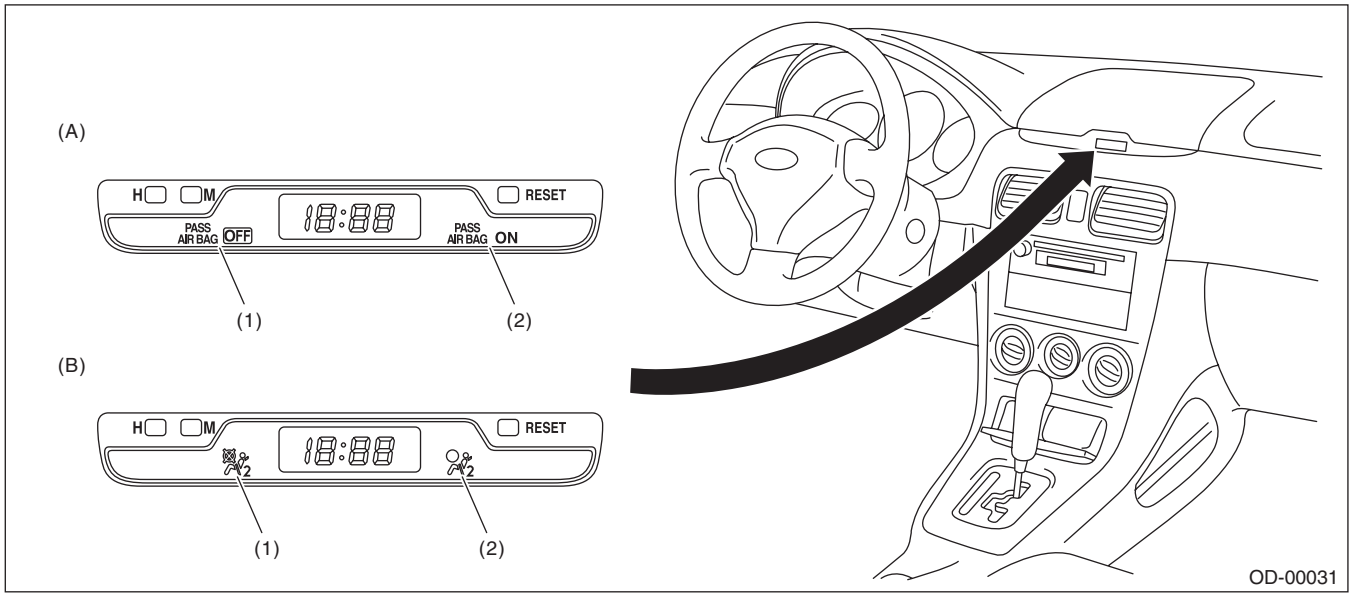


(1) Occupant detection control module
(2) Occupant detection sensor
(3) Seat belt tension sensor
(4) Buckle switch (Passenger's seat)









(A) For North America model

(B) For Canada model

(1) Passenger's airbag OFF indicator light

(2) Passenger's airbag ON indicator light

4. Airbag Connector

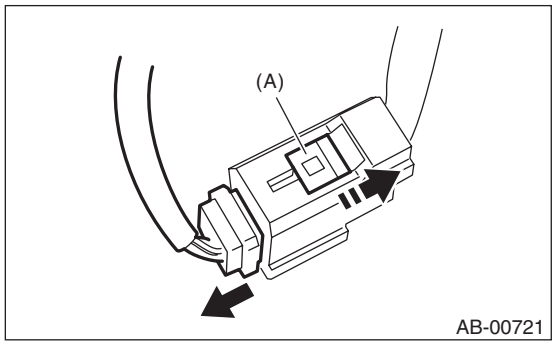
A: PROCEDURE

Buckle switch

1) How to disconnect

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

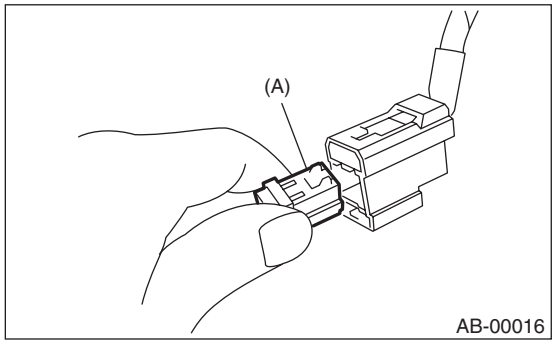
(2) With the slide lock (A) moved, disconnect the connector.



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 (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.

5. Control Module I/O Signal

A: ELECTRICAL SPECIFICATION

CAUTION:
• Never remove the occupant detection control module, occupant detection sensor and seat frame. They are integrated into one unit.
• Because the measuring of the I/O signal of the occupant detection control module is prohibited, there is no list of terminal numbers.

Terminal name		Terminal No.	Input/Output value	Remarks
IG – power supply		9	9 — 16 V	When ignition switch ON
Airbag control module communication	(COM)	10	Open collector terminal	Communication line
Airbag control module communication	(GND)	5	0 V	Ground
Belt tension sensor	(Vcc)	4	0 — 5 V	Belt tension sensor power supply
	(Vout)	16	0.5 — 4.5 V	Sensor output voltage
	(GND)	14	0 V	Sensor ground
Occupant detection sensor	(Vcc)	6	0 — 5 V	Pressure sensor power supply
	(Vout)	7	0.5 — 4.5 V	Sensor output voltage
	(GND)	15	0 V	Sensor ground
Buckle switch		1	0 — IG voltage	IG voltage when the switch is ON
Buckle switch	(GND)	2	0 V	Switch ground

B: WIRING DIAGRAM

Refer to the electrical wiring diagram. <Ref. to WI-94, Airbag System.>

6. Subaru Select Monitor

A: OPERATION

1. READ DIAGNOSTIC TROUBLE CODE (DTC)

When malfunction of the airbag system and the occupant detection system occurs, the DTC stored in airbag control module will be read out.
Refer to DTC readout of airbag system (diagnosis). <Ref. to AB(diag)-28, OPERATION, Subaru Select Monitor.>

NOTE:
- For details concerning operation procedure, refer to the “PC application help for Subaru Select Monitor”.
- For details concerning DTCs, refer to List of Diagnostic Trouble Code (Airbag system, Occupant detection system). <Ref. to AB(diag)-40, List of Diagnostic Trouble Code (DTC).> <Ref. to OD(diag)-24, List of Diagnostic Trouble Code (DTC).>

2. DISPLAY OF STATUS INFORMATION

Check the operating condition of each sensor in the event of malfunction in the seat belt buckle switch and seat position sensor, or when the seat belt buckle switch and seat position sensor has been replaced.
1) Select {Each System Check} in «Main Menu» display screen.
2) Select {Airbag System} in «System Selection Menu» display screen,
3) Select {Status Data} in «Airbag System» menu display screen.
A list of the support data is shown in the following table.

Contents	Content of diagnosis
Seat position sensor LH	Front position *1/Rear position*2 /Other *3/Initial Setting *3 / — *5
Seat position sensor RH	— *5
Seat belt buckle switch LH	Belted *6/Unbelted*7 /Other *8/Initial Setting *4 / — *9
Seat belt buckle switch RH	Belted *6/Unbelted*7 /Other *8/Initial Setting *4 / — *9
Passenger’s airbag control status	ON *10/OFF *11 /Initial Setting *4

*1: Seat position is at the front end.
*2: Seat position is at the rear end.
*3: Displayed when data other than seat position (forward/rear) is entered (such as breakdown data).
*4: Displayed when it is initial.
*5: Seat position sensor not supported
*6: Seat belt fastened
*7: Seat belt not fastened
*8: Displayed when data other than belt fastened or not fastened, (such as breakdowns) is entered.
*9: Seat belt buckle switch not supported
*10: Passenger’s seat airbag operating state
*11: Passenger’s seat airbag non-operating state

NOTE:
For details concerning operation procedure, refer to the “PC application help for Subaru Select Monitor”.

3. CLEAR MEMORY MODE

Clear the DTC stored in the airbag control module after repairing the airbag system and occupant detection system. (After the breakdown is recovered, the breakdown code for completed recoveries are read out when the next breakdown occurs if the memory clear work is not performed.)
1) Select {Each System Check} in «Main Menu» display screen.
2) Select {Airbag System} in «System Selection Menu» display screen,
3) Select {Clear Memory} in «Airbag System» menu screen.
4) “When the Clear Memory?” is shown on the screen, select [OK].
5) “When Done” is displayed, finish Subaru Select Monitor.

NOTE:
For details concerning operation procedure, refer to the “PC application help for Subaru Select Monitor”.

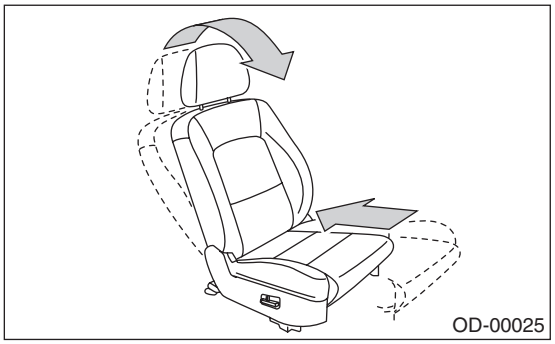
4. SYSTEM CALIBRATION (REZEROING)

NOTE:
When replacing the occupant detection system, or when removing and disassembling the passenger's seat cushion cover, always perform the system calibration after installing a seat in the vehicle.

CAUTION:
When trouble occurs in the system during calibration process, DTC 2A "OCCUPANT DETECTION CALIBRATION FAILURE" of the airbag system is detected and the airbag warning light lights. In this case, after turning the ignition switch to OFF once, redo the system calibration (Rezeroing), or after clearing the cause of the failure, perform the system calibration again.

1) Park empty vehicle on a level surface.
2) Select {Each System Check} in «Main Menu» display screen.
3) Select {Occupant Detection System} in «System Selection Menu» display screen,
4) Select {Zero Point Adjustment} in {Occupant Detection System} menu screen.
5) «See service manual. And check vehicle condition for successfully completing the rezeroing.» is displayed on the screen. Inspect the following items and adjust the vehicle condition.
- Adjust the seat backrest to the upright position.
- Adjust the slide to the rear end position.
- Do not place anything on the top of the seat cushion.
- Sit on the seat cushion to smooth the seat surface.
- Check that the passenger's seat belt is not inserted into the buckle, not tense, or not stuck.
- Check that ambient temperature is in a range from 0 — 40°C (32 — 104°F).

6) «Re-zeroing Adjust the passenger seat to the condition shown in service manual» is displayed on the screen. Slide the passenger's seat to the rear end, make sure that the backrest is adjusted to the most upright position, and press the [YES] key.



7) When the «Re-zeroing Unbelt the Passenger seatbelt Continue: YES, Quit: NO» is displayed, make sure the passenger's seatbelt is disconnected from the buckle, then press the [YES] key.
8) When the «Re-zeroing Empty the passenger seat Continue: YES, Quit: NO» is displayed, make sure that the passenger's seat is empty, airbag OFF indicator illuminates and airbag ON indicator does not illuminate, and then select [OK].

NOTE:
- After selecting [OK], «Now processing ··· Wait for a while. Do not touch or give impact to vehicle and seat» is displayed. Do not touch or rock the vehicle while the message is displayed.
- During the system calibration process, if the «Re-zeroing is unsuccessful See service manual Press OK to END» is displayed, go to step 10).

9) When the re-zeroing is normally completed, «Re-zeroing is successfully completed Press OK to END» is displayed. Select [OK] and turn the ignition switch to OFF to complete.
10) During the system calibration process, if «Re-zeroing is unsuccessful See service manual Press OK to END» is displayed, turn the ignition switch to OFF once and turn it ON again, then read the DTC of the airbag system. <Ref. to AB(diag)-28, OPERATION, Subaru Select Monitor.>
When DTC is input, fix the fault and then perform the system calibration. When DTC is not input, check the seat and vehicle status and then perform the system calibration again. <Ref. to OD(diag)-17, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>

NOTE:
When the re-zeroing is unsuccessful, there could be occupant detection system failure or the seat and the vehicle does not match. When the airbag warning light illuminates, read the DTC of the airbag system, and perform the diagnosis while referring to "List of Diagnostic Trouble Code". <Ref. to AB(diag)-28, OPERATION, Subaru Select Monitor.> <Ref. to AB(diag)-40, LIST, List of Diagnostic Trouble Code (DTC).>

B: INSPECTION

1. COMMUNICATION FOR INITIALIZING IMPOSSIBLE

DETECTING CONDITION:
Defective harness connector
TROUBLE SYMPTOM:
Communication is impossible between the airbag control module and the Subaru Select Monitor.
Refer to “Initial Communication Impossible” in the DTC of the airbag system (diagnosis). <Ref. to AB(diag)-30, INSPECTION, Subaru Select Monitor.>

2. WITHOUT DTC

DETECTING CONDITION:
- Defective combination meter
- Open circuit of harness

TROUBLE SYMPTOM:
- Airbag warning light remains on.
- “NO TROUBLE CODE” will be displayed on the Subaru Select Monitor.

For detailed operation procedures, refer to “Airbag Warning Light Failure”. <Ref. to AB(diag)-36, Airbag Warning Light Failure.>

NOTE:
When the airbag warning light is OFF and “NO TROUBLE CODE” is displayed on Subaru Select Monitor, the system is operating properly.

7. Read Diagnostic Trouble Code (DTC)

A: OPERATION

For details about reading of DTCs, refer to “Subaru Select Monitor”. <Ref. to AB(diag)-28, Subaru Select Monitor.>

8. Inspection Mode

A: PROCEDURE

Recreate the circumstance by referring to the conditions described in the checklist.

9. Clear Memory Mode

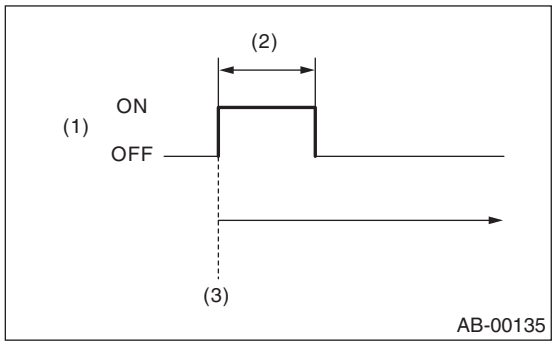
A: OPERATION

Clear the memory in the following steps after the malfunction is repaired.
For details concerning DTC clear operation, refer to “Subaru Select Monitor”. <Ref. to AB(diag)-28, Subaru Select Monitor.>

10.Airbag Warning Light Illumination Pattern

A: INSPECTION

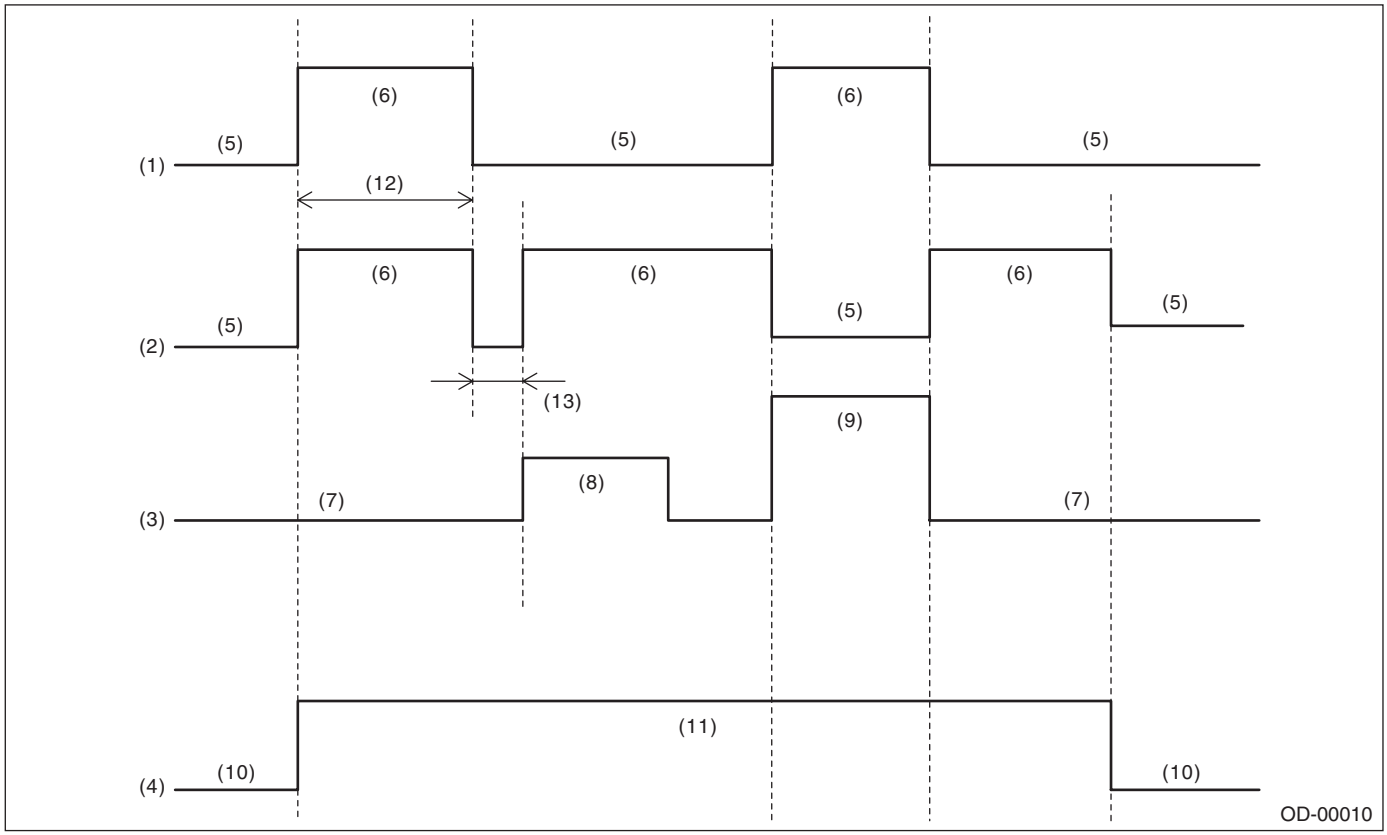
Turn the ignition switch to ON, and confirm that the airbag warning light remains on for approx. 6 seconds then turns off afterwards.



(1) Airbag warning light
(2) Approx. 6 sec.
(3) Ignition switch ON

11.Passenger's Airbag ON/OFF Indicator Light Illumination Pattern

A: INSPECTION



(1) Passenger's airbag ON indicator light
(2) Passenger's airbag OFF indicator light
(3) Occupant seating
(4) Ignition switch
(5) Light OFF
(6) Light ON
(7) Empty
(8) Child
(9) Adult
(10) OFF
(11) ON
(12) Approx. 6 sec.
(13) Approx. 2 sec.

12.List of Diagnostic Trouble Code (DTC)

A: LIST

DTC	Display	Content of diagnosis	Reference
2A	ODS Calibration Error	System calibration (Rezeroing) was not completed normally.	<Ref. to OD(diag)-25, DTC 2A ODS CALIBRATION ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
2B	ODS System Wrong Parts	• Wrong airbag control module was installed. • Wrong occupant detection system was installed. • Occupant detection system is faulty.	<Ref. to OD(diag)-25, DTC 2B ODS SYSTEM WRONG PARTS, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
2C	Belt Tension Sensor Failure	• Passenger's seat belt tension sensor is faulty. • Airbag rear harness circuit is open or shorted. • Occupant detection system is faulty. • Occupant detection harness is faulty.	<Ref. to OD(diag)-26, DTC 2C BELT TENSION SENSOR FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
27	Occupant Detection System Improper Communication	• Occupant detection control module and airbag control module communication is faulty. • Airbag rear harness circuit is open or shorted. Short circuit to the ground or the power supply. • Occupant detection harness is faulty. • Occupant detection system is faulty. • Airbag control module is faulty.	<Ref. to OD(diag)-28, DTC 27 ODS COMMUNICATION ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
29	Occupant Detection System Failure	• Occupant detection sensor is faulty. • Occupant detection control module is faulty. • Occupant detection harness is faulty. • Fuse No. 6 (in joint box) is blown.	<Ref. to OD(diag)-28, DTC 29 ODS FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
37	Buckle Switch RH Failure	• Passenger's buckle switch circuit is open, shorted or shorted to ground. • Occupant detection system is faulty. • Occupant detection harness is faulty.	<Ref. to OD(diag)-29, DTC 37 BUCKLE SWITCH RH FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

13.Diagnostic Procedure with Diagnostic Trouble Code (DTC)

A: DTC 2A ODS CALIBRATION ERROR

DTC DETECTING CONDITION:

System calibration (Rezeroing) was not completed properly.

	Step	Check	Yes	No
1	**PERFORM RE-ZEROING.** Perform the system calibration using the Subaru Select Monitor. <Ref. to OD(diag)-16, OPERATION, Subaru Select Monitor.>	Is the system calibration completed correctly?	Finish the diagnosis.	Follow the system calibration procedures. <Ref. to OD(diag)-16, OPERATION, Subaru Select Monitor.>

B: DTC 2B ODS SYSTEM WRONG PARTS

DTC DETECTING CONDITION:

- Wrong airbag control module is installed.
- Wrong occupant detection system is installed.

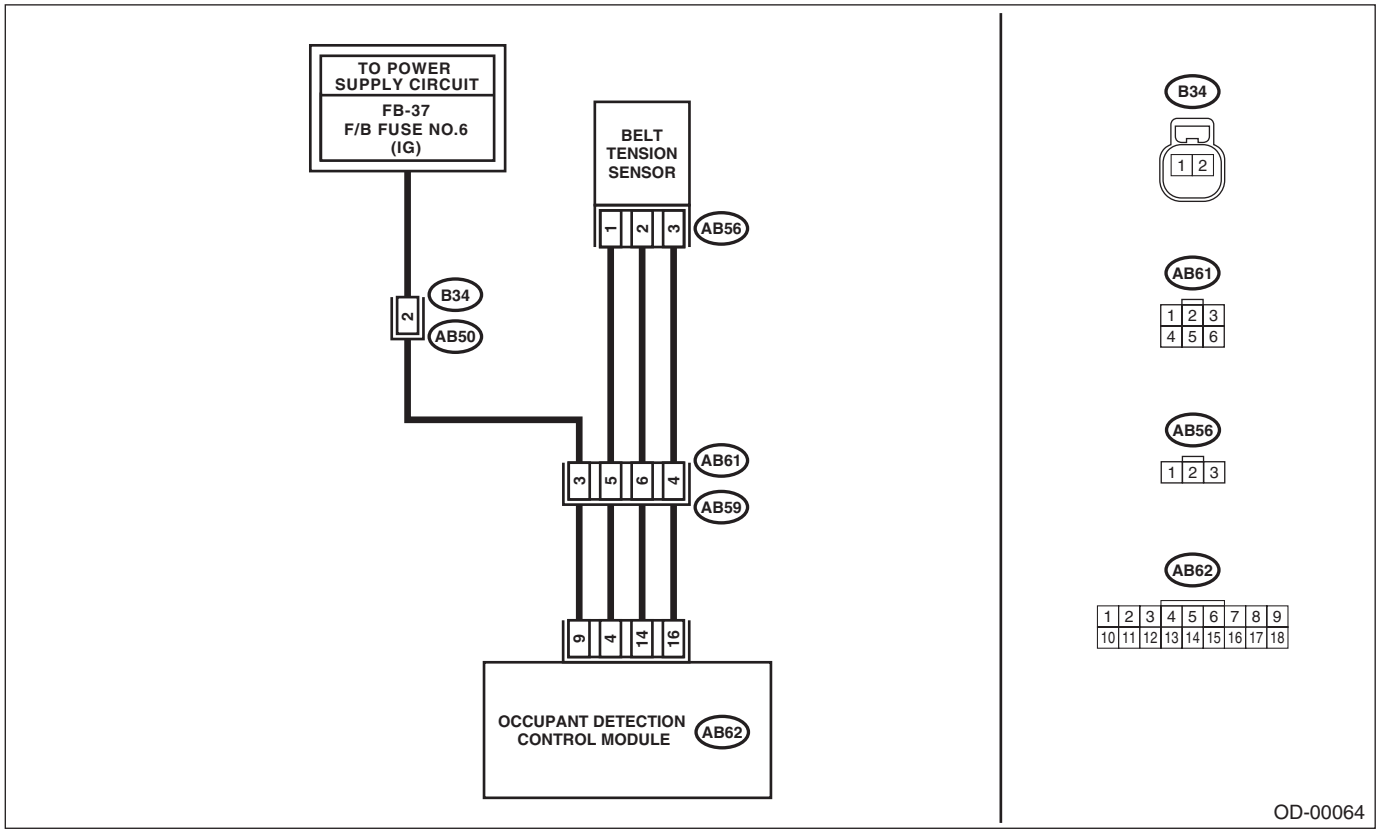
	Step	Check	Yes	No
1	**CHECK OCCUPANT DETECTION SYSTEM.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Replace the passenger's seat cushion pad and seat cushion frame assembly. <Ref. to SE-7, REMOVAL, Front Seat.> <Ref. to SE-9, DISASSEMBLY, Front Seat.> 3) Connect the battery ground cable. 4) Connect Subaru Select Monitor to the data link connector and perform the system calibration. <Ref. to OD(diag)-16, OPERATION, Subaru Select Monitor.>	Is the system calibration completed correctly?	Finish the diagnosis.	Go to step **2**.
2	**CHECK AIRBAG CONTROL SYSTEM.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Replace the airbag control module. <Ref. to AB-16, REMOVAL, Side Airbag Module.> 3) Connect the battery ground cable. 4) Connect Subaru Select Monitor to the data link connector and perform the system calibration. <Ref. to OD(diag)-16, OPERATION, Subaru Select Monitor.>	Is the system calibration completed correctly?	Finish the diagnosis.	Check between the occupant detection control module and airbag control module.

C: DTC 2C BELT TENSION SENSOR FAILURE

DTC DETECTING CONDITION:

- Passenger's seat belt tension sensor is faulty.
- Airbag main harness circuit is open or shorted.
- Occupant detection control module is faulty.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the occupant detection control module and belt tension sensor.	Is there poor contact?	Reconnect the connector. If the fault is not fixed, replace the airbag harness.	Go to step **2**.
2	**CHECK BELT TENSION SENSOR.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the belt tension sensor connector (AB56) from the airbag harness. 3) Connect the test harness AC to the connector (AB63). 4) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for approximately 6 seconds and go off?	Replace the seat belt outer. <Ref. to SB-10, REMOVAL, Front Seat Belt.>	Go to step **3**.
3	**CHECK AIRBAG HARNESS.** 1) Turn ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the test harness AC from the belt tension sensor connector (AB56). 3) Connect the test harness AD (1AD) to the connector (AB56). 4) Disconnect the airbag harness connector (AB56), and connect connector (1AB) of test harness AB. 5) Measure the resistance between test harness terminals. ***Connector & terminal*** ***(2AB) No. 5 — (2AD) No. 1:*** ***(2AB) No. 4 — (2AD) No. 3:*** ***(2AB) No. 6 — (2AD) No. 2:***	Is the resistance less than 10 Ω?	Go to step **4**.	Replace the airbag harness.
4	**CHECK AIRBAG HARNESS.** Measure the resistance between test harness terminals, and between test harness terminal and chassis ground. ***Connector & terminal*** ***(2AB) No. 4 — (2AD) No. 1:*** ***(2AB) No. 4 — (2AD) No. 2:*** ***(2AB) No. 4 — Chassis ground:*** ***(2AB) No. 5 — (2AD) No. 2:*** ***(2AB) No. 5 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **5**.	Replace the airbag harness.
5	**CHECK AIRBAG HARNESS.** 1) Connect the battery ground terminal and turn the ignition switch to ON. 2) Measure the voltage between test harness and chassis ground. ***Connector & terminal*** ***(2AD) No. 1 (+) — Chassis ground (–):*** ***(2AD) No. 3 (+) — Chassis ground (–):***	Is the voltage 1 V or less?	Replace the airbag harness.	Check the occupant detection harness, and if any fault is found, replace the occupant detection harness. If no fault is found in the occupant detection harness, replace the seat cushion frame assembly. <Ref. to SE-9, DISASSEMBLY, Front Seat.>

D: DTC 27 ODS COMMUNICATION ERROR

Perform the diagnosis by following diagnostic procedures for the airbag system. <Ref. to AB(diag)-63, DTC 27 ODS COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>

E: DTC 29 ODS FAILURE

DTC DETECTING CONDITION:

- Occupant detection sensor is faulty.
- Occupant detection control module is faulty.
- Occupant detection harness is faulty.
- Side airbag harness is faulty.
- Fuse No. 6 (in joint box) is blown.

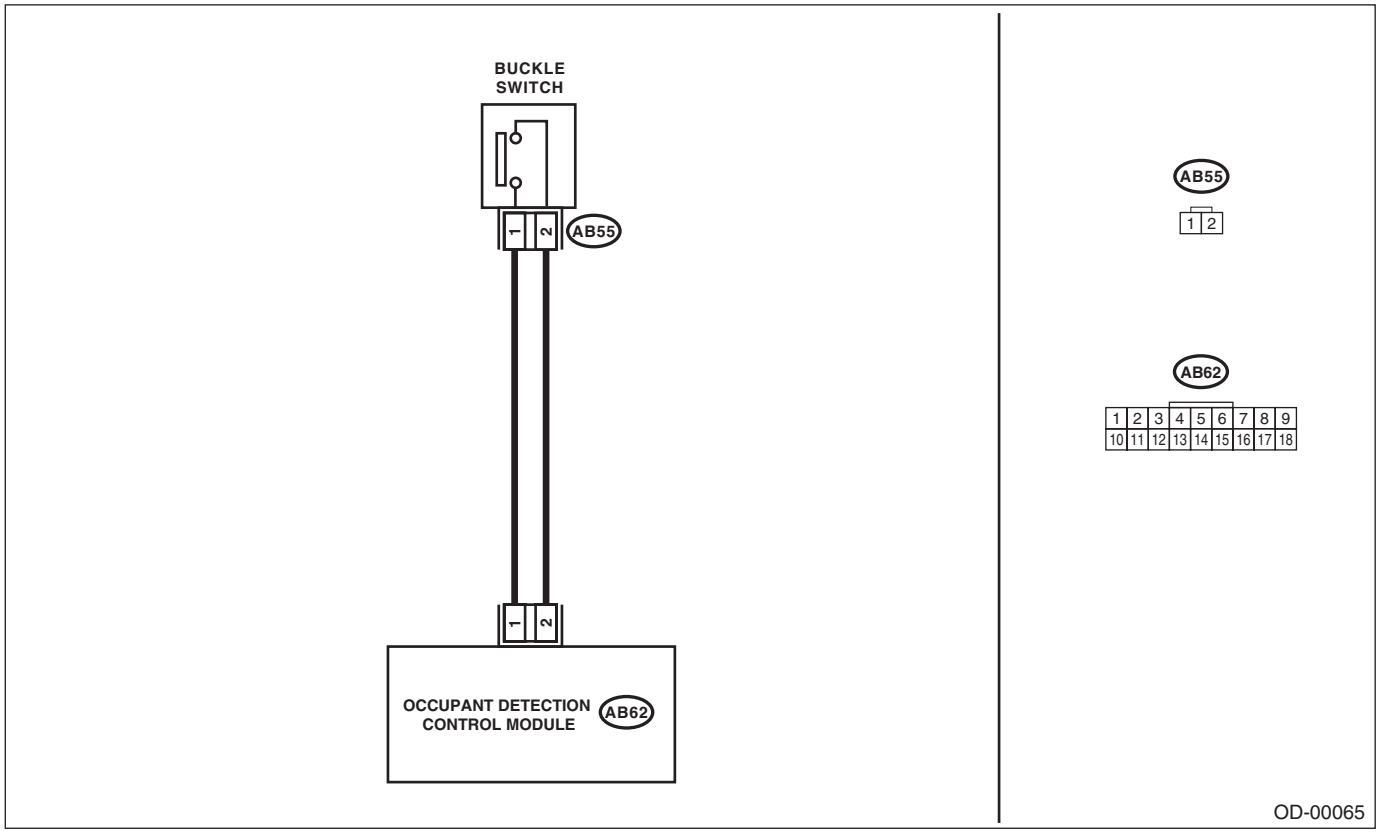
	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTOR.** Check for poor contact of the connectors between the occupant detection control module and airbag control module.	Is there poor contact?	Reconnect the connector. If the fault is not fixed, replace the airbag harness.	Go to step **2**.
2	**CHECK DIAGNOSTIC TROUBLE CODE (DTC).** Read diagnostic trouble code (DTC) for the airbag system.	Is "2C BELT TENSION SENSOR FAILURE or 37 BUCKLE SWITCH FAILURE" displayed as the diagnostics code?	Perform the diagnosis according to each DTC.	Check the occupant detection harness, and if any fault is found, replace the occupant detection harness. If the fault is not fixed, replace the occupant detection system. <Ref. to SE-9, DISASSEMBLY, Front Seat.>

F: DTC 37 BUCKLE SWITCH RH FAILURE

DTC DETECTING CONDITION:

- Passenger's seat buckle switch circuit is open, shorted or shorted to ground.
- Seat harness circuit is open, shorted or shorted to ground.
- Occupant detection control module is faulty.

WIRING DIAGRAM:



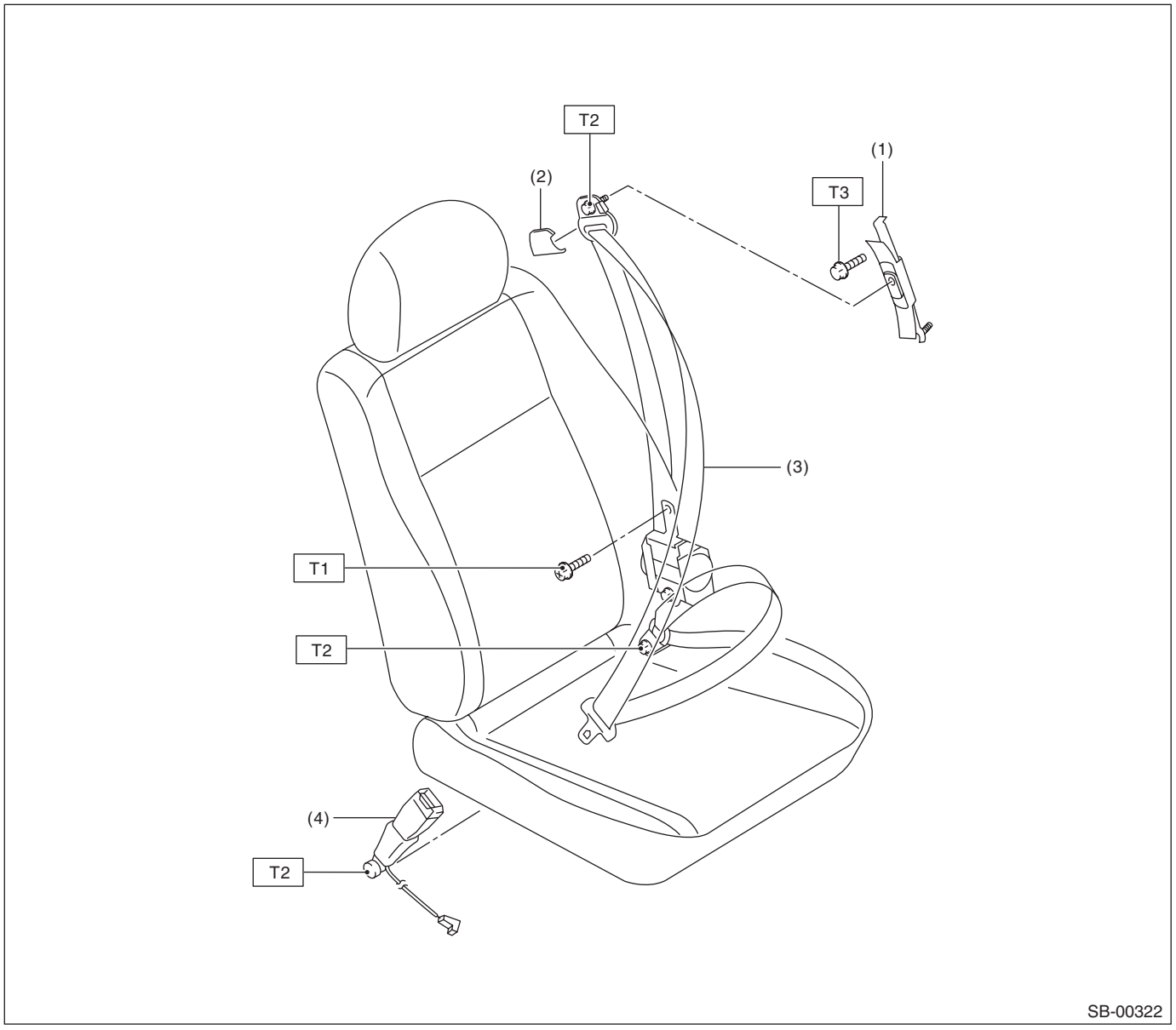
	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTOR.** Check for poor contact of the connectors between the occupant detection control module and buckle switch.	Is there poor contact?	Reconnect the connector. If the fault is not fixed, replace the airbag harness.	Go to step **2**.
2	**CHECK BUCKLE SWITCH.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for more than 20 seconds. 2) Disconnect the buckle switch connector (AB55). 3) Connect the test harness AE (1AE) and test harness connector Y to the buckle switch connector (AB55). 4) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for 6 seconds and go off?	Replace the buckle switch. <Ref. to SB-10, REMOVAL, Front Seat Belt.>	Check the occupant detection harness, and if any fault is found, replace the occupant detection harness. If the fault is not fixed, replace the occupant detection system.

