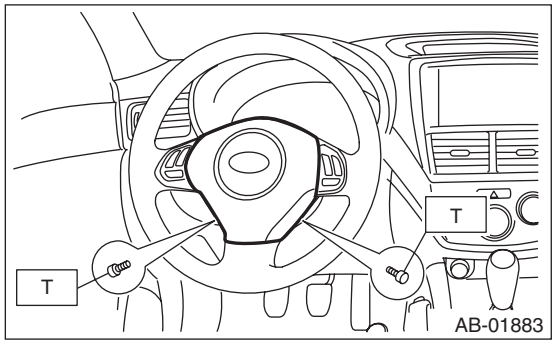
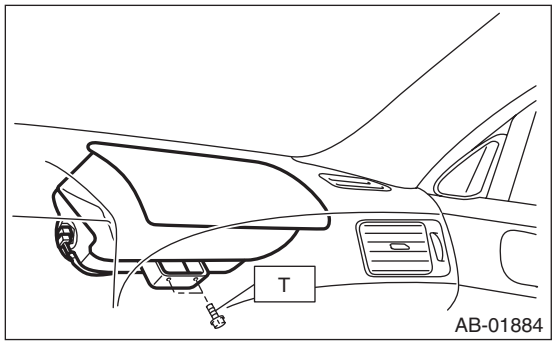
1. DRIVER'S AIRBAG MODULE



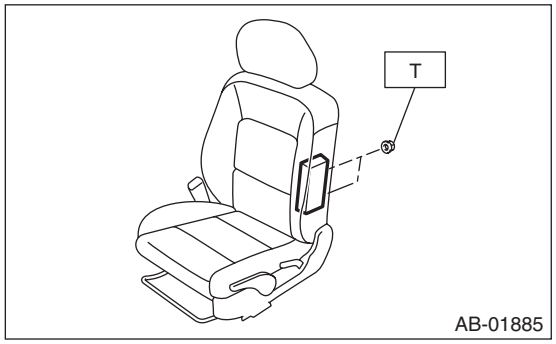
Tightening torque:
10 N·m (1.02 kgf-m, 7.4 ft-lb)

2. PASSENGER'S AIRBAG MODULE



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

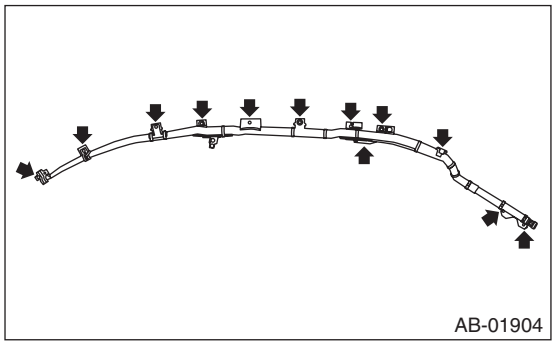
3. SIDE AIRBAG MODULE



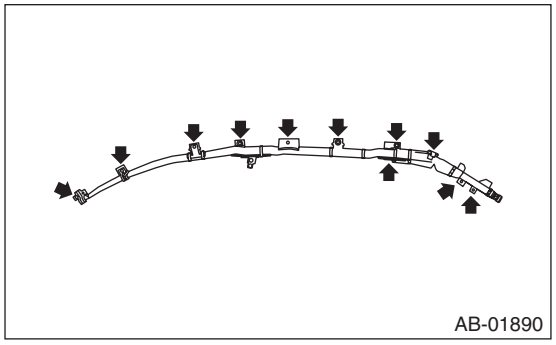
Tightening torque:
6 N·m (0.61 kgf-m, 4.4 ft-lb)

4. CURTAIN AIRBAG MODULE

- 5 DOOR MODEL



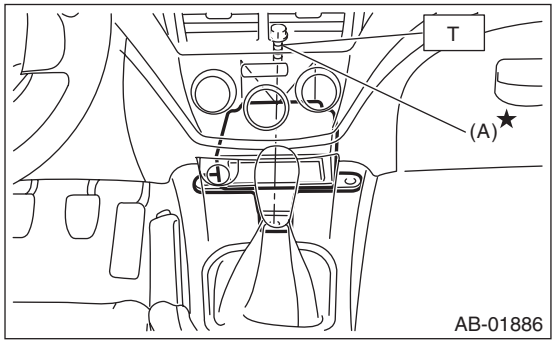
- 4 DOOR MODEL



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

5. AIRBAG CONTROL MODULE

CAUTION:
Do not reuse mounting bolts and nuts.

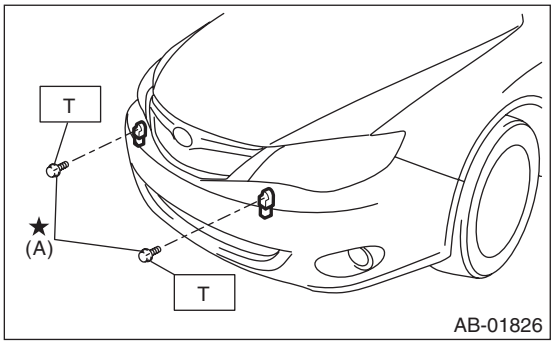


(A) Bolt

Tightening torque:
25 N·m (2.55 kgf-m, 18.4 ft-lb)

6. FRONT SUB SENSOR

CAUTION:
Do not reuse mounting bolts and nuts.

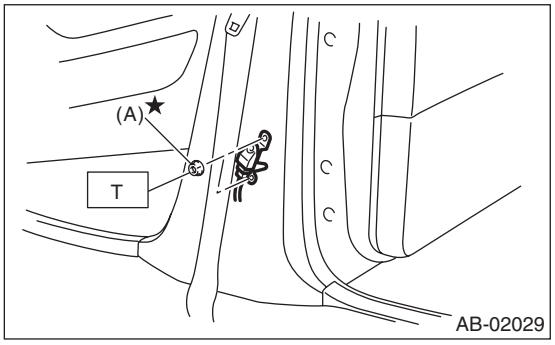


(A) Bolt

Tightening torque:
13 N·m (1.33 kgf-m, 9.6 ft-lb)

7. SIDE AIRBAG SENSOR

CAUTION:
Do not reuse mounting bolts and nuts.

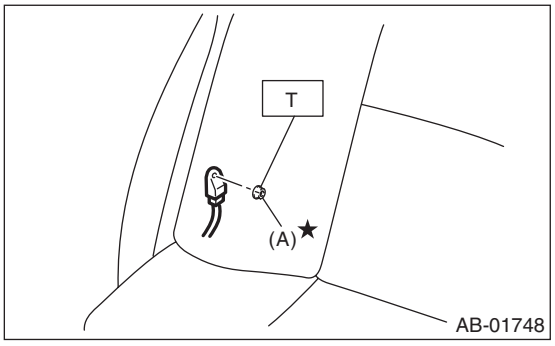


(A) Nut

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

8. CURTAIN AIRBAG SENSOR

CAUTION:
Do not reuse mounting bolts and nuts.

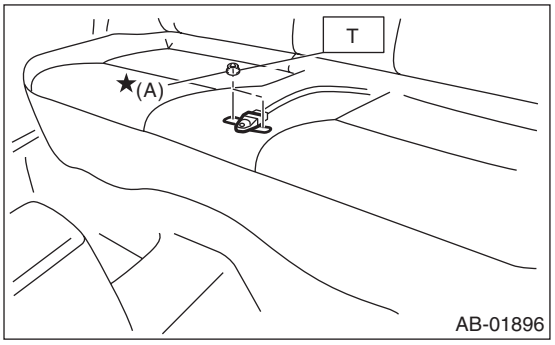


(A) Nut

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

9. SATELLITE SAFING SENSOR

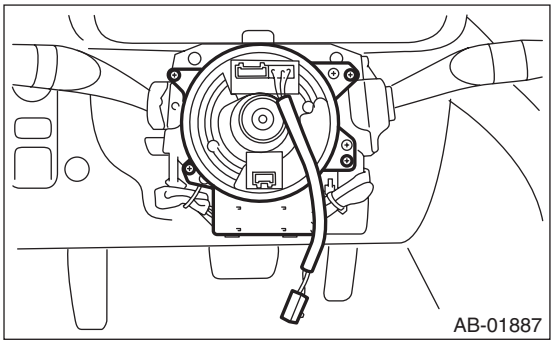
CAUTION:
Do not reuse mounting bolts and nuts.



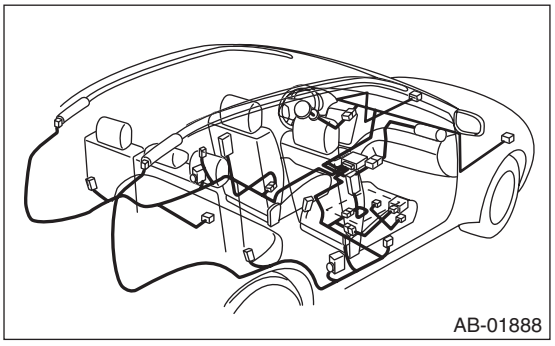
(A) Nut

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

10.STEERING ROLL CONNECTOR

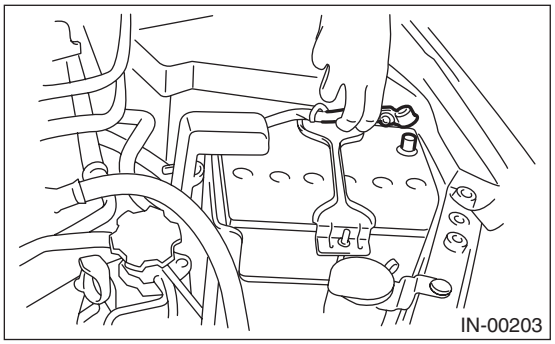


11.AIRBAG HARNESS

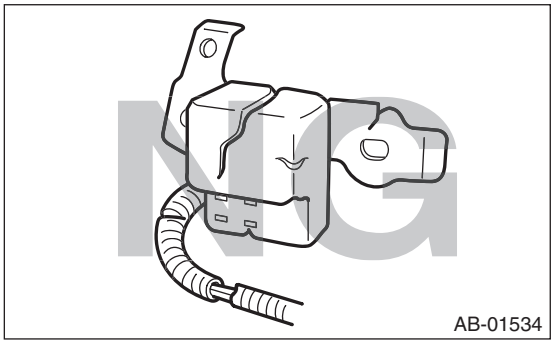


B: CAUTION

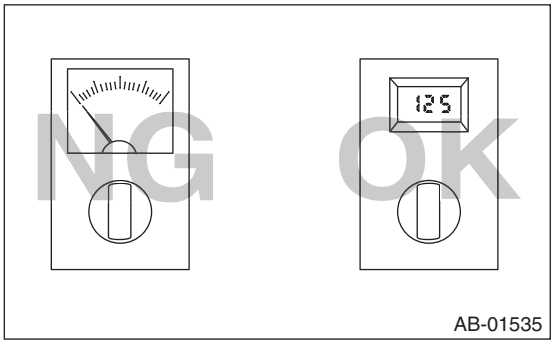
• When servicing a vehicle, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait for 20 seconds or more before starting work.
• The airbag system is fitted with a backup power supply. After disconnecting the battery ground cable, the airbag may deploy if you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



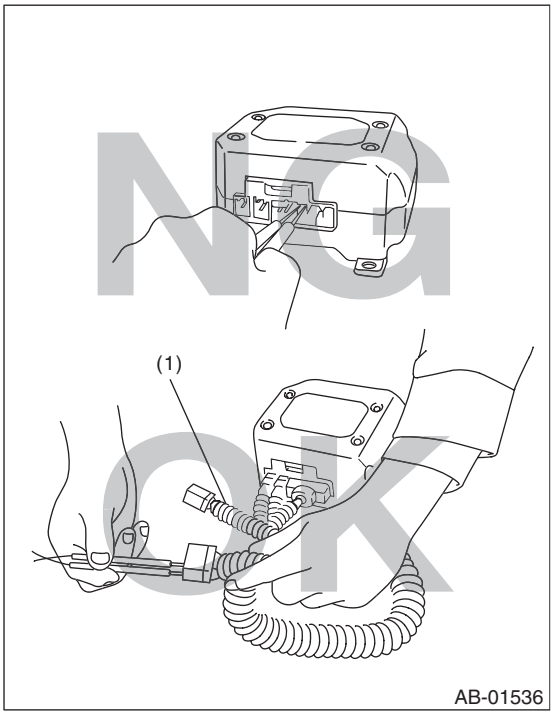
• If the airbag warning light illuminates, check or repair the vehicle immediately to prevent it from airbag system malfunction.
• If any of the airbag sensors, airbag module, airbag control module, pretensioner, harness or satellite safing sensor cover is deformed or damaged, replace with new parts.



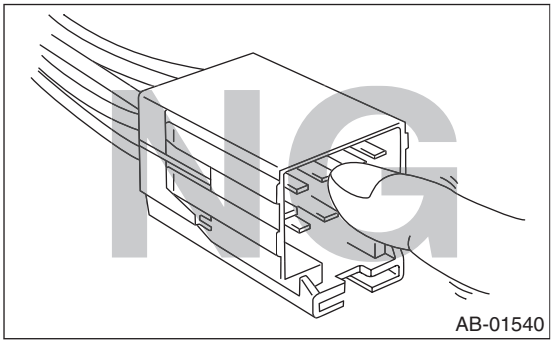
• When checking the airbag system, be sure to use a digital circuit tester. Use of an analog circuit tester may cause the airbag to activate erroneously due to a minimal current inside tester.



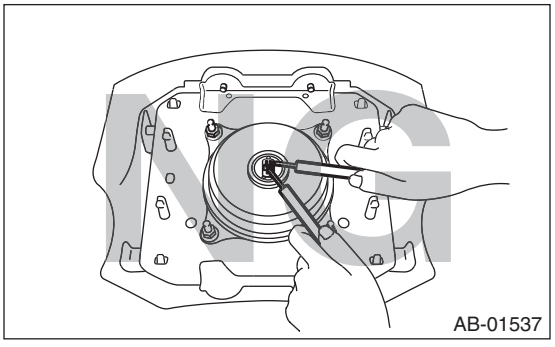
• When checking, use a test harness (1). Damage to connector terminal cause malfunction. Do not directly apply the tester probe to connector terminal of airbag.



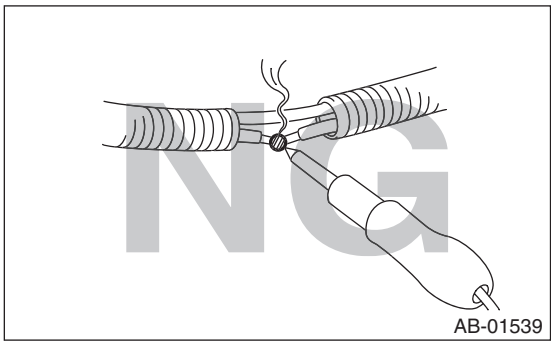
• Do not allow water or oil to come in contact with the connector terminals. Also, do not touch the connector terminals.



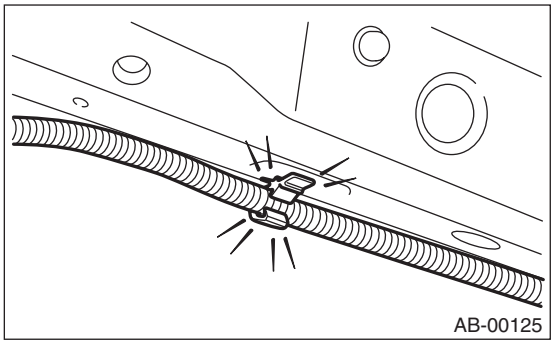
• Do not check continuity of the airbag modules for driver's side, passenger's side and curtain, or the pretensioner.



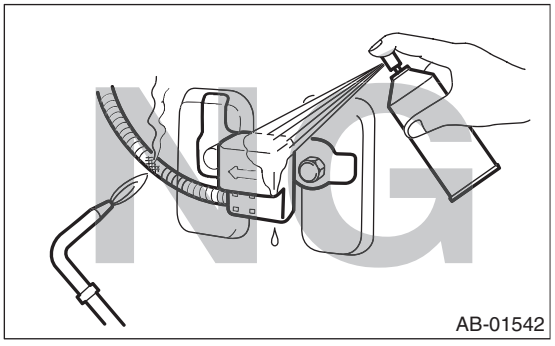
• If damage, open circuit or rust is found on airbag system wiring harness, do not use a soldering equipment to repair. Replace the faulty harness with a new genuine part.



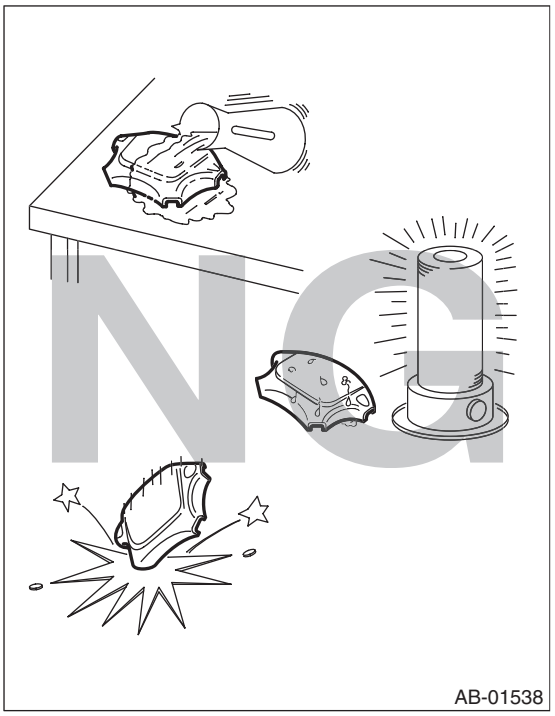
• Install the wiring harness securely with the specified clips to avoid interference or tangled with other parts.



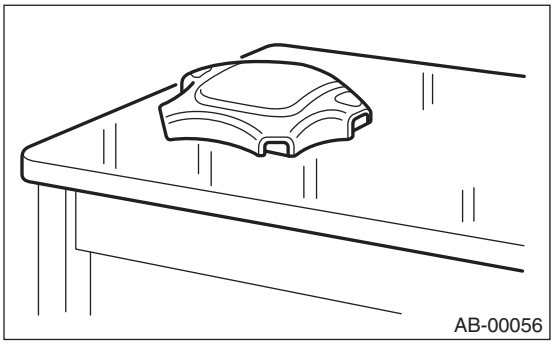
• When painting or performing sheet metal work on the front part of the vehicle, including the front wheel apron, front fender and front side frame, remove the front sub sensors and wiring harness of airbag system.
• When painting or performing sheet metal work on the side of the vehicle or rear floor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



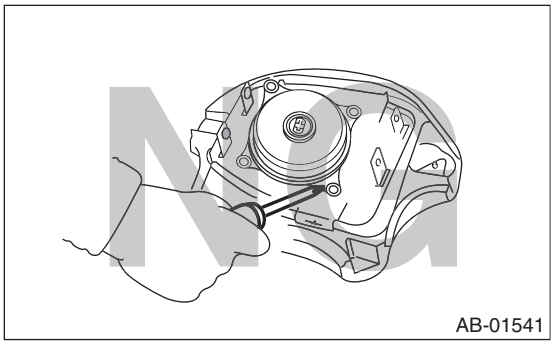
• Do not use the airbag or pretensioner parts from other vehicles. Always replace the defective parts with new parts.
• Never reuse a deployed airbag module and pretensioner.
• Do not discard the uninflated airbag or pretensioner.
• When airbag control module, front sub sensor, side airbag sensor, curtain airbag sensor and satellite safing sensor are removed, do not reuse the bolts and nuts of them. Always use new bolts and nuts for them.
• Do not drop each airbag module, airbag control module and each sensor, or store these parts under high temperature of 85°C (185°F) or more, or let water, oil or grease get on them; the internal parts may be damaged or the reliability may be greatly lowered.



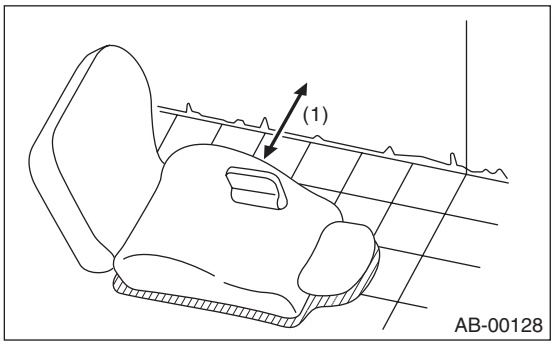
• After removal of each parts for airbag system, keep them with the pad facing upward on a dry, clean and flat surface without heat, light sources, moisture and dust.



• Do not disassemble driver's airbag module, passenger's airbag module, side or curtain airbag modules, or pretensioner.



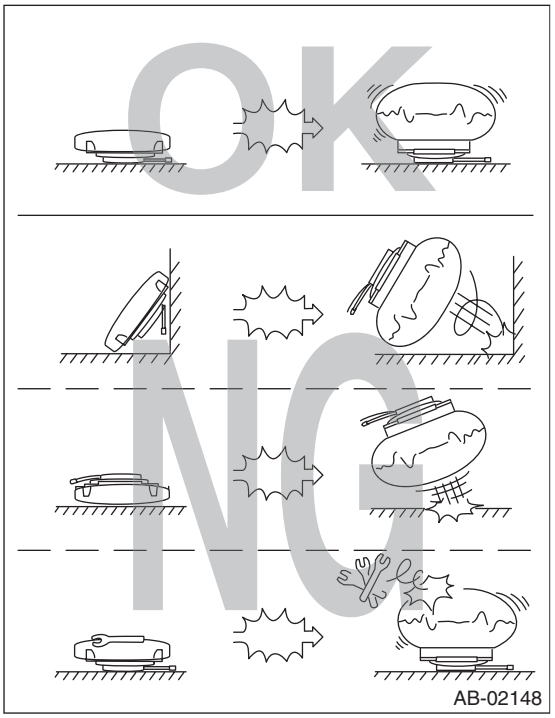
• When performing attachment of the steering wheel and steering roll connector, make sure to perform adjustment of the steering roll connector.
• The removed front seat with airbag module must be kept at least 200 mm (8 in) away from walls and other objects.



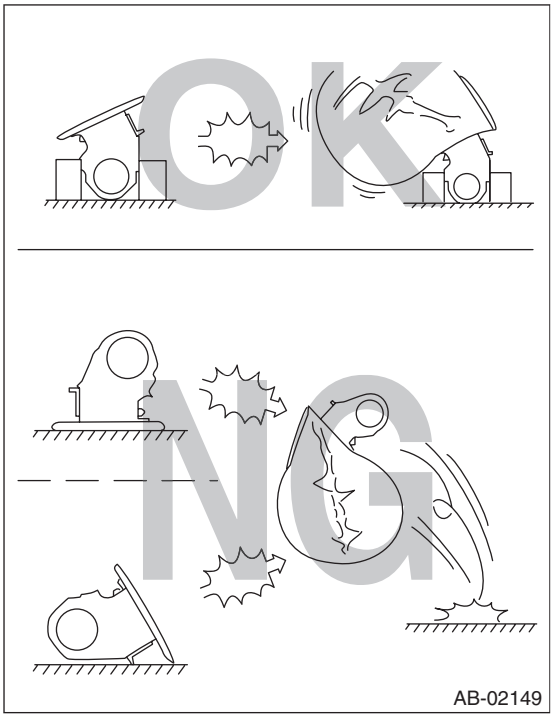
(1) 200 mm (8 in) or more

• When storing a removed airbag module, do not place with its pad side facing down. Do not place any objects on the airbag module. Do not pile up the airbag module. If the airbag inflates for some reason when an airbag module pad is touching other objects, it may cause serious accident.

• Driver's airbag module



• Passenger's airbag module and side airbag module



C: PREPARATION TOOL

1. GENERAL TOOL

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

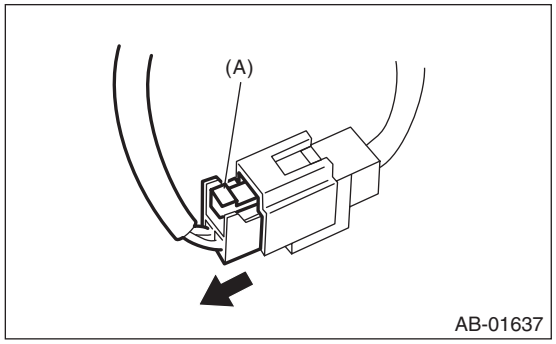
2. Airbag Connector

A: PROCEDURE

1. POWER SUPPLY

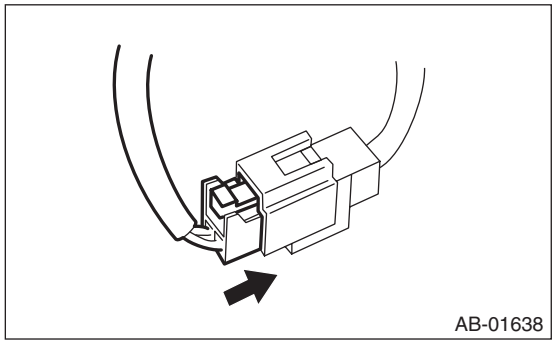
1) How to disconnect:

CAUTION:
When pulling the slide lock or disconnecting connector, be sure to hold the connector, not the harness.
Press the lock (A), and then disconnect the connector.



2) How to connect:

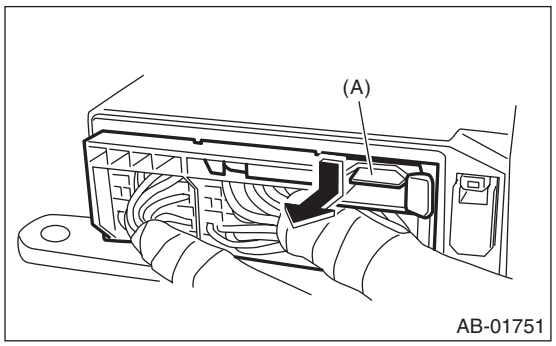
CAUTION:
Be sure to insert the connector in until it is locked. Then pull it gently to make sure that it is locked.
Holding the connector, push it in securely until a clicking sound is heard.



2. AIRBAG CONTROL MODULE

1) How to disconnect:

CAUTION:
When disconnecting connector, be sure to hold the connector, not the harness.
Press the lock lever plate (A) and pull out the lock lever.



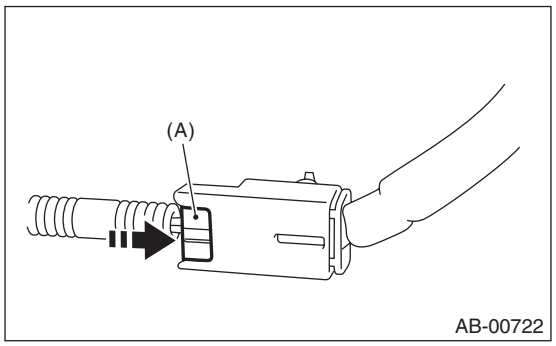
2) How to connect:

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

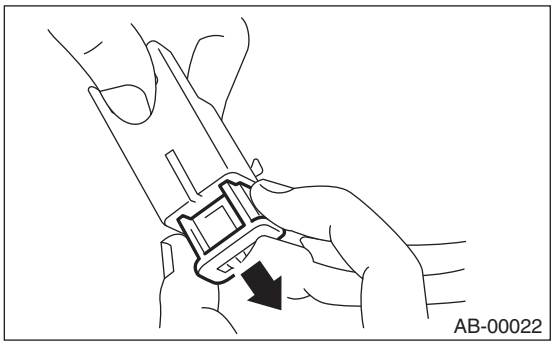
3. DRIVER'S AIRBAG (BETWEEN AIRBAG MAIN HARNESS AND ROLL CONNECTOR) AND PASSENGER'S AIRBAG

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

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

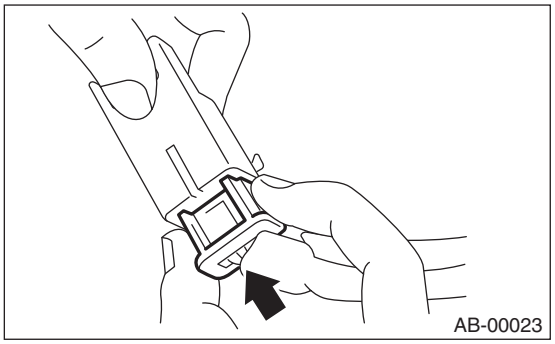


(2) With the slide lock pushed, disconnect the connector.



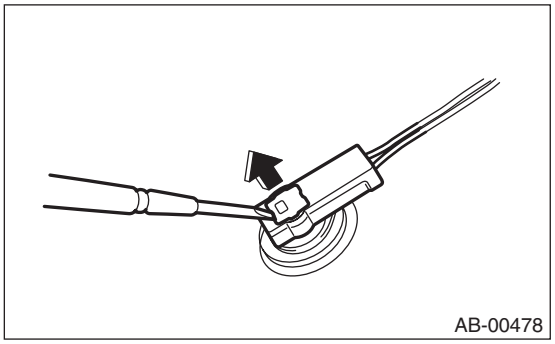
2) How to connect:

CAUTION:
Be sure to insert the connector in until it is locked. Then pull it gently to make sure that it is locked.
Holding the connector, push it in securely until a clicking sound is heard.

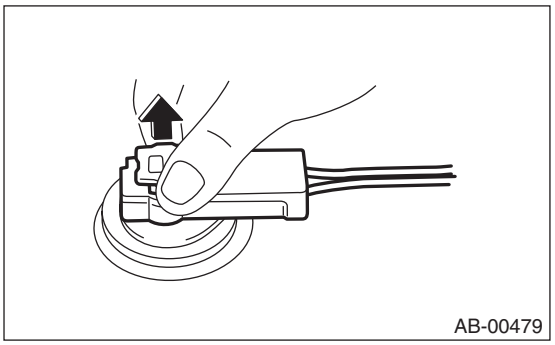


4. DRIVER'S AIRBAG MODULE, CURTAIN AIRBAG MODULE AND PRETENSIONER

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

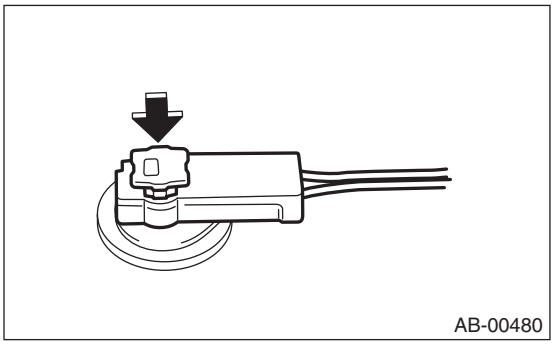


(2) Pull the connector to disconnect from the driver's airbag module assembly or the retractor assembly.



2) How to connect:

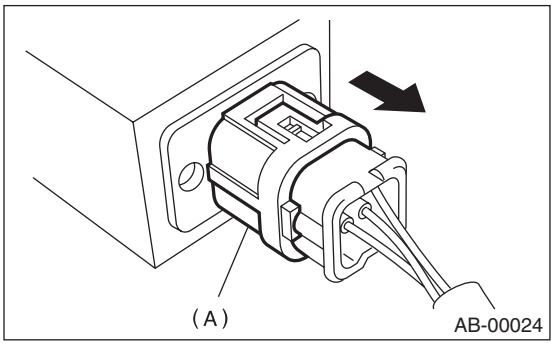
CAUTION:
• Be sure to insert the connector in until it is locked.
• Press in the push lock securely. Then pull it gently to make sure that it is locked.
Connect the connector in the reverse order of disconnecting. At this time, be sure to insert until a clicking sound is heard.



5. SIDE AIRBAG SENSOR, CURTAIN AIRBAG SENSOR AND SATELLITE SAFING SENSOR

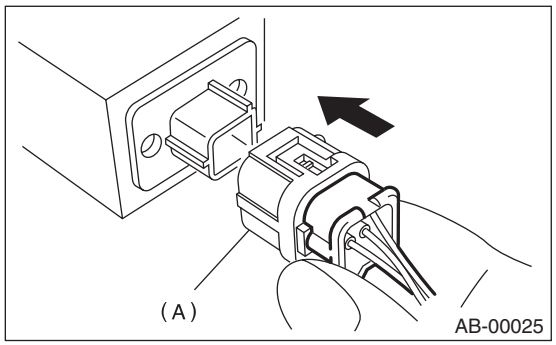
1) How to disconnect:

CAUTION:
When pulling the slide lock or disconnecting connector, be sure to hold the connector, not the harness.
Holding outer part (A), pull it in the direction of arrow.



2) How to connect:

CAUTION:
• Outer side (A) moves back, and so do not touch the outer part.
• Be sure to insert the connector in until it is locked. Then pull it gently to make sure that it is locked.
Holding the connector, push it in securely until a clicking sound is heard.

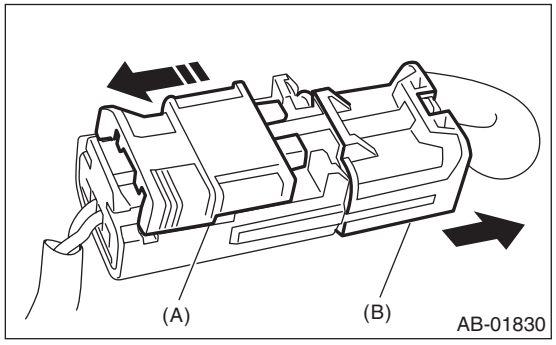


6. SIDE AIRBAG MODULE

1) How to disconnect:

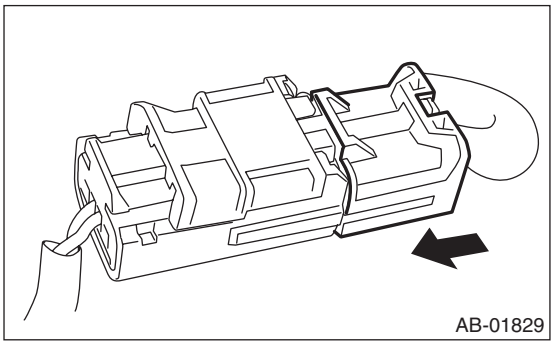
CAUTION:
When pulling the slide lock or disconnecting connector, be sure to hold the connector, not the harness.

(1) Move the slide lock (A) in the direction of arrow and hold it.
(2) While holding the slide lock (A), pull the connector (B) in the direction of arrow.



2) How to connect:

CAUTION:
Be sure to insert the connector in until it is locked. Then pull it gently to make sure that it is locked.
Holding the connector, push it in securely until a clicking sound is heard.

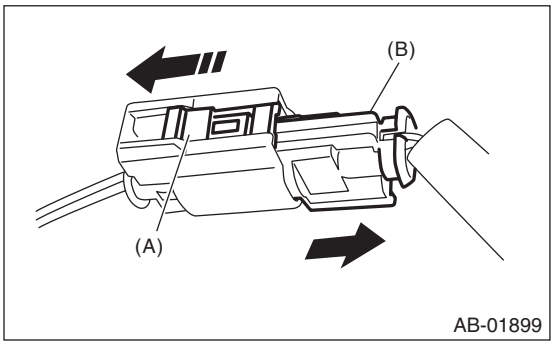


7. BUCKLE SWITCH RH

1) How to disconnect:

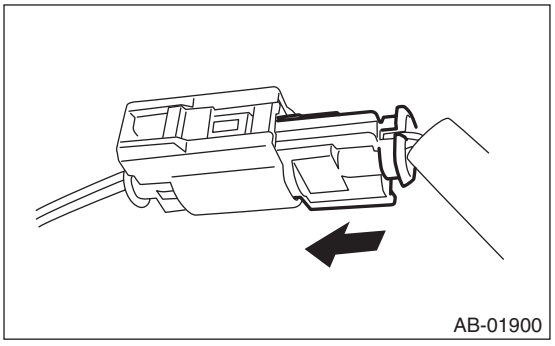
CAUTION:
When pulling the slide lock or disconnecting connector, be sure to hold the connector, not the harness.

(1) Move the slide lock (A) in the direction of arrow and hold it.
(2) While holding the slide lock (A), pull the connector (B) in the direction of arrow.



2) How to connect:

CAUTION:
Be sure to insert the connector in until it is locked. Then pull it gently to make sure that it is locked.
Holding the connector, push it in securely until a clicking sound is heard.

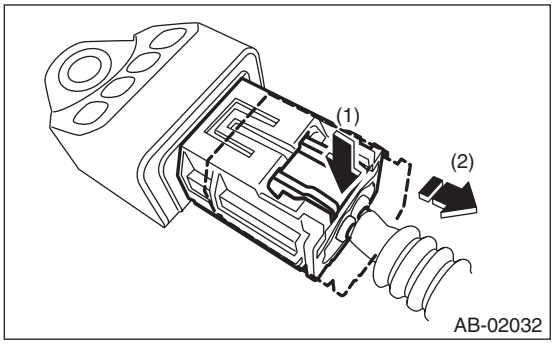


8. FRONT SUB SENSOR

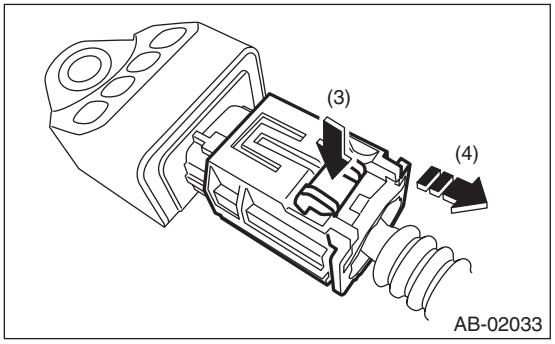
1) How to disconnect:

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

(1) Push the lock arm.
(2) Holding outer part, pull it one step in the direction of arrow.



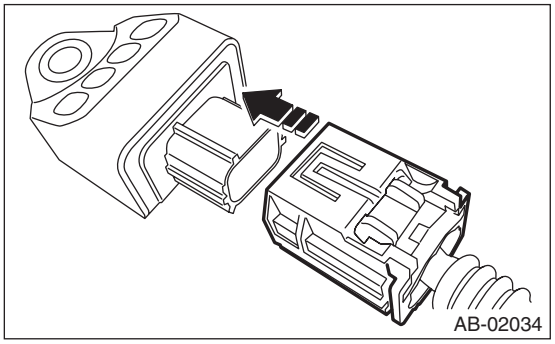
(3) Push the lock arm again.
(4) Holding outer part, pull it in the direction of arrow to disconnect the connector.



2) How to connect:

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

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



9. OCCUPANT DETECTION SYSTEM (BETWEEN AIRBAG REAR HARNESS AND SEAT HARNESS) AND BELT TENSION SENSOR

Refer to the occupant detection system section. <Ref. to OD(diag)-11, OCCUPANT DETECTION SYSTEM (BETWEEN AIRBAG REAR HARNESS AND SEAT HARNESS) AND BELT TENSION SENSOR, PROCEDURE, Airbag Connector.>

3. Inspection Locations After a Collision

A: REPLACEMENT

Replace the following parts when the airbag is deployed.

1. FRONT COLLISION

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

2. SIDE COLLISION

1) Airbag control module
2) Satellite safing sensor
3) Satellite safing sensor cover
4) Side airbag module (operating side seat backrest)
5) Side airbag sensor (operating side)
6) Curtain airbag module (operating side)
7) Curtain airbag sensor (operating side)

3. INSPECTION OF OTHER PARTS

Check for the following parts, and replace the damaged parts with new parts.
1) Steering wheel and steering shaft
Check the steering shaft for mounting conditions and deflection of front and rear, upward and downward directions, and deflection of front and rear direction with tilt lever released. (After a collision, absorbing part of steering shaft may have been operated.)
2) Check the direct type connector of driver's airbag module, curtain airbag module, pretensioner, etc. for damage, and also check each harness for pinch and connector damage. Replace the main harness as a unit if damage is found.
3) Check the seat cushion, backrest, seat rail and headrest for installing condition and play.
4) For the passenger's seat, replace the seat cushion pad frame assembly with a new part if the seat cushion frame assembly is deformed or cracked.
5) If there are tears or loosening in the passenger side seat cushion cover, it may interfere with the proper operation of the occupant detection system. Replace with a new cushion cover.
6) Be sure to perform the system calibration for the occupant detection system after removing or replacing the passenger seat cushion cover. If system adjustment is not performed, the occupant detection system may not function properly. <Ref. to OD(diag)-13, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>
7) Use the Subaru Select Monitor to check whether the passenger's seat belt buckle switch is operating normally.

B: INSPECTION

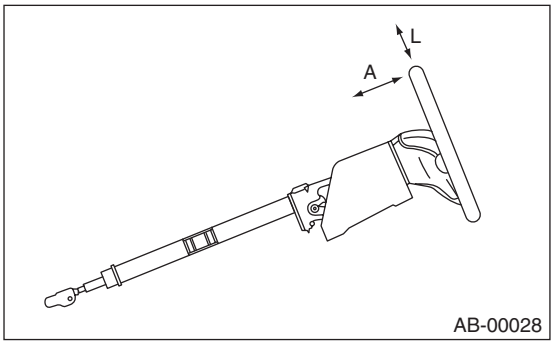
If the vehicle is involved in a collision, even if it is a slight collision, be sure to check the following systems.

1. DRIVER'S AIRBAG MODULE

1) Check for the following, and replace the damaged parts with new parts.
- Airbag module is cracked or deformed.
- Harness and/or connector is cracked, deformed or open.
- Harness wire is exposed.
- The module surface is fouled with grease, oil, water or cleaning solvent.

2) When installing a new driver's airbag module, check for the following, and replace the damaged parts with new parts.
- The steering wheel is in the way, making it difficult to install the airbag module.
- The clearance between the driver's airbag module and steering wheel is not constant.
- When steering wheel deformation in axial and vertical directions exceed limits.

Standard:
Axial deflection A (deflection of steering wheel)
Less than 6 mm (0.24 in)
Vertical deflection L (runout of steering wheel)
Less than 17 mm (0.68 in)



2. PASSENGER'S AIRBAG MODULE

Check for the following, and replace the damaged parts with new parts.
- Airbag module is cracked or deformed.
- Harness and/or connector is cracked, deformed or open.
- Harness wire is exposed.
- Mounting bracket is cracked or deformed.

3. SIDE AIRBAG MODULE

Check for the following, and replace the damaged parts with new parts.
- Front seat, airbag module and mounting bracket are damaged or deformed.
- Harness and/or connector is cracked, deformed or open.
- Harness wire is exposed.

4. CURTAIN AIRBAG MODULE

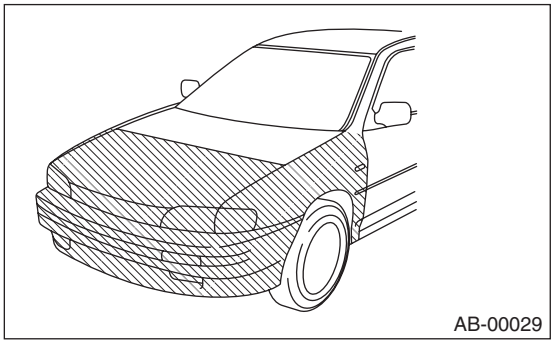
Check for the following, and replace the damaged parts with new parts.
- Airbag cover is scratched or torn.
- Harness and/or connector is cracked, deformed or open.
- Harness wire is exposed.
- Mounting bracket and securing clip are cracked or deformed.

5. AIRBAG CONTROL MODULE

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

6. FRONT SUB SENSOR

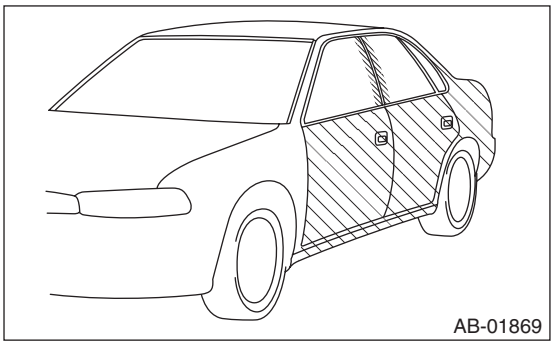
If the section of vehicle as shown in the figure is damaged, check the following items and replace the damaged parts with new parts.



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

7. SATELLITE SAFING SENSOR, SIDE AIRBAG SENSOR AND CURTAIN 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.



- Satellite safing sensor, side airbag sensor and curtain airbag sensor are cracked or deformed.
- Mounting bracket is cracked or deformed.
- Satellite safing sensor is cracked or deformed.
- Connector is scratched, cracked or deformed.
- Side airbag or curtain airbag is deployed. (operating side)

8. ROLL CONNECTOR

Check for the following, and replace the damaged parts such as cracks, deformation, etc. with new parts.
- Combination switch
- Steering roll connector

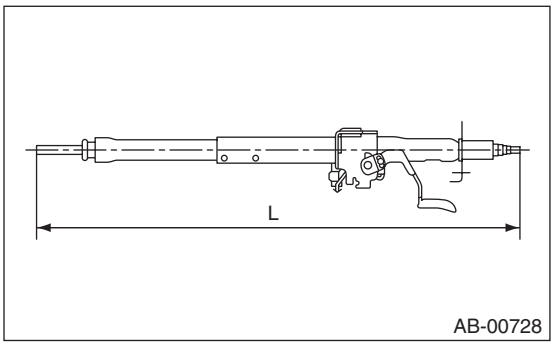
9. STEERING SHAFT

Measure the overall length of steering column.
If the length is not within the specification, the steering column may be damaged. Replace it with a new part.

Standard: Overall length L

Tilt column
$833.6^{+1.3}_{-0.3}$ mm ($32.82^{+0.051}_{-0.012}$ in)

Tilt and telescopic column (measure while minimized)
$818.6^{+1.5}_{-1.5}$ mm ($32.23^{+0.059}_{-0.059}$ in)



10.PASSENGER'S SEAT

1) Check for the following, and replace the damaged parts with new parts.
• Seat belt buckle body or bracket is scratched, cracked or deformed.
• Backrest frame for crack or deformation
• Headrest for deformation or play
• If the seat cushion cover and seat backrest cover is scratched or coming loose, replace with a new cover and readjust the system. <Ref. to OD(diag)-13, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>

CAUTION:
If any of the following applies, replace the seat cushion pad and frame assembly. Do not disassemble.
• Cracks or deformation found in the seat cushion frame or seat cushion pad.
• Scratches, cracks, or deformation found on the passenger detection system pressure sensor hoses or passenger detection control module, or attachment brackets of the control module.
• Harness and/or connector is cracked, deformed or open. Harness wire is exposed.
2) After checking the installing condition of passenger's seat, perform the system calibration of occupant detection system. <Ref. to OD(diag)-13, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>

11.BELT TENSION SENSOR

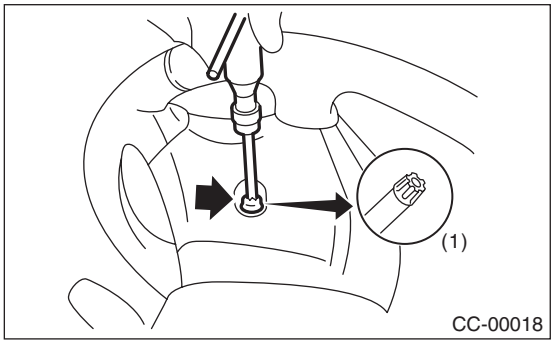
Check for the following, and replace the damaged parts with new parts.
• Belt tension sensor is scratched, cracked, or deformed.
• Harness and/or connector is cracked, deformed or open. Harness wire is exposed.

4. Driver's Airbag Module

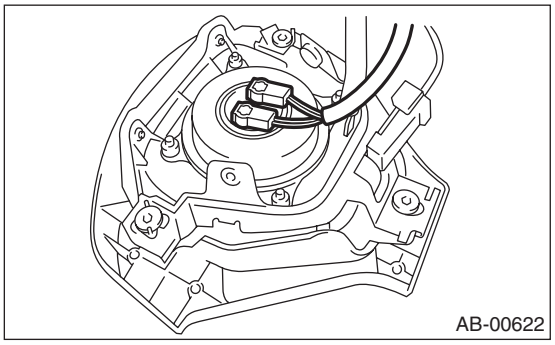
A: REMOVAL

CAUTION:
Refer to "CAUTION" of "General Description" before handling the airbag module. <Ref. to AB-5, CAUTION, General Description.>

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



5) Disconnect the horn harness.
6) Disconnect the airbag connector on the back of airbag module, and then remove the airbag module. <Ref. to AB-8, PROCEDURE, Airbag Connector.>



7) Refer to "CAUTION" for handling of a removed airbag module. <Ref. to AB-5, CAUTION, General Description.>

B: INSTALLATION

CAUTION:
• Refer to "CAUTION" of "General Description" before handling the airbag module. <Ref. to AB-5, CAUTION, General Description.>
• Do not allow harness and connectors to interfere or get tangled up with other parts.

Install in the reverse order of removal.

Tightening torque:
10 N·m (1.02 kgf-m, 7.4 ft-lb)

C: INSPECTION

CAUTION:
• Refer to "CAUTION" of "General Description" before handling the airbag module. <Ref. to AB-5, CAUTION, General Description.>
• Do not allow harness and connectors to interfere or get tangled up with other parts.

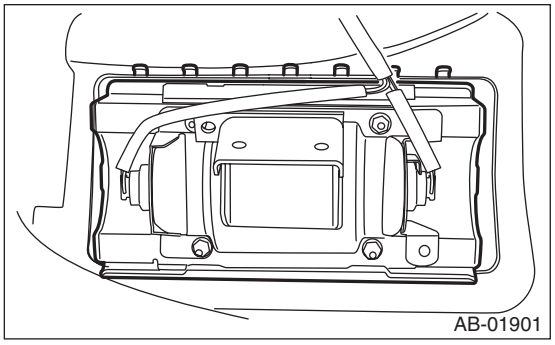
Check for the following, and replace the damaged parts with new parts. <Ref. to AB-12, DRIVER'S AIRBAG MODULE, INSPECTION, Inspection Locations After a Collision.>

- Airbag module
- Harness
- Connector
- Mounting bracket

5. Passenger's Airbag Module

A: REMOVAL

CAUTION:
Refer to "CAUTION" of "General Description" before handling the airbag module. <Ref. to AB-5, 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 instrument panel. <Ref. to EI-52, REMOVAL, Instrument Panel Assembly.>
4) Remove the claw, and remove the passenger's airbag module.



5) Refer to "CAUTION" for handling of a removed airbag module. <Ref. to AB-5, 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:
7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

C: INSPECTION

CAUTION:
Refer to "CAUTION" of "General Description" before handling the airbag module. <Ref. to AB-5, CAUTION, General Description.>
Check for the following, and replace the damaged parts with new parts. <Ref. to AB-13, PASSENGER'S AIRBAG MODULE, INSPECTION, Inspection Locations After a Collision.>
- Airbag module
- Harness
- Connector
- Mounting bracket

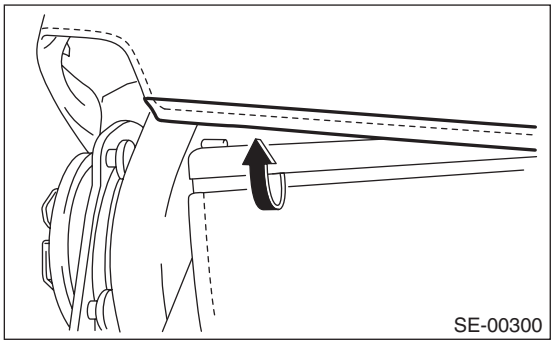
6. Side Airbag Module

A: REMOVAL

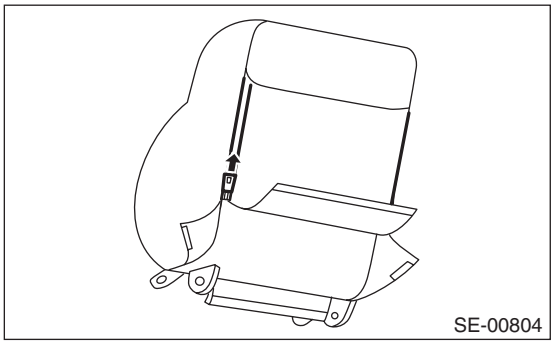
CAUTION:
Refer to "CAUTION" of "General Description" before handling the airbag module. <Ref. to AB-5, CAUTION, General Description.>

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 from vehicle. <Ref. to SE-6, REMOVAL, Front Seat.>
4) Remove the side airbag harness from the harness holder on the backside of seat cushion assembly.
5) Remove the side airbag harness from backrest frame assembly.
6) Remove the plastic fastener at the bottom-back side of backrest.

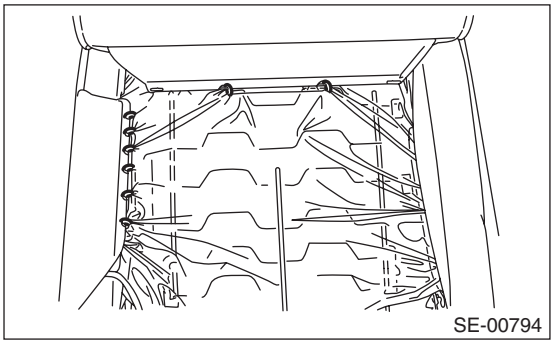

SE-00300

7) Open the fastener at the rear side of backrest.

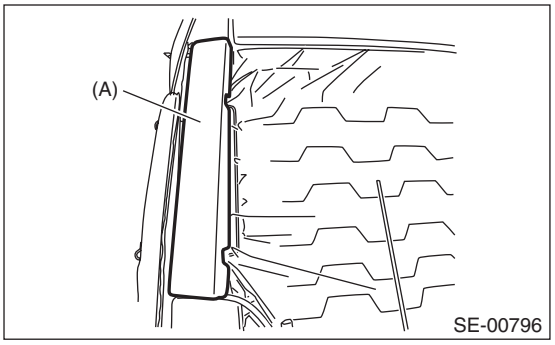

SE-00804

8) Remove the hog rings of backrest cover.

CAUTION:
When removing the hog rings, be careful not to tear the vinyl sheet within the seat.
If the sheet has torn, replace it with a new sheet.


SE-00794

9) Remove the pad (A), and remove the mounting nut from the side airbag module.



SE-00796

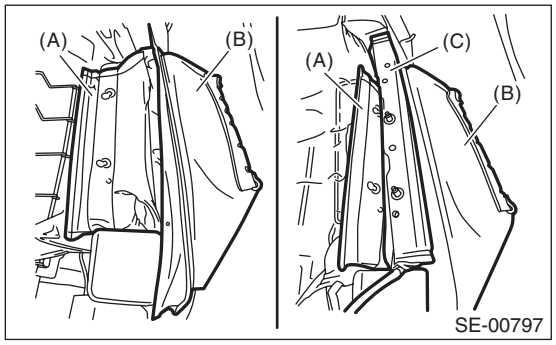
10) Remove the side airbag harness from backrest frame assembly.

B: INSTALLATION

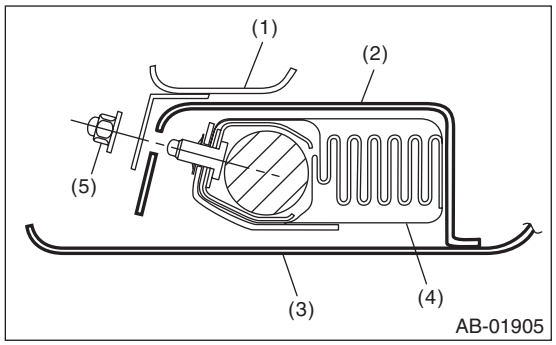
CAUTION:
- **Refer to "CAUTION" of "General Description" before handling the airbag module. <Ref. to AB-5, CAUTION, General Description.>**
- **Be sure to perform the system calibration for occupant detection system after passenger's seat installation. <Ref. to OD(diag)-13, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>**

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

CAUTION:
When installing the side airbag module assembly, be sure to put the side airbag module between backrest cover and airbag guide cloth.



(A) Airbag guide cloth
(B) Backrest cover
(C) Side airbag module ASSY



(1) Backrest frame ASSY
(2) Airbag guide cloth
(3) Backrest cover
(4) Side airbag module ASSY
(5) Hexagon cap nut

If 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.
• Always use new 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.

Tightening torque:
6.0 N·m (0.61 kgf-m, 4.4 ft-lb)
3) Install the side airbag harness to backrest frame assembly.
4) Install the backrest cover.
5) Install the side airbag harness to the clip of the slide rail IN.
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

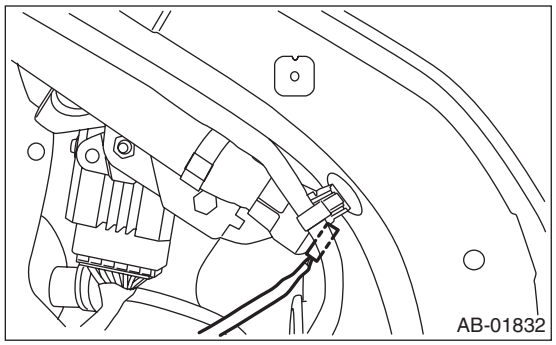
CAUTION:
Refer to "CAUTION" of "General Description" before handling the airbag module. <Ref. to AB-5, CAUTION, General Description.>
Check for the following, and replace damaged parts with new parts. <Ref. to AB-13, SIDE AIRBAG MODULE, INSPECTION, Inspection Locations After a Collision.>
1) With side collision (when side airbag is deployed)
• Side airbag module assembly
• Satellite safing sensor
• Side airbag sensor
• Curtain airbag sensor
• Backrest pad assembly
• Backrest frame assembly
• Backrest cover assembly
2) When damage is found by visual check
• Headrest assembly
• Headrest lock bushing
• Outer slide rail
• Inner slide rail
• Seat hinge cover
• Seat lifter lever
• Reclining lever
• Side airbag harness and connector on body side
• Satellite safing sensor cover
3) With side collision (when side airbag is not deployed)
Check the seat, airbag module, sensor 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. Curtain Airbag Module

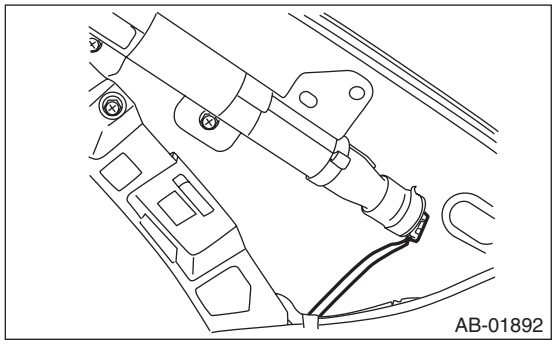
A: REMOVAL

CAUTION:
Refer to "CAUTION" of "General Description" before handling the airbag module. <Ref. to AB-5, CAUTION, General Description.>

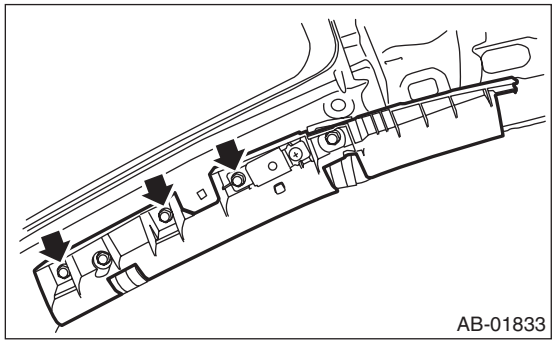
1) Turn the ignition switch to OFF.
2) Disconnect the ground cable from battery and wait for at least 20 seconds before starting work.
3) Remove the rear quarter trim. <Ref. to EI-58, REMOVAL, Rear Quarter Trim.>
4) Disconnect the curtain airbag module connector.
• 5 DOOR MODEL


AB-01832

• 4 DOOR MODEL


AB-01892

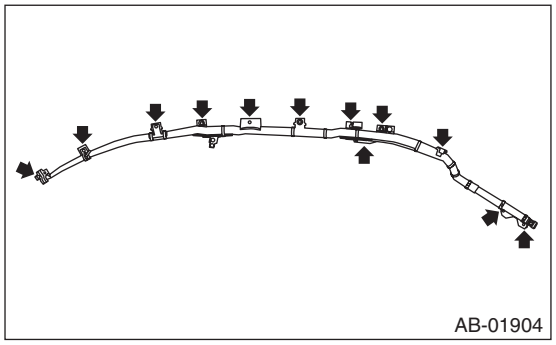
5) Remove the roof trim. <Ref. to EI-64, REMOVAL, Roof Trim.>
6) Remove the airbag guide from the front pillar.


AB-01833

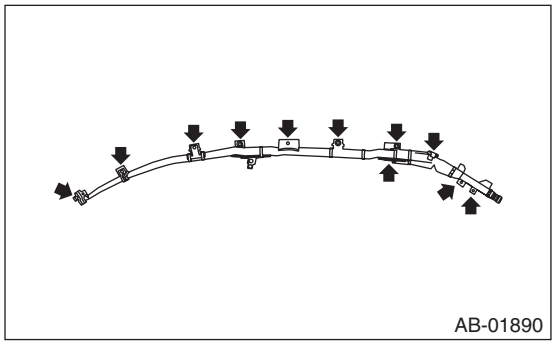
7) Remove the bolt, and remove the curtain airbag module.

CAUTION:
• Be careful not to damage the curtain airbag module during removal.
• Never open the curtain airbag module before deploying it. Never reuse the deployed curtain airbag module.

• 5 DOOR MODEL


AB-01904

• 4 DOOR MODEL


AB-01890

B: INSTALLATION

CAUTION:
• Refer to "CAUTION" of "General Description" before handling the airbag module. <Ref. to AB-5, CAUTION, General Description.>
• When installing the curtain airbag module, install a specified part at specified place.
• Be careful not to damage the curtain airbag module during removal.
• Never open the curtain airbag module before deploying it. Never reuse the deployed curtain airbag module.
• Make sure that there are no foreign matter on airbag module.

Install in the reverse order of removal.

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

C: INSPECTION

CAUTION:
Refer to "CAUTION" of "General Description" before handling the airbag module. <Ref. to AB-5, CAUTION, General Description.>

Check for the following, and replace the damaged parts with new parts. <Ref. to AB-13, CURTAIN AIRBAG MODULE, INSPECTION, Inspection Locations After a Collision.>

1) With side collision (when curtain airbag is deployed)
- Curtain airbag module assembly
- Satellite safing sensor
- Curtain airbag sensor
- Roof trim
- Front pillar upper trim
- Center pillar upper trim
- Rear quarter pillar trim
- Airbag guide

2) When damage is found by visual check
- Assist grip
- Assist grip bracket
- Curtain airbag harness and connector on body side.
- Satellite safing sensor bracket
- Satellite safing sensor cover

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

Check the roof trim, pillar trim, airbag module and sensor 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)

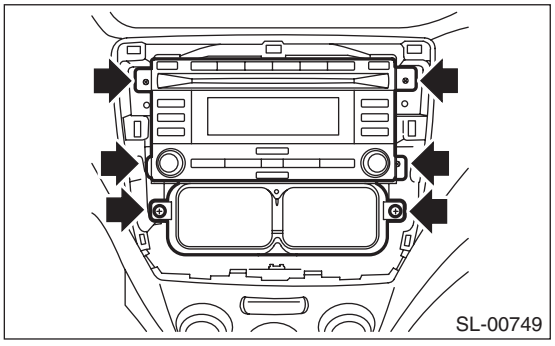
Replace the corresponding part with a new part.

8. Airbag Control Module

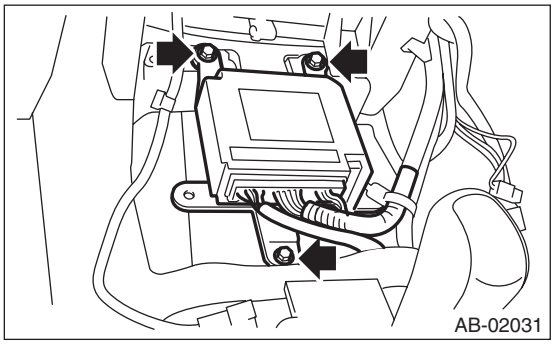
A: REMOVAL

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 box. <Ref. to EI-48, REMOVAL, Console Box.>
4) Remove the center panel. <Ref. to EI-49, CENTER PANEL, REMOVAL, Center Console.>
5) Remove the console front panel. <Ref. to EI-49, CONSOLE FRONT PANEL, REMOVAL, Center Console.>
6) Remove the audio.
7) Remove the heater duct.


SL-00749

8) Disconnect the connector from airbag control module.
9) Remove the three bolts and remove airbag control module.


AB-02031

B: INSTALLATION

CAUTION:
• Do not reuse the bolt and nut.
Always use new bolts and nuts for them.
• Before installing the audio, make sure that the heater duct is securely connected.
Install in the reverse order of removal.

Tightening torque:
25 N·m (2.55 kgf-m, 18.4 ft-lb)

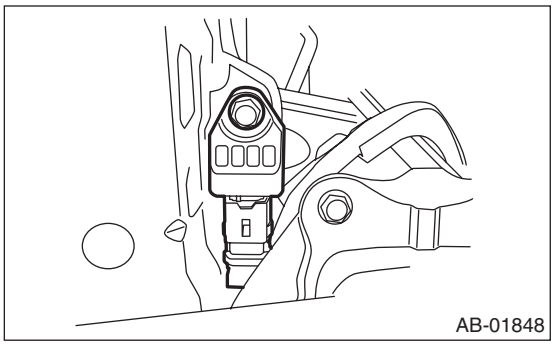
C: INSPECTION

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.
• Curtain airbag is deployed.

9. Front Sub Sensor

A: REMOVAL

1) Turn the ignition switch to OFF.
2) Disconnect the ground cable from battery and wait for at least 20 seconds before starting work.
3) Remove the front bumper face. <Ref. to EI-29, FRONT BUMPER FACE, REMOVAL, Front Bumper.>
4) Remove the headlight assembly. <Ref. to LI-14, REMOVAL, Headlight Assembly.>
5) Remove the bolt, and then detach the front sub sensor.



6) Disconnect the connector from front sub sensor.

B: INSTALLATION

CAUTION:
• Do not reuse the bolt and nut.
Always use new bolts and nuts for them.
• When installing the sensor, insert the set pin on the backside of the sensor into the hole on the body side securely.
• After the installation of headlight assembly, be sure to perform headlight beam adjustment.
Install in the reverse order of removal.

Tightening torque:
13 N·m (1.33 kgf-m, 9.6 ft-lb)

C: INSPECTION

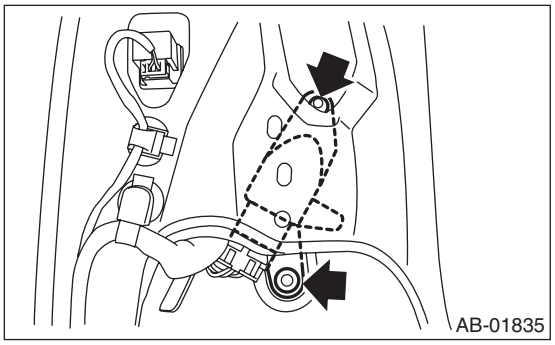
Check for the following, and replace the damaged parts with new parts.
- Front sub sensor or connector is damaged.
- Airbag is deployed.

10.Side Airbag Sensor

A: REMOVAL

1) Turn the ignition switch to OFF.
2) Disconnect the ground cable from battery and wait for at least 20 seconds before starting work.
3) Remove the front outer seat belt. <Ref. to SB-17, OUTER SEAT BELT ASSEMBLY, REMOVAL, Front Seat Belt.>
4) Remove the nuts and then remove the side airbag sensor.

CAUTION:
Do not separate the side airbag sensor and bracket. Doing so will cause the airbag system malfunction. If the sensor is removed from the bracket, be sure to replace with a new part.



5) Disconnect the airbag connector.

B: INSTALLATION

CAUTION:
Do not reuse the bolt and nut.
Always use new bolts and nuts for them.
Install in the reverse order of removal.

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

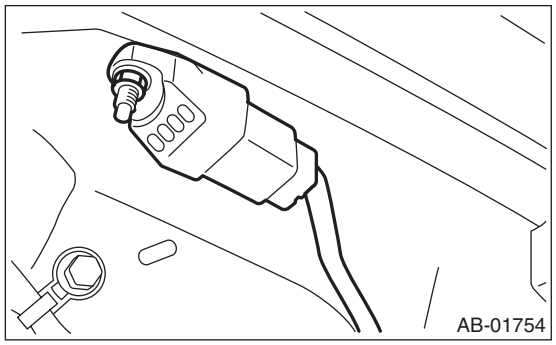
C: INSPECTION

Check for the following, and replace the damaged parts with new parts.
- The bracket or connector of side airbag sensor is damaged.
- Side airbag is deployed.

11.Curtain 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 rear seat. <Ref. to SE-12, REMOVAL, Rear Seat.>
4) Remove the nuts and then remove the curtain airbag sensor.



5) Disconnect the airbag connector.

B: INSTALLATION

CAUTION:
• Do not reuse the bolt and nut.
Always use new bolts and nuts for them.
• When installing the sensor, securely insert the arrest pin on the back side of sensor into the body side hole.
Install in the reverse order of removal.

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

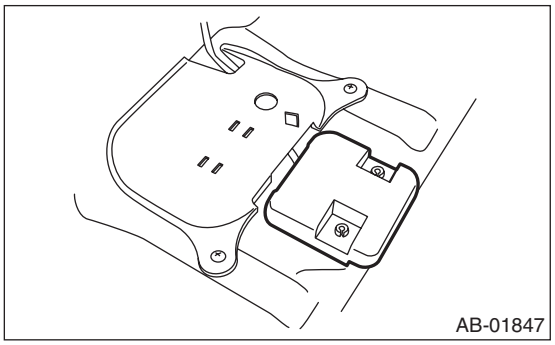
C: INSPECTION

Check for the following, and replace the damaged parts with new parts.
- Curtain airbag sensor or connector is damaged.
- Curtain airbag is deployed.

12.Satellite Safing Sensor

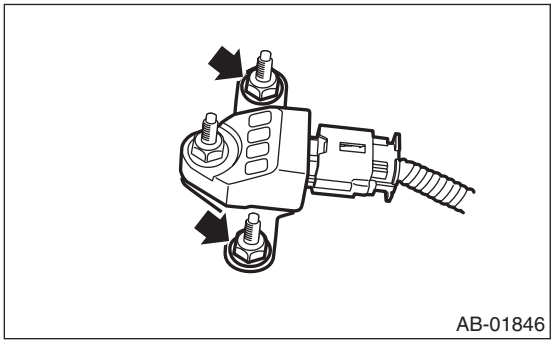
A: REMOVAL

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 rear seat cushion. <Ref. to SE-12, REMOVAL, Rear Seat.>
4) Remove the cover.


AB-01847

5) Remove the nut, and remove the satellite safing sensor.

CAUTION:
Do not separate the satellite safing sensor and bracket. Doing so will cause the airbag system malfunction. If the sensor is removed from the bracket, be sure to replace with a new part.


AB-01846

6) Disconnect the airbag connector.

B: INSTALLATION

CAUTION:
• Do not reuse the bolt and nut.
Always use new bolts and nuts for them.
• When installing the satellite safing sensor cover, push the cover securely until it contacts the floor panel.
• If the satellite safing sensor cover is too loose at its mounting portion to remove easily, replace with a new satellite safing sensor cover.
• After installing the satellite safing sensor cover, make sure that the sensor harness does not get caught.
Install in the reverse order of removal.

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

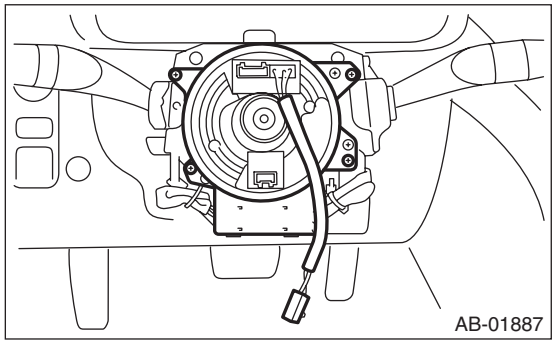
C: INSPECTION

Check for the following, and replace the damaged parts with new parts.
• Mounting bracket or connector of satellite safing sensor is damaged.
• The satellite safing sensor cover is damaged
• Side airbag or curtain airbag is deployed.

13.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-15, Driver's Airbag Module.>
4) Remove the steering wheel. <Ref. to PS-12, REMOVAL, Steering Wheel.>
5) Remove the steering column cover.
6) Remove the screws, and then remove the roll connector.



B: INSTALLATION

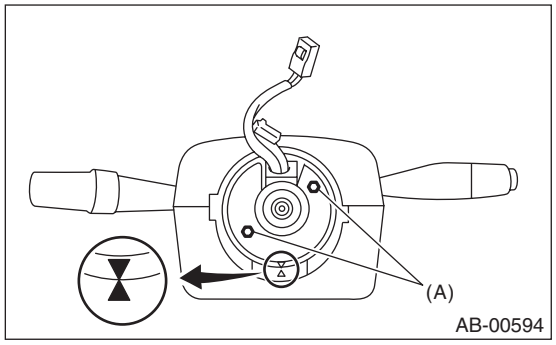
1) Install in the reverse order of removal.
2) Before installing steering wheel, be sure to adjust the direction of roll connector with steering. <Ref. to AB-26, ADJUSTMENT, Roll Connector.>

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 in the counterclockwise direction until "▲" marks are aligned.



AIRBAG SYSTEM (DIAGNOSTICS)

AB(diag)

		Page
1.	Basic Diagnostic Procedure	2
2.	Check List for Interview	3
3.	General Description	4
4.	Electrical Component Location	19
5.	Airbag Connector	21
6.	Airbag Control Module I/O Signal	22
7.	Subaru Select Monitor	24
8.	Read Diagnostic Trouble Code (DTC)	29
9.	Inspection Mode	30
10.	Clear Memory Mode	31
11.	Airbag Warning Light Illumination Pattern	32
12.	Airbag Warning Light Failure	33
13.	List of Diagnostic Trouble Code (DTC)	37
14.	Diagnostic Chart with Trouble Code	43

1. Basic Diagnostic Procedure

A: PROCEDURE

Step		Check	Yes	No
1	**CHECK WARNING LIGHT.** Check whether the airbag warning light in the combination meter is lit.	Does the airbag warning light illuminate?	Go to step **2**.	Perform the diagnosis according to phenomenon of the problem.
2	**READ DTC.** 1) Turn the ignition switch to OFF. 2) Connect the Subaru Select Monitor to data link connector. 3) Turn the ignition switch to ON and run the Subaru Select Monitor. 4) Read the DTC. <Ref. to AB(diag)-29, OPERATION, Read Diagnostic Trouble Code (DTC).> NOTE: If the communication function of the Subaru Select Monitor cannot be executed properly, check the communication circuit. <Ref. to AB(diag)-26, COMMUNICATION FOR INITIALIZING IMPOSSIBLE, INSPECTION, Subaru Select Monitor.> 5) Record all DTCs and freeze frame data.	Is DTC displayed?	Go to step **3**.	Go to "Airbag Warning Light Failure" <Ref. to AB(diag)-33, Airbag Warning Light Failure.>.
3	**PERFORM DIAGNOSIS.** 1) Determine the possible cause from "List of Diagnostic Trouble Code (DTC)" <Ref. to AB(diag)-37, 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)-31, Clear Memory Mode.> 5) Perform the Inspection Mode. <Ref. to AB(diag)-30, Inspection Mode.> 6) Read any other DTCs displayed.	Is DTC 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:		

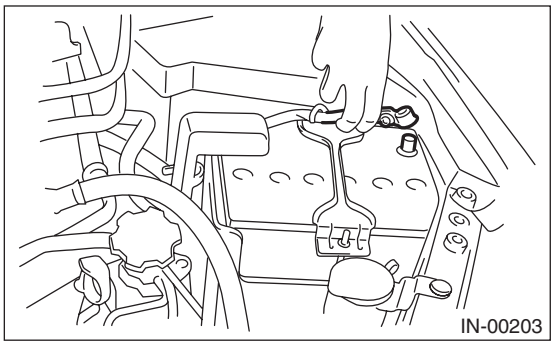
Vehicle Operation	❑ Starting
	❑ Idling
	❑ Driving
	  ❑ Constant speed
	  ❑ Accelerating
	  ❑ Decelerating
	  ❑ Turning
	  ❑ Others:		

Details of Problem			
Airbag Warning Light Operation	❑ Normal (After turning the ignition switch to ON, lit for approximately 6 seconds and goes off.) ❑ Remains ON ❑ Remains OFF		
DTC output	❑ OK code ❑ DTC: (Code:)		

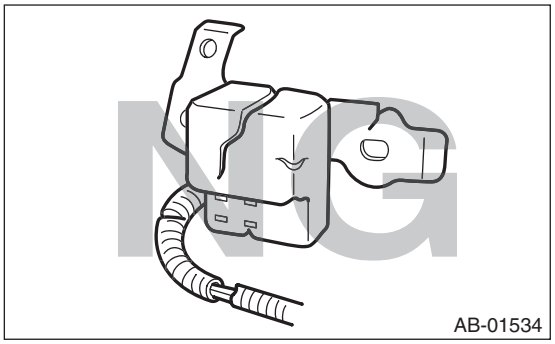
3. General Description

A: CAUTION

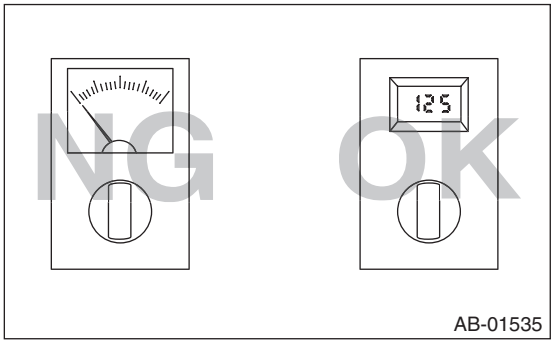
• When servicing a vehicle, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait for 20 seconds or more before starting work.
• The airbag system is fitted with a backup power supply. After disconnecting the battery ground cable, the airbag may deploy if you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



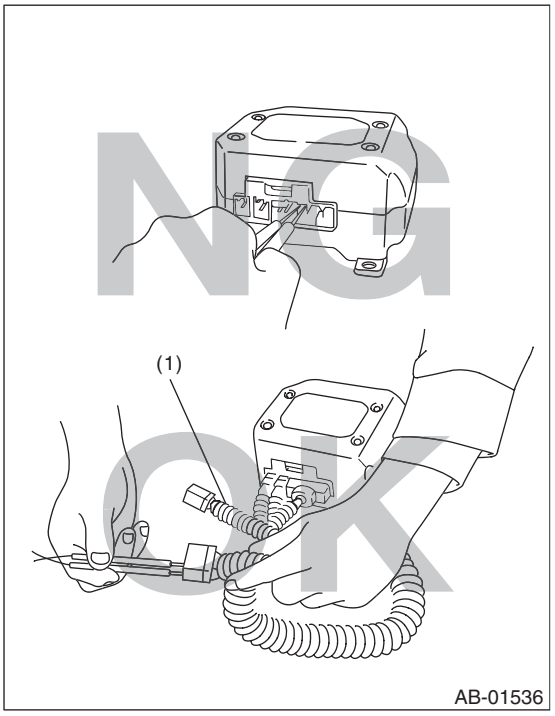
• If sensors, airbag module, airbag control module, pretensioner or harness is deformed or damaged, replace with new parts.



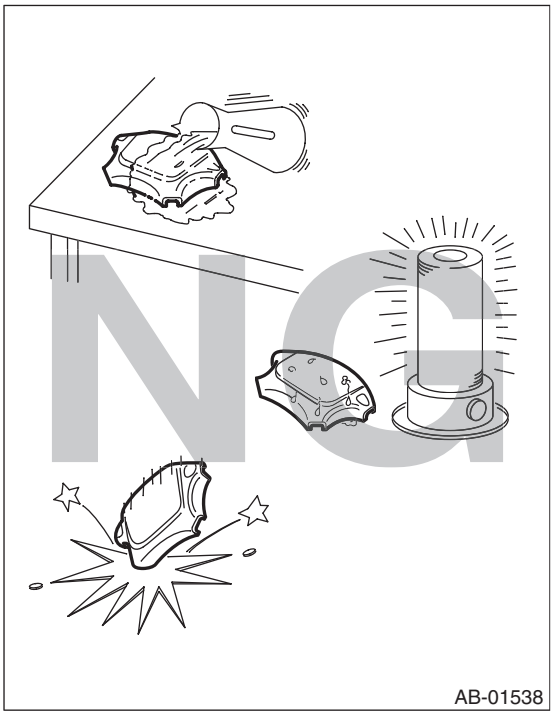
• Do not use the airbag system and pretensioners on other vehicles. When replacing parts, be sure to replace them with new parts.
• When checking the airbag system, be sure to use a digital circuit tester. Use of an analog circuit tester may cause the airbag to activate erroneously due to a minimal current inside tester.



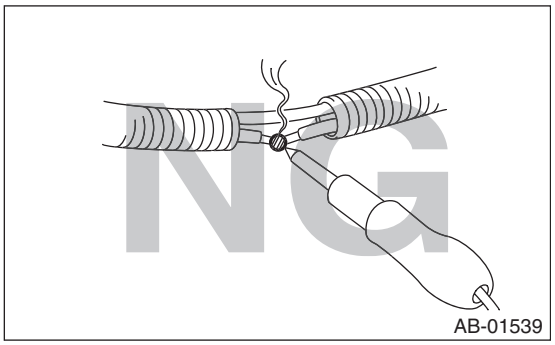
• When checking, use a test harness (1). Damage to connector terminal causes malfunction. Do not directly put the tester probe on airbag connector terminal.



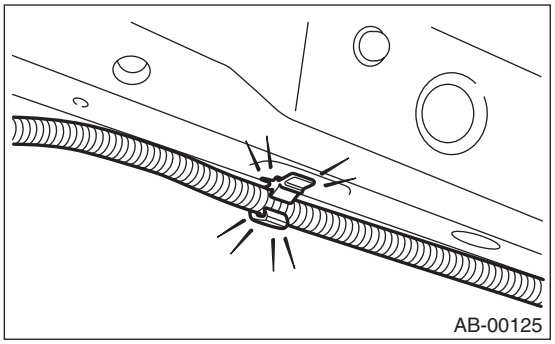
• Do not drop the airbag system parts, or keep them at high temperature of 85°C (185°F) or more, or let water, oil or grease get on them; the internal parts may be damaged and reliability greatly lowered.



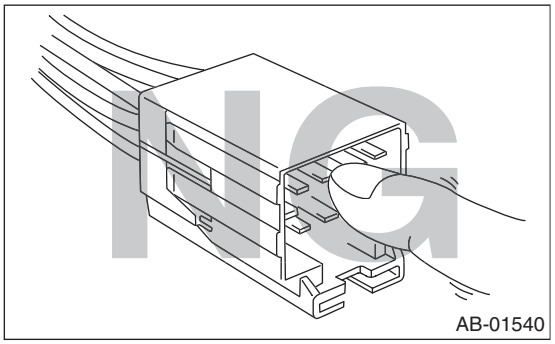
• If damage, open circuit or rust is found on airbag system wiring harness, do not use a soldering equipment to repair. Replace the faulty harness with a new genuine part.



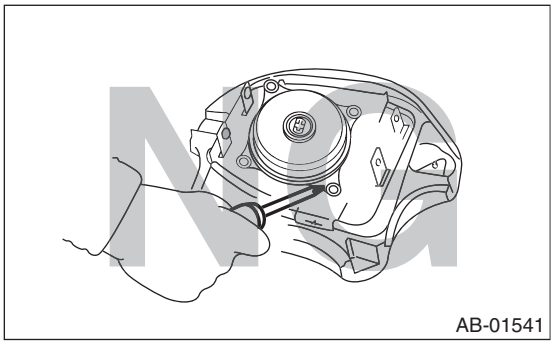
• Install the wiring harness securely with the specified clips to avoid interference or tangled with other parts.



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

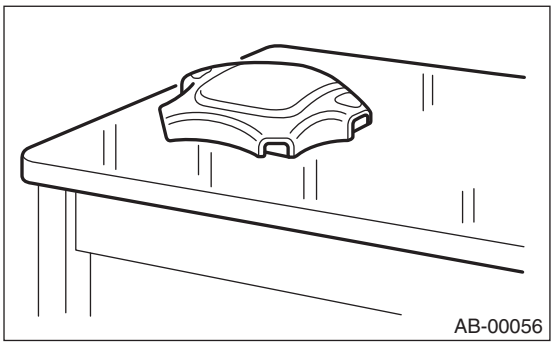


• Do not disassemble driver's airbag module, passenger's airbag module, side or curtain airbag modules, or pretensioner.

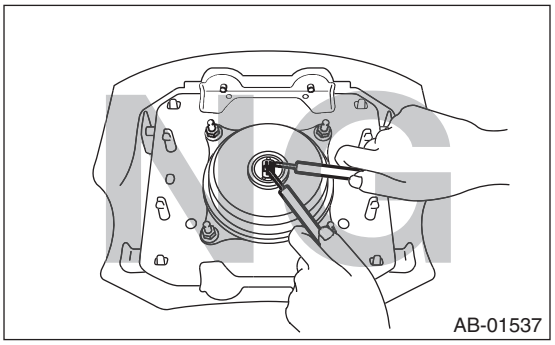


• The airbag module cannot be used again if deployed once.

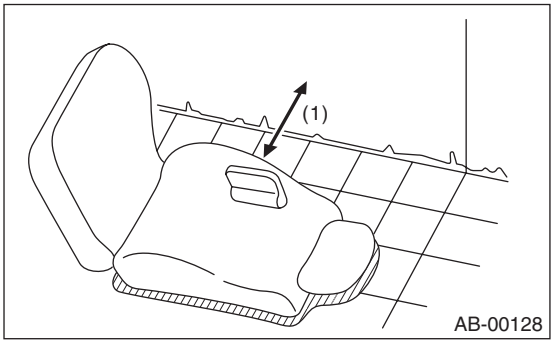
• After removal, keep the airbag module with the pad side facing upward on a dry, clean and flat surface away from heat, light sources, moisture and dust.



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



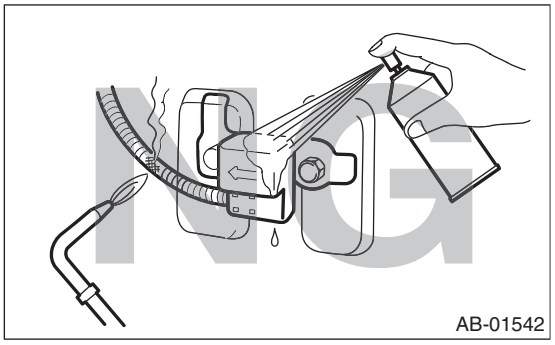
• The removed front seat with airbag module must be kept at least 200 mm (8 in) away from walls and other objects.



(1) 200 mm (8 in) or more

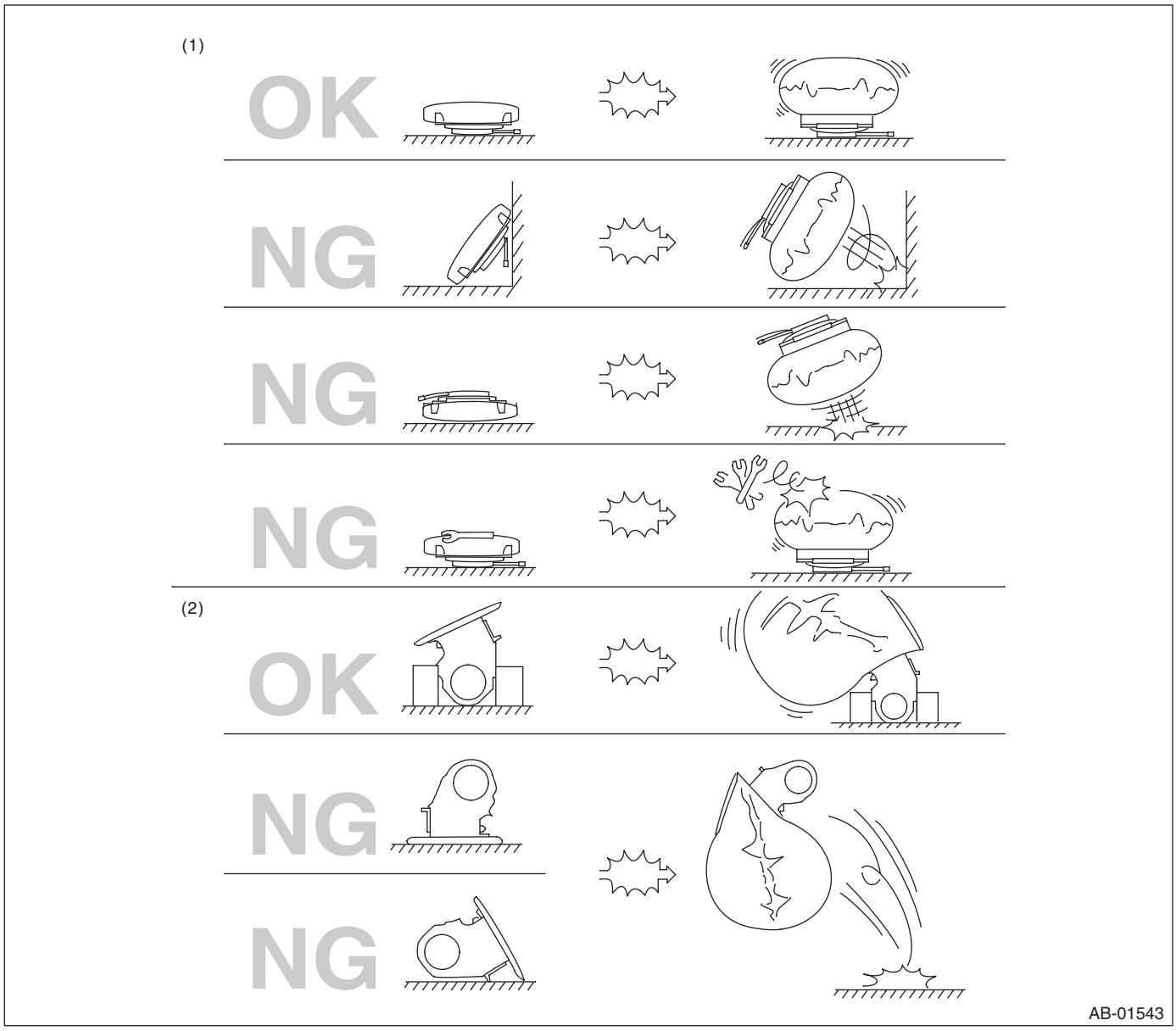
• When painting or performing sheet metal work on the front part of the vehicle, including the front wheel apron, front fender and front side frame, remove the front sub sensors and wiring harness of airbag system.

• When painting or repairing sheet metal work on the side of the vehicle, including the side sill, center pillar, front and rear doors, rear crossmember and rear floorpan, remove the side airbag sensors, curtain airbag sensor, satellite safing sensor and wiring harness of the airbag system.



• Do not discard undeployed airbag module. They could easily cause a serious accident if accidentally deployed.

• When storing a removed airbag module, do not place it with the pad side facing downward. Do not place any objects on the airbag module. Do not pile up the airbag module. If the airbag inflates for some reason when an airbag module pad is touching other objects, it may cause serious accident.



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

B: INSPECTION

Measure the battery voltage and check electrolyte.

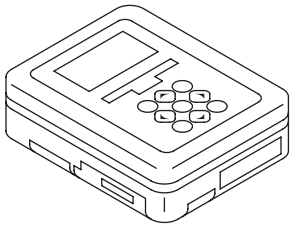
Standard voltage: 12 V

Specific gravity: 1.260 or more

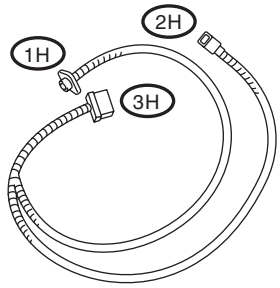
C: PREPARATION TOOL

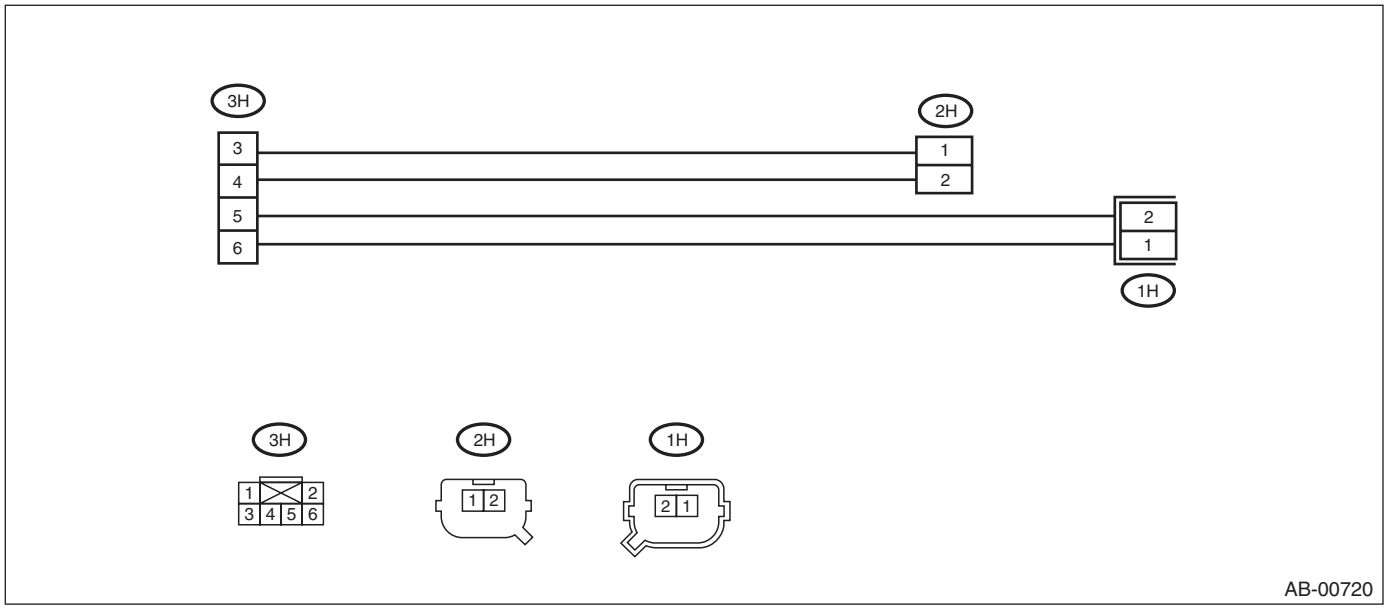
CAUTION:
To measure the voltage and resistance of airbag system component, be sure to use the specified test harness.

1. SPECIAL TOOL

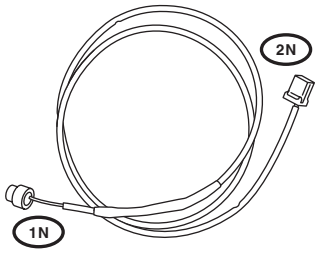
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST1B022XU0	1B022XU0	SUBARU SELECT MONITOR III KIT	Used for troubleshooting the electrical system.

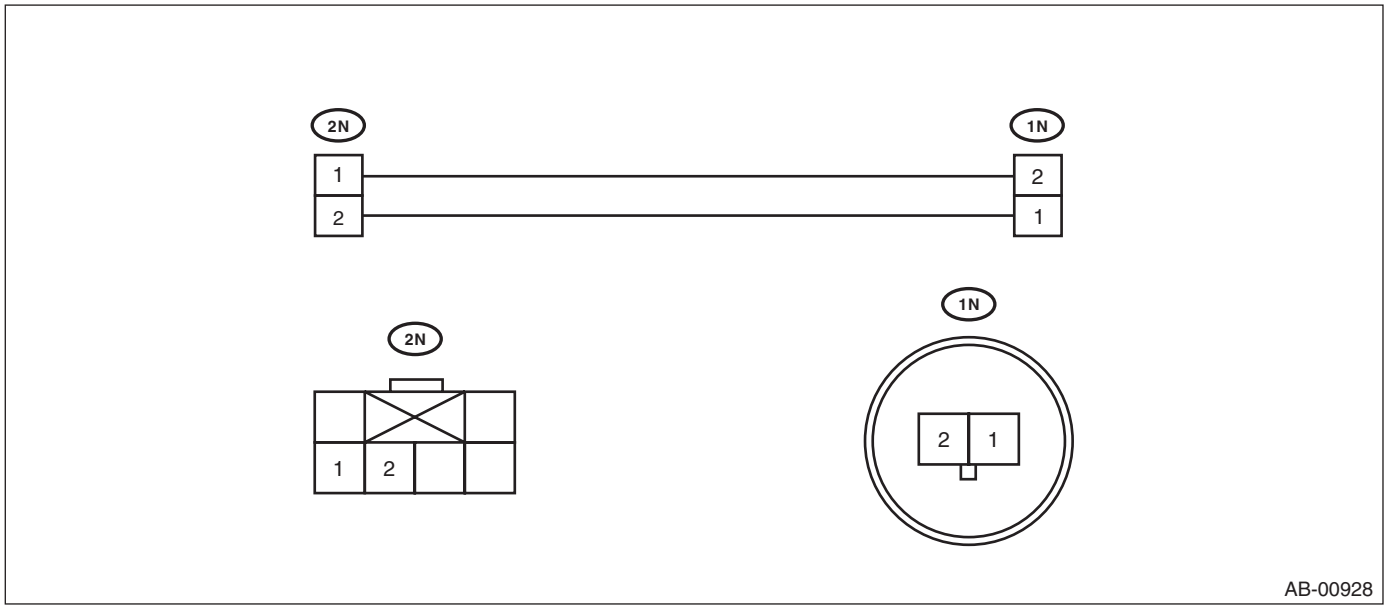
- TEST HARNESS H

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

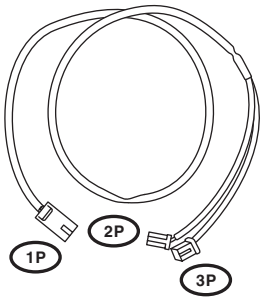


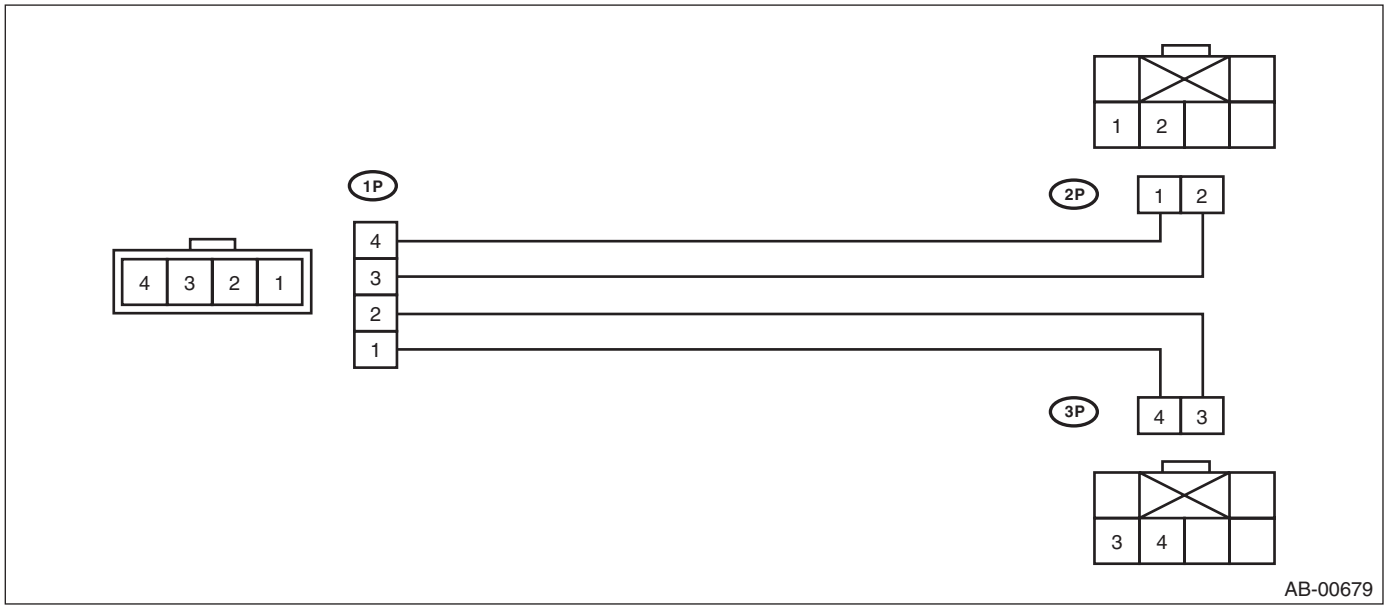
- TEST HARNESS N

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

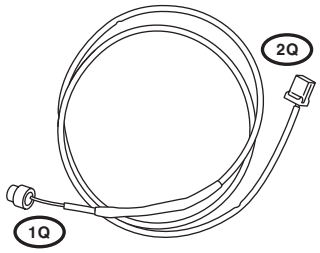


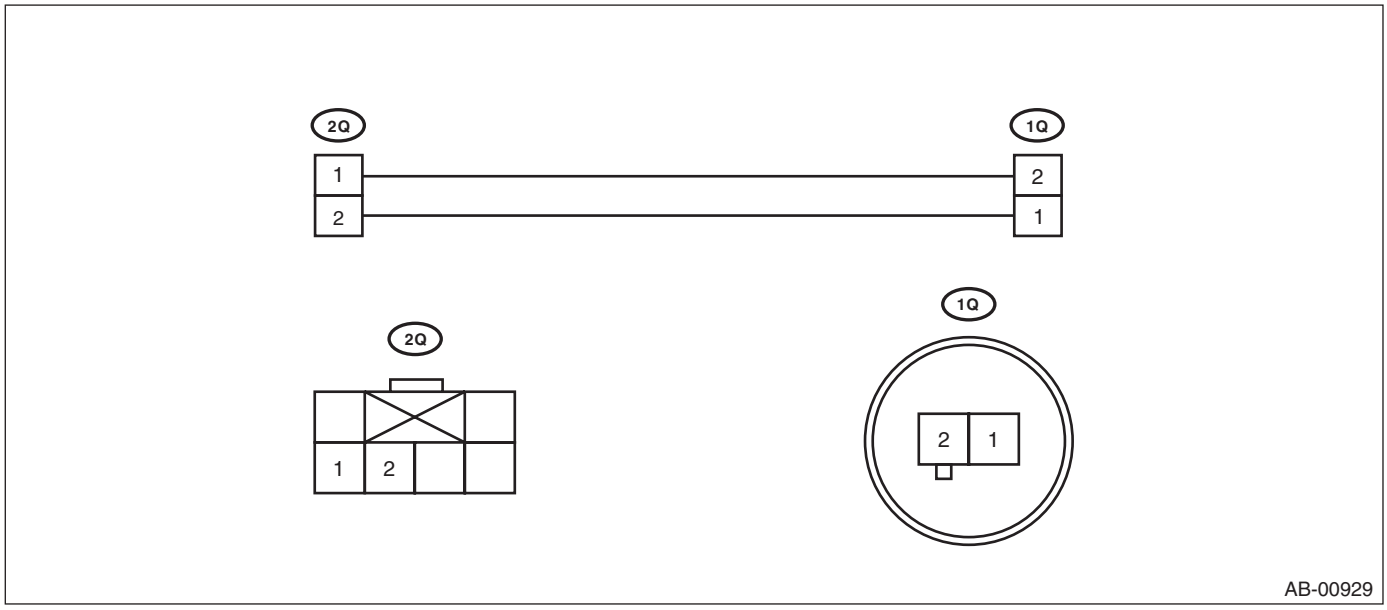
- TEST HARNESS P

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.



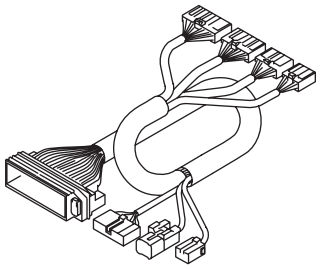
- TEST HARNESS Q

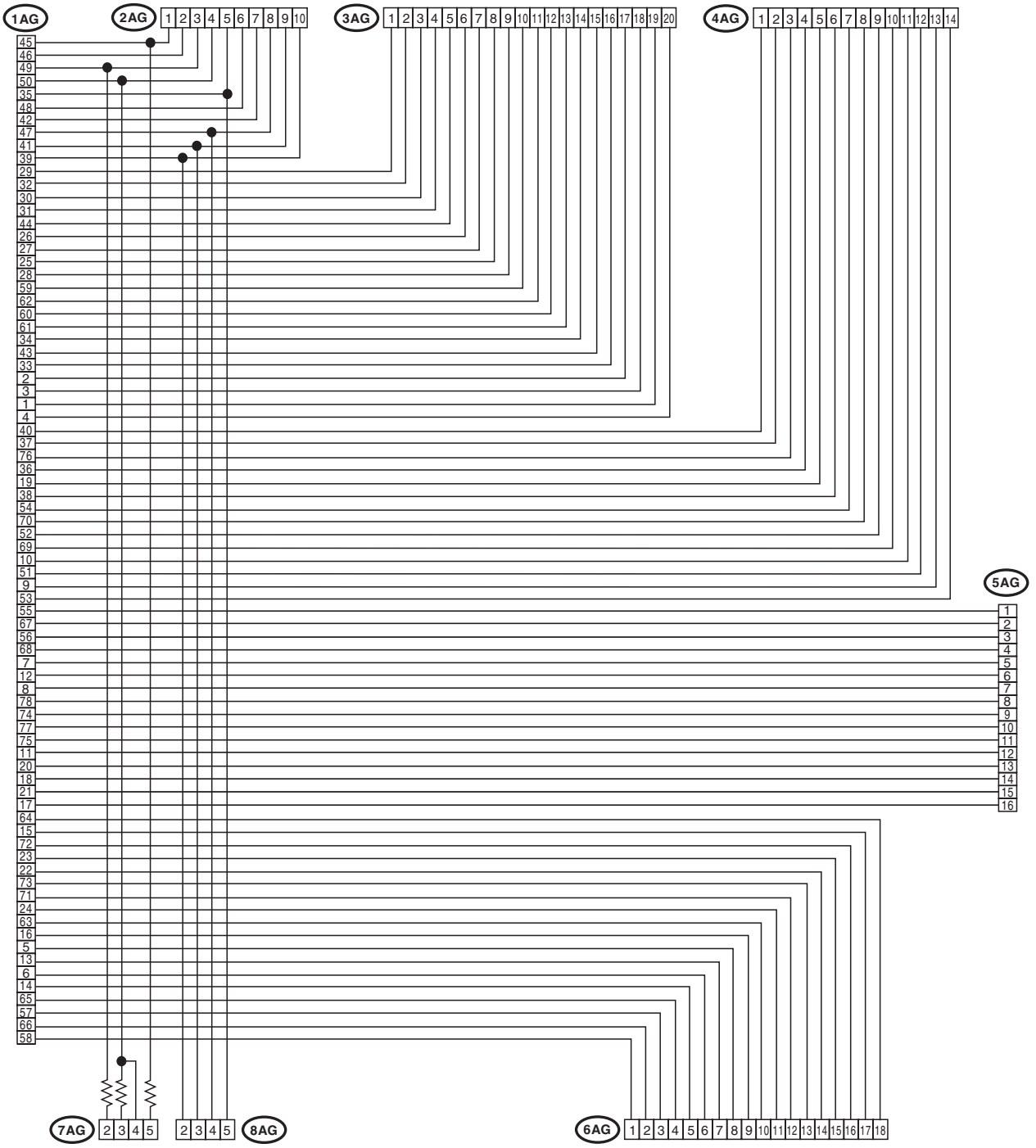
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299SA040	98299SA040	TEST HARNESS Q	Used when measuring voltage and resistance of driver's airbag module.



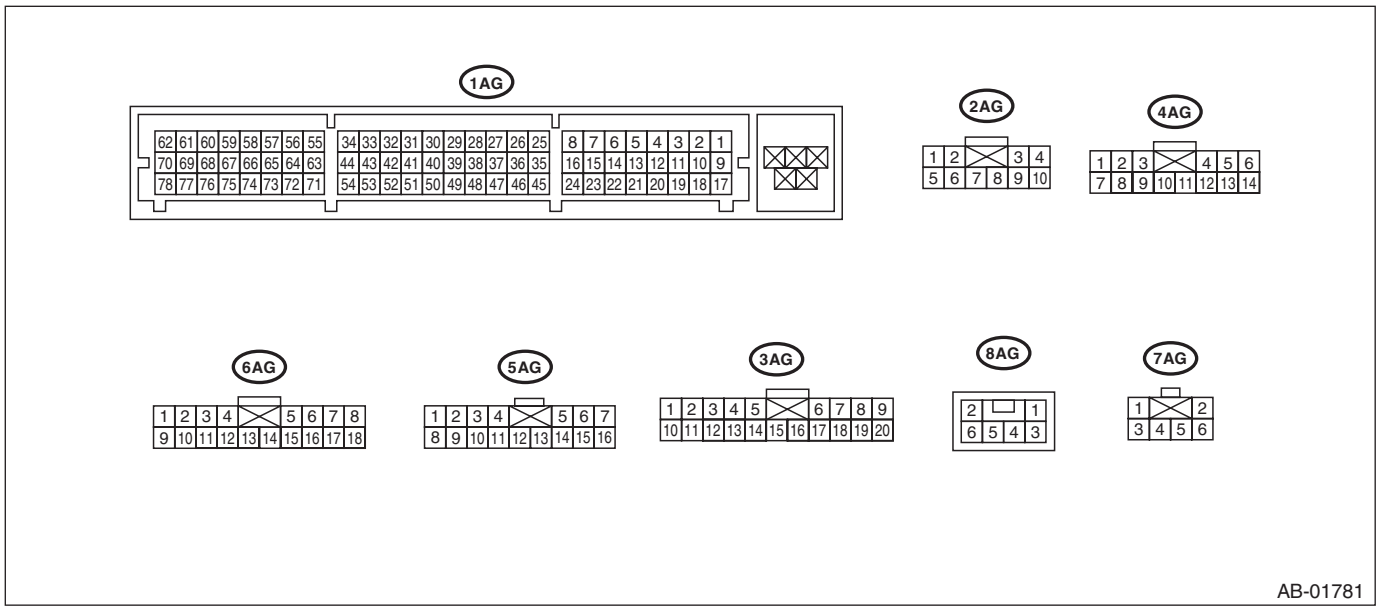
AB-00929

- TEST HARNESS AG

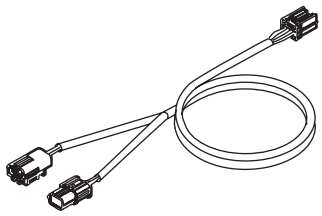
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299AG070	98299AG070	TEST HARNESS AG	Used when measuring voltage and resistance of airbag control module.

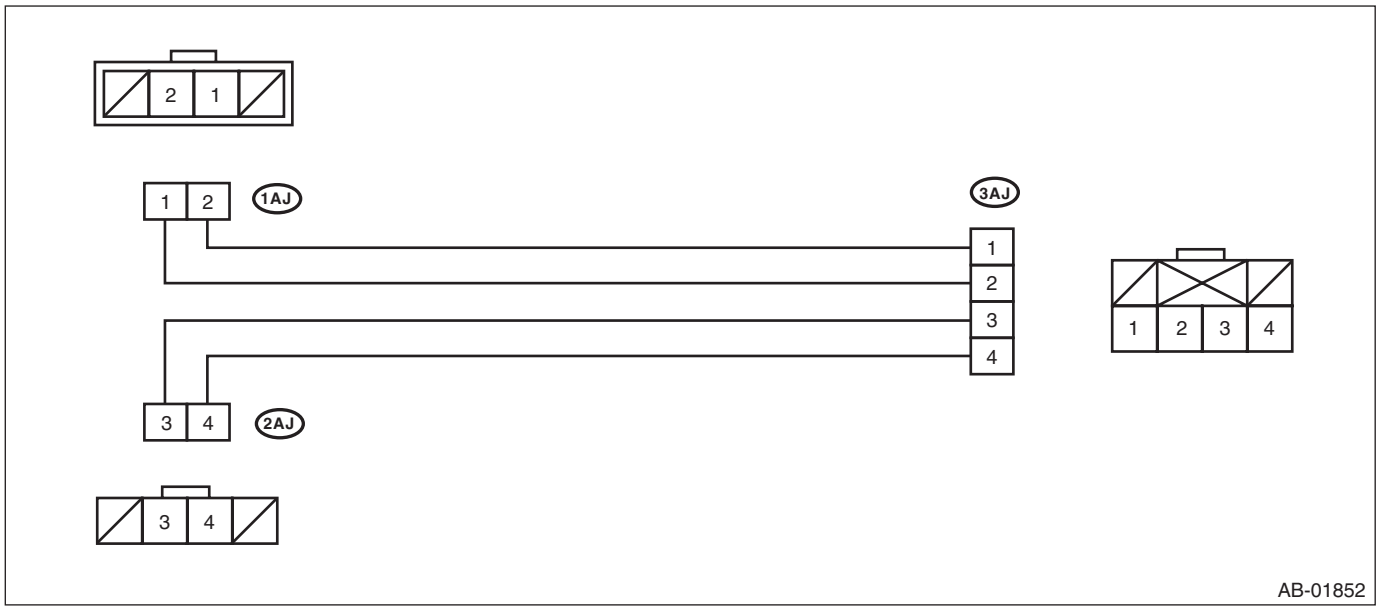


AB-01902

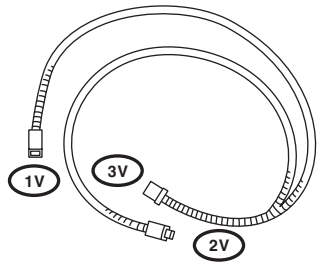


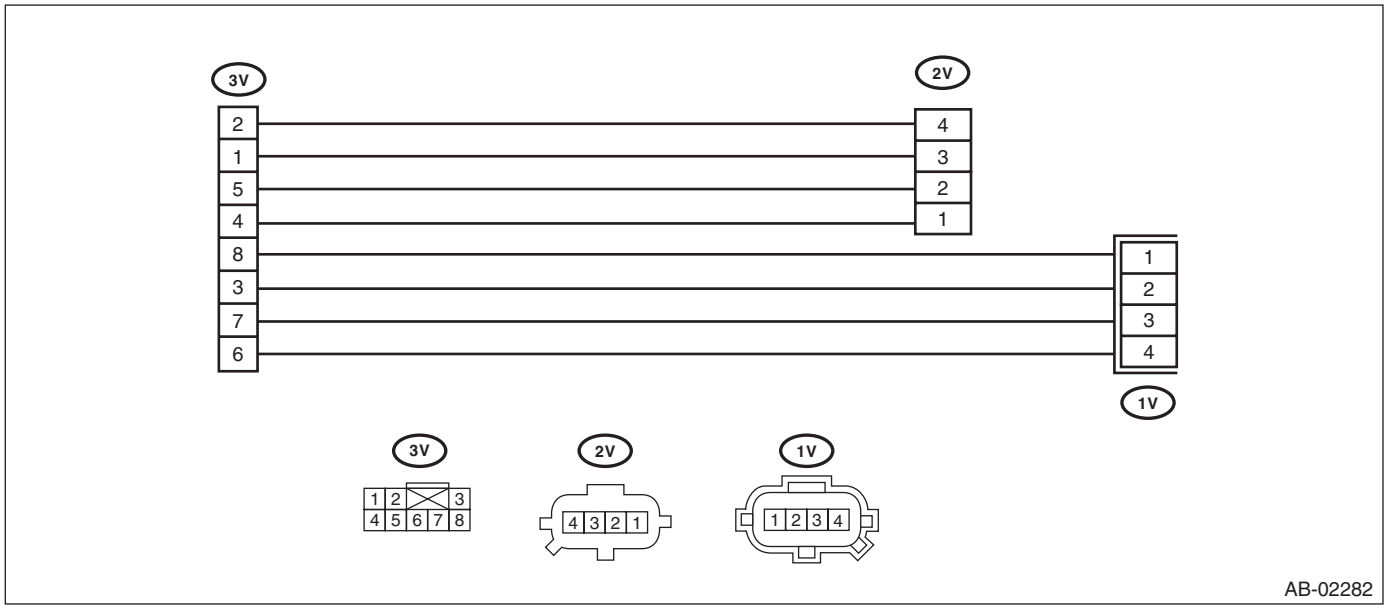
- TEST HARNESS AJ

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299FG000	98299FG000	TEST HARNESS AJ	Used when measuring power supply and resistance of side airbag harness.

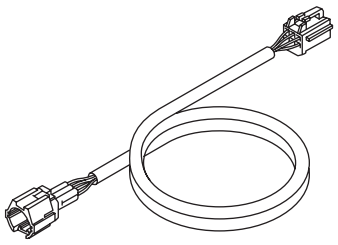


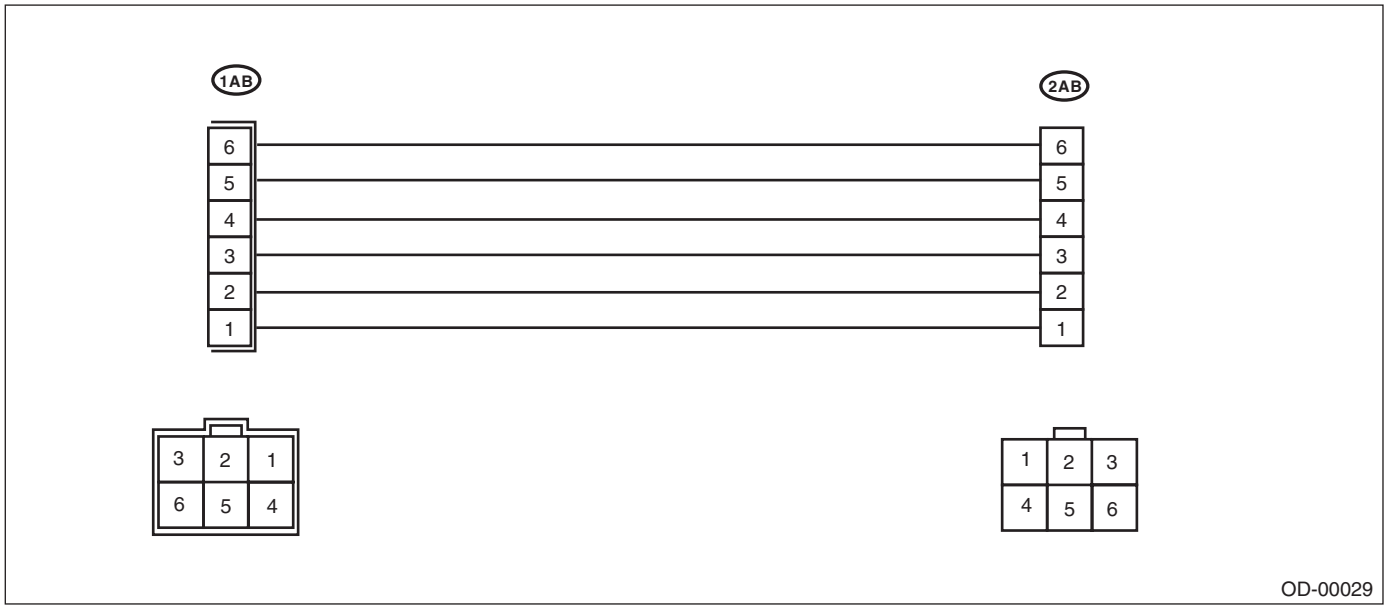
- TEST HARNESS V

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

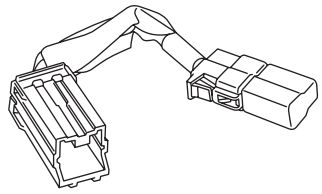


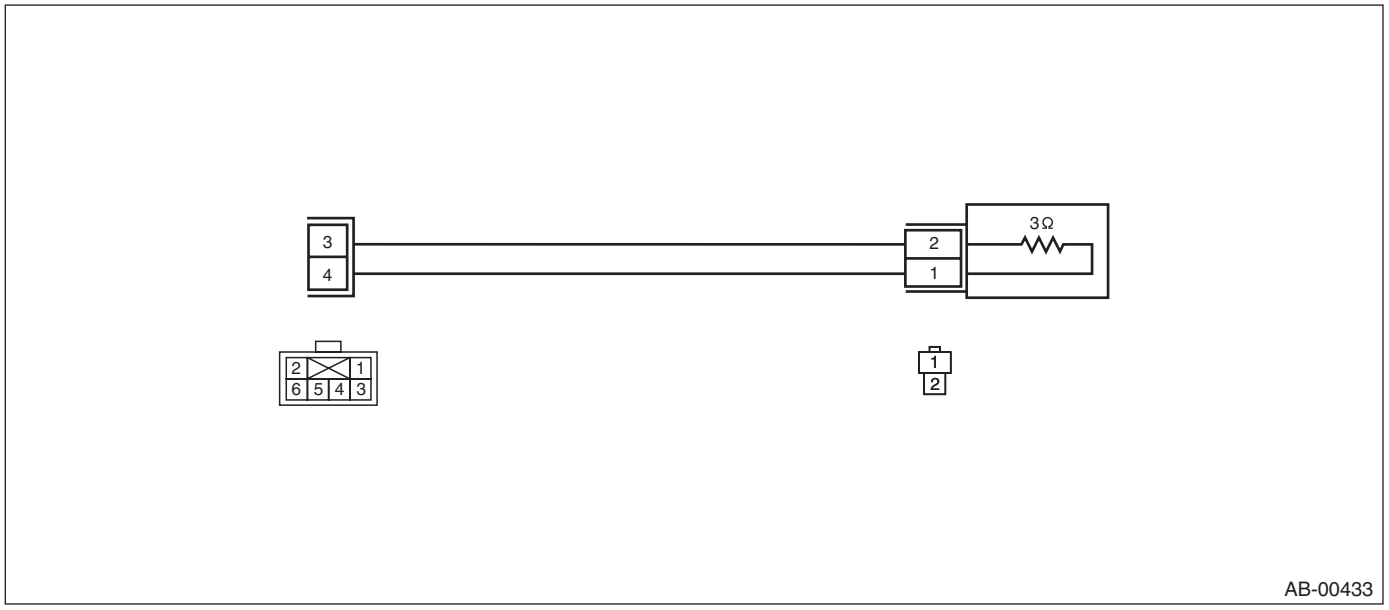
- TEST HARNESS AB

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

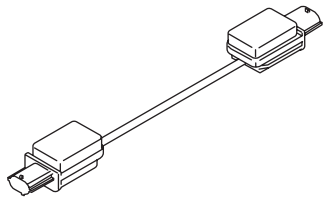


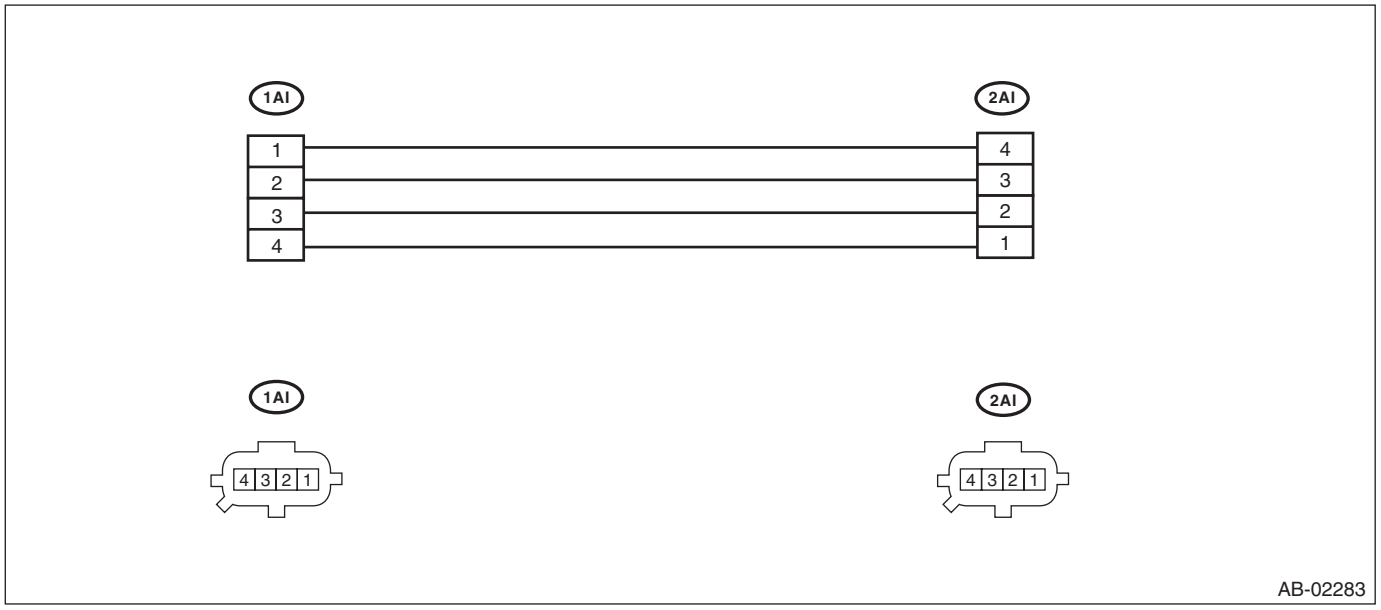
- AIRBAG RESISTOR

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299PA040	98299PA040	AIRBAG RESISTOR	Used in replacement of airbag module for which resistance value is same as airbag module. Two ST are required for diagnosis of two-stage inflator type airbag module.



- TEST HARNESS AI

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299AG090	98299AG090	TEST HARNESS AI	• Used when diagnosing the side airbag sensor and curtain airbag sensor. • Used together with test harness V.

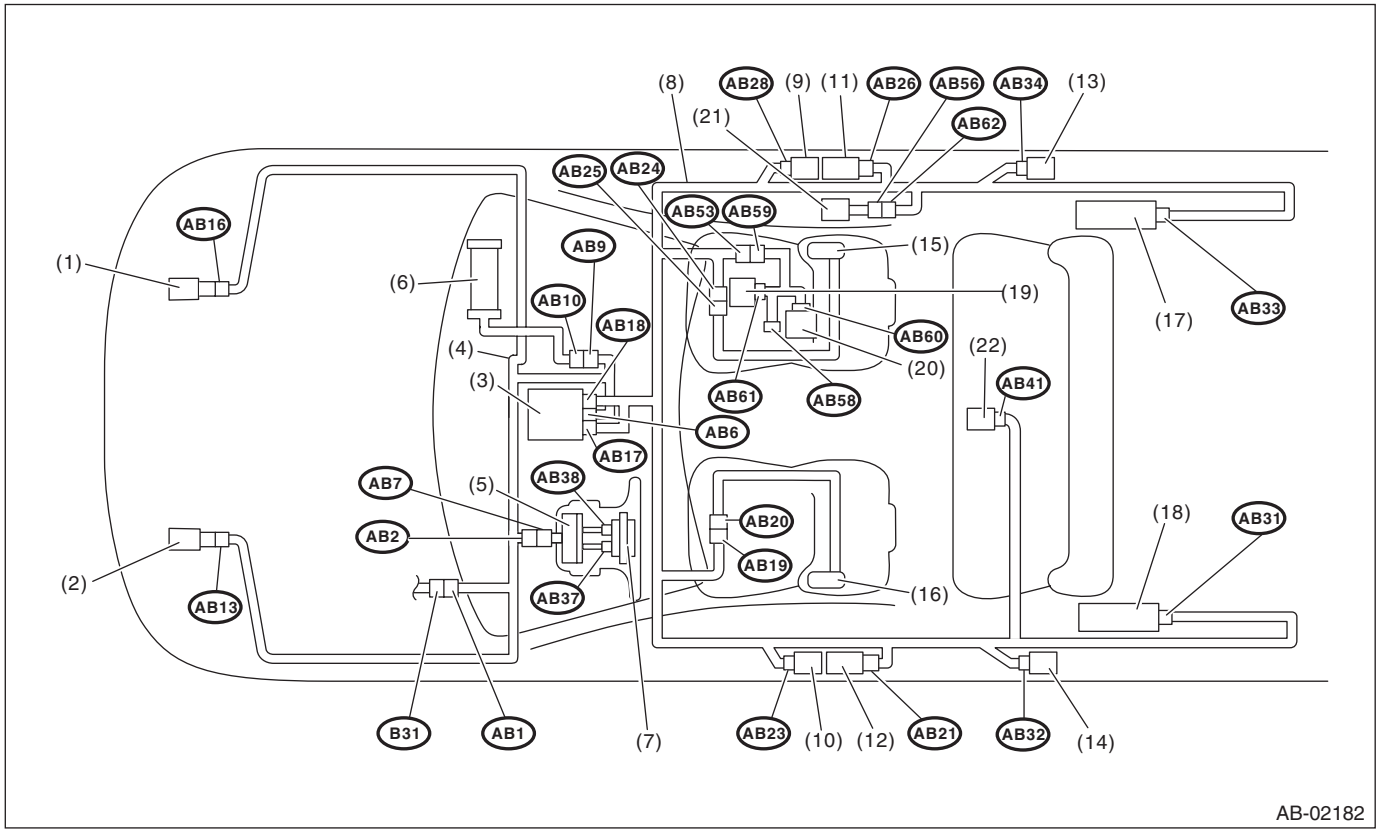


2. GENERAL TOOL

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

4. Electrical Component Location

A: LOCATION



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

Connector No.	(AB1)	(AB2)	(AB6)	(AB7)	(AB9)	(AB10)	(AB13)	(AB16)	(AB17)	(AB18)	(AB19)	(AB20)
Pin	6	4	30	4	4	4	2	2	24	24	4	4
Color	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Male/Female	Female	Female	Female	Male	Female	Male	Female	Female	Female	Female	Female	Male
Connector No.	(AB21)	(AB23)	(AB24)	(AB25)	(AB26)	(AB28)	(AB31)	(AB32)	(AB33)	(AB34)	(AB37)	(AB38)
Pin	2	4	4	4	2	4	2	4	2	4	2	2
Color	Black	Yellow	Yellow	Yellow	Black	Yellow	Black	Yellow	Black	Yellow	Orange	Black
Male/Female	Female	Female	Female	Male	Female	Female	Female	Female	Female	Female	Female	Female
Connector No.	(AB41)	(AB53)	(AB56)	(AB58)	(AB59)	(AB60)	(AB61)	(AB62)				
Pin	2	6	3	3	6	2	18	3				
Color	Yellow	Gray	Brown	Gray	Gray	Yellow	Black	Brown				
Male/Female	Female	Female	Male	Female	Male	Male	Female	Female				

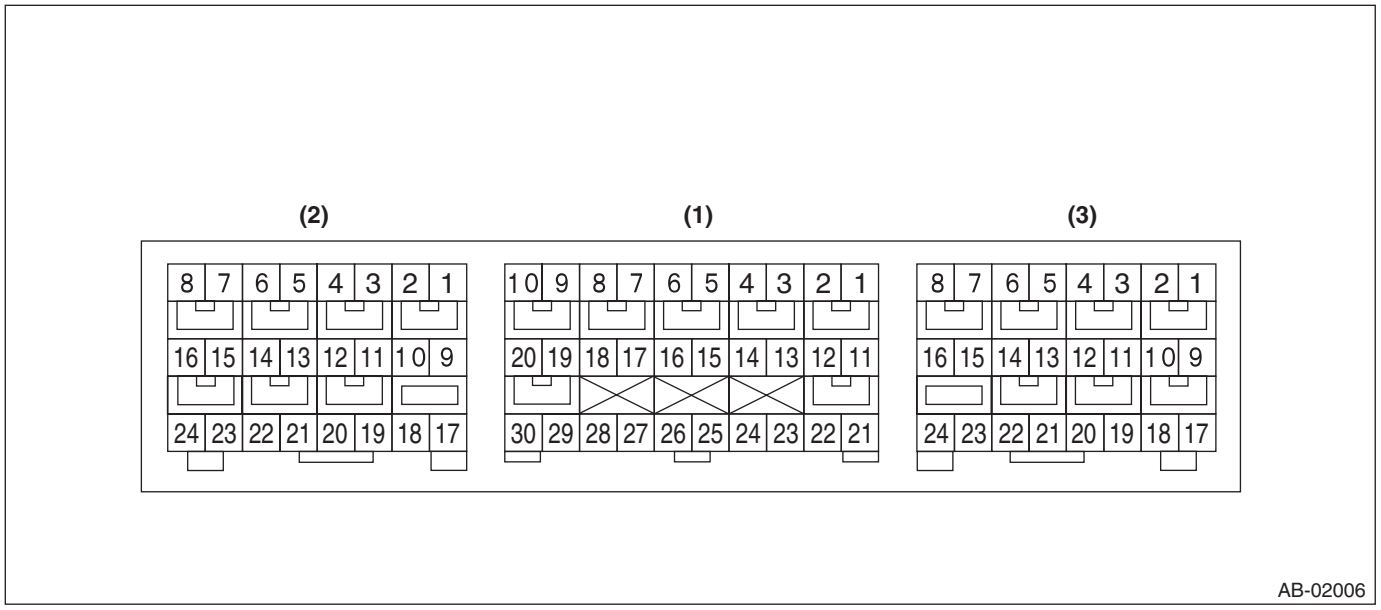
5. Airbag Connector

A: PROCEDURE

For detailed operation procedure, refer to the “Airbag Connector” in airbag section. <Ref. to AB-8, PROCEDURE, Airbag Connector.>

6. Airbag Control Module I/O Signal

A: ELECTRICAL SPECIFICATION



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

Item		Control module terminal No.
Data link connector		(1) — 16
Combination meter		(1) — 11
Battery power supply	Dedicated fuse	(1) — 21
Passenger's airbag module level one	+	(1) — 4
	–	(1) — 3
Passenger's airbag module level two	+	(1) — 1
	–	(1) — 2
Driver's airbag module level one	+	(1) — 5
	–	(1) — 6
Driver's airbag module level two	+	(1) — 8
	–	(1) — 7
Front sub sensor LH	+	(1) — 30
	–	(1) — 28
Front sub sensor RH	+	(1) — 29
	–	(1) — 27
Ground line (GND)		(1) — 25
		(1) — 26
Passenger's airbag OFF indicator		(1) — 17
Passenger's airbag ON indicator		(1) — 23
Passenger's seat belt warning light (integrated module)		(1) — 15
Seat belt pretensioner LH	+	(2) — 5
	–	(2) — 6
Side airbag sensor LH Curtain airbag sensor LH	+	(2) — 24
	–	(2) — 23
Side airbag module LH	+	(2) — 1
	–	(2) — 2
Curtain airbag module LH	+	(2) — 4
	–	(2) — 3
Seat belt pretensioner RH	+	(3) — 4
	–	(3) — 3
Side airbag sensor RH Curtain airbag sensor RH	+	(3) — 17
	–	(3) — 18
Side airbag module RH	+	(3) — 8
	–	(3) — 7
Curtain airbag module RH	+	(3) — 5
	–	(3) — 6
Satellite safing sensor	+	(2) — 20
	–	(2) — 21
Occupant detection control module	+	(3) — 16
	–	(3) — 24

B: WIRING DIAGRAM

Refer to the WI section wiring diagram. <Ref. to WI-89, WIRING DIAGRAM, Airbag System.>

7. Subaru Select Monitor

A: OPERATION

1. READ DIAGNOSTIC TROUBLE CODE (DTC)

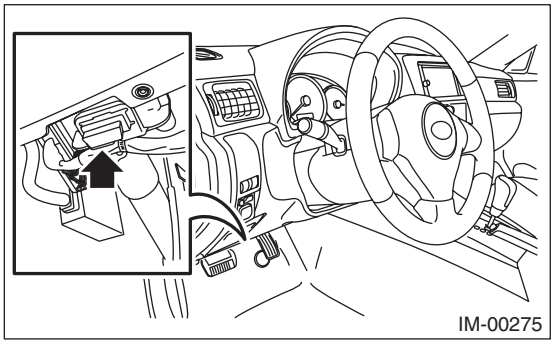
When malfunction of airbag system occurs, the DTC stored in airbag control module will be read out.

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

2) Connect the diagnosis cable to Subaru Select Monitor.

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

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



(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 and run the Subaru Select Monitor.

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

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

7) After {Airbag System} is displayed, select [OK].

8) Select the {Diagnostic Code(s) Display} in «Airbag System».

NOTE:

- For details concerning the operation procedure, refer to "PC application help for Subaru Select Monitor".
- For details concerning DTCs, refer to List of Diagnostic Trouble Code (DTC). <Ref. to AB(diag)-37, 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, or when the seat belt buckle switch has been replaced.
1) On «Main Menu» display, select {Each System Check}.
2) On «System Selection Menu» display, select {Airbag System}.
3) Select the {Status Data} in «Airbag System».
The following table is for support data.

Item	Display Contents
Seat position sensor LH	—*2
Seat position sensor RH	—*2
Seat belt buckle switch LH	—*6
Seat belt buckle switch RH	Equipped*3/Unequipped*4/Other*5/Initial setting*1/—*6
Passenger's airbag control 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 input.
*6: Seat belt buckle switch not supported
*7: Passenger's airbag operating state
*8: Passenger's airbag non-operating state

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

3. CLEAR MEMORY MODE

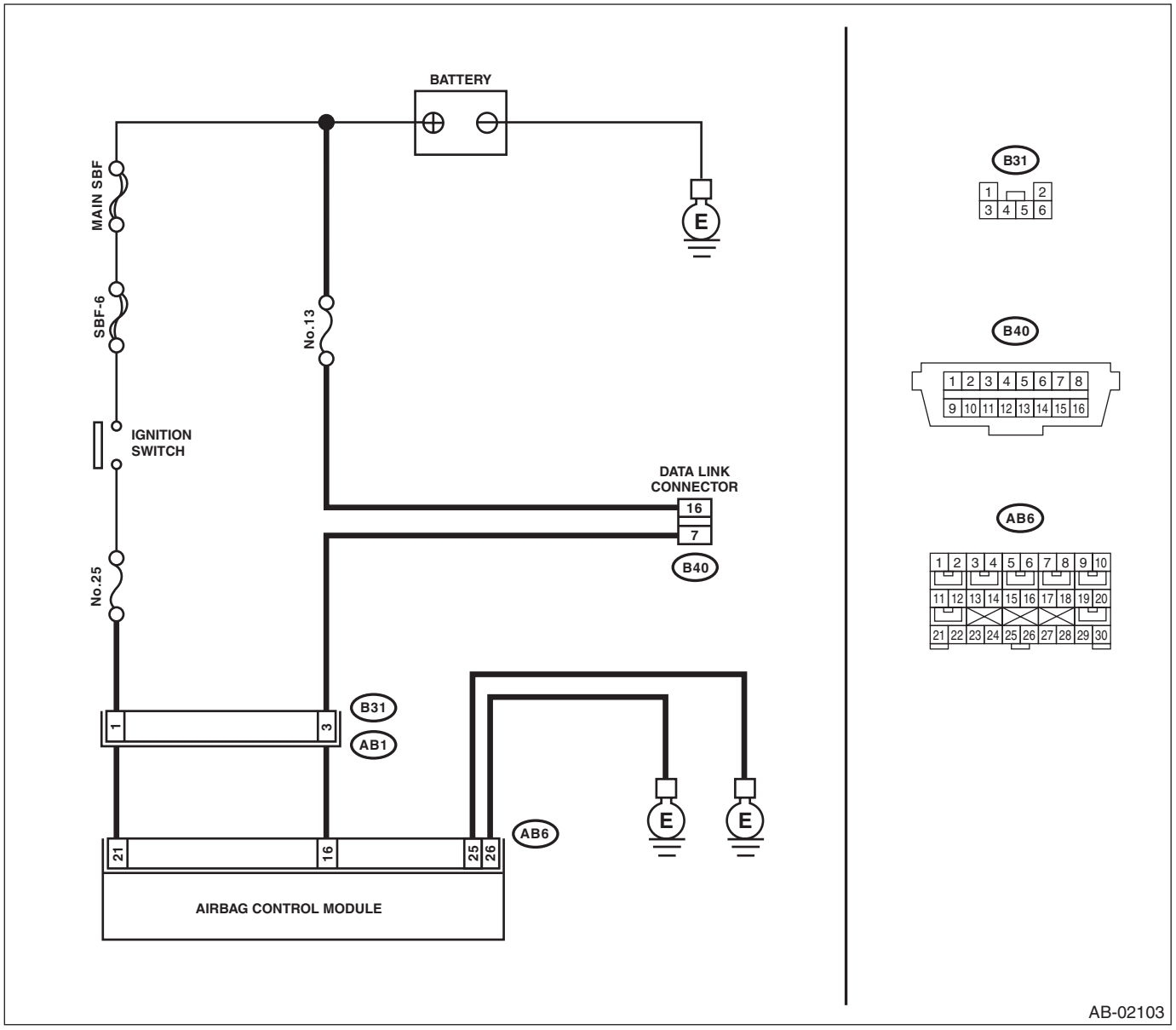
Clear the DTC stored in the airbag control module after repairing the airbag system.(After the breakdown is recovered, the breakdown code for completed recoveries are read out when the next breakdown occurs if the memory clear work is not performed.)
1) On «Main Menu» display, select {Each System Check}.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

NOTE:
For details concerning the operation procedure, refer to "PC application help 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.

	Step	Check	Yes	No
3	**CHECK BATTERY TERMINAL.**	Is there poor contact at 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 **11**.	Go to step **5**.
5	**CHECK SUBARU SELECT MONITOR.**	Is the Subaru Select Monitor turned ON?	Go to step **7**.	Go to step **6**.
6	**CHECK FUSE.** Remove the fuse No. 13 from the fuse & relay box and perform visual inspection.	Is the fuse OK?	Repair the harness between the battery and the data link connector.	Replace the fuse. If fuse is blown out again, check the power supply circuit.
7	**CHECK AIRBAG CONTROL MODULE CONNECTOR.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Confirm that the connectors of the airbag control modules (AB6, AB17, AB18) are securely connected.	Is the connector of the airbag control module securely connected?	Go to step **8**.	Connect the connector of the airbag control module.
8	**CHECK SUBARU SELECT MONITOR COMMUNICATION.** 1) Disconnect the airbag control module connector. 2) Connect the battery ground terminal. 3) Turn the ignition switch to ON. 4) 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-21, Airbag Control Module.>	Go to step **9**.
9	**CHECK HARNESS CONNECTOR BETWEEN EACH CONTROL MODULE AND DATA LINK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the airbag control module, VDCCM&H/U, body integrated unit, TPMS CU, shock sensor, 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 **10**.	Repair the harness and connector between each control module and data link connector. (Replace the entire harness if repair is necessary for airbag harness.)
10	**CHECK OUTPUT SIGNAL TO THE AIRBAG CONTROL MODULE.** 1) Turn the ignition switch to ON in the condition of step 9. 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?	Repair each control module.	Repair the harness and connector between each control module and data link connector. (Replace the entire harness if repair is necessary for airbag harness.)
11	**CHECK FUSE.** Remove the fuse No. 25 from the fuse & relay box and perform visual inspection.	Is the fuse OK?	Go to step **12**.	Replace the fuse. If fuse is blown out again, check the power supply circuit.

	Step	Check	Yes	No
12	**CHECK AIRBAG CONTROL MODULE CONNECTOR.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Confirm that the connectors of the airbag control modules (AB6, AB17, AB18) are securely connected.	Is the connector of the airbag control module securely connected?	Go to step **13**.	Connect the connector of the airbag control module.
13	**CHECK THE HARNESS BETWEEN THE AIRBAG CONTROL MODULE AND DATA LINK CONNECTOR.** 1) Disconnect the connectors (AB6, AB17, AB18) from airbag control module. 2) Connect the test harness AG connector (1AG) to the connectors (AB6, AB17, AB18). 3) Measure the resistance between connector (4AG) in the test harness AG and the data link connector. ***Connector & terminal*** ***(4AG) No. 1 — (B40) No. 7:***	Is the resistance less than 10 Ω?	Go to step **14**.	Repair the harness between the airbag control module and the data link connector. Or replace the airbag main harness along with the bulkhead harness.
14	**CHECK POWER SUPPLY CIRCUIT.** 1) Turn the ignition switch to ON. 2) Measure the voltage between connector (2AG) in the test harness AG and chassis ground. ***Connector & terminal*** ***(2AG) No. 1 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **15**.	Repair the harness between the airbag control module and the battery. Or replace the airbag main harness along with the bulkhead harness.
15	**CHECK BETWEEN THE AIRBAG CONTROL MODULE AND CHASSIS GROUND.** 1) Turn the ignition switch to OFF. 2) Measure the resistance between connector (2AG) in the test harness AG and chassis ground. ***Connector & terminal*** ***(2AG) No. 4 — Chassis ground:*** ***(2AG) No. 3 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **16**.	Repair the harness between the airbag control module and the chassis ground. Or replace the airbag main harness along with the bulkhead harness.
16	**CHECK POOR CONTACT OF CONNECTOR.**	Is there poor contact of 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 airbag control module. <Ref. to AB-21, REMOVAL, Airbag Control Module.>

8. Read Diagnostic Trouble Code (DTC)

A: OPERATION

For details about reading of DTCs, refer to “Subaru Select Monitor”. <Ref. to AB(diag)-24, Subaru Select Monitor.>

9. Inspection Mode

A: PROCEDURE

Recreate the circumstance by referring to the conditions described in the checklist.

10.Clear Memory Mode

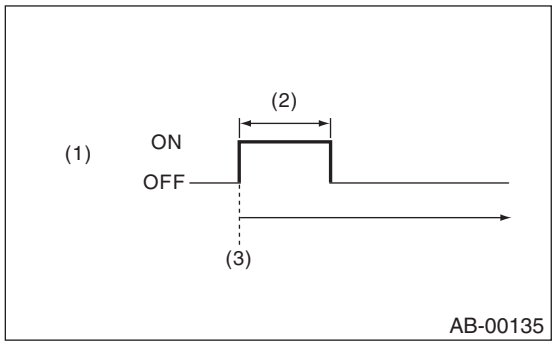
A: OPERATION

• 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)-24, Subaru Select Monitor.>

11.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

12.Airbag Warning Light Failure

A: AIRBAG WARNING LIGHT REMAINS ON

DETECTING CONDITION:

- Airbag warning light is faulty.
- Airbag control module to airbag warning light circuit is shorted or open.
- Grounding circuit is faulty.
- Airbag control module is faulty.
- Connection of (AB1) and (B31) is improper.
- Connection of (AB6, AB17, AB18) to airbag control module is improper

CAUTION:

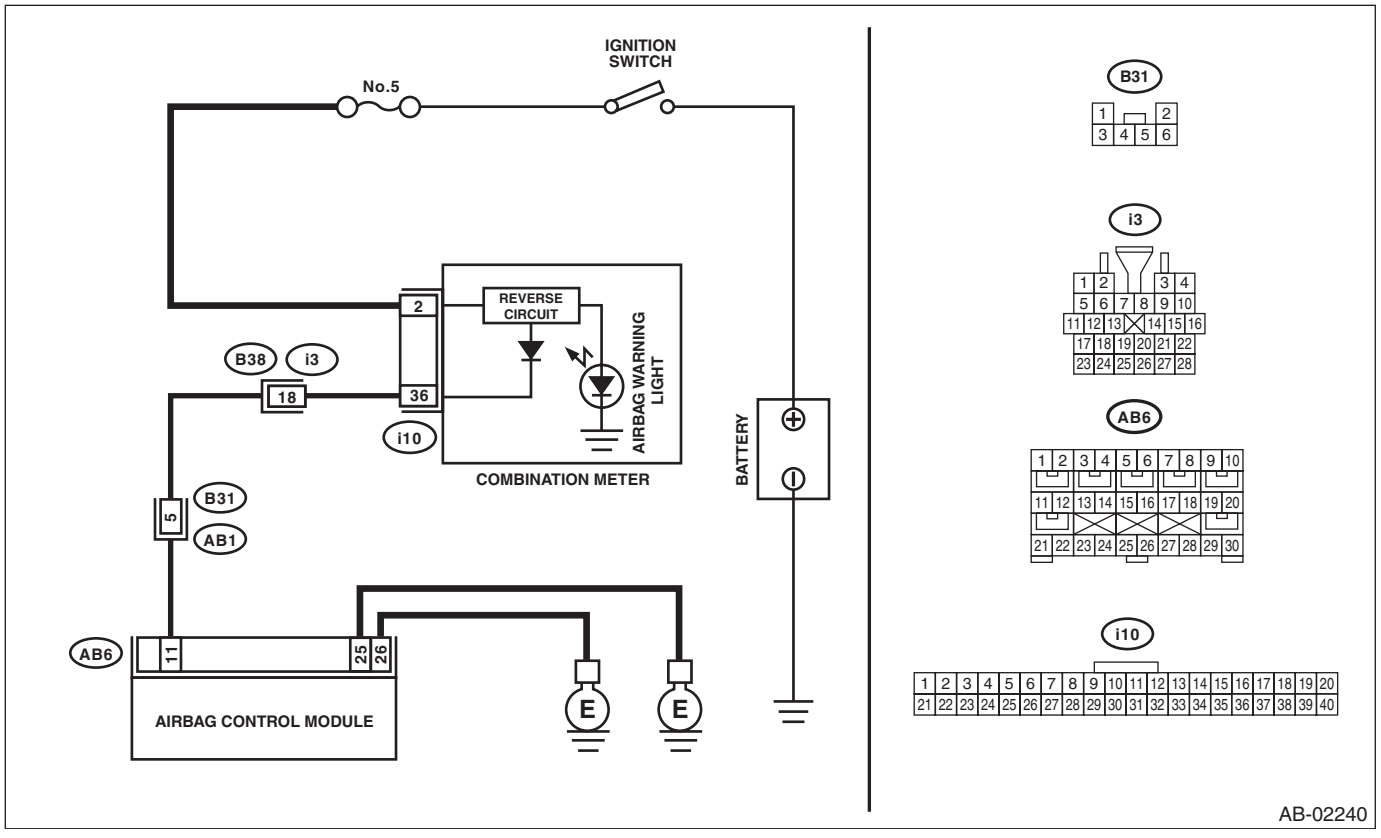
• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait 20 seconds or more before starting to work.

• 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 of the driver's and passenger's seats for safety.

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

WIRING DIAGRAM:



Step		Check	Yes	No
1	**READ DTC.** Read the DTC. <Ref. to AB(diag)-24, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is DTC displayed?	Go to step **2**.	Go to step **3**.
2	**CHECK DTC.**	Is the displayed DTC 2D?	Go to step **3**.	Perform the diagnosis according to DTC.

	Step	Check	Yes	No
3	**CHECK FOR POOR CONTACT.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Confirm that the airbag control module and the connectors (AB6, AB17, AB18) are securely connected.	Is there faulty connector contact (AB6, AB17, AB18)?	If the faulty connector contact remains, replace the airbag main harness along with body harness or replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **4**.
4	**CHECK AIRBAG MAIN HARNESS.** 1) Remove the instrument panel lower cover and disconnect the connectors (AB7) and (AB2). 2) Remove the console front panel and disconnect the connectors (AB10) and (AB9). 3) Disconnect the connectors (AB6, AB17, AB18) from the airbag control module, and connect the test harness AG connector (1AG). 4) Connect the battery ground terminal and turn the ignition switch to ON. 5) Connect the connectors (7AG) and (8AG) in the test harness AG. NOTE: After the fault has been cleared, disconnect the connectors (7AG) and (8AG).	Does the airbag warning light go off?	Go to step **5**.	Go to step **6**.
5	**CHECK GROUND CIRCUIT.** Measure the resistance between connector (2AG) in the test harness AG and chassis ground. ***Connector & terminal*** ***(2AG) No. 4 — Chassis ground:*** ***(2AG) No. 3 — Chassis ground:***	Is the resistance less than 10 Ω?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Repair the chassis ground circuit.
6	**CHECK AIRBAG MAIN HARNESS AND BULKHEAD HARNESS.** 1) Turn the ignition switch to OFF, disconnect the battery ground terminal, and wait 20 seconds or more. 2) Disconnect the connectors (7AG) and (8AG). 3) Remove the combination meter. 4) Measure the resistance between the combination meter connector and test harness AG connector (2AG). ***Connector & terminal*** ***(2AG) No. 5 — (i10) No. 36:***	Is the resistance less than 10 Ω?	Check the combination meter.	Go to step **7**.
7	**CHECK POOR CONTACT OF CONNECTORS (AB1) AND (B31).** Confirm that there is a firm contact between connectors (AB1) and (B31).	Is there poor contact of connectors (AB1) and (B31)?	Repair the bulkhead harness or replace the airbag main harness along with body harness.	Go to step **8**.
8	**CHECK AIRBAG MAIN HARNESS.** Check the airbag main harness for defect.	Is there any defect in the airbag main harness?	Replace the airbag main harness along with bulkhead harness.	Repair the bulkhead harness.

B: AIRBAG WARNING LIGHT REMAINS OFF

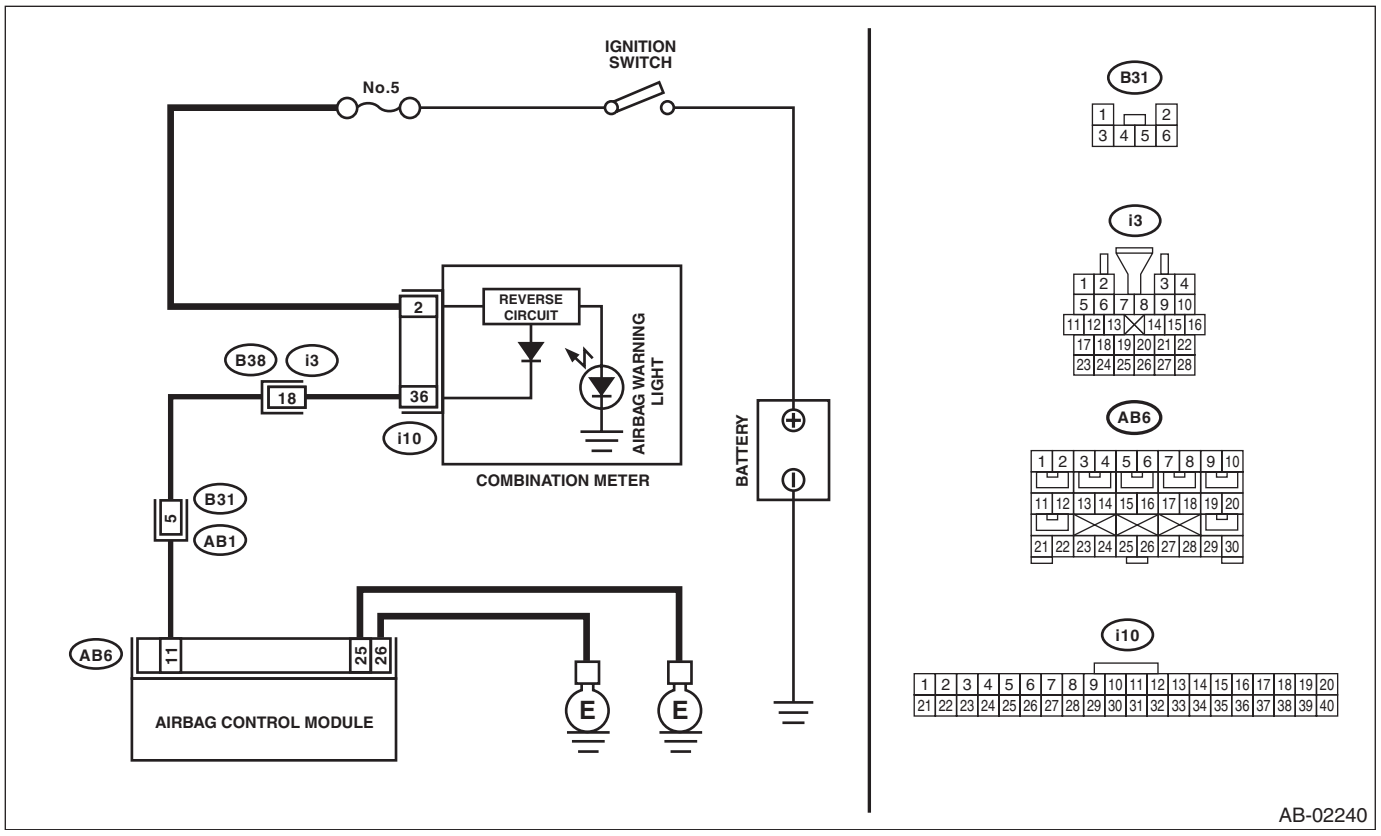
DETECTING CONDITION:

- Fuse No. 5 (in fuse box) is blown out.
- Body harness circuit is open.
- Airbag warning light is faulty.
- 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 cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK COMBINATION METER.** Turn the ignition switch to ON, and confirm that warning lights of combination meter illuminate.	Do warning lights except for airbag illuminate?	Go to step **2**.	Check the combination meter.
2	**CHECK DTC.** Read the DTC. <Ref. to AB(diag)-24, 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. 5 (IN MAIN FUSE BOX).** Remove the fuse No. 5 and perform visual inspection.	Is the fuse No. 5 (in main fuse box) blown out?	Replace the fuse No. 5. If the fuse No. 5 is blown out again, go to step 4.	Go to step **4**.

	Step	Check	Yes	No
4	**CHECK AIRBAG WARNING LIGHT CIRCUIT (IN COMBINATION METER).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connectors (AB1) and (B31). 3) Connect the battery ground terminal and turn the ignition switch to ON.	Does airbag warning light illuminate?	Go to step **5**.	Check the combination meter.
5	**CHECK AIRBAG MAIN HARNESS.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Connect the connector (AB1) and (B31). 3) Disconnect the connectors (AB6, AB17, AB18) from airbag control module. 4) Connect the battery ground terminal and turn the ignition switch to ON.	Does airbag warning light illuminate?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Replace the airbag main harness along with bulkhead harness.

13.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)-43, 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)-46, 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)-48, 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)-51, DTC 16 PASSENGER'S AIRBAG FAILURE, Diagnostic Chart with Trouble Code.>
21	Airbag ECM failure	Airbag control module is faulty.	<Ref. to AB(diag)-53, 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)-53, DTC 22 FRONT AIRBAG FIRING OUTPUT, Diagnostic Chart with Trouble Code.>
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 circuit is open.	<Ref. to AB(diag)-54, DTC 26 PASSENGER'S AIRBAG INDICATOR FAILURE, Diagnostic Chart with Trouble Code.>
27	ODS Communication Error	• Occupant detection control module communication is faulty. • Airbag rear harness circuit is open, shorted, 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)-56, 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. 25 (in joint box) is blown.	Refer to "Occupant Detection System" for details on DTC 29. <Ref. to OD(diag)-25, DTC 29 ODS FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

DTC	Display	Content of diagnosis	Reference
2A	ODS Calibration Error	System calibration (Rezeroing) of the occupant detection system was not ended normally.	Refer to “Occupant Detection System” for details on DTC 2A. <Ref. to OD(diag)-22, DTC 2A ODS CALIBRATION ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
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 details on DTC 2B. <Ref. to OD(diag)-22, 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. • Occupant detection system is faulty. • Airbag rear harness circuit is open, shorted, shorted to ground or shorted to power supply. • Occupant detection harness is faulty.	Refer to “Occupant Detection System” for details on DTC 2C. <Ref. to OD(diag)-23, DTC 2C BELT TENSION SENSOR FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
33	Front Sub Sensor RH failure	Front sub sensor (RH) is faulty.	<Ref. to AB(diag)-57, DTC 33 FRONT SUB SENSOR RH FAILURE, Diagnostic Chart with Trouble Code.>
34	Front Sub Sensor LH failure	Front sub sensor (LH) is faulty.	<Ref. to AB(diag)-57, DTC 34 FRONT SUB 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. • Occupant detection system is faulty. • Occupant detection harness is faulty.	Refer to “Occupant Detection System” for details on DTC 37. <Ref. to OD(diag)-26, DTC 37 BUCKLE SWITCH RH FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
39	Seat Belt Warning Failure	• Airbag control module is faulty. • Body integrated unit is faulty. • Harness circuits between body integrated unit and airbag control module are open, shorted or shorted to ground.	<Ref. to AB(diag)-58, DTC 39 SEAT BELT WARNING 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)-60, 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)-62, 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)-64, 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)-66, DTC 46 SIDE AIRBAG LH FAILURE, Diagnostic Chart with Trouble Code.>
53	Side Airbag Sensor RH failure	Side airbag sensor (RH) is faulty.	<Ref. to AB(diag)-68, 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)-68, DTC 54 SIDE AIRBAG SENSOR LH FAILURE, Diagnostic Chart with Trouble Code.>
55	Side/Curtain Airbag: Firing output	• Side airbag module and curtain airbag module are deployed. • Curtain airbag module is deployed.	<Ref. to AB(diag)-68, DTC 55 SIDE CURTAIN AIRBAG FIRING OUTPUT, Diagnostic Chart with Trouble Code.>
58	Curtain Airbag Sensor RH failure	Curtain airbag sensor (RH) is faulty.	<Ref. to AB(diag)-68, DTC 58 CURTAIN AIRBAG SENSOR RH FAILURE, Diagnostic Chart with Trouble Code.>
59	Curtain Airbag Sensor LH failure	Curtain airbag sensor (LH) is faulty.	<Ref. to AB(diag)-68, DTC 59 CURTAIN AIRBAG SENSOR LH FAILURE, 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)-69, 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)-71, 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)-73, 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)-75, 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)-77, 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)-80, 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)-82, DTC 75 DRIVER'S AIRBAG FAILURE, Diagnostic Chart with Trouble Code.>

DTC	Display	Content of diagnosis	Reference
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)-85, DTC 76 PASSENGER'S AIRBAG FAILURE, Diagnostic Chart with Trouble Code.>
91	Curtain Airbag Module RH Failure	• Curtain airbag harness (RH) circuit is faulty. • Curtain airbag module (RH) is faulty. • Airbag control module is faulty.	<Ref. to AB(diag)-87, DTC 91 CURTAIN AIRBAG MODULE RH FAILURE, Diagnostic Chart with Trouble Code.>
92	Curtain Airbag Module LH Failure	• Curtain airbag harness (LH) circuit is faulty. • Curtain airbag module (LH) is faulty. • Airbag control module is faulty.	<Ref. to AB(diag)-89, DTC 92 CURTAIN AIRBAG MODULE LH FAILURE, Diagnostic Chart with Trouble Code.>
95	Curtain Airbag Module RH Failure	• Curtain airbag harness (RH) is shorted to power supply. • Curtain airbag module (RH) is faulty. • Airbag control module is faulty.	<Ref. to AB(diag)-91, DTC 95 CURTAIN AIRBAG MODULE RH FAILURE, Diagnostic Chart with Trouble Code.>
96	Curtain Airbag Module LH Failure	• Curtain airbag harness (LH) is shorted to power supply. • Curtain airbag module (LH) is faulty. • Airbag control module is faulty.	<Ref. to AB(diag)-93, DTC 96 CURTAIN AIRBAG MODULE LH FAILURE, Diagnostic Chart with Trouble Code.>
E2 E3 E4	Front Sensor Bus RH Communication error	• Open or short circuit in harness (RH) between airbag control module and front sub sensor. • Front sub sensor (RH) is faulty. • Airbag control module is faulty.	<Ref. to AB(diag)-94, DTC E2 FRONT SENSOR BUS RH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.> <Ref. to AB(diag)-94, DTC E3 FRONT SENSOR BUS RH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.> <Ref. to AB(diag)-95, DTC E4 FRONT SENSOR BUS RH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>
E6 E7 E8	Front Sensor Bus LH Communication error	• Open or short circuit in harness (LH) between airbag control module and front sub sensor. • Front sub sensor (LH) is faulty. • Airbag control module is faulty.	<Ref. to AB(diag)-97, DTC E6 FRONT SENSOR BUS LH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.> <Ref. to AB(diag)-97, DTC E7 FRONT SENSOR BUS LH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.> <Ref. to AB(diag)-98, DTC E8 FRONT SENSOR BUS LH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>

DTC	Display	Content of diagnosis	Reference
E9 EA EB EC	Side Sensor Bus RH Communication error	• Open or short circuit in harness (RH) between airbag control module and side sensor. • Side airbag sensor (RH) or curtain airbag sensor (RH) is faulty. • Airbag control module is faulty.	<Ref. to AB(diag)-100, DTC E9 SIDE SENSOR BUS RH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.> <Ref. to AB(diag)-100, DTC EA SIDE SENSOR BUS RH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.> <Ref. to AB(diag)-100, DTC EB SIDE SENSOR BUS RH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.> <Ref. to AB(diag)-101, DTC EC SIDE SENSOR BUS RH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>
ED EE	Side Sensor Bus RH Communication error	• Open or short circuit in harness (RH) between airbag control module and side sensor. • Side airbag sensor (RH) or curtain airbag sensor (RH) is faulty. • Airbag control module is faulty.	<Ref. to AB(diag)-103, DTC ED SIDE SENSOR BUS RH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.> <Ref. to AB(diag)-104, DTC EE SIDE SENSOR BUS RH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>
F1 F2 F3 F4	Side Sensor Bus LH Communication error	• Open or short circuit in harness (LH) between airbag control module and side sensor. • Side airbag sensor (LH) or curtain airbag sensor (LH) is faulty. • Airbag control module is faulty.	<Ref. to AB(diag)-107, DTC F1 SIDE SENSOR BUS LH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.> <Ref. to AB(diag)-107, DTC F2 SIDE SENSOR BUS LH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.> <Ref. to AB(diag)-107, DTC F3 SIDE SENSOR BUS LH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.> <Ref. to AB(diag)-108, DTC F4 SIDE SENSOR BUS LH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>
F5 F6	Side Sensor Bus LH Communication error	• Open or short circuit in harness (LH) between airbag control module and side sensor. • Side airbag sensor (LH) or curtain airbag sensor (LH) is faulty. • Airbag control module is faulty.	<Ref. to AB(diag)-110, DTC F5 SIDE SENSOR BUS LH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.> <Ref. to AB(diag)-111, DTC F6 SIDE SENSOR BUS LH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>
F8 F9 FA	Satellite Sensor Bus Communication error	• Open or short circuit in harness between airbag control module and satellite safing sensor. • Satellite safing sensor is faulty. • Airbag control module is faulty.	<Ref. to AB(diag)-113, DTC F8 SATELLITE SENSOR BUS COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.> <Ref. to AB(diag)-113, DTC F9 SATELLITE SENSOR BUS COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.> <Ref. to AB(diag)-114, DTC FA SATELLITE SENSOR BUS COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>

DTC	Display	Content of diagnosis	Reference
3A	Front Sub Sensor RH false installation	• Front sensor (RH) is misinstalled. • Airbag control module is faulty.	<Ref. to AB(diag)-116, DTC 3A FRONT SUB SENSOR RH FALSE INSTALLATION, Diagnostic Chart with Trouble Code.>
3B	Front Sub Sensor LH false installation	• Front sensor (LH) is misinstalled. • Airbag control module is faulty.	<Ref. to AB(diag)-116, DTC 3B FRONT SUB SENSOR LH FALSE INSTALLATION, Diagnostic Chart with Trouble Code.>
3C	Satellite Sensor Bus failure	Satellite safing sensor is faulty.	<Ref. to AB(diag)-116, DTC 3C SATELLITE SENSOR BUS FAILURE, Diagnostic Chart with Trouble Code.>
3D	Satellite Sensor false installation	• Satellite safing sensor is misinstalled. • Airbag control module is faulty.	<Ref. to AB(diag)-116, DTC 3D SATELLITE SENSOR FALSE INSTALLATION, Diagnostic Chart with Trouble Code.>
5A	Side Airbag Sensor RH false installation	• Side A/B sensor is misinstalled. • Airbag control module is faulty.	<Ref. to AB(diag)-117, DTC 5A SIDE AIRBAG SENSOR RH FALSE INSTALLATION, Diagnostic Chart with Trouble Code.>
5B	Side Airbag Sensor LH false installation	• Side A/B sensor is misinstalled. • Airbag control module is faulty.	<Ref. to AB(diag)-117, DTC 5B SIDE AIRBAG SENSOR LH FALSE INSTALLATION, Diagnostic Chart with Trouble Code.>
5C	Curtain Airbag Sensor RH false installation	• Curtain A/B sensor is misinstalled. • Airbag control module is faulty.	<Ref. to AB(diag)-117, DTC 5C CURTAIN AIRBAG SENSOR RH FALSE INSTALLATION, Diagnostic Chart with Trouble Code.>
5D	Curtain Airbag Sensor LH false installation	• Curtain A/B sensor is misinstalled. • Airbag control module is faulty.	<Ref. to AB(diag)-117, DTC 5D CURTAIN AIRBAG SENSOR LH FALSE INSTALLATION, Diagnostic Chart with Trouble Code.>

14.Diagnostic Chart with Trouble Code

A: DTC 11 DRIVER'S AIRBAG FAILURE

DTC DETECTING CONDITION:

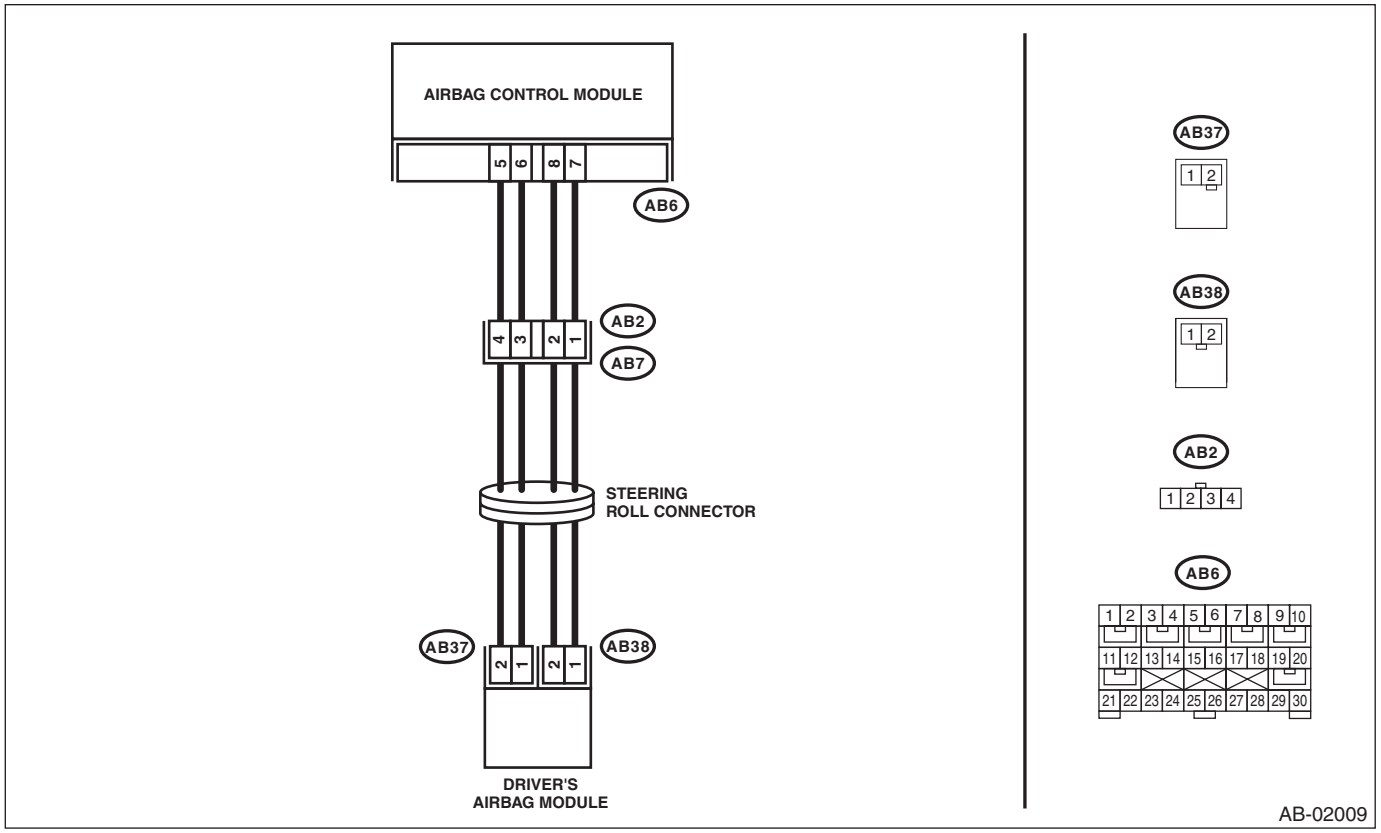
- Airbag main harness circuit is open, shorted or shorted to ground.
- Airbag module harness (Driver's side) circuit is open, shorted or shorted to ground.
- Roll connector circuit is open, shorted or shorted to ground.
- Driver's airbag module is faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

NOTE:
Prior to starting work, 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 harness.	Go to step **2**.

	Step	Check	Yes	No
2	**CHECK DRIVER'S AIRBAG MODULE.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Remove the driver's airbag module. 3) Connect the connector (1N) in the test harness N to the connector (AB38). 4) Connect the airbag resistor to the connector (2N) of 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 six seconds and go off?	Replace the driver's airbag module. <Ref. to AB-15, Driver's Airbag Module.>	Go to step **3**.
3	**CHECK ROLL CONNECTOR.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 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 and disconnect the connector (AB7) from (AB2). 5) Connect the connector (1P) in the test harness P to connector (AB2). 6) Connect the airbag resistor to the connectors (2P) and (3P) of test harness P. 7) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for six seconds and go off?	Replace the roll connector. <Ref. to AB-26, Roll Connector.>	Go to step **4**.
4	**CHECK AIRBAG MAIN HARNESS (DRIVER'S AIRBAG HARNESS).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the airbag resistor from the connectors (2P) and (3P) of test harness P. 3) Remove the console front panel and disconnect the connectors (AB10) and (AB9). 4) Disconnect the connectors (AB6, AB17, AB18) from the airbag control module, and connect the test harness AG connector (1AG). 5) Measure the resistance between connector (3AG) in the test harness AG and connectors (2P) and (3P) in the test harness P. ***Connector & terminal*** ***(3AG) No. 1 — (2P) No. 1:*** ***(3AG) No. 3 — (2P) No. 2:***	Is the resistance less than 10 Ω?	Go to step **5**.	Replace the airbag main harness along with body harness.

	Step	Check	Yes	No
5	**CHECK AIRBAG MAIN HARNESS (DRIVER'S AIRBAG HARNESS).** Measure the resistance between connector (3AG) terminals in the test harness AG. ***Connector & terminal*** ***(3AG) No. 1 — (3AG) No. 3:*** ***(3AG) No. 3 — Chassis ground:*** ***(3AG) No. 1 — Chassis ground:*** ***(3AG) No. 2 — (3AG) No. 4:*** ***(3AG) No. 2 — Chassis ground:*** ***(3AG) No. 4 — Chassis ground:*** ***(3AG) No. 1 — (3AG) No. 2:*** ***(3AG) No. 1 — (3AG) No. 4:*** ***(3AG) No. 2 — (3AG) No. 3:*** ***(3AG) No. 3 — (3AG) No. 4:***	Is the resistance 1 MΩ or more?	Go to step **6**.	Replace the airbag main harness along with body harness.
6	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **7**.
7	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

B: DTC 12 PASSENGER'S AIRBAG FAILURE

DTC DETECTING CONDITION:

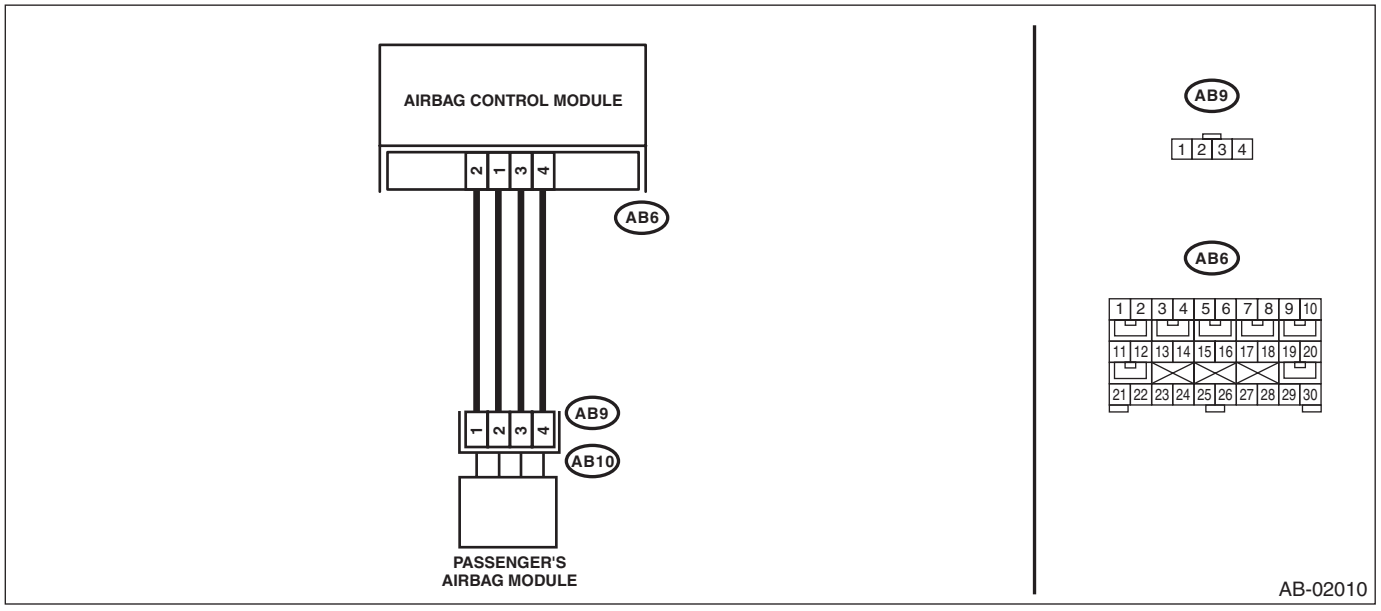
- Airbag main harness circuit is open, shorted or shorted to ground.
- Airbag module harness (Passenger's side) circuit is open, shorted or shorted to ground.
- Passenger's airbag module is faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

NOTE:
Prior to starting work, 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 passenger's airbag module.	Is there poor contact?	Replace the airbag 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 for 20 seconds or more. 2) Remove the console front panel and disconnect the connectors (AB10) from (AB9). 3) Connect the connector (1P) in the test harness P to connector (AB9). 4) Connect the airbag resistor to the connectors (2P) and (3P) of test harness P. 5) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for six seconds and go off?	Replace the passenger's airbag module. <Ref. to AB-16, Passenger's Airbag Module.>	Go to step **3**.

	Step	Check	Yes	No
3	**CHECK AIRBAG MAIN HARNESS (PASSENGER'S AIRBAG HARNESS).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the airbag resistor from the connectors (2P) and (3P) of test harness P. 3) Remove the instrument panel lower cover and disconnect the connector (AB7) from (AB2). 4) Disconnect the connectors (AB6, AB17, AB18) from the airbag control module, and connect the test harness AG connector (1AG). 5) Measure the resistance between connector (3AG) in the test harness AG and connectors (2P) and (3P) in the test harness P. ***Connector & terminal*** ***(3AG) No. 9 — (2P) No. 1:*** ***(3AG) No. 7 — (2P) No. 2:***	Is the resistance less than 10 Ω?	Go to step **4**.	Replace the airbag main harness along with body harness.
4	**CHECK AIRBAG MAIN HARNESS (PASSENGER'S AIRBAG HARNESS).** Measure the resistance between connectors (3AG) in the test harness AG, and between connector (3AG) and chassis ground. ***Connector & terminal*** ***(3AG) No. 9 — (3AG) No. 7:*** ***(3AG) No. 9 — Chassis ground:*** ***(3AG) No. 7 — Chassis ground:*** ***(3AG) No. 8 — (3AG) No. 6:*** ***(3AG) No. 8 — Chassis ground:*** ***(3AG) No. 6 — Chassis ground:*** ***(3AG) No. 7 — (3AG) No. 6:*** ***(3AG) No. 6 — (3AG) No. 9:*** ***(3AG) No. 7 — (3AG) No. 8:*** ***(3AG) No. 8 — (3AG) No. 9:***	Is the resistance 1 MΩ or more?	Go to step **5**.	Replace the airbag main harness along with body harness.
5	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **6**.
6	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

C: DTC 15 DRIVER'S AIRBAG FAILURE

DTC DETECTING CONDITION:

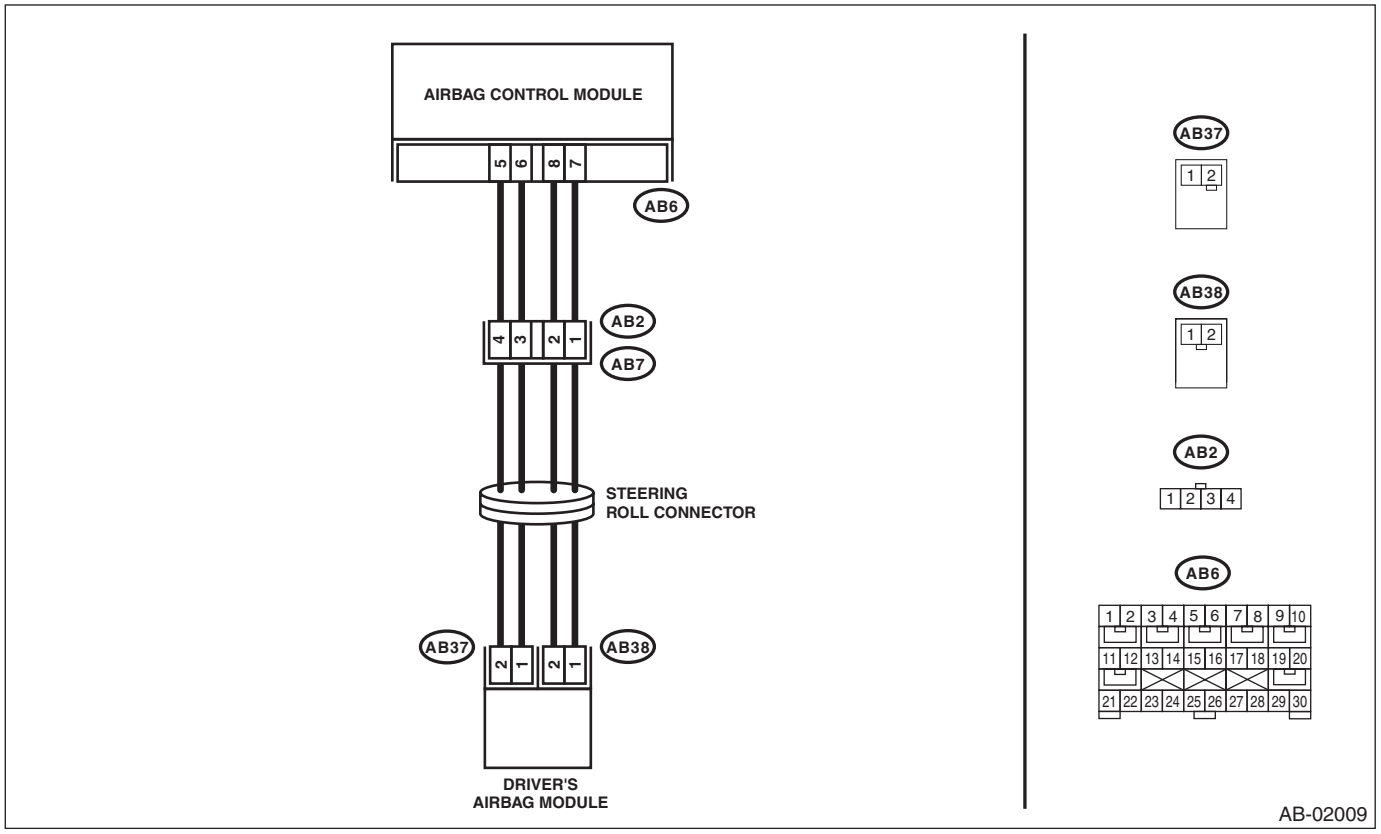
- Airbag main harness circuit (Driver's side) is shorted to power supply.
- Airbag module harness circuit (Driver's side) is shorted to power supply.
- Roll connector is shorted to power supply.
- Driver's airbag module is faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

NOTE:
Prior to starting work, 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 harness.	Go to step **2**.

	Step	Check	Yes	No
2	**CHECK DRIVER'S AIRBAG MODULE.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Remove the driver's airbag module. 3) Connect the connector (AB38) to the connector (1N) in the test harness N. 4) Connect the airbag resistor to the connector (2N) of 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 six seconds and go off?	Replace the driver's airbag module. <Ref. to AB-15, Driver's Airbag Module.>	Go to step **3**.
3	**CHECK ROLL CONNECTOR.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 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 and disconnect the connector (AB7) from (AB2). 5) Connect the connector (1P) in the test harness P to connector (AB2). 6) Connect the airbag resistor to the connectors (2P) and (3P) of test harness P. 7) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for six seconds and go off?	Replace the roll connector. <Ref. to AB-26, Roll Connector.>	Go to step **4**.
4	**CHECK AIRBAG MAIN HARNESS (DRIVER'S AIRBAG HARNESS).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the airbag resistor from the connectors (2P) and (3P) of test harness P. 3) Remove the console front panel and disconnect the connectors (AB10) and (AB9). 4) Disconnect the connectors (AB6, AB17, AB18) from the airbag control module, and connect the test harness AG connector (1AG). 5) Connect the battery ground terminal and turn the ignition switch to ON. 6) Measure the voltage between connector (3AG) in the test harness AG and chassis ground. ***Connector & terminal*** ***(3AG) No. 3 (+) — Chassis ground (–):*** ***(3AG) No. 1 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **5**.	Replace the airbag main harness along with body harness.
5	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **6**.