1. General Description

A: COMPONENT

1. FRONT SEAT BELT

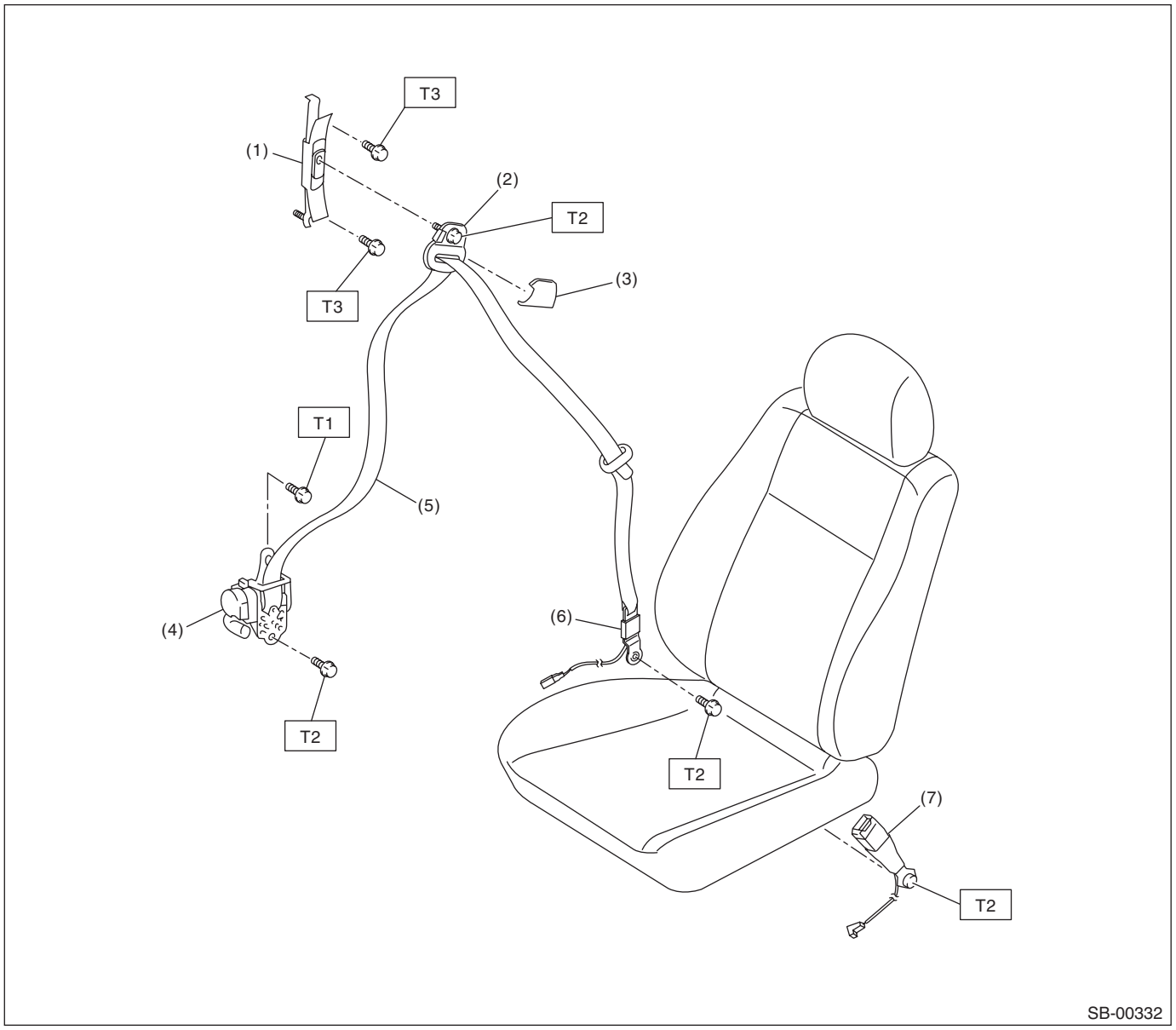
- Driver's side



(1) Adjustable anchor ASSY
(2) Anchor cover
(3) Outer belt ASSY
(4) Inner seat belt ASSY

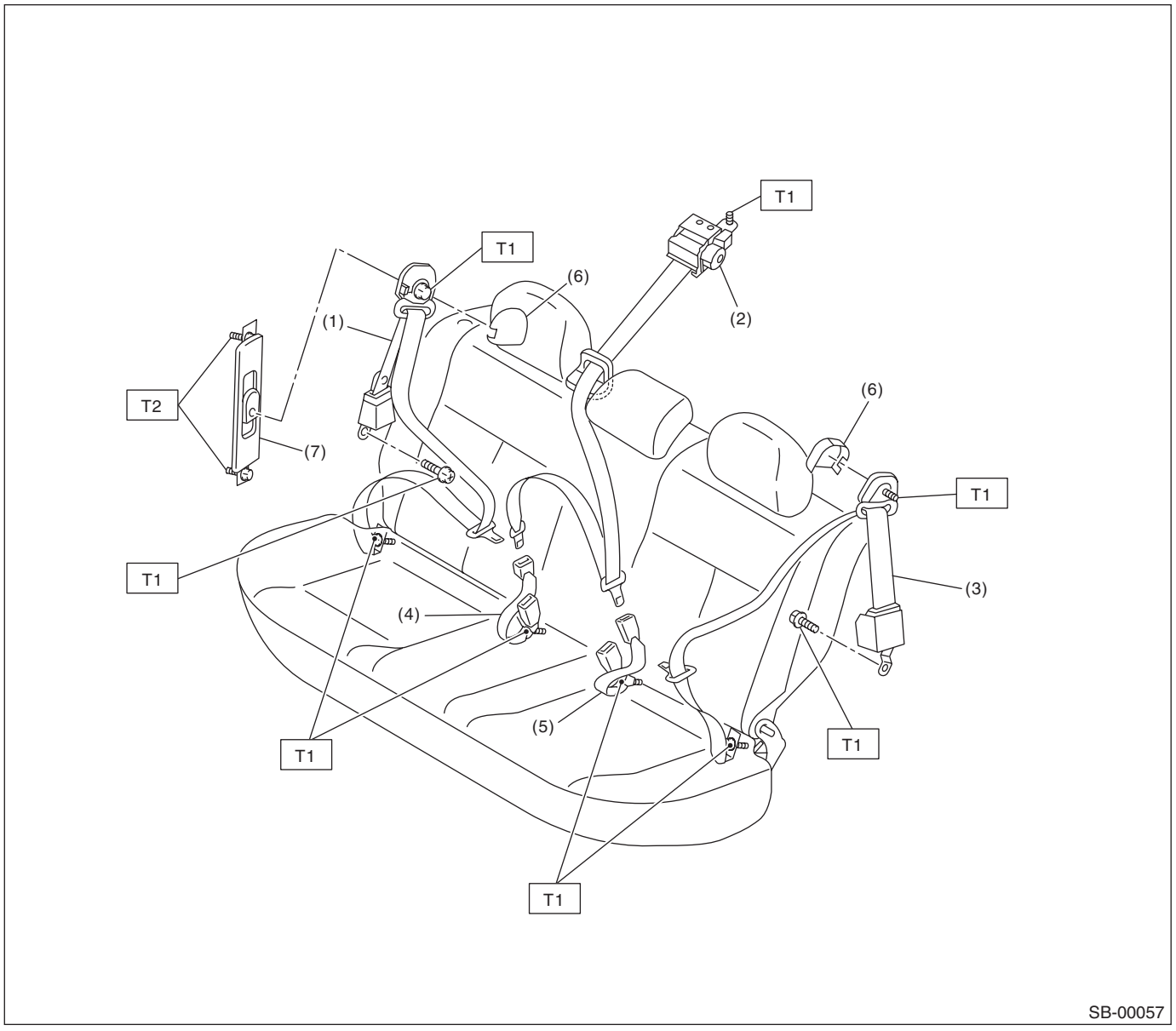
Tightening torque:N·m (kgf-m, ft-lb)
T1: 7.5 (0.76, 5.5)
T2: 30 (3.1, 22)
T3: 53 (5.4, 39)

- Passenger's side



(1)	Adjustable anchor ASSY	(5)	Outer belt ASSY	***Tightening torque:N·m (kgf-m, ft-lb)***
(2)	Shoulder anchor	(6)	Belt tension sensor	***T1: 7.5 (0.76, 5.5)***
(3)	Anchor cover	(7)	Inner seat belt ASSY	***T2: 30 (3.1, 22)***
(4)	Seat belt retractor			***T3: 53 (5.4, 39)***

2. REAR SEAT BELT



(1) Outer seat belt RH
(2) Outer seat belt center
(3) Outer seat belt LH
(4) Inner seat belt RH
(5) Inner seat belt LH
(6) Anchor cover
(7) Adjustable anchor ASSY

Tightening torque:N·m (kgf-m, ft-lb)
T1: 30 (3.1, 22)
T2: 53 (5.4, 39)

B: CAUTION

• Before starting the work, turn the ignition switch to OFF, disconnect the battery ground cable and wait for 20 seconds or more.
• The pretensioner system has a backup power source. Be careful because the pretensioner might deploy if you do not wait for 20 seconds or more before starting work.
• Do not drop or apply any impact to the pretensioner.
• If oil, grease or water gets on the pretensioner, wipe it off immediately with a dry cloth.
• Do not expose the pretensioner to high temperature or flame.
• Do not allow current to flow through or voltage to reach the pretensioner. Do not use a circuit tester to check resistance of the pretensioner.
• Do not disassemble or attempt to repair the pretensioner. If it is dented, cracked or deformed, replace it with a new part.
• Do not use the airbag or pretensioner parts from other vehicles. Always replace the parts with new parts.
• When handling a seat belt with deployed pretensioner, wear gloves and goggles. Wash your hands afterwards.
• Do not reuse a seat belt with deployed pretensioner.
• If the material gets in your eyes or on your skin during deployment, wash it away with clean water, and then consult a doctor.

2. Pretensioner Connector

A: PROCEDURE

Refer to airbag connectors in the airbag section.
<Ref. to AB-8, PROCEDURE, Airbag Connector.>

3. Seat Belt Warning System

A: WIRING DIAGRAM

<Ref. to WI-112, WIRING DIAGRAM, Seat Belt Warning System.>

B: INSPECTION

TROUBLE SYMPTOM:

- Seat belt warning light does illuminate or it remains illuminating.
- Buzzer does not beep.

Step		Check	Yes	No
1	**CHECK BODY INTEGRATED UNIT POWER SUPPLY.** 1) Turn the ignition switch to ON. 2) Measure the voltage between body integrated unit connector and chassis ground. ***Connector & terminal*** ***(B281) No. 19 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **2**.	Check the harness between body integrated unit and battery.
2	**CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND CHASSIS GROUND.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from body integrated unit. 3) Measure the resistance between body integrated unit harness connector and chassis ground. ***Connector & terminal*** ***(B280) No. 13 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **3**.	Check the harness between body integrated unit and chassis ground.
3	**CHECK SEAT BELT SWITCH AND HARNESS.** 1) Pull out the tongue plate from the driver's seat belt buckle. 2) Measure the resistance between body integrated unit harness connector and chassis ground. ***Connector & terminal*** ***(B281) No. 3 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **4**.	Check the harness between body integrated unit connector and chassis ground.
4	**CHECK SEAT BELT SWITCH AND HARNESS.** 1) Insert the tongue plate to the driver's seat belt buckle in the condition of step 3. 2) Measure the resistance between body integrated unit connector and chassis ground. ***Connector & terminal*** ***(B281) No. 3 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **7**.	Go to step **5**.
5	**CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND SEAT BELT SWITCH.** Measure the resistance of harness between body integrated unit connector and seat belt switch. ***Connector & terminal*** ***Without power seat*** ***(B281) No. 3 — (R8) No. 2:*** ***With power seat*** ***(B281) No. 3 — (R188) No. 8:***	Is the resistance less than 10 Ω?	Go to step **6**.	Check the harness between body integrated unit connector and seat belt switch.

	Step	Check	Yes	No
6	**CHECK HARNESS BETWEEN SEAT BELT SWITCH AND CHASSIS GROUND.** Measure the resistance of harness between seat belt switch and chassis ground. ***Connector & terminal*** ***Without power seat*** ***(R8) No. 1 — Chassis ground:*** ***With power seat*** ***(R188) No. 4 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **7**.	Check harness between seat belt switch and chassis ground.
7	**CHECK SEAT BELT SWITCH.** 1) Pull out the tongue plate from the driver's seat belt buckle. 2) Measure the resistance between seat belt switch terminals. ***Connector & terminal*** ***Without power seat*** ***(R8) No. 1 — (R8) No. 2:*** ***With power seat*** ***(R188) No. 8 — (R188) No. 4:***	Is the resistance 1 MΩ or more?	Go to step **8**.	Replace the inner seat belt assembly.
8	**CHECK SEAT BELT SWITCH.** 1) Insert the tongue plate to the driver's seat belt buckle. 2) Measure the resistance between seat belt switch terminals. ***Connector & terminal*** ***Without power seat*** ***(R8) No. 1 — (R8) No. 2:*** ***With power seat*** ***(R188) No. 8 — (R188) No. 4:***	Is the resistance less than 10 Ω?	Go to step **9**.	Replace the inner seat belt assembly.
9	**CHECK COMBINATION METER.** 1) Turn the ignition switch to ON. 2) Measure the voltage between combination meter and chassis ground. ***Connector & terminal*** ***(i10) No. 9 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **10**.	Check wiring harness and combination meter, then repair or replace them.
10	**CHECK POOR CONTACT.** Check for poor contact in seat belt warning light circuit.	Is there poor contact?	Repair the poor contact.	Go to step **11**.
11	**CHECK THE BODY INTEGRATED UNIT.** 1) Connect all connectors. 2) Turn the ignition switch to ON. 3) Pull out the tongue plate from the driver's seat belt buckle. 4) Check if the seat belt warning light illuminates.	Does the seat belt warning light illuminate?	Go to step **12**.	Inspect the connector or harness. If not defective, replace the seat belt warning light bulb in the combination meter.
12	**CHECK THE BODY INTEGRATED UNIT.** 1) Connect all connectors. 2) Turn the ignition switch to ON. 3) Pull out the tongue plate from the driver's seat belt buckle. 4) Check if the seat belt warning light illuminates and the buzzer sounds.	Does the seat belt warning light illuminate and the buzzer sound for 6 seconds?	A temporary poor contact of connector or harness may be the cause. Check for poor contact.	Replace the body integrated unit.

4. Inspection Locations After a Collision

A: INSPECTION

Check for the following, and replace with new parts if necessary.

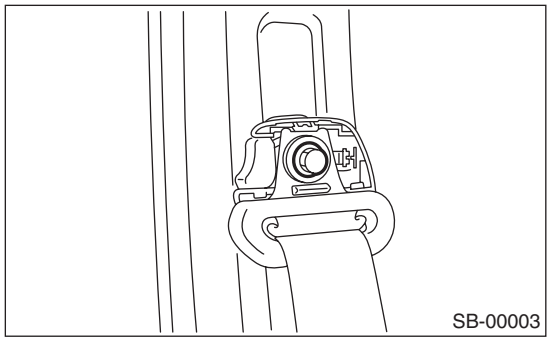
- Center pillar lower trim is discolored or cracked.
- Wiring harness and connector are damaged.

5. Front Seat Belt

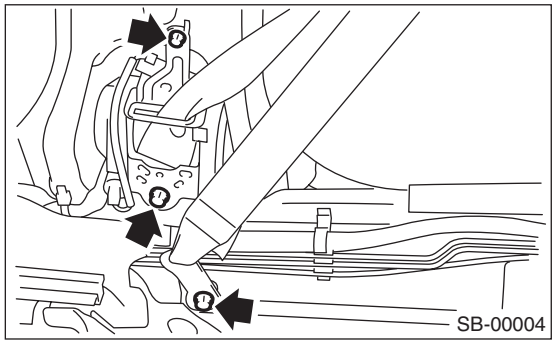
A: REMOVAL

1. FRONT OUTER BELT

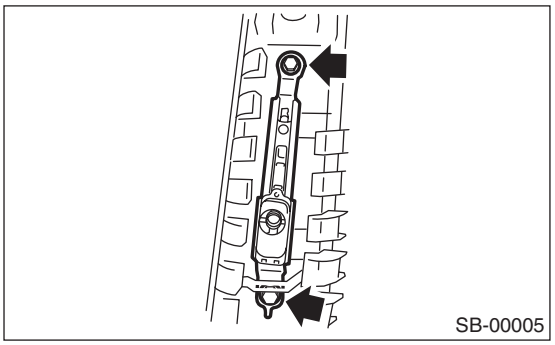
1) Fold the backrest all the way forward, and then move the front seat all the way forward.
2) Before working, turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds.
3) Remove the center pillar lower trim. <Ref. to EI-42, REMOVAL, Lower Inner Trim.>
4) Remove the anchor cover. Loosen the shoulder anchor bolt, and then detach the shoulder anchor from center pillar.


SB-00003

5) Pull off the floor mat to remove the bolt.


SB-00004

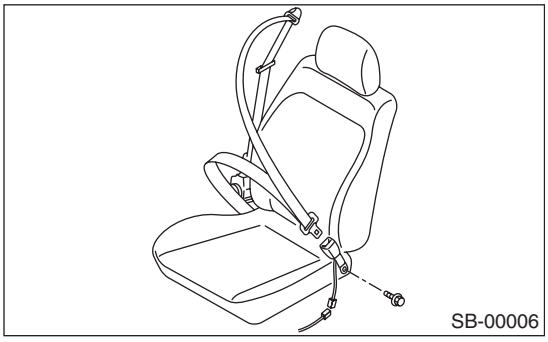
6) Disconnect the connectors of pretensioner and belt tension sensor, and remove the front outer belt.
7) Remove the center pillar upper trim. <Ref. to EI-41, REMOVAL, Upper Inner Trim.>
8) Remove the two bolts to remove the adjustable anchor assembly.


SB-00005

CAUTION:
• Do not drop or apply any impact to the pretensioner.
• Since the pretensioner and bracket are integrated as a unit, do not disassemble them.

2. FRONT INNER BELT

1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds.
2) Remove the console box. <Ref. to EI-37, REMOVAL, Console Box.>
3) Disconnect the seat belt warning light connector under the seat.
4) Remove the harness clips from the seat rail.
5) Remove the anchor bolt, and then detach the inner belt.


SB-00006

B: INSTALLATION

Install in the reverse order of removal.

CAUTION:
• The parts on right and left are not identical. Before installation, make sure that the correct part is used.
• Be careful not to twist the belts during installation.

Tightening torque:
<Ref. to SB-2, FRONT SEAT BELT, COMPONENT, General Description.>

C: INSPECTION

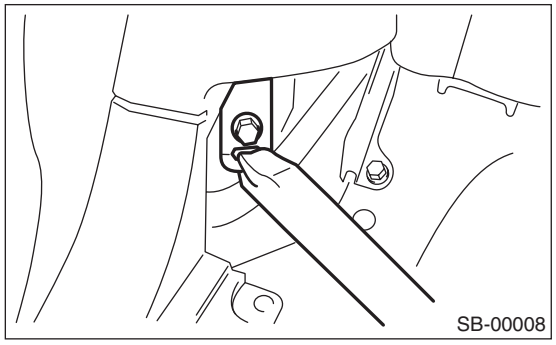
Check for the following, and replace with new parts if necessary.
- Pretensioner is cracked or deformed.
- Seat belt is slackened, bent or worn. Seat belt is abnormally wound or extended.
- Inner belt is deformed or damaged.
- Seat belt buckle cannot be engaged properly.

6. Rear Seat Belt

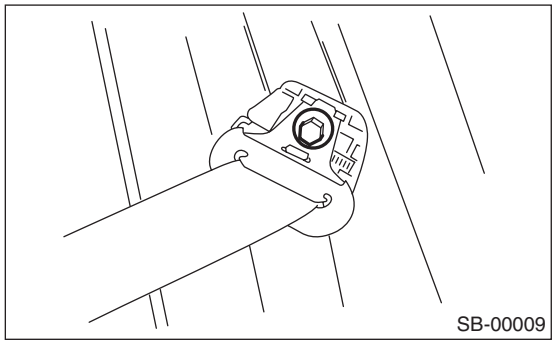
A: REMOVAL

1. OUTER BELT RH AND LH

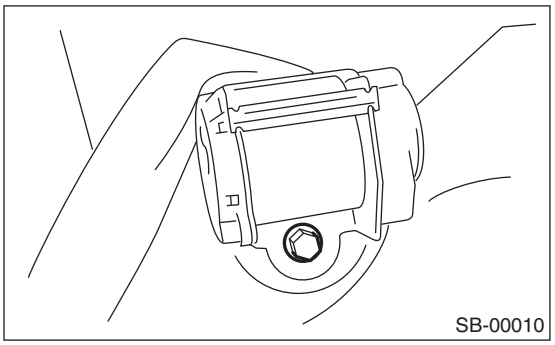
1) Remove the luggage floor mat. <Ref. to EI-48, REMOVAL, Luggage Floor Mat.>
2) Remove the rear seat. <Ref. to SE-17, REMOVAL, Rear Seat.>
3) Remove the rear quarter trim. <Ref. to EI-43, REMOVAL, Rear Quarter Trim.>
4) Remove the seat belt lower anchor bolt.


SB-00008

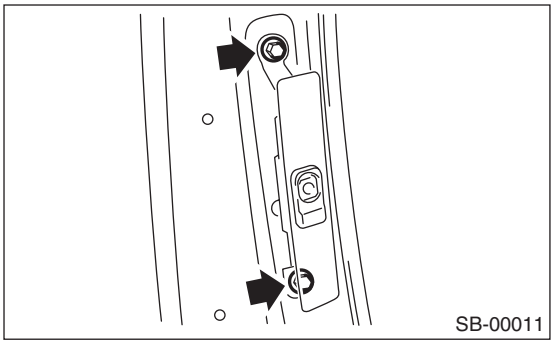
5) Remove the anchor cover.
6) Remove the shoulder anchor bolt, and then remove the shoulder anchor from the pillar.


SB-00009

7) Remove the rear quarter trim. <Ref. to EI-43, REMOVAL, Rear Quarter Trim.>
8) Remove the bolts, and then detach the outer belt side.

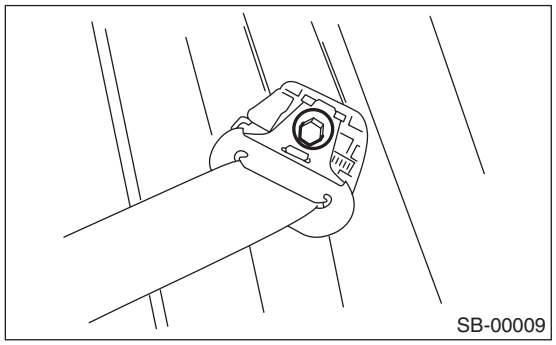

SB-00010

9) Remove the two bolts to remove the adjustable anchor assembly.

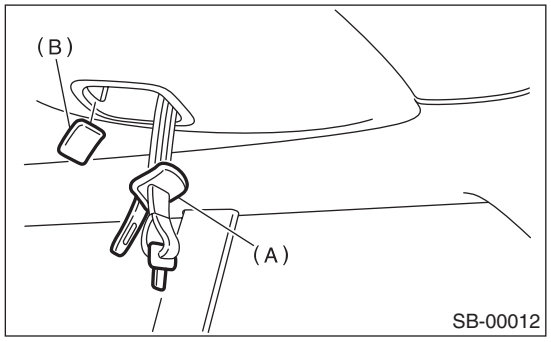

SB-00011

2. OUTER SEAT BELT CENTER

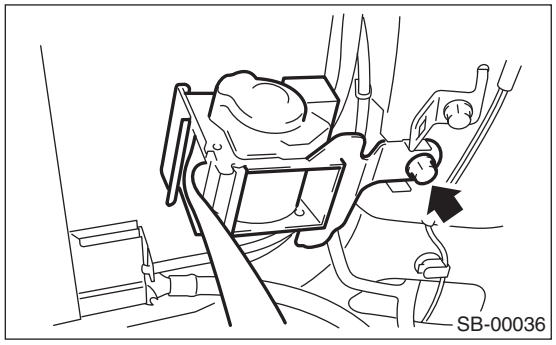
1) Remove the anchor cover. Remove the bolt, and then remove the shoulder anchor from the pillar.



2) Remove the strut cap. <Ref. to EI-43, REMOVAL, Rear Quarter Trim.>
3) Remove the rear rail trim. <Ref. to EI-43, REMOVAL, Rear Quarter Trim.>
4) Remove the rear pillar upper trim. <Ref. to EI-43, REMOVAL, Rear Quarter Trim.>
5) Remove the rear skirt trim. <Ref. to EI-43, REMOVAL, Rear Quarter Trim.>
6) Remove the rear quarter lower trim. <Ref. to EI-43, REMOVAL, Rear Quarter Trim.>
7) Remove the snap lock carefully, and then remove the cover (B). Pull the outer seat belt center tongue (A) from the hole to one side of the trim.

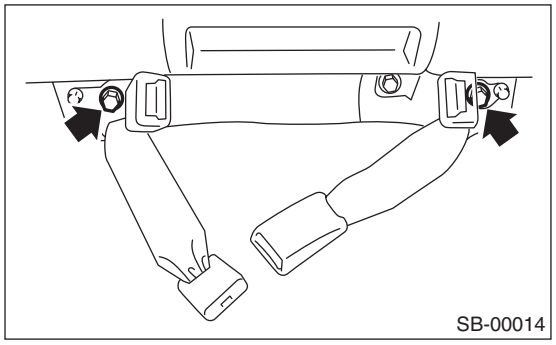


8) Remove the clips, and then hang the roof trim back end from the roof.
9) Disconnect the harness and connectors, and then remove the outer seat belt center assembly.



3. INNER BELT

1) Remove the rear cushion.
2) Remove the bolt, and then detach the inner belt.



B: INSTALLATION

Install in the reverse order of removal.

CAUTION:
• During installation, make sure that the seat belts are not twisted.
• After installation, make sure that the seat belts are smoothly extended and wound.

Tightening torque:
<Ref. to SB-4, REAR SEAT BELT, COMPONENT, General Description.>

C: INSPECTION

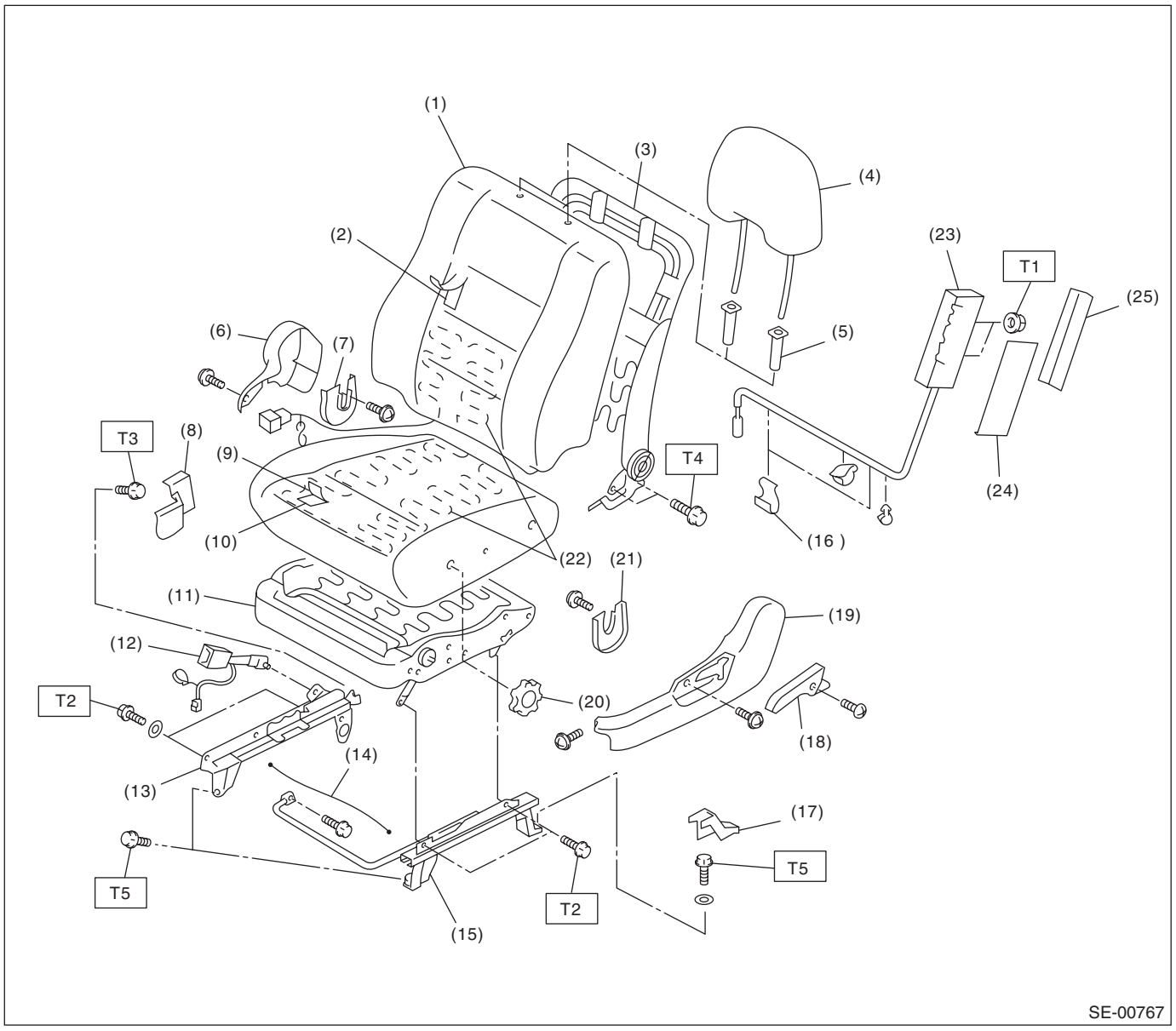
Check for the following, and replace with new parts if necessary.
- Seat belt is slackened, bent or worn.
- Seat belt is abnormally wound or extended.
- Inner belt is deformed or damaged.
- Seat belt buckle cannot be engaged properly.

1. General Description

A: COMPONENT

1. FRONT SEAT

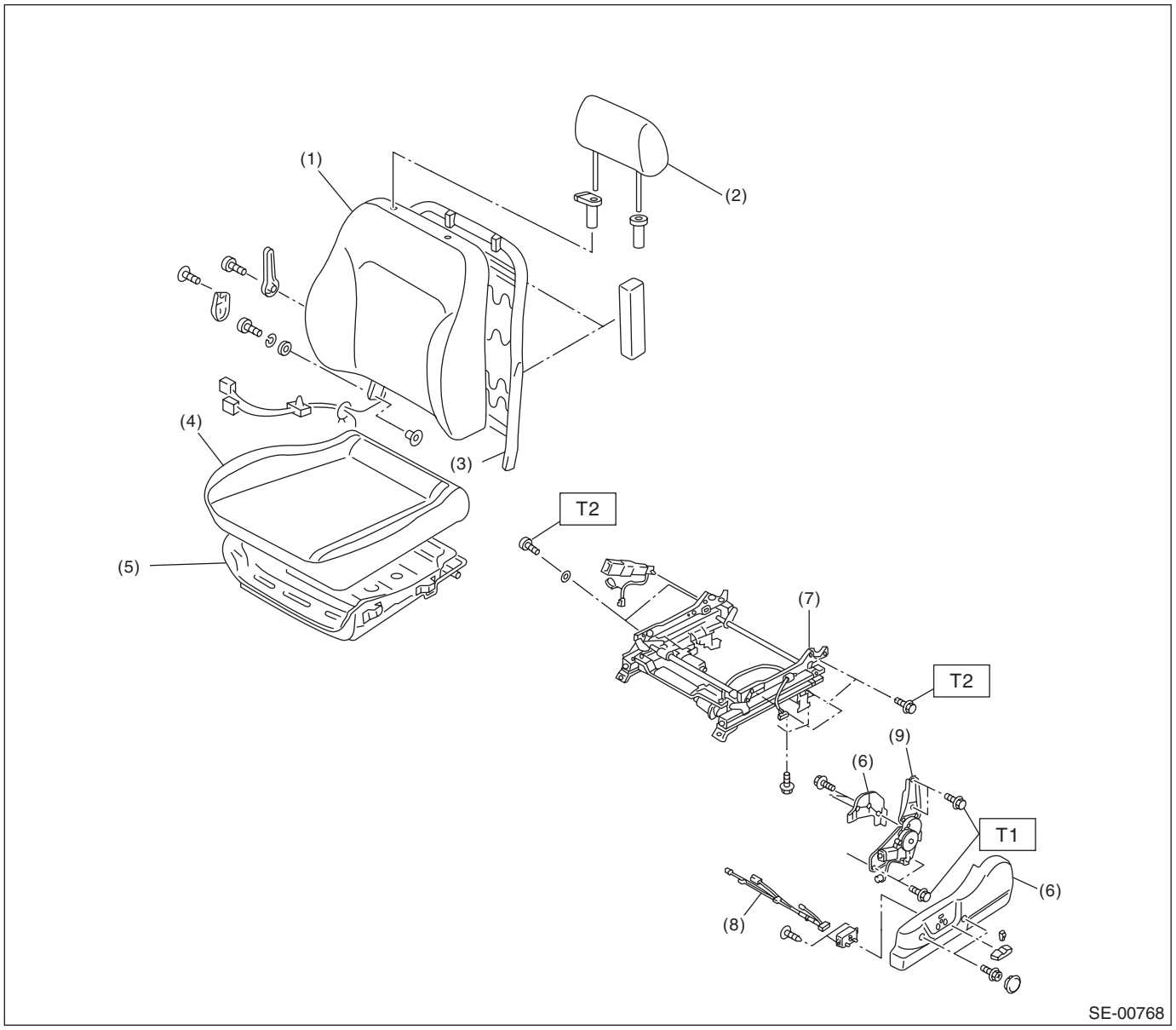
- Driver's seat (standard seat)



(1) Backrest cover
(2) Backrest pad
(3) Backrest frame ASSY
(4) Headrest ASSY
(5) Headrest bushing
(6) Seat hinge outer cover LH
(7) Seat hinge inner cover LH
(8) Bolt cover LH
(9) Seat cushion cover
(10) Seat cushion pad ASSY
(11) Seat cushion frame ASSY
(12) Inner seat belt ASSY
(13) Inner slide rail
(14) Connecting wire
(15) Outer slide rail
(16) Tape
(17) Bolt cover RH
(18) Reclining lever
(19) Seat hinge outer cover RH
(20) Seat lifter dial
(21) Seat hinge inner cover RH
(22) Seat heater unit
(23) Side airbag module ASSY
(24) Support pad A
(25) Support pad B

Tightening torque:N·m (kgf-m, ft-lb)
T1: 7.5 (0.8, 5.5)
T2: 10 (1.0, 7.4)
T3: 30 (3.0, 22.1)
T4: 52 (5.3, 38.3)
T5: 53 (5.4, 39.0)

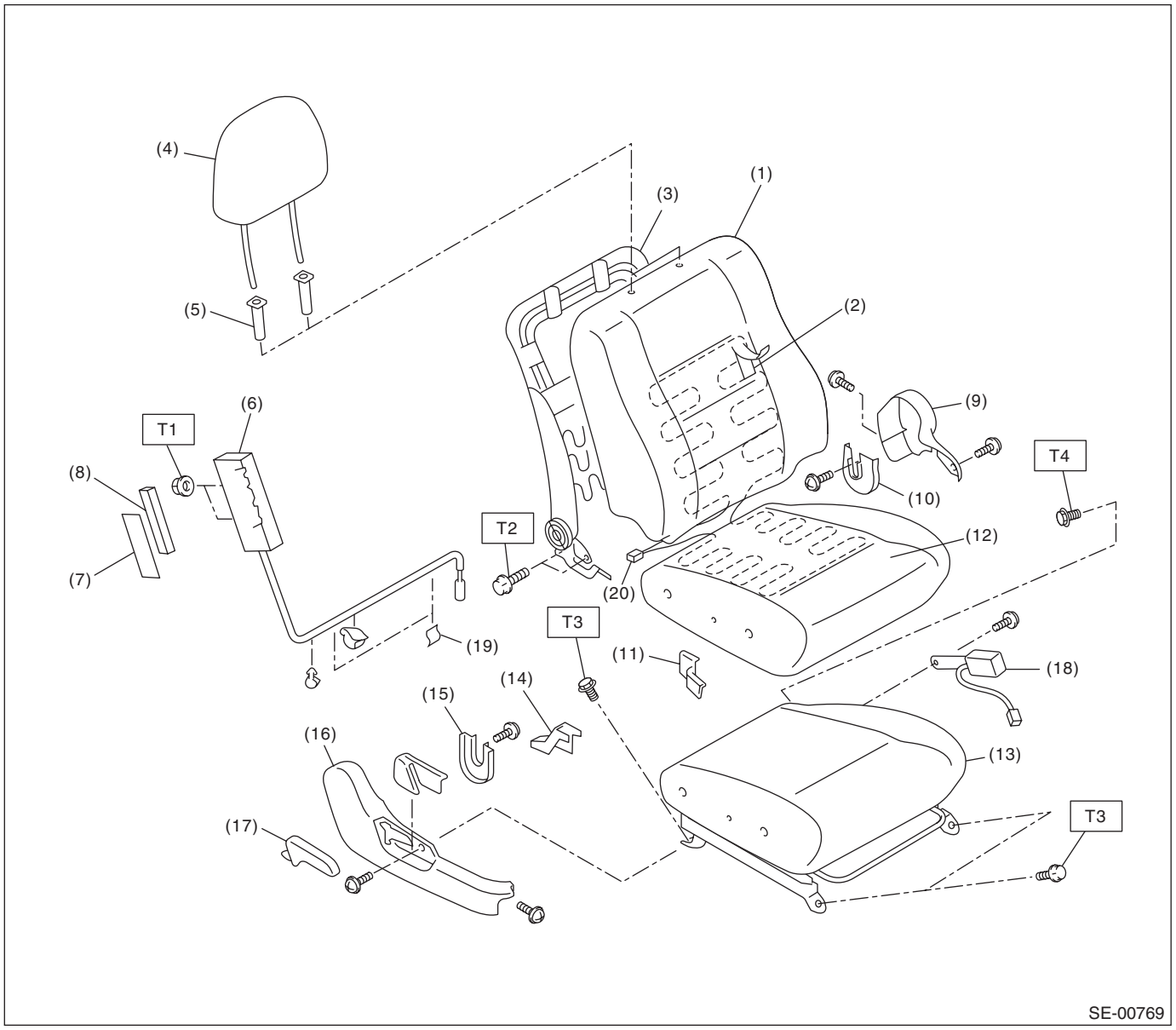
- Driver's seat (power seat)



(1) Seat back pad
(2) Headrest
(3) Seat back frame ASSY
(4) Seat cushion pad
(5) Seat cushion frame ASSY
(6) Hinge cover
(7) Slide and unit ASSY
(8) Power seat harness
(9) Hinge ASSY

Tightening torque:N·m (kgf-m, ft-lb)
T1: 53 (5.4, 39)
T2: 18 (1.8, 13)

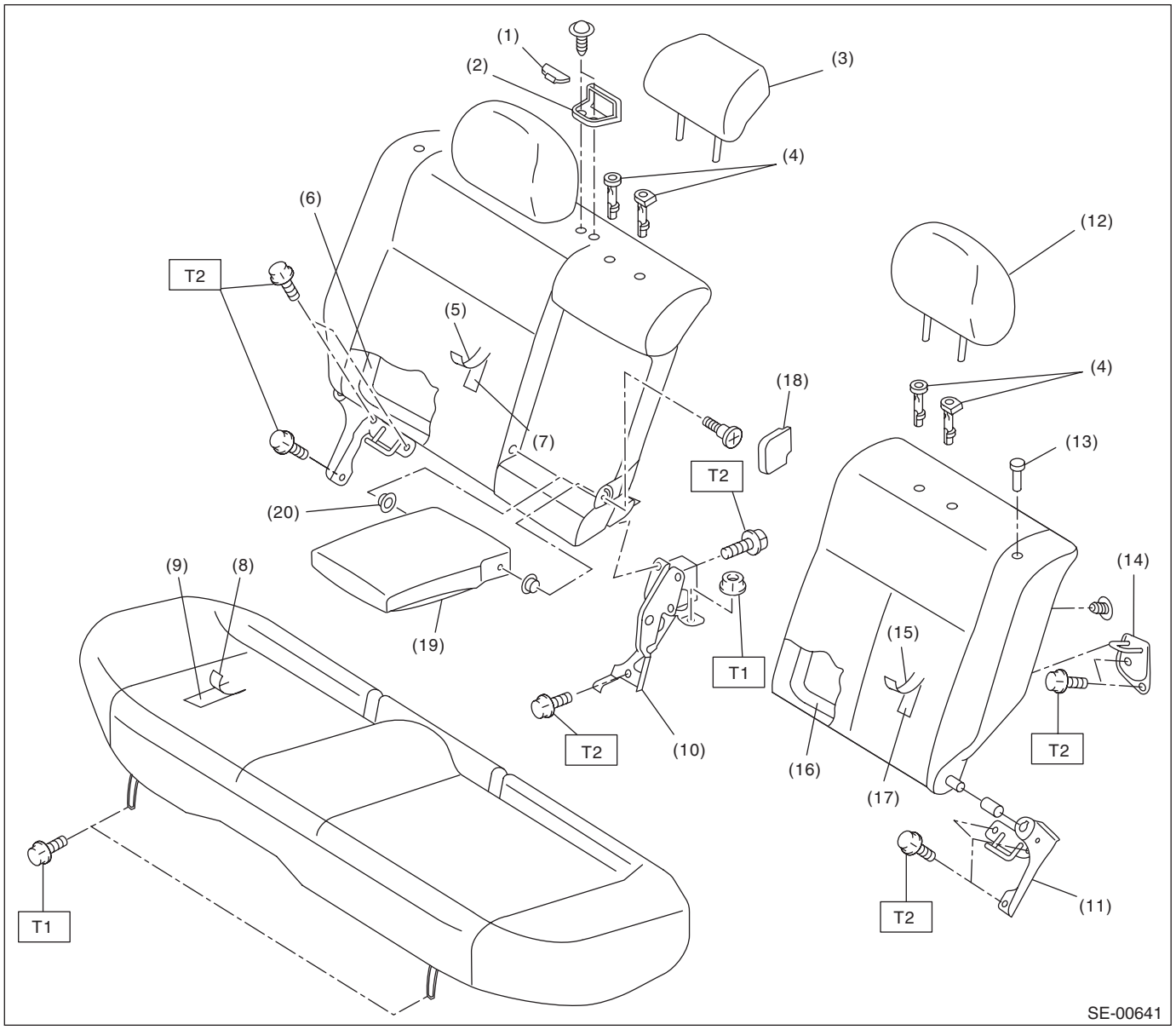
- Passenger's seat



(1) Backrest cover
(2) Backrest pad
(3) Backrest frame ASSY
(4) Headrest ASSY
(5) Headrest lock bushing
(6) Side airbag module
(7) Support pad A
(8) Support pad B
(9) Seat cover inside
(10) Hinge inner cover LH
(11) Rear bolt cover inside
(12) Seat cushion cover
(13) Occupant detection cushion ASSY
(14) Rear bolt cover outside
(15) Hinge inner cover RH
(16) Seat side cover outside
(17) Reclining lever
(18) Inner seat belt ASSY
(19) Tape
(20) Seat heater unit

Tightening torque:N·m (kgf-m, ft-lb)
T1: 7.5 (0.76, 5.5)
T2: 52 (5.3, 38.4)
T3: 53 (5.4, 39.1)
T4: 30 (3.1, 22.1)

2. REAR SEAT



(1) Webbing guide cap
(2) Webbing guide
(3) Center pillow
(4) Headrest free bushing
(5) Backrest cover RH
(6) Backrest frame RH
(7) Backrest pad RH
(8) Seat cushion cover
(9) Seat cushion pad
(10) Hinge CTR
(11) Hinge LH
(12) Headrest
(13) Backrest knob
(14) Striker
(15) Backrest cover LH
(16) Backrest frame LH
(17) Backrest pad LH
(18) Armrest cover
(19) Rear center armrest ASSY
(20) Armrest cover

Tightening torque:N·m (kgf-m, ft-lb)
T1: 24.5 (2.5, 18.1)
T2: 33 (3.4, 24.6)

B: CAUTION

1. DRIVER'S SEAT

• When removing the front seat from a side airbag loaded vehicle, follow cautions given in the airbag section. <Ref. to AB-4, CAUTION, General Description.>
• Do not remove the seat position sensor from the seat rail.