Step		Check	Yes	No
6	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using “List of Diagnostic Trouble Code (DTC)”. <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

D: DTC 16 PASSENGER'S AIRBAG FAILURE

DTC DETECTING CONDITION:

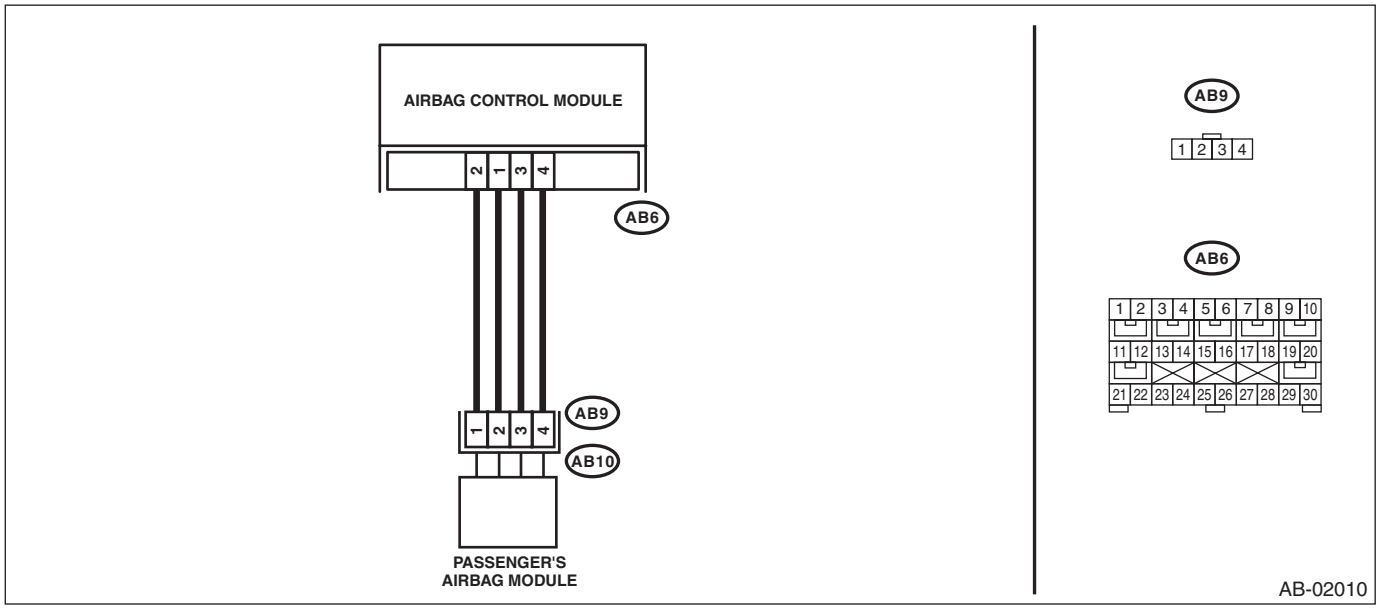
- Airbag main harness circuit (Passenger's side) is shorted to power supply.
- Airbag module harness circuit (Passenger's side) is shorted to power supply.
- Passenger's airbag module is faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

NOTE:
Prior to starting work, 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 passenger's airbag module.	Is there poor contact?	Replace the airbag harness along with chassis 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 for 20 seconds or more. 2) Remove the console front panel and disconnect the connectors (AB10) from (AB9). 3) Connect the connector (1P) in the test harness P to connector (AB9). 4) Connect the airbag resistor to the connectors (2P) and (3P) of test harness P. 5) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for six seconds and go off?	Replace the passenger's airbag module. <Ref. to AB-16, Passenger's Airbag Module.>	Go to step **3**.

	Step	Check	Yes	No
3	**CHECK AIRBAG MAIN HARNESS (PASSENGER'S AIRBAG HARNESS).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the airbag resistor from the connectors (2P) and (3P) of test harness P. 3) Remove the instrument panel lower cover and disconnect the connector (AB7) from (AB2). 4) Disconnect the connectors (AB6, AB17, AB18) from the airbag control module, and connect the test harness AG connector (1AG). 5) Connect the battery ground terminal and turn the ignition switch to ON. 6) Measure the voltage between connector (3AG) in the test harness AG and chassis ground. ***Connector & terminal*** ***(3AG) No. 9 (+) — Chassis ground (–):*** ***(3AG) No. 7 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **4**.	Replace the airbag main harness along with body harness.
4	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **5**.
5	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, 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 cable from battery, and wait 20 seconds or more 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 IF DTC 21 IS INDICATED.** Read the DTC. <Ref. to AB(diag)-24, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Does the Subaru Select Monitor display DTC21?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Perform the Clear Memory Mode. <Ref. to AB(diag)-25, CLEAR MEMORY MODE, OPERATION, Subaru Select Monitor.>

F: DTC 22 FRONT AIRBAG FIRING OUTPUT

This DTC is indicated when the front airbag module and the pretensioner are deployed.
Once this DTC is displayed, the memory cannot be cleared. Therefore replace the following parts.
- Airbag control module <Ref. to AB-21, Airbag Control Module.>
- Driver's airbag module <Ref. to AB-15, Driver's Airbag Module.>
- Passenger's airbag module <Ref. to AB-16, Passenger's Airbag Module.>
- Front sub sensor of both sides. <Ref. to AB-22, Front Sub Sensor.>
- Front outer seat belt with pretensioner of both sides. <Ref. to SB-17, Front Seat Belt.>
- Steering roll connector <Ref. to AB-26, Roll Connector.>
- Occupant detection system (passenger's seat cushion & frame assembly) <Ref. to SE-6, Front Seat.>

G: DTC 26 PASSENGER'S AIRBAG INDICATOR FAILURE

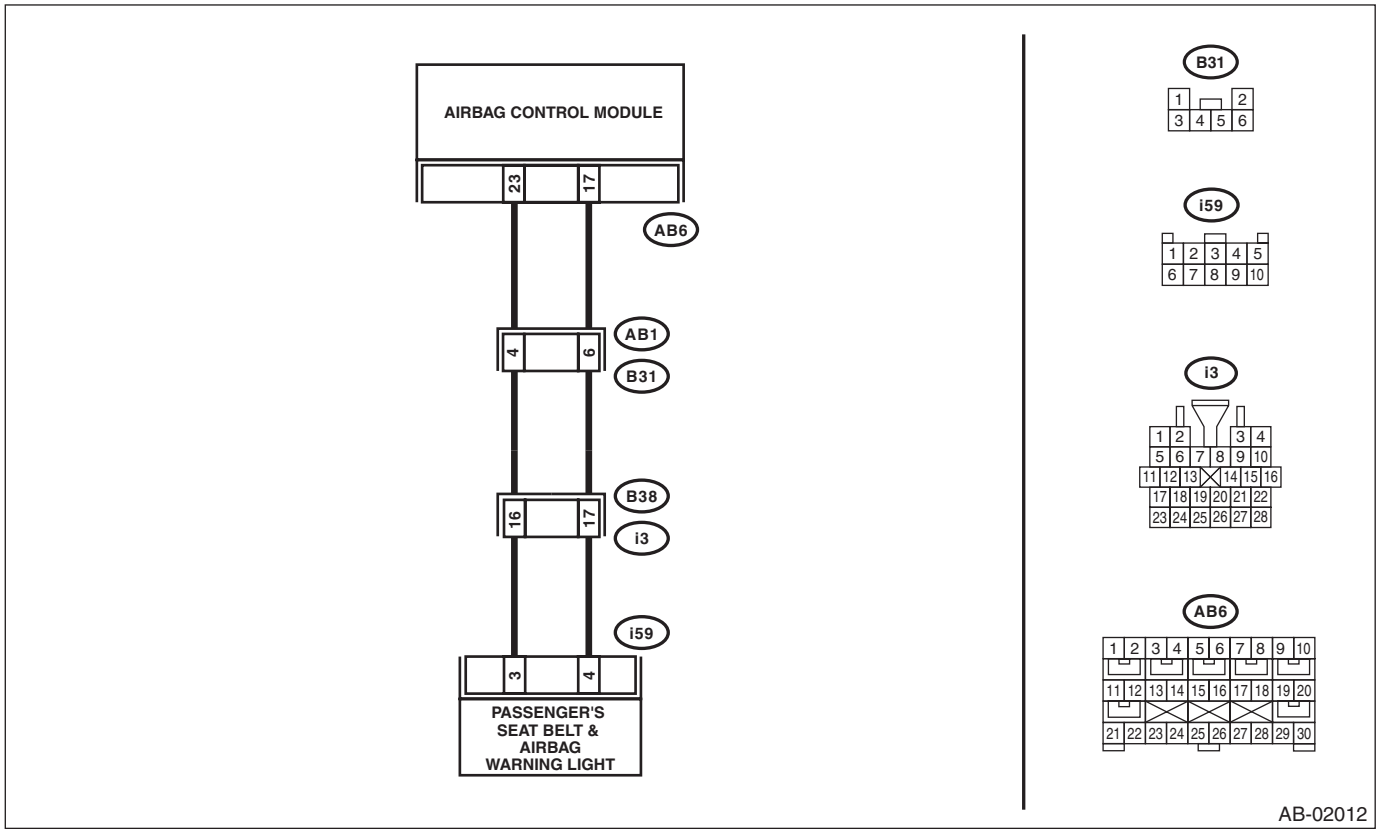
DTC DETECTING CONDITION:

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

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK FOR POOR CONTACT.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Confirm that firm contact is secured for the connector between the airbag control module and the clock.	Is there poor contact of any connector?	Replace the airbag harness connector.	Go to step **2**.

	Step	Check	Yes	No
2	**CHECK AIRBAG MAIN HARNESS.** 1) Disconnect the connectors (AB6, AB17, AB18) from airbag control module. 2) Connect the battery ground terminal and turn the ignition switch to ON. NOTE: Neither of ON/OFF illuminates when it is normal.	Does the passenger's airbag indicator illuminate?	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 disconnect the connector (i59). 3) Connect the test harness AG connector (1AG) to the connectors (AB6, AB17, AB18). 4) Measure the resistance between connector (2AG) in the test harness AG and chassis ground. ***Connector & terminal*** ***(2AG) No. 9 — (2AG) No. 8:*** ***(2AG) No. 9 — Chassis ground:*** ***(2AG) No. 8 — Chassis ground:***	Is the resistance 1 MΩ or more?	Replace the clock. <Ref. to IDI-20, REMOVAL, Clock.>	Repair the bulkhead harness. Or replace the airbag main harness along with body harness.
4	**CHECK AIRBAG HARNESS.** 1) Connect the connectors (7AG) and (8AG) in the test harness AG. 2) Connect the battery ground terminal and turn the ignition switch to ON.	Does the passenger's airbag indicator illuminate?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **5**.
5	**CHECK AIRBAG HARNESS.** 1) Turn the ignition switch to OFF. 2) Connect the test harness AG connector (1AG) to the connectors (AB6, AB17, AB18). 3) Measure the resistance between connector (2AG) in the test harness AG and connector (i59). ***Connector & terminal*** ***(2AG) No. 9 — (i59) No. 4:*** ***(2AG) No. 8 — (i59) No. 3:***	Is the resistance less than 10 Ω?	Go to step **6**.	Repair the bulkhead harness. Or replace the airbag main harness along with body harness.
6	**CHECK BODY HARNESS.** 1) Turn the ignition switch to ON. 2) Measure the voltage between connector (i59) and chassis ground. ***Connector & terminal*** ***(i59) No. 8 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Replace the clock. <Ref. to IDI-20, REMOVAL, Clock.>	Repair the clock power supply line.

H: DTC 27 ODS COMMUNICATION ERROR

DTC DETECTING CONDITION:

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

	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module and the occupant detection control module.	Is there poor contact?	Reconnect the connector. If defective is not improved, replace the airbag rear harness along with the body harness or the occupant detection harness (seat harness).	Go to step **2**.
2	**CHECK AIRBAG HARNESS.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connectors (AB6, AB17, AB18) from airbag control module. 3) Disconnect the connectors (AB59) and (AB53) under the passenger's seat. 4) Connect the test harness AG connector (1AG) to the connectors (AB6, AB17, AB18). 5) Connect the connector (1AB) in the test harness AB to the connector (AB53). 6) Measure the resistance between connector (6AG) in the test harness AG and connector (2AB) in the test harness AB. ***Connector & terminal*** ***(6AG) No. 9 — (2AB) No. 1:*** ***(6AG) No. 11 — (2AB) No. 2:***	Is the resistance less than 10 Ω?	Go to step **3**.	Replace the airbag rear harness along with body harness.
3	**CHECK AIRBAG HARNESS.** Measure the resistance between connector (6AG) in the test harness AG and chassis ground. ***Connector & terminal*** ***(6AG) No. 9 — Chassis ground:*** ***(6AG) No. 9 — (6AG) No. 11:*** ***(6AG) No. 11 — Chassis ground:***	Is the resistance less than 1 Ω?	Go to step **4**.	Replace the airbag rear harness along with body harness.
4	**CHECK AIRBAG HARNESS.** 1) Turn the ignition switch to ON. 2) Measure the voltage between connector (2AB) in the test harness AB and chassis ground. ***Connector & terminal*** ***(2AB) No. 3 (+) — Chassis ground (–):***	Is the voltage 9 V or more?	Replace the occupant detection harness (seat harness). If defective is not improved, replace the occupant detection system (seat cushion & frame assembly), and then the airbag control module in this order.	Check the battery voltage and fuse. If there is no fault, replace the airbag rear harness along with body harness or replace the body harness.

I: DTC 29 ODS FAILURE

NOTE:
Refer to “Occupant Detection System” for details on DTC 29. <Ref. to OD(diag)-25, DTC 29 ODS FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

J: DTC 2A ODS CALIBRATION ERROR

NOTE:
Refer to “Occupant Detection System” for details on DTC 2A. <Ref. to OD(diag)-22, DTC 2A ODS CALIBRATION ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

K: DTC 2B ODS SYSTEM WRONG PARTS

NOTE:
Refer to “Occupant Detection System” for details on DTC 2B. <Ref. to OD(diag)-22, DTC 2B ODS SYSTEM WRONG PARTS, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

L: DTC 2C BELT TENSION SENSOR FAILURE

NOTE:
Refer to “Occupant Detection System” for details on DTC 2C. <Ref. to OD(diag)-23, DTC 2C BELT TENSION SENSOR FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

M: DTC 33 FRONT SUB SENSOR RH FAILURE

DTC DETECTING CONDITION:
Front sub sensor (RH) is faulty.
If DTC 33 is displayed, the circuit within the front sub sensor (RH) is faulty.
Replace the front sub sensor (RH). <Ref. to AB-22, Front Sub Sensor.>

N: DTC 34 FRONT SUB SENSOR LH FAILURE

DTC DETECTING CONDITION:
Front sub sensor (LH) is faulty.
If DTC 34 is displayed, the circuit within the front sub sensor (LH) is faulty.
Replace the front sub sensor (LH). <Ref. to AB-22, Front Sub Sensor.>

O: DTC 37 BUCKLE SWITCH RH FAILURE

NOTE:
Refer to “Occupant Detection System” for details on DTC 37. <Ref. to OD(diag)-26, DTC 37 BUCKLE SWITCH RH FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

P: DTC 39 SEAT BELT WARNING FAILURE

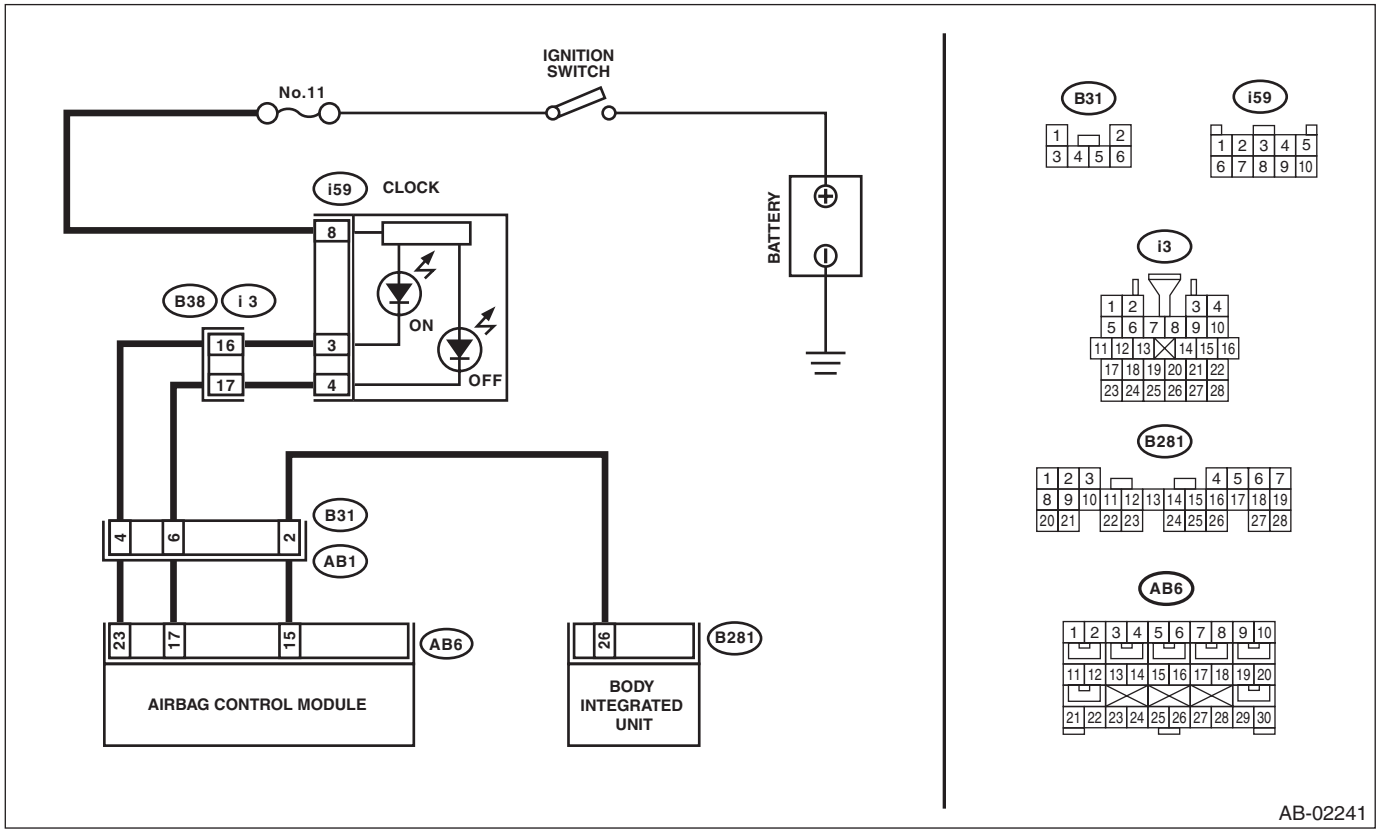
DTC DETECTING CONDITION:

- Airbag control module is faulty.
- Body integrated unit is faulty.
- Harness circuits between body integrated unit and airbag control module are open, shorted or shorted to ground.

CAUTION:

- **Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.**
- **When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.**

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK AIRBAG HARNESS.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connectors (AB6, AB17, AB18) from airbag control module. 3) Connect the battery ground terminal and turn the ignition switch to ON.	Does the passenger's seat belt warning light blink for 6 seconds and go off?	Go to step **3**.	Go to step **2**.

	Step	Check	Yes	No
2	**CHECK AIRBAG HARNESS.** 1) Turn the ignition switch to OFF. 2) Connect the test harness AG connector (1AG) to the connectors (AB6, AB17, AB18). 3) Measure the resistance between connector (2AG) in the test harness AG and chassis ground. ***Connector & terminal*** ***(2AG) No. 10 — Chassis ground:***	Is the resistance 1 MΩ or more?	Replace the body integrated unit.	Repair the bulkhead harness. Or replace the airbag main harness along with body harness.
3	**CHECK AIRBAG HARNESS.** 1) Turn the ignition switch to OFF. 2) Connect the connectors (7AG) and (8AG) in the test harness AG in the condition of step 2. 3) Turn the ignition switch to ON.	Does the passenger's seat belt warning light blink for 6 seconds, then repeatedly light and go off?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **4**.
4	**CHECK AIRBAG HARNESS.** 1) Turn the ignition switch to OFF. 2) Disconnect the connectors (7AG) and (8AG) in the test harness AG in the condition of step 3. 3) Disconnect the connector (B281) from body integrated unit. 4) Measure the resistance between connector (2AG) in the test harness AG and connector (B281). ***Connector & terminal*** ***(2AG) No. 10 — (B281) No. 26:***	Is the resistance less than 10 Ω?	Replace the body integrated unit.	Repair the bulkhead harness. Or replace the airbag main harness along with body harness.

Q: DTC 41 SIDE AIRBAG RH FAILURE

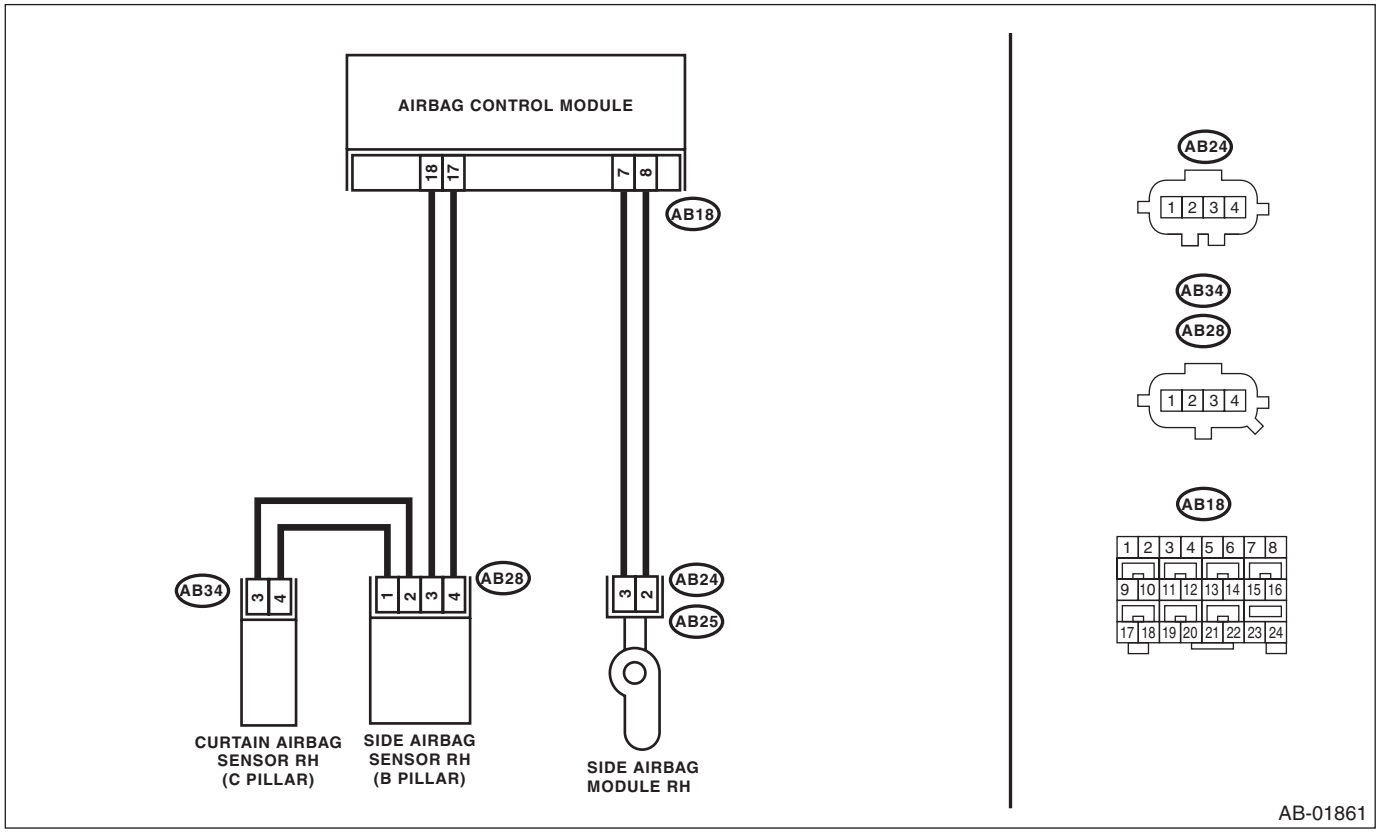
DTC DETECTING CONDITION:

- 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 cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

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 along with body harness.	Go to step **2**.

	Step	Check	Yes	No
2	**CHECK SIDE AIRBAG MODULE.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connectors (AB25) and (AB24), and connect the test harness AJ connector (1AJ) to connector (AB24). 3) Connect the airbag resistor to the test harness AJ connector (3AJ). 4) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for six seconds and go off?	Replace the side airbag module (RH). <Ref. to AB-17, REMOVAL, Side Airbag Module.>	Go to step **3**.
3	**CHECK AIRBAG REAR HARNESS (SIDE AIRBAG MODULE HARNESS RH).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connector (AB26) from seat belt pretensioner (RH). 3) Disconnect the connector (AB33) from curtain airbag module (RH). 4) Disconnect the airbag resistor from test harness AJ. 5) Disconnect the connectors (AB6, AB17, AB18) from airbag control module. 6) Connect the test harness AG connector (1AG) to the connectors (AB6, AB17, AB18). 7) Measure the resistance between the test harness AG connector (5AG) and the test harness AJ connector (3AJ). ***Connector & terminal*** ***(5AG) No. 5 — (3AJ) No. 1:*** ***(5AG) No. 7 — (3AJ) No. 2:***	Is the resistance less than 10 Ω?	Go to step **4**.	Replace the airbag rear harness along with body harness.
4	**CHECK AIRBAG REAR HARNESS (SIDE AIRBAG MODULE HARNESS RH).** Measure the resistance between connector (5AG) terminals in the test harness AG. ***Connector & terminal*** ***(5AG) No. 5 — (5AG) No. 7:***	Is the resistance 1 MΩ or more?	Go to step **5**.	Replace the airbag rear harness along with body harness.
5	**CHECK AIRBAG REAR HARNESS (SIDE AIRBAG MODULE HARNESS RH).** Measure the resistance between connector (5AG) in the test harness AG and chassis ground. ***Connector & terminal*** ***(5AG) No. 5 — Chassis ground:*** ***(5AG) No. 7 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **6**.	Replace the airbag rear harness along with body harness.
6	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **7**.
7	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

R: DTC 42 SIDE AIRBAG LH FAILURE

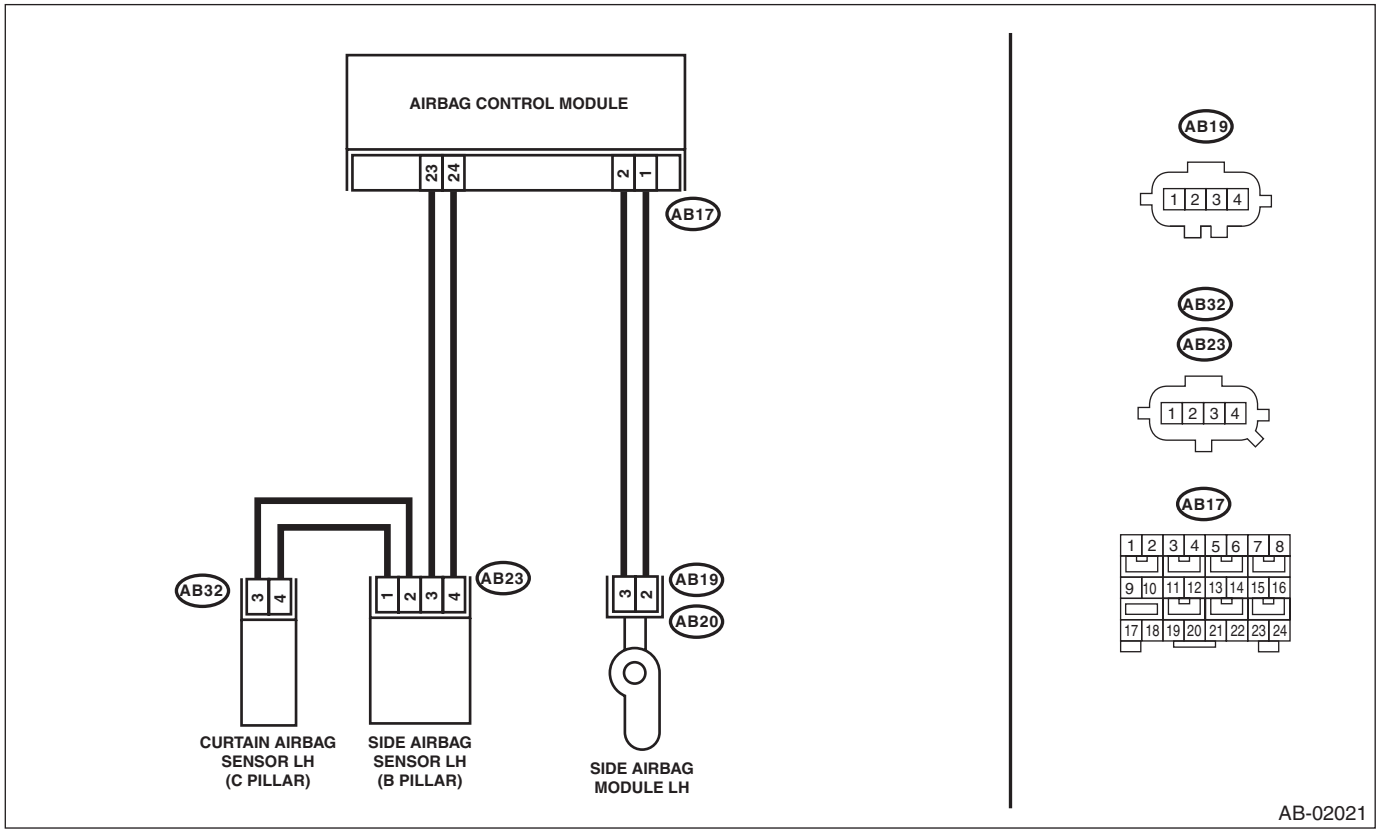
DTC DETECTING CONDITION:

- 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 cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

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 along with body harness.	Go to step **2**.

	Step	Check	Yes	No
2	**CHECK SIDE AIRBAG MODULE.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connectors (AB20) and (AB19), and connect the test harness AJ connector (1AJ) to the connector (AB19). 3) Connect the airbag resistor to the test harness AJ connector (3AJ). 4) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for six seconds and go off?	Replace the side airbag module (LH). <Ref. to AB-17, REMOVAL, Side Airbag Module.>	Go to step **3**.
3	**CHECK AIRBAG REAR HARNESS (SIDE AIRBAG MODULE HARNESS LH).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connector (AB21) from seat belt pretensioner (LH). 3) Disconnect the connector (AB31) from curtain airbag module (LH). 4) Disconnect the airbag resistor from test harness. 5) Disconnect the connectors (AB6, AB17, AB18) from airbag control module. 6) Connect the test harness AG connector (1AG) to the connectors (AB6, AB17, AB18). 7) Measure the resistance between the test harness AG connector (5AG) and the test harness AJ connector (3AJ). ***Connector & terminal*** ***(5AG) No. 1 — (3AJ) No. 2:*** ***(5AG) No. 3 — (3AJ) No. 1:***	Is the resistance less than 10 Ω?	Go to step **4**.	Replace the airbag rear harness along with body harness.
4	**CHECK AIRBAG REAR HARNESS (SIDE AIRBAG MODULE HARNESS LH).** Measure the resistance between connector (5AG) terminals in the test harness AG. ***Connector & terminal*** ***(5AG) No. 1 — (5AG) No. 3:***	Is the resistance 1 MΩ or more?	Go to step **5**.	Replace the airbag rear harness along with body harness.
5	**CHECK AIRBAG REAR HARNESS (SIDE AIRBAG MODULE HARNESS LH).** Measure the resistance between connector (5AG) in the test harness AG and chassis ground. ***Connector & terminal*** ***(5AG) No. 1 — Chassis ground:*** ***(5AG) No. 3 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **6**.	Replace the airbag rear harness along with body harness.
6	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **7**.
7	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

S: DTC 45 SIDE AIRBAG RH FAILURE

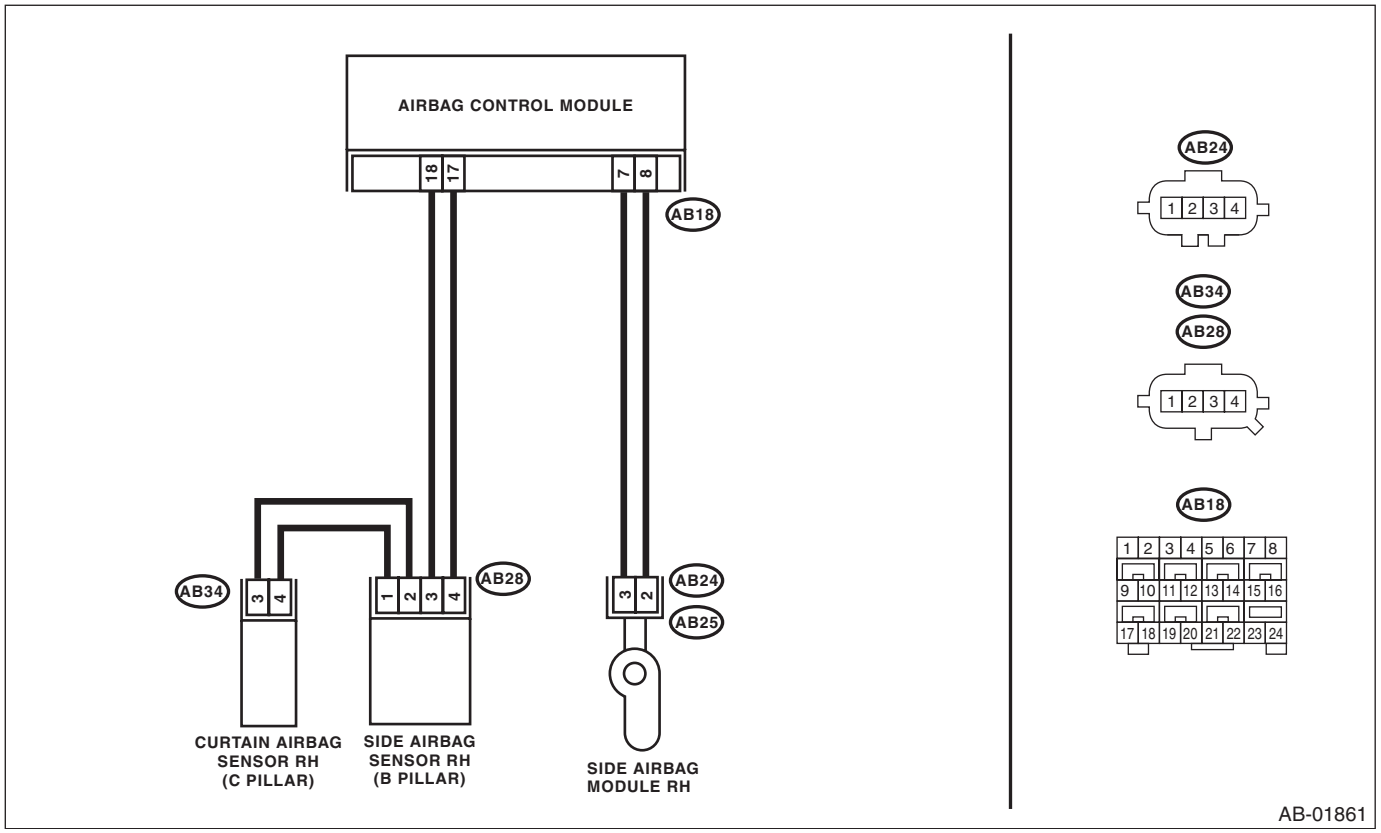
DTC DETECTING CONDITION:

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

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

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 along with body harness.	Go to step **2**.

	Step	Check	Yes	No
2	**CHECK SIDE AIRBAG MODULE.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connectors (AB25) and (AB24), and connect the test harness AJ connector (1AJ) to connector (AB24). 3) Connect the airbag resistor to the test harness AJ connector (3AJ). 4) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for six seconds and go off?	Replace the side airbag module (RH). <Ref. to AB-17, REMOVAL, Side Airbag Module.>	Go to step **3**.
3	**CHECK AIRBAG REAR HARNESS (SIDE AIRBAG MODULE HARNESS RH).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connector (AB26) from seat belt pretensioner (RH). 3) Disconnect the connector (AB33) from curtain airbag module (RH). 4) Disconnect the airbag resistor from test harness. 5) Disconnect the connectors (AB6, AB17, AB18) from airbag control module. 6) Connect the test harness AG connector (1AG) to the connectors (AB6, AB17, AB18). 7) Connect the battery ground terminal and turn the ignition switch to ON. 8) Measure the voltage between connector (5AG) in the test harness AG and chassis ground. ***Connector & terminal*** ***(5AG) No. 5 (+) — Chassis ground (–):*** ***(5AG) No. 7 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **4**.	Replace the airbag rear harness along with body harness.
4	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **5**.
5	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

T: DTC 46 SIDE AIRBAG LH FAILURE

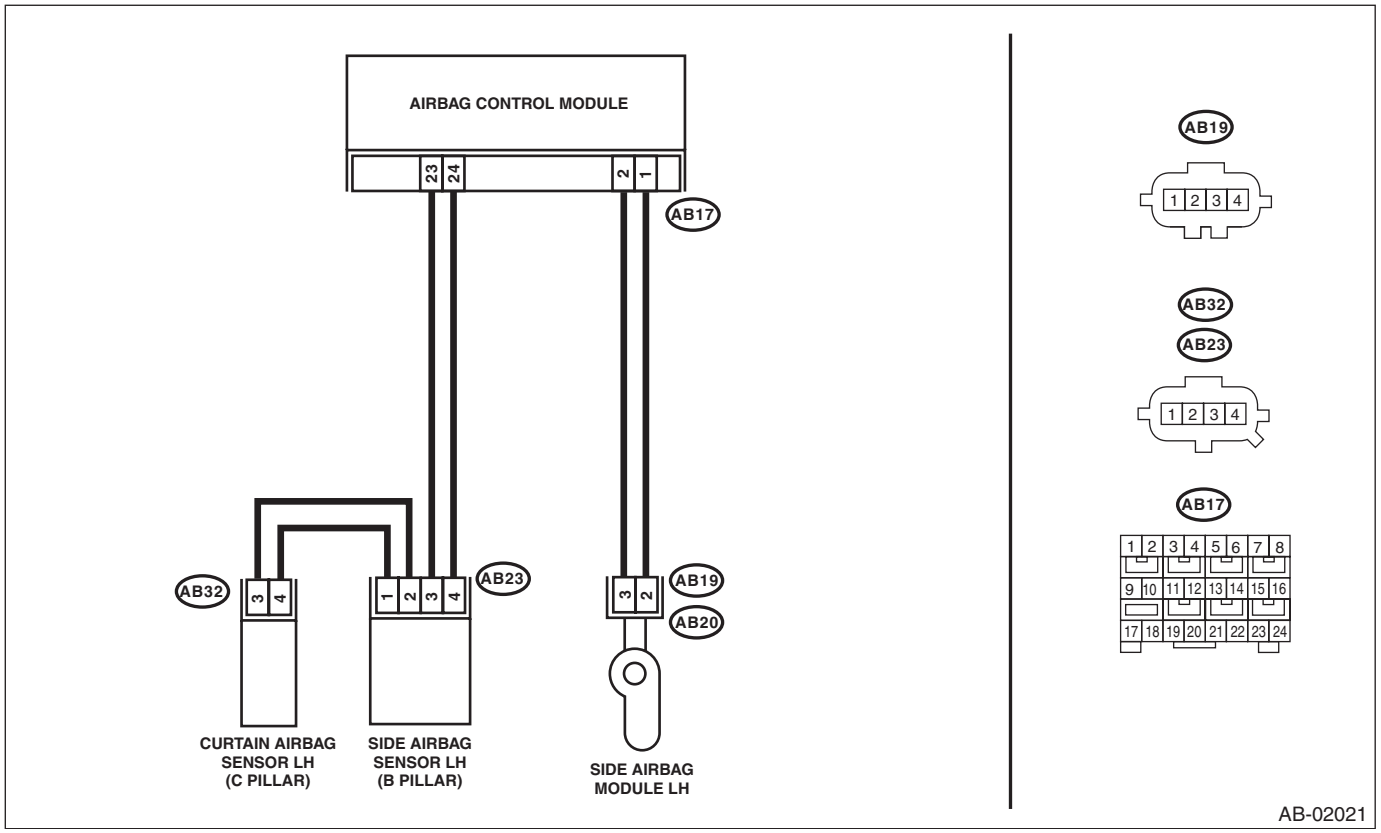
DTC DETECTING CONDITION:

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

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

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 along with body harness.	Go to step **2**.

	Step	Check	Yes	No
2	**CHECK SIDE AIRBAG MODULE.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connectors (AB20) and (AB19), and connect the test harness AJ connector (1AJ) to the connector (AB19). 3) Connect the airbag resistor to the test harness AJ connector (3AJ). 4) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for six seconds and go off?	Replace the side airbag module (LH). <Ref. to AB-17, REMOVAL, Side Airbag Module.>	Go to step **3**.
3	**CHECK AIRBAG REAR HARNESS (SIDE AIRBAG MODULE HARNESS LH).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connector (AB21) from seat belt pretensioner (LH). 3) Disconnect the connector (AB31) from curtain airbag module (LH). 4) Disconnect the airbag resistor from test harness. 5) Disconnect the connectors (AB6, AB17, AB18) from airbag control module. 6) Connect the test harness AG connector (1AG) to the connectors (AB6, AB17, AB18). 7) Connect the battery ground terminal and turn the ignition switch to ON. 8) Measure the voltage between connector (5AG) in the test harness AG and chassis ground. ***Connector & terminal*** ***(5AG) No. 3 (+) — Chassis ground (–):*** ***(5AG) No. 1 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **4**.	Replace the airbag rear harness along with body harness.
4	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **5**.
5	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

U: DTC 53 SIDE AIRBAG SENSOR RH FAILURE

DTC DETECTING CONDITION:
Side airbag sensor (RH) is faulty.
When DTC 53 is displayed, the circuit within the side airbag sensor (RH) is faulty.
Replace the side airbag sensor (RH). <Ref. to AB-23, Side Airbag Sensor.>

V: DTC 54 SIDE AIRBAG SENSOR LH FAILURE

DTC DETECTING CONDITION:
Side airbag sensor (LH) is faulty.
When DTC 54 is displayed, the circuit within the side airbag sensor (LH) is faulty.
Replace the side airbag sensor (LH). <Ref. to AB-23, Side Airbag Sensor.>

W: DTC 55 SIDE CURTAIN AIRBAG FIRING OUTPUT

This DTC is displayed when the side airbag module and curtain airbag module are deployed.
Once this DTC is displayed, the memory cannot be cleared. Replace the following parts.

- Airbag control module <Ref. to AB-21, Airbag Control Module.>
- Side airbag module (operating side) <Ref. to AB-17, Side Airbag Module.>
- Side airbag sensor (operating side) <Ref. to AB-23, Side Airbag Sensor.>
- Curtain airbag module (operating side) <Ref. to AB-19, Curtain Airbag Module.>
- Curtain airbag sensor (operating side) <Ref. to AB-24, Curtain Airbag Sensor.>
- Satellite safing sensor <Ref. to AB-25, Satellite Safing Sensor.>

X: DTC 58 CURTAIN AIRBAG SENSOR RH FAILURE

DTC DETECTING CONDITION:
Curtain airbag sensor (RH) is faulty.
If DTC 58 is displayed, the circuit within the curtain airbag sensor (RH) is faulty.
Replace the curtain airbag sensor (RH). <Ref. to AB-24, Curtain Airbag Sensor.>

Y: DTC 59 CURTAIN AIRBAG SENSOR LH FAILURE

DTC DETECTING CONDITION:
Curtain airbag sensor (LH) is faulty.
If DTC 59 is displayed, the circuit within the curtain airbag sensor (LH) is faulty.
Replace the curtain airbag sensor (LH). <Ref. to AB-24, Curtain Airbag Sensor.>

Z: DTC 61 BELT PRETENSIONER RH FAILURE

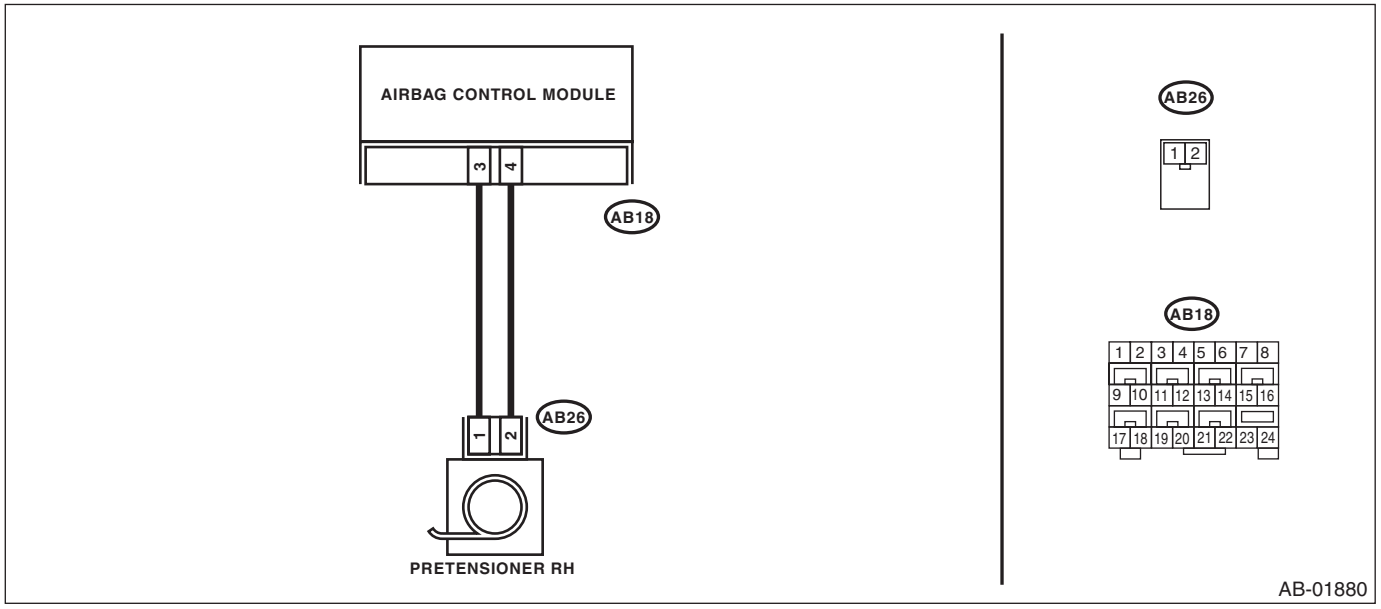
DTC DETECTING CONDITION:

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

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

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 seat belt pretensioner RH.	Is there poor contact?	Replace the airbag rear harness along with body harness.	Go to step **2**.
2	**CHECK SEAT BELT PRETENSIONER.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connector (AB26) from seat belt pretensioner (RH). 3) Connect the connector (1N) in the test harness N to the connector (AB26). 4) Connect the airbag resistor to the connector (2N) of test harness N. 5) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for six seconds and go off?	Replace the seat belt pretensioner (RH). <Ref. to SB-17, Front Seat Belt.>	Go to step **3**.

	Step	Check	Yes	No
3	**CHECK AIRBAG REAR HARNESS (PRETENSIONER HARNESS RH).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the airbag resistor from test harness. 3) Disconnect connector (AB24) from side airbag module (RH). 4) Disconnect the connector (AB33) from curtain airbag module (RH). 5) Disconnect the connectors (AB6, AB17, AB18) from airbag control module. 6) Connect the test harness AG connector (1AG) to the connectors (AB6, AB17, AB18). 7) Measure the resistance between connector (3AG) in the test harness AG and connector (2N) in the test harness N. ***Connector & terminal*** ***(3AG) No. 18 — (2N) No. 2:*** ***(3AG) No. 20 — (2N) No. 1:***	Is the resistance less than 10 Ω?	Go to step **4**.	Replace the airbag rear harness along with body harness.
4	**CHECK AIRBAG REAR HARNESS (PRETENSIONER HARNESS RH).** Measure the resistance between connector (3AG) terminals in the test harness AG. ***Connector & terminal*** ***(3AG) No. 18 — (3AG) No. 20:***	Is the resistance 1 MΩ or more?	Go to step **5**.	Replace the airbag rear harness along with body harness.
5	**CHECK AIRBAG REAR HARNESS (PRETENSIONER HARNESS RH).** Measure the resistance between connector (3AG) in the test harness AG and chassis ground. ***Connector & terminal*** ***(3AG) No. 18 — Chassis ground:*** ***(3AG) No. 20 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **6**.	Replace the airbag rear harness along with body harness.
6	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **7**.
7	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AA:DTC 62 BELT PRETENSIONER LH FAILURE

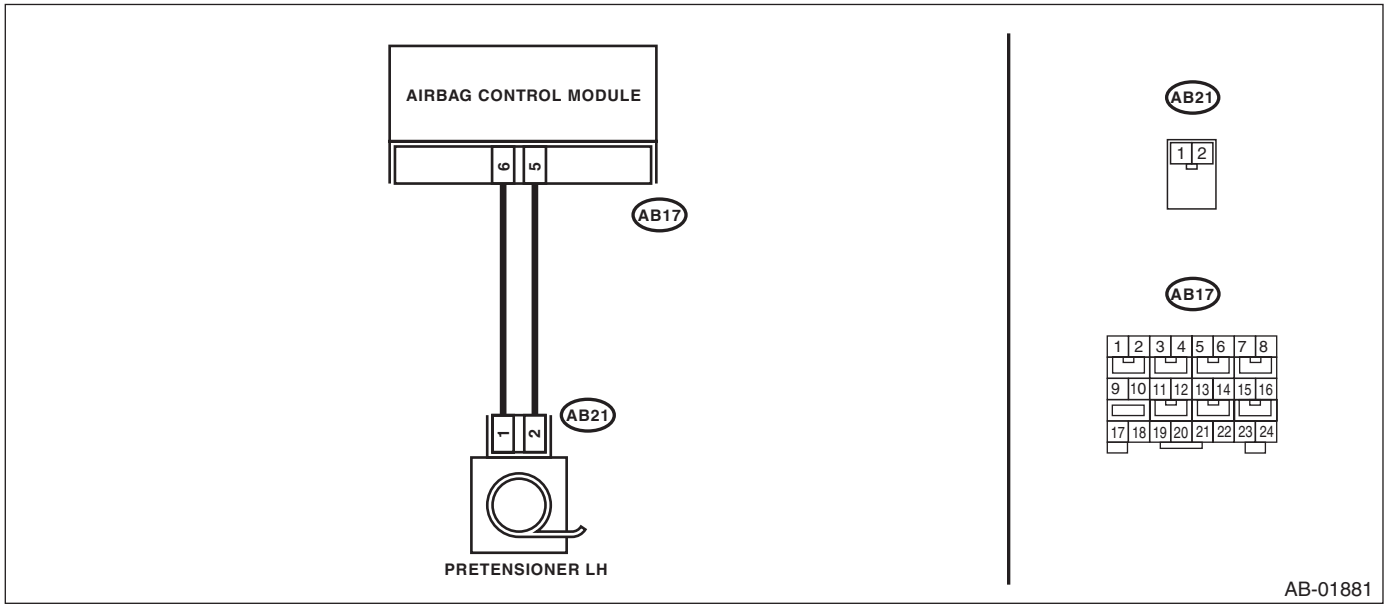
DTC DETECTING CONDITION:

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

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

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 seat belt pretensioner LH.	Is there poor contact?	Replace the airbag rear harness along with body harness.	Go to step **2**.
2	**CHECK SEAT BELT PRETENSIONER.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connector (AB21) from seat belt pretensioner (LH). 3) Connect the connector (1N) in the test harness N to the connector (AB21). 4) Connect the airbag resistor to the connector (2N) of test harness N. 5) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for six seconds and go off?	Replace the seat belt pretensioner (LH). <Ref. to SB-17, Front Seat Belt.>	Go to step **3**.

	Step	Check	Yes	No
3	**CHECK AIRBAG REAR HARNESS (PRETENSIONER HARNESS LH).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the airbag resistor from test harness. 3) Disconnect connector (AB19) from side airbag module (LH). 4) Disconnect the connector (AB31) from curtain airbag module (LH). 5) Disconnect the connectors (AB6, AB17, AB18) from airbag control module. 6) Connect the test harness AG connector (1AG) to the connectors (AB6, AB17, AB18). 7) Measure the resistance between connector (3AG) in the test harness AG and connector (2N) in the test harness N. ***Connector & terminal*** ***(3AG) No. 12 — (2N) No. 2:*** ***(3AG) No. 10 — (2N) No. 1:***	Is the resistance less than 10 Ω?	Go to step **4**.	Replace the airbag rear harness along with body harness.
4	**CHECK AIRBAG REAR HARNESS (PRETENSIONER HARNESS LH).** Measure the resistance between connector (3AG) terminals in the test harness AG. ***Connector & terminal*** ***(3AG) No. 10 — (3AG) No. 12:***	Is the resistance 1 MΩ or more?	Go to step **5**.	Replace the airbag rear harness along with body harness.
5	**CHECK AIRBAG REAR HARNESS (PRETENSIONER HARNESS LH).** Measure the resistance between connector (3AG) in the test harness AG and chassis ground. ***Connector & terminal*** ***(3AG) No. 10 — Chassis ground:*** ***(3AG) No. 12 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **6**.	Replace the airbag rear harness along with body harness.
6	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **7**.
7	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AB:DTC 65 BELT PRETENSIONER RH FAILURE

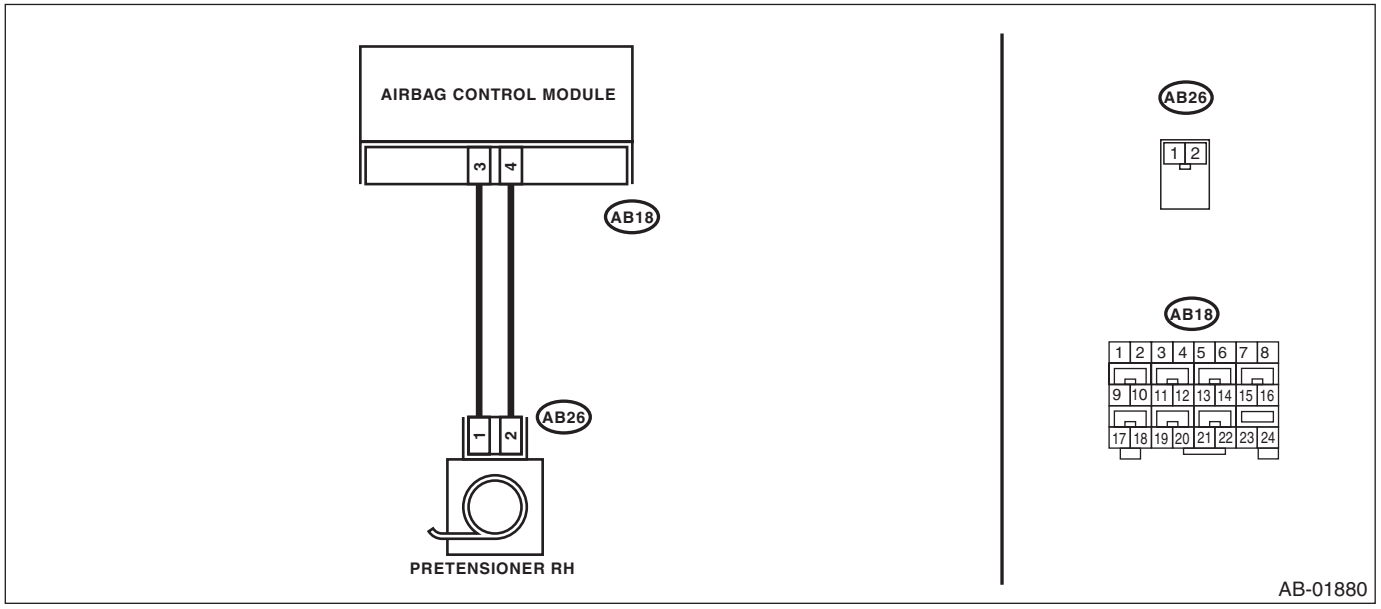
DTC DETECTING CONDITION:

- Seat belt pretensioner (RH) circuit is shorted to power supply.
- Pretensioner is faulty.
- Pretensioner 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 cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

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 seat belt pretensioner RH.	Is there poor contact?	Replace the airbag rear harness along with body harness.	Go to step **2**.
2	**CHECK SEAT BELT PRETENSIONER.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connector (AB26) from seat belt pretensioner (RH). 3) Connect the connector (1N) in the test harness N to the connector (AB26). 4) Connect the airbag resistor to the connector (2N) of test harness N. 5) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for six seconds and go off?	Replace the seat belt pretensioner (RH). <Ref. to SB-17, Front Seat Belt.>	Go to step **3**.

	Step	Check	Yes	No
3	**CHECK AIRBAG REAR HARNESS (PRETENSIONER HARNESS RH).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the airbag resistor from test harness. 3) Disconnect connector (AB24) from side airbag module (RH). 4) Disconnect the connector (AB33) from curtain airbag module (RH). 5) Disconnect the connectors (AB6, AB17, AB18) from airbag control module. 6) Connect the test harness AG connector (1AG) to the connectors (AB6, AB17, AB18). 7) Connect the battery ground terminal and turn the ignition switch to ON. 8) Measure the voltage between connector (3AG) in the test harness AG and chassis ground. ***Connector & terminal*** ***(3AG) No. 20 (+) — Chassis ground (–):*** ***(3AG) No. 18 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **4**.	Replace the airbag rear harness along with body harness.
4	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **5**.
5	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AC:DTC 66 BELT PRETENSIONER LH FAILURE

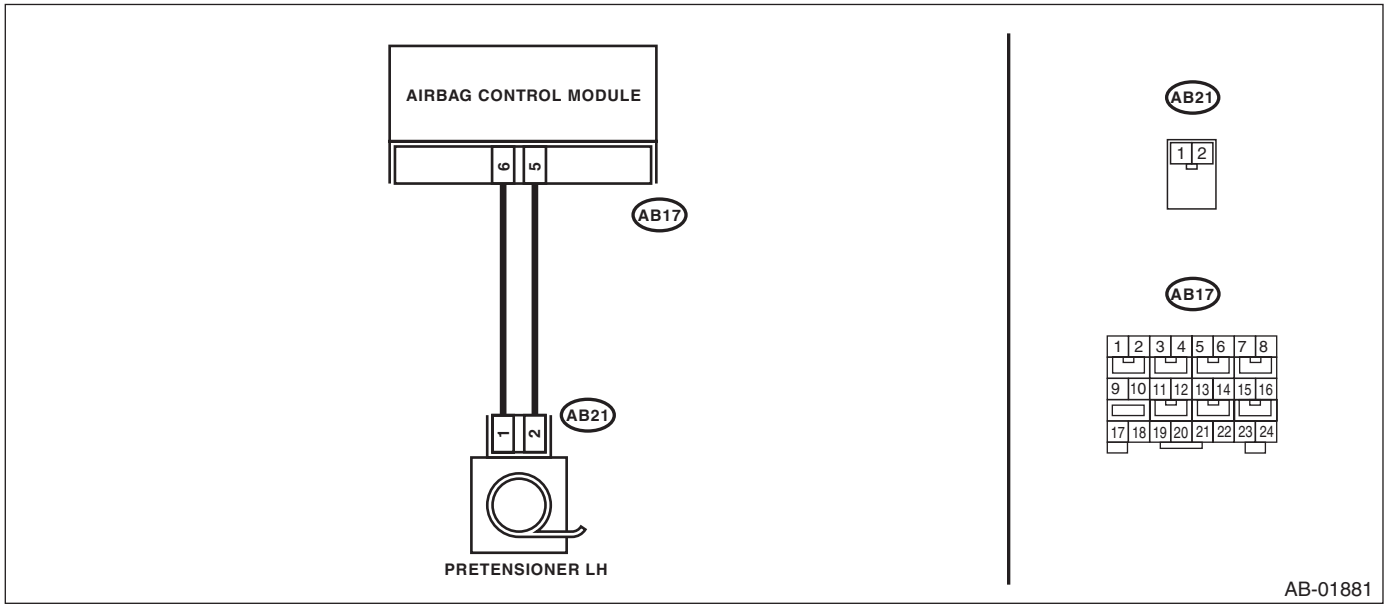
DTC DETECTING CONDITION:

- Seat belt pretensioner (LH) circuit is shorted to power supply.
- Pretensioner is faulty.
- Pretensioner 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 cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

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 seat belt pretensioner LH.	Is there poor contact?	Replace the airbag rear harness along with body harness.	Go to step **2**.
2	**CHECK SEAT BELT PRETENSIONER.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connector (AB21) from seat belt pretensioner (LH). 3) Connect the connector (1N) in the test harness N to the connector (AB21). 4) Connect the airbag resistor to the connector (2N) of test harness N. 5) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for six seconds and go off?	Replace the seat belt pretensioner (LH). <Ref. to SB-17, Front Seat Belt.>	Go to step **3**.

	Step	Check	Yes	No
3	**CHECK AIRBAG REAR HARNESS (PRETENSIONER HARNESS LH).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the airbag resistor from test harness. 3) Disconnect connector (AB19) from side airbag module (LH). 4) Disconnect the connector (AB31) from curtain airbag module (LH). 5) Disconnect the connectors (AB6, AB17, AB18) from airbag control module. 6) Connect the test harness AG connector (1AG) to the connectors (AB6, AB17, AB18). 7) Connect the battery ground terminal and turn the ignition switch to ON. 8) Measure the voltage between connector (3AG) in the test harness AG and chassis ground. ***Connector & terminal*** ***(3AG) No. 10 (+) — Chassis ground (–):*** ***(3AG) No. 12 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **4**.	Replace the airbag rear harness along with body harness.
4	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **5**.
5	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AD:DTC 71 DRIVER'S AIRBAG FAILURE

DTC DETECTING CONDITION:

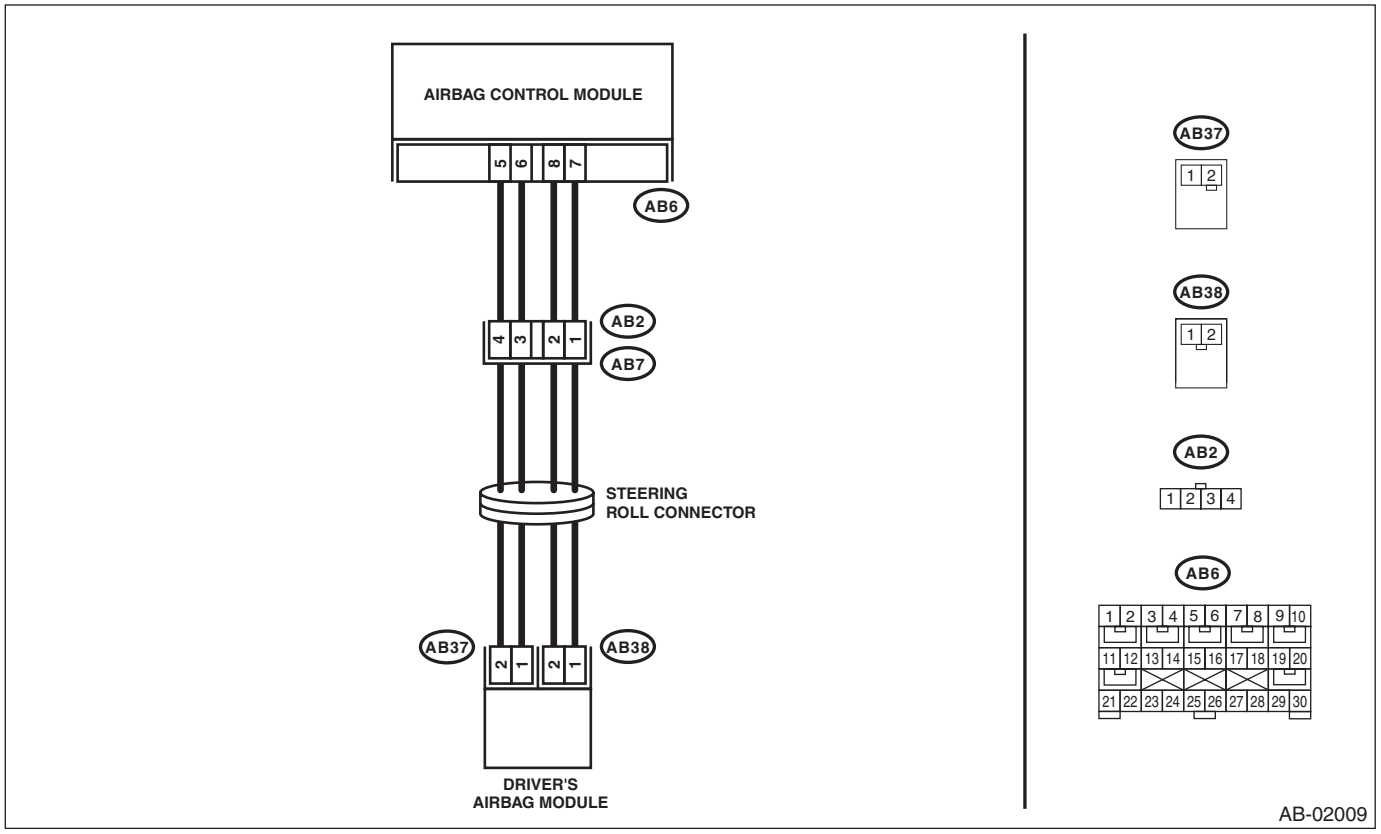
- Airbag main harness circuit is open, shorted or shorted to ground.
- Airbag module harness (Driver's side) circuit is open, shorted or shorted to ground.
- Roll connector circuit is open, shorted or shorted to ground.
- Driver's airbag module is faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

NOTE:
Prior to starting work, 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 body harness.	Go to step **2**.

	Step	Check	Yes	No
2	**CHECK DRIVER'S AIRBAG MODULE.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Remove the driver's airbag module. 3) Connect the connector (1N) in the test harness N to the connector (AB38). 4) Connect the airbag resistor to the connector (2N) of 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 six seconds and go off?	Replace the driver's airbag module. <Ref. to AB-15, Driver's Airbag Module.>	Go to step **3**.
3	**CHECK ROLL CONNECTOR.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 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 and disconnect the connector (AB7) from (AB2). 5) Connect the connector (1P) in the test harness P to connector (AB2). 6) Connect the airbag resistor to the connectors (2P) and (3P) of test harness P. 7) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for six seconds and go off?	Replace the roll connector. <Ref. to AB-26, Roll Connector.>	Go to step **4**.
4	**CHECK AIRBAG MAIN HARNESS (DRIVER'S AIRBAG HARNESS).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the airbag resistor from the connectors (2P) and (3P) of test harness P. 3) Remove the console front panel and disconnect the connectors (AB10) and (AB9). 4) Disconnect the connectors (AB6, AB17, AB18) from the airbag control module, and connect the test harness AG connector (1AG). 5) Measure the resistance between connector (3AG) in the test harness AG and connectors (2P) and (3P) in the test harness P. ***Connector & terminal*** ***(3AG) No. 2 — (3P) No. 3:*** ***(3AG) No. 4 — (3P) No. 4:***	Is the resistance less than 10 Ω?	Go to step **5**.	Replace the airbag main harness along with body harness.

Step		Check	Yes	No
5	**CHECK AIRBAG MAIN HARNESS (DRIVER'S AIRBAG HARNESS).** Measure the resistance between connectors (3AG) in the test harness AG, and between connector (3AG) and chassis ground. ***Connector & terminal*** ***(3AG) No. 1 — (3AG) No. 3:*** ***(3AG) No. 3 — Chassis ground:*** ***(3AG) No. 1 — Chassis ground:*** ***(3AG) No. 2 — (3AG) No. 4:*** ***(3AG) No. 2 — Chassis ground:*** ***(3AG) No. 4 — Chassis ground:*** ***(3AG) No. 1 — (3AG) No. 2:*** ***(3AG) No. 1 — (3AG) No. 4:*** ***(3AG) No. 2 — (3AG) No. 3:*** ***(3AG) No. 3 — (3AG) No. 4:***	Is the resistance 1 MΩ or more?	Go to step **6**.	Replace the airbag main harness along with body harness.
6	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **7**.
7	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AE:DTC 72 PASSENGER'S AIRBAG FAILURE

DTC DETECTING CONDITION:

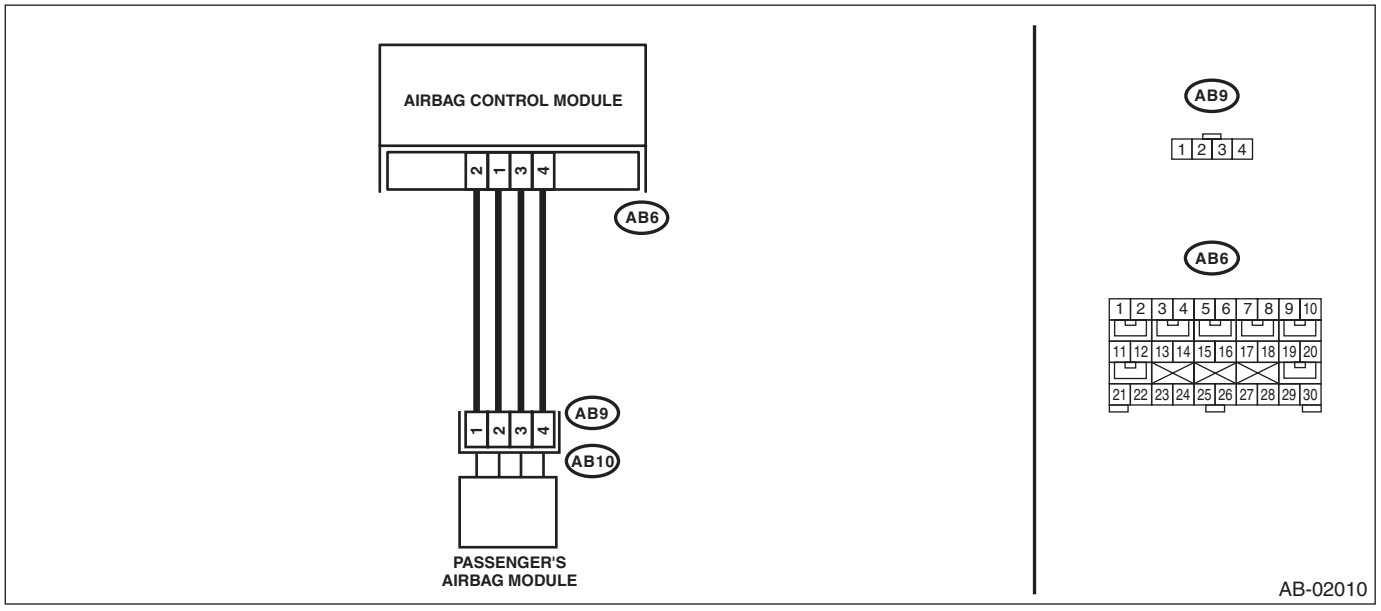
- Airbag main harness circuit is open, shorted or shorted to ground.
- Airbag module harness (Passenger's side) circuit is open, shorted or shorted to ground.
- Passenger's airbag module is faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

NOTE:
Prior to starting work, 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 passenger's airbag module.	Is there poor contact?	Replace the airbag main harness along with 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 for 20 seconds or more. 2) Remove the console front panel and disconnect the connectors (AB10) from (AB9). 3) Connect the connector (1P) in the test harness P to connector (AB9). 4) Connect the airbag resistor to the connectors (2P) and (3P) of test harness P. 5) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for six seconds and go off?	Replace the passenger's airbag module. <Ref. to AB-16, Passenger's Airbag Module.>	Go to step **3**.

	Step	Check	Yes	No
3	**CHECK AIRBAG MAIN HARNESS (PASSENGER'S AIRBAG HARNESS).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the airbag resistor from the connectors (2P) and (3P) of test harness P. 3) Remove the instrument panel lower cover and disconnect the connector (AB7) from (AB2). 4) Disconnect the connectors (AB6, AB17, AB18) from the airbag control module, and connect the test harness AG connector (1AG). 5) Measure the resistance between connector (3AG) in the test harness AG and connectors (2P) and (3P) in the test harness P. ***Connector & terminal*** ***(3AG) No. 8 — (3P) No. 3:*** ***(3AG) No. 6 — (3P) No. 4:***	Is the resistance less than 10 Ω?	Go to step **4**.	Replace the airbag main harness along with body harness.
4	**CHECK AIRBAG MAIN HARNESS (PASSENGER'S AIRBAG HARNESS).** Measure the resistance between connectors (3AG) in the test harness AG, and between connector (3AG) and chassis ground. ***Connector & terminal*** ***(3AG) No. 9 — (3AG) No. 7:*** ***(3AG) No. 9 — Chassis ground:*** ***(3AG) No. 7 — Chassis ground:*** ***(3AG) No. 8 — (3AG) No. 6:*** ***(3AG) No. 8 — Chassis ground:*** ***(3AG) No. 6 — Chassis ground:*** ***(3AG) No. 6 — (3AG) No. 7:*** ***(3AG) No. 6 — (3AG) No. 9:*** ***(3AG) No. 7 — (3AG) No. 8:*** ***(3AG) No. 8 — (3AG) No. 9:***	Is the resistance 1 MΩ or more?	Go to step **5**.	Replace the airbag main harness along with body harness.
5	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **6**.
6	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AF:DTC 75 DRIVER'S AIRBAG FAILURE

DTC DETECTING CONDITION:

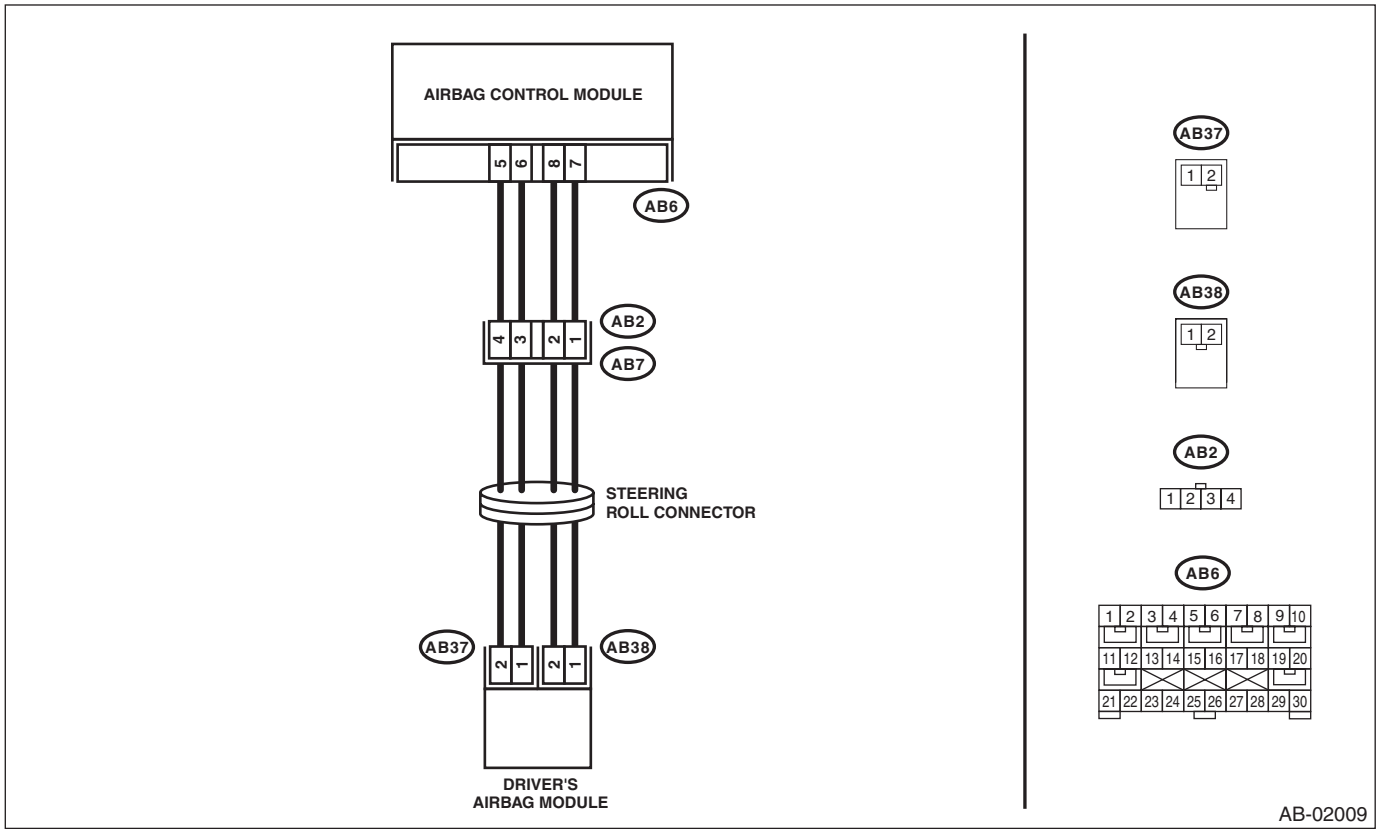
- Airbag main harness circuit (Driver's side) is shorted to power supply.
- Airbag module harness circuit (Driver's side) is shorted to power supply.
- Roll connector is shorted to power supply.
- Driver's airbag module is faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

NOTE:
Prior to starting work, 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 body harness.	Go to step **2**.

	Step	Check	Yes	No
2	**CHECK DRIVER'S AIRBAG MODULE.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Remove the driver's airbag module. 3) Connect the connector (AB38) to the connector (1N) in the test harness N. 4) Connect the airbag resistor to the connector (2N) of 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 six seconds and go off?	Replace the driver's airbag module. <Ref. to AB-15, Driver's Airbag Module.>	Go to step **3**.
3	**CHECK ROLL CONNECTOR.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 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 and disconnect the connector (AB7) from (AB2). 5) Connect the connector (1P) in the test harness P to connector (AB2). 6) Connect the airbag resistor to the connectors (2P) and (3P) of test harness P. 7) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for six seconds and go off?	Replace the roll connector. <Ref. to AB-26, Roll Connector.>	Go to step **4**.
4	**CHECK AIRBAG MAIN HARNESS (DRIVER'S AIRBAG HARNESS).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the airbag resistor from the connectors (2P) and (3P) of test harness P. 3) Remove the console front panel and disconnect the connectors (AB10) and (AB9). 4) Disconnect the connectors (AB6, AB17, AB18) from the airbag control module, and connect the test harness AG connector (1AG). 5) Connect the battery ground terminal and turn the ignition switch to ON. 6) Measure the voltage between connector (3AG) in the test harness AG and chassis ground. ***Connector & terminal*** ***(3AG) No. 2 (+) — Chassis ground (–):*** ***(3AG) No. 4 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **5**.	Replace the airbag main harness along with body harness.
5	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **6**.

Step		Check	Yes	No
6	CHECK FOR ANY OTHER DTC ON DISPLAY.	Is any other DTC displayed?	Check DTC using “List of Diagnostic Trouble Code (DTC)”. <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AG:DTC 76 PASSENGER'S AIRBAG FAILURE

DTC DETECTING CONDITION:

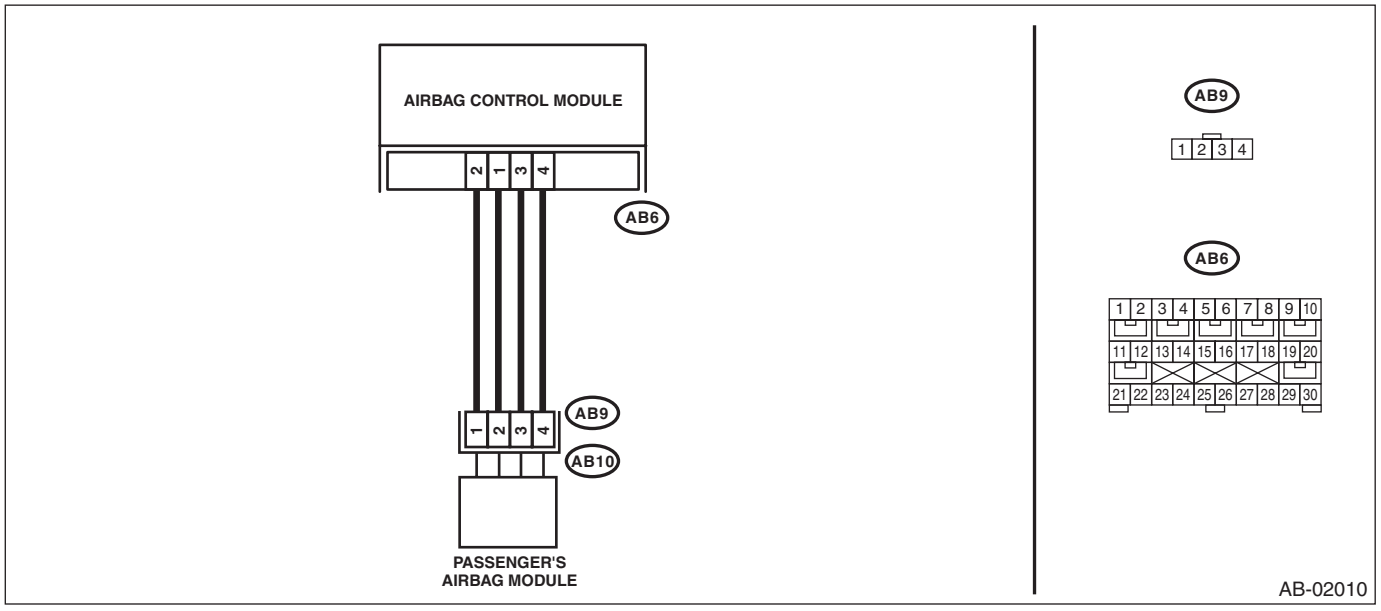
- Airbag main harness circuit (Passenger's side) is shorted to power supply.
- Airbag module harness circuit (Passenger's side) is shorted to power supply.
- Passenger's airbag module is faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

NOTE:
Prior to starting work, 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 passenger's airbag module.	Is there poor contact?	Replace the airbag main harness along with 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 for 20 seconds or more. 2) Remove the console front panel and disconnect the connectors (AB10) from (AB9). 3) Connect the connector (1P) in the test harness P to connector (AB9). 4) Connect the airbag resistor to the connectors (2P) and (3P) of test harness P. 5) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for six seconds and go off?	Replace the passenger's airbag module. <Ref. to AB-16, Passenger's Airbag Module.>	Go to step **3**.

	Step	Check	Yes	No
3	**CHECK AIRBAG MAIN HARNESS (PASSENGER'S AIRBAG HARNESS).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the airbag resistor from the connectors (2P) and (3P) of test harness P. 3) Remove the instrument panel lower cover and disconnect the connector (AB7) from (AB2). 4) Disconnect the connectors (AB6, AB17, AB18) from the airbag control module, and connect the test harness AG connector (1AG). 5) Measure the voltage between connector (3AG) in the test harness AG and chassis ground. ***Connector & terminal*** ***(3AG) No. 8 (+) — Chassis ground (–):*** ***(3AG) No. 6 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **4**.	Replace the airbag main harness along with body harness.
4	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **5**.
5	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AH:DTC 91 CURTAIN AIRBAG MODULE RH FAILURE

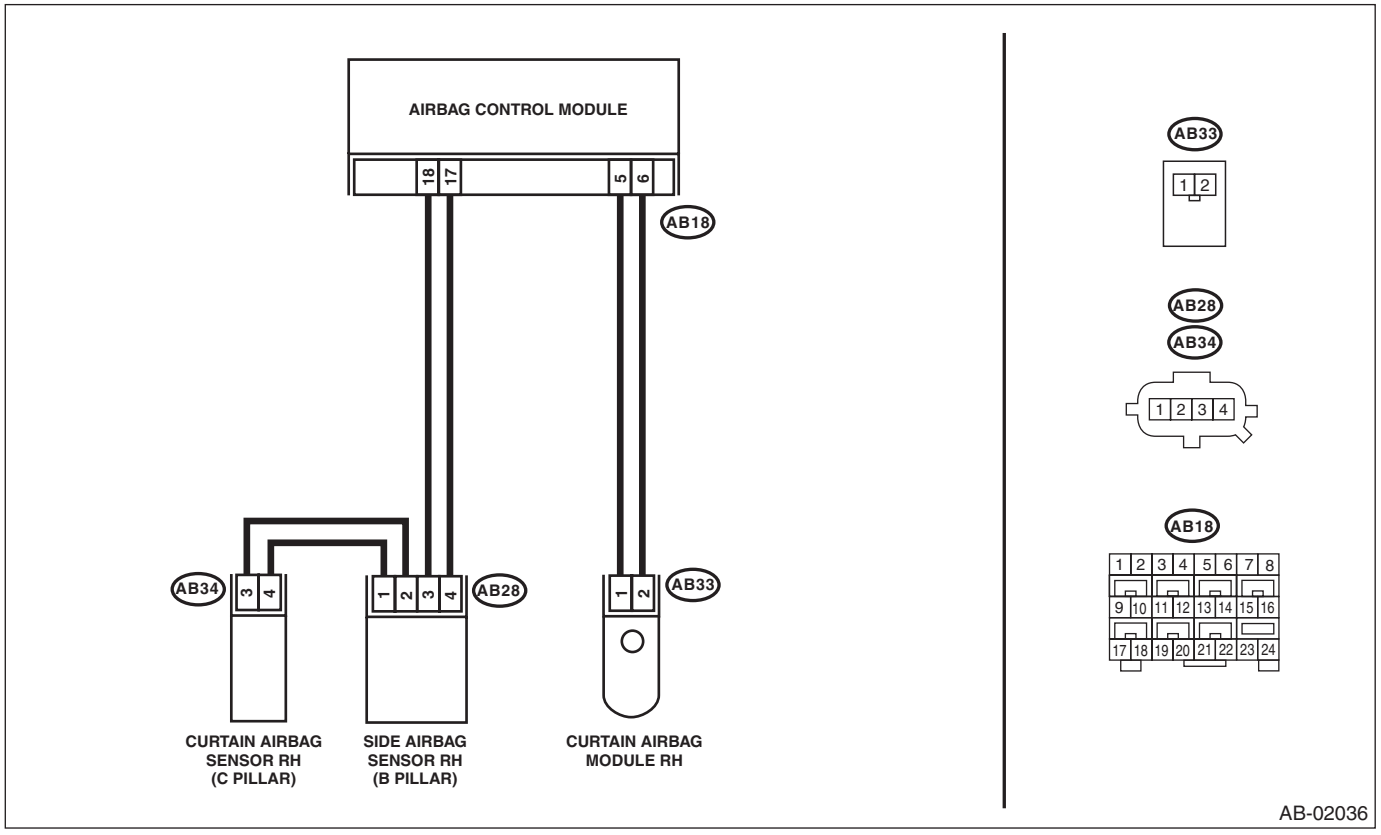
DTC DETECTING CONDITION:

- Curtain airbag harness (RH) is faulty.
- Curtain 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 cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module, curtain airbag module RH and the curtain airbag sensor RH.	Is there poor contact?	Replace the airbag rear harness along with body harness.	Go to step **2**.

	Step	Check	Yes	No
2	**CHECK CURTAIN AIRBAG MODULE.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connector (AB33), and connect the connector (1N) in test harness N to connector (AB33). 3) Connect the airbag resistor to the connector (2N) of test harness N. 4) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for six seconds and go off?	Replace the curtain airbag module (RH). <Ref. to AB-19, Curtain Airbag Module.>	Go to step **3**.
3	**CHECK AIRBAG REAR HARNESS (CURTAIN AIRBAG MODULE HARNESS RH).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connector (AB26) from seat belt pretensioner (RH). 3) Disconnect connector (AB24) from side airbag module (RH). 4) Disconnect the airbag resistor from test harness N. 5) Disconnect the connectors (AB6, AB17, AB18) from airbag control module. 6) Connect the test harness AG connector (1AG) to the connectors (AB6, AB17, AB18). 7) Measure the resistance between connector (6AG) in the test harness AG and connector (2N) in the test harness N. ***Connector & terminal*** ***(6AG) No. 6 — (2N) No. 1:*** ***(6AG) No. 8 — (2N) No. 2:***	Is the resistance less than 10 Ω?	Go to step **4**.	Replace the airbag rear harness along with body harness.
4	**CHECK AIRBAG REAR HARNESS (CURTAIN AIRBAG MODULE HARNESS RH).** Measure the resistance between connector (6AG) terminals in the test harness AG. ***Connector & terminal*** ***(6AG) No. 6 — (6AG) No. 8:***	Is the resistance 1 MΩ or more?	Go to step **5**.	Replace the airbag rear harness along with body harness.
5	**CHECK AIRBAG REAR HARNESS (CURTAIN AIRBAG MODULE HARNESS RH).** Measure the resistance between connector (6AG) in the test harness AG and chassis ground. ***Connector & terminal*** ***(6AG) No. 6 — Chassis ground:*** ***(6AG) No. 8 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **6**.	Replace the airbag rear harness along with body harness.
6	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **7**.
7	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AI: DTC 92 CURTAIN AIRBAG MODULE LH FAILURE

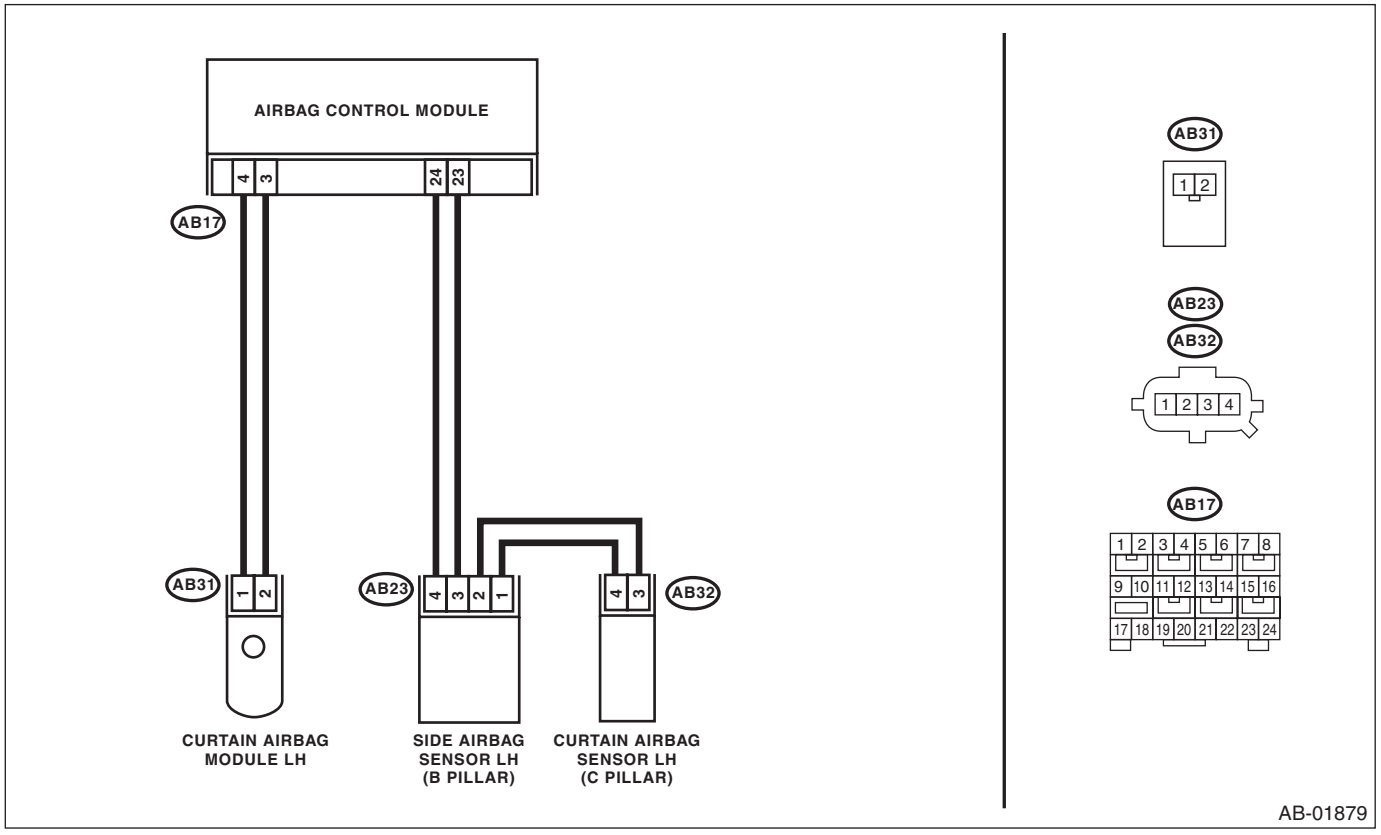
DTC DETECTING CONDITION:

- Curtain airbag harness (LH) is faulty.
- Curtain 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 cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module, curtain airbag module LH and the curtain airbag sensor LH.	Is there poor contact?	Replace the airbag rear harness along with body harness.	Go to step **2**.

	Step	Check	Yes	No
2	**CHECK CURTAIN AIRBAG MODULE.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connector (AB31), and connect the connector (1N) in test harness N to connector (AB31). 3) Connect the airbag resistor to the connector (2N) of test harness N. 4) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for six seconds and go off?	Replace the curtain airbag module (LH). <Ref. to AB-19, Curtain Airbag Module.>	Go to step **3**.
3	**CHECK AIRBAG REAR HARNESS (CURTAIN AIRBAG MODULE HARNESS LH).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connector (AB21) from seat belt pretensioner (LH). 3) Disconnect connector (AB19) from side airbag module (LH). 4) Disconnect the airbag resistor from test harness N. 5) Disconnect the connectors (AB6, AB17, AB18) from airbag control module. 6) Connect the test harness AG connector (1AG) to the connectors (AB6, AB17, AB18). 7) Measure the resistance between connector (6AG) in the test harness AG and connector (2N) in the test harness N. ***Connector & terminal*** ***(6AG) No. 1 — (2N) No. 2:*** ***(6AG) No. 3 — (2N) No. 1:***	Is the resistance less than 10 Ω?	Go to step **4**.	Replace the airbag rear harness along with body harness.
4	**CHECK AIRBAG REAR HARNESS (CURTAIN AIRBAG MODULE HARNESS LH).** Measure the resistance between connector (6AG) terminals in the test harness AG. ***Connector & terminal*** ***(6AG) No. 1 — (6AG) No. 3:***	Is the resistance 1 MΩ or more?	Go to step **5**.	Replace the airbag rear harness along with body harness.
5	**CHECK AIRBAG REAR HARNESS (CURTAIN AIRBAG MODULE HARNESS LH).** Measure the resistance between connector (6AG) in the test harness AG and chassis ground. ***Connector & terminal*** ***(6AG) No. 1 — Chassis ground:*** ***(6AG) No. 3 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **6**.	Replace the airbag rear harness along with body harness.
6	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **7**.
7	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AJ:DTC 95 CURTAIN AIRBAG MODULE RH FAILURE

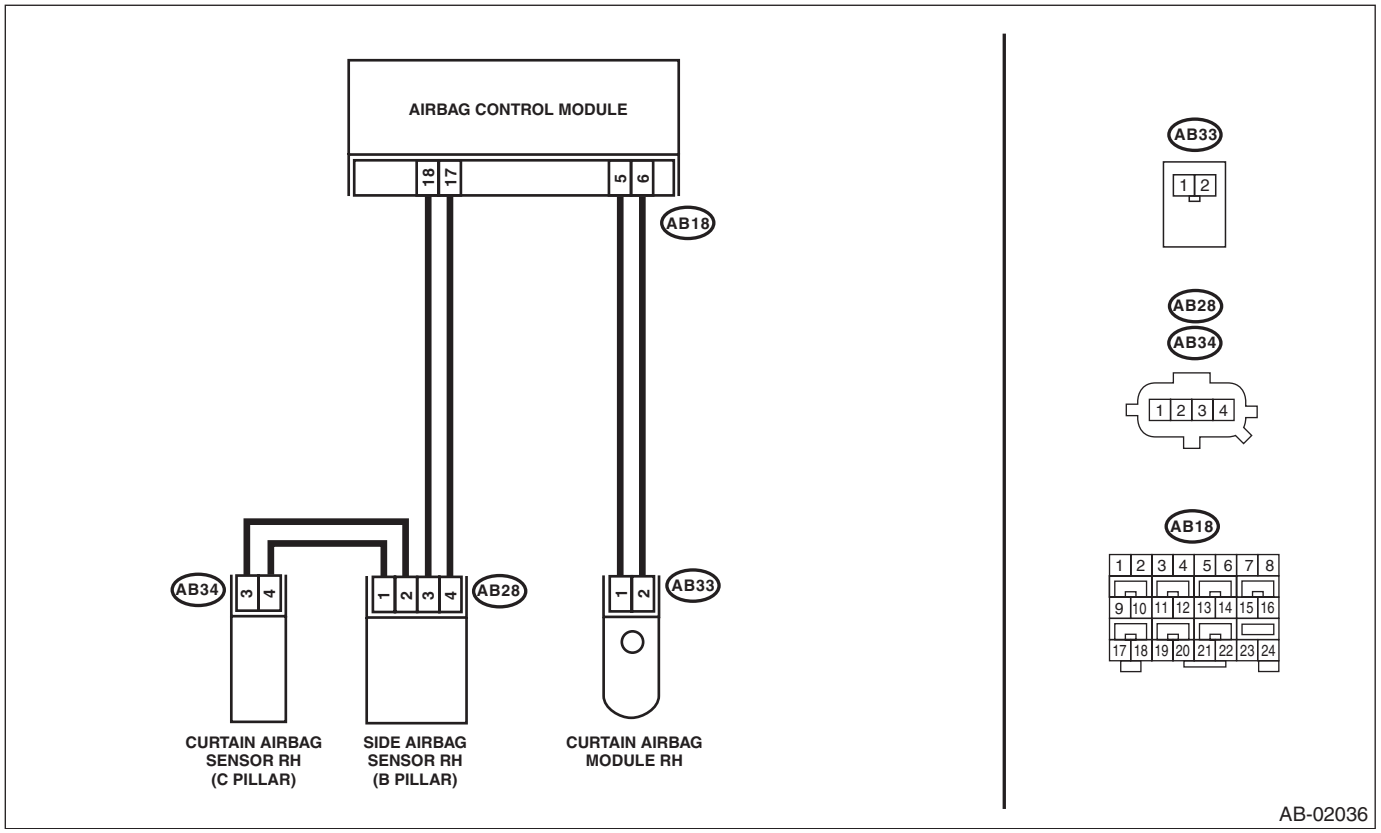
DTC DETECTING CONDITION:

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

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module, curtain airbag module RH and the curtain airbag sensor RH.	Is there poor contact?	Replace the airbag rear harness along with body harness.	Go to step **2**.

	Step	Check	Yes	No
2	**CHECK CURTAIN AIRBAG MODULE.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connector (AB33), and connect the connector (1N) in test harness N to connector (AB33). 3) Connect the airbag resistor to the connector (2N) of test harness N. 4) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for six seconds and go off?	Replace the curtain airbag module (RH). <Ref. to AB-19, Curtain Airbag Module.>	Go to step **3**.
3	**CHECK AIRBAG REAR HARNESS (CURTAIN AIRBAG MODULE HARNESS RH).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connector (AB26) from seat belt pretensioner (RH). 3) Disconnect connector (AB24) from side airbag module (RH). 4) Disconnect the airbag resistor from test harness N. 5) Disconnect the connectors (AB6, AB17, AB18) from airbag control module. 6) Connect the test harness AG connector (1AG) to the connectors (AB6, AB17, AB18). 7) Connect the battery ground terminal and turn the ignition switch to ON. 8) Measure the voltage between connector (6AG) in the test harness AG and chassis ground. ***Connector & terminal*** ***(6AG) No. 6 (+) — Chassis ground (–):*** ***(6AG) No. 8 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **4**.	Replace the airbag rear harness along with body harness.
4	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **5**.
5	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AK:DTC 96 CURTAIN AIRBAG MODULE LH FAILURE

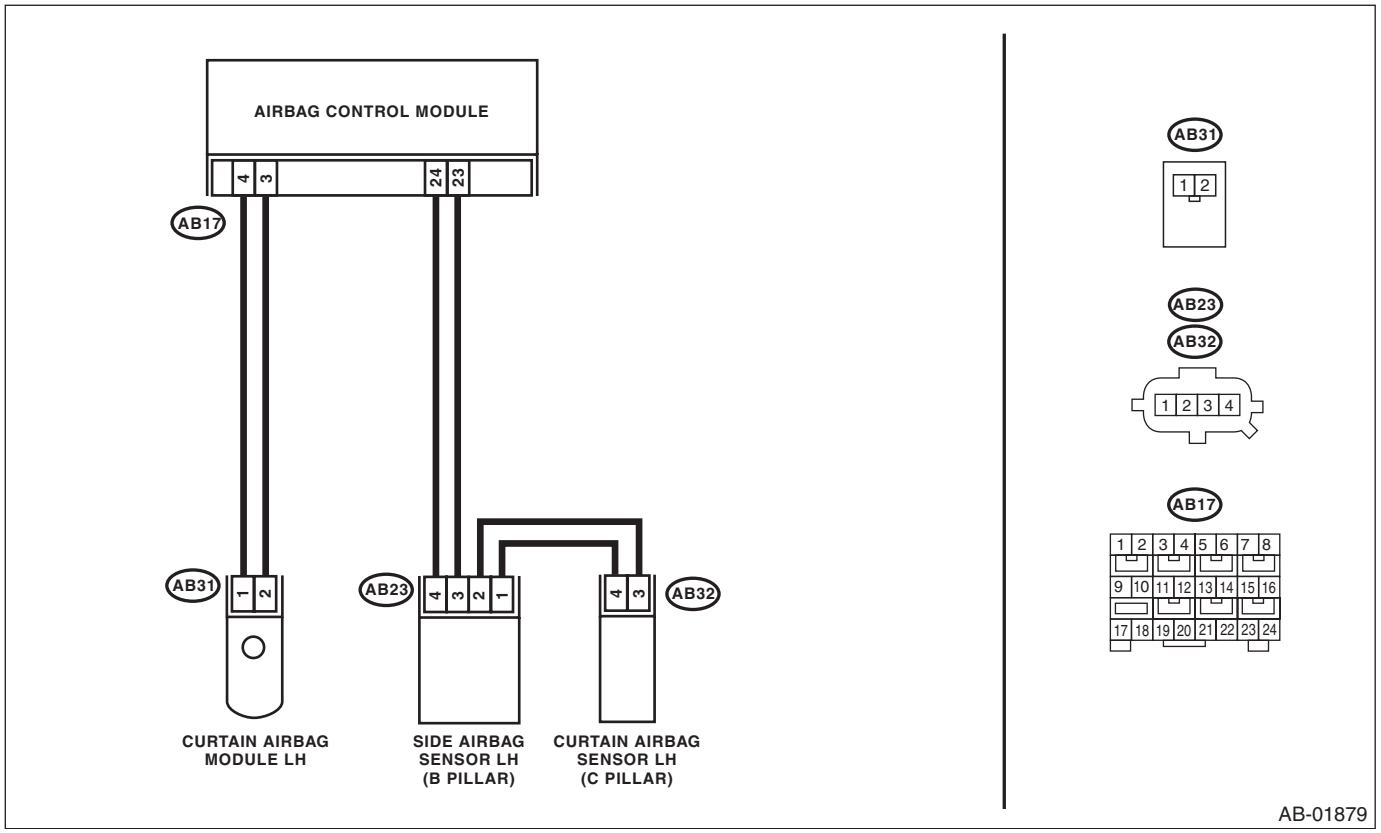
DTC DETECTING CONDITION:

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

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the airbag control module, curtain airbag module LH and the curtain airbag sensor LH.	Is there poor contact?	Replace the airbag rear harness along with body harness.	Go to step **2**.

	Step	Check	Yes	No
2	**CHECK CURTAIN AIRBAG MODULE.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connector (AB31), and connect the connector (1N) in test harness N to connector (AB31). 3) Connect the airbag resistor to the connector (2N) of test harness N. 4) Connect the battery ground terminal and turn the ignition switch to ON.	Does the airbag warning light illuminate for six seconds and go off?	Replace the curtain airbag module (LH). <Ref. to AB-19, Curtain Airbag Module.>	Go to step **3**.
3	**CHECK AIRBAG REAR HARNESS (CURTAIN AIRBAG MODULE HARNESS LH).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connector (AB21) from seat belt pretensioner (LH). 3) Disconnect connector (AB19) from side airbag module (LH). 4) Disconnect the airbag resistor from test harness N. 5) Disconnect the connectors (AB6, AB17, AB18) from airbag control module. 6) Connect the test harness AG connector (1AG) to the connectors (AB6, AB17, AB18). 7) Connect the battery ground terminal and turn the ignition switch to ON. 8) Measure the voltage between connector (6AG) in the test harness AG and chassis ground. ***Connector & terminal*** ***(6AG) No. 1 (+) — Chassis ground (–):*** ***(6AG) No. 3 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **4**.	Replace the airbag rear harness along with body harness.
4	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the airbag control module. <Ref. to AB-21, Airbag Control Module.>	Go to step **5**.
5	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AL:DTC E2 FRONT SENSOR BUS RH COMMUNICATION ERROR

NOTE:
Refer to DTC E4 for details on DTC E2. <Ref. to AB(diag)-95, DTC E4 FRONT SENSOR BUS RH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>

AM:DTC E3 FRONT SENSOR BUS RH COMMUNICATION ERROR

NOTE:
Refer to DTC E4 for details on DTC E3. <Ref. to AB(diag)-95, DTC E4 FRONT SENSOR BUS RH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>

AN:DTC E4 FRONT SENSOR BUS RH COMMUNICATION ERROR

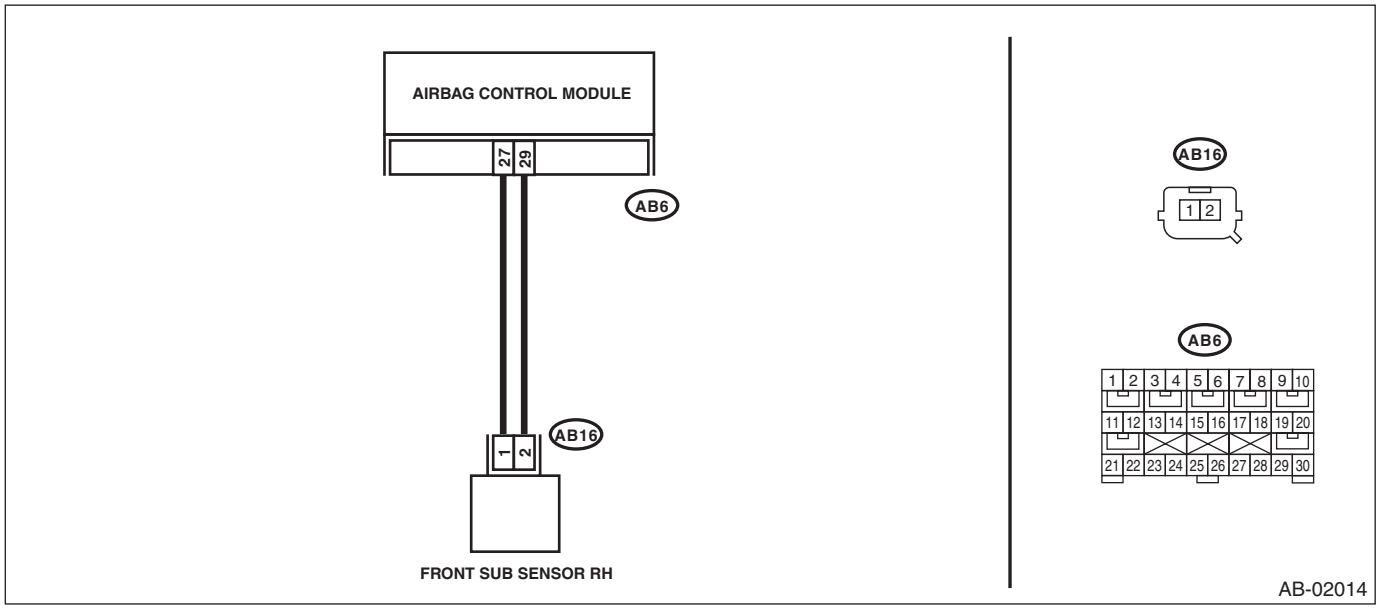
DTC DETECTING CONDITION:

- Open or short circuit in harness of front sensor bus (RH).
- 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 cable from battery, and wait 20 seconds or more 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 pretensioners of the driver's and passenger's seats for safety reasons.

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors (AB6, AB16) between the airbag control module and the front sub sensor (RH).	Is there poor contact?	Replace the airbag main harness along with body harness.	Go to step **2**.

	Step	Check	Yes	No
2	**CHECK AIRBAG MAIN HARNESS (FRONT SENSOR BUS RH).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Remove the instrument panel lower cover and disconnect the connectors (AB7) and (AB2). 3) Remove the console front panel and disconnect the connectors (AB10) and (AB9). 4) Disconnect the connectors (AB17, AB6, AB18) from airbag control module. 5) Connect the connector (1AG) in the test harness AG to the connectors (AB17, AB6, AB18). 6) Disconnect the front sub sensor (RH), and then connect the connector (1H) in the test harness H to connector (AB16). 7) Measure the resistance between connector (4AG) in the test harness AG and connector (3H) in the test harness H. ***Connector & terminal*** ***(4AG) No. 14 — (3H) No. 5:*** ***(4AG) No. 12 — (3H) No. 6:***	Is the resistance less than 10 Ω?	Go to step **3**.	Replace the airbag main harness along with body harness.
3	**CHECK AIRBAG MAIN HARNESS (FRONT SENSOR BUS RH).** Measure the resistance between connector (4AG) in the test harness AG and chassis ground, and the resistance between connector (4AG) in the test harness AG and connector (3H) in test harness H. ***Connector & terminal*** ***(4AG) No. 14 — Chassis ground:*** ***(4AG) No. 12 — Chassis ground:*** ***(4AG) No. 14 — (4AG) No. 12:***	Is the resistance 1 MΩ or more?	Go to step **4**.	Replace the airbag main harness along with body harness.
4	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the front sub sensor (RH). <Ref. to AB-22, REMOVAL, Front Sub Sensor.> Replace the airbag control module if not operating normally even after replacing the sensor. <Ref. to AB-21, REMOVAL, Airbag Control Module.>	Go to step **5**.
5	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using “List of Diagnostic Trouble Code”. <Ref. to AB(diag)-37, LIST, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AO:DTC E6 FRONT SENSOR BUS LH COMMUNICATION ERROR

NOTE:
Refer to DTC E8 for details on DTC E6. <Ref. to AB(diag)-98, DTC E8 FRONT SENSOR BUS LH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>

AP:DTC E7 FRONT SENSOR BUS LH COMMUNICATION ERROR

NOTE:
Refer to DTC E8 for details on DTC E7. <Ref. to AB(diag)-98, DTC E8 FRONT SENSOR BUS LH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>

AQ:DTC E8 FRONT SENSOR BUS LH COMMUNICATION ERROR

DTC DETECTING CONDITION:

- Open or short circuit in harness of front sensor bus (LH).
- Front sub sensor (LH) is faulty.
- Airbag control module is faulty.

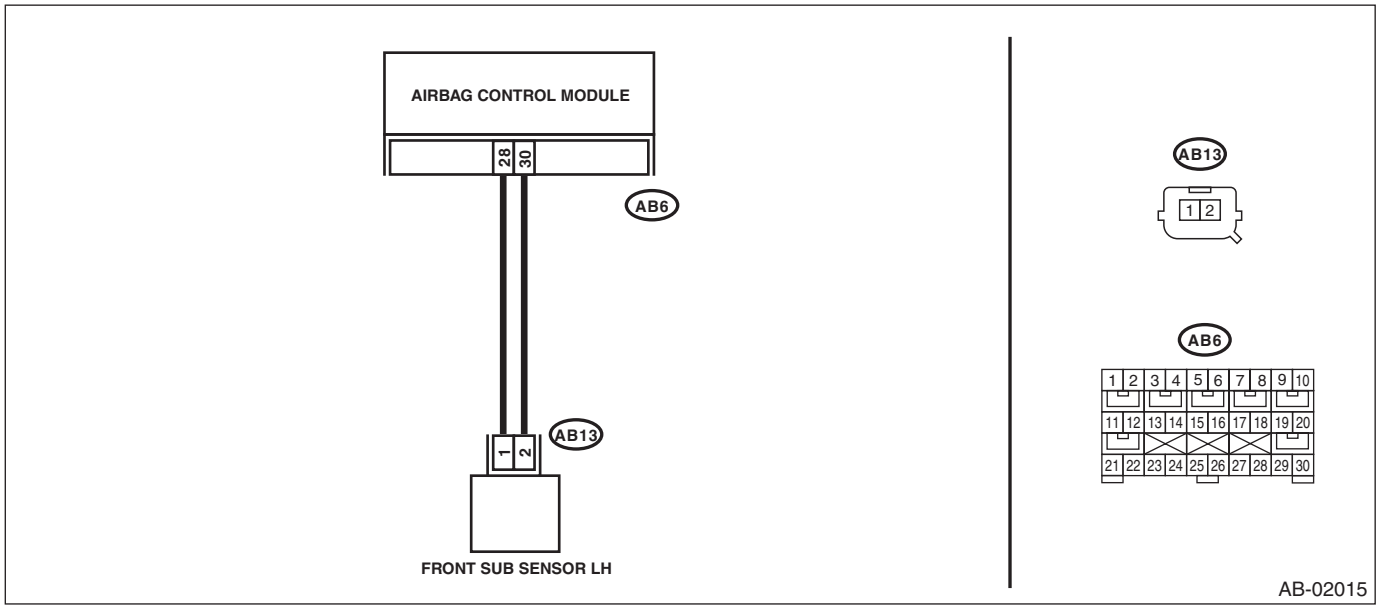
CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait 20 seconds or more 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 pretensioners of the driver's and passenger's seats for safety reasons.

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors (AB6, AB13) between the airbag control module and the front sub sensor (LH).	Is there poor contact?	Replace the airbag main harness along with body harness.	Go to step **2**.

	Step	Check	Yes	No
2	**CHECK AIRBAG MAIN HARNESS (FRONT SENSOR BUS LH).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Remove the instrument panel lower cover and disconnect the connectors (AB7) and (AB2). 3) Remove the console front panel and disconnect the connectors (AB9) and (AB10). 4) Disconnect the connectors (AB17, AB6, AB18) from airbag control module. 5) Connect the connector (1AG) in the test harness AG to the connectors (AB17, AB6, AB18). 6) Disconnect the front sub sensor (LH), and then connect the connector (1H) in the test harness H to connector (AB13). 7) Measure the resistance between connector (4AG) in the test harness AG and connector (3H) in the test harness H. ***Connector & terminal*** ***(4AG) No. 7 — (3H) No. 5:*** ***(4AG) No. 9 — (3H) No. 6:***	Is the resistance less than 10 Ω?	Go to step **3**.	Replace the airbag main harness along with body harness.
3	**CHECK AIRBAG MAIN HARNESS (FRONT SENSOR BUS LH).** Measure the resistance between connector (4AG) in the test harness AG and chassis ground, and the resistance between connector (4AG) terminals in the test harness AG. ***Connector & terminal*** ***(4AG) No. 7 — Chassis ground:*** ***(4AG) No. 9 — Chassis ground:*** ***(4AG) No. 7 — (4AG) No. 9:***	Is the resistance 1 MΩ or more?	Go to step **4**.	Replace the airbag main harness along with body harness.
4	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the front sub sensor (LH). <Ref. to AB-22, REMOVAL, Front Sub Sensor.> Replace the airbag control module if not operating normally even after replacing the sensor. <Ref. to AB-21, REMOVAL, Airbag Control Module.>	Go to step **5**.
5	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code". <Ref. to AB(diag)-37, LIST, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AR:DTC E9 SIDE SENSOR BUS RH COMMUNICATION ERROR

NOTE:
Refer to DTC EC for details on DTC E9. <Ref. to AB(diag)-101, DTC EC SIDE SENSOR BUS RH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>

AS:DTC EA SIDE SENSOR BUS RH COMMUNICATION ERROR

NOTE:
Refer to DTC EC for details on DTC EA. <Ref. to AB(diag)-101, DTC EC SIDE SENSOR BUS RH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>

AT:DTC EB SIDE SENSOR BUS RH COMMUNICATION ERROR

NOTE:
Refer to DTC EC for details on DTC EB. <Ref. to AB(diag)-101, DTC EC SIDE SENSOR BUS RH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>

AU:DTC EC SIDE SENSOR BUS RH COMMUNICATION ERROR

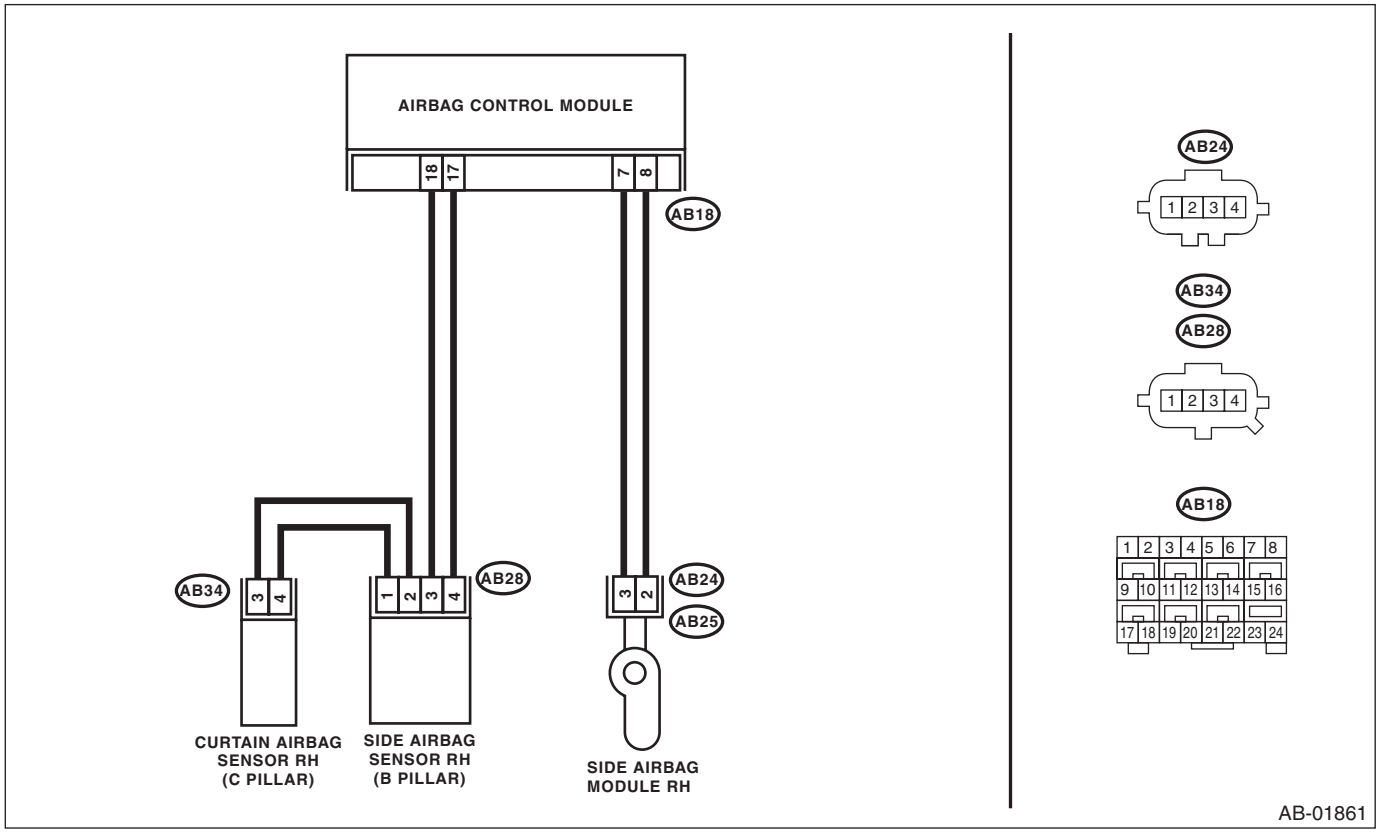
DTC DETECTING CONDITION:

- Open or short circuit in harness of side sensor bus (RH).
- Side airbag sensor (RH) and curtain airbag sensor (RH) are faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait 20 seconds or more 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 pretensioners of the driver's and passenger's seats for safety reasons.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors (AB18, AB28, AB34) between the airbag control module and the curtain airbag sensor (RH).	Is there poor contact?	Replace the airbag rear harness along with body harness.	Go to step **2**.

	Step	Check	Yes	No
2	**CHECK AIRBAG REAR HARNESS (BETWEEN AIRBAG CONTROL MODULE AND SIDE AIRBAG SENSOR RH).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connector (AB26) from seat belt pretensioner (RH). 3) Disconnect the connector (AB33) from curtain airbag module (RH). 4) Disconnect connectors (AB25) and (AB24) from side airbag module (RH). 5) Disconnect the connectors (AB17, AB6, AB18) from airbag control module. 6) Connect the connector (1AG) in the test harness AG to the connectors (AB17, AB6, AB18). 7) Disconnect the connector (AB28) from side airbag sensor (RH), and connect to the connector (2V) in test harness V. 8) Measure the resistance between connector (5AG) in the test harness AG and connector (3V) in the test harness V. ***Connector & terminal*** ***(5AG) No. 16 — (3V) No. 2:*** ***(5AG) No. 14 — (3V) No. 1:***	Is the resistance less than 10 Ω?	Go to step **3**.	Replace the airbag rear harness along with body harness.
3	**CHECK AIRBAG REAR HARNESS (BETWEEN AIRBAG CONTROL MODULE AND SIDE AIRBAG SENSOR RH).** Measure the resistance between connector (5AG) in the test harness AG and chassis ground, and the resistance between connector (5AG) terminals in the test harness AG. ***Connector & terminal*** ***(5AG) No. 16 — Chassis ground:*** ***(5AG) No. 14 — Chassis ground:*** ***(5AG) No. 16 — (5AG) No. 14:***	Is the resistance 1 MΩ or more?	Go to step **4**.	Replace the airbag rear harness along with body harness.
4	**CHECK AIRBAG REAR HARNESS (BETWEEN SIDE AIRBAG SENSOR AND CURTAIN AIRBAG SENSOR RH).** 1) Disconnect the connector (2V) in the test harness V from the connector (AB28) of side airbag sensor (RH). 2) Connect the connector (AB28) of side airbag sensor (RH) and the connector (1AI) in the test harness AI. 3) Connect the connector (2AI) in the test harness AI and the connector (1V) in the test harness V. 4) Disconnect the connector (AB34) from curtain airbag sensor (RH), and connect to the connector (2V) in test harness V. 5) Measure the resistance between connector (3V) terminals in the test harness V. ***Connector & terminal*** ***(3V) No. 2 — (3V) No. 6:*** ***(3V) No. 1 — (3V) No. 7:***	Is the resistance less than 10 Ω?	Go to step **5**.	Replace the airbag rear harness along with body harness.

	Step	Check	Yes	No
5	**CHECK AIRBAG REAR HARNESS (BETWEEN SIDE AIRBAG SENSOR AND CURTAIN AIRBAG SENSOR RH).** Measure the resistance between connector (3V) in test harness V and chassis ground, and the resistance between connector (3V) in test harness V. ***Connector & terminal*** ***(3V) No. 2 — Chassis ground:*** ***(3V) No. 1 — Chassis ground:*** ***(3V) No. 2 — (3V) No. 1:***	Is the resistance 1 MΩ or more?	Go to step **6**.	Replace the airbag rear harness along with body harness.
6	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Go to step **7**.	Go to step **8**.
7	**REPLACE SIDE AIRBAG SENSOR (RH) AND CHECK AIRBAG CONTROL MODULE AFTER REPLACEMENT.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Replace the side airbag sensor (RH). <Ref. to AB-23, REMOVAL, Side Airbag Sensor.> 3) Connect all connectors. 4) Clear the memory. 5) Perform the Inspection Mode. 6) Read the DTC.	Is the system normal?	Go to step **8**.	Replace the curtain airbag sensor (RH). <Ref. to AB-24, REMOVAL, Curtain Airbag Sensor.> Replace the airbag control module if not operating normally even after replacing the sensor. <Ref. to AB-21, REMOVAL, Airbag Control Module.>
8	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AV:DTC ED SIDE SENSOR BUS RH COMMUNICATION ERROR

NOTE:
Refer to DTC EE for details on DTC ED. <Ref. to AB(diag)-104, DTC EE SIDE SENSOR BUS RH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>

AW:DTC EE SIDE SENSOR BUS RH COMMUNICATION ERROR

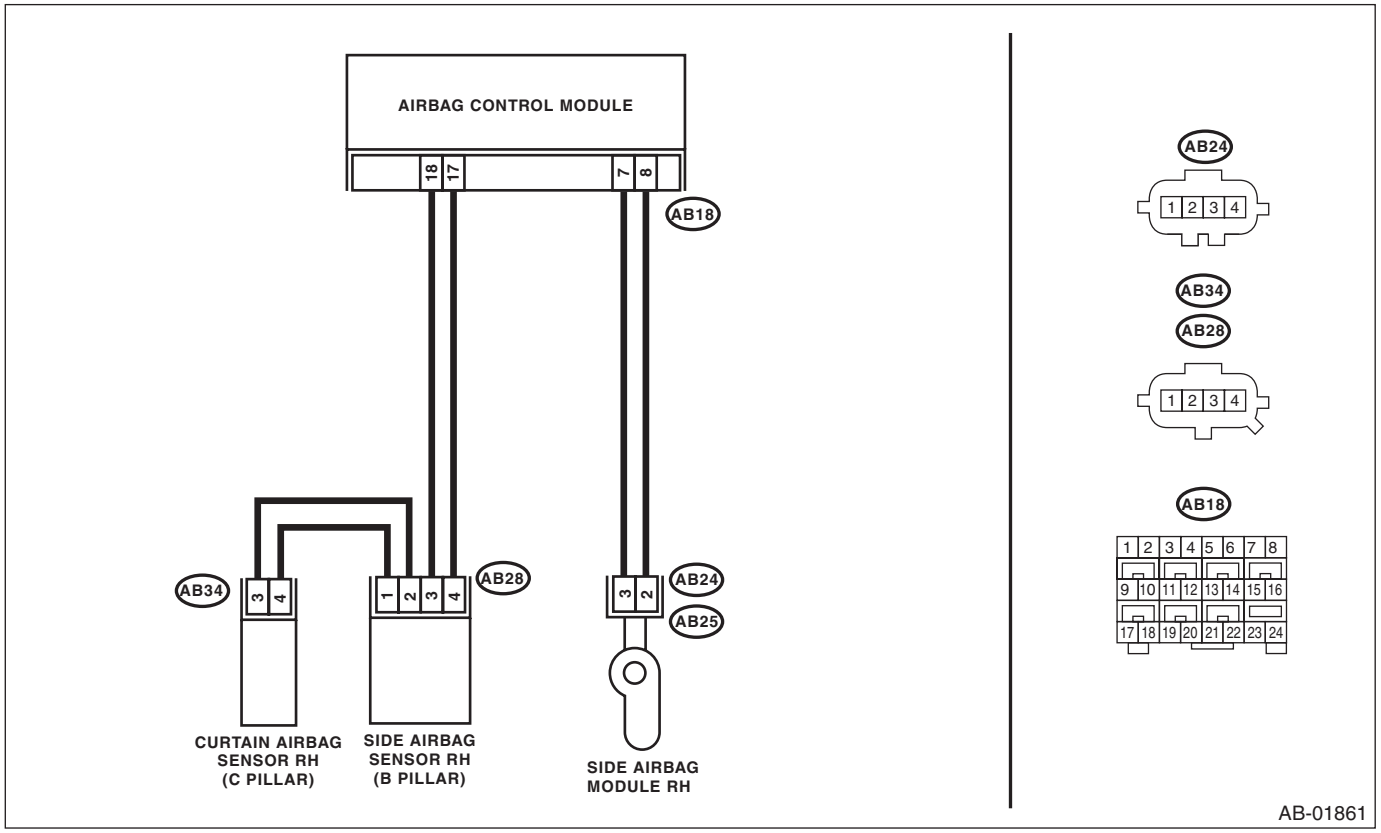
DTC DETECTING CONDITION:

- Open or short circuit in harness of side sensor bus (RH).
- Side airbag sensor (RH) or curtain airbag sensor (RH) are faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait 20 seconds or more 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 pretensioners of the driver's and passenger's seats for safety reasons.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors (AB18, AB28, AB34) between the airbag control module and the curtain airbag sensor (RH).	Is there poor contact?	Replace the airbag rear harness along with body harness.	Go to step **2**.

	Step	Check	Yes	No
2	**CHECK AIRBAG REAR HARNESS (BETWEEN SIDE AIRBAG SENSOR (RH) AND CURTAIN AIRBAG SENSOR (RH)).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connector (AB26) from seat belt pretensioner (RH). 3) Disconnect the connector (AB33) from curtain airbag module (RH). 4) Disconnect connectors (AB25) and (AB24) from side airbag module (RH). 5) Disconnect connector (AB28) from side airbag sensor (RH). 6) Connect the connector (AB28) of side airbag sensor (RH) and the connector (1AI) in the test harness AI. 7) Connect the connector (2AI) in the test harness AI and the connector (1V) in the test harness V. 8) Disconnect the connector (AB34) from curtain airbag sensor (RH), and connect to the connector (2V) in test harness V. 9) Measure the resistance between connector (3V) terminals in the test harness V. ***Connector & terminal*** ***(3V) No. 2 — (3V) No. 6:*** ***(3V) No. 1 — (3V) No. 7:***	Is the resistance less than 10 Ω?	Go to step **3**.	Replace the airbag rear harness along with body harness.
3	**CHECK AIRBAG REAR HARNESS (BETWEEN SIDE AIRBAG SENSOR AND CURTAIN AIRBAG SENSOR RH).** Measure the resistance between connector (3V) in test harness V and chassis ground, and the resistance between connector (3V) in test harness V. ***Connector & terminal*** ***(3V) No. 2 — Chassis ground:*** ***(3V) No. 1 — Chassis ground:*** ***(3V) No. 2 — (3V) No. 1:***	Is the resistance 1 MΩ or more?	Go to step **4**.	Replace the airbag rear harness along with body harness.

	Step	Check	Yes	No
4	**CHECK AIRBAG REAR HARNESS (BETWEEN AIRBAG CONTROL MODULE AND SIDE AIRBAG SENSOR (RH)).** 1) Disconnect the connectors (AB17, AB6, AB18) from airbag control module. 2) Connect the connector (1AG) in the test harness AG to the connectors (AB17, AB6, AB18). 3) Disconnect the connector (AB28) in the side airbag sensor (RH) from the connector (1AI) in the test harness AI. 4) Disconnect the connector (2AI) in the test harness AI from the connector (1V) in the test harness V. 5) Connect the connector (AB28) of side airbag sensor (RH) and the connector (2V) in the test harness V. 6) Measure the resistance between connector (5AG) in the test harness AG and connector (3V) in the test harness V. ***Connector & terminal*** ***(5AG) No. 16 — (3V) No. 2:*** ***(5AG) No. 14 — (3V) No. 1:***	Is the resistance less than 10 Ω?	Go to step **5**.	Replace the airbag rear harness along with body harness.
5	**CHECK AIRBAG REAR HARNESS (BETWEEN AIRBAG CONTROL MODULE AND SIDE AIRBAG SENSOR RH).** Measure the resistance between connector (5AG) in the test harness AG and chassis ground, and the resistance between connector (5AG) terminals in the test harness AG. ***Connector & terminal*** ***(5AG) No. 16 — Chassis ground:*** ***(5AG) No. 14 — Chassis ground:*** ***(5AG) No. 16 — (5AG) No. 14:***	Is the resistance 1 MΩ or more?	Go to step **6**.	Replace the airbag rear harness along with body harness.
6	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Go to step **7**.	Go to step **8**.
7	**REPLACE SIDE AIRBAG SENSOR (RH) AND CHECK AIRBAG CONTROL MODULE AFTER REPLACEMENT.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Replace the side airbag sensor (RH). <Ref. to AB-23, REMOVAL, Side Airbag Sensor.> 3) Connect all connectors. 4) Clear the memory. 5) Perform the Inspection Mode. 6) Read the DTC.	Is the system normal?	Go to step **8**.	Replace the curtain airbag sensor (RH). <Ref. to AB-24, REMOVAL, Curtain Airbag Sensor.> Replace the airbag control module if not operating normally even after replacing the sensor. <Ref. to AB-21, REMOVAL, Airbag Control Module.>
8	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

AX:DTC F1 SIDE SENSOR BUS LH COMMUNICATION ERROR

NOTE:
Refer to DTC F4 for details on DTC F1. <Ref. to AB(diag)-108, DTC F4 SIDE SENSOR BUS LH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>

AY:DTC F2 SIDE SENSOR BUS LH COMMUNICATION ERROR

NOTE:
Refer to DTC F4 for details on DTC F2. <Ref. to AB(diag)-108, DTC F4 SIDE SENSOR BUS LH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>

AZ:DTC F3 SIDE SENSOR BUS LH COMMUNICATION ERROR

NOTE:
Refer to DTC F4 for details on DTC F3. <Ref. to AB(diag)-108, DTC F4 SIDE SENSOR BUS LH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>

BA:DTC F4 SIDE SENSOR BUS LH COMMUNICATION ERROR

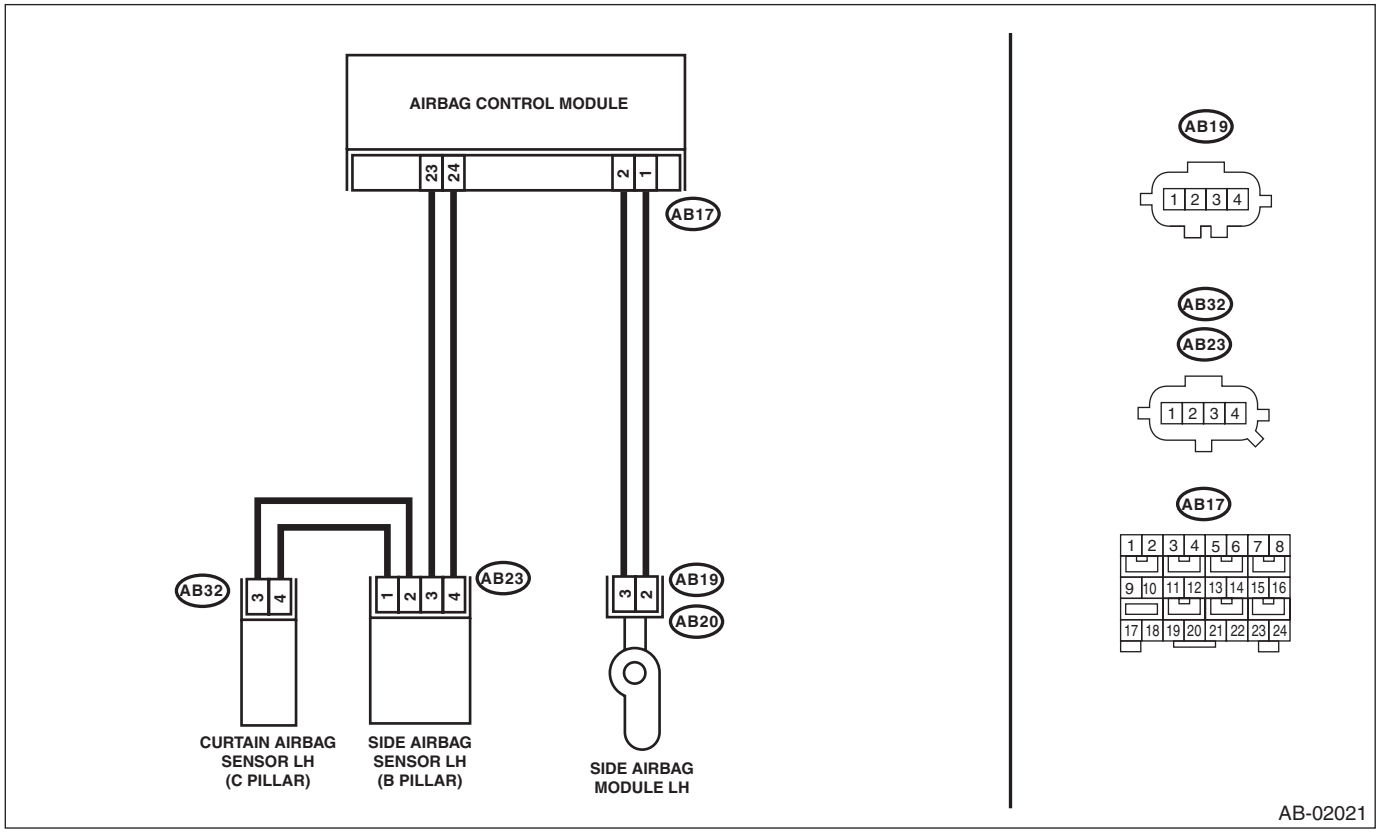
DTC DETECTING CONDITION:

- Open or short circuit in harness of side sensor bus (LH).
- Side airbag sensor (LH) and curtain airbag sensor (LH) are faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait 20 seconds or more 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 pretensioners of the driver's and passenger's seats for safety reasons.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors (AB17, AB23, AB32) between the airbag control module and the curtain airbag sensor (LH).	Is there poor contact?	Replace the airbag rear harness along with body harness.	Go to step **2**.

	Step	Check	Yes	No
2	**CHECK AIRBAG REAR HARNESS (BETWEEN AIRBAG CONTROL MODULE AND SIDE AIRBAG SENSOR LH).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connector (AB21) from seat belt pretensioner (LH). 3) Disconnect the connector (AB31) from curtain airbag module (LH). 4) Disconnect connectors (AB19) and (AB20) from side airbag module (LH). 5) Disconnect the connectors (AB17, AB6, AB18) from airbag control module. 6) Connect the connector (1AG) in the test harness AG to the connectors (AB17, AB6, AB18). 7) Disconnect the connector (AB23) from side airbag sensor (LH), and connect to the connector (2V) in test harness V. 8) Measure the resistance between connector (5AG) in the test harness AG and connector (3V) in the test harness V. ***Connector & terminal*** ***(5AG) No. 10 — (3V) No. 1:*** ***(5AG) No. 8 — (3V) No. 2:***	Is the resistance less than 10 Ω?	Go to step **3**.	Replace the airbag rear harness along with body harness.
3	**CHECK AIRBAG REAR HARNESS (BETWEEN AIRBAG CONTROL MODULE AND SIDE AIRBAG SENSOR LH).** Measure the resistance between connector (5AG) in the test harness AG and chassis ground, and the resistance between connector (5AG) terminals in the test harness AG. ***Connector & terminal*** ***(5AG) No. 10 — Chassis ground:*** ***(5AG) No. 8 — Chassis ground:*** ***(5AG) No. 10 — (5AG) No. 8:***	Is the resistance 1 MΩ or more?	Go to step **4**.	Replace the airbag rear harness along with body harness.
4	**CHECK AIRBAG REAR HARNESS (BETWEEN SIDE AIRBAG SENSOR LH AND CURTAIN AIRBAG SENSOR LH).** 1) Disconnect the connector (2V) in the test harness V from the connector (AB23) of side airbag sensor (LH). 2) Connect the connector (AB23) of side airbag sensor (LH) and the connector (1AI) in the test harness AI. 3) Connect the connector (2AI) in the test harness AI and the connector (1V) in the test harness V. 4) Disconnect the connector (AB32) from curtain airbag sensor (LH), and connect to the connector (2V) in test harness V. 5) Measure the resistance between connector (3V) terminals in the test harness V. ***Connector & terminal*** ***(3V) No. 2 — (3V) No. 6:*** ***(3V) No. 1 — (3V) No. 7:***	Is the resistance less than 10 Ω?	Go to step **5**.	Replace the airbag rear harness along with body harness.

	Step	Check	Yes	No
5	**CHECK AIRBAG REAR HARNESS (BETWEEN SIDE AIRBAG SENSOR LH AND CURTAIN AIRBAG SENSOR LH).** Measure the resistance between connector (3V) in test harness V and chassis ground, and the resistance between connector (3V) in test harness V. ***Connector & terminal*** ***(3V) No. 2 — Chassis ground:*** ***(3V) No. 1 — Chassis ground:*** ***(3V) No. 2 — (3V) No. 1:***	Is the resistance 1 MΩ or more?	Go to step **6**.	Replace the airbag rear harness along with body harness.
6	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Go to step **7**.	Go to step **8**.
7	**REPLACE SIDE AIRBAG SENSOR (LH) AND CHECK AIRBAG CONTROL MODULE AFTER REPLACEMENT.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Replace the side airbag sensor (LH). <Ref. to AB-23, REMOVAL, Side Airbag Sensor.> 3) Connect all connectors. 4) Clear the memory. 5) Perform the Inspection Mode. 6) Read the DTC.	Is the system normal?	Go to step **8**.	Replace the curtain airbag sensor (LH). <Ref. to AB-24, REMOVAL, Curtain Airbag Sensor.> Replace the airbag control module if not operating normally even after replacing the sensor. <Ref. to AB-21, REMOVAL, Airbag Control Module.>
8	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

BB:DTC F5 SIDE SENSOR BUS LH COMMUNICATION ERROR

NOTE:
Refer to DTC F6 for details on DTC F5. <Ref. to AB(diag)-111, DTC F6 SIDE SENSOR BUS LH COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>

BC:DTC F6 SIDE SENSOR BUS LH COMMUNICATION ERROR

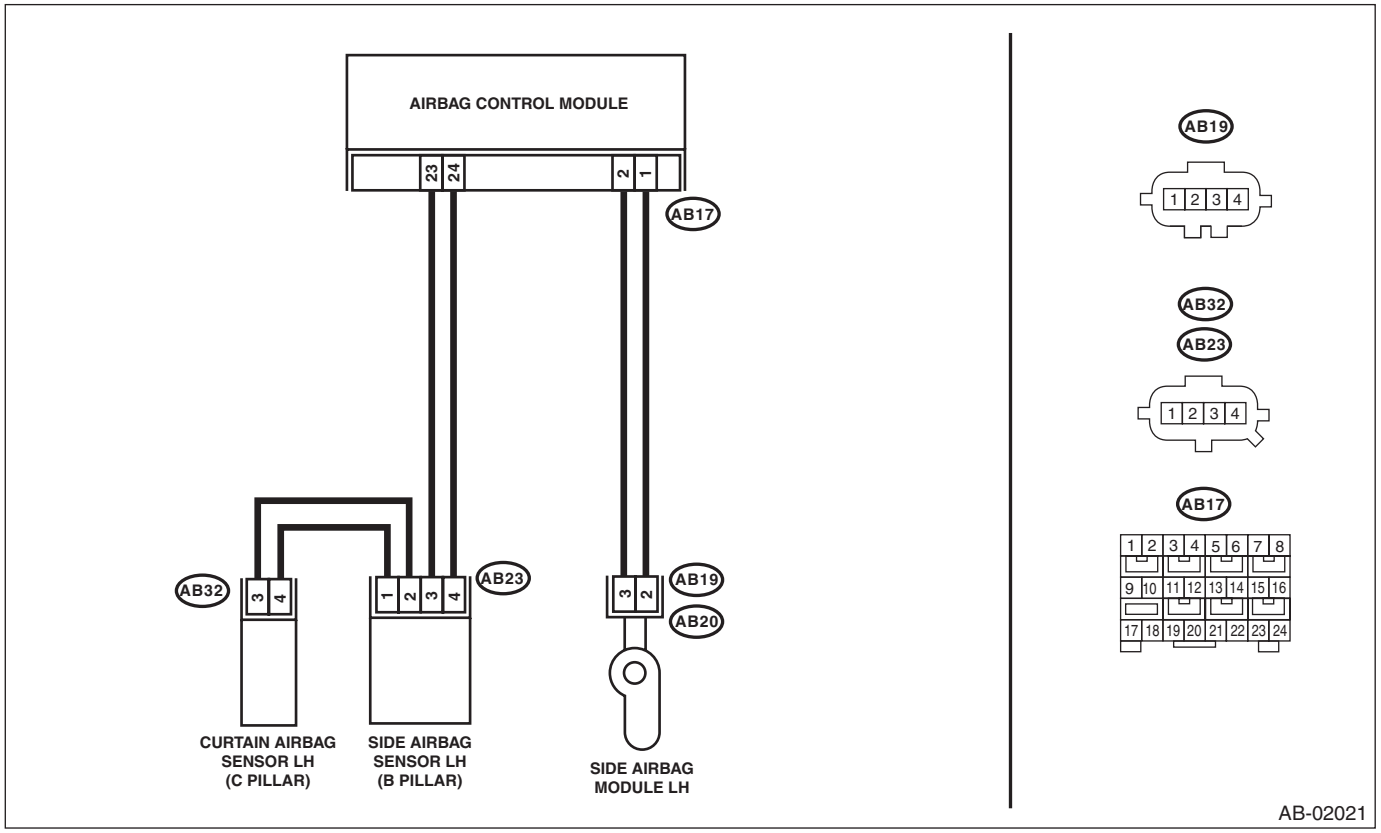
DTC DETECTING CONDITION:

- Open or short circuit in harness of side sensor bus (LH).
- Side airbag sensor (LH) or curtain airbag sensor (LH) are faulty.
- Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait 20 seconds or more 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 pretensioners of the driver's and passenger's seats for safety reasons.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors (AB17, AB23, AB32) between the airbag control module and the curtain airbag sensor (LH).	Is there poor contact?	Replace the airbag rear harness along with body harness.	Go to step **2**.

	Step	Check	Yes	No
2	**CHECK AIRBAG REAR HARNESS (BETWEEN SIDE AIRBAG SENSOR LH AND CURTAIN AIRBAG SENSOR LH).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connector (AB21) from seat belt pretensioner (LH). 3) Disconnect the connector (AB31) from curtain airbag module (LH). 4) Disconnect connectors (AB19) and (AB20) from side airbag module (LH). 5) Disconnect the connector (AB23) in the side airbag sensor (LH). 6) Connect the connector (AB23) of side airbag sensor (LH) and the connector (1AI) in the test harness AI. 7) Connect the connector (2AI) in the test harness AI and the connector (1V) in the test harness V. 8) Disconnect the connector (AB32) from curtain airbag sensor (LH), and connect to the connector (2V) in test harness V. 9) Measure the resistance between connector (3V) terminals in the test harness V. ***Connector & terminal*** ***(3V) No. 2 — (3V) No. 6:*** ***(3V) No. 1 — (3V) No. 7:***	Is the resistance less than 10 Ω?	Go to step **3**.	Replace the airbag rear harness along with body harness.
3	**CHECK AIRBAG REAR HARNESS (BETWEEN SIDE AIRBAG SENSOR AND CURTAIN AIRBAG SENSOR LH).** Measure the resistance between connector (3V) in test harness V and chassis ground, and the resistance between connector (3V) in test harness V. ***Connector & terminal*** ***(3V) No. 6 — Chassis ground:*** ***(3V) No. 7 — Chassis ground:*** ***(3V) No. 2 — (3V) No. 1:***	Is the resistance 1 MΩ or more?	Go to step **4**.	Replace the airbag rear harness along with body harness.
4	**CHECK AIRBAG REAR HARNESS (BETWEEN AIRBAG CONTROL MODULE AND SIDE AIRBAG SENSOR LH).** 1) Disconnect the connectors (AB17, AB6, AB18) from airbag control module. 2) Connect the connector (1AG) in the test harness AG to the connectors (AB17, AB6, AB18). 3) Disconnect the connector (AB23) in the side airbag sensor (LH) from the connector (1AI) in the test harness AI. 4) Disconnect the connector (2AI) in the test harness AI from the connector (1V) in the test harness V. 5) Connect the connector (2V) in the test harness V to the connector (AB23). 6) Measure the resistance between connector (5AG) in the test harness AG and connector (3V) in the test harness V. ***Connector & terminal*** ***(5AG) No. 10 — (3V) No. 1:*** ***(5AG) No. 8 — (3V) No. 2:***	Is the resistance less than 10 Ω?	Go to step **5**.	Replace the airbag rear harness along with body harness.

	Step	Check	Yes	No
5	**CHECK AIRBAG REAR HARNESS (BETWEEN SIDE AIRBAG SENSOR LH AND CURTAIN AIRBAG SENSOR LH).** Measure the resistance between connector (3V) in test harness V and chassis ground, and the resistance between connector (5AG) terminals in test harness AG. ***Connector & terminal*** ***(3V) No. 2 — Chassis ground:*** ***(3V) No. 1 — Chassis ground:*** ***(5AG) No. 10 — (5AG) No. 8:***	Is the resistance 1 MΩ or more?	Go to step **6**.	Replace the airbag rear harness along with body harness.
6	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Go to step **7**.	Go to step **8**.
7	**REPLACE SIDE AIRBAG SENSOR (LH) AND CHECK AIRBAG CONTROL MODULE AFTER REPLACEMENT.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Replace the side airbag sensor (LH). <Ref. to AB-23, REMOVAL, Side Airbag Sensor.> 3) Connect all connectors. 4) Clear the memory. 5) Perform the Inspection Mode. 6) Read the DTC.	Is the system normal?	Go to step **8**.	Replace the curtain airbag sensor (LH). <Ref. to AB-24, REMOVAL, Curtain Airbag Sensor.> Replace the airbag control module if not operating normally even after replacing the sensor. <Ref. to AB-21, REMOVAL, Airbag Control Module.>
8	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

BD:DTC F8 SATELLITE SENSOR BUS COMMUNICATION ERROR

NOTE:
Refer to DTC FA for details on DTC F8. <Ref. to AB(diag)-114, DTC FA SATELLITE SENSOR BUS COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>

BE:DTC F9 SATELLITE SENSOR BUS COMMUNICATION ERROR

NOTE:
Refer to DTC FA for details on DTC F9. <Ref. to AB(diag)-114, DTC FA SATELLITE SENSOR BUS COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>

BF:DTC FA SATELLITE SENSOR BUS COMMUNICATION ERROR

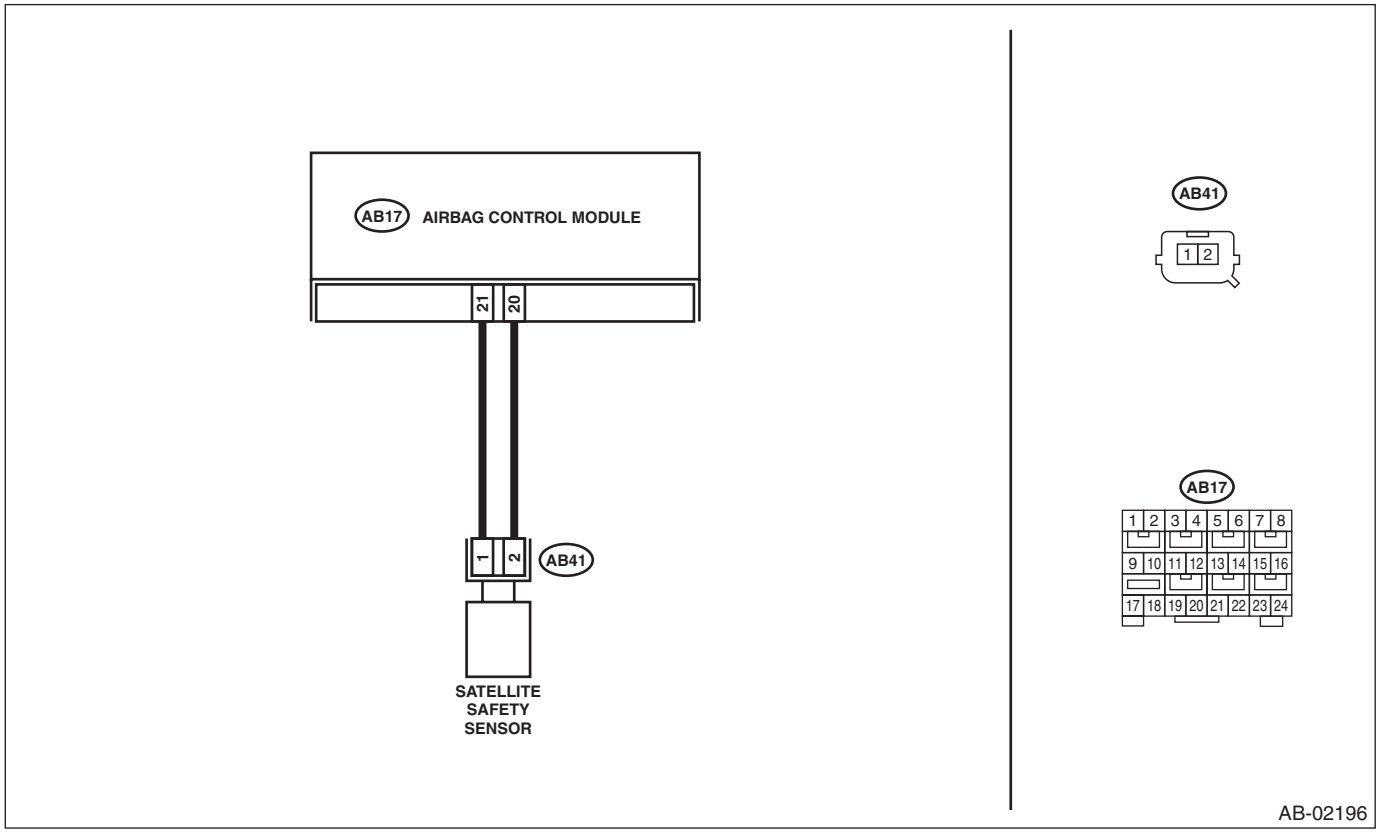
DTC DETECTING CONDITION:

- Open or short circuit in harness of satellite safing sensor.
- Satellite safing sensor 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 cable from battery, and wait 20 seconds or more 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 pretensioners of the driver's and passenger's seats for safety reasons.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors (AB17, AB41) between the airbag control module and the satellite safing sensor.	Is there poor contact?	Replace the airbag rear harness along with body harness.	Go to step **2**.

	Step	Check	Yes	No
2	**CHECK AIRBAG REAR HARNESS (BETWEEN AIRBAG CONTROL MODULE AND SATELLITE SAFING SENSOR).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the connectors (AB21, AB26) from seat belt pretensioner. 3) Disconnect the connectors (AB31, AB33) from curtain airbag module. 4) Disconnect the connectors (AB19), (AB20), (AB24) and (AB25) from the side airbag module. 5) Disconnect the connectors (AB17, AB6, AB18) from airbag control module. 6) Connect the connector (1AG) in the test harness AG to the connectors (AB17, AB6, AB18). 7) Disconnect the connector (AB41) from satellite safing sensor, and then connect the connector (1H) in the test harness H to connector (AB41). 8) Measure the resistance between connector (5AG) in the test harness AG and connector (3H) in the test harness H. ***Connector & terminal*** ***(5AG) No. 9 — (3H) No. 5:*** ***(5AG) No. 11 — (3H) No. 6:***	Is the resistance less than 10 Ω?	Go to step **3**.	Replace the airbag rear harness along with body harness.
3	**CHECK AIRBAG REAR HARNESS (BETWEEN AIRBAG CONTROL MODULE AND SATELLITE SAFING SENSOR).** Measure the resistance between connector (5AG) in the test harness AG and chassis ground, and the resistance between connector (5AG) terminals in the test harness AG. ***Connector & terminal*** ***(5AG) No. 9 — Chassis ground:*** ***(5AG) No. 11 — Chassis ground:*** ***(5AG) No. 9 — (5AG) No. 11:***	Is the resistance 1 MΩ or more?	Go to step **4**.	Replace the airbag rear harness along with body harness.
4	**CHECK AIRBAG CONTROL MODULE.** 1) Connect all connectors. 2) Clear the memory. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the satellite safing sensor. <Ref. to AB-25, REMOVAL, Satellite Safing Sensor.> Replace the airbag control module if not operating normally even after replacing the sensor. <Ref. to AB-21, REMOVAL, Airbag Control Module.>	Go to step **5**.
5	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Check DTC using "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

BG:DTC 3A FRONT SUB SENSOR RH FALSE INSTALLATION

DTC DETECTING CONDITION:
Front sub sensor (RH) is misinstalled.

	Step	Check	Yes	No
1	**REPLACE FRONT SUB SENSOR.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Replace the front sub sensor (RH) with a genuine sensor. <Ref. to AB-22, REMOVAL, Front Sub Sensor.>	Does the warning light go off?	Finish the diagnosis.	Replace the airbag control module. <Ref. to AB-21, REMOVAL, Airbag Control Module.>

BH:DTC 3B FRONT SUB SENSOR LH FALSE INSTALLATION

DTC DETECTING CONDITION:
Front sub sensor (LH) is misinstalled.

	Step	Check	Yes	No
1	**REPLACE FRONT SUB SENSOR.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Replace the front sub sensor (LH) with a genuine sensor. <Ref. to AB-22, REMOVAL, Front Sub Sensor.>	Does the warning light go off?	Finish the diagnosis.	Replace the airbag control module. <Ref. to AB-21, REMOVAL, Airbag Control Module.>

BI: DTC 3C SATELLITE SENSOR BUS FAILURE

DTC DETECTING CONDITION:
Satellite safing sensor is faulty.

	Step	Check	Yes	No
1	**REPLACE SATELLITE SAFING SENSOR.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Replace the satellite safing sensor with a genuine sensor. <Ref. to AB-25, REMOVAL, Satellite Safing Sensor.>	Does the warning light go off?	Finish the diagnosis.	Replace the airbag control module. <Ref. to AB-21, REMOVAL, Airbag Control Module.>

BJ:DTC 3D SATELLITE SENSOR FALSE INSTALLATION

DTC DETECTING CONDITION:
Satellite safing sensor is misinstalled.

	Step	Check	Yes	No
1	**REPLACE SATELLITE SAFING SENSOR.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Replace the satellite safing sensor with a genuine sensor. <Ref. to AB-25, REMOVAL, Satellite Safing Sensor.>	Does the warning light go off?	Finish the diagnosis.	Replace the airbag control module. <Ref. to AB-21, REMOVAL, Airbag Control Module.>

BK:DTC 5A SIDE AIRBAG SENSOR RH FALSE INSTALLATION

DTC DETECTING CONDITION:
Side airbag sensor RH is missinstalled.

	Step	Check	Yes	No
1	**REPLACE SIDE AIRBAG SENSOR (RH).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Replace the side A/B sensor (RH) with a genuine sensor. <Ref. to AB-23, REMOVAL, Side Airbag Sensor.>	Does the warning light go off?	Finish the diagnosis.	Replace the airbag control module. <Ref. to AB-21, REMOVAL, Airbag Control Module.>

BL:DTC 5B SIDE AIRBAG SENSOR LH FALSE INSTALLATION

DTC DETECTING CONDITION:
Side airbag sensor LH is missinstalled.

	Step	Check	Yes	No
1	**REPLACE SIDE AIRBAG SENSOR (LH).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Replace the side A/B sensor (LH) with a genuine sensor. <Ref. to AB-23, REMOVAL, Side Airbag Sensor.>	Does the warning light go off?	Finish the diagnosis.	Replace the airbag control module. <Ref. to AB-21, REMOVAL, Airbag Control Module.>

BM:DTC 5C CURTAIN AIRBAG SENSOR RH FALSE INSTALLATION

DTC DETECTING CONDITION:
Curtain airbag sensor RH is missinstalled.

	Step	Check	Yes	No
1	**REPLACE CURTAIN AIRBAG SENSOR (RH).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Replace the curtain A/B sensor (RH) with a genuine sensor. <Ref. to AB-24, REMOVAL, Curtain Airbag Sensor.>	Does the warning light go off?	Finish the diagnosis.	Replace the airbag control module. <Ref. to AB-21, REMOVAL, Airbag Control Module.>

BN:DTC 5D CURTAIN AIRBAG SENSOR LH FALSE INSTALLATION

DTC DETECTING CONDITION:
Curtain airbag sensor LH is missinstalled.

	Step	Check	Yes	No
1	**REPLACE CURTAIN AIRBAG SENSOR (LH).** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Replace the curtain A/B sensor (LH) with a genuine sensor. <Ref. to AB-24, REMOVAL, Curtain Airbag Sensor.>	Does the warning light go off?	Finish the diagnosis.	Replace the airbag control module. <Ref. to AB-21, REMOVAL, Airbag Control Module.>

OCCUPANT DETECTION SYSTEM (DIAGNOSTICS)

OD(diag)

		Page
1.	Basic Diagnostic Procedure	2
2.	Check List for Interview	3
3.	General Description	4
4.	Electrical Component Location	10
5.	Airbag Connector	11
6.	Control Module I/O Signal	12
7.	Subaru Select Monitor	13
8.	Read Diagnostic Trouble Code (DTC)	16
9.	Inspection Mode	17
10.	Clear Memory Mode	18
11.	Airbag Warning Light Illumination Pattern	19
12.	Passenger's Airbag ON/OFF Indicator Light Illumination Pattern	20
13.	List of Diagnostic Trouble Code (DTC)	21
14.	Diagnostic Procedure with Diagnostic Trouble Code (DTC)	22

1. General Description

A: SPECIFICATION

Refer to “Body Repair Manual” for general description of body structure, reference points and reference dimensions.

INSTRUMENTATION/DRIVER INFO

IDI

Page

1. General Description 2
2. Combination Meter System 4
3. Clock System 12
4. Combination Meter 15
5. Speedometer 16
6. Tachometer 17
7. Fuel Gauge 18
8. Engine Coolant Temperature Gauge 19
9. Clock 20

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

2. Horn System

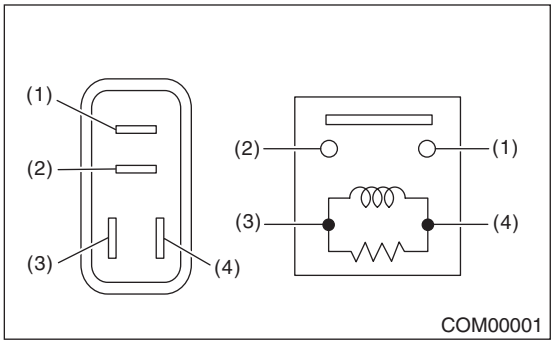
A: WIRING DIAGRAM

Refer to “Horn System” in WI section. <Ref. to WI-125, WIRING DIAGRAM, Horn System.>

B: INSPECTION

1. HORN RELAY

Measure the horn 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

C: NOTE

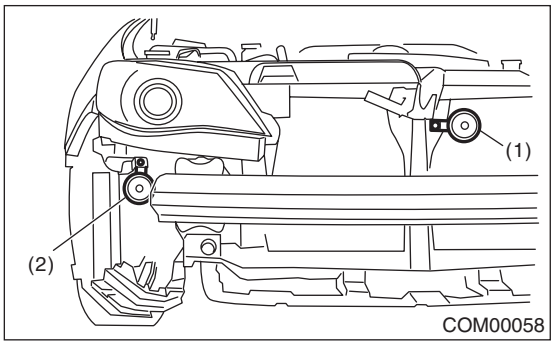
For procedure of each component in the horn system, refer to the respective section.

- Horn assembly <Ref. to COM-4, Horn.>
- Horn switch <Ref. to COM-5, Horn Switch.>

3. Horn

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the front bumper face. <Ref. to EI-29, FRONT BUMPER FACE, REMOVAL, Front Bumper.>
3) Disconnect the harness connector.
4) Remove the horn bracket mounting bolt, and remove the horn assembly.



(1) Lo side horn
(2) Hi side horn

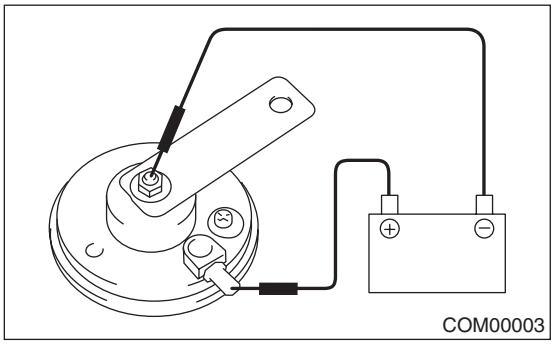
B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
Lo side: 18 N·m (1.8 kgf-m, 13.3 ft-lb)
Hi side: 13 N·m (1.3 kgf-m, 9.6 ft-lb)

C: INSPECTION

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



If defective, replace the horn.

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-5, CAUTION, General Description.>

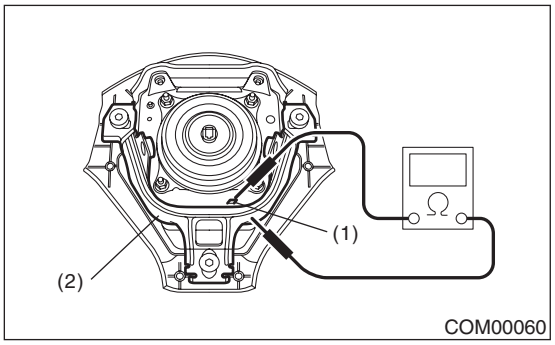
NOTE:
Horn switch is a unit with the driver's airbag module.
1) Disconnect the ground cable from battery.
2) Remove the driver's airbag module. <Ref. to AB-15, REMOVAL, Driver's Airbag Module.>

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
The airbag module bracket being pushed	Horn switch terminal and airbag module bracket	Less than 1 Ω
The airbag module bracket being separated		1 MΩ or more

If defective, replace the driver's airbag module.

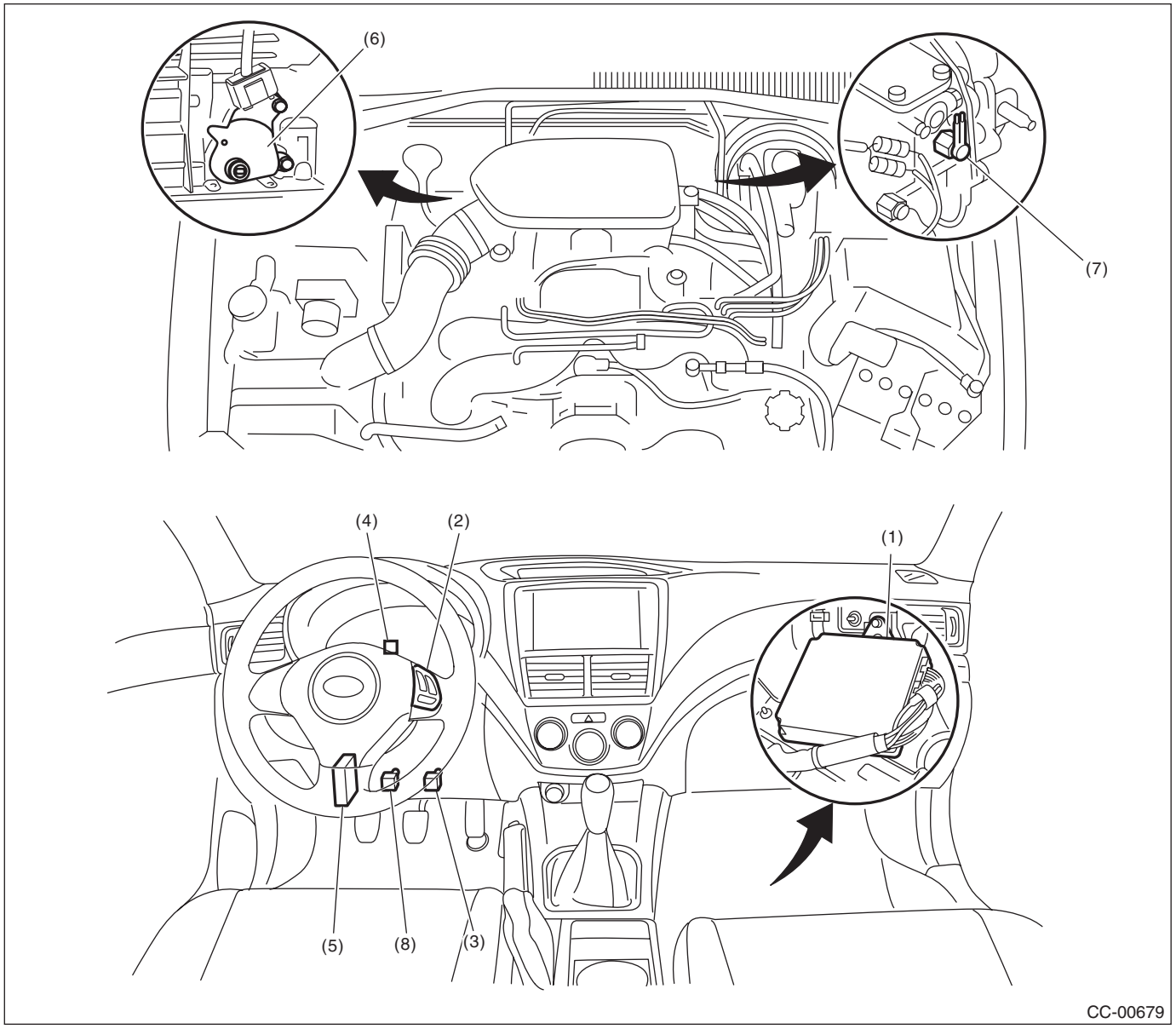
GLASS/WINDOWS/MIRRORS

GW

		Page
1.	General Description	2
2.	Power Window System	8
3.	Power Window Control Switch	9
4.	Front Door Glass	11
5.	Front Regulator and Motor Assembly	12
6.	Remote Control Mirror System	13
7.	Scalp Cap	14
8.	Outer Mirror Assembly	15
9.	Outer Mirror	16
10.	Remote Control Mirror Switch	17
11.	Rear Door Glass	18
12.	Rear Regulator and Motor Assembly	19
13.	Windshield Glass	20
14.	Rear Gate Glass	25
15.	Rear Window Glass	27
16.	Rear Window Defogger System	29
17.	Rear Quarter Glass	31
18.	Rearview Mirror	34
19.	Wiper Deicer System	35

1. General Description

A: COMPONENT



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

B: CAUTION

- Before disassembling or reassembling parts, always disconnect the battery ground cable from battery. When repairing the audio, control module, etc. which are provided with memory functions, record the memory contents before disconnecting the ground cable from battery. Otherwise, the memory will be 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 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/installing driver's airbag module.

2. Cruise Control Module

A: NOTE

The control of cruise control system is carried out in engine control module (ECM).
For removal/installation procedures of the control module, refer to Engine section.

B: REMOVAL

- 2.5 L turbo model <Ref. to FU(H4DOTC)-51, REMOVAL, Engine Control Module (ECM).>
- 2.5 L non-turbo model <Ref. to FU(H4SO)-2, SPECIFICATION, General Description.>

C: INSTALLATION

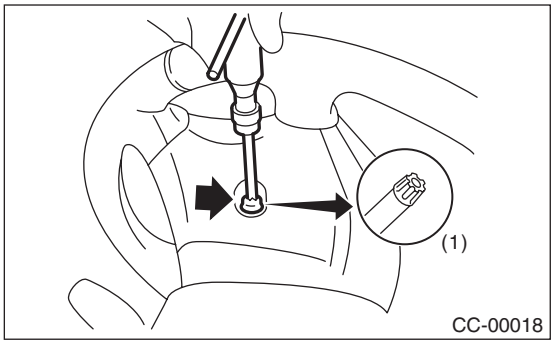
- 2.5 L turbo model <Ref. to FU(H4DOTC)-51, INSTALLATION, Engine Control Module (ECM).>
- 2.5 L non-turbo model <Ref. to FU(H4SO)-2, SPECIFICATION, General Description.>

3. Cruise Control Command Switch

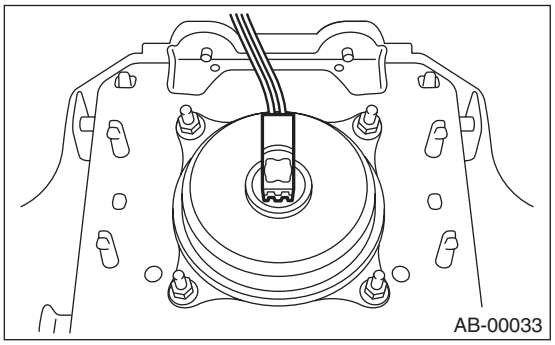
A: REMOVAL

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-5, CAUTION, General Description.>

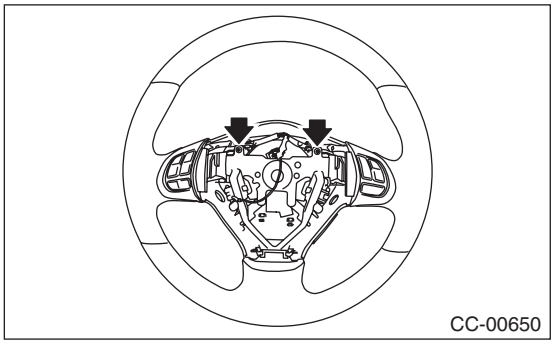
1) Set the front wheels in straight ahead position.
2) Turn the ignition switch to OFF.
3) Disconnect the ground cable from battery and wait for at least 20 seconds before starting work.
4) Using TORX® bit T30 (1), loosen two TORX® bolts which secure the driver's airbag module.



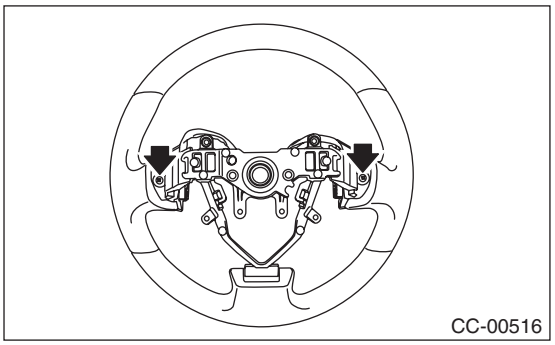
5) Disconnect the horn harness.
6) Disconnect the airbag module connector on back of the airbag module. <Ref. to AB-8, PROCEDURE, Airbag Connector.>



7) Remove the steering wheel. <Ref. to PS-12, REMOVAL, Steering Wheel.>
8) Remove the screws to remove the lower cover from steering wheel.



9) Remove the screws on the backside of the steering wheel to remove the cruise control command switch.

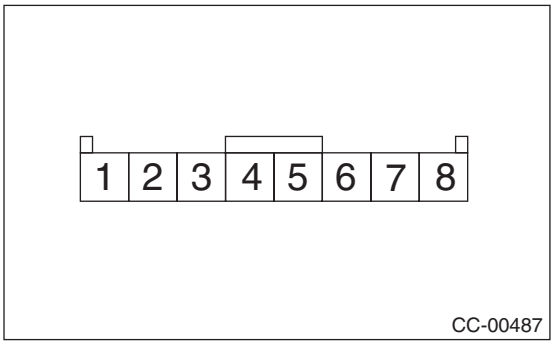


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the cruise control command switch resistance.



Switch	Position	Terminal No.	Standard
CANCEL SET/COAST RESUME/ ACCEL	All OFF	7 and 6	Approx. 4 kΩ
CANCEL	ON	7 and 6	Less than 1 Ω
SET/COAST	ON	7 and 6	Approx. 250 Ω
RESUME/ ACCEL	ON	7 and 6	Approx. 1500 Ω
MAIN (CRUISE)	OFF	8 and 6	1 MΩ or more
	ON	8 and 6	Less than 1 Ω

If NG, replace the cruise control command switch.

4. Combination Meter

A: NOTE

For the combination meter, refer to the “IDI” section. <Ref. to IDI-15, Combination Meter.>

5. Stop Light & Brake Switch

A: NOTE

For stop light & brake switch, refer to “BR”. <Ref. to BR-44, Stop Light Switch.>

6. Clutch Switch

A: NOTE

For clutch switch, refer to “CL”. <Ref. to CL-27, Clutch Switch.>

7. Transmission Control Module (TCM)

A: NOTE

For transmission control module (TCM), refer to Automatic Transmission section. <Ref. to 4AT-61, Transmission Control Module (TCM).>

8. Inhibitor Switch

A: NOTE

For inhibitor switch, refer to Automatic Transmission section. <Ref. to 4AT-46, INSPECTION, Inhibitor Switch.>

9. Neutral Position Switch

A: NOTE

For neutral position switch, refer to Manual Transmission & Differential section. <Ref. to 5MT-32, Switches and Harness.>

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

CC(diag)

Page

1. Basic Diagnostic Procedure 2
2. General Description 4
3. Electrical Component Location 5
4. Engine Control Module (ECM) I/O Signal 6
5. Subaru Select Monitor 7
6. Diagnostics with Phenomenon 9
7. List of Cancel Code 11
8. Diagnostic Procedure with Cancel Code 14

1. Basic Diagnostic Procedure

A: PROCEDURE

	Step	Check	Yes	No
1	**CHECK MALFUNCTION INDICATOR LIGHT.** Make sure the 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 **7**.	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 phenomenon 1. <Ref. to CC(diag)-9, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
4	**CHECK CRUISE CONTROL SET OPERATION.** Check the cruise control setting operation.	Can the cruise control be set while driving at 40 km/h (25 MPH) or more?	Go to step **8**.	Go to step **7**.
5	**CHECK DTC.** Read all DTCs using the Subaru Select Monitor.	Is an engine or ABS/VDC related DTC displayed?	Record the DTC. Go to step **6**.	Go to phenomenon 2. <Ref. to CC(diag)-9, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
6	**CHECK FREEZE FRAME DATA.** Using the Subaru Select Monitor, check the Freeze Frame Data or Information in Trouble State.	Was the Freeze Frame Data or Information in Trouble State recorded?	Record the data. Perform the diagnosis according to the engine or ABS/VDC related DTC.	Perform the diagnosis according to the engine or ABS/VDC related DTC.
7	**CHECK CANCEL CODE.** Using the Subaru Select Monitor, read the cancel codes. NOTE: • Do not turn the ignition switch to OFF after the cruise control is deactivated. • Do not operate the cruise control command switch after the cruise control is deactivated. If the above is performed, the cancel code will be cleared.	Is it possible to read the cancel codes?	Perform the diagnosis according to the cancel code. <Ref. to CC(diag)-11, LIST, List of Cancel Code.>	Go to step **8**.
8	**CHECK CRUISE SET INDICATOR LIGHT.** Make sure the cruise set indicator light illuminates.	Does the cruise set indicator light illuminate?	Go to step **9**.	Go to phenomenon 3. <Ref. to CC(diag)-9, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
9	**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 **10**.	Go to phenomenon 4. <Ref. to CC(diag)-9, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>

	Step	Check	Yes	No
10	**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 **11**.	Go to phenomenon 5. <Ref. to CC(diag)-9, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
11	**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 **12**.	Go to phenomenon 6. <Ref. to CC(diag)-9, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
12	**CANCEL OPERATION CHECK.** Check the CANCEL switch operation.	Is the cruise control released after CANCEL switch has been pressed?	Go to step **13**.	Go to phenomenon 7. <Ref. to CC(diag)-9, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
13	**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 **14**.	Go to phenomenon 8. <Ref. to CC(diag)-9, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
14	**CHECK CRUISE CONTROL RELEASE OPERATION.** Check the cruise control release operation.	Is the cruise control released after shifting to the neutral position?	Go to step **15**.	Go to phenomenon 9. <Ref. to CC(diag)-9, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
15	**CHECK CRUISE CONTROL RELEASE OPERATION.** Check the cruise control release operation.	Is the cruise control released after depressing the clutch pedal?	Finish the diagnosis.	Go to phenomenon 10. <Ref. to CC(diag)-9, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>

2. General Description

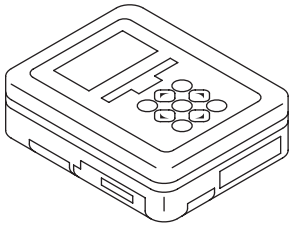
A: CAUTION

Airbag system wiring harness is routed near the cruise control command switch.

CAUTION:
• Do not use the electrical test equipment on the 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
 ST1B022XU0	1B022XU0	SUBARU SELECT MONITOR III KIT	Used for troubleshooting the electrical system.

2. GENERAL TOOL

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

C: INSPECTION

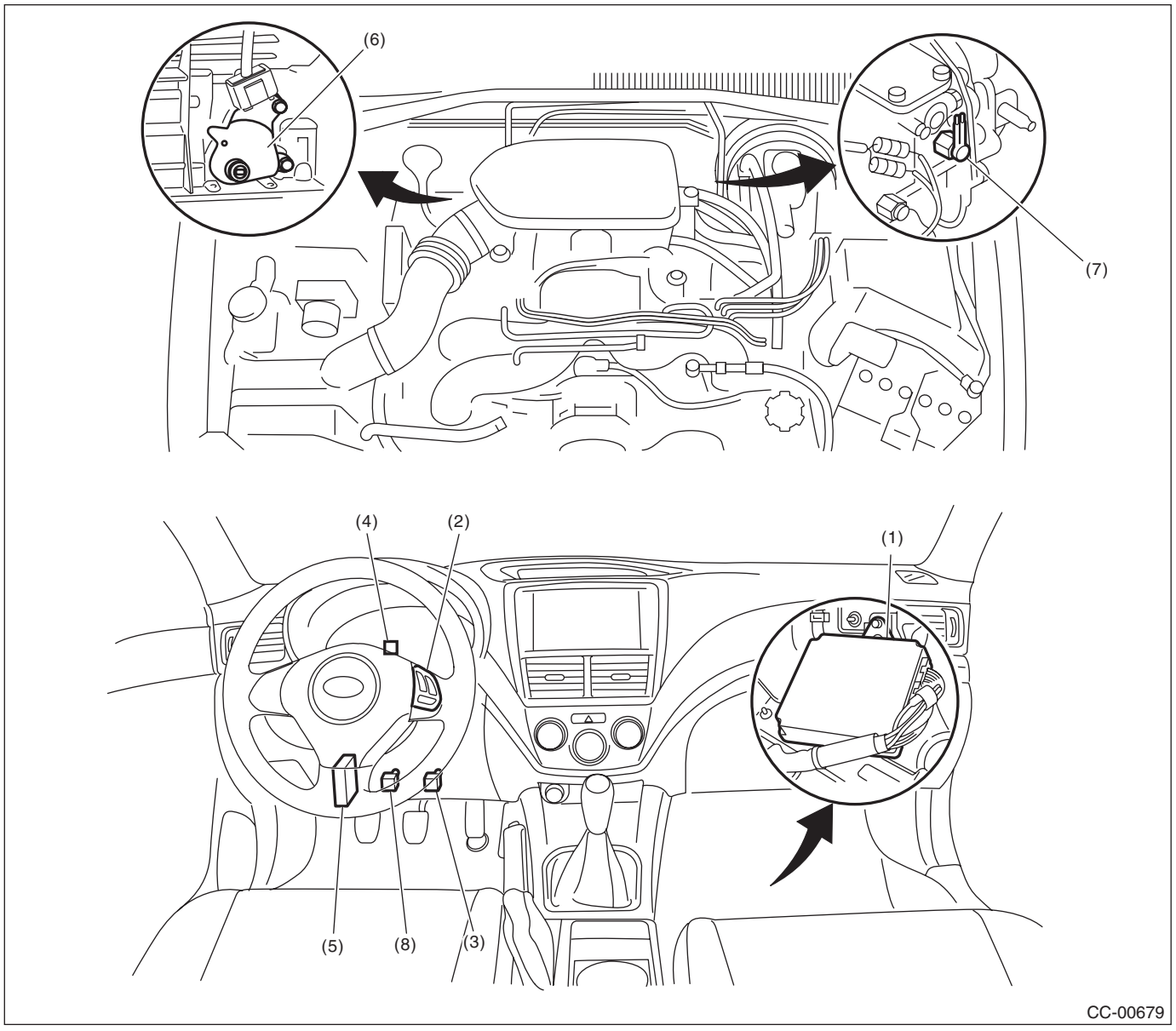
Measure the battery voltage and specific gravity of electrolyte.

Standard voltage:
12 V or more

Specific gravity:
1.260 or more

3. Electrical Component Location

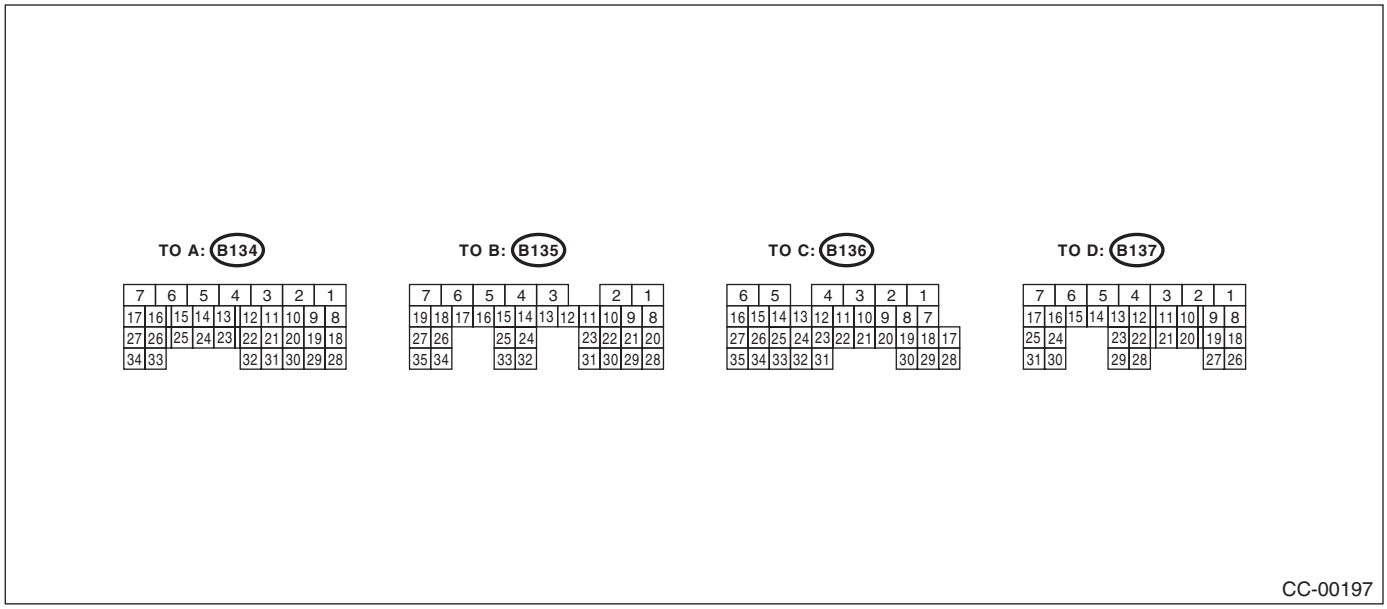
A: LOCATION



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

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

A: ELECTRICAL SPECIFICATION



Content		Terminal No.	Measurement condition and I/O signal (Idling with ignition ON: except for cruise set light)
Main power supply	VB (CONTROL 1) VB (CONTROL 2)	A7, B2	• Battery voltage is detected when the main power is turned ON. • “0 V” is detected when the main power is turned OFF.
Command switch		B24	• “0 V” is detected when the command switch is in CANCEL position. • “Approx. 1 V” is detected when the command switch is in SET/ COAST position. • “Approx. 3 V” is detected when the command switch is in RESUME/ ACCEL position. • “Approx. 4 V” is detected when the command switch is released.
Brake switch 1 (Brake switch)		B20	• Battery voltage is detected when the brake pedal is released. • “0 V” is detected when brake pedal is depressed.
Brake switch 2 (Stop light switch)		B28	• Battery voltage is detected when brake pedal is depressed. • “0 V” is detected when the brake pedal is released.
Main switch		B12	• “0 V” is detected while the main switch is pressed or turned ON. • Approx. “5 V” is detected when the main switch is OFF.
Ground	GND (CONTROL)	A5	—
Ignition switch		B19	• Battery voltage is detected when the ignition switch is turned ON. • “0 V” is detected when the ignition switch is turned OFF.
Clutch switch (MT model)		C25	• “0 V” is detected when clutch pedal is depressed. • Battery voltage is detected when the clutch pedal is released.
Neutral position switch (MT model)		C31	• Battery voltage is detected when the shift lever is in any position except for neutral. • “Approx. 0 V” is detected when the shift lever is in neutral position.
Neutral signal (AT model)		C31	• Battery voltage is detected when the shift lever is in any position except for “P” or “N”. • “0 V” is detected when the shift lever is in “P” or “N” position.