2. PASSENGER'S SEAT

• When removing the front seat from a side airbag loaded vehicle, follow cautions given in the airbag section. <Ref. to AB-4, CAUTION, General Description.>
• If the seat cushion cover is removed or replaced, make sure to perform occupant detection system adjustment after installing the seat to the vehicle. <Ref. to OD(diag)-17, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>
Failure to do so may cause improper operation of the occupant detection system.
• On the passenger's seat, never remove the occupant detection control module or the pressure sensor from the occupant detection cushion assembly. These are fixed to the occupant detection cushion assembly.
• Do not replace the seat cushion pad by itself. Always replace the occupant detection cushion assembly as a unit. The seat cushion pad, occupant detection sensor, occupant detection control module and seat cushion cover are adjusted as a set at the time of manufacture. If parts from other vehicles or from other sets are used, the occupant detection system will not function properly.
• If the seat cushion cover is removed (including when replacing the heater), always replace the wires of the seat cushion cover with new wires.

C: PREPARATION TOOL

1. GENERAL TOOL

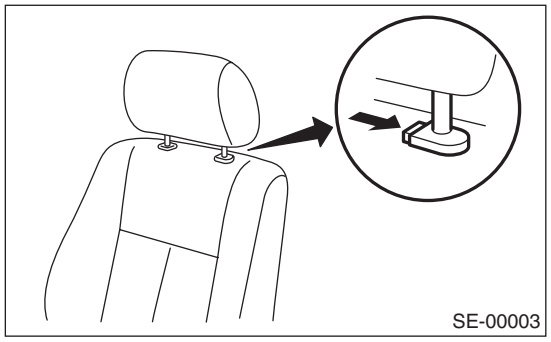
TOOL NAME	REMARKS
Long nose plier	Used for removing the hog ring.
Hog ring pliers	Used for installing the hog ring.

2. Front Seat

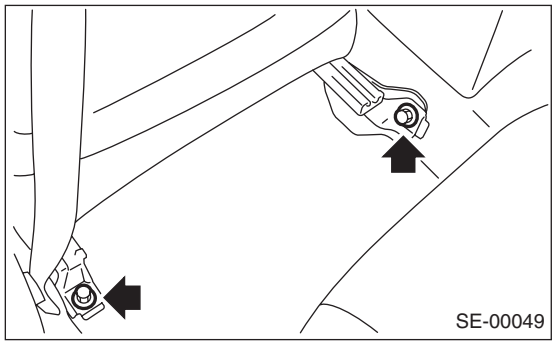
A: REMOVAL

1. DRIVER'S SEAT (STANDARD SEAT)

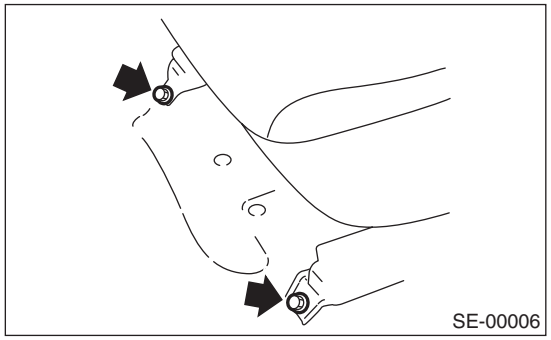
1) While pressing the headrest lock button, remove the headrest.



2) Tilt forward the backrest.
3) Slide the seat to the front end.
4) Remove the bolt cover at the rear end of slide rail, and remove the two bolts at the rear side of seat rail.



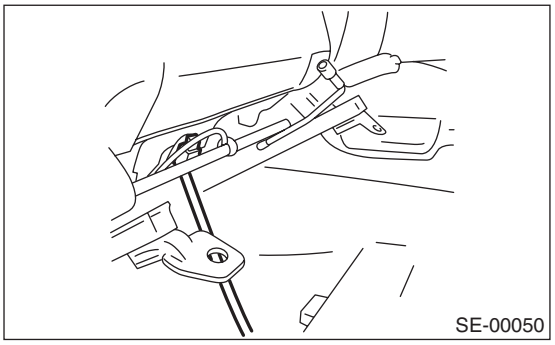
5) Slide the seat to the rear end.
6) Remove the two bolts at the front side of seat rail.



7) Disconnect the ground cable from the battery.

WARNING:
Perform airbag system maintenance at least 20 seconds have passed after removing the battery negative terminal. If the work is started within 20 seconds, the airbag may deploy due to the airbag system backup power supply.

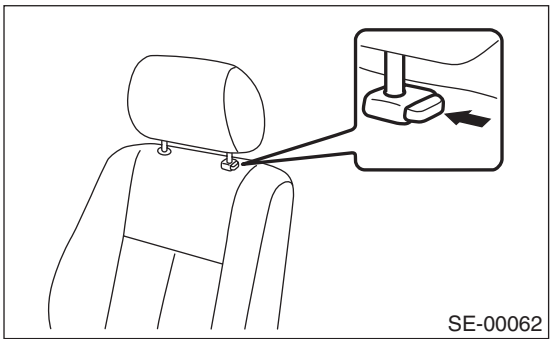
8) Disconnect the connector under the seat.
- Side airbag connector
- Seat belt warning light connector
- Buckle switch connector
- Position sensor connector



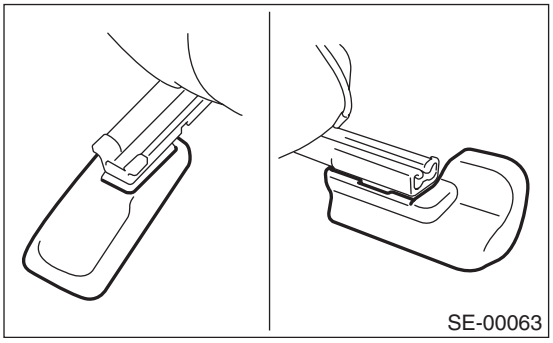
9) Remove the front seat from vehicle.

2. DRIVER'S SEAT (POWER SEAT)

1) While pressing the headrest lock button, remove the headrest.

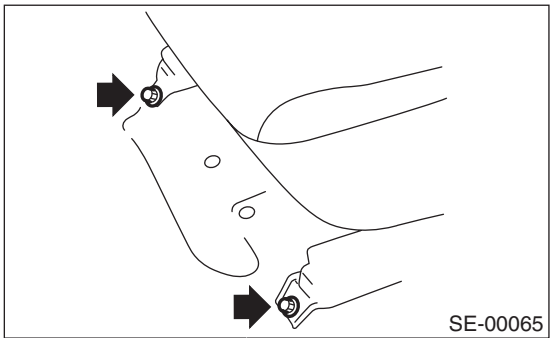


2) Tilt forward the backrest.
3) Slide the seat to the front end.
4) Remove the bolt cover at the rear end of slide rail.



5) Remove the two bolts at the rear side of seat rail.
6) Slide the seat to the rear end.

7) Remove the two bolts at the front side of seat rail.

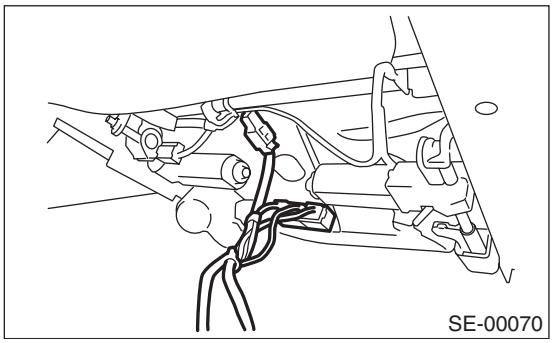


8) Disconnect the ground cable from the battery.

WARNING:
Perform airbag system maintenance at least 20 seconds have passed after removing the battery negative terminal. If the work is started within 20 seconds, the airbag may deploy due to the airbag system backup power supply.

9) Disconnect the connector under the seat.
- Side airbag connector
- Buckle switch connector
- Position sensor connector

10) Disconnect the integrated connector.



11) Remove the front seat from vehicle.

CAUTION:
Be careful not to damage the body, seat or trim when removing the seat from the vehicle.

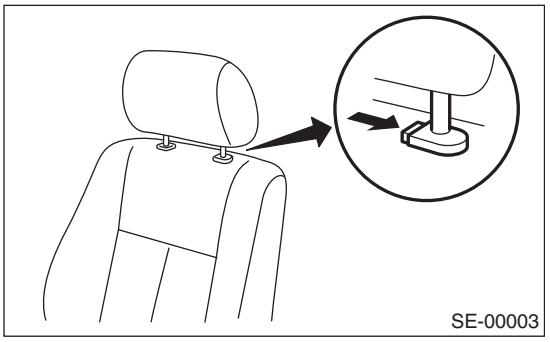
3. PASSENGER'S SEAT

CAUTION:
Refer to "CAUTION" of "General Description" before starting the work. <Ref. to SE-6, CAUTION, General Description.>

1) Disconnect the ground cable from the battery.

WARNING:
Perform airbag system maintenance at least 20 seconds have passed after removing the battery negative terminal. If the work is started within 20 seconds, the airbag may deploy due to the airbag system backup power supply.

2) Remove the headrest.



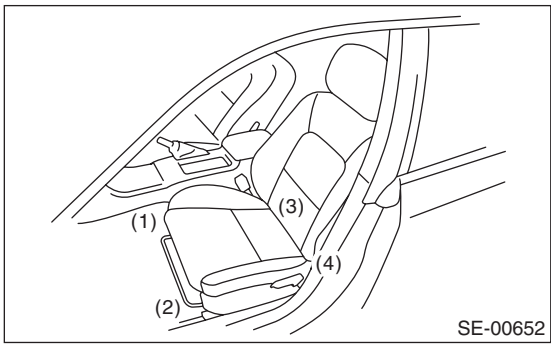
3) Tilt the backrest forward, and move the seat forward.
4) Remove the rear bolt cover, and then remove the rear side of slide rail.
5) Move the seat backward, remove the bolt at the front side of slide rail.
6) Disconnect all the connectors of connector holder in the backside of seat cushion.
- Harness connector of occupant detection control module
- Side airbag connector
- Seat heater connector (model with seat heater)

7) Remove the seat from vehicle.

B: INSTALLATION

Install in the reverse order of removal.

NOTE:
Tighten the slide rail installing bolt gradually in several steps to the specified torque in the order as shown in the figure.



CAUTION:
1. Driver's seat
After installing the driver's seat, use the Subaru Select Monitor to confirm that the seat position sensor LH and the buckle switch are operating properly. <Ref. to AB(diag)-29, DISPLAY OF STATUS INFORMATION, OPERATION, Subaru Select Monitor.>
2. Passenger's seat
Be sure to perform system calibration for the occupant detection system after passenger's seat installation. <Ref. to OD(diag)-17, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>
Failure to do so may cause improper operation of the occupant detection system.

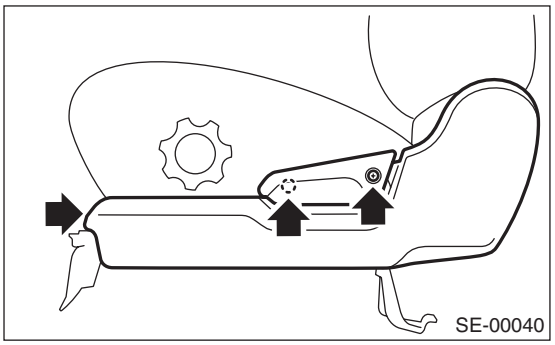
Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to SE-2, FRONT SEAT, COMPONENT, General Description.>

C: DISASSEMBLY

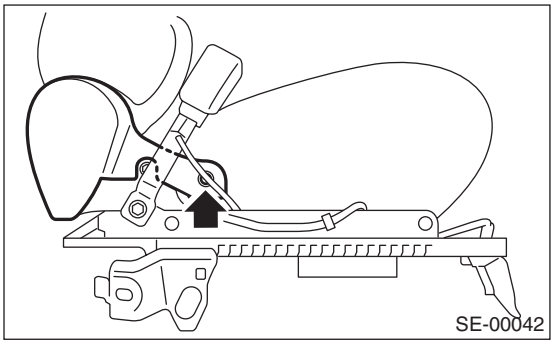
1. DRIVER'S SEAT

STANDARD SEAT

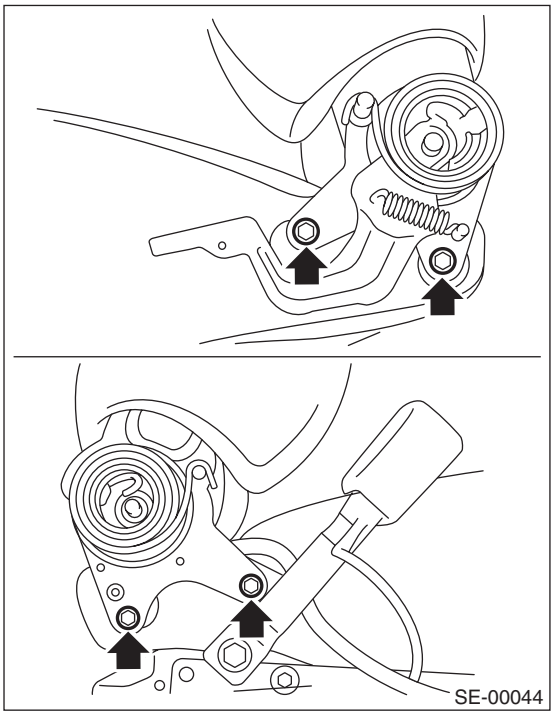
1) Remove the seat from vehicle. <Ref. to SE-7, REMOVAL, Front Seat.>
2) Remove the reclining lever cover and reclining hinge cover.



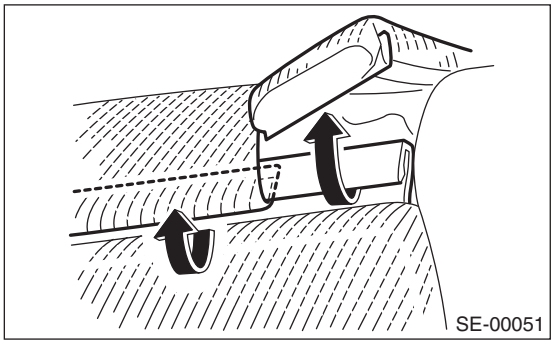
3) Loosen the screws to remove hinge cover.



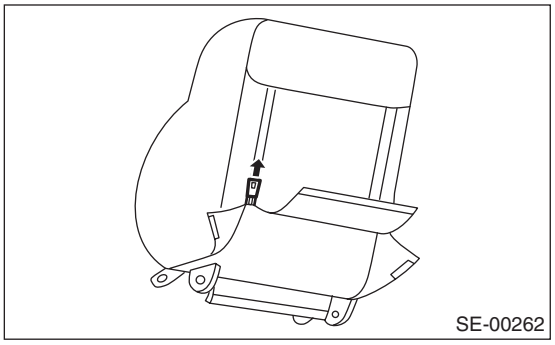
4) Remove the two bolts from the reclining hinge on each left and right side.



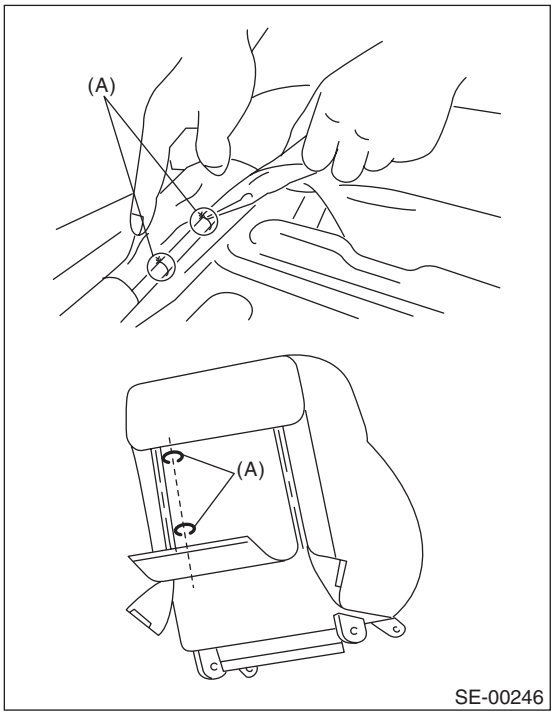
5) Remove the hook at bottom of seat backrest.



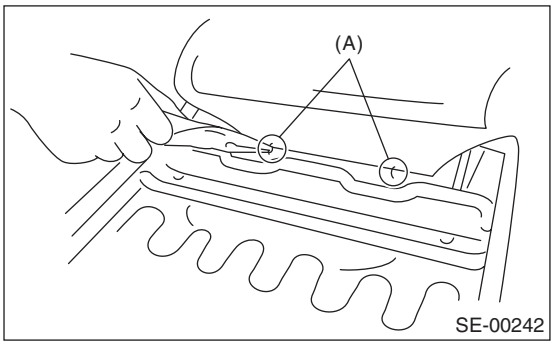
6) Open the fastener at the rear side of backrest.



7) Remove the hog rings (A) on the front side of backrest from the backrest frame. (Seat with side airbag)

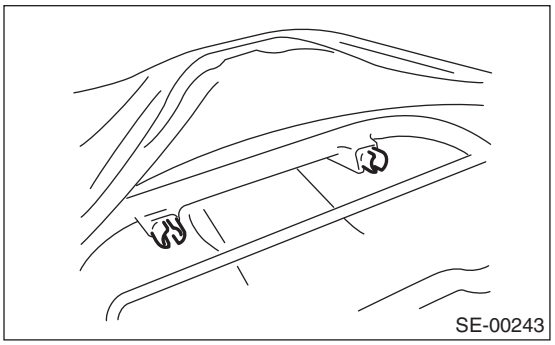


8) Remove the hog ring (A) which secures the backrest cover and backrest pad.

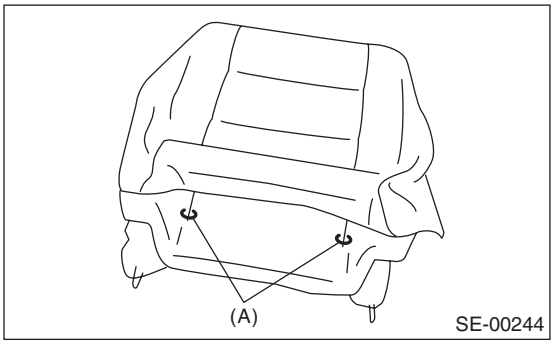


9) Remove the headrest bushing.

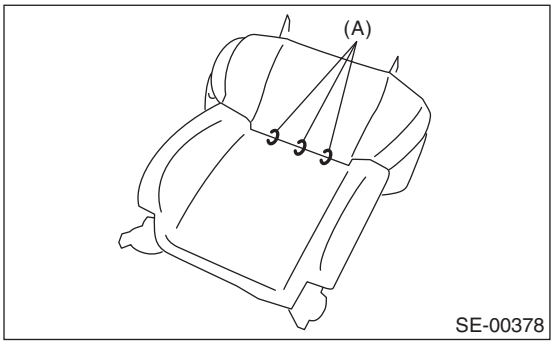
NOTE:
Push outside to remove it from the inside of seat.



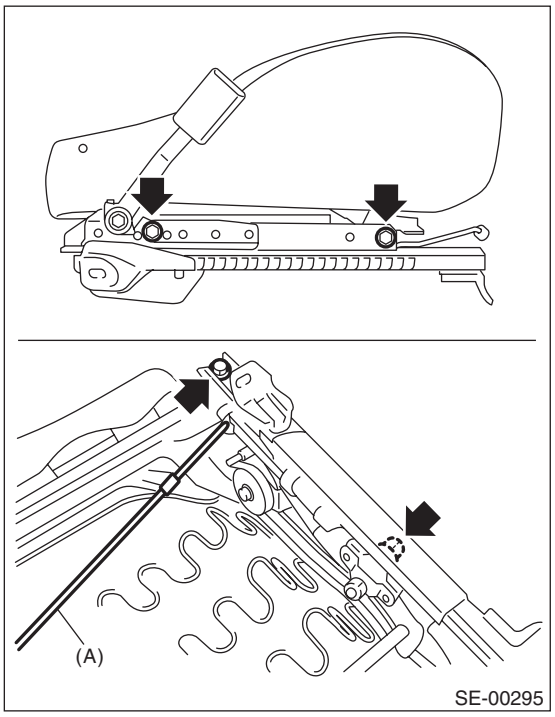
10) Pull out the backrest frame.
11) Remove the lower hog rings (A) on the front side of backrest.



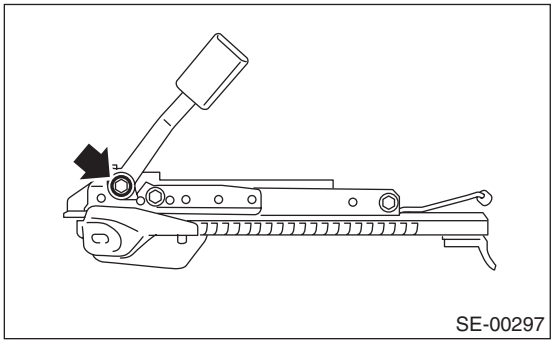
12) Remove the hog rings (A) on the front side of backrest, and then remove the backrest cover from backrest.



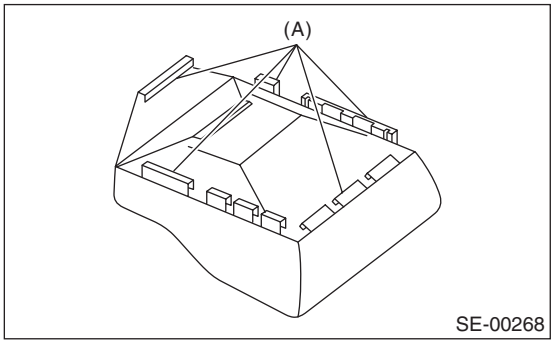
13) Remove the connecting wire (A), then loosen the bolt and nuts to remove slide rail.



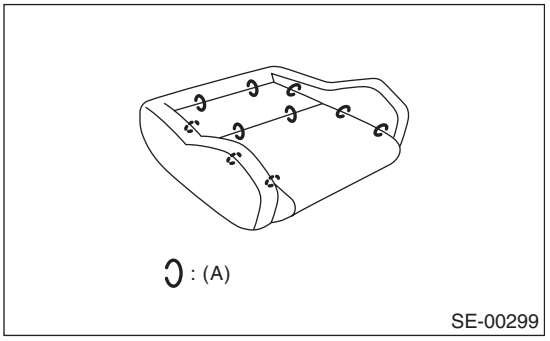
14) Remove the inner seat belt assembly.



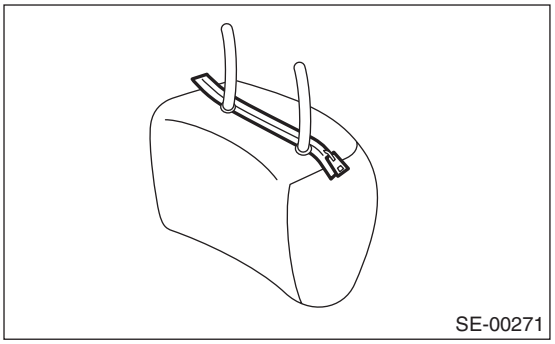
15) Remove the hooks (A), and then remove the seat cushion frame.



16) Remove the hog rings (A), and then remove the seat cushion cover from seat cushion pad.

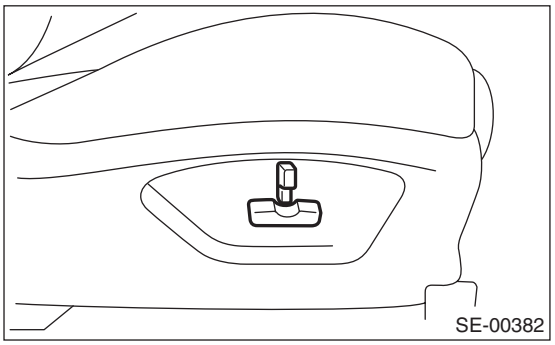


17) Open the fastener on the bottom of the headrest, then remove the headrest cover from the headrest.

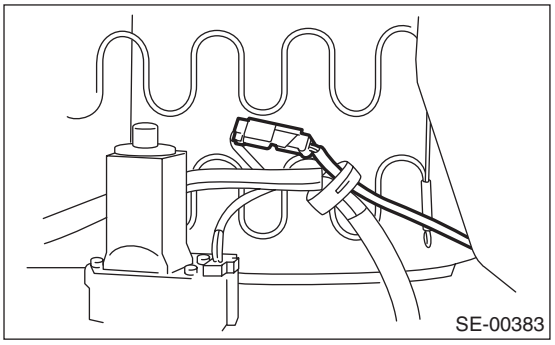


POWER SEAT

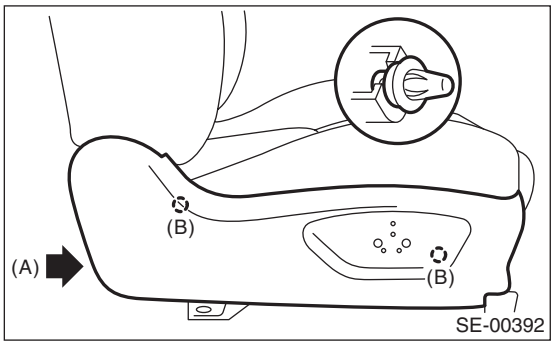
1) Remove the seat from vehicle. <Ref. to SE-7, REMOVAL, Front Seat.>
2) Remove the seat switch knob.



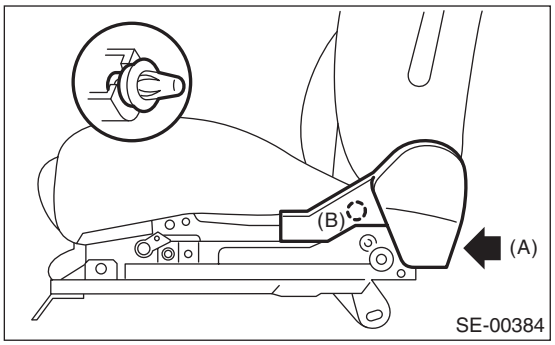
3) Disconnect the connector of reclining motor from the backside of seat cushion.



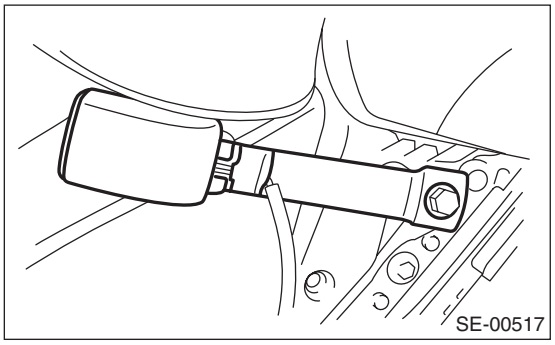
4) Remove the screw (A) and clips (B), and then disconnect the seat switch connector to remove seat hinge outer cover.



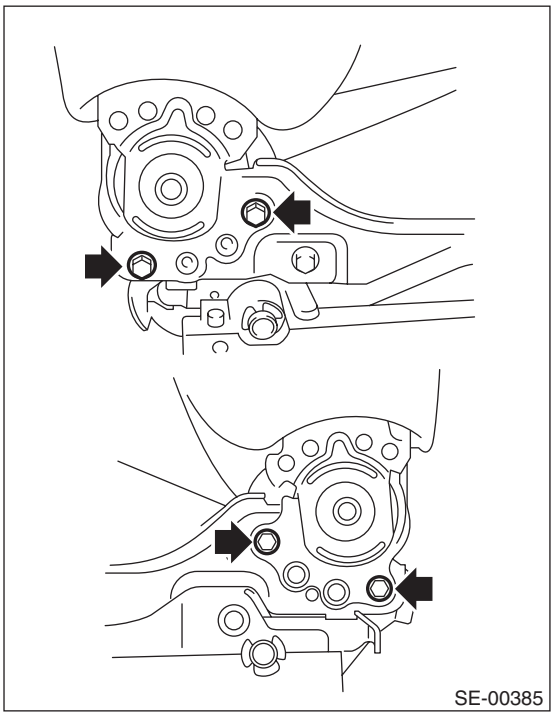
5) Remove the screw (A) and clip (B), and then remove the seat hinge inner cover.



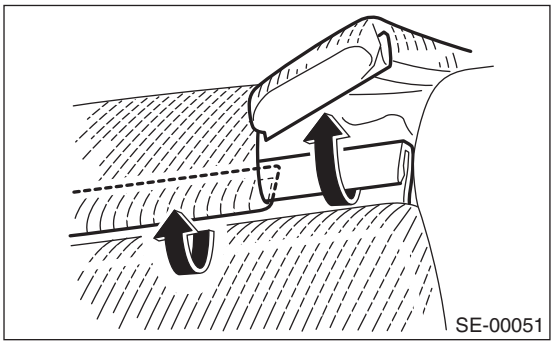
6) Remove the bolts, and then detach the inner seat belt assembly.



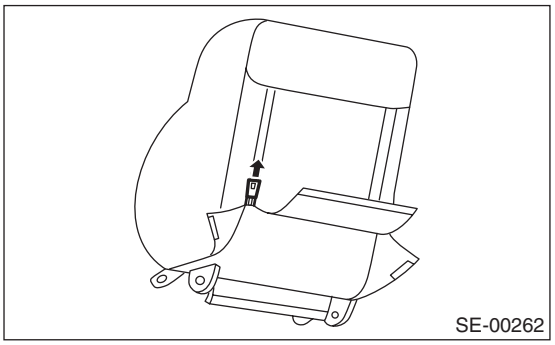
7) Remove the two bolts from the reclining hinge on each left and right side.



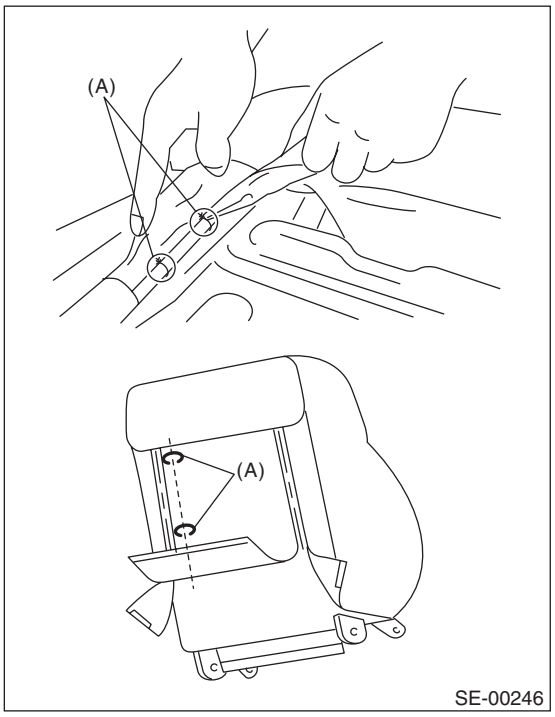
8) Remove the hook at bottom of seat backrest.



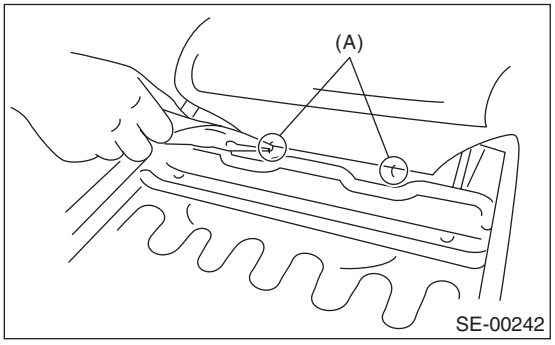
9) Open the fastener at the rear side of backrest.



10) Remove the hog rings (A) on the front side of backrest from the backrest frame. (Seat with side airbag)

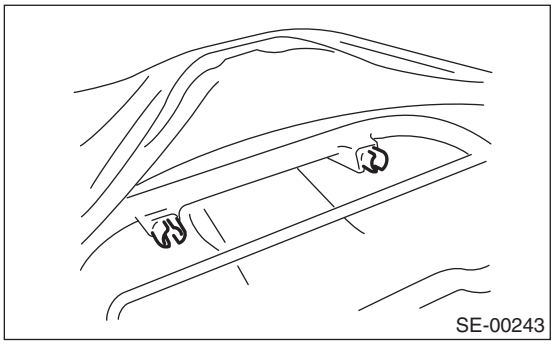


11) Remove the hog ring (A) which secures the backrest cover and backrest pad.



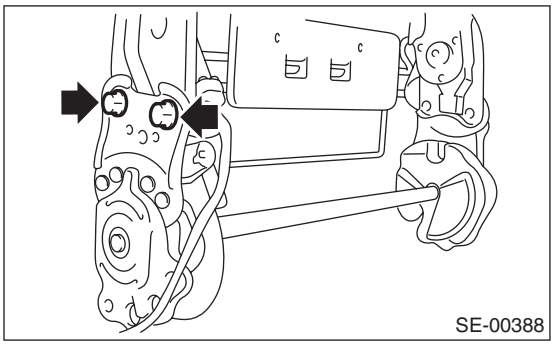
12) Remove the headrest lock bushing.

NOTE:
Push outside to remove it from the inside of seat.

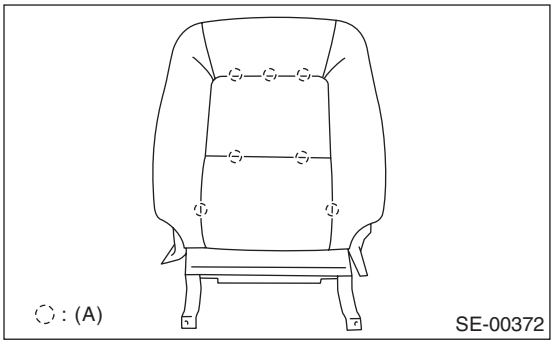


13) Pull out the backrest frame assembly.

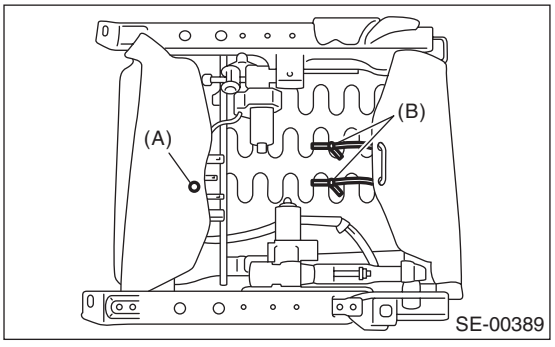
14) Remove the two bolts on each left and right side, and then remove the reclining motor assembly.



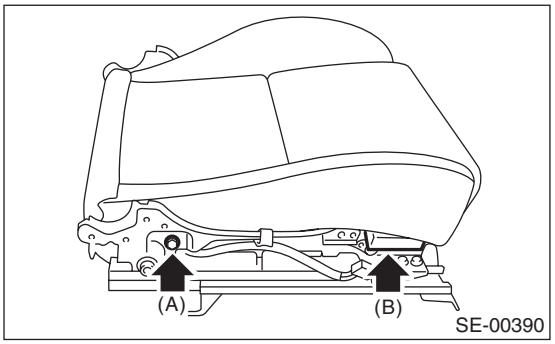
15) Remove the hog rings (A) on the surface side of backrest, and then remove the backrest cover from backrest.



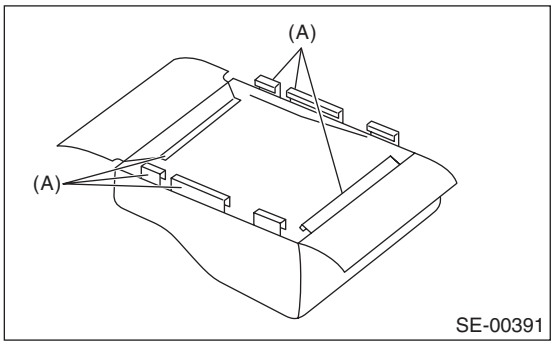
16) Remove the clip (A) and straps (B) on the back of seat cushion.



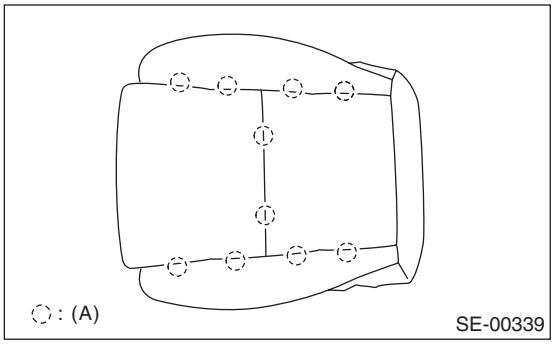
17) Remove the bolt (A) and hook (B) on left and right side, and then remove the seat cushion frame from seat rail assembly.



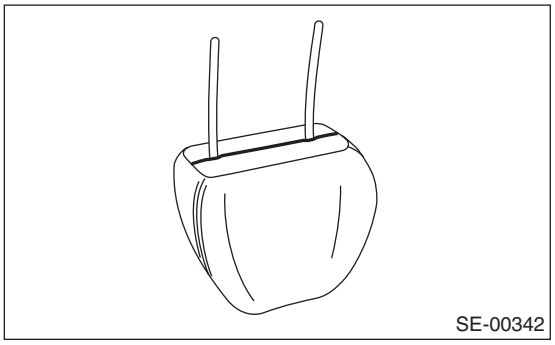
18) Remove the hooks (A), and then remove the seat cushion from seat cushion frame.



19) Remove the hog rings (A), and then remove the seat cushion cover from seat cushion pad.



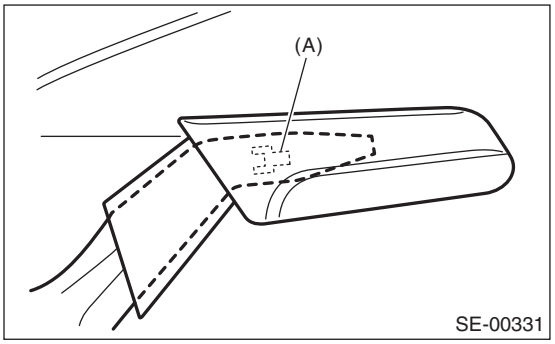
20) Remove the hooks and hog rings at the bottom of headrest, and then remove the headrest cover from headrest.



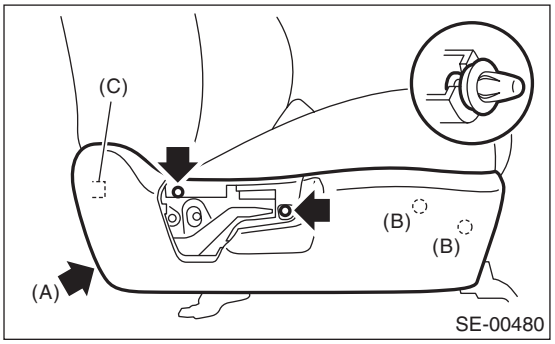
2. PASSENGER'S SEAT

CAUTION:
• If the seat cushion cover is removed or replaced, make sure to perform occupant detection system adjustment after installing the seat. <Ref. to OD(diag)-17, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>
Failure to do so may cause improper activation of passenger's airbag.
• For the passenger's seat, never remove the occupant detection control module and occupant detection sensor from the seat cushion frame. These all are the parts of occupant detection cushion assemblies.
• If the seat cushion cover is removed (including when replacing the heater), always replace the wires of the seat cushion cover with new wires.

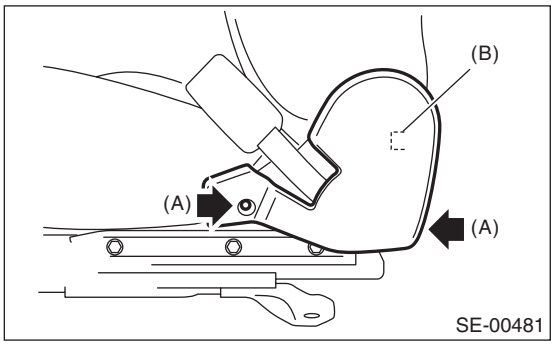
1) Remove the seat from vehicle.
2) Remove the reclining lever cover.



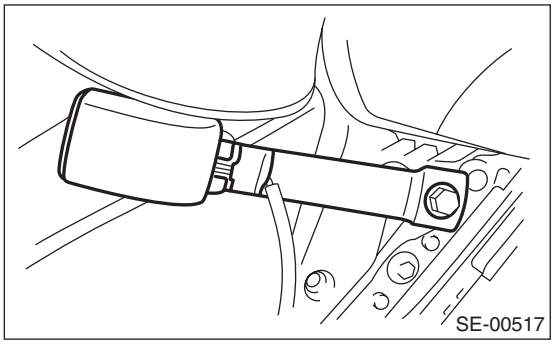
3) Remove the screw (A), clip (B) and claw (C), and then remove the seat side cover outside.



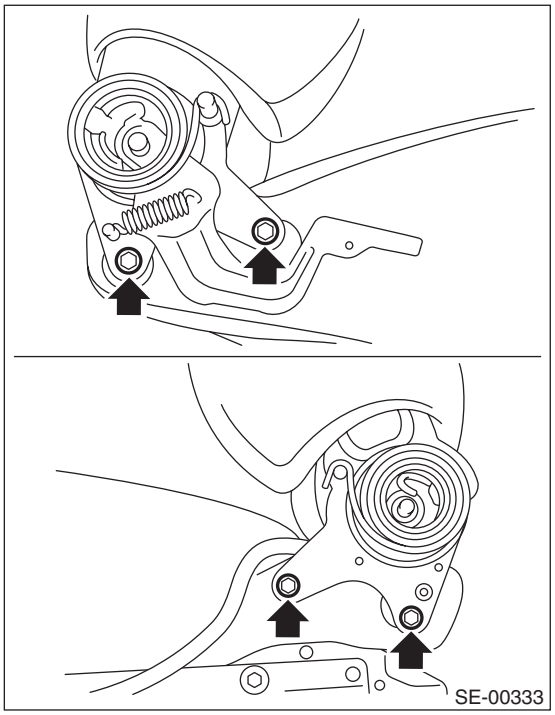
4) Remove the screw (A) and claw (B), and then remove the seat side cover inside.



5) Remove the bolts, and then detach the inner seat belt assembly.

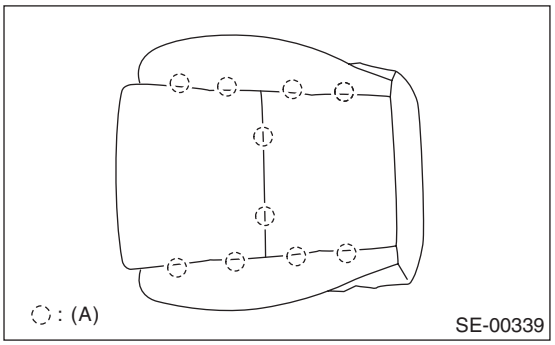


6) Remove the two reclining hinge bolts on each of the left and right sides.



7) Remove the seat cushion pad and cover from seat cushion frame assembly.

8) Remove the hog rings (A), and then remove the seat cushion cover from seat cushion pad.



9) Refer to “DRIVER’S SEAT” for disassembly procedures of backrest and headrest.

D: ASSEMBLY

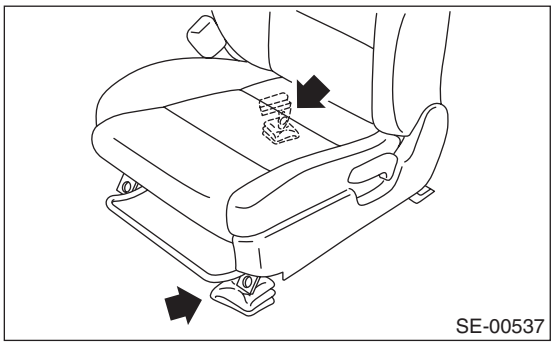
CAUTION:
When the backrest cover is not installed securely, the side airbag module may not be deployed properly, therefore keep strictly to the following procedure.
• Be careful not to stain or damage the backrest cover during assembly.
• Do not reuse hog rings.
• Secure the hog ring using hog ring pliers.
• Install the hog rings to the specified points securely and make sure that no wrinkle or twisting on backrest cover.

1. DRIVER'S SIDE

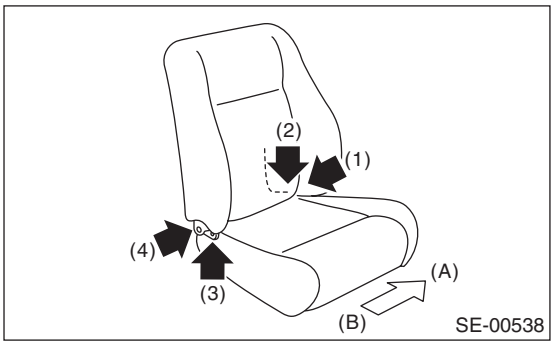
Assemble in the reverse order of disassembly.

2. PASSENGER'S SIDE

CAUTION:
• If the seat cushion cover is removed or replaced, make sure to perform occupant detection system adjustment after installing the seat. <Ref. to OD(diag)-17, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>
• Failure to do so may cause improper activation of passenger's airbag.
1) Assemble the seat cushion in the reverse order of disassembly.
2) Assemble the backrest in the reverse order of disassembly.
3) When installing the backrest assembly to the seat cushion assembly, fill the gap in the front side of slide rail LH and in the rear side of slide rail RH with cloth etc. in order to stabilize the seat cushion assembly.


SE-00537

4) Temporarily tighten the reclining hinge bolts in the order of (1) through (4) to an extent that the seat backrest assembly is not held securely.



SE-00538

(A) Inside the vehicle
(B) Outside the vehicle

5) Use the reclining lever to place the backrest in the most upright position, and check the first lock position of recliner.
6) Hold the seat cushion assembly securely, and tighten the reclining hinge bolts in the order described above until they reach the specified torque.

CAUTION:
Do not touch the backrest assembly when tightening the reclining hinge bolts.
7) Assemble each harness, inner seat belt assembly and each cover in the reverse order of removal.

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to SE-2, FRONT SEAT, COMPONENT, General Description.>

E: INSPECTION

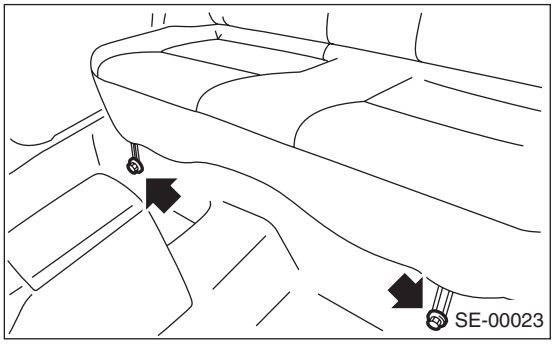
Check that no tear or fray is on the backrest cover assembly.

NOTE:
When the door side of backrest cover assembly is torn or frayed, the side airbag may not be deployed properly. Replace it with new part in such a case.

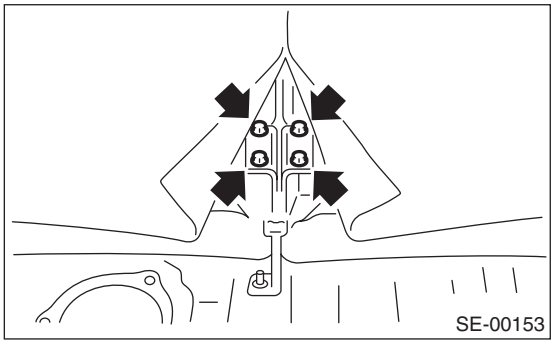
3. Rear Seat

A: REMOVAL

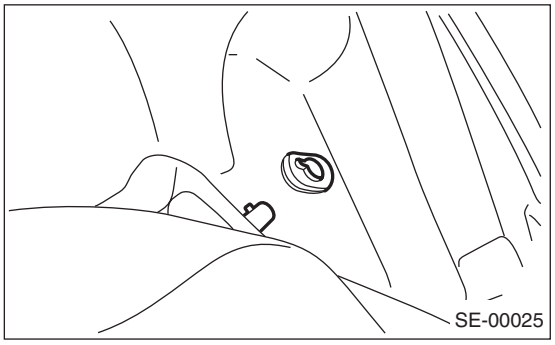
1) Remove the bolt to remove the rear seat cushion.



2) Remove the headrest.
3) Remove the luggage floor mat. <Ref. to EI-48, REMOVAL, Luggage Floor Mat.>
4) Turn over the rear seat backrest.
5) Turn over the seat cover to remove the bolt.



6) Remove the rear seat backrest.



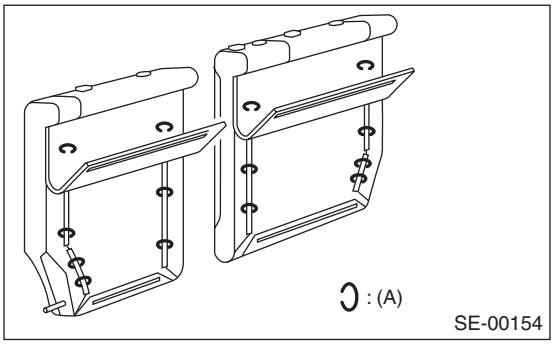
B: INSTALLATION

Install in the reverse order of removal.

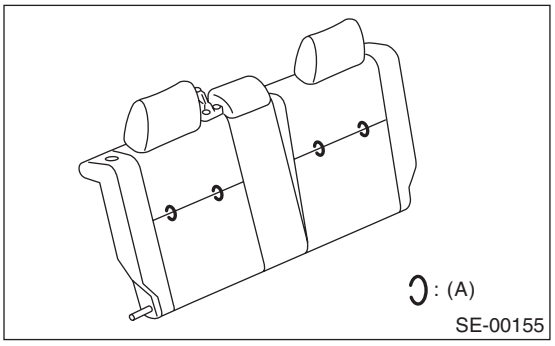
Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to SE-5, REAR SEAT, COMPONENT, General Description.>

C: DISASSEMBLY

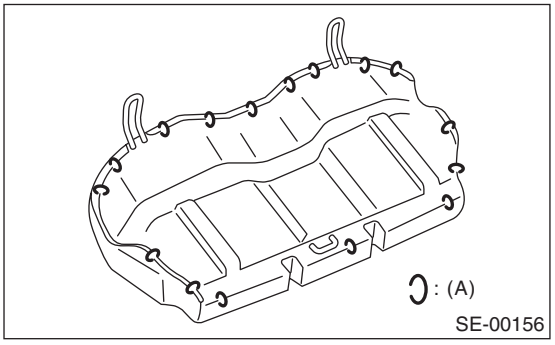
1) Remove the rear seat. <Ref. to SE-17, REMOVAL, Rear Seat.>
2) Remove the hog rings (A) from the vicinity of the seat backrest.



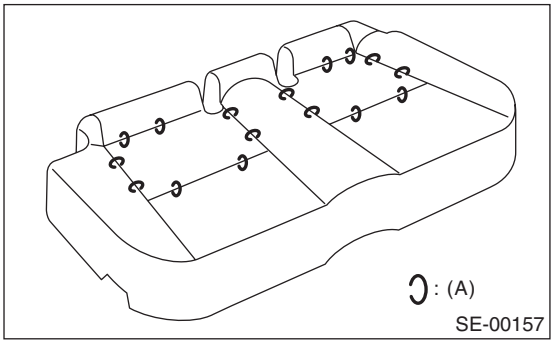
3) Remove the hog rings (A) on the front side of cushion pad, then remove the cover.



4) Remove the hog rings (A) from the vicinity of the seat cushion.



5) Remove the hog rings (A), and then remove the cover.



D: ASSEMBLY

Assemble in the reverse order of disassembly.

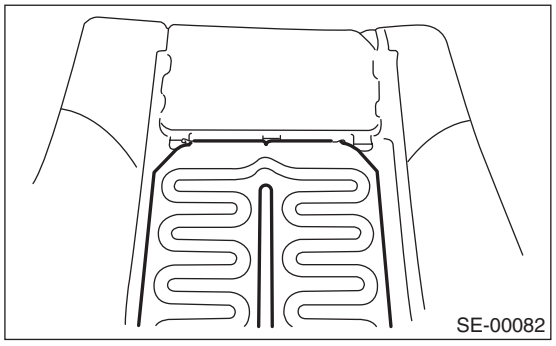
NOTE:
- Do not contaminate or damage the cover.
- While installing the hog rings, prevent the seat from getting wrinkled.

4. Seat Heater System

A: REMOVAL

1. SEAT HEATER UNIT

1) Remove the front seats. <Ref. to SE-7, REMOVAL, Front Seat.>
2) Remove the backrest cover of front seat and seat cushion cover. <Ref. to SE-9, DISASSEMBLY, Front Seat.>
3) Remove the hog rings, and then remove the seat heater unit.



2. SEAT HEATER SWITCH

1) Remove the console box. <Ref. to EI-37, REMOVAL, Console Box.>
2) Remove the seat heater switch from the console box.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

1. WIRING DIAGRAM

<Ref. to WI-113, WIRING DIAGRAM, Seat Heater System.>

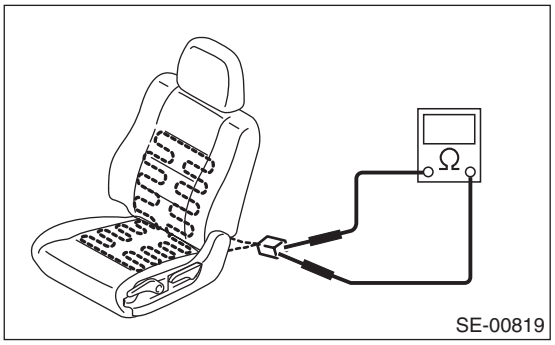
2. SEAT HEATER UNIT

Disconnect the seat heater unit connector, and check the continuity between terminals of connector.

Connector & terminal

LHD side seat
Without power seat (R188)
No. 1 — No. 4:
No. 1 — No. 5:
No. 4 — No. 5:
With power seat (R189)
No. 2 — No. 6:
No. 2 — No. 7:
No. 6 — No. 7:

RHD side seat (R41)
No. 1 — No. 3:
No. 1 — No. 4:
No. 3 — No. 4:



If no continuity exists, replace the seat heater unit with a new part.

3. SEAT HEATER SWITCH

• CHECK THERMISTOR OUTPUT VOLTAGE

1) Connect the battery to the connector.
Connector terminals No. 2 (+):
2) Measure the voltage between connector and chassis ground.

Connector & terminal:
LHD side seat
(R43) No. 4 (+) — Chassis ground (–):
RHD side seat
(R42) No. 4 (+) — Chassis ground (–):
If voltage is not 1.5 V or more, replace the seat heater switch.

• CHECK SWITCH OUTPUT VOLTAGE

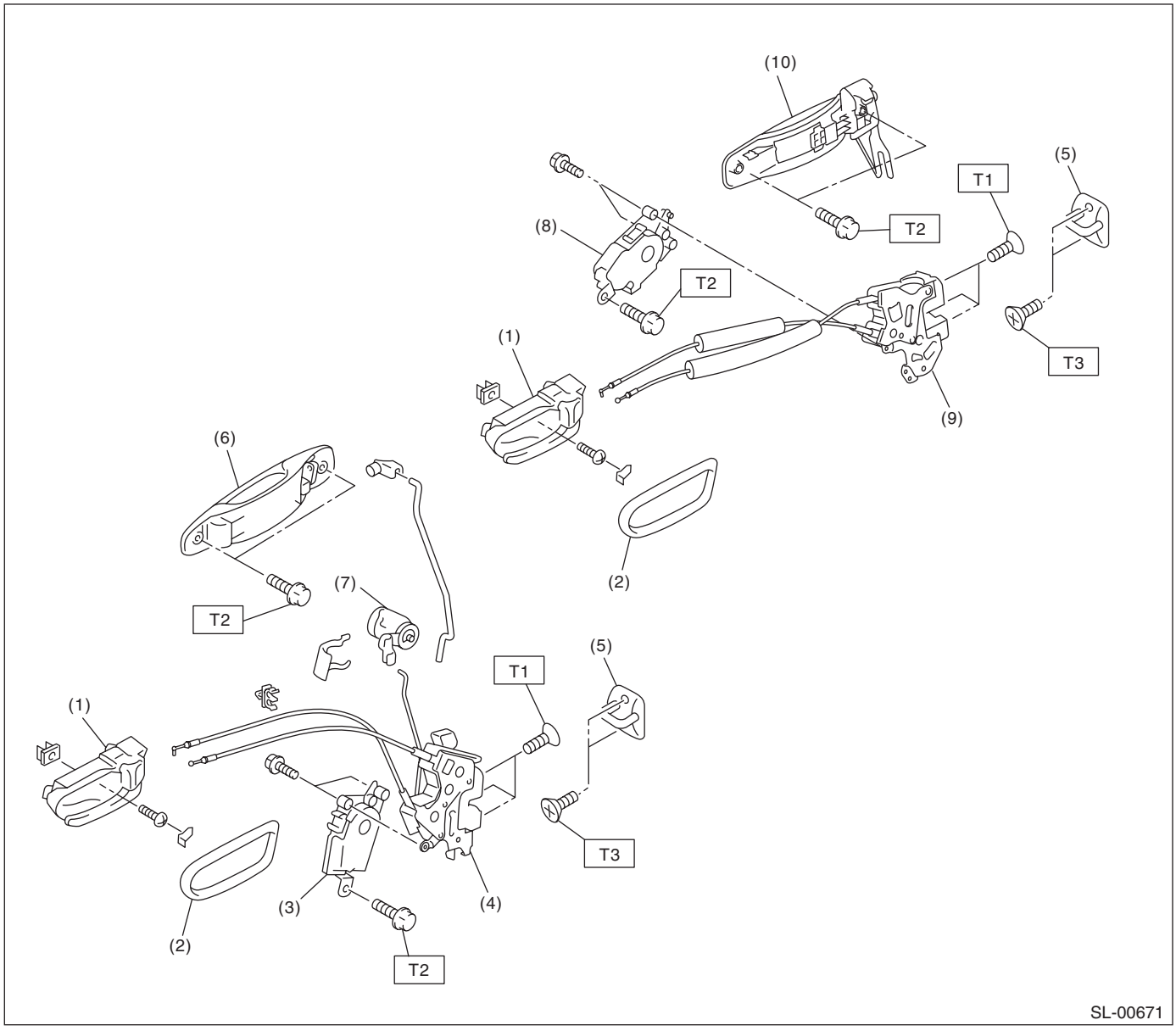
1) Connect the battery to the connector.
Connector terminals No. 2 (+):
2) Measure the voltage between connector and chassis ground while turning the switch to ON.

Connector & terminal:
LHD side seat
(R43) No. 3 (+) — Chassis ground (–):
RHD side seat
(R42) No. 3 (+) — Chassis ground (–):
If voltage does not change from 10 V or more to zero, replace the seat heater switch.

1. General Description

A: COMPONENT

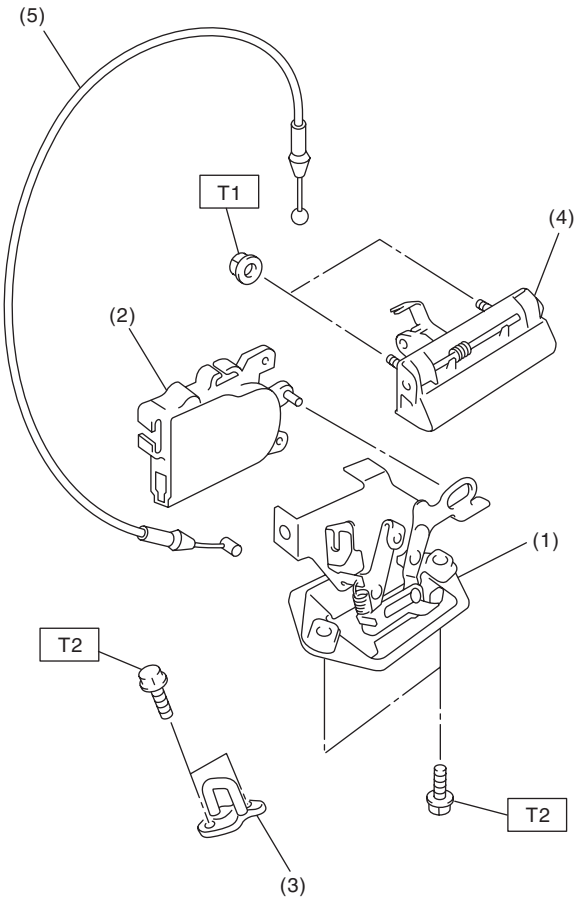
1. DOOR LOCK ASSEMBLY



(1)	Inner remote ASSY	(6)	Front door outer handle
(2)	Inner remote cover	(7)	Key cylinder
(3)	Front door lock actuator	(8)	Rear door lock actuator
(4)	Front door latch	(9)	Rear door latch
(5)	Striker	(10)	Rear door outer handle

Tightening torque:N·m (kgf-m, ft-lb)
T1: 6.5 (0.66, 4.8)
T2: 7.5 (0.76, 5.5)
T3: 18 (1.8, 13.3)

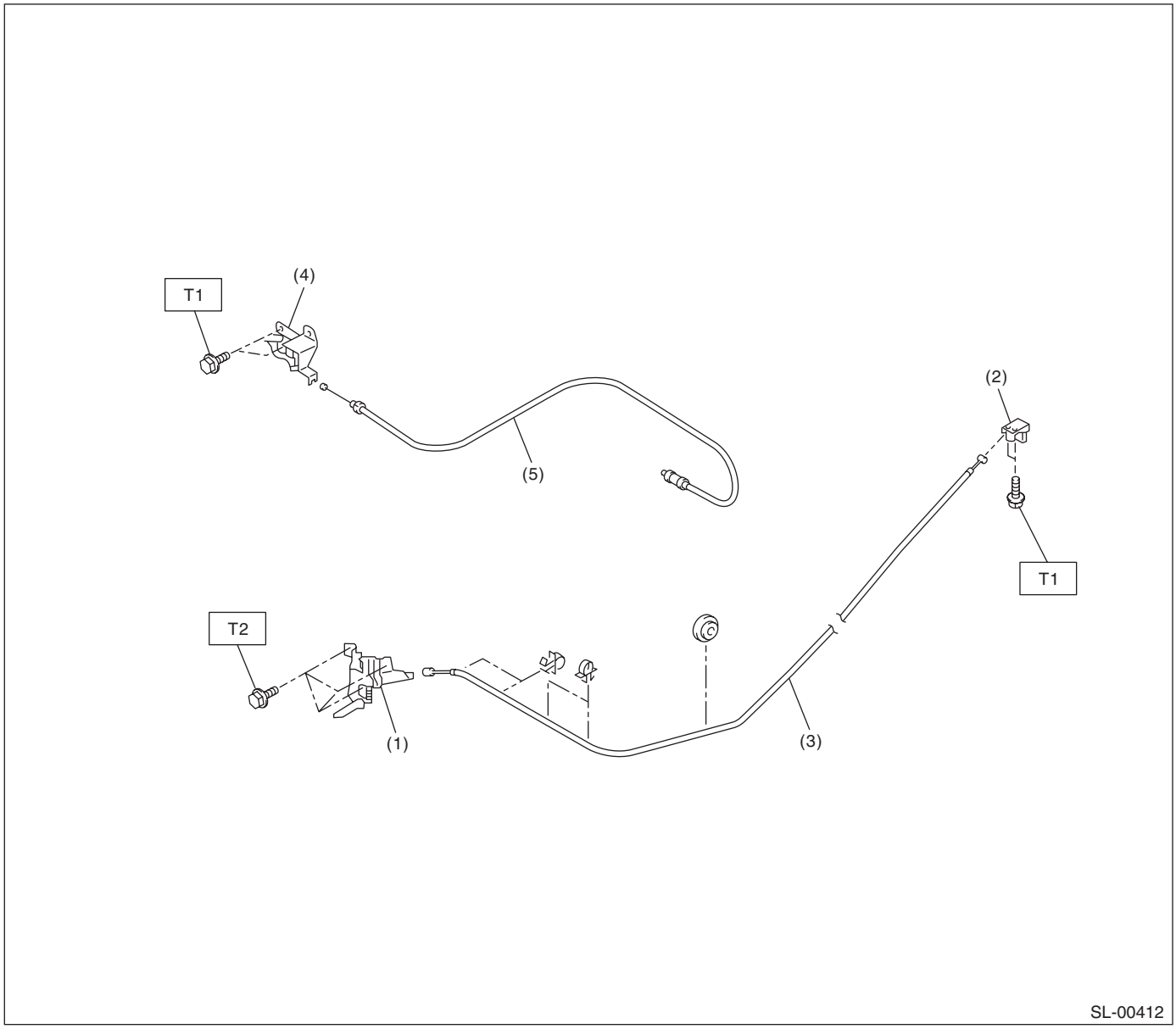
2. REAR GATE LOCK



SL-00002

(1)	Rear gate latch	(4)	Rear gate outer handle	***Tightening torque:N·m (kgf-m, ft-lb)***
(2)	Rear gate actuator	(5)	Cable	***T1: 7.5 (0.76, 5.5)***
(3)	Striker			***T2: 25 (2.5, 18.4)***

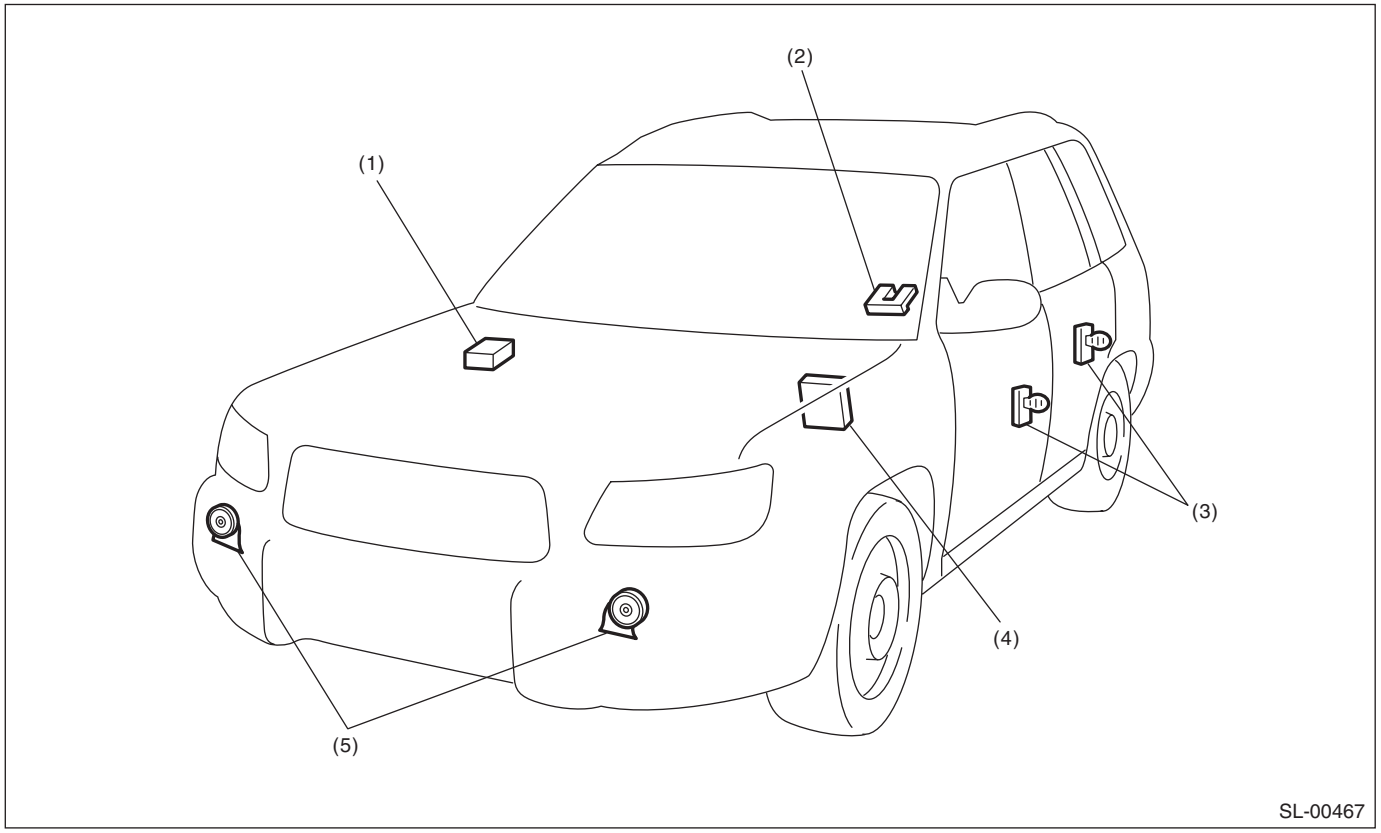
3. FRONT HOOD LOCK AND REMOTE OPENERS



(1) Front hood lock ASSY
(2) Lever ASSY
(3) Front hood cable ASSY
(4) Pull handle ASSY
(5) Fuel cable ASSY

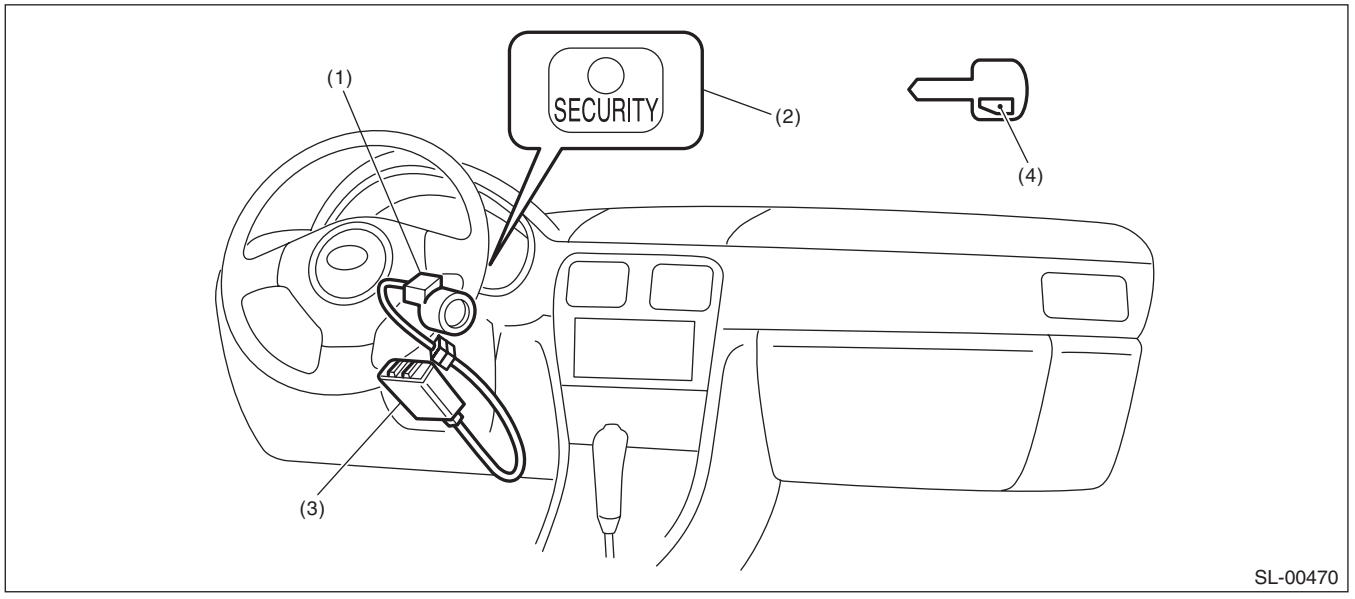
Tightening torque:N·m (kgf-m, ft-lb)
T1: 7.5 (0.76, 5.5)
T2: 33 (3.4, 24.6)

4. KEYLESS ENTRY SYSTEM



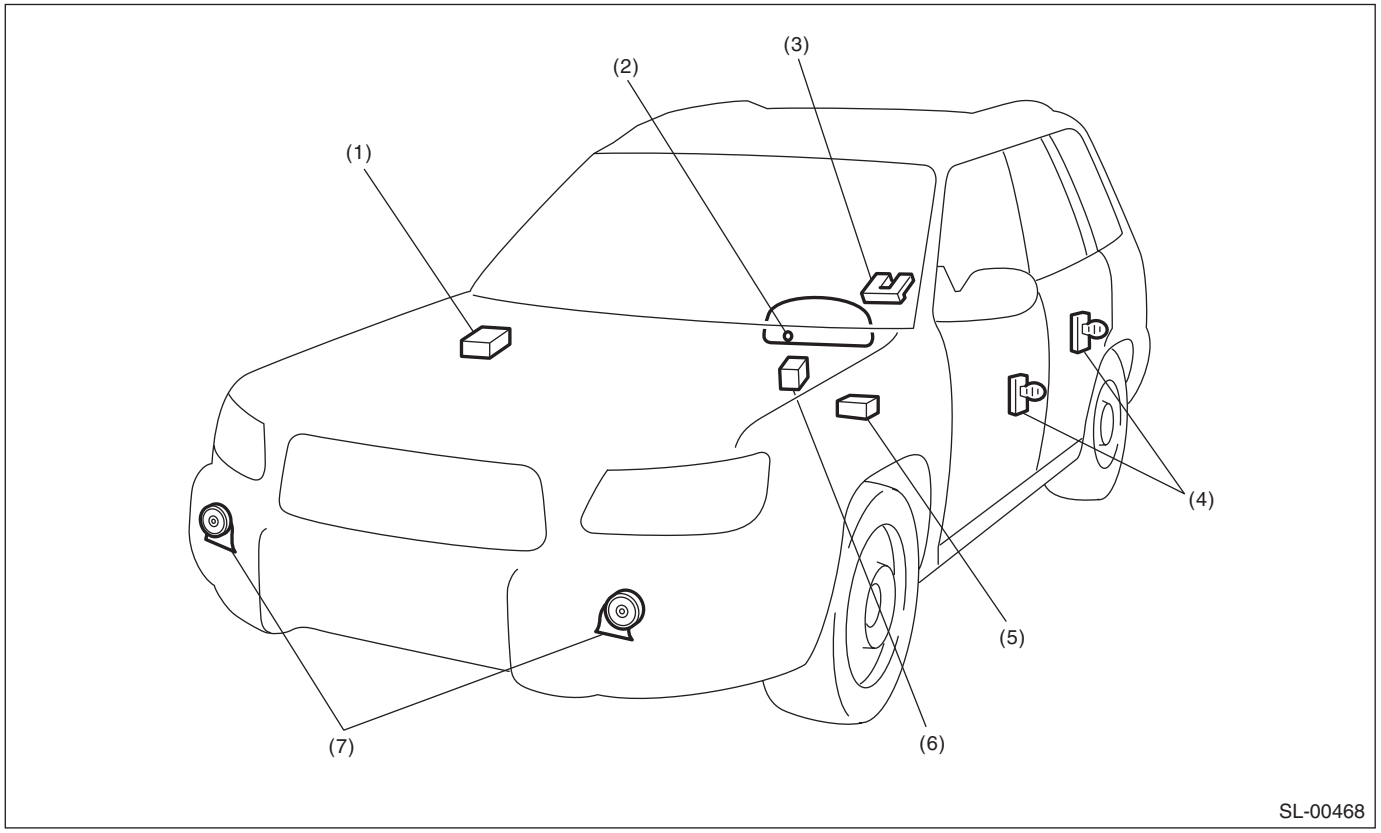
(1) Keyless entry control module
(2) Rear gate latch switch
(3) Door switch
(4) Body integrated unit
(5) Horn

5. IMMOBILIZER SYSTEM



(1) Antenna
(2) Security indicator light (LED bulb)
(3) Immobilizer control module (IMMCM)
(4) Transponder

6. SECURITY SYSTEM



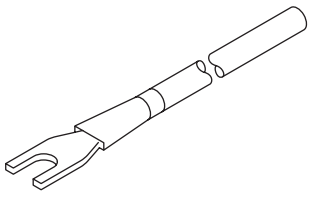
(1) Keyless entry control module
(2) Security indicator light (in combination meter)
(3) Rear gate latch switch
(4) Door switch
(5) Interrupt relay
(6) Horn relay (in main fuse box)
(7) Horn

B: CAUTION

• Before disassembling or reassembling parts, always disconnect the battery ground cable from battery. When repairing the radio, control module, etc. which are provided with memory functions, record the memory contents before disconnecting the ground cable from battery. Otherwise, these contents are erased upon disconnection.
• Reassemble the parts in the reverse order of disassembly unless otherwise indicated.
• Adjust the parts to the specifications described in this manual if so designated.
• Connect the connectors and hoses securely during reassembly.
• After reassembly, make sure all the functional parts operate smoothly.
• The wiring harnesses of the airbag system pass near electrical parts and switches.
• Airbag system wiring harnesses and connectors are yellow. Do not use electrical test equipment on these circuits.
• Be careful not to damage the airbag system wiring harness when servicing the ignition key cylinder.

C: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-925580000	925580000	PULLER	Used for removing trim clip

2. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance and voltage.
Drill	Used for replacing ignition key lock.