B: WIRING DIAGRAM

<Ref. to WI-159, WIRING DIAGRAM, Cruise Control System.>

5. Subaru Select Monitor

A: OPERATION

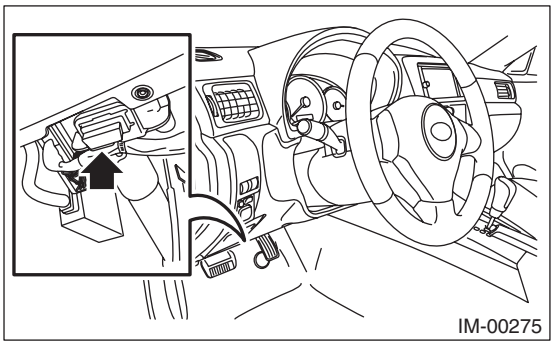
1. GENERAL DESCRIPTION

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 code which occurred during driving. When there are multiple cancel code, 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 memory content (latest code) is cleared when ignition switch is turned to OFF. However, memory contents set by the diagnosis of faulty switches related to the system and cruise control will remain as trouble history (memory code) after the ignition switch is 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 Subaru Select Monitor.
3) Connect the Subaru Select Monitor to 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 data link connector.
4) Start the engine and turn the cruise control main switch to ON.
5) Run the Subaru Select Monitor.
6) On «Main Menu» display, select {Each System Check}.
On «System Selection Menu» display, select {Engine Control System} and select the [OK]. Select [OK] after the engine type information 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.
• The cancel code will be also appear when cruise control is cancelled by the driver's operation. Do not confuse them.
• Be sure to get an assistant to support the diagnosis while driving, and have him/her operate the select monitor.
8) When the set speed is cancelled by itself (without any cancel operations such as applying brake) or when the cruise control could not be set by performing the setting operation, selecting the {Cancel Code(s) Display} on the engine malfunction diagnosis screen will display the cancel code on the select monitor display.

NOTE:
The {Latest Diagnostic Code(s)} and {Memorized Diagnostic Code(s)} are contained in the cancel code. The latest code recognized during current test drive is displayed in {Latest Diagnostic Code(s)}. Cancel codes resulting from fault diagnosis of switches relating to the system and cruise control are also displayed in {Memorized Diagnostic Code(s)}.

9) Perform Engine DTC Clear Memory operation.
<Ref. to EN(H4DOTC)(diag)-56, OPERATION, Clear Memory Mode.>
Cancel codes for switches relating to the system and cruise control are deleted by clearing memory on the engine side.

NOTE:
The latest code 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) On «Main Menu» display, select {Each System Check}.
5) On «System Selection Menu» display, select {Engine Control System}.
6) Select [OK] after engine type information is displayed.
7) On «Cruise Control Diagnosis» display, select {Current Data Display & Save}.
8) Make sure that normal display is shown when operated as follows:
• Depress and release the brake pedal.(Stop light switch and brake switch are turned ON.)
• Turn the main switch to ON.
• Turn the “CANCEL” switch to ON.
• Turn the “SET/COAST” switch to ON.
• Turn the “RESUME/ACCEL” switch to ON.
• 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 “PC application help for Subaru Select Monitor”.
• For detailed concerning cancel codes, refer to the “List of Cancel Codes”. <Ref. to CC(diag)-11, List of Cancel Code.>

6. Diagnostics with Phenomenon

A: DIAGNOSTIC PROCEDURE WITH PHENOMENON

Phenomenon		Check item	Index
1	Cruise control main switch is not turned to ON.(Cruise indicator light does not illuminate.) Or cruise control is cancelled without operating the cruise control command switch.	(1) Perform cruise cancel conditions diagnosis.	Perform the diagnosis according to displayed cancel code.
		(2) Perform the real-time diagnosis.	Check the input signal of cruise control system.
		(3) Check the cruise control command switch.	<Ref. to CC(diag)-14, 11, Diagnostic Procedure with Cancel Code.>
		(4) Check the cruise indicator light.	<Ref. to CC(diag)-10, CHECK CRUISE INDICATOR LIGHT AND CRUISE SET INDICATOR LIGHT, Diagnostics with Phenomenon.>
2	Cruise control cannot be set. Or cruise control is cancelled without releasing operation.	(1) Perform cruise cancel conditions diagnosis.	Perform the diagnosis according to displayed cancel code.
		(2) Perform the real-time diagnosis.	Check the input signal of cruise control system.
		(3) Check the cruise control command switch.	<Ref. to CC(diag)-14, 11, Diagnostic Procedure with Cancel Code.>
		(4) Check stop light switch and brake switch.	<Ref. to BR-42, Brake Pedal.> <Ref. to CC(diag)-16, 12, Diagnostic Procedure with Cancel Code.>
		(5) Check clutch switch.	<Ref. to CL-27, Clutch Switch.> <Ref. to CC(diag)-18, 13, Diagnostic Procedure with Cancel Code.>
		(6) Check the neutral position switch.	<Ref. to CC(diag)-20, 14, Diagnostic Procedure with Cancel Code.> <Ref. to CC(diag)-24, 62, Diagnostic Procedure with Cancel Code.>
		(7) Check vehicle speed sensor.	<Ref. to CC(diag)-23, 22, Diagnostic Procedure with Cancel Code.>
3	Cruise set indicator light does not illuminate.	Check the cruise set indicator light.	<Ref. to CC(diag)-10, CHECK CRUISE INDICATOR LIGHT AND CRUISE SET INDICATOR LIGHT, Diagnostics with Phenomenon.>
4	Vehicle speed is not held within set speed ±3 km/h (±2 MPH).	Check the vehicle speed sensor.	<Ref. to CC(diag)-23, 22, Diagnostic Procedure with Cancel Code.>
5	Vehicle speed does not increase or does not return to set speed after RESUME/ACCEL switch has been pressed.	(1) Perform the real-time diagnosis.	Check the input signal of cruise control system.
		(2) Check the RESUME/ACCEL switch.	<Ref. to CC(diag)-14, 11, Diagnostic Procedure with Cancel Code.>
6	Vehicle speed does not decrease after SET/COAST switch has been pressed.	(1) Perform the real-time diagnosis.	Check the input signal of cruise control system.
		(2) Check the SET/COAST switch.	<Ref. to CC(diag)-14, 11, Diagnostic Procedure with Cancel Code.>
7	Cruise control is not released after CANCEL switch has been pressed.	(1) Perform the real-time diagnosis.	Check the input signal of cruise control system.
		(2) Check the CANCEL switch.	<Ref. to CC(diag)-14, 11, Diagnostic Procedure with Cancel Code.>
8	Cruise control is not released after brake pedal has been depressed.	(1) Perform the real-time diagnosis.	Check the input signal of cruise control system.
		(2) Check stop light switch and brake switch.	<Ref. to CC(diag)-16, 12, Diagnostic Procedure with Cancel Code.> <Ref. to BR-44, INSTALLATION, Stop Light Switch.>
9	Cruise control is not released after shifting to the neutral position.	(1) Perform the real-time diagnosis.	Check the input signal of cruise control system.
		(2) Check the neutral position switch.	<Ref. to CC(diag)-20, 14, Diagnostic Procedure with Cancel Code.>
10	Cruise control is not released after clutch pedal has been depressed.	(1) Perform the real-time diagnosis.	Check the input signal of cruise control system.
		(2) Check clutch switch.	<Ref. to CC(diag)-18, 13, Diagnostic Procedure with Cancel Code.>

B: CHECK CRUISE INDICATOR LIGHT AND CRUISE SET INDICATOR LIGHT

TROUBLE SYMPTOM:

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

	Step	Check	Yes	No
1	**CHECK CRUISE INDICATOR LIGHT AND CRUISE SET INDICATOR LIGHT.** 1) Perform the self-diagnosis of combination meter. <Ref. to IDI-4, SELF-DIAGNOSIS, INSPECTION, Combination Meter System.> 2) Check the cruise indicator light and cruise set indicator light if they illuminate.	Do the cruise indicator light and cruise set indicator light illuminate?	Go to step **2**.	Replace the meter case assembly. <Ref. to IDI-15, Combination Meter.>
2	**CHECK DTC OF LAN COMMUNICATION CIRCUIT.** 1) Complete self-diagnosis, and turn the ignition switch to ON again. 2) Read the DTC of body integrated unit using Subaru Select Monitor.	Is DTC of low-speed CAN displayed?	Check the LAN communication circuit. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>	Replace the ECM. <Ref. to FU(H4SO)-45, Engine Control Module (ECM).> <Ref. to FU(H4DOTC)-51, Engine Control Module (ECM).>

7. List of Cancel Code

A: LIST

NOTE:
- The cancel code is registered even when cancel is performed intentionally by the driver.
- Cancel codes are cleared if the ignition switch is turned to OFF.
- If a different cancel code is input after a cancel code (latest code) has been input, the latest code is overwritten.
- If the cruise indicator light is flashing, a malfunction is occurring in the system or cruise control related switch. The cancel code at this time is saved even after ignition switch is OFF as a memory code of a past malfunction.
- To display a cancel code, use the Subaru Select Monitor to read the code after the cruise control is deactivated during a driving test.

Cancel code	Item	Contents of diagnosis	Index
11	Main Switch	Main switch of cruise control command switch is turned to OFF, and then the cruise control is released.	This code is displayed without operating the main switch. <Ref. to CC(diag)-14, 11, Diagnostic Procedure with Cancel Code.>
12	Stop Light & Brake Switch	Stop light switch or brake switch is turned to ON, and then the cruise control is released.	This code is displayed without depressing the brake pedal. <Ref. to CC(diag)-16, 12, Diagnostic Procedure with Cancel Code.>
13	Clutch Switch	Clutch switch is turned to ON, and then the cruise control is released.	This code is displayed without depressing the clutch pedal. <Ref. to CC(diag)-18, 13, Diagnostic Procedure with Cancel Code.>
14	Neutral Position Switch	Neutral position switch is turned to ON, and then the cruise control is released.	This code is displayed without shifting to neutral position. <Ref. to CC(diag)-20, 14, Diagnostic Procedure with Cancel Code.>
15	Cancel Switch	Cancel switch is turned to ON, and then the cruise control is released.	This code is displayed without operating the cancel switch. <Ref. to CC(diag)-21, 15, Diagnostic Procedure with Cancel Code.>
16	Ignition switch	Ignition switch is turned to OFF, and then the cruise control is released.	This code is displayed without operating the ignition switch. <Ref. to CC(diag)-22, 16, Diagnostic Procedure with Cancel Code.>
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 code is displayed when the ignition switch is turned to ON without operating the cruise control command switch. <Ref. to CC(diag)-23, 21, Diagnostic Procedure with Cancel Code.>

List of Cancel Code

Cancel code	Item	Contents of diagnosis	Index
22	Abnormality of change in vehicle speed	Malfunction of vehicle speed signal variation is detected.	<Ref. to CC(diag)-23, 22, Diagnostic Procedure with Cancel Code.>
24	Abnormality of switches related to cruise control	Open circuit of cruise control switch is detected during cruise driving. (The system is judged as model without cruise control.)	This code is displayed with normal operation. <Ref. to CC(diag)-23, 24, Diagnostic Procedure with Cancel Code.>
31	Abnormal engine speed Signal	• Abnormal increase of engine speed is detected. • Gear is placed in Neutral, 1st or Reverse position.	Cruise in 2nd shift position or more. <Ref. to CC(diag)-23, 31, Diagnostic Procedure with Cancel Code.>
32	Cruse Control out of Range	• Controlled vehicle speed decreased under the limit during cruising. • Set operation was performed at vehicle speed unavailable for setting. • RESUME operation was performed without memorized vehicle speed.	This code is displayed, though the vehicle speed is increased to the speed available for cruise set and set operation was performed again. <Ref. to CC(diag)-23, 32, Diagnostic Procedure with Cancel Code.>
34	Prohibition of cruise control at continuing big Accel. angle	The vehicle has been driven at higher speed than set vehicle speed for an abnormally long time (approximately 10 minutes) during cruise driving.	This code is displayed when driving for a long period of time at higher speed than appropriate cruise set vehicle speed by operating accelerator pedal. In this case, the cruise setting is deactivated. <Ref. to CC(diag)-24, 34, Diagnostic Procedure with Cancel Code.>
35	Prohibition of cruise control at vehicle speed F/B malfunction	Set vehicle speed cannot be kept because of some reasons (steep uphill, parking brake, abnormal decrease of engine output, etc.) during cruise driving.	This code is displayed when driving condition is not suitable for cruise control. Perform cruise set operation again after clearing the possible cause. <Ref. to CC(diag)-24, 35, Diagnostic Procedure with Cancel Code.>
41	VDC/TCS Operating	Vehicle dynamics control (VDC) or TCS is operated during cruise driving or cruise setting.	This code is displayed when driving condition is not suitable for cruise control. Perform cruise set operation again after clearing the possible cause. <Ref. to CC(diag)-24, 41, Diagnostic Procedure with Cancel Code.>
43	ABS/VDC Failure	ABS or vehicle dynamics control (VDC) system malfunction is detected during cruise driving or cruise setting.	<Ref. to CC(diag)-24, 43, Diagnostic Procedure with Cancel Code.>
44	Body Integrated unit Failure	Body integrated unit system malfunction is detected during cruise driving or cruise setting.	<Ref. to CC(diag)-24, 44, Diagnostic Procedure with Cancel Code.>

List of Cancel Code

Cancel code	Item	Contents of diagnosis	Index
45	Meter Failure	Combination meter malfunction is detected during cruise driving or cruise setting.	<Ref. to CC(diag)-24, 45, Diagnostic Procedure with Cancel Code.>
61	Brake switch abnormal	Malfunction in the stop light & brake switch is detected.	<Ref. to CC(diag)-24, 61, Diagnostic Procedure with Cancel Code.>
62	Neutral Switch Failure	Neutral position switch malfunction is detected.	<Ref. to CC(diag)-24, 62, Diagnostic Procedure with Cancel Code.>
63	Abnormality of change in vehicle speed	Malfunction of vehicle speed signal variation is detected.	<Ref. to CC(diag)-24, 63, Diagnostic Procedure with Cancel Code.>
64	Engine Sensor Failure 1	Malfunction related to engine is detected.	<Ref. to CC(diag)-25, 64, Diagnostic Procedure with Cancel Code.>
65	Abnormality 1 of switches related to cruise control	Cruise control command switch malfunction is detected. (When the switch is pressed ON for a long time (approximately two minutes), stuck ON condition is detected.)	<Ref. to CC(diag)-25, 65, Diagnostic Procedure with Cancel Code.>
66	Cruise Control Calculation Error	Cruise control calculation (microcomputer) malfunction is detected.	<Ref. to CC(diag)-25, 66, Diagnostic Procedure with Cancel Code.>

8. Diagnostic Procedure with Cancel Code

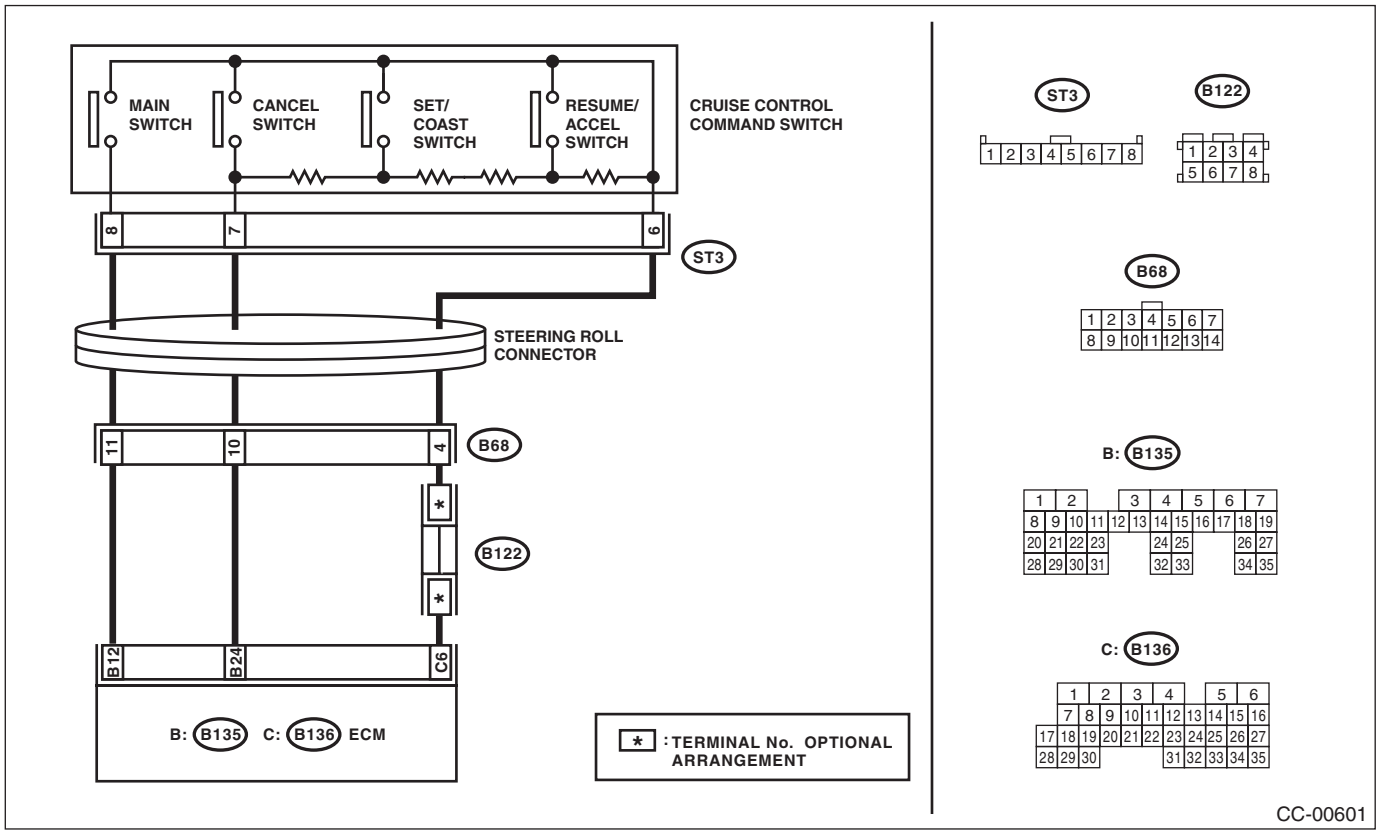
A: 11

Detected when main switch is pressed or when main switch related malfunction occurs.

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-15, 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. 8 (+) — Chassis ground (–):*** ***(ST3) No. 7 (+) — Chassis ground (–):***	Is the voltage 5 V or more?	Go to step **2**.	Check the harness between cruise control command switch and ECM, and the steering roll connector for open or short circuit, or for poor contact.
2	**CHECK CRUISE CONTROL COMMAND SWITCH CIRCUIT.** 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 harness connector terminal and chassis ground. ***Connector & terminal*** ***(ST3) No. 6 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **3**.	Check for open circuit between cruise control command switch, ECM, and chassis ground and check the ECM.

	Step	Check	Yes	No
3	**CHECK CRUISE CONTROL COMMAND SWITCH.** Measure the resistance between switch terminals when the cruise control command switch is not depressed. ***Terminals*** ***No. 6 — No. 7:***	Is the resistance approx. 4 kΩ?	Go to step **4**.	Replace the cruise control command switch. <Ref. to CC-5, Cruise Control Command Switch.>
4	**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 with the CANCEL switch pressed. ***Terminals*** ***No. 6 — No. 7:***	Is the resistance approx. less than 1 Ω when the CANCEL switch is pressed?	Go to step **5**.	Replace the cruise control command switch. <Ref. to CC-5, Cruise Control Command Switch.>
5	**CHECK SET/COAST SWITCH.** Measure the resistance between switch terminals with the SET/COAST switch pressed. ***Terminals*** ***No. 6 — No. 7:***	Is the resistance approx. 250 Ω when SET/COAST switch is pressed?	Go to step **6**.	Replace the cruise control command switch. <Ref. to CC-5, Cruise Control Command Switch.>
6	**CHECK RESUME/ACCEL SWITCH CIRCUIT.** Measure the resistance between switch terminals with the RESUME/ACCEL switch pressed. ***Terminals*** ***No. 6 — No. 7:***	Is the resistance approx. 1,500 Ω when RESUME/ACCEL switch is pressed?	Replace the ECM. <Ref. to FU(H4SO)-45, Engine Control Module (ECM).> <Ref. to FU(H4DOTC)-51, Engine Control Module (ECM).>	Replace the cruise control command switch. <Ref. to CC-5, Cruise Control Command Switch.>

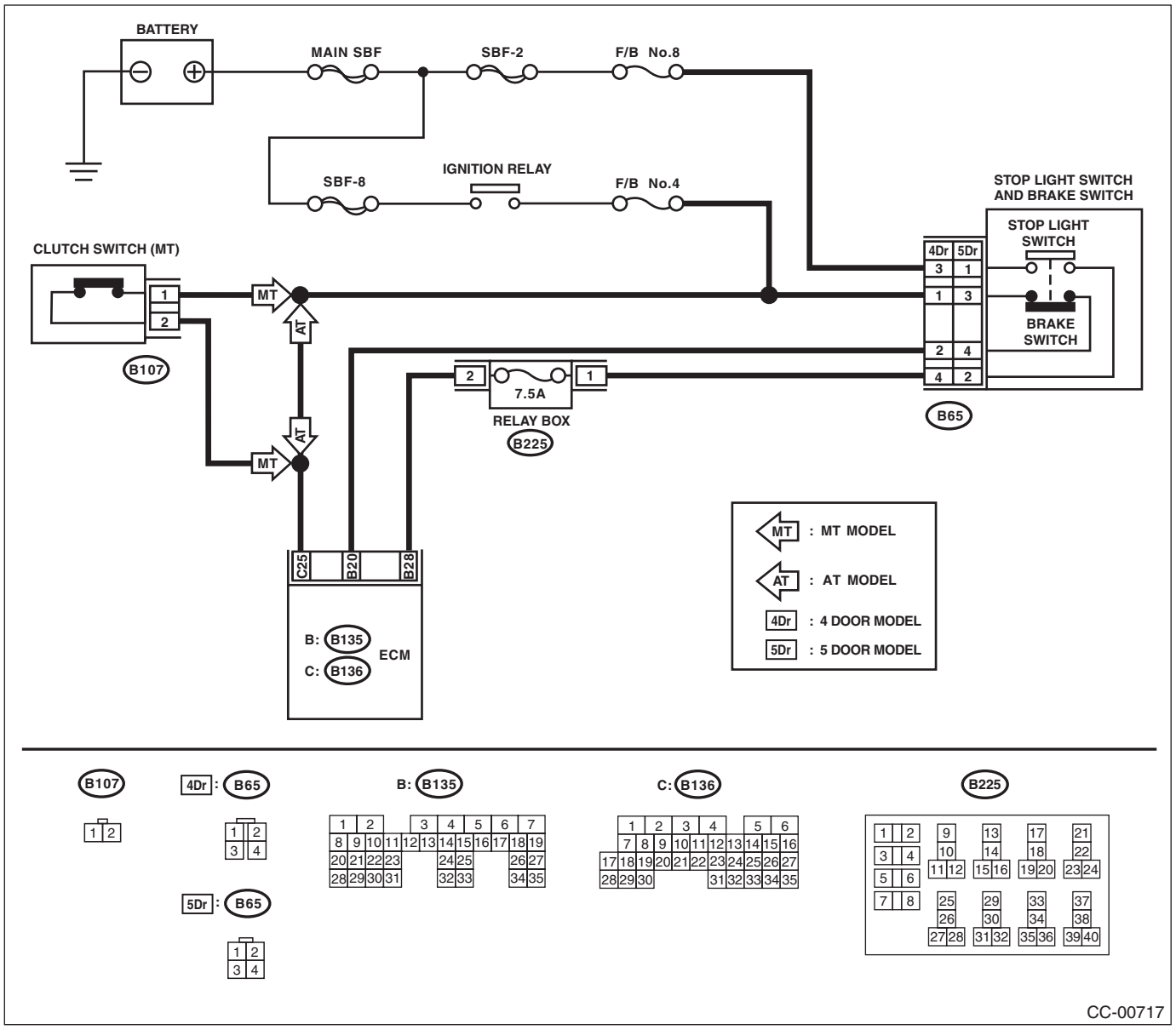
B: 12

Detected when brake pedal is depressed or malfunction related to stop light & brake switch occurs.

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK STOP LIGHT & BRAKE SWITCH.** Check the stop light & brake switch. <Ref. to CC-7, Stop Light & Brake Switch.>	Is the stop light & brake switch and installation position OK?	Go to step **2**.	Replace the stop light & brake switch. Or adjust the installation position.

	Step	Check	Yes	No
2	**CHECK STOP LIGHT & BRAKE SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the stop light & brake switch harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***5 door model:*** ***(B65) No. 1 (+) — Chassis ground (–):*** ***4 door model:*** ***(B65) No. 3 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **3**.	• Check fuse No. 8 (in fuse & relay box). • Check for open or short in the harness between stop light & brake switch and fuse & relay box.
3	**CHECK STOP LIGHT & BRAKE SWITCH CIRCUIT.** Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***5 door model:*** ***(B65) No. 3 (+) — Chassis ground (–):*** ***4 door model:*** ***(B65) No. 1 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **4**.	• Check fuse No. 4 (in fuse & relay box). • Check for open or short in the harness between stop light & brake switch and fuse & relay box.
4	**CHECK STOP LIGHT & BRAKE SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of ECM. 3) Measure the resistance between ECM harness connector terminal and stop light & brake switch harness connector terminal. ***Connector & terminal*** ***5 door model:*** ***(B135) No. 20 — (B65) No. 4:*** ***(B135) No. 28 — (B65) No. 2:*** ***4 door model:*** ***(B135) No. 20 — (B65) No. 2:*** ***(B135) No. 28 — (B65) No. 4:***	Is the resistance less than 10 Ω?	Replace the ECM. <Ref. to FU(H4SO)-45, Engine Control Module (ECM).> <Ref. to FU(H4DOTC)-51, Engine Control Module (ECM).>	Repair the harness.

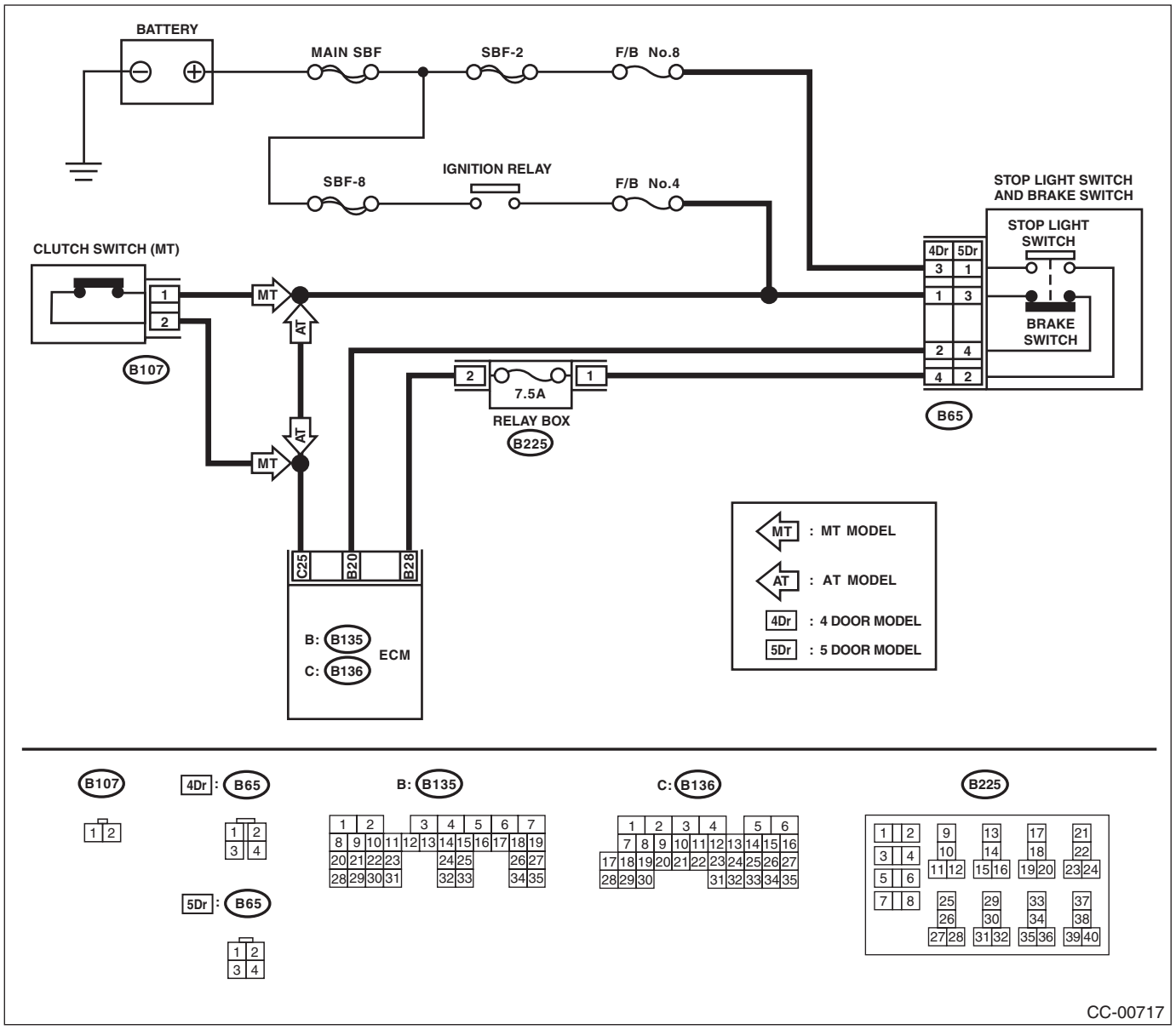
C: 13

Detected when clutch pedal is depressed or malfunction related to clutch switch occurs.

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK CLUTCH SWITCH.** Check the clutch switch. <Ref. to CL-27, INSPECTION, Clutch Switch.>	Is the clutch switch and installation position OK?	Go to step **2**.	Replace the clutch switch. Or adjust the installation position.

	Step	Check	Yes	No
2	**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. 1 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **3**.	• Check fuse No. 4 (in fuse & relay box). • Check open or shorted circuit of harness between clutch switch and fuse & relay box.
3	**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. 2 — (B136) No. 25:***	Is the resistance less than 10 Ω?	Replace the ECM. <Ref. to FU(H4SO)-45, Engine Control Module (ECM).> <Ref. to FU(H4DOTC)-51, Engine Control Module (ECM).>	Repair the harness.

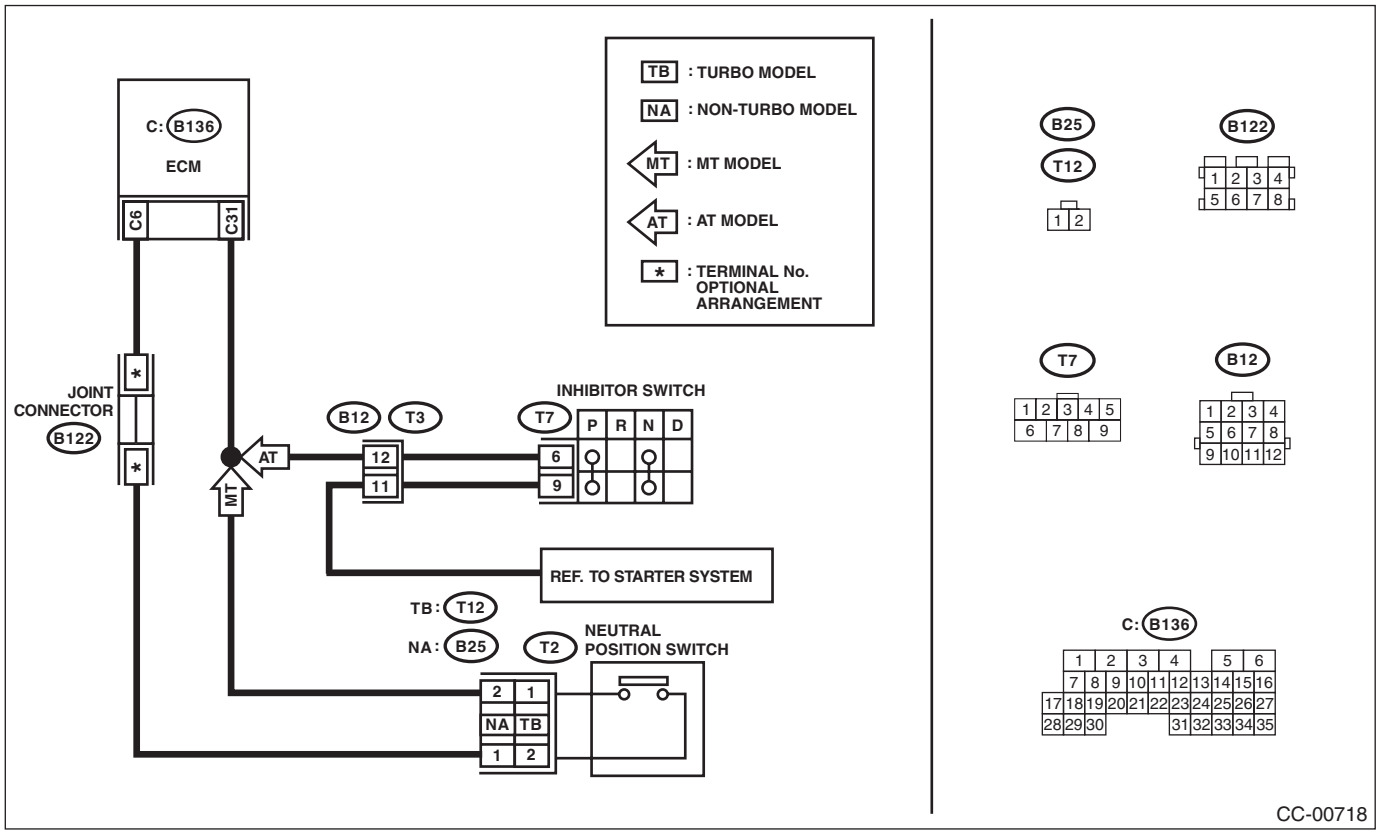
D: 14

Detected when select lever is set in the neutral position, or when malfunction related to neutral position switch occurs.

TROUBLE SYMPTOM:

Cruise control cannot be set.

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK TRANSMISSION TYPE.**	Is the transmission type AT?	Go to step **2**.	Go to step **5**.(MT model)
2	**CHECK INHIBITOR SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the inhibitor switch harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(T7) No. 6 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **3**.	Check for open or short in the harness between inhibitor switch and ECM.
3	**CHECK INHIBITOR SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the starter motor harness connector. 3) Measure the resistance between inhibitor switch harness connector terminal and starter motor. ***Connector & terminal*** ***(T7) No. 9 — Starter motor:***	Is the resistance less than 10 Ω?	Go to step **4**.	Repair the harness.

	Step	Check	Yes	No
4	**CHECK INHIBITOR SWITCH.** Remove and check the inhibitor switch. <Ref. to CC-10, Inhibitor Switch.>	Is the inhibitor switch working normal?	Replace the ECM. <Ref. to FU(H4SO)-45, Engine Control Module (ECM).>	Replace the inhibitor switch.
5	**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*** ***Non-turbo model*** ***(B25) No. 2 (+) — Chassis ground (–):*** ***Turbo model*** ***(T12) No. 1 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **6**.	Check for open or short in the harness between neutral position switch and ECM.
6	**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*** ***Non-turbo model*** ***(B25) No. 1 — Chassis ground:*** ***Turbo model*** ***(T12) No. 2 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **7**.	Repair the harness.
7	**CHECK NEUTRAL POSITION SWITCH.** Remove and check the neutral position switch. <Ref. to 5MT-33, NEUTRAL POSITION SWITCH, INSPECTION, Switches and Harness.>	Is the neutral position switch OK?	Replace the ECM. <Ref. to FU(H4SO)-45, Engine Control Module (ECM).> <Ref. to FU(H4DOTC)-51, Engine Control Module (ECM).>	Replace the neutral position switch.

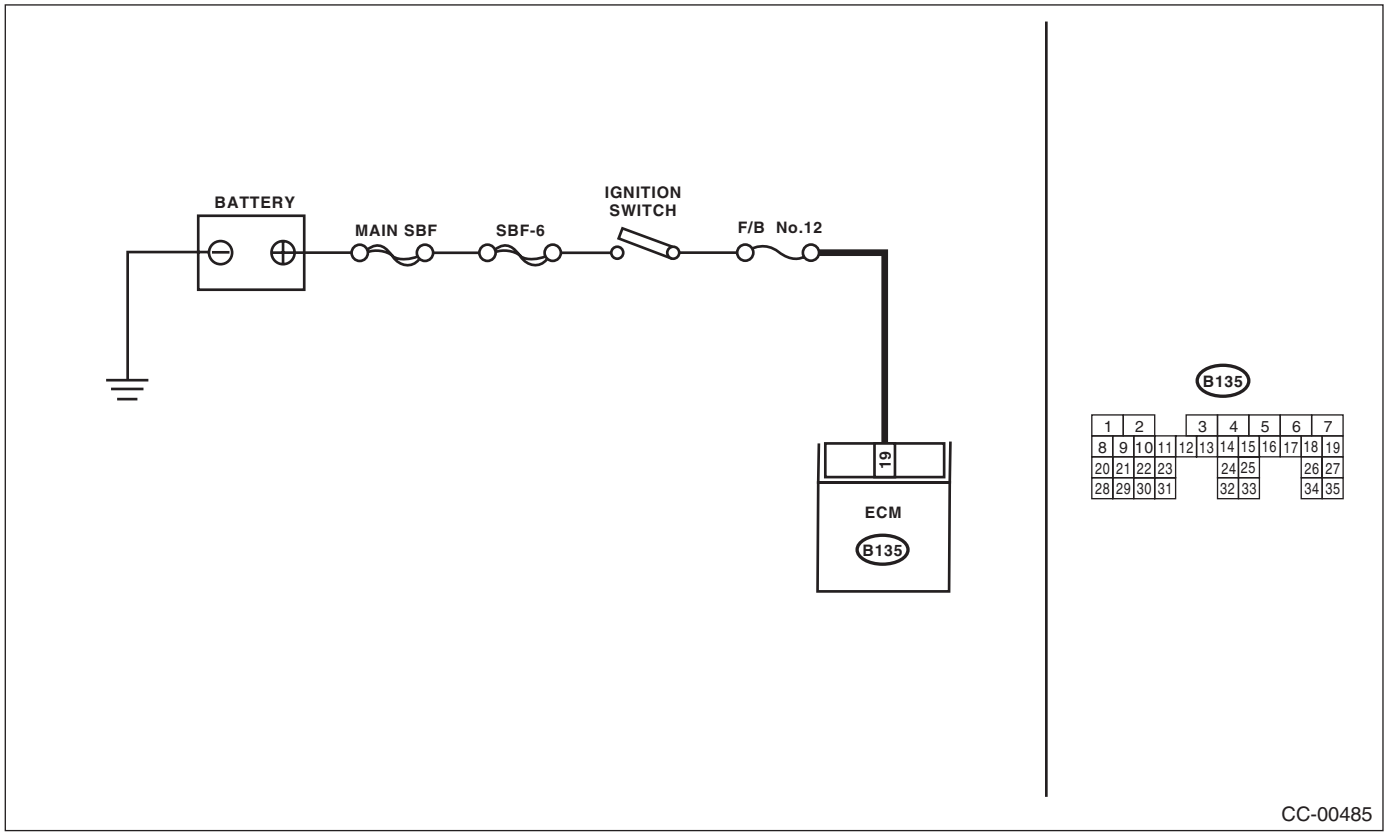
E: 15

Detected when CANCEL switch is pressed or malfunction related to main switch occurs.
TROUBLE SYMPTOM:
- Cruise control cannot be set.(Cancelled immediately.)
- Cruise control cannot be released.

Refer to DTC 11 for diagnostic procedure.
<Ref. to CC(diag)-14, 11, Diagnostic Procedure with Cancel Code.>

F: 16

Detected when ignition switch is turned to OFF or malfunction related to the ignition switch occurs.
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*** ***(B135) No. 19 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Check for poor contact of ECM connector.	• Check fuse No. 12 (in fuse & relay box). • Check the harness for open or short circuit between ignition switch and ECM.

G: 21

Cruise control command switch malfunction is detected.
TROUBLE SYMPTOM:
- Cruise control cannot be set.(Cancelled immediately.)
- Cruise control cannot be released.

Refer to DTC 11 for diagnostic procedure.
<Ref. to CC(diag)-14, 11, Diagnostic Procedure with Cancel Code.>

H: 22

Malfunction related to vehicle speed sensor is detected.
DIAGNOSIS:
Open or shorted circuit in vehicle speed sensor system.
TROUBLE SYMPTOM:
Cruise control cannot be set.(Cancelled immediately.)

	Step	Check	Yes	No
1	**CHECK ABS OR VDC WARNING LIGHT.** 1) Turn the ignition switch to ON. 2) After the initial operation of combination meter is completed, check if ABS or VDC warning light continues to illuminate.	Does the warning light continue to illuminate?	Check the VDCCM. <Ref. to VDC(diag)-2, Basic Diagnostic Procedure.>	Go to step **2**.
2	**CHECK DTC OF LAN COMMUNICATION CIRCUIT.** Read the DTC of body integrated unit using Subaru Select Monitor.	Is DTC of low-speed CAN displayed?	Check the LAN communication circuit.	Replace the ECM. <Ref. to FU(H4SO)-45, Engine Control Module (ECM).> <Ref. to FU(H4DOTC)-51, Engine Control Module (ECM).>

I: 24

Malfunction in cruise control-related switch is detected.
TROUBLE SYMPTOM:
- Cruise control cannot be set.(Cancelled immediately.)
- Cruise control cannot be released.

Refer to DTC 11 for diagnostic procedure.
<Ref. to CC(diag)-14, 11, Diagnostic Procedure with Cancel Code.>

J: 31

Engine speed signal malfunction is detected.
Abnormal increase of engine speed is detected.
Gear is placed in 1st or Reverse position.
After driving at the 2nd gear position or higher, perform the cruise setting again. If a cancel code is not detected, it is normal.

K: 32

Detected when the vehicle speed is out of the system controllable range.
Increase vehicle speed high enough to allow the cruise control to function, and then perform setting operation again.
If cancel code is still detected after setting cruise again, perform the diagnosis for DTC 22.
Refer to DTC 22 for diagnostic procedure.
<Ref. to CC(diag)-23, 22, Diagnostic Procedure with Cancel Code.>

L: 34

The vehicle has been driven at a speed higher than set speed for a long time (approximately 10 minutes) during cruise driving.
This cancel code is detected when driving for a long period of time at a speed higher than appropriate for cruise control setting by operating the accelerator pedal.
Perform the cruise control setting operation again. If the cancel code is not detected, it is normal.

M: 35

Detected when it is impossible to perform the vehicle speed feedback.
Set vehicle speed cannot be kept for some reasons (steep uphill, unreleased parking brake, etc.) during cruise driving.
Cancel code is detected when driving condition is not suitable for cruise control.
Perform cruise set operation again after clearing the possible cause.

N: 41

VDC/TCS has operated.
Vehicle dynamics control (VDC) or TCS is operated during cruise driving or cruise setting.
<Ref. to VDC(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

O: 43

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

P: 44

Body integrated unit malfunction is detected.
Body integrated unit system malfunction is detected during cruise driving or cruise setting. <Ref. to LAN(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

Q: 45

Combination meter malfunction is detected.
Combination meter malfunction is detected during cruise driving or cruise setting. <Ref. to LAN(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

R: 61

Malfunction in the stop light & brake switch is detected.
TROUBLE SYMPTOM:
- Cruise control cannot be set.
- Cruise control cannot be released.

Refer to DTC 12 for diagnostic procedure.
<Ref. to CC(diag)-16, 12, Diagnostic Procedure with Cancel Code.>

S: 62

Neutral position switch malfunction is detected.
TROUBLE SYMPTOM:
Cruise control cannot be set.
Refer to DTC 14 for diagnostic procedure.
<Ref. to CC(diag)-20, 14, Diagnostic Procedure with Cancel Code.>

T: 63

Malfunction of vehicle speed signal variation is detected.
TROUBLE SYMPTOM:
Cruise control cannot be set.(Cancelled immediately.)
Refer to DTC 22 for diagnostic procedure.
<Ref. to CC(diag)-23, 22, Diagnostic Procedure with Cancel Code.>

U: 64

Malfunction related to engine is detected.
Refer to the 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.>

V: 65

Cruise control command switch malfunction is detected.
While the command switch is pressed ON for a long time (approximately two minutes), stuck ON condition is detected.
TROUBLE SYMPTOM:
- Cruise control cannot be set.(Cancelled immediately.)
- Cruise control cannot be released.

Refer to DTC 11 for diagnostic procedure.
<Ref. to CC(diag)-14, 11, Diagnostic Procedure with Cancel Code.>

W: 66

Cruise control calculation malfunction is detected.
Refer to the 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.>

IMMOBILIZER (DIAGNOSTICS)

IM(diag)

Page

1. Basic Diagnostic Procedure 2
2. General Description 4
3. Electrical Component Location 6
4. Immobilizer Control Module I/O Signal 7
5. Subaru Select Monitor 8
6. Read Diagnostic Trouble Code (DTC) 9
7. Clear Memory Mode 10
8. Diagnostics Chart for Security Indicator Light 11
9. List of Diagnostic Trouble Code (DTC) 15
10. Diagnostic Procedure with Diagnostic Trouble Code (DTC) 16

1. General Description

A: CAUTION

• Before disassembling or reassembling parts, always disconnect the battery ground cable from battery. When replacing the audio, control module 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 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. Audio System

A: WIRING DIAGRAM

1. AUDIO

<Ref. to WI-118, 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 audio. 2. Check the audio ground. 3. Remove the audio for repair.
A specific speaker does not operate.	1. Check the speaker. 2. Check the output circuit between audio and speaker.
Audio generates noise with engine is running.	1. Check the audio ground. 2. Check the generator. 3. Check the ignition coil. 4. Remove the audio for repair.
Volume is low in AM and FM modes or interference noise occurs.	1. Check the antenna. 2. Check the audio ground. 3. Remove the audio for repair.

C: NOTE

For procedure of each component in the audio system, refer to the respective section.

- Audio unit <Ref. to ET-6, Audio.>
- Front speaker <Ref. to ET-7, Front Speaker.>
- Tweeter <Ref. to ET-8, Tweeter.>
- Rear speaker <Ref. to ET-9, Rear Speaker.>
- Antenna <Ref. to ET-10, Antenna.>

3. Navigation System

A: WIRING DIAGRAM

<Ref. to WI-122, WIRING DIAGRAM, Navigation System.>

B: INSPECTION

NOTE:
If there are no problems in the following “CHECK NAVIGATION OPERATION”, “CHECK DVD-ROM”, “CHECK CONNECTION” and “CHECK EACH VEHICLE SIGNAL”, check the navigation system circuit. <Ref. to WI-122, WIRING DIAGRAM, Navigation System.>

1. CHECK THE OPERATION OF THE NAVIGATION

Start the engine, and then inspect that the opening screen is displayed.
Standard value: The opening screen should be displayed.
OK: Normal
NG: If the screen is not displayed, check that the map disc is inserted correctly. Or, check the connection of the power supply connector at the backside of the navigation unit. If there are no problems in the connecting lines or the lines were repaired, check that the opening screen is displayed.
At this point, if the display is not viewable, the unit is defective.

2. CHECK THE DVD-ROM

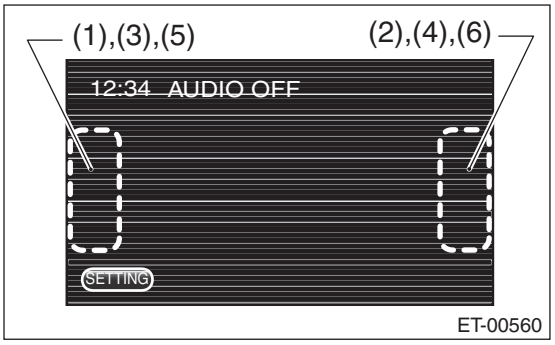
An opening screen is displayed, then it switches to the map screen by pressing the «Agree» key.
When a screen other than the opening screen is displayed, press the «MAP» key.
Standard value: The map screen should be displayed.
OK: Normal
NG: If the map screen is not displayed, the following causes are possible.
- The DVD-ROM is not set in the navigation system unit.
- The DVD-ROM is inserted with its wrong side.
- The type of DVD-ROM is wrong.
- The DVD-ROM has scratches etc.

If there are no problems on the DVD-ROM, the main body is defective.

3. CHECK CONNECTION

CHECK AUX

1) Press «Audio» key to display the Audio OFF screen.
2) Touch the screen in the order of (1) to (6) shown in the figure.



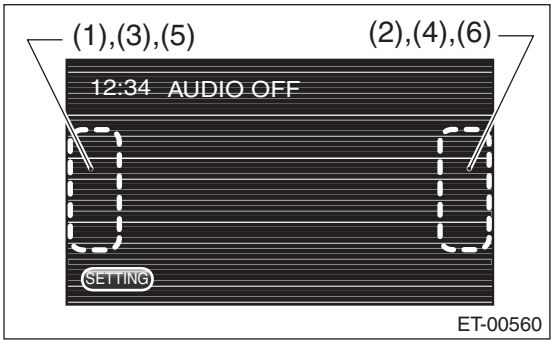
3) The display will switch to the Dealer Diag Menu screen.
4) Touch {Connection Info.} on the «Dealer Diag Menu» screen.



5) Check that “Connect” is displayed in the respective section of AUX.
Connect: Normal.
NC: Abnormal. Check the signal line connection. If there are no problems, the unit could be faulty.

4. CHECK EACH VEHICLE SIGNAL

1) Press «Audio» key to display the Audio OFF screen.
2) Touch the screen in the order of (1) to (6) shown in the figure.



3) The display will switch to the Dealer Diag Menu screen.



• CHECK GPS ANTENNA

NOTE:
When checking the GPS antenna, perform the check operation outdoors to improve the receiver sensitivity.
1) Touch {Vehicle Signal Info.} on the «Dealer Diag Menu» screen.
2) Check that “Connect” is displayed in the GPS Antenna item.
Connect: Normal.
NC: Abnormal. Check the GPS antenna connection.

• CHECK BACK SENSOR

NOTE:
Before starting inspections, check the safety around the rear end of the vehicle and then turn the ignition switch to ON.
1) Touch {Vehicle Signal Info.} on the «Dealer Diag Menu» screen.
2) Pull the parking brake and depress the brake, then put the gear in reverse.
3) Make sure that “ON” is displayed in the Reverse item.
ON: Normal.
OFF: Abnormal. Check the signal line connection. If there are no problems, the unit could be faulty.

• CHECK ILLUMINATION

NOTE:
Before starting inspections, turn the ignition switch to ON.
1) Touch {Vehicle Signal Info.} on the «Dealer Diag Menu» screen.
2) Turn the lighting switch to level 1.
Make sure that the bright switch is not turned ON at this time.
3) Make sure that “ON” lights in the Illumination item and then the screen fades out.
ON: Normal.
OFF: Abnormal. Check the signal line connection. If there are no problems, the unit could be faulty.

• CHECK SPEED SENSOR

NOTE:
• Before starting inspections, check the safety around the vehicle.
• Lift up the vehicle as necessary.
• When the diagnostic trouble code is input in the VDCCM, perform the Clear Memory operation.
1) Touch {Vehicle Signal Info.} on the «Dealer Diag Menu» screen.
2) Move the vehicle 2 to 3 meters (6.6 to 9.8 ft).
3) Check that “ON” is displayed in the Speed item.
ON: Normal.
OFF: Abnormal. Check the signal line connection. If there are no problems, the unit could be faulty.

• CHECK IGNITION SIGNAL

1) Touch {Vehicle Signal Info.} on the «Dealer Diag Menu» screen.
2) Turn the ignition switch to ON.
3) Check that “ON” is displayed in the IGN item.
ON: Normal.
OFF: Abnormal. Check the signal line connection. If there are no problems, the unit could be faulty.

• CHECK PARKING BRAKE SIGNAL

1) Touch {Vehicle Signal Info.} on the «Dealer Diag Menu» screen.
2) Pull parking brake lever.
3) Check that “ON” is displayed in the Parking item.
ON: Normal.
OFF: Abnormal. Check the signal line connection. If there are no problems, the unit could be faulty.

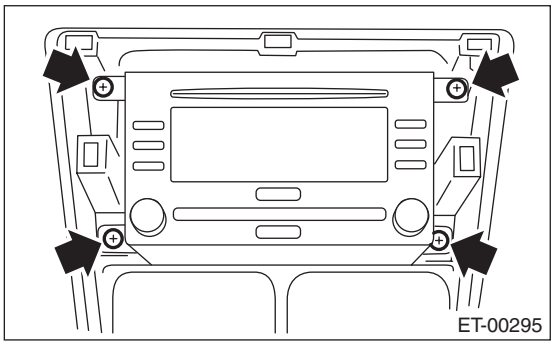
C: NOTE

For procedure of each component in the navigation system, refer to the respective section.
• Navigation unit <Ref. to ET-12, Navigation Body.>
• GPS antenna <Ref. to ET-13, GPS Antenna.>

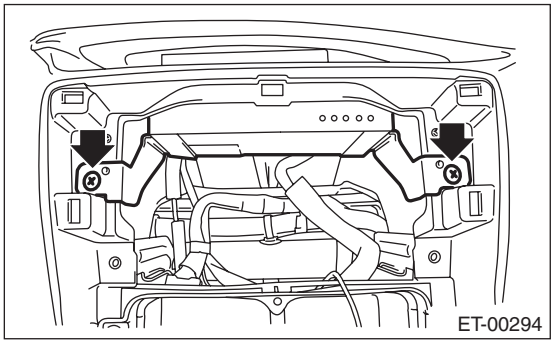
4. Audio

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the center panel. <Ref. to EI-49, CENTER PANEL, REMOVAL, Center Console.>
3) Remove the screws, and partially pull the audio out from center console.



4) Disconnect the harness connectors and antenna feeder cord.
5) Remove the audio.
6) Remove the screws and detach the satellite radio unit.



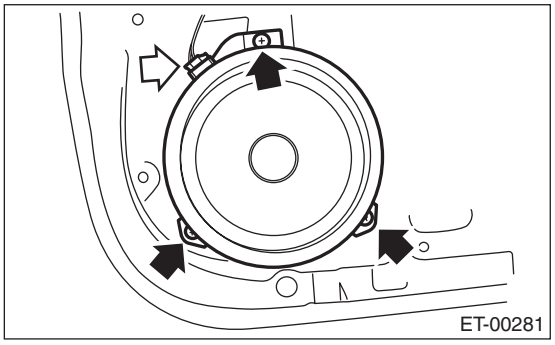
B: INSTALLATION

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-43, REMOVAL, Door Trim.>
3) Remove the front speaker mounting screws.



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

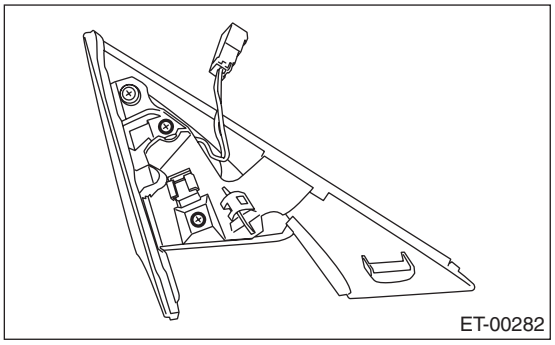
B: INSTALLATION

Install in the reverse order of removal.

6. Tweeter

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the front door gusset cover. <Ref. to EI-43, REMOVAL, Door Trim.>
3) Disconnect the harness connector.
4) Remove the screws and detach the tweeter.



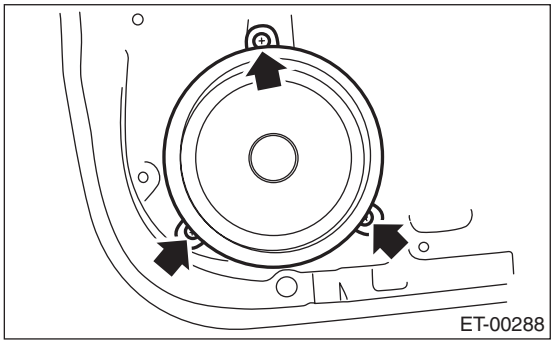
B: INSTALLATION

Install in the reverse order of removal.

7. Rear Speaker

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the rear door trim. <Ref. to EI-43, REMOVAL, Door Trim.>
3) Remove the rear speaker mounting screws.



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

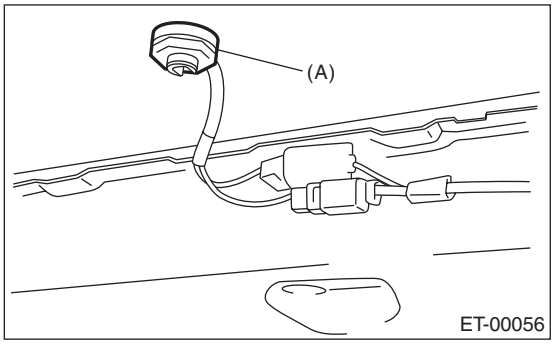
B: INSTALLATION

Install in the reverse order of removal.

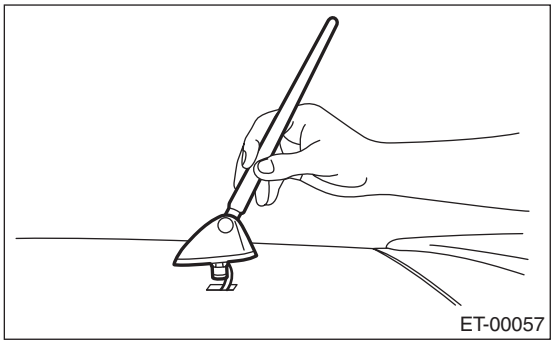
8. Antenna

A: REMOVAL

1) Remove the roof trim. <Ref. to EI-64, REMOVAL, Roof Trim.>
2) Disconnect the harness connectors and terminals and remove the fitting nut (A).



3) Pull off the antenna from the roof.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

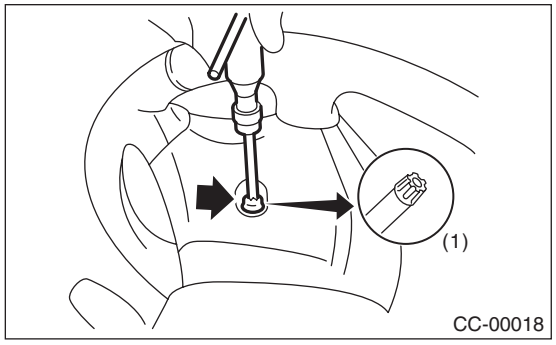
Check for cracks or damages.
If any cracks or damages, replace the antenna.

9. Steering Satellite Switch

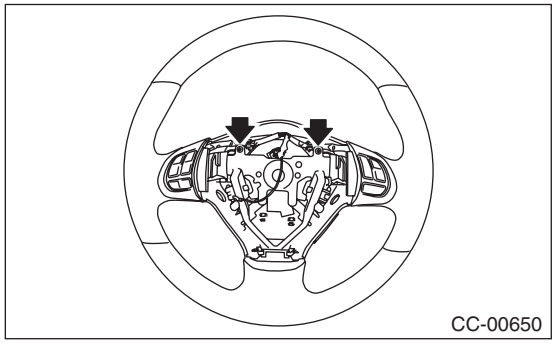
A: REMOVAL

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-5, CAUTION, General Description.>

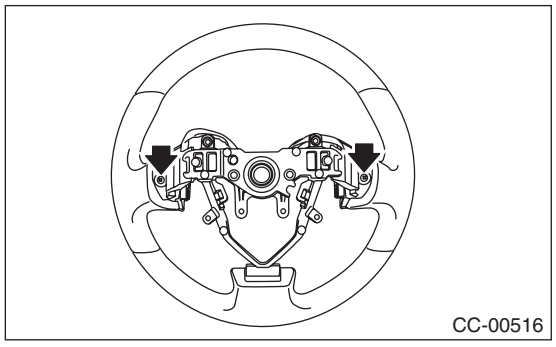
1) Set the front wheels in straight ahead position.
2) Turn the ignition switch to OFF.
3) Disconnect the ground cable from battery and wait for at least 20 seconds before starting work.
4) Using TORX® bit T30 (1), loosen two TORX® bolts which secure the driver's airbag module.



5) Disconnect the airbag module connector on back of the airbag module. <Ref. to AB-8, PROCEDURE, Airbag Connector.>
6) Remove the steering wheel. <Ref. to PS-12, REMOVAL, Steering Wheel.>
7) Remove the screws to remove the lower cover from steering wheel.



8) Loosen the screws on the backside of the steering wheel and remove the satellite switch.

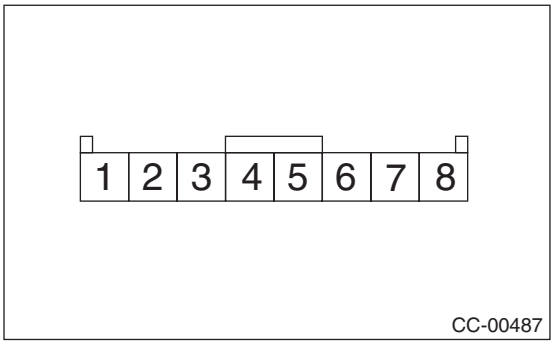


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the resistance between satellite switch connector terminals.



Switch	Position	Terminal No.	Standard
Mute Volume (+) Volume (–) Mode SEEK (/\) SEEK (\/)	All OFF	4 and 5	Approx. 4.7 kΩ
Mute	ON	4 and 5	Approx. 22 Ω
Volume (+)	ON	4 and 5	Approx. 90 Ω
Volume (–)	ON	4 and 5	Approx. 200 Ω
Mode	ON	4 and 5	Approx. 360 Ω
SEEK (/\)	ON	4 and 5	Approx. 690 Ω
SEEK (\/)	ON	4 and 5	Approx. 1.5 kΩ

If the result of the measurement is not at the standard value, replace the satellite switch.

10.Navigation Body

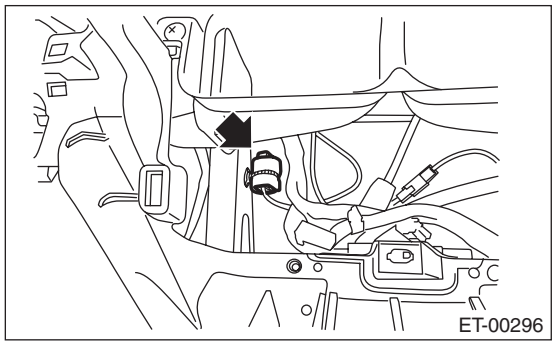
A: PROCEDURE

For the removal and installation operation procedures of navigation unit, refer to the removal and installation procedures of the audio unit. <Ref. to ET-6, Audio.>

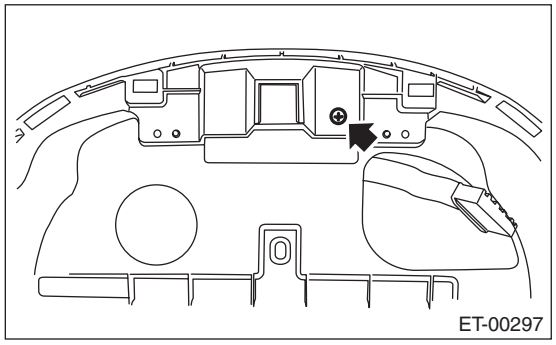
11.GPS Antenna

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the center panel. <Ref. to EI-49, CENTER PANEL, REMOVAL, Center Console.>
3) Remove the audio. <Ref. to ET-6, REMOVAL, Audio.>
4) Disconnect the connector (green) of GPS antenna.



NOTE:
Attach a string of about 50 cm in length, etc. to the GPS antenna for easy installation work.
5) Remove the combination meter assembly. <Ref. to IDI-15, REMOVAL, Combination Meter.>
6) Remove the screw and harness clamp to remove the GPS antenna.



NOTE:
When the GPS antenna harness connector is pulled out, remove the string attached to the connector in step 4).

B: INSTALLATION

Install in the reverse order of removal.

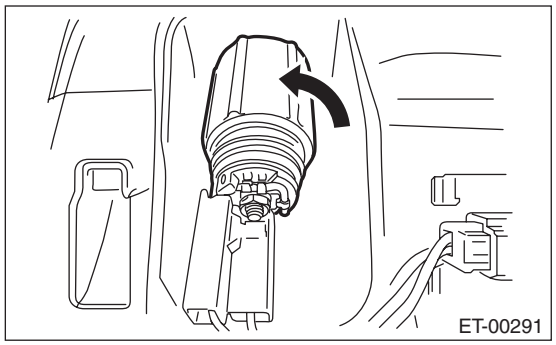
12.Front Accessory Power Supply Socket

A: WIRING DIAGRAM

<Ref. to WI-120, WIRING DIAGRAM, Front Accessory Power Supply Socket System.>

B: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the instrument panel lower. <Ref. to EI-51, INSTRUMENT PANEL, LOWER, REMOVAL, Center Console.>
3) Disconnect the harness connectors and remove the front accessory power supply socket.



C: INSTALLATION

Install in the reverse order of removal.

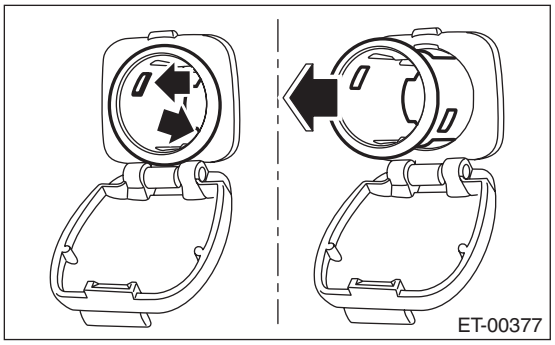
13.Rear Accessory Power Supply Socket

A: WIRING DIAGRAM

<Ref. to WI-121, WIRING DIAGRAM, Rear Accessory Power Supply Socket System.>

B: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the console box. <Ref. to EI-48, REMOVAL, Console Box.>
3) Disconnect the harness connector, and remove the claws (two) in accessory power supply socket.
4) Pull the accessory power supply socket out to remove.



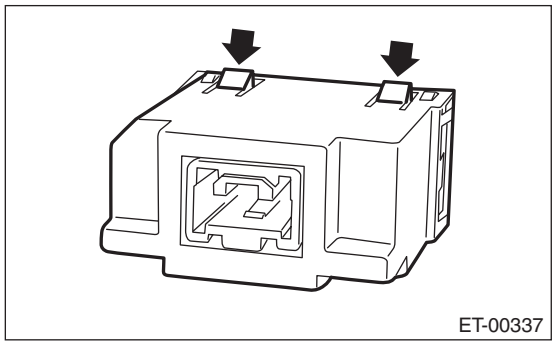
C: INSTALLATION

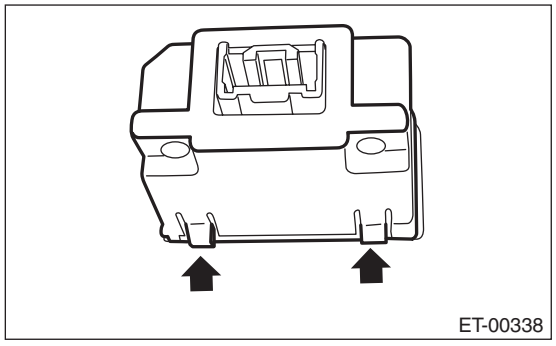
Install in the reverse order of removal.

14.AUX Input Terminal

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the console box. <Ref. to EI-48, REMOVAL, Console Box.>
3) Disconnect the harness connector.
4) Disengage four claws, and remove the AUX input terminal by pushing it into the console box.





B: INSTALLATION

Install in the reverse order of removal.

COMMUNICATION SYSTEM

COM

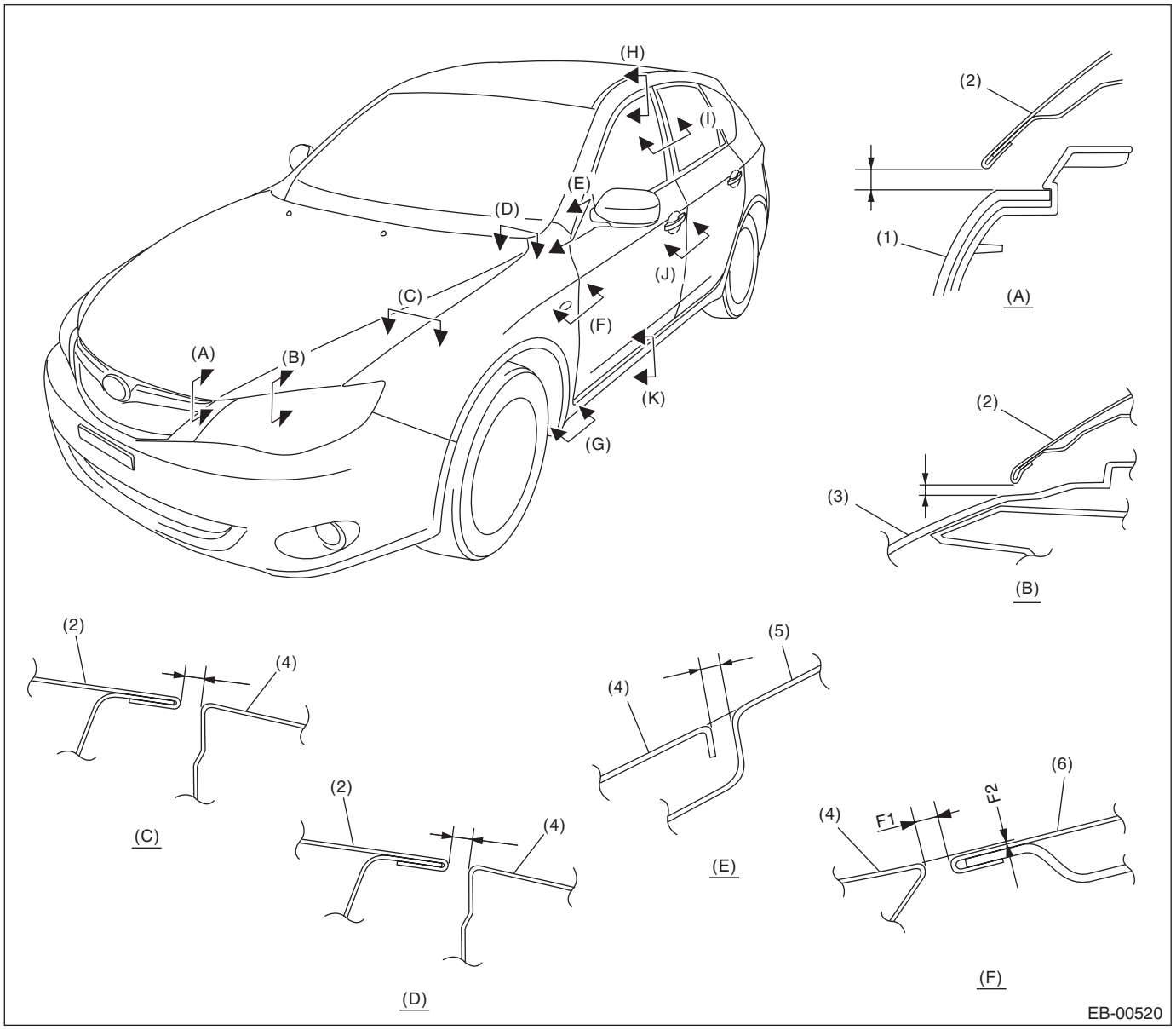
Page

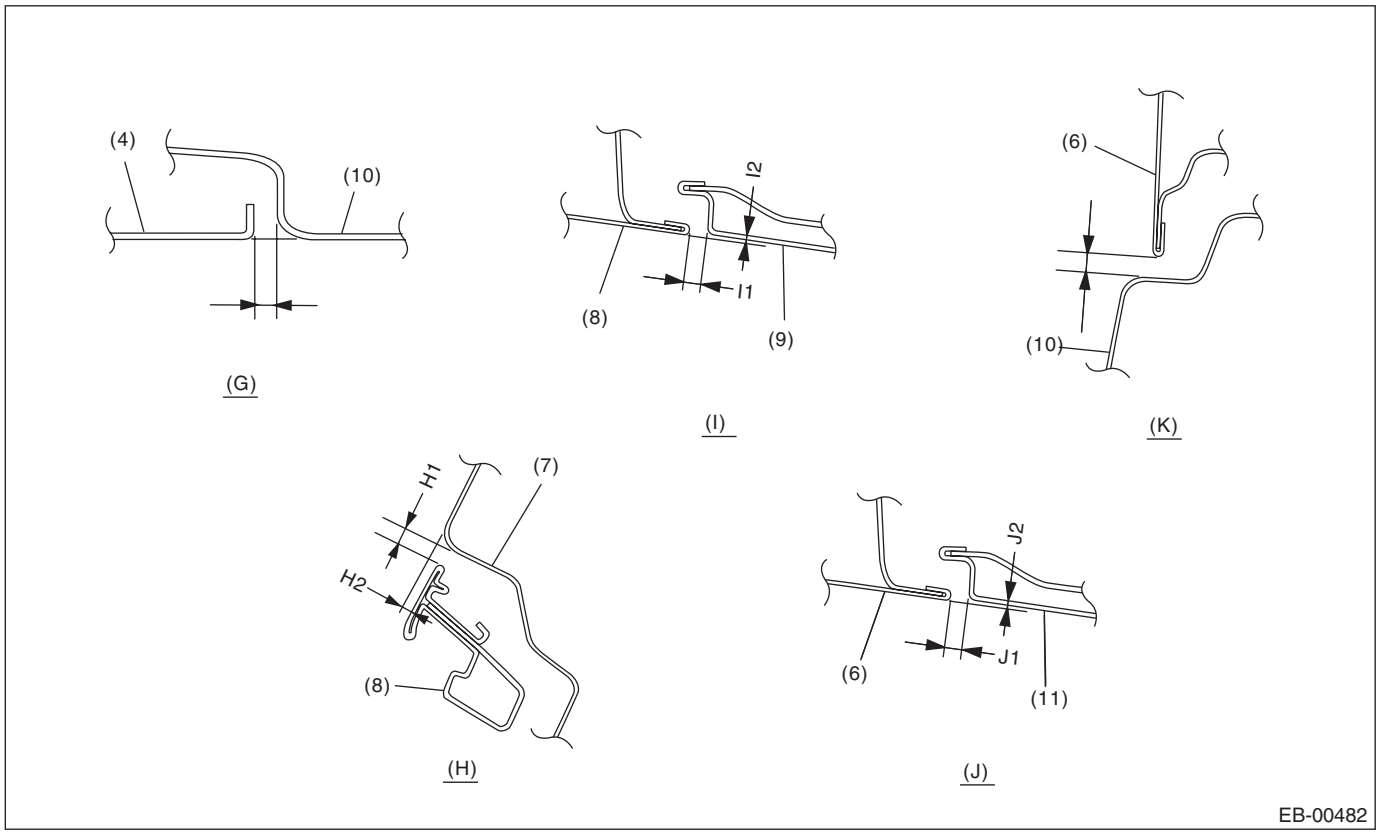
1. General Description 2
2. Horn System 3
3. Horn 4
4. Horn Switch 5

1. General Description

A: SPECIFICATION

1. FRONT

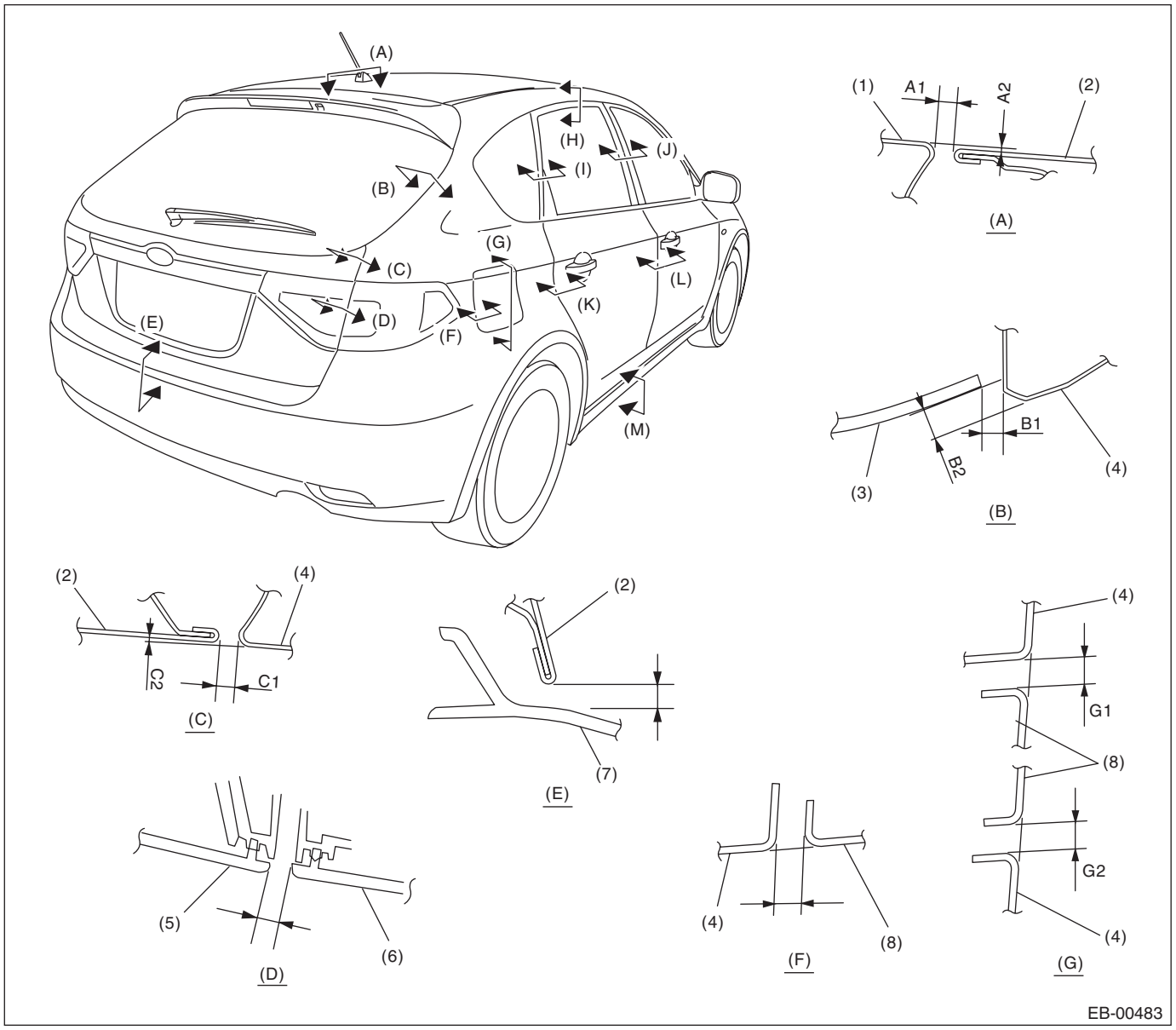


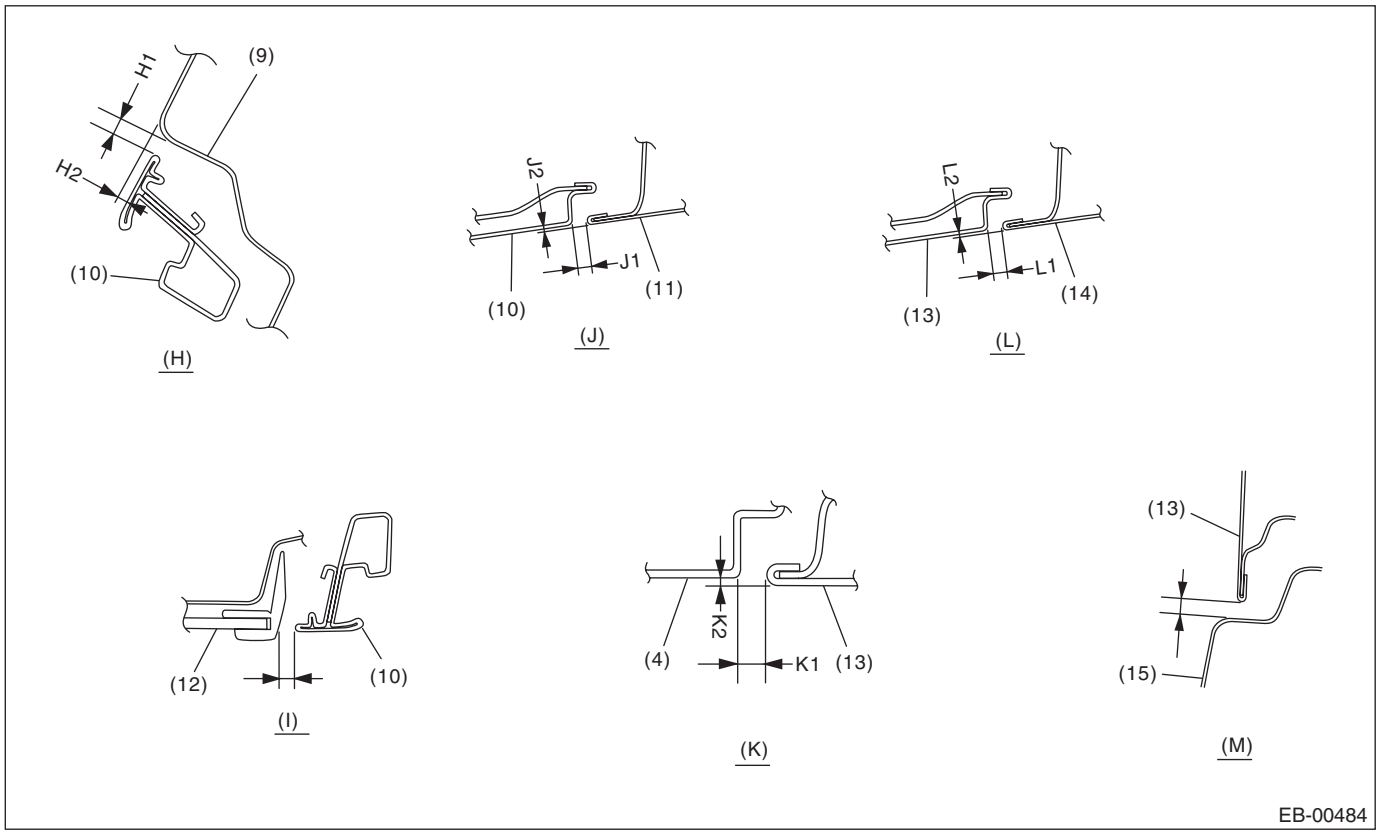


(1) Front grille
(2) Front hood panel
(3) Headlight
(4) Front fender panel
(5) Front pillar panel
(6) Front door panel
(7) Roof panel
(8) Front door sash
(9) Rear door sash
(10) Side sill panel
(11) Rear door panel

Section	Part	Specification
(A)	Front hood panel to Front grille	6.0±1.0 mm (0.23±0.04 in)
(B)	Front hood panel to Headlight	6.0±1.0 mm (0.24±0.04 in)
(C)	Front hood panel to Front fender panel	3.5±1.0 mm (0.14±0.04 in)
(D)	Front hood panel to Front fender panel (Rear end only)	4.8+0.7, –1.0 mm (0.14+0.03, –0.04 in)
(E)	Front fender panel to Front pillar panel	3.0±1.0 mm (0.12±0.04 in)
(F)	Front fender panel to Front door panel	F1: 4.0±1.0 mm (0.16±0.04 in) F2: 0+1.0, –0.5 mm (0+0.04, –0.02 in)
(G)	Front fender panel to Side sill panel	3.0±1.0 mm (0.12±0.04 in)
(H)	Roof panel to Front door sash	H1: 5.0±1.0 mm (0.20±0.04 in) H2: 3.8±1.0 mm (0.15±0.04 in)
(I)	Front door sash to Rear door sash	I1: 5.5±1.0 mm (0.22±0.04 in) I2: 0+1.0, –0.5 mm (0+0.04, –0.02 in)
(J)	Front door panel to Rear door panel	J1: 4.5±1.0 mm (0.18±0.04 in) J2: 0+1.0, –0.5 mm (0+0.04, –0.02 in)
(K)	Front door panel to Side sill panel	6.0±1.0 mm (0.23±0.04 in)

2. REAR (5 DOOR MODEL)

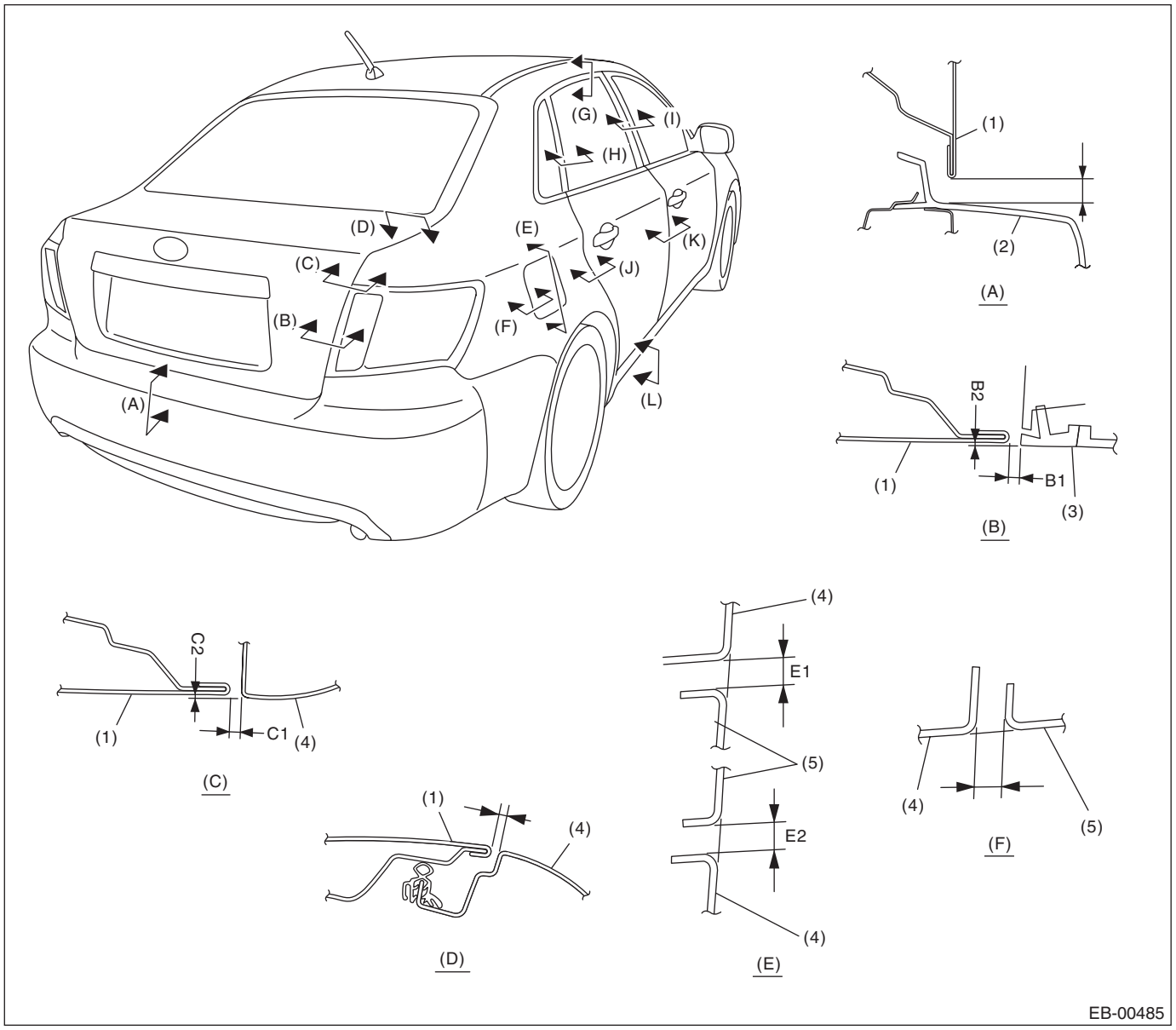


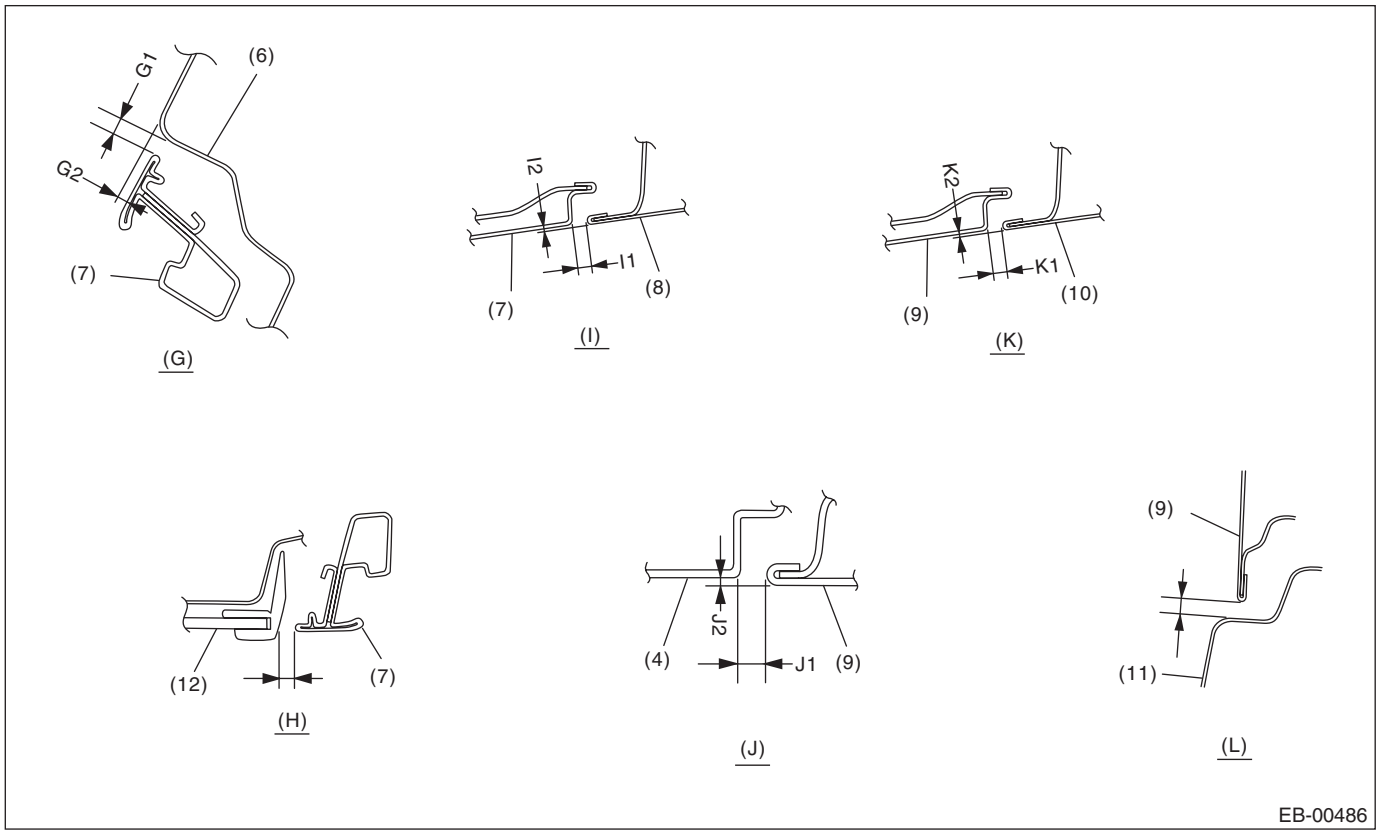


(1)	Roof panel	(6)	Rear combination light	(11)	Front door sash
(2)	Rear gate panel	(7)	Rear bumper	(12)	Rear quarter glass
(3)	Rear gate glass	(8)	Fuel filler lid	(13)	Rear door panel
(4)	Rear quarter panel	(9)	Roof panel	(14)	Front door panel
(5)	Rear finisher light	(10)	Rear door sash	(15)	Side sill panel

Section	Part	Specification
(A)	Roof panel to Rear gate panel	A1: 6.0+1.0, –0.5 mm (0.23+0.04–0.02 in) A2: 1.0±1.0 mm (0.02±0.02 in)
(B)	Rear gate glass to Rear quarter panel	B1: 5.0±1.5 mm (0.20±0.06 in) B2: 6.7±1.5 mm (0.26±0.06 in)
(C)	Rear gate panel to Rear quarter panel	C1: 4.6±1.0 mm (0.18±0.04 in) C2: 0.5±1.0 mm (0.02±0.04 in)
(D)	Rear combination light to Rear finisher light	5.0±1.0 mm (0.20±0.04 in)
(E)	Rear gate panel to Rear bumper	8.0±1.0 mm (0.31±0.04 in)
(F)	Rear quarter panel to Fuel filler lid	3.5±0.5 mm (0.14±0.02 in)
(G)	Rear quarter panel to Fuel filler lid	G1: 3.5±0.5 mm (0.14±0.06 in) G2: 4.0±0.5 mm (0.18±0.06 in)
(H)	Roof panel to Rear door sash	H1: 5.0±1.0 mm (0.20±0.04 in) H2: 3.8±1.0 mm (0.15±0.04 in)
(I)	Rear door sash to Rear quarter glass molding	7.0±1.0 mm (0.28±0.04 in)
(J)	Rear door sash to Front door sash	J1: 5.5±1.0 mm (0.22±0.04 in) J2: 0+1.0, –0.5 mm (0+0.04, –0.02 in) (Rear door sash standard)
(K)	Rear door panel to Rear quarter panel	K1: 4.0±1.0 mm (0.16±0.04 in) K2: 0+1.0, –0.5 mm (0+0.04, –0.02 in) (Rear quarter panel standard)
(L)	Front door panel to Rear door panel	L1: 4.5±1.0 mm (0.18±0.04 in) L2: 0+1.0, –0.5 mm (0+0.04, –0.02 in) (Rear door panel standard)
(M)	Rear door panel to Side sill panel	6.0±1.0 mm (0.24±0.04 in)

3. REAR (4 DOOR MODEL)



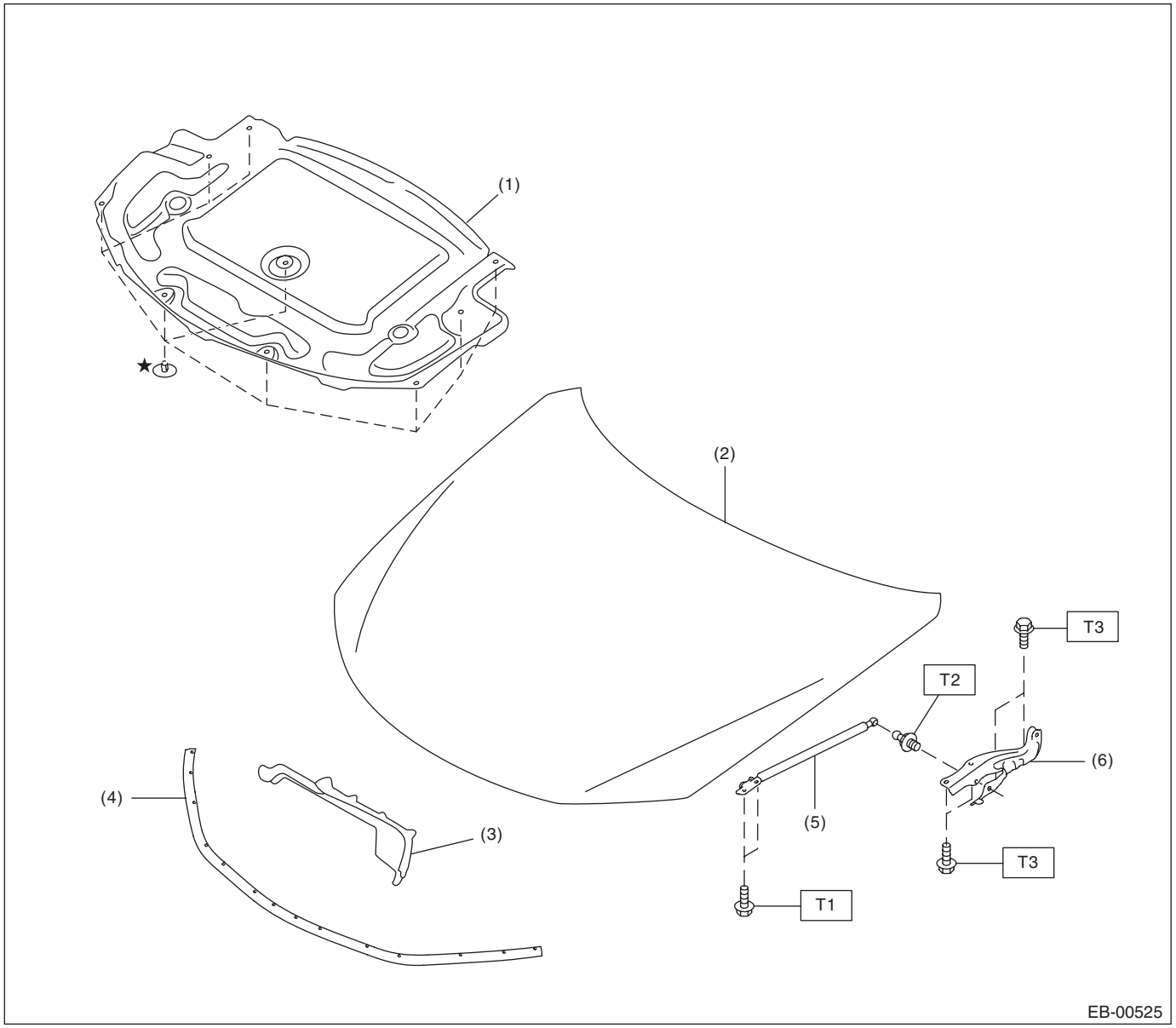


(1) Trunk panel
(2) Rear bumper
(3) Rear combination light
(4) Rear quarter panel
(5) Fuel filler lid
(6) Roof panel
(7) Rear door sash
(8) Front door sash
(9) Rear door panel
(10) Front door panel
(11) Side sill panel
(12) Rear quarter glass

Section	Part	Specification
(A)	Trunk panel to Rear bumper face	9.0±1.0 mm (0.35±0.04 in)
(B)	Trunk panel to Rear combination light	B1: 3.5±1.0 mm (0.14±0.04 in) B2: 0.5±1.0 mm (0.02±0.04 in)
(C)	Trunk panel to Rear quarter panel	C1: 3.5±1.0 mm (0.14±0.04 in) C2: 0.5±1.0 mm (0.02±0.04 in)
(D)	Trunk panel to Rear quarter panel	3.5±1.0 mm (0.14±0.04 in)
(E)	Rear quarter panel to Fuel filler lid	E1: 3.5±0.5 mm (0.14±0.06 in) E2: 4.0±0.5 mm (0.18±0.06 in)
(F)	Rear quarter panel to Fuel filler lid	3.5±0.5 mm (0.14±0.02 in)
(G)	Roof panel to Rear door sash	G1: 5.0±1.0 mm (0.20±0.04 in) G2: 3.8±1.0 mm (0.15±0.04 in)
(H)	Rear door sash to Rear quarter glass	7.0±1.0 mm (0.28±0.04 in)
(I)	Rear door sash to Front door sash	I1: 5.5±1.0 mm (0.22±0.04 in) I2: 0+1.0, –0.5 mm (0+0.04, –0.02 in) (Rear door sash standard)
(J)	Rear door panel to Rear quarter panel	J1: 4.0±1.0 mm (0.16±0.04 in) J2: 0+1.0, –0.5 mm (0+0.04, –0.02 in) (Rear quarter panel standard)
(K)	Front door panel to Rear door panel	K1: 4.5±1.0 mm (0.18±0.04 in) K2: 0+1.0, –0.5 mm (0+0.04, –0.02 in) (Rear door panel standard)
(L)	Rear door panel to Side sill panel	6.0±1.0 mm (0.24±0.04 in)

B: COMPONENT

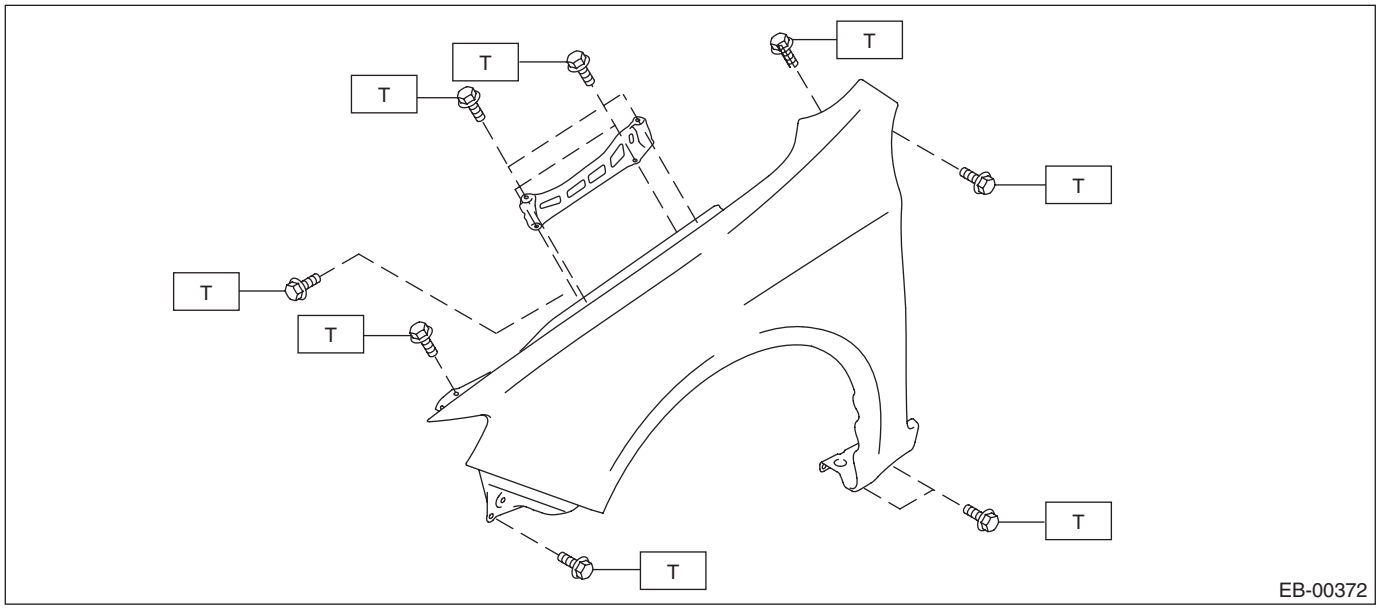
1. FRONT HOOD



(1)	Insulator	(4)	Seal (front panel)
(2)	Front hood panel	(5)	Damper stay
(3)	Seal (intake duct)	(6)	Hinge

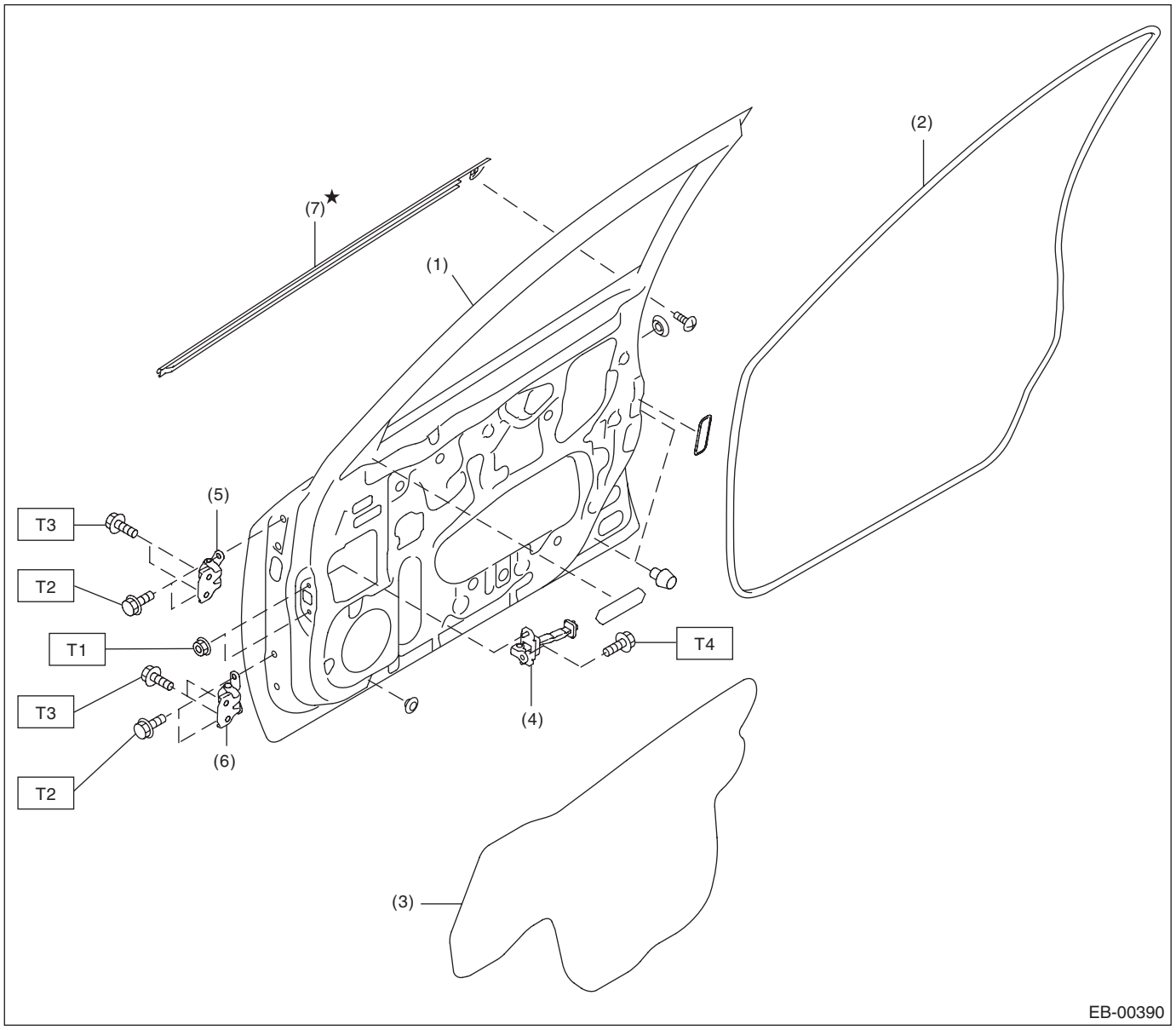
Tightening torque:N·m (kgf-m, ft-lb)
T1: 7.5 (0.76, 5.5)
T2: 20 (2.04, 14.5)
T3: 25 (2.55, 18.4)

2. FRONT FENDER



Tightening torque:N·m (kgf-m, ft-lb)
T: 7.4 (0.75, 5.5)

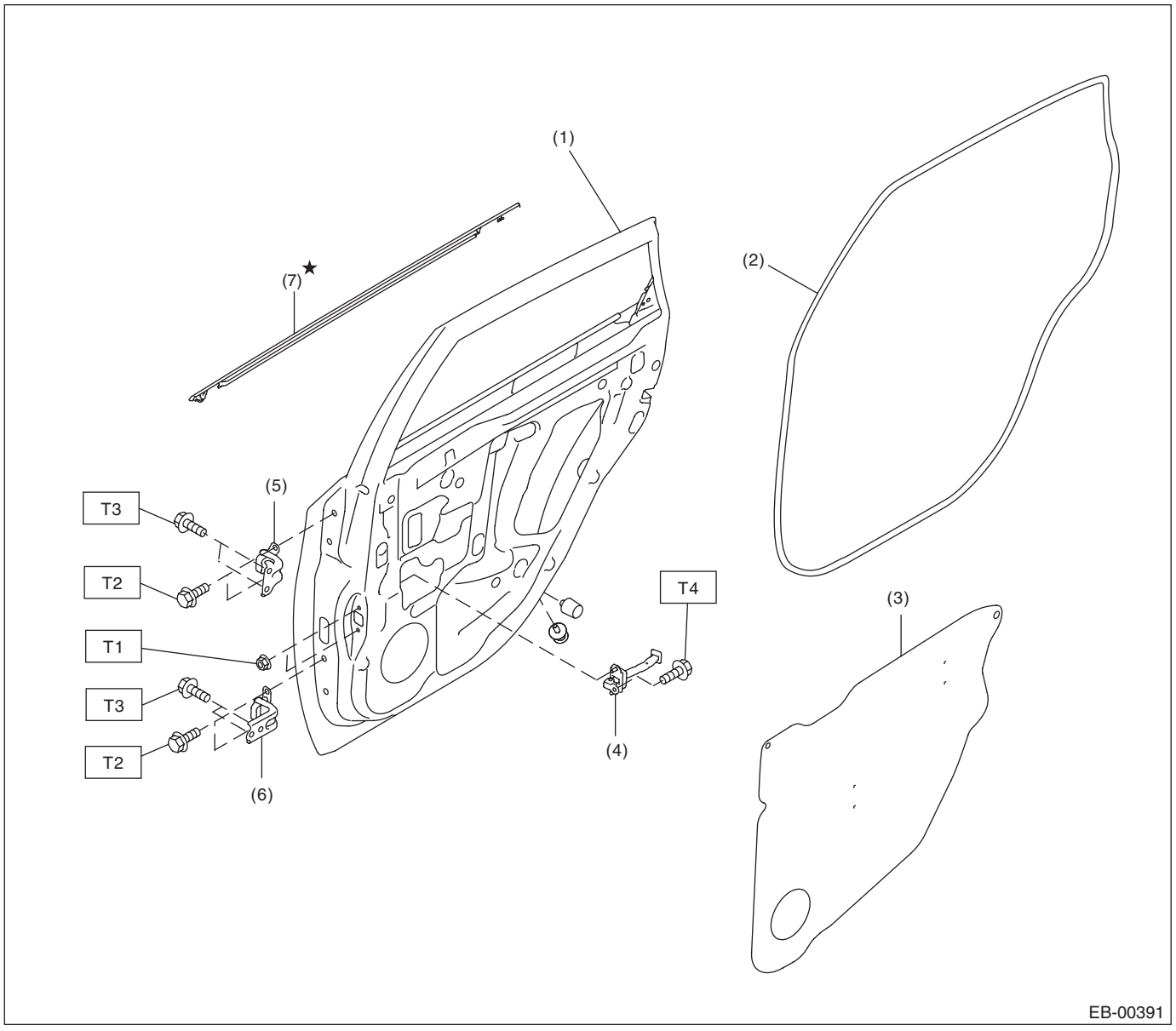
3. FRONT DOOR



(1)	Front door panel	(5)	Upper hinge	
(2)	Front door weather strip	(6)	Lower hinge	
(3)	Sealing cover	(7)	Front door weather strip outer	
(4)	Checker			

Tightening torque:N·m (kgf-m, ft-lb)
T1: 7.5 (0.76, 5.5)
T2: 25 (2.55, 18.4)
T3: 30 (3.06, 22.1)
T4: 33 (3.36, 24.3)

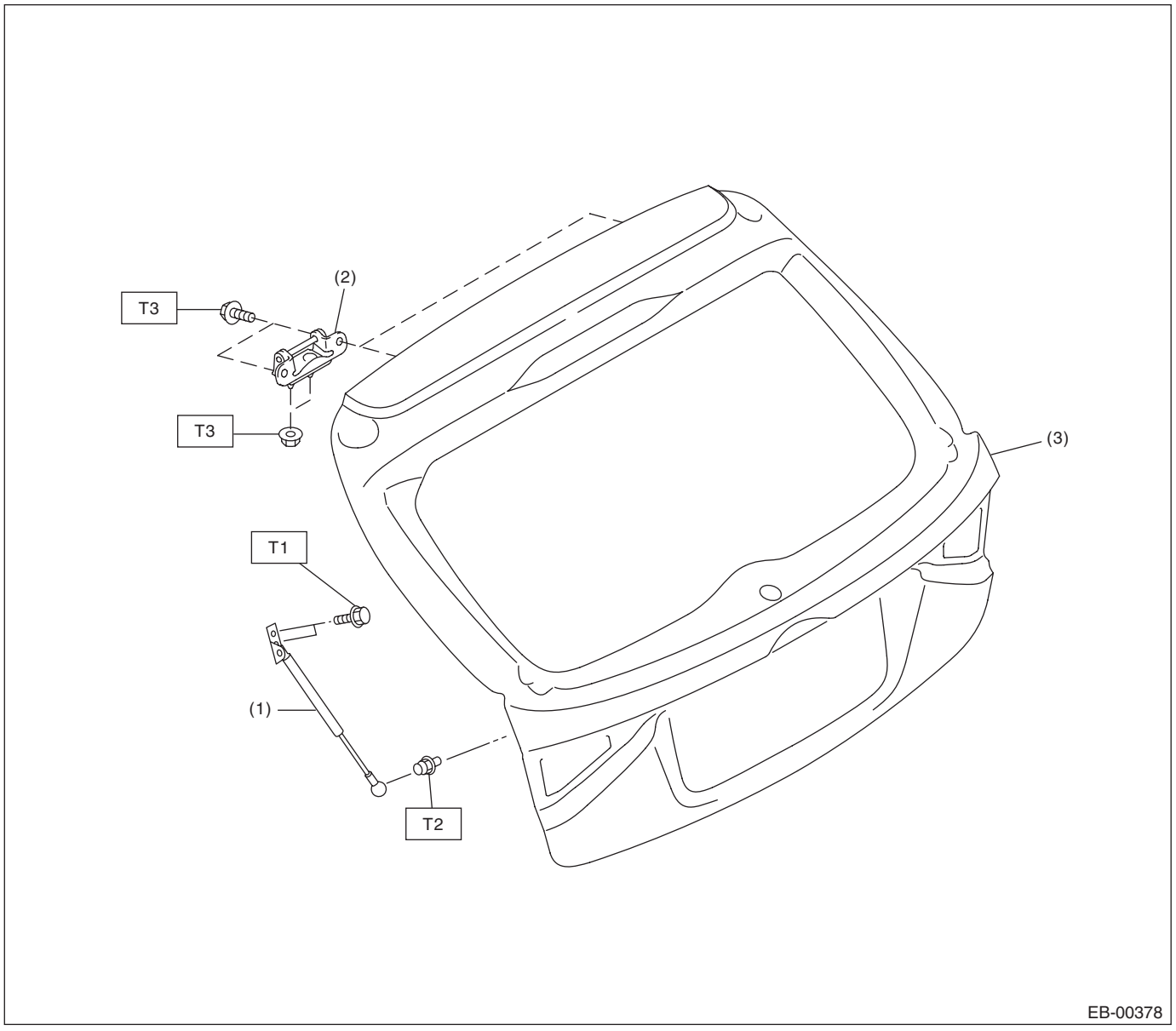
4. REAR DOOR



(1)	Rear door panel	(5)	Upper hinge	
(2)	Rear door weather strip	(6)	Lower hinge	
(3)	Sealing cover	(7)	Rear door weather strip outer	
(4)	Checker			

Tightening torque:N·m (kgf-m, ft-lb)
T1: 7.5 (0.76, 5.5)
T2: 25 (2.55, 18.4)
T3: 30 (3.06, 22.1)
T4: 33 (3.36, 24.3)

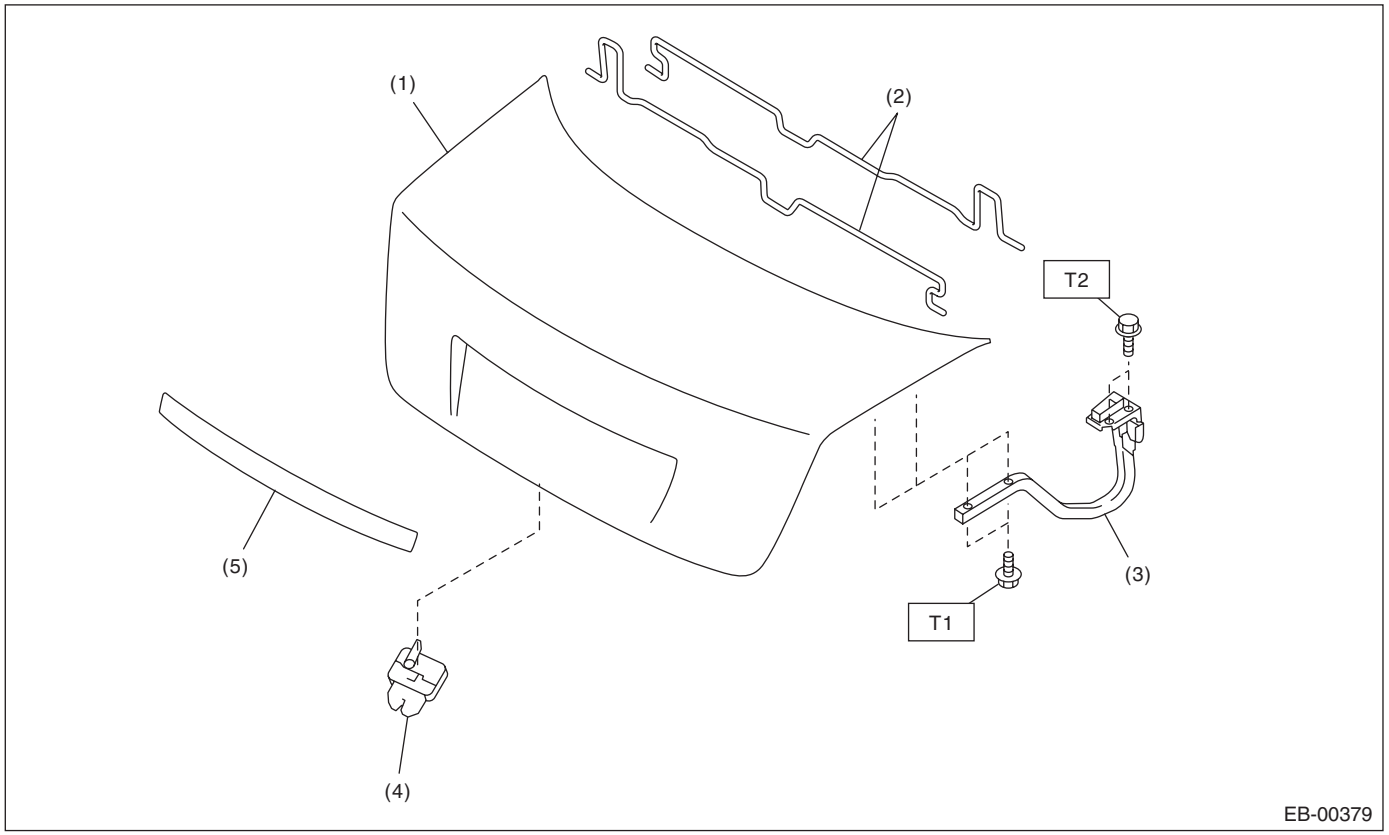
5. REAR GATE



(1) Rear gate damper stay
(2) Hinge
(3) Rear gate panel

Tightening torque:N·m (kgf-m, ft-lb)
T1: 10 (1.02, 7.4)
T2: 20 (2.04, 14.8)
T3: 25 (2.55, 18.4)

6. TRUNK LID PANEL



(1) Trunk lid panel
(2) Torsion bar
(3) Trunk lid arm ASSY
(4) Trunk lid lock ASSY
(5) Trunk lid garnish

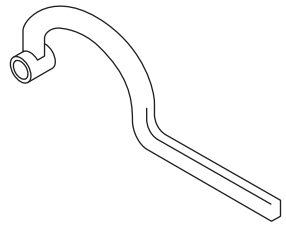
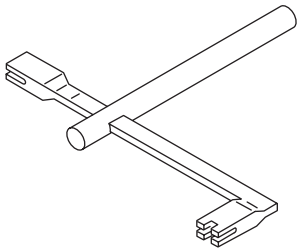
Tightening torque:N·m (kgf-m, ft-lb)
T1: 14 (1.43, 10.3)
T2: 18 (1.84, 13.3)

C: CAUTION

Exterior body panels are heavy. When removing or installing, do not drop and damage the panels. Do not damage the panel painting surface.

D: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-925610000	925610000	WRENCH	Used for removing and installing door hinge.
 ST-927780000	927780000	REMOVER	Used for removing and installing the trunk torsion bar.

2. GENERAL TOOL

TOOL NAME	REMARKS
Support jack	Used for supporting door panel.
Clip remover	Used for removing various types of clips

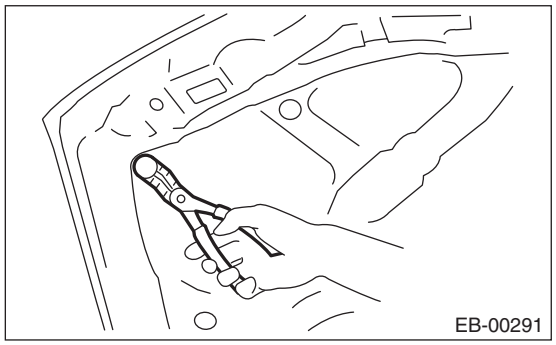
2. Front Hood

A: REMOVAL

1. FRONT HOOD INSULATOR

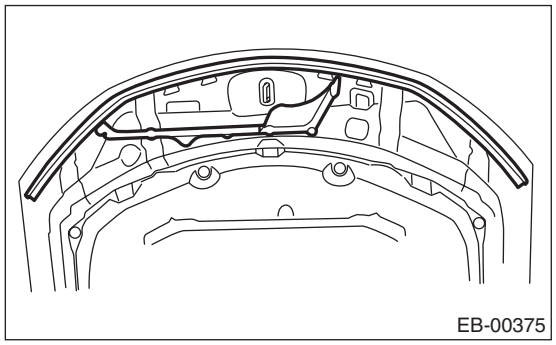
Release the clips to remove the front hood insulator.

CAUTION:
Do not reuse any clips damaged during removal. Always replace with new clips.



2. FRONT HOOD SEAL

Remove the seal.

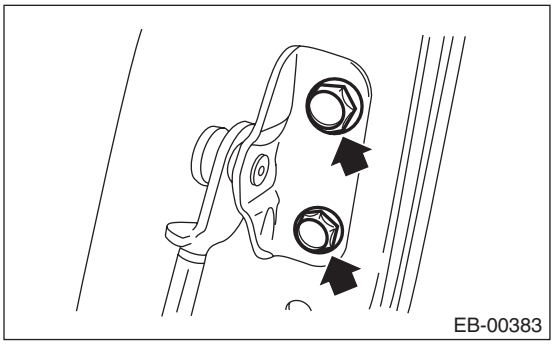


3. FRONT HOOD DAMPER

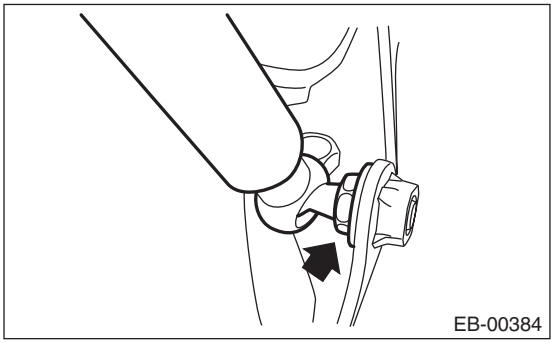
CAUTION:
- **Do not damage piston rods and oil seals.**
- **Never disassemble cylinders: They contain gas.**
- **The front hood panel is heavy. When removing or installing the damper stay and hood hinge, be sure to work in a group of two or more.**

3) Detach the tabs and remove the cowl panel side.

1) Remove mounting bolt, and remove the damper stay.



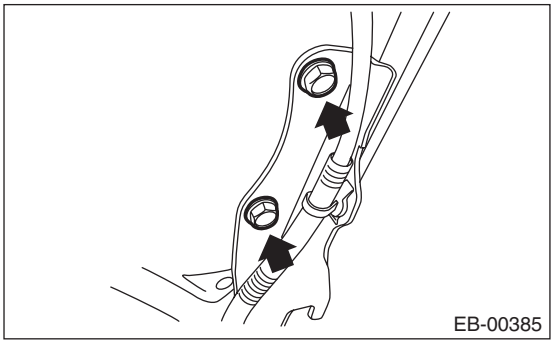
2) Remove the mounting bolt of front hood damper stay.

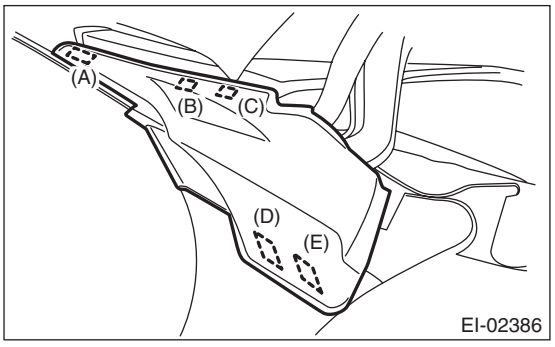


4. FRONT HOOD HINGE

CAUTION:
The front hood panel is heavy. When removing or installing the damper stay and hood hinge, be sure to work in a group of two or more.

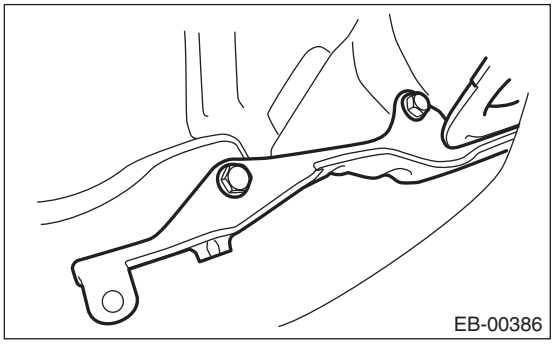
1) Remove the front hood damper.
2) Remove the bolt, and remove the front hood panel.





(1) Detach tabs (A), (B), and (C) from the vehicle exterior.
(2) Detach tabs (D) and (E).

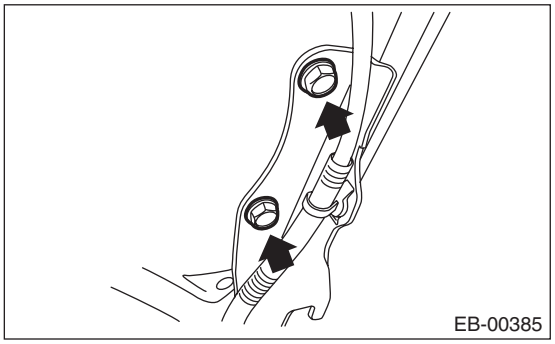
4) Remove the bolts of front hood hinge.


EB-00386

5. FRONT HOOD PANEL

CAUTION:
The front hood panel is heavy. When removing or installing the damper stay and hood hinge, be sure to work in a group of two or more.

1) Remove the front hood insulator.
2) Remove the front hood seal.
3) Remove the window washer hose and nozzle. <Ref. to WW-17, REMOVAL, Front Washer Nozzle.>
4) Remove the front hood damper.
5) Remove the bolt, and remove the front hood panel from the front hood hinge.


EB-00385

B: INSTALLATION

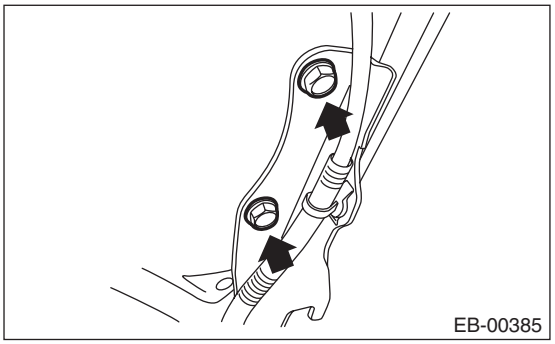
Install in the reverse order of removal.

NOTE:
• Be careful not to catch the window washer hose between insulators etc.
• Install while paying attention to make a uniform clearance around the front hood panel. For the dimension of clearance, refer to “SPECIFICATION” in “General Description”. <Ref. to EB-2, SPECIFICATION, General Description.>

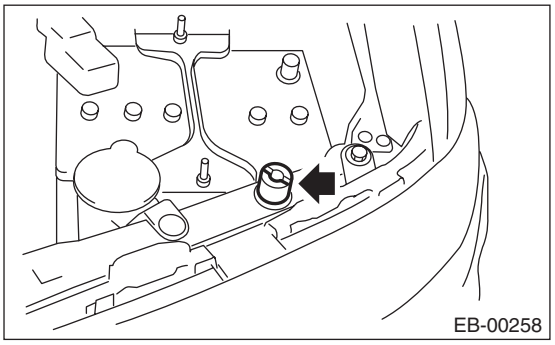
Tightening torque:
Refer to “COMPONENT” of “General Description”. <Ref. to EB-8, FRONT HOOD, COMPONENT, General Description.>

C: ADJUSTMENT

1) Adjust the clearance between front hood panel and front fender panel. Clearance must be equal at both sides. For the dimension of clearance, refer to “SPECIFICATION” in “General Description”. <Ref. to EB-2, SPECIFICATION, General Description.>
2) Use the hinge mounting bolts to align the front hood longitudinal and lateral position.


EB-00385

3) Adjust the height at the front end of hood. <Ref. to SL-40, ADJUSTMENT, Front Hood Lock Assembly.>
4) Rotate the hood buffer to adjust lateral height.


EB-00258

D: DISPOSAL

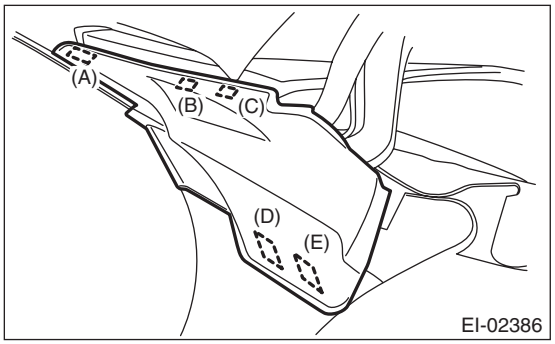
For the disposal procedures of front hood damper stay, refer to the disposal procedures of rear gate damper stay. <Ref. to EB-32, REAR GATE DAMPER STAY, DISPOSAL, Rear Gate.>

3. Front Fender

A: REMOVAL

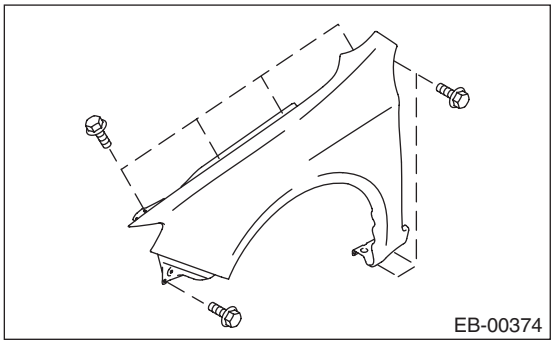
1. FRONT FENDER PANEL

1) Disconnect the ground cable from battery.
2) Remove the side sill spoilers. <Ref. to EI-41, REMOVAL, Side Sill Spoiler.>
3) Remove the front bumper face. <Ref. to EI-29, FRONT BUMPER FACE, REMOVAL, Front Bumper.>
4) Remove the headlight assembly. <Ref. to LI-14, REMOVAL, Headlight Assembly.>
5) Remove the mud guard. <Ref. to EI-28, REMOVAL, Mud Guard.>
6) Detach the tabs and remove the cowl panel side.



(1) Detach tabs (A), (B), and (C) from the vehicle exterior.
(2) Detach tabs (D) and (E).

7) Remove the bolt, and remove the front fender panel.



2. COWL SIDE STAY

For operation procedures, refer to performance stay items. <Ref. to EB-18, REMOVAL, Front Performance Stay.>

B: INSTALLATION

CAUTION:
After the installation of front fender panel, be sure to perform headlight beam adjustment.
Install in the reverse order of removal.

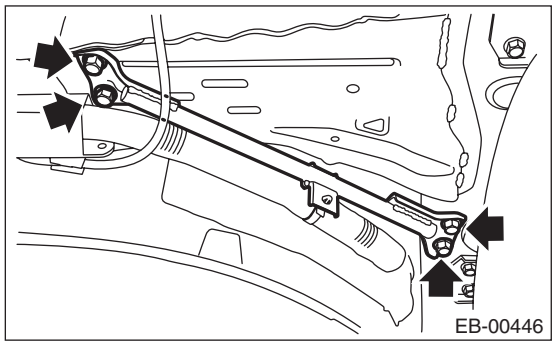
Tightening torque:
7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

NOTE:
Install while paying attention to make a uniform clearance around the front fender panel. For the dimension of clearance, refer to “SPECIFICATION” in “General Description”. <Ref. to EB-2, SPECIFICATION, General Description.>

4. Front Performance Stay

A: REMOVAL

1) Remove the front fender. <Ref. to EB-17, REMOVAL, Front Fender.>
2) Remove the bolts and harness clip, and remove the front performance stay.



B: INSTALLATION

Install in the reverse order of removal.

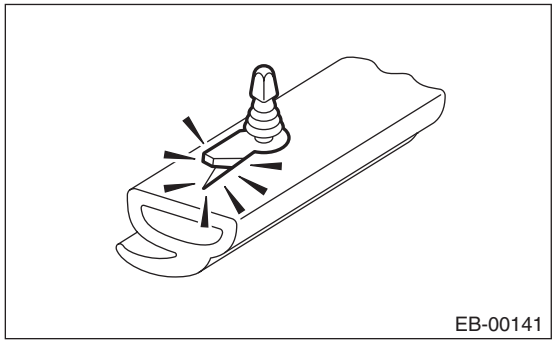
Tightening torque:
70 N·m (7.14 kgf-m, 51.6 ft-lb)

5. Front Door

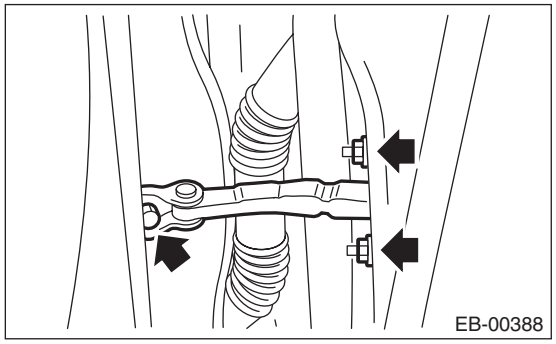
A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the front door trim. <Ref. to EI-43, REMOVAL, Door Trim.>
3) Remove the outer mirror assembly. <Ref. to GW-15, REMOVAL, Outer Mirror Assembly.>
4) Remove the front door speaker. <Ref. to ET-7, REMOVAL, Front Speaker.>
5) Remove the sealing cover. <Ref. to EB-21, REMOVAL, Front Sealing Cover.>
6) Remove the front door glass. <Ref. to GW-11, REMOVAL, Front Door Glass.>
7) Remove the front door regulator and motor. <Ref. to GW-12, REMOVAL, Front Regulator and Motor Assembly.>
8) Remove the front door latch assembly. <Ref. to SL-33, REMOVAL, Front Door Latch and Door Lock Actuator Assembly.>
9) Remove the front outer handle. <Ref. to SL-32, REMOVAL, Front Outer Handle.>
10) Remove the front door weather strip.

NOTE:
If the weather strip clip is removed with excessive force, the weather strip may be damaged. Be sure to use clip remover to remove.

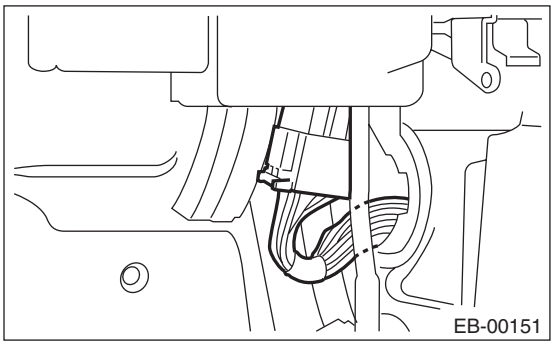

EB-00141

11) Remove the bolts and nuts to remove the door checker.

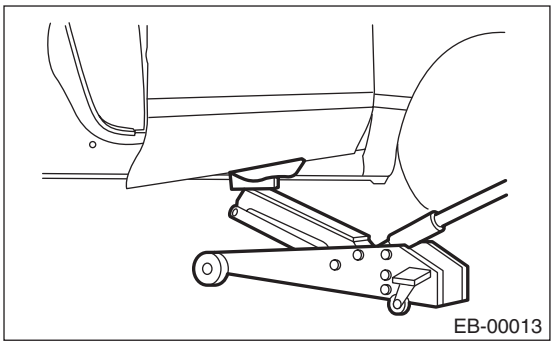

EB-00388

12) Remove the front pillar lower trim. <Ref. to EI-55, REMOVAL, Lower Inner Trim.>

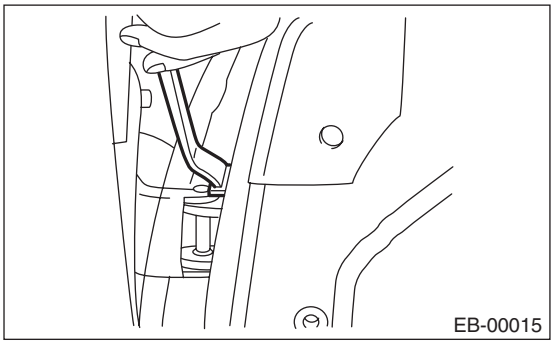
13) Disconnect the connector of door harness from body harness.


EB-00151

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


EB-00013

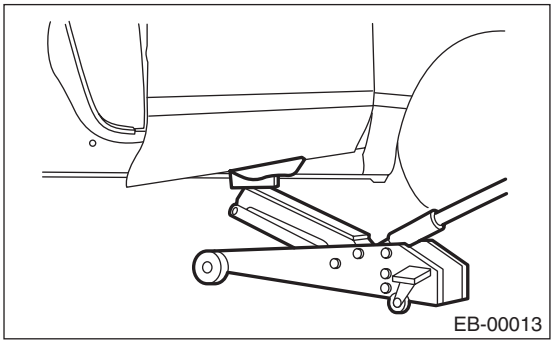
15) Remove the door-side bolts for upper and lower hinges to remove front door panel.


EB-00015

16) Remove the door hinge from vehicle.

B: INSTALLATION

1) Put a wooden block on jack and place the front door on that.


EB-00013

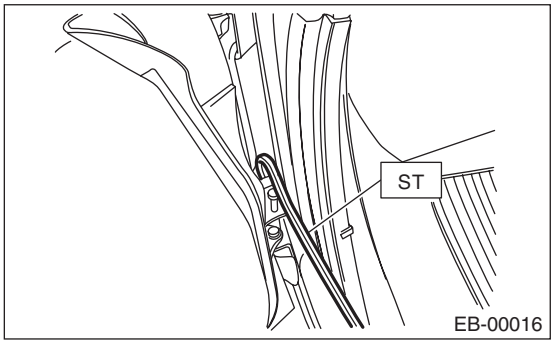
2) Apply grease to the sliding area of door hinges, and install the door hinge to vehicle.
3) Install the front door to upper hinge and lower hinge adjusting by jack.
4) Tighten bolt of door checker.
5) Connect door harness connector, and install the instrument panel lower cover.
6) Install the front pillar lower trim.

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to EB-11, REAR DOOR, COMPONENT, General Description.>

7) Install while paying attention to make a uniform clearance around the front door panel. For the dimension of clearance, refer to "SPECIFICATION" in "General Description". <Ref. to EB-2, SPECIFICATION, General Description.>

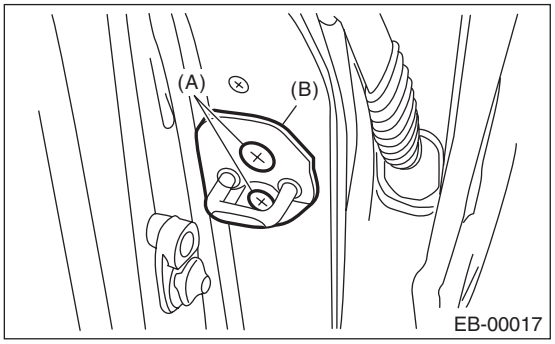
C: ADJUSTMENT

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



2) Loosen the screw (A) and tap striker (B) using plastic hammer to adjust the gap between rear end surface of front door panel and front end surface of rear door.

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

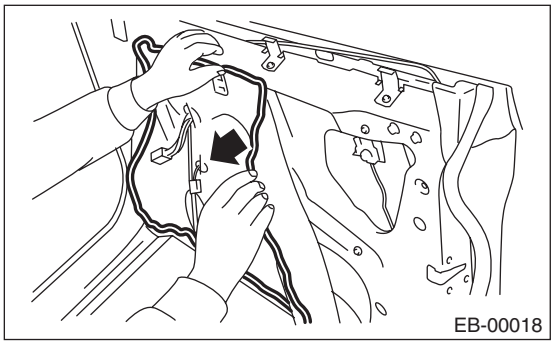


6. Front Sealing Cover

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the front door trim. <Ref. to EI-43, REMOVAL, Door Trim.>
3) 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 the 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

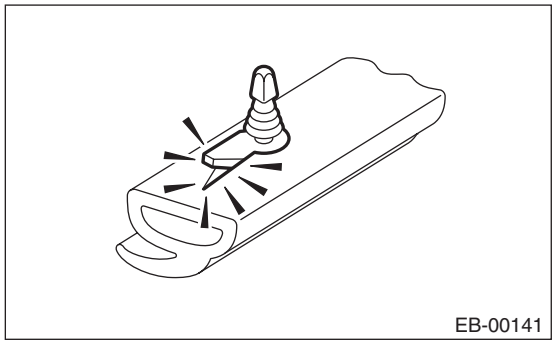
If the sealing cover gets damaged, replace it with a new part.

7. Rear Door

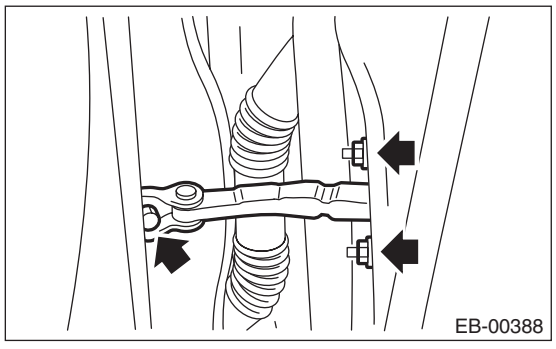
A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the rear door trim. <Ref. to EI-43, REMOVAL, Door Trim.>
3) Remove the rear speaker. <Ref. to ET-9, REMOVAL, Rear Speaker.>
4) Remove the sealing cover. <Ref. to EB-24, REMOVAL, Rear Sealing Cover.>
5) Remove the door sash and rear door glass. <Ref. to GW-18, REMOVAL, Rear Door Glass.>
6) Remove the rear door regulator and motor assembly. <Ref. to GW-19, REMOVAL, Rear Regulator and Motor Assembly.>
7) Remove the rear door latch. <Ref. to SL-36, REMOVAL, Rear Door Latch and Door Lock Actuator Assembly.>
8) Remove the rear outer handle. <Ref. to SL-35, REMOVAL, Rear Outer Handle.>
9) Remove the rear door weather strip.

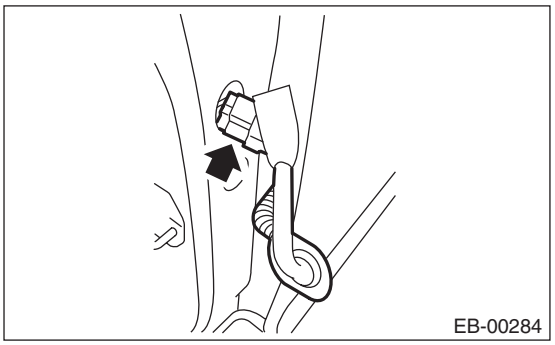
NOTE:
If the weather strip clip is removed with excessive force, the weather strip may be damaged. Be sure to use clip remover to remove.


EB-00141

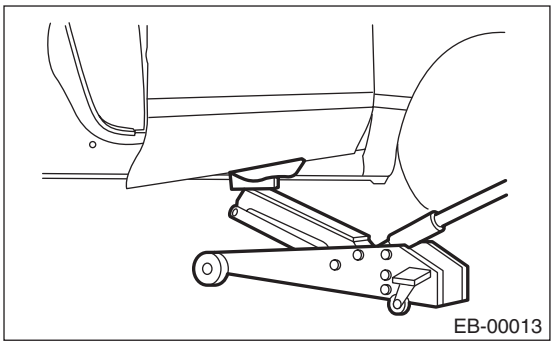
10) Remove the bolts and nuts to remove the door checker.


EB-00388

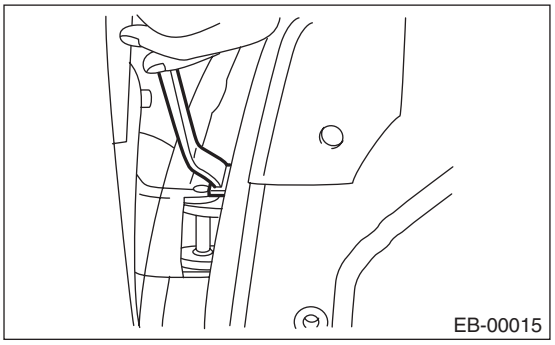
11) Pull the door harness connector inside the center pillar, then disconnect the connector.


EB-00284

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


EB-00013

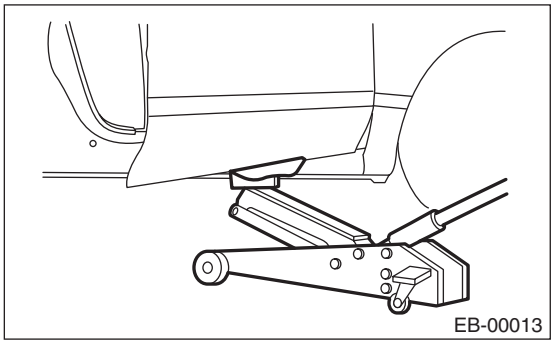
13) Remove the door-side bolts for upper and lower hinges to remove the rear door panel.


EB-00015

14) Remove the door hinge from vehicle.

B: INSTALLATION

1) Put a wooden block on jack and place the rear door on that.



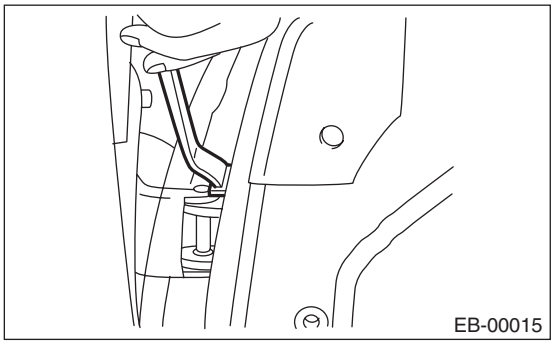
2) Apply grease to the moving part of door hinges.
3) Install the rear door to upper hinge and lower hinge adjusting by jack.
4) Tighten bolt of door checker.
5) Connect door harness connector.

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to EB-11, REAR DOOR, COMPONENT, General Description.>

6) Install while paying attention to make a uniform clearance around the rear door panel. For the dimension of clearance, refer to "SPECIFICATION" in "General Description". <Ref. to EB-2, SPECIFICATION, General Description.>

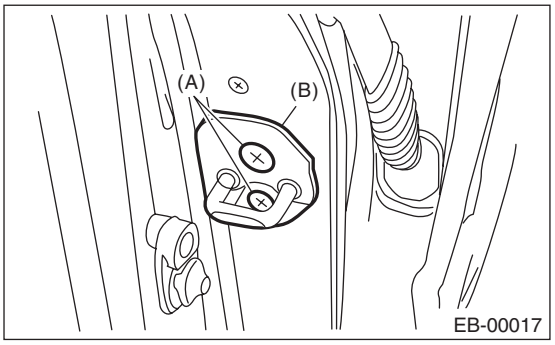
C: ADJUSTMENT

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



2) Loosen the screw (A) and tap striker (B) using plastic hammer to adjust the gap between rear end surface of rear door panel and body surface.

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

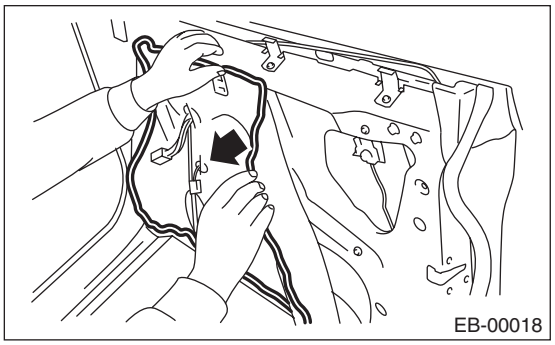


8. Rear Sealing Cover

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the rear door trim. <Ref. to EI-43, REMOVAL, Door Trim.>
3) Remove the rear speaker. <Ref. to ET-9, REMOVAL, Rear Speaker.>
4) 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 the equivalent

NOTE:
• Apply a uniform bead of butyl tape.
• Attach the sealing cover, keeping it from becoming wrinkled.
• If the butyl tape is applied unevenly, it will cause water leakage and soiling.

C: INSPECTION

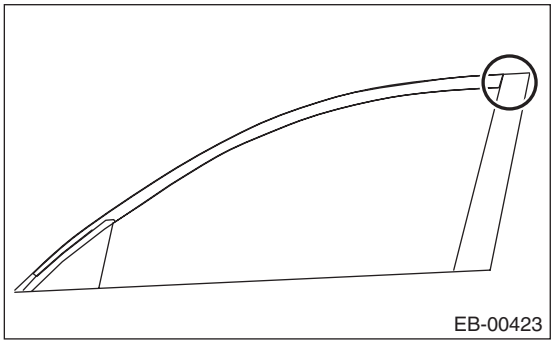
If the sealing cover gets damaged, replace it with a new part.

9. Door Sash Tape

A: REMOVAL

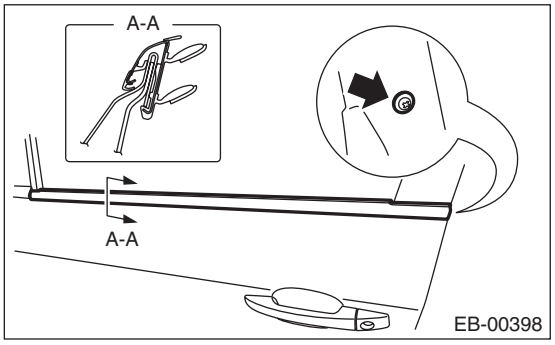
1. FRONT DOOR

1) Disconnect the ground cable from battery.
2) Remove the front door trim. <Ref. to EI-43, REMOVAL, Door Trim.>
3) Remove the outer mirror assembly. <Ref. to GW-15, REMOVAL, Outer Mirror Assembly.>
4) Remove the sealing cover. <Ref. to EB-21, REMOVAL, Front Sealing Cover.>
5) Remove the front door glass. <Ref. to GW-11, REMOVAL, Front Door Glass.>
6) Remove the glass run rubber.
7) Remove the B pillar upper clip, and remove the front door weather strip.



8) Remove the screws, and remove the front door weather strip outer.

CAUTION:
• When removing the weather strip outer, be careful not to damage the vehicle.
• If the weather strip outer is deformed, always replace with a new part.

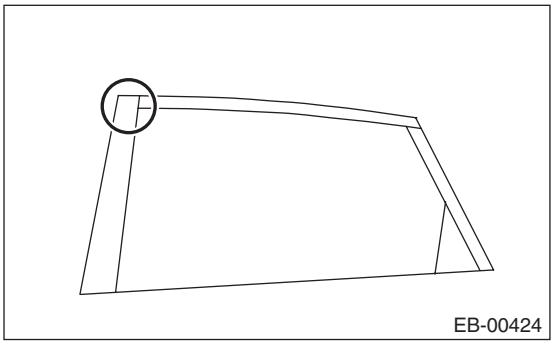


9) Peel the door sash tape from the door sash.

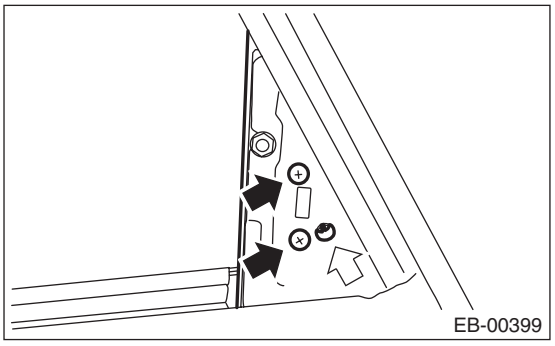
NOTE:
• If the tape is difficult to remove, warm the tape with a hairdryer, etc. to make the removal easier. Use a household hairdryer. Do not use industrial dryers.
• If tape residue is remaining on the door sash, wipe clean.

2. REAR DOOR

1) Disconnect the ground cable from battery.
2) Remove the rear door trim. <Ref. to EI-43, REMOVAL, Door Trim.>
3) Remove the sealing cover. <Ref. to EB-24, REMOVAL, Rear Sealing Cover.>
4) Remove the rear door glass. <Ref. to GW-18, REMOVAL, Rear Door Glass.>
5) Remove the glass run rubber.
6) Remove the B pillar upper clip, and remove the rear door weather strip.

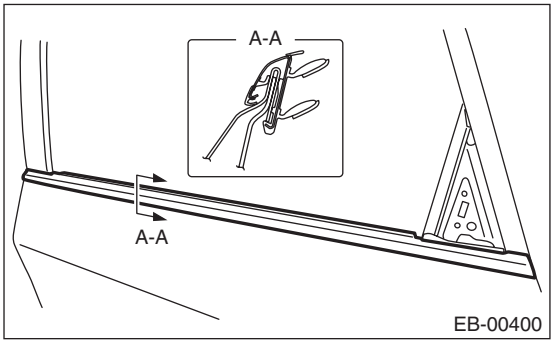


7) Loosen the screws and clips to remove the gusset cover outer.



8) Remove the rear door weather strip outer.

CAUTION:
• When removing the weather strip outer, be careful not to damage the vehicle.
• If the weather strip outer is deformed, always replace with a new part.



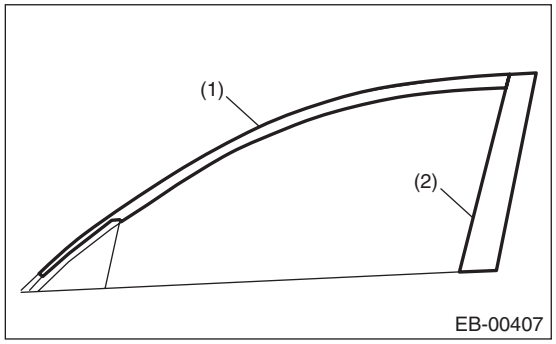
9) Peel the door sash tape from the door sash.

NOTE:
• If the tape is difficult to remove, warm the tape with a hairdryer, etc. to make the removal easier. Use a household hairdryer. Do not use industrial dryers.
• If tape residue is remaining on the door sash, wipe clean.

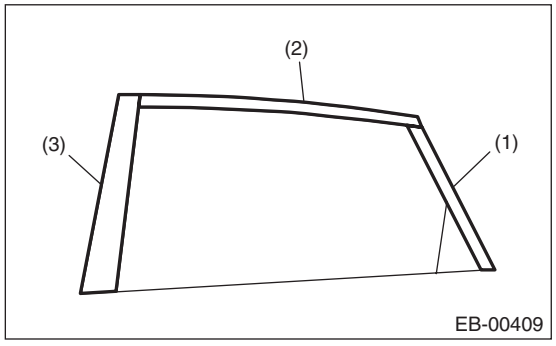
B: INSTALLATION

CAUTION:
• When applying tape, use a spatula, etc. to apply evenly, pushing it against the sash to make sure that no air bubbles are formed.
If air bubbles are formed, reapply the tape.
• If the tape is wrinkled, etc. during application, replace the tape.
• Turning points and ends of the tape will be a cause for peeling if the pressure is insufficient during application, so make sure to push down on the tape firmly when applying.
• There are locations where the tape ends will overlap each other. When applying the tape, be careful of the order of their application.

- **Front**

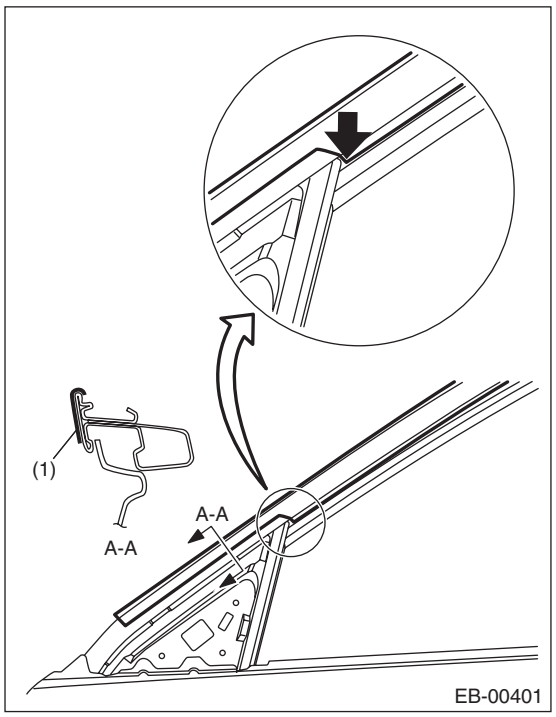


- **Rear**



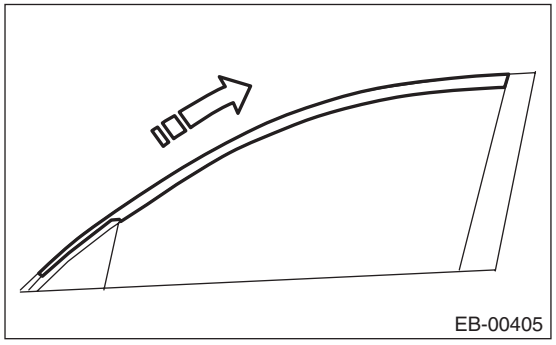
1. FRONT DOOR

1) Match the upper area of the gusset and the cut area of the tape as shown in the figure. (Position of the arrow)

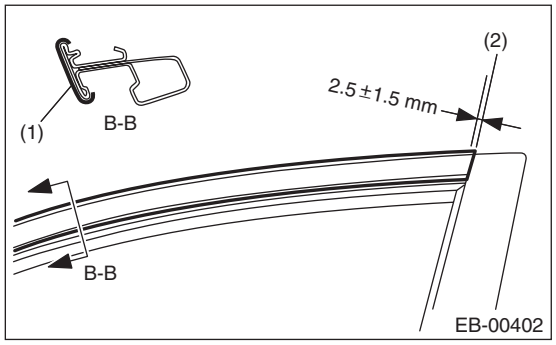


(1) Front door sash tape - front

2) Apply tape from the front of the vehicle towards the rear.

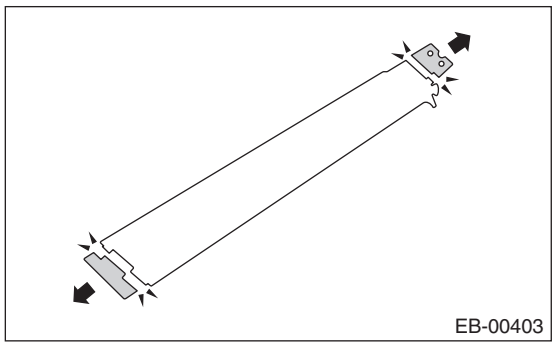


NOTE:
Apply the tape end at a position within 2.5±1.5 mm (0.1±0.06 in) from the front door rear sash line.



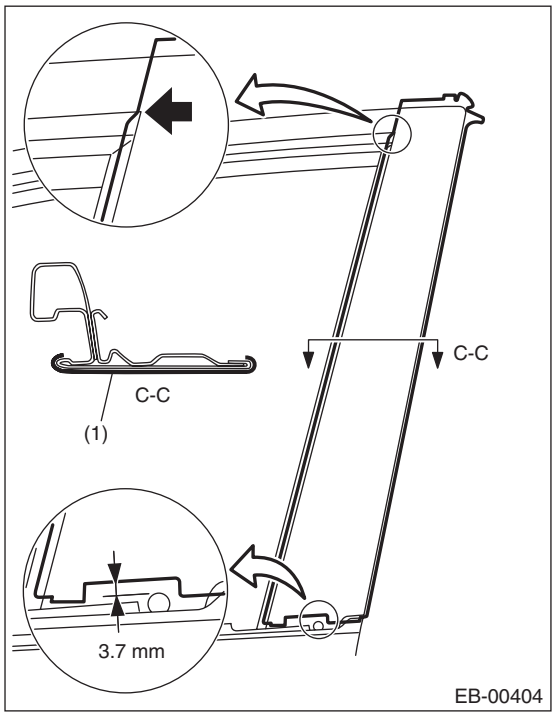
(1) Front door sash tape - front
(2) Front door rear sash line

3) Cut off both ends of the front door sash tape — rear.



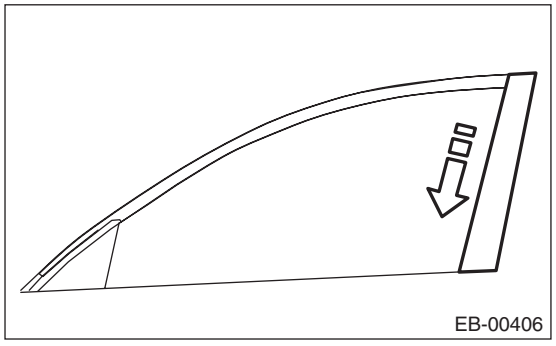
4) Match the sash corner and the cut area of the tape as shown in the figure. (Position of the arrow)

5) The lower end of the tape is to be aligned so that a space of approximately 3.7 mm (0.15 in) remains, so that the attachment holes of the weather strip outer are not blocked. (Position of the arrow)

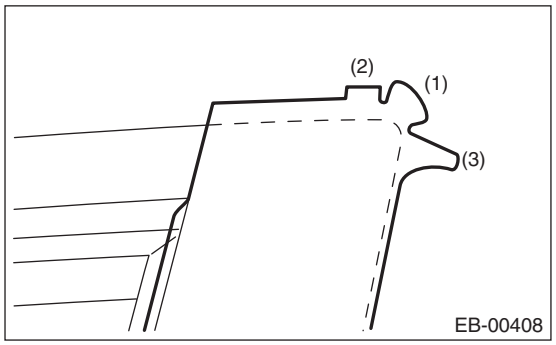


(1) Front door sash tape — rear

6) Apply tape from the top of the vehicle towards the bottom.



7) Fold the corners at the door upper end area in the order of (1) - (3).

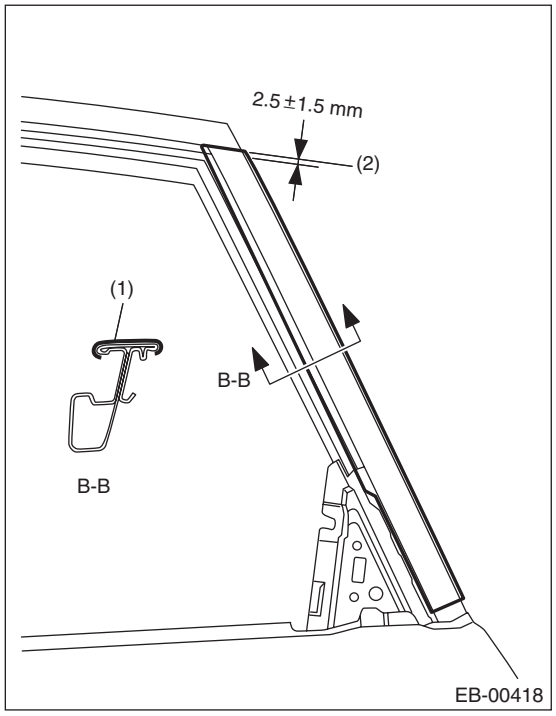


8) Thereafter, install door parts in the reverse order of disassembly.

9) Install while paying attention to make a uniform clearance around the front door panel. For the dimension of clearance, refer to “SPECIFICATION” in “General Description”. <Ref. to EB-2, SPECIFICATION, General Description.>

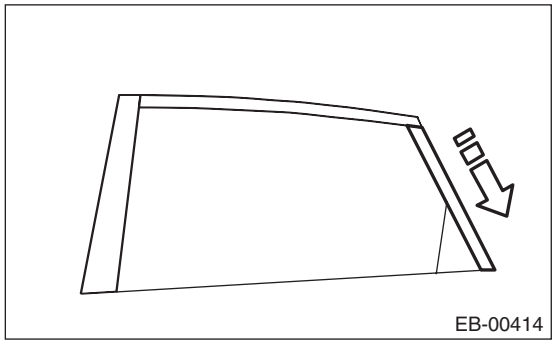
2. REAR DOOR

1) Apply the tape end at a position within 2.5±1.5 mm (0.1±0.06 in) from the rear door front sash line.



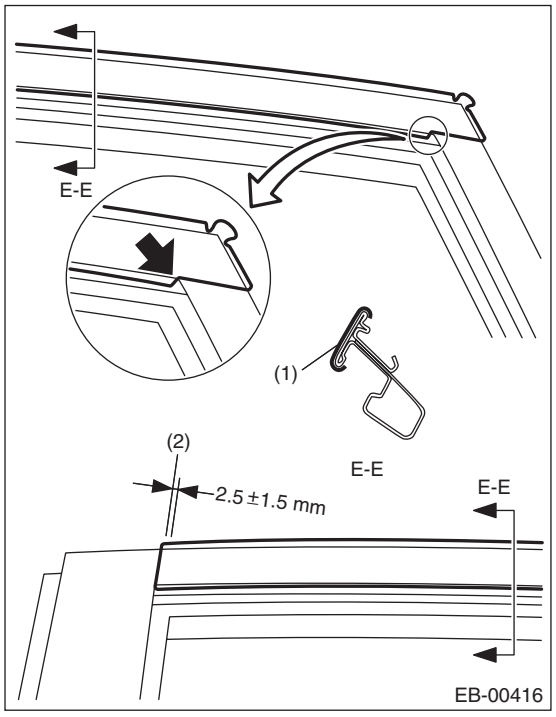
(1) Rear door sash tape — rear
(2) Rear door upper sash line

2) Apply tape from the top of the vehicle towards the bottom.



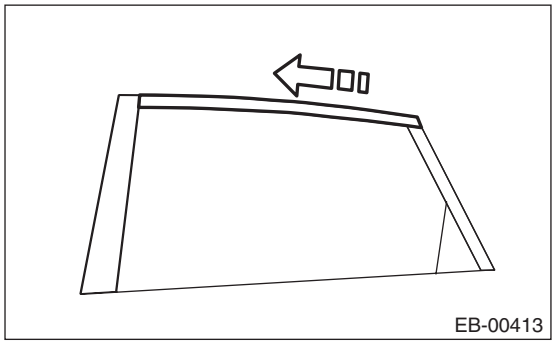
3) Match the rear door upper sash corner and the cut area of the tape as shown in the figure. (Position of the arrow)

NOTE:
Apply the tape end at a position within 2.5±1.5 mm (0.1±0.06 in) from the rear door front sash line.

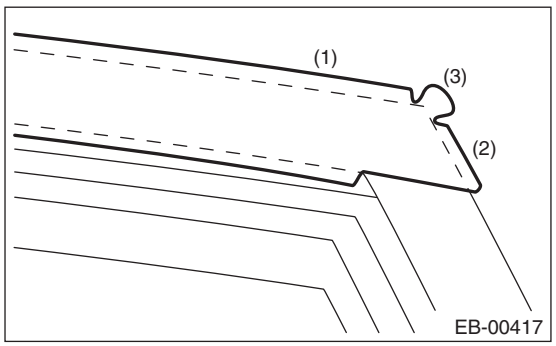


(1) Rear door sash tape — medium
(2) Rear door front sash line

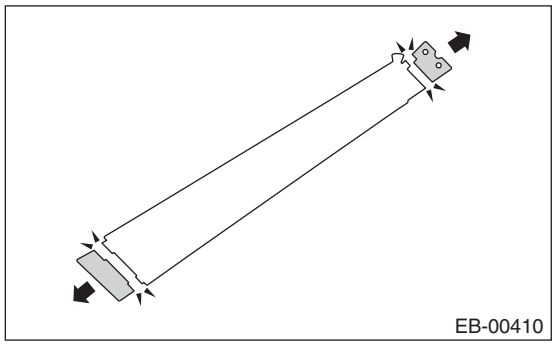
4) Apply tape from the rear of the vehicle towards the front.



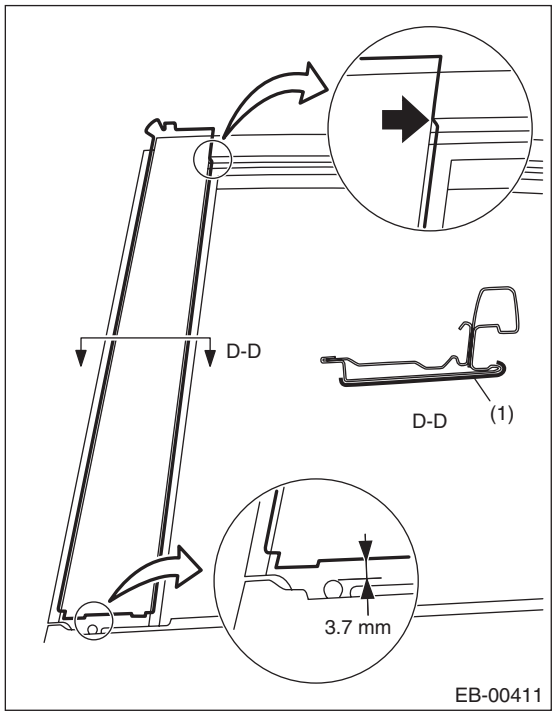
5) Fold the corners at the door upper end area in the order of (1) - (3).



6) Cut off both ends of the rear door sash tape — front.

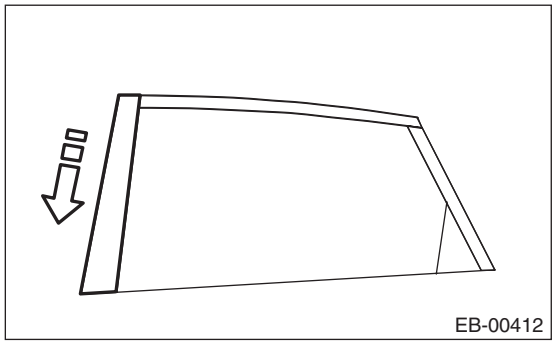


7) Match the sash corner and the cut area of the tape as shown in the figure. (Position of the arrow)
8) The lower end of the tape is to be aligned so that a space of approximately 3.7 mm (0.15 in) remains, so that the attachment holes of the weather strip outer are not blocked. (Position of the arrow)

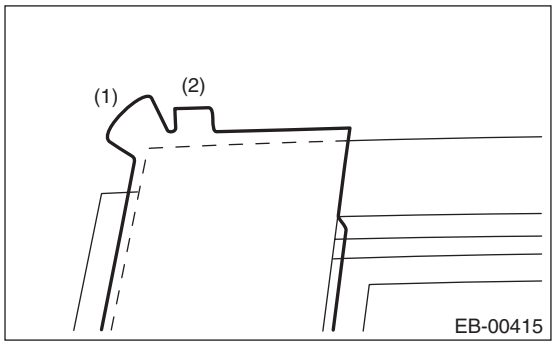


(1) Rear door sash tape — front

9) Apply tape from the top of the vehicle towards the bottom.



10) Fold the corners at the door upper end area in the order of (1) - (2).



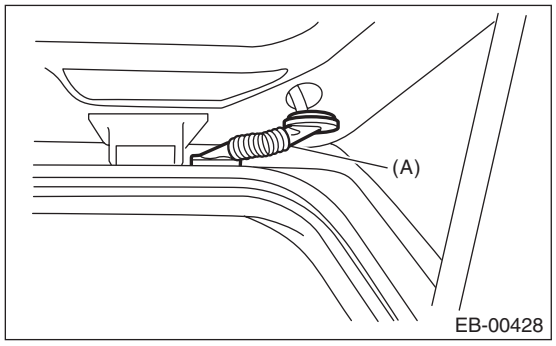
11) Thereafter, install door parts in the reverse order of disassembly.
12) Install while paying attention to make a uniform clearance around the rear door panel. For the dimension of clearance, refer to “SPECIFICATION” in “General Description”. <Ref. to EB-2, SPECIFICATION, General Description.>

10.Rear Gate

A: REMOVAL

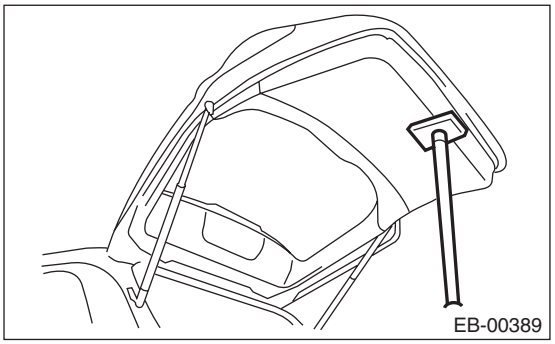
1. REAR GATE PANEL

1) Disconnect the ground cable from battery.
2) Remove the rear gate trim. <Ref. to EI-67, REMOVAL, Rear Gate Trim.>
3) Remove the rear finisher light assembly. <Ref. to LI-26, REMOVAL, Rear Finisher Light Assembly.>
4) Remove the rear gate garnish. <Ref. to EI-70, REMOVAL, Rear Gate Garnish.>
5) Remove the rear wiper arm. <Ref. to WW-18, REMOVAL, Rear Wiper Arm.>
6) Remove the rear wiper motor. <Ref. to WW-19, REMOVAL, Rear Wiper Motor.>
7) Remove the rear gate latch and actuator assembly. <Ref. to SL-38, REMOVAL, Rear Gate Latch and Actuator Assembly.>
8) Remove the roof spoiler. <Ref. to EI-39, REMOVAL, Roof Spoiler.>
9) Remove the rubber duct (A) connection.

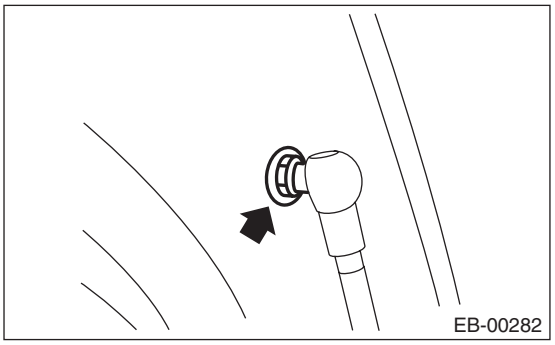


10) Remove harness clip of each connector from the rear gate panel.
11) Pull out the harness and washer hose from the rear gate.
12) Before removing the rear gate damper stay, prevent the rear gate from closing using prop or the like.

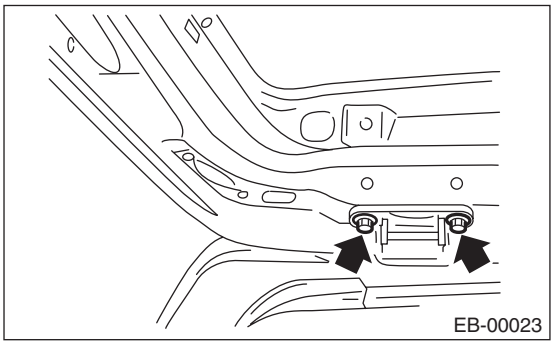
CAUTION:
If the prop comes off, operators may get injured and vehicle may get damaged. Make sure to support the rear gate with secure material to prevent injury or damage.



13) Remove the mounting bolt of rear gate damper stay.



14) Remove the rear gate hinge bolt, and remove the rear gate panel.



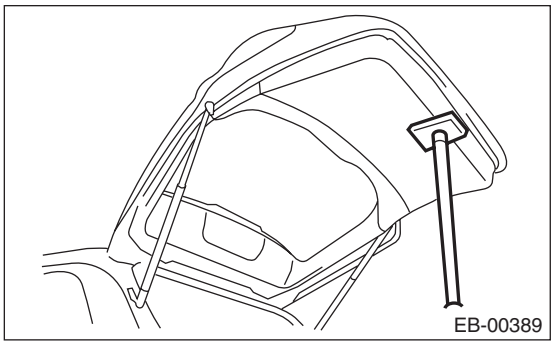
15) Remove the rear gate hinge from the vehicle.

2. REAR GATE DAMPER STAY

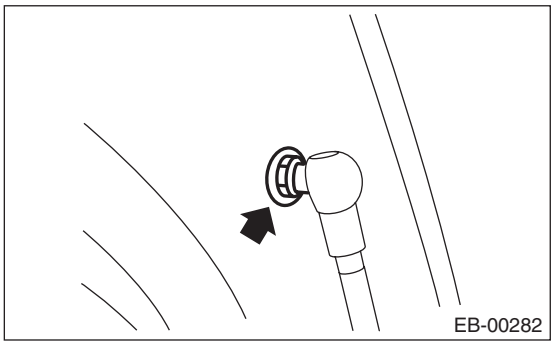
CAUTION:
- **Do not damage piston rods and oil seals.**
- **Never disassemble cylinders: They contain gas.**

1) Before removing the rear gate damper stay, prevent the rear gate from closing using prop or the like.

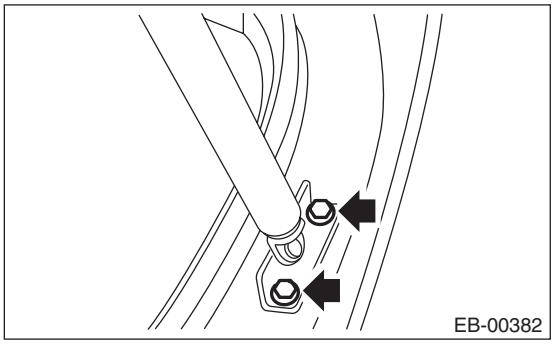
CAUTION:
If the prop comes off, operators may get injured and vehicle may get damaged. Make sure to support the rear gate with secure material to prevent injury or damage.



2) Remove the mounting bolt of rear gate damper stay.



3) Remove mounting bolt, and remove the damper stay.



B: INSTALLATION

1. REAR GATE PANEL

1) Install in the reverse order of removal.

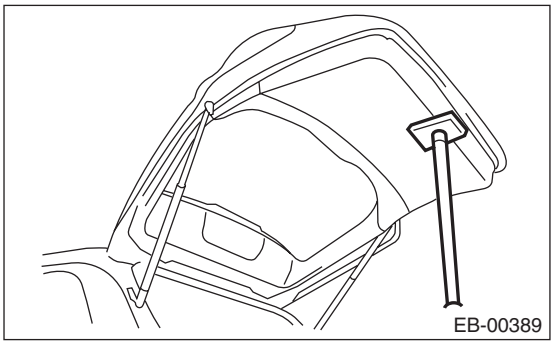
Tightening torque:
25 N·m (2.55 kgf-m, 18.4 ft-lb)

2) Install while paying attention to make a uniform clearance around the rear gate panel. For the dimension of clearance, refer to “SPECIFICATION” in “General Description”. <Ref. to EB-2, SPECIFICATION, General Description.>

2. REAR GATE DAMPER STAY

1) Prevent the rear gate from closing using prop or the like.

CAUTION:
If the prop comes off, operators may get injured and vehicle may get damaged. Make sure to support the rear gate with secure material to prevent injury or damage.



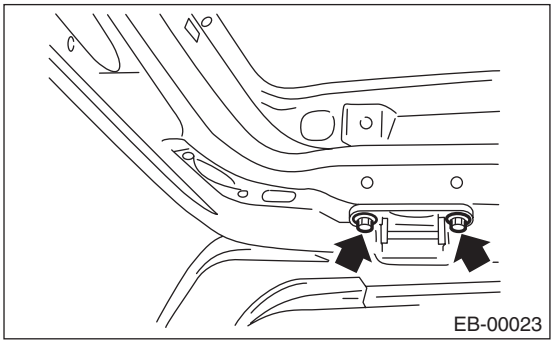
2) Install in the reverse order of removal.

Tightening torque:
Refer to “COMPONENT” of “General Description”. <Ref. to EB-12, REAR GATE, COMPONENT, General Description.>

C: ADJUSTMENT

For the dimension of panel around the rear gate panel, refer to “SPECIFICATION” in “General Description”. <Ref. to EB-2, SPECIFICATION, General Description.>

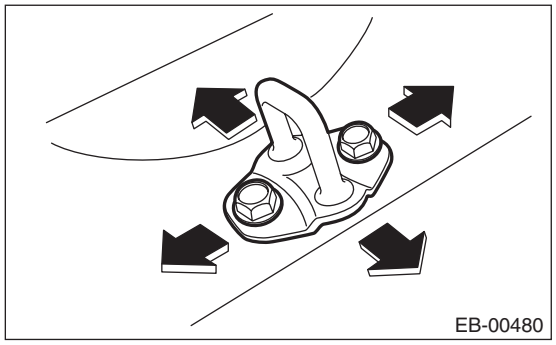
1) Align the rear gate panel longitudinal and lateral position.



(1) Loosen the hinge attaching bolts.

(2) Align the rear gate panel longitudinal and lateral panel dimension.

2) Adjust the gap between rear gate panel and body surface.



(1) Loosen the bolt.

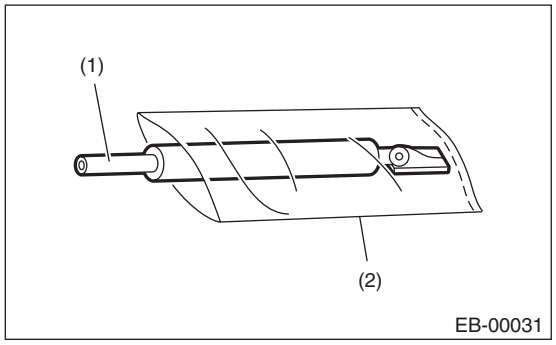
(2) Tap striker using plastic hammer to adjust the gap between rear gate panel and body surface.

D: 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.

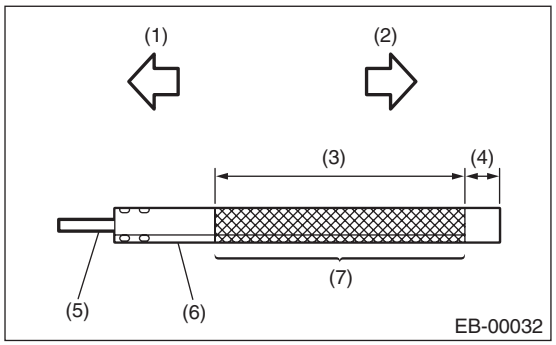


(1) Rear gate damper stay
(2) Vinyl sack

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 with vise.

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 completely.



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

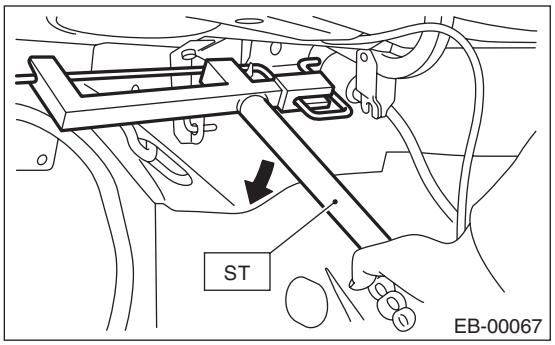
11.Trunk Lid

A: REMOVAL

1. TORSION BAR

1) Open the trunk lid.
2) Using the ST, remove the torsion bar from the hinge link.
ST 927780000 REMOVER

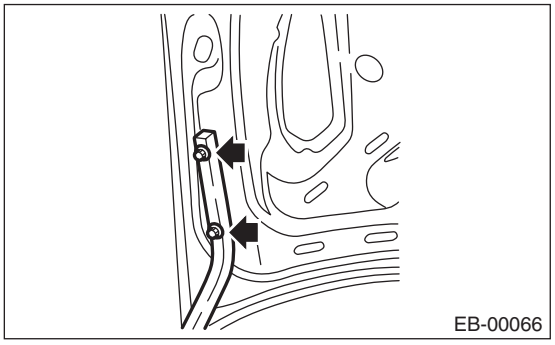
CAUTION:
During removal and installation, handle the torsion bar carefully, because it will generate reactive force.



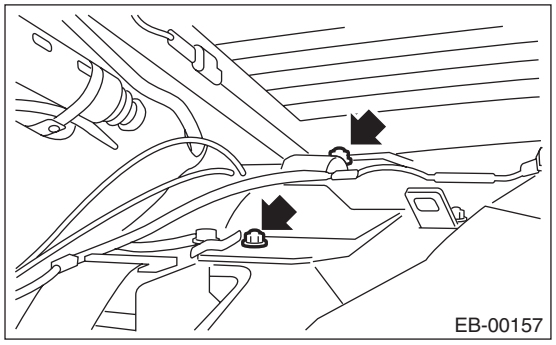
3) Remove the torsion bars RH/LH.