2. Door Lock Control System

A: WIRING DIAGRAM

1. DOOR LOCK CONTROL

<Ref. to WI-166, WIRING DIAGRAM, Door Lock System.>

B: INSPECTION

1. SYMPTOM CHART

Symptom	Repair order	Reference
The door lock control system does not operate.	1. Remove and visually check the fuses No. 2 (in the main fuse box) and No. 3 (in the fuse & relay box).	When the fuse is blown out, replace with a new part. When there is no defective with the fuse, check the power supply and ground circuit. <Ref. to SL-8, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Door Lock Control System.>
	2. Check the power supply and ground circuit for body integrated unit.	<Ref. to SL-8, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Door Lock Control System.>
	3. Check the door lock switch and the circuit.	<Ref. to SL-9, CHECK DOOR LOCK SWITCH AND CIRCUIT, INSPECTION, Door Lock Control System.>
	4. Check the door lock actuator and the circuit.	<Ref. to SL-10, CHECK DOOR LOCK ACTUATOR AND CIRCUIT, INSPECTION, Door Lock Control System.>
The door lock switch does not operate.	Check the door lock switch and circuit.	<Ref. to SL-9, CHECK DOOR LOCK SWITCH AND CIRCUIT, INSPECTION, Door Lock Control System.>
A specific door lock actuator does not operate.	Check the door lock actuator and circuit.	<Ref. to SL-10, CHECK DOOR LOCK ACTUATOR AND CIRCUIT, INSPECTION, Door Lock Control System.>

2. CHECK POWER SUPPLY AND GROUND CIRCUIT

	Step	Check	Yes	No
1	**CHECK POWER SUPPLY.** 1) Disconnect the harness connector of body integrated unit. 2) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B280) No. 2 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **2**.	Check the harness for open or short circuit between body integrated unit and fuse.
2	**CHECK GROUND CIRCUIT.** Measure the resistance between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B280) No. 4 — Chassis ground:*** ***(B280) No. 13 — Chassis ground:***	Is the resistance less than 10 Ω?	The power supply and ground circuit are OK.	Repair the harness.

3. CHECK DOOR LOCK SWITCH AND CIRCUIT

	Step	Check	Yes	No
1	**CHECK DOOR LOCK SWITCH CIRCUIT.** 1) Disconnect the harness connector of body integrated unit. 2) Measure the resistance between the harness connector terminal and chassis ground when moving the door lock switch to LOCK. ***Connector & terminal*** ***(B281) No. 12 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **2**.	Go to step **3**.
2	**CHECK DOOR LOCK SWITCH CIRCUIT.** Measure the resistance between the harness connector terminal and chassis ground when the door lock switch is moved to UNLOCK. ***Connector & terminal*** ***(B281) No. 11 — Chassis ground:***	Is the resistance less than 10 Ω?	The door lock switch is OK.	Go to step **3**.
3	**CHECK DOOR LOCK SWITCH GROUND CIRCUIT.** 1) Disconnect the door lock switch harness connector. 2) Measure the resistance between the door lock switch harness connector terminal and the body ground. ***Connector & terminal*** ***Driver side:*** ***(D7) No. 5 — Chassis ground:*** ***Passenger side:*** ***(D62) No. 5 — Chassis ground:***	Is the resistance less than 1 Ω?	Go to step **4**.	Repair the open circuit in the harness or chassis ground.
4	**CHECK DOOR LOCK SWITCH.** 1) Measure the resistance between the door lock switch terminals when moving the door lock switch to LOCK. ***Connector & terminal*** ***Driver side:*** ***(D7) No. 5 — No. 9:*** ***Passenger side:*** ***(D62) No. 4 — No. 5:***	Is the resistance less than 1 Ω?	Go to step **5**.	Replace the door lock switch.
5	**CHECK DOOR LOCK SWITCH.** Measure the resistance between the door lock switch terminals when moving the door lock switch to UNLOCK. ***Connector & terminal*** ***Driver side:*** ***(D7) No. 5 — No. 8:*** ***Passenger side:*** ***(D62) No. 2 — No. 5:***	Is the resistance less than 1 Ω?	Check the harness for open circuits or shorts between the body integrated unit and the door lock switch.	Replace the door lock switch.

4. CHECK DOOR LOCK ACTUATOR AND CIRCUIT

	Step	Check	Yes	No
1	**CHECK OUTPUT SIGNAL.** Measure the voltage between the harness connector terminal and chassis ground of body integrated unit when moving the door lock switch to LOCK. ***Connector & terminal*** ***(B280) No. 6 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **2**.	Replace the body integrated unit.
2	**CHECK OUTPUT SIGNAL.** Measure the voltage between the harness connector terminal and chassis ground of body integrated unit when moving the door lock switch to UNLOCK. ***Connector & terminal*** ***(B280) No. 7 (+) — Chassis ground (–):*** ***(B280) No. 8 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **3**.	Replace the body integrated unit.
3	**CHECK DOOR LOCK ACTUATOR.** Check the door lock actuator. Front door lock actuator: <Ref. to SL-31, Front Door Lock Actuator.> Rear door lock actuator: <Ref. to SL-35, Rear Door Lock Actuator.> Rear gate latch lock actuator: <Ref. to SL-38, Rear Gate Latch Lock Actuator.>	Is the door lock actuator OK?	Check the harness for open or short circuits between body integrated unit and door lock actuator.	Replace the door lock actuator.

3. Keyless Entry System

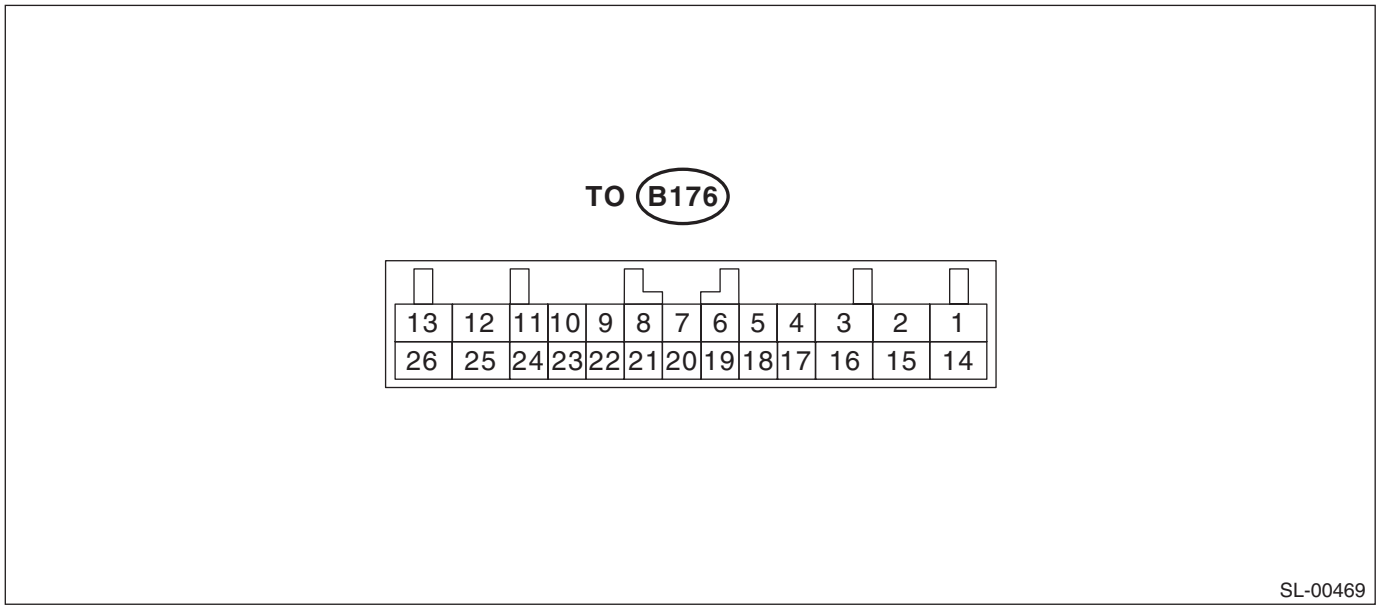
A: WIRING DIAGRAM

1. KEYLESS ENTRY

<Ref. to WI-157, WIRING DIAGRAM, Keyless Entry System.>

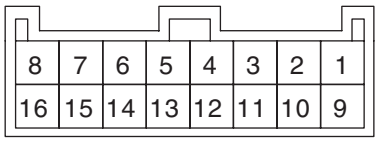
B: ELECTRICAL SPECIFICATION

1. KEYLESS ENTRY CONTROL MODULE

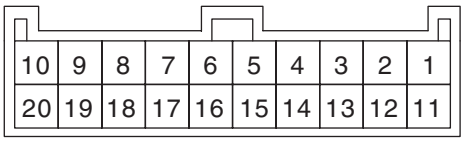


Content	Terminal No.	Measuring condition
Turn signal light LH	1 (OUTPUT)	Battery voltage is present when the keyless transmitter UNLOCK/DISARM or LOCK/ARM button is pressed.
Power supply (Back-up)	2	Battery voltage is constantly present.
Keyless buzzer	3 (OUTPUT)	0 V is present when the keyless transmitter UNLOCK/DISARM or LOCK/ARM button is pressed.
Door lock switch	4 (INPUT)	0 V is present when the door lock switch is turned to UNLOCK.
Door lock switch	5 (INPUT)	0 V is present when the door lock switch is turned to LOCK.
Door switch	6 (INPUT)	0 V is present when opening one of the doors or rear gate.
Key warning switch	9 (INPUT)	Battery voltage is present when inserting the key into ignition switch.
Ignition switch (ON)	10 (INPUT)	Battery voltage is present when ignition switch is turned to ON.
Turn signal light RH	13 (OUTPUT)	Battery voltage is present when the keyless transmitter UNLOCK/DISARM or LOCK/ARM button is pressed.
Ground	14	0 V is constantly present.
Body integrated unit	18 (OUTPUT)	Battery voltage is present when the keyless transmitter UNLOCK/DISARM button is pressed.
Body integrated unit	19 (OUTPUT)	Battery voltage is present when the keyless transmitter LOCK/ARM button is pressed.
Horn relay	24 (OUTPUT)	0 V is present when the keyless transmitter LOCK/ARM button is pressed for approx. 2 seconds, and the panic alarm is operated.
Power supply (Back-up)	26	Battery voltage is constantly present.

2. BODY INTEGRATED UNIT



a



b

SL-00364

Content	Terminal No.	Measuring condition
Door switch (Except driver's door)	b7 (INPUT)	0 V is present when opening the door. (Except driver's door)
Door switch (Driver's door)	b8 (INPUT)	0 V is present when opening the driver's side door.
Door lock switch	b11 (INPUT)	0 V is present when the door lock switch is turned to UNLOCK.
Door lock switch	b12 (INPUT)	0 V is present when the door lock switch is turned to LOCK.
Keyless entry control module (LOCK)	b13 (INPUT)	Battery voltage is present when the keyless transmitter LOCK/ARM button is pressed.
Keyless entry control module (UNLOCK)	b14 (INPUT)	Battery voltage is present when the keyless transmitter UNLOCK/DISARM button is pressed.
Ignition switch (ON)	b19 (INPUT)	Battery voltage is present when ignition switch is turned to ON.
Key warning switch	b20 (INPUT)	Battery voltage is present when inserting the key into ignition switch.
Power supply	a2	Battery voltage is constantly present.
Ground	a4	0 V is constantly present.
Room light	a5 (OUTPUT)	0 V is present when the keyless transmitter UNLOCK/DISARM button is pressed.
Door and rear gate lock actuator	a6 (OUTPUT)	Battery voltage is present when the keyless transmitter LOCK/ARM button is pressed.
Door and rear gate lock actuator (Except driver side)	a7 (OUTPUT)	Battery voltage is present when the keyless transmitter UNLOCK/DISARM button is pressed twice.
Door lock actuator (Driver side)	a8 (OUTPUT)	Battery voltage is present when the keyless transmitter UNLOCK/DISARM button is pressed once.
Ground	a13	0 V is constantly present.

C: INSPECTION

1. SYMPTOM CHART

Symptom	Repair order	Reference
None of the functions of the keyless entry system operate.	1. Check the keyless transmitter battery and function.	<Ref. to SL-15, CHECK KEYLESS TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	2. Remove and visually check the fuses No. 6 (in the main fuse box) and No. 3 (in the fuse & relay box).	When the fuse is blown out, replace with a new part. When there is no defective with the fuse, check the power supply and ground circuit. <Ref. to SL-16, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Keyless Entry System.>
	3. Check the keyless entry control module power supply and ground circuit.	<Ref. to SL-16, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Keyless Entry System.>
	4. Replace the keyless entry control module.	<Ref. to SL-47, Keyless Entry Control Module.>
The keyless transmitter cannot be registered.	1. Check the keyless transmitter battery and function.	<Ref. to SL-15, CHECK KEYLESS TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	2. Check the ignition switch circuit.	<Ref. to SL-17, CHECK IGNITION SWITCH CIRCUIT, INSPECTION, Keyless Entry System.>
	3. Check the door switch.	<Ref. to SL-17, CHECK DOOR SWITCH, INSPECTION, Keyless Entry System.>
	4. Replace the keyless entry control module.	<Ref. to SL-47, Keyless Entry Control Module.>
Door lock or unlock does not operate. NOTE: If the door lock control system does not operate when using the door lock switch, check the door lock control system. <Ref. to SL-8, INSPECTION, Door Lock Control System.>	1. Check the keyless transmitter battery and function.	<Ref. to SL-15, CHECK KEYLESS TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	2. Check the key warning switch.	<Ref. to SL-18, CHECK KEY WARNING SWITCH, INSPECTION, Keyless Entry System.>
	3. Check the door switch.	<Ref. to SL-17, CHECK DOOR SWITCH, INSPECTION, Keyless Entry System.>
	4. Check the output signal of the body integrated unit.	<Ref. to SL-19, CHECK OUTPUT SIGNAL OF THE BODY INTEGRATED UNIT, INSPECTION, Keyless Entry System.>
	5. Replace the keyless entry control module.	<Ref. to SL-47, Keyless Entry Control Module.>

Symptom	Repair order		Reference
The panic alarm does not operate.	1. Check the keyless transmitter battery and function.		<Ref. to SL-15, CHECK KEYLESS TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	2. Check the horn operation.		<Ref. to SL-19, CHECK HORN OPERATION, INSPECTION, Keyless Entry System.>
	3. Replace the keyless entry control module.		<Ref. to SL-47, Keyless Entry Control Module.>
Buzzer and hazard light do not operate.	1. Check the buzzer function.		<Ref. to SL-16, CHECK BUZZER CHIRP SETTING, INSPECTION, Keyless Entry System.>
	2. Check buzzer and hazard light operation.	Buzzer	<Ref. to SL-20, CHECK KEYLESS BUZZER, INSPECTION, Keyless Entry System.>
		Hazard light	<Ref. to SL-20, CHECK HAZARD LIGHT OPERATION, INSPECTION, Keyless Entry System.>
	3. Replace the keyless entry control module.		<Ref. to SL-47, Keyless Entry Control Module.>
The room light does not operate.	1. Check the room light operation.		<Ref. to SL-18, CHECK ROOM LIGHT OPERATION, INSPECTION, Keyless Entry System.>
	2. Replace the keyless entry control module.		<Ref. to SL-47, Keyless Entry Control Module.>
The door warning does not operate.	1. Check the door switch.		<Ref. to SL-17, CHECK DOOR SWITCH, INSPECTION, Keyless Entry System.>
	2. Check the buzzer operation.		<Ref. to SL-20, CHECK KEYLESS BUZZER, INSPECTION, Keyless Entry System.>
	3. Replace the keyless entry control module.		<Ref. to SL-47, Keyless Entry Control Module.>

2. CHECK KEYLESS TRANSMITTER BATTERY AND FUNCTION

	Step	Check	Yes	No
1	**CHECK KEYLESS TRANSMITTER BATTERY.** 1) Remove the battery from the keyless transmitter. <Ref. to SL-49, DISASSEMBLY, Transmitter.> 2) Check the battery voltage. <Ref. to SL-49, INSPECTION, Transmitter.>	Is the voltage 2.5 V or more?	Go to step **2**.	Replace the keyless transmitter battery.
2	**CHECK KEYLESS TRANSMITTER.** Register a keyless transmitter which operated normally on other vehicles to the inspection target vehicle. <Ref. to SL-49, REGISTRATION OF KEYLESS TRANSMITTER WITH SUBARU SELECT MONITOR, REPLACEMENT, Transmitter.> 1) Close all the doors and rear gate of inspection target vehicle. 2) Using the keyless transmitter, lock and unlock the doors and rear gate of vehicle.	Is the inspection target vehicle operates lock and unlock normally?	Go to step **3**.	Due to vehicle malfunction, continue the keyless entry system diagnosis.
3	**CHECK KEYLESS TRANSMITTER.** Register the keyless transmitter of the inspection target vehicle to an other vehicle for which the keyless system operates normally. <Ref. to SL-49, REGISTRATION OF KEYLESS TRANSMITTER WITH SUBARU SELECT MONITOR, REPLACEMENT, Transmitter.>	Is the keyless transmitter registered correctly?	Go to step **4**.	Replace the keyless transmitter. <Ref. to SL-49, REGISTRATION OF KEYLESS TRANSMITTER WITH SUBARU SELECT MONITOR, REPLACEMENT, Transmitter.>
4	**CHECK KEYLESS TRANSMITTER.** Check the registered keyless transmitter. 1) Close all the doors and rear gate of the vehicle for which the keyless system operates normally. 2) Using the keyless transmitter, lock and unlock the doors and rear gate of vehicle.	Does the vehicle operates lock and unlock normally?	The keyless transmitter is OK.	Replace the keyless transmitter. <Ref. to SL-49, REGISTRATION OF KEYLESS TRANSMITTER WITH SUBARU SELECT MONITOR, REPLACEMENT, Transmitter.>

CAUTION:
Be sure to reset the keyless transmitter of the other vehicle that was registered to the inspection target vehicle, and the vehicle for which the keyless transmitter was registered for inspection, to the condition before performing the inspection. (Register the keyless transmitter again.)

3. CHECK BUZZER CHIRP SETTING

	Step	Check	Yes	No
1	**CHECK BUZZER CHIRP SETTING.** 1) Check the current setting of the buzzer chirp. 2) Remove the key from the ignition switch. 3) Close all the doors and rear gate. 4) Press the LOCK/ARM or UNLOCK/DISARM button.	Does the buzzer sound?	The buzzer function is OK.	Go to step **2**.
2	**CHECK BUZZER CHIRP SETTING.** NOTE: When steps 1) to 5) are performed with the answer-back buzzer setting OFF, the answer-back buzzer setting is switched to ON. 1) Open the driver's door, and remove the key from ignition switch. 2) Turn the center door lock switch to UNLOCK, then insert the ignition key. 3) Remove and insert the key five times within 10 seconds from the step 2). 4) Close the driver's door within 10 seconds from the 5th of the step 3). 5) Switch the answer-back buzzer setting (ON⇔OFF), then hazard light will blink three times. NOTE: If the driver's door is not closed within 10 seconds, the hazard light blinks once. In this case, retry from the beginning. 6) Press the LOCK/ARM or UNLOCK/DISARM button.	Does the buzzer sound?	The buzzer function is OK.	Check the keyless transmitter function. <Ref. to SL-15, CHECK KEYLESS TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>

4. CHECK POWER SUPPLY AND GROUND CIRCUIT

	Step	Check	Yes	No
1	**CHECK POWER SUPPLY.** 1) Disconnect the keyless entry control module harness connector. 2) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B176) No. 2 (+) — Chassis ground (–):*** ***(B176) No. 26 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **2**.	Check the harness for open circuits and shorts between the keyless entry control module and fuse.
2	**CHECK GROUND CIRCUIT.** Measure the resistance between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B176) No. 14 — Chassis ground:***	Is the resistance less than 10 Ω?	The power supply and ground circuit are OK.	Repair the harness.

5. CHECK IGNITION SWITCH CIRCUIT

	Step	Check	Yes	No
1	**CHECK IGNITION SWITCH CIRCUIT.** 1) Disconnect the keyless entry control module harness connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B176) No. 10 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Ignition switch function is normal.	Check the harness for open circuits or shorts between the keyless entry control module and the ignition relay.

6. CHECK DOOR SWITCH

	Step	Check	Yes	No
1	**CHECK DOOR SWITCH CIRCUIT.** Measure the voltage between the keyless entry control module harness connector terminal and the body ground. ***Connector & terminal*** ***Front and rear door, rear gate:*** ***(B176) No. 6 (+) — Chassis ground (–):***	Is the voltage 0 V when any door or rear gate is opened?	Go to step **2**.	Go to step **3**.
2	**CHECK DOOR SWITCH CIRCUIT.** Measure the voltage between the keyless entry control module harness connector terminal and the body ground. ***Connector & terminal*** ***Front and rear door, rear gate:*** ***(B176) No. 6 (+) — Chassis ground (–):***	Is the voltage 10 V or more when any door or rear gate is closed?	The door switch is OK.	Go to step **3**.
3	**CHECK DOOR SWITCH.** 1) Disconnect the door switch harness connector. 2) Measure the resistance between door switch terminals. ***Terminals*** ***Door switch No. 1 — No. 3:*** ***Rear gate latch switch No. 1 — No. 2:***	Is the resistance 1 MΩ or more when door switch is pushed?	Go to step **4**.	Replace the door switch.
4	**CHECK DOOR SWITCH.** Measure the resistance between door switch terminals. ***Terminals*** ***Door switch No. 1 — No. 3:*** ***Rear gate latch switch No. 1 — No. 2:***	Is the resistance less than 1 Ω when door switch is released?	Check the harness for open circuits and shorts between the keyless entry control module and the door switch.	Replace the door switch.

7. CHECK KEY WARNING SWITCH

	Step	Check	Yes	No
1	**CHECK FUSE.** Remove and visually check the fuse No. 6 (in the main fuse box).	Is the fuse blown out?	Replace the fuse with a new part.	Go to step **2**.
2	**CHECK KEY WARNING SWITCH CIRCUIT.** 1) Disconnect the keyless entry control module harness connector. 2) Insert the key into ignition switch. (LOCK position) 3) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B176) No. 9 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **3**.	Go to step **4**.
3	**CHECK KEY WARNING SWITCH CIRCUIT.** 1) Remove the key from ignition switch. 2) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B176) No. 9 (+) — Chassis ground (–):***	Is the voltage 0 V?	The key warning switch is OK.	Go to step **4**.
4	**CHECK KEY WARNING SWITCH.** 1) Disconnect the key warning switch harness connector. 2) Insert the key into ignition switch. (LOCK position) 3) Measure the resistance between key warning switch terminals. ***Connector & terminal*** ***(B73) No. 1 — No. 2:***	Is the resistance less than 1 Ω?	Go to step **5**.	Replace the key warning switch.
5	**CHECK KEY WARNING SWITCH.** 1) Remove the key from ignition switch. 2) Measure the resistance between key warning switch terminals. ***Connector & terminal*** ***(B73) No. 1 — No. 2:***	Is the resistance 1 MΩ or more?	Check the following sections for open or short circuit. • Harness between the key warning switch and fuse. • Harness between body integrated unit and key warning switch.	Replace the key warning switch.

8. CHECK ROOM LIGHT OPERATION

	Step	Check	Yes	No
1	**CHECK ROOM LIGHT OPERATION.** Make sure the room light illuminates when the room light switch is turned to ON.	Does the room light illuminate?	Go to step **2**.	Check the room light circuit.
2	**CHECK HARNESS BETWEEN ROOM LIGHT AND BODY INTEGRATED UNIT.** 1) Disconnect the body integrated unit harness connector and room light harness connector. 2) Measure the resistance between the body integrated unit harness connector terminal and room light harness connector terminal. ***Connector & terminal*** ***(B280) No. 5 — (R52) No. 2:***	Is the resistance less than 10 Ω?	The room light operation circuit is OK.	Check the harness for open or short circuit between body integrated unit and the room light.

9. CHECK OUTPUT SIGNAL OF THE BODY INTEGRATED UNIT

	Step	Check	Yes	No
1	**CHECK OUTPUT SIGNAL.** Measure the voltage between the keyless entry control module harness connector terminal and the chassis ground when the UNLOCK/DISARM buttons of the keyless transmitter are pressed. ***Connector & terminal*** ***(B176) No. 18 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **2**.	Replace the keyless entry control module.
2	**CHECK OUTPUT SIGNAL.** Measure the voltage between the keyless entry control module harness connector terminal and the chassis ground when the LOCK/ARM buttons of the keyless transmitter are pressed. ***Connector & terminal*** ***(B176) No. 19 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **3**.	Replace the keyless entry control module.
3	**CHECK HARNESS BETWEEN KEYLESS ENTRY CONTROL MODULE AND BODY INTEGRATED UNIT.** 1) Disconnect the keyless entry control module harness connector and the body integrated unit harness connector. 2) Measure the resistance between keyless entry control module harness connector terminal and body integrated unit harness connector terminal. ***Connector & terminal*** ***(B176) No. 18 — (B281) No. 14:*** ***(B176) No. 19 — (B281) No. 13:***	Is the resistance less than 10 Ω?	Replace the body integrated unit.	Check the harness for open or short circuit between the keyless entry control module and the body integrated unit.

10.CHECK HORN OPERATION

	Step	Check	Yes	No
1	**CHECK HORN OPERATION.** Make sure the horn sounds when the horn switch is pushed.	Does the horn sound?	Go to step **2**.	Check the horn circuit.
2	**CHECK HORN OPERATION.** 1) Disconnect the keyless entry control module harness connector. 2) Connect the harness connector terminal to ground using a suitable lead wire. ***Connector & terminal*** ***(B176) No. 24 (+) — Chassis ground (–):***	Does the horn sound?	Replace the keyless entry control module.	Check the harness for open circuits or shorts between the keyless entry control module and the horn relay.

11.CHECK HAZARD LIGHT OPERATION

	Step	Check	Yes	No
1	**CHECK HAZARD LIGHT OPERATION.** Make sure the hazard light blinks when hazard switch is turned to ON.	Does the hazard light blink?	Go to step **2**.	Check the hazard light circuit.
2	**CHECK OUTPUT SIGNAL.** 1) Remove the key from ignition switch. 2) Close all the doors and the rear gate. 3) Measure the voltage between the keyless entry control module harness connector terminal and the chassis ground when the LOCK/ARM buttons of the keyless transmitter are pressed. ***Connector & terminal*** ***(B176) No. 1 (+) — Chassis ground (–):*** ***(B176) No. 13 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Check the harness for open circuits or shorts between the keyless entry control module and the turn signal light.	Replace the keyless entry control module.

12.CHECK KEYLESS BUZZER

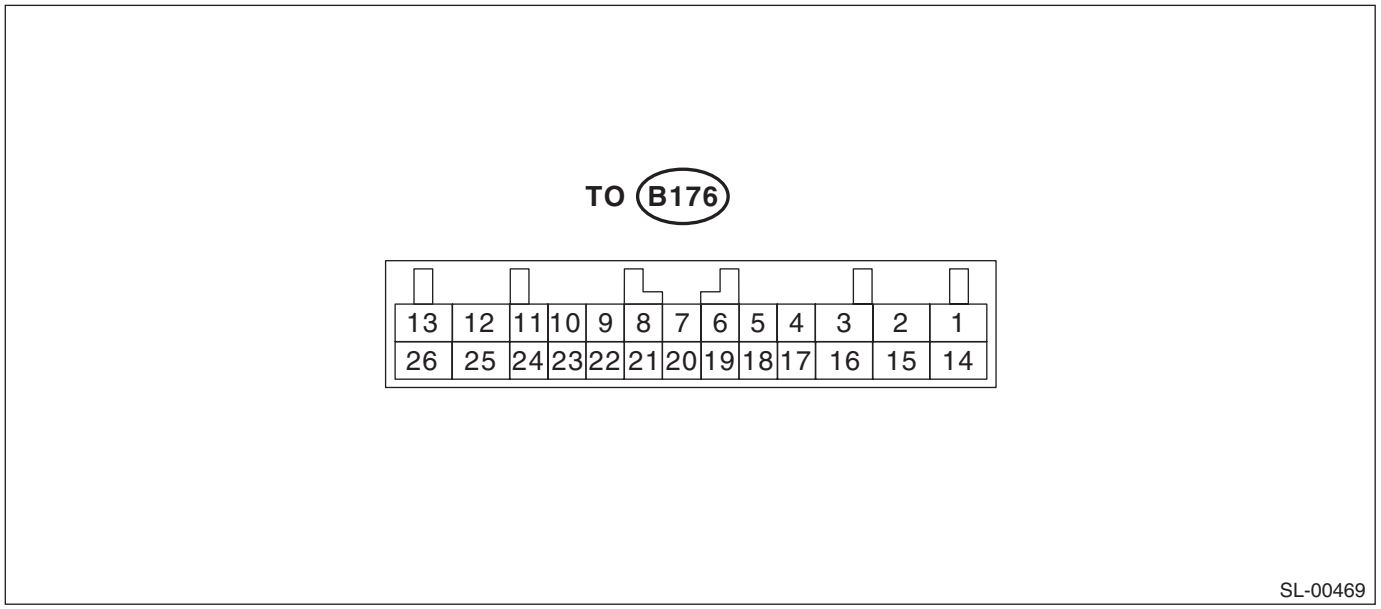
	Step	Check	Yes	No
1	**CHECK FUSE.** Remove and check the fuse No. 2 (in the main fuse box).	Is the fuse blown out?	Replace the fuse with a new part.	Go to step **2**.
2	**CHECK FOR POWER SUPPLY OF KEYLESS BUZZER.** 1) Disconnect the connector from keyless buzzer. 2) Measure the voltage between the keyless buzzer harness connector terminal and the body ground. ***Connector & terminal*** ***(F102) No. 2 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **3**.	Check for open or short circuit in the harness between fuse and keyless buzzer.
3	**CHECK THE HARNESS BETWEEN KEYLESS BUZZER AND KEYLESS ENTRY CONTROL MODULE.** 1) Disconnect the connector from the keyless entry control module. 2) Measure the resistance of the harness between keyless buzzer and keyless entry control module. ***Connector & terminal*** ***(F102) No. 1 — (B176) No. 3:***	Is the resistance 10 Ω or more?	Go to step **4**.	Repair the harness between keyless buzzer and keyless entry control module.
4	**CHECK KEYLESS BUZZER.** Connect the positive terminal (+) of the battery to No. 2 terminal of the keyless buzzer connector, and the negative (–) terminal to No. 1 terminal. Check the buzzer sounds.	Does the buzzer sound?	Replace the keyless entry control module.	Replace the keyless buzzer.

4. Security System

A: WIRING DIAGRAM

<Ref. to WI-160, WIRING DIAGRAM, Security System.>

B: ELECTRICAL SPECIFICATION



Content	Terminal No.	Measuring condition
Turn signal light LH	1 (OUTPUT)	Battery voltage is present when the alarm operation is activated.
Power supply (Backup)	2	Battery voltage is constantly present.
Door switch	6 (INPUT)	0 V is present when opening one of the doors or rear gate.
Impact sensor	8	When not applying vibration to the impact sensor, it repeats displaying the 0 V and battery voltage every 45 milliseconds.
Ignition switch (ON)	10 (INPUT)	Battery voltage is present when ignition switch is turned to ON.
Horn relay	24 (OUTPUT)	0 V is present when the alarm operation is activated.
Interrupt relay	12 (OUTPUT)	Battery voltage is present when the alarm operation is activated.
Turn signal light RH	13 (OUTPUT)	Battery voltage is present when the alarm operation is activated.
Ground	14	0 V is constantly present.
Security indicator light	15 (OUTPUT)	0 V is present when the alarm operation is activated.
Power supply for turn signal light (Backup)	26	Battery voltage is constantly present.

C: INSPECTION

1. BASIC DIAGNOSTIC PROCEDURE

NOTE:
- Turbo model is the model with immobilizer.
- Non-turbo model is the model without immobilizer.

	Step	Check	Yes	No
1	**SECURITY SYSTEM SETTING.** Turn the setting of security system ON. <Ref. to SL-23, SECURITY SYSTEM ON/OFF SETTING, INSPECTION, Security System.>	Is setting completed correctly?	Go to step **2**.	• Check the ignition switch circuit. <Ref. to SL-27, CHECK IGNITION SWITCH CIRCUIT, INSPECTION, Security System.> • Check the door lock switch circuit. <Ref. to SL-9, CHECK DOOR LOCK SWITCH AND CIRCUIT, INSPECTION, Door Lock Control System.>
2	**CHECK SECURITY SYSTEM SETTING OPERATION.** 1) Before starting this diagnosis, open all doors. 2) Remove the key from ignition key cylinder, then close all doors and rear gate. 3) Press the LOCK/ARM button of keyless transmitter, and wait for 30 seconds.	Can the security system be set?	Go to step **3**.	Go to symptom 1. <Ref. to SL-24, SYMPTOM CHART, INSPECTION, Security System.>
3	**CHECK SECURITY INDICATOR LIGHT AND HAZARD LIGHT BLINKING.** Check the security indicator light and hazard light blinking. NOTE: The blinking pattern of security indicator light is twice within 1 second in 1 second cycle.	Does the security indicator light and the hazard light blink?	Go to step **4**.	Go to symptom 2. <Ref. to SL-24, SYMPTOM CHART, INSPECTION, Security System.>
4	**CHECK SECURITY ALARM OPERATION.** 1) Unlock all doors using the door lock switch on front door. 2) Open any door or rear gate.	Does the security alarm operate when opening any door or rear gate?	Go to step **5**.	Go to symptom 3. <Ref. to SL-24, SYMPTOM CHART, INSPECTION, Security System.>
5	**CHECK SECURITY ALARM OPERATION.** Check the security alarm operation.	Do all security alarm (horn, hazard light and security indicator light) operate? And is the starter motor deactivated?	Go to step **6**.	Go to symptom 4. <Ref. to SL-24, SYMPTOM CHART, INSPECTION, Security System.>
6	**CHECK SECURITY ALARM CANCEL OPERATION.** Press the UNLOCK/DISARM button of the keyless transmitter. NOTE: Model with immobilizer blinks once, model without immobilizer is remain off.	Do all security alarm (horn and hazard light) stop? And is the starter motor activated?	Go to step **7**.	Go to symptom 5. <Ref. to SL-24, SYMPTOM CHART, INSPECTION, Security System.>

Step		Check	Yes	No
7	**CHECK BATTERY DISCONNECT PROTECTION.** Check that the system functions properly when the battery is disconnected temporally. <Ref. to SL-23, CHECK BATTERY DISCONNECT PROTECTION, INSPECTION, Security System.>	Does the system function properly when the battery is disconnected temporally?	Go to step **8**.	Replace the keyless control module.
8	**CHECK IMPACT SENSOR.** Check the sensitivity of impact sensor. <Ref. to SL-45, CHECK IMPACT SENSOR, ADJUSTMENT, Impact Sensor.> NOTE: Perform this procedure only to the vehicle with an impact sensor (dealer OP).	Is the sensitivity set properly?	Press the UNLOCK/DISARM button of keyless transmitter, and finish the diagnosis.	Adjust the sensitivity properly. <Ref. to SL-45, IMPACT SENSITIVITY ADJUSTMENT, ADJUSTMENT, Impact Sensor.>

2. CHECK BATTERY DISCONNECT PROTECTION

1) Remove the key from the ignition switch.
2) Close all the doors and rear gate.
3) Open the front hood.
4) Press the keyless transmitter LOCK/ARM button, and wait until the security indicator light blinks twice within 1 second in 1 second cycle.
5) Disconnect the ground cable from the battery.
6) Connect the ground cable to the battery.
7) Check that the security indicator light blinks twice within 1 second in 1 second cycle after connecting the battery ground cable.
If NG, replace the keyless entry control module.

3. SECURITY SYSTEM ON/OFF SETTING

NOTE:
When steps 1) to 4) are performed with the security system setting ON, the security system setting is switched to OFF.
1) Close all doors and the rear gate, then sit down on the driver seat. Press the UNLOCK button of the keyless transmitter.
2) Turn the ignition switch to ON.
3) While turning the center door lock switch to UNLOCK, open the driver's door, and keep this condition for 10 seconds.
4) Switch the security system setting (ON⇔OFF), then the horn sounds.

Setting	Notification
OFF → ON	Horn sounds once.
ON → OFF	Horn sounds twice.

NOTE:
See the following for security system ON/OFF setting with the select monitor. <Ref. to SL-43, PROCEDURE, Security Control Unit.>

4. SYMPTOM CHART

Symptom			Repair order	Reference
1	The security system cannot be set.		1. Check the keyless transmitter function.	<Ref. to SL-15, CHECK KEYLESS TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
			2. Remove and visually check the fuses No. 2, No. 6 (in the main fuse box) and No. 3 (in the fuse & relay box).	When the fuse is blown out, replace with a new part. When there is no defective with the fuse, check the power supply and ground circuit. <Ref. to SL-25, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Security System.>
			3. Check the keyless entry control module power supply and ground circuit.	<Ref. to SL-25, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Security System.>
			4. Check the door switch.	<Ref. to SL-25, CHECK DOOR SWITCH, INSPECTION, Security System.>
			5. Replace the keyless entry control module.	<Ref. to SL-43, Security Control Unit.>
2	Security system can be set, but the security indicator light or hazard light does not blink.	Security indicator light	Check the security indicator light circuit.	<Ref. to SL-26, CHECK SECURITY INDICATOR LIGHT CIRCUIT, INSPECTION, Security System.>
		Hazard light	Check the hazard light operations.	<Ref. to SL-27, CHECK HAZARD LIGHT OPERATION, INSPECTION, Security System.>
3	Security system does not trigger when one of the doors is opened.		Check the door switch.	<Ref. to SL-25, CHECK DOOR SWITCH, INSPECTION, Security System.>
4	Security alarm does not activate.	All functions	Check the door switch.	<Ref. to SL-25, CHECK DOOR SWITCH, INSPECTION, Security System.>
		Security indicator light	Check the security indicator light circuit.	<Ref. to SL-26, CHECK SECURITY INDICATOR LIGHT CIRCUIT, INSPECTION, Security System.>
		Horn	Check the horn.	<Ref. to SL-26, CHECK THE HORN, INSPECTION, Security System.>
		Hazard light	Check the hazard light operations.	<Ref. to SL-27, CHECK HAZARD LIGHT OPERATION, INSPECTION, Security System.>
		Starter motor does not run.	Check the interrupt relay circuit.	<Ref. to SL-27, CHECK INTERRUPT RELAY CIRCUIT, INSPECTION, Security System.>
5	The security system cannot be cancelled.	Keyless transmitter	Check the keyless transmitter function.	<Ref. to SL-15, CHECK KEYLESS TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
		Ignition switch	Check the ignition switch circuit.	<Ref. to SL-27, CHECK IGNITION SWITCH CIRCUIT, INSPECTION, Security System.>

5. CHECK POWER SUPPLY AND GROUND CIRCUIT

	Step	Check	Yes	No
1	**CHECK POWER SUPPLY.** 1) Disconnect the keyless entry control module harness connector. 2) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B176) No. 2 (+) — Chassis ground (–):*** ***(B176) No. 26 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **2**.	Check the harness for open circuits or shorts between the keyless entry control module and the fuse.
2	**CHECK GROUND CIRCUIT.** Measure the resistance between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B176) No. 14 — Chassis ground:***	Is the resistance less than 10 Ω?	The power supply and ground circuit are OK.	Repair the harness.

6. CHECK DOOR SWITCH

	Step	Check	Yes	No
1	**CHECK DOOR SWITCH CIRCUIT.** Measure the voltage between the keyless entry control module harness connector terminal and the body ground. ***Connector & terminal*** ***Front and rear door, rear gate:*** ***(B176) No. 6 (+) — Chassis ground (–):***	Is the voltage 0 V when each door or rear gate is opened?	Go to step **2**.	Go to step **3**.
2	**CHECK DOOR SWITCH CIRCUIT.** Measure the voltage between the keyless entry control module harness connector terminal and the body ground. ***Connector & terminal*** ***Front and rear door, rear gate:*** ***(B176) No. 6 (+) — Chassis ground (–):***	Is the voltage 10 V or more when each door or rear gate is closed?	The door switch is OK.	Go to step **3**.
3	**CHECK DOOR SWITCH.** 1) Disconnect the door switch harness connector. 2) Measure the resistance between door switch terminals. ***Terminals*** ***Door switch No. 1 — No. 3:*** ***Rear gate latch switch No. 1 — No. 2:***	Is the resistance more than 1 MΩ when door switch is pushed?	Go to step **4**.	Replace the door switch.
4	**CHECK DOOR SWITCH.** Measure the resistance between door switch terminals. ***Terminals*** ***Door switch No. 1 — No. 3:*** ***Rear gate latch switch No. 1 — No. 2:***	Is the resistance less than 1 Ω when door switch is released?	Check the harness for open circuits or shorts between the keyless entry control module and the door switch.	Replace the door switch.