2. TRUNK LID ARM

1) Disconnect the ground cable from battery.
2) Open the trunk lid to remove the trunk room trim. <Ref. to EI-61, REMOVAL, Trunk Room Trim.>
3) Disconnect the trunk lid release cable. <Ref. to SL-39, REMOVAL, Trunk Lid Latch and Actuator Assembly.>
4) Disconnect the connectors, and remove the harness clip, etc.
5) Remove the trunk lid mounting bolts, to remove the trunk lid panel from the trunk lid arm.

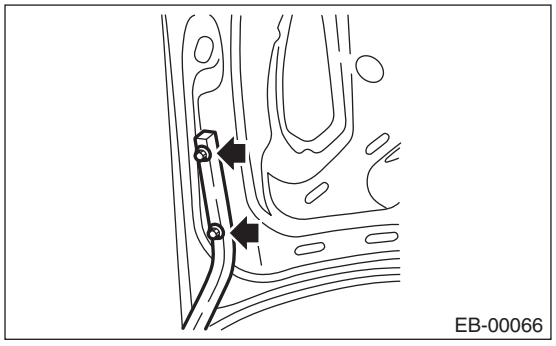


6) Remove the torsion bar from the trunk lid hinge link. <Ref. to EB-33, TORSION BAR, REMOVAL, Trunk Lid.>
7) Remove the rear shelf trim. <Ref. to EI-60, REMOVAL, Rear Shelf Trim.>
8) Remove the bolts, then remove the trunk lid arm.



3. TRUNK LID PANEL

1) Disconnect the ground cable from battery.
2) Disconnect the connector to remove the trunk lid harness.
3) Remove the trunk lid latch and actuator assembly. <Ref. to SL-39, REMOVAL, Trunk Lid Latch and Actuator Assembly.>
4) Remove the trunk lid garnish. <Ref. to EI-71, REMOVAL, Trunk Lid Garnish.>
5) Remove the bolts, then remove the trunk lid panel from the trunk lid arm.



B: INSTALLATION

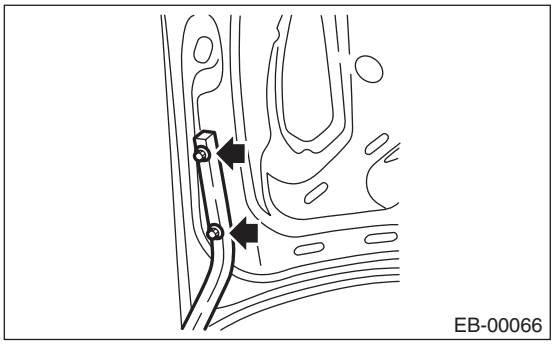
1) Install in the reverse order of removal.
2) Apply grease to the rotating area of hinges and the torsion bar.
3) Install while paying attention to make a uniform clearance around the trunk lid panel. For the dimension of clearance, refer to “SPECIFICATION” in “General Description”. <Ref. to EB-2, SPECIFICATION, General Description.>

Tightening torque:
Refer to “COMPONENT” of “General Description”. <Ref. to EB-9, FRONT FENDER, COMPONENT, General Description.>

C: ADJUSTMENT

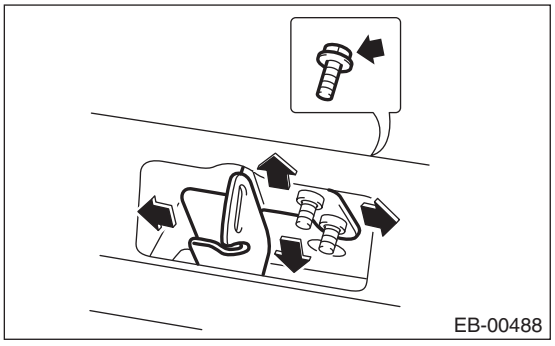
For the dimension of panel around the trunk lid panel, refer to “SPECIFICATION” in “General Description”. <Ref. to EB-2, SPECIFICATION, General Description.>

1) Adjust the trunk lid panel lateral position.



(1) Loosen the mounting bolt.
(2) Align the trunk lid panel lateral panel dimension.

2) Adjust the gap between trunk lid panel and body surface.



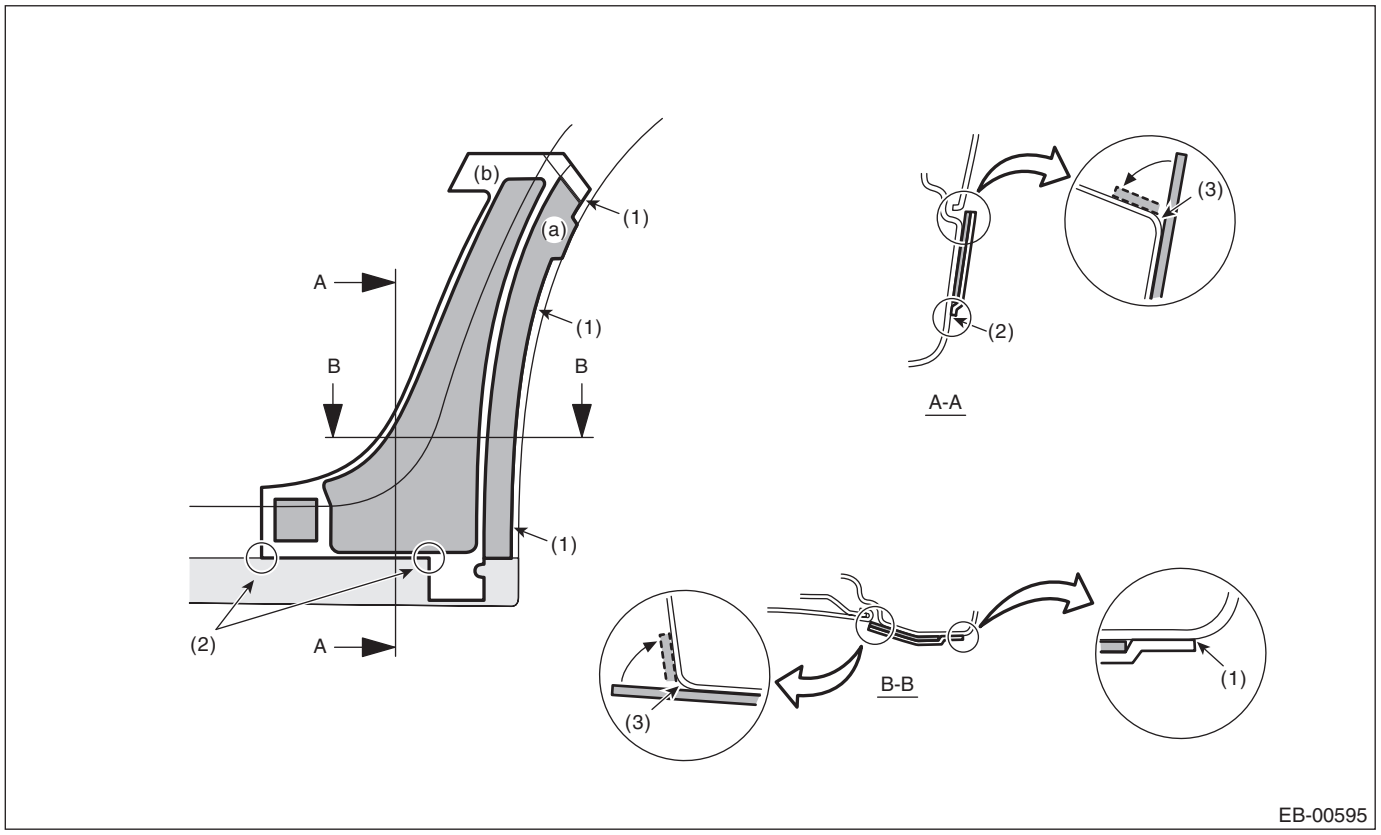
(1) Loosen the bolt.
(2) Tap striker using plastic hammer to adjust the gap between trunk lid panel and body surface.

12.Protector Tape

A: INSTALLATION

Adhere the protector tape to position, follow the procedures below.
1) Open the rear door and moisten around the adhering position by using liquid such as mild detergent solution.
2) Peel away the backing paper of (a).
3) Align the application tape to the position shown in the following figure.
4) Peel away the film of (a).
5) Peel away the backing paper of (b) and adhere the protector tape to the vehicle body.

CAUTION:
Remove the water or air bubbles out of the protector tape by using the plastic or rubber spatula.
6) Get rid of water and air bubbles in the protector tape and remove the application tape and the film.



(1) Align the R terminal of side sill panel to application paper.
(2) Align the PCV coat terminal to application paper.
(3) Apply the protector tape to align the R.

CRUISE CONTROL SYSTEM

CC

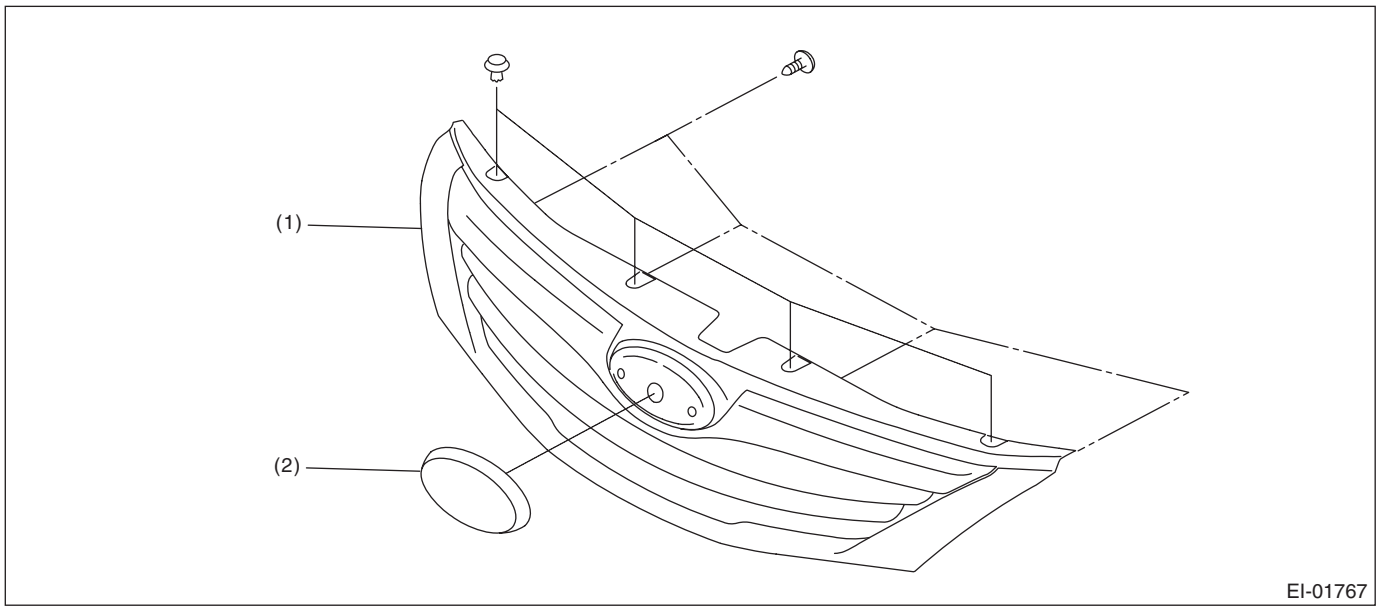
Page

1. General Description 2
2. Cruise Control Module 4
3. Cruise Control Command Switch 5
4. Combination Meter 6
5. Stop Light & Brake Switch 7
6. Clutch Switch 8
7. Transmission Control Module (TCM) 9
8. Inhibitor Switch 10
9. Neutral Position Switch 11

1. General Description

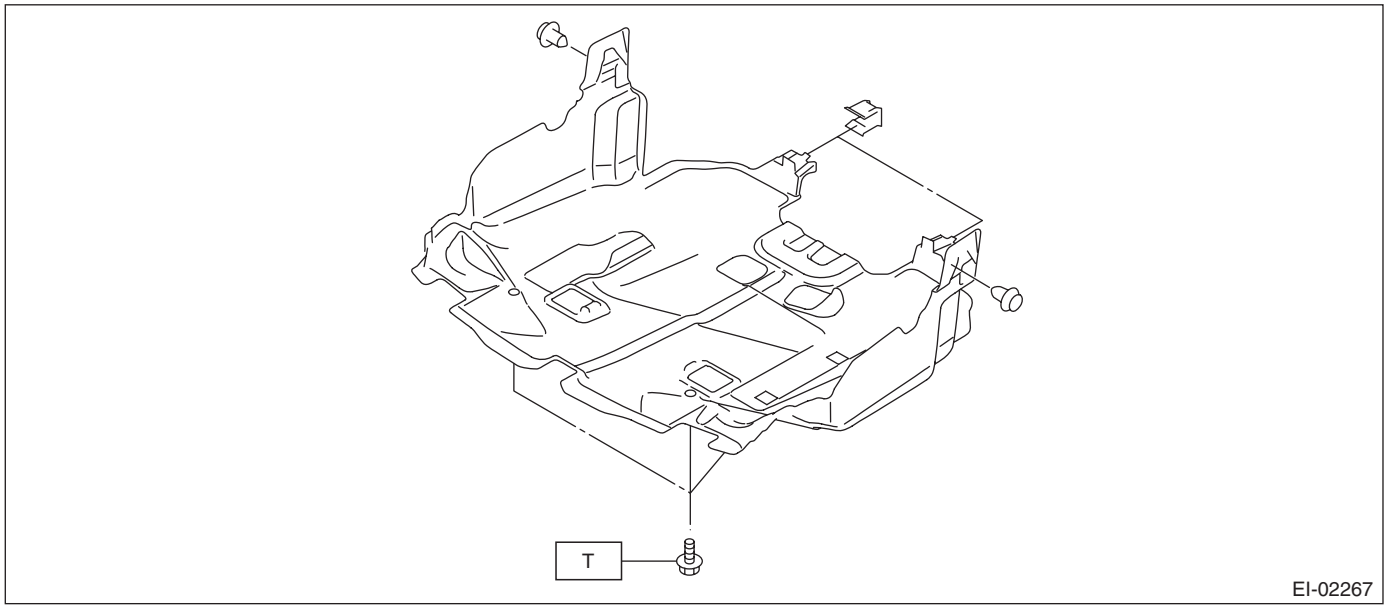
A: COMPONENT

1. FRONT GRILLE



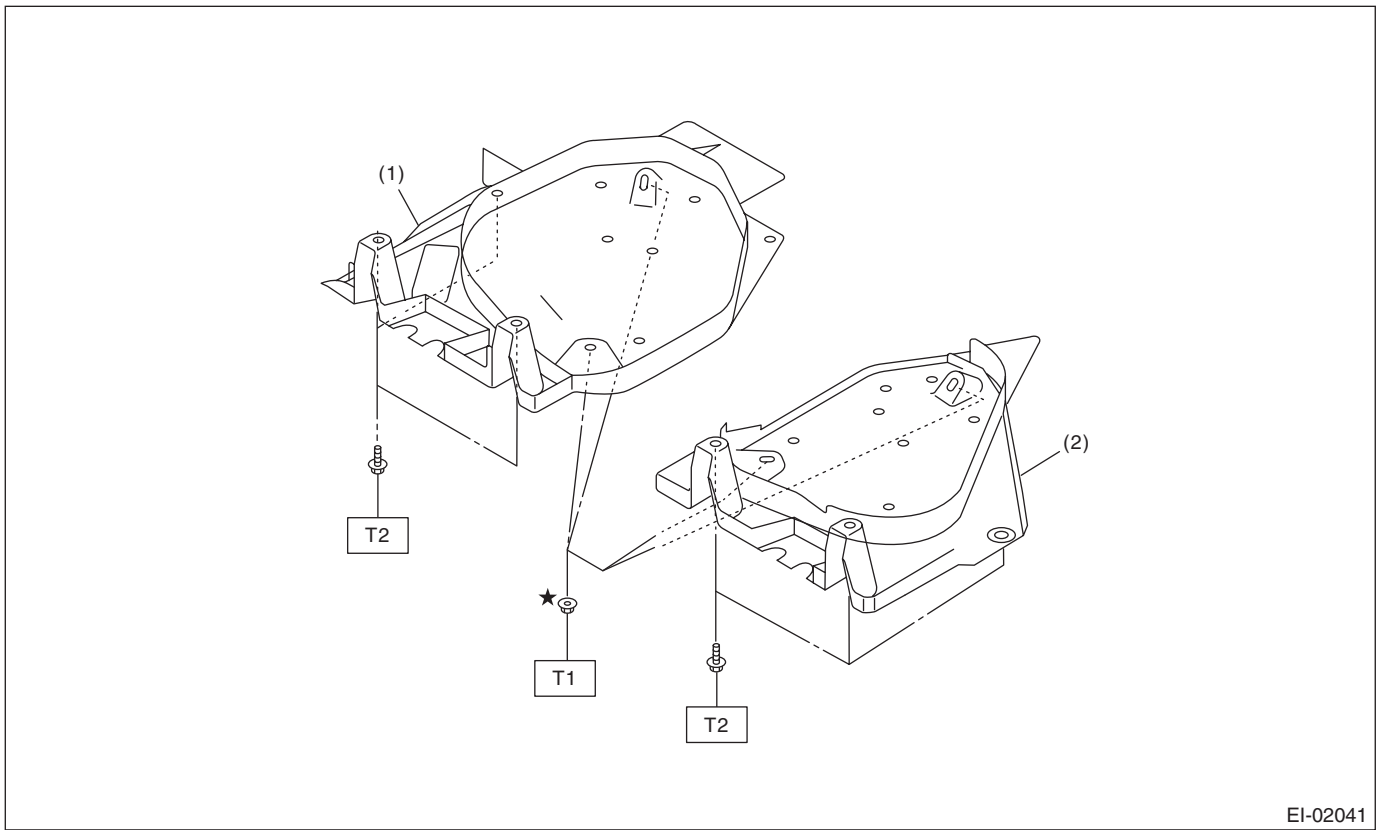
(1) Front grille ASSY
(2) Front grille emblem

2. UNDER COVER



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

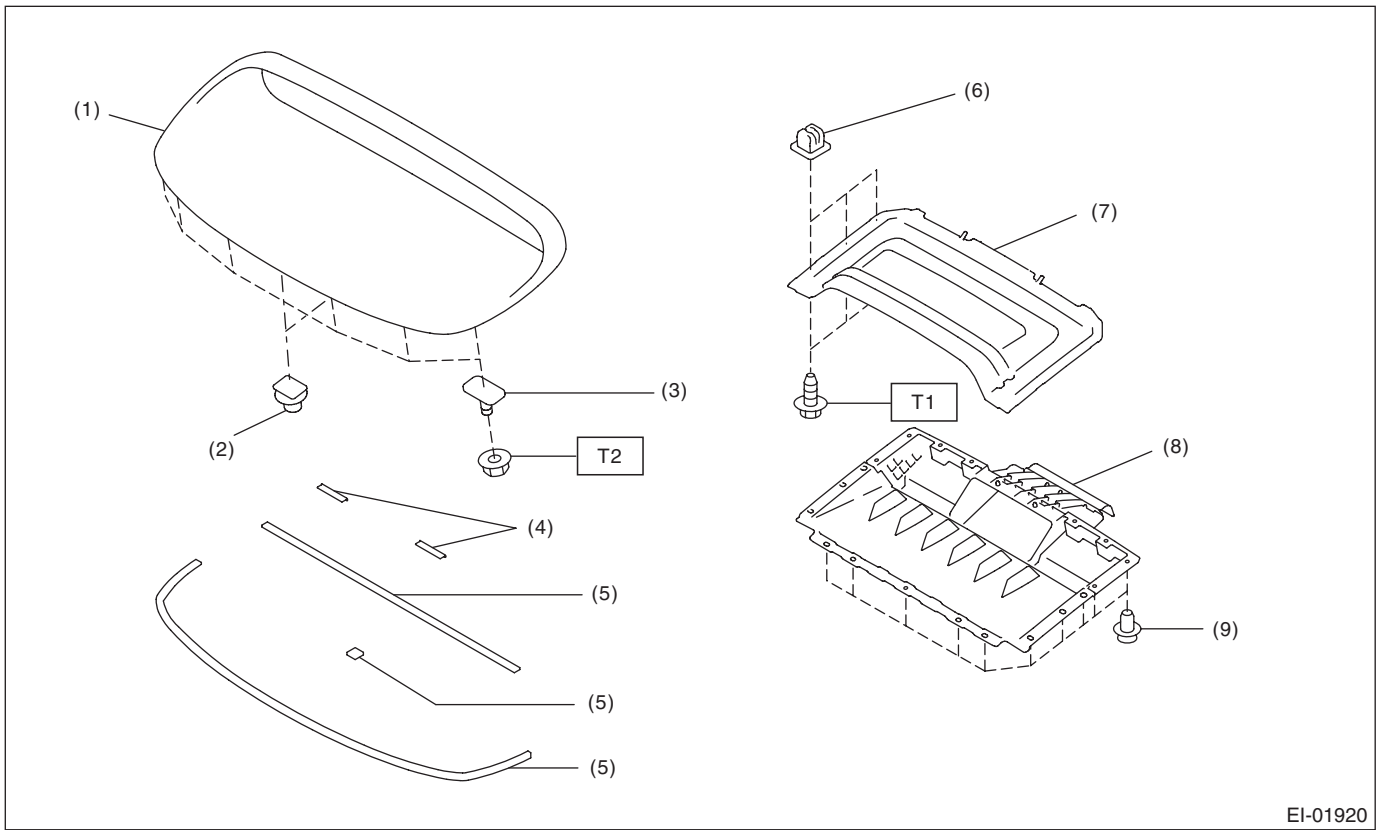
3. UNDER PROTECTOR



(1) Fuel tank protector RH
(2) Fuel tank protector LH

Tightening torque:N·m (kgf-m, ft-lb)
T1: 9 (0.92, 6.6)
T2: 18 (1.84, 13.3)

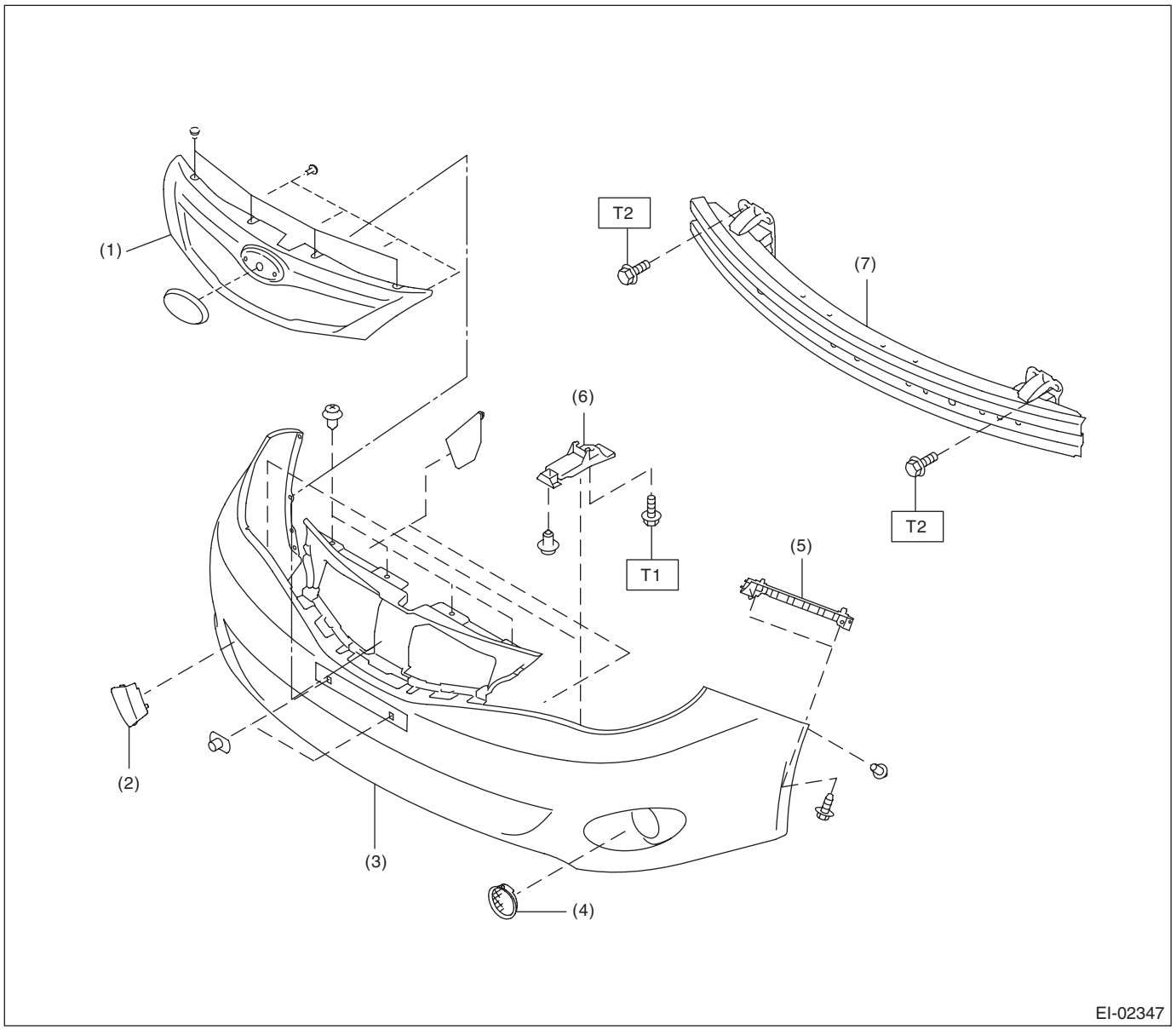
4. FRONT HOOD GRILLE



(1) Front hood grille
(2) Clip anchor
(3) Bolt
(4) Protector
(5) Gasket
(6) Grommet
(7) Hood duct
(8) Hood duct inner
(9) Clip

Tightening torque:N·m (kgf-m, ft-lb)
T1: 1.0 (0.1, 0.7)
T2: 4.5 (0.46, 3.3)

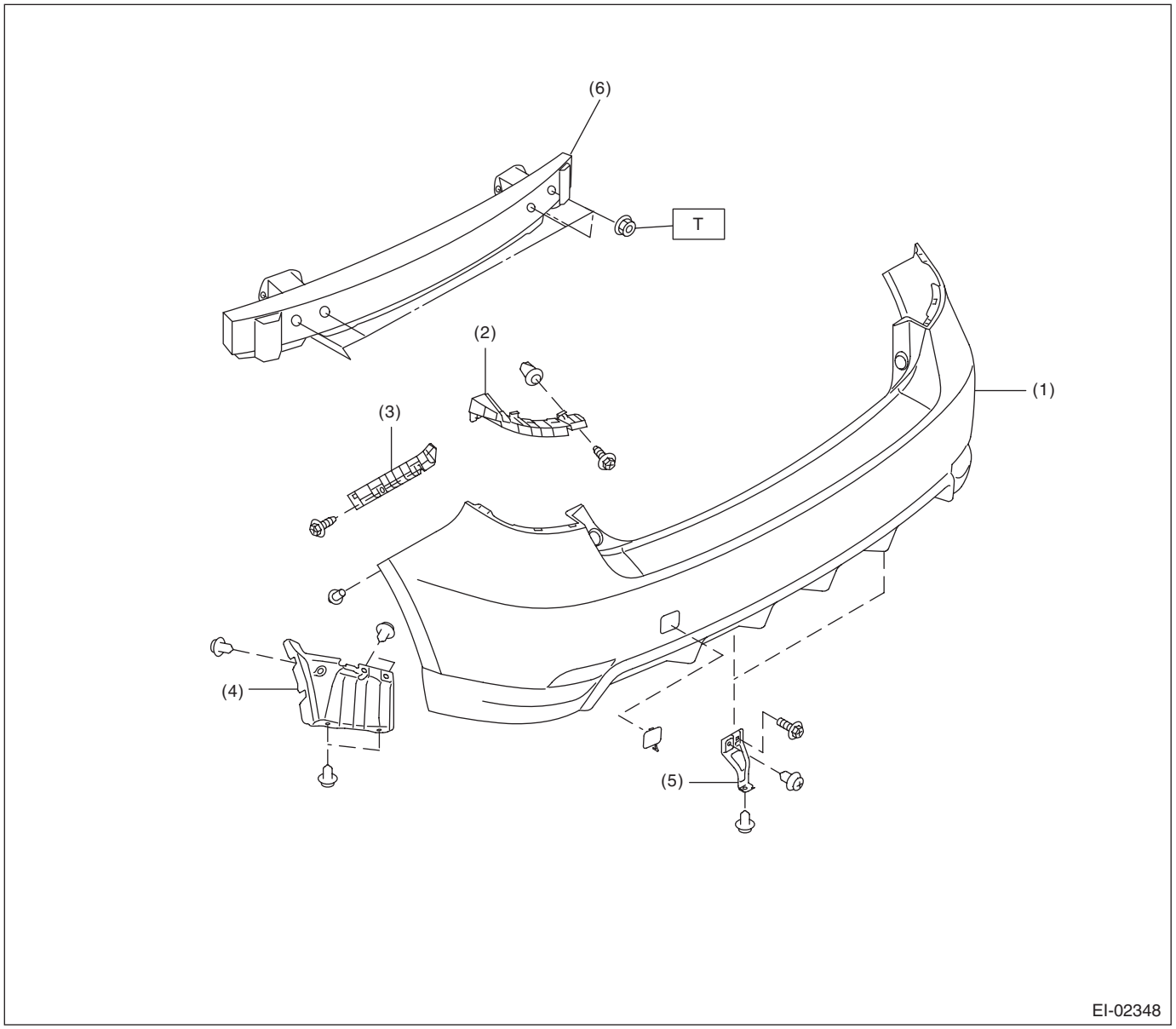
5. FRONT BUMPER



(1) Front grille ASSY
(2) Front hook cover
(3) Bumper face
(4) Fog light cover
(5) Front side bracket
(6) Front bracket center lower
(7) Bumper beam reinforcement

Tightening torque:N·m (kgf-m, ft-lb)
T1: 7.5 (0.76, 5.5)
T2: 32 (3.26, 23.6)

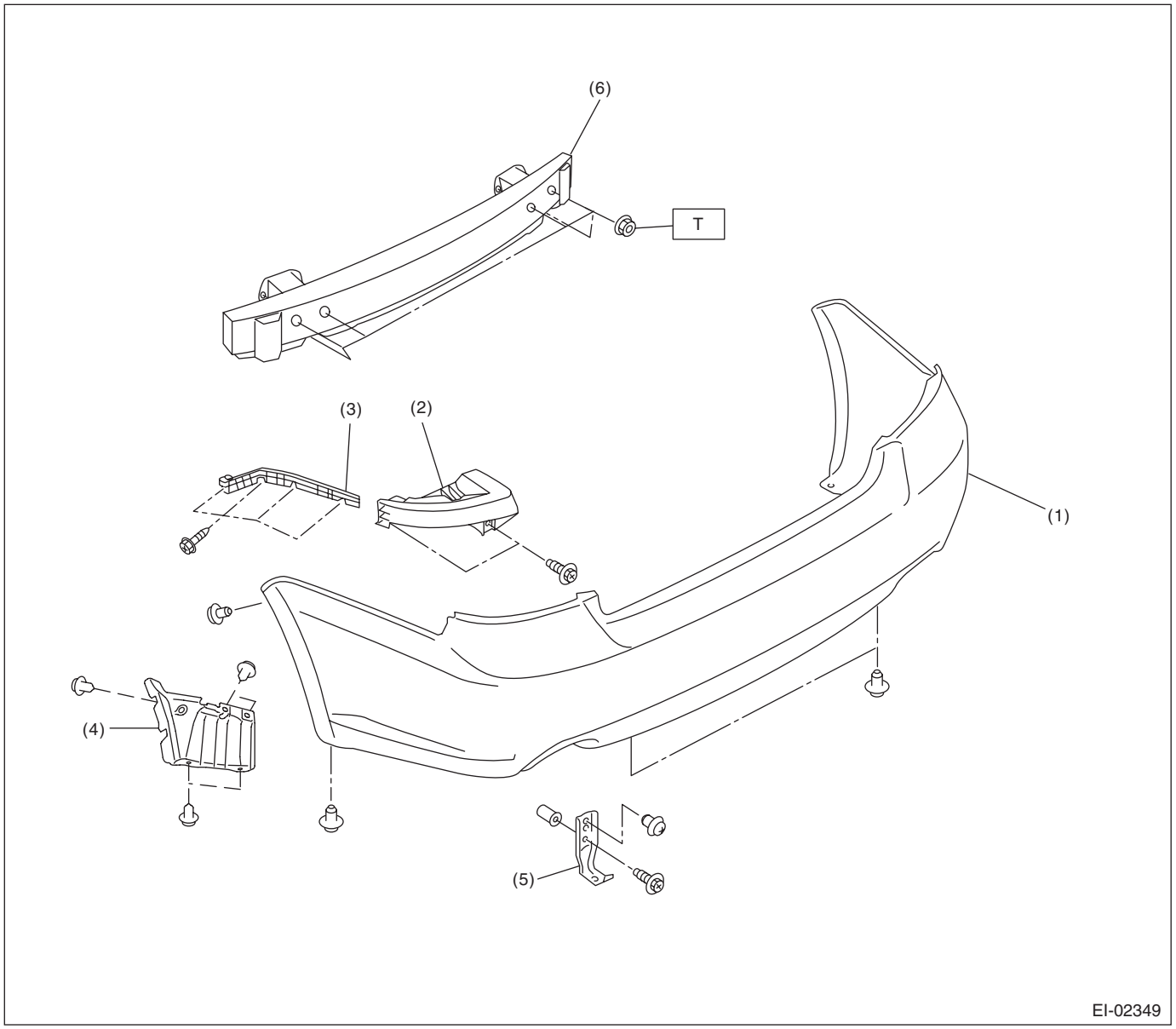
6. REAR BUMPER (5 DOOR MODEL)



(1) Bumper face
(2) Rear bracket corner
(3) Rear side bracket
(4) Rear side cover lower
(5) Lower bracket
(6) Bumper beam reinforcement

Tightening torque:N·m (kgf-m, ft-lb)
T: 45 (4.59, 33.2)

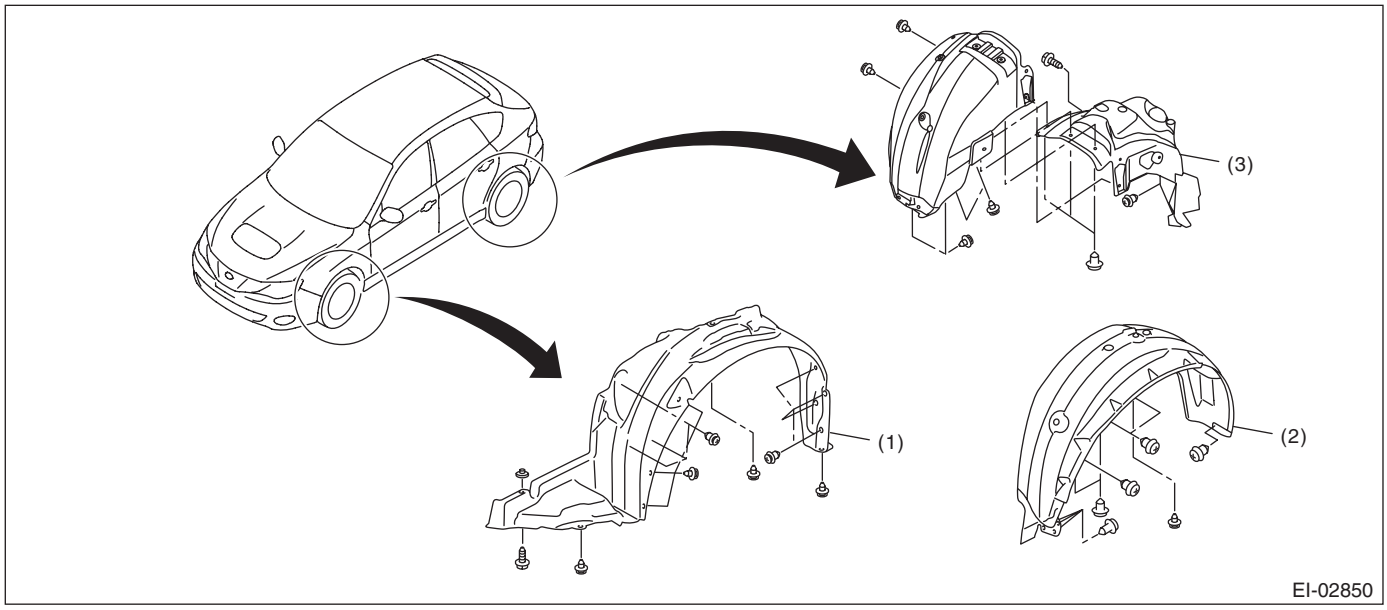
7. REAR BUMPER (4 DOOR MODEL)



(1) Bumper face
(2) Rear bracket corner
(3) Rear side bracket
(4) Rear side cover lower
(5) Lower bracket
(6) Bumper beam reinforcement

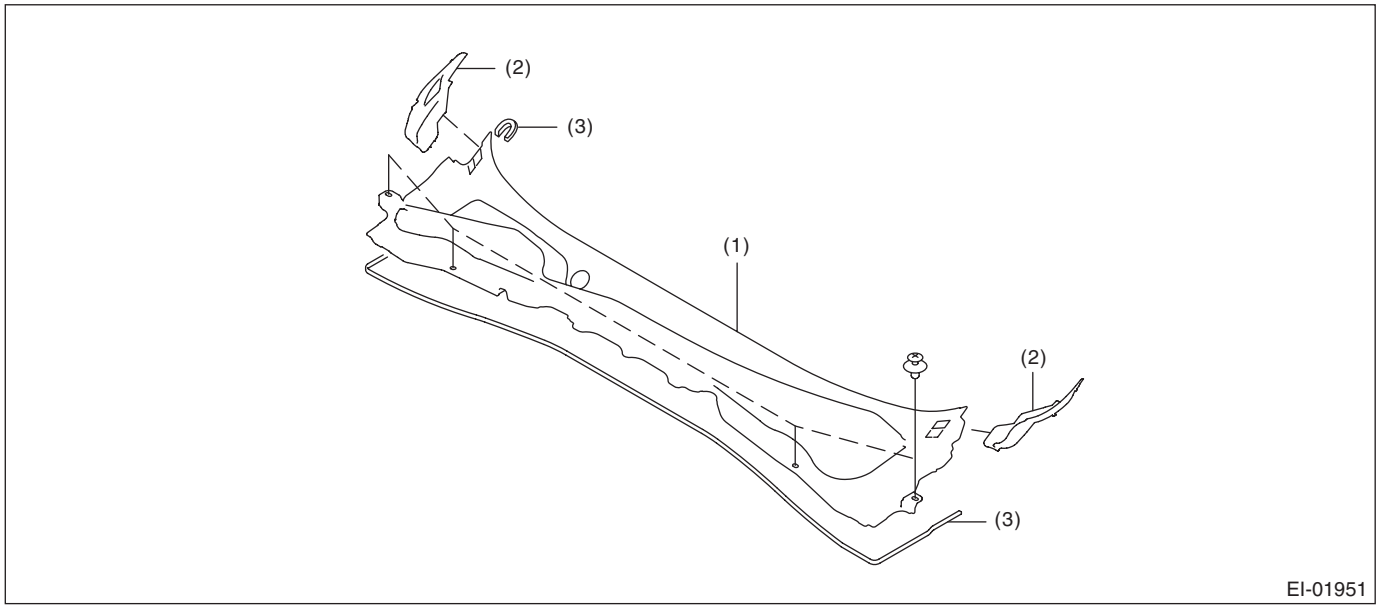
Tightening torque:N·m (kgf-m, ft-lb)
T: 45 (4.59, 33.2)

8. MUD GUARD



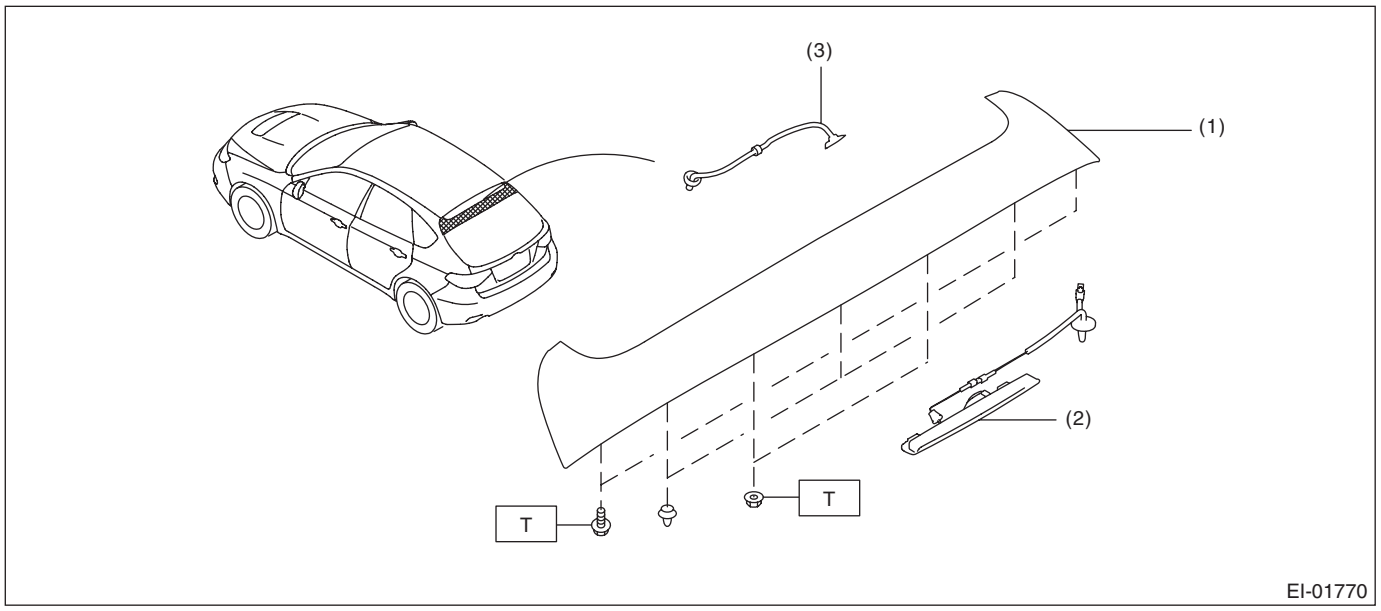
(1) Front mud guard
(2) Rear mud guard LH
(3) Rear mud guard RH

9. COWL PANEL



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

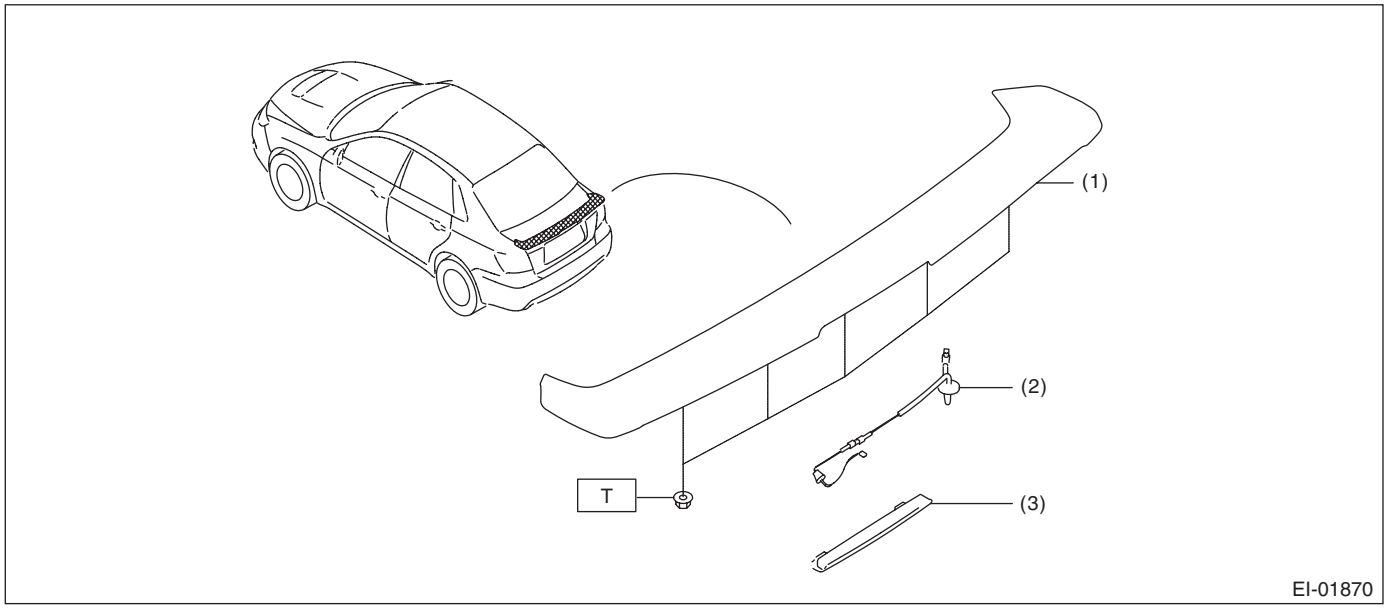
10.ROOF SPOILER



(1) Roof spoiler
(2) High-mounted stop light
(3) Washer nozzle

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

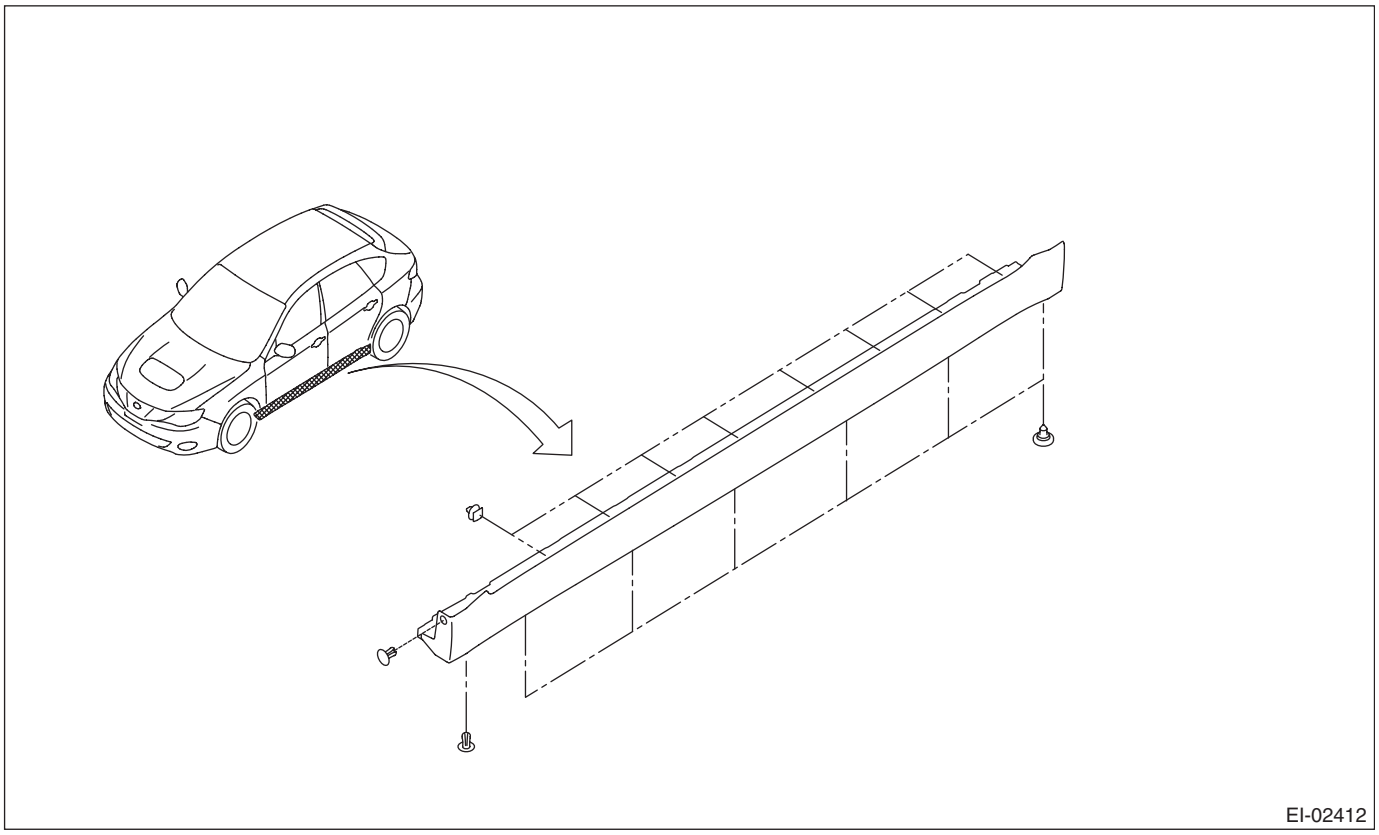
11.REAR SPOILER



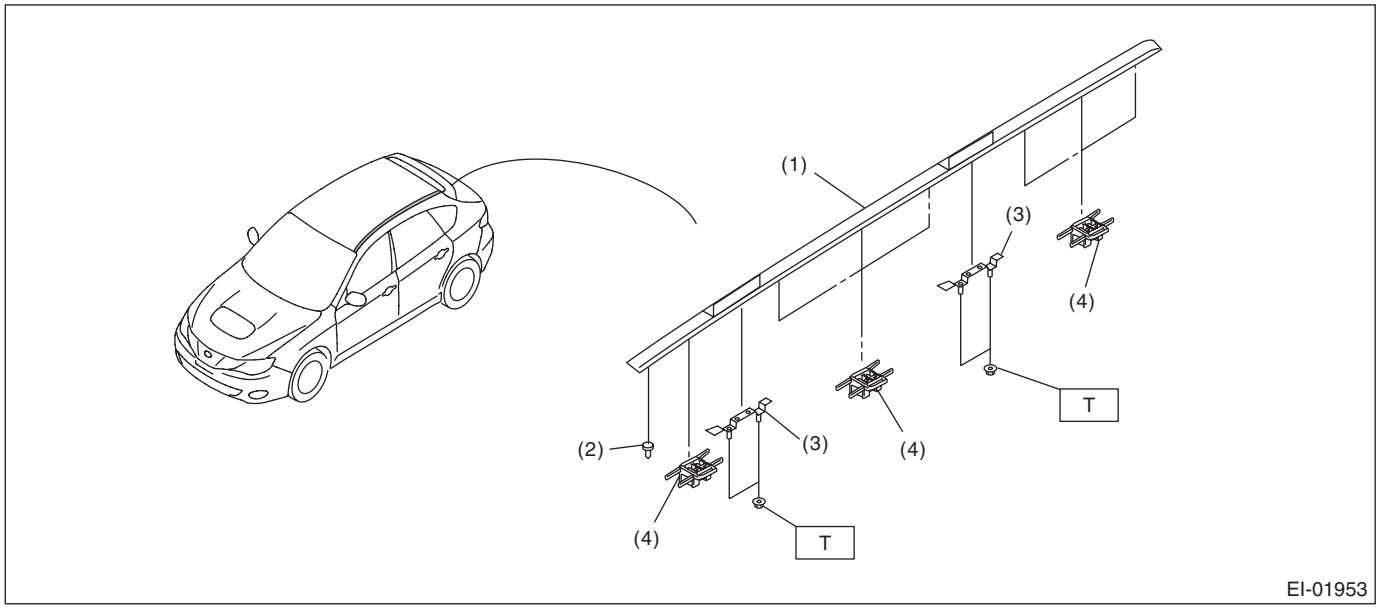
(1) Rear spoiler
(2) High mounted stop light harness
(3) High mounted stop light

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

12.SIDE SILL SPOILER



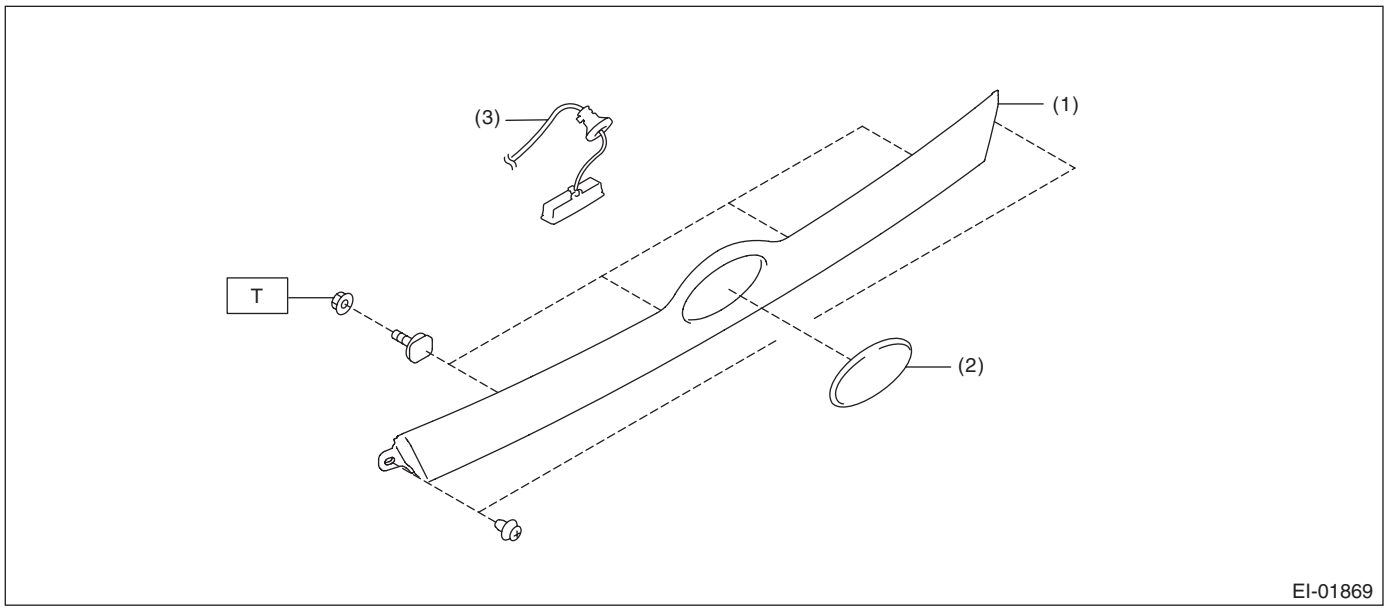
13.ROOF MOLDING



(1) Roof molding
(2) Rivet
(3) Roof carrier attachment bracket
(4) Clip

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

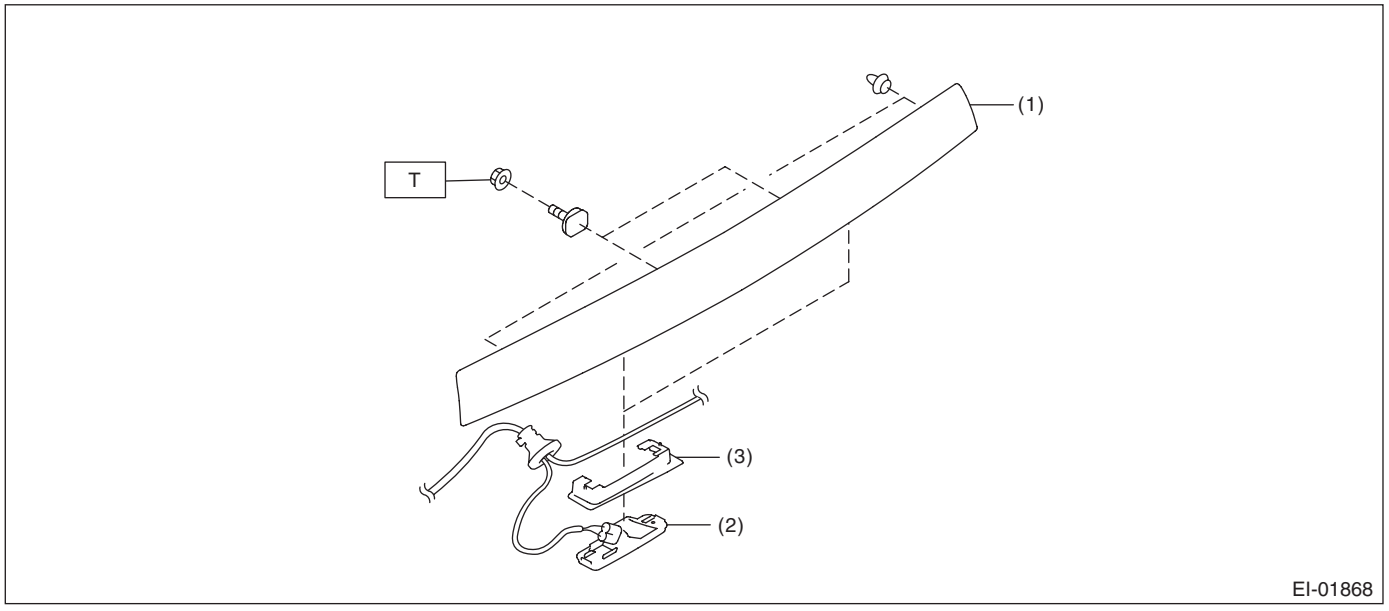
14.REAR GATE GARNISH



(1) Rear gate garnish
(2) Ornament
(3) Rear gate opener button harness

Tightening torque:N·m (kgf-m, ft-lb)
T: 4.5 (0.46, 3.3)

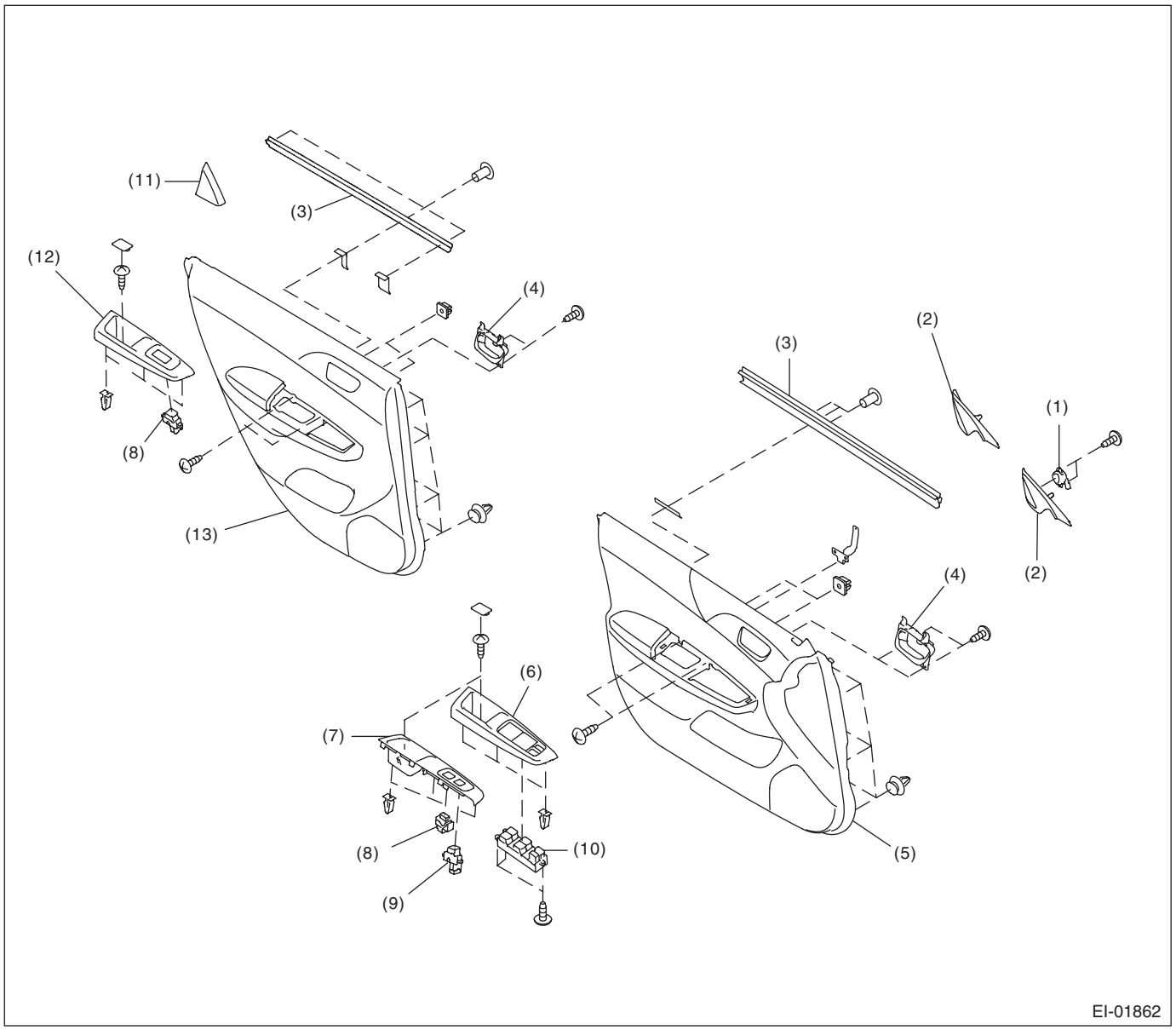
15.TRUNK LID GARNISH



(1) Rear gate garnish
(2) License light ASSY
(3) License light bracket

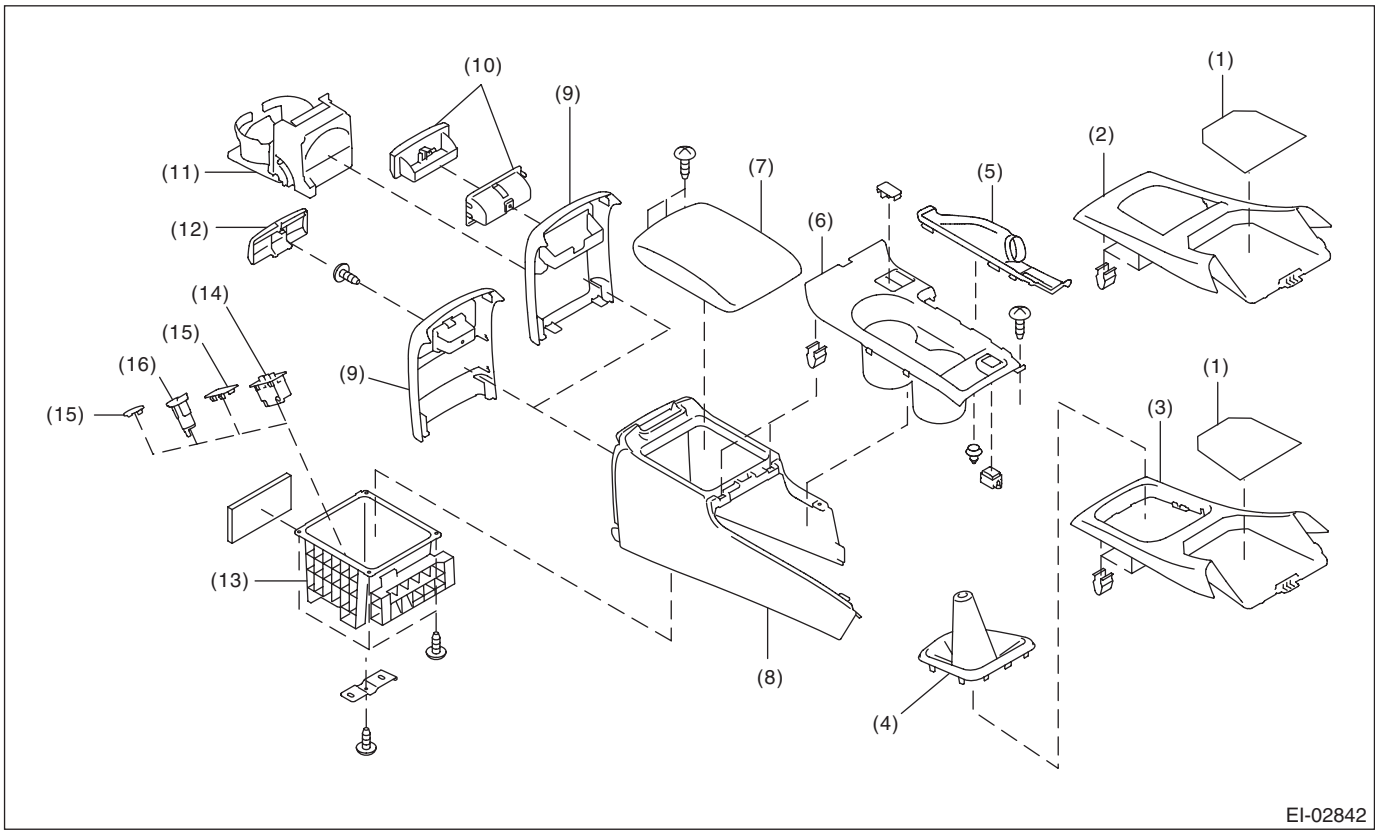
Tightening torque:N·m (kgf-m, ft-lb)
T: 4.5 (0.46, 3.3)

16.DOOR TRIM



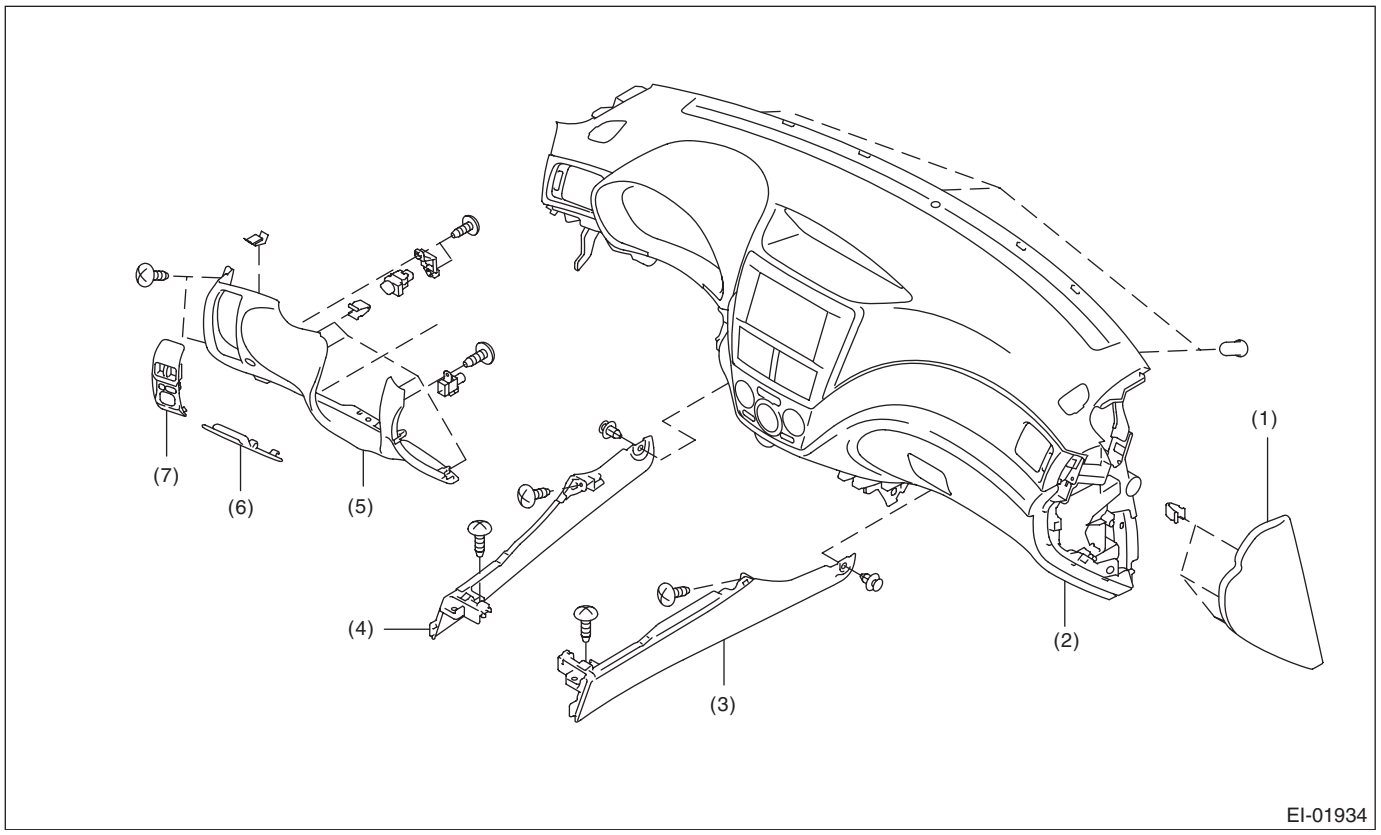
(1)	Tweeter	(6)	Power window switch panel front LH	(11)	Gusset cover rear
(2)	Gusset cover front	(7)	Power window switch panel front RH	(12)	Power window switch panel rear
(3)	Upper weather strip	(8)	Power window sub-switch	(13)	Rear door trim
(4)	Inner remote	(9)	Door lock switch		
(5)	Front door trim	(10)	Power window main switch ASSY		

17.CONSOLE BOX

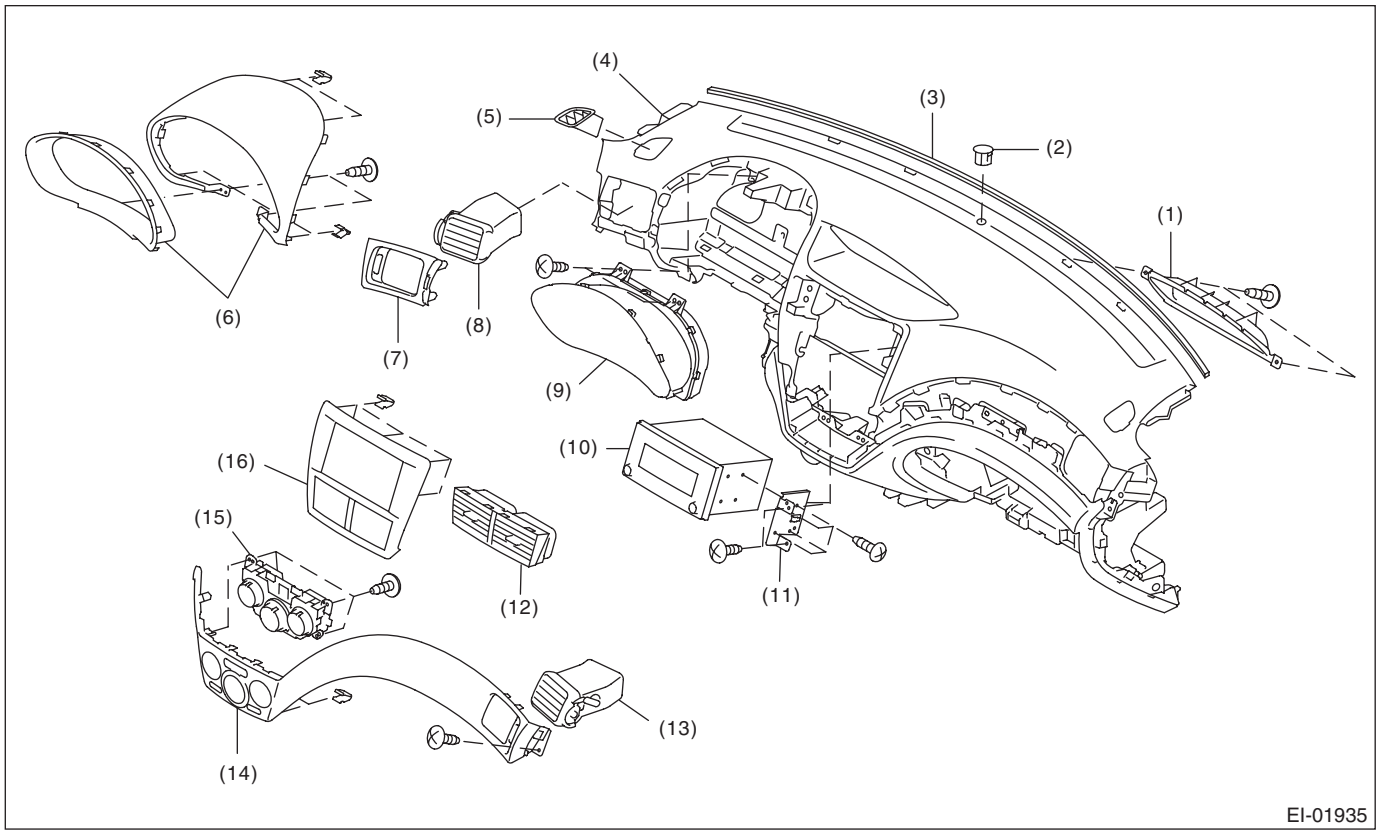


(1) Front cover mat
(2) Console front panel (AT model)
(3) Console front panel (MT model)
(4) Shift boot
(5) Parking brake lever boot
(6) Console cover
(7) Upper lid
(8) Console box outer
(9) Console box end cover
(10) Ash tray
(11) Rear cup holder
(12) Console box end cap
(13) Console pocket
(14) AUX input terminal
(15) Cap
(16) Accessory power supply socket

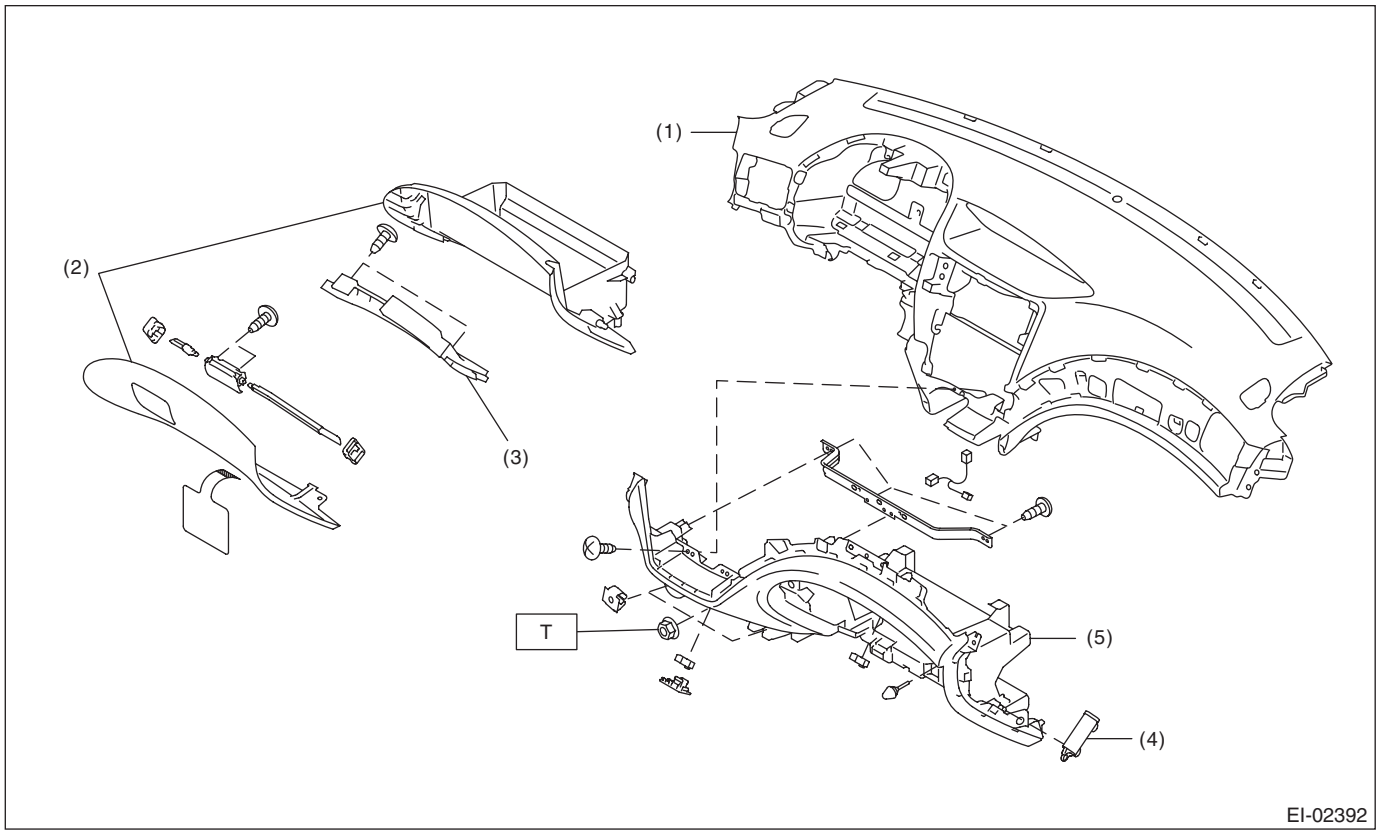
18.INSTRUMENT PANEL



(1) Instrument panel side cover
(2) Instrument panel ASSY
(3) Console side panel RH
(4) Console side panel LH
(5) Instrument panel lower cover
(6) Fuse box lid
(7) Switch panel ASSY



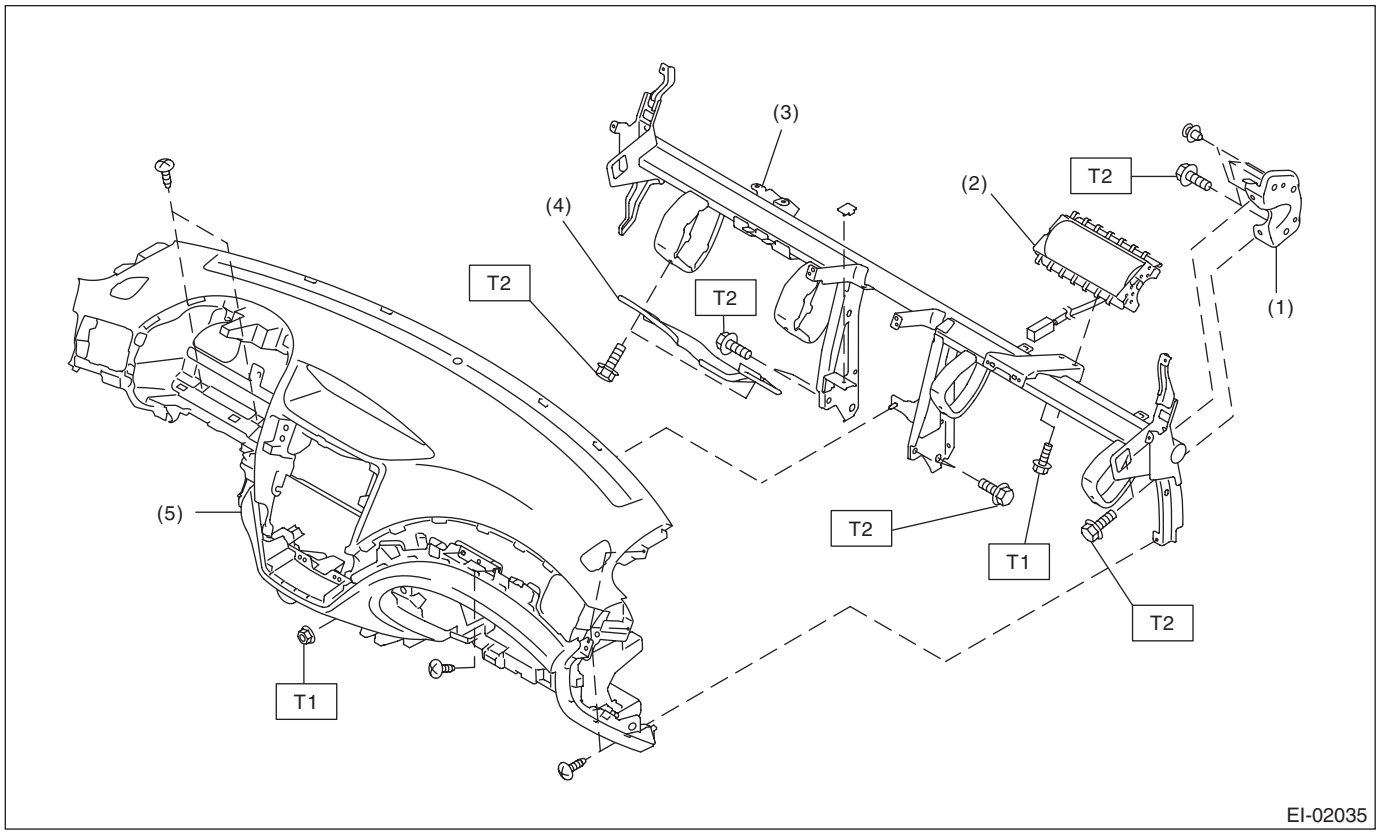
(1) Clock panel
(2) Sunload sensor
(3) Cushion
(4) Instrument panel ASSY
(5) Defroster side grille
(6) Meter visor ASSY
(7) Ornament panel LH
(8) Air vent side grille LH
(9) Combination meter ASSY
(10) Audio
(11) Audio bracket
(12) Air vent grille CTR
(13) Air vent side grille RH
(14) Ornament panel RH
(15) Control module
(16) Center panel



(1) Instrument panel pad and frame ASSY
(2) Glove box lid ASSY
(3) Glove box pad
(4) Glove box damper
(5) Instrument panel lower

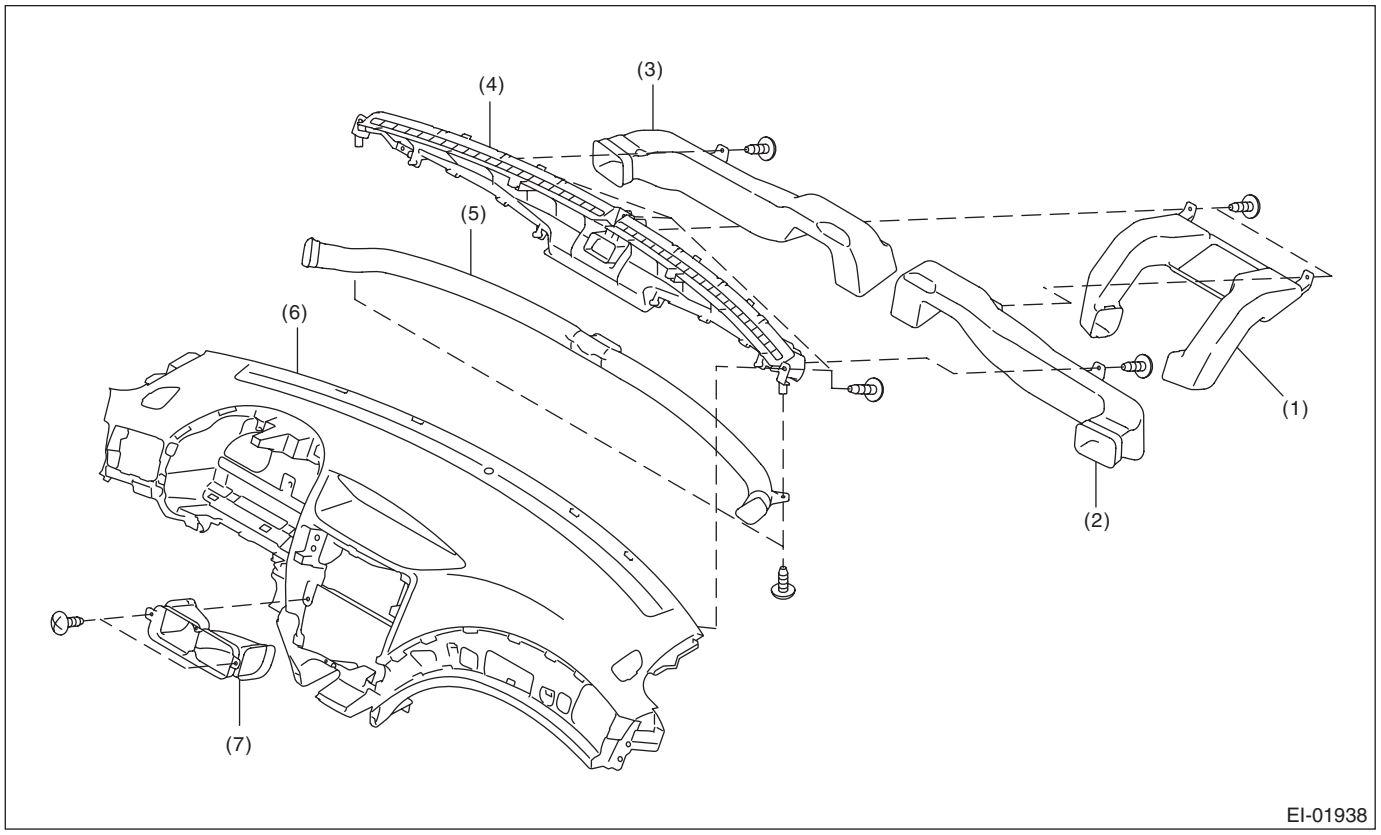
Tightening torque:N·m (kgf-m, ft-lb)

T: 7.5 (0.76, 5.5)



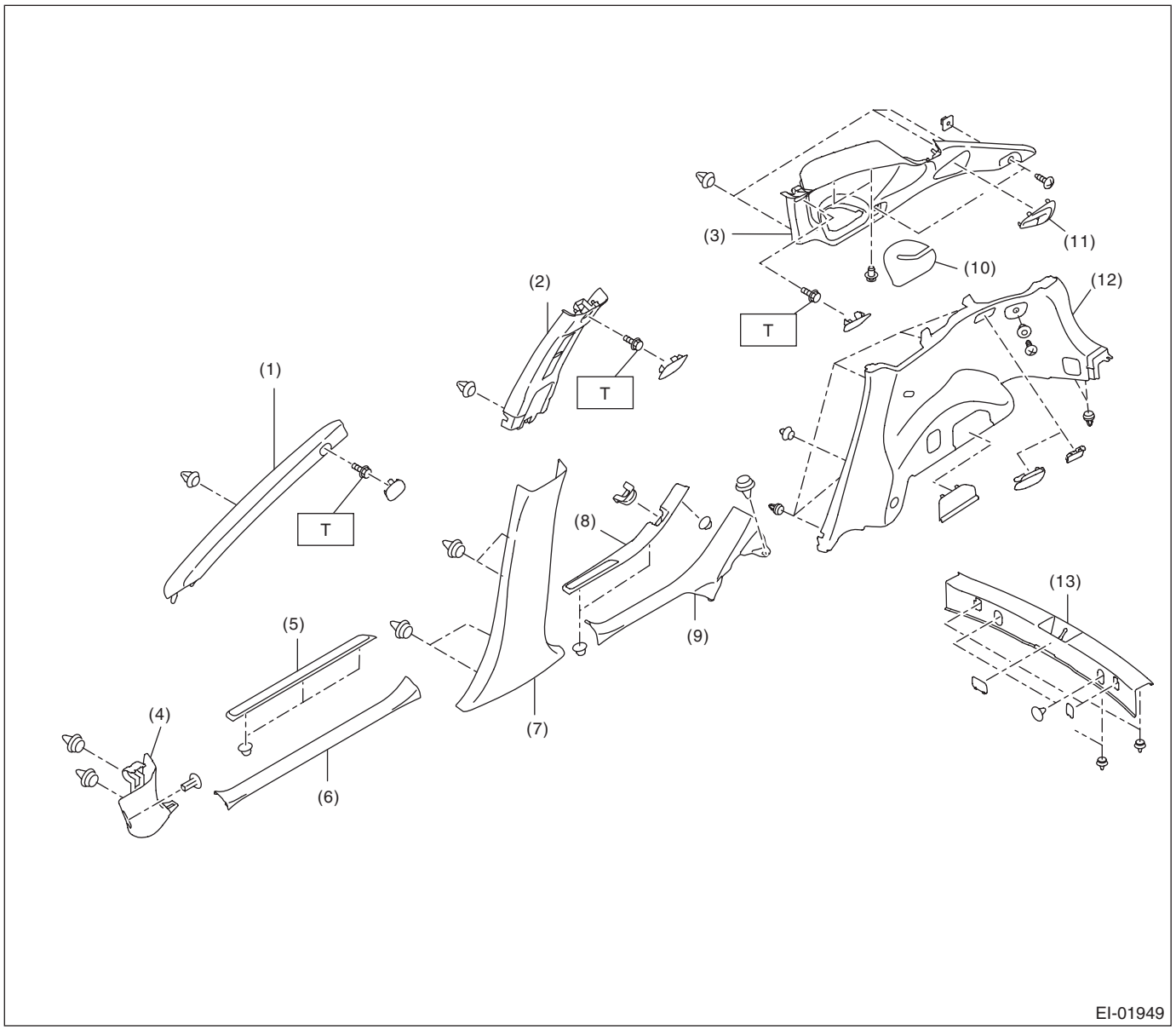
(1) Steering support beam bracket
(2) Passenger's airbag module ASSY
(3) Steering support beam ASSY
(4) Knee guard panel
(5) Instrument panel ASSY

Tightening torque:N·m (kgf-m, ft-lb)
T1: 7.5 (0.76, 5.5)
T2: 25 (2.55, 18.4)



(1) Center vent duct
(2) Side vent duct LH
(3) Side vent duct RH
(4) Defroster nozzle ASSY
(5) Side defroster
(6) Instrument panel pad and frame ASSY
(7) Center vent duct front

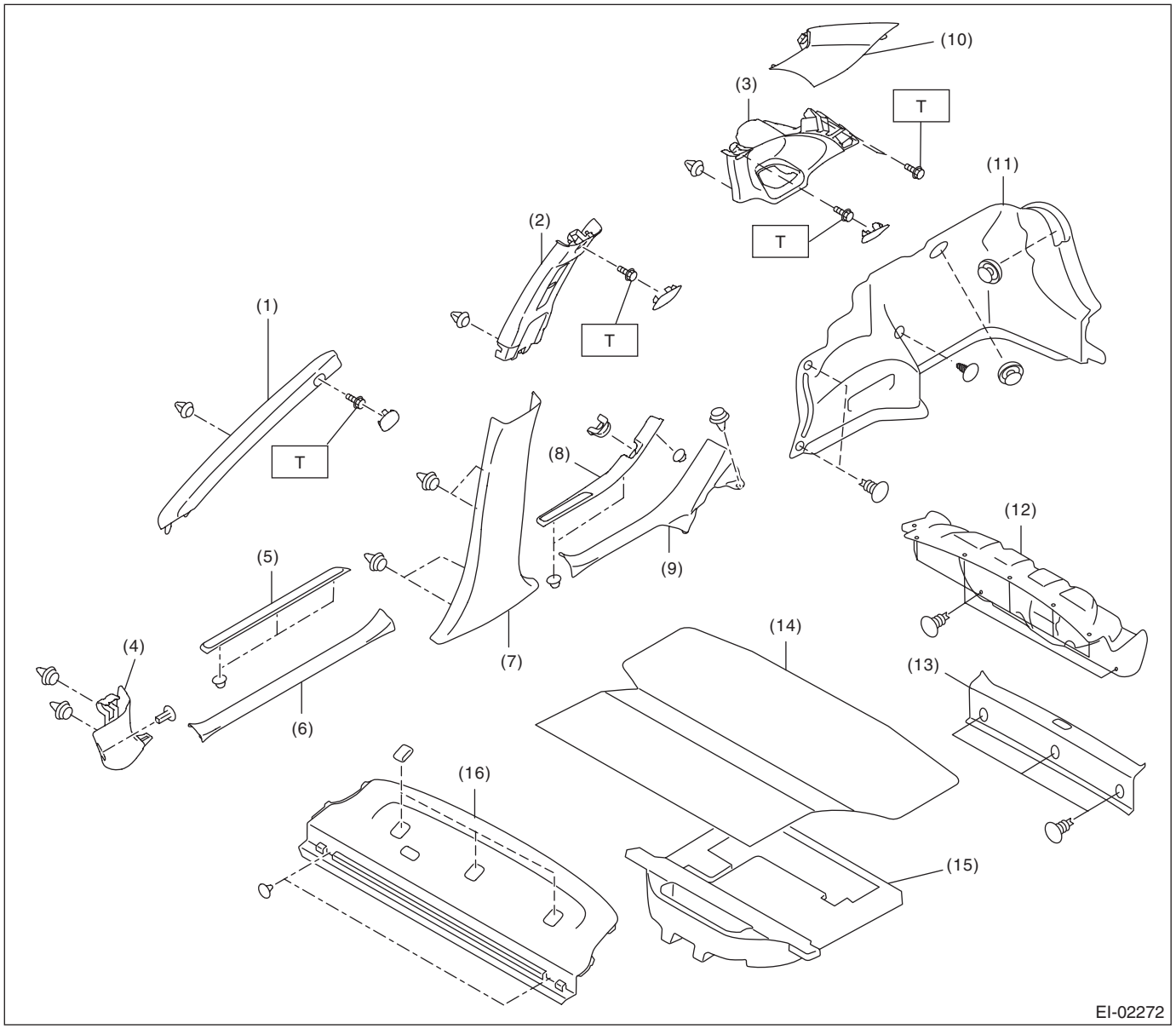
19.INNER TRIM (5 DOOR MODEL)



(1) Front pillar upper trim
(2) Center pillar upper trim
(3) Rear quarter upper trim
(4) Front pillar lower trim
(5) Front outside scuff plate
(6) Front inside scuff plate
(7) Center pillar lower trim
(8) Rear outside scuff plate
(9) Rear inside scuff plate
(10) Side seat belt cover
(11) Center seat belt cover
(12) Rear quarter lower trim
(13) Luggage room end cover

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

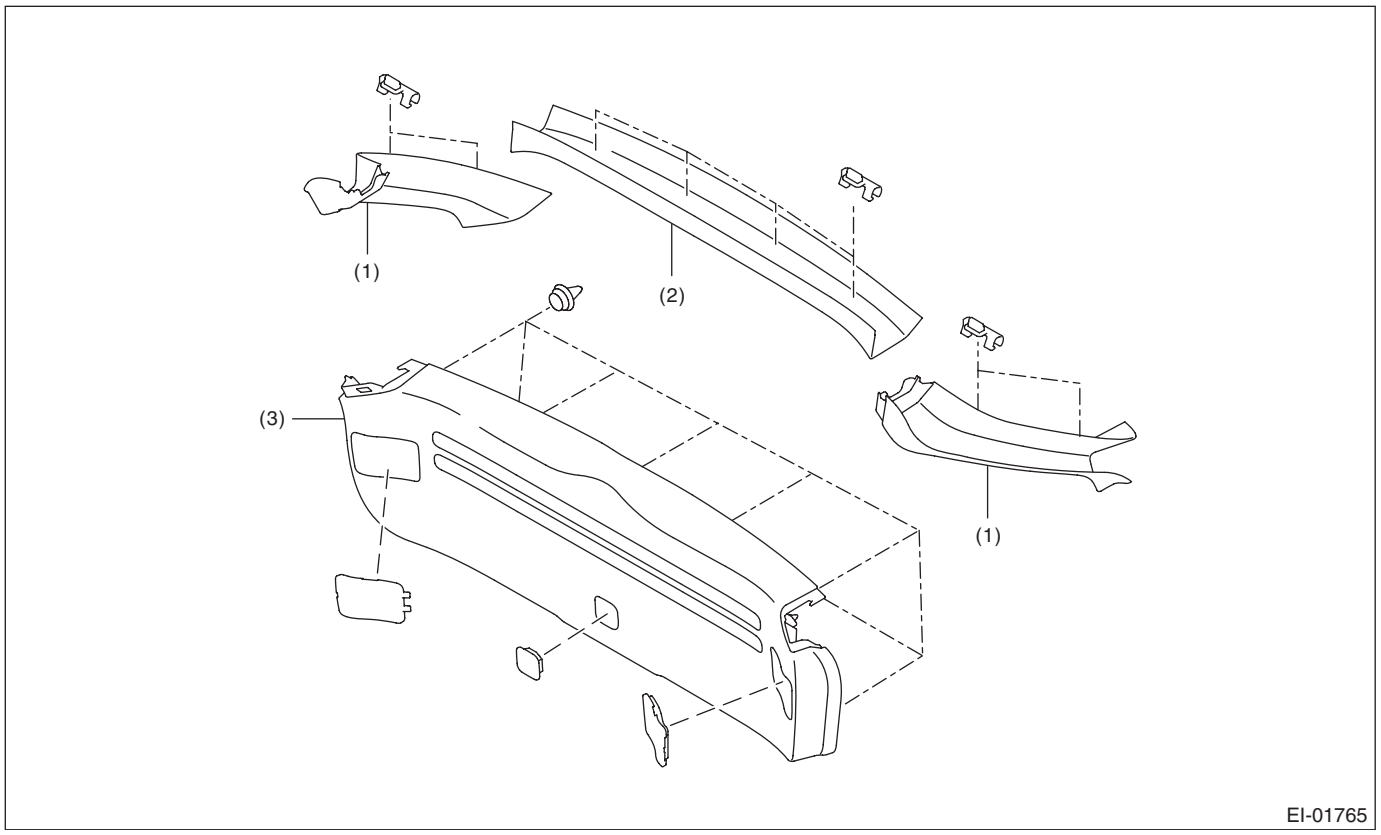
20.INNER TRIM (4 DOOR MODEL)



(1) Front pillar upper trim
(2) Center pillar upper trim
(3) Quarter upper trim, front
(4) Front pillar lower trim
(5) Front outside scuff plate
(6) Front inside scuff plate
(7) Center pillar lower trim
(8) Rear outside scuff plate
(9) Rear inside scuff plate
(10) Quarter upper trim, rear
(11) Quarter lower trim
(12) Trunk lid trim
(13) Trunk room end cover
(14) Trunk room mat
(15) Sub trunk box
(16) Rear shelf trim

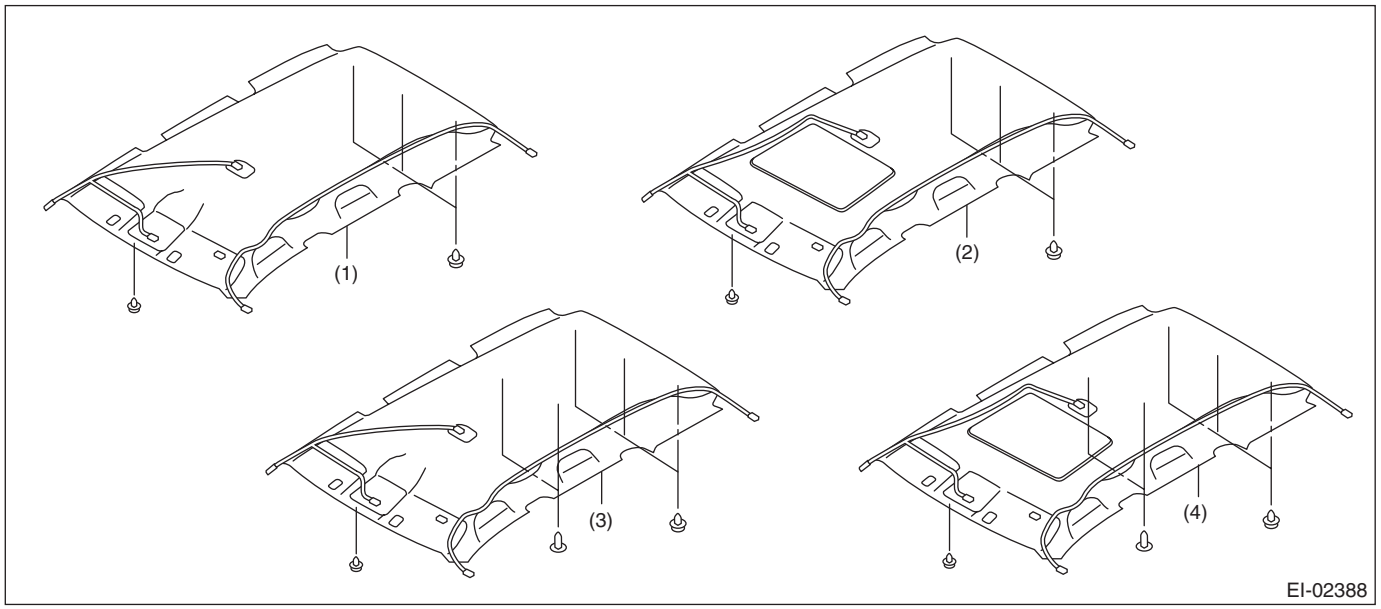
Tightening torque:N·m (kgf-m, ft-lb)
T: 7.5 (0.76, 5.5)

21.REAR GATE TRIM



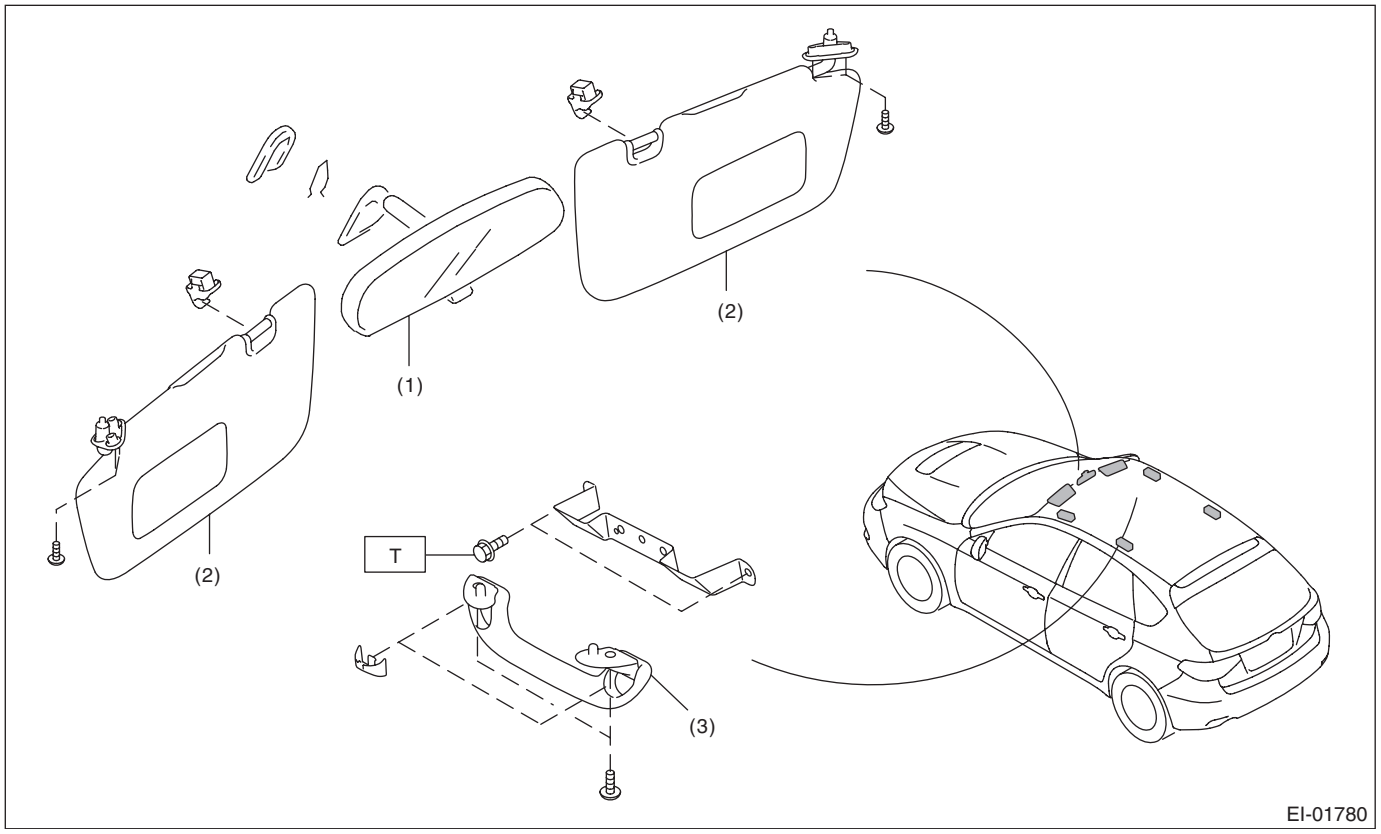
(1) Rear gate pillar trim
(2) Rear gate upper trim
(3) Rear gate lower trim

22.ROOF TRIM



(1) Model without sunroof (5 door model)
(2) Model with sunroof (5 door model)
(3) Model without sunroof (4 door model)
(4) Model with sunroof (4 door model)

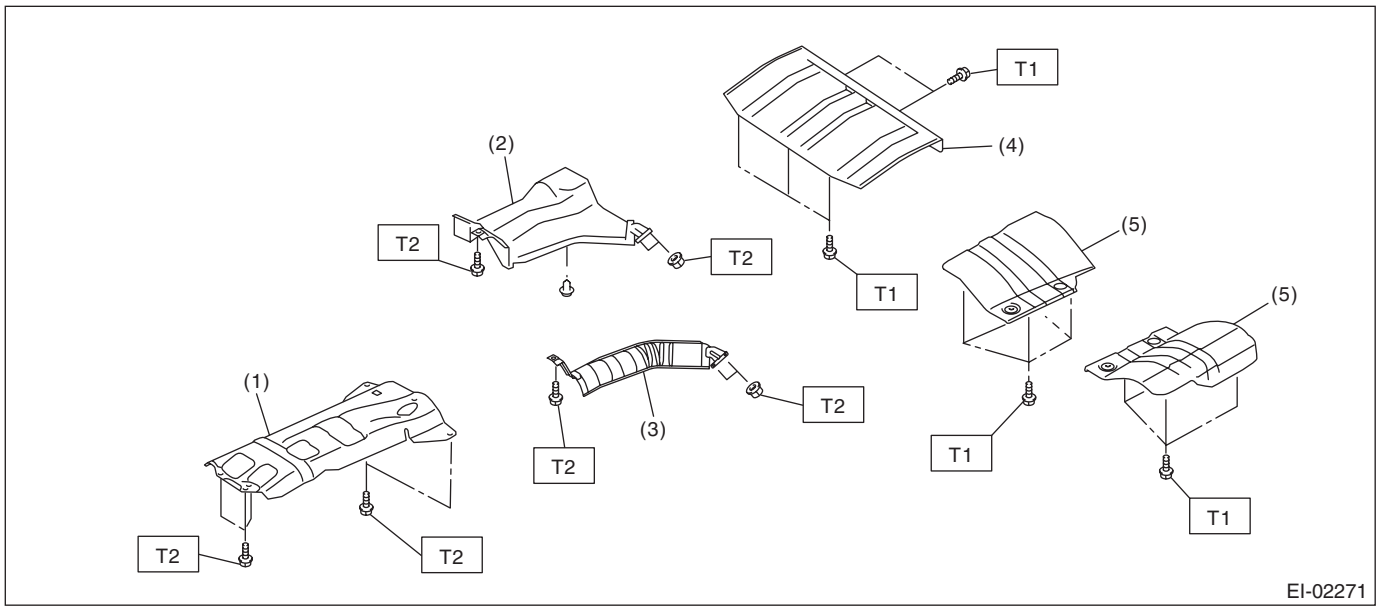
23.ROOM INNER PARTS



(1) Room mirror
(2) Sun visor
(3) Assist grip

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

24.HEAT SHIELD COVER



(1) Front heat shield cover
(2) Center heat shield cover (turbo model)
(3) Center heat shield cover (non-turbo model)
(4) Rear heat shield cover (5 door model)
(5) Rear heat shield cover (4 door model)

Tightening torque:N·m (kgf-m, ft-lb)

T1: 7.5 (0.76, 5.5)

T2: 18 (1.84, 13.3)

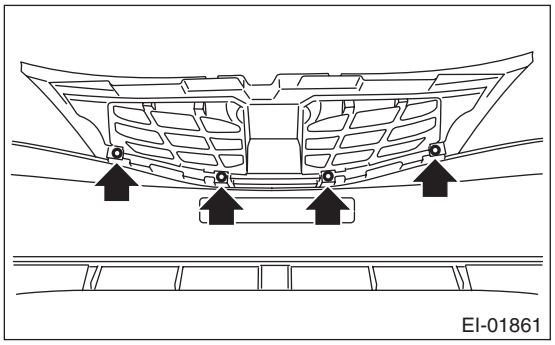
B: PREPARATION TOOL

TOOL NAME	REMARKS
Clip remover	Used for removing trim. • KTC AP201-10A • KTC AP201-N • KTC AP203-10A • KTC AP20L-10B Or equivalent.
Clip clamp pliers	Used for removal of various clips and clamps. • KTC CCP-190 Or equivalent.

2. Front Grille

A: REMOVAL

1) Remove the front bumper face. <Ref. to EI-29, FRONT BUMPER FACE, REMOVAL, Front Bumper.>
2) Remove the screws from the reverse side of the bumper face, and remove the front grille assembly.



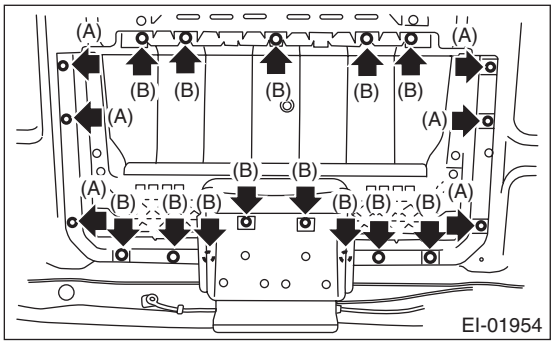
B: INSTALLATION

Install in the reverse order of removal.

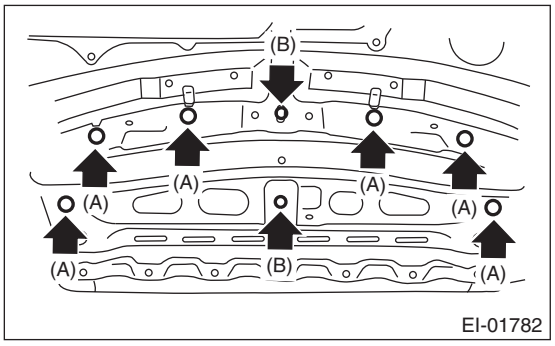
3. Front Hood Grille

A: REMOVAL

1) Open the front hood.
2) Remove the front hood insulator. <Ref. to EB-15, FRONT HOOD INSULATOR, REMOVAL, Front Hood.>
3) Remove screws (A) and clip (B), and remove the hood duct assembly.



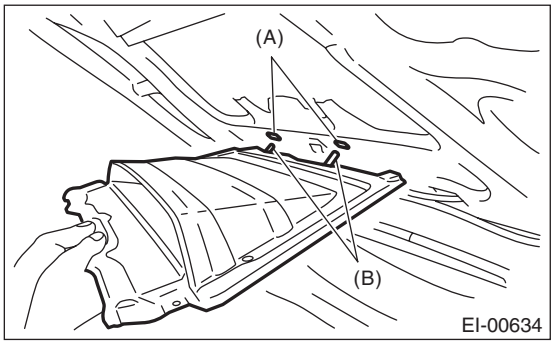
4) Remove the nuts (A) and clips (B), and remove the front hood grille.



B: INSTALLATION

Install in the reverse order of removal.

NOTE:
Insert the hooks (B) of the front hood duct into holes (A) of the front hood.

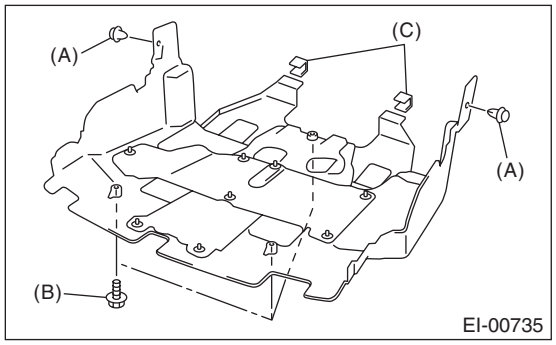


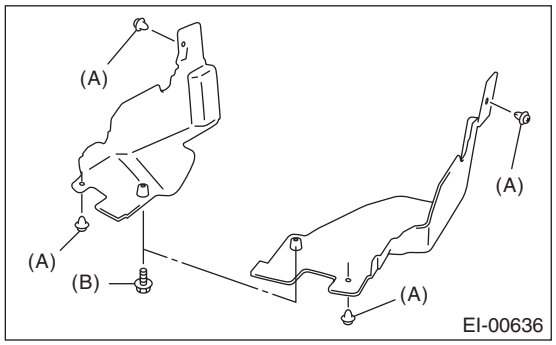
Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to EI-4, FRONT HOOD GRILLE, COMPONENT, General Description.>

4. Front Under Cover

A: REMOVAL

1) Lift up the vehicle.
2) Remove clips (A) and (C), and bolts (B) in the front fender, then remove the front under cover.





B: INSTALLATION

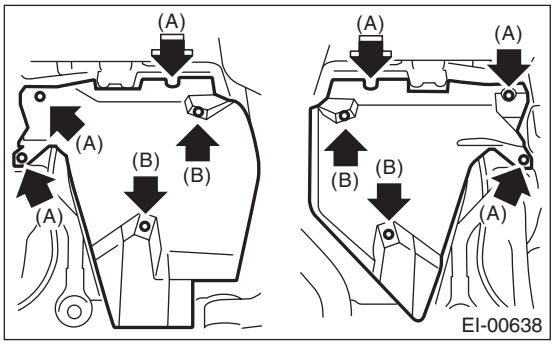
Install in the reverse order of removal.

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

5. Fuel Tank Protector

A: REMOVAL

1) Lift up the vehicle.
2) Remove the bolts (A) and nuts (B), and then remove the fuel tank protector.



B: INSTALLATION

CAUTION:
Do not reuse the nut (self locking nut). Always replace with a new part.
Install in the reverse order of removal.

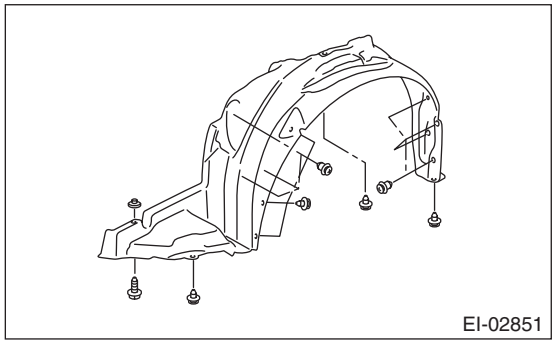
Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to EI-3, UNDER PROTECTOR, COMPONENT, General Description.>

6. Mud Guard

A: REMOVAL

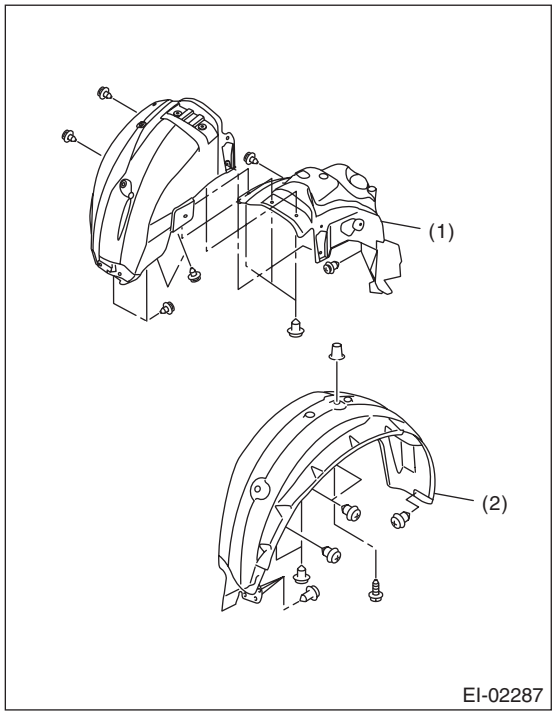
1. FRONT MUD GUARD

1) Jack-up the vehicle.
2) Remove the front wheels.
3) Remove the screws and clips to remove the mud guard.



2. REAR MUD GUARD

1) Jack-up the vehicle.
2) Remove the rear wheels.
3) Remove the screws and clips to remove the mud guard.



(1) Rear mud guard RH
(2) Rear mud guard LH

B: INSTALLATION

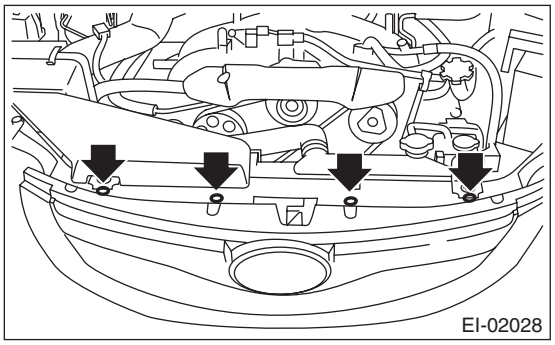
Install in the reverse order of removal.

7. Front Bumper

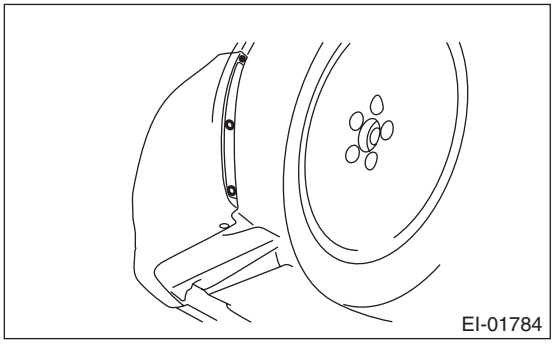
A: REMOVAL

1. FRONT BUMPER FACE

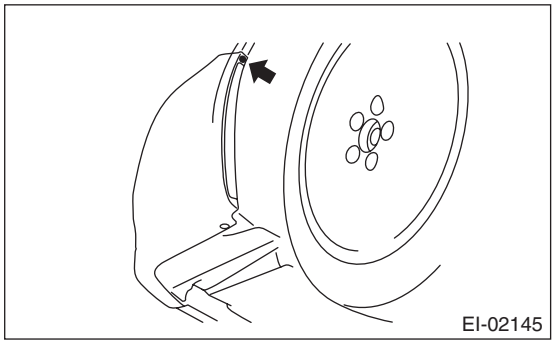
1) Disconnect the ground cable from battery.
2) Remove the clip of the front grille.


EI-02028

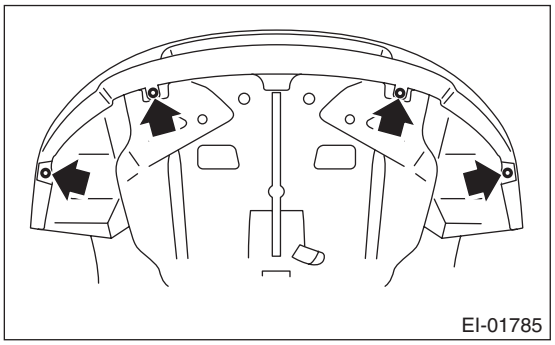
3) Remove the clips securing the front mud guard and front bumper.


EI-01784

4) Turn over the front mud guard, and remove the clips connecting the fender and bumper.


EI-02145

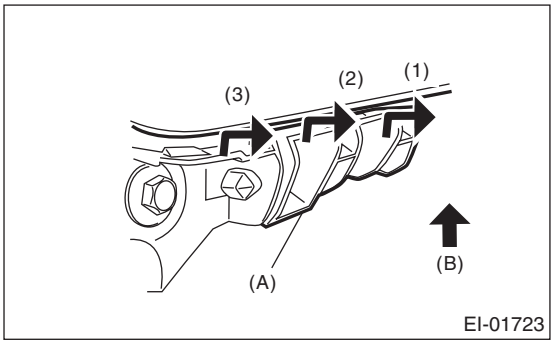
5) Remove the clips at the lower side of bumper.


EI-01785

6) Disconnect the fog light connector. (Model with fog light)
7) Detach the flange sections on the bumper face side from guide bracket (A).

CAUTION:
Do not pull forcibly. It may damage the flange sections of the bumper face.

NOTE:
It is easier to detach them from the fender side in the order from (1) to (3), while pulling up the bumper face to the direction of arrow (B) (upward).

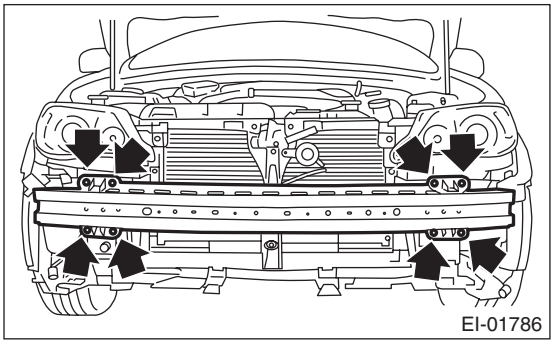


EI-01723

8) Remove the bumper from the vehicle body.
9) Remove the front grille from bumper face. <Ref. to EI-24, REMOVAL, Front Grille.>
10) Remove the fog light from bumper face. <Ref. to LI-20, REMOVAL, Front Fog Light Assembly.>

2. FRONT BUMPER BEAM ASSEMBLY

1) Disconnect the ground cable from battery.
2) Remove the front bumper face. <Ref. to EI-29, FRONT BUMPER FACE, REMOVAL, Front Bumper.>
3) Remove the bolts, and remove the bumper beam assembly from vehicle body.

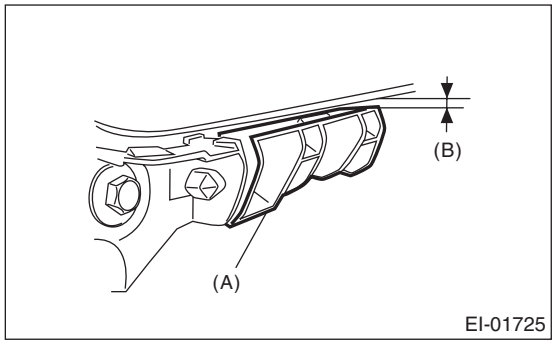

EI-01786

NOTE:
After all bolts are removed, raise the whole bumper beam a little to remove it from vehicle body.

B: INSTALLATION

Install in the reverse order of removal.

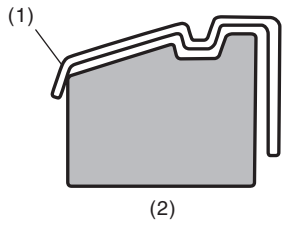
NOTE:
Fit the bumper face to the gap (B) between the guide bracket (A) and fender securely.



Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to EI-5, 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-00234 (1) Bumper (2) Set bumper section
2	Masking	Mask specified part (black base) with masking tape. Use masking tape for PP (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 to all parts to be painted, using spray 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)	Non-colored	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 — 13 sec./20°C (68°F) • Film thickness: 35 — 45 μ • Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kgf/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 — 13 sec./20°C (68°F) • Film thickness: 15 — 20 μ • Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kgf/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 — 16 sec./20°C (68°F) • Film thickness: 25 — 30 μ • Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kgf/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 become be deformed. Keep maximum temperature 80°C (176°F) or less.	
10	Inspection	Check paint.	
11	Removal of masking	Remove the masking tape applied in procedure 2.	

2. REPAIR INSTRUCTIONS FOR COLORED PP BUMPER

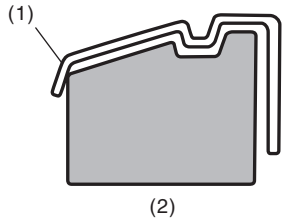
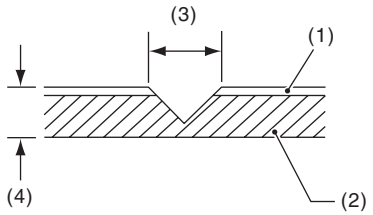
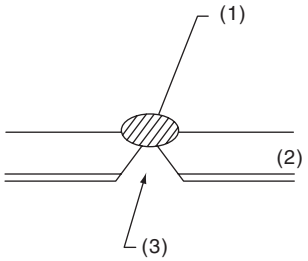
NOTE:
All PP bumpers are provided with a grained surface, and if the surface is damaged, it cannot normally be restored to its former condition. Damages limited to the shallow scratches that cause only a change in the luster of the base material or coating, can be almost fully restored. Before repairing 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.

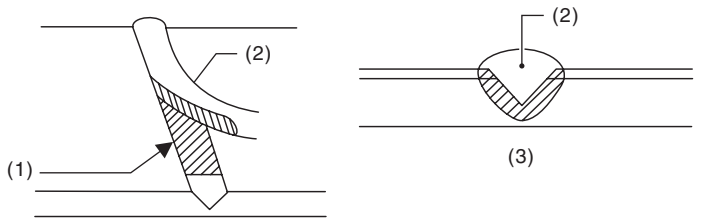
<table>
<tr><th>Process No.</th><th>Process name</th><th colspan="2">Job contents</th></tr>
<tr><td>1</td><td>Cleaning</td><td colspan="2">Clean the area to be repaired using water.</td></tr>
<tr><td>2</td><td>Sanding</td><td colspan="2">Grind the repairing area with #500 sand paper in a “feathering” 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)

Process No.	Process name	Job contents	
1	Bumper removal	Remove the bumper as required.	
2	Removal of parts	Remove the parts built into bumper as required.	
3	Bumper placement	Place the bumper on a paint worktable as required. It is recommended to use the paint worktable conforming to internal shape of bumper.	 EI-00234 (1) Bumper (2) Set bumper section
4	Surface preparation	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.).	
5	Cutting	If the damage is a crack or a hole, 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 base surface. Next, use a knife or grinder to carve a V-shaped groove in the area for repair.	 EI-00235 (1) Paint surface (2) PP base surface (3) 20 — 30 mm (0.79 — 1.18 in) (4) 3 mm (0.12 in)
6	Sanding (I)	Grind the beveled surface with sand paper (#40 — #60) to smooth finish.	
7	Cleaning	Clean the sanded surface with the same solvent as used in process No. 4.	
8	Temporary welding	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.	 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.

Process No.	Process name	Job contents
9	Welding	Using a heater gun and PP welding rod, weld the beveled spot while melting both the rod and damaged area.  EI-00237 (1) Welding rod (2) Melt hatched area (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.
10	Sanding (II)	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.  EI-00042 Sand the welded spot smooth with #240 sand paper.
11	Masking	Mask the black substrate section using masking tape. Recommended masking tape: Nichiban No. 533 or equivalent
12	Cleaning/degreasing	Completely clean the entire coated area, using solvent similar to that used in process No. 4.
13	Primer coating	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: Be sure to apply a coat of primer using a spray gun at a pressure of 245 — 343 kPa (2.5 — 3.5 kgf/cm^2, 36 — 50 psi).
14	Leave unattended	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.)
15	Primer surfacer coating	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 — 14 sec./20°C (68°F) • Coating film thickness: 40 — 50 μ
16	Drying	Allow the coated surface to dry for 20 minutes at 20°C (68°F) [or 30 minutes at 60°C (140°F)].

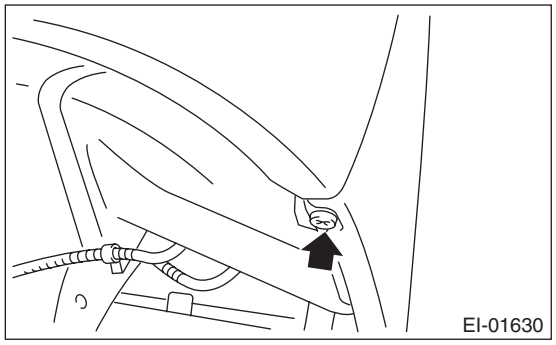
Process No.	Process name	Job contents	
17	Sanding (III)	Sand the coated surface and its surrounding areas using #400 sand paper and water.	
18	Cleaning/degreasing	Same as process No. 12.	
19	Top coat (I)	Non-colored	Metallic paint
		Use a “block” coating method. • Recommended paint: Suncryl (SC) No. 307 Flex Hardener SC Reducer (thinner) • Mixture ratio: Suncryl (SC): No. 307 Flex Hardener = 3 : 1 • Viscosity: 11 — 13 sec./20°C (68°F) • Coating film thickness: 40 — 50 µ • Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kgf/cm^2, 36 — 50 psi)	Use a “block” coating method. • Recommended paint: Suncryl (SC) No. 307 Flex Hardener SC Reducer (thinner) • Mixture ratio: Suncryl (SC): No. 307 Flex Hardener = 3 : 1 • Viscosity: 11 — 13 sec./20°C (68°F) • Coating film thickness: 20 — 30 µ • Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kgf/cm^2, 36 — 50 psi)
20	Leave unattended	Not required.	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.
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: Suncryl (SC): No. 307 Flex Hardener = 3 : 1 • Viscosity: 10 — 13 sec./20°C (68°F) • Coating film thickness: 20 — 30 µ • Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kgf/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.	

8. Rear Bumper

A: REMOVAL

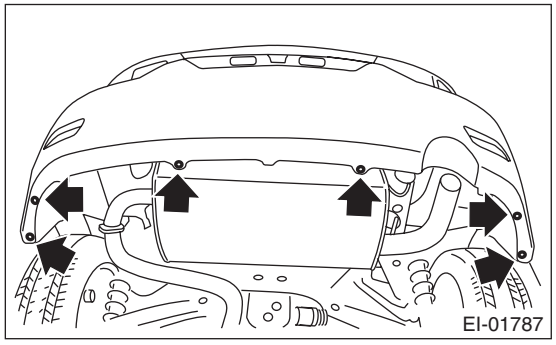
1. REAR BUMPER FACE

1) Remove the clips inside the wheel housing.

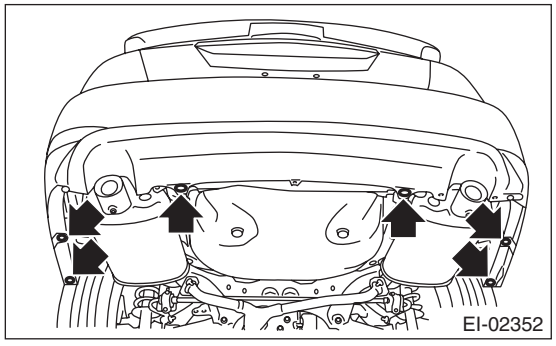


2) Remove the clips on the lower side of rear bumper.

- 5 DOOR MODEL



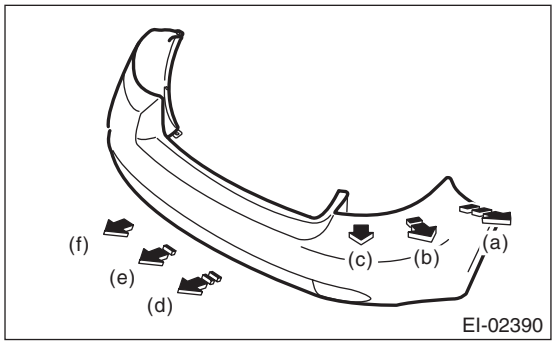
- 4 DOOR MODEL



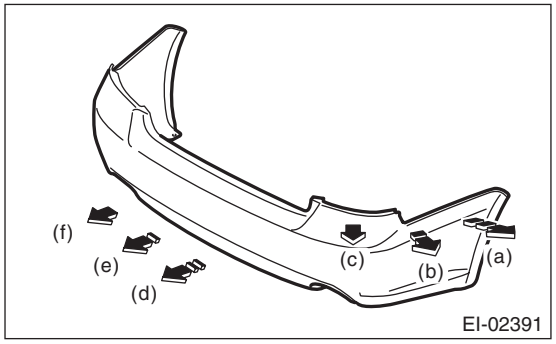
3) Remove the rear bumper from vehicle body.

CAUTION:
Do not pull with an excessive force. Otherwise the bracket installation area may be damaged.

- 5 DOOR MODEL



- 4 DOOR MODEL



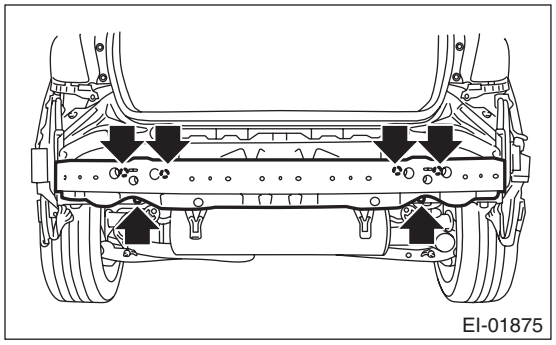
(1) Lifting the whole bumper face upward and twist it forward, then detach them from the fender side in the order from (a) to (c). (both side)
(2) Lifting the center of bumper face upward, detach in the order from (d) to (f).

4) Remove the reflector.

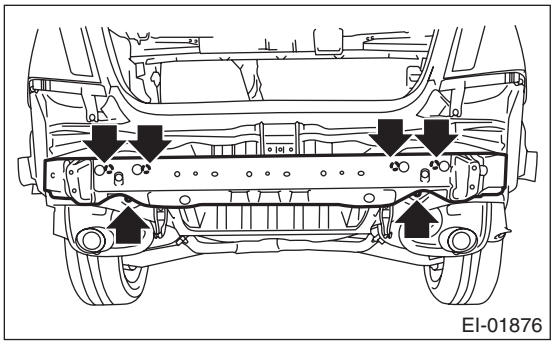
2. REAR BUMPER BEAM ASSEMBLY

1) Remove the rear bumper face. <Ref. to EI-36, REAR BUMPER FACE, REMOVAL, Rear Bumper.>
2) Remove the nuts, and remove the bumper beam assembly from the vehicle body.

- 5 DOOR MODEL



- 4 DOOR MODEL

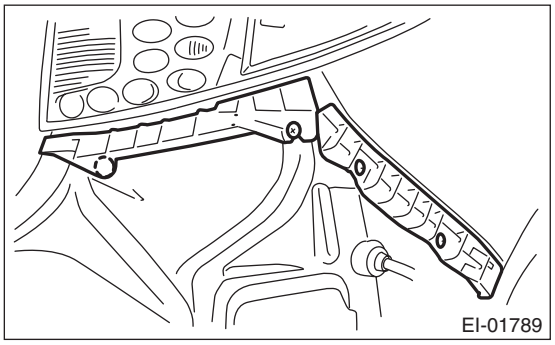


NOTE:
After all nuts have been removed, lift the whole bumper beam slightly while detaching it from the vehicle body.

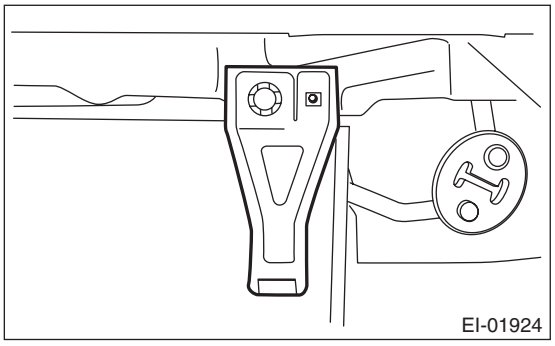
3. REAR BUMPER BRACKET

Remove the rear bumper face from vehicle body, and remove each bumper bracket.

- Corner bracket



- Lower bracket



B: INSTALLATION

Install in the reverse order of removal.

NOTE:
If the bumper face comes off easily from the beam upper rear, adjust the hook of the bracket side.

Tightening torque:
Refer to "COMPONENT" of "General Description".
5 door model:<Ref. to EI-6, REAR BUMPER (5 DOOR MODEL), COMPONENT, General Description.>
4 door model:<Ref. to EI-7, REAR BUMPER (4 DOOR MODEL), COMPONENT, General Description.>

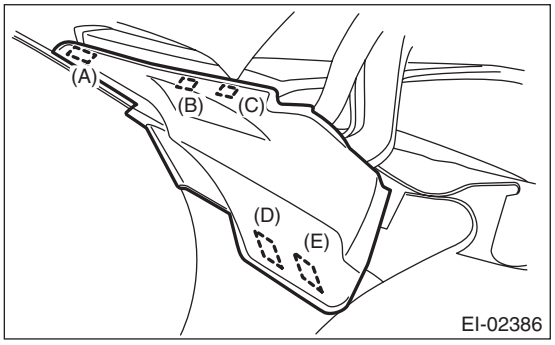
C: REPAIR

Refer to the description for front bumper repair. <Ref. to EI-31, REPAIR, Front Bumper.>

9. Cowl Panel

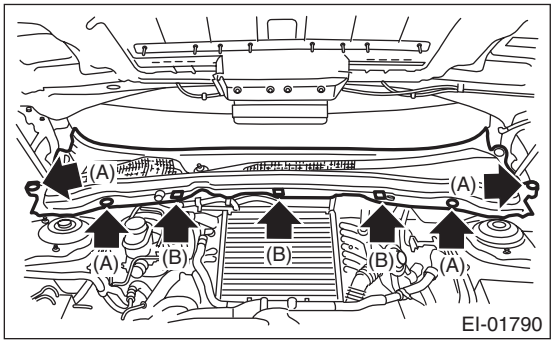
A: REMOVAL

1) Open the front hood.
2) Remove the wiper arm. <Ref. to WW-14, REMOVAL, Front Wiper Arm.>
3) Detach the tabs and remove the cowl panel side.

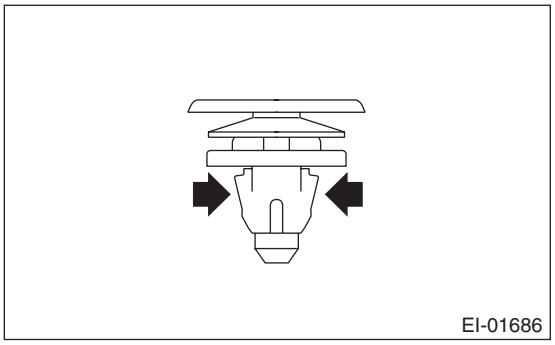


(1) Detach tabs (A), (B), and (C) from the vehicle exterior.
(2) Detach tabs (D) and (E).

4) Remove the clips (A) and (B), and remove the cowl panel.



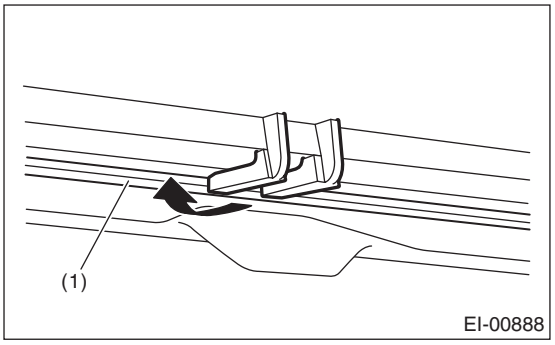
CAUTION:
When removing clip (B), push the claws of the clips from both the left and right to remove.
If pulled with excessive force, the clip will become damaged.



B: INSTALLATION

Install in the reverse order of removal.

NOTE:
Hook the claw of the cowl panel on the lower end of the wind shield.

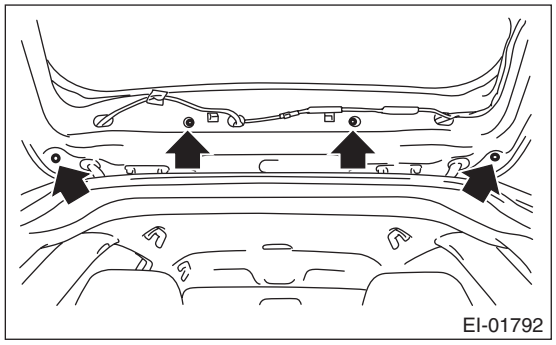


(1) Wind shield cross section

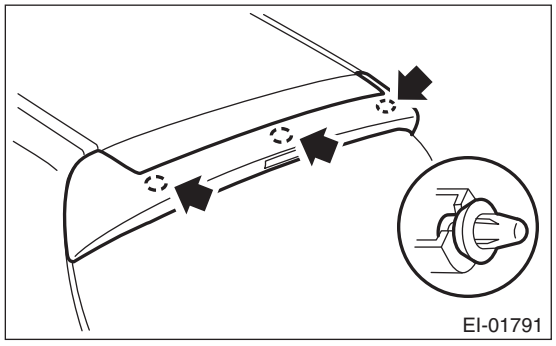
10.Roof Spoiler

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the rear gate trim. <Ref. to EI-67, REMOVAL, Rear Gate Trim.>
3) Disconnect the connector of high-mounted stop light and the washer hose of rear washer.
4) Remove the bolts and nuts.


EI-01792

5) Remove the clips, and remove the roof spoiler.


EI-01791

B: INSTALLATION

CAUTION:
• Improper installing may cause the water leakage, make sure the harness grommet is installed securely.
• Check that there is no foreign matter in roof spoiler between the high-mounted stop light harness or washer hose, it may cause washer defective and improper installation of spoiler.
Install in the reverse order of removal.

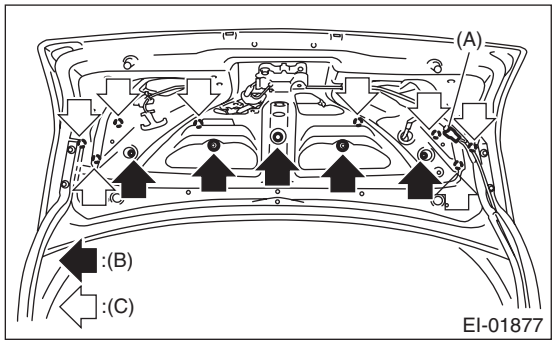
Tightening torque:
7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

11.Rear Spoiler

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Open the trunk lid.
3) Remove the high mount stop light connector (A).
4) Remove the rear spoiler attachment nut (B) and clip (C), and remove the rear spoiler.

CAUTION:
• When removing the nut, be careful not to drop the nut inside the trunk lid panel.
• Be careful not to cause damage during removal and installation.



B: INSTALLATION

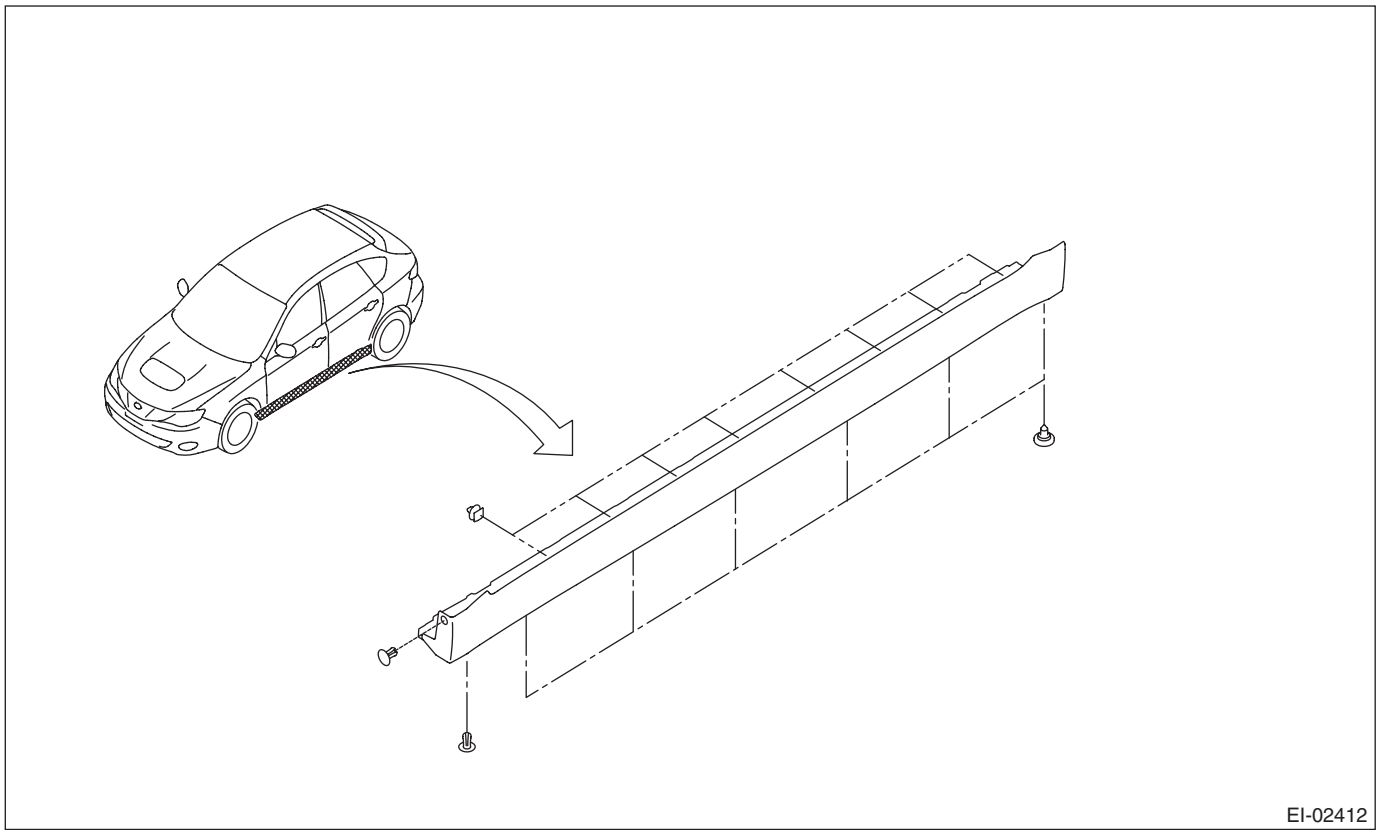
CAUTION:
Improper installing may cause the water leakage, make sure the harness grommet is installed securely.
1) Install in the reverse order of removal.
2) Clean the trunk lid and spoiler attachment surface before installation.

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

12.Side Sill Spoiler

A: REMOVAL

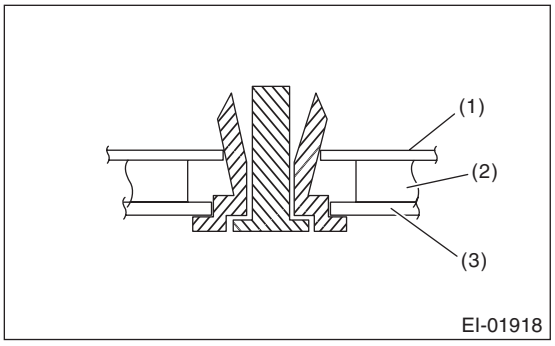
Remove the clips and detach the side spoiler.



B: INSTALLATION

Install in the reverse order of removal.

NOTE:
For the rearmost clip securing the side sill spoiler, install through the air flap.

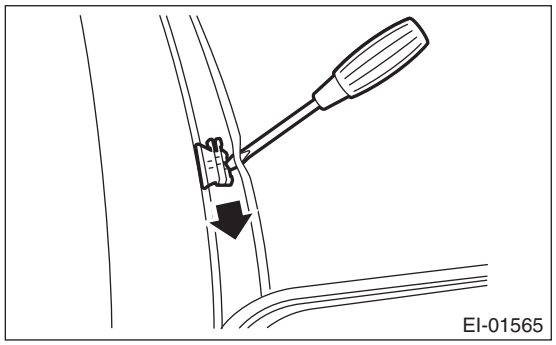


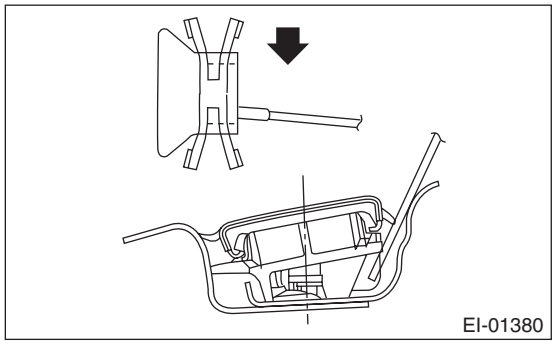
(1) Vehicle body
(2) Air flap
(3) Side sill spoiler

13.Roof Molding

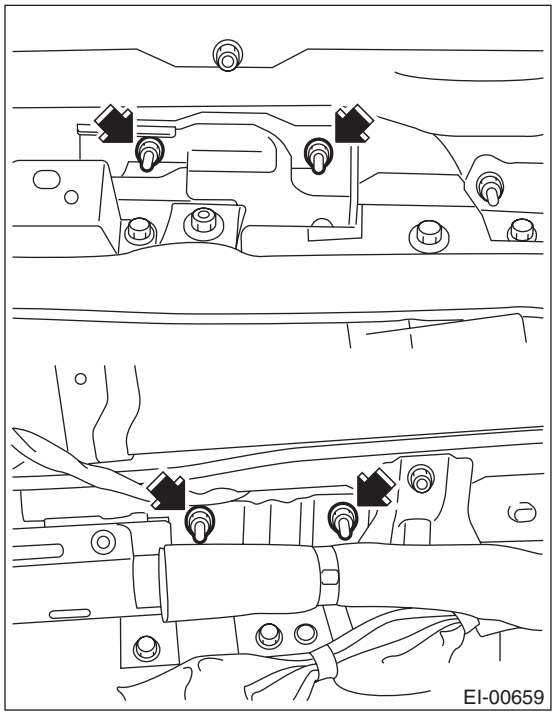
A: REMOVAL

1) Peel the end of the roof molding, and slide the inner clip in the direction of the arrow using a flat tip screwdriver, to remove the clip from the stud on the vehicle.
Right side: Slide towards the front of the vehicle.
Left side: Slide towards the rear of the vehicle.


EI-01565


EI-01380

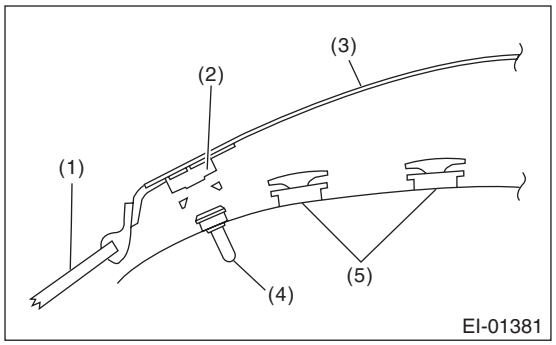
2) Pull up the roof molding upward, and remove from the vehicle.
3) Remove the roof trim. <Ref. to EI-64, REMOVAL, Roof Trim.>
4) Remove the nut, and remove the roof carrier bracket.


EI-00659

B: INSTALLATION

CAUTION:
Always replace clips that were damaged during removal of the roof molding.
1) Install the roof carrier bracket.

Tightening torque:
7.5 N·m (0.76 kgf-m, 5.5 ft-lb)
2) Remove the clips from the roof molding, and attach to the studs on the vehicle.
3) Push the front end of the roof molding against the front window, and attach the forward positioning clip onto the rivet on the body.



EI-01381

(1) Windshield
(2) Positioning clip
(3) Roof molding
(4) Rivet
(5) Clip

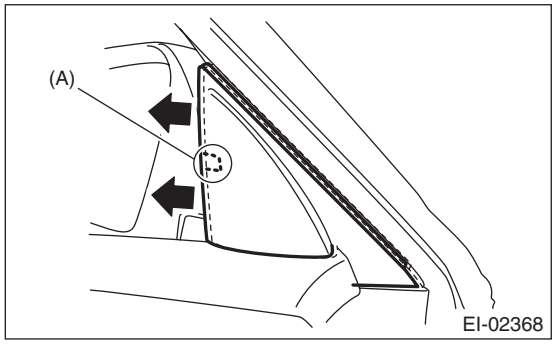
4) While pushing down the roof molding from above, connect the roof molding and the clip.

14.Door Trim

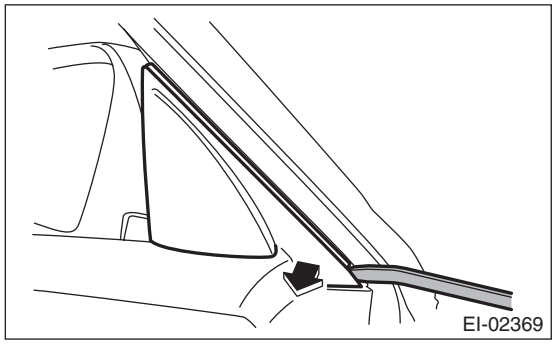
A: REMOVAL

1. FRONT DOOR

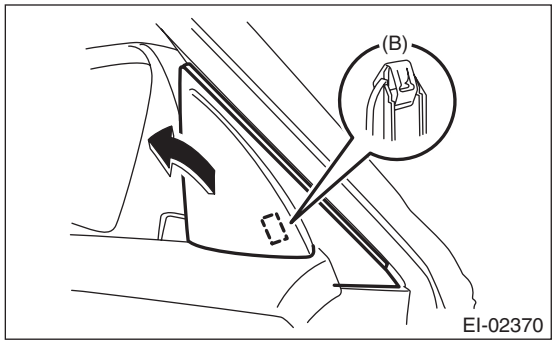
1) Disconnect the ground cable from battery.
2) Remove the gusset cover.
   (1) Pull the gusset cover backward to detach the claws (A) on the backside of the gusset cover.



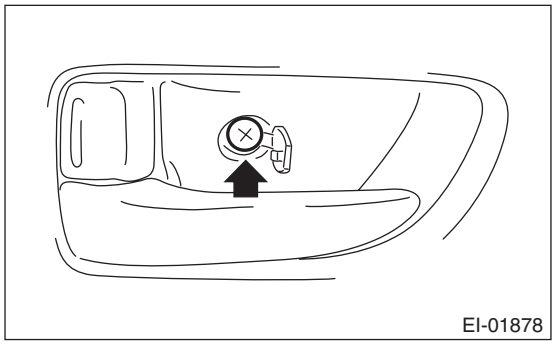
   (2) Insert a plastic remover into the position shown in the figure while retaining the condition in step (1), and lift up the gusset cover.



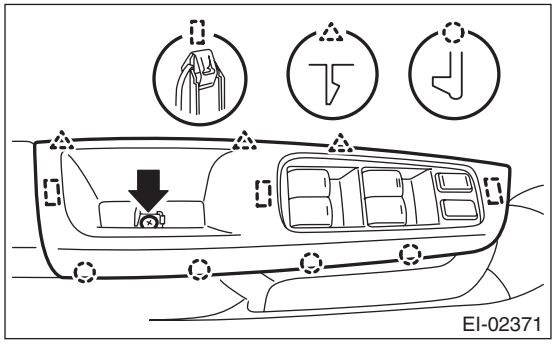
   (3) Remove the gusset cover in the direction of the arrow to detach the clip section (B), and disconnect the connector.



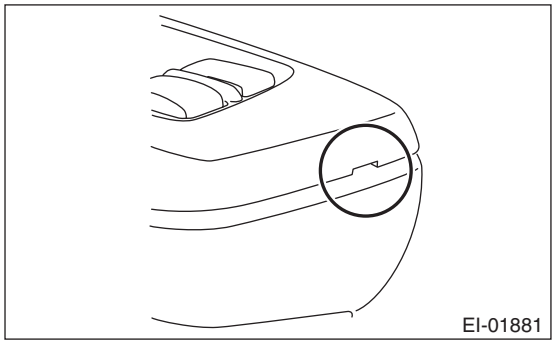
3) Open the cover of the inner remote section, and remove the screws.



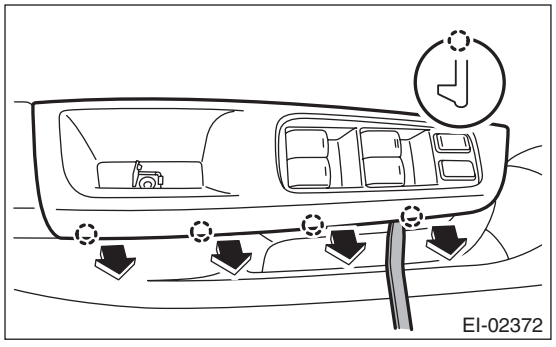
4) Remove the power window switch panel.



   (1) Open the cover and remove the screws.
   (2) Lift up the tip of switch panel by using a plastic remover.

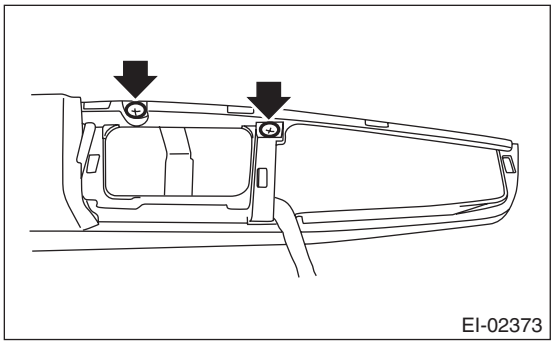


   (3) Remove the side claws by using a plastic remover.

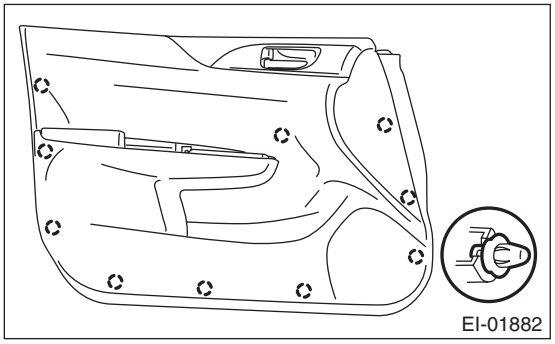


   (4) Remove the power window switch panel.

5) Remove the door trim screws.

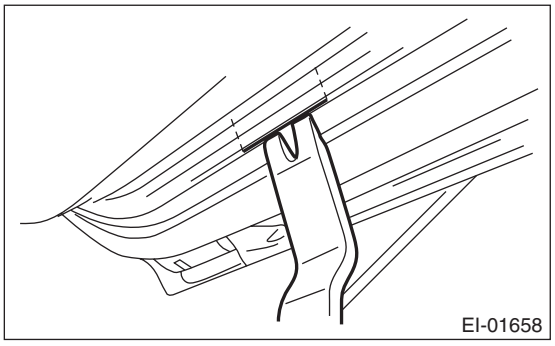


6) Remove the door trim.

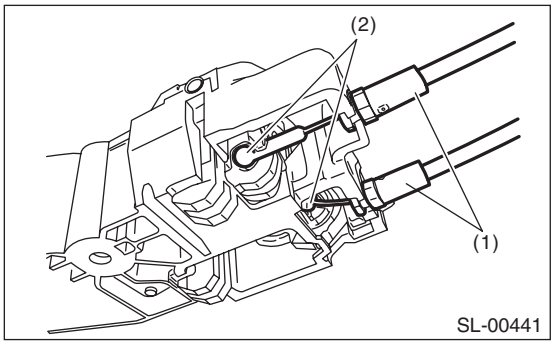


(1) Remove the clips, then lift the door trim.

NOTE:
Insert a plastic clip remover into the slit at the bottom of the door trim, to lift the door trim.



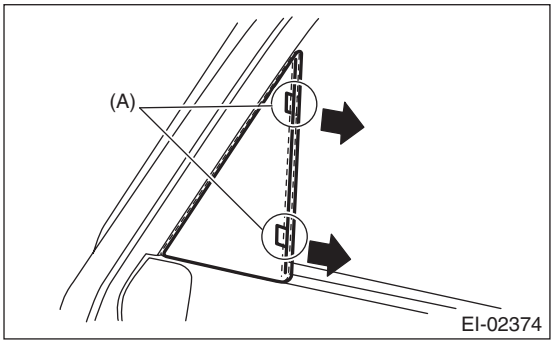
(2) Remove the cable (1) and (2) from the cable holder of inner remote.



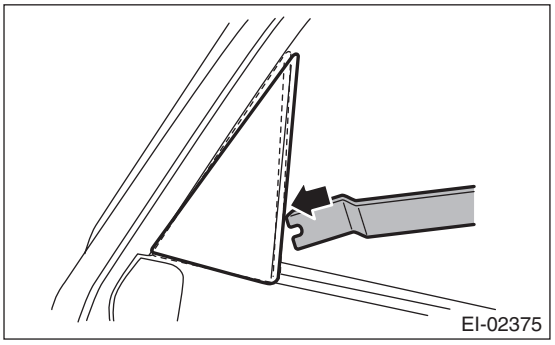
(3) Disconnect the harness connector and remove the door trim.

2. REAR DOOR

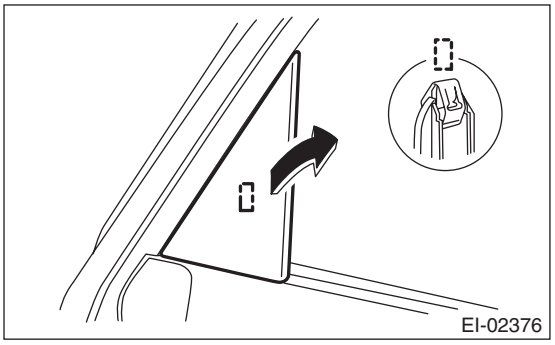
1) Disconnect the ground cable from battery.
2) Remove the gusset cover.
(1) Push gusset cover in direction of vehicle front to detach the claws (A) on the backside of the gusset cover.



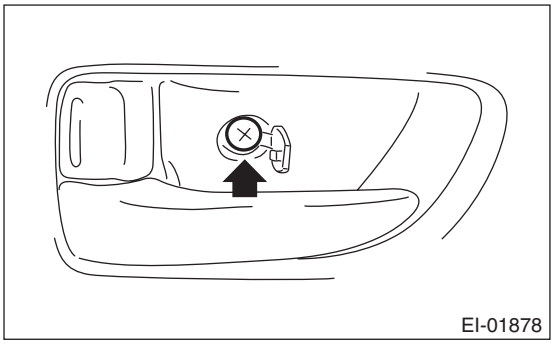
(2) Insert a plastic remover into to the position shown in the figure while retaining the condition in step (1), and lift up the gusset cover.



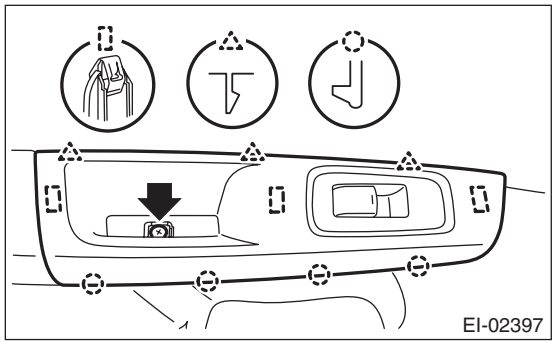
(3) Remove the gusset cover in the direction of the arrow to detach the clip section.



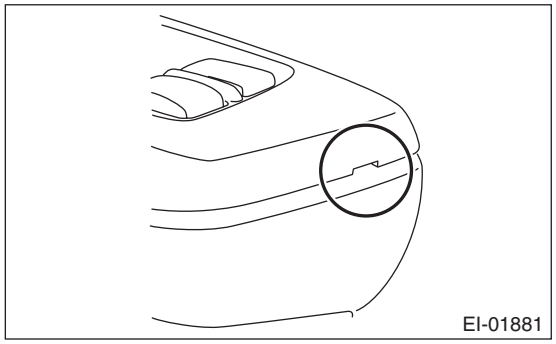
3) Open the cover of the inner remote section, and remove the screws.



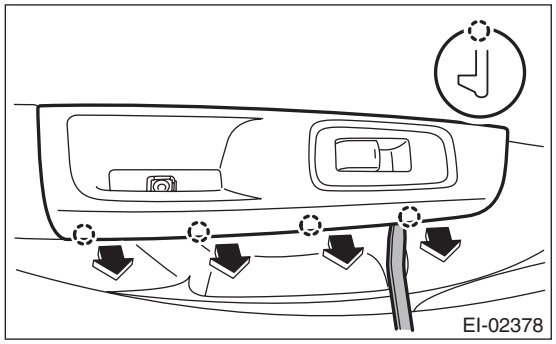
4) Remove the power window switch panel.



(1) Open the cover and remove the screws.
(2) Lift up the tip of switch panel by using a plastic remover.

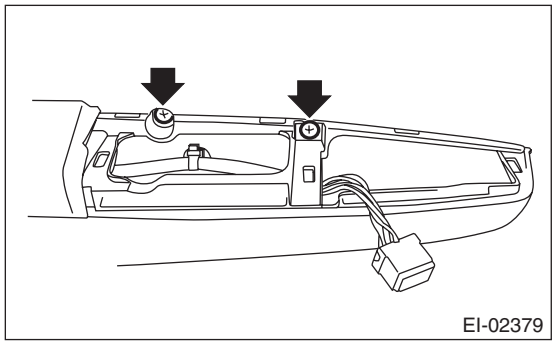


(3) Remove the side claws by using a plastic remover.

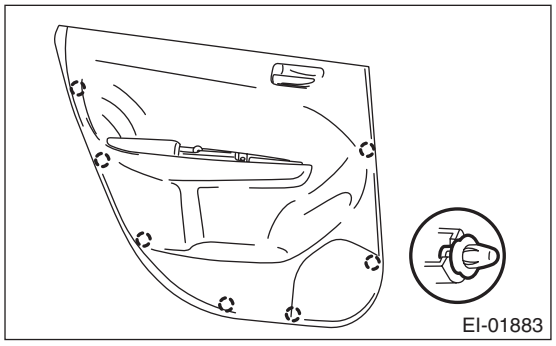


(4) Remove the power window switch panel.

5) Remove the door trim screws.

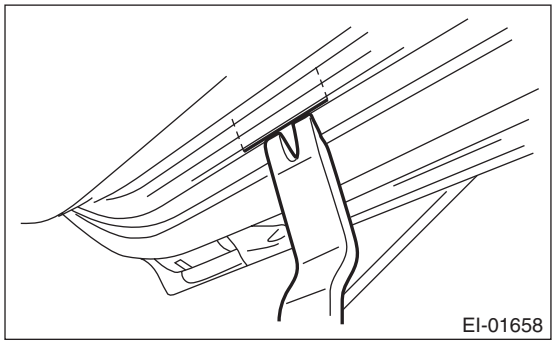


6) Remove the door trim.

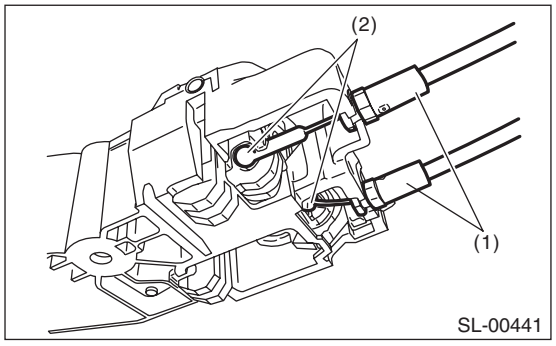


(1) Remove the clips, then lift the door trim.

NOTE:
Insert a plastic clip remover into the slit at the bottom of the door trim, to lift the door trim.



(2) Remove the cable (1) and (2) from the cable holder of inner remote.



(3) Disconnect the harness connector and remove the door trim.

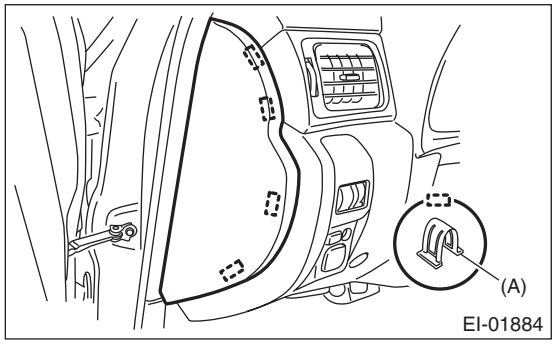
B: INSTALLATION

Install in the reverse order of removal.

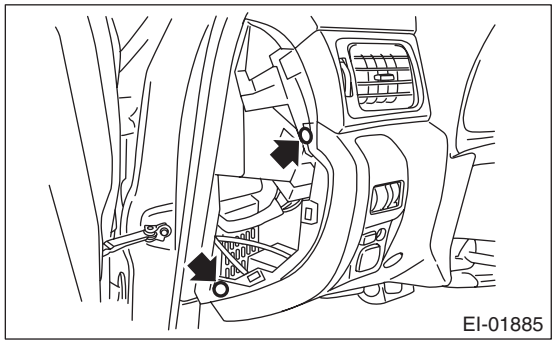
15.Instrument Panel Lower Cover

A: REMOVAL

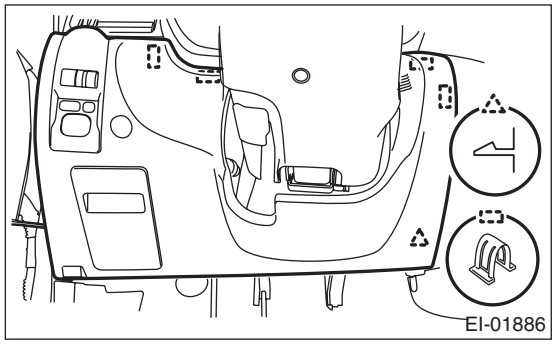
1) Disconnect the ground cable from battery.
2) Remove the plastic hook (A), and remove the instrument panel side cover LH.



3) Remove the screws.



4) Remove plastic hook (A), disconnect connectors and remove the instrument panel lower cover.



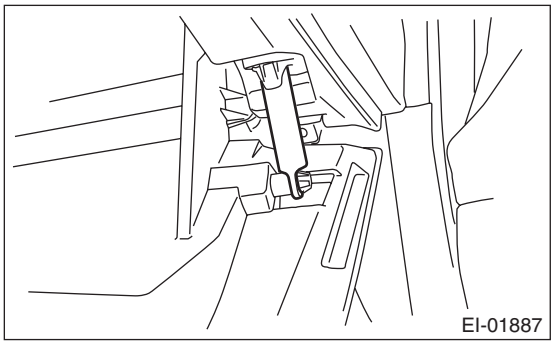
B: INSTALLATION

Install in the reverse order of removal.

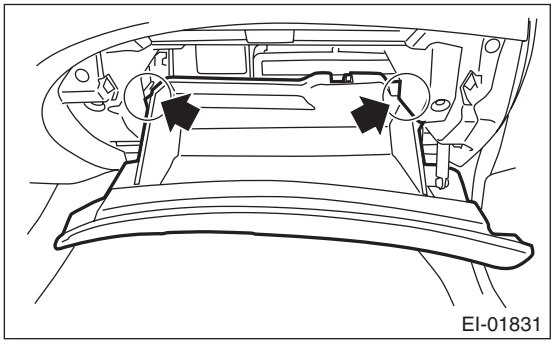
16.Glove Box

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the glove box damper.



3) Remove the stopper section, and pull out the glove box lid assembly towards yourself.



4) Remove the instrument panel lower cover. <Ref. to EI-51, INSTRUMENT PANEL, LOWER, REMOVAL, Center Console.>

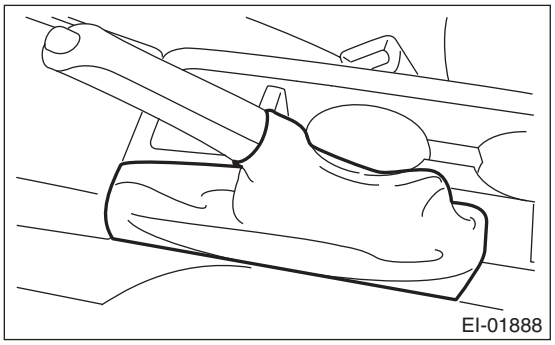
B: INSTALLATION

Install in the reverse order of removal.

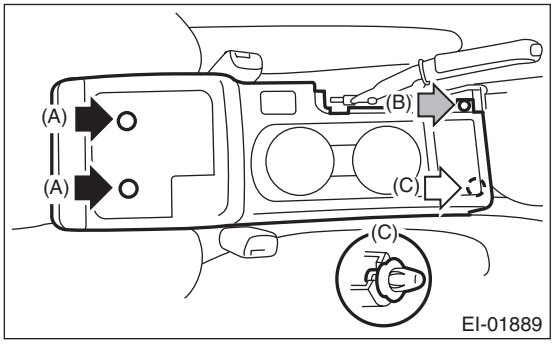
17.Console Box

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the parking brake lever boot.



3) Remove bolt (A) screw (B) and clip (C).



4) Disconnect connectors, and remove the console box.

B: INSTALLATION

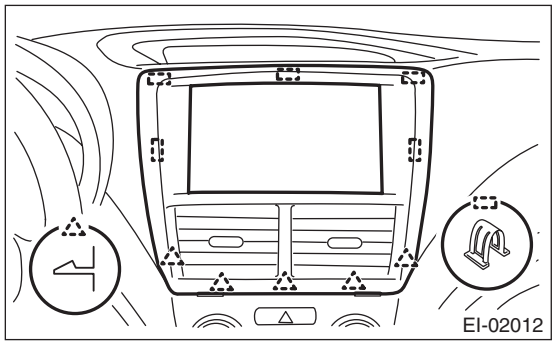
Install in the reverse order of removal.

18.Center Console

A: REMOVAL

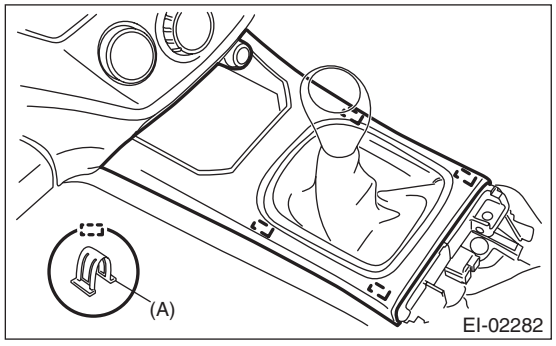
1. CENTER PANEL

1) Insert the plastic clip remover into the slit on the bottom of the center panel, to lift the panel.
2) Remove the claws and resin hook and then remove the center panel.

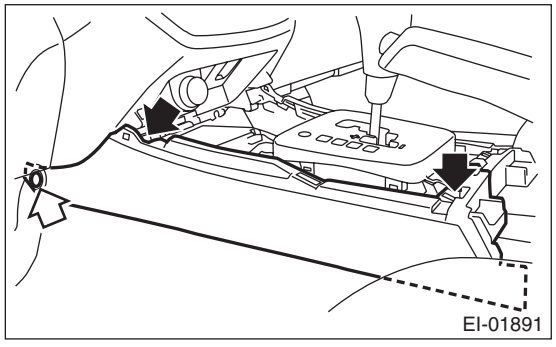


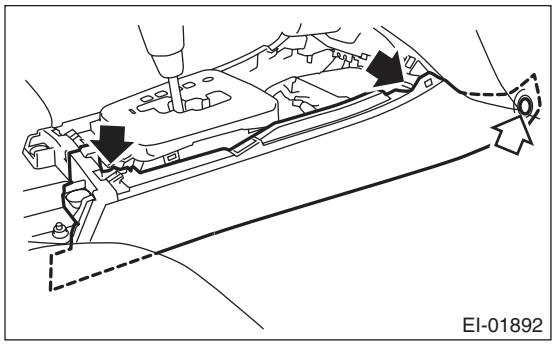
2. CONSOLE FRONT PANEL

1) Remove the console box. <Ref. to EI-48, REMOVAL, Console Box.>
2) Remove the shift knob. (MT model)
3) Detach plastic hook (A), and remove the console front panel.



NOTE:
When removing the console front panel, pull it in the direction of the rear vehicle.
4) Remove the clips and screws, and remove the console side cover.



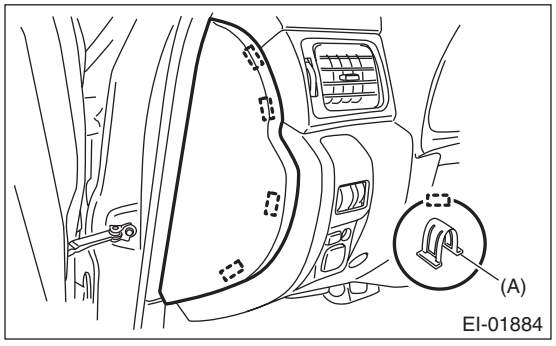


NOTE:
Pull towards the rear of the vehicle to remove.

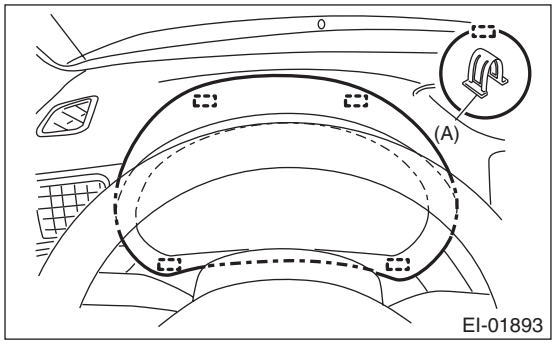
3. ORNAMENT PANEL

• Driver's side

1) Remove the plastic hook (A), and remove the instrument panel side cover LH.

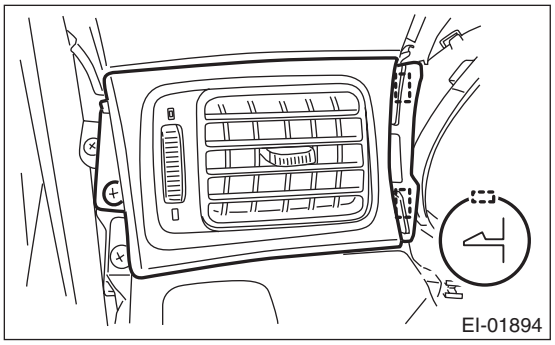


2) Remove the plastic hook (A), and detach the meter visor.



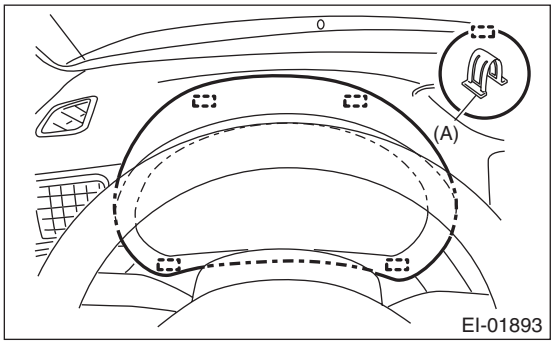
NOTE:
Remove the plastic hook on the bottom side of the meter visor by pulling it.

3) Detach the screw and the claw to take out ornament panel LH.

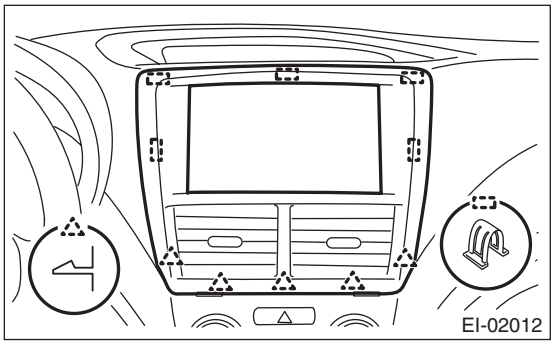


- **Passenger's side**

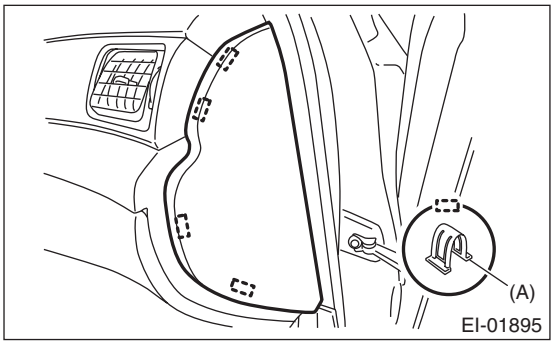
1) Remove the instrument panel lower cover. <Ref. to EI-46, REMOVAL, Instrument Panel Lower Cover.>
2) Remove the plastic hook (A), and detach the meter visor.



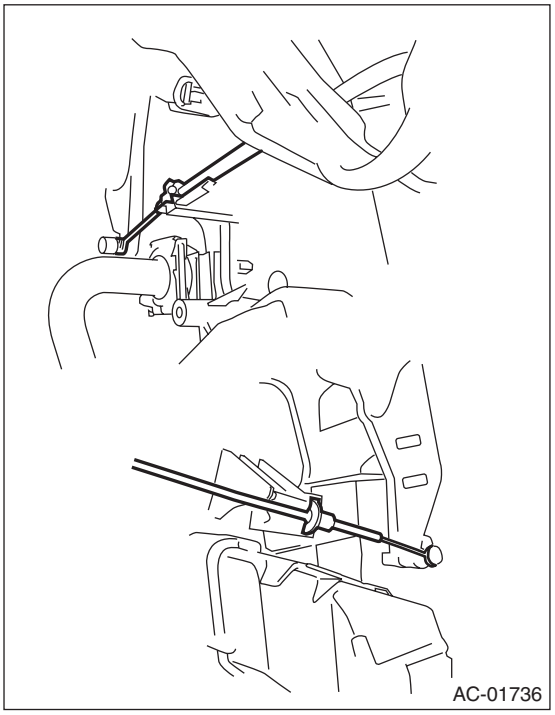
NOTE:
Remove the plastic hook on the bottom side of the meter visor by pulling it.
3) Insert the plastic clip remover into the slit on the bottom of the center panel, to lift the panel.
4) Remove the claws and resin hook and then remove the center panel.



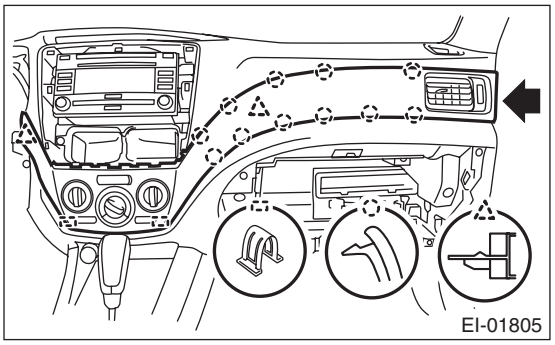
5) Detach the plastic hook (A), and remove the instrument panel side cover RH.



6) Remove the glove box lid. (Manual A/C model) <Ref. to EI-47, REMOVAL, Glove Box.>
7) On manual A/C models, detach the control cable.



8) Detach the screws and the plastic hooks to remove ornament panel RH.

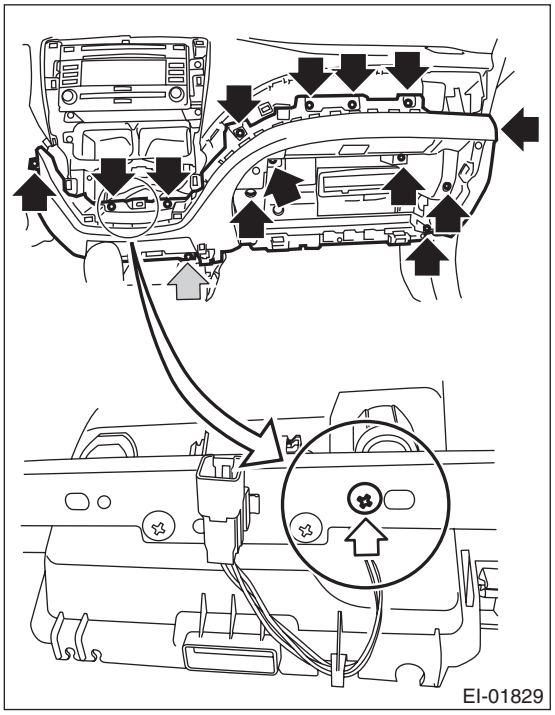


9) Disconnect connectors.

4. INSTRUMENT PANEL, LOWER

1) Remove the console box. <Ref. to EI-48, REMOVAL, Console Box.>
2) Remove the center panel. <Ref. to EI-49, CENTER PANEL, REMOVAL, Center Console.>
3) Remove the console front panel. <Ref. to EI-49, CONSOLE FRONT PANEL, REMOVAL, Center Console.>
4) Remove ornament panel RH. <Ref. to EI-49, ORNAMENT PANEL, REMOVAL, Center Console.>
5) Remove the instrument panel lower cover. <Ref. to EI-46, REMOVAL, Instrument Panel Lower Cover.>
6) Remove the glove box lid. <Ref. to EI-46, REMOVAL, Instrument Panel Lower Cover.>
7) Remove the screws and nuts, and remove the instrument panel lower.

NOTE:
The screws indicated with the white arrows are tightened from the opposing side.


EI-01829

B: INSTALLATION

Install in the reverse order of removal.

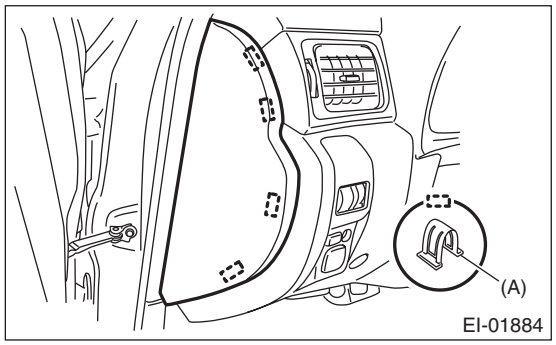
Tightening torque:
7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

19.Instrument Panel Assembly

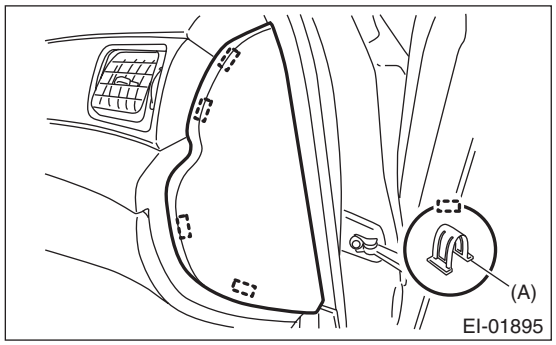
A: REMOVAL

CAUTION:
Be careful not to damage the airbag system harness when servicing the instrument panel. Damage may cause the system to malfunction.

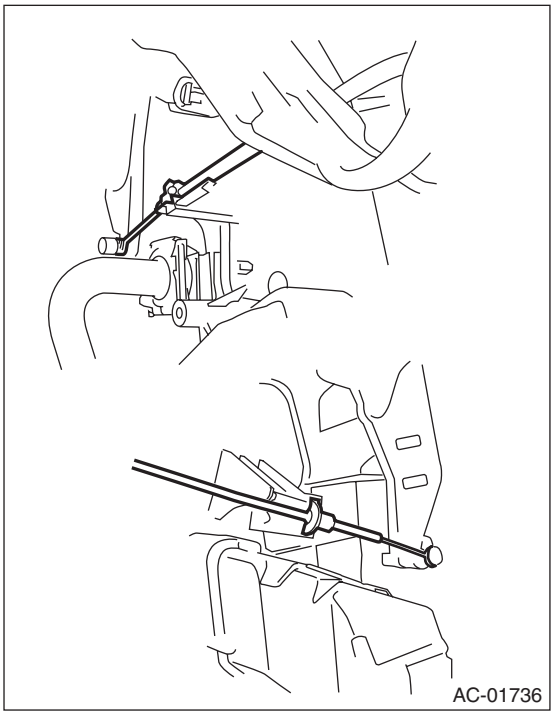
1) Disconnect the ground cable from battery.
2) Remove the front pillar upper trim. <Ref. to EI-57, REMOVAL, Upper Inner Trim.>
3) Remove the plastic hook (A), and remove the instrument panel side cover LH.



4) Detach the plastic hook (A), and remove the instrument panel side cover RH.



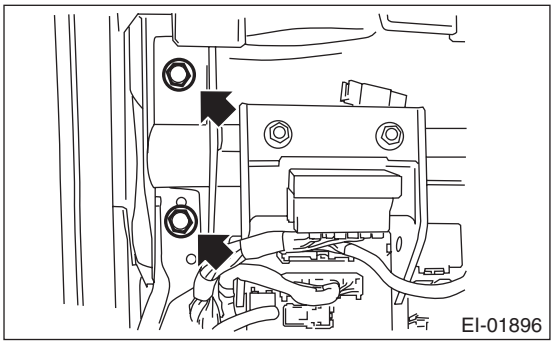
Remove the console box. <Ref. to EI-48, REMOVAL, Console Box.>
5) Remove the console box. <Ref. to EI-48, REMOVAL, Console Box.>
6) Remove the console front panel. <Ref. to EI-49, CONSOLE FRONT PANEL, REMOVAL, Center Console.>
7) Remove the instrument panel lower cover. <Ref. to EI-46, REMOVAL, Instrument Panel Lower Cover.>
8) Remove the glove box lid. (Manual A/C model) <Ref. to EI-46, REMOVAL, Instrument Panel Lower Cover.>
9) On manual A/C models, detach the control cable.

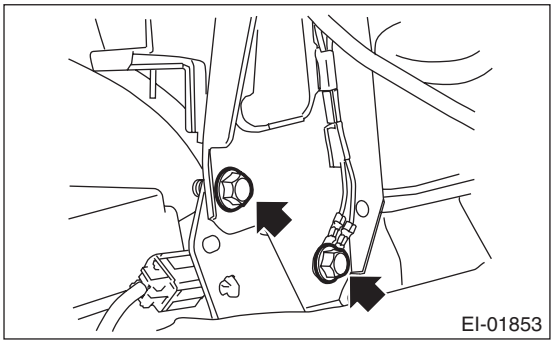


10) Remove the steering shaft assembly. <Ref. to PS-15, REMOVAL, Tilt Steering Column.>
11) Disconnect connectors.

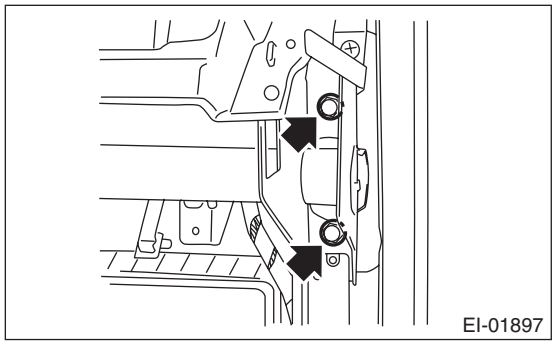
NOTE:
To make reassembly easier, place matching markings on connectors as necessary.

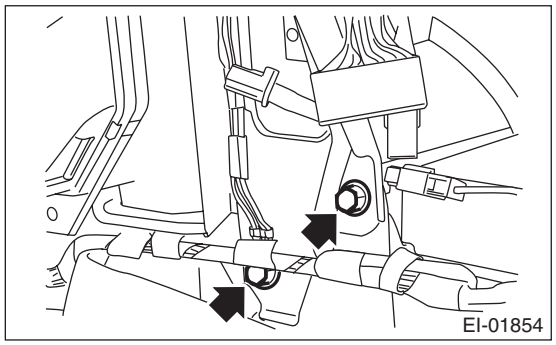
12) Remove the bolts and fuse box on the driver's side.





13) Remove the bolts on the passenger's side.

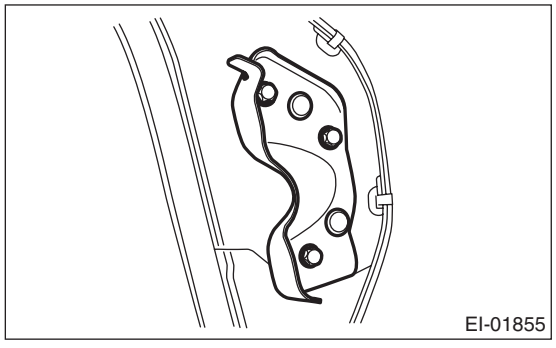

EI-01897


EI-01854

14) Make sure that the connectors are disconnected, and remove the instrument panel from the vehicle.

CAUTION:
When taking the instrument panel out of the vehicle, be careful not to damage the vehicle. Perform this work by a group of two persons or more.

15) Remove the steering support beam bracket.


EI-01855

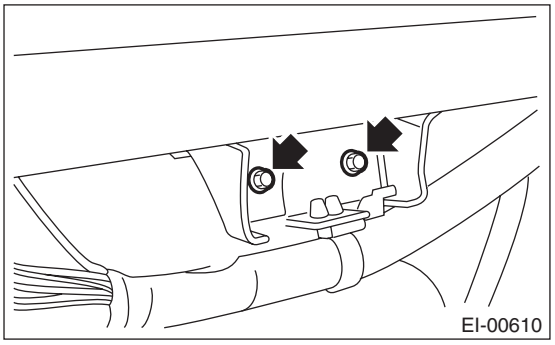
B: INSTALLATION

1) Insert the vehicle side matching pins (3 locations) into the instrument panel assembly.
2) Check that the matching pins are inserted securely, and then route the harness.
3) Install in the reverse order of removal.

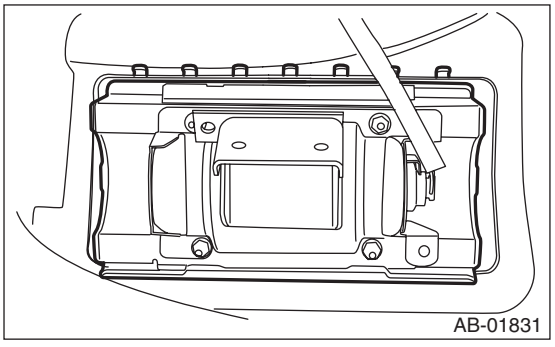
Tightening torque:
Steering support beam & steering support beam bracket: 25 N·m (2.55 kgf-m, 18.4 ft-lb)
Steering shaft:<Ref. to PS-3, STEERING WHEEL AND COLUMN, COMPONENT, General Description.>
Instrument panel lower: 7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

C: DISASSEMBLY

1) Remove the combination meter assembly. <Ref. to IDI-15, REMOVAL, Combination Meter.>
2) Remove the audio. <Ref. to ET-6, REMOVAL, Audio.>
3) Remove the GPS antenna. <Ref. to ET-13, REMOVAL, GPS Antenna.>
4) Remove the heater vent duct. <Ref. to AC-46, REMOVAL, Heater Vent Duct.>
5) Remove the bolts securing the passenger's side airbag module to the steering support beam.


EI-00610

6) Remove the claw, and remove the passenger's airbag module.


AB-01831

D: ASSEMBLY

CAUTION:
Be careful with the wiring harness routing during installation. When installing to the vehicle body, pinching the wiring harness may cause open circuits and shorts.

Attach each part in the reverse order of disassembly, until the instrument panel assembly is formed.

NOTE:
Method of installing insulator

- Adhesive

Use polyurethane adhesive. When assembling the instrument panel assembly, wait until the adhesive has evaporated to prevent filling of the smell in the compartment.

- Double-sided tape

Use commercial double-sided tape. (Use strong double-sided adhesive tape.)

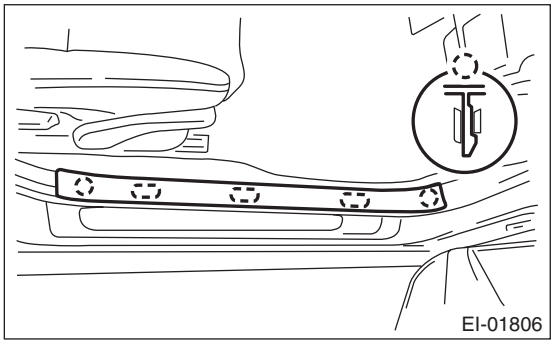
Tightening torque:
Instrument panel lower: 7.5 N·m (0.76 kgf-m, 5.5 ft-lb)
Passenger's airbag module: 7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

20.Lower Inner Trim

A: REMOVAL

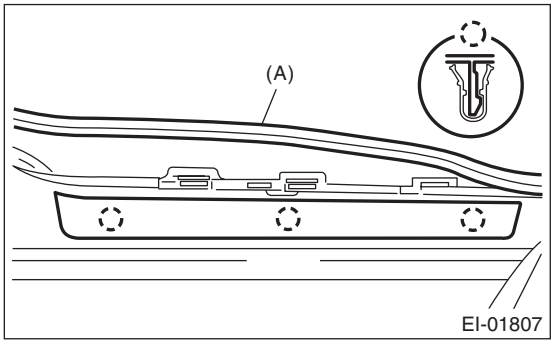
1) Remove the hook, and remove the inside scuff plate.

CAUTION:
Do not pull with excessive force. Doing so may damage the scuff plate.


EI-01806

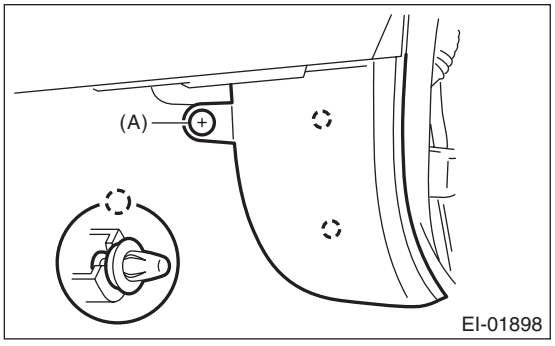
NOTE:
It is easier to remove the weather strip and pull off the floor mat to detach the claw of scuff plate from the backside.

2) Remove the weather strip (A), and remove the outside scuff plate.



EI-01807

3) Remove clip (A), and remove the front pillar lower trim.

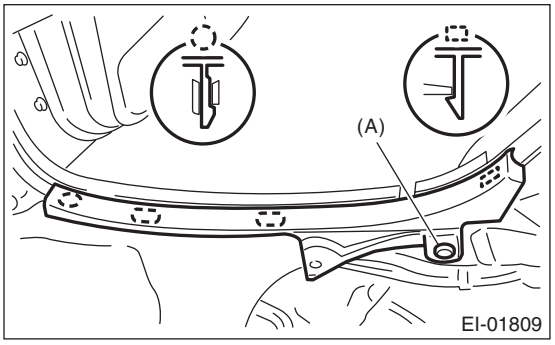


EI-01898

4) Remove the rear seat cushion. <Ref. to SE-12, REMOVAL, Rear Seat.>

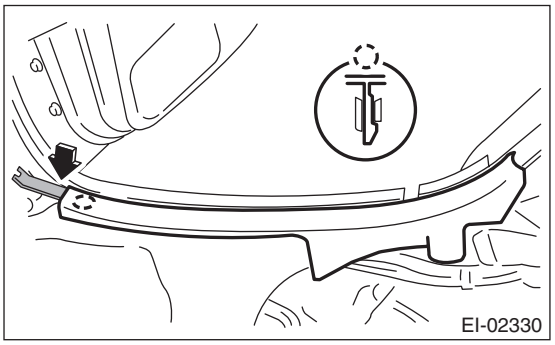
5) Remove clip (A), and remove the inside scuff plate.

CAUTION:
Do not pull with excessive force. Doing so may damage the scuff plate.

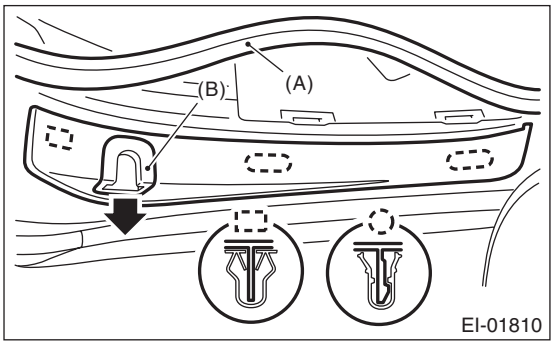


EI-01809

NOTE:
- It is easier to remove the weather strip to detach the claw of scuff plate from the backside of floor mat.
- It is easier to detach the tip claw of scuff plate using a clip remover.

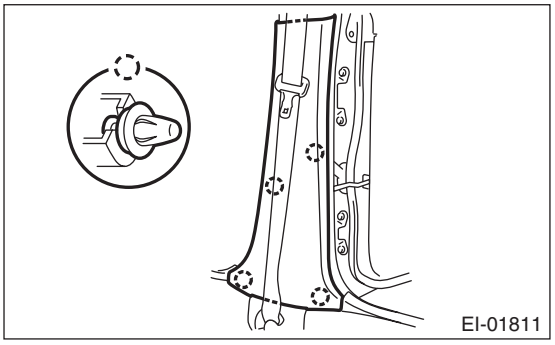

EI-02330

6) Remove weather strip (A) and door catcher cover (B), then remove the outside scuff plate.

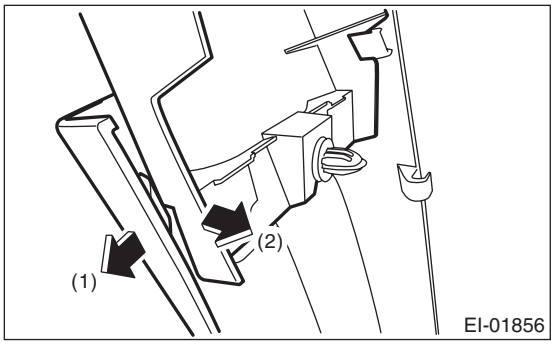


EI-01810

7) Remove the clips of the center pillar lower trim.


EI-01811

8) Spread the lower trim outwards to remove the claw, and pull on the upper trim to remove.



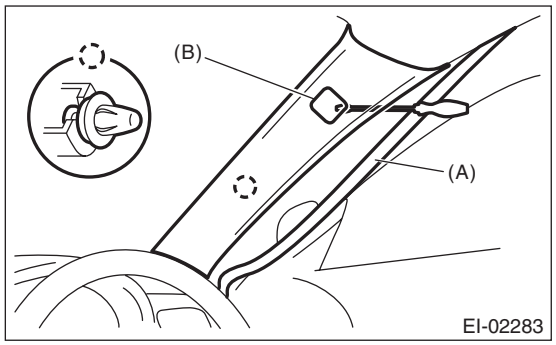
B: INSTALLATION

Install in the reverse order of removal.

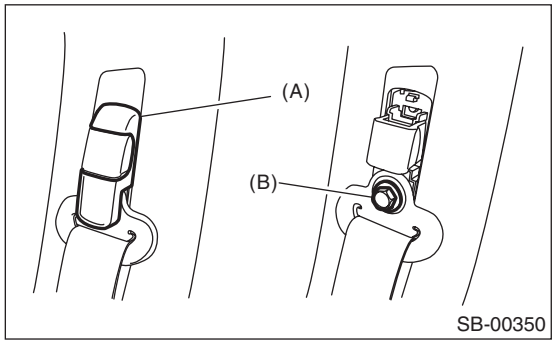
21.Upper Inner Trim

A: REMOVAL

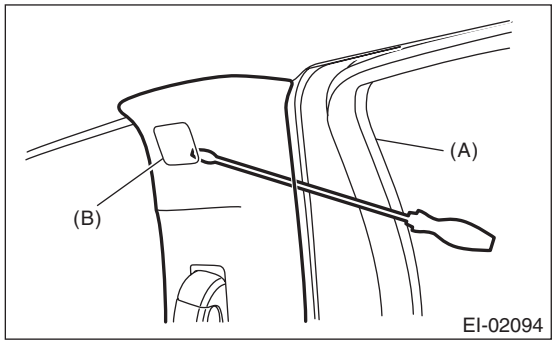
1) Remove the cap (B) on the upper side of the pillar trim, and remove the bolt.



NOTE:
Remove the molding (A), and remove the cap from the backside of pillar trim not to damage the trim.
2) Remove the front pillar upper trim.
3) Remove the front inside scuff plate, rear inside scuff plate and center pillar lower trim. <Ref. to EI-55, REMOVAL, Lower Inner Trim.>
4) Remove anchor bolt cover (A).
5) Loosen the shoulder anchor bolt (B), and then detach the shoulder anchor from center pillar.

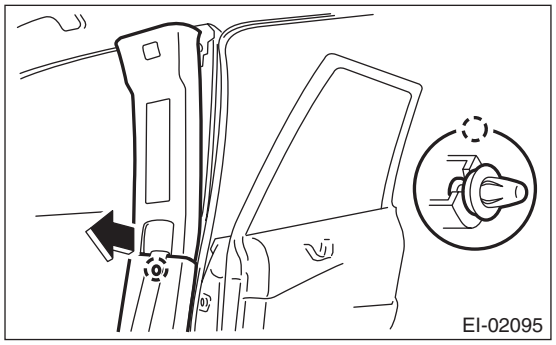


6) Remove the cap (B) on the upper side of the pillar trim, and remove the bolt.

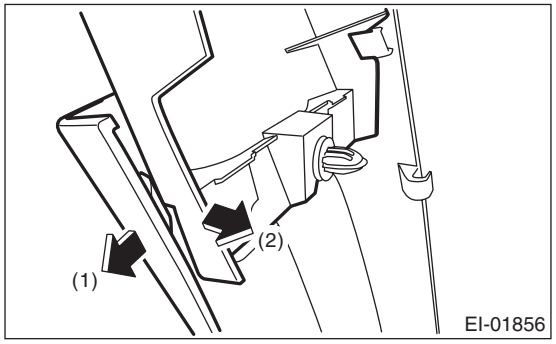


NOTE:
Remove the molding (A), and remove the cap from the backside of pillar trim not to damage the trim.

7) Pull and remove the upper trim clip section of the center pillar along with the lower trim.



8) Spread the lower trim outwards to remove the claw, and pull on the upper trim to remove.



B: INSTALLATION

Install in the reverse order of removal.

Tightening torque

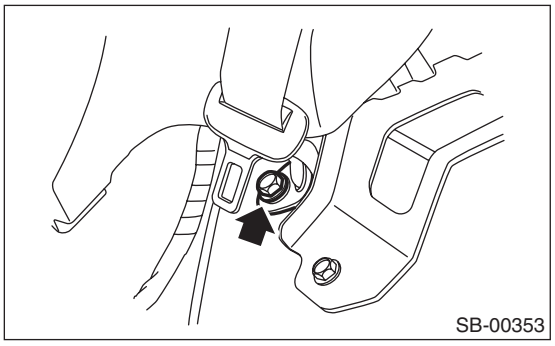
Refer to "COMPONENT" of "General Description".
Upper inner trim (5 door model):<Ref. to EI-19, INNER TRIM (5 DOOR MODEL), COMPONENT, General Description.>
Upper inner trim (4 door model):<Ref. to EI-20, INNER TRIM (4 DOOR MODEL), COMPONENT, General Description.>
Seat belt anchor:<Ref. to SB-2, FRONT SEAT BELT, COMPONENT, General Description.>

22.Rear Quarter Trim

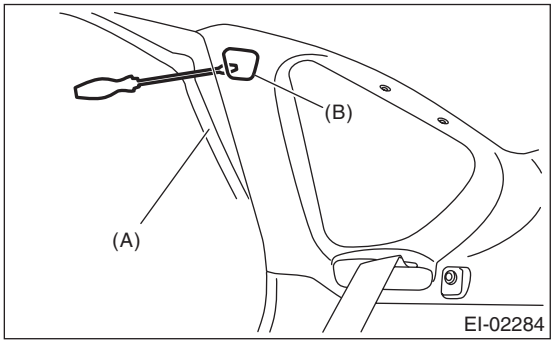
A: REMOVAL

1. 5 DOOR MODEL

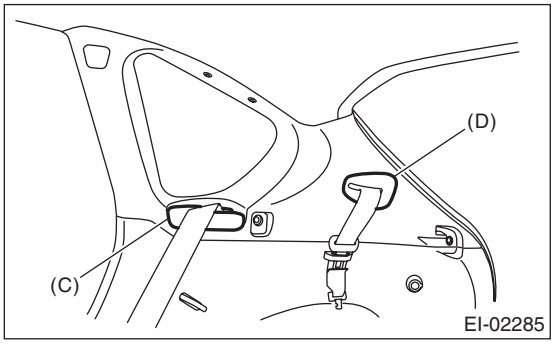
1) Remove the rear seat. <Ref. to SE-12, REMOVAL, Rear Seat.>
2) Remove the seat belt lower anchor bolt.



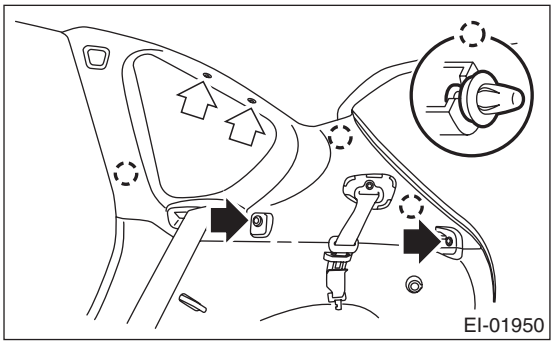
3) Remove the cap (B) on the upper side of the rear quarter pillar front trim, and remove the bolt inside.



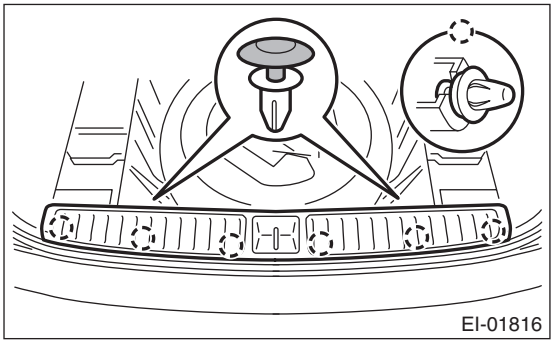
NOTE:
Remove the molding (A), and remove the cap from the backside of pillar trim not to damage the trim.
4) Remove the side belt cover (C).
5) Remove center belt cover (D), and remove the anchor bolt inside.



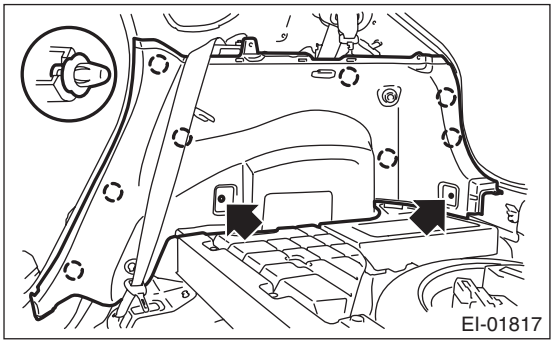
6) Remove the clips and screws, and remove the rear quarter upper trim.



7) Remove the luggage floor end cover.

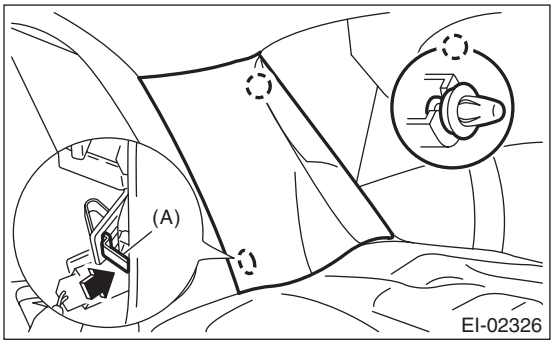


8) Remove the bolts, and remove the rear quarter lower trim.



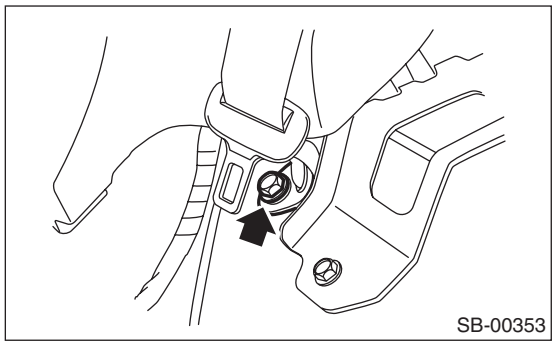
2. 4 DOOR MODEL

1) Remove the rear seat. <Ref. to SE-12, REMOVAL, Rear Seat.>
2) Remove the inside scuff plate. <Ref. to EI-55, REMOVAL, Lower Inner Trim.>
3) Peel the trim, and use a screwdriver, etc. to press claw (A) of the metal clip, to remove the quarter upper trim.

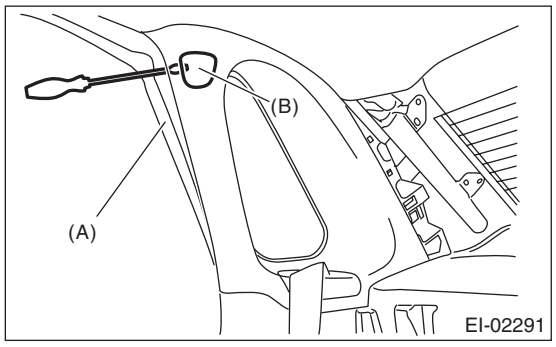


CAUTION:
If the metal clip comes off or becomes damaged, replace both the quarter upper trim rear and metal clips.

4) Remove the seat belt lower anchor bolt.

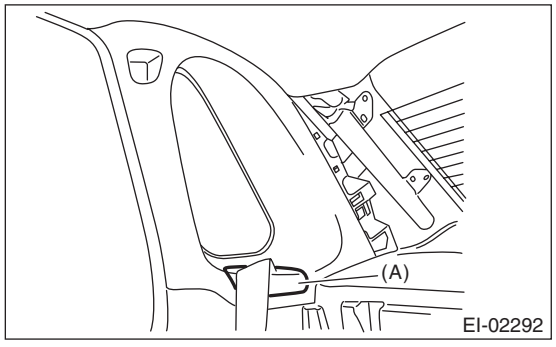


5) Remove the cap (B) on the upper side of the rear quarter trim, and remove the bolt inside.

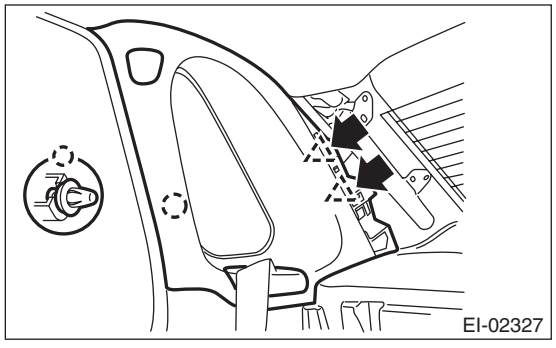


NOTE:
Remove the molding (A), and remove the cap from the backside of pillar trim not to damage the trim.

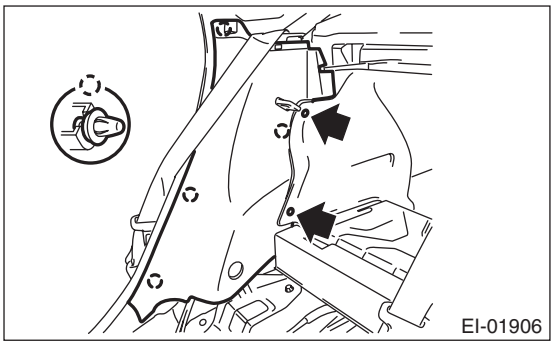
6) Remove side belt cover (A).



7) Remove the bolts and clips, and remove the quarter upper trim front.



8) Remove the rear seat. <Ref. to SE-12, REMOVAL, Rear Seat.>
9) Remove the clip of the trunk room side trim.
10) Remove the clips, then remove the quarter lower trim.



B: INSTALLATION

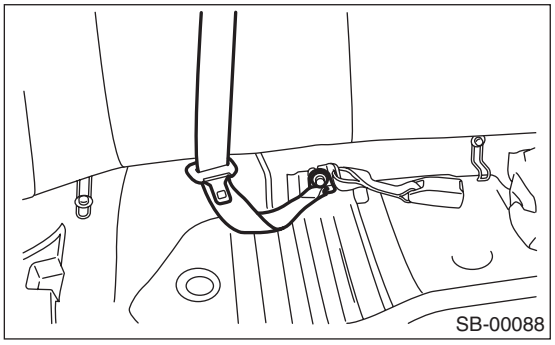
Install in the reverse order of removal.

Tightening torque
Refer to "COMPONENT" of "General Description".
Rear quarter upper trim (5 door model):<Ref. to EI-19, INNER TRIM (5 DOOR MODEL), COMPONENT, General Description.>
Rear quarter upper trim (4 door model):<Ref. to EI-20, INNER TRIM (4 DOOR MODEL), COMPONENT, General Description.>
Seat belt anchor:<Ref. to SB-3, REAR SEAT BELT, COMPONENT, General Description.>

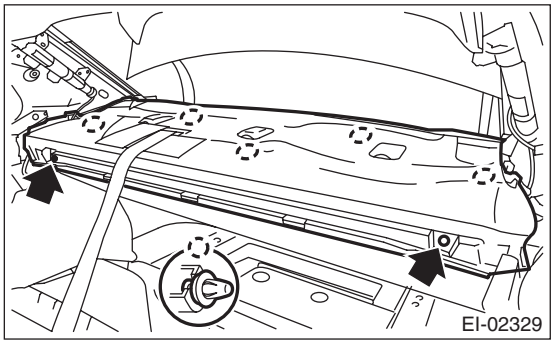
23.Rear Shelf Trim

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the rear quarter trim. <Ref. to EI-58, 4 DOOR MODEL, REMOVAL, Rear Quarter Trim.>
3) Remove the seat belt center anchor lower bolt.



4) Remove the clips, and remove the rear shelf trim.



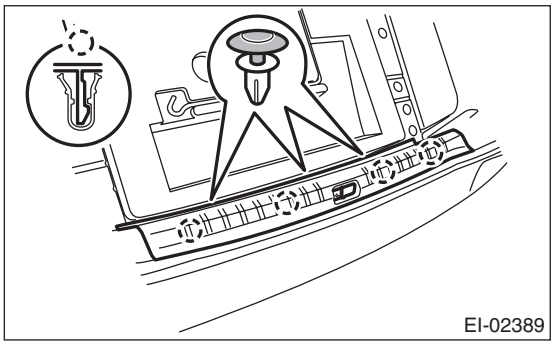
B: INSTALLATION

Install in the reverse order of removal.

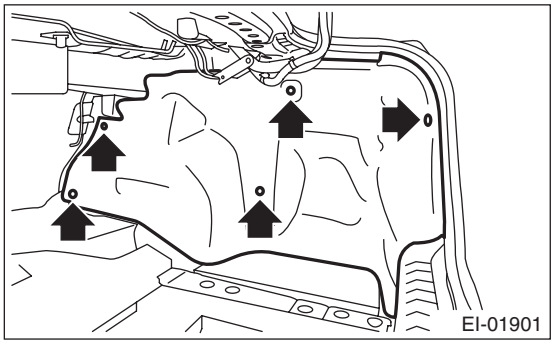
24.Trunk Room Trim

A: REMOVAL

1) Remove the rear seat backrest. <Ref. to SE-12, REMOVAL, Rear Seat.>
2) Remove the trunk room mat.
3) Remove the clips, and then remove the trunk room rear trim.



4) Remove the clips, and remove the trunk side trim.



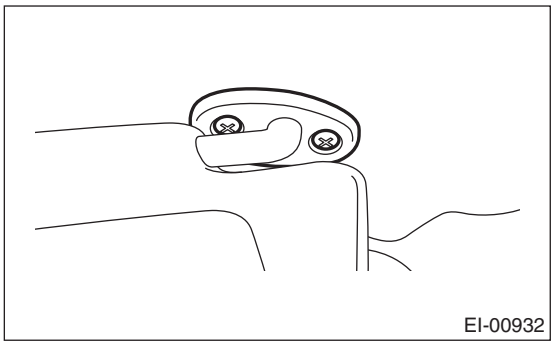
B: INSTALLATION

Install in the reverse order of removal.

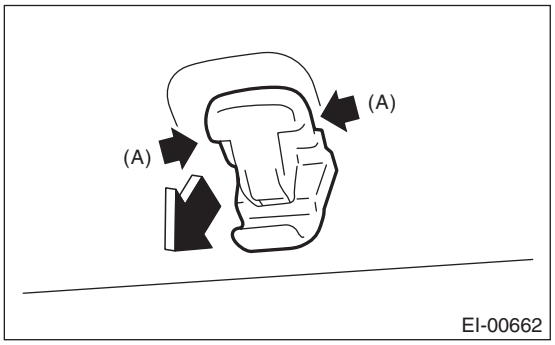
25.Sun Visor

A: REMOVAL

1) Remove the screws and detach the sun visor.



2) Disconnect the connector. (Model with vanity mirror light)
3) While pressing the (A) on the both side using flat tip screwdriver, pull the sun visor hook to remove it.



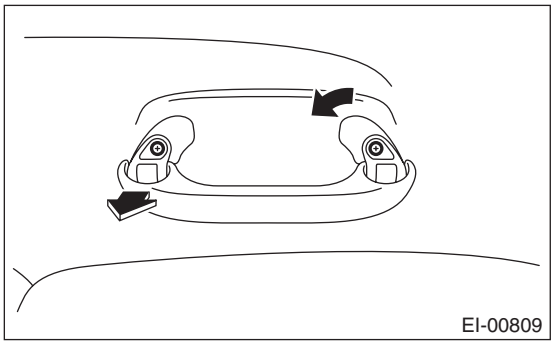
B: INSTALLATION

Install in the reverse order of removal.

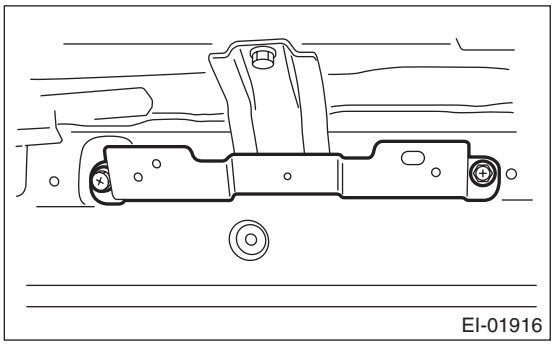
26.Assist Grip

A: REMOVAL

1) Remove the screw cover, and remove the screw inside.
2) Pull the left side of assist grip, and rotate the right side of it counterclockwise to remove.



3) Remove the roof trim. <Ref. to EI-64, REMOVAL, Roof Trim.>
4) Remove the bolts, and remove the assist grip bracket.



B: INSTALLATION

Install in the reverse order of removal.

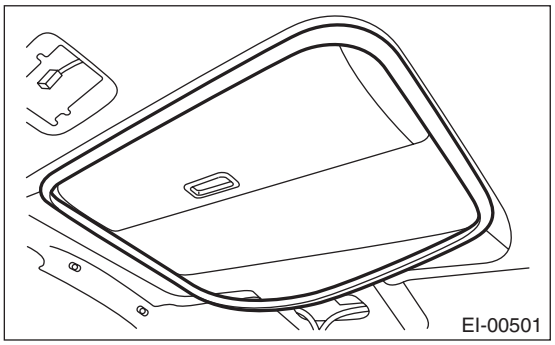
Tightening torque
7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

27.Roof Trim

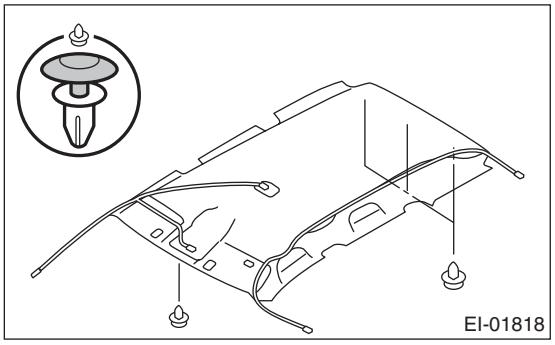
A: REMOVAL

1. 5 DOOR MODEL

1) Disconnect the ground cable from battery.
2) Remove the spot map light. <Ref. to LI-30, REMOVAL, Spot Map Light.>
3) Remove the room light. <Ref. to LI-31, REMOVAL, Room Light.>
4) Remove the sun visor. <Ref. to EI-62, REMOVAL, Sun Visor.>
5) Remove the assist grip. <Ref. to EI-63, REMOVAL, Assist Grip.>
6) Remove the upper inner trim. <Ref. to EI-57, REMOVAL, Upper Inner Trim.>
7) Remove the rear quarter trim. <Ref. to EI-58, REMOVAL, Rear Quarter Trim.>
8) Disconnect the harness connectors of the right and left front pillars, and the rear quarter (LH).
9) Remove the sunroof opening trim. (Model with sunroof)



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

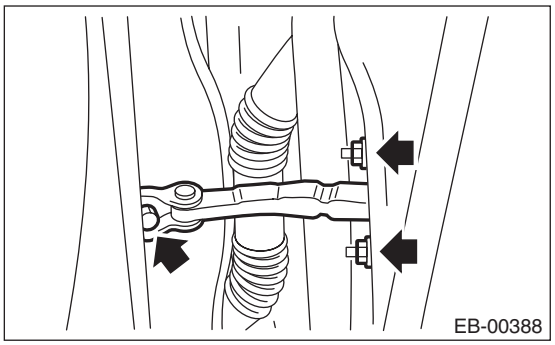


CAUTION:
Do not remove the roof end trim with excessive force. Otherwise the roof trim may become damaged. Roof trim and roof end trim are fastened by rivets.

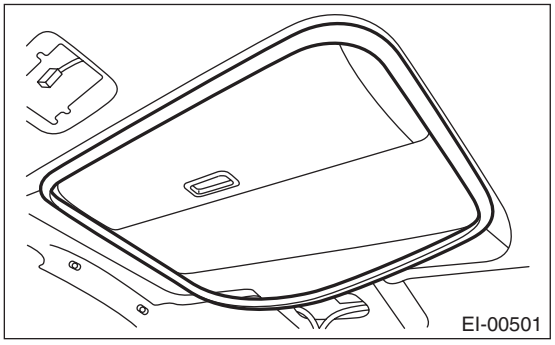
2. 4 DOOR MODEL

CAUTION:
When taking the roof trim out of the vehicle, be careful not to damage the room inner trim. Perform this work with 3 persons.
1) Disconnect the ground cable from battery.
2) Apply protective tape, etc. to prevent damage to the face of the instrument panel.
3) Remove the spot map light. <Ref. to LI-30, REMOVAL, Spot Map Light.>
4) Remove the room light. <Ref. to LI-31, REMOVAL, Room Light.>
5) Remove the sun visor. <Ref. to EI-62, REMOVAL, Sun Visor.>
6) Remove the assist grip. <Ref. to EI-63, REMOVAL, Assist Grip.>
7) Remove the upper inner trim. <Ref. to EI-57, REMOVAL, Upper Inner Trim.>
8) Remove the rear quarter trim. <Ref. to EI-58, REMOVAL, Rear Quarter Trim.>
9) Disconnect the harness connectors of the right and left front pillars, and the rear quarter (LH).
10) Remove the console front panel. <Ref. to EI-49, CONSOLE FRONT PANEL, REMOVAL, Center Console.>

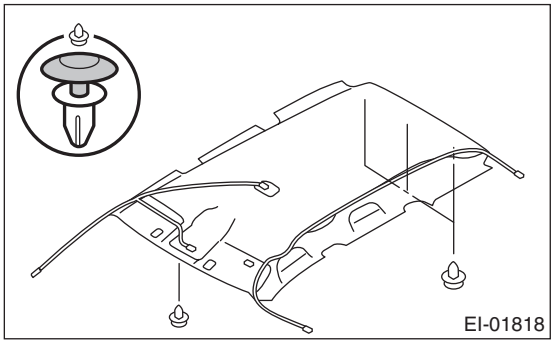
11) Remove the steering wheel. <Ref. to PS-12, REMOVAL, Steering Wheel.>
12) Remove the passenger's side door trim. <Ref. to EI-43, REMOVAL, Door Trim.>
13) Remove the passenger's side door checker.



14) Fully recline the front seat.
15) Remove the sunroof opening trim. (Model with sunroof)



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



17) Open the passenger's side door all the way, and maintain at that position.
18) Take out the roof trim from the passenger's side opening.

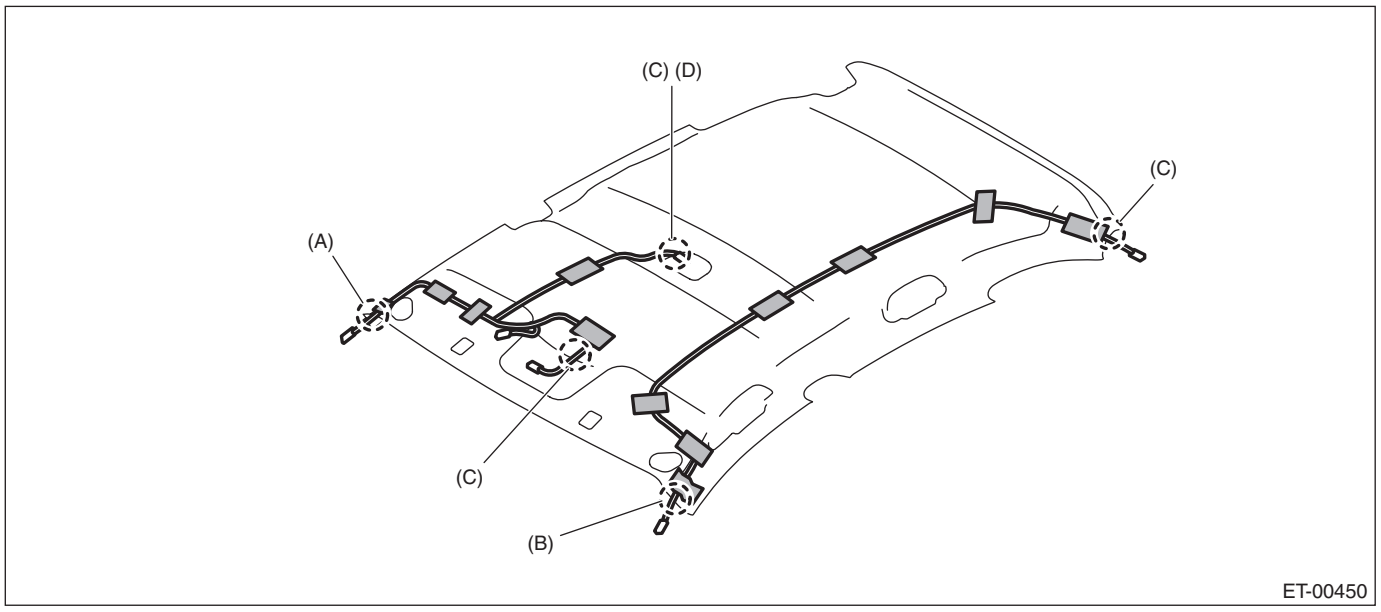
NOTE:
Rotate the roof trim to go through the gap between the front accessory socket and airbag control unit.

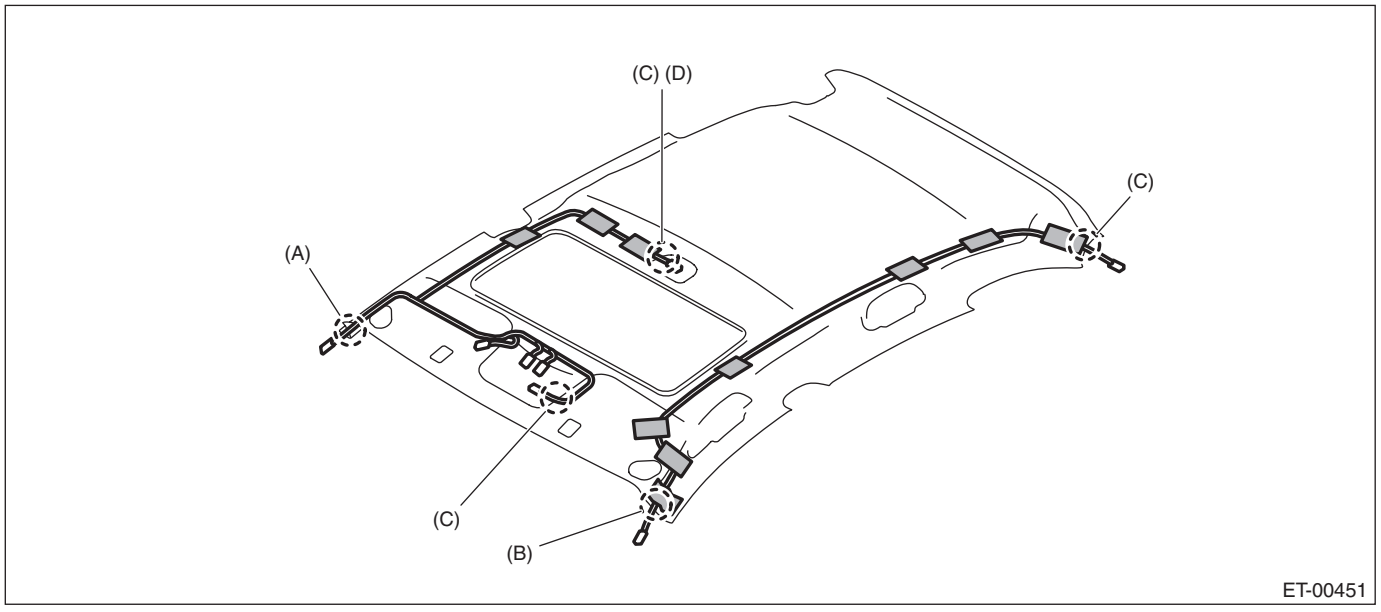
B: INSTALLATION

1) Apply the roof cord and feeder cord along the mark-off line of the roof trim.

CAUTION:
Route and apply each cord so that they pass over the mark-off line. If not doing so, the cord may interfere, thus preventing normal deployment of the curtain airbag when necessary.

Tape:
Use the tape contained in the roof trim replacement parts.





(A) Align the end of roof cord white tape and the end of roof trim, and route the cord along the mark-off line of roof trim, and then affix with tape.

(B) Align the end of feeder cord white tape and the end of roof trim, and route the cord along the mark-off line of roof trim, and then affix with tape.

(C) Align the marking to the roof trim terminal end, and affix with tape.

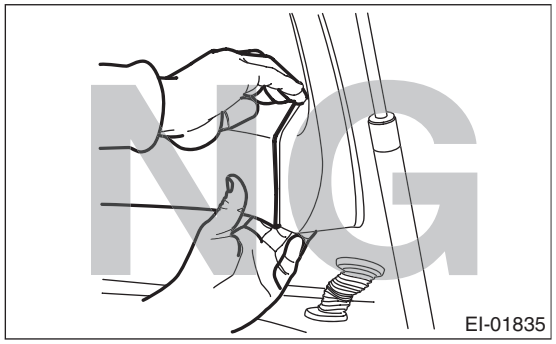
(D) Affix the roof cord end to the patch area of room light.

2) Install in the reverse order of removal.

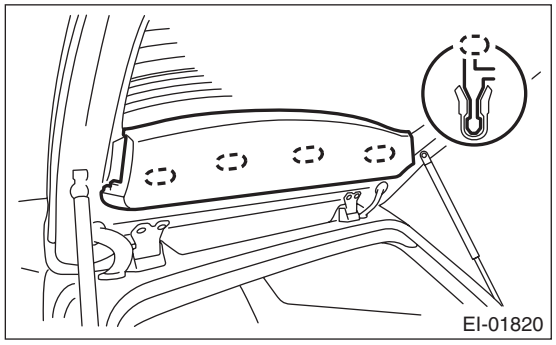
28.Rear Gate Trim

A: REMOVAL

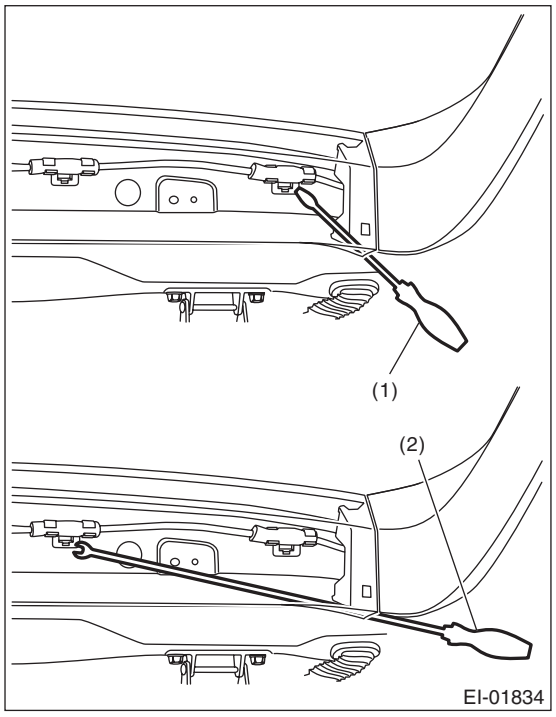
CAUTION:
When detaching the rear gate upper trim and pillar trim, do not pull these parts with excessive force. Pulling with excessive force may damage the trim.



1) Remove the clips, and remove the rear gate upper trim.



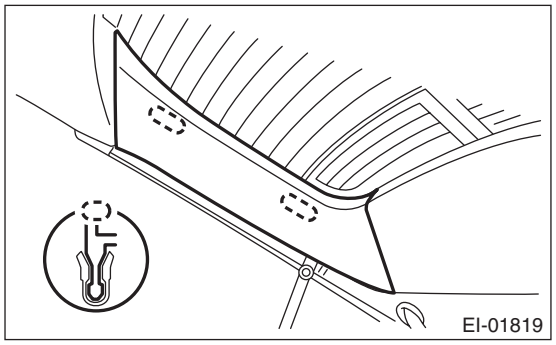
CAUTION:
When removing trim, make sure to follow the procedures below. Applying excessive force when removing can damage the trim. Use flat tip screwdrivers (1) or clip removers (2) to detach the claws of the trim.



1. Use a flat tip screwdriver (1) to detach the claws of the trim.
2. Use a clip remover (2) to detach the claws of the trim.

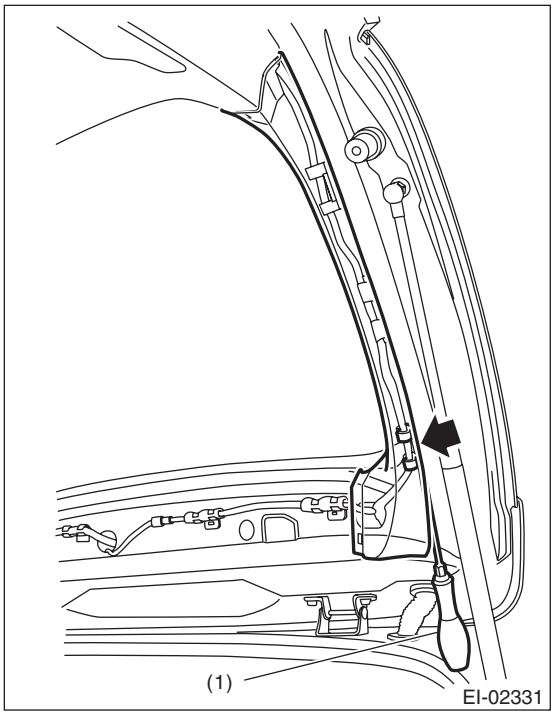
Tools used
Flat tip screwdriver: Those with a shaft length of around 100 mm.
Clip remover: KTC AP20L-10B

2) Use a flat tip screwdriver to detach the claws of the trim, and remove the rear gate pillar trim.

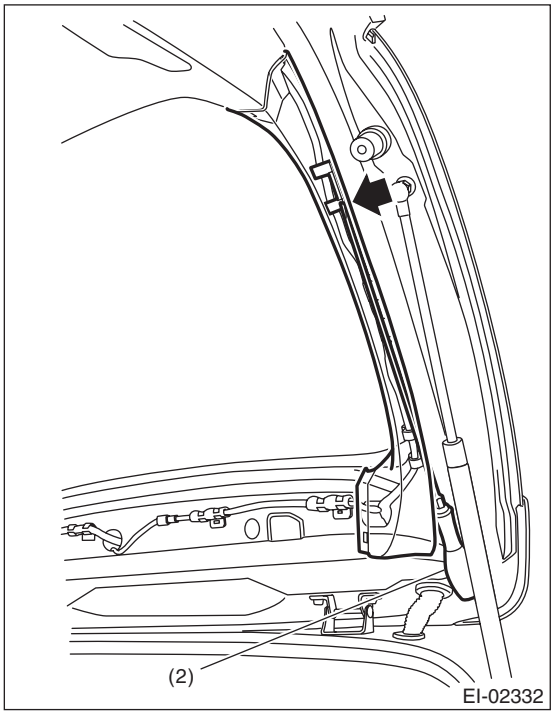


CAUTION:
When removing trim, make sure to follow the procedures below. Applying excessive force when removing can damage the trim.

1. Insert a flat tip screwdriver (1) as shown in the figure, to detach the claws of the trim.



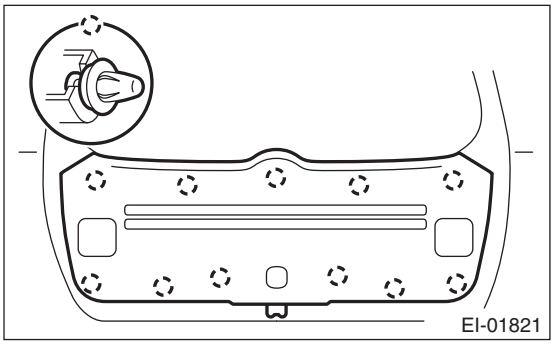
2. Insert a flat tip screwdriver (2) as shown in the figure, to detach the claws of the trim.



Tools used

Flat tip screwdriver (1): Axle length 100 mm
Flat tip screwdriver (2): Axle length 290 mm

3) Remove the clips, and then remove the rear gate lower trim.



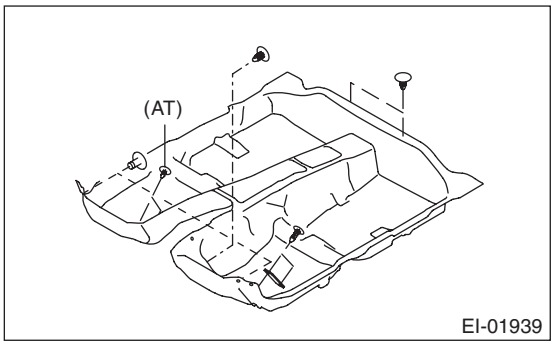
B: INSTALLATION

Install in the reverse order of removal.

29.Floor Mat

A: REMOVAL

1) Remove the front seats. <Ref. to SE-6, REMOVAL, Front Seat.>
2) Remove the rear seat cushion. <Ref. to SE-12, REMOVAL, Rear Seat.>
3) Remove the console box. <Ref. to EI-48, Console Box.>
4) Remove the console side panel. <Ref. to EI-49, REMOVAL, Center Console.>
5) Remove the lower inner trim. <Ref. to EI-55, REMOVAL, Lower Inner Trim.>
6) Remove the footrest. (MT model)
7) Remove the clips from the floor mat.
8) Remove the mat hook on both sides.
9) Remove the mat from toe board area.
10) Remove the mat from rear heater duct.
11) Roll the mat, and then take it out of opened rear door.



(AT) Automatic transmission model

B: INSTALLATION

Install in the reverse order of removal.

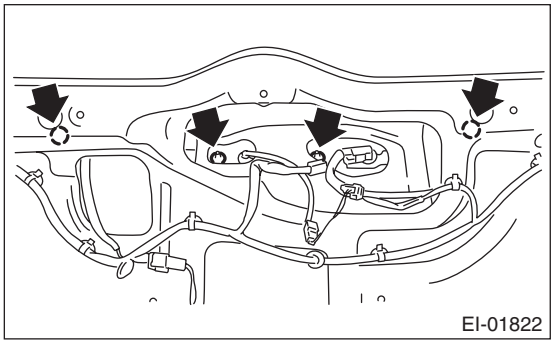
NOTE:
- Secure the mat firmly with hook and clip.
- Insert the mat edge firmly into the groove of side sill cover.

30.Rear Gate Garnish

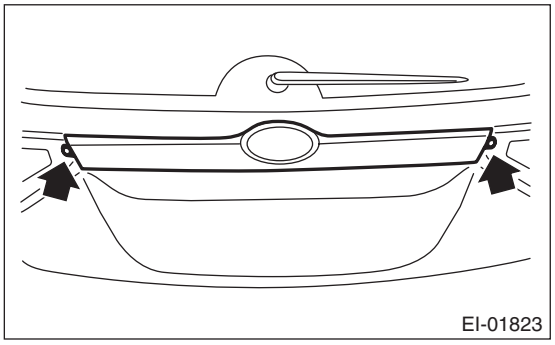
A: REMOVAL

1) Remove the rear gate trim. <Ref. to EI-67, REMOVAL, Rear Gate Trim.>
2) Remove the rear wiper motor. <Ref. to WW-19, Rear Wiper Motor.>
3) Remove the rear finisher light. <Ref. to LI-26, REMOVAL, Rear Finisher Light Assembly.>
4) Disconnect the connector.
- Rear gate opener button harness connector
- Rear request switch harness connector (Smart keyless models)

5) Remove the nuts.


EI-01822

6) Remove the clips, and remove the rear gate garnish.


EI-01823

B: INSTALLATION

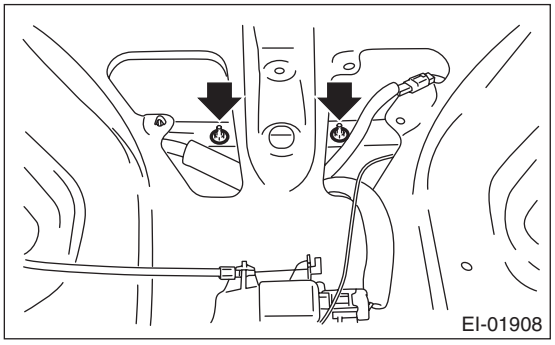
CAUTION:
Make sure that the harness grommet is securely installed.
If not properly installed, this may cause leaks.
Install in the reverse order of removal.

Tightening torque:
4.5 N·m (0.46 kgf-m, 3.3 ft-lb)

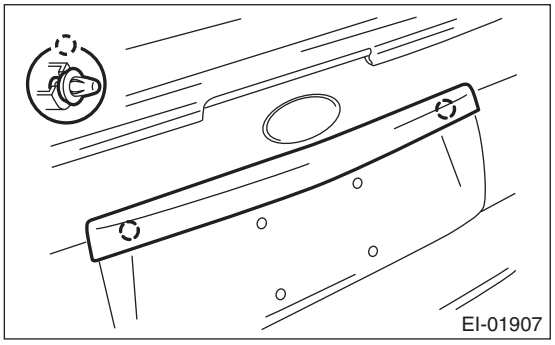
31.Trunk Lid Garnish

A: REMOVAL

1) Remove the clip in the upper corner of the trunk lid garnish.



2) Place your hands between the trunk lid garnish and the trunk lid panel, and remove the trunk lid garnish starting from the edge, in order.



B: INSTALLATION

Install in the reverse order of removal.

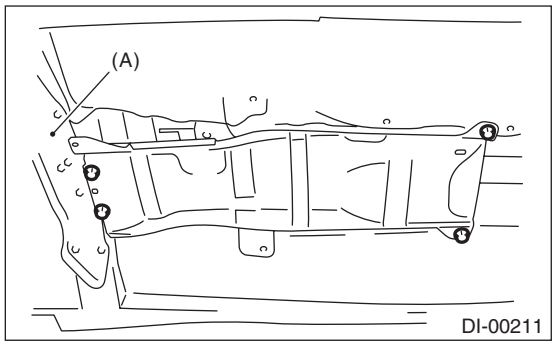
Tightening torque:
4.5 N·m (0.46 kgf-m, 3.3 ft-lb)

32.Heat Shield Cover

A: REMOVAL

1. FRONT HEAT SHIELD COVER

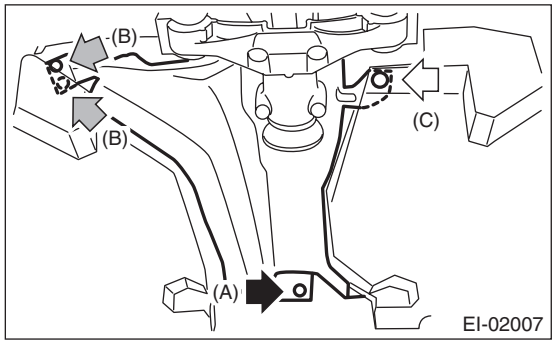
1) Disconnect the ground cable from battery.
2) Disconnect the connector from oxygen (A/F) sensor.
• Turbo model:<Ref. to EX(H4DOTC)-9, REMOVAL, Center Exhaust Pipe.>
• Non-turbo model:<Ref. to EX(H4SO)-6, REMOVAL, Front Exhaust Pipe.>
3) Remove the exhaust pipe.
• Turbo model:<Ref. to EX(H4DOTC)-14, REMOVAL, Rear Exhaust Pipe.>
• Non-turbo model:<Ref. to EX(H4SO)-10, REMOVAL, Rear Exhaust Pipe.>
4) Remove the four bolts to remove the front heat shield cover.

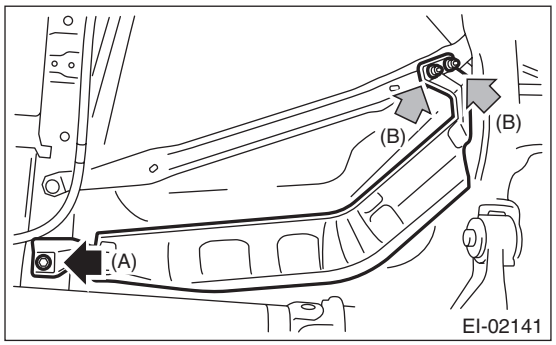


(A) Transmission mount

2. CENTER HEAT SHIELD COVER

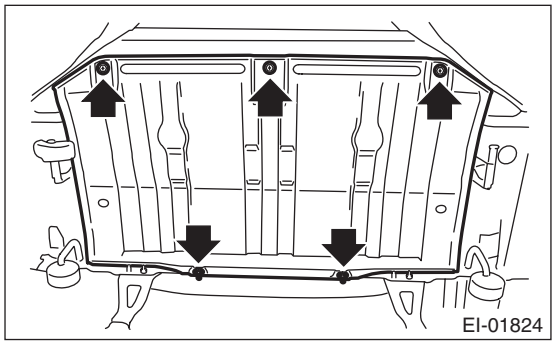
1) Remove the rear exhaust pipe.
• Turbo model:<Ref. to EX(H4DOTC)-14, REMOVAL, Rear Exhaust Pipe.>
• Non-turbo model:<Ref. to EX(H4SO)-10, REMOVAL, Rear Exhaust Pipe.>
2) Remove the propeller shaft. (Turbo model only) <Ref. to DS-10, REMOVAL, Propeller Shaft.>
3) Remove the bolt (A), nut (B) and clip (C) to remove center heat shield cover.



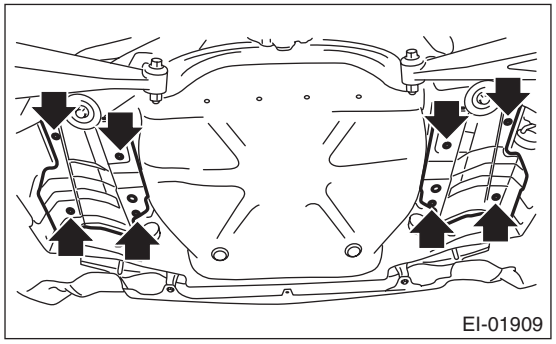


3. REAR HEAT SHIELD COVER

1) Remove the muffler.
• Turbo model:<Ref. to EX(H4DOTC)-16, REMOVAL, Muffler.>
• Non-turbo model:<Ref. to EX(H4SO)-12, REMOVAL, Muffler.>
2) Remove the bolts, and remove the rear heat shield cover.
• 5 DOOR MODEL



• 4 DOOR MODEL



B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to EI-23, HEAT SHIELD COVER, COMPONENT, General Description.>

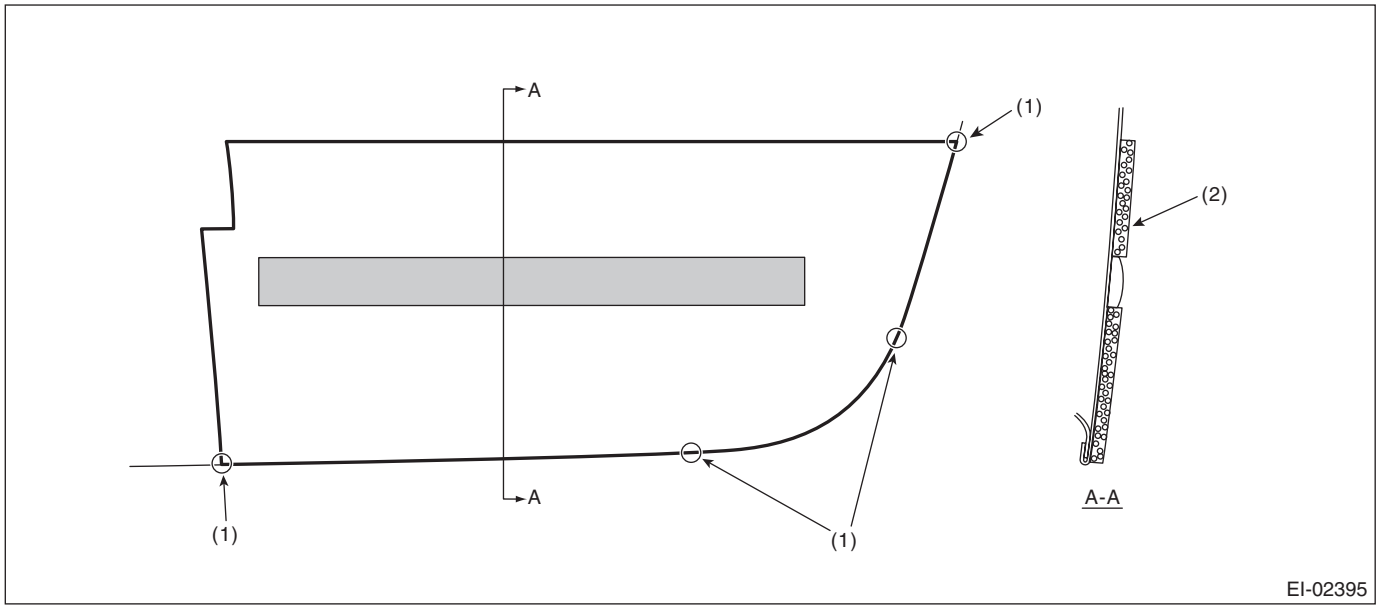
33.Ornament

A: INSTALLATION

1. LETTER MARK

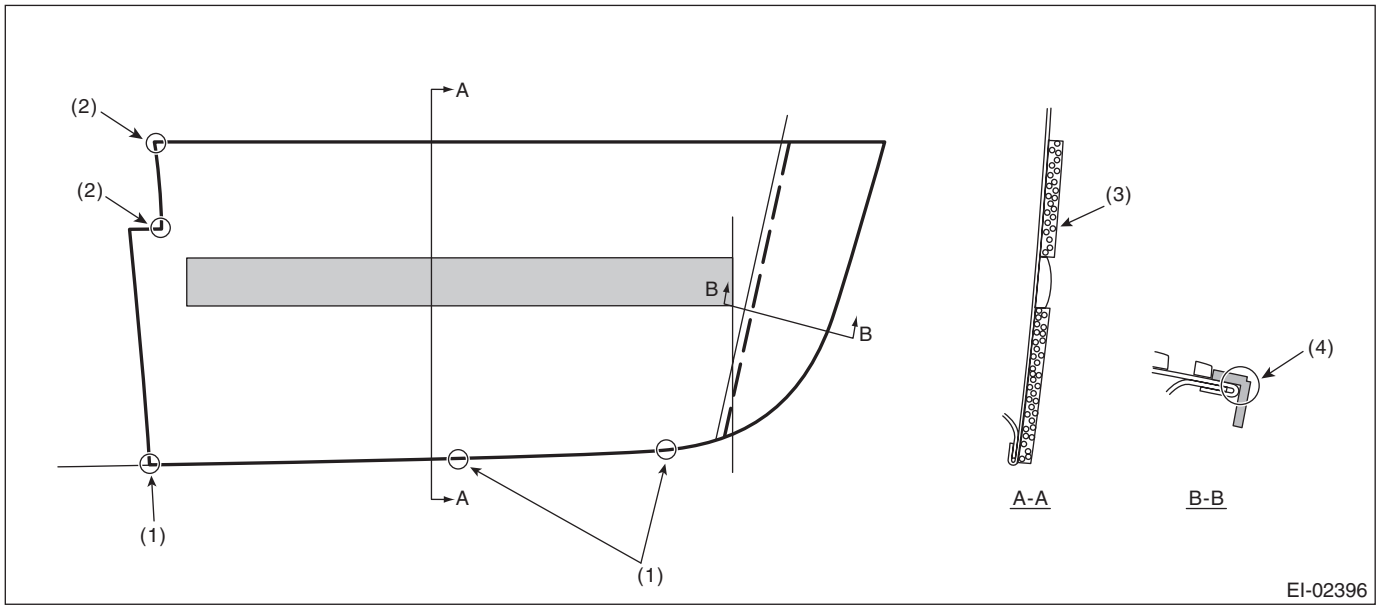
Adhere the letter mark according to the following position.

- 5 DOOR MODEL



(1) Match the end of the application tape to the end of the rear gate panel.
(2) Application tape

- 4 DOOR MODEL



(1) Match the end of the application tape to the end of the rear gate panel.
(2) Match the end of the application tape to the end of the trunk lid garnish. (4 door model)
(3) Application tape
(4) Fold the slit of the application tape to match the end of the trunk panel.

EXTERIOR BODY PANELS

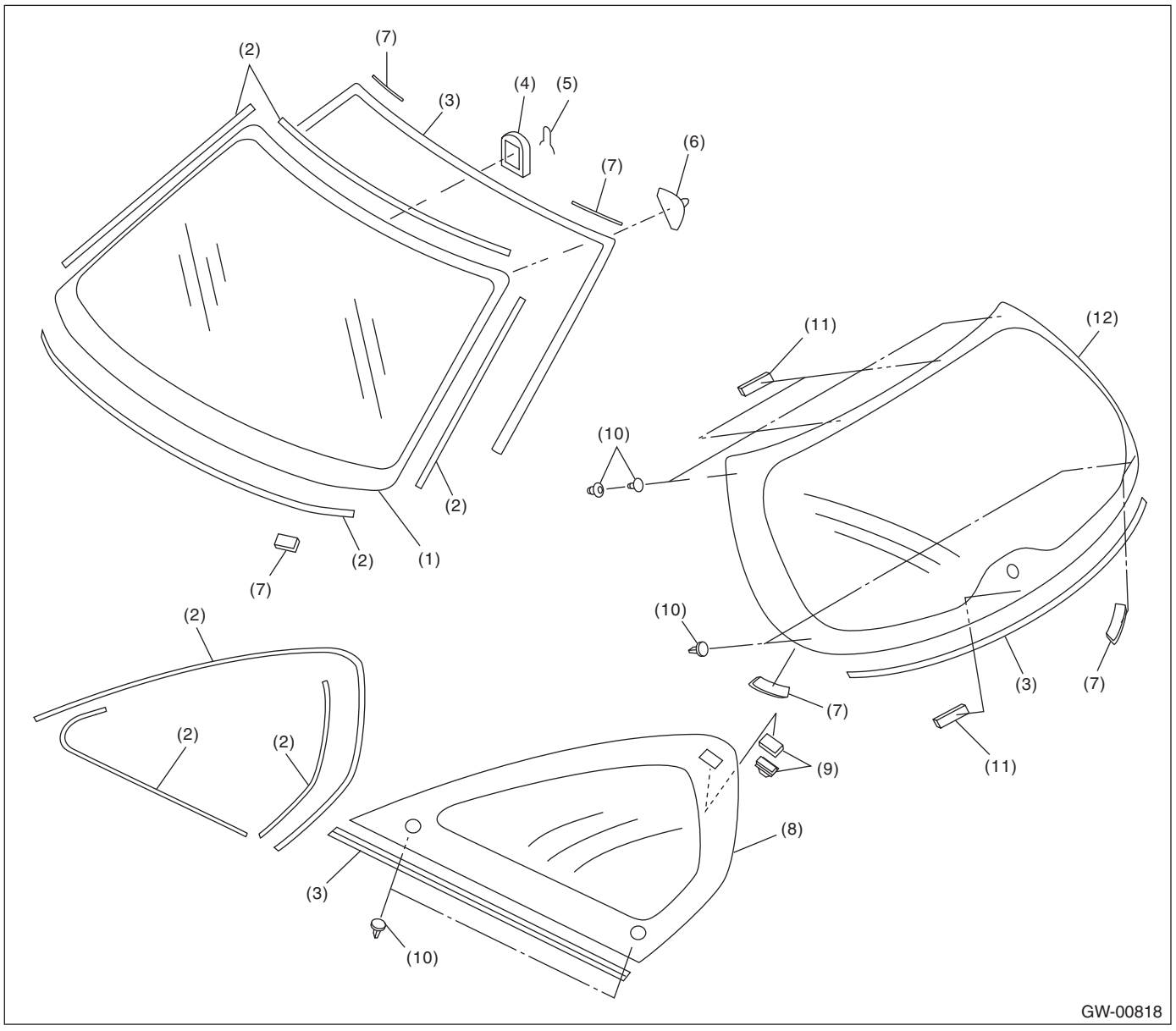
EB

		Page
1.	General Description	2
2.	Front Hood	15
3.	Front Fender	17
4.	Front Performance Stay	18
5.	Front Door	19
6.	Front Sealing Cover	21
7.	Rear Door	22
8.	Rear Sealing Cover	24
9.	Door Sash Tape	25
10.	Rear Gate	30
11.	Trunk Lid	33
12.	Protector Tape	35

1. General Description

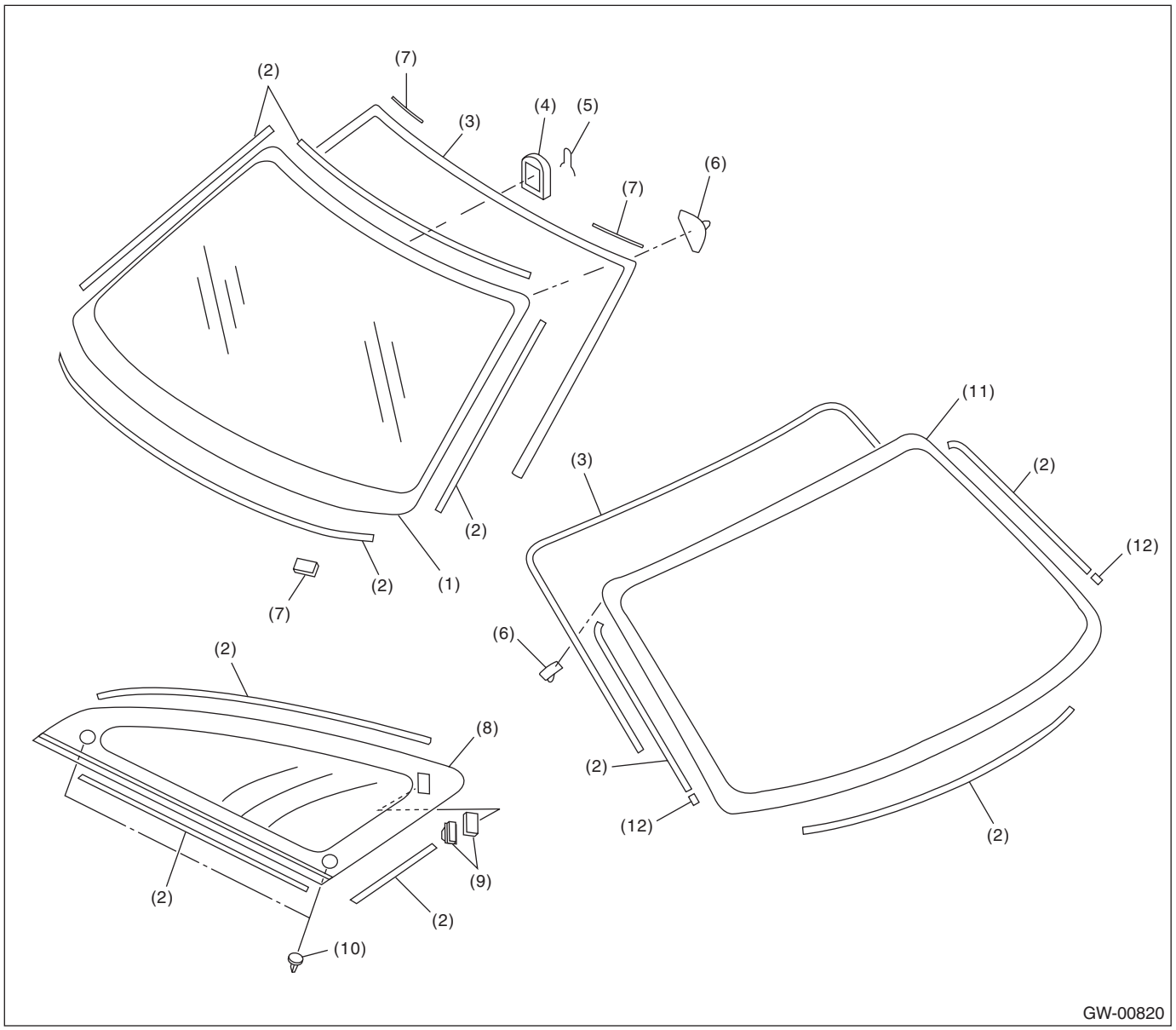
A: COMPONENT

1. FIXED GLASS (5 DOOR MODEL)



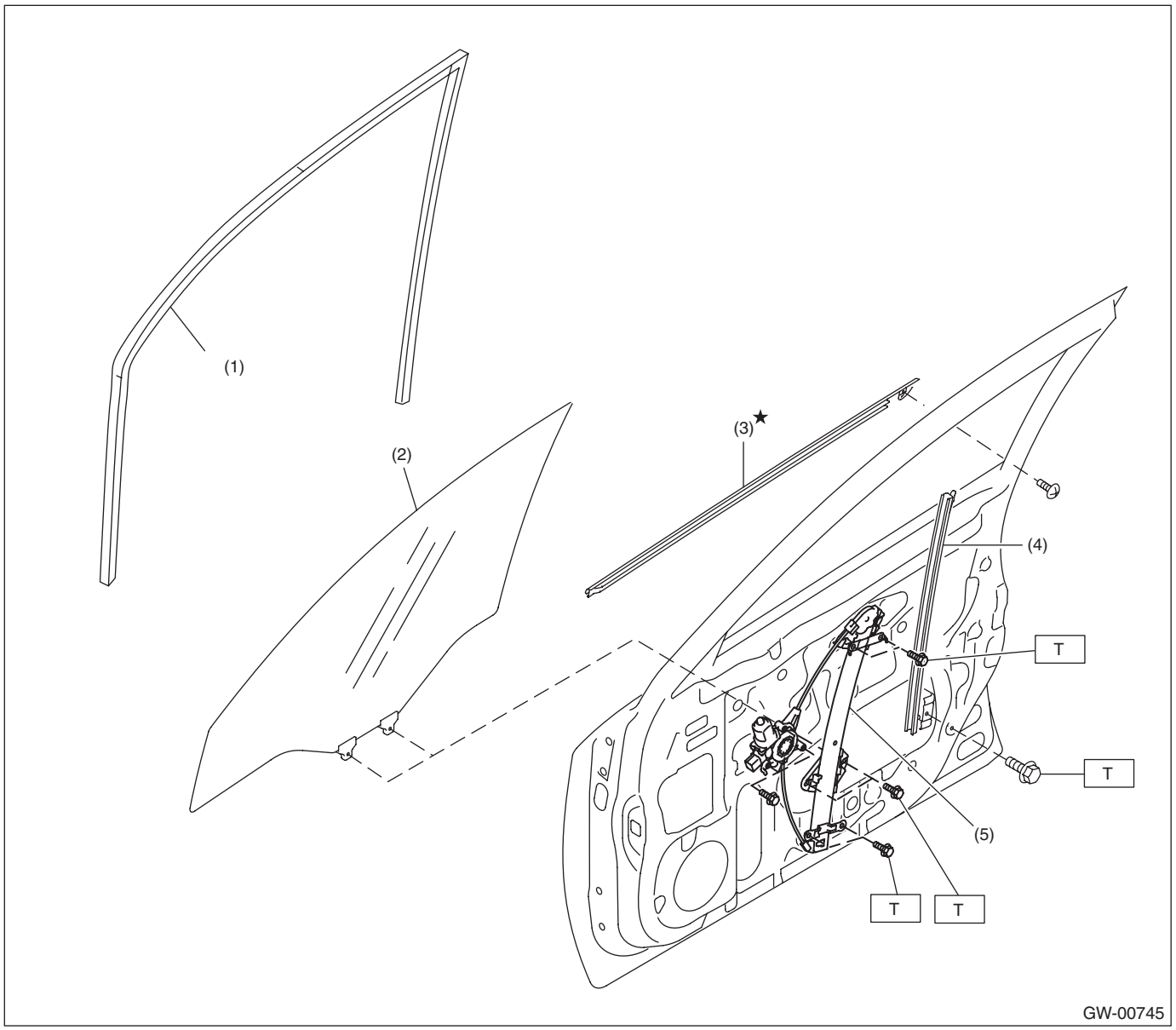
(1) Windshield glass
(2) Dam rubber
(3) Molding
(4) Rearview mirror mount
(5) Spring
(6) Locating pin
(7) Seal
(8) Rear quarter glass
(9) Fastener
(10) Locating pin
(11) Spacer
(12) Rear gate glass

2. FIXED GLASS (4 DOOR MODEL)



(1) Windshield glass
(2) Dam rubber
(3) Molding
(4) Rearview mirror mount
(5) Spring
(6) Locating pin
(7) Seal
(8) Rear quarter glass
(9) Fastener
(10) Locating pin
(11) Rear window glass
(12) Spacer

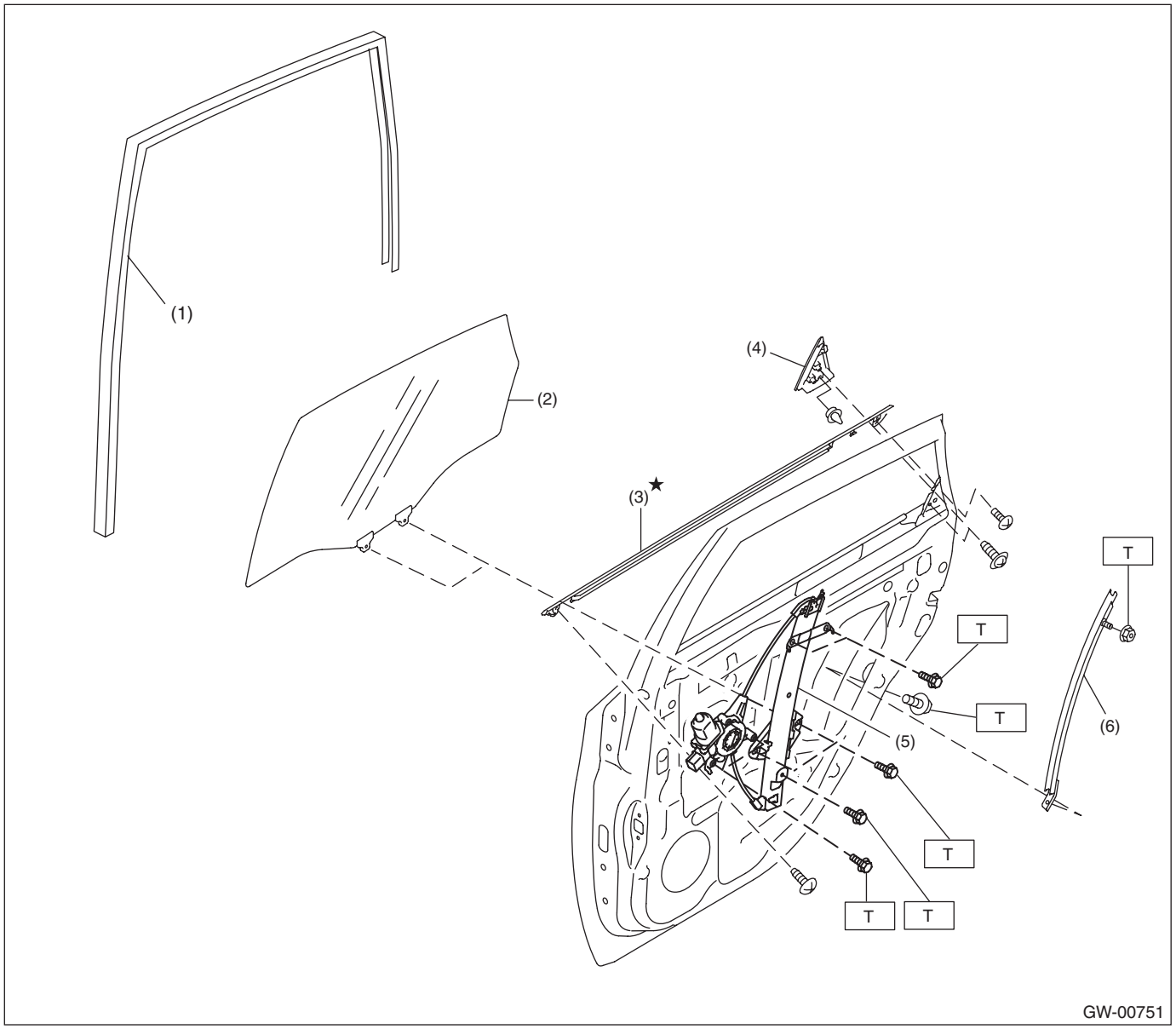
3. FRONT DOOR GLASS



(1) Glass run rubber
(2) Glass
(3) Weather strip outer
(4) Door sash
(5) Regulator & motor ASSY

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

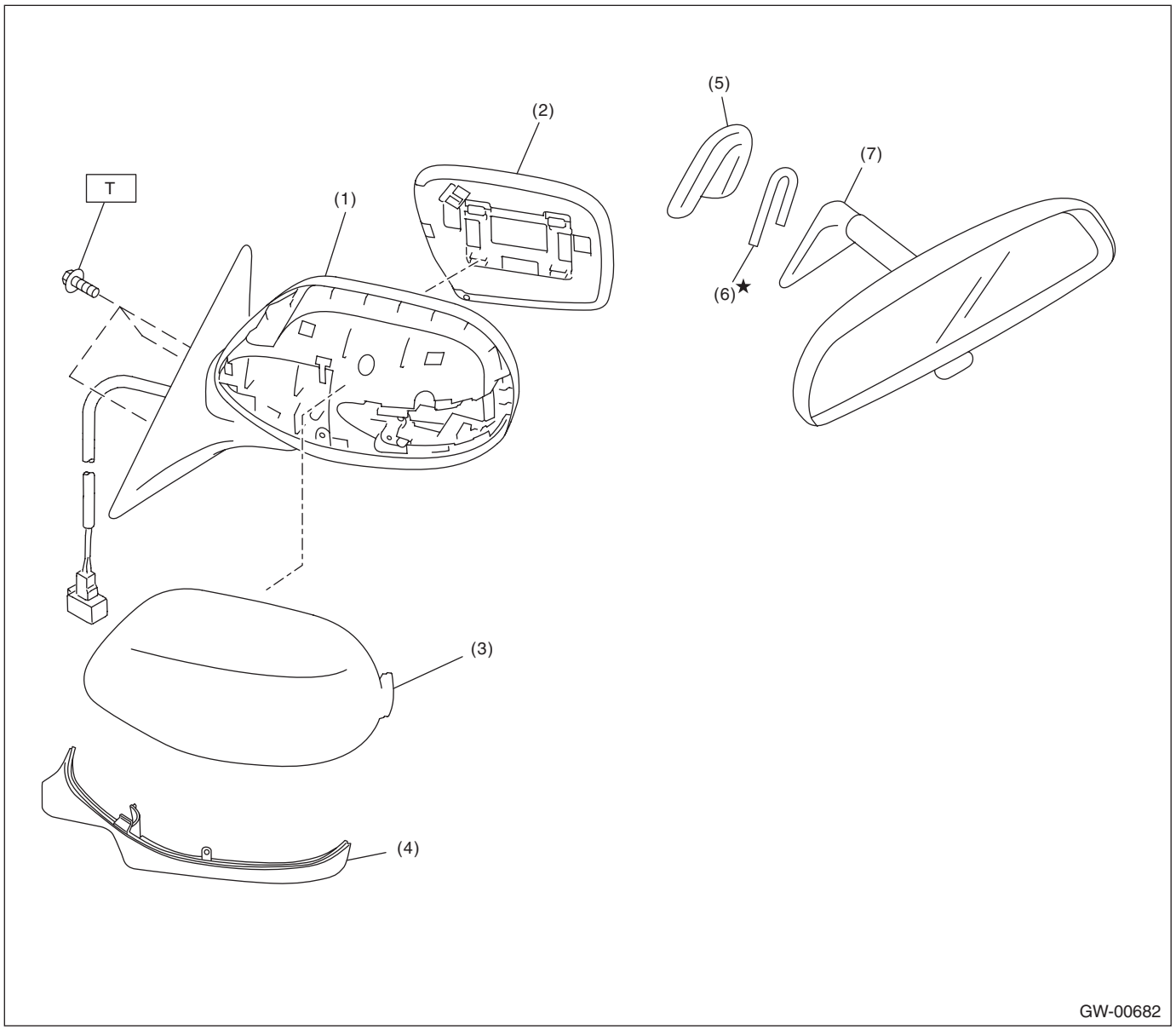
4. REAR DOOR GLASS



(1) Glass run rubber
(2) Glass
(3) Weather strip outer
(4) Rear outer gusset cover
(5) Regulator & motor ASSY
(6) Door sash

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

5. MIRROR



(1) Outer mirror case ASSY
(2) Mirror
(3) Scalp cap
(4) Lower cover
(5) Mount
(6) Spring
(7) Rearview mirror ASSY

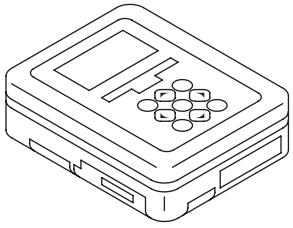
Tightening torque: N·m (kgf-m, ft-lb)
T: 4.5 (0.46, 3.3)

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
 ST1B022XU0	1B022XU0	SUBARU SELECT MONITOR III KIT	Used for setting of each function and trouble-shooting for electrical system.

2. GENERAL TOOL

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

2. Power Window System

A: WIRING DIAGRAM

Refer to “Power Window System” in WI section. <Ref. to WI-126, WIRING DIAGRAM, Power Window System.>

B: INSPECTION

Symptoms	Repair order
All power windows do not operate.	1. Fuse (SBF-4) 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

C: NOTE

For procedure of each component in the power window system, refer to the respective section.

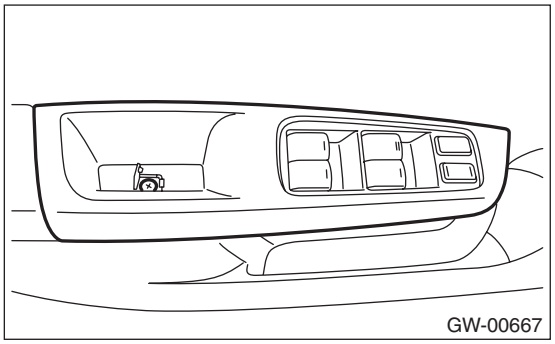
- Power window control switch <Ref. to GW-9, Power Window Control Switch.>
- Front door glass <Ref. to GW-11, Front Door Glass.>
- Front regulator & motor assembly <Ref. to GW-12, Front Regulator and Motor Assembly.>
- Rear door glass <Ref. to GW-18, Rear Door Glass.>
- Rear regulator & motor assembly <Ref. to GW-19, Rear Regulator and Motor Assembly.>

3. Power Window Control Switch

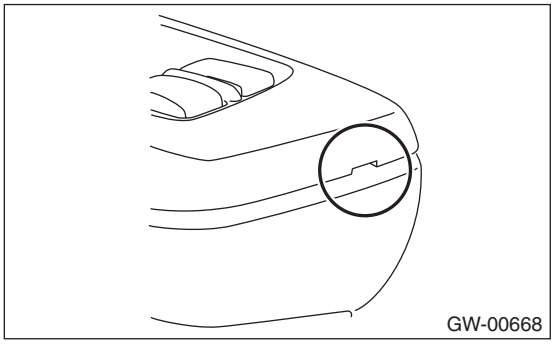
A: REMOVAL

1. MAIN SWITCH

1) Disconnect the ground cable from battery.
2) Open the screw cover by using a flat tip screwdriver.
3) Remove the screw to remove the power window main switch panel.



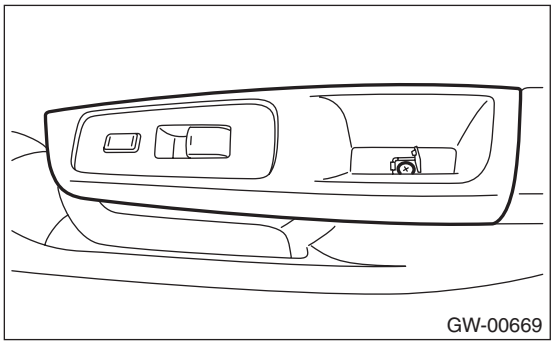
NOTE:
Remove it from the cutout portion at the tip of the switch panel.



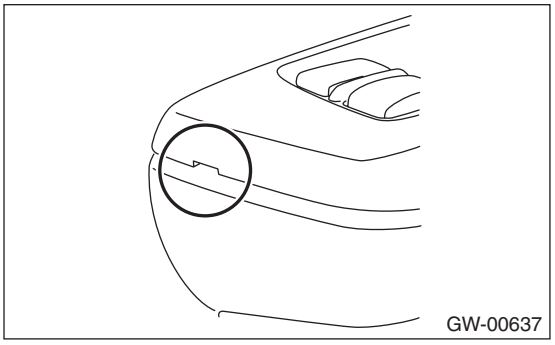
4) Disconnect the harness connector.
5) Remove the screws to remove the power window main switch assembly.

2. SUB-SWITCH

1) Open the screw cover by using a flat tip screwdriver.
2) Remove the screw to remove the power window sub-switch panel.



NOTE:
Remove it from the cutout portion at the tip of the switch panel.



3) Disconnect the harness connector.
4) Remove the screws to remove the power window sub-switch assembly.

B: INSTALLATION

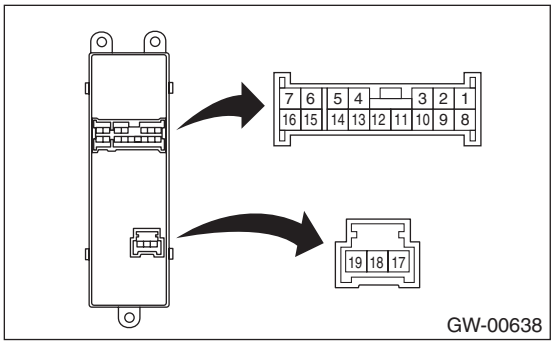
Install in the reverse order of removal.

C: INSPECTION

1. MAIN SWITCH

1) Remove the main switch. <Ref. to GW-9, MAIN SWITCH, REMOVAL, Power Window Control Switch.>

2) Measure the main switch resistance.



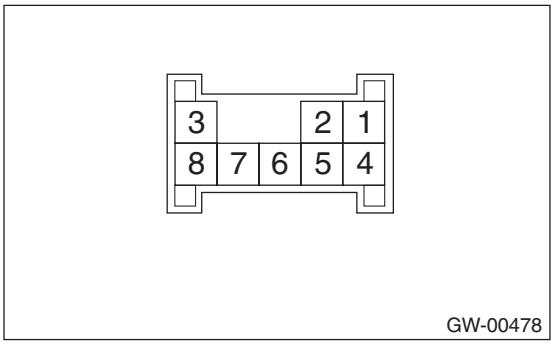
	Switch position	Terminal No.	Standard
Driver's seat	UP	14 and 16 13 and 19	Less than 1 Ω
	OFF	14 and 13 14 and 16	1 MΩ or more
		17 and 18	Less than 1 Ω
	DOWN	14 and 13 16 and 19	Less than 1 Ω
	AUTO DOWN	14 and 13 16 and 19	Less than 1 Ω
Passenger's seat	UP	14 and 8 12 and 19	Less than 1 Ω
	OFF	14 and 12 14 and 8	1 MΩ or more
		8 and 12 8 and 19 12 and 19	Less than 1 Ω
	DOWN	14 and 12 8 and 19	Less than 1 Ω
Rear LH	UP	14 and 7 5 and 19	Less than 1 Ω
	OFF	14 and 7 14 and 5	1 MΩ or more
		19 and 7 19 and 5 7 and 5	Less than 1 Ω
	DOWN	14 and 5 7 and 19	Less than 1 Ω
Rear RH	UP	14 and 1 3 and 19	Less than 1 Ω
	OFF	14 and 1 14 and 3	1 MΩ or more
		19 and 3 19 and 1 3 and 1	Less than 1 Ω
	DOWN	14 and 3 1 and 19	Less than 1 Ω

Replace the main switch if faulty.

2. SUB-SWITCH

1) Remove the sub-switch. <Ref. to GW-9, SUB-SWITCH, REMOVAL, Power Window Control Switch.>

2) Measure the sub-switch resistance.



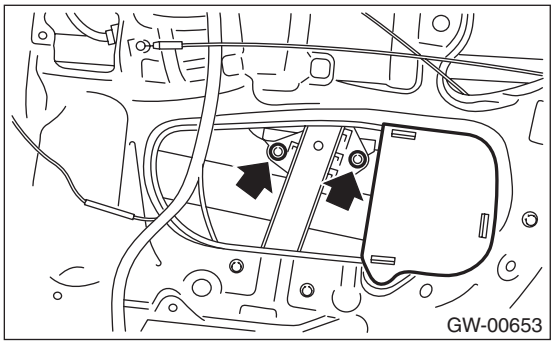
	Switch position	Terminal No.	Standard
Passenger seat, rear	UP	4 and 5 6 and 7	Less than 1 Ω
	OFF	7 and 4 8 and 4	1 MΩ or more
		5 and 8 6 and 7	Less than 1 Ω
	DOWN	4 and 6 5 and 8	Less than 1 Ω

Replace the sub-switch if faulty.

4. Front Door Glass

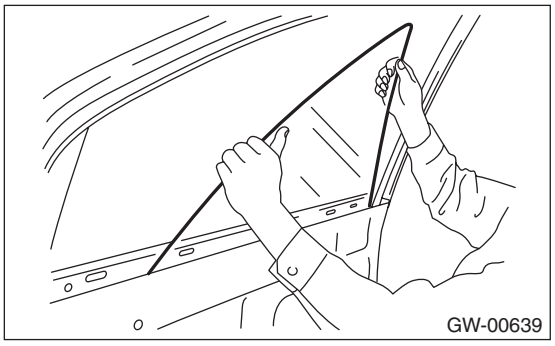
A: REMOVAL

1) Remove the front door trim. <Ref. to EI-43, REMOVAL, Door Trim.>
2) Remove the sealing cover. <Ref. to EB-21, REMOVAL, Front Sealing Cover.>
3) Operate the power window switch to move the glass, and remove the two bolts.



4) Tilt the door glass forward and remove the door glass from the glass run rubber.
5) Remove the door glass while tilting.

CAUTION:
Avoid impact and damage to the glass.



B: INSTALLATION

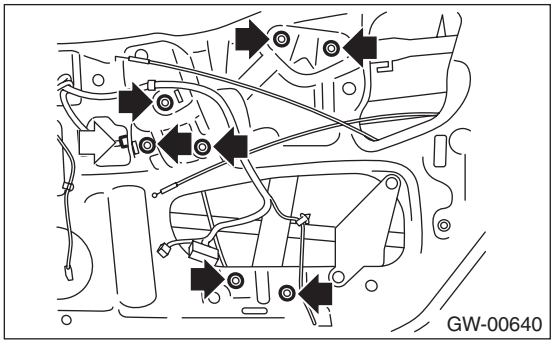
CAUTION:
Make sure that the glass run rubber is placed securely in door frame and sash.
Install in the reverse order of removal.

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to GW-4, FRONT DOOR GLASS, COMPONENT, General Description.>

5. Front Regulator and Motor Assembly

A: REMOVAL

1) Remove the door glass. <Ref. to GW-11, REMOVAL, Front Door Glass.>
2) Disconnect the motor connector.
3) Remove seven bolts to remove the front regulator and motor assembly.



B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to GW-4, FRONT DOOR GLASS, COMPONENT, General Description.>

C: INSPECTION

1) Check to ensure that the power window motor rotates properly when the battery voltage is applied to motor connector terminal.
2) Check to ensure that the motor rotates in the other direction when the terminal which battery voltage is applied to is changed.

6. Remote Control Mirror System

A: WIRING DIAGRAM

Refer to “Remote Control Mirror System” in WI section. <Ref. to WI-130, WIRING DIAGRAM, Remote Control Mirror System.>

B: INSPECTION

Symptoms	Repair order
All function does not operate.	1. Check the fuse. 2. Check the remote control mirror switch. 3. Check the wiring harness.
One side of the mirror motor does not operate.	1. Check the remote control mirror switch. 2. Check the mirror motor. 3. Check the wiring harness.
Mirror heater does not operate.	1. Check the defogger switch. 2. Check the mirror heater. 3. Check the wiring harness.

NOTE:
The mirror heater operates simultaneously with the rear window defogger. Refer to the inspection procedure of rear window defogger system. <Ref. to GW-29, INSPECTION, Rear Window Defogger System.>

C: NOTE

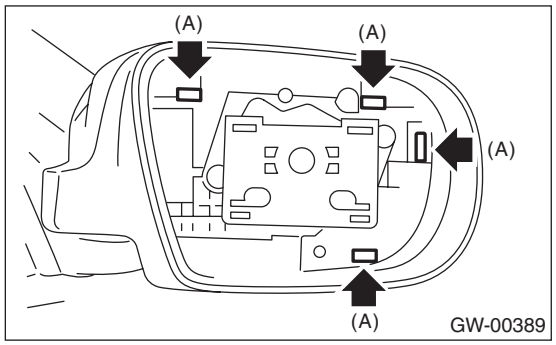
For procedure of each component in the remote control mirror system, refer to the respective section.

- Scalp cap <Ref. to GW-14, Scalp Cap.>
- Outer mirror assembly <Ref. to GW-15, Outer Mirror Assembly.>
- Outer mirror <Ref. to GW-16, Outer Mirror.>
- Remote control mirror switch <Ref. to GW-17, Remote Control Mirror Switch.>

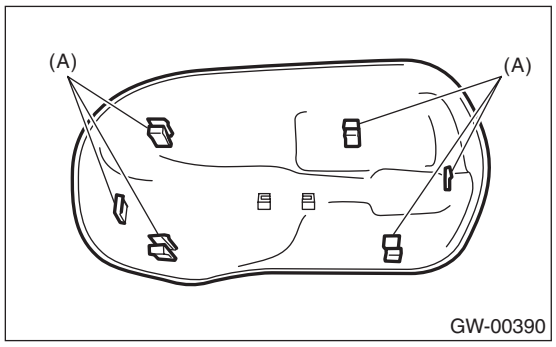
7. Scalp Cap

A: REPLACEMENT

1) Remove the mirror. <Ref. to GW-16, REPLACEMENT, Outer Mirror.>
2) Press-in the clips (A) from inside of outer mirror.



3) Pull the scalp cap towards the front of the outer mirror, then remove the scalp cap.
4) Align clips (A) on the reverse side of the scalp cap and the clip attachment hole of the outer mirror, and push the scalp cap in.

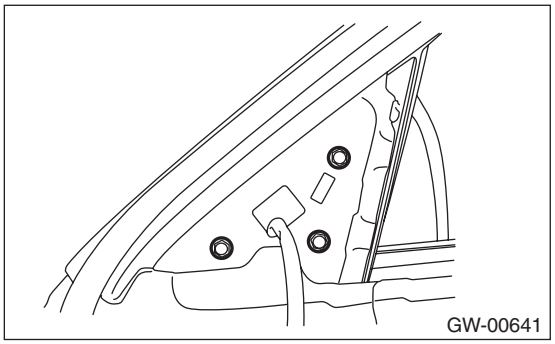


5) Install the scalp cap and lower cover securely.

8. Outer Mirror Assembly

A: REMOVAL

1) Remove the front door trim. <Ref. to EI-43, REMOVAL, Door Trim.>
2) Disconnect the outer mirror connector.
3) Remove the bolts to remove outer mirror assembly.



B: INSTALLATION

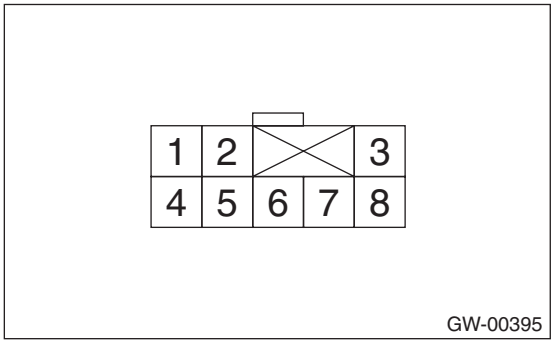
Install in the reverse order of removal.

Tightening torque:
4.5 N·m (0.46 kgf-m, 3.3 ft-lb)

C: INSPECTION

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

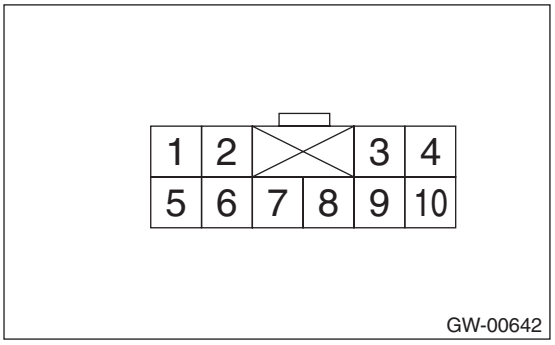
Model without mirror heater



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

If defective, replace the outer mirror.

Model with mirror heater



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

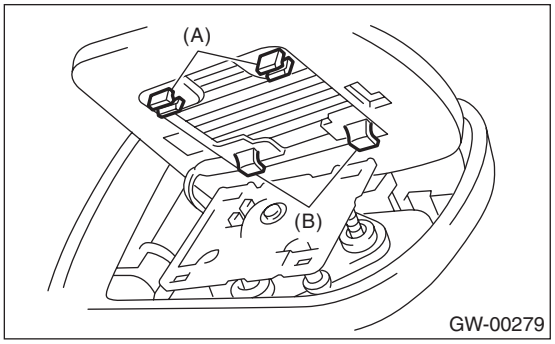
If defective, replace the outer mirror.

9. Outer Mirror

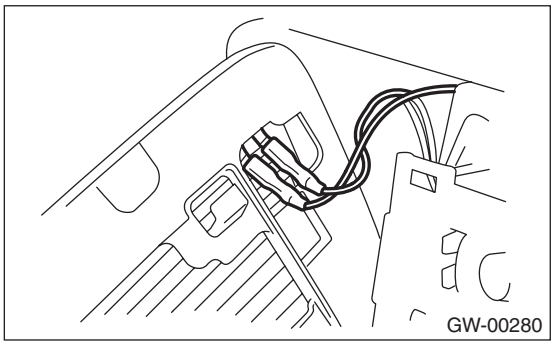
A: REPLACEMENT

CAUTION:
• When removing the mirror, be careful not to damage the back surface of mirror with a flat tip screwdriver.
• When installing the mirror, insert the fitting area securely.

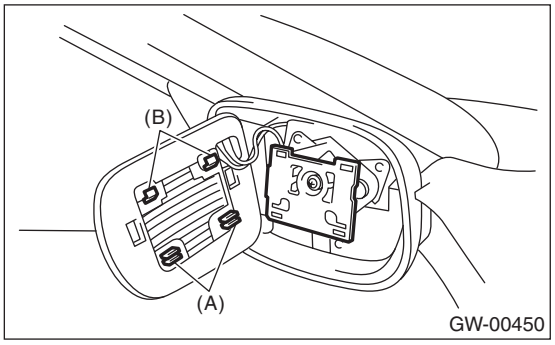
1) Face the mirror upward.
2) Use a flat tip screwdriver to remove clips (A).
3) Lift the lower mirror up to remove hooks (B).



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



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



10.Remote Control Mirror Switch

A: REMOVAL

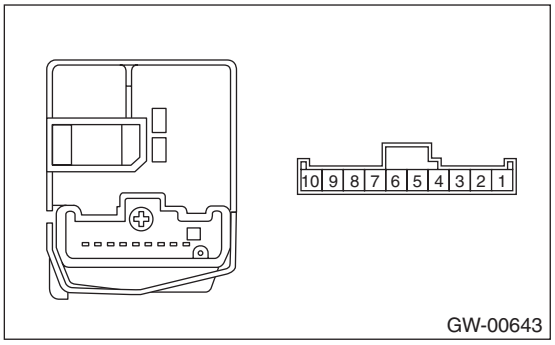
1) Remove the instrument panel lower cover. <Ref. to EI-46, REMOVAL, Instrument Panel Lower Cover.>
2) Remove the remote control mirror switch from instrument panel lower cover.

B: INSTALLATION

Install in the reverse order of removal.

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.

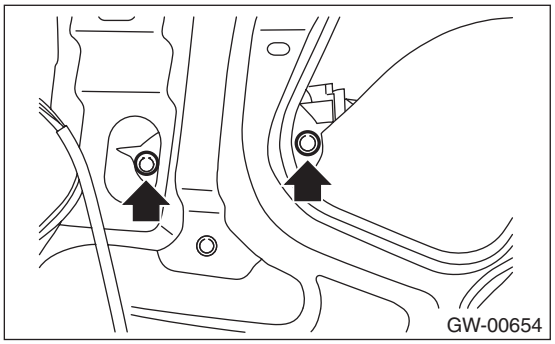
Switch position	Terminal No.	Standard
OFF	—	1 MΩ or more
UP	8 and 4, 6 and 7	Less than 1 Ω
DOWN	8 and 6, 4 and 7	Less than 1 Ω
LEFT	8 and 5, 6 and 7	Less than 1 Ω
RIGHT	8 and 6, 5 and 7	Less than 1 Ω

If NG, replace the remote control mirror switch.

11.Rear Door Glass

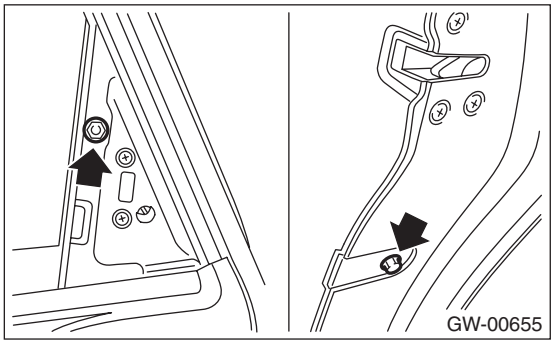
A: REMOVAL

1) Remove the rear door trim. <Ref. to EI-43, REMOVAL, Door Trim.>
2) Remove the sealing cover. <Ref. to EB-24, REMOVAL, Rear Sealing Cover.>
3) Operate the power window switch to move the glass, and remove the two bolts.



4) Remove the glass from the carrier plate, and while holding the glass, lower the carrier plate alone to the lowest position.

CAUTION:
Without the carrier plate lowered to the bottom most position, do not lower the glass by itself to the lowest position within the door panel. The glass may come off of the sash, and become damaged.
5) Lower the glass slowly to the bottom most position in the door panel.
6) Remove the bolts and nuts, and then remove the sash.(Remove the upper attachment point first.)



7) Remove the glass run rubber.
8) Remove the door glass while tilting.

CAUTION:
Avoid impact and damage to the glass.

B: INSTALLATION

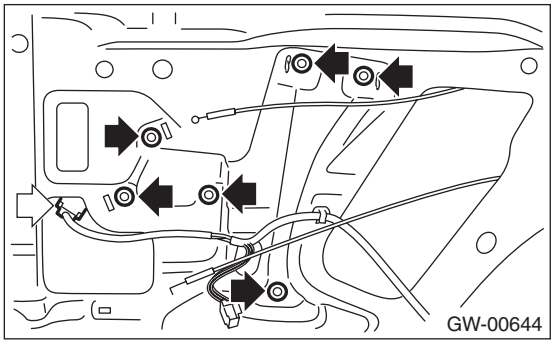
CAUTION:
Make sure that the glass run rubber is placed securely in door frame and sash.
Install in the reverse order of removal.

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to GW-5, REAR DOOR GLASS, COMPONENT, General Description.>

12.Rear Regulator and Motor Assembly

A: REMOVAL

1) Remove the rear door glass. <Ref. to GW-18, REMOVAL, Rear Door Glass.>
2) Disconnect the motor connector.
3) Remove six bolts to remove the rear regulator and motor assembly.



B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to GW-5, REAR DOOR GLASS, COMPONENT, General Description.>

C: INSPECTION

1) Check to ensure that the power window motor rotates properly when the battery voltage is applied to motor connector terminal.
2) Check to ensure that the motor rotates in the other direction when the terminal which battery voltage is applied to is changed.

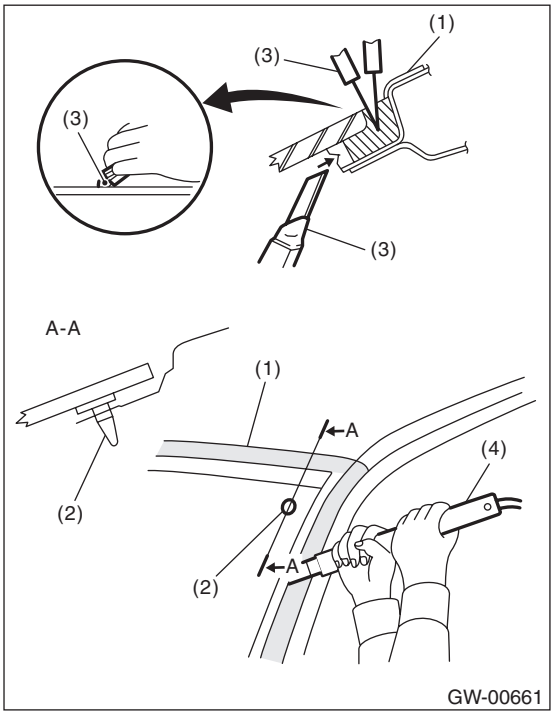
13.Windshield Glass

A: REMOVAL

1. WHEN USING WINDSHIELD GLASS KNIFE

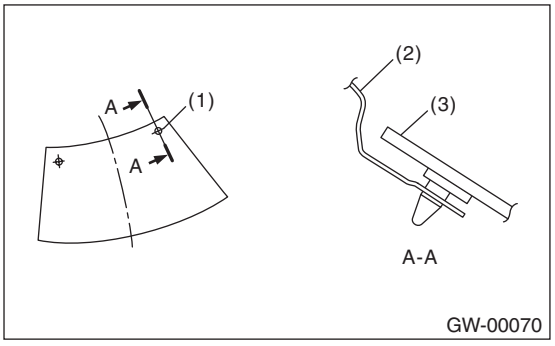
CAUTION:
Apply protective tape, etc, and be careful that the inner and outer components of the vehicle are not damaged.

1) Disconnect the ground cable from battery. (Models with wiper deicer)
2) Remove the front pillar upper trim. <Ref. to EI-57, REMOVAL, Upper Inner Trim.>
3) Disconnect the wiper deicer connector. (Models with wiper deicer)
4) Remove the cowl panel. <Ref. to EI-38, REMOVAL, Cowl Panel.>
5) Remove the glass molding.
6) Tape the body side of the circumference of windshield glass for protection.
7) Apply sufficient amount of soapy water to the adhesive part.
8) Make a slit using a cutter knife to make it easier to insert the windshield glass knife.
9) Insert the windshield glass knife into adhesive part.
10) 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.



(1) Tape for protection
(2) Locating pin
(3) Cutter knife
(4) Windshield glass knife

NOTE:
• Do not twist the windshield glass knife.
• Cutting of adhesive part shall be started with wider gap between windshield glass and body.
• The locating pins are bonded to the corners of glass. Use piano wire to disconnect the pins.

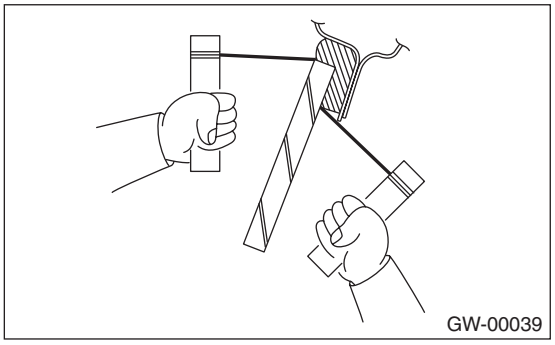


(1) Locating pin
(2) Body panel
(3) Windshield glass

2. WHEN USING PIANO WIRE

CAUTION:
• Do not tightly pull the piano wire against the windshield glass edge.
• Apply protective tape, etc, and be careful that the inner and outer components are not damaged.
• Do not cross piano wires. Otherwise they may be cut.

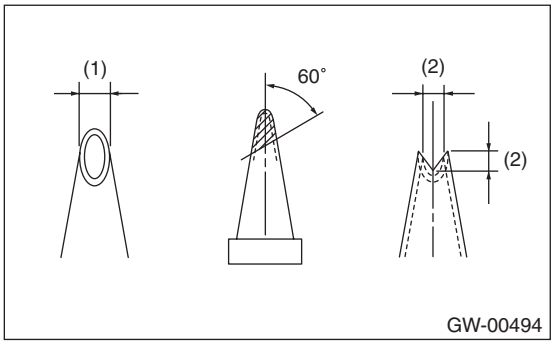
1) Disconnect the ground cable from battery. (Models with wiper deicer)
2) Remove the front pillar upper trim. <Ref. to EI-57, REMOVAL, Upper Inner Trim.>
3) Disconnect the wiper deicer connector. (Models with wiper deicer)
4) Remove the cowl panel. <Ref. to EI-38, REMOVAL, Cowl Panel.>
5) Remove the glass molding.
6) Tape the body side of the circumference of windshield glass for protection.
7) Make a hole in the adhesive part using drill or cutter knife.
8) Pass the piano wire through the hole, and attach both the wire ends securely to pieces of wood.



9) Pull the wire ends alternately to cut off the adhesive part.

B: INSTALLATION

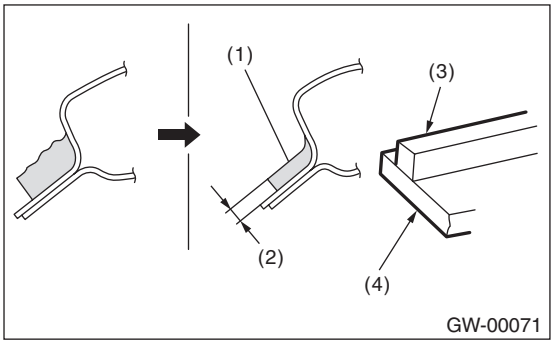
1) Fabricate the cartridge nozzle tip as shown and set the sealant gun with the adhesive.



(1) 10 mm (0.39 in)
(2) 8 mm (0.31 in)

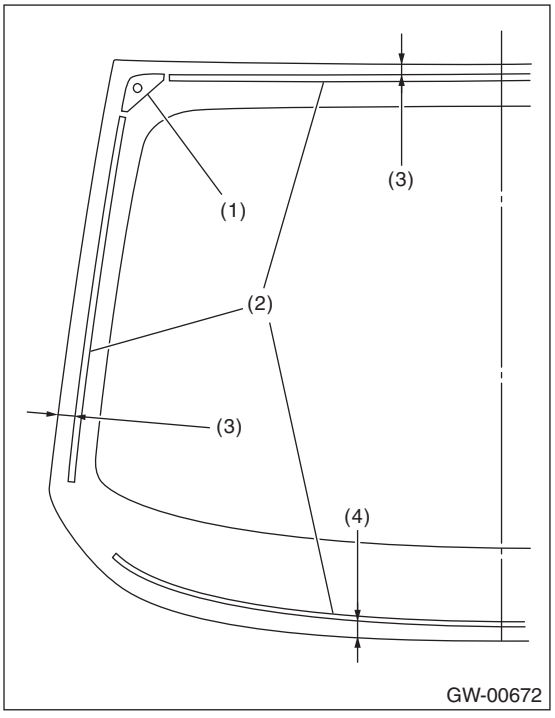
2) Clean the external circumference of windshield glass with alcohol or white gasoline.
3) Remove the adhesive layer on the body using cutter knife to obtain smooth face of 2 mm (0.08 in) thick.

CAUTION:
Be careful not to damage the body and paint surface.



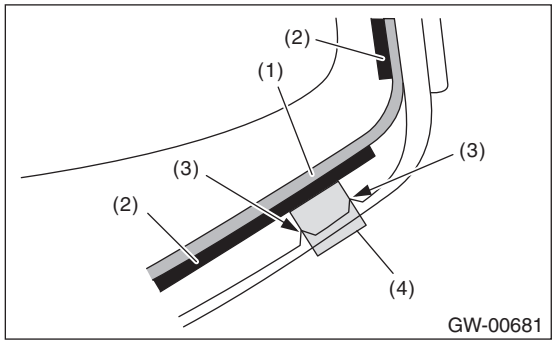
(1) Adhesive
(2) 2 mm (0.08 in)
(3) Dam rubber
(4) Glass

4) Clean the body with alcohol or white gasoline to eliminate cutting powder, dust and dirt completely from body.
5) Install the dam rubber.



(1) Locating pin
(2) Dam rubber
(3) 11 mm (0.43 in)
(4) 14.5 mm (0.57 in)

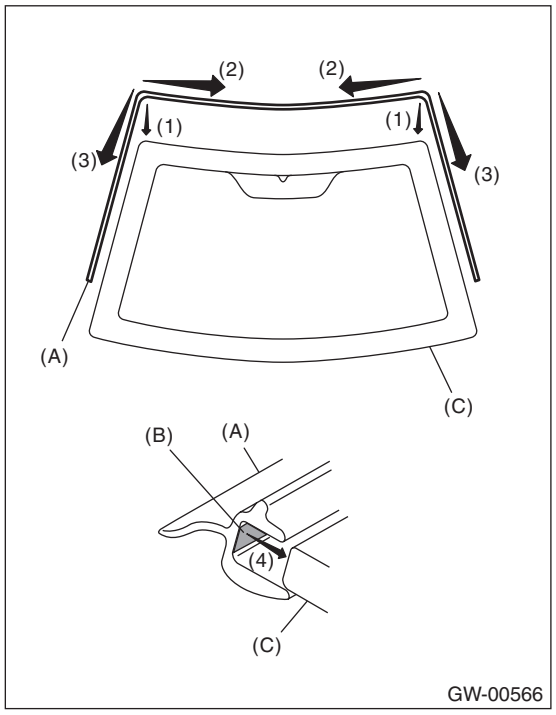
6) Attach the seal to the glass. (driver's side only)



(1) Adhesive
(2) Dam rubber
(3) Ceramic print cutout portion
(4) Seal

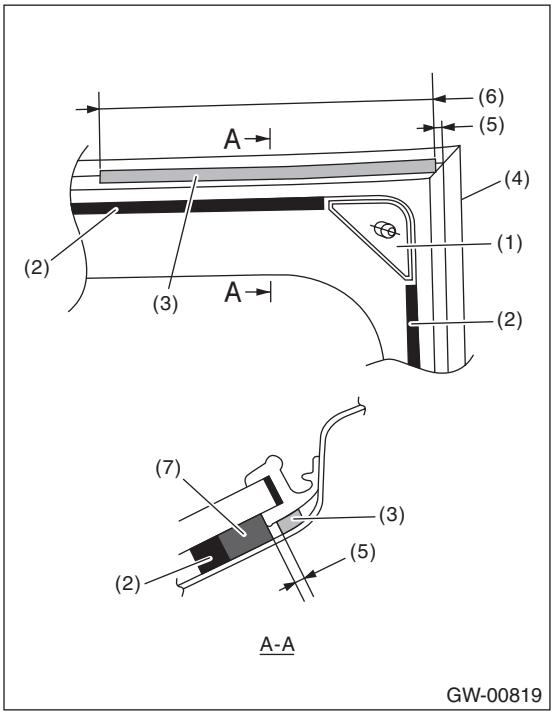
NOTE:
Attach the seal between the ceramic print cutout portions (3) located at the lower edge of the glass (driver's seat side).
Attach the seal and dam rubber so that there are no gap by pressing on them.

7) Install the molding to the glass.



(1) Align the molding (A) with both ends of the upper edge of the windshield glass (C).
(2) Install the molding from both corners of the upper edge toward the center.
(3) Install the molding from both corners of the upper edge toward the lower side.
(4) Apply the double-sided tapes (B) of the molding uniformly on both sides of the glass.

8) Apply the seal to the molding.



(1) Locating pin
(2) Dam rubber
(3) Seal
(4) Molding
(5) 3 mm (0.12 in)
(6) 165 mm (6.50 in)
(7) Adhesive

NOTE:
Apply so that the sticker does not overlap out to the adhesive side (5).

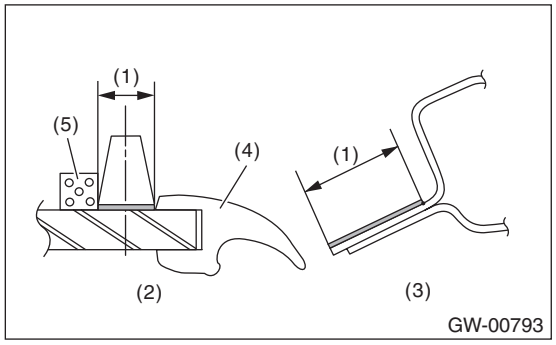
9) Apply the primer to the adhesive surface of glass side and body side using sponge.

Glass primer:
Dow Automotive's
ESSEX U-401, U-402

Painted surface primer:
Dow Automotive's
ESSEX U-413

NOTE:
• Primer once attached to the painted surface of the body and internal trim is hard to wipe off. Mask the circumference of such area.
• Let primer dry for about ten minutes before installing the glass.

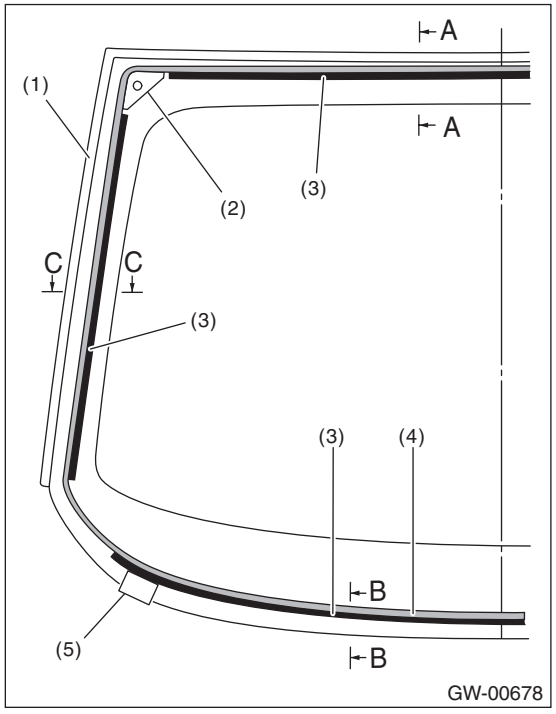
- Do not touch the surface coated with primer.



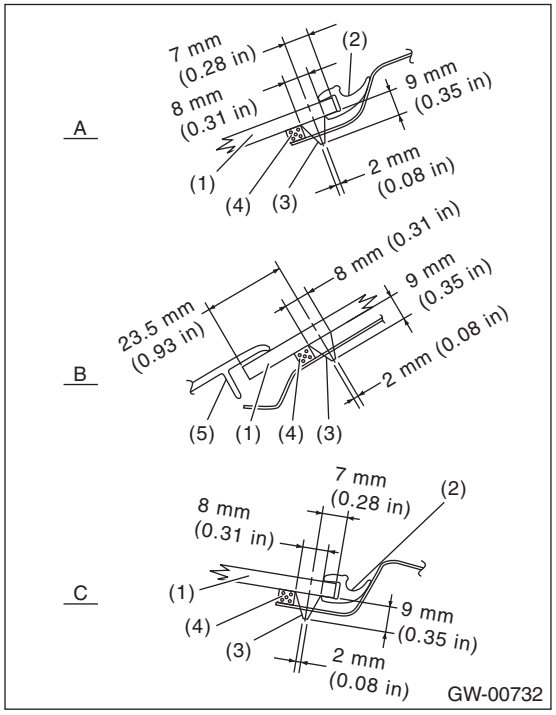
(1) Application of primer
(2) Glass side
(3) Body side
(4) Molding
(5) Dam rubber

10) Apply adhesive to the glass end surface as shown.

Adhesive:
Dow Automotive's
ESSEX U-400HV or equivalent



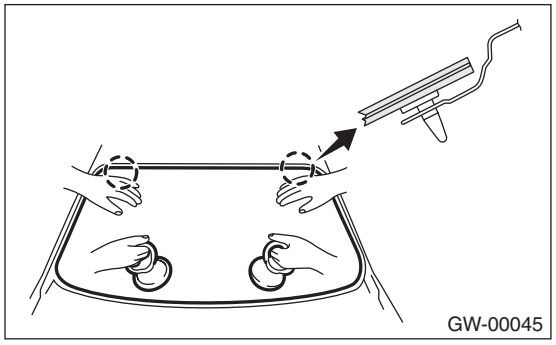
(1) Molding
(2) Locating pin
(3) Dam rubber
(4) Adhesive
(5) Seal (driver's side only)



A Upper end
B Lower end
C Side end

(1) Glass
(2) Molding
(3) Adhesive
(4) Dam rubber
(5) Cowl panel

11) Fit the locating pins to vehicle body using suction rubber cup to install the 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-38, INSTALLATION, Cowl Panel.>

17) Connect the wiper deicer connector. (Models with wiper deicer)

18) Install the front pillar upper trim. <Ref. to EI-57, INSTALLATION, Upper Inner Trim.>

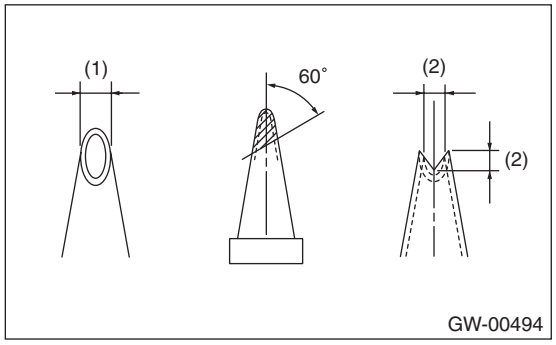
14.Rear Gate Glass

A: REMOVAL

1) Detach the rear spoiler. <Ref. to EI-39, REMOVAL, Roof Spoiler.>
2) Remove the rear wiper motor. <Ref. to WW-19, REMOVAL, Rear Wiper Motor.>
3) Disconnect the connectors from rear defogger terminal.
4) Remove the glass in the same procedure as for windshield glass. <Ref. to GW-20, REMOVAL, Windshield Glass.>

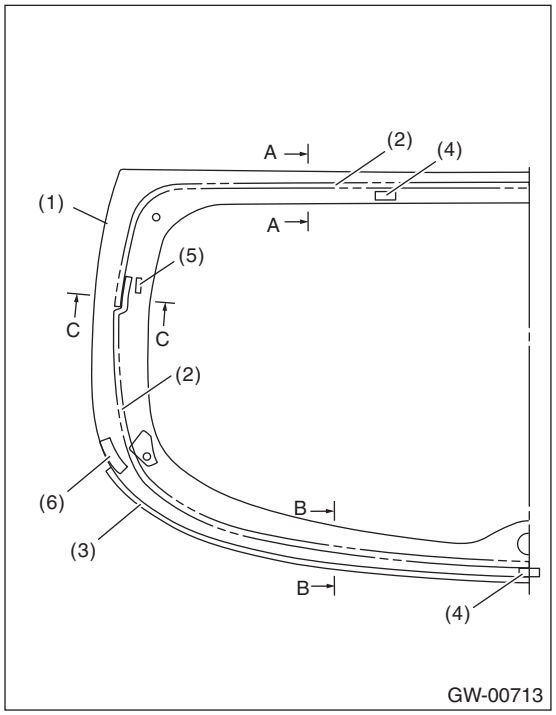
B: INSTALLATION

1) Apply the primer to the glass and body sides in the same procedure as for windshield glass. <Ref. to GW-21, INSTALLATION, Windshield Glass.>
2) Fabricate the cartridge nozzle tip as shown and set the sealant gun with the adhesive.

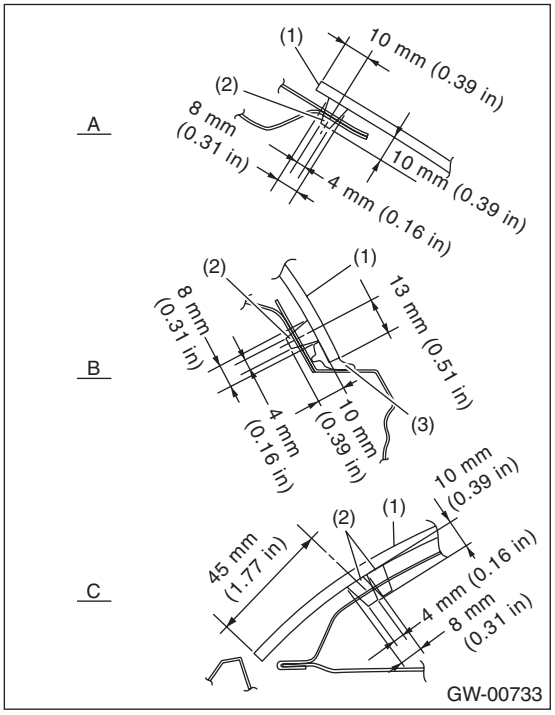


(1) 10 mm (0.39 in)
(2) 8 mm (0.31 in)

3) Apply adhesive in the same procedure as for windshield glass. <Ref. to GW-21, INSTALLATION, Windshield Glass.>



(1) Glass
(2) Adhesive
(3) Molding
(4) Spacer
(5) Heat wire terminal
(6) Seal

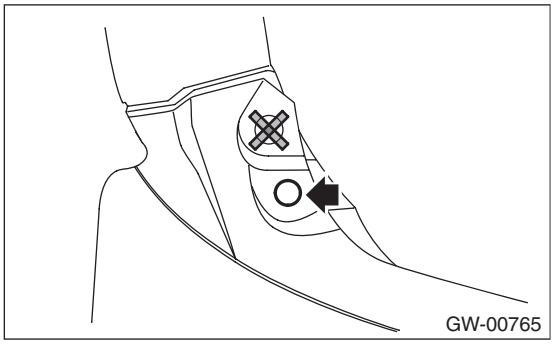


A Upper end
B Lower end
C Side end

(1) Glass
(2) Adhesive
(3) Molding

4) Insert the glass locating pin into the hole on rear gate panel and push on the area around the locating pin to secure it.

NOTE:
Insert the locating pin into the lower hole of the rear gate panel.



5) Push lightly all around the locating pin to seal it.
6) 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.

7) 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.

8) Connect the rear defogger terminals.
9) Install the rear wiper. <Ref. to WW-19, INSTALLATION, Rear Wiper Motor.>
10) Install the rear spoiler. <Ref. to EI-39, INSTALLATION, Roof Spoiler.>

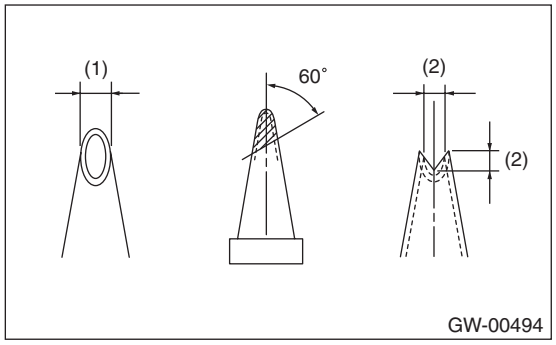
15.Rear Window Glass

A: REMOVAL

1) Remove the rear wiper motor. <Ref. to WW-19, REMOVAL, Rear Wiper Motor.>
2) Disconnect the connectors from rear defogger terminal.
3) Remove the glass in the same procedure as for windshield glass. <Ref. to GW-20, REMOVAL, Windshield Glass.>

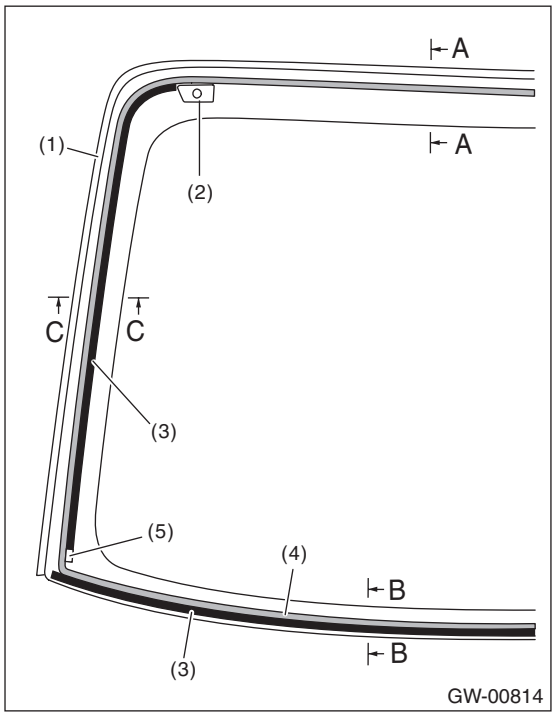
B: INSTALLATION

1) Apply the primer to the glass and body sides in the same procedure as for windshield glass. <Ref. to GW-21, INSTALLATION, Windshield Glass.>
2) Fabricate the cartridge nozzle tip as shown and set the sealant gun with the adhesive.

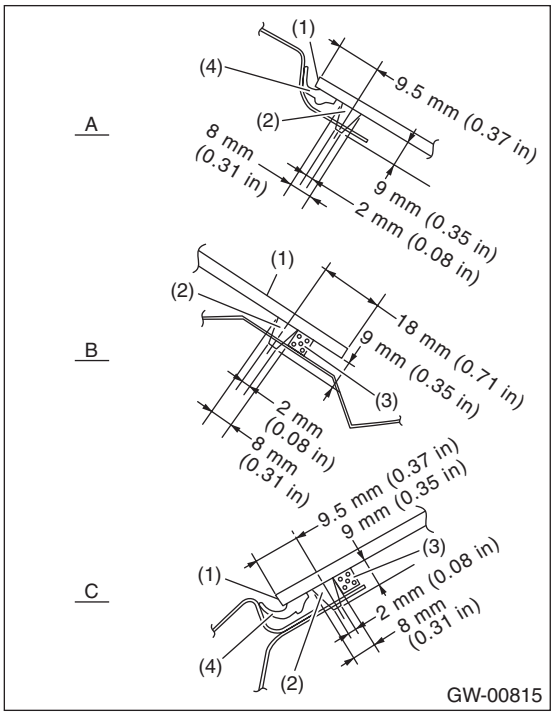


(1) 10 mm (0.39 in)
(2) 8 mm (0.31 in)

3) Apply adhesive with the dam rubber installed in the same procedure as for windshield glass. <Ref. to GW-21, INSTALLATION, Windshield Glass.>



(1) Molding
(2) Locating pin (adhered)
(3) Dam rubber
(4) Adhesive
(5) Spacer



A Upper end
B Lower end
C Side end

(1) Glass
(2) Adhesive
(3) Dam rubber
(4) Molding

4) Install the glass in the same procedure as for windshield glass. <Ref. to GW-21, INSTALLATION, Windshield Glass.>
5) 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.
6) 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.
7) Connect the rear defogger terminals.
8) Install the rear wiper motor. <Ref. to WW-19, INSTALLATION, Rear Wiper Motor.>

16. Rear Window Defogger System

A: WIRING DIAGRAM

Refer to “Rear Defogger System” in WI section. <Ref. to WI-131, WIRING DIAGRAM, Rear Defogger System.>

B: INSPECTION

1. SYSTEM INSPECTION

Symptoms	Repair order
Rear window defogger does not operate.	1. Check the fuse. 2. Check the rear defogger relay. 3. Check the rear defogger switch. 4. Check the heat wire. 5. Check the wiring harness. 6. Check body integrated unit.

NOTE:
Rear window defogger system can be customized on the Subaru Select Monitor, when the body integrated unit customize setting {A/C ECM setting} is “support”. (Auto A/C model)

System name	Initial setting	Customize setting
Rr defogger op. mode	OFF after 15 min.	Repeat 15 min. operation and 2 min. stop.

2. CHECK WITH SUBARU SELECT MONITOR

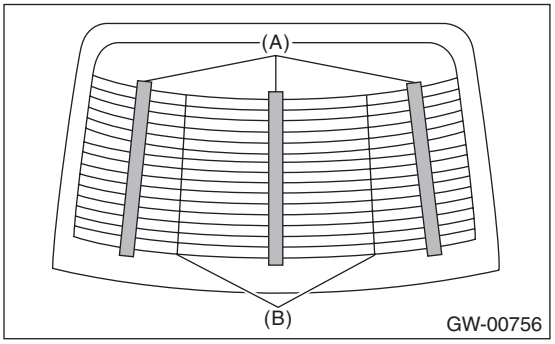
CAUTION:
Check whether the “Rr defogger op. mode” setting is in initial setting or customize setting before performing inspection.

1) Check the input signal when the rear window defogger switch is operated using Subaru Select Monitor.
   (1) Prepare the Subaru Select Monitor. <Ref. to GW-7, PREPARATION TOOL, General Description.>
   (2) Turn the ignition switch to ON (engine OFF) and run the “PC application for Subaru Select Monitor”.
   (3) On «System Selection Menu» display, select {Integ. unit mode}.
   (4) Select the {Rr Defogger Output} from the {Current Data Display & Save}.
   (5) Operate the rear window defogger switch to check the displayed data (ON/OFF).
2) Check the operation when the rear window defogger switch is ON.
• When the customize setting is “Continuous”, the cycle of 15-minute operation then 2-minute stop is correct.
• When the customize setting is “Normal”, the cycle of 15-minute operation then OFF is correct.
3) If the correct operation as described in the above 2) is not carried out, replace the body integrated unit.

3. HEAT WIRE 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) Prepare the following checking items.
• Liquid crystal thermograph sheet (Approximate Size: 300 × 300 mm (11.8 × 11.8 in) and thermal temperature: 35 — 40°C (95 — 104°F))
• Aluminum foil
2) Turn the ignition switch to ON.
3) Turn the defogger switch to ON.
4) Push the liquid crystal thermograph sheet from the outside of the rear glass.



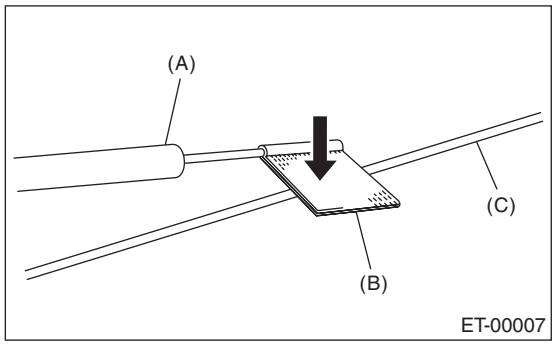
(A) Liquid crystal thermograph sheet
(B) Separate line

NOTE:
Use the liquid crystal thermograph sheet every range it is separated with the separate line.
5) Determine the faulty heat wire by checking the color of the liquid crystal thermograph sheet.

Liquid crystal thermograph sheet	Criteria
Change occured (red → blue)	Normal
No change (black)	Open

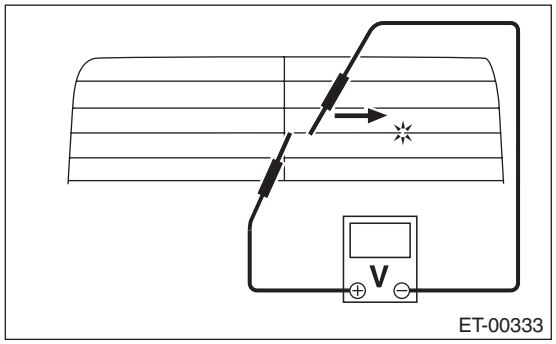
NOTE:
• Check from the inside of the glass if the liquid crystal thermograph sheet does not change.
• The time for the color change may differ depends on the surface temperature of the glass.

6) Wrap a piece of aluminum foil around the tip of tester probe and press it against the heat wire with your finger.



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

7) To both ends of the section that has been found to include an open in the step 5), apply the tester positive (+) probe and the negative (–) probe.
8) Move the tester probe on the negative (–) side slowly along the heat wire. If voltage changes from zero to several volts during movement of tester probe, heat wire is open at the voltage change point.

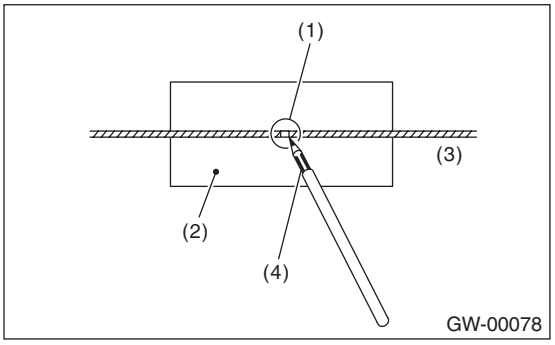


9) Repair the heat wire that determines the place of the open circuit. <Ref. to GW-30, REPAIR, Rear Window Defogger System.>

C: REPAIR

1) Clean the broken portion with alcohol or white gasoline.
2) Mask both side of wire with masking tape.
3) Apply the conductive silver composition to the broken portion.

Conductive silver composition:
by Permatex
QUICK GRID



(1) Broken portion
(2) Masking tape
(3) Broken wire
(4) Conductive silver composition

4) Dry using a dryer after applying the composition.
5) After repair, check the wire.

17.Rear Quarter Glass

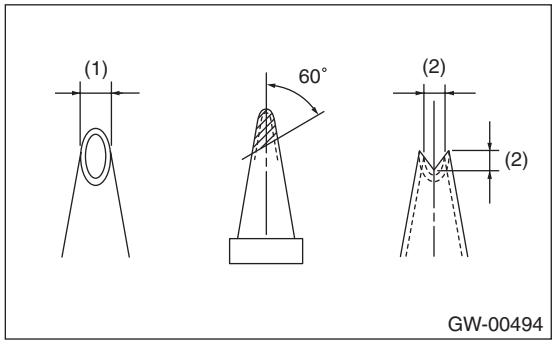
A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the rear quarter trim. <Ref. to EI-58, REMOVAL, Rear Quarter Trim.>
3) Remove the glass in the same procedure as for windshield glass. <Ref. to GW-20, REMOVAL, Windshield Glass.>

B: INSTALLATION

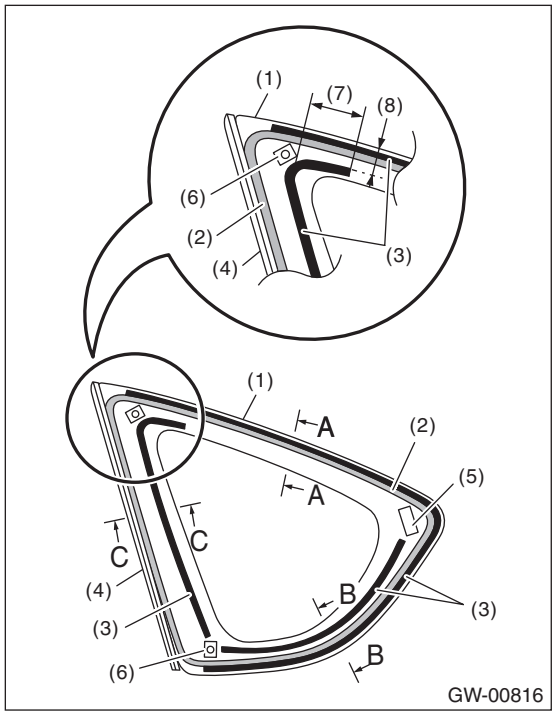
1. 5 DOOR MODEL

1) Mount the fastener on the vehicle body.
2) Apply the primer to the glass and body sides in the same procedure as for windshield glass. <Ref. to GW-21, INSTALLATION, Windshield Glass.>
3) Fabricate the cartridge nozzle tip as shown and set the sealant gun with the adhesive.

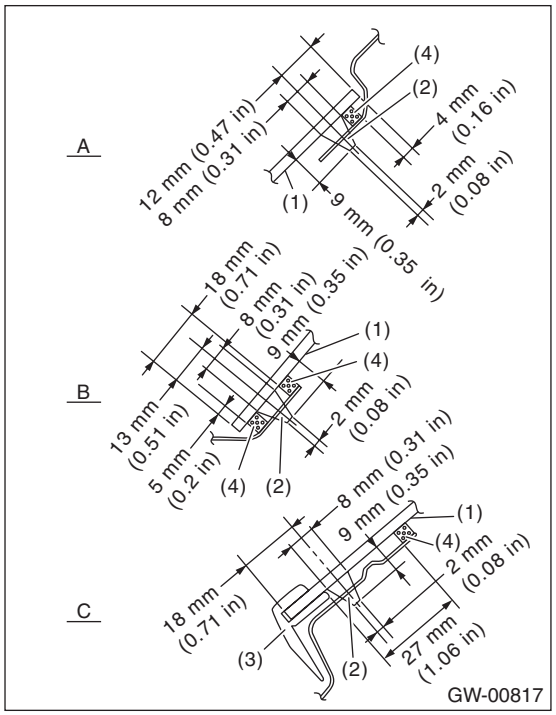


(1) 10 mm (0.39 in)
(2) 8 mm (0.31 in)

4) Apply adhesive with the dam rubber installed in the same procedure as for windshield glass. <Ref. to GW-21, INSTALLATION, Windshield Glass.>



(1) Glass
(2) Adhesive
(3) Dam rubber
(4) Molding
(5) Fastener
(6) Clip
(7) 66 mm (2.60 in)
(8) 17 mm (0.61 in)



A Upper end
B Lower end
C Front end

(1) Glass
(2) Adhesive
(3) Molding
(4) Dam rubber

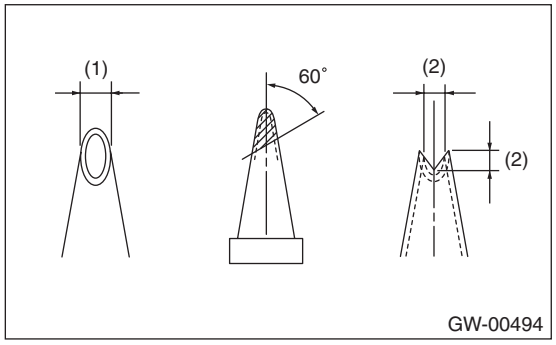
5) Insert the glass locating pin into the hole on side panel and push on the area around the locating pin to secure it.
Then push lightly all around the locating pin to seal it.
6) After completion of all work, allow the vehicle to stand for about 24 hours.

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.
7) 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.

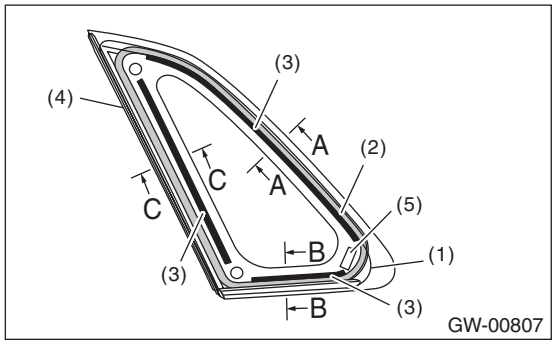
2. 4 DOOR MODEL

1) Mount the fastener on the vehicle body.
2) Apply the primer to the glass and body sides in the same procedure as for windshield glass. <Ref. to GW-21, INSTALLATION, Windshield Glass.>
3) Fabricate the cartridge nozzle tip as shown and set the sealant gun with the adhesive.

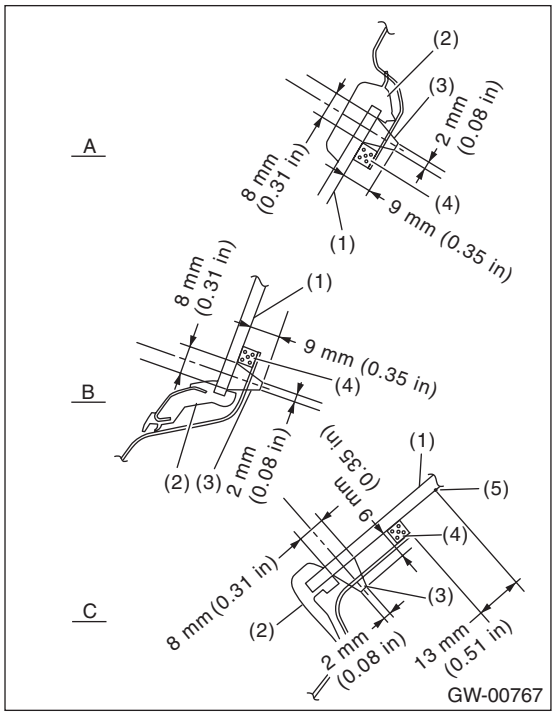


(1) 10 mm (0.39 in)
(2) 8 mm (0.31 in)

4) Apply adhesive with the dam rubber installed in the same procedure as for windshield glass. <Ref. to GW-21, INSTALLATION, Windshield Glass.>



(1) Glass
(2) Adhesive
(3) Dam rubber
(4) Molding
(5) Fastener



A Upper end
B Lower end
C Front end

(1) Glass
(2) Molding
(3) Adhesive
(4) Dam rubber
(5) Ceramic line edge

5) Insert the glass locating pin into the hole on side panel and push on the area around the locating pin to secure it. Then push lightly all around the locating pin to seal it.
6) 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.

7) After curing of adhesive, pour the water on external surface of vehicle to check that there are no water leaks.

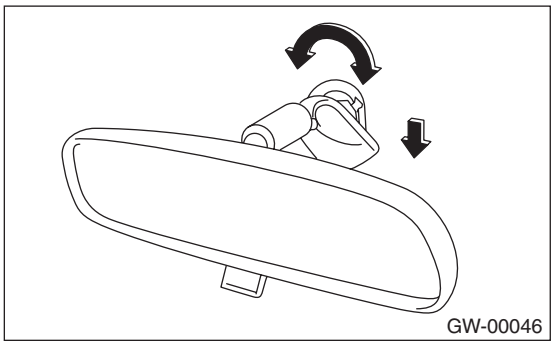
NOTE:
When a vehicle is returned to the user, tell him or her that the vehicle should not be subjected to heavy impact for at least three days.

18.Rearview Mirror

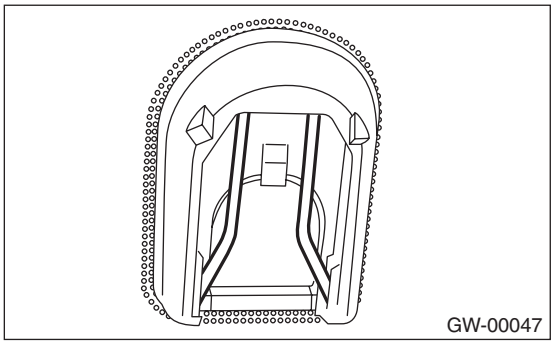
A: REMOVAL

CAUTION:
• Never reuse the spring. When the rearview mirror assembly is removed from the mirror base, fixed force will decline and the rearview mirror assembly may come off.
• Be careful not to damage the mirror surface and windshield glass.

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

3) When the mirror base is damaged, use a piano wire, spatula, etc. to remove.

B: INSTALLATION

Install in the reverse order of removal.

NOTE:
If the mirror base is removed, install it in the following procedure.
1. Clean the old adhesive completely.
2. Align the mirror base with the mark on the windshield glass to install it.
3. Make sure the mirror base is securely attached and then install the spring to it.

Adhesive:
REPAIR KIT IN MR (Part No. 65029FC000) or equivalent

C: INSPECTION

- Make sure the mirror is not damaged.
- Make sure the spring is not damaged.
- Make sure the mirror base is not damaged.

19.Wiper Deicer System

A: WIRING DIAGRAM

Refer to “Wiper Deicer System” in WI section. <Ref. to WI-117, WIRING DIAGRAM, Wiper Deicer System.>

B: INSPECTION

NOTE:
• The wiper deicer does not operate under ambient temperature of 5° or more.
• The wiper deicer operates simultaneously with the rear window defogger.
• Forced operation can be performed by holding down the rear window defogger switch for 3 seconds or more.

1. SYSTEM INSPECTION

Symptoms	Inspection order
Wiper deicer does not operate.	1. Check the fuse. 2. Check the wiper deicer relay. 3. Check the rear defogger switch. 4. Check the heat wire. 5. Check the wiring harness. 6. Check body integrated unit.

NOTE:
• Wiper deicer system can be customized on the Subaru Select Monitor, when the body integrated unit customize setting {A/C ECM setting} is “support”. (Auto A/C model)
• Set the system using the “Rr defogger op. mode”, and setting will be the same as rear defogger system setting.

System name	Initial setting	Customize setting
Rr defogger op. mode	OFF after 15 min.	Continuous operation*

*: If any of the following conditions occur, the continuous operation is terminated and turned OFF in 15 minutes.
• Ambient temperature remains 5°C (41°F) or more for 10 seconds.
• The ambient sensor error has occurred.
• Vehicle speed of 15 km/h (9 MPH) or less continues 15 minutes. (OFF when conditions are met)
• CAN communication error has occurred.
• Battery voltage (10 V or less) continues for 30 seconds.

2. CHECK WITH SUBARU SELECT MONITOR

CAUTION:
Before performing the inspection, check the following settings.
• Is the “wiperdeicer” setting “support”? If “no support”, set to “support” using customize setting.
• “Rr defogger op. mode” setting → Initial setting or customize setting
1) Check the input signal when the rear window defogger switch is operated using Subaru Select Monitor.
(1) Prepare the Subaru Select Monitor. <Ref. to GW-7, PREPARATION TOOL, General Description.>
(2) Turn the ignition switch to ON (engine OFF) and run the “PC application for Subaru Select Monitor”.
(3) On «System Selection Menu» display, select {Integ. unit mode}.
(4) Select the {Wiper Deicer Output} from the {Current Data Display & Save}.
(5) Operate the rear window defogger switch to check the displayed data (ON/OFF).
2) Check the operation when the rear window defogger switch is ON.
• When the customize setting is “Continuous”, the continuous operation without any termination conditions is correct.
• When the customize setting is “Normal”, the cycle of 15-minute operation then OFF is correct.
3) If the correct operation as described in the above 2) is not carried out, replace the body integrated unit.

3. HEAT WIRE INSPECTION

Refer to the heat wire inspection procedure of rear window defogger system. <Ref. to GW-29, HEAT WIRE INSPECTION, INSPECTION, Rear Window Defogger System.>

NOTE:
Heat wire inspection needs removing/installing procedure of instrument panel assembly.

C: REPAIR

Refer to “REPAIR” of “Rear Window Defogger System”. <Ref. to GW-30, REPAIR, Rear Window Defogger System.>

NOTE:
Heat wire repair needs removing/installing procedure of instrument panel assembly.

BODY STRUCTURE

BS

Page
1. General Description 2

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)-13, 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 the A/C switch to ON. 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)-19, 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)-19, 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.
• Auto A/C control module may be damaged.
4) Every A/C-related part is a precision part. Do not drop them.
5) Airbag system wiring harness is routed near the A/C control panel and junction box.

CAUTION:
• Do not use electrical test equipment on the airbag system wiring harness and connector.
• Be careful not to damage the airbag system wiring harness when servicing the A/C control panel 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 specific gravity of the electrolyte.

Standard voltage:
12 V

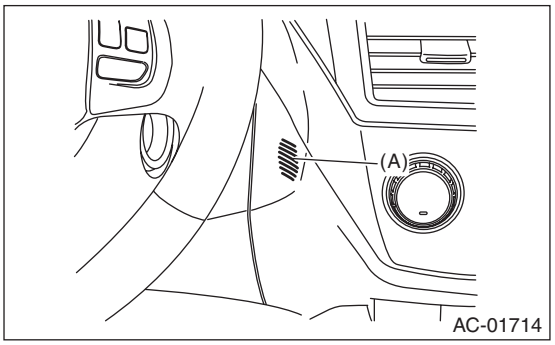
Specific gravity:
1.260 or more

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.

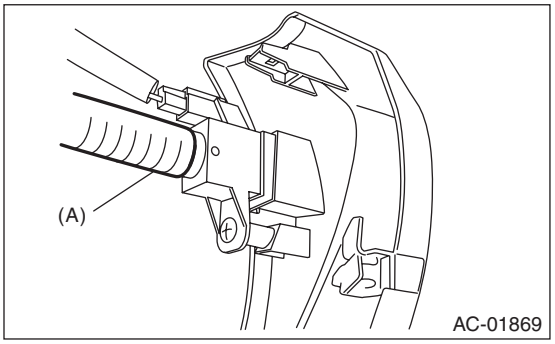
2. ASPIRATOR HOSE

1) Turn the ignition switch to ON, and press the A/C switch.
2) Turn the temperature control dial to maximum hot position.
3) Set the blow vents to the DEF position.
4) Turn the fan switch to “MAX” position.
5) Put a strip of paper close to the front side of in-vehicle sensor suction port (A) located in the instrument panel lower cover, 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.

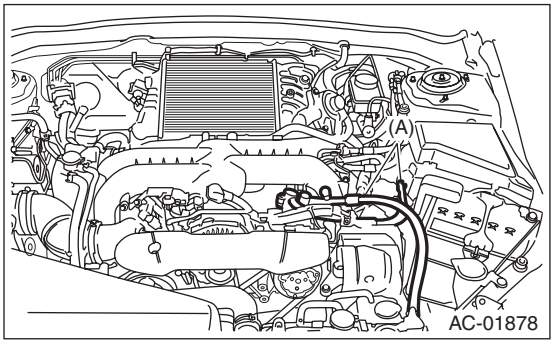


6) If the paper does not move at all, remove the instrument panel lower cover <Ref. to EI-46, REMOVAL, Instrument Panel Lower Cover.> and check for poor connection of the aspirator hose (A), in-vehicle sensor and heater unit, and repair them if necessary.



3. A/C LINE

Check the connection for A/C line (A) and lower side 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 intake 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 (mode) switches AUTO → VENT → BI-LEVEL → HEAT → DEF/HEAT → DEF each time turning the dial.
2	Fan speed control dial	Turn the dial to the right.	Each time the dial is turned, the fan speed switches OFF → AUTO → 1st → 2nd → 3rd → 4th → 5th → 6th → 7th.
3	FRESH/RECIRC switch	Press the FRESH/RECIRC switch.	Inlet opening switches RECIRC → FRESH → RECIRC each time pressing the switch. (LED illuminates at RECIRC)
		Set the air flow control dial and fan speed control dial to the AUTO position.	The system switches to AUTO.
4	A/C switch	Turn the A/C switch to ON with the fan speed control dial set to other than OFF position.	The LED lights and the compressor operates.
		Set the air flow control dial and fan speed control dial to the AUTO position.	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 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 hot 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 air temperature: AUTO • Fan speed: AUTO • Outlet opening: DEF or DEF/HEAT • Inlet opening: FRESH • Compressor: ON
7	Rear defogger switch	Press the rear defogger switch.	LED illuminates.

2) Inspection of compressor operation

No.	Point to check	Switch operation	Judgment standard
1	Compressor	1) Turn the A/C switch to ON. 2) Set the FAN switch between LO and HI.	Compressor: ON

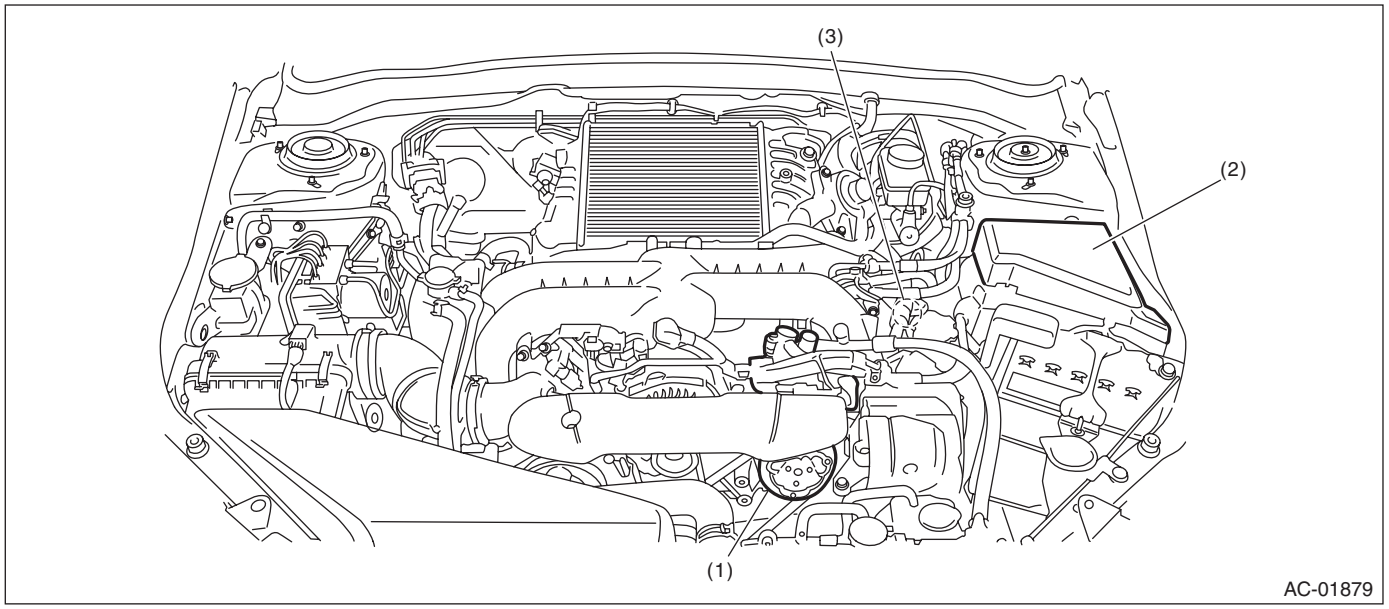
3) Inspection of illumination control

No.	Point to check	Switch operation	Judgment standard
1	Illumination	Turn the lighting switch to ON.	Illumination comes on. If the LED lights, the LED will dim.

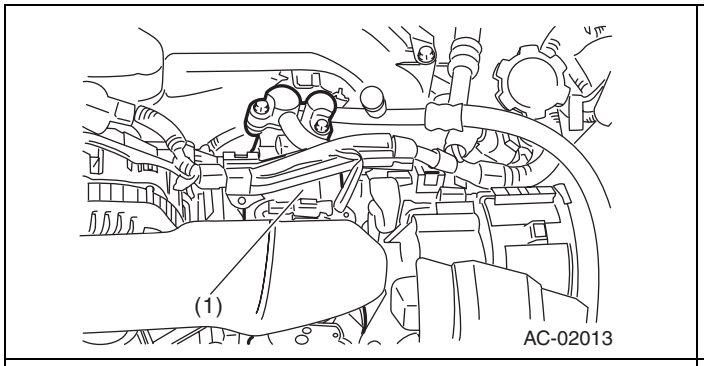
3. Electrical Component Location

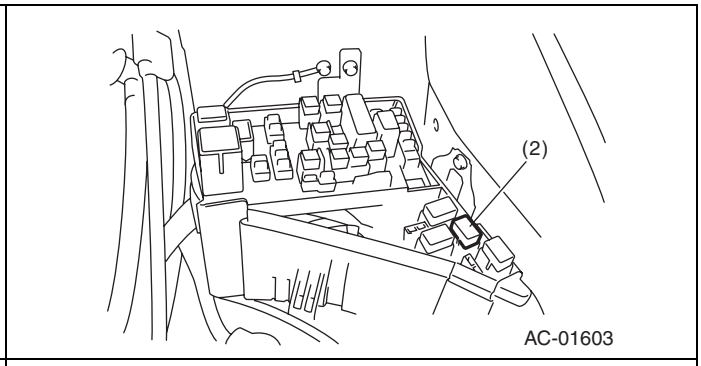
A: LOCATION

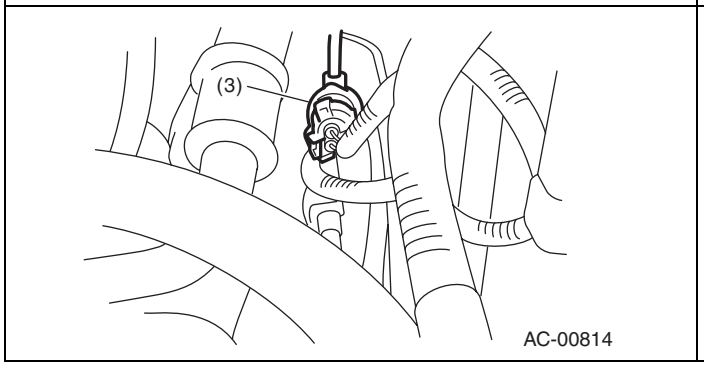
1. ENGINE COMPARTMENT

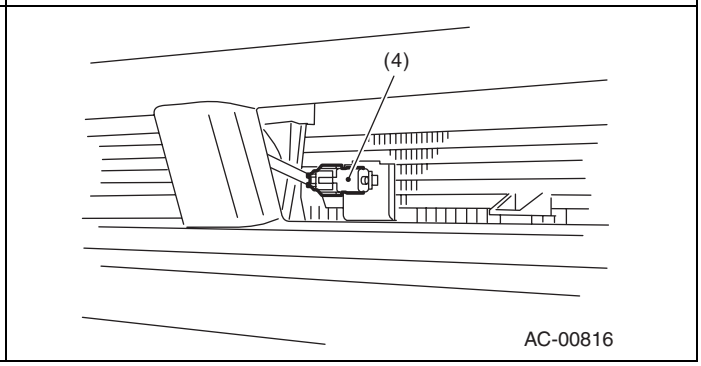


(1) A/C compressor
(2) A/C relay
(3) Pressure switch
(4) Ambient sensor

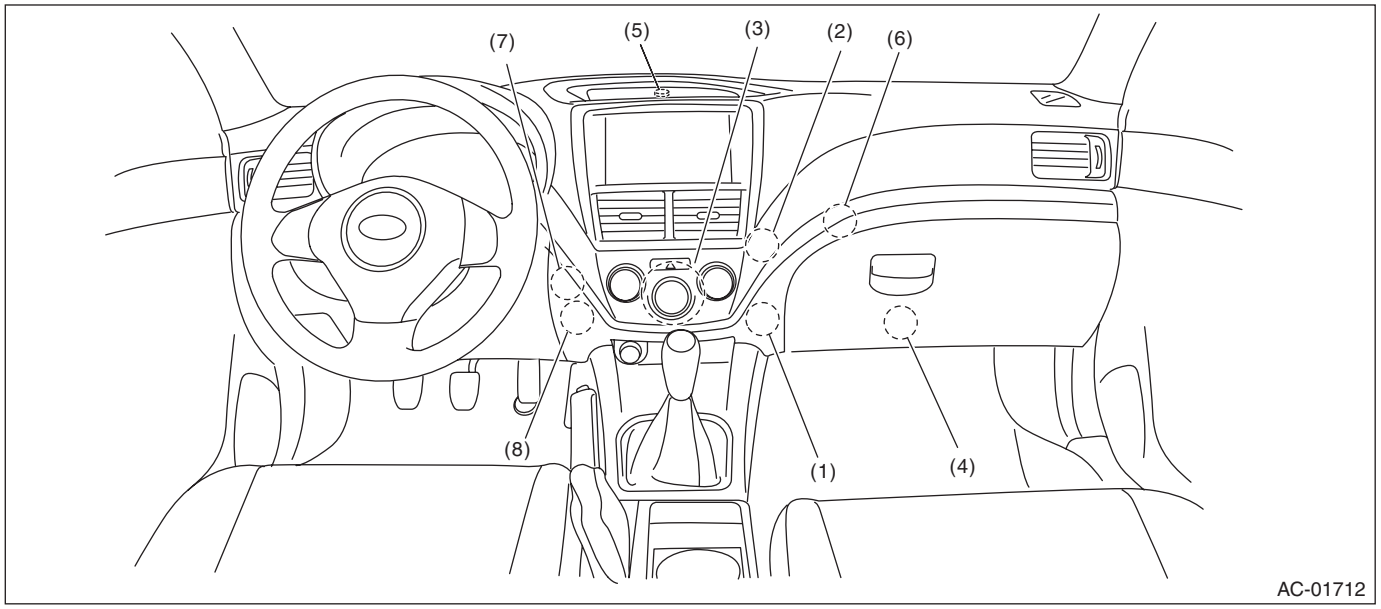








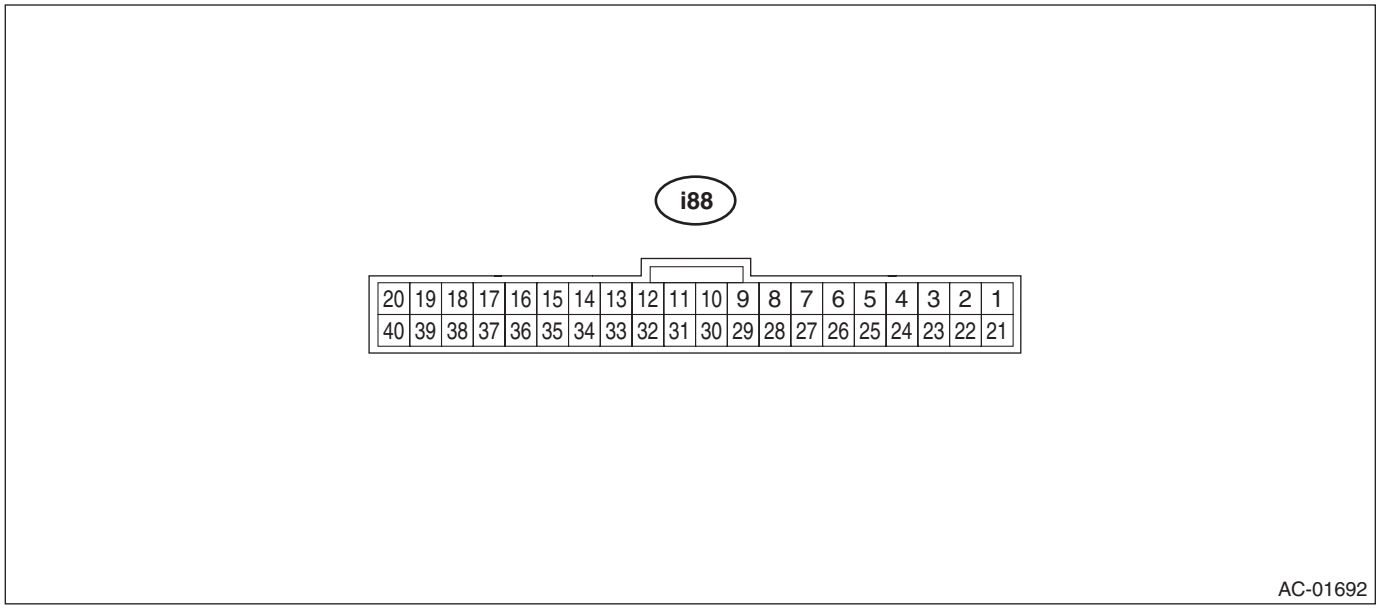
2. COMPARTMENT



(1) Evaporator sensor
(2) Air mix door actuator
(3) Auto A/C control module
(4) Blower motor
(5) Sunload sensor
(6) Intake door actuator
(7) Mode door actuator
(8) In-vehicle sensor

4. Auto A/C Control Module I/O Signal

A: ELECTRICAL SPECIFICATION



Terminal No.	Content	Measuring condition	Specification
1	Mode actuator # 4	Actuator operating	8 V or more
2	Mode actuator # 3	Actuator operating	8 V or more
3	Mode actuator # 2	Actuator operating	8 V or more
4	Mode actuator # 1	Actuator operating	8 V or more
6	Intake door actuator (FRESH)	FRESH mode	1 V or less
7	Intake door actuator (MIX)	MIX mode	1 V or less
8	Intake door actuator (RECIRC)	RECIRC mode	1 V or less
9	Blower fan ON signal	Blower fan is ON	1 V or less
11	A/C cut-off signal	A/C is cut off	1 V or less
14	GND for sensors	Always	1 V or less
15	ACC power supply	ACC ON	Battery voltage
16	Sunload sensor	Sunlight is contacting sensor	1 — 4 V
17	RECIRC sensor	Ignition switch ON	25°C: 2.5 V
18	Post evaporator sensor	Depends on temperature after the evaporator.	1 — 4.5 V
19	CAN Lo	Digital signal; can not be measured	—
20	CAN Hi	Digital signal; can not be measured	—
25	Air mix actuator #4	Air mix actuator is operating	8 V or more
26	Air mix actuator #3	Air mix actuator is operating	8 V or more
27	Air mix actuator #2	Air mix actuator is operating	8 V or more
28	Air mix actuator #1	Air mix actuator is operating	8 V or more
31	BATT	Always	Battery voltage
32	IGN	Ignition ON	Battery voltage
34	Ground	Always	1 V or less
36	A/C ON signal	A/C is operating	8 V or more
35	ILL–	Illumination ON (measure between 37 — 35)	Battery voltage
37	ILL+		
39	Rr defogger switch output	When the rear defogger switch is ON	1 V or less
40	Fan control signal	Ignition switch : ON, Blower switch : ON	8 V or more

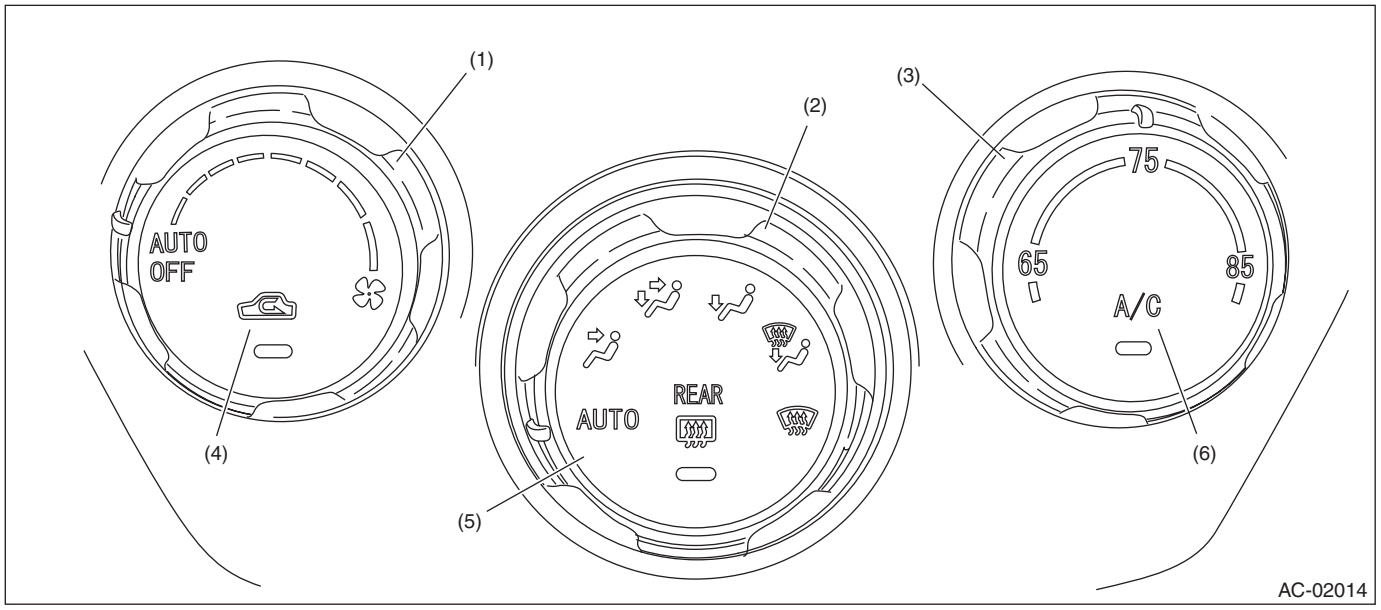
B: WIRING DIAGRAM

1. AIR CONDITIONER AUTO A/C MODEL

<Ref. to WI-81, WIRING DIAGRAM, Air Conditioning System.>

5. Diagnostic Chart for Self-diagnosis

A: OPERATION



(1) Fan dial
(2) Air flow control dial
(3) Temperature adjustment dial
(4) FRESH/RECIRC switch
(5) Rear window defogger switch
(6) A/C switch

1. A/C CONTROL PANEL SELF-DIAGNOSIS

	Step	Check	Yes	No
1	**SELECT SELF-DIAGNOSIS MODE IN THE CONTROL PANEL.** 1) Set the air flow control dial and fan dial to the AUTO position. 2) Start the engine with the A/C switch and the FRESH/RECIRC switch pressed.	Does the self-diagnosis mode operate?	Go to step **2**.	<Ref. to AC(diag)-13, A/C OR SELF-DIAGNOSIS SYSTEMS DO NOT OPERATE, Diagnostics for A/C System Malfunction.>
2	**CHECK THE LIGHTING OF THE LED.** Make sure that all switch LEDs on the control panel illuminate.	Do all LEDs blink eight times?	Go to step **3**.	Replace the control panel.
3	**CHECK SENSOR MALFUNCTION.** 1) Set the air flow control dial and fan dial to the AUTO position. 2) If the system has trouble for each sensor, the FRESH/RECIRC switch LED blinks or is turned off. 3) If the system has no malfunctions, the FRESH/RECIRC switch LED is illuminated.	Does the FRESH/RECIRC switch LED illuminate?	Go to step **5**.	Go to step **4**.
4	**CONFIRM MALFUNCTIONING SENSOR.** 1) Set the air flow control dial to AUTO. 2) Turn the fan dial to each mode position, and check each switch LED illumination according to sensor check table. <Ref. to AC(diag)-11, SENSOR CHECK TABLE, OPERATION, Diagnostic Chart for Self-diagnosis.>	When turning the fan dial to each mode position, does the FRESH/RECIRC switch LED go off?	Go to step **5**.	Repair the defective sensor. <Ref. to AC(diag)-28, Diagnostic Procedure for Sensors.>

Step		Check	Yes	No
5	**CHECK AIR MIX DOOR AND MODE DOOR POSITION SIGNALS.** 1) Set the air flow control dial to FACE. 2) Turn the fan dial to AUTO. 3) If there is a system malfunction in the air mix door signal or the mode door position signal, the FRESH/RECIRC switch LED goes off or blinks. 4) If the system has no malfunctions, the FRESH/RECIRC switch LED is illuminated.	Does the FRESH/RECIRC switch LED illuminate?	Go to step **8**.	Go to step **6**.
6	**CHECK AIR MIX DOOR POSITION DRIVE SIGNALS.** 1) Set the air flow control dial to FACE. 2) Place the fan dial in each position and then check each LED illumination conditions. <Ref. to AC(diag)-12, DRIVE SIGNAL CHECK TABLE, OPERATION, Diagnostic Chart for Self-diagnosis.>	Do the LEDs illuminate in accordance with operation signal table?	Go to step **7**.	Check the air mix door actuator circuit. <Ref. to AC(diag)-26, AIR MIX DOOR ACTUATOR, Diagnostic Procedure for Actuators.>
7	**CHECK MODE DOOR POSITION DRIVE SIGNAL.** 1) Press the A/C switch. 2) Place the fan dial in each position and then check each LED illumination conditions. <Ref. to AC(diag)-12, DRIVE SIGNAL CHECK TABLE, OPERATION, Diagnostic Chart for Self-diagnosis.>	Do the LEDs illuminate in accordance with operation signal table?	Go to step **8**.	Check the mode door actuator circuit. <Ref. to AC(diag)-24, MODE DOOR ACTUATOR, Diagnostic Procedure for Actuators.>
8	**CHECK OPERATION OF EACH ACTUATOR, BLOWER FAN AND COMPRESSOR CLUTCH.** 1) Set the air flow control dial to B/L. 2) Turn the fan dial from AUTO to 7th, and select operating modes. 3) Check the operation of each mode according to operating mode table. <Ref. to AC(diag)-12, OPERATING MODE TABLE, OPERATION, Diagnostic Chart for Self-diagnosis.> • FRESH/RECIRC door • Air flow control door • Air mix door • Blower fan • A/C compressor	Does the operation of each mode match to operating mode table?	Turn the fan dial to OFF or the ignition switch to OFF in order to complete self-diagnosis.	Repair the malfunctioning part in accordance with each diagnostic chart.

2. SENSOR CHECK TABLE

NOTE:
• When the sunload sensor check is performed indoors or in the shade, it could be diagnosed as having an open circuit. Always check the sunload sensor at a location exposed to direct sunlight.
• LED illuminates to warn the past malfunction if it was detected four times or more in the past.
• To clear the past malfunction, disconnect the ground cable from the battery, or press and hold the FRESH/RECIRC switch for five seconds or more when performing the self-diagnosis Step 3 to Step 7.

Air flow control dial position	Fan dial position	Sensor	No trouble	Short circuit	Open circuit	When currently malfunctioning	When having malfunctioned in the past
AUTO	AUTO	In-vehicle sensor	FRESH/RECIRC switch LED is turned off	FRESH/RECIRC switch LED blinks (Illuminates for 0.2 sec. ⇔ turns off for 0.2 sec.)	FRESH/RECIRC switch LED blinks (Illuminates for 1 sec. ⇔ turns off for 1 sec.)	Rear window defogger switch LED is turned off	Rear window defogger switch LED illuminates
	1st	Ambient sensor		FRESH/RECIRC switch LED blinks (Illuminates for 0.2 sec. ⇔ turns off for 0.2 sec.)			
	2nd	Evaporator sensor		FRESH/RECIRC switch LED blinks (Illuminates for 0.2 sec. ⇔ turns off for 0.2 sec.)			
	3rd	Engine coolant temperature sensor		—			
	4th	Sunload sensor		FRESH/RECIRC switch LED blinks (Illuminates for 0.2 sec. ⇔ turns off for 0.2 sec.)			
	5th – 7th	CAN communication		—			

3. OPERATING MODE TABLE

Operation	Fan dial position							
	AUTO	1st	2nd	3rd	4th	5th	6th	7th
Blower fan	4 V	4 V	4.9 V	5.9 V	7.0 V	8.3 V	9.8 V	14 V
FRESH/ RECIRC door	RECIRC	RECIRC	MIX	FRESH	FRESH	FRESH	FRESH	FRESH
Air flow control door	FACE	FACE	FACE	B/L	HEAT	HEAT	D/H	DEF
Air mix door	0%	0%	0%	50%	50%	100%	100%	100%
A/C compressor	OFF	ON	ON	ON	ON	ON	ON	ON

4. DRIVE SIGNAL CHECK TABLE

NOTE:
- LED illuminates to warn the past malfunction if it was detected four times or more in the past.
- To clear the past malfunction, disconnect the ground cable from the battery, or press and hold the FRESH/ RECIRC switch for five seconds or more when performing the self-diagnosis Step 3 to Step 7.