7. CHECK SECURITY INDICATOR LIGHT CIRCUIT

	Step	Check	Yes	No
1	**CHECK SECURITY INDICATOR LIGHT.** 1) Disconnect the keyless entry control module harness connector. 2) Connect the harness connector terminal to ground using a suitable lead wire. ***Connector & terminal*** ***(B176) No. 15 — Chassis ground:***	Does the security indicator light illuminate?	Replace the keyless entry control module.	Go to step **2**.
2	**CHECK POWER SUPPLY FOR SECURITY INDICATOR LIGHT.** 1) Disconnect the connector from the combination meter. 2) Measure the voltage between combination meter harness connector terminal and chassis ground. ***Connector & terminal*** ***(i10) No. 8 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **3**.	Check the harness for open or short circuits between combination meter and fuse.
3	**CHECK SECURITY INDICATOR LIGHT CIRCUIT.** Measure the resistance between the combination meter harness connector terminal and keyless entry control module harness connector terminal. ***Connector & terminal*** ***(i12) No. 4 — (B176) No. 15:***	Is the resistance less than 10 Ω?	Replace the combination meter.	Check the harness for open or short circuits between combination meter and keyless entry control module.

8. CHECK THE HORN

	Step	Check	Yes	No
1	**CHECK HORN OPERATION.** Make sure the horn sounds when the horn switch is pushed.	Does the horn sound?	Go to step **2**.	Check the horn circuit.
2	**CHECK HORN OPERATION.** 1) Disconnect the keyless entry control module harness connector. 2) Connect the harness connector terminal to ground using a suitable lead wire. ***Connector & terminal*** ***(B176) No. 24 (+) — Chassis ground (–):***	Does the horn sound?	Replace the keyless entry control module.	Check the harness for open circuits or shorts between the keyless entry control module and the horn relay.

9. CHECK HAZARD LIGHT OPERATION

	Step	Check	Yes	No
1	**CHECK HAZARD LIGHT OPERATION.** Make sure the hazard light blinks when hazard switch is turned to ON.	Does the hazard light blink?	Go to step **2**.	Check the hazard light circuit.
2	**CHECK KEYLESS ENTRY CONTROL MODULE OUTPUT SIGNAL.** 1) Remove the key from the ignition switch. 2) Open the driver's window, then close all doors and the rear gate. 3) Lock all doors with the keyless transmitter or door lock switch to activate the security system. 4) Unlock all doors using the door lock switch. 5) Measure the voltage between the keyless entry control module harness connector terminal and the body ground when any door is open. ***Connector & terminal*** ***(B176) No. 1 (+) — Chassis ground (–):*** ***(B176) No. 13 (+) — Chassis ground (–):***	Is the voltage 1 — 4 V?	Check the harness for open circuits or shorts between the keyless entry control module and the turn signal light.	Replace the keyless entry control module.

10.CHECK INTERRUPT RELAY CIRCUIT

	Step	Check	Yes	No
1	**CHECK INTERRUPT RELAY.** Remove and check interrupt relay. <Ref. to SL-46, Interrupt Relay.>	Is the interrupt relay normal?	Go to step **2**.	Replace the interrupt relay.
2	**CHECK INTERRUPT RELAY POWER SUPPLY.** Measure the voltage between interrupt relay harness connector terminal and chassis ground. ***Connector & terminal*** ***(B59) No. 1 (+) — Chassis ground (–):***	Is the voltage more than 10 V when ignition switch is turned to START?	Go to step **3**.	Check the harness for open circuits or shorts between the interrupt relay and the ignition switch.
3	**CHECK THE HARNESS BETWEEN INTERRUPT RELAY AND KEYLESS ENTRY CONTROL MODULE.** 1) Turn the ignition switch to OFF. 2) Disconnect the keyless entry control module harness connector. 3) Measure the resistance of the harness between interrupt relay harness connector terminal and keyless entry control module harness connector. ***Connector & terminal*** ***(B59) No. 1 — (B176) No. 12:***	Is the resistance less than 10 Ω?	Replace the keyless entry control module.	Check the harness for open or short circuits between interrupt relay and keyless entry control module.

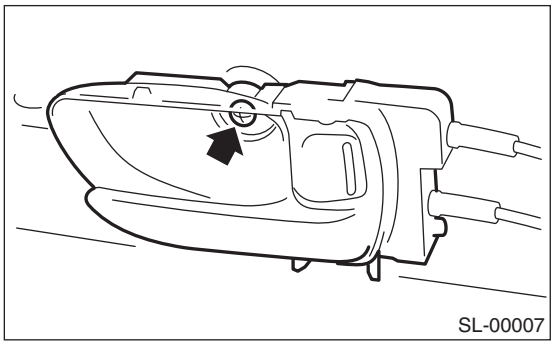
11.CHECK IGNITION SWITCH CIRCUIT

	Step	Check	Yes	No
1	**CHECK IGNITION SWITCH SIGNAL.** 1) Disconnect the keyless entry control module harness connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B176) No. 10 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Ignition switch is normal.	Check the harness for open circuits or shorts between the keyless entry control module and the ignition switch.

5. Front Inner Remote

A: REMOVAL

1) Remove the door trim. <Ref. to EI-33, REMOVAL, Front Door Trim.>
2) Remove the sealing cover. <Ref. to EB-13, REMOVAL, Front Sealing Cover.>
3) Remove the one screw and two cables.
4) Remove the front inner remote.



B: INSTALLATION

NOTE:
Check the following items during installation.
- Is the cable damaged such as any fray, etc.?
- Is grease sufficiently applied to the cable connection? (When the remote handle is a chrome plated type)

If there is not enough grease, assemble the cable after applying additional grease.
Install in the reverse order of removal.

C: INSPECTION

1) Make sure the cable is not deformed.
2) Make sure the lever and cable move smoothly.

NOTE:
If the remote handle is a chrome plated type, check that there is plenty of grease applied to the cable joint of the remote handle.
If there is not enough grease, assemble the cable after applying additional grease.

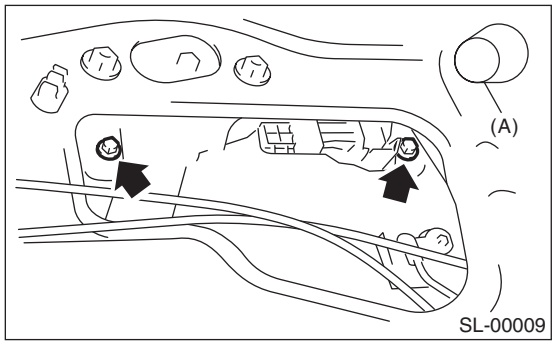
6. Front Outer Handle

A: REMOVAL

1) Remove the door trim. <Ref. to EI-33, REMOVAL, Front Door Trim.>

CAUTION:
Do not apply excessive force to remove the door trim. This can deform the door panel.
2) Remove the sealing cover. <Ref. to EB-13, REMOVAL, Front Sealing Cover.>
3) Remove the front inner remote. <Ref. to SL-28, REMOVAL, Front Inner Remote.>
4) Remove the cable from the cable holder and allow it to be free.
5) Remove the two bolts and the rod clamp to remove front outer handle.

NOTE:
The rear side bolt can be removed from the inner panel service hole (A) by adjusting the glass position.



B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

NOTE:
Make sure the outer handle works properly by opening/closing the door after installation.

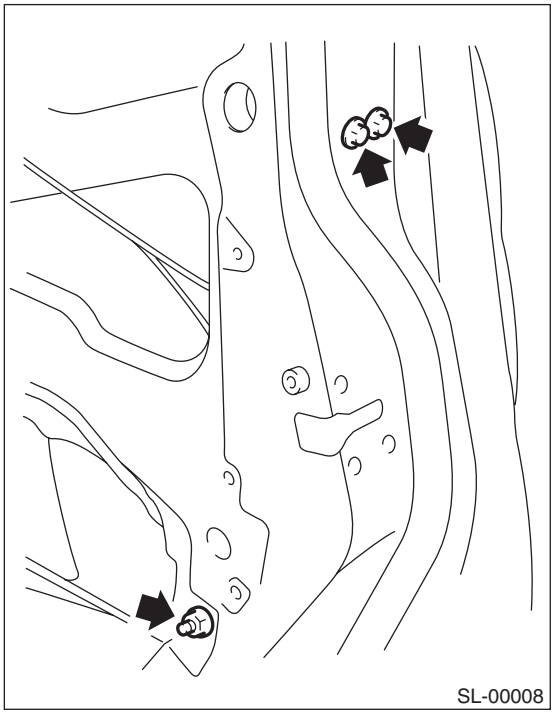
C: INSPECTION

After the installation, check the following items.
- Do the lever and rod move smoothly?
- Is the cable damaged such as any fray, etc.?

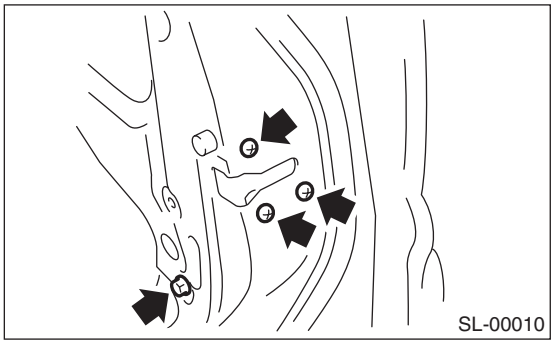
7. Front Door Latch and Door Lock Actuator Assembly

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the front door trim. <Ref. to EI-33, REMOVAL, Front Door Trim.>
3) Remove the sealing cover. <Ref. to EB-13, REMOVAL, Front Sealing Cover.>
4) Remove the front inner remote. <Ref. to SL-28, REMOVAL, Front Inner Remote.>
5) Remove the two bolts and one nut to remove the guide rail.



6) Remove the three screws and one bolt.



7) Remove the front door latch assembly, and disconnect the connector.

B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
Door latch mounting screw
6.5 N·m (0.66 kgf-m, 4.8 ft-lb)
Door lock actuator mounting bolt
7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

NOTE:
Make sure the door lock works properly after installation.

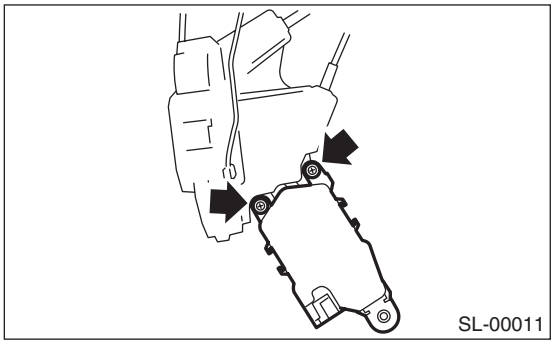
C: INSPECTION

After the installation, inspect the following items.
- Do the lever, rod and cable move smoothly?
- Does the cable have any snags?

8. Front Door Lock Actuator

A: REMOVAL

1) Remove the front door latch assembly. <Ref. to SL-30, REMOVAL, Front Door Latch and Door Lock Actuator Assembly.>
2) Loosen two screws to remove the front door lock actuator.



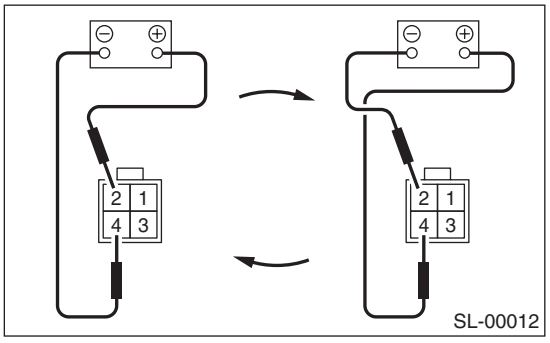
B: INSTALLATION

Install in the reverse order of removal.

NOTE:
Make sure the door lock works properly after installation.

C: INSPECTION

1) Disconnect the door lock actuator harness connector.
2) Connect the battery to door lock actuator terminals.



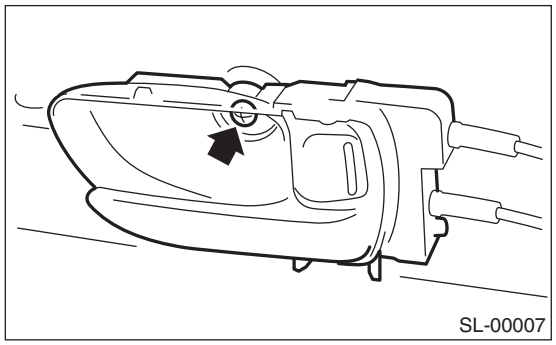
Terminal No.	Actuator operation
No. 2 (+) and No. 4 (–)	Unlock → Lock
No. 4 (+) and No. 2 (–)	Lock → Unlock

If defective, replace the door lock actuator.

9. Rear Inner Remote

A: REMOVAL

1) Remove the rear door trim. <Ref. to EI-34, REMOVAL, Rear Door Trim.>
2) Remove the sealing cover. <Ref. to EB-16, REMOVAL, Rear Sealing Cover.>
3) Remove the one screw and two cables.
4) Remove the inner remote.



B: INSTALLATION

NOTE:
At installation, check the following items.
- Does the cable have any snags?
- Is grease sufficiently applied to the cable connection? (When the remote handle is a chrome plated type)

If there is not enough grease, assemble the cable after applying additional grease.
Install in the reverse order of removal.

C: INSPECTION

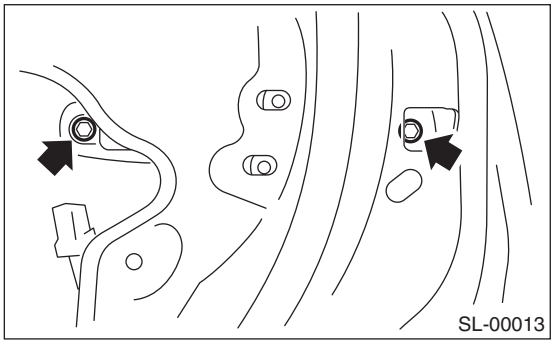
After the installation, inspect the following items.
- Do the lever and cable move smoothly?
- After closing the door, does the inner remote work properly?
- Do the rear door child safety locks operate properly?

10.Rear Outer Handle

A: REMOVAL

1) Remove the rear door trim. <Ref. to EI-34, REMOVAL, Rear Door Trim.>

CAUTION:
Do not apply excessive force to remove the door trim. This can deform the door panel.
2) Remove the sealing cover. <Ref. to EB-16, REMOVAL, Rear Sealing Cover.>
3) Remove the rear inner remote. <Ref. to SL-32, REMOVAL, Rear Inner Remote.>
4) Remove the rear door latch assembly. <Ref. to SL-34, REMOVAL, Rear Door Latch and Door Lock Actuator Assembly.>
5) Remove the two bolts, and then detach the rear outer handle.



B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

NOTE:
Make sure the outer handle works properly by opening/closing the door after installation.

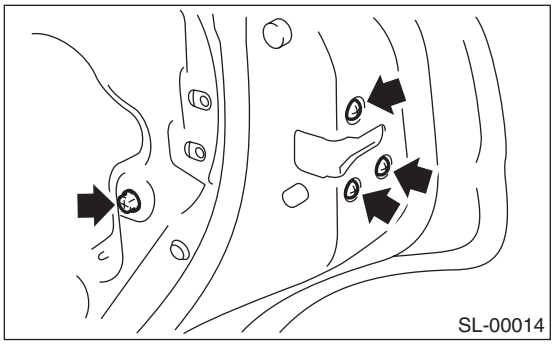
C: INSPECTION

After the installation, inspect the following items.
- Does the plastic lever move smoothly?
- Does the plastic lever have any deformation, cracks, or damage?

11.Rear Door Latch and Door Lock Actuator Assembly

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the rear door trim. <Ref. to EI-34, REMOVAL, Rear Door Trim.>
3) Remove the sealing cover. <Ref. to EB-16, REMOVAL, Rear Sealing Cover.>
4) Remove the rear inner remote. <Ref. to SL-32, REMOVAL, Rear Inner Remote.>
5) Remove the three screws and one bolt.



6) Disconnect the connector and then detach the rear door latch assembly.

B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
Door latch mounting screw
6.5 N·m (0.66 kgf-m, 4.8 ft-lb)
Door lock actuator mounting bolt
7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

NOTE:
Make sure the door lock works properly after installation.

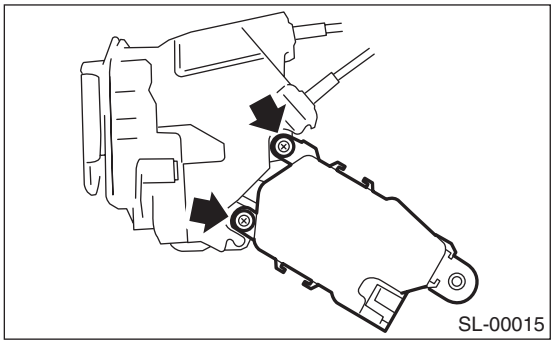
C: INSPECTION

After the installation, inspect the following items.
- Do the lever, rod and cable move smoothly?
- Does the cable have any snags?

12.Rear Door Lock Actuator

A: REMOVAL

1) Remove the rear door latch assembly. <Ref. to SL-34, REMOVAL, Rear Door Latch and Door Lock Actuator Assembly.>
2) Loosen two screws to remove the rear door lock actuator.



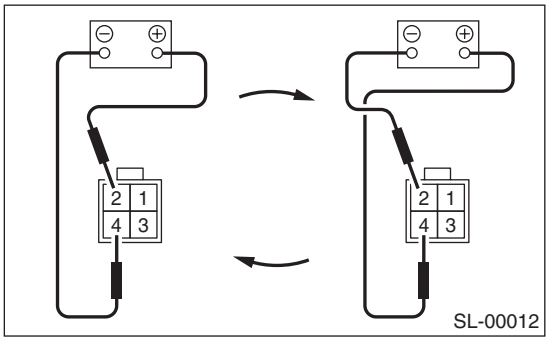
B: INSTALLATION

Install in the reverse order of removal.

NOTE:
Make sure the door lock works properly after installation.

C: INSPECTION

1) Disconnect the door lock actuator harness connector.
2) Connect the battery to door lock actuator terminals.



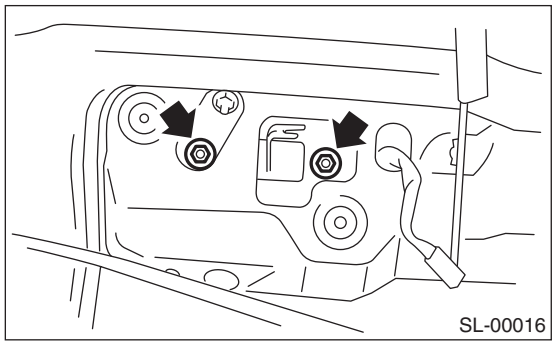
Terminal No.	Actuator operation
No. 2 (+) and No. 4 (–)	Unlock → Lock
No. 4 (+) and No. 2 (–)	Lock → Unlock

If defective, replace the door lock actuator.

13.Rear Gate Outer Handle

A: REMOVAL

1) Remove the rear gate trim. <Ref. to EI-46, REMOVAL, Rear Gate Trim.>
2) Remove the rear wiper motor assembly. <Ref. to WW-16, REMOVAL, Rear Wiper Motor.>
3) Remove the rear finisher light.
4) Remove the cable and the two nuts.



5) Remove the rear gate outer handle.

B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

NOTE:
Make sure the outer handle works properly by opening/closing the rear gate after installation.

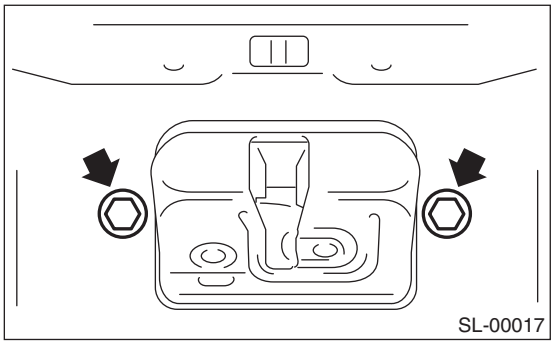
C: INSPECTION

After the installation, inspect the following items.
- Do the lever and cable move smoothly?
- Does the cable have any snags?

14.Rear Gate Latch Assembly

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the rear gate trim. <Ref. to EI-46, REMOVAL, Rear Gate Trim.>
3) Remove two bolts.



4) Remove the rear gate latch assembly and disconnect the connector.
5) Remove the rear gate outer handle cable, and then remove the rear gate latch assembly.

B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
25 N·m (2.5 kgf-m, 18.4 ft-lb)

NOTE:
Make sure the lock works properly after installation.

C: INSPECTION

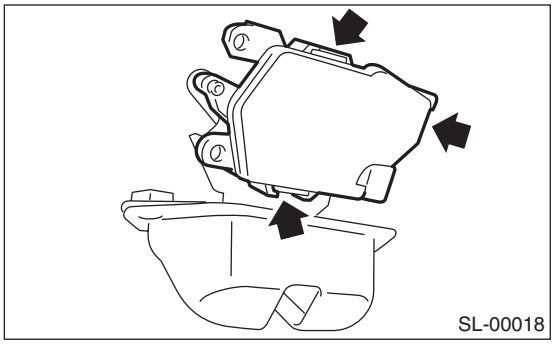
After the installation, inspect the following items.
- Does the cable have any snags?
- Do the rear gate outer handle, cable, rear gate latch, and door lock move smoothly?

15.Rear Gate Latch Lock Actuator

A: REMOVAL

1) Remove the rear gate latch assembly. <Ref. to SL-37, REMOVAL, Rear Gate Latch Assembly.>
2) Disconnect the three claws, and then remove the rear gate latch lock actuator from the rear gate latch assembly.

CAUTION:
Do not apply excessive force to remove the actuator when removing it. This can deform the area around the rear gate latch assembly claws.



B: INSTALLATION

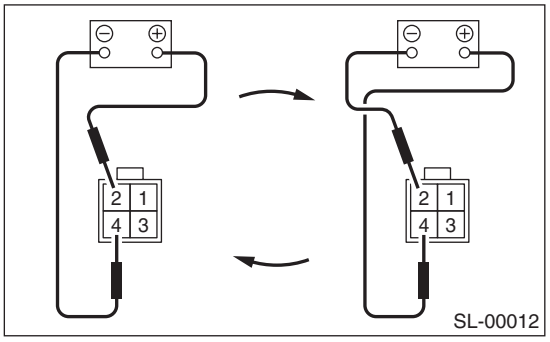
Install in the reverse order of removal.

CAUTION:
Align the rear gate latch assembly lever groove and actuator lever.

NOTE:
Make sure the door lock works properly after installation.

C: INSPECTION

1) Disconnect the door lock actuator harness connector.
2) Connect the battery to door lock actuator terminals.



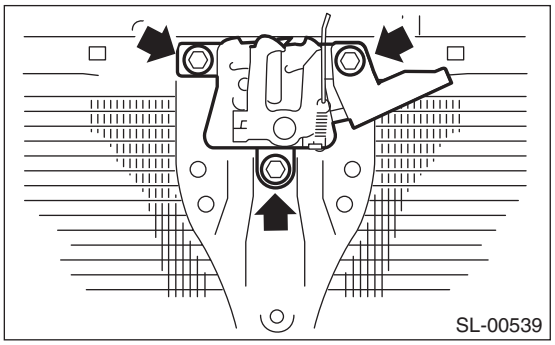
Terminal No.	Actuator operation
No. 4 (+) and No. 2 (–)	Unlock → Lock
No. 2 (+) and No. 4 (–)	Lock → Unlock

If NG, replace the rear gate latch lock actuator.

16.Front Hood Lock Assembly

A: REMOVAL

1) Open the front hood.
2) Remove the front grille.
3) Remove the bolts, and then detach the front hood lock assembly.
4) Remove the release cable from lock assembly.



B: INSTALLATION

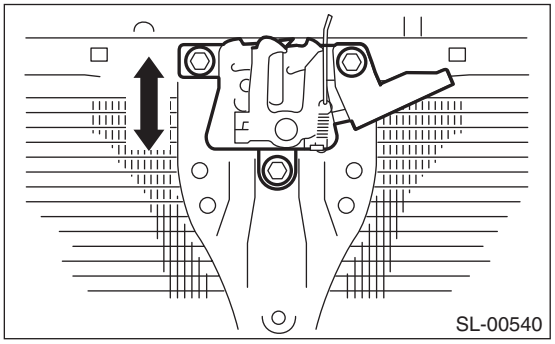
Install in the reverse order of removal.

Tightening torque:
33 N·m (3.4 kgf-m, 24.6 ft-lb)

NOTE:
- Apply grease to the movable part.
- Make sure the release cable works properly after installation.

C: ADJUSTMENT

Loosen the bolt, and adjust the lock assembly while moving it up and down.



D: INSPECTION

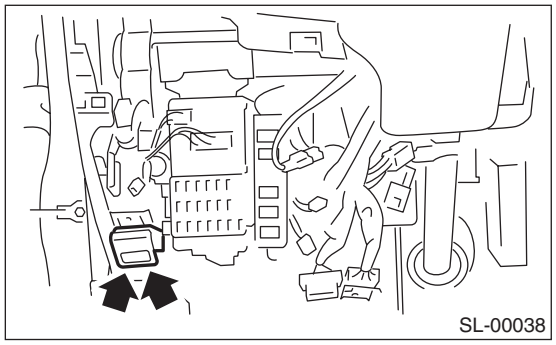
Inspect the following items.
- Does the striker have any deformation or uneven wear?
- Is the movement of the safety lever improper?
- Are there any rust formation or unsmooth movement for other levers and the spring?

17.Remote Openers

A: REMOVAL

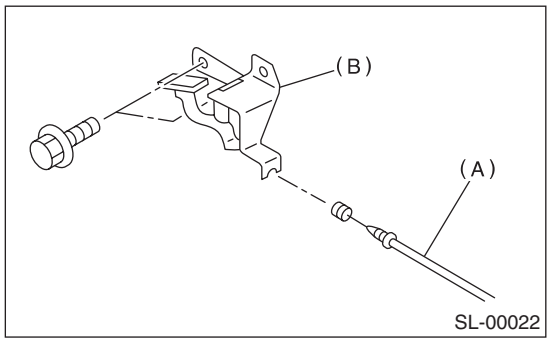
1. FRONT HOOD OPENER

1) Remove the hood lock assembly. <Ref. to SL-39, REMOVAL, Front Hood Lock Assembly.>
2) Remove the release cable from hood lock.
3) Remove the bolt, and then detach the opener lever.

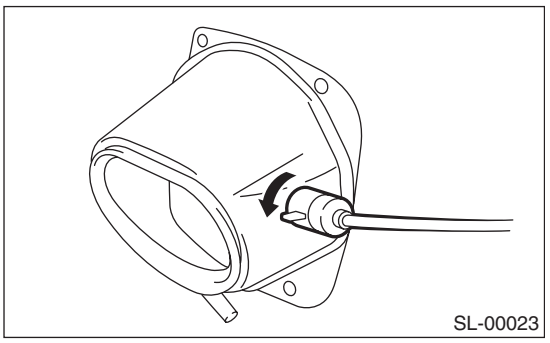


2. FUEL FLAP OPENER

1) Remove the rear seat. <Ref. to SE-17, REMOVAL, Rear Seat.>
2) Remove the center pillar lower trim, and side sill cover of front and rear. Remove the rear pillar lower trim. Remove the floor mat. <Ref. to EI-42, REMOVAL, Lower Inner Trim.>
3) Remove the rear quarter trim RH. <Ref. to EI-43, REMOVAL, Rear Quarter Trim.>Remove the clip holding cable (A).
4) Remove the bolt, and then detach the opener pull handle (B).
5) Remove the cable (A) from opener pull handle (B).



6) Rotate the fuel lock inside the quarter panel to the left and remove.



B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

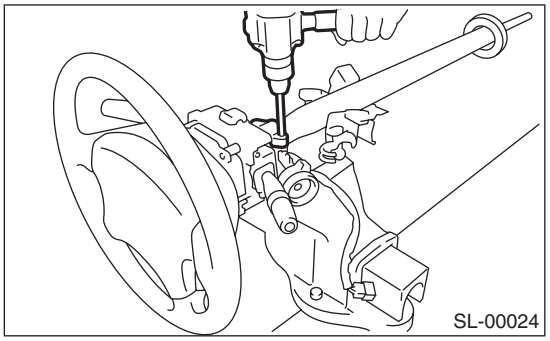
C: INSPECTION

Check that the front hood and fuel flap open and close smoothly.

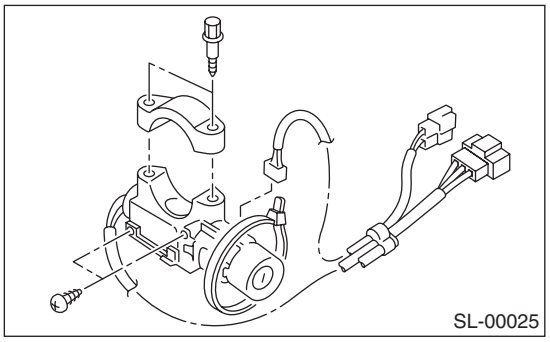
18.Ignition Key Lock

A: REPLACEMENT

1) Disconnect the ground cable from the battery.
2) Remove the steering column. <Ref. to PS-16, REMOVAL, Tilt Steering Column.>
3) Secure the steering column in a vise. Remove the bolt with a drill.



4) Remove the ignition starter and steering lock.
5) Use a new fixer bolt. Tighten the fixer bolt to the bolt head wrenched off.



B: INSPECTION

1) Remove the instrument panel lower panel.
2) Remove the lower column cover.
3) Unfasten the fixing clip which secures harness, and then disconnect the connector of the ignition switch from body harness.
4) Turn the ignition key plate to each position and check the continuity between terminals of ignition connector.

Switch	Terminal No.	Standard
LOCK	—	—
ACC	No. 1 and No. 2	Less than 1 Ω
ON	No. 1 and No. 2 No. 1 and No. 4 No. 2 and No. 4	Less than 1 Ω
ST	No. 1 and No. 3 No. 1 and No. 4 No. 3 and No. 4	Less than 1 Ω

If NG, replace the ignition switch.

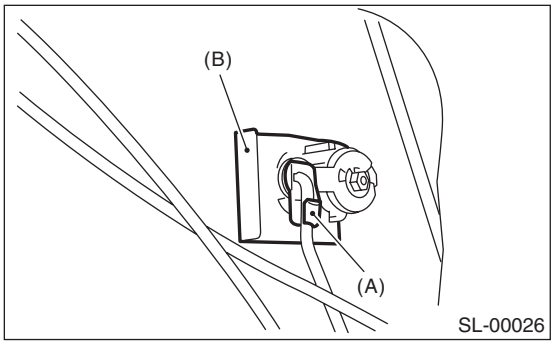
19.Key Lock Cylinders

A: REPLACEMENT

1. FRONT DOOR

1) Remove the door trim. <Ref. to EI-33, REMOVAL, Front Door Trim.>
2) Remove the sealing cover. <Ref. to EB-13, REMOVAL, Front Sealing Cover.>
3) Completely close the front door glass.
4) Remove the rod clamps (A) and lock plate (B). Replace the key cylinder.

NOTE:
Replace the lock plate (B) with a new part.



20.Security Control Unit

A: NOTE

The control of security system is carried out in keyless entry control module.

B: REMOVAL

<Ref. to SL-47, REMOVAL, Keyless Entry Control Module.>

C: INSTALLATION

<Ref. to SL-47, INSTALLATION, Keyless Entry Control Module.>

D: PROCEDURE

1. FUNCTION SETTING (ECM CUSTOMIZING)

1) Connect the Subaru Select Monitor to the data link connector.
2) Turn the ignition switch to ON.
3) On the «Main Menu» display screen, select {Each System Check}.
4) On the «System Selection Menu» display screen, select {keyless unit mode}.
5) On the «Keyless Unit Mode» display screen, select {ECM customizing}.
6) Change the setting with UP/DOWN key and press the [YES] key.

- List of function setting item (ECM customizing)

No.	Data	Initial setting value	Customize setting	Remarks
1	Security Alarm Setup	ON	ON	Security alarm (hazard and horn) in active condition.
			OFF	Security alarm in inactive condition
2	Alarm monitor delay setting	ON		After doors are locked by keyless entry system operation, alarm monitor starts in following time.
			ON	Delay time is 30 seconds.
			OFF	Delay time is 0 seconds.
3	Impact Sensor Setup	OFF	ON	Enabled when Impact Sensor Setup is set to “ON”. Impact sensor function becomes activated.
			OFF	Impact sensor in inactive condition (Make sure to set models without the impact sensor to “OFF”).
4	Impact Sensor Setup (OP)	OFF	ON	Vehicle is controlled in impact sensor equipped mode. (Make sure to set models without the impact sensor to “OFF”. If impact sensor is set to “ON”, hazard and/or horn operates after doors are locked by keyless entry system operation (Alarm monitor start).
			OFF	Vehicle is controlled in no impact sensor mode.
5	Passive arming	OFF	ON	An automatic arming feature which arms automatically even without the user intentionally locking (ARM)
			OFF	Enabled when passive arming is set to “ON.”

7) After setting, make sure that vehicle equipment matches the changed settings in the {Current Data Display & Save}.

CAUTION:

- **The above settings most match the actual vehicle equipment for proper operation.**
- **Do not change settings other than the above while setting equipment.**
- **When installing a new keyless unit, perform initial setting again.**
- **In passive mode, the system will automatically activate the security alarm but WILL NOT automatically lock the doors. Failure to lock the doors manually will result in a high security risk.**

NOTE:
For details concerning the operation procedure, refer to the “help on PC application for Subaru Select Monitor”.
8) Turn the ignition switch to OFF, and then remove the Subaru Select Monitor.

2. WARNING HISTORY NOTICE MODE

1) Turn the ignition switch to ON.
2) Indicator light will blink.

Check number of times indicator light blinked.	Condition of vehicle
Once	Minor WARNING has been activated by the impact sensor (OP). This may indicate that your vehicle has been subject to small shock from outside, or tampered with by an unauthorized person.
Twice	Strong WARNING has been activated by the impact sensor (OP). This may indicate that your vehicle has been subject to big shock from outside, or tampered with by an unauthorized person.
Three times	The ignition switch was turned ON.
Five times	One of the doors or the rear gate was opened.

NOTE:
• If ALARM/WARNING occurs during the armed mode, the indicator light will flash at ignition OFF → ON at the next DISARM.
• If ALARM/WARNING was not generated, the indicator light does not blink.
• If the warnings overlap, the warning with the largest number of blinks will have priority and will blink.
• For all ignition ON operation during DISARM mode, the indicator will blink, and the record is updated at the next ARM mode.

21.Impact Sensor

A: REMOVAL

NOTE:
The impact sensor is a dealer OP.
1) Remove the key from the ignition switch.
2) Close all the doors and the rear gate.
3) Press the UNLOCK button of the keyless transmitter.
4) Change the setting of impact sensor using Subaru Select Monitor.
5) Disconnect the ground cable from the battery.
6) Remove the impact sensor.

B: INSTALLATION

1) Remove the key from the ignition switch.
2) Close all the doors, trunk lid and rear gate.
3) Press the UNLOCK button of the keyless transmitter.
4) Disconnect the ground cable from the battery.
5) Install the impact sensor.
6) Connect the ground cable to the battery.
7) Change the setting of impact sensor using Subaru Select Monitor.

C: OPERATION

1. IMPACT SENSOR SETTING USING SUBARU SELECT MONITOR

1) Connect the Subaru Select Monitor to the data link connector.
2) Turn the ignition switch to ON.
3) Select {keyless unit} from the main menu.
4) Select {ECM customizing}.
5) Make a impact monitor setting.
- When installing: ON
- When removing: OFF

6) Make a impact monitor ON/OFF setting.
- When installing: ON
- When removing: OFF

7) Turn the ignition switch to OFF, and then remove the Subaru Select Monitor.

D: ADJUSTMENT

1. CHECK IMPACT SENSOR

1) Remove the key from the ignition switch.
2) Close all windows.
3) Close all the doors and the rear gate. Leave open the front hood.
4) Press the LOCK button of the keyless transmitter from outside of vehicle.
5) Check that after 30 seconds, the security indicator light blinks twice a second, repeating in 1 second intervals.
6) Hit the windshield with your palm continuously and check the security alarm operates. Lift up the front hood approx. 12 cm (4.7 in) or more, and then drop it off to check the operation of security alarm.
7) If NG, adjust the impact sensitivity.

2. IMPACT SENSITIVITY ADJUSTMENT

1) Connect the Subaru Select Monitor to the data link connector.
2) Turn the ignition switch to ON.
3) Select {Impact Sensor} from the main menu.
4) Make a {Sensitivity Adjustment Mode}
- Sensitivity can be adjusted in 11 levels (0 to 10).
- Initial setting is 5.
- A smaller number means it will be more sensitive.
- A larger number means it will be less sensitive.

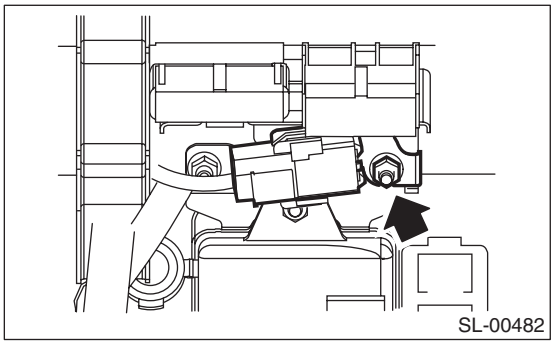
5) Turn the ignition switch to OFF, and then remove the Subaru Select Monitor.

NOTE:
- Set the sensor so that it is not triggered by normal vibrations (someone reclining on the door, hit by a ball, etc.).
- Set the sensor to operate the alarm when the windshield glass or door is hit hard repeatedly, etc, where it can be assumed that there is an attempt to damage the car by a burglar, etc.
- Even if there is no attempt to steal or burglarize the car, if the vehicle is subject to an equivalent shock or vibration (from road construction, etc.), the alarm will sound. Discuss with the customer their parking environment to make sensitivity settings accordingly.

22.Interrupt Relay

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the instrument panel lower cover. <Ref. to EI-38, REMOVAL, Instrument Panel Assembly.>
3) Remove the mounting bolt and detach the interrupt relay (Tightened together with the fuse & relay box bracket).



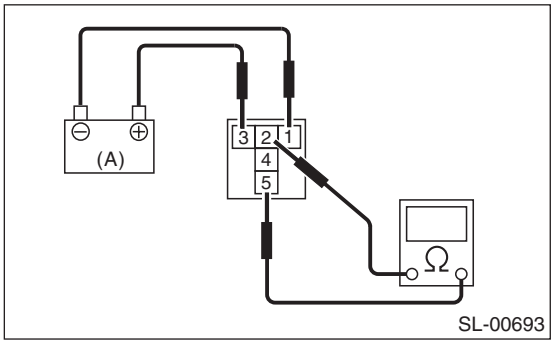
B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the interrupt relay resistance between terminals (indicated in the table below) when connecting terminal No. 3 to battery positive terminal and terminal No. 1 to battery ground terminal.

Current	Terminal No.	Standard
Flow	5 — 2	1 MΩ or more
No flow		Less than 1 Ω



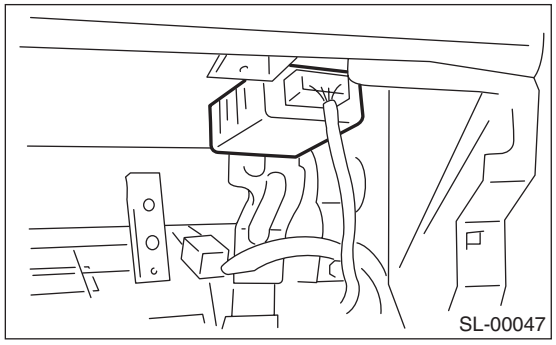
(A) Battery

If NG, replace the interrupt relay.