Air flow control dial position	Fan dial position	Drive signal to check	A/C switch LED	No trouble	Short circuit	Open circuit	When currently malfunctioning	When having malfunctioned in the past
FACE	AUTO	MIX #1	Blinking (Illuminates for 0.2 sec. ⇔ turns off for 0.2 sec.)	FRESH/ RECIRC switch LED is turned off	FRESH/ RECIRC switch LED blinks (Illuminates for 0.2 sec. ⇔ turns off for 0.2 sec.)	FRESH/ RECIRC switch LED blinks (Illuminates for 1 sec. ⇔ turns off for 1 sec.)	Rear window defogger switch LED is turned off	Rear window defogger switch LED illuminates
	1st	MIX #2						
	2nd	MIX #3						
	3rd — 7th	MIX #4						
	AUTO	MODE #1	Blinking (Illuminates for 1 sec. ⇔ turns off for 1 sec.)					
	1st	MODE #2						
	2nd	MODE #3						
	3rd — 7th	MODE #4						

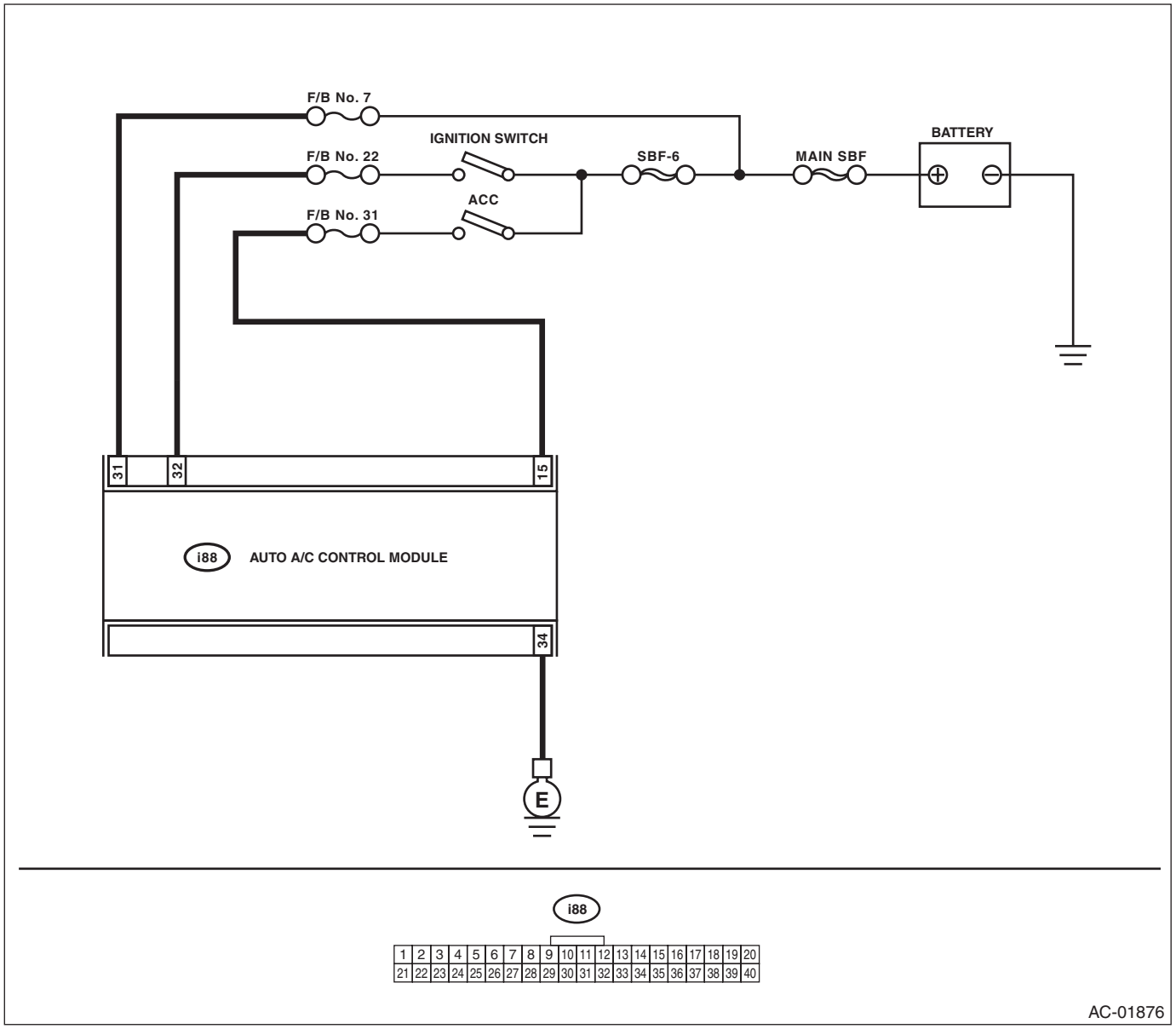
6. Diagnostics for A/C System Malfunction

A: A/C OR SELF-DIAGNOSIS SYSTEMS DO NOT OPERATE

TROUBLE SYMPTOM:

- Set temperature is not indicated on the display, switch LEDs are faulty and 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. 7, No. 22 and No. 31 from fuse & relay box. 3) Check the condition of fuse.	Is the fuse blown out?	Replace the fuse.	Go to step **2**.

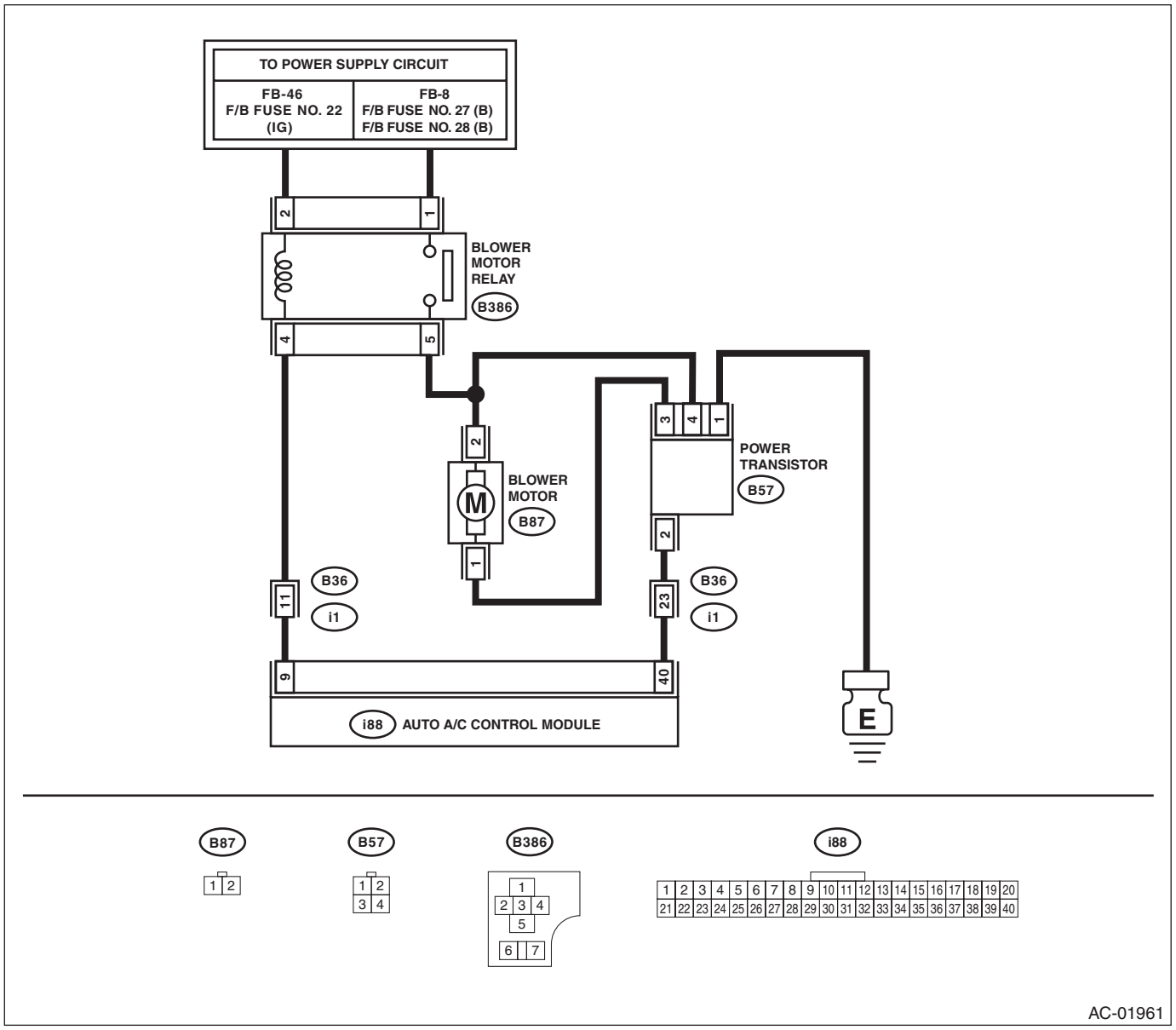
	Step	Check	Yes	No
2	**CHECK A/C CONTROL MODULE POWER CIRCUIT.** 1) Remove the A/C control panel. 2) Disconnect the A/C control panel harness connector. 3) Turn the ignition switch to ACC, and measure the voltage between A/C control panel harness connector terminal and chassis ground. ***Connector & terminal*** ***(i88) No. 15 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **3**.	Check for open or short circuit in the harness between A/C control panel and fuse.
3	**CHECK A/C CONTROL MODULE POWER CIRCUIT.** Measure the voltage between A/C control panel harness connector terminal and chassis ground after turning the ignition switch to ON. ***Connector & terminal*** ***(i88) No. 32 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **4**.	Check for open or short circuit in the harness between A/C control panel and fuse.
4	**CHECK A/C CONTROL PANEL GROUND POWER CIRCUIT.** Measure the resistance of harness between A/C control panel and chassis ground after turning the ignition switch to OFF. ***Connector & terminal*** ***(i88) No. 34 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **5**.	Repair the harness for ground line.
5	**CHECK FOR POOR CONTACT.** Check poor contact of auto A/C control module connector.	Is there poor contact of connector?	Repair the connector.	Replace the auto A/C control module. <Ref. to AC-32, REMOVAL, Control Unit (Auto A/C Model).>

B: BLOWER MOTOR 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. 22, 27 and 28 from fuse & relay box. 2) Check the condition of fuse.	Is any fuse blown out?	Replace the fuse.	Go to step **2**.
2	**CHECK POWER SUPPLY OF BLOWER MOTOR RELAY.** 1) Turn the ignition switch to OFF. 2) Remove the blower motor relay. 3) Turn the ignition switch to ON. 4) Use a tester to measure the voltage between the terminals. ***Connector & terminal*** ***(B386) No. 2 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **3**.	Repair the open circuit of blower motor power supply line harness.

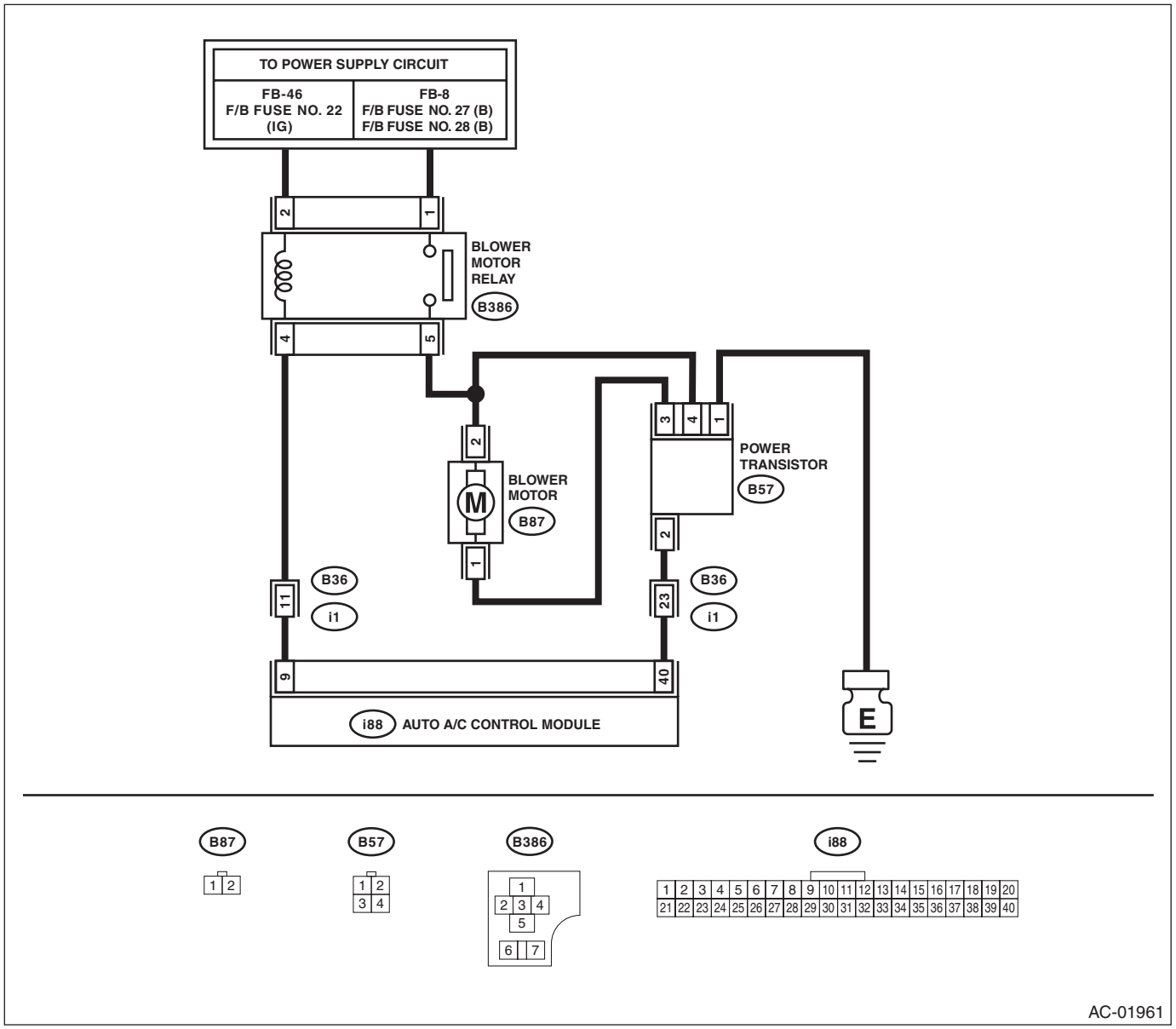
	Step	Check	Yes	No
3	**CHECK BLOWER MOTOR RELAY.** 1) Turn the ignition switch to OFF. 2) Connect the battery positive terminal to the blower motor relay terminal No. 2, and the negative terminal to No. 4. 3) Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(Relay) No. 1 — No. 5:***	Is the resistance less than 1 Ω?	Go to step **4**.	Replace the blower motor relay.
4	**CHECK HARNESS.** 1) Remove the auto A/C control module. 2) Measure the resistance between auto A/C control module and relay using a tester. ***Connector & terminal*** ***(B386) No. 4 — (i88) No. 9:***	Is the resistance less than 1 Ω?	Go to step **5**.	Repair or replace the harness.
5	**CHECK BLOWER MOTOR POWER SUPPLY.** 1) Install the blower motor relay and auto A/C control module. 2) Turn the ignition switch to ON. 3) Turn the blower fan switch to ON. 4) Use a tester to measure the voltage between the blower motor and chassis ground. ***Connector & terminal*** ***(B87) No. 2 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **6**.	Repair or replace the harness between relay and the blower motor.
6	**CHECK BLOWER MOTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from blower motor. 3) Connect the battery positive terminal to the blower motor connector terminal No. 2, and the negative terminal to No. 1. 4) Make sure the blower motor runs.	Does the blower motor run?	Go to step **7**.	Replace the blower motor. <Ref. to AC-27, REMOVAL, Blower Motor.>
7	**CHECK HARNESS.** 1) Disconnect the power transistor connector. 2) Disconnect the auto A/C control module connector. 3) Using the tester, measure the resistance between terminals of harness. ***Connector & terminal*** ***(B57) No. 1 — Chassis ground:*** ***(B57) No. 2 — (i88) No. 40:*** ***(B57) No. 3 — (B87) No. 1:*** ***(B57) No. 4 — (B87) No. 2:*** ***(B57) No. 4 — (B386) No. 5:***	Is the resistance less than 1 Ω?	Go to step **8**.	Repair or replace the harness.
8	**CHECK FAN CONTROL SIGNAL.** 1) Connect the disconnected connectors. 2) Turn the ignition switch to ON. 3) Change the fan dial from 1st to 7th. 4) Measure the voltage between the power transistor and chassis ground using a tester. ***Connector & terminal*** ***(B57) No. 2 (+) — Chassis ground (–):***	Is the voltage approx. 10 V at 1st and approx. 1 V at 7th?	Replace the power transistor. <Ref. to AC-28, REMOVAL, Power Transistor (Auto A/C Model).>	Go to step **9**.
9	**CHECK FOR POOR CONTACT.** Check poor contact of auto A/C control module connector.	Is there poor contact of connector?	Repair the connector.	Replace the auto A/C control module. <Ref. to AC-32, REMOVAL, Control Unit (Auto A/C Model).>

C: BLOWER MOTOR TURNS AROUND EARLY

TROUBLE SYMPTOM:

- The blower rotates even though the blower switch is not turned on.
- The blower motor continues to rotate at high speed. (Not adjustable.)

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK BLOWER MOTOR CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the power transistor connector. 3) Using the tester, measure the resistance between power transistor connector and chassis ground. ***Connector & terminal*** ***(B57) No. 3 — Chassis ground:***	Is there continuity?	Repair or replace the short circuit of the harness.	Go to step **2**.

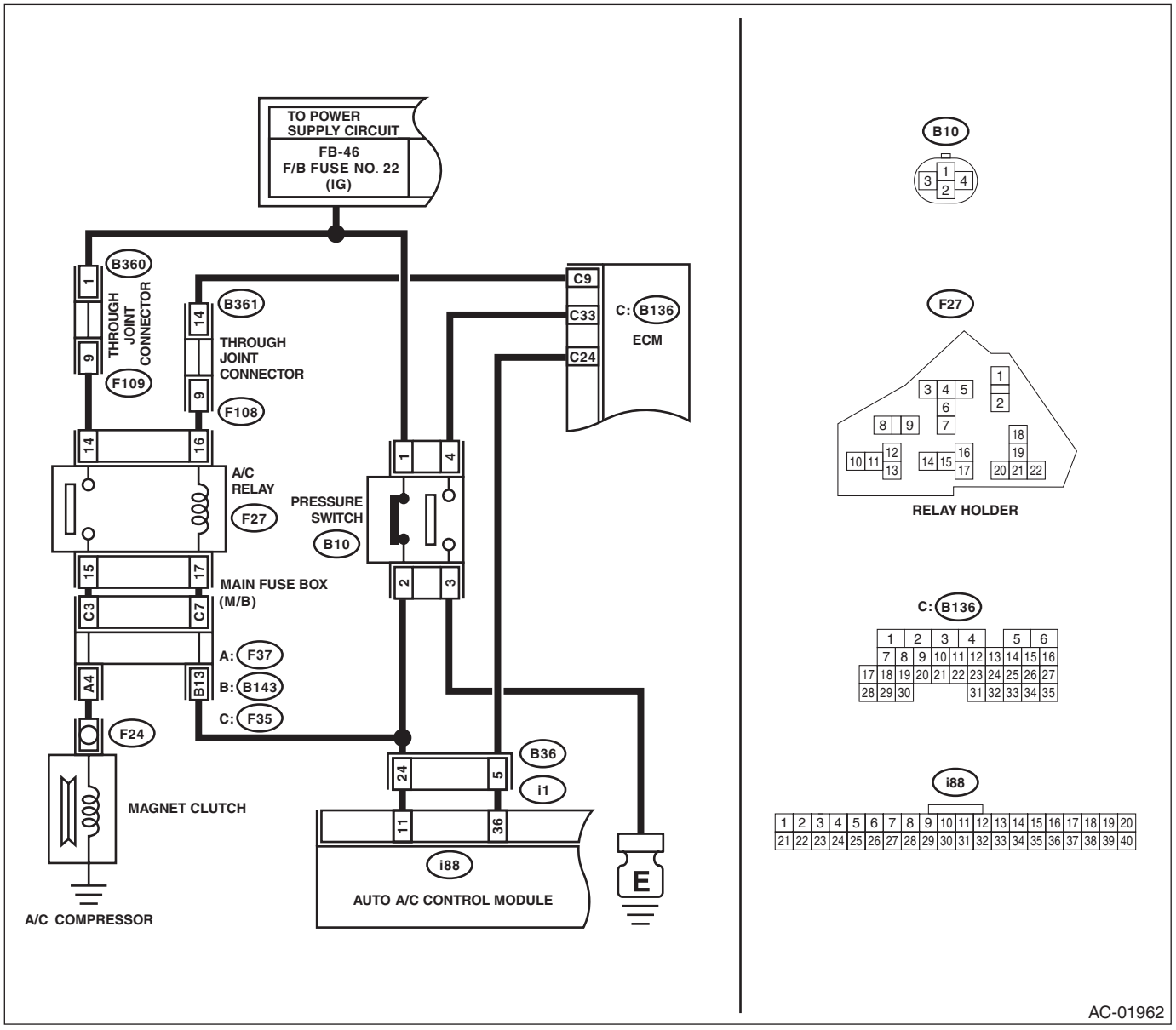
Step		Check	Yes	No
2	**CHECK HARNESS.** 1) Remove the auto A/C control module. 2) Using the tester, measure the resistance between power transistor connector and chassis ground. ***Connector & terminal*** ***(B57) No. 2 — Chassis ground:***	Is there continuity?	Repair or replace the short circuit of the harness.	Go to step **3**.
3	**CHECK POWER TRANSISTOR.** 1) Connect the disconnected connectors. 2) Turn the ignition switch to ON. 3) Use a tester to measure the voltage between the power transistor connector and chassis ground. ***Connector & terminal*** ***(B57) No. 2 (+) — Chassis ground (–):***	Is the voltage approx. 10 V when the fan dial is at 1st and approx. 1 V at 7th?	Replace the power transistor. <Ref. to AC-28, REMOVAL, Power Transistor (Auto A/C Model).>	Go to step **4**.
4	**CHECK A/C CONTROL MODULE.** 1) Turn the fan dial to OFF. 2) Disconnect the power transistor connector. 3) Using the tester, measure the resistance between power transistor connector and chassis ground. ***Connector & terminal*** ***(B57) No. 2 — Chassis ground:***	Does the resistance change between when the fan dial is set to OFF and when it is set to other than OFF?	Replace the power transistor. <Ref. to AC-28, REMOVAL, Power Transistor (Auto A/C Model).>	Replace the auto A/C control module. <Ref. to AC-32, REMOVAL, Control Unit (Auto A/C Model).>

D: COMPARTMENT TEMPERATURE DOES NOT CHANGE, OR A/C SYSTEM DOES NOT RESPOND PROMPTLY

TROUBLE SYMPTOM:

- Compartment temperature does not change. (Cold air does not come out.)
- A/C system does not respond. (Response is extremely slow)

WIRING DIAGRAM:



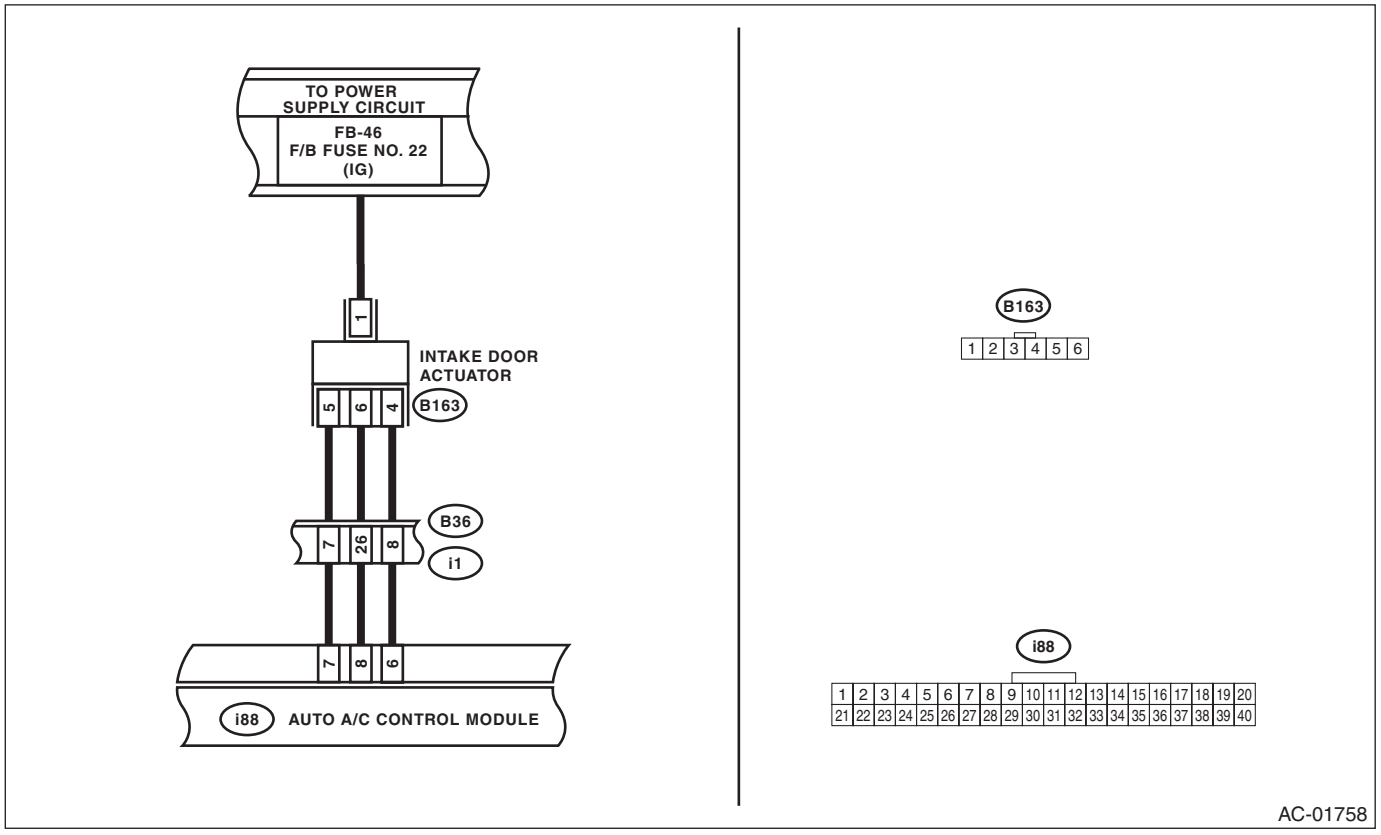
	Step	Check	Yes	No
1	**CHECK FUSE.** 1) Turn the ignition switch to OFF. 2) Remove the fuse No. 22 from fuse & relay box. 3) Check the condition of fuse.	Is the fuse blown out?	Replace the fuse.	Go to step **2**.
2	**CHECK SIGNAL TO A/C RELAY AND AUTO A/C CONTROL MODULE.** 1) Disconnect the A/C relay and auto A/C control module harness connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between A/C relay connector terminal and chassis ground. 4) Measure the voltage between auto A/C control module harness connector terminal and chassis ground. ***Connector & terminal*** ***(F27) No. 17 (+) — Chassis ground (–):*** ***(i88) No. 11 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **5**.	Go to step **3**.
3	**CHECK POWER SUPPLY FOR PRESSURE SWITCH.** 1) Turn the ignition switch to OFF. 2) Disconnect the pressure switch harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between pressure switch harness connector terminal and chassis ground. ***Connector & terminal*** ***(B10) No. 2 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **4**.	Check for open or short circuit in the harness between fuse and pressure switch.
4	**CHECK HARNESS BETWEEN PRESSURE SWITCH AND A/C RELAY, AUTO A/C CONTROL MODULE.** 1) Turn the ignition switch to OFF. 2) Measure the resistance of harness between pressure switch connector and A/C relay connector. 3) Measure the resistance of harness between pressure switch connector and auto A/C control module connector. ***Connector & terminal*** ***(B10) No. 2 — (F27) No. 17:*** ***(B10) No. 2 — (i88) No. 11:***	Is the resistance less than 1 Ω?	Check the pressure switch. <Ref. to AC-40, INSPECTION, Pressure Switch (Triple Pressure Switch).>	Repair the harness.
5	**CHECK POWER SUPPLY FOR A/C RELAY.** Measure the voltage between A/C relay connector terminal and chassis ground. ***Connector & terminal*** ***(F27) No. 14 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **6**.	Check open or short circuit of harness between fuse and A/C relay.
6	**CHECK A/C RELAY.** Check the A/C relay. <Ref. to AC-39, INSPECTION, Relay and Fuse.>	Is the A/C relay normal?	Go to step **7**.	Replace the A/C relay.

	Step	Check	Yes	No
7	**CHECK A/C ON SIGNAL.** 1) Turn the ignition switch to OFF. 2) Connect the A/C relay and all disconnected connectors. 3) Start the engine and turn the A/C switch to ON. 4) Turn the temperature control dial at maximum cool position. 5) Measure the voltage between auto A/C control module harness connector terminal and chassis ground. ***Connector & terminal*** ***(i88) No. 36 (+) — Chassis ground (–):***	Is the voltage 5.5 V or more?	Go to step **8**.	Replace the auto A/C control module. <Ref. to AC-32, REMOVAL, Control Unit (Auto A/C Model).>
8	**CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND ECM.** 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of auto A/C control module and ECM. 3) Measure the resistance of harness between auto A/C control module connector and ECM connector. ***Connector & terminal*** ***(i88) No. 36 — (B136) No. 24:***	Is the resistance less than 1 Ω?	Go to step **9**.	Repair the harness.
9	**CHECK MAGNET CLUTCH ON SIGNAL.** 1) Stop the engine and turn the A/C switch to OFF. 2) Turn the ignition switch to ON. 3) Measure the voltage between ECM connector terminal and chassis ground. ***Connector & terminal*** ***(B136) No. 9 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **10**.	Check for open or short circuit in the harness between A/C relay and ECM.
10	**CHECK MAGNET CLUTCH ON SIGNAL.** 1) Start the engine and turn the A/C switch to ON. 2) Turn the temperature control dial at maximum cool position. 3) Measure the voltage between ECM connector terminal and chassis ground. ***Connector & terminal*** ***(B136) No. 9 (+) — Chassis ground (–):***	Is the voltage 0 V?	Go to step **11**.	Replace the ECM. <Ref. to FU(H4SO)-45, REMOVAL, Engine Control Module (ECM).> <Ref. to FU(H4DOTC)-51, REMOVAL, Engine Control Module (ECM).>
11	**CHECK POWER SUPPLY FOR MAGNET CLUTCH.** 1) Stop the engine and turn the A/C switch to OFF. 2) Disconnect the harness connector of magnet clutch. 3) Start the engine and turn the A/C switch to ON. 4) Turn the temperature control dial at maximum cool position. 5) Measure the voltage between magnet clutch harness connector terminal and chassis ground. ***Connector & terminal*** ***(F24) No. 1 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Inspect the compressor. <Ref. to AC-33, INSPECTION, Compressor.>	Check for open or short circuit in the harness between A/C relay and magnet clutch.

7. Diagnostic Procedure for Actuators

A: INTAKE DOOR ACTUATOR

TROUBLE SYMPTOM:
FRESH/RECIRC mode is not changed.
WIRING DIAGRAM:

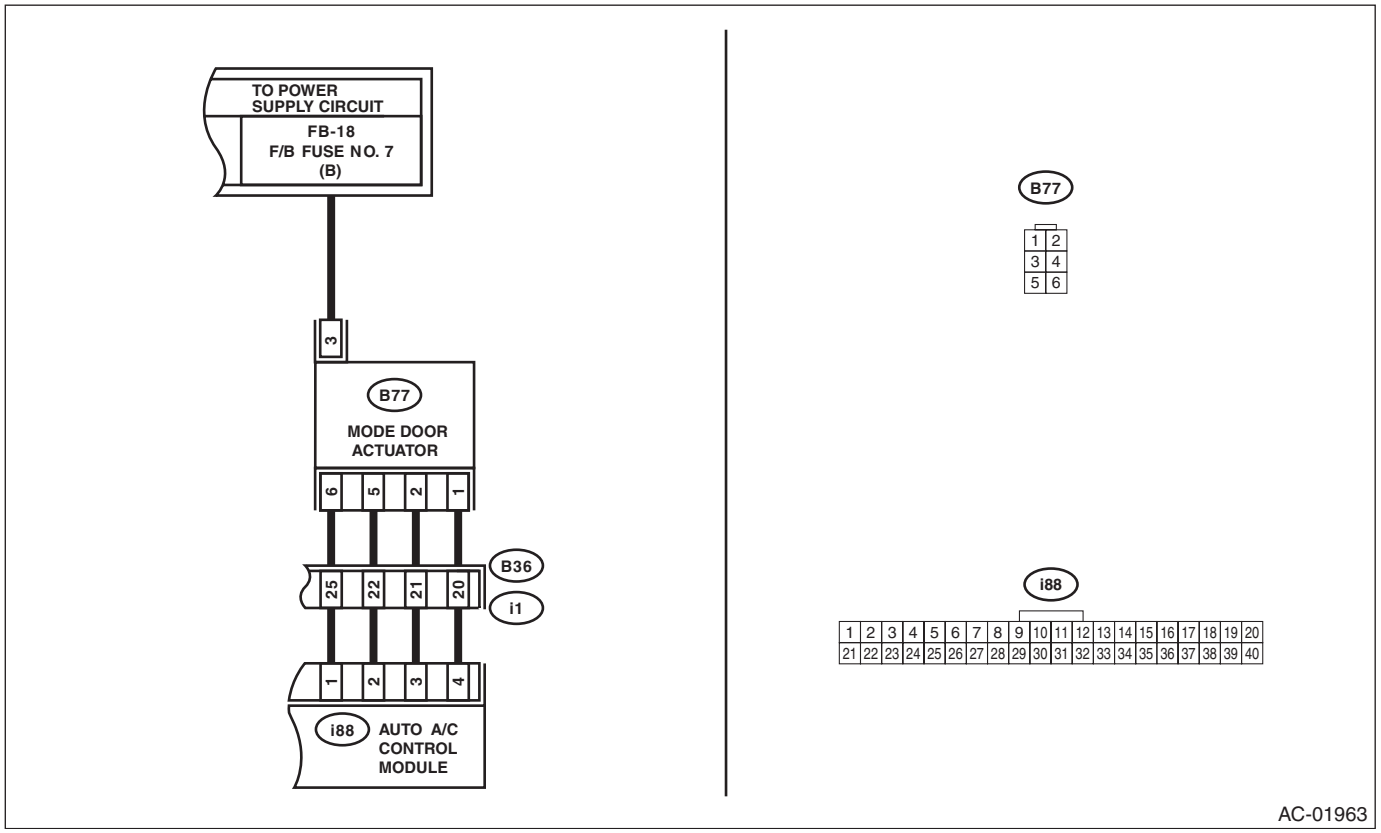


Step		Check	Yes	No
1	**CHECK POWER SUPPLY FOR INTAKE DOOR ACTUATOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the intake door actuator connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between intake door actuator connector and chassis ground. ***Connector & terminal*** ***(B163) No. 1 (+) — Chassis ground (–):***	Is the voltage approx. 10 V or more?	Go to step **2**.	Check for open or short circuit in the harness between intake door actuator and fuse.

	Step	Check	Yes	No
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*** ***(i88) No. 8 — (B163) No. 6:*** ***(i88) No. 7 — (B163) No. 5:*** ***(i88) No. 6 — (B163) No. 4:***	Is the resistance less than 1 Ω?	Go to step **3**.	Repair the 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*** ***(i88) No. 6 — Chassis ground:***	Does the actuator move to the FRESH side?	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:*** ***(i88) No. 8 — Chassis ground:***	Does the actuator move to the RECIRC side?	Replace the auto A/C control module. <Ref. to AC-32, REMOVAL, Control Unit (Auto A/C Model).>	Replace the intake door actuator.

B: MODE DOOR ACTUATOR

TROUBLE SYMPTOM:
Air flow outlet is not changed.
WIRING DIAGRAM:

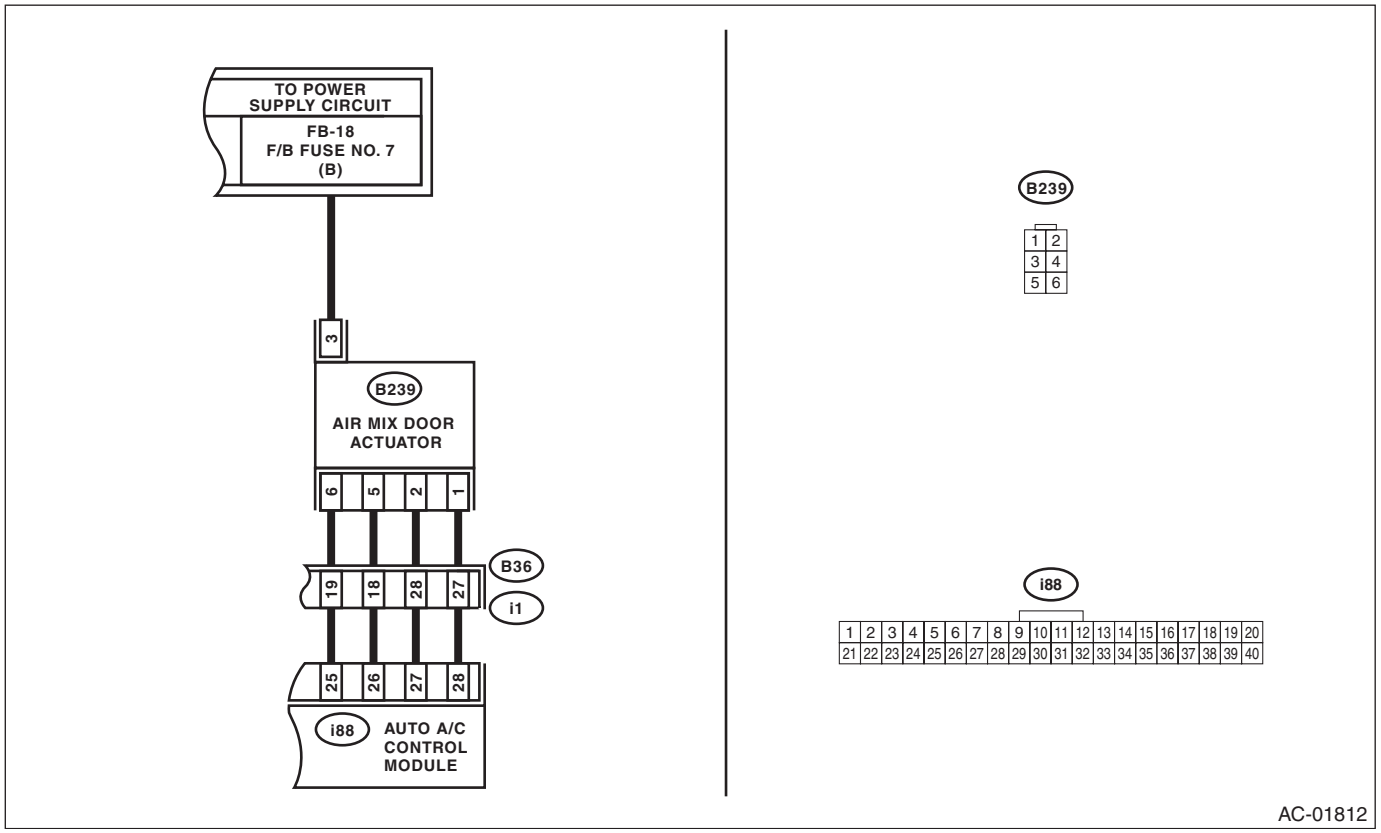


	Step	Check	Yes	No
1	**CHECK POWER SUPPLY FOR MODE DOOR ACTUATOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the mode door actuator connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between the mode door actuator connector terminal and chassis ground. ***Connector & terminal*** ***(B77) No. 3 (+) — Chassis ground (–):***	Is the voltage approx. 10 V or more?	Go to step **2**.	Check the DC power supply circuit.
2	**CHECK MODE DOOR ACTUATOR.** 1) Turn the ignition switch to OFF. 2) Measure the resistance between mode door actuator terminals using a tester. ***Connector & terminal*** ***(B77) No. 3 — No. 1:*** ***(B77) No. 3 — No. 2:*** ***(B77) No. 3 — No. 5:*** ***(B77) No. 3 — No. 6:***	Is the resistance between 80 — 100 Ω?	Go to step **3**.	Replace the mode door actuator.

	Step	Check	Yes	No
3	**CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND MODE DOOR ACTUATOR.** 1) Disconnect the auto A/C control module connector. 2) Measure the resistance between auto A/C control module and mode door actuator connector. ***Connector & terminal*** ***(B77) No. 1 — (i88) No. 4:*** ***(B77) No. 2 — (i88) No. 3:*** ***(B77) No. 5 — (i88) No. 2:*** ***(B77) No. 6 — (i88) No. 1:***	Is the resistance less than 1 Ω?	Go to step **4**.	Repair the harness between auto A/C control module and mode door actuator.
4	**CHECK FOR POOR CONTACT.** Check poor contact of auto A/C control module and connector.	Is there poor contact of connector?	Repair the connector.	Replace the auto A/C control module. <Ref. to AC-32, REMOVAL, Control Unit (Auto A/C Model).>

C: AIR MIX DOOR ACTUATOR

TROUBLE SYMPTOM:
Outlet air temperature does not change.
WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK POWER SUPPLY OF AIR MIX DOOR ACTUATOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the air mix door actuator connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between the air mix door actuator connector terminal and chassis ground. ***Connector & terminal*** ***(B239) No. 3 (+) — Chassis ground (–):***	Is the voltage approx. 10 V or more?	Go to step **2**.	Check the DC power supply circuit.
2	**CHECK AIR MIX DOOR ACTUATOR.** 1) Turn the ignition switch to OFF. 2) Measure the resistance between air mix actuator terminals using a tester. ***Connector & terminal*** ***(B239) No. 3 — No. 1:*** ***(B239) No. 3 — No. 2:*** ***(B239) No. 3 — No. 5:*** ***(B239) No. 3 — No. 6:***	Is the resistance between 80 — 100 Ω?	Go to step **3**.	Replace the air mix door actuator.

	Step	Check	Yes	No
3	**CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND AIR MIX DOOR ACTUATOR.** 1) Disconnect the auto A/C control module connector. 2) Measure the resistance between auto A/C control module and air mix door actuator connector. ***Connector & terminal*** ***(B239) No. 1 — (i88) No. 28:*** ***(B239) No. 2 — (i88) No. 27:*** ***(B239) No. 5 — (i88) No. 26:*** ***(B239) No. 6 — (i88) No. 25:***	Is the resistance less than 1 Ω?	Go to step **4**.	Repair the harness between auto A/C control module and air mix door actuator.
4	**CHECK FOR POOR CONTACT.** Check poor contact of auto A/C control module and connector.	Is there poor contact of connector?	Repair the connector.	Replace the auto A/C control module. <Ref. to AC-32, REMOVAL, Control Unit (Auto A/C Model).>

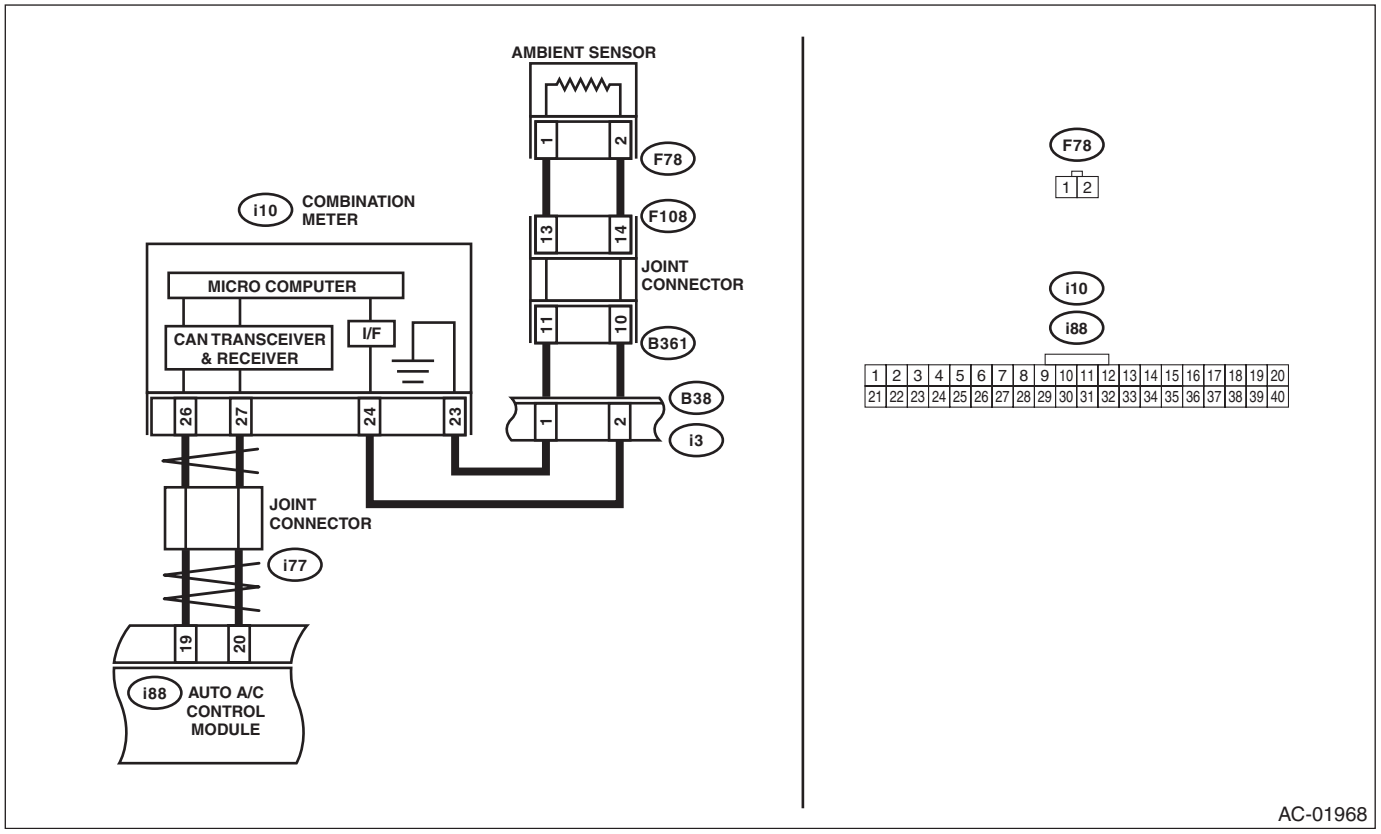
8. Diagnostic Procedure for Sensors

A: AMBIENT SENSOR

TROUBLE SYMPTOM:

- Fan speed is not switched when the fan dial is in AUTO position.
- Failure related to the ambient sensor is indicated in self-diagnosis.

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK AMBIENT SENSOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ambient sensor. 3) Measure the resistance between terminals of ambient sensor. ***Terminals*** ***No. 2 — No. 1:***	Is the resistance approximately 3 kΩ at 25°C (77°F)?	Go to step **2**.	Replace the ambient sensor. <Ref. to AC-41, REMOVAL, Ambient Sensor (Auto A/C Model).>
2	**CHECK INPUT SIGNAL FOR AMBIENT SENSOR.** 1) Turn the ignition to ON. 2) Measure the voltage between connector (F78) terminals. ***Connector & terminal*** ***(F78) No. 2 (+) — No. 1 (–):***	Is the voltage approx. 5 V?	Go to step **6**.	Go to step **3**.

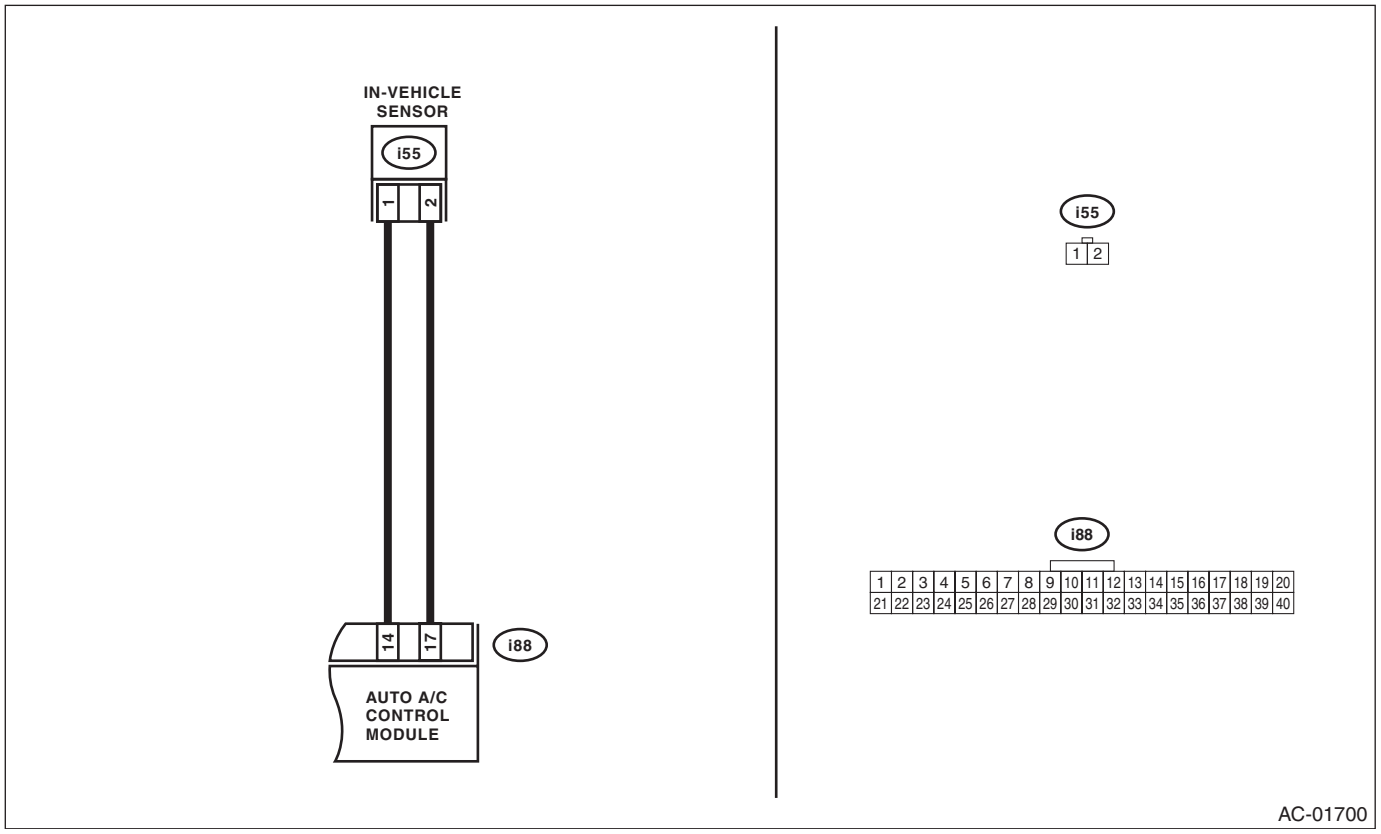
	Step	Check	Yes	No
3	**CHECK COMBINATION METER OUTPUT SIGNAL.** 1) Turn the ignition switch to OFF. 2) Pull out the combination meter. 3) Disconnect the connector from ambient sensor. 4) Turn the ignition switch to ON. 5) Measure the voltage between the combination meter connector terminals. ***Connector & terminal*** ***(i10) No. 24 (+) — No. 23 (–):***	Is the voltage approx. 5 V?	Go to step **4**.	Replace the combination meter. <Ref. to IDI-15, REMOVAL, Combination Meter.>
4	**CHECK HARNESS CONNECTOR BETWEEN COMBINATION METER AND AMBIENT SENSOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the combination meter. 3) Measure the resistance of harness between combination meter and ambient sensor. ***Connector & terminal*** ***(F78) No. 2 — (i10) No. 24:***	Is the resistance less than 1 Ω?	Go to step **5**.	Repair the open circuit of the harness between the combination meter and ambient sensor.
5	**CHECK HARNESS CONNECTOR BETWEEN COMBINATION METER AND AMBIENT SENSOR.** Measure the resistance of harness between combination meter and ambient sensor. ***Connector & terminal*** ***(F78) No. 1 — (i10) No. 23:***	Is the resistance less than 1 Ω?	Replace the combination meter. <Ref. to IDI-15, REMOVAL, Combination Meter.>	Repair the open circuit of the harness between the combination meter and ambient sensor.
6	**CHECK HARNESS CONNECTOR BETWEEN COMBINATION METER AND AUTO A/C CONTROL MODULE.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the combination meter. 3) Disconnect the auto A/C control module connector. 4) Measure the resistance of harness between the combination meter and auto A/C control module. ***Connector & terminal*** ***(i88) No. 19 — (i10) No. 26:***	Is the resistance less than 1 Ω?	Go to step **7**.	Repair the open circuit in the harness between the combination meter and auto A/C control module. <Ref. to LAN(diag)-6, LAN SYSTEM, CAUTION, General Description.>
7	**CHECK HARNESS CONNECTOR BETWEEN COMBINATION METER AND AUTO A/C CONTROL MODULE.** Measure the resistance of harness between the combination meter and auto A/C control module. ***Connector & terminal*** ***(i88) No. 20 — (i10) No. 27:***	Is the resistance less than 1 Ω?	Go to step **8**.	Repair the open circuit in the harness between the combination meter and auto A/C control module. <Ref. to LAN(diag)-6, LAN SYSTEM, CAUTION, General Description.>
8	**CHECK FOR POOR CONTACT.** Check poor contact of auto A/C control module connector.	Is there poor contact of connector?	Repair the connector.	Replace the auto A/C control module. <Ref. to AC-32, REMOVAL, Control Unit (Auto A/C Model).>

B: IN-VEHICLE SENSOR

TROUBLE SYMPTOM:

- Blower fan speed, air flow outlet and FRESH/RECIRC do not change after turning the AUTO switch to ON.
- Failure related to the in-vehicle sensor is indicated in self-diagnosis.

WIRING DIAGRAM:

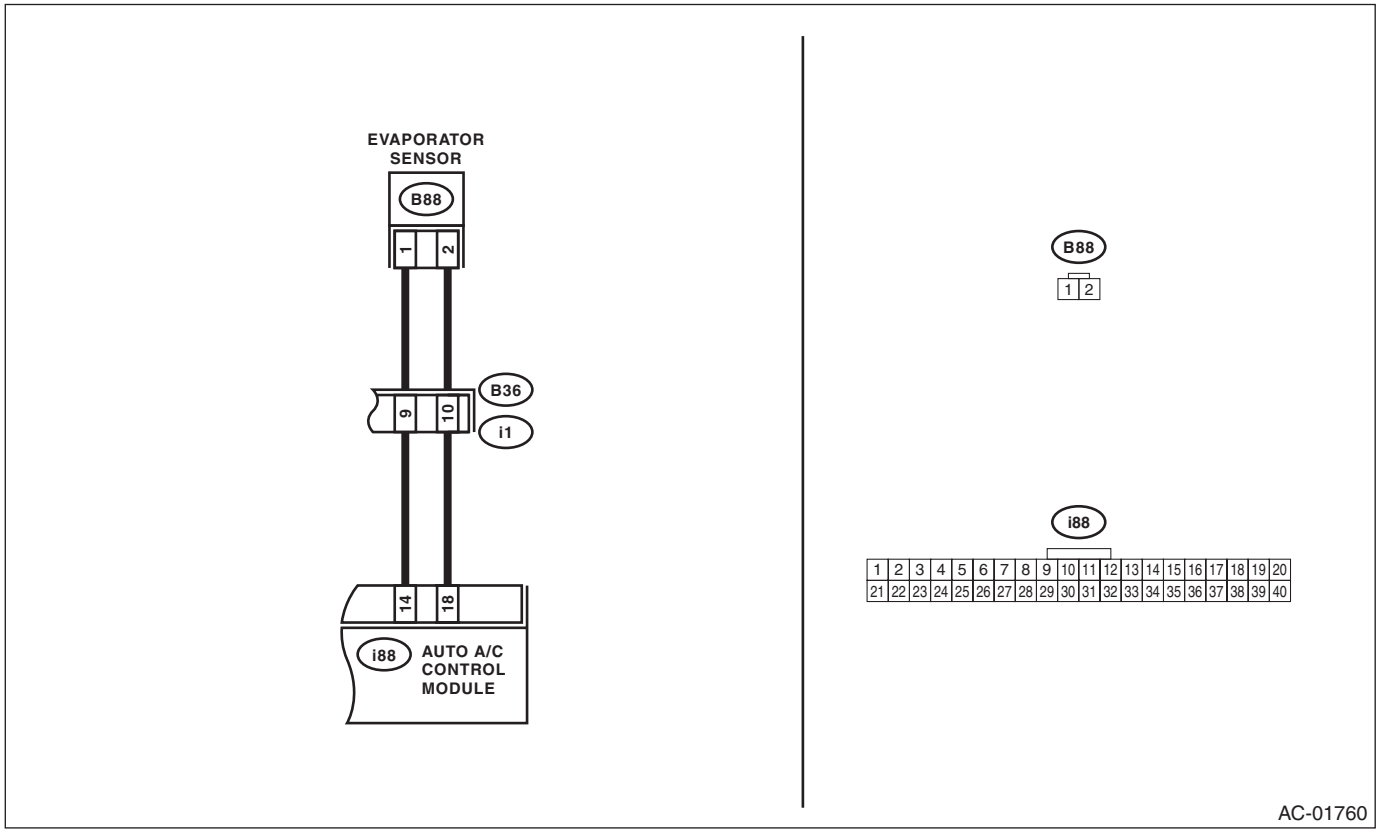


	Step	Check	Yes	No
1	**CHECK IN-VEHICLE SENSOR.** 1) Turn the ignition switch to OFF. 2) Remove the driver's side lower cover. 3) Disconnect the connector from in-vehicle sensor. 4) Measure the resistance between terminals of in-vehicle sensor. ***Terminals*** ***No. 1 — No. 2:***	Is the resistance approximately 2.2 kΩ at 25°C (77°F)?	Go to step **2**.	Replace the in-vehicle sensor. <Ref. to AC-43, REMOVAL, In-vehicle Sensor (Auto A/C Model).>
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 terminals. ***Connector & terminal*** ***(i55) No. 2 (+) — No. 1 (–):***	Is the voltage approx. 5 V?	Go to step **6**.	Go to step **3**.
3	**CHECK AUTO A/C CONTROL MODULE OUTPUT SIGNAL.** 1) Turn the ignition switch to OFF. 2) Remove 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*** ***(i88) No. 17 (+) — (i88) No. 14 (–):***	Is the voltage approx. 5 V?	Go to step **4**.	Go to step **6**.

	Step	Check	Yes	No
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 — (i88) No. 17:***	Is the resistance less than 1 Ω?	Go to step **5**.	Repair 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 — (i88) No. 14:***	Is the resistance less than 1 Ω?	Go to step **6**.	Repair the harness between auto A/C control module and in-vehicle sensor.
6	**CHECK FOR POOR CONTACT.** Check poor contact of auto A/C control module connector.	Is there poor contact of connector?	Repair the connector.	Replace the auto A/C control module. <Ref. to AC-32, REMOVAL, Control Unit (Auto A/C Model).>

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 terminals of the evaporator sensor. ***Terminals*** ***No. 1 — No. 2:***	Is the resistance approx. 6.2 kΩ at 0°C (32°F) and approx. 3.3 kΩ at 15°C (59°F)?	Go to step **2**.	Replace the evaporator sensor. <Ref. to AC-36, REMOVAL, Evaporator.>
2	**CHECK INPUT SIGNAL FOR EVAPORATOR SENSOR.** 1) Turn the ignition switch to ON. 2) Measure the voltage between connector (B88) terminals. ***Connector & terminal*** ***(B88) No. 2 (+) — No. 1 (–):***	Is the voltage approx. 5 V?	Go to step **6**.	Go to step **3**.
3	**CHECK AUTO A/C CONTROL MODULE OUTPUT SIGNAL.** 1) Turn the ignition switch to OFF. 2) Remove 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*** ***(i88) No. 18 (+) — (i88) No. 14 (–):***	Is the voltage approx. 5 V?	Go to step **4**.	Go to step **6**.

	Step	Check	Yes	No
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*** ***(B88) No. 2 — (i88) No. 18:***	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*** ***(B88) No. 1 — (i88) No. 14:***	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 FOR POOR CONTACT.** Check poor contact of auto A/C control module connector.	Is there poor contact of connector?	Repair the connector.	Replace the auto A/C control module. <Ref. to AC-32, REMOVAL, Control Unit (Auto A/C Model).>

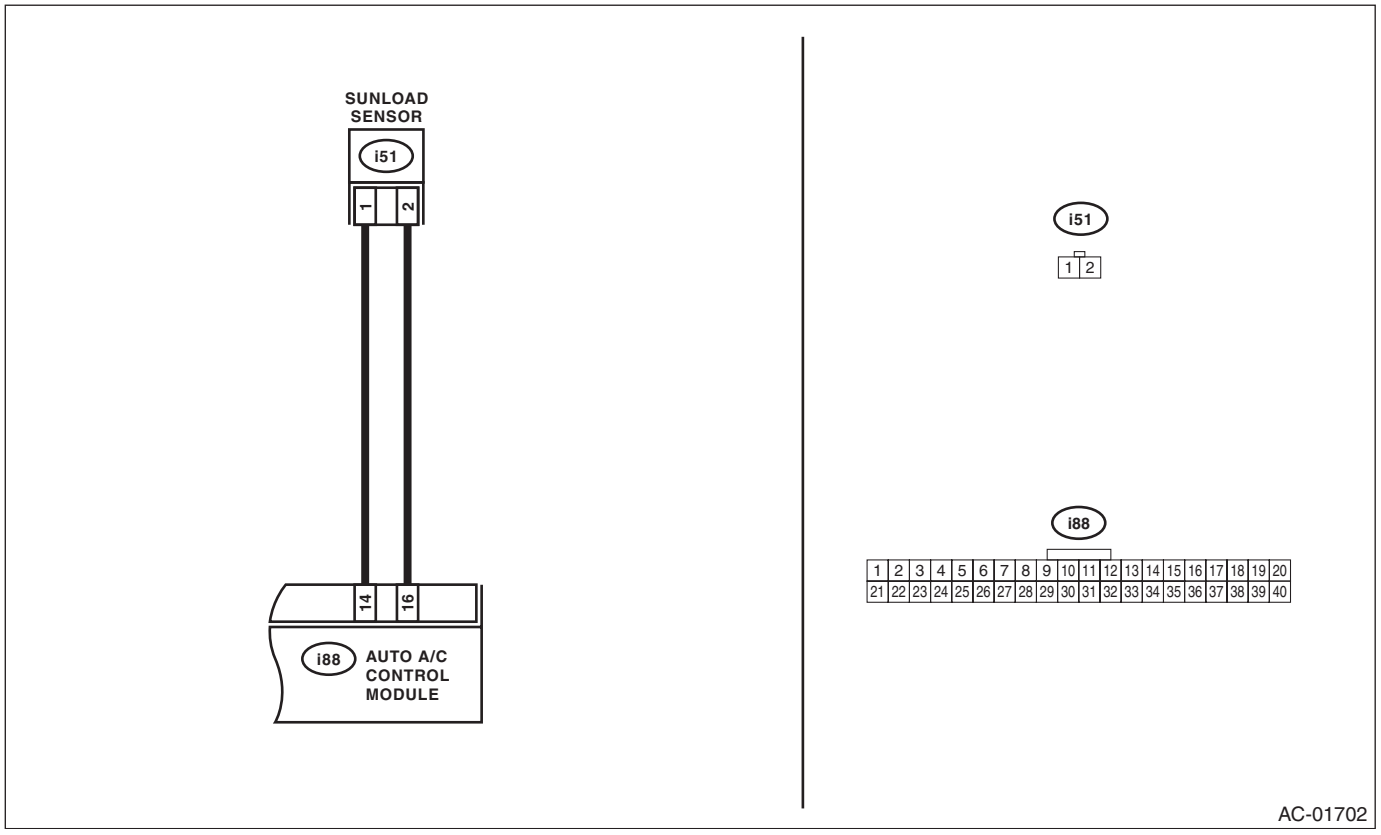
D: SUNLOAD SENSOR

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 check is performed indoors or in the shade, it could be diagnosed as having an open circuit. Always check the sunload sensor with the sun shining on it.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK POWER SUPPLY VOLTAGE FOR SUNLOAD SENSOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from sunload sensor. 3) Turn the ignition switch to ON. 4) Measure the power supply voltage for sunload sensor. ***Connector & terminal (i51) No. 2 (+) — No. 1 (–):***	Is the voltage approx. 5 V?	Go to step **4**.	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 — (i88) No. 16:***	Is the resistance less than 1 Ω?	Go to step **3**.	Repair the harness between auto A/C control module and sunload sensor.

	Step	Check	Yes	No
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 — (i88) No. 14:***	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 connectors of sunload sensor and auto A/C control module. 2) Turn the ignition switch to ON. 3) Measure the voltage between connector terminals of auto A/C control module. ***Connector & terminal*** ***(i88) No. 16 (+) — (i88) No. 14 (–):***	Is the voltage between approx. 1.0 — 4.0 V?	Go to step **5**.	Replace the sunload sensor. <Ref. to AC-42, REMOVAL, Sunload Sensor (Auto A/C Model).>
5	**CHECK FOR POOR CONTACT.** Check poor contact of auto A/C control module connector.	Is there poor contact of connector?	Repair the connector.	Replace the auto A/C control module. <Ref. to AC-32, REMOVAL, Control Unit (Auto A/C Model).>

9. Diagnostics with Phenomenon

A: INSPECTION

Symptoms	Problem parts
A/C system fails to operate.	• Fuse (F/B No. 7, 22, 31). • 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 (F/B No. 7, 22, 31). • Connector (Poor contact)
Illumination cannot dim.	• Fuse (F/B No. 7, 22, 31). • Connector (Poor contact) • Auto A/C control module
Blower fan does not rotate or fan speed cannot be controlled.	• Fuse (F/B No. 7, 22, 31). • 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
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
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

AIRBAG SYSTEM

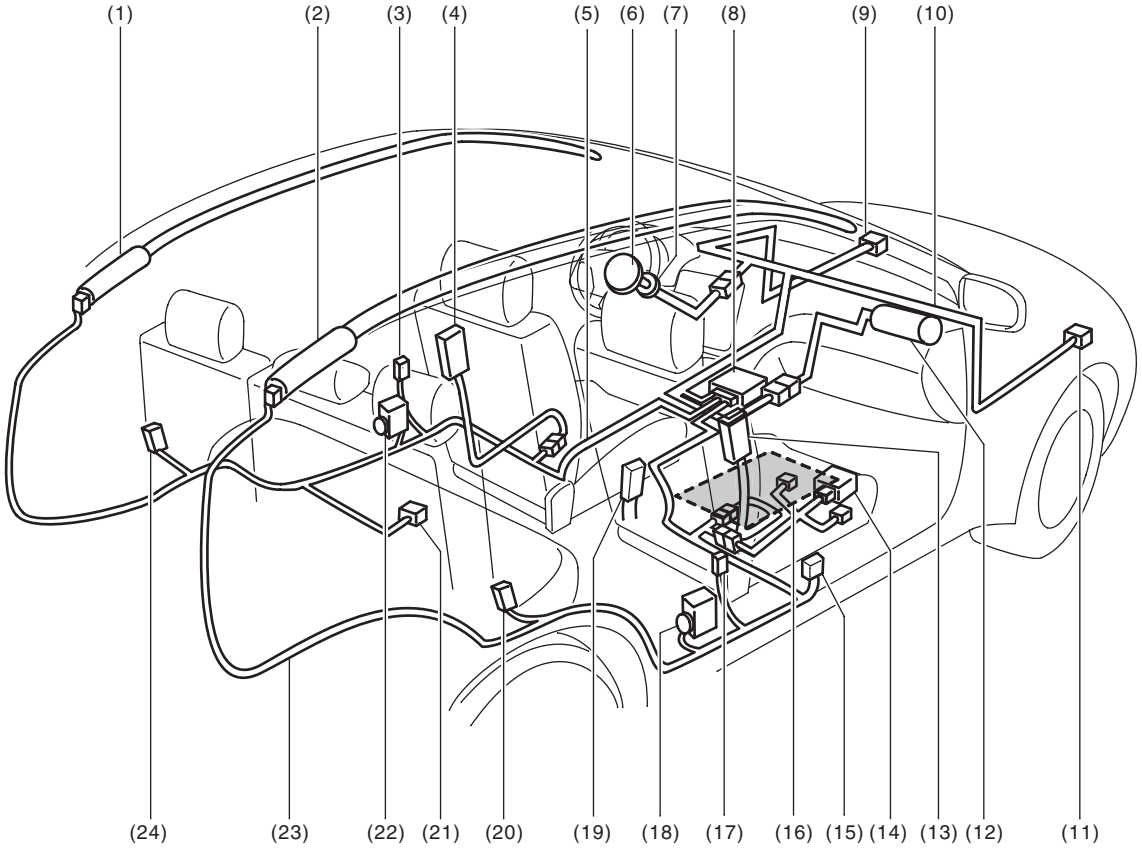
AB

Page

1. General Description 2
2. Airbag Connector 8
3. Inspection Locations After a Collision 12
4. Driver's Airbag Module 15
5. Passenger's Airbag Module 16
6. Side Airbag Module 17
7. Curtain Airbag Module 19
8. Airbag Control Module 21
9. Front Sub Sensor 22
10. Side Airbag Sensor 23
11. Curtain Airbag Sensor 24
12. Satellite Safing Sensor 25
13. Roll Connector 26

1. General Description

A: COMPONENT



(1)	Curtain airbag module LH	(9)	Front sub sensor LH	(17)	Side airbag sensor RH
(2)	Curtain airbag module RH	(10)	Front airbag harness	(18)	Seat belt pretensioner RH
(3)	Side airbag sensor LH	(11)	Front sub sensor RH	(19)	Buckle switch RH
(4)	Side airbag module LH	(12)	Airbag module ASSY (Passenger)	(20)	Curtain airbag sensor RH
(5)	Airbag rear harness LH	(13)	Side airbag module RH	(21)	Satellite safing sensor
(6)	Airbag module ASSY (Driver)	(14)	Occupant detection control module	(22)	Seat belt pretensioner LH
(7)	Combination switch ASSY with roll connector	(15)	Belt tension sensor	(23)	Airbag rear harness RH
(8)	Airbag control module	(16)	Occupant detection sensor	(24)	Curtain airbag sensor LH

1. General Description

A: SPECIFICATION

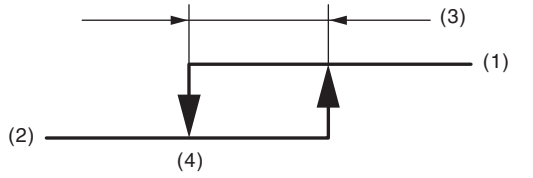
1. HEATER SYSTEM

Item		Specifications	Condition
Heating capacity		5.0 kW (4,299 kcal/h, 17,059 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		290 m^3 (10,243 cu ft)/h	Heat mode (FRESH), FULL HOT at 12.5 V
Max air flow rate		480 m^3 (16,954 cu ft)/h	• Temperature control switch: FULL COLD • Blower fan speed: Auto A/C: 7th position Manual A/C: 4th position • Mode selector lever: RECIRC
Heater core size (height × length × width)		257.5 × 118.5 × 27 mm (10.1 × 4.67 × 1.06 in)	—
Blower motor	Type	Magnet motor 250 W or less	12 V
	Fan type and size (diameter × width)	Sirocco fan type 150 × 75 mm (5.91 × 2.95 in)	—

2. A/C SYSTEM

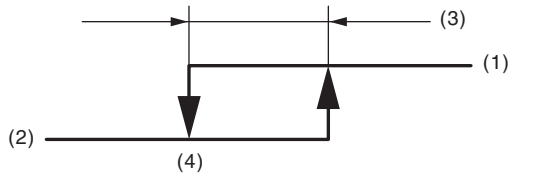
• Auto A/C model

Item		Specifications
Type of air conditioner		Reheat air-mix type
Cooling capacity		5.0 kW (4,299 kcal/h, 17,059 BTU/h)
Refrigerant		HFC-134a (CH_2FCF_3) [0.5±0.03 kg (1.1±0.07 lb)]
Compressor	Type	Rotary fixed capacity (DVK-10R)
	Discharge	105 cc (6.41 cu in)/rev
	Max. permissible speed	7,700 rpm
Magnet clutch	Type	Dry, single-disc type
	Power consumption	38.8 W
	Type of belt	V-belt 4 PK
	Pulley dia. (effective dia.)	100 mm (3.9 in)
	Pulley ratio	1.32
Condenser	Type	Sub cool type
	Core face area	0.188 m^2 (2.002 sq ft)
	Core thickness	16 mm (0.63 in)
	Radiation area	4.5 m^2 (48.44 sq ft)
Receiver drier	Effective inner capacity	177 cm^3 (10.8 cu in)
Expansion valve	Type	Block
Evaporator	Type	Dual-tank
	Dimensions (W × H × T)	290.1 × 172 × 39 mm (11.42 × 6.77 × 1.54 in)
Blower fan	Fan type	Sirocco fan
	Outer diameter × width	150 × 75 mm (5.91 × 2.95 in)
	Power consumption	250 W

Item			Specifications
Condenser fan (Sub fan)		Motor type	Magnet
		Power consumption	Non-turbo model: 90 W Turbo model: 120 W
		Fan outer diameter	Non-turbo model: 300 mm (11.8 in) Turbo model: 318.5 mm (12.5 in)
Radiator fan (Main fan)		Motor type	Magnet
		Power consumption	Non-turbo model: 90 W Turbo model: 120 W
		Fan outer diameter	Non-turbo model: 300 mm (11.8 in) Turbo model: 318.5 mm (12.5 in)
Idle speed		MPFI model	Turbo AT model (no load): 750±100 rpm Turbo AT model (A/C ON): 825±100 rpm Turbo MT model (no load): 750±100 rpm Turbo MT model (A/C ON): 800±100 rpm
Triple switch (Pressure switch)	Low-pressure switch operating pressure	ON → OFF	177±25 kPa (1.80±0.25 kgf/cm^2, 25.7±3.6 psi)
		OFF → ON	206±30 kPa (2.10±0.31 kgf/cm^2, 29.9±4.3 psi)
	High-pressure switch operating pressure	ON → OFF	2,940±200 kPa (29.98±2.04 kgf/cm^2, 426.3±29 psi)
		OFF → ON	2,350±200 kPa (24.00±2.04 kgf/cm^2, 340.7±29.0 psi)
	Middle-pressure switch operating pressure	ON → OFF	1,470±120 kPa (14.99±1.22 kgf/cm^2, 213.15±17.4 psi)
		OFF → ON	1,770±100 kPa (18.05±1.02 kgf/cm^2, 256.65±14.5 psi)
Thermo-control amplifier working temperature			 AC-00601 (1) ON (2) OFF (3) 1.5±0.3°C (34.7±0.5°F) (4) 1.0±0.5°C (33.8±0.9°F)

- Manual A/C model

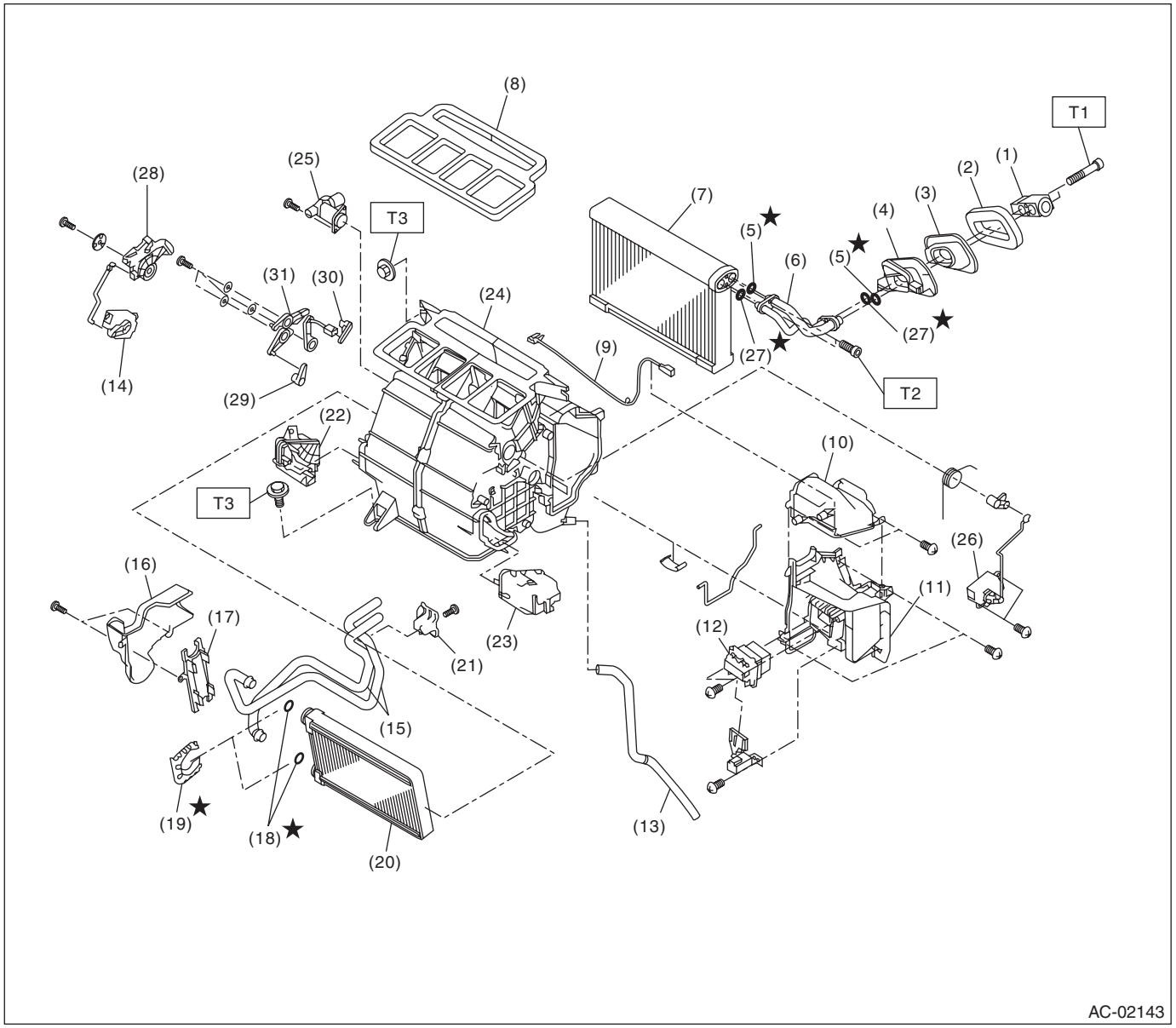
Item			Specifications
Type of air conditioner			Reheat air-mix type
Cooling capacity			5.0 kW (4,299 kcal/h, 17,059 BTU/h)
Refrigerant			HFC-134a (CH_2FCF_3) [0.5±0.03 kg (1.1±0.07 lb)]
Compressor		Type	Rotary fixed capacity (DVK-10R)
		Discharge	105 cc (6.41 cu in)/rev
		Max. permissible speed	7,700 rpm
Magnet clutch		Type	Dry, single-disc type
		Power consumption	38.8 W
		Type of belt	V-belt 4 PK
		Pulley dia. (effective dia.)	100 mm (3.9 in)
		Pulley ratio	1.32
Condenser		Type	Sub cool type
		Core face area	0.188 m^2 (2.002 sq ft)
		Core thickness	16 mm (48.44 in)
		Radiation area	4.5 m^2 (48.44 sq ft)
Receiver drier		Effective inner capacity	177 cm^3 (10.8 cu in)
Expansion valve		Type	Block
Evaporator		Type	Dual-tank
		Dimensions (W × H × T)	290.1 × 172 × 39 mm (11.42 × 6.77 × 1.54 in)
Blower fan		Fan type	Sirocco fan
		Outer diameter × width	150 × 75 mm (5.91 × 2.95 in)
		Power consumption	250 W
Condenser fan (Sub fan)		Motor type	Magnet
		Power consumption	90 W
		Fan outer diameter	300 mm (11.8 in)
Radiator fan (Main fan)		Motor type	Magnet
		Power consumption	90 W
		Fan outer diameter	300 mm (11.8 in)
Idle speed		MPFI model	Non-turbo MT model (no load): 650±100 rpm Non-turbo MT model (A/C ON): 850±100 rpm Non-turbo AT model (no load): 700±100 rpm Non-turbo AT model (A/C ON): 850±100 rpm
Triple switch (Pressure switch)	Low-pressure switch operating pressure	ON → OFF	177±25 kPa (1.80±0.25 kgf/cm^2, 25.7±3.6 psi)
		OFF → ON	206±30 kPa (2.10±0.31 kgf/cm^2, 29.9±4.3 psi)
	High-pressure switch operating pressure	ON → OFF	2,940±200 kPa (29.98±2.04 kgf/cm^2, 426.3±29 psi)
		OFF → ON	2,350±200 kPa (24.00±2.04 kgf/cm^2, 340.7±29.0 psi)
	Middle-pressure switch operating pressure	ON → OFF	1,470±120 kPa (14.99±1.22 kgf/cm^2, 213.15±17.4 psi)
		OFF → ON	1,770±100 kPa (18.05±1.02 kgf/cm^2, 256.65±14.5 psi)

Item	Specifications
Thermo-control amplifier operating temperature	 AC-00601 (1) ON (2) OFF (3) 1.5±0.3°C (34.7±0.5°F) (4) 1.0±0.5°C (33.8±0.9°F)

B: COMPONENT

1. HEATER COOLING UNIT

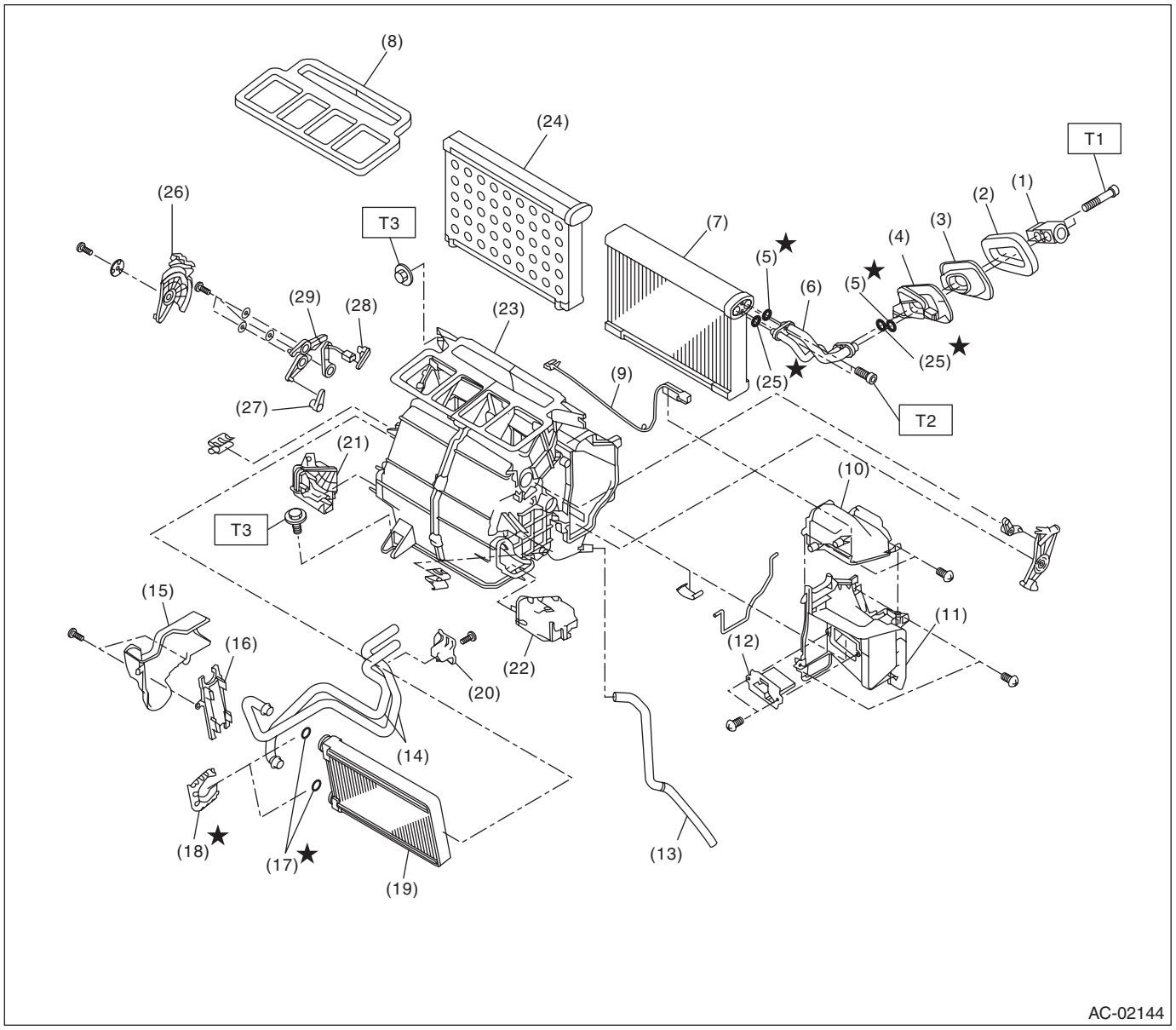
- Auto A/C model



(1) Expansion valve
(2) Gasket
(3) Grommet
(4) Case
(5) O-ring
(6) Evaporator pipe
(7) Evaporator
(8) Lining
(9) Evaporator sensor
(10) Evaporator pipe cover
(11) Evaporator cover
(12) Power transistor
(13) Drain hose
(14) Mode actuator
(15) Heater core pipe
(16) Heater pipe cover
(17) Heater core cover
(18) O-ring
(19) Clamp
(20) Heater core
(21) Pipe clamp
(22) Foot duct (LH)
(23) Foot duct (RH)
(24) Heater case
(25) Aspirator
(26) Air mix actuator
(27) O-ring
(28) Mode main lever
(29) Vent door link
(30) Defroster door link
(31) Mode link

Tightening torque: N·m (kgf-m, ft-lb)
T1: 5.0 (0.5, 3.7)
T2: 6.68 (0.7, 4.9)
T3: 7.5 (0.76, 5.5)

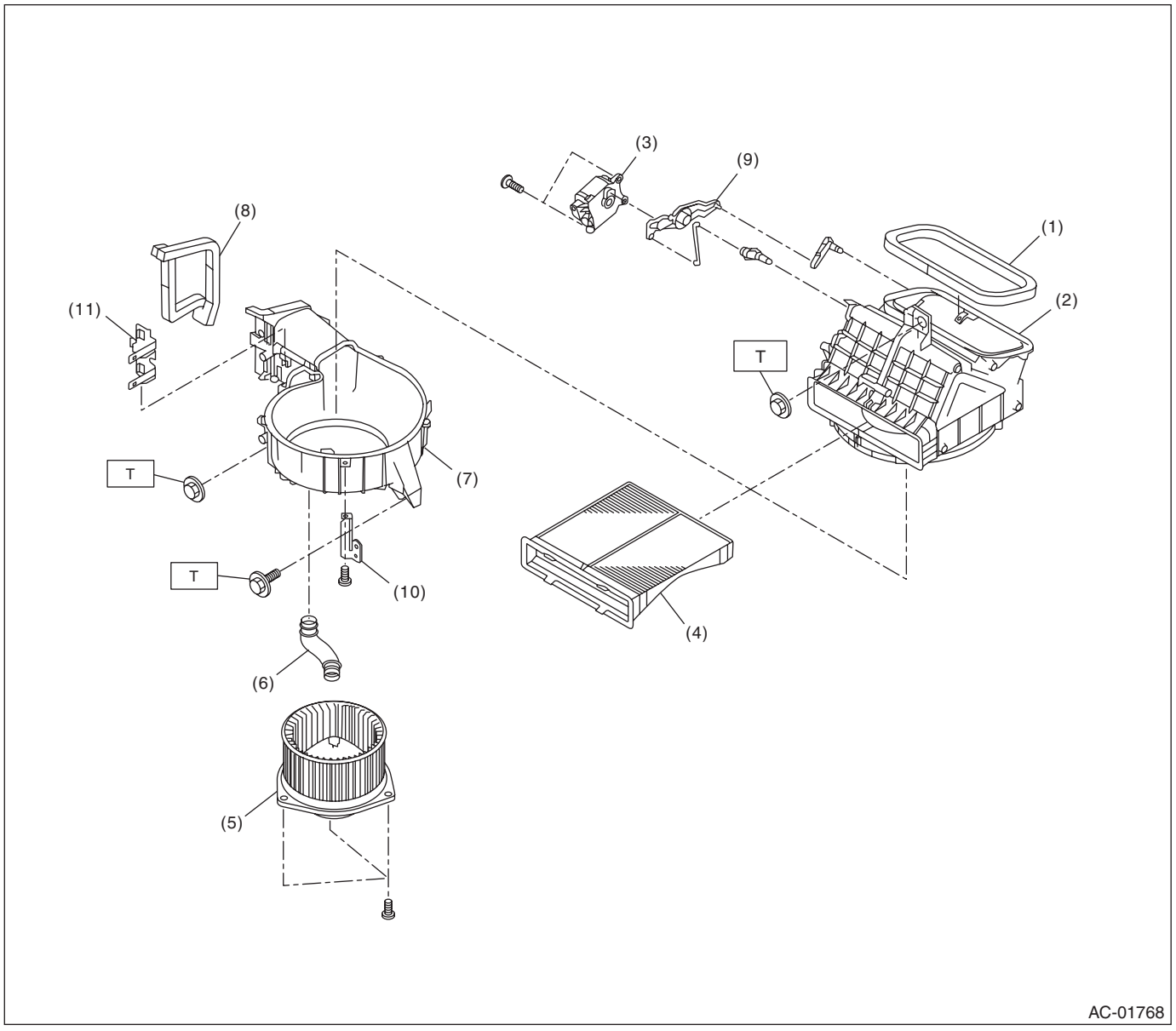
- Manual A/C model



(1) Expansion valve
(2) Gasket
(3) Grommet
(4) Case
(5) O-ring
(6) Evaporator pipe
(7) Evaporator
(8) Lining
(9) Thermostat
(10) Evaporator pipe cover
(11) Evaporator cover
(12) Resistor
(13) Drain hose
(14) Heater core pipe
(15) Heater pipe cover
(16) Heater core cover
(17) O-ring
(18) Clamp
(19) Heater core
(20) Pipe clamp
(21) Foot duct (LH)
(22) Foot duct (RH)
(23) Heater case
(24) Plate (Model without A/C)
(25) O-ring
(26) Mode main lever
(27) Vent door link
(28) Defroster door link
(29) Mode link

Tightening torque: N·m (kgf-m, ft-lb)	
T1:	*5.0 (0.5, 3.7)*
T2:	*6.68 (0.7, 4.9)*
T3:	*7.5 (0.76, 5.5)*

2. BLOWER MOTOR UNIT

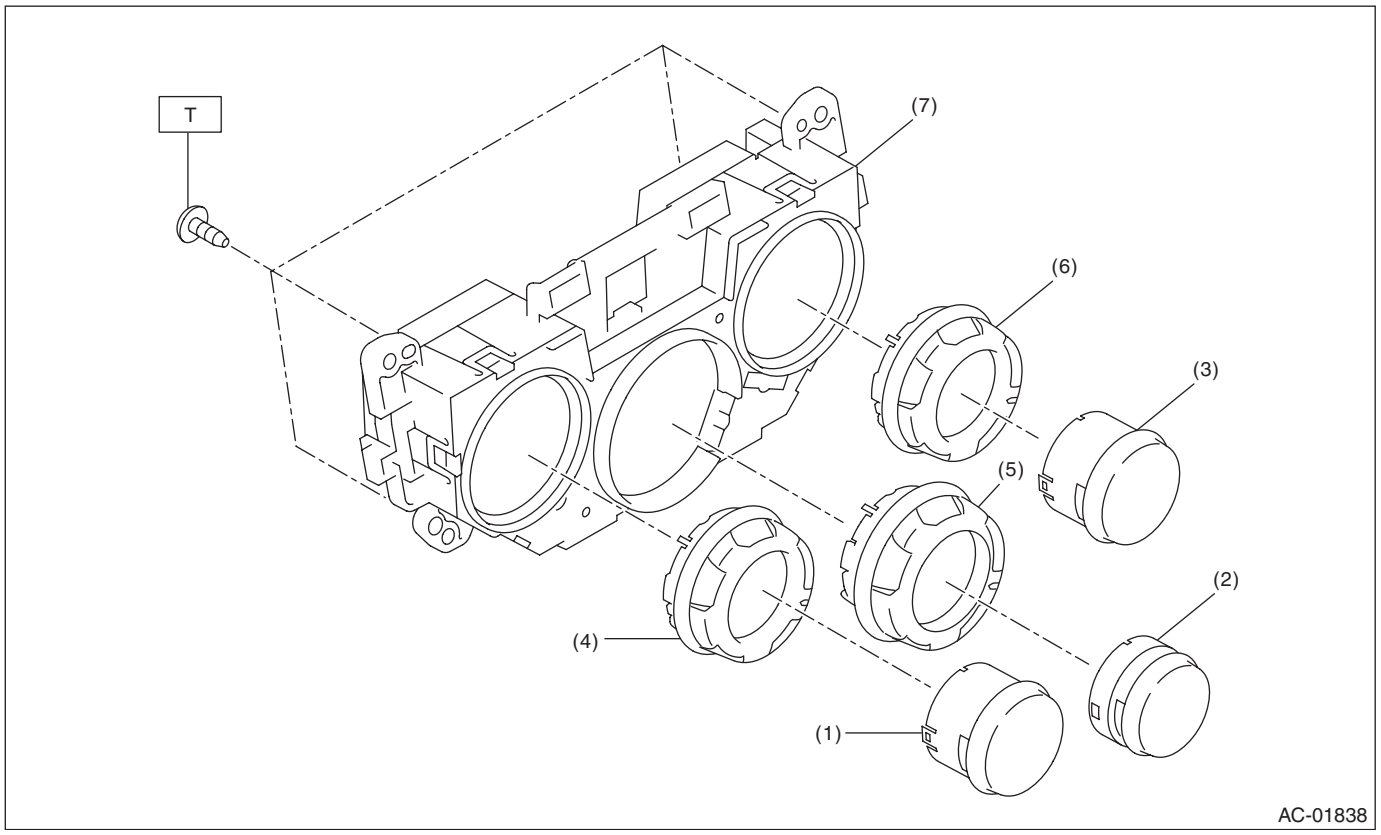


(1) Lining
(2) Upper case
(3) Intake door actuator
(4) Filter
(5) Blower motor ASSY
(6) Hose
(7) Lower case
(8) Lining
(9) Intake door link
(10) Relay bracket
(11) Relay holder bracket

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

3. CONTROL MODULE

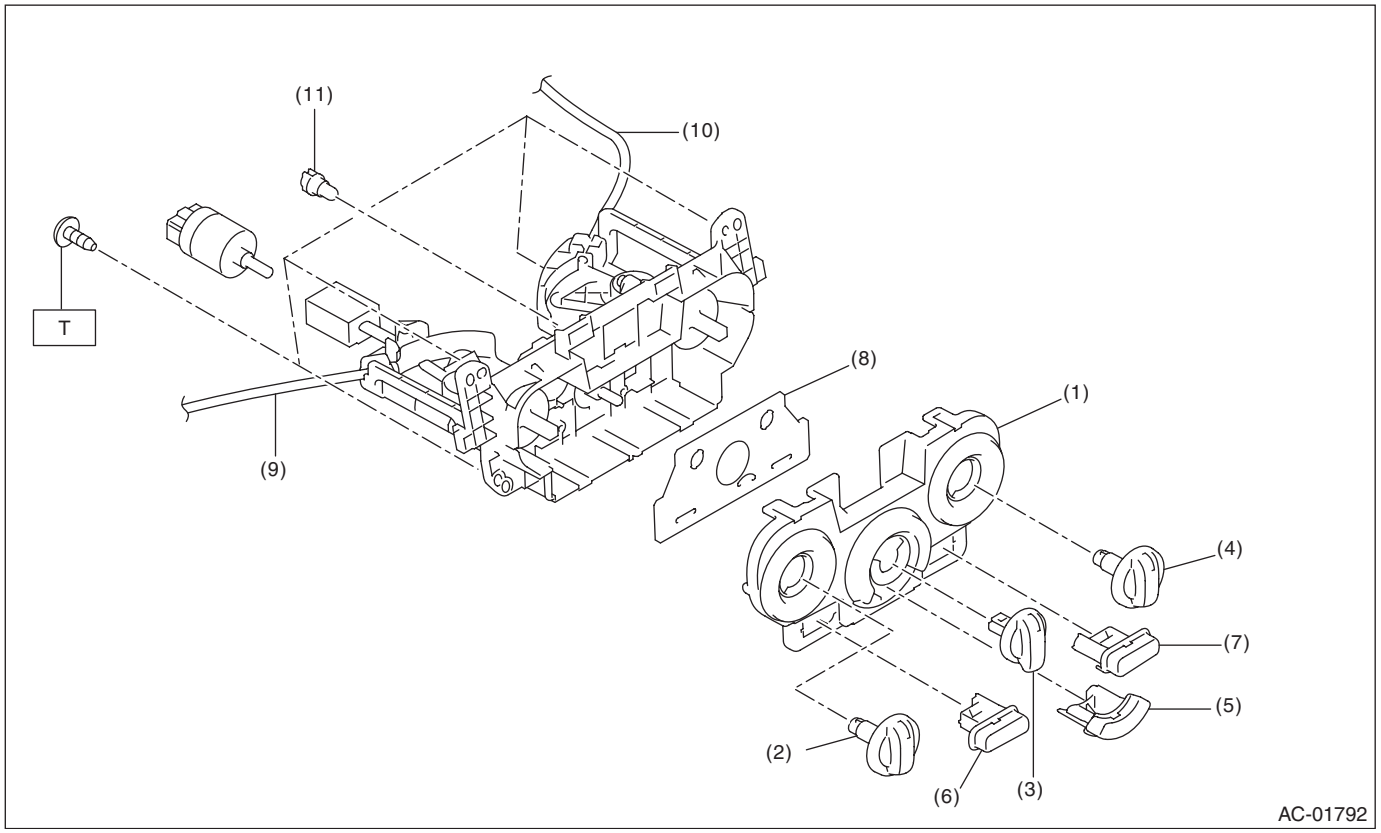
Auto A/C model



(1) FRESH/RECIRC switch
(2) Rear window defogger switch
(3) A/C switch
(4) Fan speed control dial
(5) Air flow control dial
(6) Temperature control dial
(7) Control case

Tightening torque: N·m (kgf-m, ft-lb)
T: 2 (0.2, 1.48)

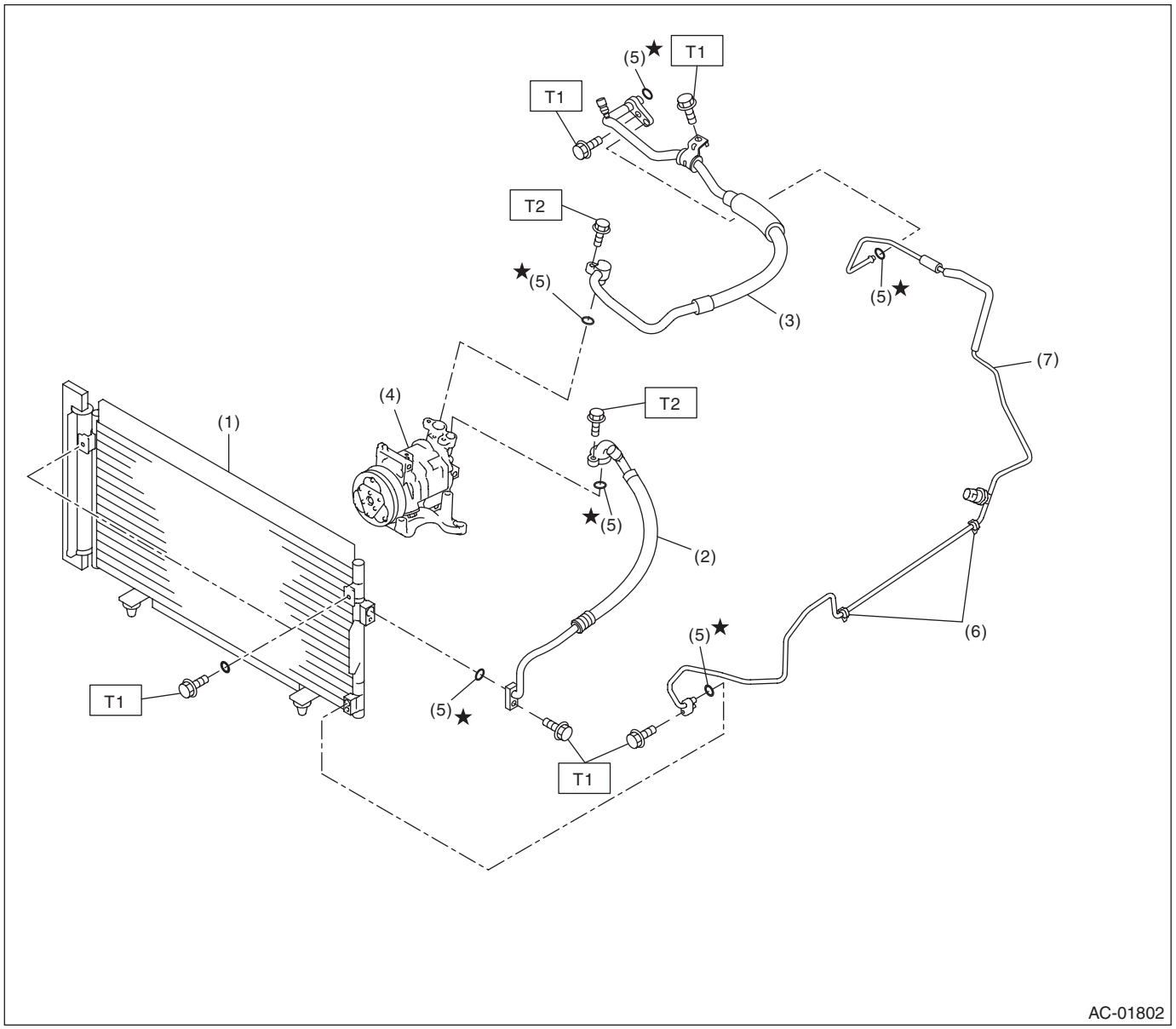
Manual A/C model



(1) Panel
(2) Air flow control dial
(3) Fan speed control dial
(4) Temperature control dial
(5) A/C switch
(6) Rear window defogger switch
(7) FRESH/RECIRC switch
(8) Switch board
(9) Air flow control cable
(10) Temperature control cable
(11) Valve

Tightening torque: N·m (kgf-m, ft-lb)
T: 2 (0.2, 1.48)

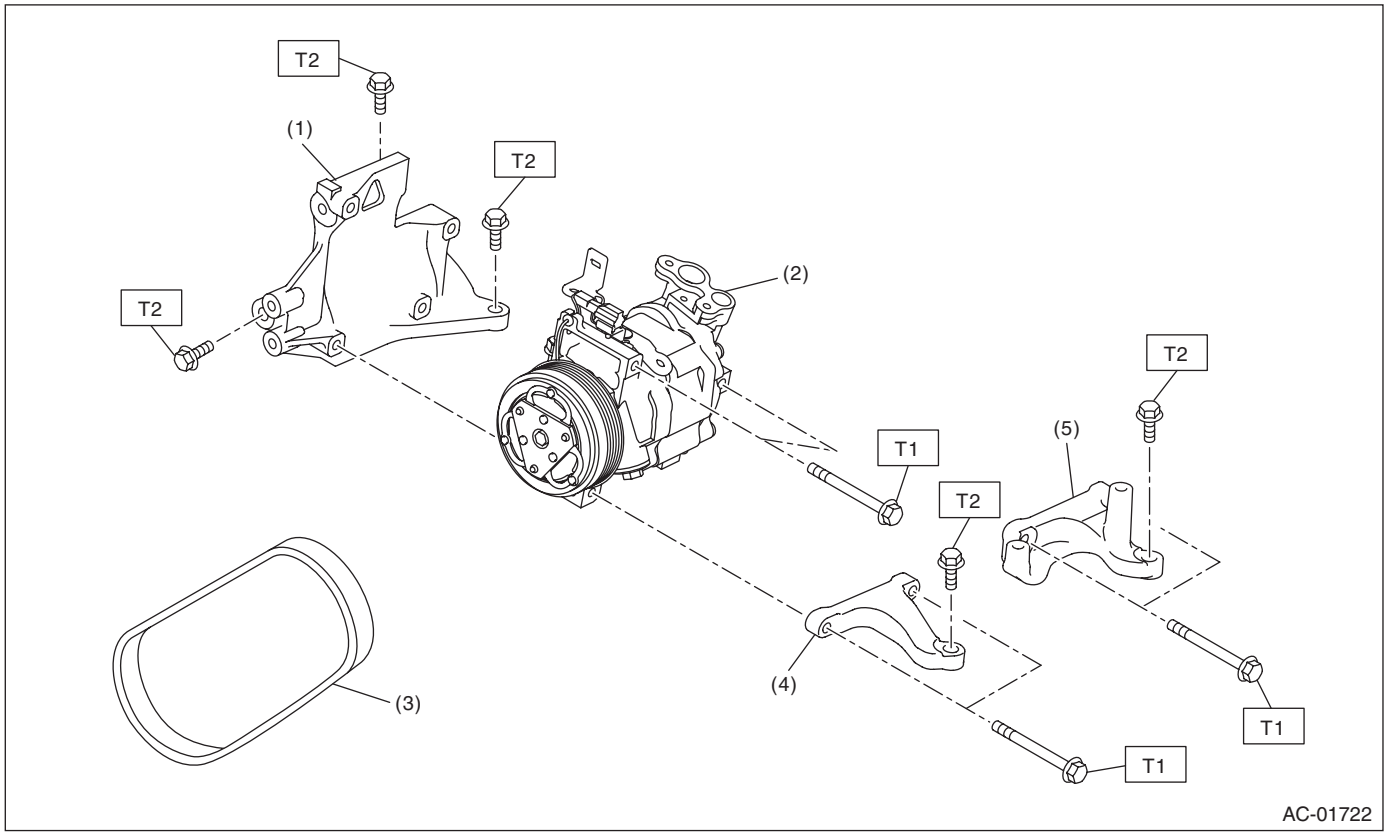
4. AIR CONDITIONING UNIT



(1) Condenser
(2) Hose (High-pressure)
(3) Hose (Low-pressure)
(4) Compressor
(5) O-ring
(6) Clamp
(7) Pipe

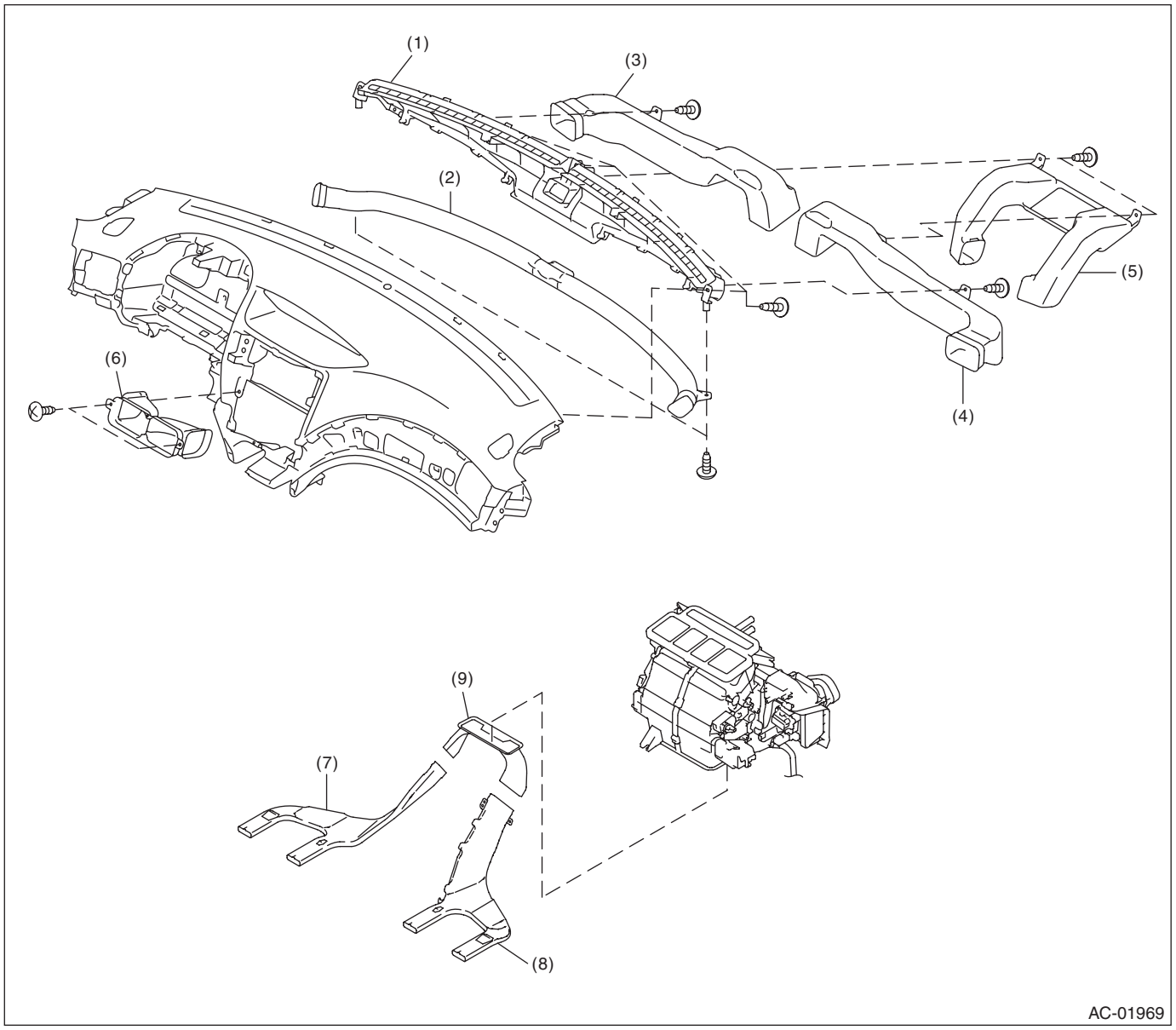
Tightening torque: N·m (kgf-m, ft-lb)
T1: 7.5 (0.76, 5.5)
T2: 10 (1.0, 7.4)

5. COMPRESSOR



(1)	Compressor bracket	(4)	Compressor bracket (non-turbo model)	***Tightening torque: N·m (kgf-m, ft-lb)***
(2)	Compressor	(5)	Compressor bracket (turbo model)	***T1: 26.5 (2.7, 19.5)***
(3)	V-belt			***T2: 36 (3.7, 26.6)***

6. HEATER DUCT

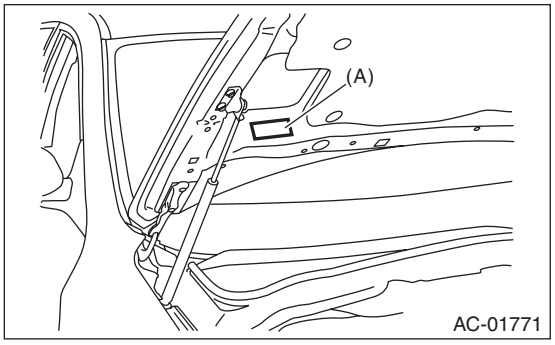


(1) Front defroster nozzle
(2) Side defroster duct
(3) Side vent duct (LH)
(4) Side vent duct (RH)
(5) Center vent duct
(6) Center vent duct front
(7) Rear heater duct (LH)
(8) Rear heater duct (RH)
(9) Rear heater duct center

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 A/C system which is installed to the vehicle.



2. COMPRESSOR OIL

• HFC-134a compressor oil has no compatibility with that of CFC-12 system.
• Use only the manufacturer-authorized compressor oil for the HFC-134a system; only use DH-PR (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.

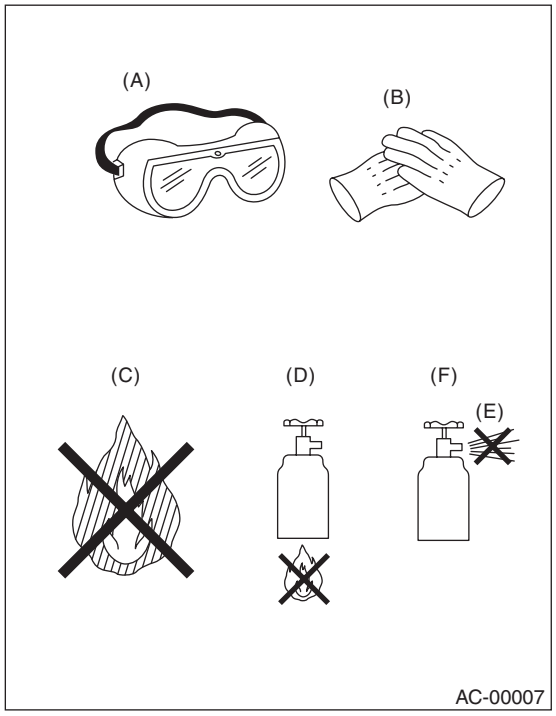
3. REFRIGERANT

• CFC-12 refrigerant cannot be used in a HFC-134a A/C system. HFC-134a refrigerant, also cannot be used in a 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 warm water of 40°C (104°F) or less.
• 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.

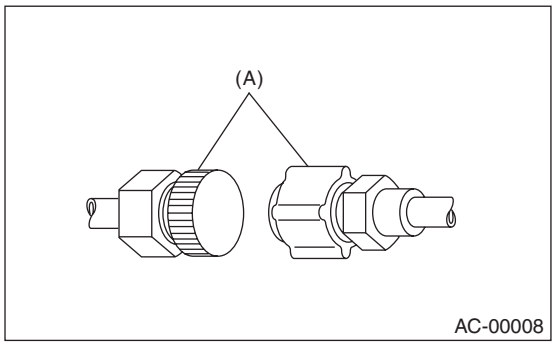
• In order to prevent global warming, avoid releasing HFC-134a into the atmosphere. Using a refrigerant recovery system, discharge and recycle the gas.



(A) Goggles
(B) Gloves
(C) Avoid open flame
(D) No direct heat on container
(E) Do not discharge
(F) Loosen

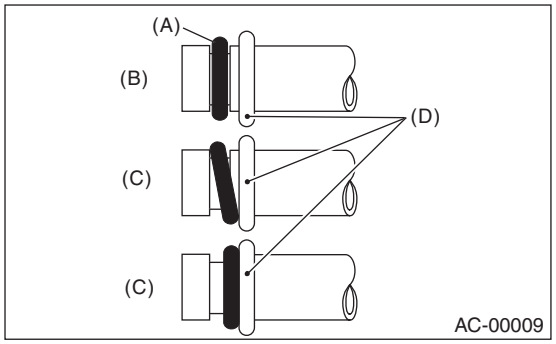
5. O-RING CONNECTIONS

• Always use a new O-ring.
• In order to keep the O-rings free of lint which will cause a refrigerant gas leak, perform work without using gloves or waste cloths.
• Apply compressor oil to O-rings to avoid sticking, before installation.
• Use a torque wrench to tighten the O-ring fittings. Over-tightening will result in damage of the O-ring and deformation of the pipe end.
• If the work is interrupted before completing pipe connections, recap the pipes, components and fittings with a plug or tape to prevent foreign matter from entering.



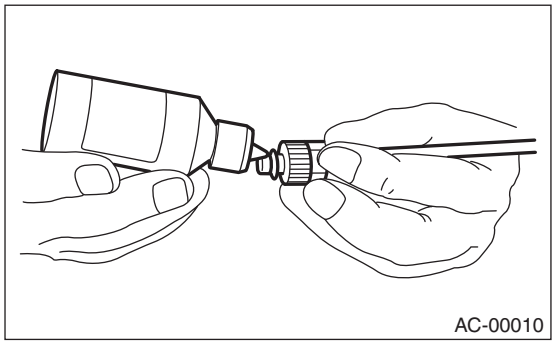
(A) Seal

• 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 pipe groove.



(A) O-ring
(B) OK
(C) NG
(D) Groove

• Use compressor oil specified in the service manual to lubricate the O-rings.
Apply oil to the top and sides of O-rings before installation.
Apply compressor oil to the pipe grooves.



• After tightening, use a clean cloth to remove excess compressor 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 tighten the connections further, 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 a HFC-134a system, only use HFC-134a specified tools and parts. Do not mix CFC-12 tools and parts. If HFC-134a and CFC-12 refrigerant or compressor oil is mixed, it will result in poor lubrication and the compressor itself may be damaged.
In order to prevent the mixture of HFC-134a and CFC-12 parts and liquid, the type of tool and screw, and the replacement 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

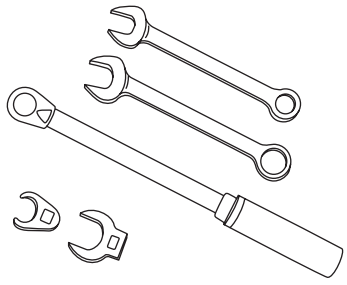
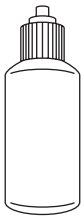
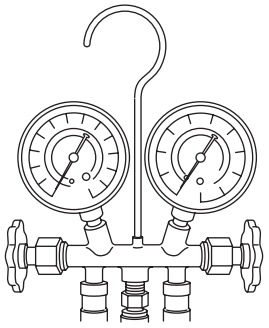
ILLUSTRATION	Name and Function
 AC-00213	Wrench Various **WRENCHES** will be required to service any A/C system.7 — 40 N·m (0.7 to 4.1 kgf-m, 5 to 30 ft-lb) torque wrench and various crow-foot wrenches will be needed. Open end or flare nut wrenches will be needed to hold the tube and hose fittings.
 AC-00012	Applicator bottle A small **APPLICATOR BOTTLE** is recommended to apply compressor oil to the various parts. It can be available at a hardware store.
 AC-00013	Manifold gauge set A **MANIFOLD GAUGE SET** (with hoses) is available at either a refrigerant supplier or an automotive equipment supplier.

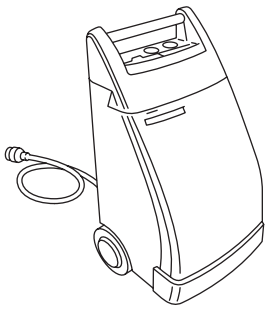
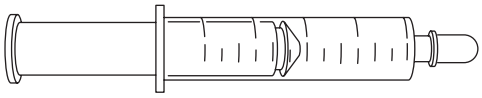
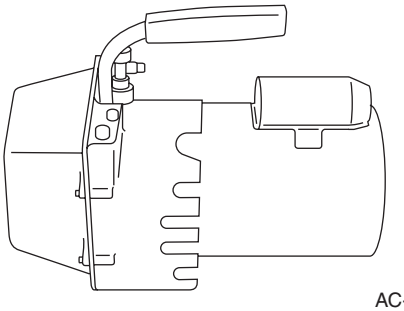
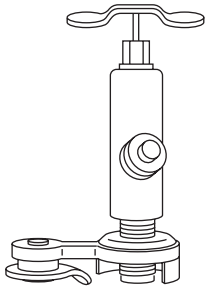
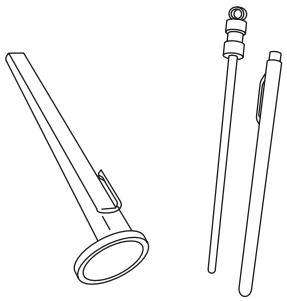
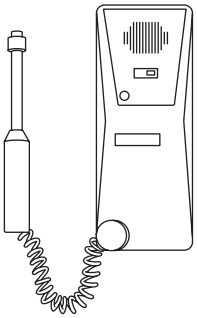
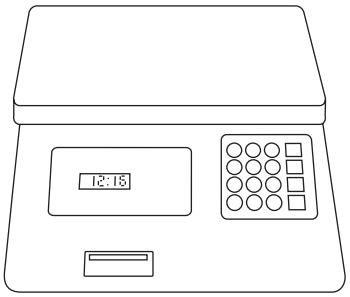
ILLUSTRATION	Name and Function
 AC-00014	Refrigerant recovery system A **REFRIGERANT RECOVERY SYSTEM** is used for the recovery and recycling of A/C system refrigerant after contaminants and moisture have been removed from the refrigerant.
 AC-00015	Syringe A graduated plastic **SYRINGE** will be needed to add oil into the system again. A syringe can be available at a pharmacy or drug store.
 AC-00016	Vacuum pump A **VACUUM PUMP** is necessary (for a good working condition), and may be available at 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 A Pocket **THERMOMETER** is available at either a industrial hardware store or a refrigerant supplier.

ILLUSTRATION	Name and Function
 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 the front windows and close all doors.
5) Increase the engine to 1,500 rpm.
6) Turn the A/C switch to ON.
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)

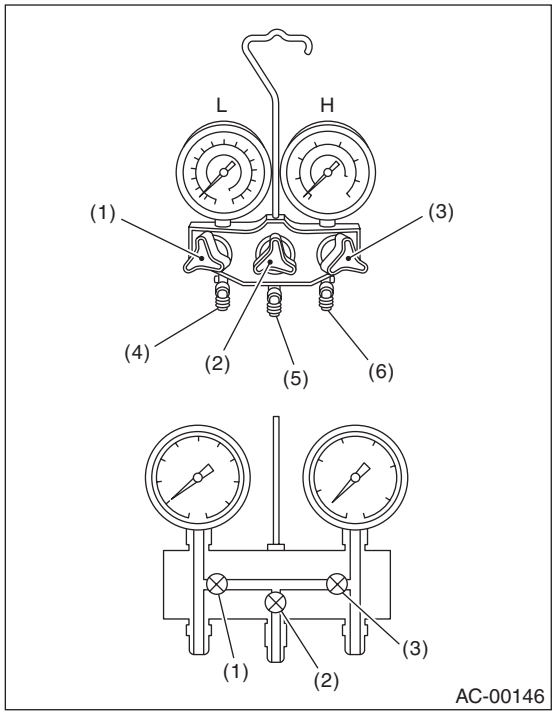
B: INSPECTION

Symptoms	Probable cause	Repair order
High-pressure side is unusually high.	• Defective condenser fan 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

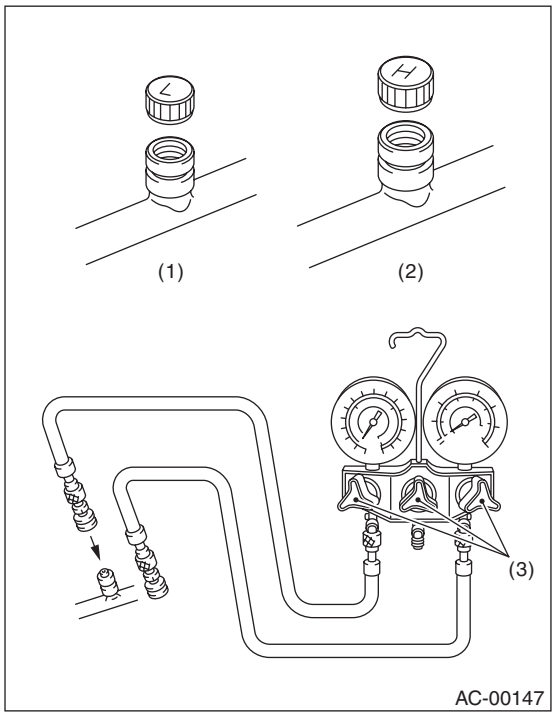
A: PROCEDURE

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 recycle the gas.
• When recycling 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 compressor oil return operation. <Ref. to AC-25, 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

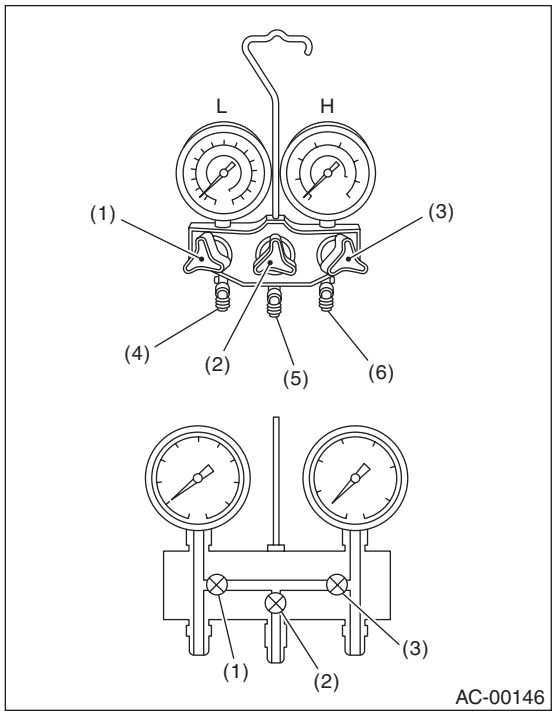
5) Connect the center hose to the refrigerant recovery system.
6) Follow the operation manual to activate the refrigerant recovery system.

4. Refrigerant Charging Procedure

A: PROCEDURE

CAUTION:
• While working, be sure to wear protective goggles and protective gloves.
• Air in the cycle can cause insufficient air conditioning, and water in the cycle can cause clogging in the cycle (icing) and rust. To remove this air and water content, use a vacuum pump to perform evacuation before filling with refrigerant. By making the inside of the cycle a vacuum, the water content will evaporate even at normal temperatures, and can be removed.

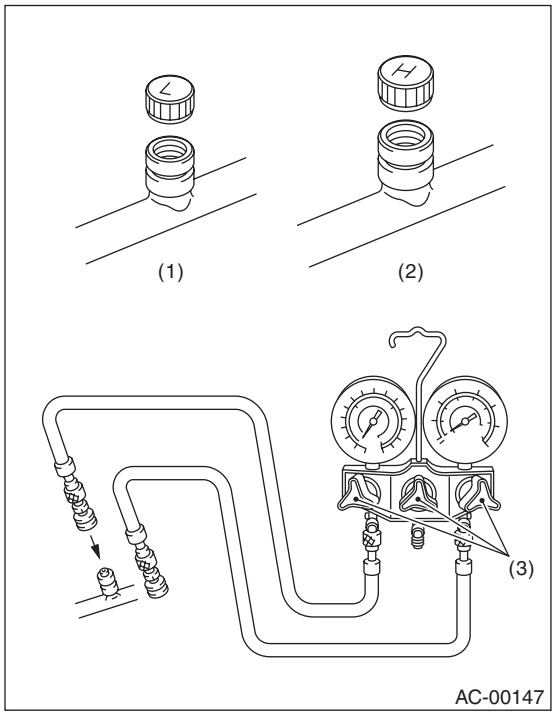
1) Close all valves of the manifold gauge.



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) Attach the low pressure side and high pressure side hoses to the vehicle service port.

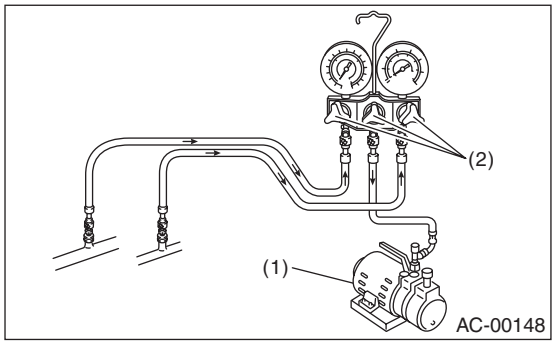
CAUTION:
Confirm that the connections are secure.



(1) Low-pressure side service port
(2) High-pressure side service port
(3) Close

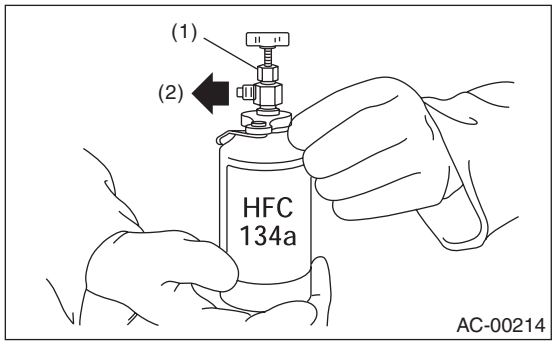
3) Connect the center manifold hose of the manifold gauge to the vacuum pump.
4) Operate the vacuum pump and open the low pressure and high pressure side valves. Next, open the center manifold hose valve, and begin evacuation.

CAUTION:
Make sure to perform evacuation using a vacuum pump.



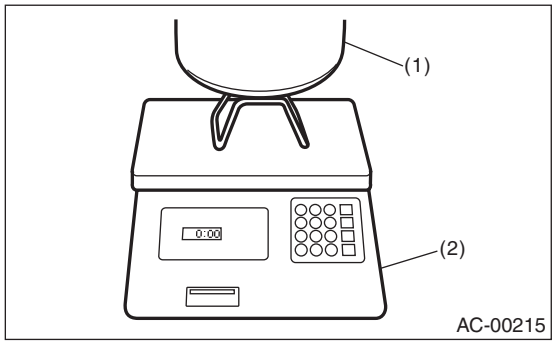
(1) Vacuum pump
(2) Open

5) Perform evacuation for 5 minutes or more, and when the low pressure gauge needle reaches –100.0 kPa (–750 mmHg, –29.5 inHg) or higher, close the center manifold hose valve, and stop the vacuum pump.
6) Leave alone for 5 to 10 minutes after closing the low pressure side and high pressure side valves, and check whether there is any change in the low pressure gauge needle indication. If the needle position changes, this indicates a leak. Check the pipe and hose connections, and repair the location with the problem. In this case, repeat again from step 1).
7) If there is no leakage, continue evacuation for additional 20 to 30 minutes.
8) Close all valves and stop the vacuum pump.
9) Follow the can tap operation manual, install to the refrigerant can.



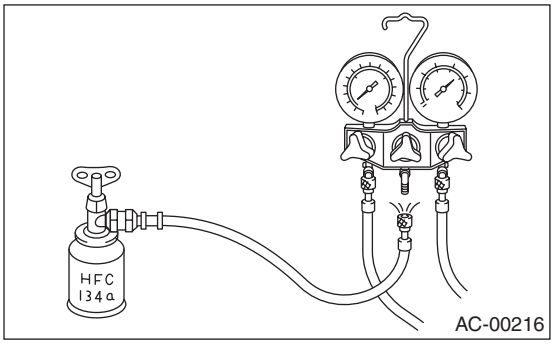
(1) Tap valve
(2) To the center manifold hose

10) Disconnect the center manifold hose from the vacuum pump, and connect the hose to the tap valve.
11) When a 13.6 kg (30 lb) refrigerant container is used, measure the amount of refrigerant with a refrigerant charging scale, and connect with the center manifold hose.



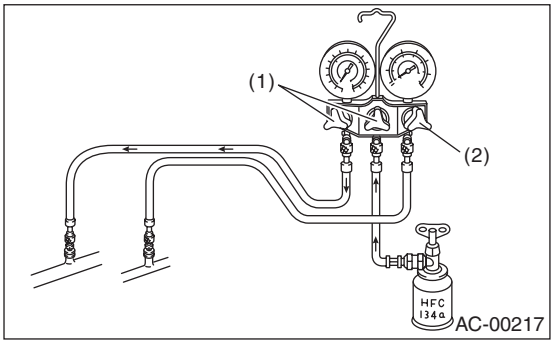
(1) Refrigerant container (HFC-134a)
(2) Weight scale

12) Open the valve on the HFC-134a source.
13) Loosen the center manifold hose connection on the manifold gauge for a few seconds (if there is a purge valve on the manifold gauge, push this instead) to allow the air in the center manifold hose to be bled by the refrigerant pressure.



14) Open the high pressure side and low pressure side valves of the manifold gauge to fill with refrigerant.

CAUTION:
When filling with the engine running, do not open the high pressure side valve. Always fill from the low pressure side.



(1) Open
(2) Open

15) When the gauge needle reaches approximately 200 kPa (1,500 mmHg, 59.1 inHg), close all valves.
16) Using a leak tester, check for refrigerant leaks in the system.
17) After checking that there are no refrigerant leaks, fill with refrigerant up to the specified amount.
18) If the HFC-134a supply container becomes empty, close all valves, and close the can tap valve to replace the empty container. After replacing with a new HFC-134a supply container, perform air purge, and resume the filling operation.
19) If the refrigerant filling efficiency drops, close all valves.
20) Check that both the low pressure and high pressure valves are closed. Start the engine with the A/C switch OFF.

21) To prevent damage to the compressor, push the A/C switch ON-OFF quickly a few times.
22) Set up the vehicle to the following status:

CAUTION:
When filling with the engine running, do not open the high pressure side valve.
Always fill from the low pressure side valve.

- 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 with refrigerant up to the specified amount.
24) After filling with refrigerant, close all valves and disconnect the hose from the service port.
25) Attach the cap to the service port.

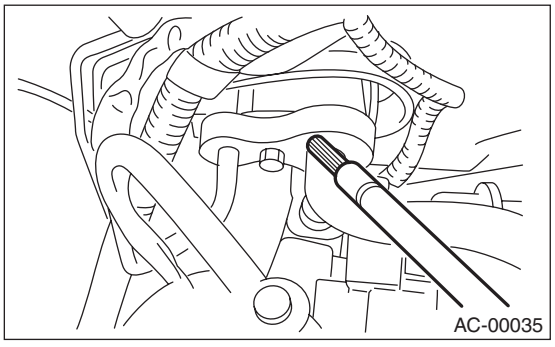
5. Refrigerant Leak Check

A: INSPECTION

1) Operate the A/C system for approx. 10 minutes, and check that the high-pressure side shows at least 690 kPa (7.03 kgf/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.
• Check the joint and seam between pressure switch (triple pressure switch) and high-pressure pipe.
• Check the connections between condenser and pipes, and welded joints on the condenser.

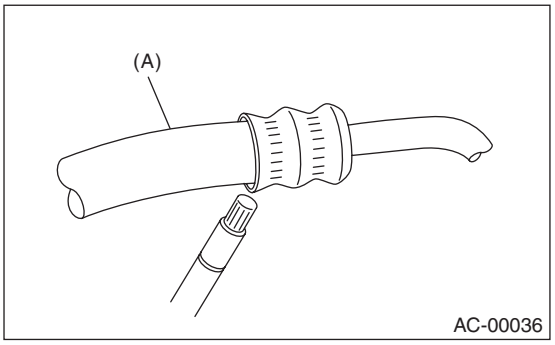
NOTE:
The leak tester may detect the oil on the condenser fins as a leak.
• Check the joint between compressor and hoses.
• Check the machined area of the compressor and other joints on the compressor.
• Check the compressor shaft seal at the area near the center of compressor clutch pulley.

NOTE:
Some shaft seals will show a slight amount of leakage, about 3 g (0.1 oz) per year. This is not a problem.
3) 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

4) 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.

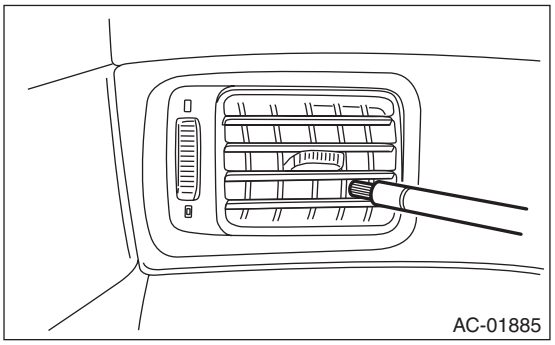
CAUTION:
Carefully check the external surface of hoses and pipes at approx. 25 mm (0.98 in) per second.



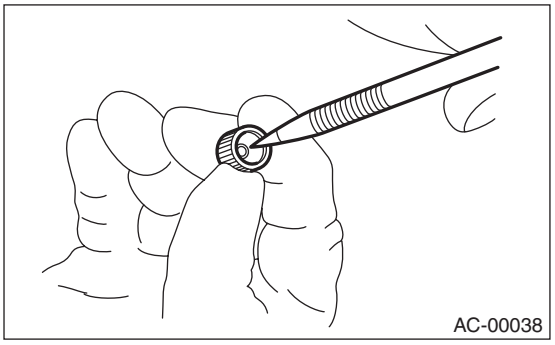
AC-00036

(A) Flexible hose

5) Disconnect the drain hose from the heater case, and check the hose end for at least 10 seconds.
After the test is finished, reconnect the drain hose.
6) Turn the ignition switch to the ON, 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 position for at least 10 seconds.


AC-01885

7) Check the valve in the service port.
8) Visually check the rubber seal in the service port cap.


AC-00038

6. Compressor Oil

A: PROCEDURE

NOTE:
Before making repairs, perform the oil return operation to return the compressor oil in circulation with the refrigerant to the compressor.
1) Increase the engine to 1,500 rpm.
2) Turn the A/C switch to ON.
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.

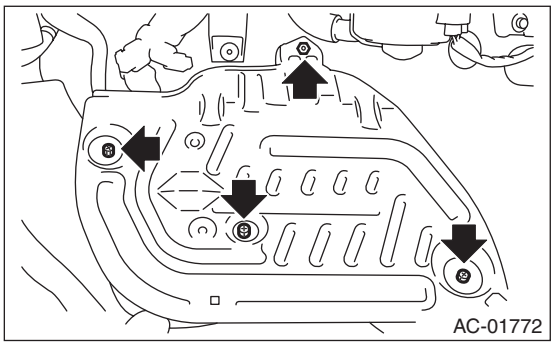
B: REPLACEMENT

NOTE:
• If a component has been replaced, 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. Adjust the oil amount (so that the amount remains the same as that of the removed compressor) and install the new compressor.
• Since the hygroscopicity of compressor oil is high, perform this series of works quickly.

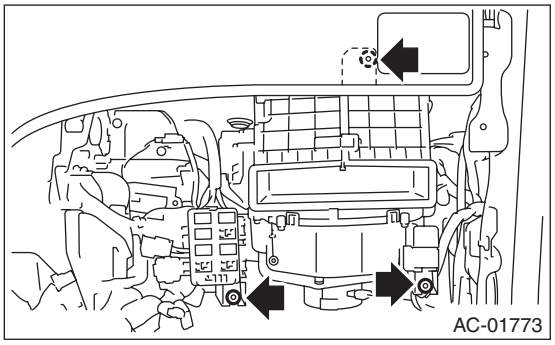
7. Blower Motor Unit Assembly

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the instrument panel lower. <Ref. to EI-51, INSTRUMENT PANEL, LOWER, REMOVAL, Center Console.>
3) Remove the engine ECM protect cover.



4) Disconnect the intake door actuator and blower motor harness connectors.
5) Remove the relay holder.
6) Remove the bolts and nuts to remove blower motor unit assembly.



B: INSTALLATION

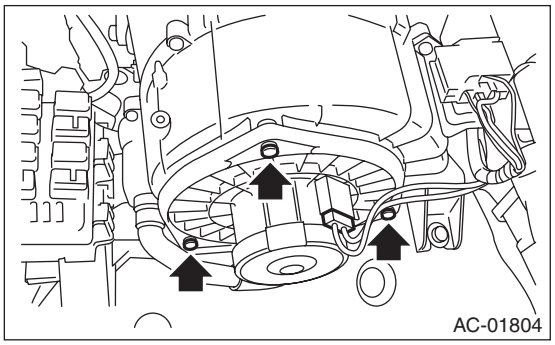
Install in the reverse order of removal.

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to AC-6, HEATER COOLING UNIT, COMPONENT, General Description.> <Ref. to AC-8, BLOWER MOTOR UNIT, COMPONENT, General Description.>

8. Blower Motor

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Disconnect the blower motor connector.
3) Turn up the floor mat near the blower motor.
4) Remove the screws and detach the blower motor.

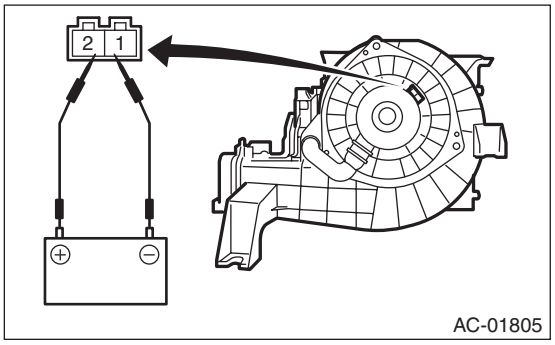


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Connect the battery positive (+) terminal to terminal No. 2 of blower motor connector, and negative (–) terminal to terminal No. 1. Check the blower motor for smooth rotation.

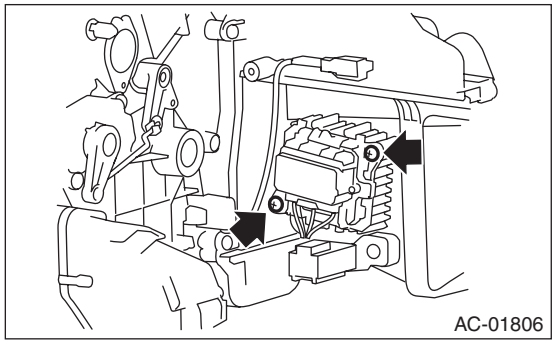


Replace the blower motor if defective.

9. Power Transistor (Auto A/C Model)

A: REMOVAL

1) Remove the instrument panel lower. <Ref. to EI-51, INSTRUMENT PANEL, LOWER, REMOVAL, Center Console.>
2) Disconnect the power transistor connector.
3) Remove the two screws and remove the power transistor.



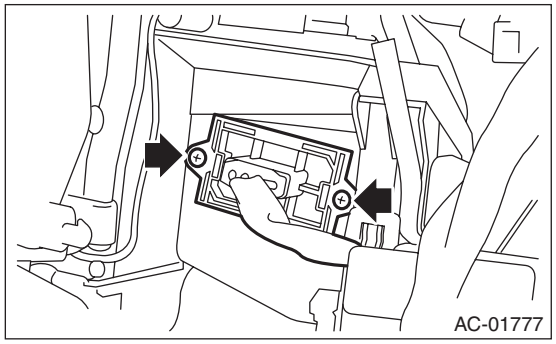
B: INSTALLATION

Install in the reverse order of removal.

10. Blower Resistor (Manual A/C Model)

A: REMOVAL

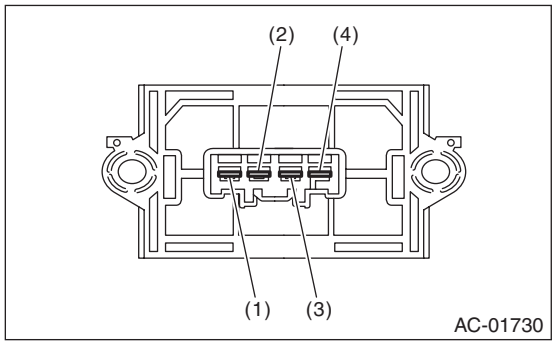
1) Remove the instrument panel lower. <Ref. to EI-51, INSTRUMENT PANEL, LOWER, REMOVAL, Center Console.>
2) Disconnect the blower resistor connector.
3) Remove the two screws and remove the blower resistor.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION



Measure the blower resistor resistance.

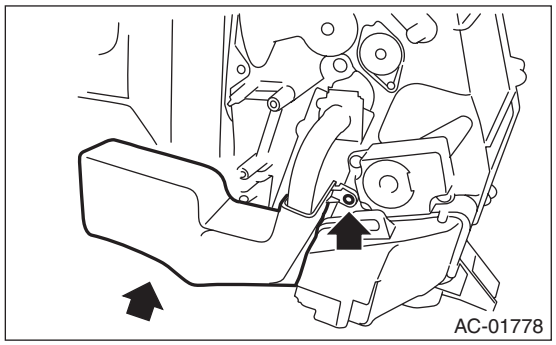
Terminal No.	Standard
4 and 3	Approx. 0.43 Ω
4 and 2	Approx. 1.03 Ω
4 and 1	Approx. 3.0 Ω

If NG, replace the blower resistor.

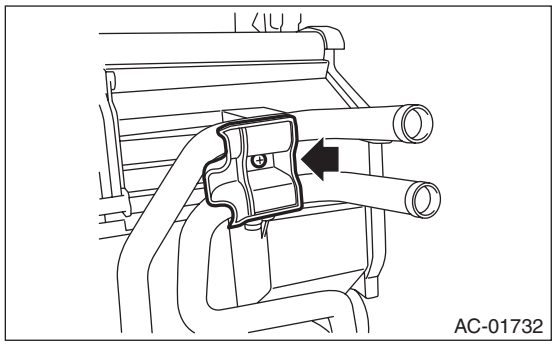
11.Heater Core

A: REMOVAL

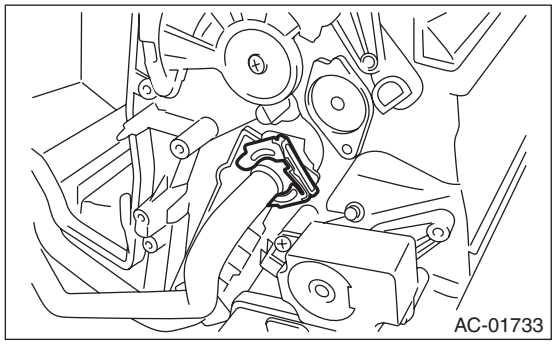
1) Remove the heater and cooling unit. <Ref. to AC-35, REMOVAL, Heater and Cooling Unit.>
2) Remove the screw and detach the heater pipe cover.


AC-01778

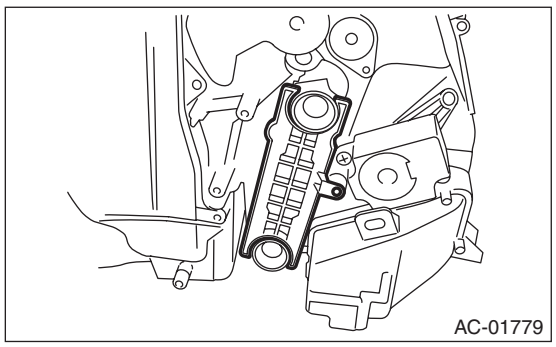
3) Remove the screw and detach the clamp.


AC-01732

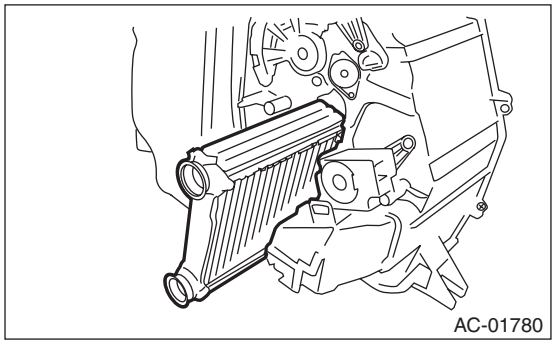
4) Remove the pipe clamp and pipe.


AC-01733

5) Remove the heater core cover.


AC-01779

6) Remove the heater core.


AC-01780

B: INSTALLATION

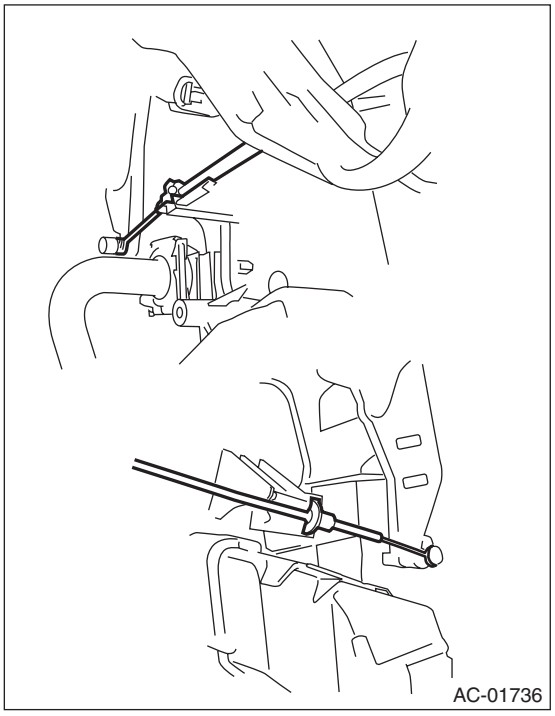
CAUTION:
Replace O-rings and pipe clamps with new parts and install securely.

1) Install in the reverse order of removal.
2) Fill engine coolant. <Ref. to CO(H4DOTC)-14, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.> <Ref. to CO(H4SO)-13, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>
3) Charge refrigerant. <Ref. to AC-21, PROCEDURE, Refrigerant Charging Procedure.>

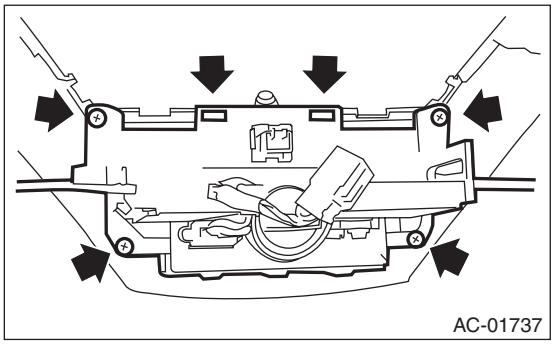
12.Control Unit (Manual A/C Model)

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the ornament panel. <Ref. to EI-49, ORNAMENT PANEL, REMOVAL, Center Console.>
3) Remove the control wires from both sides of the heater and cooling unit.


AC-01736

4) Remove the screws and claws, and remove the control module from the ornament panel.


AC-01737

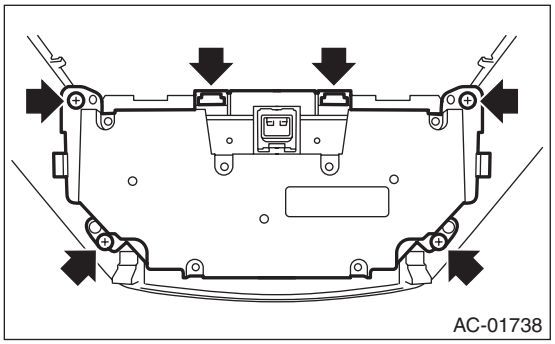
B: INSTALLATION

CAUTION:
Securely assemble the plate at the end of the control wire to the heater case.
Install in the reverse order of removal.

13.Control Unit (Auto A/C Model)

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the ornament panel. <Ref. to EI-49, ORNAMENT PANEL, REMOVAL, Center Console.>
3) Remove the screws and claws, and remove the control module from the ornament panel.



B: INSTALLATION

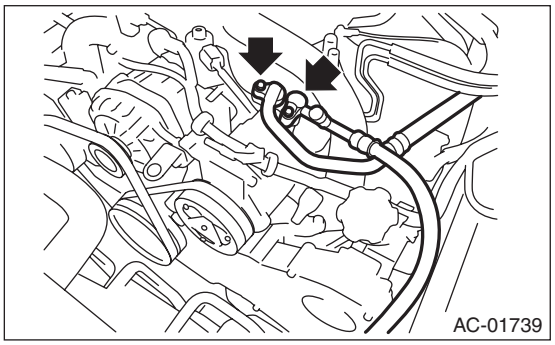
Install in the reverse order of removal.

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to AC-9, CONTROL MODULE, COMPONENT, General Description.>

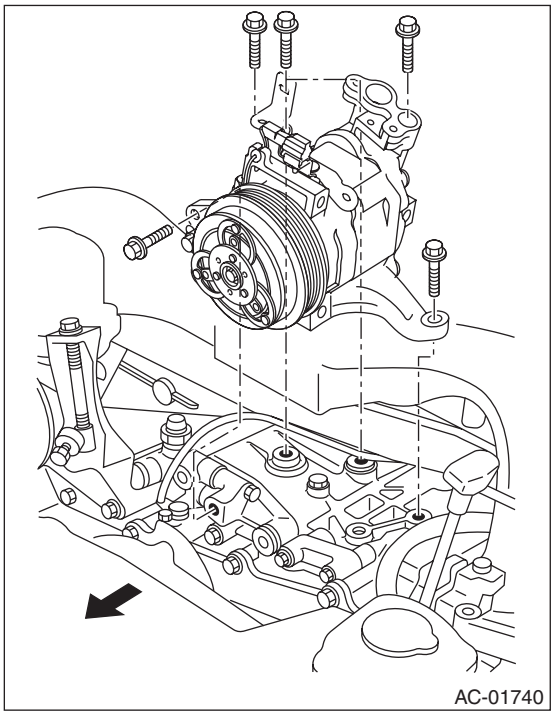
14.Compressor

A: REMOVAL

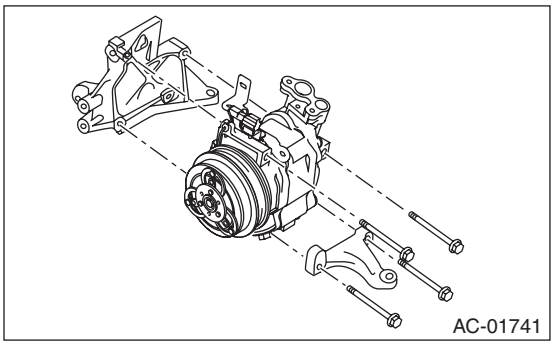
1) Perform compressor oil return operation. <Ref. to AC-25, PROCEDURE, Compressor Oil.>
2) Turn the A/C switch to OFF and stop the engine.
3) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-20, PROCEDURE, Refrigerant Recovery Procedure.>
4) Disconnect the ground cable from battery.
5) Remove the V-belts. <Ref. to ME(H4DOTC)-40, REMOVAL, V-belt.> <Ref. to ME(H4SO)-39, REMOVAL, V-belt.>
6) Remove the generator. <Ref. to SC(H4SO)-16, REMOVAL, Generator.>
7) Remove the bolt and remove the low-pressure hose and high-pressure hose.


AC-01739

8) Disconnect the compressor harness from body harness.
9) Remove the bolts and remove the compressor bracket.


AC-01740

10) Remove the bolts, then remove the bracket from the compressor.


AC-01741

B: INSTALLATION

1) Install in the reverse order of removal.
2) Replace the O-rings on low/high pressure hoses with new parts, and apply compressor oil.
3) After replacing the compressor, adjust the amount of the compressor oil. <Ref. to AC-25, PROCEDURE, Compressor Oil.>
4) Charge refrigerant. <Ref. to AC-21, PROCEDURE, Refrigerant Charging Procedure.>

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to AC-11, AIR CONDITIONING UNIT, COMPONENT, General Description.> <Ref. to AC-12, COMPRESSOR, COMPONENT, General Description.>

C: INSPECTION

1. MAGNETIC CLUTCH CLEARANCE

1) Check the clearance of entire circumference around the drive plate and pulley.

Specification:
0.3 — 0.6 mm (0.0118 — 0.0236 in)
2) If it is not at the standard value, replace the compressor.

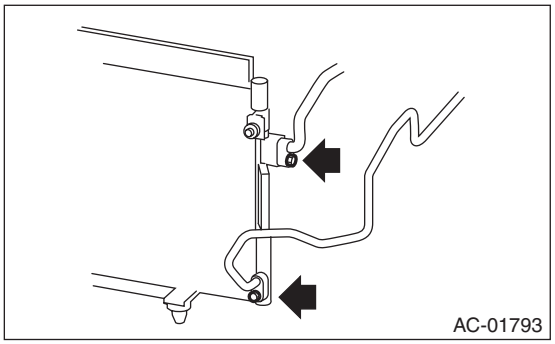
2. MAGNETIC CLUTCH OPERATION

1) Disconnect the compressor connector.
2) Connect the battery positive (+) terminal to the terminal of the compressor connector.
3) Check the magnet clutch engagement.
4) If there is a malfunction, replace the compressor.

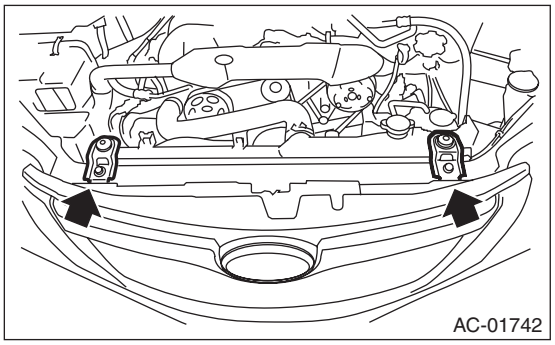
15.Condenser

A: REMOVAL

1) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-20, PROCEDURE, Refrigerant Recovery Procedure.>
2) Disconnect the ground cable from battery.
3) Disconnect the pressure hose and pipe from the condenser.


AC-01793

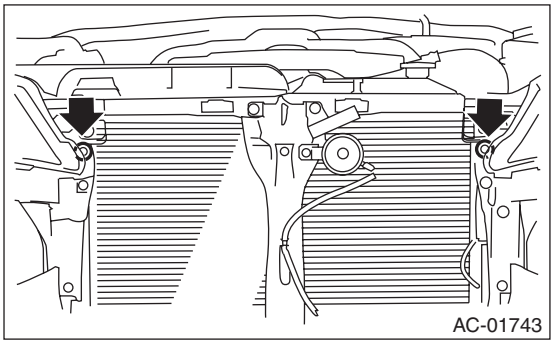
4) Remove the radiator bracket.


AC-01742

5) Remove the front bumper face. <Ref. to EI-29, FRONT BUMPER FACE, REMOVAL, Front Bumper.>
6) Remove two bolts. While lifting the condenser, pull out through space between the radiator and the radiator panel.

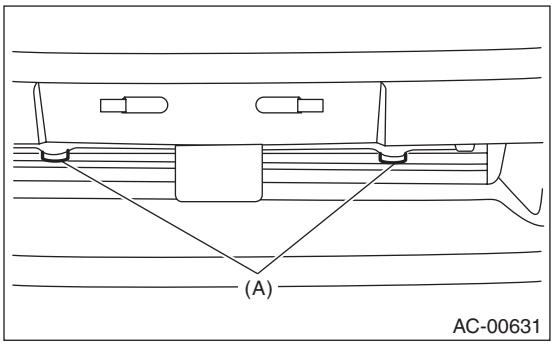
CAUTION:
• Be careful not to damage the condenser fins. If a damaged fin is found, repair it using a thin screwdriver.

• If the condenser is replaced, add an appropriate amount of compressor oil to the compressor. <Ref. to AC-25, REPLACEMENT, Compressor Oil.>


AC-01743

B: INSTALLATION

CAUTION:
• Replace the O-rings on hoses or pipes with new parts, and then apply compressor oil.
• Confirm that lower guide (A) of condenser fits into holes on radiator panel.



AC-00631

1) Install in the reverse order of removal.
2) Charge refrigerant. <Ref. to AC-21, PROCEDURE, Refrigerant Charging Procedure.>

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to AC-11, AIR CONDITIONING UNIT, COMPONENT, General Description.> <Ref. to CO(H4DOTC)-4, RADIATOR AND RADIATOR FAN, COMPONENT, General Description.> <Ref. to CO(H4SO)-4, RADIATOR & RADIATOR FAN, COMPONENT, General Description.>

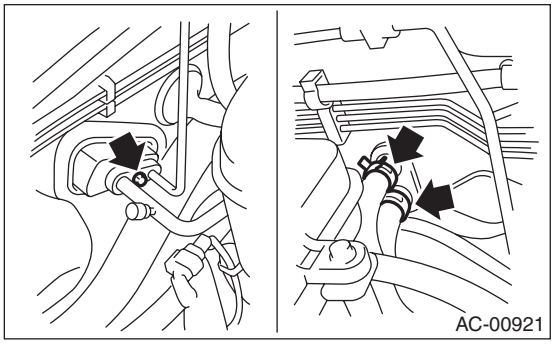
C: INSPECTION

1) Check to see that the condenser fins are not clogged with debris or insects. Blow with compressed air or flush fins with water as needed.
2) Inspect for oil leakage from the condenser. If a failure is found, replace the condenser with a new part.

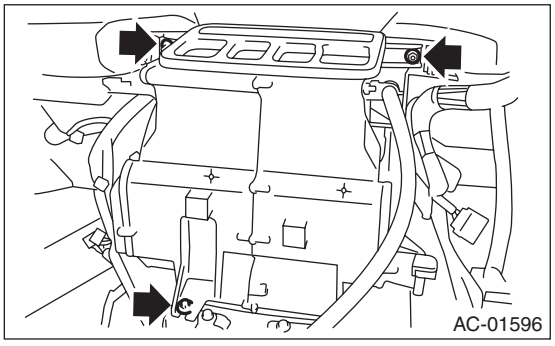
16.Heater and Cooling Unit

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-20, PROCEDURE, Refrigerant Recovery Procedure.>
3) Drain coolant from the radiator.
4) Remove the bolts securing expansion valve and pipe in engine compartment. Release the heater hose clamps in engine compartment to remove the hoses.



5) Remove the instrument panel. <Ref. to EI-52, REMOVAL, Instrument Panel Assembly.>
6) Remove the blower motor unit assembly. <Ref. to AC-26, REMOVAL, Blower Motor Unit Assembly.>
7) Disconnect the harness connectors of the actuator, thermo sensor, power transistor and blower resistor.
8) Remove the bolt and nuts and remove the heater and cooling unit.



B: INSTALLATION

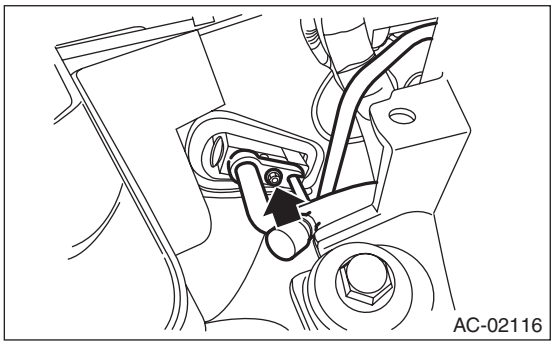
1) Install in the reverse order of removal.
2) Fill engine coolant. <Ref. to CO(H4DOTC)-14, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.> <Ref. to CO(H4SO)-13, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>
3) Charge refrigerant. <Ref. to AC-21, PROCEDURE, Refrigerant Charging Procedure.>

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to AC-6, HEATER COOLING UNIT, COMPONENT, General Description.>

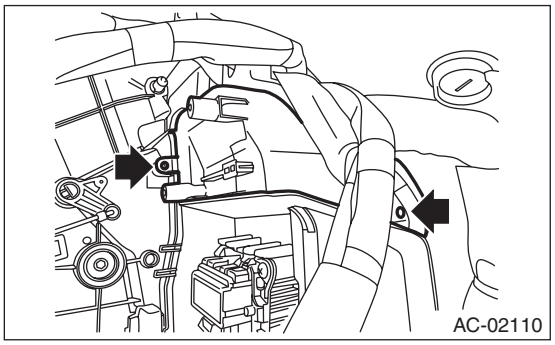
17.Evaporator

A: REMOVAL

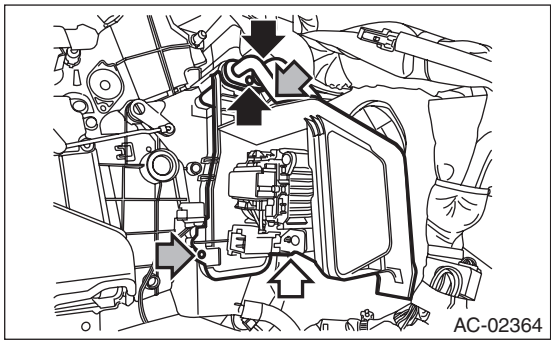
1) Disconnect the ground cable from battery.
2) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-20, PROCEDURE, Refrigerant Recovery Procedure.>
3) Remove the bolt, and detach the pipe from the expansion valve.


AC-02116

4) Remove the instrument panel lower. <Ref. to EI-51, INSTRUMENT PANEL, LOWER, REMOVAL, Center Console.>
5) Remove the blower motor unit. <Ref. to AC-26, REMOVAL, Blower Motor Unit Assembly.>
6) Remove the two screws, and remove the evaporator pipe cover.

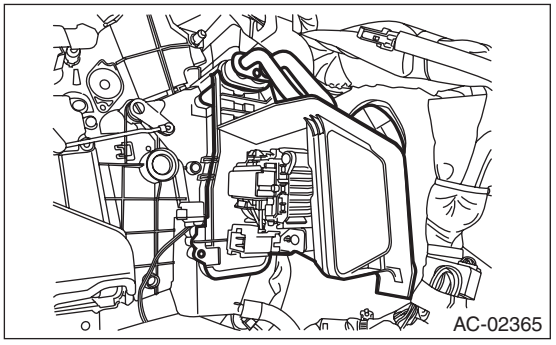

AC-02110

7) Remove the two evaporator pipe mounting bolts, two evaporator cover mounting screws and clip.


AC-02364

8) Remove the evaporator cover and evaporator pipe.

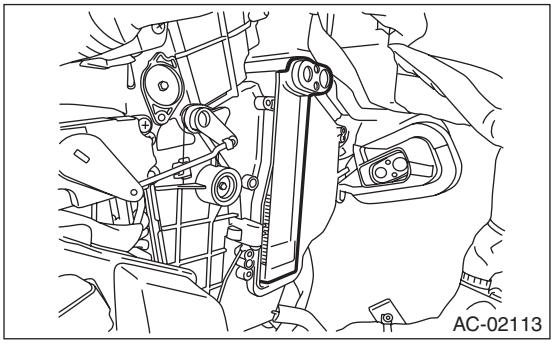
CAUTION:
Since the evaporator cover and evaporator pipe cannot be removed by itself, remove them as a unit.


AC-02365

(1) Release the connection of evaporator and pipe.
(2) Remove the evaporator pipe together with the evaporator cover.

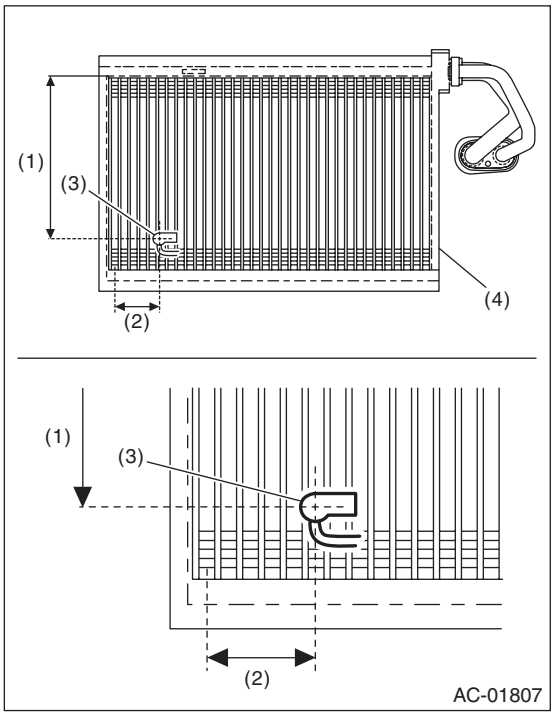
9) Remove the evaporator.

CAUTION:
If the evaporator is replaced, add an appropriate amount of compressor oil to evaporator. <Ref. to AC-25, REPLACEMENT, Compressor Oil.>


AC-02113

B: INSTALLATION

CAUTION:
Install the sensor in the location shown in the figures below.



(1) 148 mm (5.83 in) from the upper end of the fins
(2) Sixth row fin from the left end
(3) Sensor
(4) Evaporator

1) Install in the reverse order of removal.
2) Fill engine coolant. <Ref. to CO(H4DOTC)-14, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.> <Ref. to CO(H4SO)-13, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>
3) Charge refrigerant. <Ref. to AC-21, PROCEDURE, Refrigerant Charging Procedure.>

18.Hose and Pipe

A: REMOVAL

CAUTION:
• When disconnecting hoses, do not apply excessive force. After installing, check that no torsion or excessive tension applied to the hoses.
• Seal the disconnected hose with a plug or vinyl tape to prevent foreign matter from entering.
1) Disconnect the ground cable from battery.
2) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-20, PROCEDURE, Refrigerant Recovery Procedure.>
3) Remove the bolt and detach the hoses and pipes.

B: INSTALLATION

CAUTION:
• Replace the O-rings with new parts.
• When connecting hoses, do not apply an excessive force to them. After installing, check that no torsion or excessive tension applied to the hoses.
1) Install in the reverse order of removal.
2) Charge refrigerant. <Ref. to AC-21, PROCEDURE, Refrigerant Charging Procedure.>

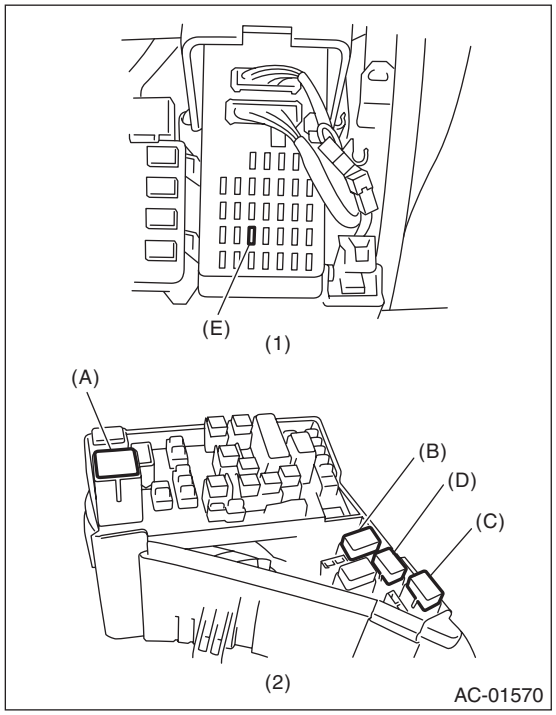
Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to AC-11, AIR CONDITIONING UNIT, COMPONENT, General Description.>

C: INSPECTION

Check the hoses for cracks, damage and expansion. If any fault is found, replace with new parts.

19.Relay and Fuse

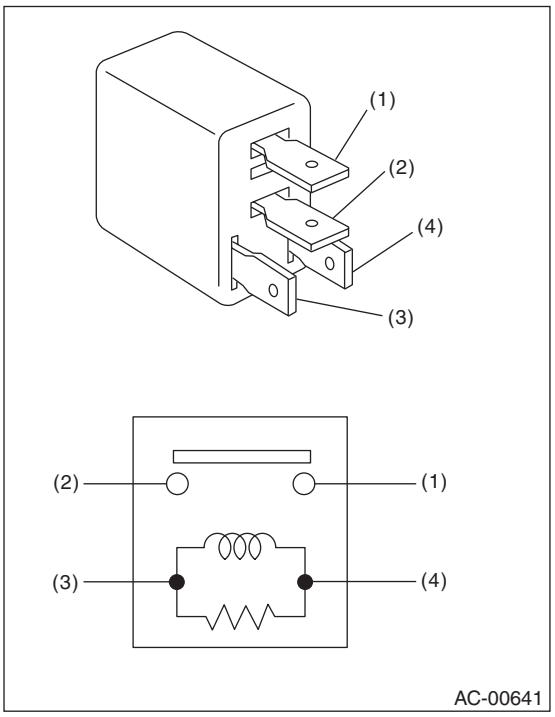
A: LOCATION



(1) Joint box
(2) Main fuse box

Main fan relay 1	(A)
Main fan relay 2	(B)
Sub fan relay	(C)
A/C relay	(D)
A/C fuse	(E)

B: INSPECTION



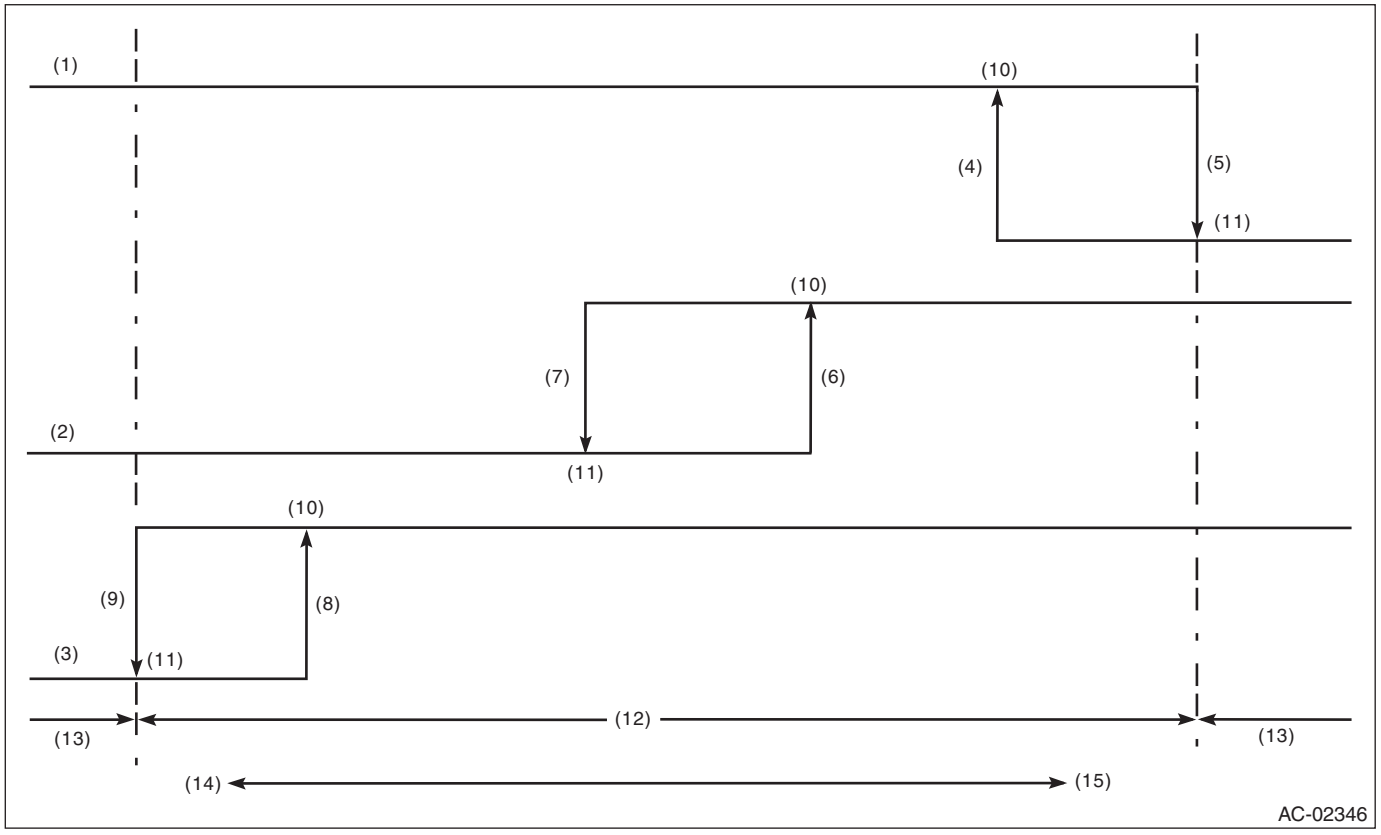
(3) — (4): Continuity exists
(1) — (2): Continuity does not exist

1) While applying battery voltage to the terminal between (3) and (4), check for continuity between (1) and (2).
2) Replace the relay if faulty.

20.Pressure Switch (Triple Pressure Switch)

A: INSPECTION

1) Connect the manifold gauge to the service valve on the high-pressure side.
2) Disconnect the pressure switch harness connector.
3) 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.



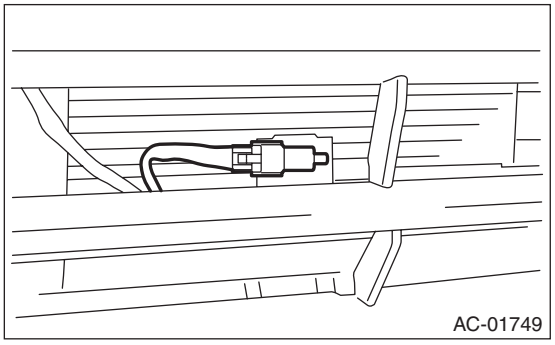
(1)	High pressure switch	(6)	1,770±100 kPa (18.05±1.02 kg/cm^2, 256.65±14.5 psi)	(11)	OFF
(2)	Middle pressure switch	(7)	1,470±120 kPa (14.99±1.22 kg/cm^2, 213.15±17.4 psi)	(12)	Operative range of compressor
(3)	Low pressure switch	(8)	206±30 kPa (2.10±0.31 kg/cm^2, 29.9±4.3 psi)	(13)	Inoperative range of compressor
(4)	2,350±200 kPa (24.00±2.04 kg/cm^2, 340.7±29.0 psi)	(9)	177±25 kPa (1.80±0.25 kg/cm^2, 25.7±3.6 psi)	(14)	Low pressure
(5)	2,940±200 kPa (29.98±2.04 kg/cm^2, 426.3±29.0 psi)	(10)	ON	(15)	High pressure

NOTE:
• High pressure switch turns the compressor (magnet clutch) to OFF when the refrigerant pressure becomes extremely high to prevent the evaporator, air conditioner piping and expansion valve from getting damaged or frozen, etc.
• Middle pressure switch effectively controls the radiator fan output by judging high load/low load in normal range.
• If the refrigerant pressure is abnormally low, the low pressure switch determines that there is insufficient refrigerant, and turns the compressor (magnetic clutch) OFF since there is a possibility that the compressor will seize if it is continued to run.

21. Ambient Sensor (Auto A/C Model)

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Disconnect the ambient sensor connector.
3) Remove the ambient sensor from the radiator lower panel.



B: INSTALLATION

Install in the reverse order of removal.

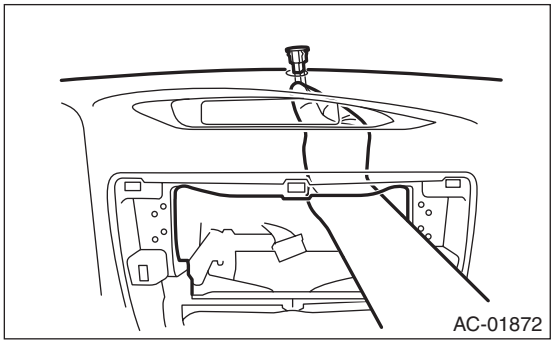
C: INSPECTION

Refer to “Ambient Sensor” of HVAC SYSTEM (AUTO A/C)(DIAGNOSTICS). <Ref. to AC(diag)-28, AMBIENT SENSOR, Diagnostic Procedure for Sensors.>

22.Sunload Sensor (Auto A/C Model)

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the audio. <Ref. to ET-6, REMOVAL, Audio.>
3) Push out the sunload sensor from the back side of the instrument panel.



4) Disconnect the harness connector and remove the sunload sensor.

CAUTION:
Be careful not to damage the interior trims when removing the sensor.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

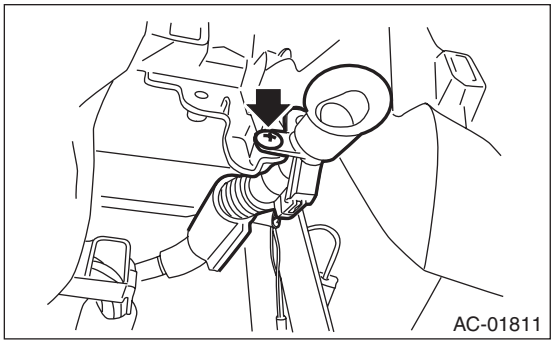
Refer to “Sunload Sensor” of HVAC SYSTEM (AUTO A/C)(DIAGNOSTICS). <Ref. to AC(diag)-34, SUNLOAD SENSOR, Diagnostic Procedure for Sensors.>

23.In-vehicle Sensor (Auto A/C Model)

A: REMOVAL

CAUTION:
Be careful not to damage the sensors and interior trims when removing.

1) Disconnect the ground cable from battery.
2) Remove the instrument panel lower cover. <Ref. to EI-46, REMOVAL, Instrument Panel Lower Cover.>
3) Disconnect the connector and aspirator hose, remove the screw and remove the in-vehicle sensor from the instrument panel.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

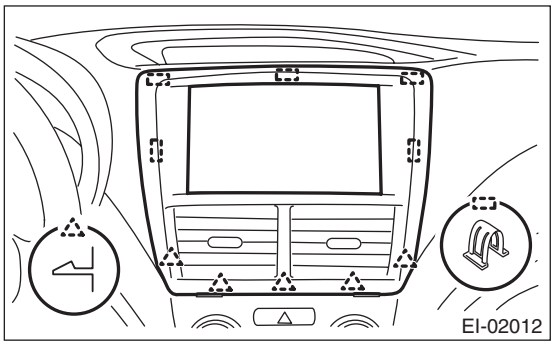
Refer to “In-Vehicle Sensor” of HVAC SYSTEM (AUTO A/C)(DIAGNOSTICS). <Ref. to AC(diag)-30, IN-VEHICLE SENSOR, Diagnostic Procedure for Sensors.>

24.Air Vent Grille

A: REMOVAL

1. CENTER GRILLE

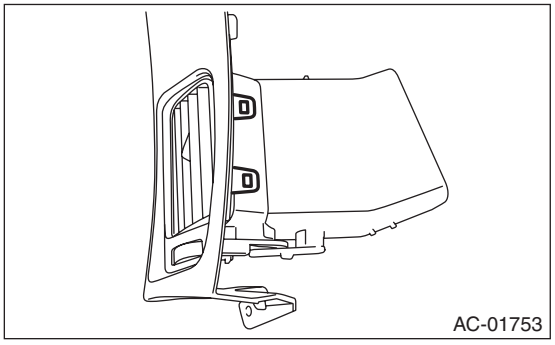
1) Insert a plastic remover into the slit at the bottom of the center panel, to lift the panel.
2) Remove the claws and resin hook and then remove the center panel.



3) Remove the claws, and remove the air vent center grille from the center panel.

2. SIDE GRILLE

1) Remove the ornament panel. <Ref. to EI-49, ORNAMENT PANEL, REMOVAL, Center Console.>
2) Remove the claws, and remove the air vent side grille.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

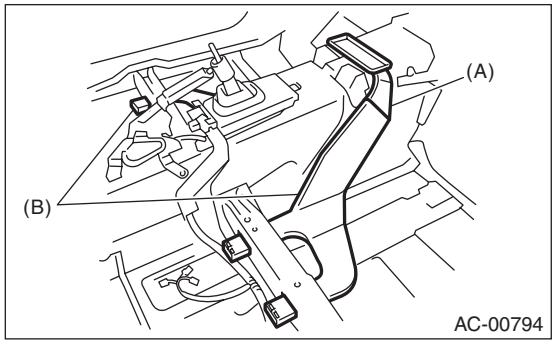
1) Check that the direction and amount of air can be adjusted smoothly.
2) Check that the adjustment can be maintained in each position.

25.Heater Duct

A: REMOVAL

1. REAR HEATER DUCT

1) Remove the heater cooling unit. <Ref. to AC-35, REMOVAL, Heater and Cooling Unit.>
2) Remove the front seats. <Ref. to SE-6, REMOVAL, Front Seat.>
3) Remove the front side sill cover.
4) Pull off the floor mat to remove the rear heater duct center (A) and rear heater duct LH, RH (B).



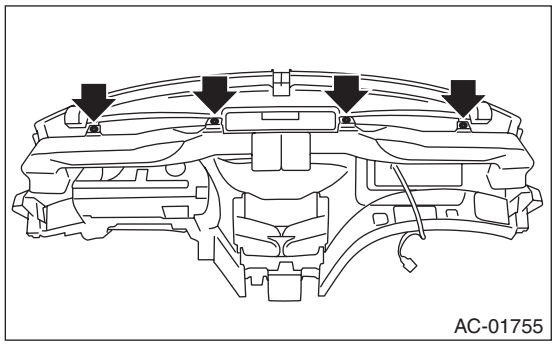
B: INSTALLATION

Install in the reverse order of removal.

26.Heater Vent Duct

A: REMOVAL

1) Remove the instrument panel. <Ref. to EI-52, REMOVAL, Instrument Panel Assembly.>
2) Remove the screws, and then remove the heater vent duct.



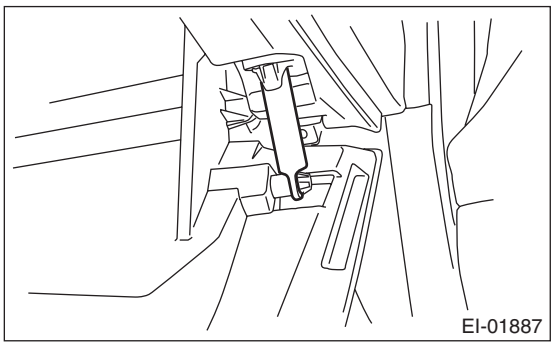
B: INSTALLATION

Install in the reverse order of removal.

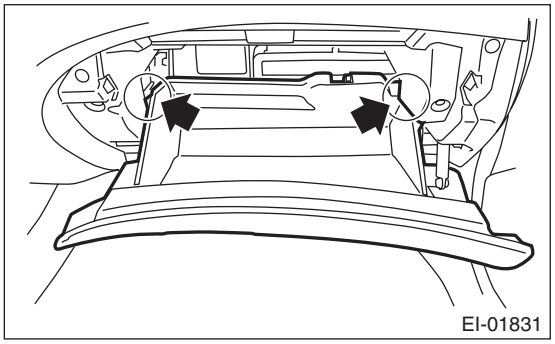
27.A/C Filter

A: REPLACEMENT

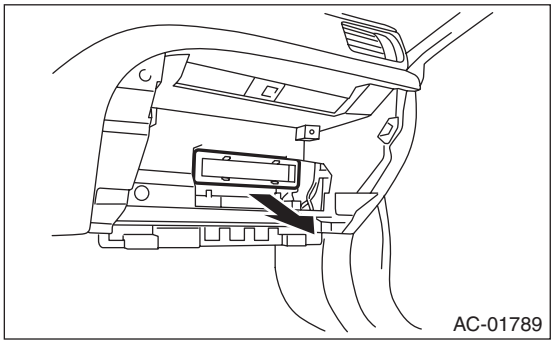
1) Remove the glove box damper.



2) Remove the stoppers and pull the glove box lid assembly forward to remove.



3) Pinch the tabs to release the lock and remove the A/C filter.



4) Install in the reverse order of removal.

28.General Diagnostic Table

A: INSPECTION

Symptoms		Repair order
Blower motor	Does not operate.	Fuse
		Blower motor relay
		Blower motor
		Blower motor resistor (Manual A/C)
		Blower switch
		Wiring harness
	Noise	Blower motor
Compressor	Does not operate.	Refrigerant
		Fuse
		Air conditioning relay
		Magnet clutch
		Compressor
		Pressure switch
		A/C switch
		Blower switch
		Wiring harness
	Noise	V-belt
		Magnet clutch
		Compressor
Cold air not emitted.		Refrigerant
		V-belt
		Magnet clutch
		Compressor
		Pressure switch
		Aspirator hose
		Blower fan relay
		Blower motor
		A/C switch
		Blower switch
		Control module
		Expansion valve
		Evaporator
		Air mix actuator (Auto A/C)
		Temperature control cable (Manual A/C)
		Wiring harness
		Heater duct
		Heater vent duct
Warm air not emitted.		Engine coolant
		Aspirator hose
		Air mix actuator (Auto A/C)
		Temperature control cable (Manual A/C)
		Blower switch
		Heater core

Symptoms	Repair order
Temperature of air from vents does not change.	Engine coolant
	Air mix actuator (Auto A/C)
	Temperature control cable (Manual A/C)
	Temperature control switch
	Wiring harness (Auto A/C)
Unable to switch blow vents.	Mode actuator (Auto A/C)
	Mode switch cable (Manual A/C)
	Mode switch (Auto A/C)
	Wiring harness (Auto A/C)
Unable to switch suction vents.	FRESH/RECIRC switch (Auto A/C)
	Intake door actuator (Auto A/C)
	Wiring harness (Auto A/C)

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

AC(diag)

Page

1. Basic Diagnostic Procedure 2
2. General Description 3
3. Electrical Component Location 5
4. Auto A/C Control Module I/O Signal 7
5. Diagnostic Chart for Self-diagnosis 9
6. Diagnostics for A/C System Malfunction 13
7. Diagnostic Procedure for Actuators 22
8. Diagnostic Procedure for Sensors 28
9. Diagnostics with Phenomenon 36

1. Basic Diagnostic Procedure

A: PROCEDURE

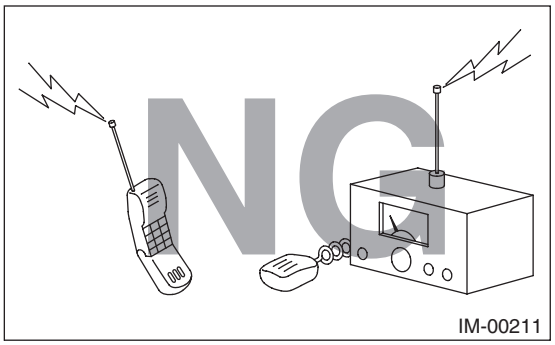
	Step	Check	Yes	No
1	**CHECK SECURITY INDICATOR LIGHT.** 1) Turn the ignition switch to “OFF” or “ACC”. 2) Wait at least 60 seconds.	Does the security indicator light blink?	Go to step **2**.	Check the security indicator light circuit. <Ref. to IM(diag)-11, CHECK SECURITY INDICATOR LIGHT CIRCUIT, INSPECTION, Diagnostics Chart for Security Indicator Light.>
2	**CHECK KEY SWITCH.** 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 key switch circuit. <Ref. to IM(diag)-13, CHECK KEY SWITCH CIRCUIT, INSPECTION, Diagnostics Chart for Security Indicator Light.>
3	**CHECK SECURITY INDICATOR LIGHT.** Turn the ignition switch to ON.	Does the security indicator light go off?	Go to step **5**.	Go to step **4**.
4	**CHECK ENGINE START.** Turn the ignition switch to START.	Does the starter operate?	Check the LAN communication system. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>	Go to step **7**.
5	**CHECK ENGINE START.** Turn the ignition switch to START.	Does the starter operate?	Go to step **6**.	Check the LAN communication system. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>
6	**CHECK ENGINE START.** Turn the ignition switch to START.	Does the engine start?	Immobilizer system is normal.	Go to step **8**.
7	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Connect the Subaru Select Monitor to data link connector. <Ref. to IM(diag)-8, Subaru Select Monitor.> 3) Turn the ignition switch and Subaru Select Monitor switch to ON. 4) Read DTC of body integrated unit.	Is the DTC displayed on screen?	Go to step **10**.	Replace the body integrated unit <Ref. to SL-49, Body Integrated Unit.> Replace all ignition keys (transponder). Execute the registration procedure next. Refer to the “PC application help for Subaru Select Monitor”.

Step		Check	Yes	No
8	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Connect the Subaru Select Monitor to data link connector. <Ref. to IM(diag)-8, Subaru Select Monitor.> 3) Turn the ignition switch and Subaru Select Monitor switch to ON. 4) Read DTC of ECM.	Is the DTC displayed on screen?	Go to step **9**.	Perform the diagnosis for engine system. <Ref. to EN(H4SO)(diag)-71, PROCEDURE, Diagnostics for Engine Starting Failure.> <Ref. to EN(H4DOTC)(diag)-70, PROCEDURE, Diagnostics for Engine Starting Failure.>
9	**CHECK FREEZE FRAME DATA.** Using the Subaru Select Monitor, check the Freeze Frame Data.	Was the Freeze Frame Data recorded?	Record the data. Go to step **10**.	Go to step **10**.
10	**PERFORM DIAGNOSIS.** 1) Inspect using the “Diagnostic Procedure with Diagnostic Trouble Code (DTC)”. <Ref. to IM(diag)-16, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> 2) Repair the trouble cause. 3) Perform the Clear Memory Mode. 4) Read DTC’s again.	Is the DTC displayed on screen?	Inspect using the “Diagnostic Procedure with Diagnostic Trouble Code (DTC)”. <Ref. to IM(diag)-16, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

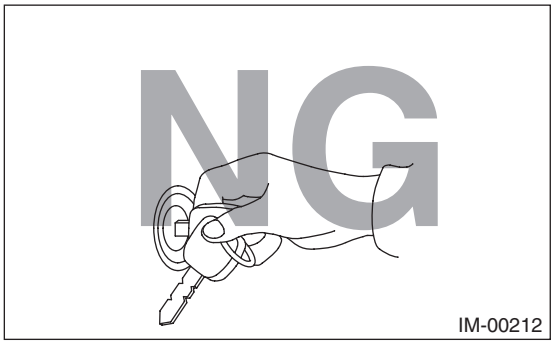
2. General Description

A: CAUTION

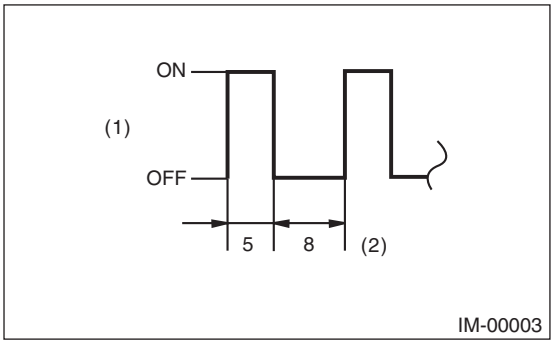
CAUTION:
• Do not use the electrical test equipment on the airbag system wiring harnesses and connector circuits.
• Be careful not to damage the airbag system wiring harness.
• While diagnostic items are being checked, do not operate radios, portable telephones, etc. which emit electromagnetic waves near or inside the vehicle.



• When turning the ignition switch to ON or OFF while diagnostic items are being checked, do not allow keys with different ID codes close to the ignition switch. If the ignition key is on a key holder, remove it from the key holder before performing 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.

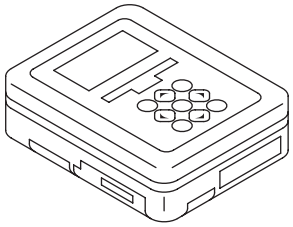


(1) Ignition switch position
(2) Sec.

• 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 performing the diagnostics, obtain all keys for the vehicle from the owner.
• Do not install or register a body integrated unit already registered to another vehicle to diagnose failures or inspect functions.

B: PREPARATION TOOL

1. SPECIAL TOOL

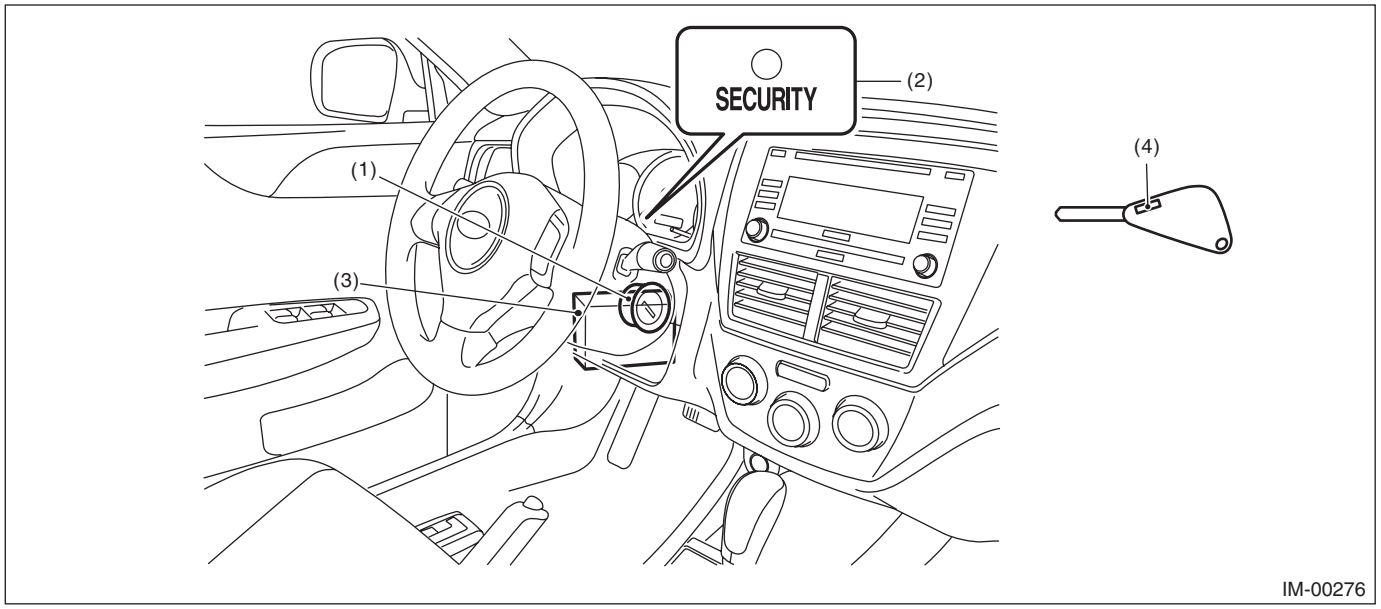
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST1B022XU0	1B022XU0	SUBARU SELECT MONITOR III KIT	Used for troubleshooting the electrical system.

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) Body integrated unit
(4) Transponder

4. Immobilizer Control Module I/O Signal

A: WIRING DIAGRAM

1. IMMOBILIZER

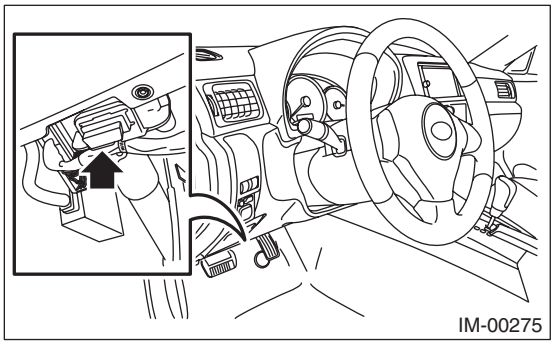
<Ref. to WI-154, WIRING DIAGRAM, Immobilizer System.>

5. Subaru Select Monitor

A: OPERATION

1. HOW TO USE 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 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 data link connector.

CAUTION:
Do not connect the scan tools other than the Subaru Select Monitor.
4) Turn the ignition switch to ON 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 ENGINE AND BODY INTEGRATED UNIT

Refer to "Read Diagnostic Trouble Code" for information about how to indicate DTC. <Ref. to IM(diag)-9, Read Diagnostic Trouble Code (DTC).>

3. COMMUNICATION LINE CHECK

NOTE:
The communication line between ECM and body integrated 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 «Main Menu» display, select {Each System Check}.
3) On «System Selection Menu» display, select {Engine Control System}.
4) Select [OK] after the information of engine type is displayed.
5) On «Engine Diagnosis» display, select {System Operation Check Mode}.
6) On «System Operation Check Mode» display, select {Immobilizer System}.
7) Start the communication line check.
8) Is «OK» displayed on screen?
If displayed, go to step 9).
If not, go to step 10).
9) After diagnostic results, it is determined that the circuit is not shorted. Finish the communication line check.
10) If a problem is detected, repair the trouble cause. <Ref. to IM(diag)-20, DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

6. Read Diagnostic Trouble Code (DTC)

A: OPERATION

1. ECM

1) On «Main Menu» display, select {Each System Check}.
2) On «System Selection Menu» display, select {Engine Control System}.
3) Select [OK] after the information of engine type is displayed.
4) On «Engine Diagnosis» display, select {Diagnostic Code(s) Display}.
5) On «Diagnostic Code(s) Display» display, select {Current DTC} or {Past DTC}.

NOTE:
• For detailed operation procedures, refer to “PC application help for Subaru Select Monitor”.
• For detailed concerning DTC, refer to the List of Diagnostic Trouble Codes (DTC). <Ref. to IM(diag)-15, LIST, List of Diagnostic Trouble Code (DTC).>

2. BODY INTEGRATED UNIT

1) On «Main Menu» display, select {Each System Check}.
2) On «System Selection Menu» display, select {Integ. Unit}.
3) After {Integ. unit} is displayed, select [OK].
4) On «Integ. unit mode failure diag» display, select {Diagnostic Code(s) Display}.

NOTE:
• For detailed operation procedures, refer to “PC application help for Subaru Select Monitor”.
• For detailed concerning DTC, refer to the List of Diagnostic Trouble Codes (DTC). <Ref. to IM(diag)-15, LIST, List of Diagnostic Trouble Code (DTC).>

7. Clear Memory Mode

A: OPERATION

1. ECM

1) On «Main Menu» display, select {Each System Check}.
2) On «System Selection Menu» display, select {Engine Control System}.
3) Select [OK] after the information of engine type is displayed.
4) On «Engine Diagnosis» display, select {Clearing Memory}.
5) When “Done” is displayed on the display, end the Subaru Select Monitor and turn the ignition switch to OFF.

NOTE:
• After the memory is cleared, initial diagnosis of the electronic throttle control is performed. Wait for 10 seconds or more after turning the ignition switch to ON, and then start the engine.
• For detailed operation procedures, refer to “PC application help for Subaru Select Monitor”.

2. BODY INTEGRATED UNIT

1) On «Main Menu» display, select {Each System Check}.
2) On «System Selection Menu» display, select {Integ. Unit}.
3) After {Integ. unit} is displayed, select [OK].
4) On «Integ. unit mode» display, select {Clearing Memory}.
5) When “Done” is displayed on the display, end the Subaru Select Monitor and turn the ignition switch to OFF.

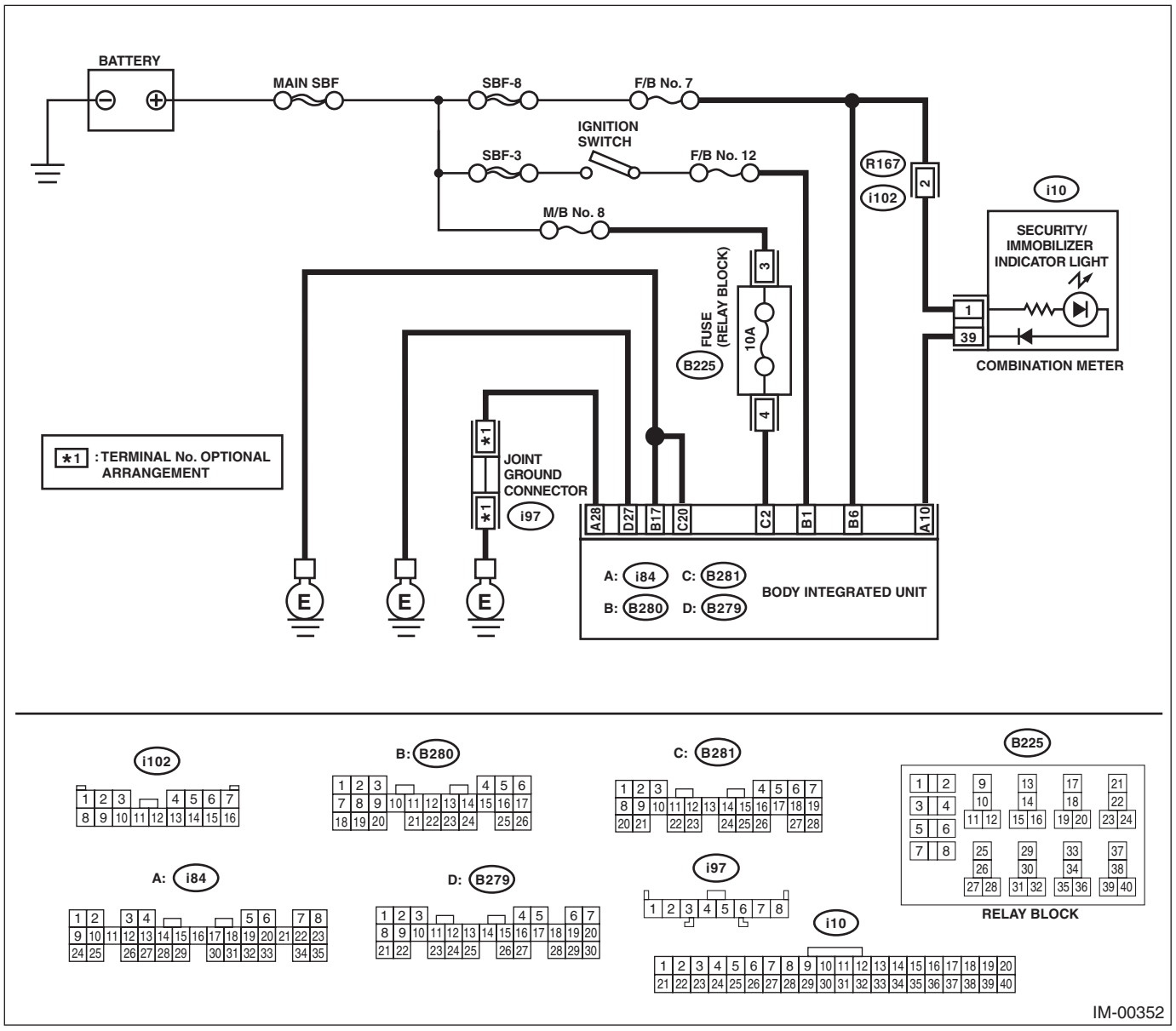
NOTE:
For detailed operation procedures, refer to “PC application help for Subaru Select Monitor”.

8. Diagnostics Chart for Security Indicator Light

A: INSPECTION

1. CHECK SECURITY INDICATOR LIGHT CIRCUIT

WIRING DIAGRAM:



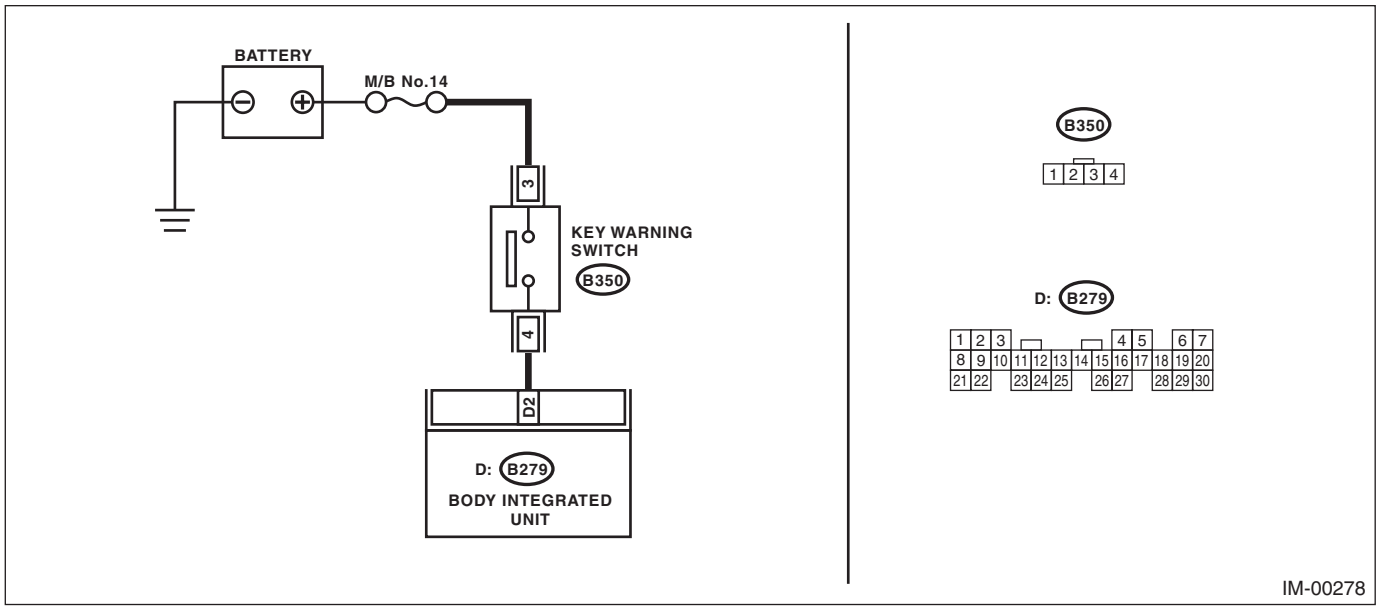
Step		Check	Yes	No
1	**CHECK FUSE.** 1) Turn the ignition switch to OFF. 2) Check the fuse (M/B No. 8).	Is the fuse blown out?	Replace the fuse. If the replaced fuse blows out easily, repair the short circuit in the harness between the fuse and body integrated unit.	Go to step **2**.

Diagnostics Chart for Security Indicator Light

	Step	Check	Yes	No
2	**CHECK SECURITY INDICATOR LIGHT.** 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from body integrated unit. 3) Connect a resistor (100 Ω) between the body integrated unit harness connector terminal (i84) No. 10 and chassis ground.	Does the security indicator light illuminate?	Go to step **3**.	Go to step **6**.
3	**CHECK BODY INTEGRATED UNIT GROUND CIRCUIT.** Measure the resistance between body integrated unit harness connector terminal and chassis ground. ***Connector & terminal*** ***(i84) No. 28 — Chassis ground:*** ***(B280) No. 17 — Chassis ground:*** ***(B281) No. 20 — Chassis ground:*** ***(B279) No. 27 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **4**.	Repair the open circuit of the body integrated unit ground circuit.
4	**CHECK BODY INTEGRATED UNIT IGNITION CIRCUIT.** 1) Turn the ignition switch to ON. 2) Measure the voltage between the body integrated unit harness connector terminal and chassis ground. ***Connector & terminal*** ***(B280) No. 1 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **5**.	Check the harness for open or short circuit between the body integrated unit and ignition switch.
5	**CHECK BODY INTEGRATED UNIT POWER SUPPLY CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Measure the voltage between the body integrated unit harness connector terminal and chassis ground. ***Connector & terminal*** ***(B280) No. 6 (+) — Chassis ground (–):*** ***(B281) No. 2 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Replace the body integrated unit <Ref. to SL-49, Body Integrated Unit.> Replace all ignition keys (transponder). Execute the registration procedure next. Refer to the “PC application help for Subaru Select Monitor”.	Check the harness for open or short circuit between body integrated unit and fuse.
6	**CHECK COMBINATION METER CIRCUIT.** 1) Remove the combination meter. <Ref. to IDI-15, Combination Meter.> 2) Measure the voltage between combination meter harness connector terminal and chassis ground. ***Connector & terminal*** ***(i10) No. 1 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **7**.	Check for an open or short circuit in the harness between the combination meter and fuse.
7	**CHECK COMBINATION METER CIRCUIT.** Measure the resistance between the body integrated unit harness connector terminal and combination meter harness connector terminal. ***Connector & terminal*** ***(i84) No. 10 — (i10) No. 39:***	Is the resistance less than 10 Ω?	LED bulb is defective. Replace the combination meter case assembly. <Ref. to IDI-15, DISASSEMBLY, Combination Meter.>	Repair the harness or connector.

2. CHECK KEY SWITCH CIRCUIT

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK POWER SUPPLY CIRCUIT.** 1) Disconnect the harness connector from key warning switch. 2) Turn the ignition switch to ACC or LOCK. (with key inserted) 3) Measure the voltage between key warning switch harness connector terminal and chassis ground. ***Connector & terminal*** ***(B350) No. 3 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **2**.	Check the harness for an open or short between the key warning switch and fuse.
2	**CHECK KEY WARNING SWITCH.** 1) Insert the ignition key in the ignition switch. (OFF or ACC) 2) Measure the resistance between key warning switch connector terminals. ***Connector & terminal*** ***No. 3 — No. 4:***	Is the resistance less than 1 Ω?	Go to step **3**.	Replace the key warning switch.
3	**CHECK KEY WARNING SWITCH.** 1) Remove the ignition key from ignition switch. 2) Measure the resistance between key warning switch connector terminals. ***Connector & terminal*** ***No. 3 — No. 4:***	Is the resistance 1 MΩ or more?	Go to step **4**.	Replace the key warning switch.

	Step	Check	Yes	No
4	**CHECK HARNESS BETWEEN KEY WARNING SWITCH AND BODY INTEGRATED UNIT.** 1) Disconnect the harness connector from key warning switch. 2) Disconnect the harness connector from body integrated unit. 3) Measure the resistance between key warning switch harness connector terminal and body integrated unit harness connector terminal. ***Connector & terminal*** ***(B350) No. 4 — (B279) No. 2:***	Is the resistance less than 10 Ω?	Replace the body integrated unit <Ref. to SL-49, Body Integrated Unit.> Replace all ignition keys (transponder). Execute the registration procedure next. Refer to the “PC application help for Subaru Select Monitor”.	Repair the harness between key warning switch and body integrated unit.

9. List of Diagnostic Trouble Code (DTC)

A: LIST

1. ECM

DTC	Item	Contents of diagnosis	Index No.
P0513	Incorrect Immobilizer Key	Incorrect immobilizer key (Use of unregistered key in body integrated unit)	<Ref. to IM(diag)-16, DTC P0513 INCORRECT IMMOBILIZER KEY, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P1570	Antenna	Faulty antenna	<Ref. to IM(diag)-17, DTC P1570 ANTENNA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P1571	Reference Code Incompatibility	Reference code incompatibility between body integrated unit and ECM	<Ref. to IM(diag)-19, DTC P1571 REFERENCE CODE INCOMPATIBILITY, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P1572	IMM Circuit Failure (Except Antenna Circuit)	Communication failure between body integrated unit and ECM	<Ref. to IM(diag)-20, DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P1574	Key Communication Failure	Communication failure between key and body integrated unit	<Ref. to IM(diag)-22, DTC P1574 KEY COMMUNICATION FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P1576	EGI Control Module EEPROM	ECM malfunctioning	<Ref. to IM(diag)-23, DTC P1576 EGI CONTROL MODULE EEPROM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P1577	IMM Control Module EEPROM	Body integrated unit malfunctioning	<Ref. to IM(diag)-24, DTC P1577 IMM CONTROL MODULE EEPROM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P1578	Meter Failure	• Reference code incompatibility between combination meter and body integrated unit • Communication failure between body integrated unit and ECM	<Ref. to IM(diag)-25, DTC P1578 METER FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

NOTE:
Perform diagnosis of engine DTC when a DTC other than an immobilizer DTC is detected. <Ref. to EN(H4DOTC)(diag)-85, List of Diagnostic Trouble Code (DTC).>

2. BODY INTEGRATED UNIT

DTC	Item	Contents of diagnosis	Index No.	Relation between ECM and DTC
B1401	M Collation NG	Reference code incompatibility between combination meter and body integrated unit	<Ref. to IM(diag)-25, DTC B1401 M COLLATION NG, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	P1578
B1402	Immobilizer Key Collation NG	• Incorrect immobilizer key (Use of unregistered key in body integrated unit) • Faulty antenna	<Ref. to IM(diag)-25, DTC B1402 IMMOBILIZER KEY COLLATION NG, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	• P0513 • P1570 • P1574
B1403	E/G request NG	Communication failure between body integrated unit and ECM	<Ref. to IM(diag)-25, DTC B1403 E/G REQUEST NG, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	P1572

NOTE:
The starter relay control is performed in immobilizer system. When the body integrated unit detects a nonconformity of reference code, it immediately outputs a starter relay cut signal to ECM, and then ECM stops the starter relay operation. In this case, engine does not start, and DTC is not recorded in ECM. Check that the engine does not start on the DTC of body integrated unit.

10.Diagnostic Procedure with Diagnostic Trouble Code (DTC)

A: DTC P0513 INCORRECT IMMOBILIZER KEY

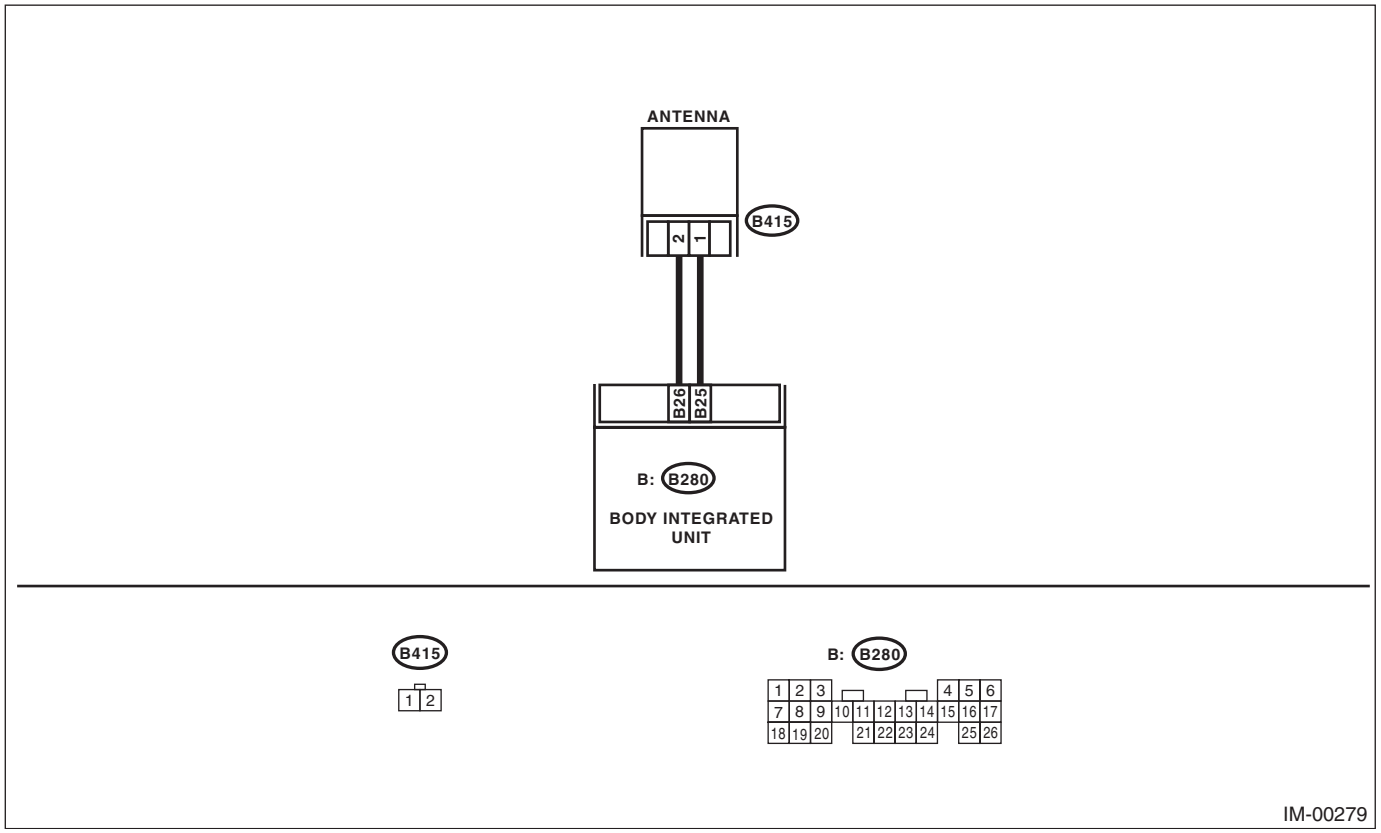
DTC DETECTING CONDITION:

Incorrect immobilizer key (Use of unregistered key in body integrated unit)

	Step	Check	Yes	No
1	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “PC application help for Subaru Select Monitor”.	Is registration for all keys complete?	End.	Replace ignition keys (transponder) which cannot be registered. Go to step **2**.
2	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “PC application help for Subaru Select Monitor”.	Is registration for all keys complete?	End.	Replace the body integrated unit <Ref. to SL-49, Body Integrated Unit.> Replace all ignition keys (transponder). Execute the registration procedure next. Refer to the “PC application help for Subaru Select Monitor”.

B: 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 connector from the antenna. <Ref. to SL-53, Immobilizer Antenna.> 3) Measure the resistance of antenna circuit. ***Connector & terminal*** ***(B415) No. 1 — No. 2:***	Is the resistance less than 10 Ω?	Go to step **2**.	Replace the antenna. <Ref. to SL-53, Immobilizer Antenna.>
2	**CHECK ANTENNA CIRCUIT.** 1) Disconnect the harness connector from body integrated unit. 2) Measure the resistance of harness connector and chassis ground. ***Connector & terminal*** ***(B280) No. 26 — Chassis ground:***	Is the resistance less than 10 Ω?	Repair the harness.	Go to step **3**.
3	**CHECK ANTENNA CIRCUIT.** Measure the resistance of harness connector and chassis ground. ***Connector & terminal*** ***(B280) No. 25 — Chassis ground:***	Is the resistance less than 10 Ω?	Repair the harness.	Go to step **4**.
4	**CHECK ANTENNA CIRCUIT.** 1) Turn the ignition switch to ON. 2) Measure the voltage between harness connector and chassis ground. ***Connector & terminal*** ***(B280) No. 26 (+) — Chassis ground (–):***	Is the voltage 0 V?	Go to step **5**.	Repair the harness between body integrated unit and antenna.

	Step	Check	Yes	No
5	**CHECK ANTENNA CIRCUIT.** Measure the voltage between harness connector and chassis ground. ***Connector & terminal*** ***(B280) No. 25 (+) — Chassis ground (–):***	Is the voltage 0 V?	Go to step **6**.	Repair the harness between body integrated unit and antenna.
6	**CHECK BODY INTEGRATED UNIT FUNCTION.** 1) Turn the ignition switch to OFF. 2) Connect the harness connector to body integrated unit. 3) Insert the key into the ignition switch, then measure changes in voltage between the antenna harness connectors. ***Connector & terminal*** ***(B280) No. 25 (+) — No. 26 (–):***	Is the voltage 40 V or more at maximum? (Approx. 0.1 second after inserting the key) Is the voltage 0 V? (Approx. 1 second after inserting the key)	Go to step **7**.	Replace the body integrated unit <Ref. to SL-49, Body Integrated Unit.> Replace all ignition keys (transponder). Execute the registration procedure next. Refer to the “PC application help for Subaru Select Monitor”.
7	**CHECK IGNITION KEY (TRANSPONDER).** 1) Remove the key from ignition switch. 2) Start the engine using other key which is already registered.	Does the engine start?	Replace the ignition key (transponder). Execute the registration procedure next. Refer to the “PC application help for Subaru Select Monitor”.	Replace the body integrated unit <Ref. to SL-49, Body Integrated Unit.> Replace all ignition keys (transponder). Execute the registration procedure next. Refer to the “PC application help for Subaru Select Monitor”.

C: DTC P1571 REFERENCE CODE INCOMPATIBILITY

DTC DETECTING CONDITION:

Reference code incompatibility between body integrated unit and ECM

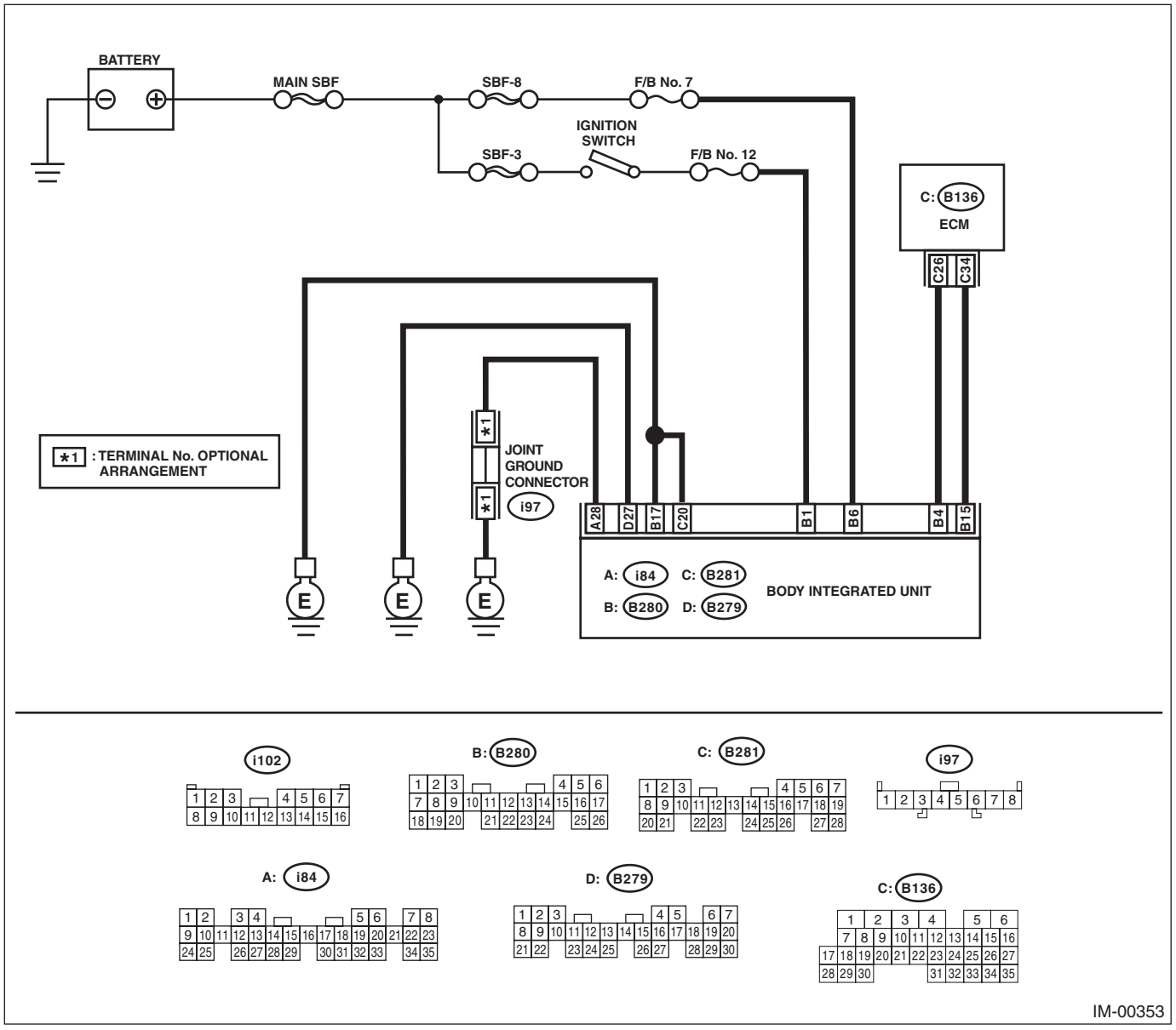
	Step	Check	Yes	No
1	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “PC application help for Subaru Select Monitor”.	Is registration for all keys complete?	End.	Go to step **2**.
2	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other immobilizer DTC displayed?	Check the appropriate DTC using the “List of Diagnostic Trouble Code (DTC)”. <Ref. to IM(diag)-15, List of Diagnostic Trouble Code (DTC).> Execute the registration procedure next. Refer to the “PC application help for Subaru Select Monitor”.	Replace the ECM. <Ref. to FU(H4DOTC)-51, Engine Control Module (ECM).> <Ref. to SL-49, Body Integrated Unit.> Replace the body integrated unit, and replace all the ignition keys (transponder). Execute the registration procedure next. Refer to the “PC application help for Subaru Select Monitor”.

D: DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT)

DTC DETECTING CONDITION:

Communication failure between body integrated unit and ECM

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK BODY INTEGRATED UNIT POWER SUPPLY CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from body integrated unit. 3) Measure the voltage between the body integrated unit harness connector terminal and chassis ground. ***Connector & terminal*** ***(B280) No. 6 (+) — 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.

	Step	Check	Yes	No
2	**CHECK BODY INTEGRATED UNIT POWER SUPPLY CIRCUIT.** 1) Turn the ignition switch to ON. 2) Measure the voltage between the body integrated unit harness connector terminal and chassis ground. ***Connector & terminal*** ***(B280) No. 1 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **3**.	Check the harness for open or short circuit between the body integrated unit and ignition switch.
3	**CHECK BODY INTEGRATED UNIT GROUND CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Measure the resistance between body integrated unit harness connector terminal and chassis ground. ***Connector & terminal*** ***(i84) No. 28 — Chassis ground:*** ***(B280) No. 17 — Chassis ground:*** ***(B281) No. 20 — Chassis ground:*** ***(B279) No. 27 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **4**.	Repair the open circuit of the body integrated unit ground circuit.
4	**CHECK GROUND CIRCUIT FOR ECM.** Measure the resistance between the ECM ground terminal and engine ground.	Is the resistance less than 10 Ω?	Go to step **5**.	Repair the ECM ground circuit.
5	**CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND ECM.** 1) Disconnect the harness connector from the ECM and body integrated unit. 2) Measure the resistance between body integrated unit harness connector terminal and ECM harness connector terminal. ***Connector & terminal*** ***(B280) No. 4 — (B136) No. 26:***	Is the resistance less than 10 Ω?	Go to step **6**.	Repair the open circuit of the harness between the body integrated unit and ECM.
6	**CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND ECM.** Measure the resistance between body integrated unit harness connector terminal and ECM harness connector terminal. ***Connector & terminal*** ***(B280) No. 15 — (B136) No. 34:***	Is the resistance less than 10 Ω?	Go to step **7**.	Repair the open circuit of the harness between the body integrated unit and ECM.
7	**CHECK COMMUNICATION CIRCUIT HARNESS.** 1) Turn the ignition switch to ON. 2) Measure the voltage between the body integrated unit harness connector terminal and chassis ground. ***Connector & terminal*** ***(B280) No. 4 (+) — Chassis ground (–):*** ***(B280) No. 15 (+) — Chassis ground (–):***	Is the voltage 0 V?	Go to step **8**.	Repair the harness between body integrated unit and ECM.
8	**CHECK COMMUNICATION CIRCUIT HARNESS.** 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 **9**.	Repair the harness between body integrated unit and ECM.

	Step	Check	Yes	No
9	**CHECK ECM BY COMMUNICATION SHORT CHECK.** 1) Connect the harness connector to ECM. 2) Disconnect the harness connector from body integrated unit. 3) Start the communication short check. <Ref. to IM(diag)-8, COMMUNICATION LINE CHECK, OPERATION, Subaru Select Monitor.>	Is the communication short check OK?	Replace the body integrated unit <Ref. to SL-49, Body Integrated Unit.> Replace all ignition keys (transponder). Execute the registration procedure next. Refer to the "PC application help for Subaru Select Monitor".	Replace the ECM. <Ref. to FU(H4DOTC)-51, Engine Control Module (ECM).> Perform the registration procedure next. Refer to the "PC application help for Subaru Select Monitor".

NOTE:
Refer to the following inspection when DTC is detected after inspection above. <Ref. to IM(diag)-25, DTC P1578 METER FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

E: DTC P1574 KEY COMMUNICATION FAILURE

DTC DETECTING CONDITION:
Communication failure between key and body integrated unit

	Step	Check	Yes	No
1	**CHECK BODY INTEGRATED UNIT FUNCTION.** Insert the key into the ignition switch (LOCK position), then measure changes in voltage between the antenna connectors. ***Connector & terminal*** ***(B415) No. 1 (+) — Chassis ground (–):***	Is the voltage 40 V or more at maximum? (Approx. 0.1 second after inserting the key) Is the voltage 0 V? (Approx. 1 second after inserting the key)	Go to step **2**.	Replace the body integrated unit <Ref. to SL-49, Body Integrated Unit.> Replace all ignition keys (transponder). Execute the registration procedure next. Refer to the "PC application help for Subaru Select Monitor".
2	**CHECK IGNITION KEY (TRANSPONDER).** 1) Remove the key from ignition switch. 2) Start the engine using other key which is already registered.	Does the engine start?	Replace the ignition key (transponder). Execute the registration procedure next. Refer to the "PC application help for Subaru Select Monitor".	Replace the body integrated unit <Ref. to SL-49, Body Integrated Unit.> Replace all ignition keys (transponder). Execute the registration procedure next. Refer to the "PC application help for Subaru Select Monitor".

F: 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 “PC application help for Subaru Select Monitor”.	Is registration for all keys complete?	Make sure it is possible to start the engine with all keys that have been taught. This completes the work.	Go to step **2**.
2	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “PC application help for Subaru Select Monitor”.	Is registration for all keys complete?	Make sure it is possible to start the engine with all keys that have been taught. This completes the work.	Go to step **3**.
3	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “PC application help for Subaru Select Monitor”.	Is registration for all keys complete?	Make sure it is possible to start the engine with all keys that have been taught. This completes the work.	Replace the ECM. <Ref. to FU(H4DOTC)-51, Engine Control Module (ECM).> Execute the registration procedure next. Refer to the “PC application help for Subaru Select Monitor”.

G: DTC P1577 IMM CONTROL MODULE EEPROM

DTC DETECTING CONDITION:

- Body integrated unit malfunctioning
- Failed to access the ROM inside the body integrated unit.

	Step	Check	Yes	No
1	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “PC application help for Subaru Select Monitor”.	Is registration for all keys complete?	Make sure it is possible to start the engine with all keys that have been taught. This completes the work.	Go to step **2**.
2	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “PC application help for Subaru Select Monitor”.	Is registration for all keys complete?	Make sure it is possible to start the engine with all keys that have been taught. This completes the work.	Go to step **3**.
3	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “PC application help for Subaru Select Monitor”.	Is registration for all keys complete?	Make sure it is possible to start the engine with all keys that have been taught. This completes the work.	Replace the body integrated unit <Ref. to SL-49, Body Integrated Unit.> Replace all ignition keys (transponder). Execute the registration procedure next. Refer to the “PC application help for Subaru Select Monitor”.

H: DTC P1578 METER FAILURE

DTC DETECTING CONDITION:

Reference code incompatibility between combination meter and body integrated unit

	Step	Check	Yes	No
1	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor.	Is DTC B1401 detected?	Go to step **2**.	<Ref. to IM(diag)-20, DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
2	**CHECK LAN COMMUNICATION SYSTEM.** Inspect LAN communication system. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>	Is DTC U1300, U1301, U1302, B1100 or B1101 of the body integrated unit displayed?	Perform the diagnosis according to the DTC. <Ref. to LAN(diag)-34, List of Diagnostic Trouble Code (DTC).>	Go to step **3**.
3	**CHECK COMBINATION METER.** 1) Perform the registration of immobilizer. Refer to the “PC application help for Subaru Select Monitor”. 2) Start the engine.	Does the engine start?	System is normal.	Replace the combination meter. <Ref. to IDI-15, REMOVAL, Combination Meter.>

NOTE:

- When the combination meter has been replaced, be sure to perform the registration procedure of immobilizer.
- When the combination meter and body integrated unit are replaced at a time, the registration can not be completed. In this case, it is necessary to rewrite the ID into the body integrated unit.

I: DTC B1401 M COLLATION NG

NOTE:

Refer to DTC P1578 “METER FAILURE” for diagnostic procedure. <Ref. to IM(diag)-25, DTC P1578 METER FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

J: DTC B1402 IMMOBILIZER KEY COLLATION NG

NOTE:

For diagnostic procedures, refer to the following items.

- DTC P0513 “INCORRECT IMMOBILIZER KEY” <Ref. to IM(diag)-16, DTC P0513 INCORRECT IMMOBILIZER KEY, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
- DTC P1570 “ANTENNA” <Ref. to IM(diag)-17, DTC P1570 ANTENNA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
- DTC P1574 “KEY COMMUNICATION FAILURE” <Ref. to IM(diag)-22, DTC P1574 KEY COMMUNICATION FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

K: DTC B1403 E/G REQUEST NG

NOTE:

For diagnostic procedures, refer to DTC P1572 “IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT)”. <Ref. to IM(diag)-20, DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

LAN SYSTEM (DIAGNOSTICS)

LAN(diag)

		Page
1.	Basic Diagnostic Procedure	2
2.	Check List for Interview	3
3.	General Description	6
4.	Electrical Component Location	8
5.	Control Module I/O Signal	10
6.	Subaru Select Monitor	15
7.	Read Diagnostic Trouble Code (DTC)	30
8.	Clear Memory Mode	31
9.	Read Current Data	32
10.	User Customizing	33
11.	List of Diagnostic Trouble Code (DTC)	34
12.	Diagnostic Procedure with Diagnostic Trouble Code (DTC)	37
13.	General Diagnostic Table	84

1. General Description

A: SPECIFICATION

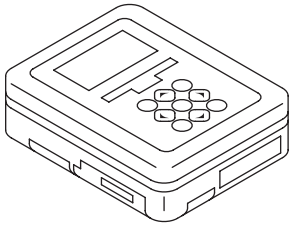
Combination meter	Speedometer	Stepping motor type
	Tachometer	
	Engine coolant temperature gauge (turbo model)	
	Fuel gauge	
	Malfunction indicator light	LED
	Oil pressure warning light	
	ATF temperature warning light	
	ABS warning light	
	Engine coolant temperature indicator light (non-turbo model)	
	Engine coolant temperature warning light (non-turbo model)	
	Airbag warning light	
	Seat belt warning light	
	Door open warning light	
	Brake fluid and parking brake warning light	
	Fuel level warning light	
	Charge warning light	
	AWD warning light (AT model)	
	Hill start assist warning light (MT model with VDC)	
	Tire pressure warning light	
	Vehicle dynamics control (VDC) warning light	
	Vehicle dynamics control (VDC) indicator light	
	Turn signal indicator light	
	HI-beam indicator light	
	Security and immobilizer indicator light	
	Cruise indicator light	
	Cruise set indicator light	
	Front fog light indicator light	
	SPORT indicator light (AT model)	
	Light illumination indicator light (turbo model)	
	Meter illumination back light	
	LCD back light	
	Odo/trip meter	LCD
	SPORT shift indicator (AT model)	
	AT select lever position indicator	
Clock	Average fuel economy, Ambient air temperature, Current time, Malfunction warning display	VFD
	Passenger's airbag ON indicator	LED
	Passenger's airbag OFF indicator	
	Passenger' seat belt warning light	

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 an excessive force on the printed circuit.
- Do not drop or otherwise apply impact.
- When the combination meter of model with immobilizer has been replaced, be sure to perform the registration of immobilizer.

C: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST1B022XU0	1B022XU0	SUBARU SELECT MONITOR III KIT	Used for troubleshooting the electrical system.

2. GENERAL TOOL

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

2. Combination Meter System

A: WIRING DIAGRAM

Refer to “Combination Meter System” in WI section. <Ref. to WI-132, WIRING DIAGRAM, Combination Meter System.>

B: INSPECTION

1. SELF-DIAGNOSIS

The self-diagnosis (checking of each meter, warning light, indicator light, illumination, LCD) of combination meter can be performed in the following procedure.

CAUTION:
Perform the steps described in 2) through 4) within 10 seconds.

1) Within 3 seconds after turning the ignition switch to ON, set the lighting switch to tail light or headlight position.
2) Press the odo/trip meter knob three times.
3) Turn the lighting switch to OFF, and press the odo/trip meter knob three times.
4) Set the lighting switch to tail light or headlight position again, and press the odo/trip meter knob three times.

NOTE:
• When pressing the odo/trip meter knob four times, the display changes to DTC display mode. <Ref. to IDI-11, DTC DISPLAY MODE, INSPECTION, Combination Meter System.>
• Warning light, indicator light, and LCD display checks are performed when self-diagnosis is performed. After this, every time the odo/trip meter knob is pressed, the buzzer will sound for 0.5 seconds, and operation checks for meter operation, meter readings, and the LCD are performed in this order. Turn the ignition switch to OFF to cancel the self-diagnosis function.
• The self-diagnosis function is not cancelled if the engine is started during diagnosis. However, the self-diagnosis function is cancelled automatically for safety when you start to drive the vehicle.

5) Go to “Check meter indicator operation”.
Check meter operation, warning light, indicator light, and LCD.

Meter indicator	LCD display, illumination	Warning light, indicator light
MIN indication ↓ MAX indication	ILL1 (Min. brightness) ↓(Displayed for one second for each level) ILL6 (Max. brightness)	Light ON Engine coolant temperature warning light color is red. (Non-turbo model)
MAX indication ↓ MIN indication	ILL6 (Max. brightness) ↓(Displayed for one second for each level) ILL1 (Min. brightness)	

6) Press the odo/trip meter knob once.

7) Go to “Check meter indication”.
Check meter operation, warning light, indicator light, and LCD.

NOTE:
• The meter indicator needle will switch every 1.5 seconds.
• ILL indication illuminates at the same brightness as when entering “Meter Indicator Needle Indication Check”.

Speedometer (km/h)	Tachometer (rpm)	Fuel gauge	Engine coolant temperature gauge	Fuel level warning light	Warning light, indicator light
0	0	Lowest point	Lowest point	Light ON	Light OFF Engine coolant temperature indicator light color is blue. (Non-turbo model)
0	0	E	C	Light ON	
40	1000	1/2	1/2	Light OFF	
100	4000	F	H	Light OFF	
40	1000	1/2	1/2	Light OFF	
0	0	E	C	Light ON	

8) Press the odo/trip meter knob once.
9) Go to “Check LCD display”.
Check the LCD.

NOTE:
• All warning and indicator lights go off.
• The meter indication remains at the same level as “Meter Indicator Needle Indication Check”.
• ILL indication illuminates at ILL6 level (max. brightness).

Illuminating order	1	2	3	4	5	6	7	8	9	10	11	12	13	
ODO, TRIP A/B	All lights ON	All lights OFF	ODO	All lights OFF	TRIP A	All lights OFF	TRIP B	All lights OFF	All lights OFF	All lights OFF	TRIP A	All lights OFF	TRIP B	Go back to 1 and repeat.
Odo/trip meter	88888.8	111111	22222.2	333333	44444.4	555555	66666.6	777777	88888.8	999999	00000.0	888888	88888.8	
AT shift indicator	All lights ON	1	2	3	4	5	6	7	P	R	N	D	E	
▲ ▼	▲ ▼	All lights OFF	▲	All lights OFF	▼	All lights OFF	▲	All lights OFF	▼	All lights OFF	▲	All lights OFF	▼	

2. SYMPTOM CHART

CAUTION:
When measuring the voltage and resistance of each control module or 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).

Symptom	Repair order	Index
Combination meter assembly does not operate.	1. Power supply 2. Ground circuit 3. Combination meter	<Ref. to IDI-6, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Combination Meter System.>
Speedometer does not operate.	1. VDC C/M 2. Harness 3. Combination meter	<Ref. to IDI-7, CHECK ABS CONTROL MODULE OR VDC CONTROL MODULE, INSPECTION, Combination Meter System.>
Tachometer does not operate.	1. ECM 2. Harness 3. Combination meter	<Ref. to IDI-7, CHECK ENGINE CONTROL MODULE (ECM), INSPECTION, Combination Meter System.>
Fuel gauge does not operate.	1. Communication circuit 2. Fuel level sensor 3. Harness 4. Combination meter	<Ref. to IDI-8, CHECK FUEL LEVEL SENSOR, INSPECTION, Combination Meter System.>
Engine coolant temperature gauge does not operate. (Turbo model)	1. Communication circuit 2. Engine coolant temperature sensor 3. Harness 4. Combination meter	<Ref. to IDI-9, CHECK ENGINE COOLANT TEMPERATURE SENSOR, INSPECTION, Combination Meter System.>

3. 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-15, REMOVAL, Combination Meter.> 2) Disconnect the combination meter connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between combination meter connector and chassis ground. ***Connector & terminal*** ***(i10) No. 2 (+) — 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. 1 (+) — 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 between combination meter connector and chassis ground. ***Connector & terminal*** ***(i10) No. 21 — Chassis ground:*** ***(i10) No. 22 — Chassis ground:***	Is the resistance less than 10 Ω?	Replace the meter case assembly.	Repair the wiring harness.

4. CHECK VDC CONTROL MODULE

	Step	Check	Yes	No
1	**CHECK VEHICLE SPEED 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 combination meter connector and chassis ground. ***Connector & terminal*** ***(i10) No. 31 (+) — Chassis ground (–):***	Is the voltage less than 1 V ←→ 5 V or more?	Replace the meter case assembly.	Go to step **2**.
2	**CHECK HARNESS BETWEEN VDCCM AND COMBINATION METER.** 1) Turn the ignition switch to OFF. 2) Disconnect the VDCCM connector and combination meter connector. 3) Measure the resistance between VDCCM and combination meter. ***Connector & terminal*** ***(B310) No. 33 — (i10) No. 31:***	Is the resistance less than 10 Ω?	Check the VDC control module. <Ref. to VDC(diag)-2, Basic Diagnostic Procedure.>	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 chassis ground. ***Connector & terminal*** ***(B136) No. 22 (+) — Chassis ground (–):***	Is the voltage 0 ←→ 14 V or more?	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 ECM connector and combination meter connector. 3) Measure the resistance between the ECM connector and combination meter connector. ***Connector & terminal*** ***(B136) No. 22 — (i10) No. 32:***	Is the resistance less than 10 Ω?	Replace the meter case assembly.	Repair the wiring harness.

6. CHECK FUEL LEVEL SENSOR

	Step	Check	Yes	No
1	**CHECK COMBINATION METER.** 1) Drain fuel. 2) Check the indication status of the fuel gauge in the combination meter.	Does the fuel gauge needle indicate EMPTY and is the low fuel warning light blinking?	Go to step **4**.	Go to step **2**.
2	**CHECK COMBINATION METER.** Perform the self-diagnosis of combination meter. <Ref. to IDI-4, SELF-DIAGNOSIS, INSPECTION, Combination Meter System.>	Is it operating normally?	Go to step **3**.	Replace the meter case assembly.
3	**CHECK COMMUNICATION STATUS.** 1) Prepare the Subaru Select Monitor kit. 2) Turn the ignition switch to ON (engine OFF) and run the “PC application for Subaru Select Monitor”. 3) On «System Selection Menu» display, select {Integ. unit mode}. 4) Select the {Diagnostic Code(s) Display}.	Is DTC being displayed?	Perform the diagnosis according to DTC. <Ref. to LAN(diag)-34, LIST, List of Diagnostic Trouble Code (DTC).>	Go to step **4**.
4	**CHECK HARNESS.** 1) Disconnect the body integrated unit connector. 2) Measure the resistance between the body integrated unit and chassis ground. ***Connector & terminal*** ***(B281) No. 7 — Chassis ground:***	Is the resistance 2 — 96 Ω?	Go to step **5**. If the step 1 is “Yes”, Go to step **9**.	Repair the wiring harness.
5	**CHECK COMMUNICATION BETWEEN BODY INTEGRATED UNIT AND METERS.** 1) Remove the fuel sub level sensor. <Ref. to FU(H4SO)-67, REMOVAL, Fuel Sub Level Sensor.> <Ref. to FU(H4DOTC)-74, REMOVAL, Fuel Sub Level Sensor.> 2) Short the fuel sub level sensor connector terminal to the chassis ground with approx. 100 Ω resistance. 3) Turn the ignition switch to ON. ***Connector & terminal*** ***(R59) No. 1 — Chassis ground:***	Does the meter needle indicate EMPTY?	Go to step **7**.	Go to step **6**.
6	**CHECK BODY INTEGRATED UNIT.** 1) Retain the condition in step 5. 2) On {Integ. unit mode}, select {Fuel level resistance} using the Subaru Select Monitor.	Is approx. 100 Ω displayed in the data?	Go to step **11**.	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>
7	**CHECK COMMUNICATION BETWEEN BODY INTEGRATED UNIT AND METERS.** 1) Remove the fuel sub level sensor. <Ref. to FU(H4SO)-67, REMOVAL, Fuel Sub Level Sensor.> <Ref. to FU(H4DOTC)-74, REMOVAL, Fuel Sub Level Sensor.> 2) Short the fuel sub level sensor connector terminal to the chassis ground with approx. 2 Ω to 6 Ω resistance. 3) Turn the ignition switch to ON. ***Connector & terminal*** ***(R59) No. 1 — Chassis ground:***	Does the meter needle indicate FULL?	Go to step **9**.	Go to step **8**.
8	**CHECK BODY INTEGRATED UNIT.** 1) Retain the condition in step 7. 2) On {Integ. unit mode}, select {Fuel level resistance} using the Subaru Select Monitor.	Is the resistance approximately 2 to 6 Ω?	Go to step **11**.	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>

	Step	Check	Yes	No
9	**CHECK FUEL SUB LEVEL SENSOR.** 1) Remove the fuel sub level sensor. <Ref. to FU(H4SO)-67, REMOVAL, Fuel Sub Level Sensor.> <Ref. to FU(H4DOTC)-74, REMOVAL, Fuel Sub Level Sensor.> 2) Measure the resistance between the fuel sub level sensor connector terminals when the float is in FULL and EMPTY position. ***Connector & terminal*** ***(R59) No. 1 — No. 2:***	Is the resistance 1.0 to 3.0 Ω (FULL) and 61 to 63 Ω (EMPTY)?	Go to step **10**.	Replace the fuel sub level sensor.
10	**CHECK FUEL LEVEL SENSOR.** 1) Remove the fuel level sensor. <Ref. to FU(H4SO)-66, REMOVAL, Fuel Level Sensor.> <Ref. to FU(H4DOTC)-73, REMOVAL, Fuel Level Sensor.> 2) Measure the resistance between the fuel level sensor connectors when the float is in FULL and EMPTY position. ***Connector & terminal*** ***(R58) No. 1 — No. 4:***	Is the resistance 1.0 to 3.0 Ω (FULL) and 31 to 33 Ω (EMPTY)?	Check the connection status of the harness and connector that may have a temporary poor contact.	Replace the fuel level sensor.
11	**CHECK COMBINATION METER OPERATION.** 1) Remove the combination meter. 2) Attach the combination meter to another vehicle on which the fuel gauge operates normally to check its operation.	Is the fuel gauge normal?	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>	Replace the meter case assembly.

7. CHECK ENGINE COOLANT TEMPERATURE SENSOR

	Step	Check	Yes	No
1	**CHECK COMMUNICATION STATUS.** 1) Prepare the Subaru Select Monitor kit. 2) Turn the ignition switch to ON (engine OFF) and run the “PC application for Subaru Select Monitor”. 3) On «System Selection Menu» display, select {Integ. unit mode}. 4) Select the {Diagnostic Code(s) Display}.	Is DTC being displayed?	Perform the diagnosis according to DTC. <Ref. to LAN(diag)-34, LIST, List of Diagnostic Trouble Code (DTC).>	Go to step **2**.
2	**CHECK ENGINE COOLANT TEMPERATURE SENSOR.** Check the engine coolant temperature sensor. <Ref. to EN(H4SO)(diag)-2, Basic Diagnostic Procedure.> <Ref. to EN(H4DOTC)(diag)-2, Basic Diagnostic Procedure.>	Is the engine coolant temperature sensor OK?	Replace the meter case assembly.	Replace the engine coolant temperature sensor.

8. CHECK KEY WARNING SWITCH ALARM

	Step	Check	Yes	No
1	**CHECK KEY WARNING SWITCH ALARM.** 1) Insert the key to the ignition key lock. 2) Open the driver's side door.	Does the buzzer sound from the meter?	Normal	Go to step **2**.
2	**CHECK COMMUNICATION STATUS.** 1) Prepare the Subaru Select Monitor. 2) On «System Selection Menu» display, select {Integ. unit mode}. 3) On {Current Data Display & Save}, select {Key-lock warning SW}. 4) Remove and insert the key.	Does the display change between ON ⇔ OFF?	Go to step **3**.	Check the ignition switch circuit. <Ref. to SL-43, INSPECTION, Ignition Key Lock.>
3	**CHECK COMMUNICATION STATUS.** 1) On {Current Data Display & Save}, select {Driver's door SW input}. 2) Open and close the door.	Does the display change between ON ⇔ OFF?	Go to step **4**.	Check the door switch circuit. <Ref. to SL-9, CHECK DOOR LOCK SWITCH, INSPECTION, Door Lock Control System.>
4	**CHECK COMMUNICATION STATUS.** 1) Turn the ignition switch to ON (engine OFF) and run the "PC application for Subaru Select Monitor". 2) On «System Selection Menu» display, select {Integ. unit mode}. 3) Select the {Diagnostic Code(s) Display}.	Is DTC being displayed?	Perform the diagnosis according to DTC. <Ref. to LAN(diag)-34, LIST, List of Diagnostic Trouble Code (DTC).>	Go to step **5**.
5	**CHECK COMBINATION METER.** Perform the self-diagnosis of combination meter. <Ref. to IDI-4, SELF-DIAGNOSIS, INSPECTION, Combination Meter System.>	Did the buzzer sound?	Go to step **6**.	Replace the meter case assembly.
6	**CHECK COMBINATION METER.** 1) Remove the combination meter. 2) Attach the buzzer to another vehicle on which the buzzer operates normally to check its operation.	Did the buzzer sound?	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>	Replace the meter case assembly.

9. DTC DISPLAY MODE

The combination meter DTC can be displayed according to the following procedure.

CAUTION:
Perform the steps described in 2) through 4) within 10 seconds.
1) Within 3 seconds after turning the ignition switch to ON, set the lighting switch to tail light or headlight position.
2) Press the odo/trip meter knob four times.
3) Turn the lighting switch to OFF, and press the odo/trip meter knob four times.
4) Set the lighting switch to tail light or headlight position again, and press the odo/trip meter knob four times.
5) Go to “DTC display mode”.
When the DTC display mode operates, the display is changed every 3 seconds or {ECM}, {TCM}, {ABS/VDC} is displayed cyclically in this order for every press of the trip knob. DTC is displayed in the following table according to type of control module, receiving DTC, DTC detected or No DTC.

Control module	Condition	Display
ECM	Receiving DTC	Trip “A” + “P (Blink)”
	DTC detected	Trip “A” + “P xxxx”
	No DTC	Trip “A” + “P ----”
TCM	Receiving DTC	Trip “B” + “P (Blink)”
	DTC detected	Trip “B” + “P xxxx”
	No DTC	Trip “B” + “P ----”
ABS/VDCCM	Receiving DTC	Trip “A” + “C (Blink)”
	DTC detected	Trip “A” + “C xxxx”
	No DTC	Trip “A” + “C ----”
When CAN communication error is occurred	—	“ ----- ”

NOTE:
• When the engine starts during diagnosis, the self-diagnosis function is not cancelled, however, once ignition switch is turned OFF or the vehicle is driven, the DTC display mode is cancelled automatically for safety.
• When the DTC of individual control modules changes in status from current trouble to past trouble, and the trouble is fixed, the DTC will no longer appear in the combination meter if the engine is started three times or more. In this case, read the DTC using the Subaru Select Monitor.
• Because the MT model is not equipped with a TCM, only “Receiving DTC” is displayed.

C: NOTE

For procedure of each component in the combination meter system, refer to the respective section.
• Combination meter <Ref. to IDI-15, Combination Meter.>
• Speedometer <Ref. to IDI-16, Speedometer.>
• Tachometer <Ref. to IDI-17, Tachometer.>
• Fuel gauge <Ref. to IDI-18, Fuel Gauge.>
• Engine coolant temperature gauge (turbo model) <Ref. to IDI-19, Engine Coolant Temperature Gauge.>

3. Clock System

A: WIRING DIAGRAM

Refer to “Clock System” in WI section. <Ref. to WI-143, WIRING DIAGRAM, Clock System.>

B: INSPECTION

1. SYMPTOM CHART

Symptom	Repair order	Index
No display is shown.	1. Power supply 2. Ground circuit 3. Communication circuit harness 4. Clock body	<Ref. to IDI-12, CHECK POWER SUPPLY AND GROUND CIRCUIT AND COMMUNICATION CIRCUIT, INSPECTION, Clock System.>
Ambient air temperature/fuel economy displays do not appear.	1. Power supply 2. Ground circuit 3. Communication circuit harness 4. Clock body	<Ref. to IDI-13, CHECK CLOCK SYSTEM COMMUNICATION CIRCUIT, INSPECTION, Clock System.>
Only ambient air temperature display is not displayed.	1. Power supply 2. Harness 3. Ambient sensor 4. Communication circuit 5. Clock body	<Ref. to IDI-13, CHECK AMBIENT TEMPERATURE METER SYSTEM COMMUNICATION CIRCUIT, INSPECTION, Clock System.>
Only fuel economy display is not displayed.	1. Setting 2. Communication circuit 3. Clock body	<Ref. to IDI-14, CHECK COMMUNICATION CIRCUIT OF FUEL ECONOMY SYSTEM, INSPECTION, Clock System.>

2. CHECK POWER SUPPLY AND GROUND CIRCUIT AND COMMUNICATION CIRCUIT

	Step	Check	Yes	No
1	**CHECK POWER SUPPLY.** 1) Disconnect the clock connector. 2) Measure the voltage between clock connector and chassis ground. ***Connector & terminal*** ***(i59) No. 10 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **2**.	Check the harness for a open or short between the fuse and clock.
2	**CHECK GROUND CIRCUIT.** Measure the resistance between the clock connector and chassis ground. ***Connector & terminal*** ***(i59) No. 6 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **3**.	Repair or replace the harness.
3	**CHECK HARNESS BETWEEN CLOCK AND COMBINATION METER.** 1) Disconnect the combination meter connector. 2) Measure the resistance between the clock connector and combination meter connector. ***Connector & terminal*** ***(i59) No. 5 — (i10) No. 29:***	Is the resistance less than 10 Ω?	Go to step **4**.	Repair or replace the harness.
4	**CHECK CLOCK.** 1) Remove the clock. 2) Attach the clock to another vehicle on which the clock operates normally to check its operation.	Is clock normal?	Replace the meter case assembly.	Replace the clock body.

3. CHECK CLOCK SYSTEM COMMUNICATION CIRCUIT

	Step	Check	Yes	No
1	**CHECK POWER SUPPLY.** 1) Disconnect the clock connector. 2) Measure the voltage between clock connector and chassis ground. ***Connector & terminal*** ***(i59) No. 8 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **2**.	Repair or replace the harness.
2	**CHECK GROUND CIRCUIT.** Measure the resistance between the clock connector and chassis ground. ***Connector & terminal*** ***(i59) No. 6 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **3**.	Repair or replace the harness.
3	**CHECK HARNESS BETWEEN CLOCK AND COMBINATION METER.** 1) Disconnect the combination meter connector. 2) Measure the resistance between the clock connector and combination meter connector. ***Connector & terminal*** ***(i59) No. 5 — (i10) No. 29:***	Is the resistance less than 10 Ω?	Go to step **4**.	Repair or replace the harness.
4	**CHECK CLOCK.** 1) Remove the clock. 2) Attach the clock to another vehicle on which the clock operates normally to check its operation.	Is clock normal?	Replace the meter case assembly.	Replace the clock body.

4. CHECK AMBIENT TEMPERATURE METER SYSTEM COMMUNICATION CIRCUIT

	Step	Check	Yes	No
1	**CHECK AMBIENT SENSOR POWER SUPPLY.** 1) Disconnect the ambient sensor connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between the ambient sensor connector and chassis ground. ***Connector & terminal*** ***(F78) No. 2 (+) — Chassis ground (–):***	Is the voltage 4 V or more?	Go to step **2**.	Check the harness for a open or short between the fuse and clock.
2	**CHECK HARNESS BETWEEN AMBIENT SENSOR AND COMBINATION METER.** 1) Disconnect the combination meter connector. 2) Measure the resistance between the ambient sensor connector and combination meter connector. ***Connector & terminal*** ***(F78) No. 1(+) — (i10) No. 23:*** ***(F78) No. 2(+) — (i10) No. 24:***	Is the resistance less than 10 Ω?	Go to step **3**.	Repair or replace the harness.
3	**CHECK AMBIENT SENSOR.** 1) Remove the ambient sensor. <Ref. to AC-41, REMOVAL, Ambient Sensor (Auto A/C Model).> 2) Check the ambient sensor. <Ref. to AC(diag)-28, AMBIENT SENSOR, Diagnostic Procedure for Sensors.>	Is the ambient sensor operating properly?	Go to step **4**.	Replace the ambient sensor.

	Step	Check	Yes	No
4	**CHECK AMBIENT TEMPERATURE DISPLAY.** 1) Connect the combination meter connector. 2) Install the 3 Ω resistance to ambient sensor connector. 3) Turn the ignition switch to ON. ***Connector & terminal (F78) No. 1 — (F78) No. 2:***	Is the ambient temperature display 25°C (77°F)?	Repair the poor contact between the ambient sensor and harness connector.	Go to step **5**.
5	**CHECK AMBIENT TEMPERATURE OUTPUT DATA.** 1) Prepare the Subaru Select Monitor kit. 2) Turn the ignition switch to ON (engine OFF) and run the "PC application for Subaru Select Monitor". 3) On «System Selection Menu» display, select {Integ. unit mode}. 4) Select {Ambient Temperature}.	Is the ambient temperature display 25°C (77°F)?	Go to step **6**.	Replace the meter case assembly. <Ref. to IDI-15, Combination Meter.>
6	**CHECK CLOCK.** 1) Remove the clock. 2) Attach the ambient temperature display to another vehicle on which the ambient temperature display operates normally to check its operation.	Is the ambient temperature display 25°C (77°F)?	Replace the clock body.	Replace the meter case assembly. <Ref. to IDI-15, Combination Meter.>

5. CHECK COMMUNICATION CIRCUIT OF FUEL ECONOMY SYSTEM

	Step	Check	Yes	No
1	**CHECK FUEL ECONOMY DISPLAY OFF MODE.** Hold down the button "+" on the clock for 5 seconds or more.	Does the fuel economy display part blink?	Go to step **2**.	Go to step **3**.
2	**CHECK FUEL ECONOMY DISPLAY OFF MODE.** Turn the ignition switch to ON.	Is fuel economy displayed?	Clock is normal.	Go to step **3**.
3	**CHECK DIAGNOSTIC TROUBLE CODE (DTC).** 1) Prepare the Subaru Select Monitor kit. 2) Turn the ignition switch to ON (engine OFF) and run the "PC application for Subaru Select Monitor". 3) On «System Selection Menu» display, select {Integ. unit mode}. 4) Select the {Diagnostic Code(s) Display}.	Is DTC detected?	Go to step **4**.	Replace the meter case assembly. <Ref. to IDI-15, Combination Meter.>
4	**CHECK CLOCK.** 1) Remove the clock. 2) Attach the fuel economy display to another vehicle on which the fuel economy display operates normally to check its operation.	Is the fuel economy display correct?	Replace the clock body.	Replace the meter case assembly. <Ref. to IDI-15, Combination Meter.>

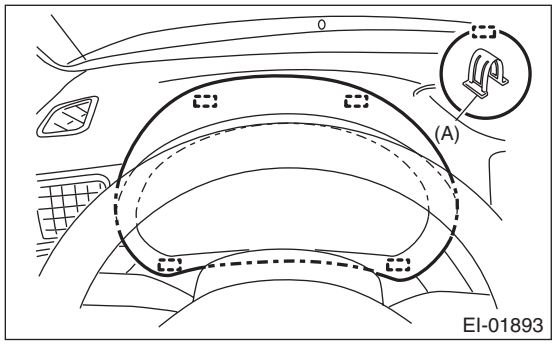
C: NOTE

For procedure of each component in the clock system, refer to the respective section.
- CLOCK<Ref. to IDI-20, Clock.>

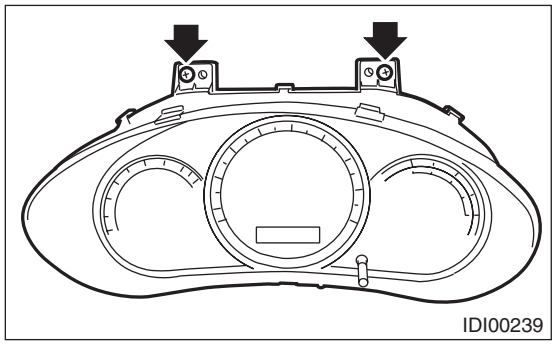
4. Combination Meter

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Set the tilt steering at the lowest position. For steering wheel with telescopic system, pull the steering.
3) Remove the plastic hook (A), and detach the meter visor.



4) Remove the screws of the combination meter, and pull on the meter while tipping it towards yourself.



5) Disconnect the connector in the rear side of combination meter to remove meter.

CAUTION:
• Be careful not to damage the meter or instrument panel.
• Pay particular attention to avoid damaging the meter glass.

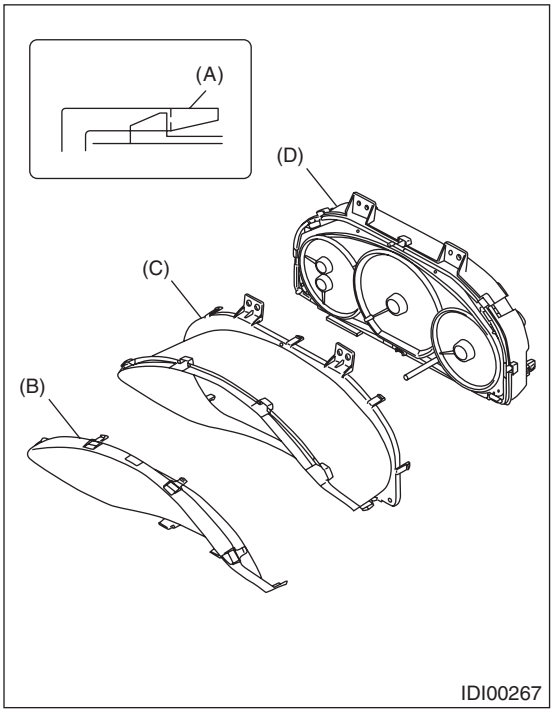
B: INSTALLATION

CAUTION:
• Make sure the electrical connector is connected securely.
• Make sure that each meter operates normally.
• When the combination meter of model with immobilizer has been replaced, be sure to perform the registration of immobilizer.
Install in the reverse order of removal.

C: DISASSEMBLY

1. DISASSEMBLY OF COMBINATION METER

CAUTION:
• Use gloves to avoid damage and getting fingerprints on the glass surface and meter surfaces.
• Be careful not to apply excessive force to the trip knob.
• Be sure not to touch the meter indicator needle.
Disengage the tabs (A), and remove the meter glass assembly (B) and meter visor (C) from the meter case assembly (D).



2. BULB REPLACEMENT

LEDs are used for all of warning lights and indicator lights of combination meters, replace the meter case assembly if faulty.

D: ASSEMBLY

Assemble in the reverse order of disassembly.

5. Speedometer

A: SPECIFICATION

Since the meter case assembly cannot be disassembled, do not remove or inspect the speedometer alone. (Do not remove the cover on the back surface.)

6. Tachometer

A: SPECIFICATION

Since the meter case assembly cannot be disassembled, do not remove or inspect the tachometer alone. (Do not remove the cover on the back surface.)

7. Fuel Gauge

A: SPECIFICATION

Since the meter case assembly cannot be disassembled, do not remove or inspect the fuel gauge alone. (Do not remove the cover on the back surface.)

8. Engine Coolant Temperature Gauge

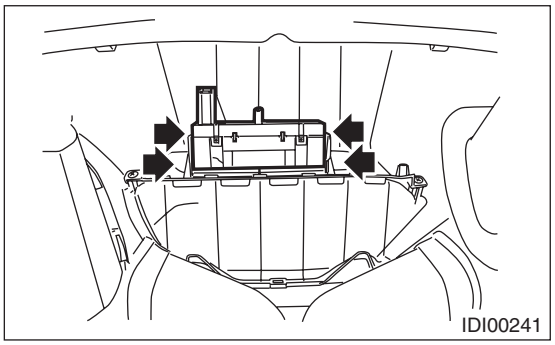
A: SPECIFICATION

Since the meter case assembly cannot be disassembled, do not remove or inspect the engine coolant temperature gauge alone. (Do not remove the cover on the back surface.)

9. Clock

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the audio. <Ref. to ET-6, REMOVAL, Audio.>
3) Reach through the audio space to release the four tabs from the bracket behind the instrument panel.



4) Disconnect the harness connector and remove the clock.

B: INSTALLATION

Install in the reverse order of removal.

SEATS

SE

Page

1. General Description 2
2. Front Seat 6
3. Rear Seat 12
4. Seat Heater System 15

1. Basic Diagnostic Procedure

A: PROCEDURE

CAUTION:
• Subaru Select Monitor is required for reading DTC, performing diagnosis and reading current data.
• Remove foreign matter (dust, water, oil, etc.) from the body integrated unit connector during removal and installation.
• For model with immobilizer, registration of immobilizer may be needed after the replacement of controller etc. For details, refer to the "PC application help for Subaru Select Monitor".

NOTE:
• To check harness for open or short circuits, shake the suspected trouble spot or connector.
• Check List for Interview <Ref. to LAN(diag)-3, Check List for Interview.>

	Step	Check	Yes	No
1	**CHECK PRE-INSPECTION.** Ask the customer when and how the trouble occurred using the interview check list. <Ref. to LAN(diag)-3, Check List for Interview.>	Did you interview the customer?	Go to step **2**.	Interview the customer.
2	**BASIC INSPECTION.** Check components which might affect body control. <Ref. to LAN(diag)-6, INSPECTION, General Description.>	Is the component that might influence the body control problem normal?	Go to step **3**.	Repair or replace each component.
3	**CHECK DTC.** 1) Read the DTC. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.> NOTE: If the communication function of the Subaru Select Monitor cannot be executed properly, check the communication circuit. <Ref. to LAN(diag)-28, COMMUNICATION FOR INITIALIZING IMPOSSIBLE, INSPECTION, Subaru Select Monitor.> 2) Record all DTCs and freeze frame data.	Is DTC displayed on Subaru Select Monitor?	Go to step **5**.	Go to step **4**.
4	**PERFORM GENERAL DIAGNOSTICS.** Inspect using the "General Diagnostics Table". <Ref. to LAN(diag)-84, General Diagnostic Table.>	Is result of inspection OK?	LAN system is normal.	Go to step **5**.
5	**PERFORM DIAGNOSIS.** 1) Correct the cause of trouble. 2) Perform the Clear Memory Mode. <Ref. to LAN(diag)-24, CLEAR MEMORY MODE, OPERATION, Subaru Select Monitor.> 3) Read the DTC. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is DTC displayed on Subaru Select Monitor?	Repeat step 5 until DTC is not shown.	Finish the diagnosis.

2. Check List for Interview

A: CHECK

Inspect the following item about the vehicle's state.

1. DISPLAY STATUS IN THE COMBINATION METER

Display status in the combination meter	Engine coolant temperature gauge display	❑ OK / ❑ NG
	Fuel gauge display	❑ OK / ❑ NG
Display of other indicators	Malfunction indicator light	❑ ON / ❑ OFF
	SPORT indicator light (AT warning light)	❑ ON / ❑ Blink / ❑ OFF
	Engine coolant temperature warning light	❑ ON / ❑ Blink / ❑ OFF
	Fuel level warning light	❑ ON / ❑ Blink / ❑ OFF
	ATF temperature warning light	❑ ON / ❑ Blink / ❑ OFF
	EBD warning light	❑ ON / ❑ Blink / ❑ OFF
	ABS warning light	❑ ON / ❑ Blink / ❑ OFF
	VDC warning light	❑ ON / ❑ Blink / ❑ OFF
	Hill start assist warning light	❑ ON / ❑ Blink / ❑ OFF
	Immobilizer indicator	❑ ON / ❑ Blink / ❑ OFF

2. SYMPTOMS

Vehicle condition	Clearance light does not illuminate.	❑ Yes / ❑ No
	Clearance light indicator does not illuminate.	❑ Yes / ❑ No
	Low beam does not illuminate.	❑ Yes / ❑ No
	High beam does not illuminate.	❑ Yes / ❑ No
	High beam indicator does not illuminate.	❑ Yes / ❑ No
	Front fog light does not illuminate.	❑ Yes / ❑ No
	Front fog light indicator does not illuminate.	❑ Yes / ❑ No
	DRL does not illuminate.	❑ Yes / ❑ No
	Key cannot be removed from key cylinder.	❑ Yes / ❑ No
	Key can be removed from any other than parking range.	❑ Yes / ❑ No
	Shift lever can not be operated.	❑ Yes / ❑ No
	Shift lock does not operate.	❑ Yes / ❑ No
	Key warning switch alarm does not sound.	❑ Yes / ❑ No
	Driver's seat belt warning light does not illuminate.	❑ Yes / ❑ No
	Passenger's seat belt warning light does not illuminate.	❑ Yes / ❑ No
	Seat belt warning alarm does not sound.	❑ Yes / ❑ No
	Wiper deicer does not operate.	❑ Yes / ❑ No
	Rear defogger does not operate.	❑ Yes / ❑ No
	Illumination volume control is not available.	❑ Yes / ❑ No
	Combination meter does not dim when headlights are ON.	❑ Yes / ❑ No
	Rear wiper does not operate.	❑ Yes / ❑ No
	Doors can not be locked/unlocked with central door lock switch.	❑ Yes / ❑ No
	Doors can not be locked/unlocked with keyless entry system.	❑ Yes / ❑ No
	Rear gate can not be opened when rear gate opener button is pressed.	❑ Yes / ❑ No
	Trunk can not be opened with keyless entry system.	❑ Yes / ❑ No
	Hazard answer-back does not operate.	❑ Yes / ❑ No
	Answer-back buzzer does not sound.	❑ Yes / ❑ No
	Ignition key illumination does not light.	❑ Yes / ❑ No
	Ignition key illumination blinks.	❑ Yes / ❑ No
	Room light does not operate in accordance with door open/close operations.	❑ Yes / ❑ No
	Room light blinks.	❑ Yes / ❑ No
	Map light does not operate in accordance with door open/close operations. (model with sunroof)	❑ Yes / ❑ No
	Map light blinks. (model with sunroof)	❑ Yes / ❑ No
	Indicator does not illuminate when parking brake is operated.	❑ Yes / ❑ No
	Security monitor condition does not occur.	❑ Yes / ❑ No
	Security condition can not be cancelled.	❑ Yes / ❑ No
	Hazard light does not blink during security operation.	❑ Yes / ❑ No
	Horn does not sound during security operation.	❑ Yes / ❑ No
	Alarm operates as soon as security monitor condition occurs.	❑ Yes / ❑ No
	Security alarm does not operate even when impact is applied (model with impact sensor).	❑ Yes / ❑ No
	Engine does not start.	❑ Yes / ❑ No

3. CONDITIONS UNDER WHICH TROUBLE OCCURS

Driving condition	❑ At standstill (While idling) ❑ When the vehicle is running Vehicle speed km/h (MPH) ❑ While accelerating Acceleration km/h (MPH) to km/h (MPH) ❑ Decelerating (With braking) Deceleration km/h (MPH) to km/h (MPH) ❑ Decelerating (Without braking) Deceleration km/h (MPH) to km/h (MPH)
	❑ Flat road ❑ Uphill ❑ Downhill ❑ Gravel road ❑ Bumpy road ❑ Snowy road
	Does it occur when operating any part? Operated part: **TROUBLE SYMPTOM:**
	Are there any other troubles occurred? From where: **TROUBLE SYMPTOM:**

3. General Description

A: CAUTION

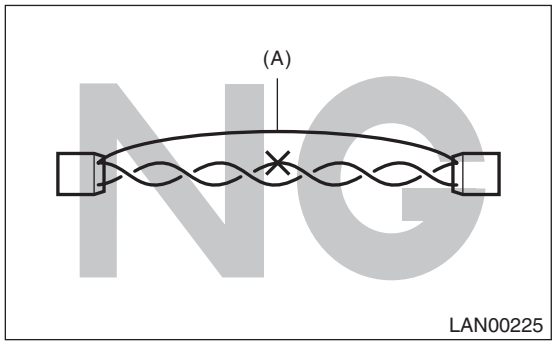
1. SUPPLEMENTAL RESTRAINT SYSTEM "AIRBAG"

Airbag system wiring harness is routed near the body integrated unit and twisted pair line.

CAUTION:
• Do not use the electrical test equipment on all airbag system wiring harnesses and connectors.
• Be careful not to damage the airbag system wiring harness when servicing the body integrated unit and LAN system.

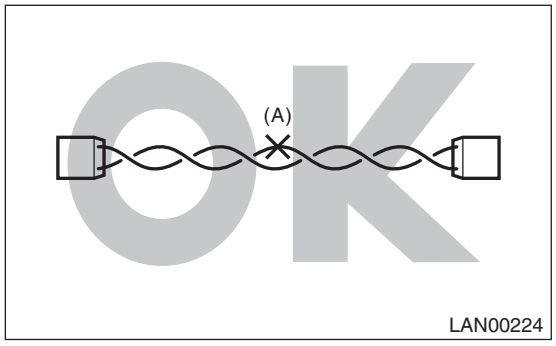
2. LAN SYSTEM

• Bus line of LAN system is twisted pair line. Be careful not to bypass or partly unbind the twisted pair line.
• Do not make clearance between bus lines (CAN High, CAN Low).
• Difference of bus line length should be within 10 cm (3.94 in).
• Fray near the connector should be within 8 cm (3.14 in).



(A) Bypass wire connection

• If the characteristics of the twisted pair line are changed, it may extremely weaken against noise.
• When repairing the harness, connect the wires using soldering and protect it with insulating tape etc.



(A) Soldering and protection with insulating tape

B: INSPECTION

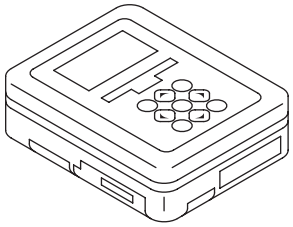
Before performing diagnostics, check the following item which might affect body integrated unit malfunctions.
1) Measure the battery voltage and check electrolyte.

Standard voltage: 12 V or more

Specific gravity: 1.260 or more
2) Check the fuse condition.
Make sure that ampere of the fuse is setting value, and it is not blown out.
(Be sure to check the back-up fuse also.)
3) Check the connecting condition of harness and harness connector.
4) Confirm settings of body integrated unit are corresponded to vehicle equipment. <Ref. to LAN(diag)-22, REGISTRATION BODY INTEGRATED UNIT (FUNCTION SETTING), OPERATION, Subaru Select Monitor.>
5) Make sure that the User Customizing of the body integrated unit matches the vehicle equipment. <Ref. to LAN(diag)-25, USER CUSTOMIZING, OPERATION, Subaru Select Monitor.>
6) Confirm "Factory or Market setting" of body integrated unit registrations is "Market".
7) Confirm key illumination does not blink with ignition switch turned to ON.

C: PREPARATION TOOL

1. SPECIAL TOOL

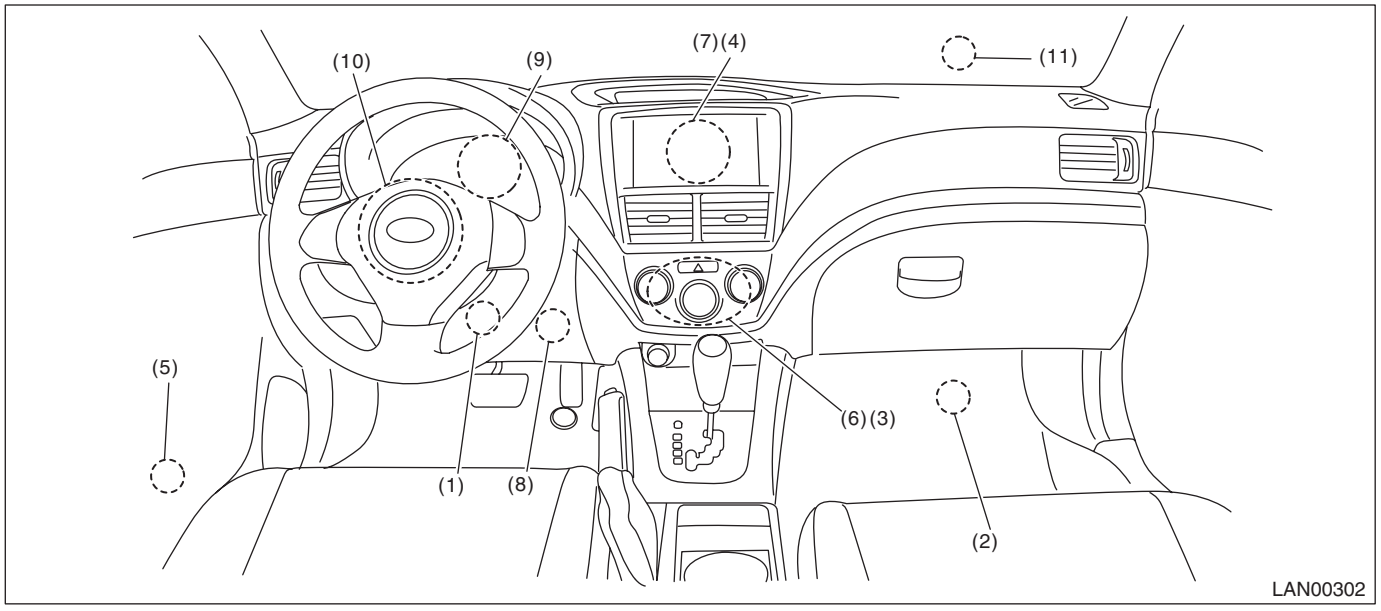
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST1B022XU0	1B022XU0	SUBARU SELECT MONITOR III KIT	Used for troubleshooting the electrical system.

2. GENERAL TOOL

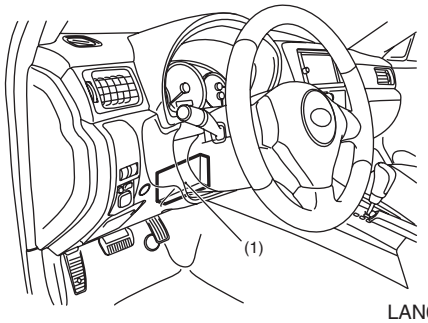
TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance, voltage and current.

4. Electrical Component Location

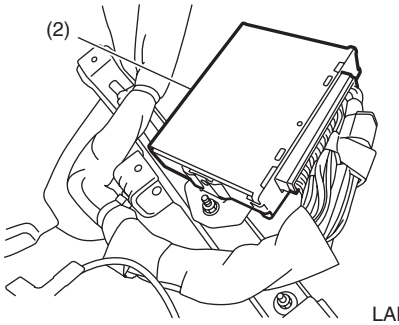
A: LOCATION



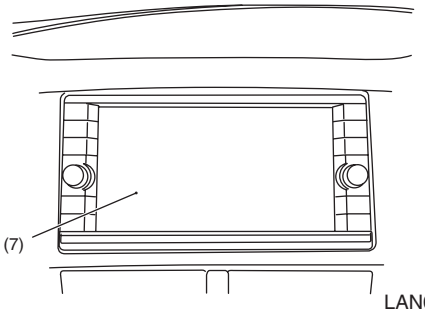
(1)	Body integrated unit	(5)	Keyless entry control module (inside rear quarter trim)	(9)	Combination meter
(2)	Engine control module (ECM)	(6)	A/C control panel	(10)	Steering angle sensor
(3)	Auto A/C control module	(7)	Center display	(11)	VDCCM&H/U (In engine compartment)
(4)	Navigation unit	(8)	Transmission control module (TCM)		



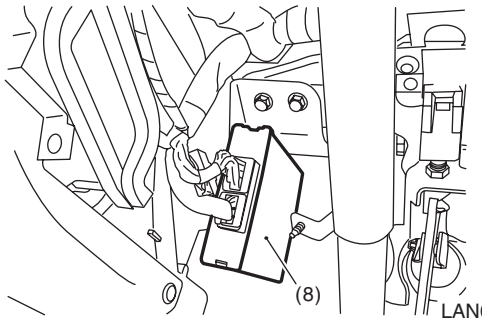
LAN00303



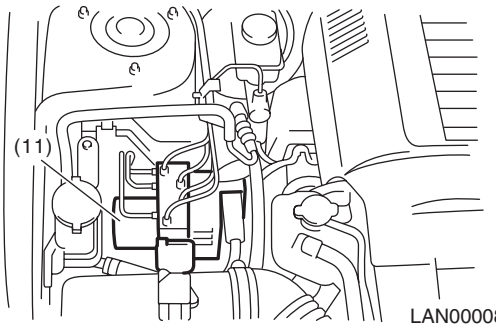
LAN00425



LAN00299



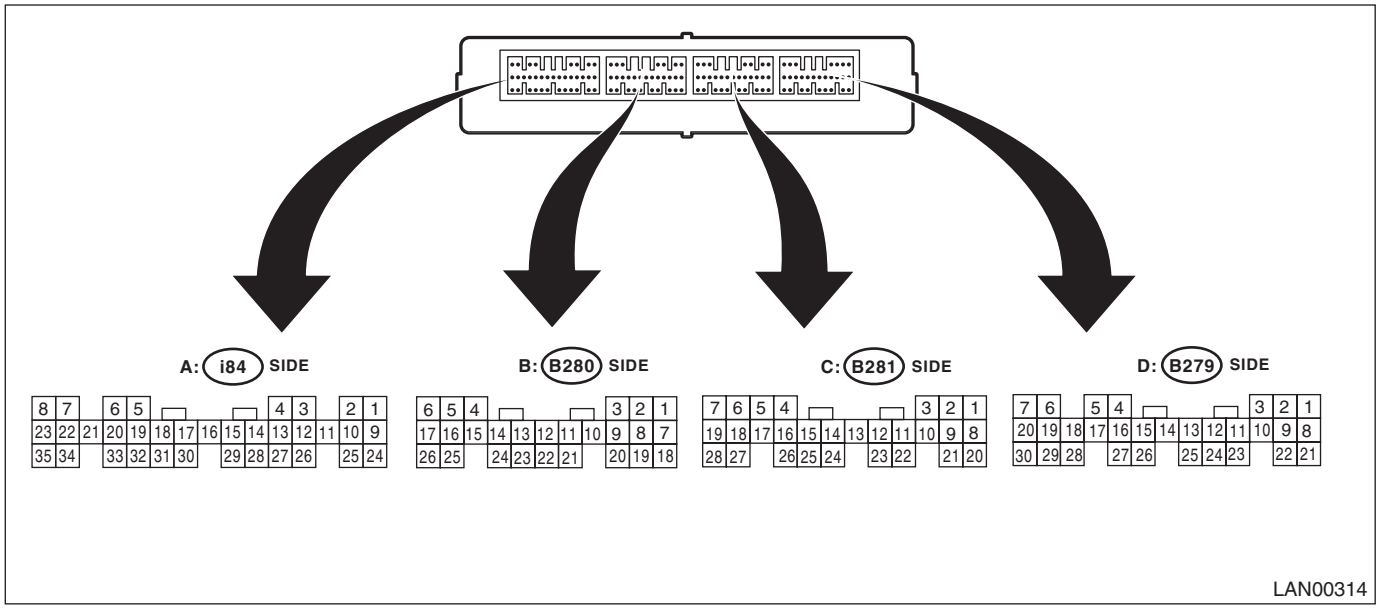
LAN00297



LAN00008

5. Control Module I/O Signal

A: ELECTRICAL SPECIFICATION



Contents	Terminal No.	Standard	Measuring conditions
BAT (control)	B6 ←→ chassis ground	10 — 14 V	Always
BAT (backup)	C2 ←→ chassis ground	10 — 14 V	Always
BAT (door lock)	A34 ←→ chassis ground	10 — 14 V	Always
BAT (shift lock/key lock)	D22 ←→ chassis ground	10 — 14 V	Always
ACC (rear wiper)	D21 ←→ chassis ground	10 — 15 V	When ACC is ON
Ground	A28 ←→ chassis ground	Less than 1.5 V	Always
Ground	B17 ←→ chassis ground	Less than 1.5 V	Always
Ground	C20 ←→ chassis ground	Less than 1.5 V	Always
Ground	D27 ←→ chassis ground	Less than 1.5 V	Always
Key warning switch	D2 ←→ chassis ground	Less than 1.5 V → 10 — 15 V	With key removed → inserted
ACC	B7 ←→ chassis ground	Less than 1.5 V → 10 — 15 V	ACC OFF → ACC ON

Contents	Terminal No.	Standard	Measuring conditions
IGN	B1 ←→ chassis ground	Less than 1.5 V → 10 — 15 V	IGN OFF → IGN ON
P range switch	C4 ←→ chassis ground	Less than 1.5 V → 8 V or more	P range → other than P range
Stop light switch	B2 ←→ chassis ground	Less than 1.5 V → 8 V or more	With brake pedal released → depressed
Door switch, driver's seat	A19 ←→ chassis ground	8 V or more → less than 1.5 V	With driver's door closed → opened
Door switch, passenger's seat	A32 ←→ chassis ground	8 V or more → less than 1.5 V	With passenger's door closed → opened
Door switch, rear RH seat	A6 ←→ chassis ground	8 V or more → less than 1.5 V	With rear RH seat door closed → opened
Door switch, rear LH seat	A20 ←→ chassis ground	8 V or more → less than 1.5 V	With rear LH seat door closed → opened
Door switch, trunk/rear gate	A33 ←→ chassis ground	8 V or more → less than 1.5 V	With trunk/rear gate closed → opened
Rear gate opener button	C24 ←→ chassis ground	8 V or more → less than 1.5 V	Switch OFF → ON
Manual switch (LOCK)	A15 ←→ chassis ground	8 V or more → less than 1.5 V	Switch OFF → ON
Manual switch (UNLOCK)	A29 ←→ chassis ground	8 V or more → less than 1.5 V	Switch OFF → ON
Delivery (test) mode connector	A17 ←→ chassis ground	8 V or more → less than 1.5 V	When delivery (test) mode connector is connected
Front wiper input RTN	C5 ←→ chassis ground	8 V or more → less than 1.5 V	When front wiper is reversed
Rear wiper switch ON	C18 ←→ chassis ground	8 V or more → less than 1.5 V	Switch OFF → ON
Rear wiper switch (INT)	C27 ←→ chassis ground	8 V or more → less than 1.5 V	Switch OFF → ON
Rear wiper switch, washer	C28 ←→ chassis ground	8 V or more → less than 1.5 V	Switch OFF → ON
Lighting I switch	B11 ←→ chassis ground	8 V or more → less than 1.5 V	Switch OFF → ON
Lighting II switch	C8 ←→ chassis ground	8 V or more → less than 1.5 V	Switch OFF → ON
	D6 ←→ chassis ground	8 V or more → less than 1.5 V	Key warning switch ON and lighting switch OFF → ON

Contents	Terminal No.	Standard	Measuring conditions
Dimmer switch, Hi beam	B12 ←→ chassis ground	8 V or more → less than 1.5 V	Switch OFF → ON
Dimmer switch, passing	B22 ←→ chassis ground	8 V or more → less than 1.5 V	Switch OFF → ON
Front fog light switch	B24 ←→ chassis ground	8 V or more → less than 1.5 V	Switch OFF → ON
TPMS answer-back request input	B13 ←→ chassis ground	8 V or more → less than 1.5 V	When TPMS transmitter registration answer-back is output
MT reverse switch	B18 ←→ chassis ground	Less than 1.5 V → 8 V or more	Other than reverse → reverse
Parking brake switch	C15 ←→ chassis ground	8 V or more → less than 1.5 V	With parking brake not operated → operated
Bright switch	A14 ←→ chassis ground	Less than 1.5 V → 8 V or more	Switch OFF → ON
Illumination (Vi1)	A12 ←→ chassis ground	Approx. 5 V	While clearance light illuminates
Illumination (Vi2)	A3 ←→ chassis ground	0.5 V — 4.5 V	While clearance light illuminates
Illumination (Vi3)	A26 ←→ chassis ground	Less than 1.5 V	Always
Fuel level sensor	C7 ←→ chassis ground	Approx. 2 — 96 Ω	Ignition ON
Wiper deicer & rear defogger switch	A16 ←→ chassis ground	8 V or more → less than 1.5 V	Switch OFF → ON
Seat belt switch (driver's seat)	C16 ←→ chassis ground	Less than 1.5 V → 8 V or more	With seat belt unbuckled → buckled
Seat belt switch (passenger's seat)	C26 ←→ chassis ground	Less than 1.5 V → 8 V or more	With seat belt unbuckled → buckled
Impact sensor	B8 ←→ chassis ground	Less than 1.5 V → 8 V or more	When impact is applied
Key lock solenoid output	D11 ←→ chassis ground	Less than 1.5 V → 6 V or more	While key is inserted in other than P range
Shift lock solenoid output	D12 ←→ chassis ground	Less than 1.5 V → 10 V or more	When vehicle stopped, IGN ON, other than P range, brake pedal depressed
Rear wiper output ON	D9 ←→ chassis ground	Less than 1.5 V → 10 V or more	When rear wiper operates
Rear wiper output RTN	D8 ←→ chassis ground	Less than 1.5 V → 10 V or more	When rear wiper reversed

Contents	Terminal No.	Standard	Measuring conditions
Door lock output	A7 ←→ A8	Less than 1.5 V → 10 V or more	While lock output
Door unlock output	A8 ←→ A7	Less than 1.5 V → 10 V or more	While unlock output
Driver's door unlock output	A23 ←→ A7	Less than 1.5 V → 10 V or more	While unlock output
Trunk/rear gate UNLOCK output	A22 ←→ chassis ground	Less than 1.5 V → 10 V or more	4 door: While trunk UNLOCK output 5 door: While rear gate UNLOCK output
Lighting power supply	C1 ←→ chassis ground	Less than 1.5 V → 10 V or more	With back-up fuse inserted, key removed, headlight switch OFF → ON
	D1 ←→ chassis ground	Less than 1.5 V → 10 V or more	When key warning switch is ON
Clearance light relay output	D19 ←→ chassis ground	8 V or more → less than 1.5 V	Small light ON
Lo beam relay output	C3 ←→ chassis ground	8 V or more → less than 1.5 V	Headlight switch ON
	D7 ←→ chassis ground	8 V or more → less than 1.5 V	Headlight switch ON
Hi beam relay output	D20 ←→ chassis ground	8 V or more → less than 1.5 V	Headlight switch ON and Hi beam ON Passing switch ON
Front fog light relay output	D17 ←→ chassis ground	8 V or more → less than 1.5 V	Headlight switch ON, and front fog light switch ON
DRL cancel output	D18 ←→ chassis ground	8 V or more → less than 1.5 V	When Hi beam 100 % illuminates
Room light output	D5	Pulse control	When room light illuminates
Key ring illumination output	C23	Pulse control	Illumination is adjusted through PWM control
Illumination output	A2	Pulse control	Illumination is adjusted through PWM control
Map light output (model with sunroof)	D4	Pulse control	Illumination is adjusted through PWM control
Rear defogger relay output	D16 ←→ chassis ground	8 V or more → less than 1.5 V	While rear defogger output
Wiper deicer relay output	D15 ←→ chassis ground	8 V or more → less than 1.5 V	While wiper deicer output
Seat belt warning light passenger's seat	A25 ← → chassis ground	8 V or more → less than 1.5 V	Indicator go off → illuminate
Answer-back buzzer output	D24 ←→ chassis ground	Less than 1.5 V → 10 V or more	Door lock → unlock with keyless entry system
Turn & hazard output	C22 ←→ chassis ground	8 V or more → less than 1.5 V	Door lock or unlock with keyless entry system
Horn relay output	D29 ←→ chassis ground	8 V or more → less than 1.5 V	While security alarm operates

Contents	Terminal No.	Standard	Measuring conditions
Security indicator output	A10 ←→ chassis ground	8 V or more → less than 1.5 V	While indicator in combination meter blinks
Immobilizer antenna 1	B26 ←→ B25	-30 — +30 V	While key secret code is verified
Immobilizer antenna 2	B25 ←→ B26		
Immobilizer communication_1	B4	Can not be measured because of digital communication	Serial communication line
Immobilizer communication_2	B15	Can not be measured because of digital communication	Serial communication line
Keyless entry control module communication	A24	Can not be measured because of digital communication	Serial communication line
SSM communication (K line)	B20	Can not be measured because of digital communication	Serial communication line
Body system CAN_Hi	A1 ←→ chassis ground	Can not be measured because of digital communication	Serial communication line
Body system CAN_Lo	A9 ←→ chassis ground	Can not be measured because of digital communication	Serial communication line
Driving system CAN_Hi	B3 ←→ chassis ground	Can not be measured because of digital communication	Serial communication line
Driving system CAN_Lo	B9 ←→ chassis ground	Can not be measured because of digital communication	Serial communication line

B: WIRING DIAGRAM

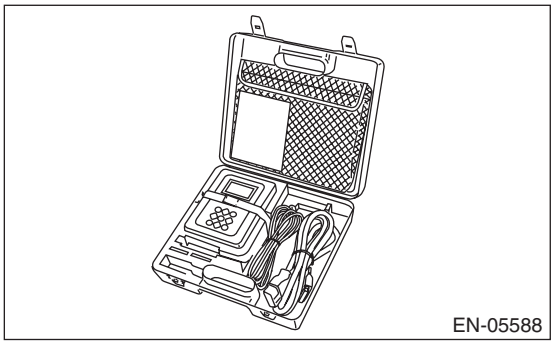
<Ref. to WI-167, WIRING DIAGRAM, CAN Communication System.>

6. Subaru Select Monitor

A: OPERATION

1. READ DIAGNOSTIC TROUBLE CODE (DTC)

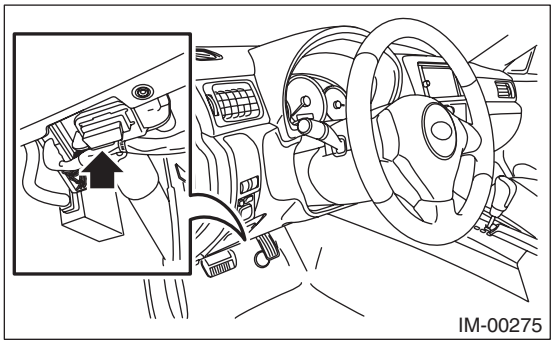
1) Prepare the Subaru Select Monitor kit. <Ref. to LAN(diag)-7, PREPARATION TOOL, General Description.>


EN-05588

2) Prepare PC with Subaru Select Monitor installed.
3) Connect the USB cable between SDI (Subaru Diagnosis Interface) and USB port on the personal computer (dedicated port for the Subaru Select Monitor).

NOTE:
The dedicated port for the Subaru Select Monitor means the USB port which was used to install the Subaru Select Monitor.

4) Connect the diagnosis cable to SDI.
5) Connect SDI to data link connector located in the lower portion of the instrument panel (on the driver's side).


IM-00275

6) Start the PC.
7) Turn the ignition switch to ON and run the "PC application for Subaru Select Monitor".
8) Read the diagnostic trouble code and record it.

NOTE:
For detailed operation procedures, refer to "PC application help for Subaru Select Monitor".

2. READ CURRENT DATA

1) On «Main Menu» display, select {Each System Check}.
2) On «System Selection Menu» display, select {Integ. unit mode}.
3) Select «Current Data Display & Save» screen.
4) Using the scroll key, scroll the display screen up or down until the desired data is shown.

3. DISPLAY OF DATA

Items to be displayed	Unit of measure	Remarks	Index
BATT voltage (control)	10 — 15 V	Body integrated unit input value	Always
BATT voltage (BACKUP)	10 — 15 V	Body integrated unit input value	Always
IG power supply voltage	10 — 15 V	Body integrated unit input value	Ignition switch ON
ACC voltage	10 — 15 V	Body integrated unit input value	Ignition switch ACC
Illumination VR Voltage	0 — 5 V	Body integrated unit input value	Input value from illumination volume
Illumi. output d-ratio	0 — 100%	Body integrated unit output value	Small light ON Illumination volume is other than bright.
Ambient Temperature	–40 — 87.5°C	CAN data input value	Ignition switch ON
Fuel level voltage	0 — 10 V	Body integrated unit input value	Ignition switch ON
Fuel level resistance	0 — 102.3 Ω	Body integrated unit input value	Ignition switch ON
Key-lock solenoid V	6 — 15 V	Body integrated unit output value	Key warning switch ON, other than parking range Ignition ON
Number of regist.	0 — 4	Number of keyless key registered	Number of transmitter registered is displayed
Front Wheel Speed	km/h	CAN data input value	Reception from VDC module
VDC/ABS latest f-code	DTC display (Temporarily)	CAN data input value	It is normal when DTC is not been input even if this code is displayed. Received from VDC (displayed by hexadecimal number system)
Blower Fan Steps	0 — 2 levels	CAN data input value	0: OFF, 1: Low, 2: 2 levels or more Reception from air conditioner ECM
Fuel level resistance 2	0 — 102.3 Ω	CAN data output value	Reception from body integrated unit
Fuel consumption	cc/s	CAN data input value	Reception from ECM and transmission to center monitor
Engine coolant temperature	–40 — 130°C	CAN data input value	Reception from ECM
Vehicle longitudinal G	m/s^2	CAN data input value	Reception from VDC module
SPORT Shift Stages	0 — 7 levels	CAN data input value	(0: Light OFF; 1 — 5: Gear display; 6: Fail; 7: ATF temperature High/Low) Reception from TCM
Shift position	0 — 7 levels	CAN data input value	0: 1; 1: 2; 2: 3; 3: 4; 4: D, 5: N; 6: R; 7: P shift position (There is no 8 input.) 8 is displayed in manual mode Reception from TCM
VDC/ABS condition	0 — 4	CAN data input value	Reception from VDC module
Destination code	0 — 16	CAN data input value	Reception from combination meter
Touch SW	0 — 64	CAN data input value	Reception from navigation module
Key-lock warning SW	ON/OFF	Body integrated unit input value	On when ignition key is inserted
Stop Light Switch	ON/OFF	Body integrated unit input value	On when brake pedal is depressed
Front fog lamp SW input	ON/OFF	Body integrated unit input value	When front fog light switch is ON
TPMS input	ON/OFF	Body integrated unit input value	Registration done signal
Driver's door SW input	ON/OFF	Body integrated unit input value	On when driver's door is open

Items to be displayed	Unit of measure	Remarks	Index
P-door SW input	ON/OFF	Body integrated unit input value	On when passenger's door is open
Rear right door SW input	ON/OFF	Body integrated unit input value	On when rear right door is open
Rear left door SW input	ON/OFF	Body integrated unit input value	On when rear left door is open
R Gate SW input	ON/OFF	Body integrated unit input value	On when trunk/rear gate is open
Manual lock SW input	ON/OFF	Body integrated unit input value	Manual lock switch ON
Manual unlock SW input	ON/OFF	Body integrated unit input value	Manual unlock switch ON
Bright SW input	ON/OFF	Body integrated unit input value	ON when bright switch is ON
P SW	ON/OFF	Body integrated unit input value	On when shift range is in parking Shift lever P SW signal
MT Reverse Switch	ON/OFF	Body integrated unit input value	Shift lever is at reverse position
R wiper ON SW input	ON/OFF	Body integrated unit input value	Rear wiper switch ON
R wiper INT SW input	ON/OFF	Body integrated unit input value	Rear wiper switch INT ON
R washer SW input	ON/OFF	Body integrated unit input value	Rear washer switch ON
Wiper deicer SW input	ON/OFF	Body integrated unit input value	Rear defogger switch ON
Rear Defogger SW	ON/OFF	Body integrated unit input value	
Driver's Seat SW input	ON/OFF	Body integrated unit input value	Driver's seat buckle switch ON
P seatbelt SW input	ON/OFF	Body integrated unit input value	With passenger's seat occupied and buckle switch ON
Fr wiper input	ON/OFF	Body integrated unit input value	On when front wiper is operating
Parking Brake Switch Input	ON/OFF	Body integrated unit input value	When parking brake locked
R gate lock status SW input	ON/OFF	Body integrated unit inner memory value	Displays door lock/unlock state, ON when locked
R Gate Release SW input	ON/OFF	Body integrated unit input value	When rear gate opener button is ON
R defogger output	ON/OFF	Body integrated unit output value	On when rear defogger relay is operating
Lock actuat. LOCK output	ON/OFF	Body integrated unit output value	ON when LOCK signal is output
All seat UNLOCK output	ON/OFF	Body integrated unit output value	On when unlock signal is output
D-seat UNLOCK output	ON/OFF	Body integrated unit output value	On when unlock signal is output
R gate/trunk UNLK output	ON/OFF	Body integrated unit output value	On when rear gate/trunk unlock signal is output
R wiper output	ON/OFF	Body integrated unit output value	ON when rear wiper motor is operating
Shift lock solenoid	ON/OFF	Body integrated unit output value	ON when shift lock solenoid is ON (only AT)
Key locking output	ON/OFF	Body integrated unit output value	With ignition switch ON and in other than the shift P range, with key in switch ON
Wiper deicer output	ON/OFF	Body integrated unit output value	ON when wiper deicer relay is operating
Hazard Output	ON/OFF	Body integrated unit output value	ON when answer-back signal is received or when hazard is operating
Keyless Buzzer Output	ON/OFF	Body integrated unit output value	ON when lock/unlock signal is received
Horn Output	ON/OFF	Body integrated unit output value	On when security warning is operating
D-belt warning light O/P	ON/OFF	CAN data output value	ON when ignition switch is turned to ON, and buckle switch is turned off

Items to be displayed	Unit of measure	Remarks	Index
P-belt warning light O/P	ON/OFF	Body integrated unit output value	On when Ignition switch is turned to ON, occupant is seated, and buckle switch is turned off
Illumination lamp O/P	ON/OFF	Body integrated unit output value	On when illumination is illuminated
Room light output	ON/OFF	Body integrated unit output value	When the room lamp is ON (the switch is in the DOOR position)
Key illumi. lamp o/p	ON/OFF	Body integrated unit output value	On when key illumination light is illuminated
Immobilizer lamp output	ON/OFF	Body integrated unit output value	On when immobilizer pilot light blinks
Keyless operation 1	Registration/Normal	Body integrated unit input value	When keyless is registered
Keyless operation 2	Clear/Normal	Body integrated unit input value	When keyless registration is deleted
CC Main Lamp	On/Off	CAN data input value	Cruise control switch on Reception from ECM and transmission to combination meter
CC Set Lamp	On/Off	CAN data input value	On when cruise control vehicle speed is set Reception from ECM and transmission to combination meter
SPORT Lamp	On/Off	CAN data input value	SPORT mode switch ON Reception from TCM and transmission to combination meter (only AT)
SPORT Blink	Blink/Off	CAN data input value	Blinks when there is an AT failure Reception from TCM and transmission to combination meter (only AT)
ATF Temperature Lamp	On/Off	CAN data input value	When ATF temperature rise (only AT)
ATF Blink	Blink/Off	CAN data input value	Blinks when there is an AT failure Reception from TCM and transmission to combination meter (only AT)
ECO Lamp (AT)	On/Off	CAN data input value	Not applicable
ECO Lamp (MT)	On/Off	CAN data input value	Not applicable
Tire diameter abnormal 1	On/Off	CAN data input value	Lit when FWD fuse is connected (4AT only)
Tire diameter abnormal 2	Blink/Off	CAN data input value	Blinks when the difference in rotation between front and rear wheels is 4% or more Reception from TCM and transmission to combination meter (only AT)
Shift Up Indication	UP/OFF	CAN data input value	ON when shift lever can be operated up (only AT)
Shift Down Indication	DOWN/OFF	CAN data input value	ON when shift lever can be operated down (only AT)
SPORT Shift (buzzer 1)	ON/OFF	CAN data input value	ON while the shift change prohibited warning buzzer is operating Reception from TCM and transmission to combination meter (only AT)

Items to be displayed	Unit of measure	Remarks	Index
SPORT Shift (buzzer 2)	ON/OFF	CAN data input value	ON when the ATF high temperature warning buzzer is operating Reception from TCM and transmission to combination meter (only AT)
ABS/VDC Judging	ABS/VDC	CAN data input value	Transmission from vehicle dynamic control (VDC) to high speed control module
Small Light SW	ON/OFF	CAN data output value	On when small light is illuminated
Headlamp	ON/OFF	CAN data output value	When headlight LO is ON
High Beam	ON/OFF	CAN data output value	When headlight HI is ON
Large diameter tire	Large diameter/others	CAN data output value	Large diameter when standard tire is 18 in. Reception from combination meter
Number of cylinders	4 cylinders/6 cylinders	CAN data input value	Display engine equipped
Cam shaft specification	SOHC/DOHC	CAN data input value	Display engine equipped
Turbo	Turbo/Non-turbo	CAN data input value	Display engine equipped
E/G displacement (2.5L)	2.5 L/OFF	CAN data input value	Display engine equipped
E/G displacement (3.0L)	3.0 L/OFF	CAN data input value	Display engine equipped
AT Vehicle ID Signal	AT model / MT model	CAN data input value	Display transmission equipped
Blower fan information	ON/OFF	CAN data input value	ON when blower fan is operating (always OFF for auto A/C equipped models)
Center display failure	OK/NG	CAN data input value	NG when there is a center display failure Reception from center display (NAVI monitor)
NAVI Failure	OK/NG	CAN data input value	NG when there is a navigation system failure Reception from Center Display
IE Bus failure	Can not use	CAN data input value	Reception from Center Display
Auto A/C failure	OK/NG	CAN data input value	NG when there is a failure in auto air conditioning system Reception from auto A/C module
EBD Warning Light	ON/OFF	CAN data input value	OK when EBD warning light is illuminated Reception from VDC/ABS and transmission to combination meter
ABS Warning Light	ON/OFF	CAN data input value	OK when ABS warning light is illuminated Reception from VDC/ABS and transmission to combination meter
VDC OFF flag	ON/OFF	CAN data input value	Vehicle dynamics control OFF SW is ON Reception from VDC/ABS and transmission to combination meter
VDC/ABS OK B	OK/NG	CAN data input value	NG when there is an error in VDC/ABS system Reception from VDC/ABS
Lighting I Switch Input	ON/OFF	Body integrated unit input value	ON when lighting switch, illumination is ON

Items to be displayed	Unit of measure	Remarks	Index
Lighting II Switch Input	ON/OFF	Body integrated unit input value	ON when lighting switch, headlight is ON
Dimmer Hi Switch Input	ON/OFF	Body integrated unit input value	ON when dimmer switch is Hi beam position
Dimmer Pass Switch Input	ON/OFF	Body integrated unit input value	ON when dimmer switch is passing position
Lighting I Lamp Output	ON/OFF	Body integrated unit output value	On when small light is illuminated
Lighting II Lamp Output	ON/OFF	Body integrated unit output value	ON when headlight is illuminated
Lighting Hi Lamp Output	ON/OFF	Body integrated unit output value	ON when Hi beam is illuminated
Front Fog Lamp Output	ON/OFF	Body integrated unit output value	ON when Front fog light is ON
DRL cancel output	ON/OFF	Body integrated unit output value	ON when lighting switch is “Headlight ON” and dimmer switch is “Hi beam” or “Passing” position
Power Supply Tr	ON/OFF	Body integrated unit output value	ON when lighting switch is “Head” position without inserting key in key cylinder
Spot map lamp output	ON/OFF	Body integrated unit output value	ON when spot map light is illuminated
Echo switch information	ON/OFF	CAN data output value	Not applicable
Off delay time	OFF, Short, Normal, Long	Body integrated unit setting items	Customize setting
Rr defogger op. mode	Continuous/Normal	Body integrated unit setting items	Customize setting
Security Alarm Setup	ON/OFF	Body integrated unit setting items	Customize setting
Impact Sensor Setup	ON/OFF	Body integrated unit setting items	Customize setting
Alarm delay setup	ON/OFF	Body integrated unit setting items	Customize setting
Lockout prevention	ON/OFF	Body integrated unit setting items	Customize setting
Impact sensor	Provided/None	Body integrated unit setting items	Customize setting
Answer-back buzzer setup	ON/OFF	Body integrated unit setting items	Customize setting
Hazard answer-back setup	ON/OFF	Body integrated unit setting items	Customize setting
Ans.-back Buzzer	Provided/None	Body integrated unit setting items	Customize setting
Auto locking	Provided/None	Body integrated unit setting items	Customize setting
Passive Alarm	ON/OFF	Body integrated unit setting items	Customize setting
Door open warning	ON/OFF	Body integrated unit setting items	Customize setting
Dome Light Alarm Setting	ON/OFF	Body integrated unit setting items	Customize setting
Map Light Setting	ON/OFF	Body integrated unit setting items	Customize setting
Belt Warning Switch	ON/OFF	Body integrated unit setting items	Customize setting
Map lamp 30 sec off record	Provided/None	Body integrated unit setting items	Customize setting
A/C ECM setting	Provided/None	Body integrated unit setting items	Customize setting
wiperdeicer	Provided/None	Body integrated unit setting items	Customize setting
Sedan/Wagon Setting	Sedan/wagon	Body integrated unit setting items	Customize setting
MT/AT Setting	MT/AT	Body integrated unit setting items	Customize setting
6MT Setting	6MT/other than 6MT	Body integrated unit setting items	Customize setting
DESTINATION SETTING	0 — 16	Body integrated unit setting items	—
Factory or Market setting	Factory/Market	Body integrated unit setting items	Customize setting

NOTE:
For details concerning the operation procedure, refer to “PC application help for Subaru Select Monitor”.

4. CONFIRM CURRENT SETTING.

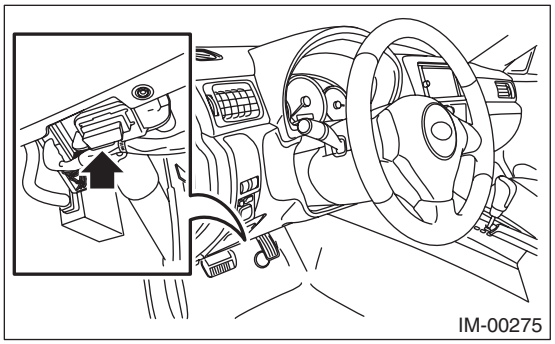
1) On «Main Menu» display, select {Each System Check}.
2) On «System Selection Menu» display, select {Integ. unit mode}.
3) On «Integ. unit mode failure diag» display, select {Current Data Display & Save}.
4) Using the scroll key, scroll the display screen up or down until the desired data is shown.
5) Display the following item and record the settings.

Required items for new registration (Except for system not equipped)

Item	Item to confirm				Remarks
Number of regist.	1	2	3	4	Number of registered keys
Off delay time	OFF	Long	Normal	Short	Setting for lighting off time
Rr defogger op. mode	Normal		Continuous		
Security Alarm Setup	ON		OFF		
Impact Sensor Setup	ON		OFF		Option setting
Alarm delay setup	ON		OFF		
Lockout prevention	ON		OFF		
Impact sensor	Yes		No		Option setting
Answer-back buzzer setup	ON		OFF		
Hazard answer-back setup	ON		OFF		
Ans.-back Buzzer	Yes		No		
Passive Alarm	ON		OFF		
Door open warning	Yes		No		
Dome Light Alarm Setting	ON		OFF		
Map Light Setting	ON		OFF		
Belt Warning Switch	ON		OFF		Switch the belt warning lighting and the buzzer sound.
Map lamp 30 sec off record	Yes		No		
A/C ECM setting	Yes		No		Model with auto A/C
Wiperdeicer	Yes		No		Option setting
Sedan/Wagon Setting	Sedan		Wagon		
MT/AT Setting	AT		MT		
6MT Setting	6MT		Other than 6MT		
Factory or Market setting	Factory		Market		Do not change to factory mode.

5. REGISTRATION BODY INTEGRATED UNIT (FUNCTION SETTING)

CAUTION:
Body integrated unit is core of LAN system, and also can select the function of all vehicle system control. It is possible to control the original functions of vehicle when registrations of body integrated unit and function setting are corresponded to vehicle equipment.
If registrations and function setting are different from vehicle equipment, vehicle system does not operate normally and diagnosis cannot be performed correctly. Pay attention to following item.
• Be sure to correspond registrations and function settings to vehicle equipment.
• Do not change the settings of vehicle improperly.
• Confirm key illumination does not blink or "Factory or Market setting" of body integrated unit registrations is "Market". If "Factory or Market setting" is set to "Factory," key illumination blinks when ignition key is turned ON, to notify that the settings are unconfirmed.
• Key illumination does not blink with ignition switch turned to ON and go off with door closed.
• Be sure to register immobilizer if body integrated unit is replaced with a new part. (models with immobilizer)
• Make a registration of immobilizer when the parts related to immobilizer have been replaced. Refer to the "PC application help for Subaru Select Monitor".
1) Connect SDI to data link connector located in the lower portion of the instrument panel (on the driver's side).


IM-00275

CAUTION:
Do not connect the scan tools other than the Subaru Select Monitor.
2) Start the PC.
3) Turn the ignition switch to ON and run the "PC application for Subaru Select Monitor".
4) On «Main Menu» display, select {Each System Check}.
5) On «System Selection Menu» display, select {Integ. unit mode}.
6) Click the [OK] button after the control module name {Integ. Unit} is displayed.
7) On «Integ. unit mode failure diag» display, select {Unit customizing}.
8) Change the setting with UP/DOWN key.

- List of body integrated unit registration item

NOTE:
Setting is different depending on the grade of vehicle.

Data	Initial setting	Registration	Remarks
Map lamp 30 sec off record	ON	ON	Set to OFF for models with door interlock switch in map light, ON for models without door interlock switch.
		OFF	
A/C ECM setting	OFF	ON	Set to «ON» in case of model with auto A/C. Set to «OFF» in case of model without auto A/C.
		OFF	
Wiperdeicer (Manufacuturer option)	OFF	ON	Be sure to set exactly according to vehicle equipment. ON signal does not output even when the switch is operated, if “OFF” is set.
		OFF	
Sedan/Wagon Setting	Wagon	Sedan	Be sure to set exactly according to vehicle model. This relates to door lock control.
		Wagon	
MT/AT Setting	AT	MT	Be sure to set exactly according to vehicle model. This relates to key interlock control, shift lock control.
		AT	
6MT Setting	Other than 6MT	6MT	Set 6MT for 6MT model, and set Other than 6MT for AT/5AT model.
		Other than 6MT	
Factory or Market setting	Factory	Factory	Be sure to set to “Market”. After setting, turn the ignition switch to OFF and settle the changed settings.
		Market	

CAUTION:
- **To perform normal operation of vehicle and diagnosis, The above settings must match the actual vehicle equipment.**
- **When body integrated unit is a new part or “Factory” mode, key illumination blinks to show equipment settings have not been completed. Check the detailed procedures of function setting.**
- **Be sure not to change Factory or Market setting except when installing a new body integrated unit.**

NOTE:
“Factory” mode:
- Body integrated unit has not been set yet. It can be recognized by key illumination blinking with ignition switch turned to ON.
- All replacement body integrated units are set to “Factory” mode. When replacing a body integrated unit, be sure to perform the registration operation.

“Market” mode:
- Each settings have been set. It can be recognized by key ring illumination coming on in concocting with room light and going off with ignition switch turned to ON.

9) Perform the Factory or Market setting. On the «ECM customizing" display screen of Subaru Select Monitor, select the {Factory or Market setting}.
10) Change the mode from Factory to Market and then turn the ignition switch to OFF.
11) Change the Subaru Select Monitor system selection to «Immobilizer» to register the immobilizer key. (models with immobilizer)
12) Perform the operation according to the "PC application help for Subaru Select Monitor".
13) When key registration is completed, "Do you want to register remote engine start?" is displayed. Perform registration only for equipped models.
14) Perform the User Customizing.
<Ref. to LAN(diag)-25, USER CUSTOMIZING, OPERATION, Subaru Select Monitor.>

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

6. CLEAR MEMORY MODE

1) On «Main Menu» display, select {Each System Check}.
2) On «System Selection Menu» display, select {Integ. unit mode}.
3) Press the [OK] key after the information of body integrated unit type is displayed.
4) On «Integ. unit mode failure diag» display, select {Clearing Memory} and press the [OK] key.

Display	Contents to be displayed
Clear Memory ?	Clear function of DTC and freeze frame data

5) When "Done" is shown on the display screen, turn the ignition switch to OFF.

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

7. FREEZE FRAME DATA

NOTE:
• Data stored at the time of trouble occurrence is shown on display.
• Freeze frame data will be memorized maximum to 20.
• If freeze frame data is not stored in memory correctly (caused by low power supply of body integrated unit), DTC will be displayed with "?" on the head of it in the Subaru Select Monitor display. This shows it may be an unreliable reading.

8. USER CUSTOMIZING

1) On «Main Menu» display, select {Each System Check}.
2) On «System Selection Menu» display, select {Integ. unit mode}.
3) On «Integ. unit mode failure diag» display, select {Unit Customizing}.
4) Change the setting with UP/DOWN key and set with the [OK] key.

- List of User Customizing item

Data	Initial setting value	Customize setting	Remarks
Off delay time	Long		Delay time below can be selected by setting.
		OFF	0 seconds
		Short	10 seconds
		Normal	20 seconds
		Long	30 seconds
Rr defogger op. mode	15 min.	15 min.	Wiper deicer stops in 15 minutes automatically after switch is turned to ON.
		Continuous	The wiper deicer activates for 15 minutes and turns inactive for 2 minutes repeatedly until the switch is turned OFF.
Security Alarm Setup	ON	ON	Security alarm (hazard, horn or siren) in active condition
		OFF	Security alarm in inactive condition
Impact Sensor Setup	OFF	ON	Workable when Impact Sensor Setup is set to “ON” Impact sensor function becomes activated.
		OFF	Impact sensor in inactive condition(Set to “OFF” in models without sensors.)
Alarm delay setup	ON		After the keyless lock operation, the alarm monitor starts after the following delay time has passed.
		ON	Delay time is 30 seconds.
		OFF	Delay time is 0 seconds.
Lockout prevention	ON	ON	Lockout prevention in active condition(The function does not operate if safety knob is locked by hand.)
		OFF	Lockout prevention in inactive condition
Impact sensor (OP)	OFF	ON	Vehicle is controlled in impact sensor equipped mode. (Make sure to set to OFF for models without the impact sensor. When “ON”, hazard, horn or siren become activated by keyless lock (alarm monitor start).)
		OFF	Vehicle is controlled in no impact sensor mode.

Data	Initial setting value	Customize setting	Remarks
Answer-back buzzer setup	ON	ON	When lock/unlock is selected by keyless entry system operated, hazard answer-back buzzer operates.
		OFF	When lock/unlock is selected by keyless entry system operated, answer-back buzzer does not sound.
Hazard answer-back setup	ON	ON	When lock/unlock is selected by keyless entry system operated, hazard answer-back buzzer operates.
		OFF	When lock/unlock is selected by keyless entry system operated, hazard answer-back does not operate.
Ans.-back Buzzer	ON	ON	Vehicle is controlled in answer-back buzzer equipped mode.
		OFF	Vehicle is controlled in answer-back buzzer non-equipped mode.(Make sure to set to “OFF” in models without answer back buzzers.)
Initial keyless setting	—	—	—
		Execution	Settings of keyless entry system are initialized.
Initial button setting	—	—	—
		Execution	Settings of each function are initialized.
Passive Alarm	OFF	ON	Setting only for North American models
		OFF	
Door open warning	ON	ON	If detecting door open for 20 minutes, room light, map light, and key ring illumination that are related to doors are turned off to prevent battery run-out.
		OFF	Room light, map light, key illumination and door warning light are not turned off.
Dome Light Alarm Setting	OFF	ON	The room light lights by being interlocked with the activation of the alarm.
		OFF	
Map Light Setting	ON	ON	Illuminates in accordance with the door interlocked room light.(models with sunroof)
		OFF	
Belt Warning Switch	ON	ON	When using normally
		OFF	Stop the belt warning buzzer beep and warning light illumination.

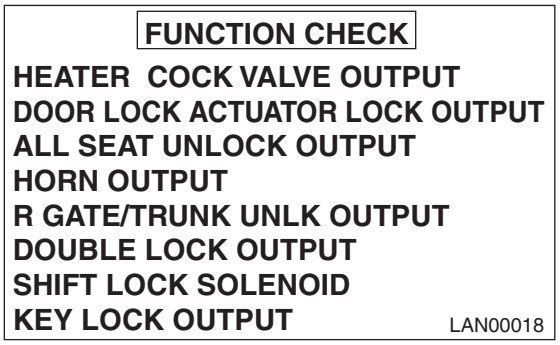
5) After setting, make sure that the setting changed in the {Current Data Display & Save} is same as vehicle equipment.

CAUTION:
- **The above settings must match the actual vehicle equipment.**
- **Do not change settings except for setting above while setting the functions.**
- **Be sure not to change Factory or Market setting except when installing a new body integrated unit.**

NOTE:
For details concerning the operation procedure, refer to “PC application help for Subaru Select Monitor”.

9. FUNCTION CHECK

In order to check the body integrated unit function, inspect the body integrated unit and actuator using Subaru Select Monitor without operating switches.
1) On «Main Menu» display, select {Each System Check}.
2) On «System Selection Menu» display, select {Integ. unit mode}.
3) On «Integ. unit mode failure diag» display, select {Function check}.
4) Select the item to be operated on the «Function check» display screen with “UP/Down key” and press the [Next] button.



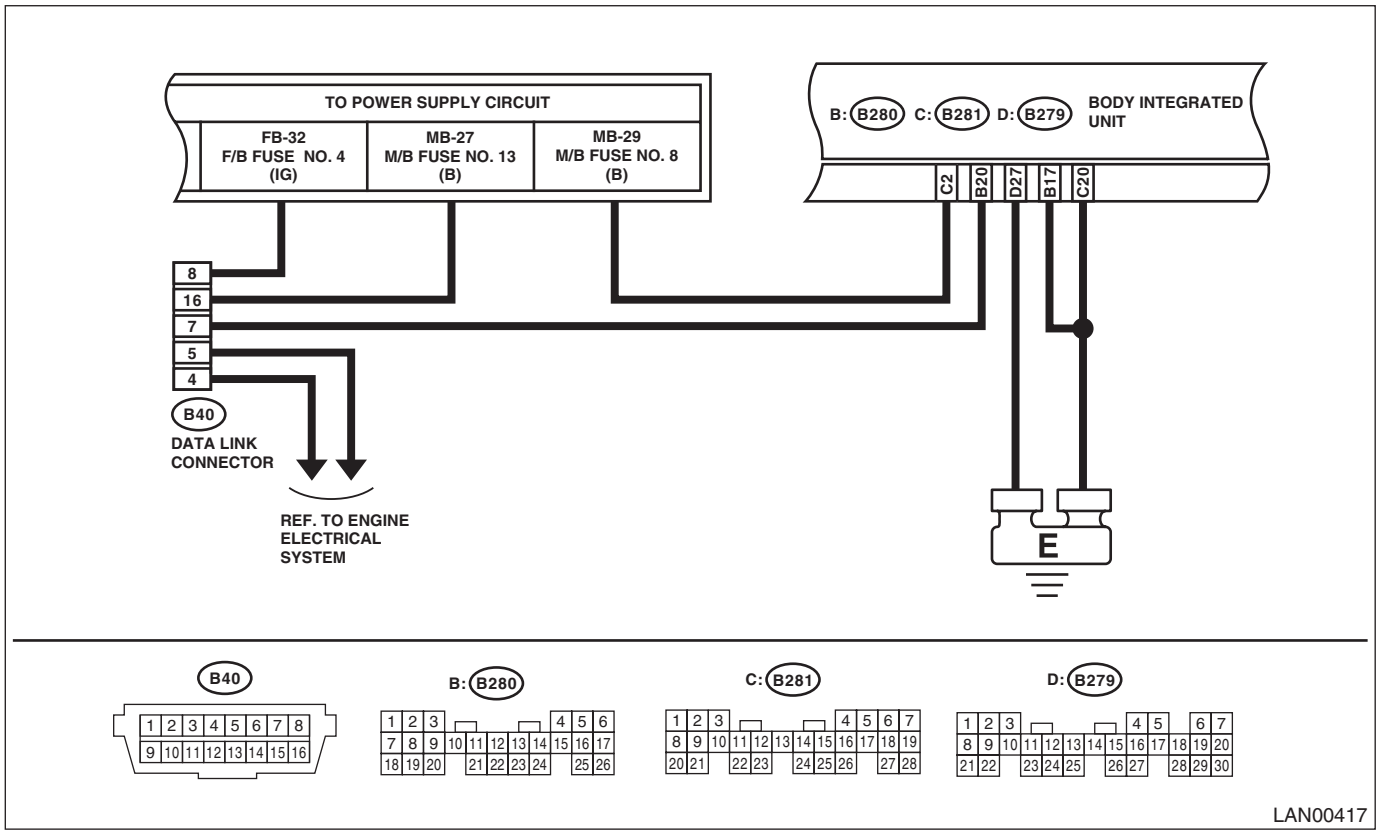
5) Pressing [Next] starts, [End] cancels the operation and [OK] returns to the System Operation Check Mode display screen.

NOTE:
If not equipped (based on area or condition), process will not go on.

B: INSPECTION

1. COMMUNICATION FOR INITIALIZING IMPOSSIBLE

DETECTING CONDITION:
Defective harness connector
TROUBLE SYMPTOM:
Not communicable with Subaru Select Monitor.
WIRING DIAGRAM:



LAN00417

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 Integ. unit mode using 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 battery terminal?	Repair or tighten the battery terminal.	Go to step **4**.
4	**CHECK COMMUNICATION OF SUBARU SELECT MONITOR.** 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?	Go to step **7**.	Go to step **5**.

	Step	Check	Yes	No
5	**CHECK COMMUNICATION OF SUBARU SELECT MONITOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the body integrated unit connector. 3) Turn the ignition switch to ON. 4) Check whether communication to other systems can be executed normally.	Is the system name displayed?	Go to step **7**.	Go to step **6**.
6	**CHECK HARNESS CONNECTOR BETWEEN EACH CONTROL MODULE AND SUBARU SELECT MONITOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the body integrated unit connector. 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 Subaru Select Monitor.
7	**CHECK OUTPUT SIGNAL TO BODY INTEGRATED UNIT.** 1) Turn the ignition switch to ON. 2) Measure the voltage between body integrated unit 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 Subaru Select Monitor.
8	**CHECK HARNESS CONNECTOR BETWEEN BODY INTEGRATED UNIT AND DATA LINK CONNECTOR.** Measure the resistance between body integrated unit and data link connector. ***Connector & terminal*** ***(B40) No. 7 — (B280) No. 20:***	Is the resistance less than 1 Ω?	Go to step **9**.	Repair the harness and connector between body integrated unit and Subaru Select Monitor.
9	**CHECK BACK-UP FUSE.** Check that back-up fuse is not blown out, or check that it is inserted.	Is back-up fuse OK?	Go to step **10**.	Replace the back-up fuse, or insert it into the fuse holder.
10	**CHECK POWER SUPPLY CIRCUIT.** Measure the voltage between body integrated unit connector and chassis ground. ***Connector & terminal*** ***(B281) No. 2 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **11**.	Repair the open circuit of harness between body integrated unit and battery.
11	**CHECK HARNESS CONNECTOR 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 of harness between the body integrated unit and chassis ground. ***Connector & terminal*** ***(B280) No. 20 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **12**.	Repair the poor contact of harness between body integrated unit and ground.
12	**CHECK POOR CONTACT OF CONNECTOR.**	Is there poor contact of the control unit ground and the Subaru Select Monitor?	Repair the poor contact of connector.	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>

CAUTION:
For model with immobilizer, immobilizer registration work is necessary when the body integrated unit replaced. For details, refer to the "PC application help for Subaru Select Monitor".

7. Read Diagnostic Trouble Code (DTC)

A: OPERATION

For details concerning DTC reading procedure, refer to “Subaru Select Monitor”. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>

8. Clear Memory Mode

A: OPERATION

For details concerning DTC clear operation, refer to “Subaru Select Monitor”. <Ref. to LAN(diag)-24, CLEAR MEMORY MODE, OPERATION, Subaru Select Monitor.>

9. Read Current Data

A: OPERATION

1) On «Main Menu» display, select {Each System Check}.
2) On «System Selection Menu» display, select {Integ. unit mode}.
3) On «Integ. unit mode failure diag» display, select {Current Data Display & Save}.
4) Using the scroll key, scroll the display screen up or down until the desired data is shown.
<Ref. to LAN(diag)-16, DISPLAY OF DATA, OPERATION, Subaru Select Monitor.> <Ref. to LAN(diag)-21, CONFIRM CURRENT SETTING., OPERATION, Subaru Select Monitor.>

10.User Customizing

A: OPERATION

For detailed procedures of User Customizing, refer to “SUBARU SELECT MONITOR”. <Ref. to LAN(diag)-25, USER CUSTOMIZING, OPERATION, Subaru Select Monitor.>

11.List of Diagnostic Trouble Code (DTC)

A: LIST

DTC	Item	Content of diagnosis	Index
B1100	Integ. Unit System Error	Memory read out error in body integrated unit	<Ref. to LAN(diag)-37, DTC B1100 INTEG. UNIT SYSTEM ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B1101	BATT p/supply malfunction cont.	• Open or short in battery power supply control circuit • Voltage malfunction caused by poor contact	<Ref. to LAN(diag)-38, DTC B1101 BATT P/SUPPLY MALFUNCTION CONT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B1102	BATT p/supply malfunction backup	Voltage malfunction caused by poor contact of battery power supply backup circuits	<Ref. to LAN(diag)-40, DTC B1102 BATT P/SUPPLY MALFUNCTION BACKUP, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B1103	Ignition power failure	Voltage malfunction caused by poor contact of IGN power supply circuits	<Ref. to LAN(diag)-42, DTC B1103 IGNITION POWER FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B1104	ACC power failure	Voltage malfunction caused by poor contact of ACC power supply circuits	<Ref. to LAN(diag)-44, DTC B1104 ACC POWER FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B1105	Key interlock circuit abnormal	GND-output short of key interlock circuit	<Ref. to LAN(diag)-46, DTC B1105 KEY INTERLOCK CIRCUIT ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B1106	shift lock circuit Failure	Open or power supply-output short, GND-output short in shift lock circuit	<Ref. to LAN(diag)-48, DTC B1106 SHIFT LOCK CIRCUIT FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U1201	CAN-HS counter abnormal	Communication is unstable because of high speed CAN line communication error.	<Ref. to LAN(diag)-50, DTC U1201 CAN-HS COUNTER ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U1202	CAN-HS bus off	Integrated unit communication is shut down because of high speed CAN communication error.	<Ref. to LAN(diag)-54, DTC U1202 CAN-HS BUS OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U1211	CAN-HS ECM data abnormal	Received error data from ECM.	<Ref. to LAN(diag)-57, DTC U1211 CAN-HS ECM DATA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U1212	CAN-HS TCM data abnormal	Received error data from TCM.	<Ref. to LAN(diag)-59, DTC U1212 CAN-HS TCM DATA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U1213	CAN-HS VDC/ABS data abnormal	Received error data from VDC/ABS unit.	<Ref. to LAN(diag)-61, DTC U1213 CAN-HS VDC/ABS DATA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U1221	CAN-HS ECM no-receive data	Not received data from ECM.	<Ref. to LAN(diag)-63, DTC U1221 CAN-HS ECM NO-RECEIVE DATA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U1222	CAN-HS TCM No-Receive Data	Not received data from TCM.	<Ref. to LAN(diag)-66, DTC U1222 CAN-HS TCM NO-RECEIVE DATA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U1223	CAN-HS VDC/ABS no-receive data	Not received data from VDC/ABS CM.	<Ref. to LAN(diag)-68, DTC U1223 CAN-HS VDC/ABS NO-RECEIVE DATA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U1300	CAN-LS malfunction	Open or short in low speed CAN circuit	<Ref. to LAN(diag)-70, DTC U1300 CAN-LS MALFUNCTION, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

DTC	Item	Content of diagnosis	Index
U1301	CAN-LS counter abnormal	Communication is unstable because of low speed CAN communication error.	<Ref. to LAN(diag)-73, DTC U1301 CAN-LS COUNTER ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U1302	CAN-LS bus off	Integrated unit communication is shut down because of low speed CAN communication error.	<Ref. to LAN(diag)-76, DTC U1302 CAN-LS BUS OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U1311	CAN-LS meter unit data abnormal	Received error data from meter.	<Ref. to LAN(diag)-79, DTC U1311 CAN-LS METER UNIT DATA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U1321	CAN-LS meter no-receive data	Not received data from meter.	<Ref. to LAN(diag)-80, DTC U1321 CAN-LS METER NO-RECEIVE DATA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B1401	M Collation NG	Immobilizer related malfunction	<Ref. to IM(diag)-15, List of Diagnostic Trouble Code (DTC).>
B1402	Immobilizer Key Collation NG	Immobilizer related malfunction	<Ref. to IM(diag)-15, List of Diagnostic Trouble Code (DTC).>
B1403	E/G request NG	Immobilizer related malfunction	<Ref. to IM(diag)-15, List of Diagnostic Trouble Code (DTC).>
B1500	Keyless UART com. Malfunction	Open or short circuit in keyless UART circuit	<Ref. to LAN(diag)-82, DTC B1500 KEYLESS UART COM. MALFUNCTION, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

1. DTC TABLE

NOTE:
When more than two DTC codes are recorded, referring to their combination will make it easy to identify the possible cause. Refer to the list for typical examples.

DTC to Check	Diagnostic Code that was displayed.				Probable cause
	Body integrated unit	ECM	TCM	VDC/ABS CM	
B1100 <Ref. to LAN(diag)-37, DTC B1100 INTEG. UNIT SYSTEM ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	B1100	—	—	—	There could be a problem in the body integrated unit.
U1221 <Ref. to LAN(diag)-63, DTC U1221 CAN-HS ECM NO-RECEIVE DATA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	U1221	—	P1718	C0047 C0140	It is possible that the ECM is faulty.
U1222 <Ref. to LAN(diag)-66, DTC U1222 CAN-HS TCM NO-RECEIVE DATA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	U1222	U0101	—	C0047 C0140	It is possible that the TCM is faulty.
U1223 <Ref. to LAN(diag)-68, DTC U1223 CAN-HS VDC/ABS NO-RECEIVE DATA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	U1223	U0122	P1718	—	It is possible that the VDC/ABS CM is faulty.
U1321 <Ref. to LAN(diag)-80, DTC U1321 CAN-LS METER NO-RECEIVE DATA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	U1321	—	—	—	It is possible that the combination meter is faulty.
B1500 <Ref. to LAN(diag)-82, DTC B1500 KEYLESS UART COM. MALFUNCTION, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	B1500	—	—	—	It's possible that there is an internal problem in the keyless entry control module, or a problem in the communication line.

12.Diagnostic Procedure with Diagnostic Trouble Code (DTC)

A: DTC B1100 INTEG. UNIT SYSTEM ERROR

DTC DETECTING CONDITION:
Memory read out error in body integrated unit
TROUBLE SYMPTOM:
LAN communication immobilizer function may not be executed normally.

	Step	Check	Yes	No
1	**CHECK DTC.** Check DTC indicated by body integrated unit. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is B1100 a current malfunction?	Go to step **2**.	Temporary EEPROM access error occurred.
2	**CHECK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the body integrated unit connector. 3) Connect the disconnected connectors. 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is B1100 a current malfunction?	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>	Temporary EEPROM access error occurred.

B: DTC B1101 BATT P/SUPPLY MALFUNCTION CONT

DTC DETECTING CONDITION:

- Open or short in battery power supply control circuit
- Voltage malfunction caused by poor contact

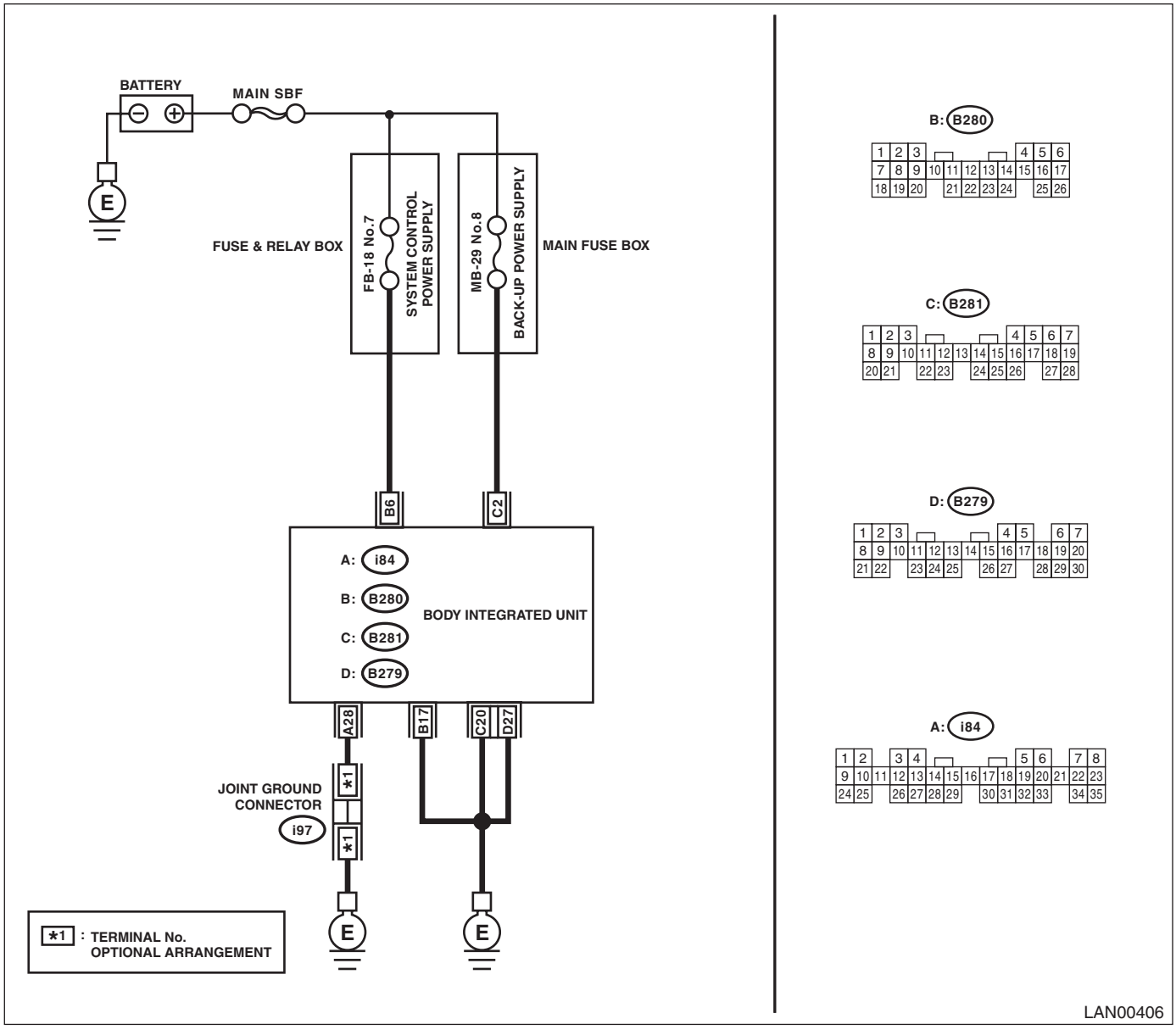
TROUBLE SYMPTOM:

Each function stops operation.

NOTE:

- When B1102 BATT p/supply (backup) malfunction is output at the same time, all the function of body integrated unit may not operate.
- B1101 may input when the battery run-out occurs.

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is B1101 a current malfunction?	Go to step **2**.	Go to step **5**.

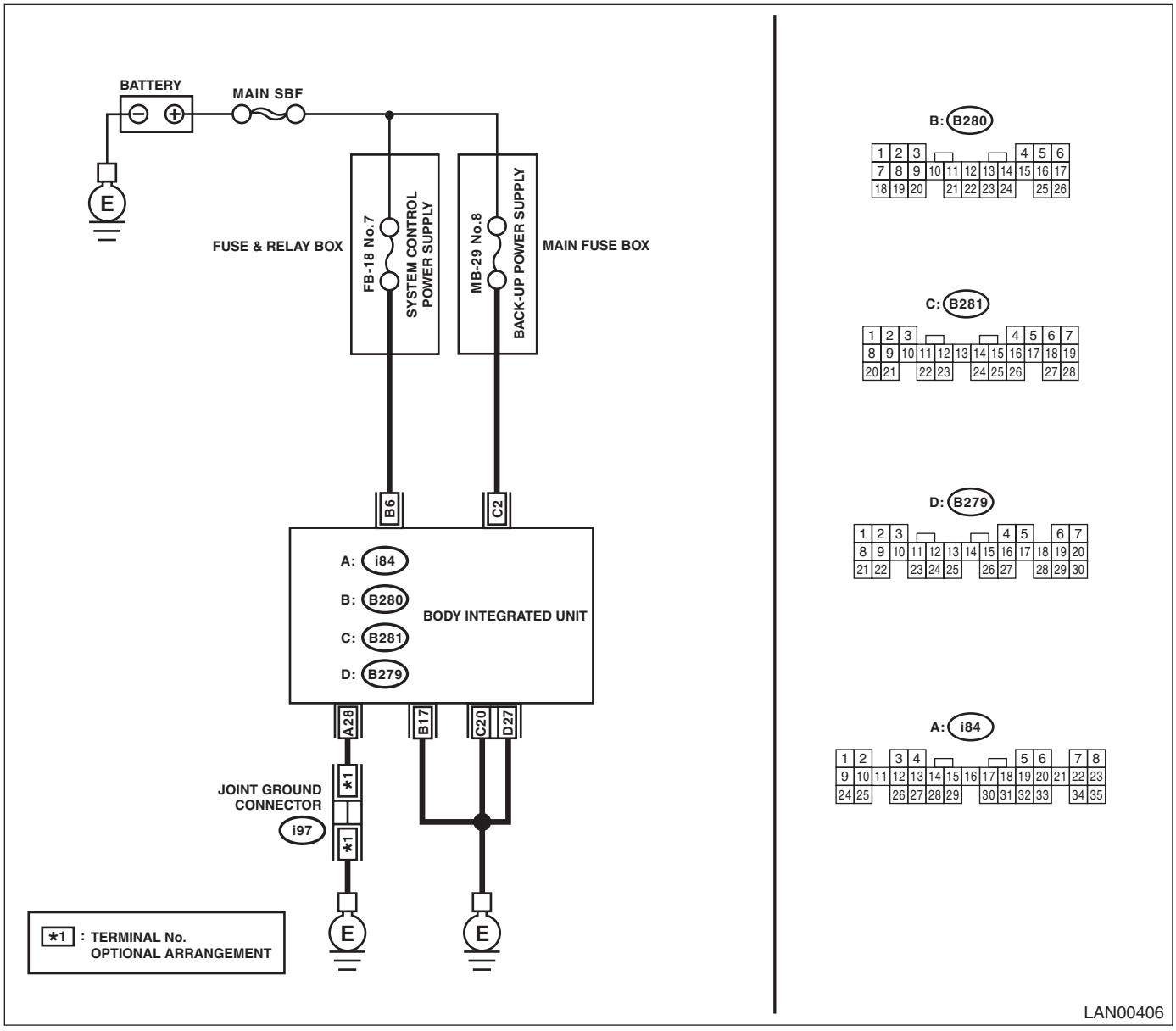
	Step	Check	Yes	No
2	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from body integrated unit and reconnect. 3) Wait approx. 2 minutes. 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is B1101 a current malfunction?	Go to step **3**.	Go to step **5**.
3	**CHECK FUSE.** 1) Turn the ignition switch to OFF. 2) Inspect the fuse.	Is the fuse OK?	Go to step **4**.	Replace the defective fuse.
4	**CHECK HARNESS.** 1) Disconnect the body integrated unit connector (B280). 2) Measure the voltage between body integrated unit connector and chassis ground using tester. ***Connector & terminal*** ***(B280) No. 6 (+) — Chassis ground (–):***	Is the voltage 8.5 — 16.5 V?	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>	Repair or replace the open or shorted circuit between body integrated unit and fuse.
5	**CHECK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the body integrated unit connector (B280).	Is there poor contact of connector?	Repair or replace the poor contact of connector.	A temporary change of voltage occurred.

C: DTC B1102 BATT P/SUPPLY MALFUNCTION BACKUP

DTC DETECTING CONDITION:
Voltage malfunction caused by poor contact of battery power supply backup circuits
TROUBLE SYMPTOM:
No influence.

NOTE:
- When B1101 BATT p/supply (cont.) malfunction are output at the same time, all function of body integrated unit may not operate.
- B1101 may input when the battery run-out occurs.

WIRING DIAGRAM:



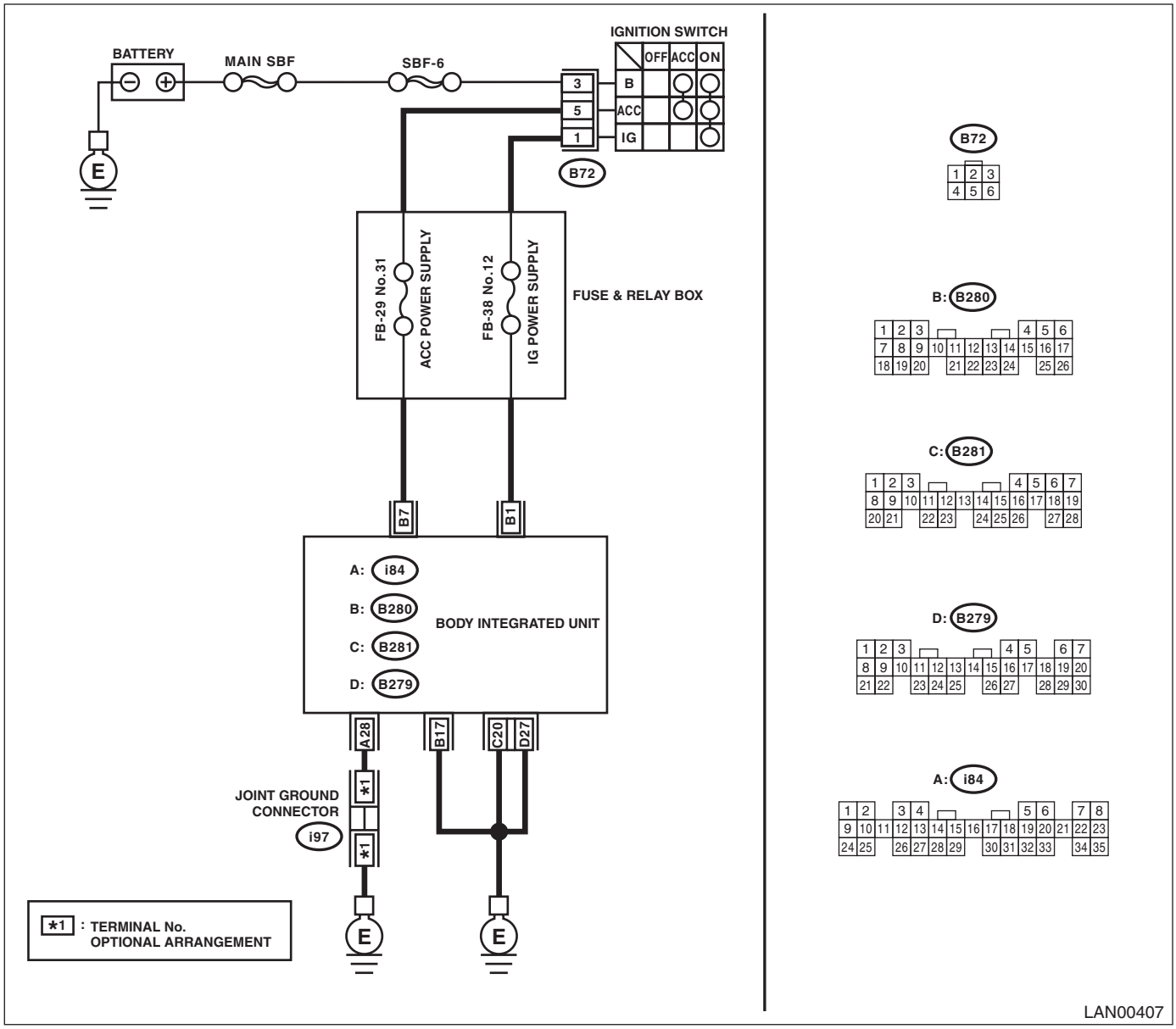
Step		Check	Yes	No
1	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is B1102 a current malfunction?	Go to step **2**.	Go to step **5**.

	Step	Check	Yes	No
2	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from body integrated unit and reconnect. 3) Wait approx. 2 minutes. 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is B1102 a current malfunction?	Go to step **3**.	Go to step **5**.
3	**CHECK FUSE.** 1) Turn the ignition switch to OFF. 2) Inspect the fuse.	Is the fuse OK?	Go to step **4**.	Replace the defective fuse.
4	**CHECK HARNESS.** 1) Disconnect the body integrated unit connector (B281). 2) Measure the voltage between body integrated unit connector and chassis ground using tester. ***Connector & terminal*** ***(B281) No. 2 (+) — Chassis ground (–):***	Is the voltage 8.5 — 16.5 V?	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>	Repair or replace the open or shorted circuit between body integrated unit and fuse.
5	**CHECK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the body integrated unit connector (B280).	Is there poor contact of connector?	Repair or replace the poor contact of connector.	A temporary change of voltage occurred.

D: DTC B1103 IGNITION POWER FAILURE

DTC DETECTING CONDITION:
Voltage malfunction caused by poor contact of IGN power supply circuits
TROUBLE SYMPTOM:
Error related to LAN system will not be detected.

NOTE:
B1103 may output when the ignition switch turns to ON with the weak battery condition.
WIRING DIAGRAM:



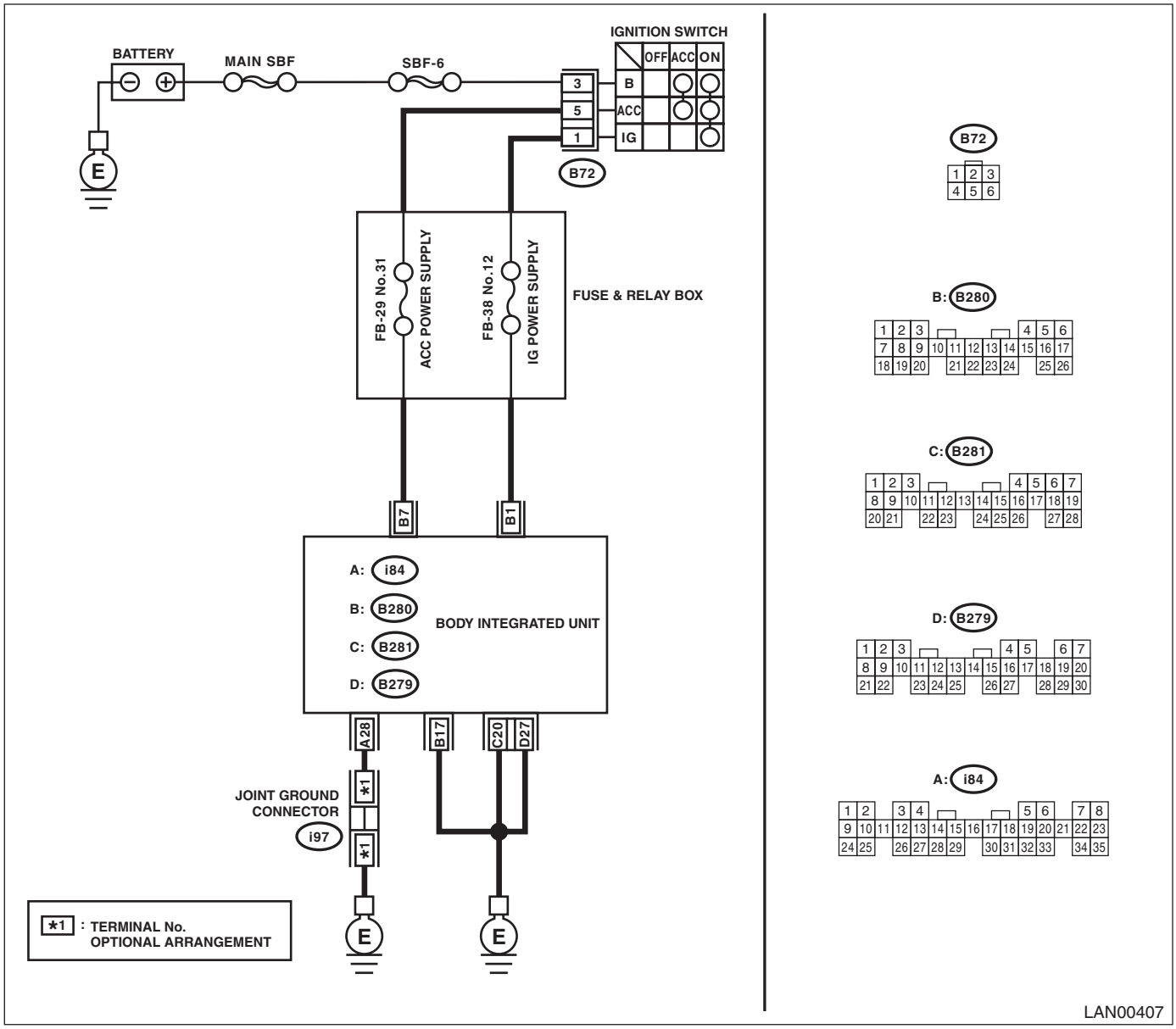
Step		Check	Yes	No
1	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is B1103 a current malfunction?	Go to step **2**.	Go to step **5**.

	Step	Check	Yes	No
2	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from body integrated unit and reconnect. 3) Turn the ignition switch to ON. 4) Wait approx. 2 minutes. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is B1103 a current malfunction?	Go to step **3**.	Go to step **5**.
3	**CHECK FUSE.** 1) Turn the ignition switch to OFF. 2) Inspect the fuse.	Is the fuse OK?	Go to step **4**.	Replace the defective fuse.
4	**CHECK HARNESS.** 1) Disconnect the body integrated unit connector (B280). 2) Turn the ignition switch to ON. 3) Measure the voltage between body integrated unit connector and chassis ground using tester. ***Connector & terminal*** ***(B280) No. 1 (+) — Chassis ground (–):***	Is the voltage 8.5 — 16.5 V?	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>	Repair or replace the open or shorted circuit between body integrated unit and fuse.
5	**CHECK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the body integrated unit connector (B280).	Is there poor contact of connector?	Repair or replace the poor contact of connector.	A temporary change of voltage occurred.

E: DTC B1104 ACC POWER FAILURE

DTC DETECTING CONDITION:
Voltage malfunction caused by poor contact of ACC power supply circuits
TROUBLE SYMPTOM:
Does not exist.

NOTE:
B1104 may output when the ignition switch turns to ACC with the weak battery condition.
WIRING DIAGRAM:

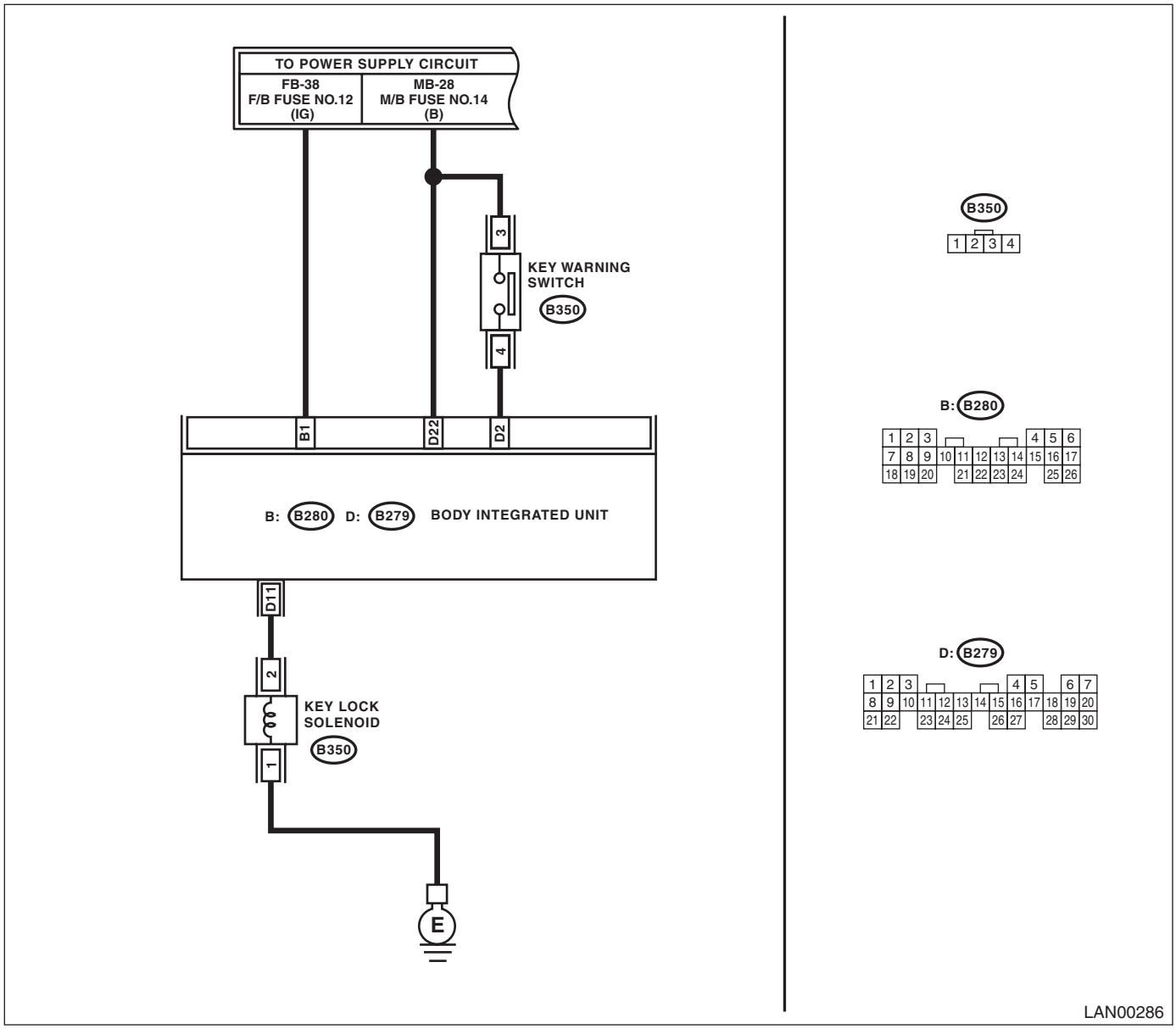


Step		Check	Yes	No
1	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is B1104 a current malfunction?	Go to step **2**.	Go to step **5**.

	Step	Check	Yes	No
2	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from body integrated unit and reconnect. 3) Turn the ignition switch to ACC. 4) Wait approx. 2 minutes. 5) Turn the ignition switch to ON. 6) Read the DTC of body integrated unit using Subaru Select Monitor.	Is B1104 a current malfunction?	Go to step **3**.	Go to step **5**.
3	**CHECK FUSE.** 1) Turn the ignition switch to OFF. 2) Inspect the fuse.	Is the fuse OK?	Go to step **4**.	Replace the defective fuse.
4	**CHECK HARNESS.** 1) Disconnect the body integrated unit connector (B280). 2) Turn the ignition switch to ACC. 3) Measure the voltage between body integrated unit connector and chassis ground using tester. ***Connector & terminal*** ***(B280) No. 7 (+) — Chassis ground (–):***	Is the voltage 8.5 — 16.5 V?	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>	Repair or replace the open or shorted circuit between body integrated unit and fuse.
5	**CHECK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the body integrated unit connector (B280).	Is there poor contact of connector?	Repair or replace the poor contact of connector.	A temporary change of voltage occurred.

F: DTC B1105 KEY INTERLOCK CIRCUIT ABNORMAL

DTC DETECTING CONDITION:
Ground short of key interlock circuit
TROUBLE SYMPTOM:
Key interlock does not keep lock condition.
WIRING DIAGRAM:



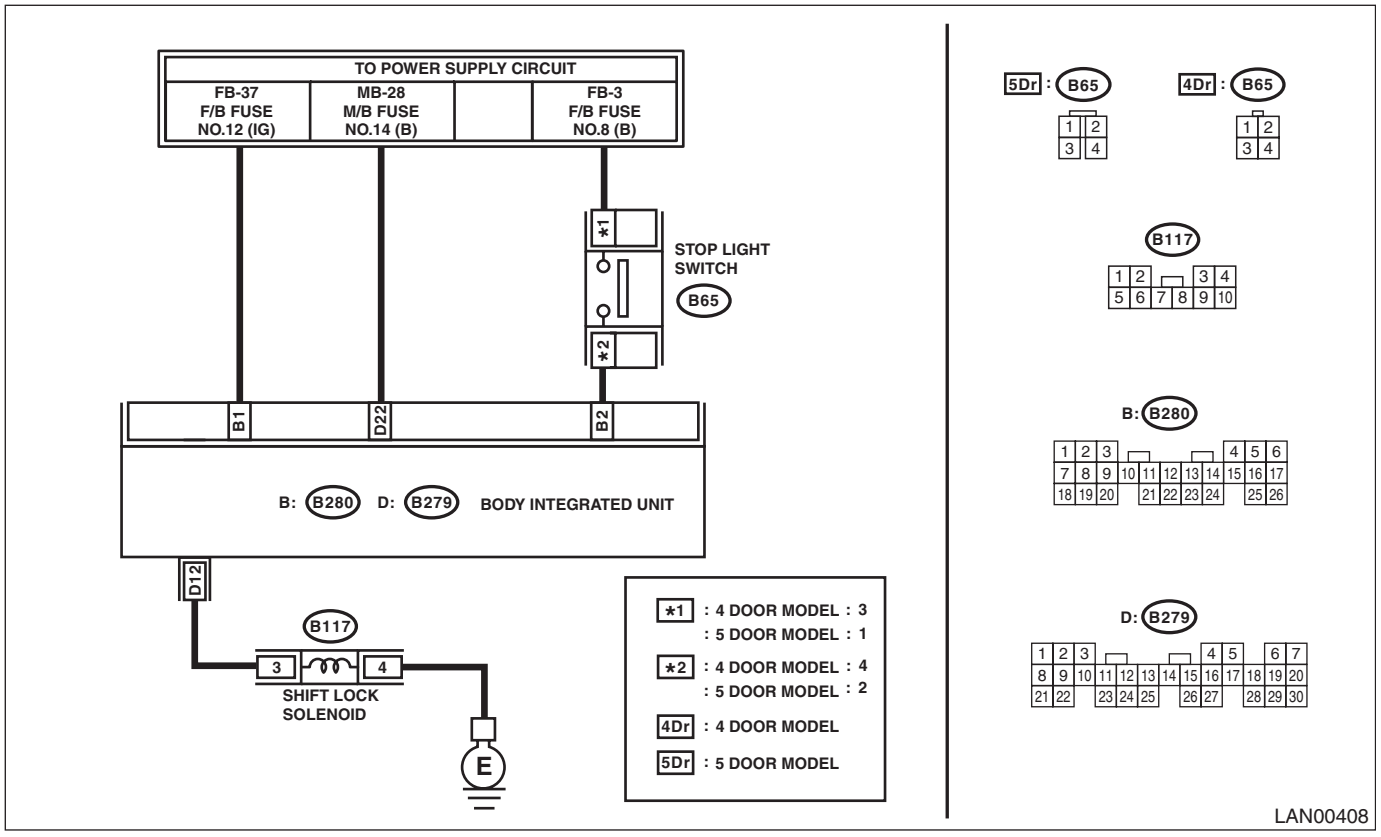
Step		Check	Yes	No
1	**CHECK DTC.** 1) Insert the ignition key. 2) Shift to the Neutral range. 3) Turn the ignition switch to ON. 4) Read the DTC of body integrated unit using Subaru Select Monitor.	Is B1105 a current malfunction?	Go to step **2**.	Go to step **8**.

	Step	Check	Yes	No
2	**CHECK DTC.** 1) Remove the ignition key. 2) Disconnect the key lock solenoid connector (B350) and body integrated unit connector (B279). 3) Connect the disconnected connectors. 4) Insert the key and shift into Neutral. 5) Turn the ignition switch to ON. 6) Read the DTC of body integrated unit using Subaru Select Monitor.	Is B1105 a current malfunction?	Go to step **3**.	Go to step **8**.
3	**CHECK KEY LOCK SOLENOID.** 1) Turn the ignition switch to OFF. 2) Disconnect the key lock solenoid connector (B350). 3) Measure the resistance between the key lock solenoid connector. ***Connector & terminal*** ***(B350) No. 1 — No. 2:***	Is the resistance 12 — 14.5 Ω?	Go to step **4**.	Replace the key lock solenoid.
4	**CHECK KEY LOCK SOLENOID.** Connect the battery terminal to key lock solenoid. ***Terminals*** ***(B350) No. 2 — positive terminal:*** ***(B350) No. 1 — ground terminal:***	Is the solenoid activated and then key locked?	Go to step **5**.	Replace the key lock solenoid.
5	**CHECK HARNESS.** 1) Disconnect the body integrated unit connector (B279). 2) Measure the resistance between body integrated unit and key lock solenoid using tester. ***Connector & terminal*** ***(B350) No. 2 — (B279) No. 11:***	Is the resistance less than 10 Ω?	Go to step **6**.	Repair or replace the open circuit of harness.
6	**CHECK HARNESS.** Measure the resistance between body integrated unit and chassis ground using tester. ***Connector & terminal*** ***(B279) No. 11 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **7**.	Repair or replace the short circuit of the harness.
7	**CHECK HARNESS.** 1) Turn the ignition switch to ON. 2) Measure the voltage between body integrated unit and chassis ground using tester. ***Connector & terminal*** ***(B279) No. 11 (+) — Chassis ground (–):***	Is the voltage 1.5 V or more?	Repair or replace the short circuit of the harness.	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>
8	**CHECK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the body integrated unit connector (B279) and key lock solenoid connector (B350).	Is there poor contact at disconnected connector terminal?	Repair the terminal where poor contact exists, or replace harness.	It is possible that temporary poor contact occurs.

G: DTC B1106 SHIFT LOCK CIRCUIT FAILURE

DTC DETECTING CONDITION:
Shift lock circuit is open or shorted.
TROUBLE SYMPTOM:
Shift lock does not be released or remain locked.

NOTE:
P0801 may input simultaneously.
WIRING DIAGRAM:

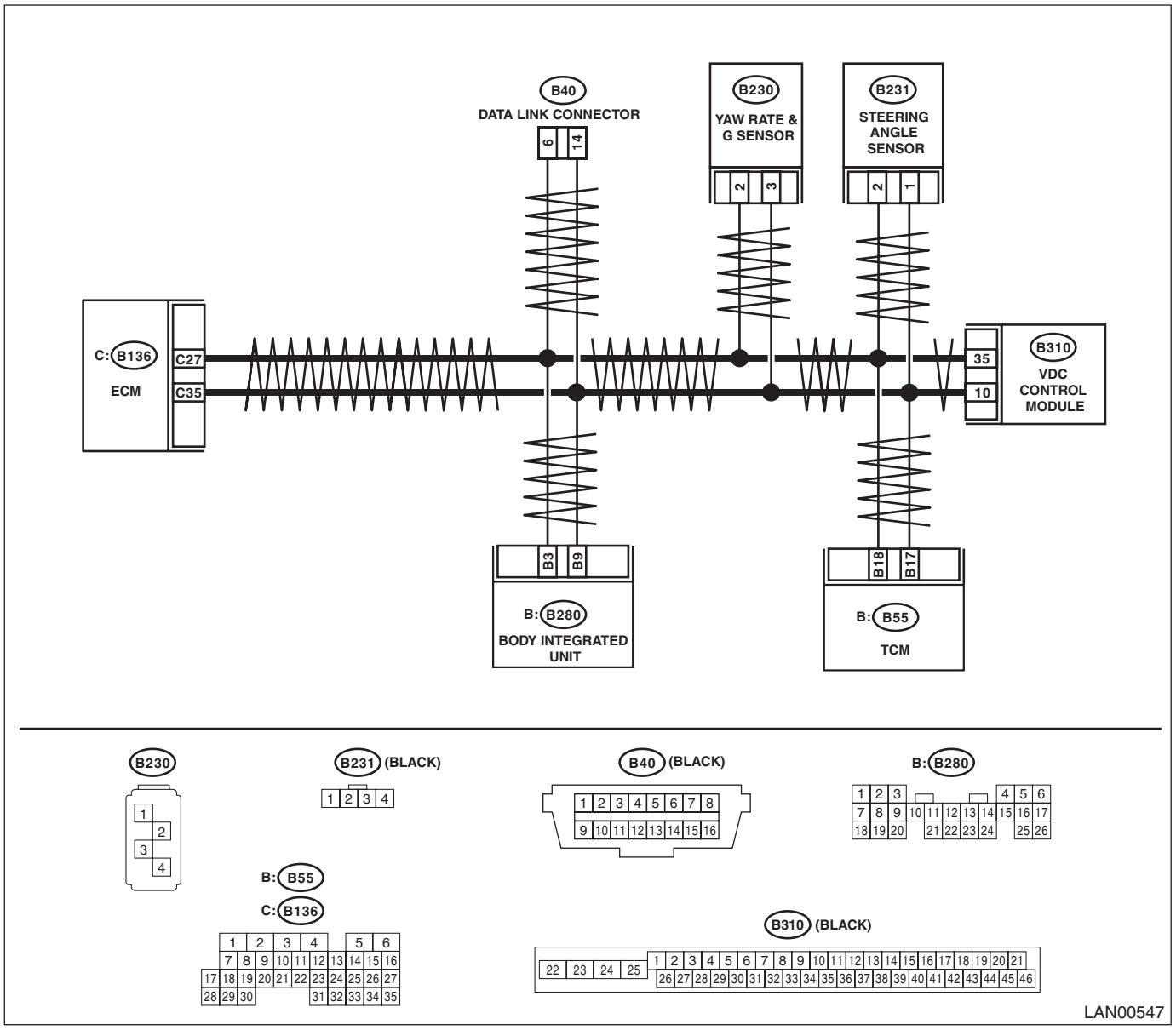


Step		Check	Yes	No
1	**CHECK DTC.** 1) Turn the ignition switch to ON. 2) Keep the Parking range for approx. 5 seconds. 3) Read the DTC of body integrated unit using Subaru Select Monitor.	Is B1106 a current malfunction?	Go to step **2**.	Go to step **8**.
2	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Disconnect the body integrated unit connector (B279) and shift lock solenoid connector (B117). 3) Connect the disconnected connectors. 4) Turn the ignition switch to ON, then keep the Parking range for approx. 5 seconds. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is B1106 a current malfunction?	Go to step **3**.	Go to step **8**.