23.Keyless Entry Control Module

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the glove box. <Ref. to EI-35, REMOVAL, Glove Box.>
3) Remove the nut, then disconnect the connector to remove the keyless entry control module.



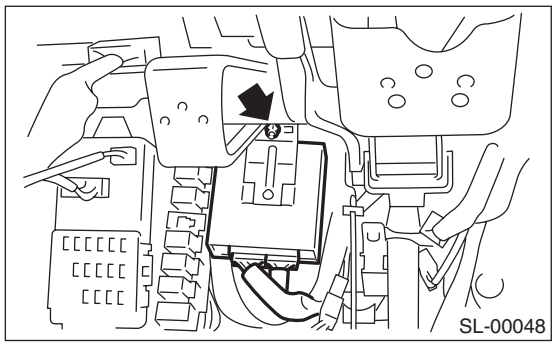
B: INSTALLATION

Install in the reverse order of removal.

24.Body Integrated Unit

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the instrument panel lower cover. <Ref. to EI-38, REMOVAL, Instrument Panel Assembly.>
3) Remove the nut, then disconnect the connector to remove the body integrated unit.



B: INSTALLATION

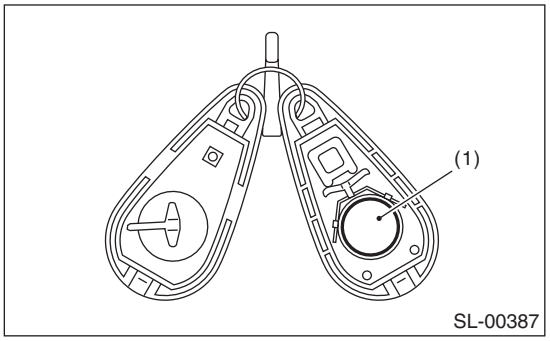
Install in the reverse order of removal.

25.Transmitter

A: DISASSEMBLY

Remove the battery from the keyless transmitter.

NOTE:
Before disassembling the keyless transmitter, prevent damage by static electricity to the transmitter's printed circuit board by touching a steel piece of a building etc. with your hand to discharge any static from your body and clothes.



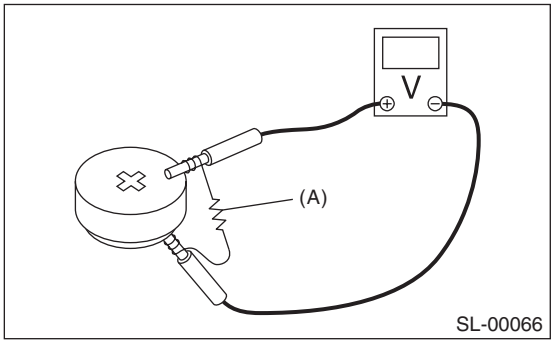
B: ASSEMBLY

Assemble in the reverse order of disassembly.

C: INSPECTION

Measure the voltage between the battery (+) terminal and (–) terminal.

NOTE:
The battery will discharge during the measurement. Complete the measurement within 5 seconds.



(A) Resistance (47 Ω)

Tester connection		Standard
(+)	(–)	
Battery (+) terminal	Ground terminal	2.5 — 3.0 V

If NG, replace the battery. (Use CR2025 or equivalent.)

D: REPLACEMENT

1. REGISTRATION OF KEYLESS TRANSMITTER WITH SUBARU SELECT MONITOR

NOTE:
• A maximum of four keyless transmitters can be registered for each individual vehicle.
• When replacing or adding a keyless transmitter, new registration of the transmitter is necessary.
1) Connect the Subaru Select Monitor to the vehicle.
2) Turn the ignition switch to ON.
3) From the «Main Menu» on the Subaru Select Monitor, select {2. Check individual system} → {7. Keyless unit mode} → {8. Keyless transmitter ID registration}.
4) Input the 8-digit ID number from the left, which is attached to the plastic bag of the keyless transmitter or to the transmitter inner circuit board, then press the [YES] key.

NOTE:
Press the [▲] key on the Subaru Select Monitor to increase the number, and the [▼] key to decrease. Press the [<] key to move to the digit in the left, and [>] to the right.
5) The ID number you have entered will be shown. Make sure that the ID number shown is the same as the plastic bag.
6) Press the [YES] key if the ID number is correct. If incorrect, press the [NO] key to return to the step 3) and try again.
7) «ID registration in process···» is displayed and registration starts.
8) «ID registration done» will be displayed when the registration process is done.
9) To exit, select «END: NO», and press the [NO] key to return to {8. Keyless transmitter ID registration}. If there are additional keyless transmitters to be registered, select «Next registration: YES», and press the [YES] key to return to the step 3).

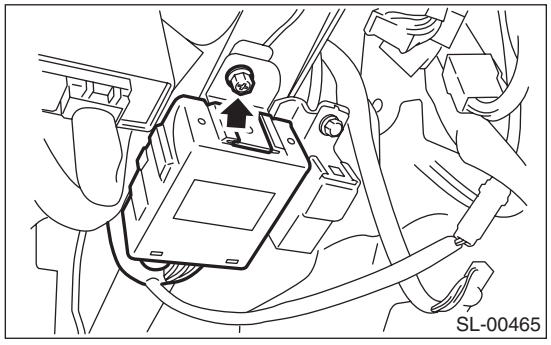
NOTE:
• If the registration fails, «ID registration failed. Try again.» will be shown. Press the [YES] key to return to {8. Transmitter ID registration}. And retry from the step 2).
• «END: NO» is shown on the Subaru Select Monitor when fourth keyless transmitter has been registered. Press the [NO] key to return to {8. Keyless transmitter ID registration}.

26.Immobilizer Control Module

A: REMOVAL

NOTE:
• Prepare the security ID plate.
• Prepare all registered immobilizer keys for the model with immobilizer.
• When replacing the immobilizer control module, register the immobilizer. At that time, a new immobilizer key is required. Refer to the REGISTRATION MANUAL FOR IMMOBILIZER.
• If not replacing the immobilizer control module, re-registration of a key used before is not required.
• If not replacing the immobilizer control module, a maximum of four keys, including the added key, can be registered.

1) Disconnect the ground cable from the battery.
2) Remove the instrument panel lower cover. <Ref. to EI-38, REMOVAL, Instrument Panel Assembly.>
3) Disconnect the connector from immobilizer control module.
4) Remove the immobilizer control module.



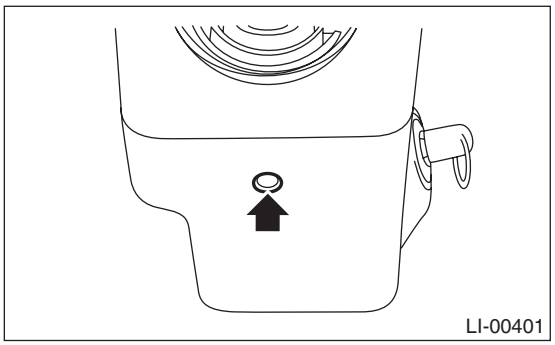
B: INSTALLATION

Install in the reverse order of removal.

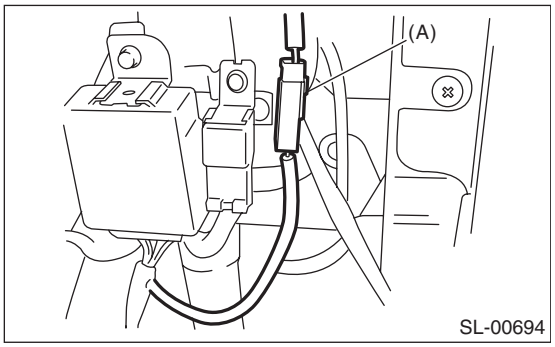
27.Immobilizer Antenna

A: REMOVAL

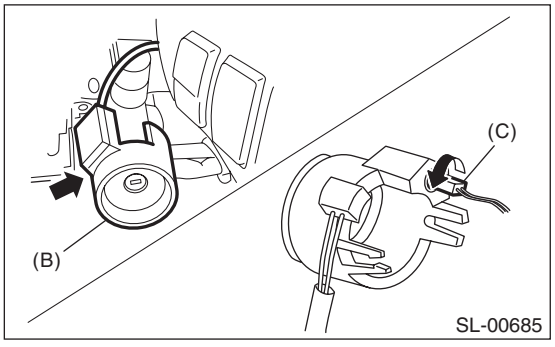
1) Disconnect the ground cable from the battery.
2) Remove the instrument panel lower cover. <Ref. to EI-38, REMOVAL, Instrument Panel Assembly.>
3) Remove the screws, and detach the upper column cover and lower column cover.



4) Disconnect the immobilizer antenna connector (A) from body harness.



5) Remove the screws and detach the immobilizer antenna (B).
6) Remove the valve (C) of the key ring illumination.

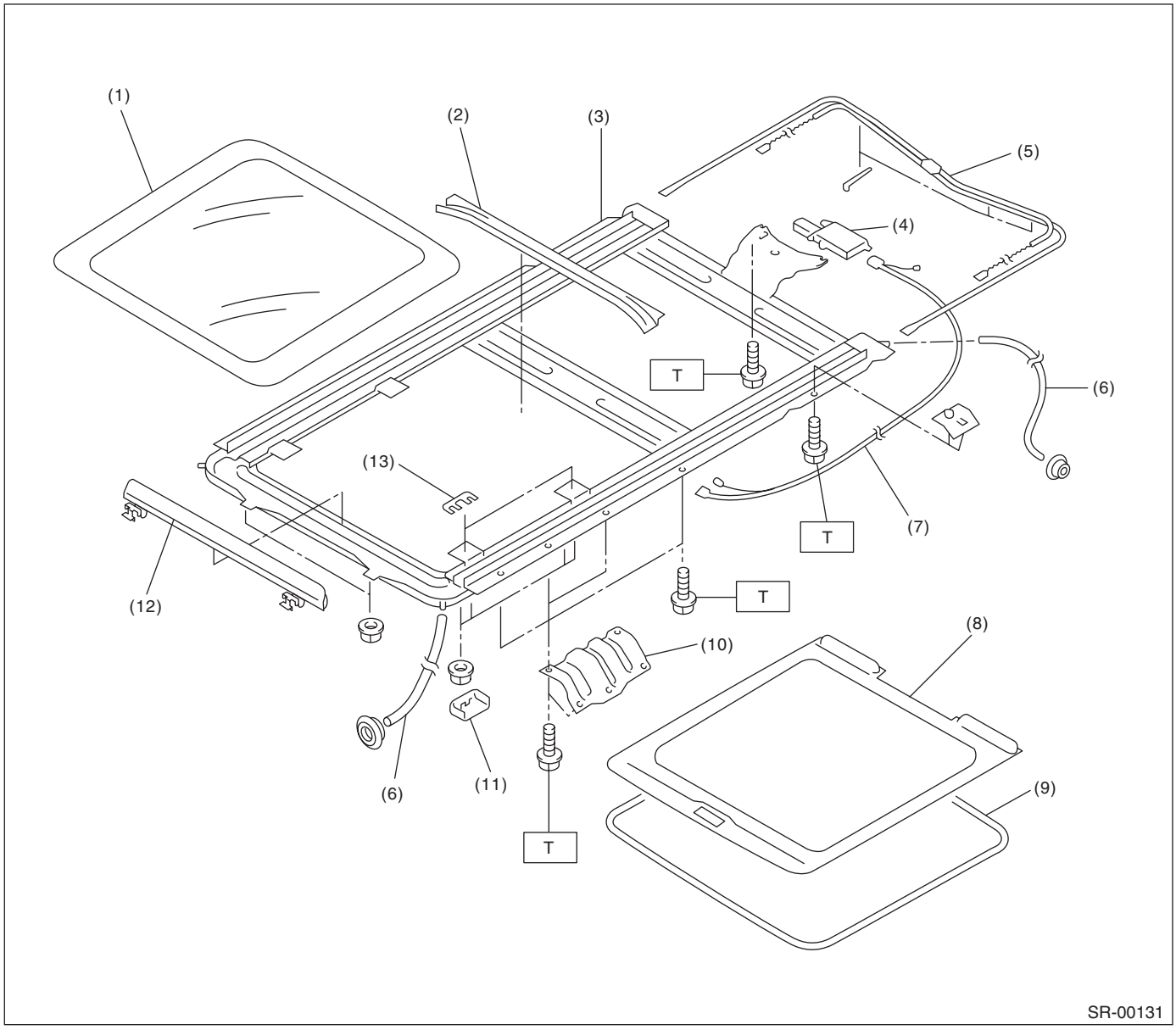


B: INSTALLATION

Install in the reverse order of removal.

1. General Description

A: COMPONENT



(1) Sunroof lid
(2) Rear drain ASSY
(3) Sunroof frame
(4) Sunroof motor
(5) Drive unit
(6) Drain tube
(7) Harness
(8) Sunshade
(9) Garnish
(10) Frame bracket
(11) Cover
(12) Deflector
(13) Shim

Tightening torque:N·m (kgf-m, ft-lb)
T: 7.4 (0.75, 5.4)

B: CAUTION

• Before disassembling or reassembling parts, always disconnect the battery ground cable from battery. When replacing the radio, control unit, and other parts provided with memory functions, record the memory contents before disconnecting the battery ground cable in order to prevent memory deletion.
• Reassemble the parts in the reverse order of disassembly unless otherwise indicated.
• Adjust parts to the given specifications.
• Connect the connectors and hoses securely during reassembly.
• After reassembly, make sure functional parts operate smoothly.

C: PREPARATION TOOL

1. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance and voltage.

2. Sunroof Control System

A: WIRING DIAGRAM

<Ref. to WI-156, WIRING DIAGRAM, Sunroof Control System.>

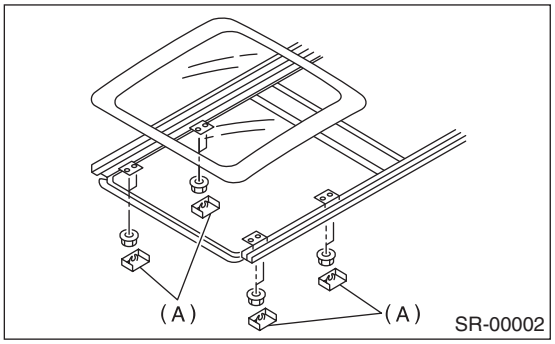
B: INSPECTION

Symptom	Inspection order
Water leakage	1. Check roof panel and sunroof lid for improper or poor sealing. 2. Check drain tube for clogging. 3. Check sunroof frame seal and body for improper fit.
Wind noise	1. Check sunroof lid and roof panel for improper clearance. 2. Check sunshade and roof trim for improper clearance.
Abnormal motor noise	1. Check the motor mounting screws for looseness. 2. Check gears and bearings for wear. 3. Check cable for wear. 4. Check cable pipe for deformities.
Failure of sunroof (Motor operates properly.)	1. Check sunroof frame for foreign particles. 2. Check sunroof frame for improper installation. 3. Check parts for mutual interference. 4. Check cable slider for improper clinching. 5. Check cable for improper installation. 6. Check clutch adjusting nut for improper tightness.
Motor does not rotate or it rotates improperly.	1. Check fuse for blown out. 2. Check switch for improper function. 3. Check motor for incorrect terminal voltage. 4. Check the relay for improper operation. 5. Check poor grounding system. 6. Check harness for open or short and terminals for poor connections. 7. Check limit switch for improper operation.

3. Sunroof Lid

A: REMOVAL

1) Completely close the sunroof lid, and then open the sunshade.
2) Remove the four covers (A), and then remove the eight nuts.



3) Remove the sunroof lid carefully.

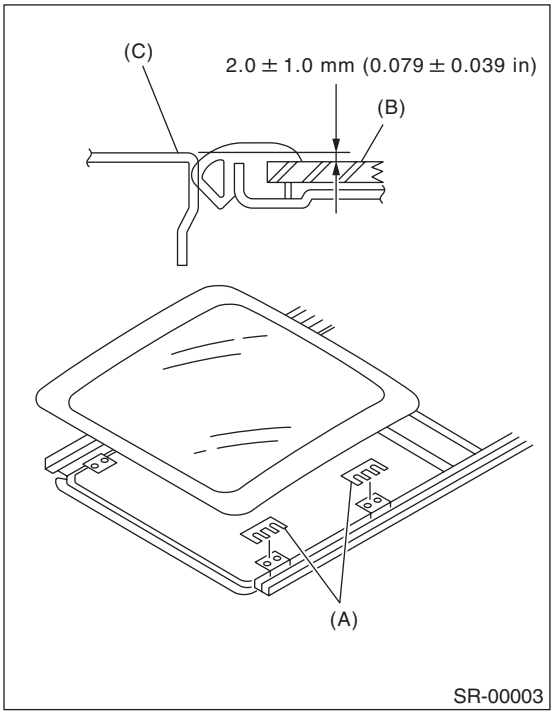
B: INSTALLATION

Install in the reverse order of removal.

C: ADJUSTMENT

Align the height between sunroof lid and roof panel. Loosen the sunroof lid nuts, and then adjust the height by adding (max: four pieces) or extracting (min: zero pieces) shims (normally two pieces) which are installed between the sunroof lid and the roof panel.

Difference of height between sunroof lid and roof panel:
2.0±1.0 mm (0.079±0.039 in)

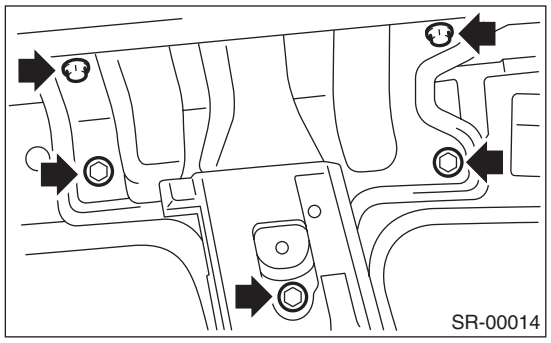


(A) Shim
(B) Sunroof lid
(C) Roof panel

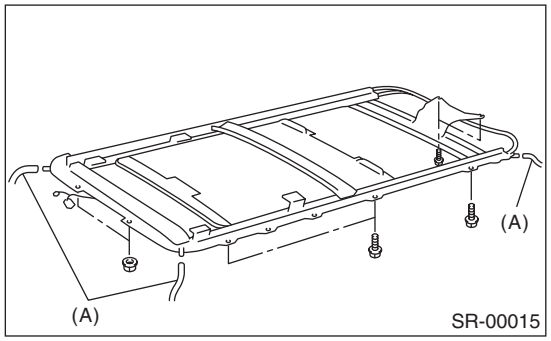
4. Sunroof Assembly

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the roof trim. <Ref. to EI-45, REMOVAL, Roof Trim.>
3) Remove the sunroof lid. <Ref. to SR-5, REMOVAL, Sunroof Lid.>
4) Disconnect the four drain tubes (A) from the sunroof frame.
5) Disconnect the sunroof harness connector.
6) Remove the bolts and then remove the frame bracket.


SR-00014

7) Remove the nuts and bolts to remove the sunroof frame.



SR-00015

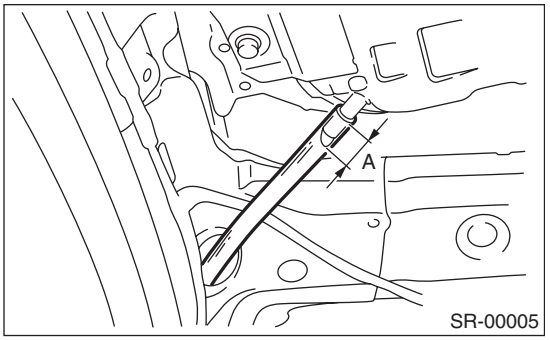
B: INSTALLATION

Install in the reverse order of removal.

CAUTION:
Be careful not to snag the harness.

NOTE:
- Be sure to connect the harness connector.
- When installing the drain tube, insert it securely into drain pipe.

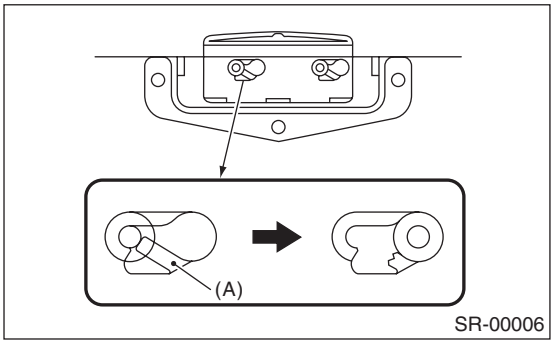
Length A:
15 mm (0.59 in) or more



SR-00005

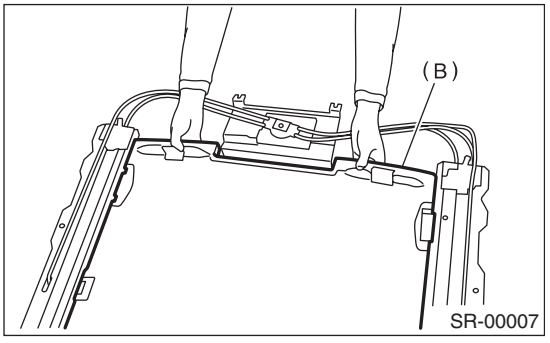
C: DISASSEMBLY

1) Remove the sunroof frame.
2) Cut the right front side sunshade claw (A).
3) Remove the right front slider.



SR-00006

4) Pull out the sunshade (B) from sunroof frame.



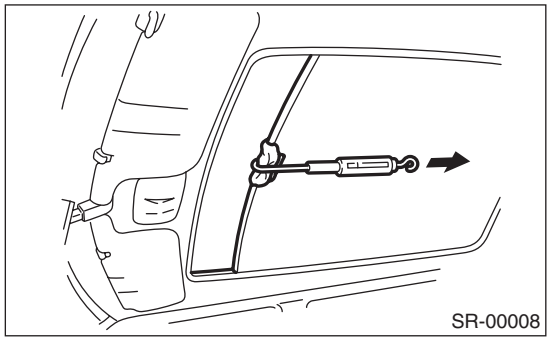
SR-00007

D: ASSEMBLY

Assemble in the reverse order of disassembly.

E: INSPECTION

Inspect the moving load of the sunshade
1) Attach a spring scale to sunshade edge using a cloth.



2) Pull the spring scale to measure moving load of the sunshade.

Moving load of sunshade:
Less than 25 N (2.5 kgf, 5.5 lb)

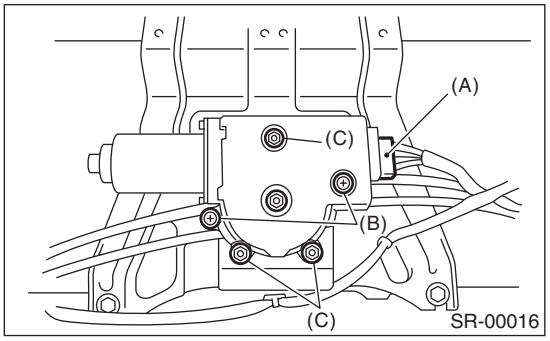
NOTE:
Moving load is larger at the beginning of pulling a spring scale, so take a spring scale reading while sunshade sliding smoothly.
3) If moving load exceeds specifications, check the sunroof lid, sunshade, deflector and sunroof frame for improper installation.

5. Sunroof Motor

A: REMOVAL

CAUTION:
• When removing the sunroof motor, completely close the sunroof.
• When removing the clip, use great care not to damage the roof trim.

1) Completely close the sunroof lid.
2) Disconnect the ground cable from the battery.
3) Remove the roof trim. <Ref. to EI-45, REMOVAL, Roof Trim.>
4) Disconnect the harness connector (A), and then remove the sunroof motor mounting screws (B) and nuts (C).



B: INSTALLATION

CAUTION:
When installing the sunroof motor assembly, be careful not to move the sunroof cable.

1) Install the sunroof motor.
2) Connect the sunroof motor harness connector of motor assembly, and then connect the battery ground cable to battery.
3) Reset the sunroof motor. <Ref. to SR-8, ADJUSTMENT, Sunroof Motor.>
4) Check the sunroof operation as follows:

Inspection order		Switch position
(1)	Sunroof closes completely.	Close
(2)	Sunroof opens 500 mm (19.7 in) away from completely closed position.	Open
(3)	Sunroof opens completely.	Open
(4)	Sunroof closes 200 mm (7.87 in) in front of the completely closed position.	Close
(5)	Sunroof closes completely.	Close

5) Install the roof trim. <Ref. to EI-45, INSTALLATION, Roof Trim.>

C: ADJUSTMENT

1) Reset the sunroof motor.
   (1) Completely close the sunroof lid. At this time, it operates intermittently in 50 mm (1.97 in) amounts. The switch must be pressed several times.
   (2) Then continue pushing the switch for more than one second to the CLOSE side.
   (3) Open the sunroof lid approximately 400 mm (15.75 in) out.
   (4) Completely close the sunroof lid, then continue pushing the switch for more than one second to the CLOSE side. (This operation enables the auto operation.)

D: INSPECTION

Inspect the sunroof lid auto-reverse mechanism functions
1) Open the sunroof lid.
2) Forcefully push the sunroof lid in the opening direction while auto-closing, to check whether the window auto-reverse mechanism functions.
3) Check whether the window auto-reverse mechanism operates and the roof moves back 150 mm (5.91 in) in the opening direction.

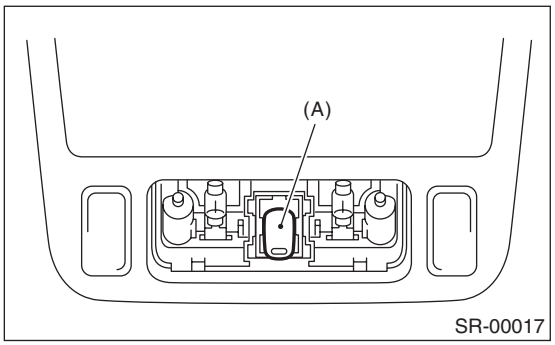
CAUTION:
Do not place objects in the way to check the auto-reverse mechanism.

NOTE:
• The auto-function is cancelled when the window auto-reverse mechanism is activated more than five times.
• If the auto function is cancelled, reset it. <Ref. to SR-8, ADJUSTMENT, Sunroof Motor.>

6. Sunroof Switch

A: REMOVAL

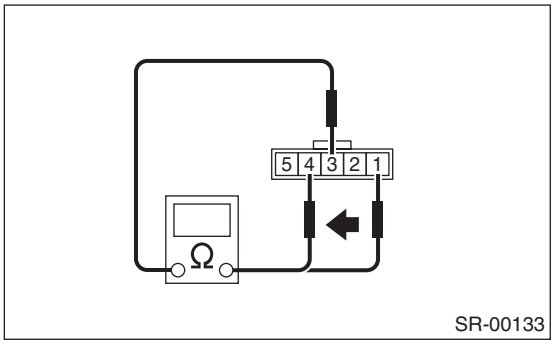
1) Disconnect the ground cable from the battery.
2) Remove the spot map light. <Ref. to LI-29, REMOVAL, Spot Map Light.>
3) Disconnect the harness connector, and then remove the sunroof switch (A).



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION



Inspect the continuity between each terminal during operation of the switches.

Switch	Terminal No.	Standard
Open	1 and 3	Less than 1 Ω
Close	4 and 3	Less than 1 Ω

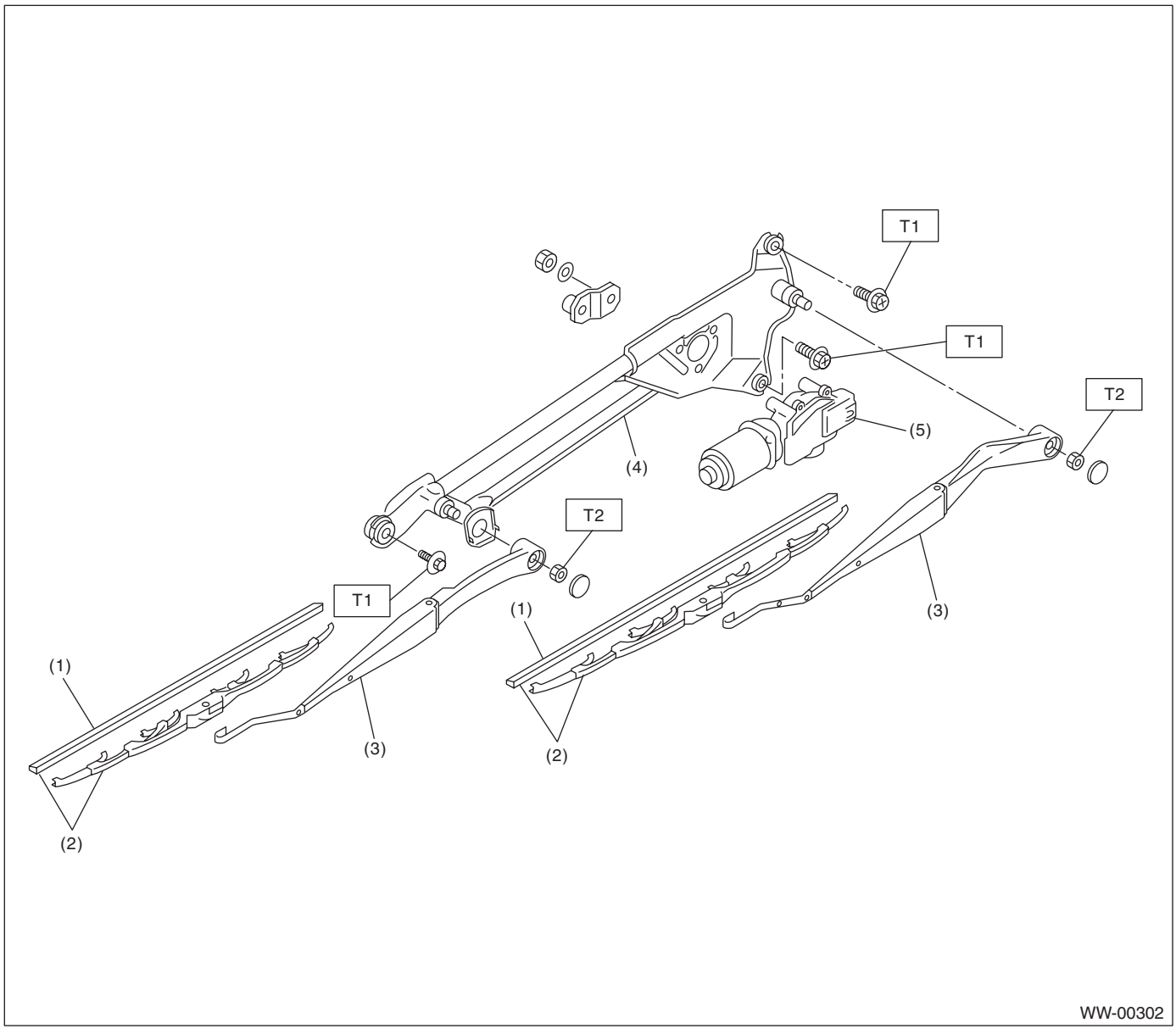
1. General Description

A: SPECIFICATION

Front wiper motor	Input	12 V — 72 W or less
Rear wiper motor	Input	12 V — 42 W or less
Front washer pump	Pump type	Centrifugal
	Input	12 V — 36 W or less
Rear washer pump	Pump type	Centrifugal
	Input	12 V — 36 W or less

B: COMPONENT

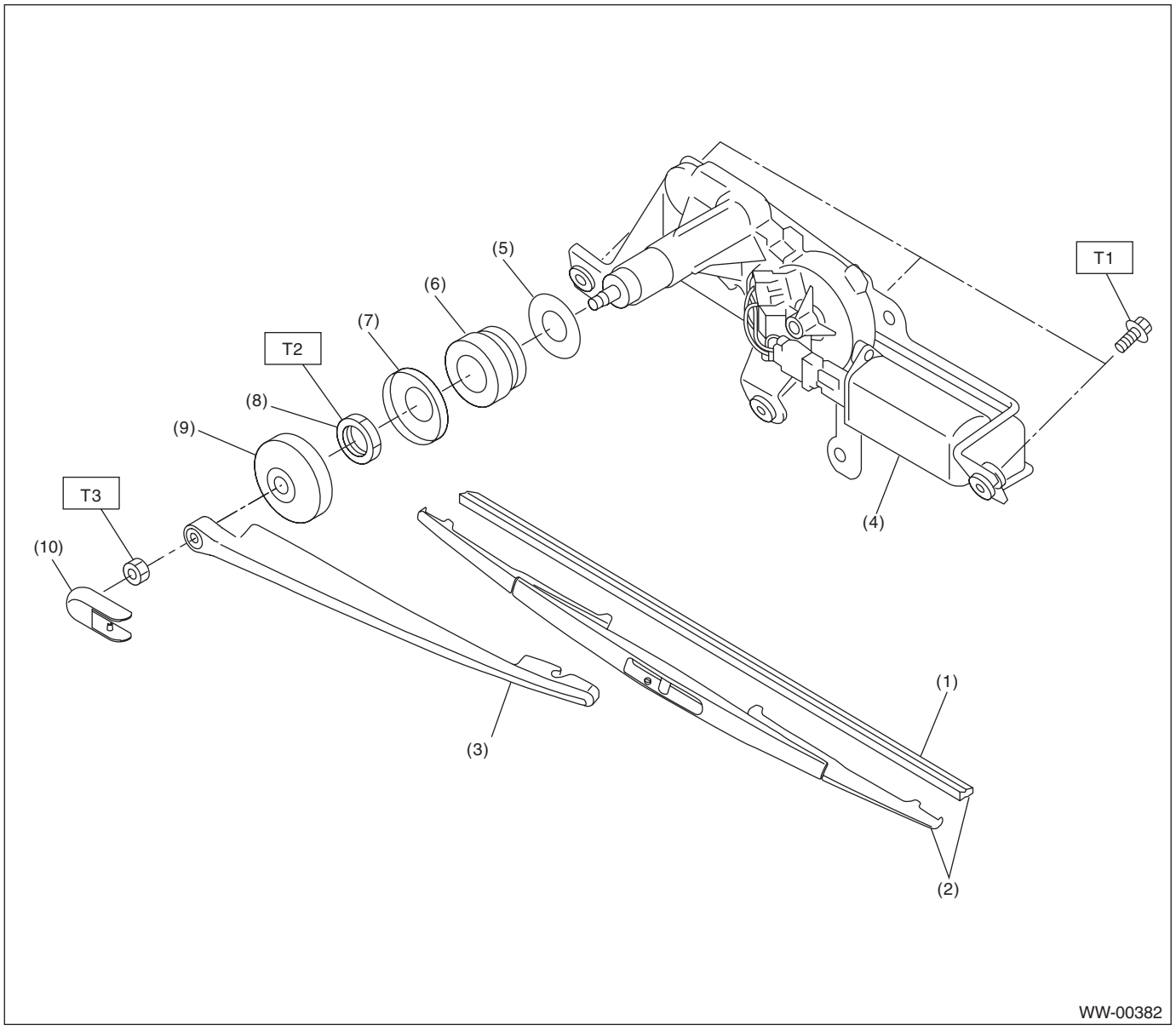
1. FRONT WIPER



(1) Wiper rubber
(2) Wiper blade ASSY
(3) Wiper arm
(4) Wiper link
(5) Wiper motor

Tightening torque:N·m (kgf-m, ft-lb)
T1: 6.0 (0.61, 4.4)
T2: 20 (2.0, 14.5)

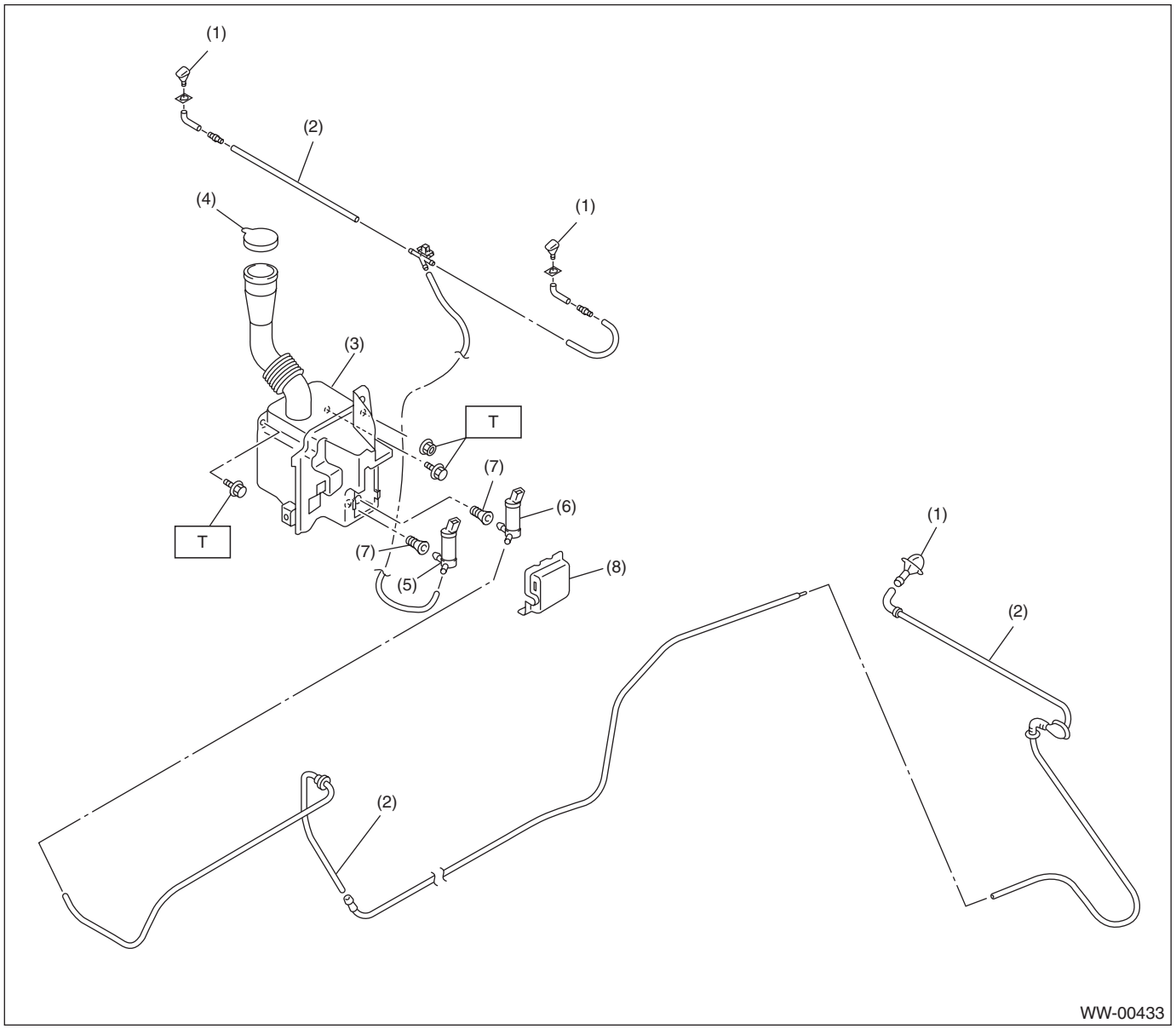
2. REAR WIPER



(1)	Wiper rubber	(6)	Cushion
(2)	Wiper blade ASSY	(7)	Spacer B
(3)	Wiper arm	(8)	Nut
(4)	Wiper motor	(9)	Cap
(5)	Spacer A	(10)	Wiper arm cover

Tightening torque:N·m (kgf-m, ft-lb)	
T1:	*6.0 (0.61, 4.4)*
T2:	*7.5 (0.76, 5.5)*
T3:	*8.0 (0.82, 5.9)*

3. WASHER TANK



(1)	Washer nozzle	(5)	Front washer motor
(2)	Washer hose	(6)	Rear washer motor
(3)	Washer tank	(7)	Grommet
(4)	Washer tank cap	(8)	Washer motor cover

Tightening torque:N·m (kgf-m, ft-lb)
T: 6.0 (0.61, 4.4)

C: CAUTION

- Connect the connectors and hoses securely during reassembly.

After reconnection, make sure each part operates normally.

- Be careful with the airbag system wiring harness which passes near electrical parts and switches.
- Airbag system wiring harness and connectors are colored yellow. Do not use a tester equipment on these circuits.
- Care must be taken when connecting the washer hose so that no bending, jamming, etc. are caused.
- If even a small amount of silicon oil or grease enters tank and washer fluid passages, an oil film will be formed on the glass, and will cause the wiper to chatter and judder. Be careful no oil comes into contact with the system.

2. Wiper and Washer System

A: WIRING DIAGRAM

1. WIPER AND WASHER (FRONT)

<Ref. to WI-130, WIRING DIAGRAM, Front Wiper and Washer System.>

2. WIPER AND WASHER (REAR)

<Ref. to WI-131, WIRING DIAGRAM, Rear Wiper and Washer System.>

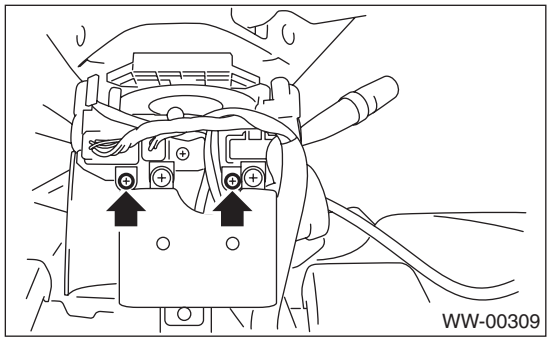
B: INSPECTION

Symptom	Repair order
Wiper and washers do not operate.	(1) Wiper fuse (F/B No. 14, 15) (2) Combination switch (3) Wiper motor assembly (4) Wiring harness
Wipers do not operate in LO or HI.	(1) Combination switch (2) Wiper motor assembly (3) Wiring harness
Wipers do not operate in INT.	(1) Combination switch (2) Wiper motor assembly (3) Wiring harness
Washer motor does not operate.	(1) Washer switch (2) Washer motor (3) Wiring harness
Wipers do not operate when washer switch is turned to ON.	(1) Wiper motor assembly (2) Wiring harness
Washer fluid spray does not operate properly.	(1) Washer motor (2) Washer hose and nozzle

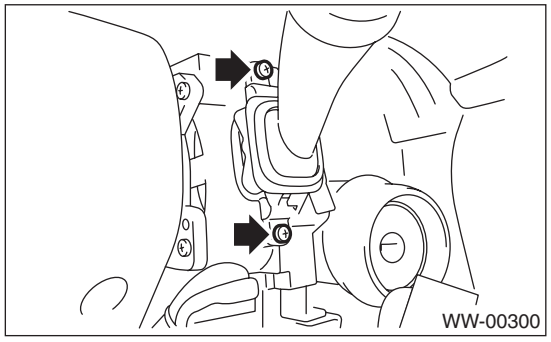
3. Combination Switch (Wiper)

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the instrument panel lower cover. <Ref. to EI-38, REMOVAL, Instrument Panel Assembly.>
3) Loosen the screw to remove a steering column lower cover.
4) Remove the steering column upper cover mounting screw.



5) Disconnect the connector from combination switch.
6) Loosen the screw to remove the combination switch.

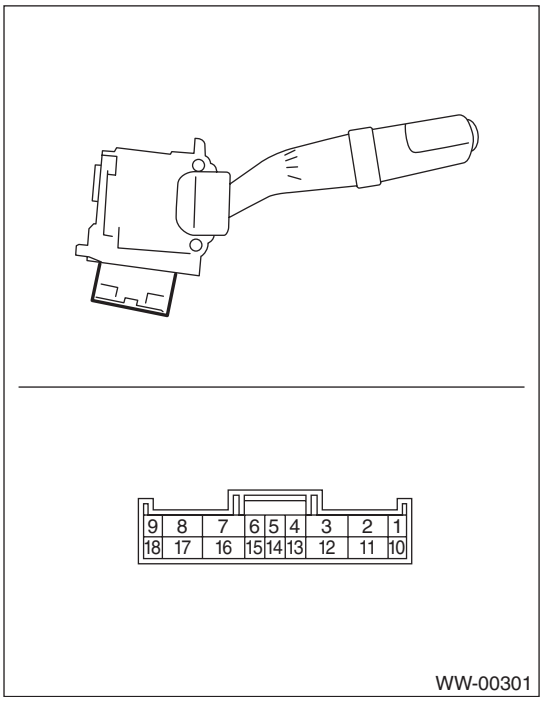


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

• Inspect the continuity between each connector terminal.

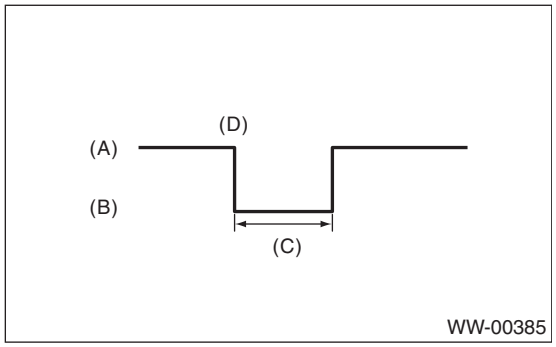


	Switch position	Terminal No.	Standard
Front	LO	7 and 17	Less than 1 Ω
	HI	8 and 17	Less than 1 Ω
	Washer ON	2 and 11	Less than 1 Ω
Rear	OFF	Between any two of following terminals: 2, 10, 12, 13	1 MΩ or more
	INT	2 and 13	Less than 1 Ω
	ON	2 and 10	Less than 1 Ω
	Washer ON	2 and 10 10 and 12 2 and 12	Less than 1 Ω

If continuity is not as specified, replace the switch.
• Intermittent operation inspection
Inspect wiper switch separately
1) Set the voltmeter between switch terminal No. 7 (+) and No. 2 (–).
2) Connect the battery between switch terminal No. 17 (+) and No. 2 (–).
3) Turn the front wiper switch to INT.
4) Connect the battery (+) to switch terminal No. 16 for 5 seconds.

5) Connect battery (–) to switch terminal No. 16 and measure the voltage during intermittent operation.

Terminals
No. 7 — No. 2:



(A) Approx. 12 V
(B) Approx. 0 V
(C) Intermittent stationary time
(D) Connect battery (–) to terminal No. 16.

6) Perform step 1) to 5) when intermittent control switch is in MIN or MAX.

Intermittent stationary time:
MIN: Approx. 2 sec.
MAX: Approx. 16 sec.

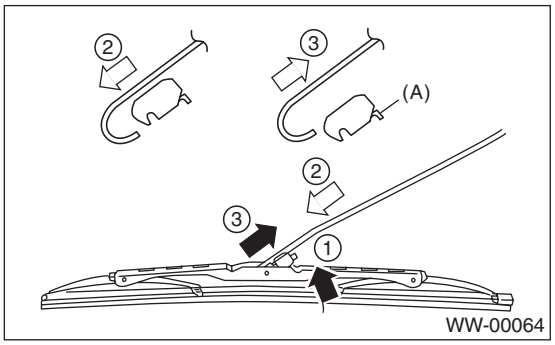
7) If operation is not as specified, replace the switch.

4. Wiper Blade

A: REMOVAL

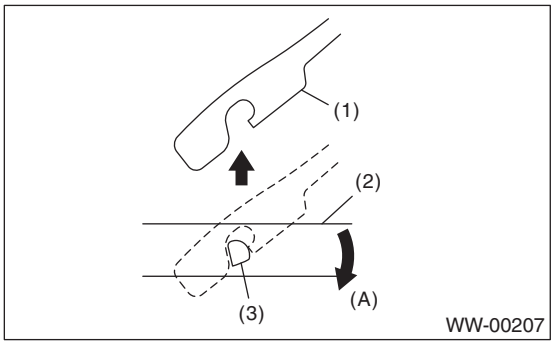
1. FRONT

While pushing the locking clip (A) up, pull out the blade assembly to the direction of the arrow and remove it from the wiper arm.



2. REAR

Turn the blade in the direction of arrow (A) and remove it from arm.



(A) Turn the wiper blade.
(1) Wiper arm
(2) Wiper blade
(3) Wiper blade attachment section

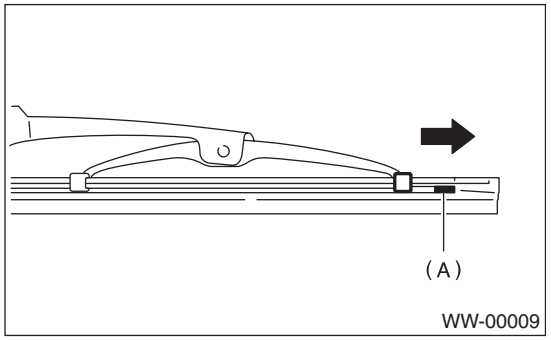
B: INSTALLATION

1) Install in the reverse order of removal.
2) Confirm that the clip is locked securely.

C: DISASSEMBLY

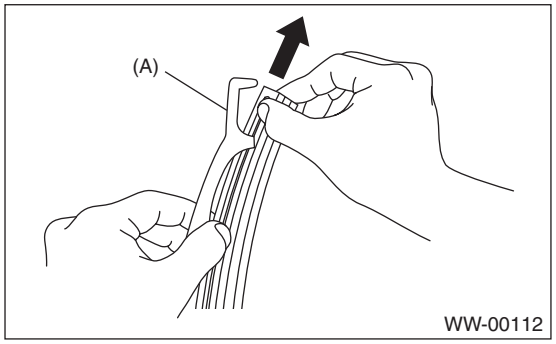
1. FRONT

Pull side (A) of the wiper rubber stopper and remove the rubber from the blade assembly.



2. REAR

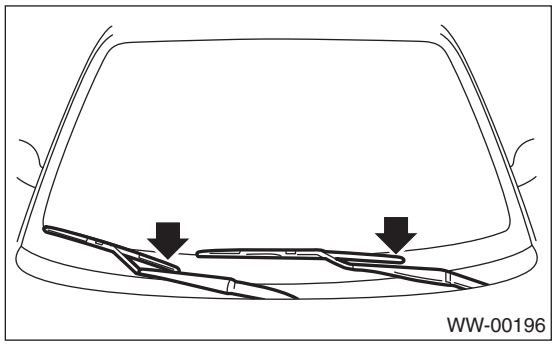
Pull the wiper rubber top slightly from stopper (A) and pull out completely.



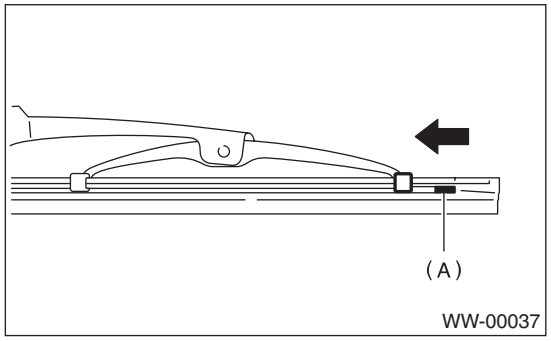
D: ASSEMBLY

1. FRONT

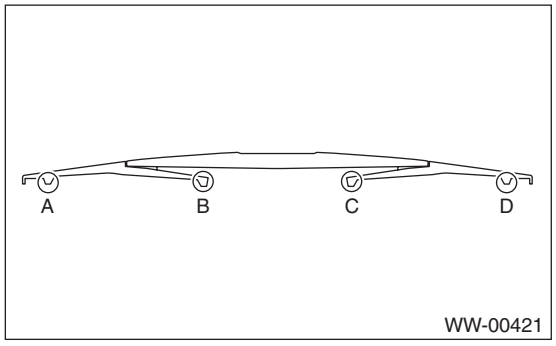
1) Insert the wiper rubber onto the blade so that the stopper is in the position shown.



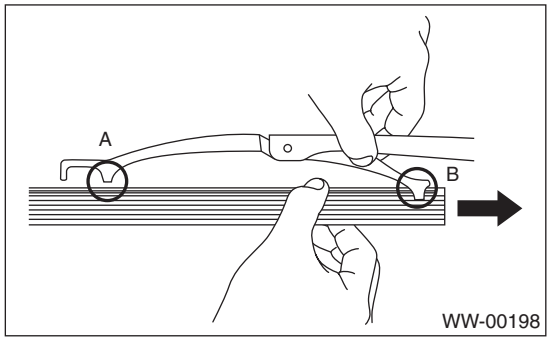
2) Make sure the wiper rubber is securely fastened to the pull stopper (A).



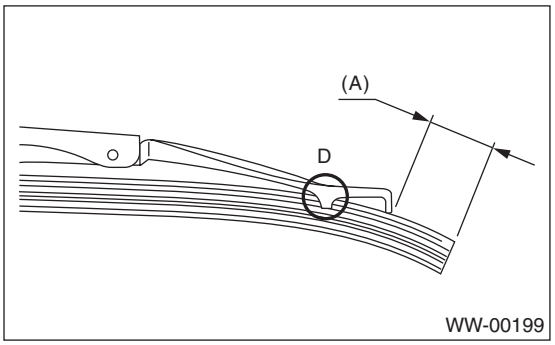
2. REAR



1) Insert the wiper rubber into claw (B).

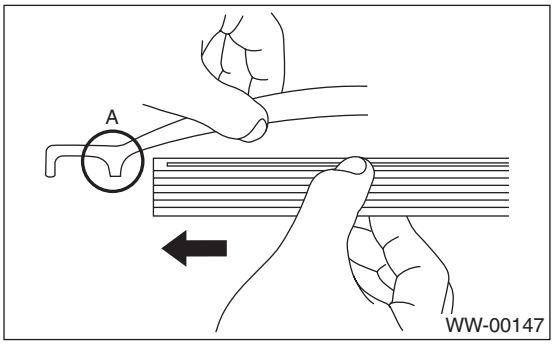


2) Insert the wiper rubber until its top end protrudes approx. 20 mm (0.79 in) from stopper (D).



(A) 20 mm (0.79 in)

3) Insert the wiper rubber into claw (A).



E: INSPECTION

1) When the wiper does not operate properly, inspect the following item.

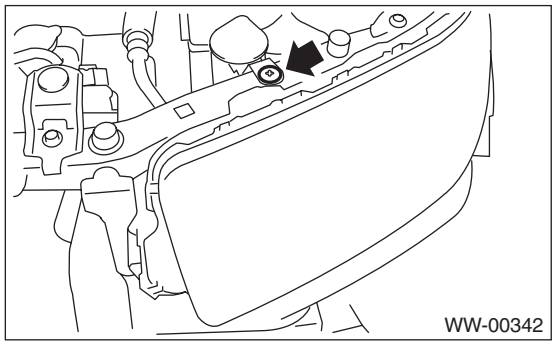
- Make sure the movable part of blade assembly moves smoothly.
- Make sure the wiper rubber is not deformed or damaged.

2) Replace with a new part if damage is found.

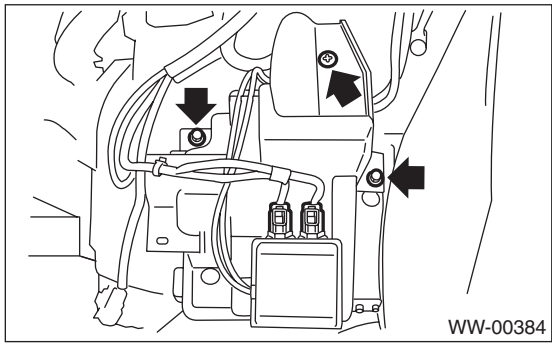
5. Washer Tank and Motor

A: REMOVAL

1) Open the front hood.
2) Disconnect the ground cable from the battery.
3) Remove the front bumper. <Ref. to EI-20, REMOVAL, Front Bumper.>
4) Remove the clip holding washer water supply tap.



5) Remove three bolts, hose and connector, and then remove the washer tank.



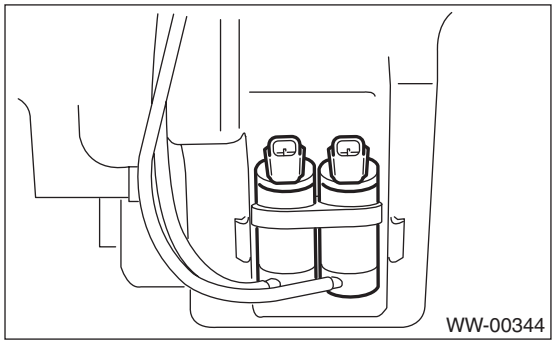
B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
6.0 N·m (0.61 kgf-m, 4.4 ft-lb)

C: DISASSEMBLY

Pull out the washer motor from tank.

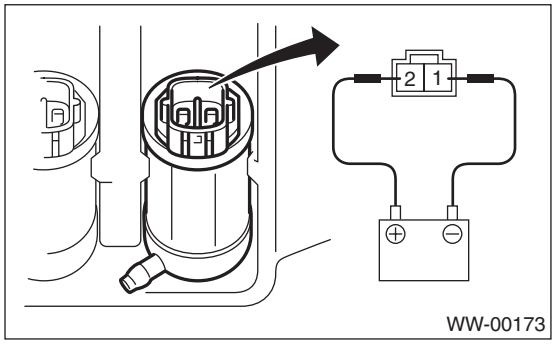


D: ASSEMBLY

1) Assemble in the reverse order of disassembly.
2) Confirm that water does not leak from installation area of motor.

E: INSPECTION

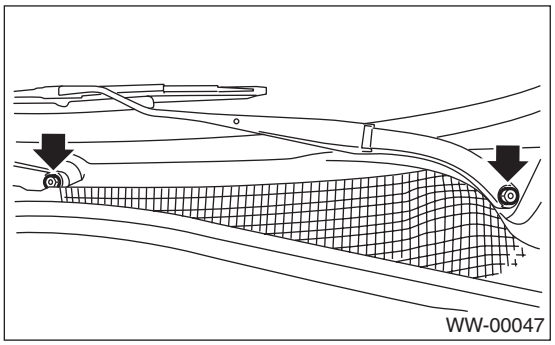
Apply battery voltage to the connector terminal of the washer motor and make sure the motor operates.



6. Front Wiper Arm

A: REMOVAL

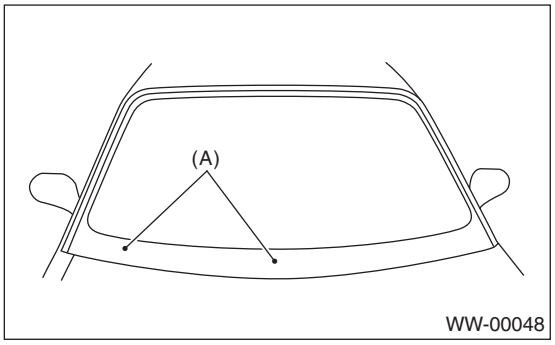
1) Open the front hood.
2) Remove the cap, and loosen the nut.



3) Remove the wiper arm assembly.

B: INSTALLATION

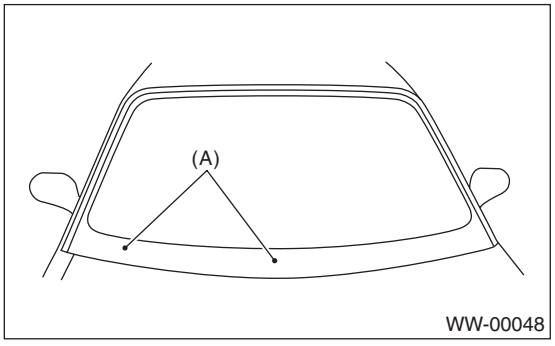
1) Install in the reverse order of removal.
2) Operate the wiper once.
3) Align the wiper blade to ceramic print point mark (A) of front window panel.



Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to WW-2, FRONT WIPER, COMPONENT, General Description.>

C: ADJUSTMENT

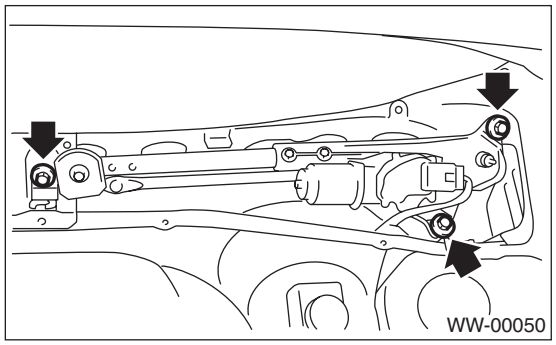
Operate the wiper once. Align the wiper blade to ceramic print point mark (A) of front window panel.



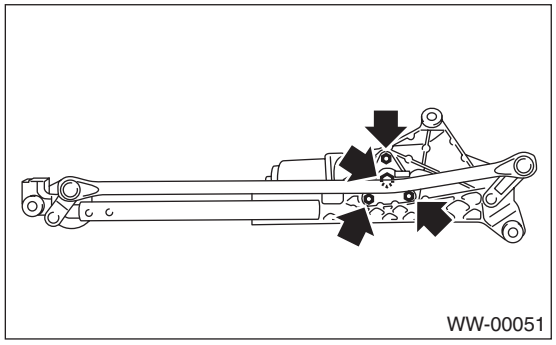
7. Front Wiper Motor and Link

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the cowl panel. <Ref. to EI-30, REMOVAL, Cowl Panel.>
3) Disconnect the connector of motor.
4) Loosen the bolts and nuts to remove the wiper link.

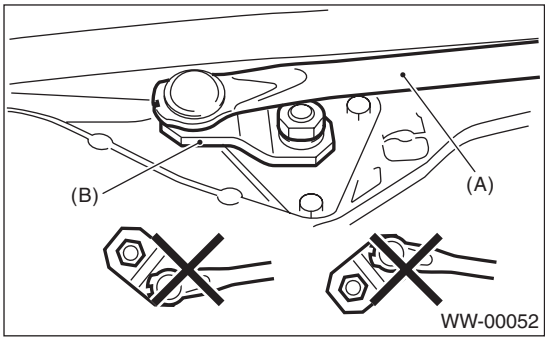


5) Loosen the bolts and nuts to remove the motor.



B: INSTALLATION

1) Install the wiper link to the vehicle, then connect the motor connector.
2) Connect the ground cable to the battery.
3) To confirm that the motor is at the auto stop position, turn the wiper switch ON/OFF.
4) Disconnect the ground cable from the battery.
5) Tighten the nut where rod (A) and link plate (B) is aligned in a straight line.

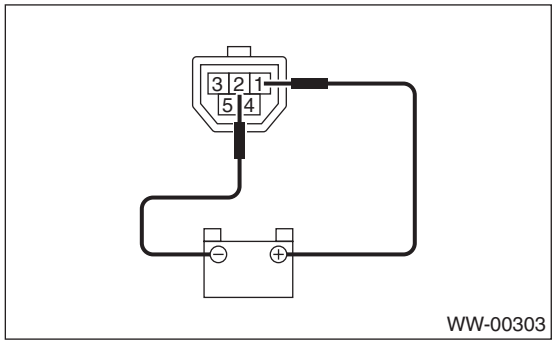


6) Install in the reverse order of removal.

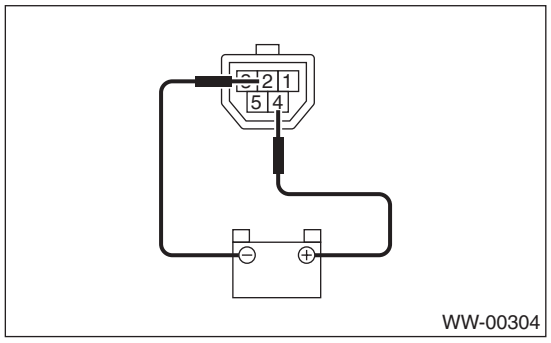
Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to WW-2, FRONT WIPER, COMPONENT, General Description.>

C: INSPECTION

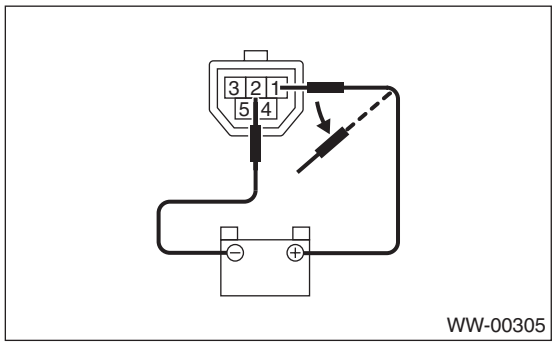
1) When the battery is connected to the terminal of connectors as shown in the figure, confirm that the motor operates at low speed.



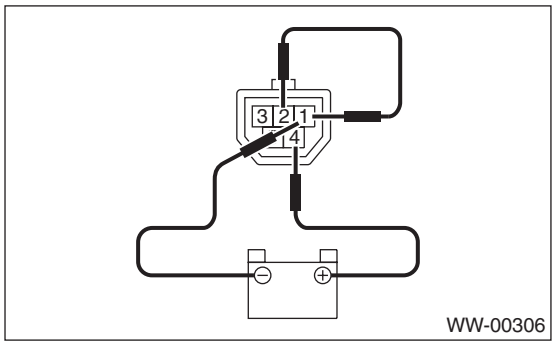
2) When the battery is connected to the terminal of connectors as shown in the figure, confirm that the wiper motor operates at high speed.



3) Connect the battery to terminals of the connector, and remove the terminal connection with motor rotating at low speed, and stop the wiper motor in mid-operation.



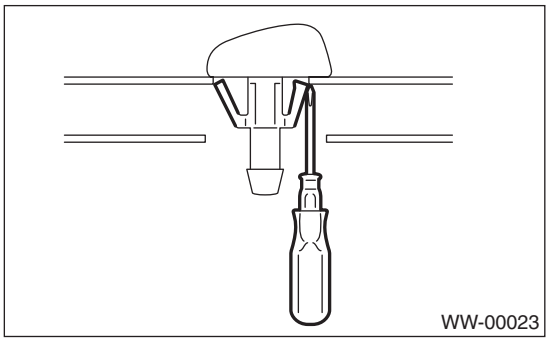
4) Connect the battery and confirm that the motor stops at the automatic stop position after the motor operates at low speed again.



8. Front Washer Nozzle

A: REMOVAL

1) Remove the washer hose from the washer nozzle.
2) Open the clips on the underside of the front hood with a thin screwdriver or other tool, and remove the washer nozzle.



B: INSTALLATION

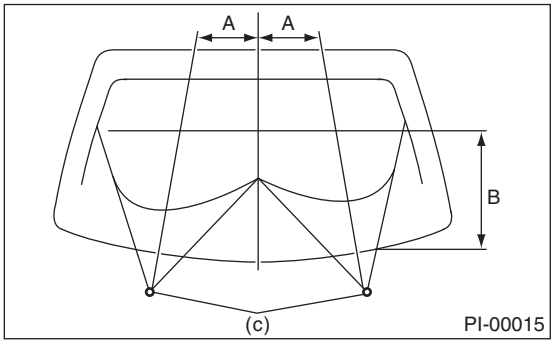
Install in the reverse order of removal.

C: INSPECTION

- Make sure the nozzle and hose are not clogged.
- Make sure the hose is not twisted or bent.

NOTE:
- It is not possible to adjust the ejection position of the washer liquid because it is the scatter nozzle.
- If the spray position is largely different from the position shown as follows, replace the washer nozzle.

In ejection position:
A: 250 mm (9.84 in)
B: 345 mm (13.58 in)

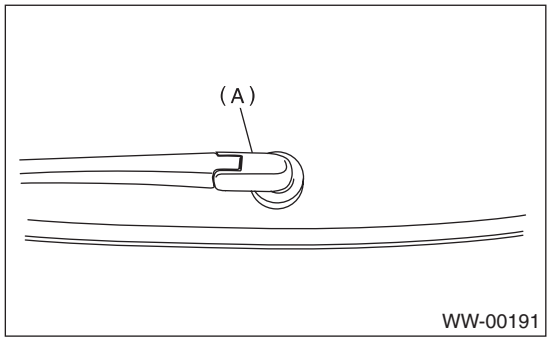


(C) Nozzle

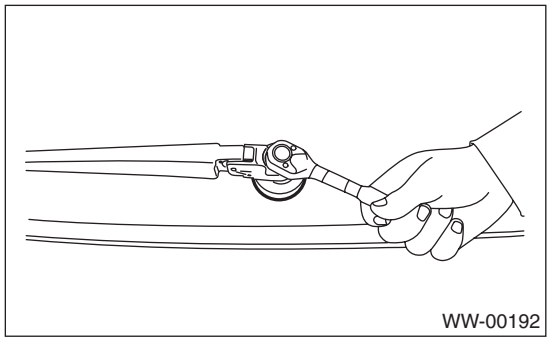
9. Rear Wiper Arm

A: REMOVAL

1) Detach the wiper arm cover (A).

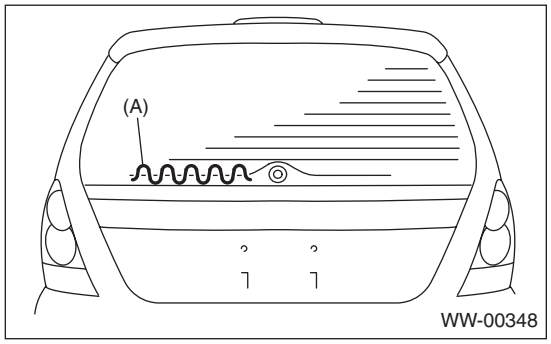


2) Loosen the nut to remove the wiper arm.



B: INSTALLATION

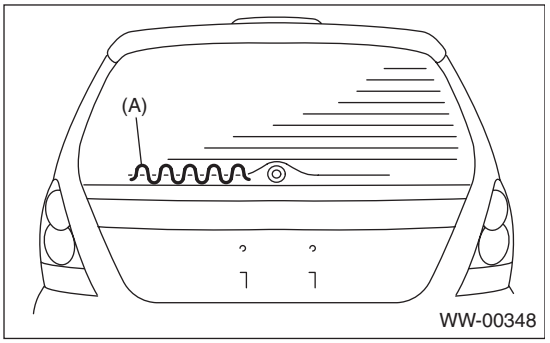
1) Install in the reverse order of removal.
2) Operate the rear wiper once.
3) Align the blade to center of the rear defogger heat wire (A).



Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to WW-3, REAR WIPER, COMPONENT, General Description.>

C: ADJUSTMENT

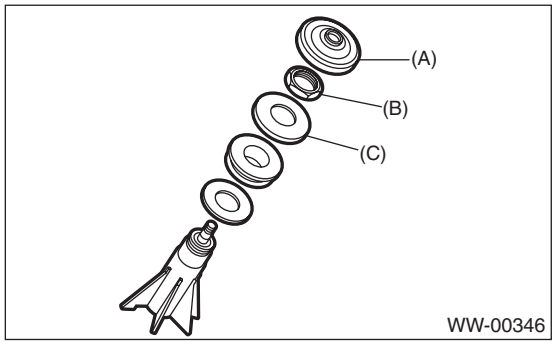
1) Operate the rear wiper once.
2) Align the blade to center of the rear defogger heat wire (A).



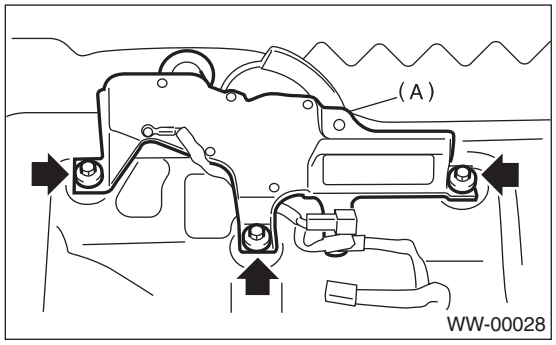
10.Rear Wiper Motor

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the rear wiper arm.
3) Remove the cap (A), nut (B), and spacer (C) from rear wiper shaft.

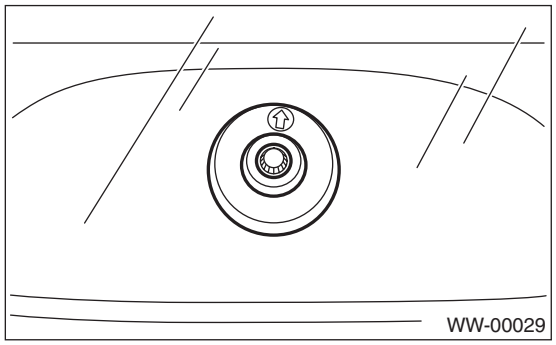


4) Remove the rear gate lower trim. <Ref. to EI-46, REMOVAL, Rear Gate Trim.>
5) Unclip the clip of harness and disconnect connector of wiper motor.
6) Loosen the bolts to remove the wiper motor assembly (A).



B: INSTALLATION

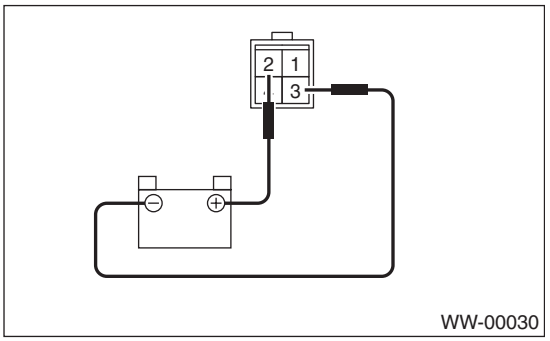
1) Install in the reverse order of removal.
2) Install the rear wiper cushion with the arrow mark facing up, as shown in the figure.



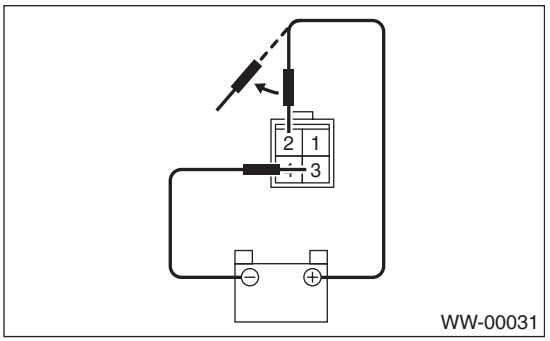
Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to WW-3, REAR WIPER, COMPONENT, General Description.>

C: INSPECTION

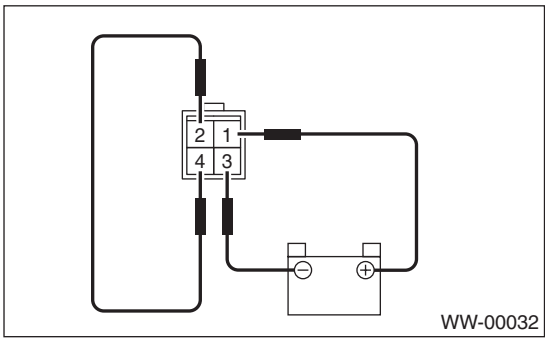
1) Connect the battery to the wiper motor connector and confirm that wiper motor operates.



2) Connect the battery to terminals of the connector, and remove the terminal connection with motor rotating, and stop the wiper motor in mid-operation.



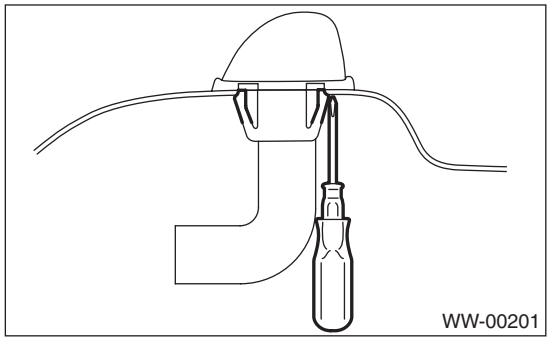
3) Connect the battery and confirm that the motor stops at the automatic stop position after the motor operates at low speed again.



11.Rear Washer

A: REMOVAL

1) Remove the rear gate upper trim. <Ref. to EI-46, REMOVAL, Rear Gate Trim.>
2) Remove the washer hose from the washer nozzle.
3) Push the anchor of the washer nozzle body with a flat tip screwdriver or equivalent, and remove the washer nozzle.



B: INSTALLATION

1) Install in the reverse order of removal.
2) Adjust the position of the washer liquid sprayer. <Ref. to WW-17, ADJUSTMENT, Rear Washer.>

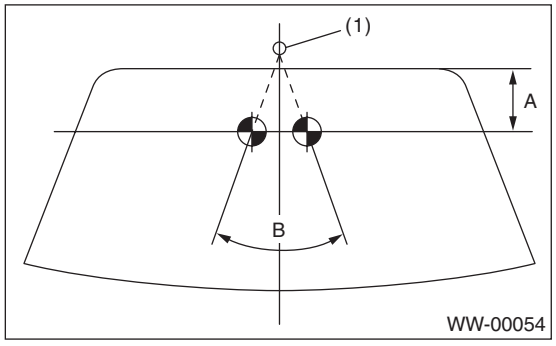
C: INSPECTION

- Make sure the nozzle and hose are not clogged.
- Make sure the hose is not bent.

D: ADJUSTMENT

1) Turn the wiper switch to OFF position.
2) When the vehicle stops, adjust the washer liquid ejection position as shown in the figure.

In ejection position:
A: 35 mm (1.38 in)
B: 72°

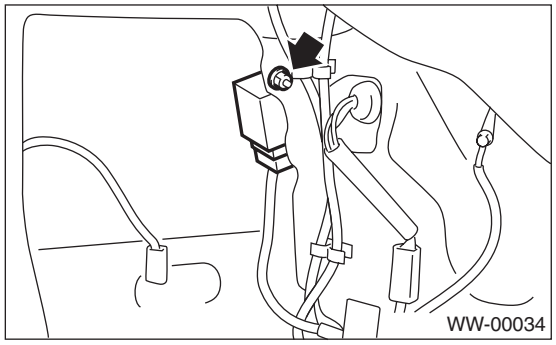


(1) Nozzle

12.Wiper Control Relay

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the quarter lower trim RH.
3) Loosen the nut to remove the control unit.

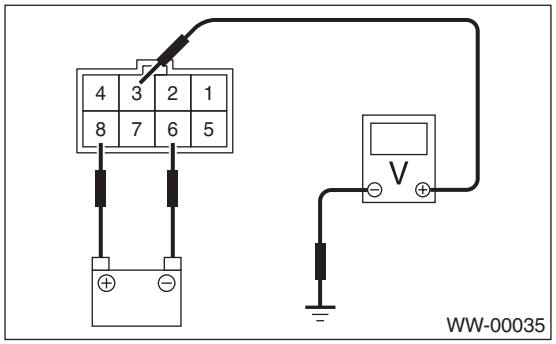


B: INSTALLATION

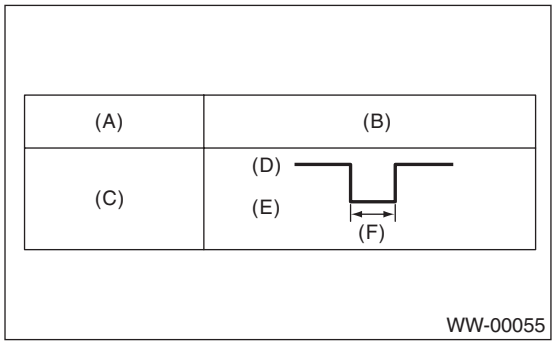
Install in the reverse order of removal.

C: INSPECTION

1) Disconnect the connector from the wiper control relay.
2) Connect the positive (+) probe from the battery to terminal 8 and the negative (–) probe to terminal 6. Connect the positive (+) probe from the voltage meter to terminal 3 and the negative (–) probe to the ground.



3) Measure the voltage when the wiper relay operates.



(A) Switch position
(B) Voltage
(C) ON
(D) 12 V
(E) 0 V
(F) 9±2 sec.

If operation is not as specified, replace the switch.