	Step	Check	Yes	No
3	**CHECK HARNESS.** 1) Turn the ignition switch to OFF. 2) Disconnect the shift lock solenoid connector (B117). 3) Measure the resistance between shift lock solenoid and chassis ground using tester. ***Connector & terminal*** ***(B117) No. 4 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **4**.	Repair the open circuit of harness or replace harness.
4	**CHECK SHIFT LOCK SOLENOID.** Measure the resistance between the shift lock solenoid connector. ***Connector & terminal*** ***(B117) No. 4 — No. 3:***	Is the resistance 19 — 25 Ω?	Go to step **5**.	Replace the shift lock solenoid.
5	**CHECK SHIFT LOCK SOLENOID.** Connect the battery terminal to shift lock solenoid. ***Terminals*** ***(B117) No. 3 — positive terminal:*** ***(B117) No. 4 — ground terminal:***	Is the solenoid activated, and then the shift lock released?	Go to step **6**.	Replace the shift lock solenoid.
6	**CHECK HARNESS.** 1) Disconnect the body integrated unit connector (B279). 2) Measure the resistance between body integrated unit connector (B279) and chassis ground. ***Connector & terminal*** ***(B279) No. 12 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **7**.	Repair the short circuit of harness or replace harness.
7	**CHECK HARNESS.** Measure the resistance between body integrated unit connector (B279) and shift lock solenoid (B117). ***Connector & terminal*** ***(B117) No. 3 — (B279) No. 12:***	Is the resistance less than 10 Ω?	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>	Repair the open circuit of harness or replace harness.
8	**CHECK DTC.** 1) Connect the disconnected connectors. 2) Turn the ignition switch to ON. 3) With Parking range, depress the brake pedal and keep it at depressed condition. 4) Read the DTC of body integrated unit using Subaru Select Monitor.	Is B1106 a current malfunction?	Go to step **9**.	Go to step **10**.
9	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Disconnect the body integrated unit connector (B279) and shift lock solenoid connector (B117). 3) Connect the disconnected connectors. 4) Turn the ignition switch to ON. 5) Shift into Parking range, then depress the brake pedal. 6) Read the DTC of body integrated unit using Subaru Select Monitor.	Is B1106 a current malfunction?	Go to step **4**.	Go to step **10**.
10	**CHECK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the body integrated unit connector (B279) and shift lock solenoid connector (B117).	Is there poor contact of connector terminal?	Repair the poor contact of the terminal or replace the harness.	It is possible that temporary poor contact occurs.

H: DTC U1201 CAN-HS COUNTER ABNORMAL

DTC DETECTING CONDITION:
Communication is unstable because of high speed CAN communication error.
TROUBLE SYMPTOM:
Malfunction indicator light illuminates.
WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK DTC.** Read all DTCs using the Subaru Select Monitor. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is there U1202, or any DTC other than for the body integrated unit?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK DTC.** Check DTC indicated by body integrated unit.	Is U1201 a current malfunction?	Go to step **3**.	Go to step **14**.

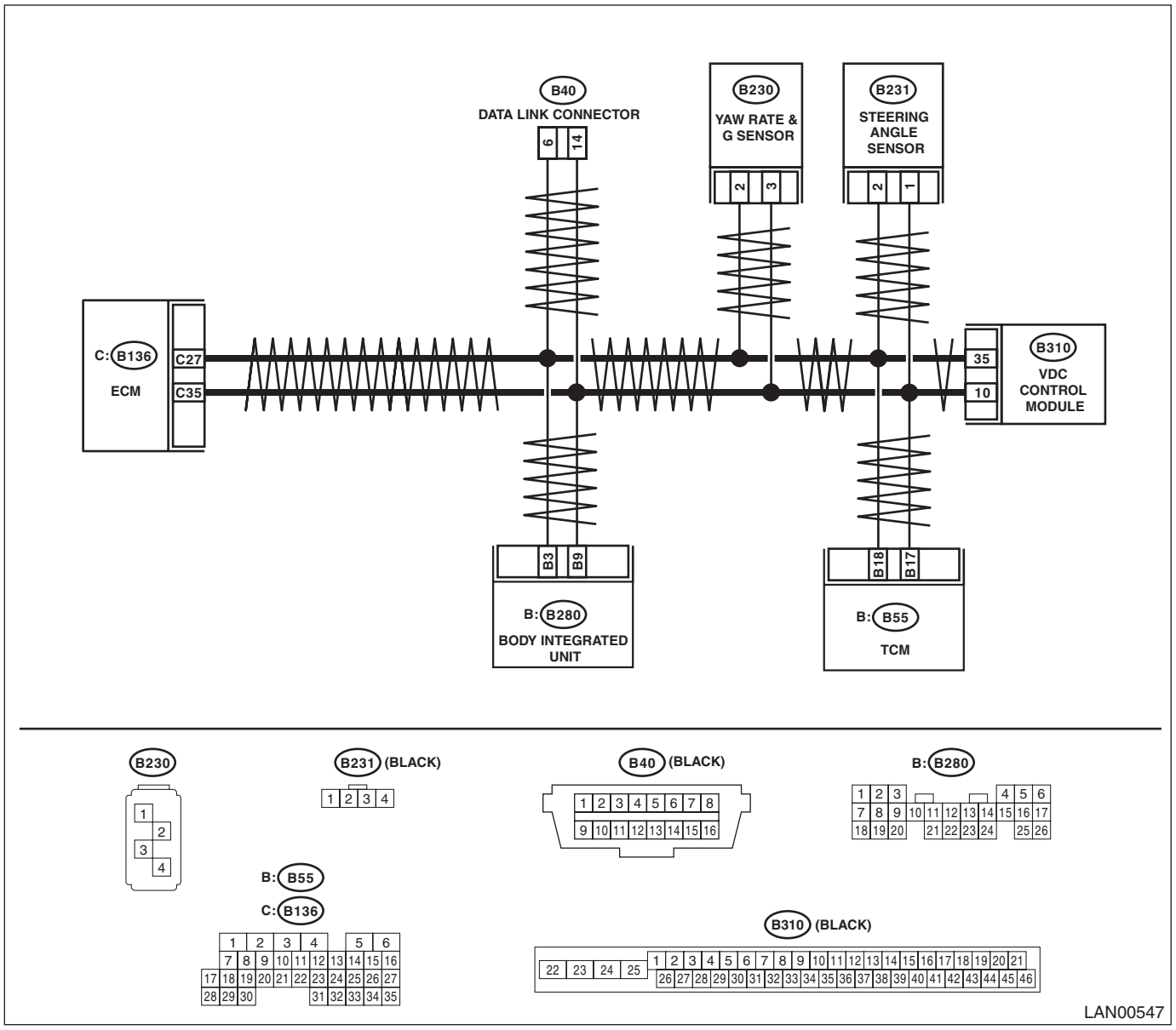
	Step	Check	Yes	No
3	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (B280, B310, B55, B136, B230, B231) that are connected to high speed CAN communication line. 3) Connect all the disconnected connectors. 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1201 a current malfunction?	Go to step **4**.	Go to step **14**.
4	**CHECK TCM.** NOTE: If the vehicle is MT model, go to the next step. 1) Turn the ignition switch to OFF. 2) Disconnect the TCM connector (B55). 3) Turn the ignition switch to ON. 4) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1201 a current malfunction?	Go to step **5**.	Go to step **16**.
5	**CHECK STEERING ANGLE SENSOR.** 1) Turn the ignition switch to OFF. 2) Connect the TCM connector. 3) Disconnect the steering angle sensor connector (B231). 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1201 a current malfunction?	Go to step **6**.	Go to step **17**.
6	**CHECK YAW RATE SENSOR.** 1) Turn the ignition switch to OFF. 2) Connect the steering angle sensor connector. 3) Disconnect the yaw rate sensor connector (B230). 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1201 a current malfunction?	Go to step **7**.	Go to step **18**.
7	**CHECK VDC/ABS CM.** 1) Turn the ignition switch to OFF. 2) Connect the yaw rate sensor connector. 3) Disconnect the VDC/ABS CM (B301or B310) connector. 4) Install the 120 Ω resistance to VDC/ABS CM connector terminals. ***Terminals*** ***(B310) No. 10 — No. 35:*** 5) Using the tester, measure the resistance between terminals of data link connector. ***Terminals*** ***(B40) No. 6 — No. 14:***	Is the resistance 60 Ω?	Go to step **8**.	Go to step **10**.
8	**CHECK DTC.** 1) Turn the ignition switch to ON. 2) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1201 a current malfunction?	Go to step **9**.	Go to step **10**.
9	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1202 a current malfunction?	Replace the VDC/ABS CM. <Ref. to VDC-7, REMOVAL, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Go to step **10**.

	Step	Check	Yes	No
10	**CHECK ECM.** 1) Turn the ignition switch to OFF. 2) Connect the VDC/ABS CM. 3) Disconnect the ECM connector (B136). 4) Install the 120 Ω resistance to ECM connector. ***Terminals*** ***(B136) No. 27 — No. 35:*** 5) Using the tester, measure the resistance between terminals of data link connector. ***Connector & terminal*** ***(B40) No. 6 — No. 14:***	Is the resistance 60 Ω?	Go to step **11**.	Repair or replace the open circuit of harness.
11	**CHECK DTC.** 1) Turn the ignition switch to ON. 2) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1201 a current malfunction?	Go to step **12**.	Go to step **13**.
12	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1202 a current malfunction?	Replace the ECM. <Ref. to FU(H4SO)-45, REMOVAL, Engine Control Module (ECM).> <Ref. to FU(H4DOTC)-51, REMOVAL, Engine Control Module (ECM).>	Go to step **13**.
13	**CHECK DTC.** 1) Reconnect all the disconnected connectors. 2) Turn the ignition switch to ON. 3) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1201 a current malfunction?	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>	Go to step **14**.
14	**CHECK HARNESS.** 1) Shake the instrument harness and bulkhead harness, rear harness. 2) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1201 a current malfunction?	Repair or replace the harness.	Go to step **15**.
15	**CHECK CONNECTOR.** 1) Disconnect the connector used for CAN circuit. 2) Check the connector terminal.	Is there poor contact of connector terminal?	Repair the connector terminal where poor contact exists, or replace harness.	It is possible that temporary poor contact occurs.
16	**CHECK HARNESS.** Using the tester, inspect the open circuit of harness and short (power supply-output short, GND-output short) between terminals of data link connector and TCM. ***Connector & terminal*** ***(B40) No. 14 — (B55) No. 17:*** ***(B40) No. 6 — (B55) No. 18:***	Is harness normal?	Replace the TCM. <Ref. to 4AT-61, REMOVAL, Transmission Control Module (TCM).>	Repair or replace the harness.
17	**CHECK HARNESS.** Using the tester, inspect the open circuit of harness and short (power supply-output short, GND-output short) between terminals of data link connector and steering angle sensor. ***Connector & terminal*** ***(B40) No. 14 — (B231) No. 1:*** ***(B40) No. 6 — (B231) No. 2:***	Is harness normal?	Replace the steering sensor. <Ref. to VDC-21, REPLACEMENT, Steering Angle Sensor.>	Repair or replace the harness.

	Step	Check	Yes	No
18	**CHECK HARNESS.** Using the tester, inspect the open circuit of harness and short (power supply-output short, GND-output short) between terminals of data link connector and yaw rate sensor. ***Connector & terminal*** ***(B40) No. 14 — (B230) No. 3:*** ***(B40) No. 6 — (B230) No. 2:***	Is harness normal?	Replace the yaw rate sensor. <Ref. to VDC-19, REMOVAL, Yaw Rate and G Sensor.>	Repair or replace the harness.

I: DTC U1202 CAN-HS BUS OFF

DTC DETECTING CONDITION:
Integrated unit communication is shut down because of high speed CAN error.
TROUBLE SYMPTOM:
Each warning light illuminates because the CAN communication (sending and receiving) is not normal.
WIRING DIAGRAM:



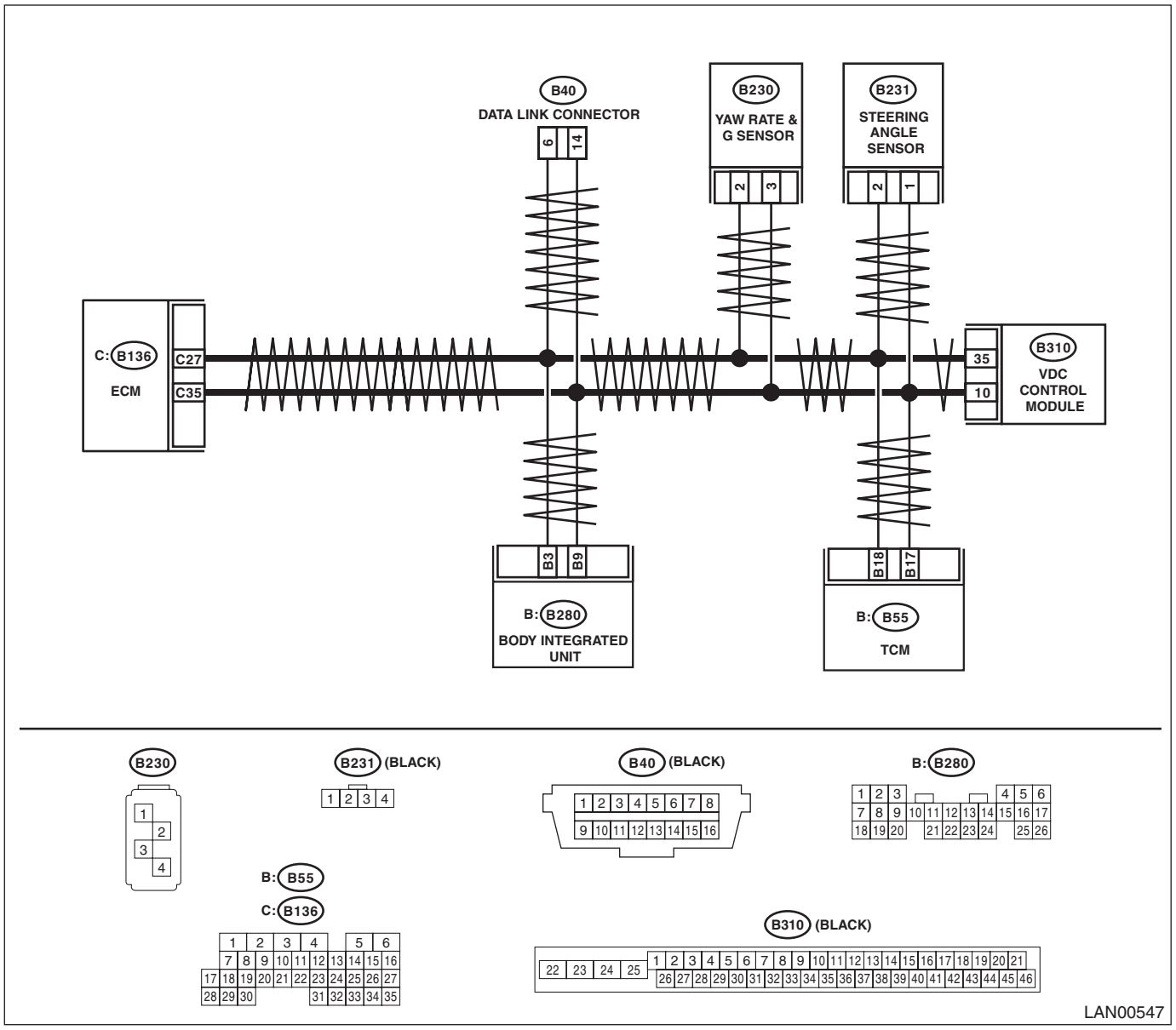
Step		Check	Yes	No
1	**CHECK DTC.** Using the Subaru Select Monitor, confirm all DTCs. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is any DTC other than for the body integrated unit displayed?	Perform the diagnosis according to displayed DTC.	Go to step **2**.
2	**CHECK DTC.** 1) Turn the ignition switch to OFF → ON. 2) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1202 a current malfunction?	Go to step **3**.	Go to step **10**.

	Step	Check	Yes	No
3	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (B280, B310, B55, B136, B230, B231) that are connected to high speed CAN communication line. 3) Connect the disconnected connectors. 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1202 a current malfunction?	Go to step **4**.	Go to step **10**.
4	**CHECK HARNESS.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (B280, B310, B55, B136, B230, B231) that are connected to high speed CAN communication line. 3) Using the tester, inspect the open circuit of harness and short (power supply-output short, GND-output short). ***Connector & terminal*** ***(B40) No. 6 — (B136) No. 27:*** ***(B40) No. 6 — (B310) No. 35:*** ***(B40) No. 6 — (B230) No. 2:*** ***(B40) No. 6 — (B231) No. 2:*** ***(B40) No. 6 — (B55) No. 18:*** ***(B40) No. 6 — (B280) No. 3:***	Is harness normal?	Go to step **5**.	Repair or replace the harness.
5	**CHECK HARNESS.** Using the tester, inspect the open circuit of harness and short (power supply-output short, GND-output short). ***Connector & terminal*** ***(B40) No. 14 — (B136) No. 35:*** ***(B40) No. 14 — (B310) No. 10:*** ***(B40) No. 14 — (B230) No. 3:*** ***(B40) No. 14 — (B231) No. 1:*** ***(B40) No. 14 — (B55) No. 17:*** ***(B40) No. 14 — (B280) No. 9:***	Is harness normal?	Go to step **6**.	Repair or replace the harness.
6	**CHECK ECM.** 1) Connect the ECM. 2) Using the tester, measure the resistance between terminals of data link connector. ***Connector & terminal*** ***(B40) No. 6 — No. 14:***	Is the resistance 120±5 Ω?	Go to step **7**.	Replace the ECM. <Ref. to FU(H4SO)-45, REMOVAL, Engine Control Module (ECM).> <Ref. to FU(H4DOTC)-51, REMOVAL, Engine Control Module (ECM).>
7	**CHECK VDC/ABS CM.** 1) Disconnect the ECM connector (B136). 2) Connect the VDC/ABS CM. 3) Using the tester, measure the resistance between terminals of data link connector. ***Connector & terminal*** ***(B40) No. 6 — No. 14:***	Is the resistance 120±5 Ω?	Go to step **8**.	Replace the VDC/ABS CM. <Ref. to VDC-7, REMOVAL, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>

	Step	Check	Yes	No
8	**CHECK HARNESS.** 1) Connect the disconnected connectors. 2) Using the tester, measure the resistance between terminals of data link connector and chassis ground. ***Connector & terminal*** ***(B40) No. 6 — Chassis ground:*** ***(B40) No. 14 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **9**.	Go to step **12**.
9	**CHECK HARNESS.** 1) Turn the ignition switch to ON. 2) Using the tester, measure the voltage between terminals of data link connector and chassis ground. ***Connector & terminal*** ***(B40) No. 6 — Chassis ground:*** ***(B40) No. 14 — Chassis ground:***	Is the voltage less than 6 V?	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>	Go to step **13**.
10	**CHECK HARNESS.** 1) Shake the harness. 2) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1202 a current malfunction?	Repair or replace the harness.	Go to step **11**.
11	**CHECK CONNECTOR.** Disconnect the connector used for high speed CAN circuit.	Is there poor contact of connector terminal?	Repair the connector terminal, or replace harness.	It is possible that temporary poor communication occurs.
12	**CHECK CONTROL MODULE.** With the tester connected, disconnect each control module connector.	Is there any control module whose resistance has changed?	Replace the control module whose resistance has changed.	Repair or replace the open or short circuit of the harness.
13	**CHECK ECM.** With the tester connected, disconnect each control module connector.	Is there any control module whose voltage has changed?	Replace the control module whose voltage has changed.	Repair or replace the short circuit of the harness.

J: DTC U1211 CAN-HS ECM DATA ABNORMAL

DTC DETECTING CONDITION:
Received error data from ECM.
TROUBLE SYMPTOM:
It is possible that engine control error may occur.
WIRING DIAGRAM:

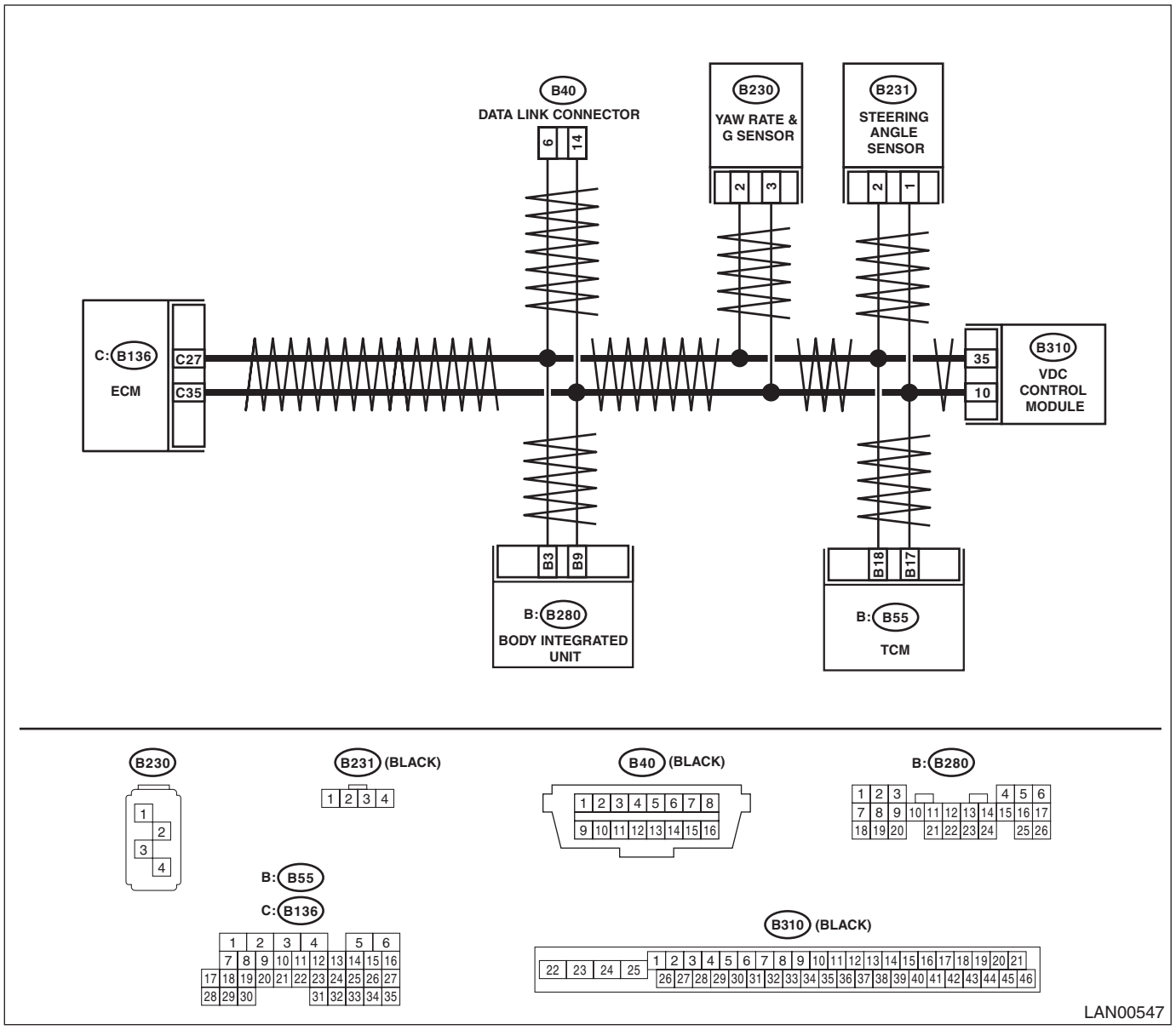


Step		Check	Yes	No
1	**CHECK DTC.** Read all DTCs using the Subaru Select Monitor. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is there DTC U1202?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1211 a current malfunction?	Go to step **3**.	Go to step **4**.

	Step	Check	Yes	No
3	**CHECK ECM.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ECM. 3) Connect the disconnected connectors. 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1211 a current malfunction?	Replace the ECM. <Ref. to FU(H4SO)-45, REMOVAL, Engine Control Module (ECM).> <Ref. to FU(H4DOTC)-51, REMOVAL, Engine Control Module (ECM).>	Go to step **4**.
4	**CHECK HARNESS.** 1) Shake the harness used for CAN communication circuit. 2) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1211 a current malfunction?	Repair the poor contact or temporary open circuit of harness.	Go to step **5**.
5	**CHECK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector that is connected to high speed CAN circuit.	Is there poor contact of connector?	Repair the connector terminal where poor contact exists, or replace harness.	It is possible that temporary poor communication occurs.

K: DTC U1212 CAN-HS TCM DATA ABNORMAL

DTC DETECTING CONDITION:
Received error data from TCM.
TROUBLE SYMPTOM:
It is possible that transmission control error may occur.
WIRING DIAGRAM:

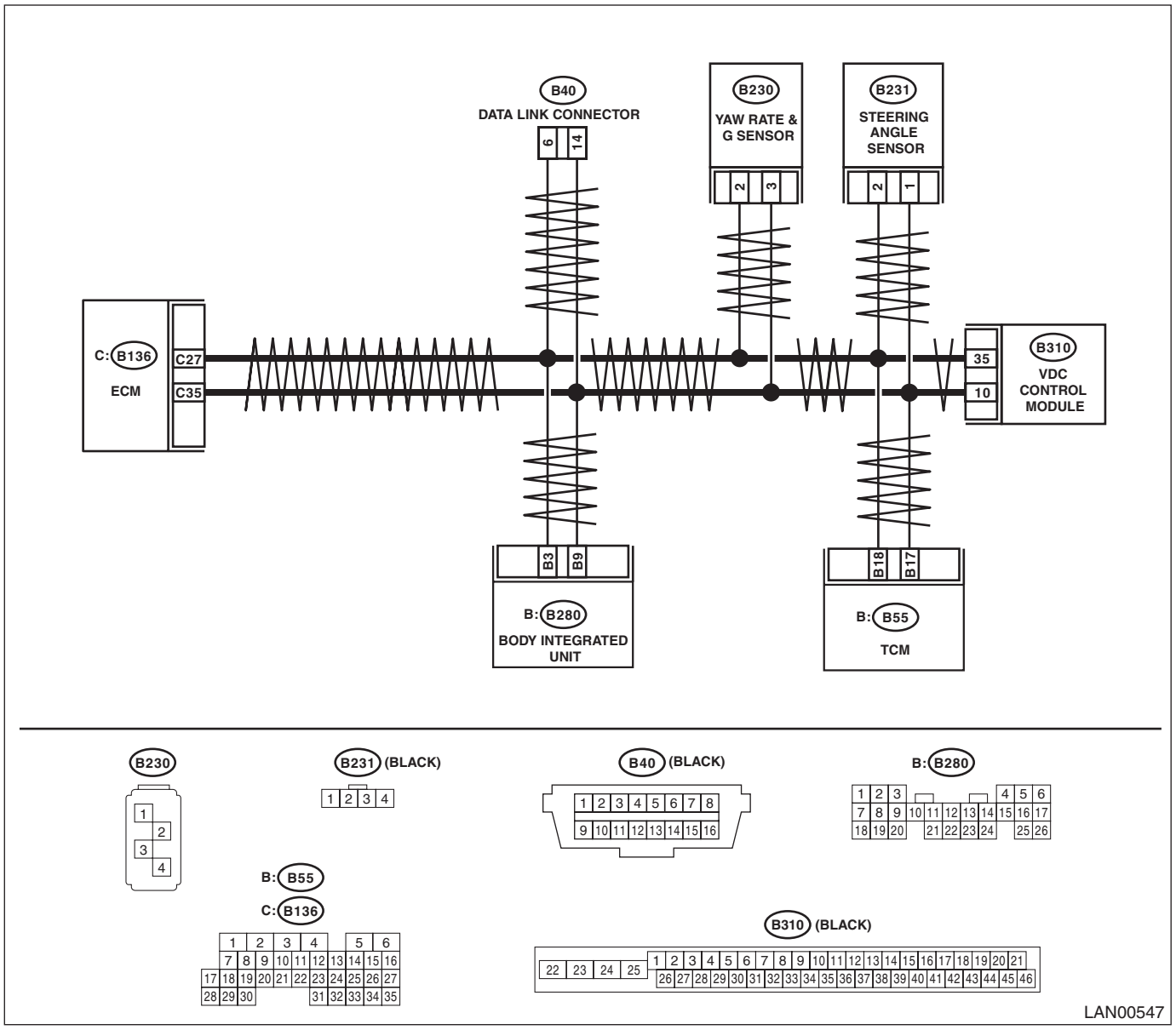


Step		Check	Yes	No
1	**CHECK DTC.** Read all DTCs using the Subaru Select Monitor. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is there DTC U1202?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1212 a current malfunction?	Go to step **3**.	Go to step **4**.

	Step	Check	Yes	No
3	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Disconnect the TCM connector. 3) Connect the disconnected connectors. 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1212 a current malfunction?	Replace the TCM. <Ref. to 4AT-61, Transmission Control Module (TCM).>	Go to step **4**.
4	**CHECK HARNESS.** 1) Turn the ignition switch to OFF. 2) Shake the harness used for CAN communication circuit. 3) Turn the ignition switch to ON. 4) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1212 a current malfunction?	Repair or replace the harness.	Go to step **5**.
5	**CHECK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector that is connected to high speed CAN circuit.	Is there poor contact of connector terminal?	Repair the connector terminal, or replace harness.	Temporary poor contact occurs.

L: DTC U1213 CAN-HS VDC/ABS DATA ABNORMAL

DTC DETECTING CONDITION:
Received error data from VDC/ABS module.
TROUBLE SYMPTOM:
It is possible that brake control error may occur.
WIRING DIAGRAM:

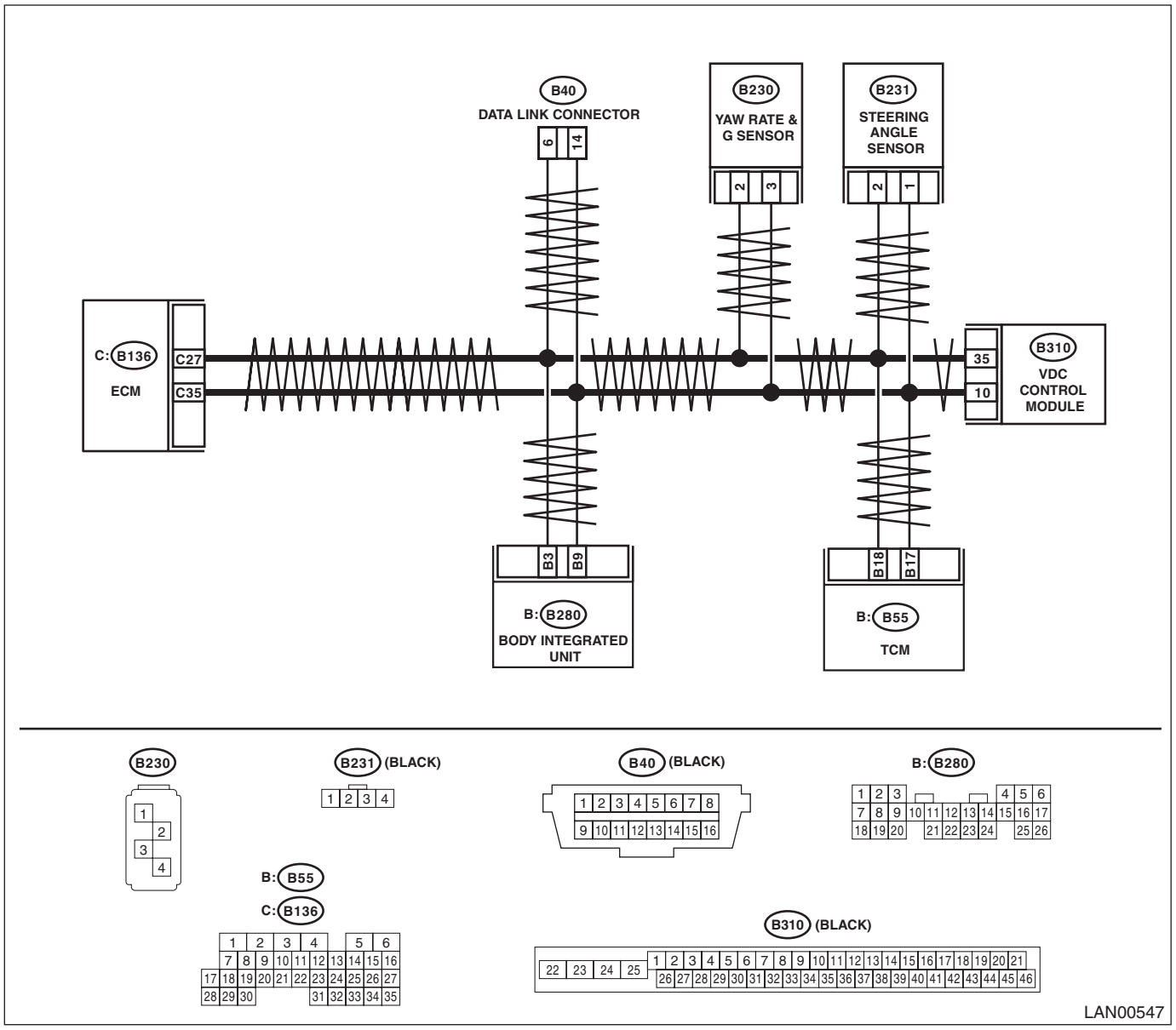


Step		Check	Yes	No
1	**CHECK DTC.** Read all DTCs using the Subaru Select Monitor. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is there DTC U1202?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1213 a current malfunction?	Go to step **3**.	Go to step **4**.

	Step	Check	Yes	No
3	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Disconnect the VDC/ABS CM connector. 3) Connect the disconnected connectors. 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1213 a current malfunction?	Replace the VDC/ABS CM. <Ref. to VDC-7, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Go to step **4**.
4	**CHECK HARNESS.** 1) Turn the ignition switch to OFF. 2) Shake the harness used for CAN communication circuit. 3) Turn the ignition switch to ON. 4) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1213 a current malfunction?	Repair or replace the harness.	Go to step **5**.
5	**CHECK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector that is connected to high speed CAN circuit.	Is there poor contact of connector terminal?	Repair the connector terminal, or replace harness.	It is possible that temporary poor communication occurs.

M: DTC U1221 CAN-HS ECM NO-RECEIVE DATA

DTC DETECTING CONDITION:
Not received data from ECM.
TROUBLE SYMPTOM:
Malfunction indicator light illuminates.
WIRING DIAGRAM:



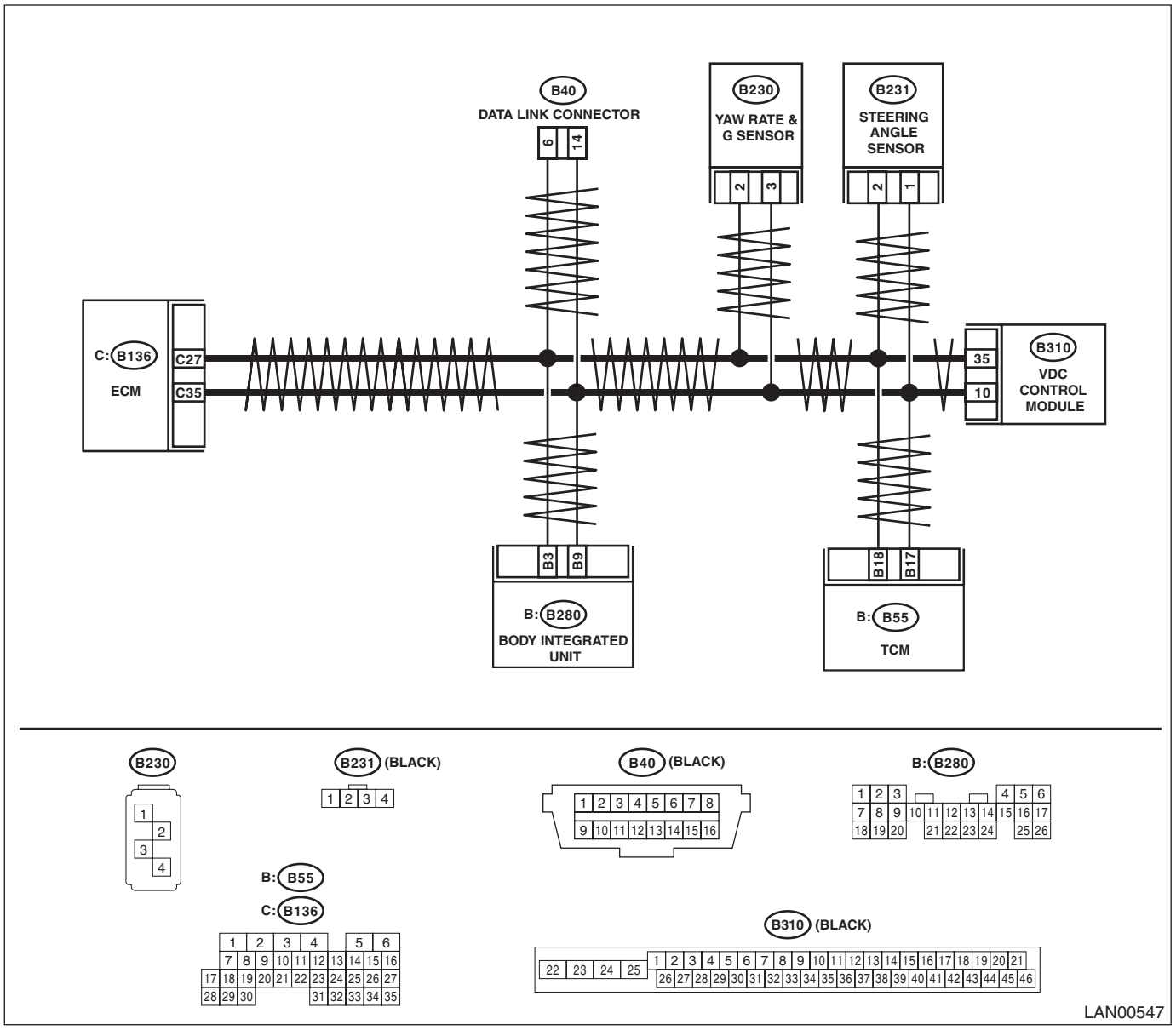
Step		Check	Yes	No
1	**CHECK DTC.** Read all DTCs using the Subaru Select Monitor. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is there DTC U1202?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1221 a current malfunction?	Go to step **3**.	Go to step **8**.

	Step	Check	Yes	No
3	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (B280, B310, B55, B136, B230, B231) that are connected to high speed CAN communication line. 3) Connect the disconnected connectors. 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1221 a current malfunction?	Go to step **4**.	Go to step **8**.
4	**CHECK HARNESS.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (B280, B310, B55, B136, B230, B231) that are connected to high speed CAN communication line. 3) Using the tester, inspect the open circuit of harness and short (power supply-output short, GND-output short). ***Connector & terminal*** ***(B40) No. 6 — (B136) No. 27:*** ***(B40) No. 6 — (B310) No. 35:*** ***(B40) No. 6 — (B230) No. 2:*** ***(B40) No. 6 — (B231) No. 2:*** ***(B40) No. 6 — (B55) No. 18:*** ***(B40) No. 6 — (B280) No. 3:***	Is harness normal?	Go to step **5**.	Repair or replace the harness.
5	**CHECK HARNESS.** Using the tester, inspect the open circuit of harness and short (power supply-output short, GND-output short). ***Connector & terminal*** ***(B40) No. 14 — (B136) No. 35:*** ***(B40) No. 14 — (B310) No. 10:*** ***(B40) No. 14 — (B230) No. 3:*** ***(B40) No. 14 — (B231) No. 1:*** ***(B40) No. 14 — (B55) No. 17:*** ***(B40) No. 14 — (B280) No. 9:***	Is harness normal?	Go to step **6**.	Repair or replace the harness.
6	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Connect the disconnected connectors. 3) Start the engine and stop. 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1221 a current malfunction?	Go to step **7**.	Go to step **8**.
7	**CHECK DTC.** Read all DTCs using the Subaru Select Monitor.	Is DTC P1718 or C0047 detected?	Replace the ECM. <Ref. to FU(H4SO)-45, REMOVAL, Engine Control Module (ECM).> <Ref. to FU(H4DOTC)-51, REMOVAL, Engine Control Module (ECM).>	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>
8	**CHECK HARNESS.** 1) Turn the ignition switch to OFF. 2) Shake the harness used for CAN communication circuit. 3) Turn the ignition switch to ON. 4) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1221 a current malfunction?	Repair or replace the harness.	Go to step **9**.

	Step	Check	Yes	No
9	**CHECK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect all the connector that is connected to high speed CAN circuit.	Is there poor contact of connector terminal?	Repair the connector terminal where poor contact exists, or replace harness.	Temporary poor contact occurs.

N: DTC U1222 CAN-HS TCM NO-RECEIVE DATA

DTC DETECTING CONDITION:
Not received data from TCM.
TROUBLE SYMPTOM:
Malfunction indicator light illuminates.
WIRING DIAGRAM:

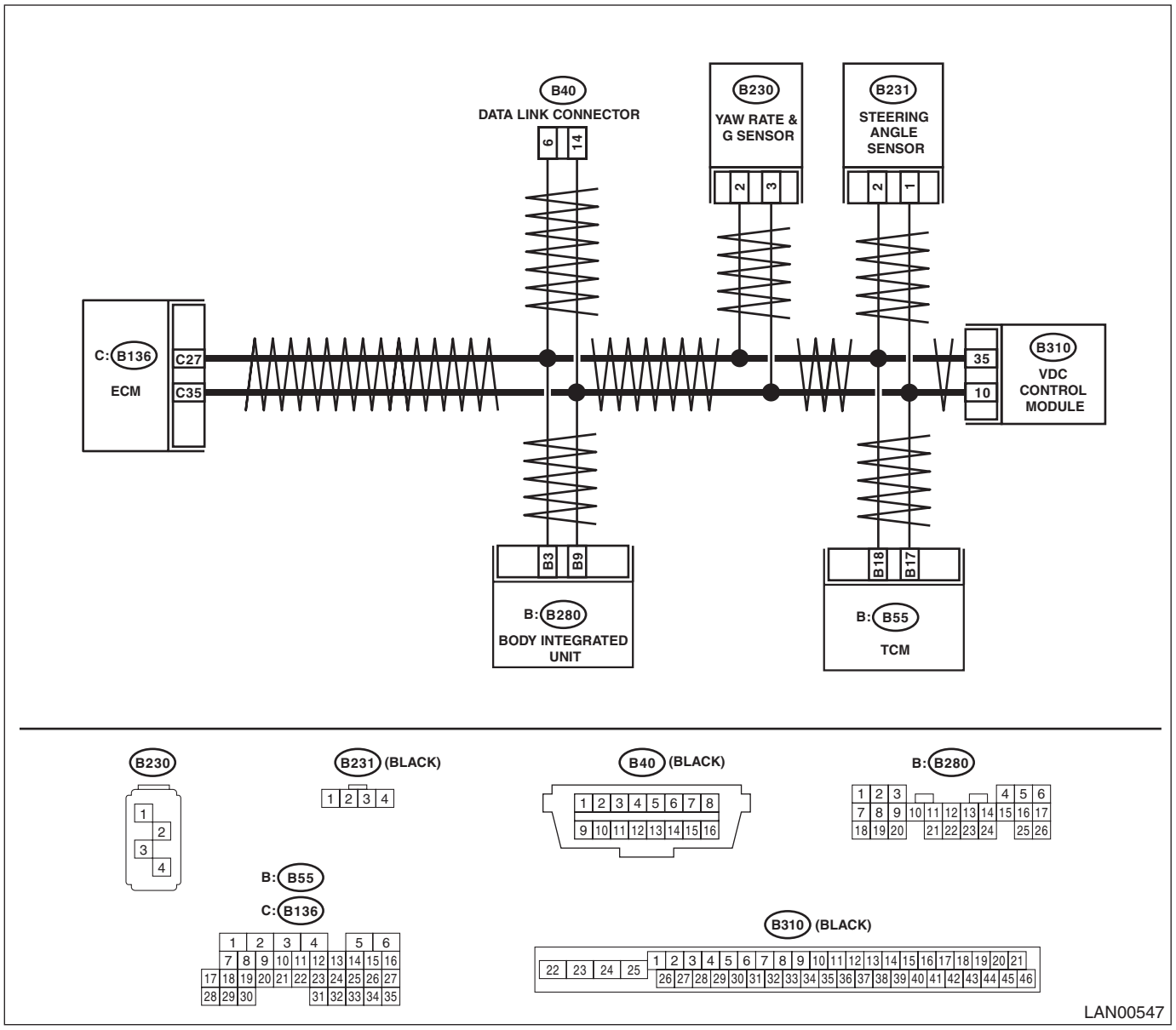


Step		Check	Yes	No
1	**CHECK DTC.** Read all DTCs using the Subaru Select Monitor. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is there DTC U1202?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1222 a current malfunction?	Go to step **3**.	Go to step **7**.

	Step	Check	Yes	No
3	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (B280, B310, B55, B136, B230, B231) that are connected to high speed CAN communication line. 3) Connect the disconnected connectors. 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1222 a current malfunction?	Go to step **4**.	Go to step **7**.
4	**CHECK HARNESS.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (B280, B310, B55, B136, B230, B231) that are connected to high speed CAN communication line. 3) Using the tester, inspect the open circuit of harness and short (power supply-output short, GND-output short). ***Connector & terminal*** ***(B55) No. 17 — (B40) No. 14:*** ***(B55) No. 18 — (B40) No. 6:***	Is harness normal?	Go to step **5**.	Repair or replace the harness.
5	**CHECK DTC.** 1) Connect the disconnected connectors. 2) Start the engine and stop. 3) Turn the ignition switch to ON. 4) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1222 a current malfunction?	Go to step **6**.	Go to step **7**.
6	**CHECK DTC.** Using the Subaru Select Monitor, read all DTCs.	Are DTCs U0101, C0047 or C0140 displayed?	Replace the TCM. <Ref. to 4AT-61, Transmission Control Module (TCM).>	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>
7	**CHECK HARNESS.** 1) Shake the harness used for CAN communication circuit. 2) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1222 a current malfunction?	Repair or replace the harness.	Go to step **8**.
8	**CHECK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect all the connector that is connected to high speed CAN circuit.	Is there poor contact of connector terminal?	Repair the connector terminal where poor contact exists, or replace harness.	Temporary poor contact occurs.

O: DTC U1223 CAN-HS VDC/ABS NO-RECEIVE DATA

DTC DETECTING CONDITION:
Not received data from VDC/ABS CM.
TROUBLE SYMPTOM:
ABS warning light and VDC warning light illuminate.
WIRING DIAGRAM:

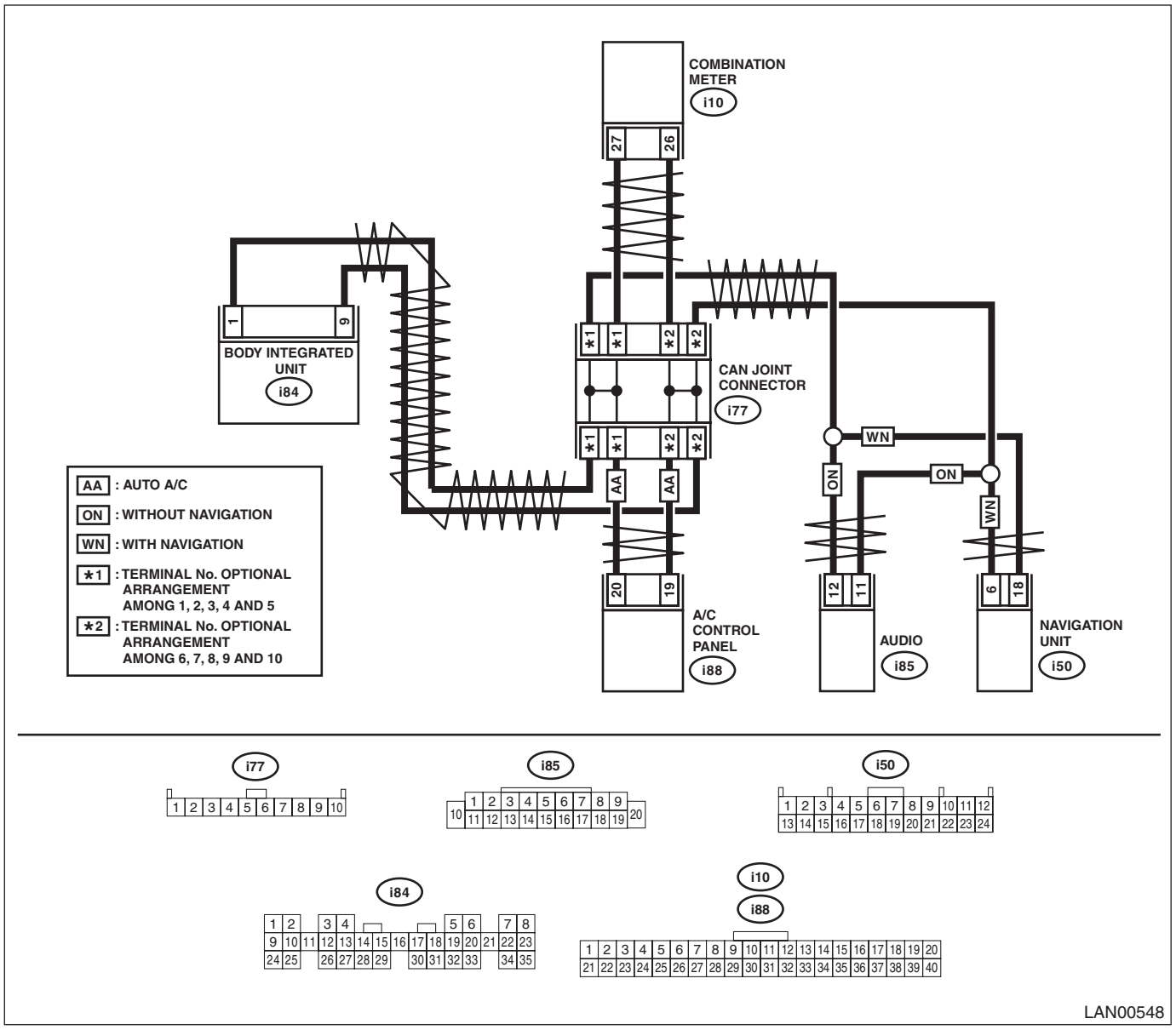


Step		Check	Yes	No
1	**CHECK DTC.** Read all DTCs using the Subaru Select Monitor. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is there DTC U1202?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1223 a current malfunction?	Go to step **3**.	Go to step **7**.

	Step	Check	Yes	No
3	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (B280, B310, B55, B136, B230, B231) that are connected to high speed CAN communication line. 3) Connect the disconnected connectors. 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1223 a current malfunction?	Go to step **4**.	Go to step **7**.
4	**CHECK HARNESS.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (B280, B310, B55, B136, B230, B231) that are connected to high speed CAN communication line. 3) Using the tester, inspect the open circuit of harness and short (power supply-output short, GND-output short). ***Connector & terminal*** ***(B40) No. 6 — (B310) No. 35:*** ***(B40) No. 14 — (B310) No. 10:***	Is harness normal?	Go to step **5**.	Repair or replace the harness.
5	**CHECK DTC.** 1) Connect the disconnected connectors. 2) Start the engine. 3) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1223 a current malfunction?	Go to step **6**.	Go to step **7**.
6	**CHECK DTC.** Read all DTCs using the Subaru Select Monitor.	Is P1718 or U0122 displayed?	Replace the VDC/ABS CM. <Ref. to VDC-7, REMOVAL, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>
7	**CHECK HARNESS.** 1) Shake the harness used for CAN communication circuit. 2) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1223 a current malfunction?	Repair or replace the harness.	Go to step **8**.
8	**CHECK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (B280, B310, B55, B136, B230, B231) that are connected to high speed CAN communication line.	Is there connector terminal where poor contact exists?	Repair the connector terminal where poor contact exists, or replace harness.	Temporary poor contact occurs.

P: DTC U1300 CAN-LS MALFUNCTION

DTC DETECTING CONDITION:
Open or short in low speed CAN circuit
TROUBLE SYMPTOM:
No influence.
WIRING DIAGRAM:



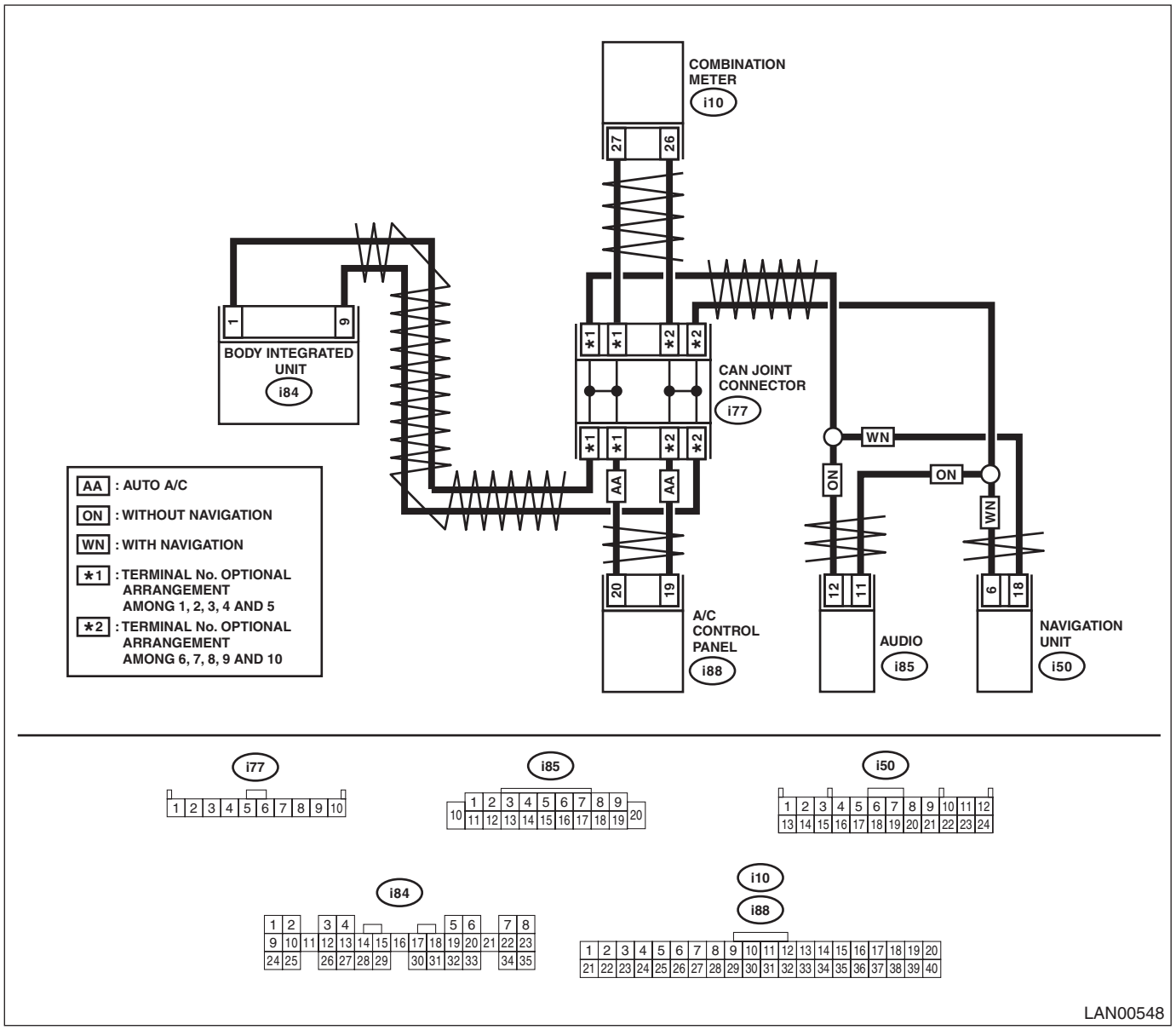
Step		Check	Yes	No
1	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is U1300 a current malfunction?	Go to step **2**.	Go to step **7**.

	Step	Check	Yes	No
2	**CHECK DTC.** 1) Disconnect all connectors (i84, i10, i88, i85 or i50) that are connected to low speed CAN communication line. 2) Connect the disconnected connectors. 3) Turn the ignition switch to ON. 4) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1300 a current malfunction?	Go to step **3**.	Go to step **7**.
3	**CHECK HARNESS.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (i84, i10, i88, i85 or i50) that are connected to low speed CAN communication line. 3) Using the tester, inspect the open circuit of harness and short (power supply-output short, GND-output short). ***Connector & terminal*** ***(i84) No. 1 — (i10) No. 27 (combination meter):*** ***(i84) No. 9 — (i10) No. 26 (combination meter):*** ***(i84) No. 1 — (i88) No. 20 (auto A/C):*** ***(i84) No. 9 — (i88) No. 19 (auto A/C):*** ***(i84) No. 1 — (i85) No. 12 (audio):*** ***(i84) No. 9 — (i85) No. 11 (audio):*** ***(i84) No. 1 — (i50) No. 18 (navigation):*** ***(i84) No. 9 — (i50) No. 6 (navigation):***	Is harness normal?	Go to step **4**.	Repair or replace the harness.
4	**CHECK AUDIO OR NAVIGATION.** 1) Connect the disconnected connectors. 2) Disconnect the connector of navigation (i85) or audio (i50). 3) Turn the ignition switch to ON. 4) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1300 a current malfunction?	Go to step **5**.	Replace the navigation or audio. <Ref. to ET-6, REMOVAL, Audio.>
5	**CHECK AUTO A/C CONTROL MODULE.** 1) Turn the ignition switch to OFF. 2) Connect the audio or navigation connectors. 3) Disconnect the auto A/C control module connector (i88). 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1300 a current malfunction?	Go to step **6**.	Replace the auto A/C control module. <Ref. to AC-32, REMOVAL, Control Unit (Auto A/C Model).>
6	**CHECK BODY INTEGRATED UNIT.** 1) Turn the ignition switch to OFF. 2) Connect the auto A/C control module. 3) Replace the body integrated unit of your vehicle with the body integrated unit from other vehicle, which is working normally. 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1300 a current malfunction?	Replace the combination meter. <Ref. to IDI-15, REMOVAL, Combination Meter.>	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>
7	**CHECK HARNESS.** 1) Turn the ignition switch to OFF. 2) Shake the harness used for CAN communication circuit. 3) Turn the ignition switch to ON. 4) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1300 a current malfunction?	Repair or replace the harness.	Go to step **8**.

	Step	Check	Yes	No
8	**CHECK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector that is connected to low speed CAN circuit.	Is there poor contact at disconnected connector?	Repair the connector terminal, or replace harness.	Temporary poor contact occurs.

Q: DTC U1301 CAN-LS COUNTER ABNORMAL

DTC DETECTING CONDITION:
Communication is unstable because of low speed CAN communication error.
TROUBLE SYMPTOM:
Display error may occur in fuel gauge because the CAN communication is not transmitted (sending/receiving) normally.
WIRING DIAGRAM:



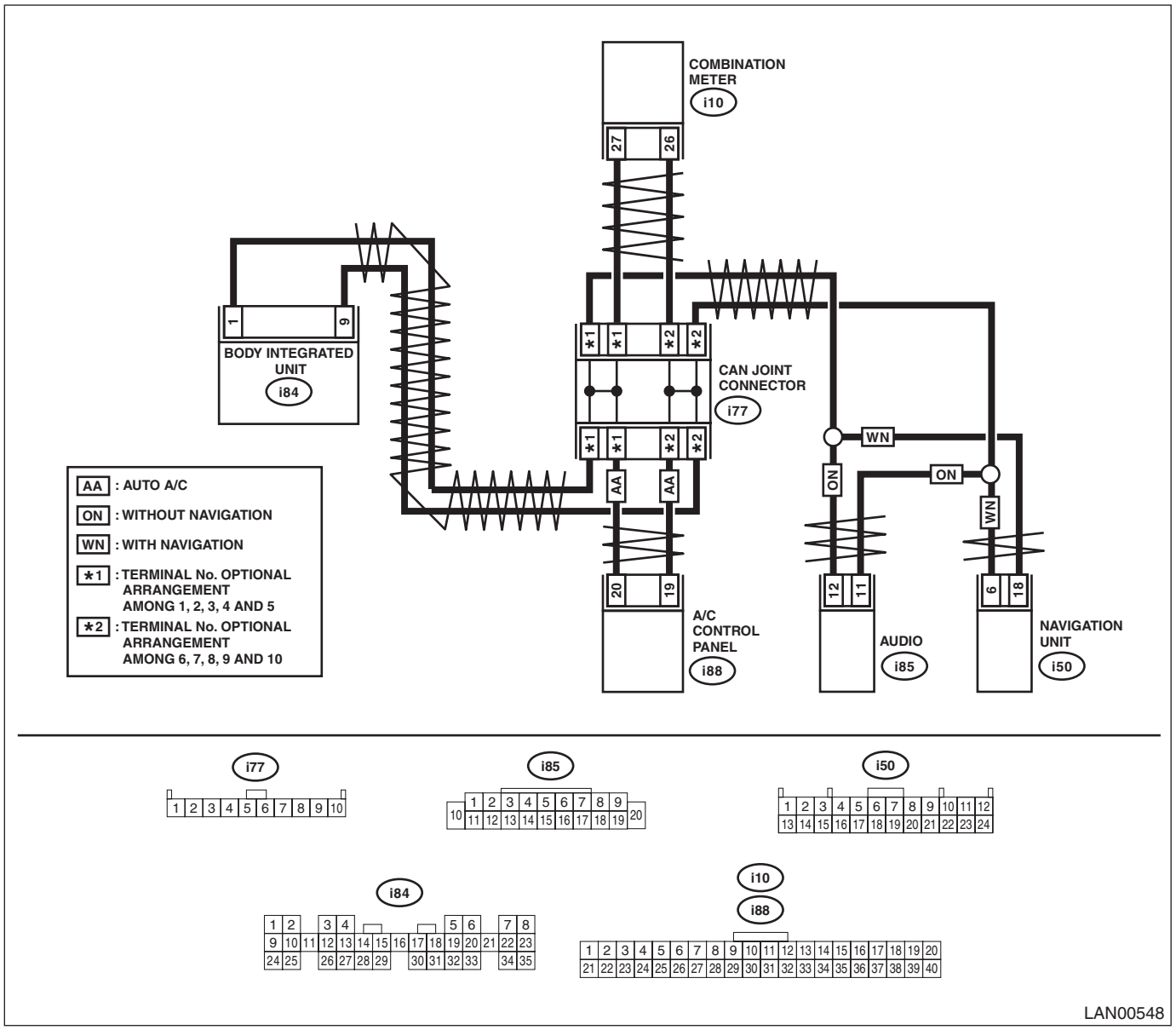
Step		Check	Yes	No
1	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Are there DTC U1300 or U1302?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1301 a current malfunction?	Go to step **3**.	Go to step **9**.

	Step	Check	Yes	No
3	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (i84, i10, i88, i85 or i50) that are connected to low speed CAN communication line. 3) Connect the disconnected connectors. 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1301 a current malfunction?	Go to step **4**.	Go to step **9**.
4	**CHECK HARNESS.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (i84, i10, i88, i85 or i50) that are connected to low speed CAN communication line. 3) Using the tester, inspect the open circuit of harness and short (power supply-output short, GND-output short). ***Connector & terminal*** ***(i84) No. 1 — (i10) No. 27 (combination meter):*** ***(i84) No. 9 — (i10) No. 26 (combination meter):*** ***(i84) No. 1 — (i88) No. 20 (auto A/C):*** ***(i84) No. 9 — (i88) No. 19 (auto A/C):*** ***(i84) No. 1 — (i85) No. 12 (audio):*** ***(i84) No. 9 — (i85) No. 11 (audio):*** ***(i84) No. 1 — (i50) No. 18 (navigation):*** ***(i84) No. 9 — (i50) No. 6 (navigation):***	Is harness normal?	Go to step **5**.	Repair or replace the harness.
5	**CHECK AUDIO OR NAVIGATION.** 1) Connect the disconnected connectors. 2) Disconnect the connector of navigation (i85) or audio (i50). 3) Turn the ignition switch to ON. 4) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1301 a current malfunction?	Go to step **6**.	Replace the audio or navigation. <Ref. to ET-6, REMOVAL, Audio.>
6	**CHECK AUTO A/C CONTROL MODULE.** 1) Turn the ignition switch to OFF. 2) Connect the audio or navigation module. 3) Disconnect the auto A/C control module connector (i88). 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1301 a current malfunction?	Go to step **7**.	Replace the auto A/C control module. <Ref. to AC-32, REMOVAL, Control Unit (Auto A/C Model).>
7	**CHECK COMBINATION METER.** 1) Turn the ignition switch to OFF. 2) Connect the disconnected connectors. 3) Perform the self-diagnosis of combination meter. <Ref. to IDI-4, SELF-DIAGNOSIS, INSPECTION, Combination Meter System.>	Is the self-diagnosis of combination meter OK?	Go to step **8**.	Replace the combination meter. <Ref. to IDI-15, REMOVAL, Combination Meter.>
8	**CHECK BODY INTEGRATED UNIT.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (i84, i10, i88, i85 or i50) that are connected to low speed CAN communication line. 3) Connect the disconnected connectors. 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1301 a current malfunction?	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>	Go to step **9**.

	Step	Check	Yes	No
9	**CHECK HARNESS.** 1) Turn the ignition switch to OFF. 2) Shake the harness used for low speed CAN communication circuit. 3) Turn the ignition switch to ON. 4) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1301 a current malfunction?	Repair or replace the harness.	Go to step **10**.
10	**CHECK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (i84, i10, i88, i85 or i50) that are connected to low speed CAN communication line.	Is there poor contact of connector terminal?	Repair the connector terminal, or replace harness.	Temporary poor contact occurs.

R: DTC U1302 CAN-LS BUS OFF

DTC DETECTING CONDITION:
Integrated unit communication is shut down because of low speed CAN communication error.
TROUBLE SYMPTOM:
Display error may occur in fuel gauge because the CAN communication is not transmitted (sending/receiving) normally.
WIRING DIAGRAM:



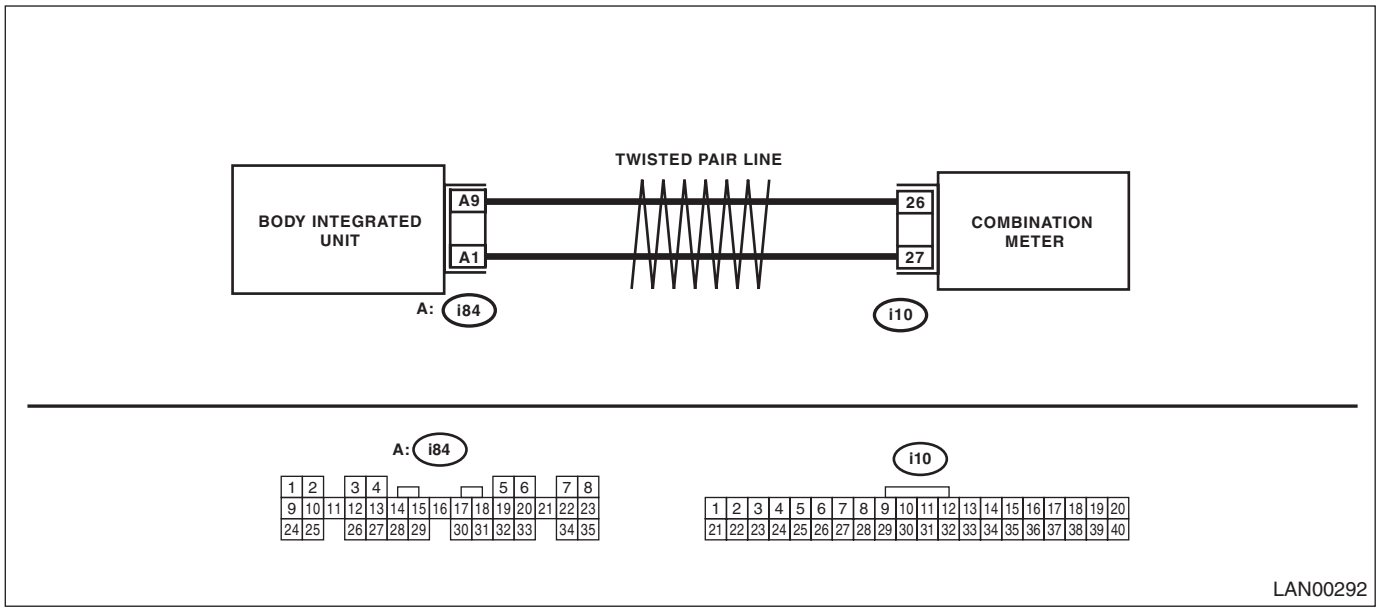
Step		Check	Yes	No
1	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is U1302 a current malfunction?	Go to step **2**.	Go to step **8**.

	Step	Check	Yes	No
2	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (i84, i10, i88, i85 or i50) that are connected to low speed CAN communication line. 3) Connect the disconnected connectors. 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1302 a current malfunction?	Go to step **3**.	Go to step **8**.
3	**CHECK HARNESS.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (i84, i10, i88, i85 or i50) that are connected to low speed CAN communication line. 3) Using the tester, inspect the open circuit of harness and short (power supply-output short, GND-output short). ***Connector & terminal*** ***(i84) No. 1 — (i10) No. 27 (combination meter):*** ***(i84) No. 9 — (i10) No. 26 (combination meter):*** ***(i84) No. 1 — (i88) No. 20 (auto A/C):*** ***(i84) No. 9 — (i88) No. 19 (auto A/C):*** ***(i84) No. 1 — (i85) No. 12 (audio):*** ***(i84) No. 9 — (i85) No. 11 (audio):*** ***(i84) No. 1 — (i50) No. 18 (navigation):*** ***(i84) No. 9 — (i50) No. 6 (navigation):***	Is harness normal?	Go to step **4**.	Repair or replace the harness.
4	**CHECK HARNESS.** 1) Connect the disconnected connectors. 2) Using the tester, measure the resistance between harness connector and chassis ground. ***Connector & terminal*** ***(i84) No. 1 — Chassis ground:*** ***(i84) No. 9 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **5**.	Go to step **7**.
5	**CHECK HARNESS.** 1) Turn the ignition switch to ON. 2) Using the tester, measure the voltage between harness connector and chassis ground. ***Connector & terminal*** ***(i84) No. 1 (+) — Chassis ground (–):*** ***(i84) No. 9 (+) — Chassis ground (–):***	Is the voltage less than 6 V?	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>	Go to step **6**.
6	**CHECK HARNESS.** With the tester connected, disconnect control module.	Is there any control module whose voltage has changed?	Replace the control module whose voltage has changed.	Repair or replace the short circuit of the harness.
7	**CHECK HARNESS.** With the tester connected, disconnect control module.	Is there any control module whose resistance has changed?	Replace the control module whose resistance has changed.	Repair or replace the short circuit of the harness.
8	**CHECK HARNESS.** 1) Shake the harness used for low speed CAN communication circuit. 2) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1302 a current malfunction?	Repair or replace the open, short circuit of the harness.	Go to step **9**.

	Step	Check	Yes	No
9	**CHECK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (i84, i10, i88, i85 or i50) that are connected to low speed CAN communication line.	Is there poor contact of connector terminal?	Repair the connector terminal, or replace harness.	Temporary poor contact occurs.

S: DTC U1311 CAN-LS METER UNIT DATA ABNORMAL

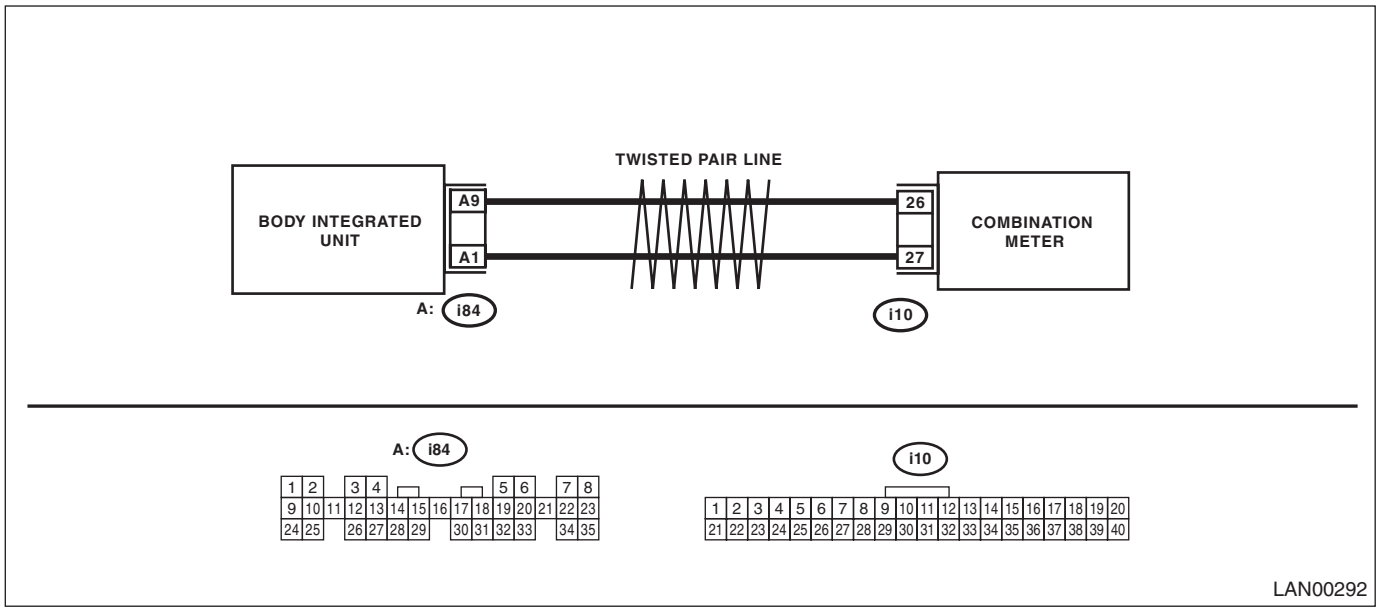
DTC DETECTING CONDITION:
Received error data from meter.
TROUBLE SYMPTOM:
Defective data from combination meter occurs.
WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is DTC U1300 or U1302 displayed?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1311 a current malfunction?	Go to step **3**.	Go to step **4**.
3	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Disconnect the combination meter connector (i10). 3) Connect the disconnected connectors. 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1311 a current malfunction?	Replace the combination meter. <Ref. to IDI-15, REMOVAL, Combination Meter.>	Go to step **4**.
4	**CHECK HARNESS.** 1) Shake the harness used for low speed CAN communication circuit. 2) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1311 a current malfunction?	Repair or replace the harness.	Go to step **5**.
5	**CHECK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (i84, i10, i88, i85 or i50) that are connected to low speed CAN communication line.	Is there poor contact of connector terminal?	Repair the connector terminal, or replace harness.	Temporary poor contact occurs.

T: DTC U1321 CAN-LS METER NO-RECEIVE DATA

DTC DETECTING CONDITION:
Not received data from meter.
TROUBLE SYMPTOM:
Engine may not be started.
WIRING DIAGRAM:

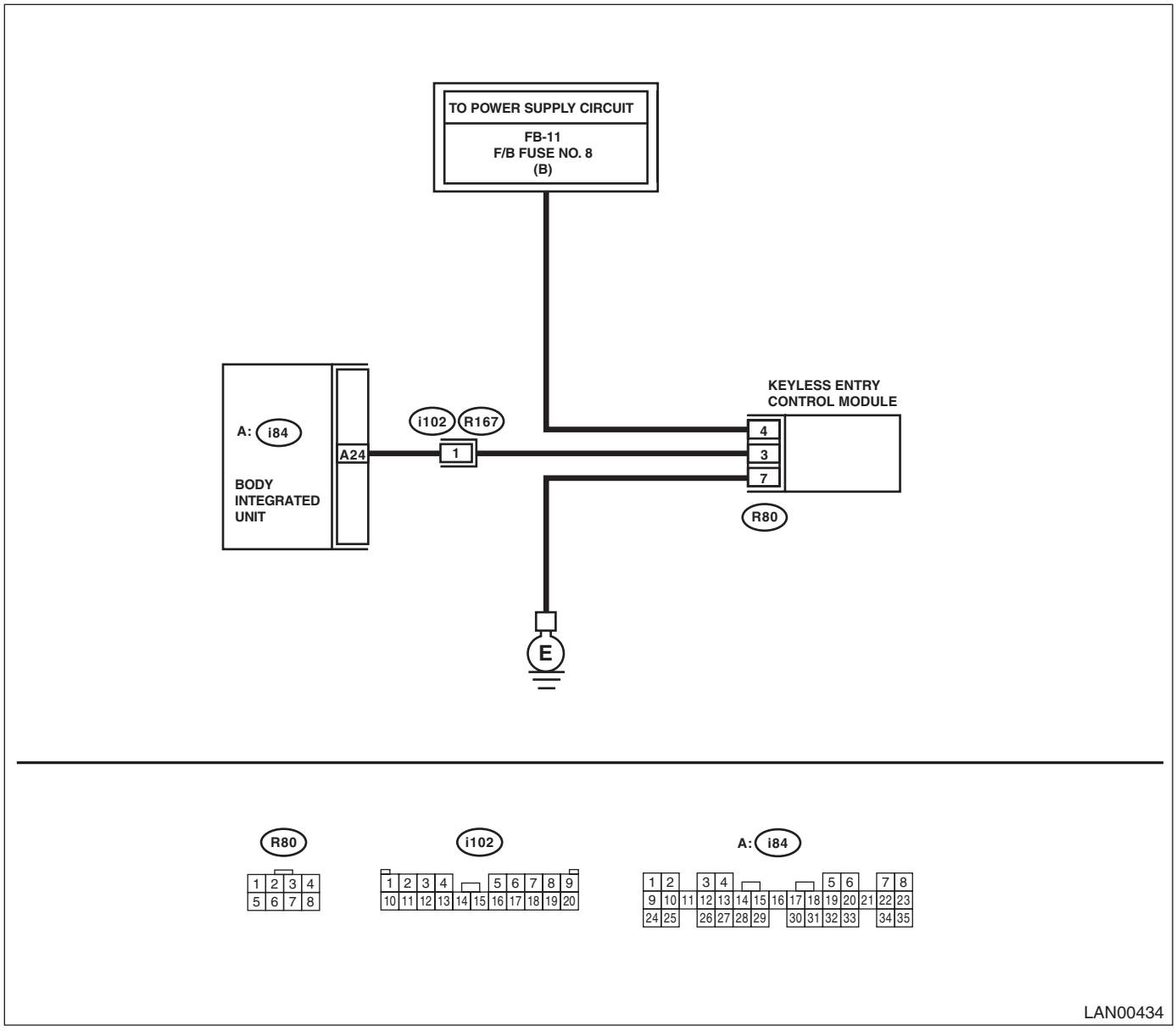


	Step	Check	Yes	No
1	**CHECK ALL DTCS.** Read all DTCs using the Subaru Select Monitor. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is U1300 or U1302 displayed?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1321 a current malfunction?	Go to step **3**.	Go to step **7**.
3	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (i84, i10, i88, i85 or i50) that are connected to low speed CAN communication line. 3) Connect the disconnected connectors. 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1321 a current malfunction?	Go to step **4**.	Go to step **7**.

	Step	Check	Yes	No
4	**CHECK HARNESS.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (i84, i10, i88, i85 or i50) that are connected to low speed CAN communication line. 3) Using the tester, inspect the open circuit of harness and short (power supply-output short, GND-output short). ***Connector & terminal*** ***(i84) No. 1 — (i10) No. 27 (combination meter):*** ***(i84) No. 9 — (i10) No. 26 (combination meter):*** ***(i84) No. 1 — (i88) No. 20 (auto A/C):*** ***(i84) No. 9 — (i88) No. 19 (auto A/C):*** ***(i84) No. 1 — (i85) No. 12 (audio):*** ***(i84) No. 9 — (i85) No. 11 (audio):*** ***(i84) No. 1 — (i50) No. 18 (navigation):*** ***(i84) No. 9 — (i50) No. 6 (navigation):***	Is harness normal?	Go to step **5**.	Repair or replace the harness.
5	**CHECK COMBINATION METER.** 1) Connect the disconnected connectors. 2) Perform the self-diagnosis of combination meter. <Ref. to IDI-4, SELF-DIAGNOSIS, INSPECTION, Combination Meter System.>	Is the self-diagnosis OK?	Go to step **6**.	Replace the combination meter. <Ref. to IDI-15, REMOVAL, Combination Meter.>
6	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (i84, i10, i88, i85 or i50) that are connected to low speed CAN communication line. 3) Connect the disconnected connectors. 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1321 a current malfunction?	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>	Go to step **7**.
7	**CHECK DTC.** 1) Shake the harness used for low speed CAN communication circuit. 2) Read the DTC of body integrated unit using Subaru Select Monitor.	Is U1321 a current malfunction?	Repair the poor contact, open circuit of harness or replace harness.	Go to step **8**.
8	**CHECK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect all connectors (i84, i10, i88, i85 or i50) that are connected to low speed CAN communication line.	Is there poor contact of connector terminal?	Repair the connector terminal, or replace harness.	It is possible that temporary poor communication occurs.

U: DTC B1500 KEYLESS UART COM. MALFUNCTION

DTC DETECTING CONDITION:
Open or short circuit in keyless UART circuit
TROUBLE SYMPTOM:
Door lock does not operate with keyless.
WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is B1500 a current malfunction?	Go to step **2**.	Go to step **7**.

	Step	Check	Yes	No
2	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from body integrated unit and keyless entry control module. 3) Connect the disconnected connectors. 4) Turn the ignition switch to ON. 5) Read the DTC of body integrated unit using Subaru Select Monitor.	Is B1500 a current malfunction?	Go to step **3**.	Go to step **7**.
3	**CHECK HARNESS.** 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from body integrated unit and keyless entry control module. 3) Using the tester, inspect the open circuit of harness and short (power supply-output short, GND-output short). ***Connector & terminal*** ***(i84) No. 24 — (R80) No. 3:***	Is harness normal?	Go to step **4**.	Repair or replace the harness.
4	**CHECK HARNESS.** Using the tester, measure the voltage between keyless entry control module and chassis ground. ***Connector & terminal*** ***(R80) No. 4 (+) — Chassis ground (–):***	Is the voltage battery voltage?	Go to step **5**.	Check the power supply circuit for keyless entry control module.
5	**CHECK HARNESS.** Using the tester, measure the resistance between keyless entry control module and chassis ground. ***Connector & terminal*** ***(R80) No. 7 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **6**.	Repair the open circuit of harness or replace harness.
6	**CHECK OPERATION.** 1) Install the keyless entry control module from other vehicle, which is working normally. 2) Register the keyless key which is working normally. 3) Operate the keyless key.	Is the door locking operate?	Replace the keyless entry control module. <Ref. to SL-47, REMOVAL, Keyless Entry Control Module.>	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>
7	**CHECK CONNECTOR.** Disconnect the connectors from body integrated unit and keyless entry control module.	Is there poor contact of connector?	Repair the connector, or replace harness.	Temporary poor contact occurs.

13.General Diagnostic Table

A: INSPECTION

Item	Operation	Specifications		Index
		YES	NO	
Diagnostic code	DTC is not displayed when inspecting all DTCs.	System is normal.	Perform the diagnosis according to DTC.	—
Engine coolant temperature	Engine coolant temperature gauge displays correctly without engine coolant temperature warning light illuminating/blinking.	System is normal.	Refer to the following to check. • Engine cooling system • LAN system	If three data values are different when display the current data of ECM, TCM and body integrated unit, it is possible that driving system CAN is malfunction.
Remaining fuel level	Fuel gauge displays correctly without low fuel warning light remaining illuminated.	System is normal.	Refer to the following to check. • Combination meter system • LAN system	If the values of “Fuel level resistance” and “Fuel level resistance 2” are different when display the current data of body integrated unit, it is possible that body integrated unit is malfunction.
ATF temperature warning light	ATF temperature warning light is free from illuminating/blinking.	System is normal.	Refer to the following to check. • Automatic transmission • Shift lock control system • LAN system	Warning light also blinks when DTC: B1106 occurs.
EBD warning light ABS warning light VDC warning light Hill start assist warning light	EBD warning light/ABS warning light/VDC warning light/Hill start assist warning light are free from ON/OFF all the time.	System is normal.	Refer to the following to check. • VDC (diagnostics) • Parking brake • Combination meter system • LAN system	—
Shift position	Meter display of shift position is correct. Shift position changes when switch the shift (up/down) on manual mode.	System is normal.	Refer to the following to check. • Automatic transmission • Combination meter system • LAN system	—
Clearance light Low beam High beam	Clearance light/low beam/high beam illuminate correctly by switch operation. Indicator in the meter illuminates when clearance light/high beam are illuminating.	System is normal.	Refer to the following to check. • Lighting system • Combination meter system • LAN system	—
Fog light	Fog light illuminates correctly by switch operation. Indicator in the meter illuminates when each fog light is illuminating.	System is normal.	Refer to the following to check. • Lighting system • Combination meter system • LAN system	—

Item	Operation	Specifications		Index
		YES	NO	
DRL	DRL operates correctly.	System is normal.	Refer to the following to check. • Lighting system • LAN system	—
Key interlock	Key cannot be removed in other than P range. Key can be removed in P range.	System is normal.	Refer to the following to check. • Shift lock control system • LAN system	—
Shift Lock	Shift operation is normal.	System is normal.	Refer to the following to check. • Shift lock control system • Combination meter system • LAN system	—
Key warning switch alarm	Alarm sounds when driver's door is open with the key removed.	System is normal.	Refer to the following to check. • Combination meter system • LAN system	—
Seat belt warning alarm	Indicator in the meter illuminate and alarm sounds when driver's seat belt is not worn. Indicator in the clock illuminates. When passenger's seat is occupied without passenger's seat belt worn. Alarm sounds when vehicle speed is approx. 15 km/h without seat belt fastened.	System is normal.	Refer to the following to check. • Seat belt warning system • Combination meter system • LAN system	—
Rear window defogger	Rear window defogger operates by operating the switch. Indicator in the switch illuminates when rear window defogger is operating.	System is normal.	Refer to the following to check. • Rear window defogger • A/C control module	—
Wiper deicer	Wiper deicer operates by operating the switch. (When the outside temperature is 5° or higher, press the switch for three seconds or more to operate forcibly, otherwise the wiper deicer operation will be cancelled.)	System is normal.	Refer to the following to check. • Wiper deicer system • A/C control module	—
Rear wiper	Rear wiper operates by operating the switch.	System is normal.	Refer to the following to check. • Wiper and washer system	Vehicle speed response time varies depending on the condition of customization of the body integrated unit "Sedan/Wagon Setting".
Door lock	Lock/unlock operates by operating the central door lock switch. Rear gate opens by operating the rear gate opener button.	System is normal.	Refer to the following to check. • Security and locks • LAN system	Rear gate cannot open by operating the rear gate opener button when customization of the body integrated unit "Sedan/Wagon Setting" is set to "Sedan".

Item	Operation	Specifications		Index
		YES	NO	
Keyless Entry	Lock/unlock operates by operating the keyless transmitter. Trunk/rear gate unlocks by operating the trunk opener button and rear gate lock/unlock button.	System is normal.	Refer to the following to check. • Security and locks • LAN system	Rear gate swung to open by operating the trunk/rear gate unlock button when customization of the body integrated unit “Sedan/Wagon Setting” is set to “Sedan”.
Answer back	Answer back operates by operating lock/unlock with the keyless entry.	System is normal.	Refer to the following to check. • Security and locks • LAN system	—
Room light	ON/OFF according to the door open/close operation, the lock/unlock operation with the keyless entry, and the ignition operation.	System is normal.	Refer to the following to check. • Room light system • Security and locks • LAN system	—
Map light (model with sunroof)	ON/OFF according to the door open/close operation except rear gate, the lock/unlock operation with the keyless entry, and the ignition operation.	System is normal.	Refer to the following to check. • Spot map light • Security and locks • LAN system	—
Key illumination	ON/OFF according to the driver’s door open/close operation, the lock/unlock operation with the keyless entry, and the ignition operation.	System is normal.	Refer to the following to check. • Ignition switch illumination • Security and locks • LAN system	Key illumination blinks when customization of the body integrated unit “Factory or Market setting” is set to “Factory” for models with keyless entry.
Illumination control	Illumination volume control is available.	System is normal.	Refer to the following to check. • Combination meter system • LAN system	Lighting adjustment is not possible when customization of the body integrated unit “Illumination Control On/Off” is set to “Off”.
Engine start	Engine starts normally.	System is normal.	Refer to the following to check. • Engine (diagnostics) • Immobilizer • LAN system	—
Vehicle security	When locked by the keyless entry, security monitor condition starts. When unlocked by the keyless entry, security is released.	System is normal.	Refer to the following to check. • Security and locks • LAN system	When the “Impact sensor” setup is set to “ON” without connecting the impact sensor (dealer option), the alarm operates as soon as security monitor condition occurs.

WIRING SYSTEM SECTION

This service manual has been prepared to provide SUBARU service personnel with the necessary information and data for the correct maintenance and repair of SUBARU vehicles.
This manual includes the procedures for maintenance, disassembling, reassembling, inspection and adjustment of components and diagnostics for guidance of experienced mechanics.
Please peruse and utilize this manual fully to ensure complete repair work for satisfying our customers by keeping their vehicle in optimum condition. When replacement of parts during repair work is needed, be sure to use SUBARU genuine parts.

All information, illustration and specifications contained in this manual are based on the latest product information available at the time of publication approval.

WIRING SYSTEM

WI

		Page
1.	Basic Diagnostic Procedure	3
2.	Working Precautions	14
3.	Power Supply Circuit	15
4.	Ground Circuit	22
5.	Engine Electrical System	32
6.	Radiator Fan System	60
7.	Charging System	61
8.	Starter System	62
9.	Remote Engine Start System	63
10.	AT Control System	68
11.	AT Shift Lock Control System	75
12.	Vehicle Dynamics Control System	76
13.	Tire Pressure Monitoring System	80
14.	Air Conditioning System	81
15.	Airbag System	89
16.	Seat Belt Warning System	93
17.	Occupant Detection System	94
18.	Seat Heater System	95
19.	Headlight System	96
20.	Front Fog Light System	99
21.	Back-up Light System	100
22.	Stop Light System	101
23.	Clearance Light and Illumination Light System	103
24.	Turn Signal Light and Hazard Light System	108
25.	Interior Light System	111
26.	Front Wiper and Washer System	114
27.	Rear Wiper and Washer System	115
28.	Wiper Deicer System	117
29.	Audio System	118
30.	Front Accessory Power Supply Socket System	120
31.	Rear Accessory Power Supply Socket System	121
32.	Navigation System	122
33.	Horn System	125
34.	Power Window System	126
35.	Remote Control Mirror System	130
36.	Rear Defogger System	131
37.	Combination Meter System	132
38.	Speedometer System	142
39.	Clock System	143
40.	Fuel Gauge System	144
41.	Coolant Temperature System	145
42.	Oil Pressure Warning Light System	147
43.	Parking Brake / Brake Fluid Level Warning Light System	148
44.	Sunroof Control System	149
45.	Security System	150

46. Immobilizer System 154
47. Keyless Entry System 155
48. Cruise Control System 159
49. CAN Communication System 167
50. Rearview Mirror System 169
51. Harness Components Location 170
52. Front Wiring Harness 172
53. Bulkhead Wiring Harness (In Engine Compartment) 174
54. Bulkhead Wiring Harness (In Compartment) 178
55. Engine Wiring Harness and Transmission Cord 181
56. Instrument Panel Wiring Harness 186
57. Rear Wiring Harness 188
58. Door Cord 191
59. Rear Wiring Harness and Trunk Lid Cord 193
60. Rear Wiring Harness and Rear Gate Cord 195

1. General Description

A: SPECIFICATION

Headlight	Halogen type low beam	12 V — 55 W
	HID type low beam	12 V — 35 W
	Halogen type high beam	12 V — 60 W
Front turn signal light		12 V — 27 W
Clearance/parking light		12 V — 8 W
Front fog light		12 V — 51 W
Rear combination light (4 door)	Tail/stop light	12 V — 5/21 W
	Turn signal light	12 V — 21 W
	Back-up light	12 V — 16 W
Rear combination light (5 door)	Tail/stop light	12 V — 0.3 W (LED) / 12 V — 4.8 W (LED)
	Turn signal light	12 V — 21 W
	Side marker light	12 V — 5 W
Back-up light (5 door)		12 V — 21 W
License plate light		12 V — 5 W
High-mounted stop light	4 door with built-in rear spoiler	12 V — 1.2 W (LED)
	4 door standard type	12 V — 21 W
	5 door small type with built-in roof spoiler	12 V — 2.7 W (LED)
	5 door large type with built-in roof spoiler	12 V — 1.2 W (LED)
Room light		12 V — 8 W
Spot map light		12 V — 8 W
Luggage room light		12 V — 5 W
Trunk room light		12 V — 5 W

B: CAUTION

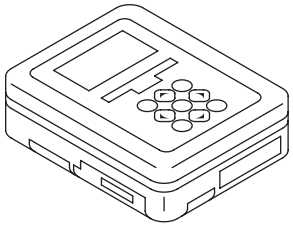
- Before removing or installing parts, always disconnect the battery ground cable from battery. When replacing the audio, control module and other parts provided with memory functions, record the memory contents before disconnecting the battery ground cable. Otherwise, the memory is cleared.
- Reassemble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

WARNING:

- **The airbag system wiring harness is routed near electrical parts and switches. Do not use electrical test devices on any airbag system wiring harnesses or connector circuits.**
- **Be careful not to damage the airbag system wiring harness when servicing electrical parts and switches.**

C: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST1B022XU0	1B022XU0	SUBARU SELECT MONITOR III KIT	Used for troubleshooting the electrical system.

2. GENERAL TOOL

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

2. Headlight and Tail Light System

A: WIRING DIAGRAM

1. HALOGEN TYPE HEADLIGHT

Refer to “Headlight System” in WI section. <Ref. to WI-96, WIRING DIAGRAM, Headlight System.>

2. HID TYPE HEADLIGHT

Refer to “Headlight System” in WI section. <Ref. to WI-96, WIRING DIAGRAM, Headlight System.>

3. CLEARANCE LIGHT AND ILLUMINATION LIGHT

Refer to “Clearance Light and Illumination Light System” in WI section. <Ref. to WI-103, WIRING DIAGRAM, Clearance Light and Illumination Light System.>

B: INSPECTION

1. LIGHTING SWITCH

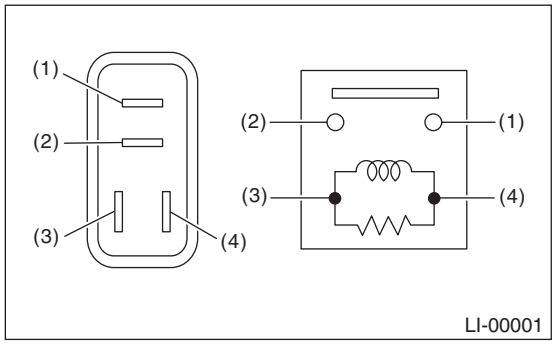
Measure the resistance between lighting switch terminals. <Ref. to LI-11, LIGHTING SWITCH, INSPECTION, Combination Switch (Light).>

2. DIMMER & PASSING SWITCH

Measure the resistance between dimmer & passing switch terminals. <Ref. to LI-12, DIMMER & PASSING SWITCH, INSPECTION, Combination Switch (Light).>

3. HEADLIGHT RELAY

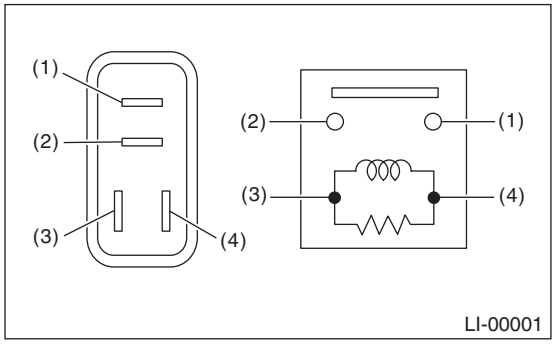
Measure the headlight relay resistance between terminals when connecting terminal No. 4 to the battery positive terminal and terminal No. 3 to the battery ground terminal.



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

4. TAIL AND ILLUMINATION RELAY

Measure the resistance between the 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. Day Time Running Light System

A: WIRING DIAGRAM

Refer to “Headlight System” in WI section. <Ref. to WI-96, WIRING DIAGRAM, Headlight System.>

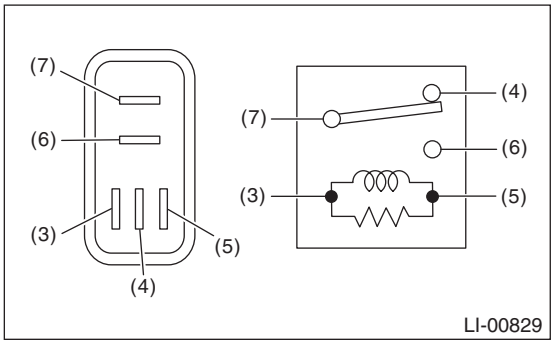
B: INSPECTION

1. DAYTIME RUNNING LIGHT MODULE CHECK

	Step	Check	Yes	No
1	**CHECK DTC.** 1) Connect the Subaru Select Monitor. 2) Read the DTC of the integrated unit.	Is DTC displayed?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK INPUT SIGNAL.** 1) Display the current data of the integrated unit. 2) Check the following input signals. (1) Parking brake switch (2) Shift position (3) Light 2	Is the input signal normal?	Go to step **3**.	Check the defective part.
3	**CHECK RELAY.** Check the daytime running light relay.	Is the relay OK?	Go to step **4**.	Replace the relay.
4	**CHECK HARNESS.**	Is harness normal?	Replace the integrated unit.	Repair the harness.

2. DAYTIME RUNNING LIGHT RELAY

Measure the resistance between the daytime running relay terminals when connecting terminal No. 3 to the battery positive terminal and terminal No. 5 to the battery ground terminal.



Continuity	Terminal No.	Standard
Yes	7 and 6	Less than 1 Ω
No		1 MΩ or more
Yes	7 and 4	1 MΩ or more
No		Less than 1 Ω

4. Front Fog Light System

A: WIRING DIAGRAM

Refer to “Front Fog Light System” in WI section. <Ref. to WI-99, WIRING DIAGRAM, Front Fog Light System.>

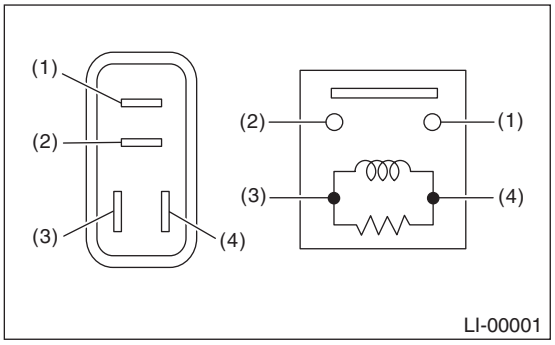
B: INSPECTION

1. FRONT FOG LIGHT SWITCH

Measure the resistance between front fog light switch terminals. <Ref. to LI-12, FRONT FOG LIGHT SWITCH, INSPECTION, Combination Switch (Light).>

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

5. Turn Signal Light and Hazard Light System

A: WIRING DIAGRAM

Refer to “Turn Signal Light and Hazard Light System” in WI section. <Ref. to WI-108, WIRING DIAGRAM, Turn Signal Light and Hazard Light System.>

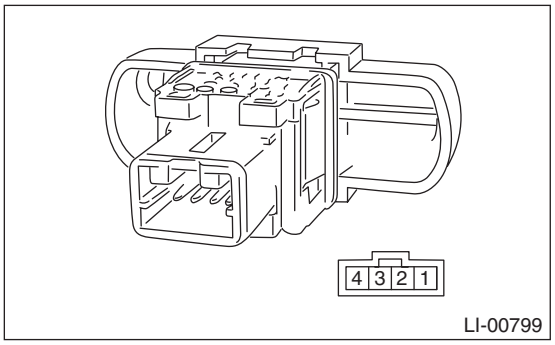
B: INSPECTION

1. TURN SIGNAL SWITCH

Measure the resistance between turn signal switch terminals. <Ref. to LI-12, TURN SIGNAL SWITCH, INSPECTION, Combination Switch (Light).>

2. HAZARD SWITCH

Measure the resistance between hazard switch terminals.

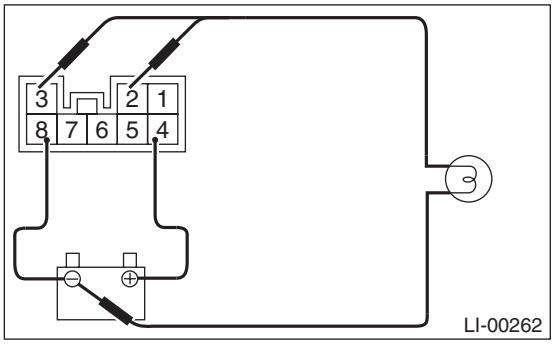


Switch position	Terminal No.	Standard
OFF	2 and 3	1 MΩ or more
ON		Less than 1 Ω

Replace the hazard switch if faulty.

3. TURN SIGNAL AND HAZARD MODULE

Connect the battery and turn signal light bulb to the module. The module is properly functioning if it blinks when power is supplied to the circuit.



Replace the turn signal & hazard module if faulty.

6. Back-up Light System

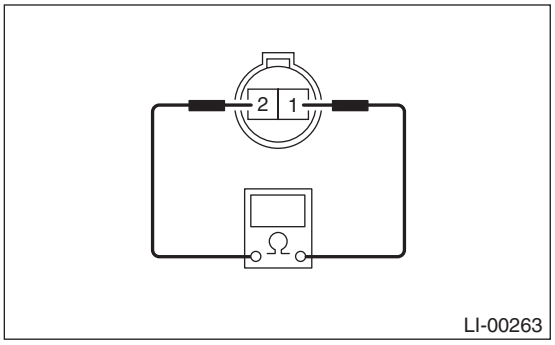
A: WIRING DIAGRAM

Refer to “Back-up Light System” in WI section. <Ref. to WI-100, WIRING DIAGRAM, Back-up Light System.>

B: INSPECTION

1. BACK-UP LIGHT SWITCH (MT MODEL)

Measure the resistance between the back-up light switch terminals.

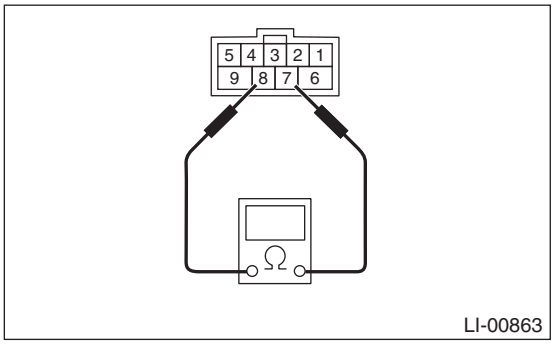


Switch position	Terminal No.	Standard
When shift lever is set in reverse position	1 and 2	Less than 1 Ω
Other positions		1 MΩ or more

Replace the back-up light switch if faulty.

2. INHIBITOR SWITCH (AT MODEL)

Measure the resistance between the inhibitor switch terminals.



Switch position	Terminal No.	Standard
When the selector lever is in the “R” range	7 and 8	Less than 1 Ω
Other positions		1 MΩ or more

Replace the inhibitor switch if faulty.

7. Stop Light System

A: WIRING DIAGRAM

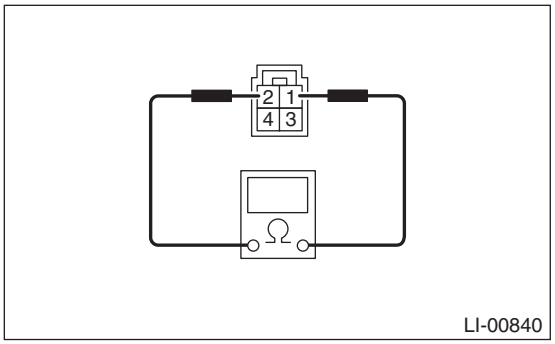
Refer to “Stop Light System” in WI section. <Ref. to WI-101, WIRING DIAGRAM, Stop Light System.>

B: INSPECTION

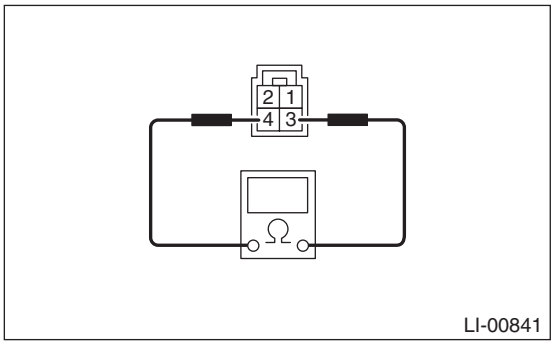
1. STOP LIGHT SWITCH

Measure the resistance between stop light switch terminals.

- 5 door model



- 4 door model



Switch position	Terminal No.	Standard
When brake pedal is depressed	5 door model: 1 and 2 4 door model: 3 and 4	Less than 1 Ω
When brake pedal is released		1 MΩ or more

Replace the stop light switch if faulty.

8. Room Light System

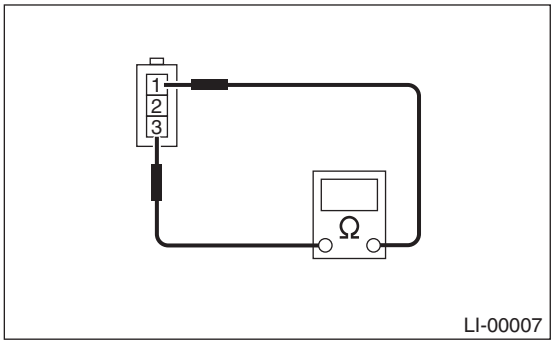
A: WIRING DIAGRAM

Refer to “Interior Light System” in WI section. <Ref. to WI-111, WIRING DIAGRAM, Interior Light System.>

B: INSPECTION

1. DOOR SWITCH

Measure the resistance between door switch terminals.

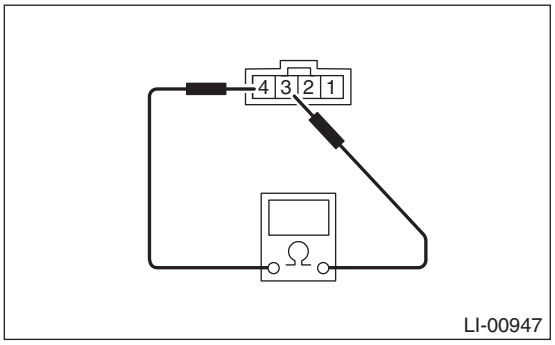


Switch position	Terminal No.	Standard
When door is opened	1 and 3	Less than 1 Ω
When door is closed		1 MΩ or more

Replace the door switch if faulty.

2. REAR GATE LATCH SWITCH

Measure the resistance between rear gate latch switch terminals.

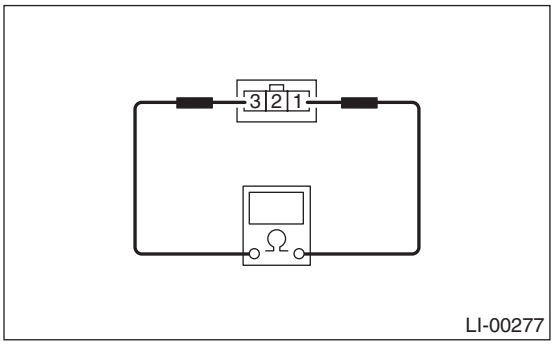


Switch position	Terminal No.	Standard
When rear gate is opened	3 and 4	Less than 1 Ω
When rear gate is closed		1 MΩ or more

Replace the rear gate latch and actuator assembly if faulty.

3. TRUNK LID SWITCH

Measure the resistance between trunk lid switch terminals.



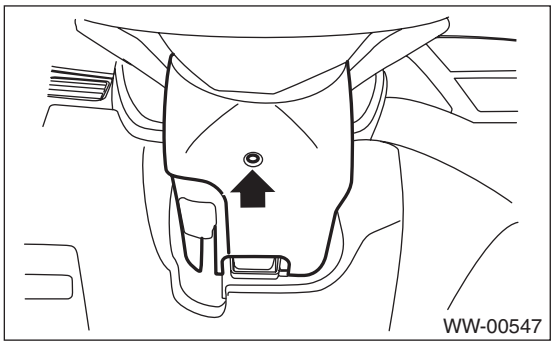
Switch position	Terminal No.	Standard
When trunk lid is opened	1 and 3	Less than 1 Ω
When trunk lid is closed		1 MΩ or more

Replace the trunk lid latch and actuator assembly if faulty.

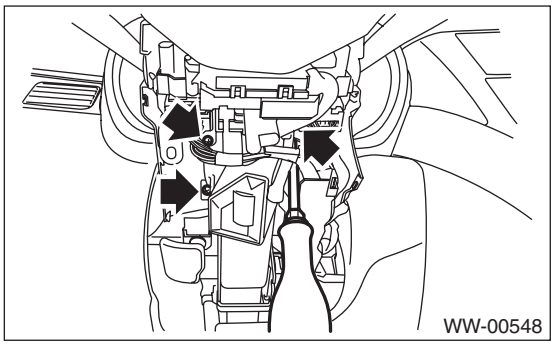
9. Combination Switch (Light)

A: REMOVAL

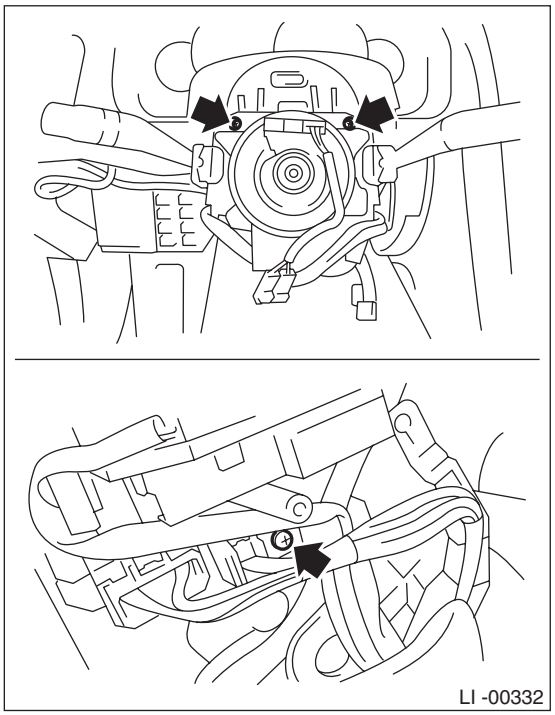
1) Disconnect the ground cable from battery.
2) Remove the screws and remove the steering column cover lower.



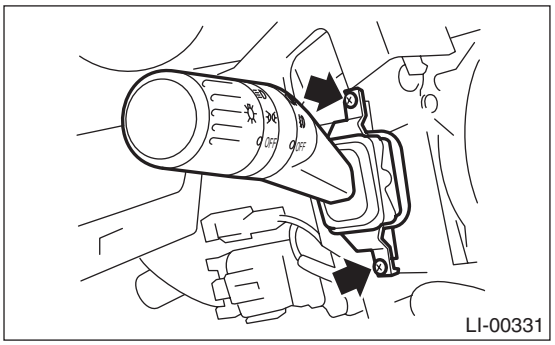
3) Remove the three mounting screws of steering column cover upper.



4) Disconnect the connector from combination switch.
5) Remove the three screws, and pull out the combination base switch assembly.



6) Remove the screws which secure the switch, then remove the combination switch.

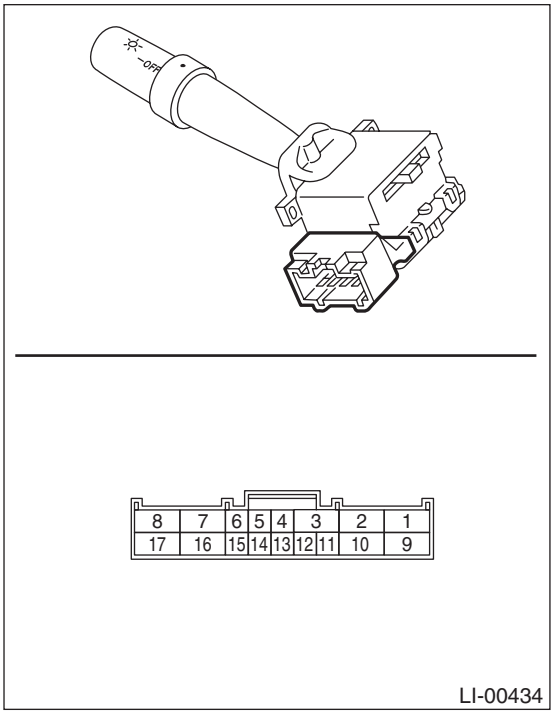


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the resistance between combination switch terminals.



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

Replace the combination switch (light) if faulty.

2. DIMMER & PASSING SWITCH

Switch position	Terminal No.	Standard
Passing	7, 8 and 16	Less than 1 Ω
High beam	7 and 16	Less than 1 Ω

Replace the combination switch (light) if faulty.

3. TURN SIGNAL SWITCH

Switch position	Terminal No.	Standard
Left	1 and 2	Less than 1 Ω
Neutral	—	1 MΩ or more
Right	3 and 2	Less than 1 Ω

Replace the combination switch (light) if faulty.

4. FRONT FOG LIGHT SWITCH

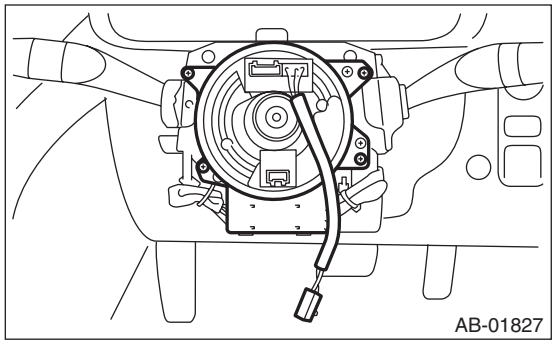
Switch position	Terminal No.	Standard
OFF	11 and 10	1 MΩ or more
ON		Less than 1 Ω

Replace the combination switch (light) if faulty.

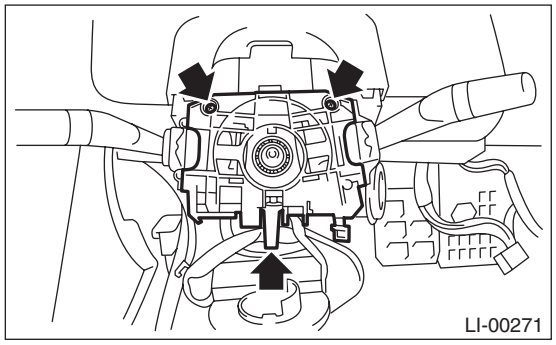
10.Combination Base Switch Assembly

A: REMOVAL

1) Remove the driver's airbag module. <Ref. to AB-15, REMOVAL, Driver's Airbag Module.>
2) Remove the steering wheel. <Ref. to PS-12, REMOVAL, Steering Wheel.>
3) Remove the combination switch. <Ref. to LI-11, REMOVAL, Combination Switch (Light).> <Ref. to WW-7, REMOVAL, Combination Switch (Wiper).>
4) Remove the four screws and remove the roll connector.



5) Remove the three screws.



6) Disconnect the harness connector and remove the combination base switch assembly.

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-26, ADJUSTMENT, Roll Connector.>

C: INSPECTION

1. COMBINATION BASE SWITCH ASSEMBLY

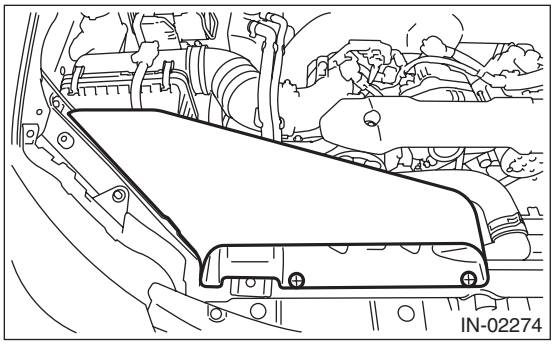
Inspect the combination base switch assembly and roll connector for cracks or deformation. If any damage is found, replace with a new part.

11.Headlight Assembly

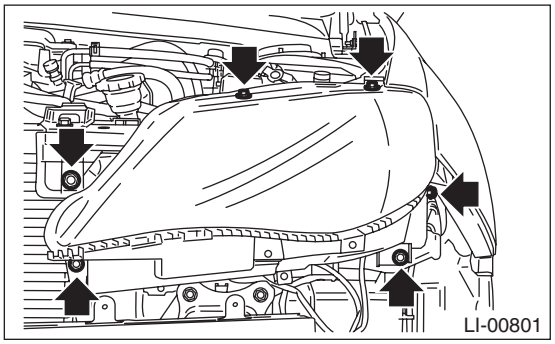
A: REMOVAL

CAUTION:
- **Do not perform work with wet hands.**
- **The HID headlight uses very high voltages for the lighting circuit. Make sure that the power is turned OFF before working.**

1) Disconnect the ground cable from battery.
2) Remove the air intake duct. (When removing the headlight RH).



3) Remove the front bumper face. <Ref. to EI-29, FRONT BUMPER FACE, REMOVAL, Front Bumper.>
4) Disconnect harness connectors.
5) Remove the five bolts and clip to remove the headlight assembly.



B: INSTALLATION

Install in the reverse order of removal.

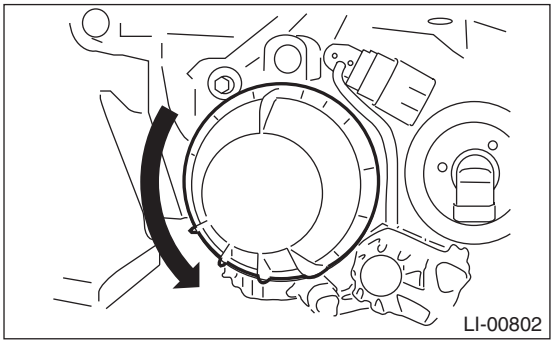
Tightening torque:
7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

C: DISASSEMBLY

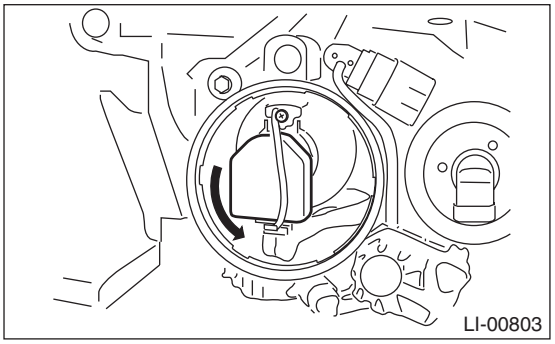
1. HID HEADLIGHT BALLAST

CAUTION:
- **Do not perform work with wet hands.**
- **The HID headlight uses very high voltages for the lighting circuit. Make sure that the power is turned OFF before working.**
- **Do not leave the headlight without the ballast for a long time. Dust, moisture, etc. entering the headlight may affect its performance.**

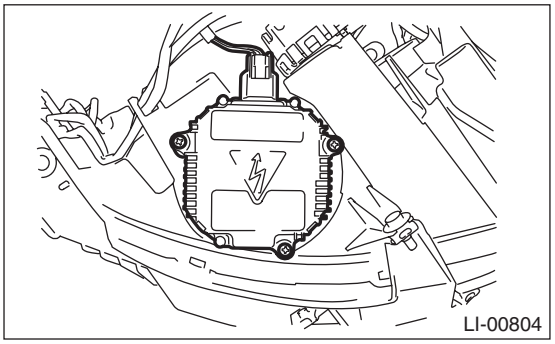
1) Disconnect the ground cable from battery.
2) Remove the headlight assembly. <Ref. to LI-14, REMOVAL, Headlight Assembly.>
3) Remove the back cover.



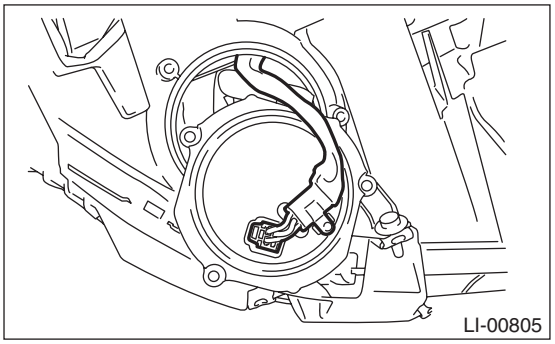
4) Disconnect the harness connector.



5) Remove the harness connector and screws to pull out the ballast.



6) Remove the harness connector and screws on the back to remove the headlight ballast.



D: ASSEMBLY

1. HID HEADLIGHT BALLAST

CAUTION:
• When installing the ballast cover, be sure to install the gasket.
• After installing the ballast to the vehicle, be sure to perform beam adjustment.
Install in the reverse order of removal.

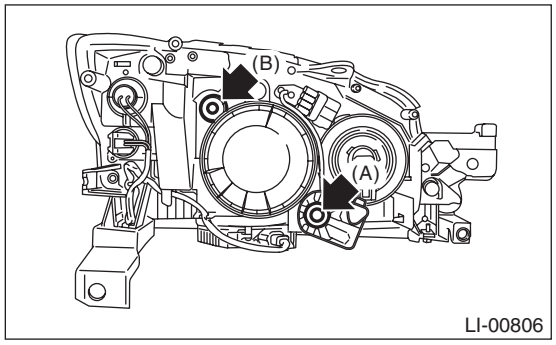
Tightening torque:
1.3 N·m (0.13 kgf-m, 0.96 ft-lb)

NOTE:
Adjust the projector lens to near the center of the extension opening before installing the ballast. This makes the beam adjustment work easier.

E: ADJUSTMENT

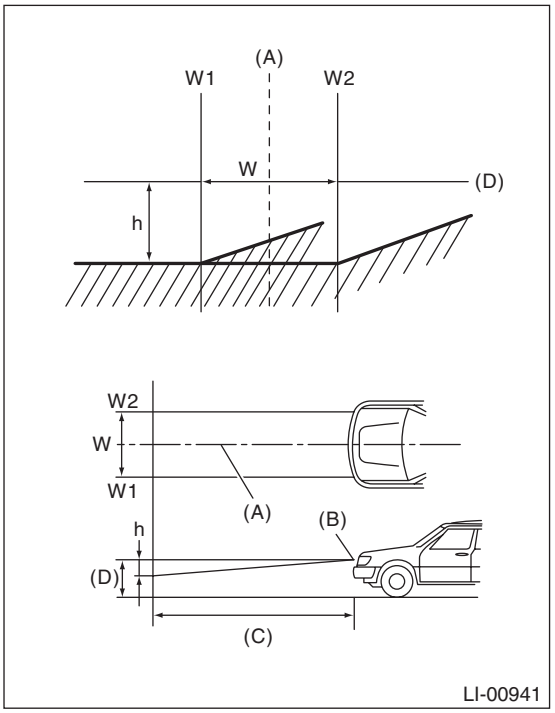
1. HEADLIGHT BEAM ADJUSTMENT

CAUTION:
Turn off the light before adjusting the headlight beam level. If it is necessary to inspect the beam level, do not keep the light on for two minutes or more.
1) Before checking the headlight beam level, be sure of the following:
• The area around the headlight has not sustained any accident, 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 fully filled.
2) For vehicle with a manual leveler, set the headlight beam leveler switch to the "0" position.
3) Bounce the vehicle several times to normalize the suspension.
4) Make certain that someone is seated in the driver's seat.
5) Measure the distance between the low beam bulb centers and the height of the bulb center.
6) Turn the headlights on and then adjust the low beam pattern.



(1) Adjust the vertical beam level (A).

(2) Adjust the horizontal beam level (B).



(A) Vehicle center
(B) Bulb center marking
(C) 3 m (10 ft)
(D) Height of headlight center

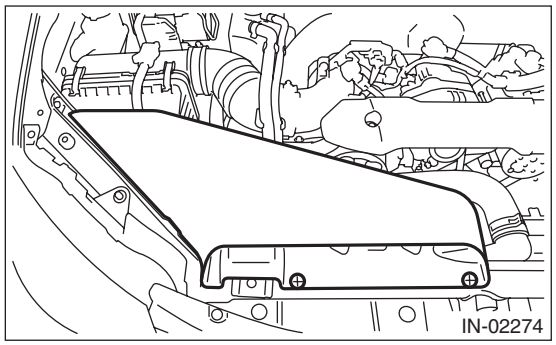
W mm (in)	h mm (in) at 3 m (10 ft)
1,160 (45.67)	30 (1.18)

12.Headlight Bulb

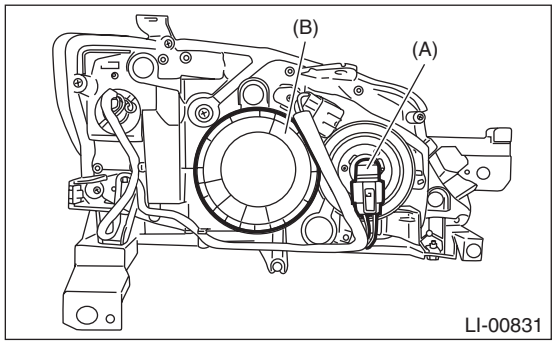
A: REMOVAL

1. HIGH BEAM & HALOGEN TYPE LOW BEAM

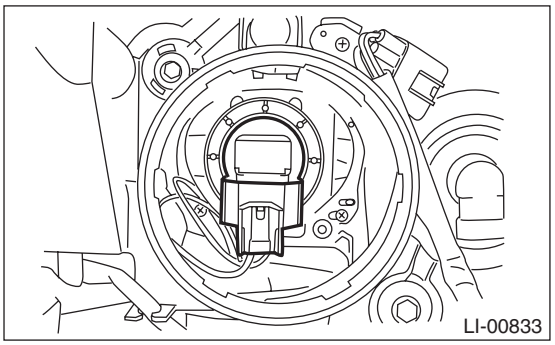
CAUTION:
• Because the halogen bulb operates at a high temperature, dirt and oil on the bulb surface reduces the bulb's service life. Hold the flange portion when replacing the bulb. Never touch the glass portion.
• Do not leave the headlight without a bulb for a long time. Dust, moisture, etc. entering the headlight may affect its performance.
1) Disconnect the ground cable from battery.
2) Remove the air intake duct. (When removing the headlight bulb RH).



3) Remove the battery cover. (When removing the headlight bulb LH)
4) Tilt the washer tank filler neck. (When removing the headlight bulb LH)
5) Disconnect the harness connector.
6) Remove the bulb assembly (A) then remove the high beam. To remove the low beam, remove the back cover (B), and then go to step 7.

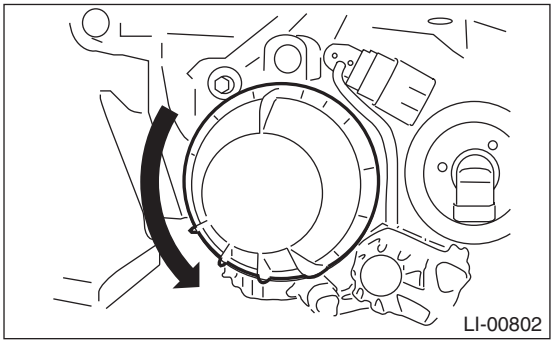


7) Disconnect the harness connector, and remove the bulb.

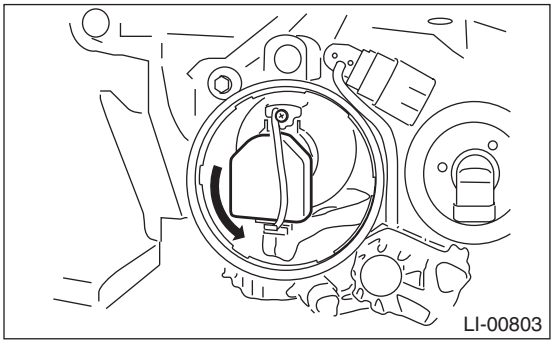


2. HID TYPE LOW BEAM

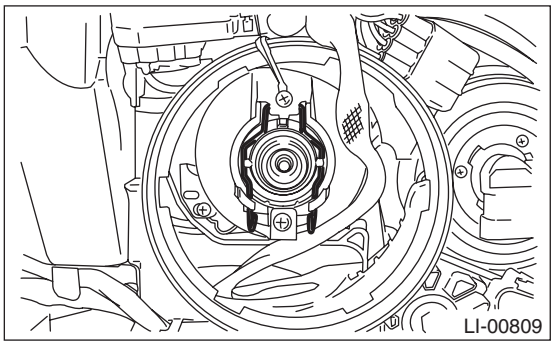
CAUTION:
• Do not work with wet hands.
• Because the lighting circuit uses high voltage, be sure to confirm that the power supply is turned off before operation.
• When replacing the bulb, hold the flange portion, and never touch the glass.
• Do not leave the headlight without a bulb for a long time. 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, REMOVAL, Headlight Assembly.>
3) Remove the back cover.



4) Disconnect the harness connector.



5) Remove the light bulb retaining spring, and remove the bulb.



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

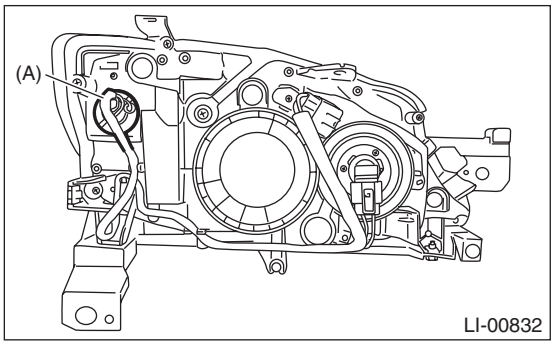
CAUTION:
• Do not perform work with wet hands.
• When lit (lighting switch is ON), do not touch the harness, light internals, or metal parts of the light.
• When performing a lighting test, make sure that the headlight is mounted on the vehicle, and the power supply is connected to the connector on the vehicle's side.

1) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
2) Install the factory HID bulb to check whether it lights properly.
3) If it does not light properly, replace with a new bulb.
4) Inspect the HID ballast.
Inspect the ballast in the following manner, and determine whether or not to reuse.
(1) Perform cold starts (light the headlight after turning off for 10 minutes or more), and hot starts (light the headlight for 15 minutes or more, then turn off for 1 minute and relight) several times, to make sure that the headlight lights properly.
(2) Monitor the lighting condition right after a cold start up to a stable state (approx. 5 min.), to see if there are any unstable conditions such as flickering.
(3) Install bulbs with the same number of operating hours on both headlights, and light for approximately 30 minutes. Check for whether there is a difference in brightness on the right and left sides.
5) If there is a malfunction, replace with a new ballast.

13.Front Turn Signal Light Bulb

A: REMOVAL

1) When removing the turn signal light bulb, fully turn the steering wheels to opposite direction from the turn signal light bulb to remove.
2) Disconnect the ground cable from battery.
3) Turn the mud guard inward.
4) Turn socket (A) from the wheel arch, and remove the front turn signal light bulb.



B: INSTALLATION

Install in the reverse order of removal.

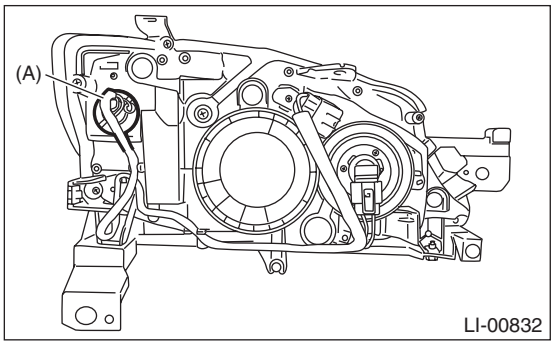
C: INSPECTION

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.

14.Clearance/Parking Light Bulb

A: REMOVAL

1) When removing the clearance/parking light bulb, fully turn the steering wheels to opposite direction from the turn signal light bulb to remove.
2) Disconnect the ground cable from battery.
3) Turn the mud guard inward.
4) Turn socket (A) from the wheel arch, and remove the clearance/parking light bulb.



B: INSTALLATION

Install in the reverse order of removal.

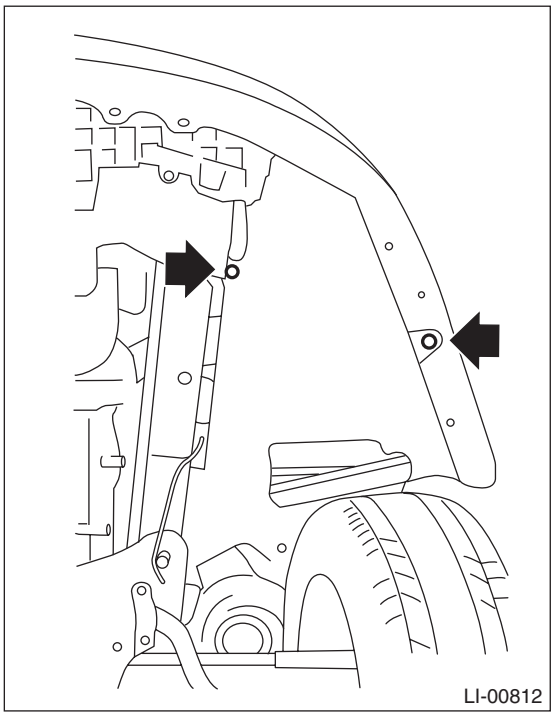
C: INSPECTION

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.

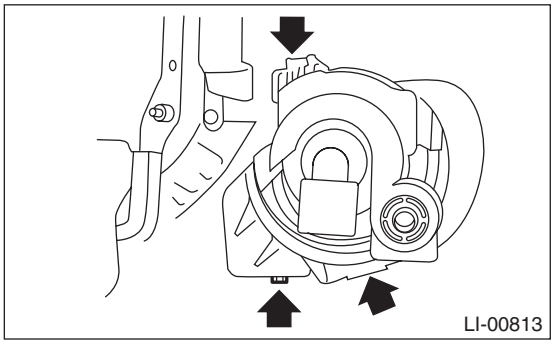
15.Front Fog Light Assembly

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Disengage the two clips, and then turn over the mud guard.



3) Disconnect the harness connector.
4) Remove the upper clip and the lower bolt and clip, and then remove the fog light assembly.



B: INSTALLATION

Install in the reverse order of removal.

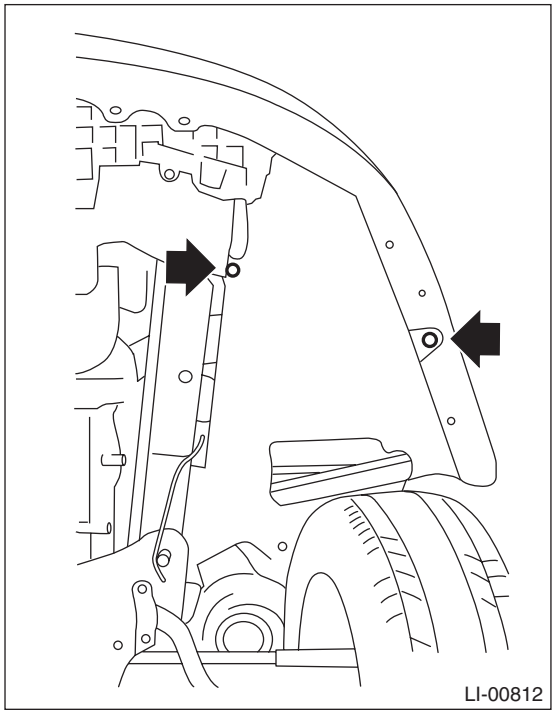
Tightening torque:
7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

C: ADJUSTMENT

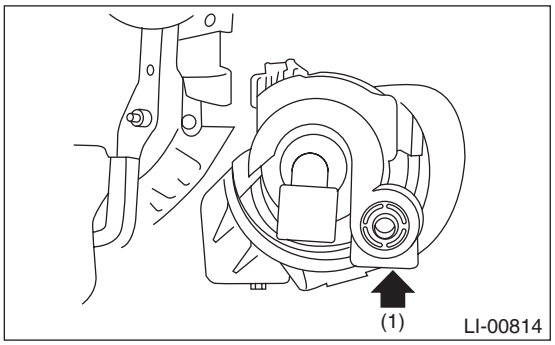
1. FOG LIGHT AIMING

1) Before checking the fog light beam level, be sure of the following:
- The area around the fog light has not sustained any accident, 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 fully filled.

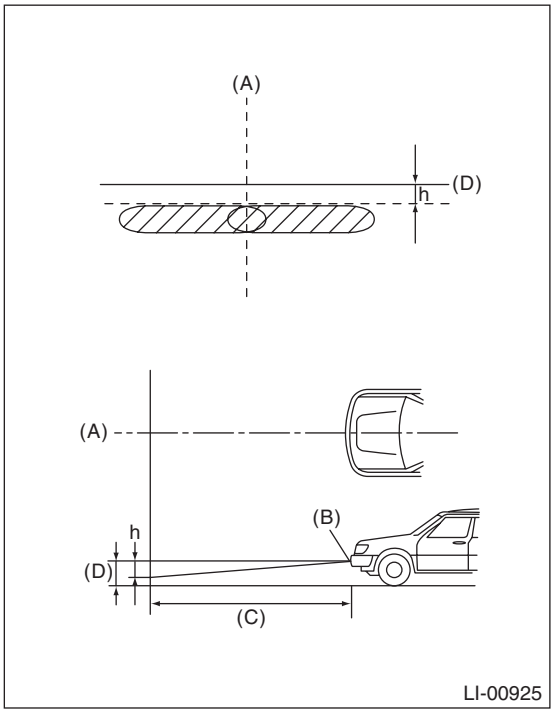
2) Bounce the vehicle several times to normalize the suspension.
3) Make certain that someone is seated in the driver's seat.
4) Disengage the two clips, and then turn over the mud guard.



5) Adjust the front fog light pattern by inserting a Philips screwdriver to the adjusting hole.



(1) Adjusting hole



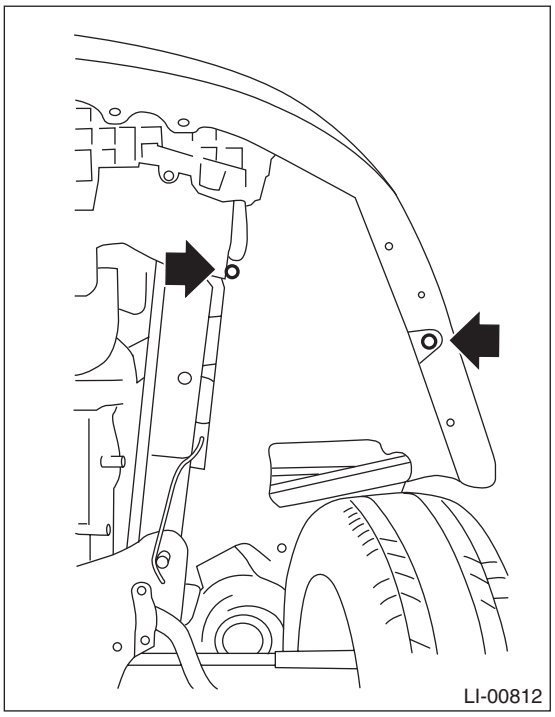
(A) Vehicle center
(B) Bulb center marking
(C) 3 m (10 ft)
(D) Height of fog light center

h mm (in) at 3 m (10 ft)
60 (2.38)

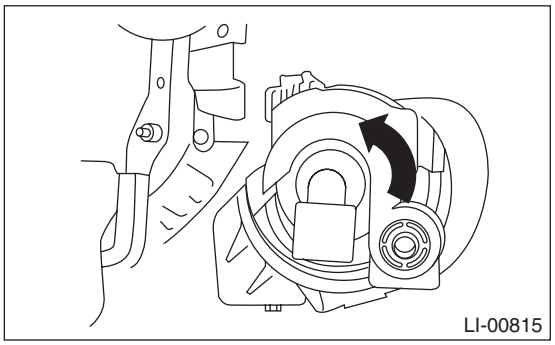
16.Front Fog Light Bulb

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Disengage the two clips, and then turn over the mud guard.



3) Disconnect the harness connector.
4) Rotate the bulb then detach the fog light bulb.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

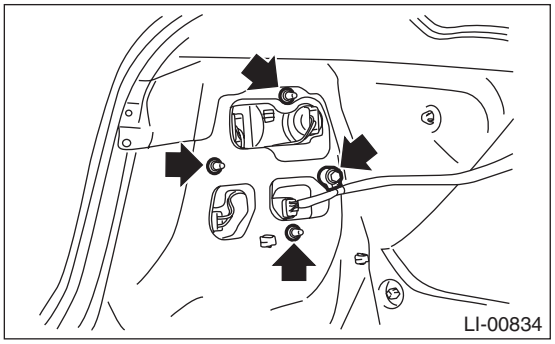
1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
3) If NG, replace the bulb with a new part.

17. Rear Combination Light Assembly

A: REMOVAL

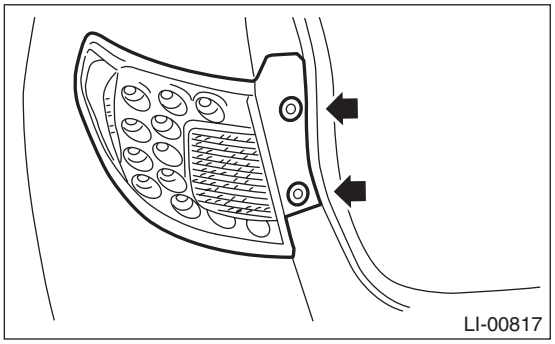
1. 4 DOOR MODEL

1) Disconnect the ground cable from battery.
2) Remove the trunk room side trim. <Ref. to EI-61, REMOVAL, Trunk Room Trim.>
3) Remove the harness connector and four nuts, and remove the rear combination light.



2. 5 DOOR MODEL

1) Disconnect the ground cable from the battery.
2) Remove the two bolts, and then detach the rear combination light by pulling it to the rear side of vehicle.



3) Disconnect the harness connector and rear combination light.

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

1. 4 DOOR MODEL

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. 5 DOOR MODEL

1) Install the rear combination light assembly and check that it blinks normally.
2) If it does not blink normally, replace the rear combination light assembly with a new part.

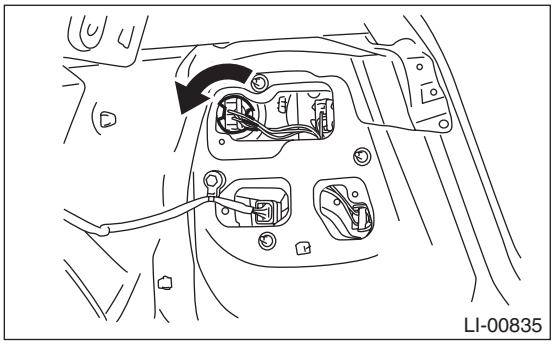
NOTE:
Since LED (Light Emitting Diode) is used for the tail light/stop light bulb, replace the rear combination light assembly if the LED burns out.

18.Tail/Stop Light Bulb

A: REMOVAL

1. 4 DOOR MODEL

1) Disconnect the ground cable from battery.
2) Remove the trunk room side trim cover. <Ref. to EI-61, REMOVAL, Trunk Room Trim.>
3) Turn the socket and remove the bulb.



2. 5 DOOR MODEL

Since LED (Light Emitting Diode) is used for the tail light / stop light bulb, they can not removed.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

1. 4 DOOR MODEL

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. 5 DOOR MODEL

1) Install the rear combination light assembly and check that it blinks normally.
2) If it does not blink normally, replace the rear combination light assembly with a new part.

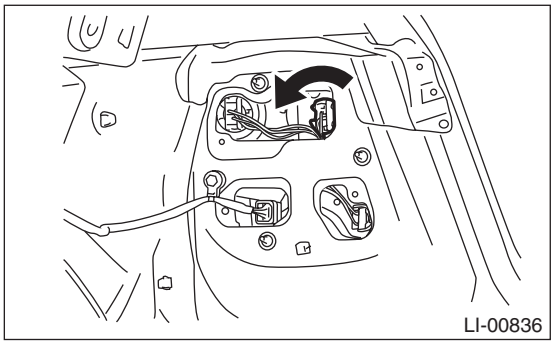
NOTE:
Since LED (Light Emitting Diode) is used for the tail light/stop light bulb, replace the rear combination light assembly if the LED burns out.

19.Rear Turn Signal Light Bulb

A: REMOVAL

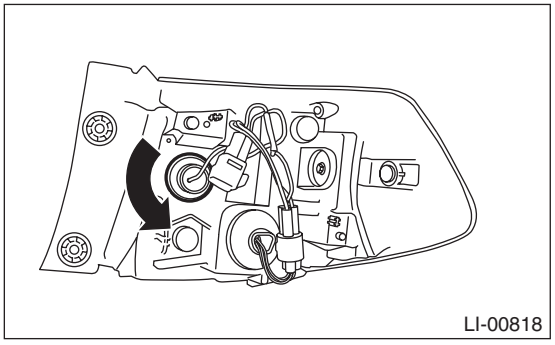
1. 4 DOOR MODEL

1) Disconnect the ground cable from battery.
2) Remove the trunk room side trim cover. <Ref. to EI-61, REMOVAL, Trunk Room Trim.>
3) Turn the socket and remove the bulb.



2. 5 DOOR MODEL

1) Remove the rear combination light assembly. <Ref. to LI-23, 5 DOOR MODEL, REMOVAL, Rear Combination Light Assembly.>
2) Turn the socket and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

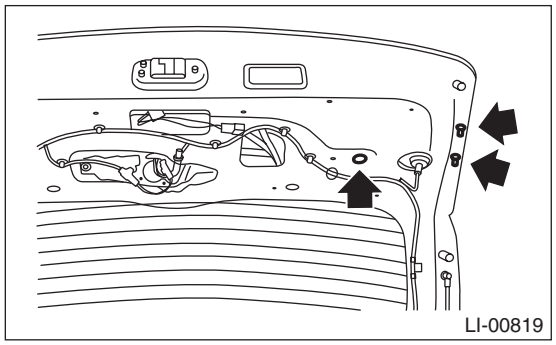
C: INSPECTION

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.Rear Finisher Light Assembly

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the rear gate trim. <Ref. to EI-67, REMOVAL, Rear Gate Trim.>
3) Disconnect the harness connector.
4) Remove the attachment nuts and remove the rear finisher light assembly.



B: INSTALLATION

Install in the reverse order of removal.

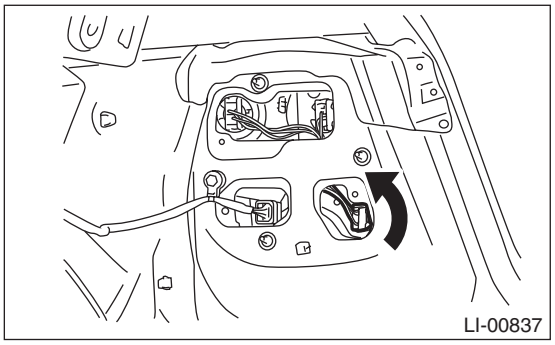
Tightening torque:
4.5 N·m (0.46 kgf-m, 3.3 ft-lb)

21.Back-up Light Bulb

A: REMOVAL

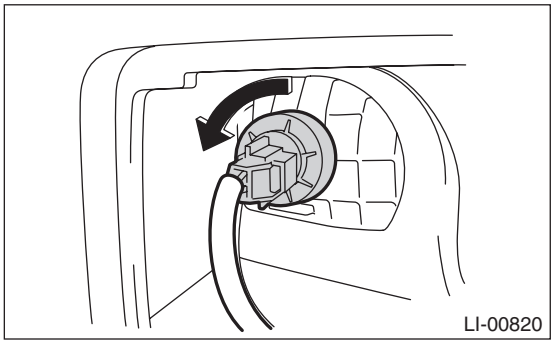
1. 4 DOOR MODEL

1) Disconnect the ground cable from battery.
2) Remove the trunk room side trim cover. <Ref. to EI-61, REMOVAL, Trunk Room Trim.>
3) Turn the socket and remove the bulb.



2. 5 DOOR MODEL

NOTE:
For models with a rear fog light, the back-up light is installed on the passenger's side.
1) Disconnect the ground cable from battery.
2) Remove the bulb inspection cover of the rear gate trim.
3) Turn the socket and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

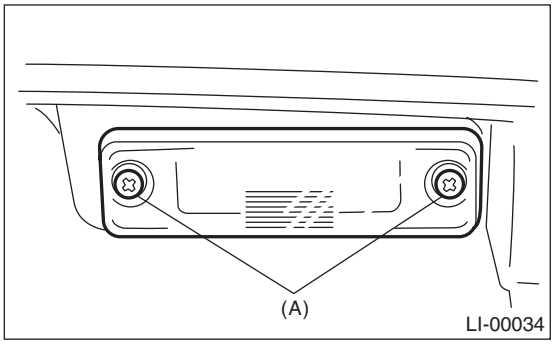
1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
3) If NG, replace the bulb with a new part.

22.License Plate Light

A: REMOVAL

1. 4 DOOR MODEL

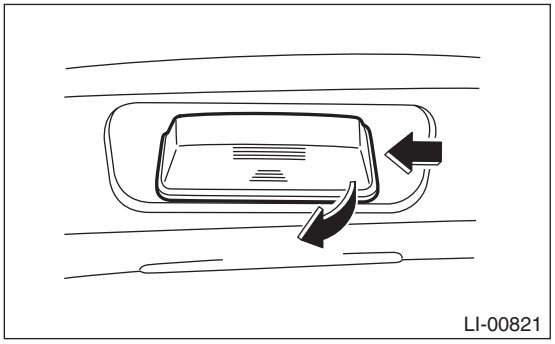
1) Disconnect the ground cable from battery.
2) Remove the license plate light mounting screw (A) and then remove the lens.



3) Remove the bulb.

2. 5 DOOR MODEL

1) Disconnect the ground cable from battery.
2) Remove the license plate light while pushing it to the left and pulling it.



3) Remove the bulb.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

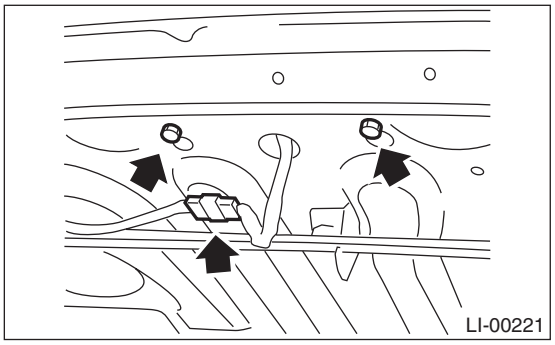
1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
3) If NG, replace the bulb with a new part.

23.High-mounted Stop Light

A: REMOVAL

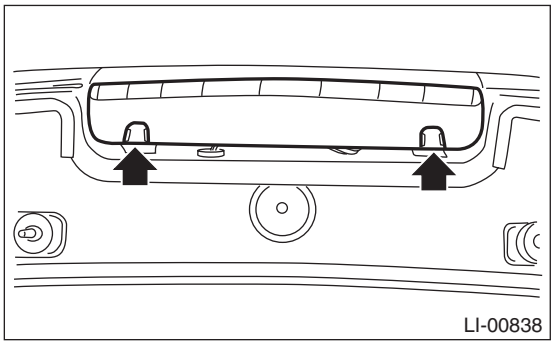
1. 4 DOOR MODEL (STANDARD TYPE)

1) Disconnect the ground cable from the battery.
2) Disconnect the connector of the high-mounted stop light from the body harness.
3) Remove the bolt, then remove the high-mounted stop light assembly.



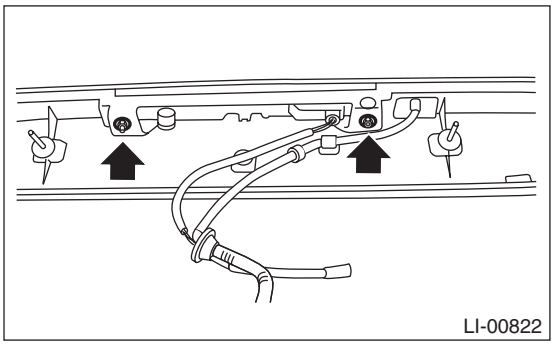
2. 4 DOOR MODEL (WITH BUILT-IN REAR SPOILER)

1) Disconnect the ground cable from the battery.
2) Remove the rear spoiler. <Ref. to EI-40, REMOVAL, Rear Spoiler.>
3) Remove the caps and screws, then detach the high-mounted stop light.



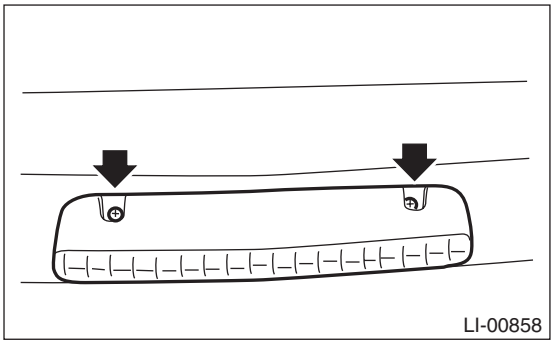
3. 5 DOOR MODEL (WITH BUILT-IN SMALL TYPE ROOF SPOILER)

1) Disconnect the ground cable from the battery.
2) Remove the roof spoiler. <Ref. to EI-39, REMOVAL, Roof Spoiler.>
3) Remove the nuts, then detach the high-mounted stop light.



4. 5 DOOR MODEL (WITH BUILT-IN LARGE TYPE ROOF SPOILER)

1) Disconnect the ground cable from battery.
2) Remove the roof spoiler. <Ref. to EI-39, REMOVAL, Roof Spoiler.>
3) Remove the caps and screws, then detach the high-mounted stop light.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

1. 4 DOOR MODEL (STANDARD 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. EXCEPT FOR 4 DOOR MODEL (STANDARD TYPE)

1) Install the high-mounted stop light to test if it illuminates normally.
2) If the high-mounted stop light does not illuminate, replace it with a new part.

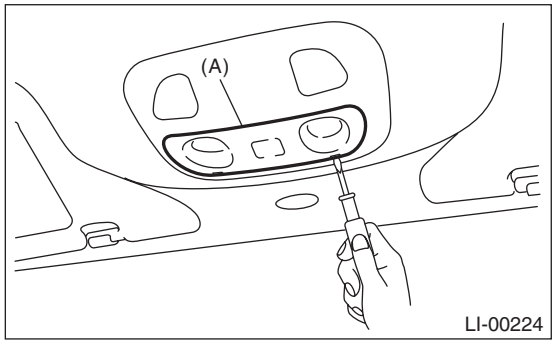
NOTE:
Since LED (Light Emitting Diode) is used for the high-mounted stop light, replace the high-mounted stop light assembly if the LED burns out.

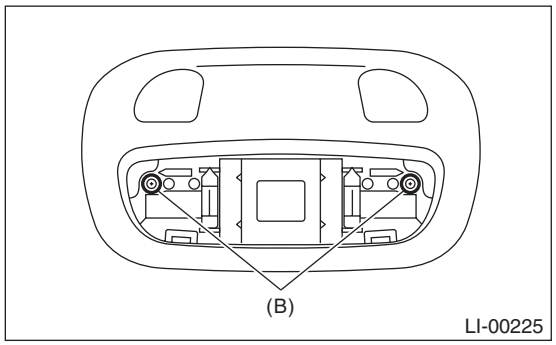
24.Spot Map Light

A: REMOVAL

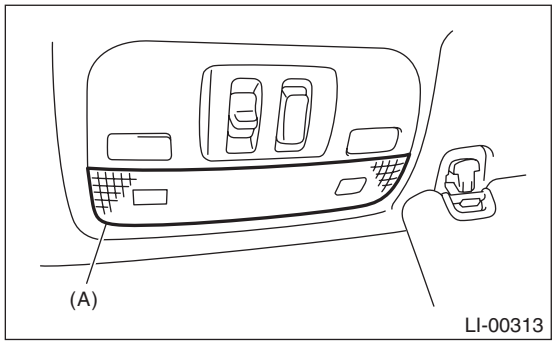
1) Disconnect the ground cable from battery.
2) Remove the lens (A) and spot map light mounting screws (B).

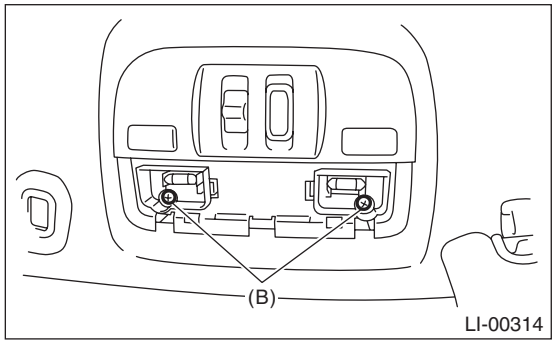
- Model without sunroof





- Model with sunroof





3) Disconnect the harness connectors and remove the spot map light.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

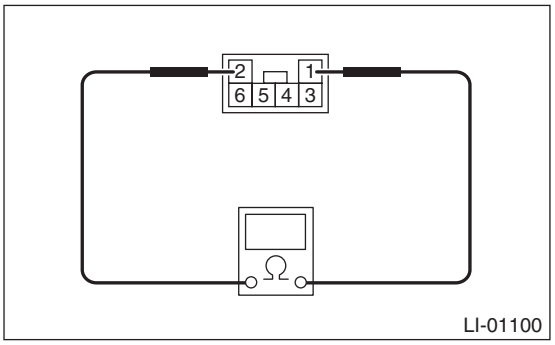
1. SPOT MAP LIGHT BULB

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.

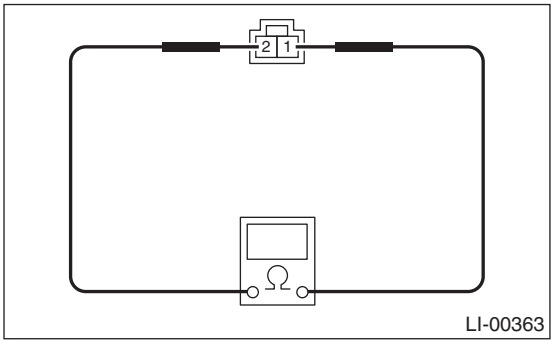
2. SPOT MAP LIGHT SWITCH

Measure the spot map light resistance.

- Model without sunroof



- Model with sunroof



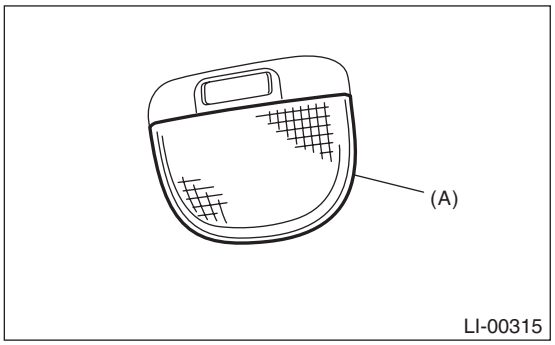
Switch position	Terminal No.	Standard
OFF	1 and 2	1 MΩ or more
ON	1 and 2	18±5.4 Ω

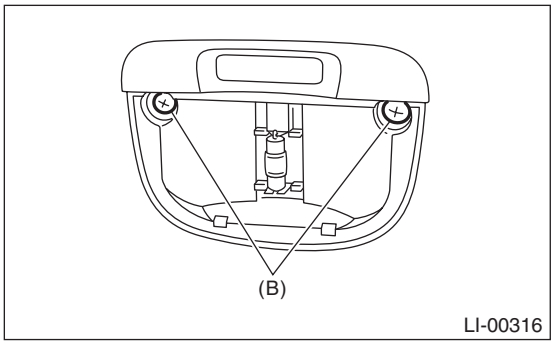
Replace the spot map light if faulty.

25.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.

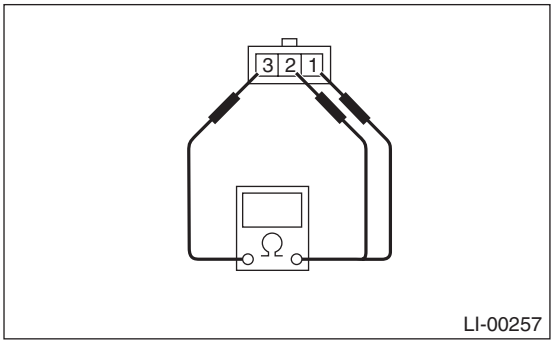
C: INSPECTION

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

1) Measure the resistance between room light switch terminals.



Switch position	Terminal No.	Standard
OFF	—	1 MΩ or more
ON	1 and 3	1.5±0.5 Ω
DOOR	2 and 3	1.5±0.5 Ω

2) Connect terminal No. 3 to the battery positive terminal and terminal No. 1 and No. 2 to the battery ground terminal, and check room light operation.

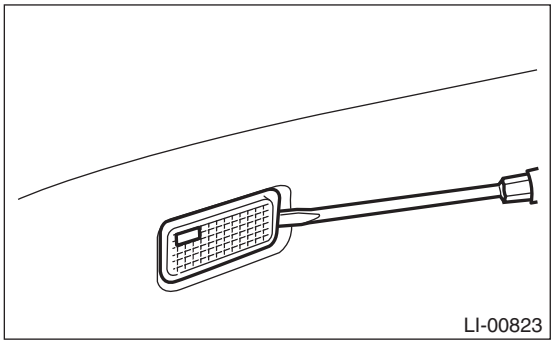
Switch position	Light status
OFF	Light OFF
ON	Light ON
DOOR	Light ON

3) Replace the room light if faulty.

26.Luggage Room Light

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Insert a flat tip screwdriver into the edge of the luggage room light body to remove the luggage room light.



3) Disconnect the harness connector and remove the lens.

B: INSTALLATION

Install in the reverse order of removal.

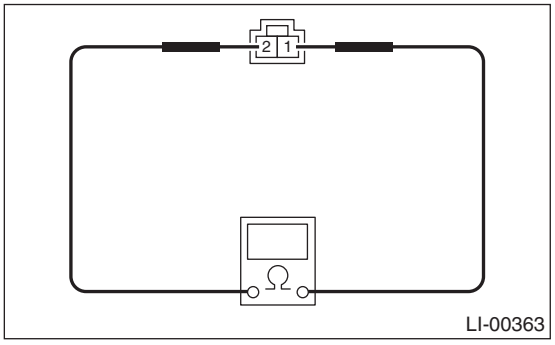
C: INSPECTION

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 resistance between luggage room light switch terminals.



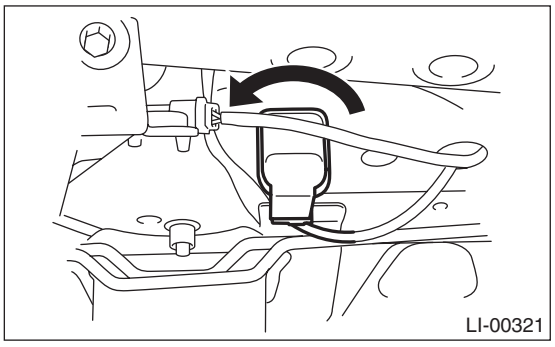
Switch position	Terminal No.	Standard
OFF	1 and 2	1 MΩ or more
ON		Less than 1 Ω

Replace the luggage room light if faulty.

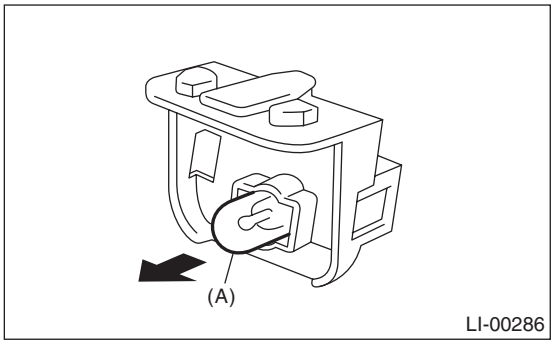
27.Trunk Room Light

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Turn the trunk room light counterclockwise 60° to remove it and disconnect the harness connector.



3) Remove bulb (A).



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

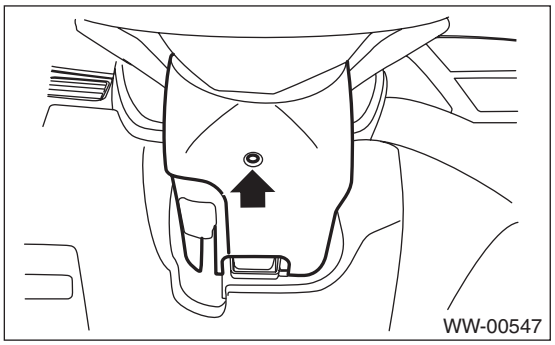
1. TRUNK ROOM LIGHT BULB

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.

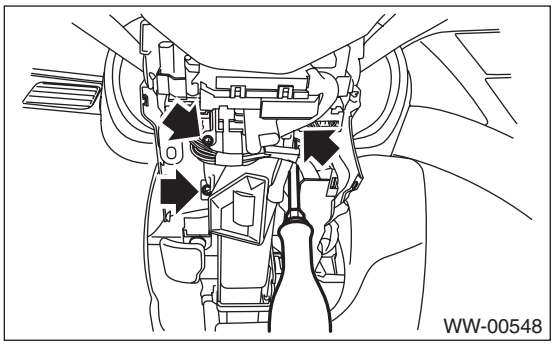
28.Ignition Switch Illumination

A: REMOVAL

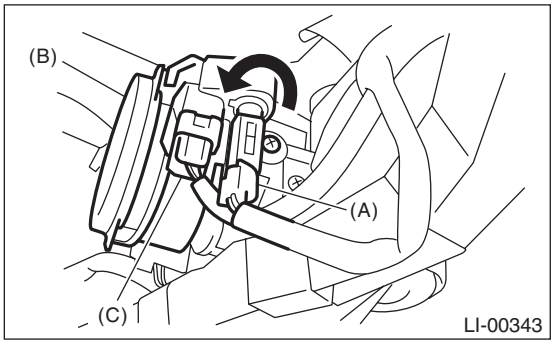
1) Disconnect the ground cable from battery.
2) Remove the screws and remove the steering column cover lower.



3) Remove the three mounting screws of steering column cover upper.



4) Remove the instrument panel lower cover. <Ref. to EI-46, REMOVAL, Instrument Panel Lower Cover.>
5) Disconnect the ignition switch illumination connector (A).
6) Turn the ignition switch illumination connector to the left and remove it.



(A) Ignition switch illumination connector
(B) Ignition switch illumination
(C) Immobilizer antenna connector

B: INSTALLATION

Install in the reverse order of removal.

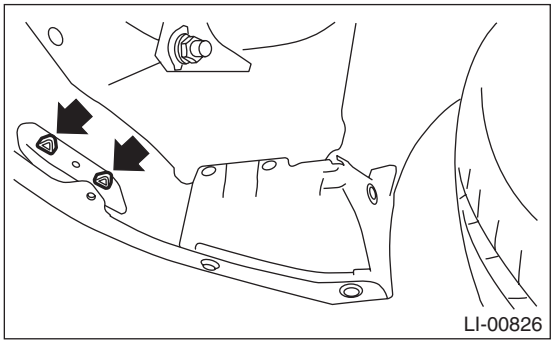
C: INSPECTION

Step		Check	Yes	No
1	**CHECK THE IGNITION SWITCH ILLUMINATION.** Make sure the ignition switch illumination illuminates when driver's side door is open.	Does the ignition switch illumination illuminate?	Ignition switch illumination is normal.	Go to step **2**.
2	**CHECK THE IGNITION SWITCH ILLUMINATION.** Make sure the ignition switch illumination blinks when the ignition switch is turned to ON.	Does the ignition switch illumination blink?	Check the function setting of body integrated unit. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>	Check the ignition switch illumination circuit. <Ref. to SL-24, CHECK IGNITION SWITCH ILLUMINATION, INSPECTION, Keyless Entry System.>

29.Reflex Reflector

A: REMOVAL

1) Remove the reflex reflector by pressing the claw of the reflex reflector from the backside of bumper.



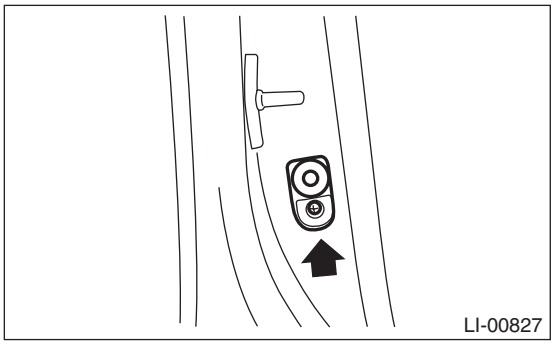
B: INSTALLATION

Install in the reverse order of removal.

30.Door Switch

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the screw, and pull out the door switch.



3) Disconnect the harness connector.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Refer to the door switch inspection of the room light system. <Ref. to LI-10, DOOR SWITCH, INSPECTION, Room Light System.>

WIPER AND WASHER SYSTEMS

WW

		Page
1.	General Description	2
2.	Wiper and Washer System	6
3.	Combination Switch (Wiper)	7
4.	Wiper Blade	11
5.	Washer Tank and Motor	13
6.	Front Wiper Arm	14
7.	Front Wiper Motor and Link	15
8.	Front Washer Nozzle	17
9.	Rear Wiper Arm	18
10.	Rear Wiper Motor	19
11.	Rear Washer	20

1. Basic Diagnostic Procedure

A: PROCEDURE

Step		Check	Yes	No
1	**CHECK WARNING LIGHT.** Check whether the airbag warning light in the combination meter is lit.	Does the airbag warning light illuminate?	Go to step **2**.	Perform the diagnosis according to phenomenon of the problem.
2	**READ DTC.** 1) Turn the ignition switch to OFF. 2) Connect the Subaru Select Monitor to data link connector. 3) Turn the ignition switch to ON and run the Subaru Select Monitor. 4) Read the DTC. <Ref. to OD(diag)-16, OPERATION, Read Diagnostic Trouble Code (DTC).> NOTE: If the communication function of the Subaru Select Monitor cannot be executed properly, check the communication circuit. <Ref. to AB(diag)-26, COMMUNICATION FOR INITIALIZING IMPOSSIBLE, INSPECTION, Subaru Select Monitor.> 5) Record all DTCs and freeze frame data.	Is DTC displayed?	Go to step **3**.	Go to “Airbag Warning Light Failure” <Ref. to AB(diag)-33, Airbag Warning Light Failure.>.
3	**PERFORM DIAGNOSIS.** 1) Determine the possible cause from “List of Diagnostic Trouble Code (DTC)” <Ref. to OD(diag)-21, 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 OD(diag)-18, Clear Memory Mode.> 5) Perform the Inspection Mode. <Ref. to OD(diag)-17, Inspection Mode.> 6) Read any other DTCs displayed.	Is DTC 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 ❑ Remains OFF		
Passengers airbag ON/OFF indicator operation	❑ Normal (After turning the ignition switch to ON, illuminates for 6 seconds then goes off for 2 seconds; Lights ON (adult) or OFF (children/unoccupied).) ❑ Both remain ON ❑ Both remain OFF		
DTC output	❑ OK code ❑ DTC: (Code:)		

3. General Description

A: CAUTION

1) If the seat cushion cover is removed or replaced, make sure to perform passenger detection system adjustment after installing the seat to the vehicle. <Ref. to OD(diag)-14, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>
Failure to do so may cause improper operation of the occupant detection system.
2) The passenger detection system (passenger seat only) control unit and the passenger detection sensor are fixed to the seat cushion frame. Never remove the passenger detection control unit or the pressure sensor from the seat cushion frame.
3) Do not replace the seat cushion pad by itself. Always replace the seat cushion pad and frame assembly as a set. The seat cushion pad and cushion frame are adjusted as a set at the time of manufacture. If cushion pads and cushion frames are combined from those of other vehicles or other sets, the passenger detection system may not operate properly.
4) If the seat cushion cover is removed, make sure to replace the hang wire on the seat cushion side with a new wire.
5) Never connect the battery in reverse polarity.
Occupant detection system may be destroyed instantly.
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.
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 occupant detection system-related part is a precision part. Do not drop them.

CAUTION:
• Do not use electrical test equipment on wiring harness and connector circuits of the airbag system.
• Be careful not to damage the airbag system wiring harness when servicing the occupant detection system.
• Refer to CAUTION in Airbag System when repairing the occupant detection system. <Ref. to AB(diag)-4, CAUTION, General Description.>

B: INSPECTION

Measure the battery voltage and check electrolyte.

Standard voltage:
12 V

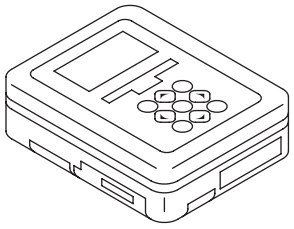
Specific gravity:
1.260 or more

Fluid level:
Between the upper level and lower level

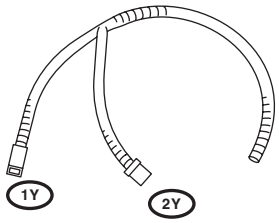
C: PREPARATION TOOL

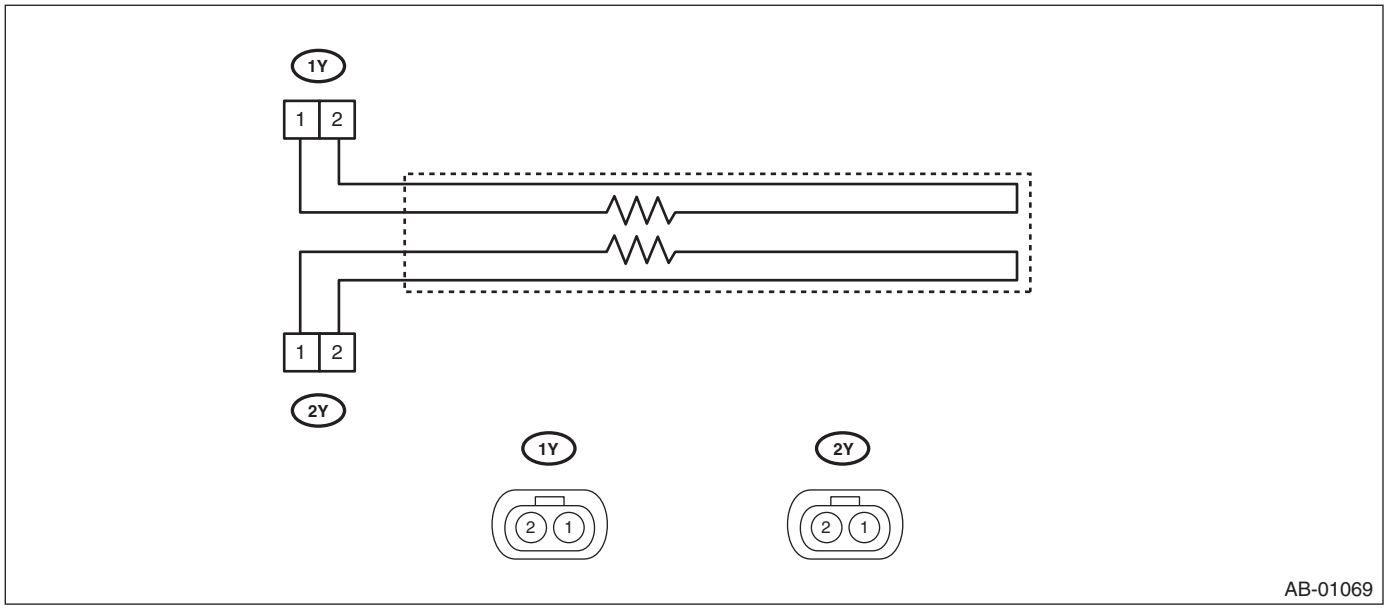
CAUTION:
To measure the voltage and resistance of airbag system and occupant detection system components, be sure to use the specified test harness.

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST1B022XU0	1B022XU0	SUBARU SELECT MONITOR III KIT	Used for troubleshooting the electrical system.

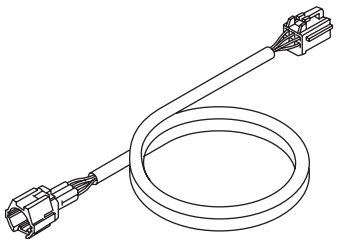
- TEST HARNESS Y

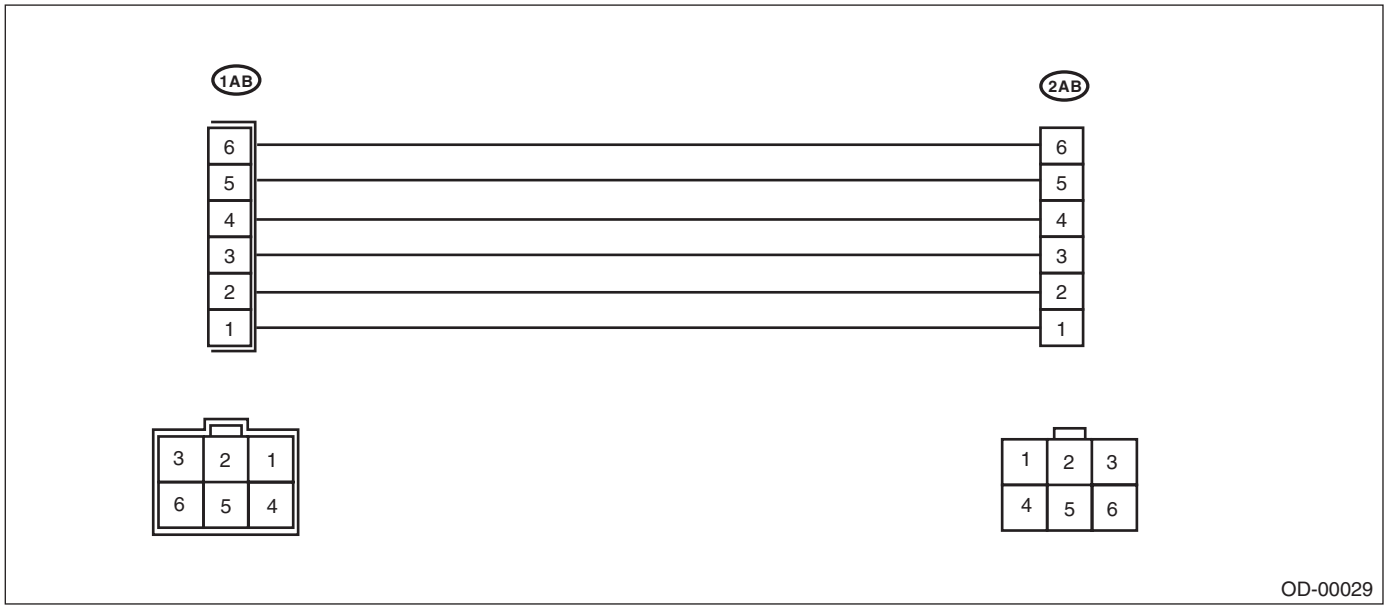
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299AG040	98299AG040	TEST HARNESS Y	Used for troubleshooting seat belt buckle switch.



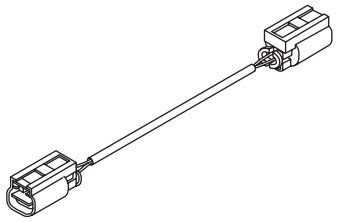
AB-01069

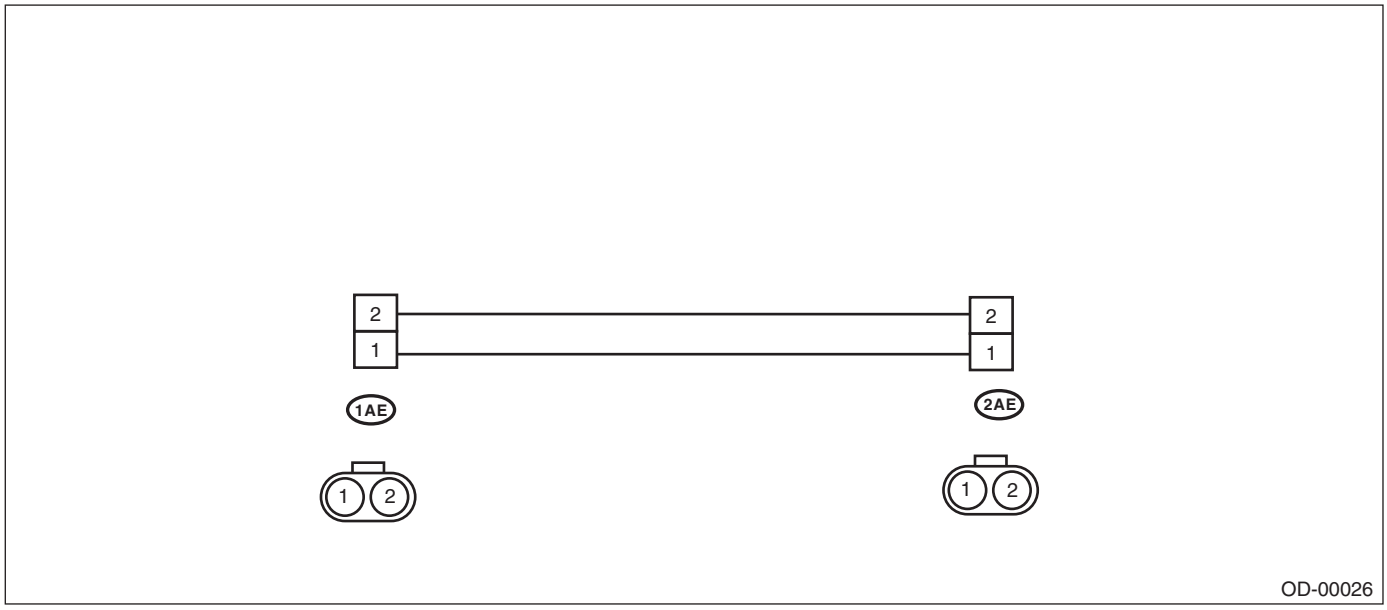
- TEST HARNESS AB

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

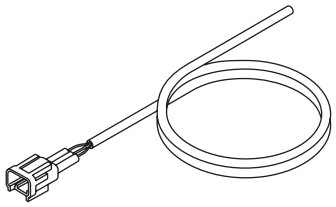


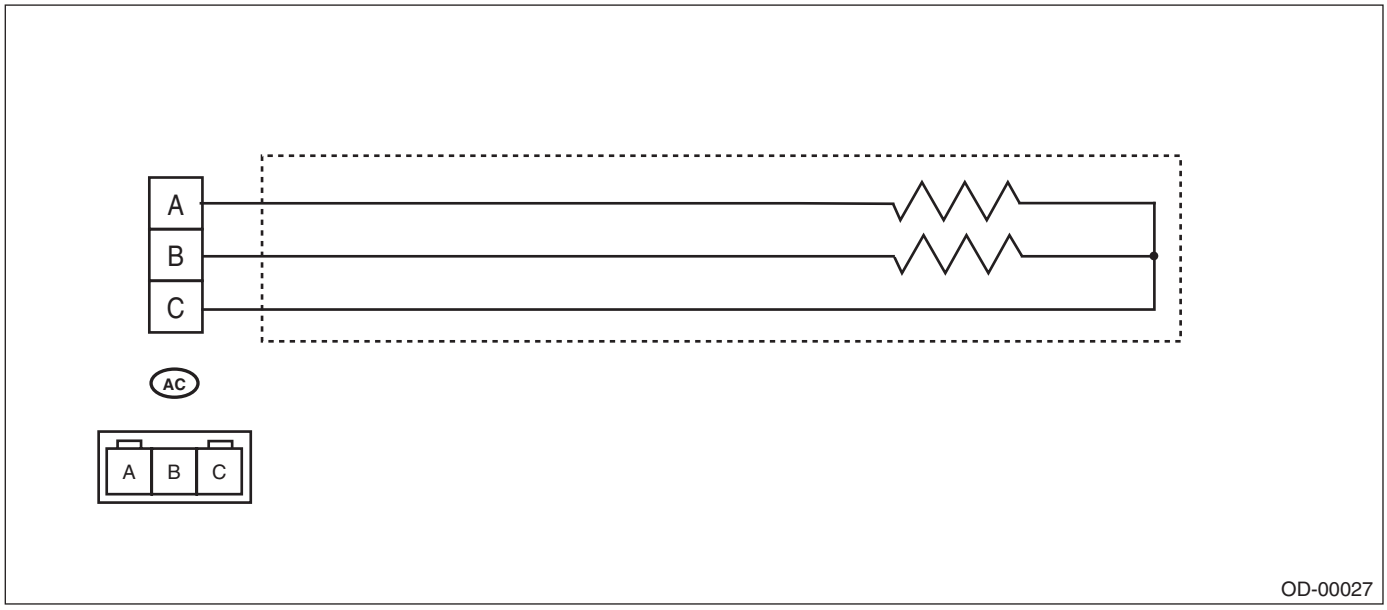
- TEST HARNESS AE

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299XA030	98299XA030	TEST HARNESS AE	TEST HARNESS Y adapter harness Used for troubleshooting seat belt buckle switch.

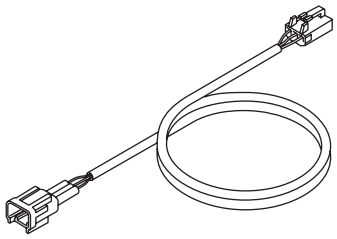


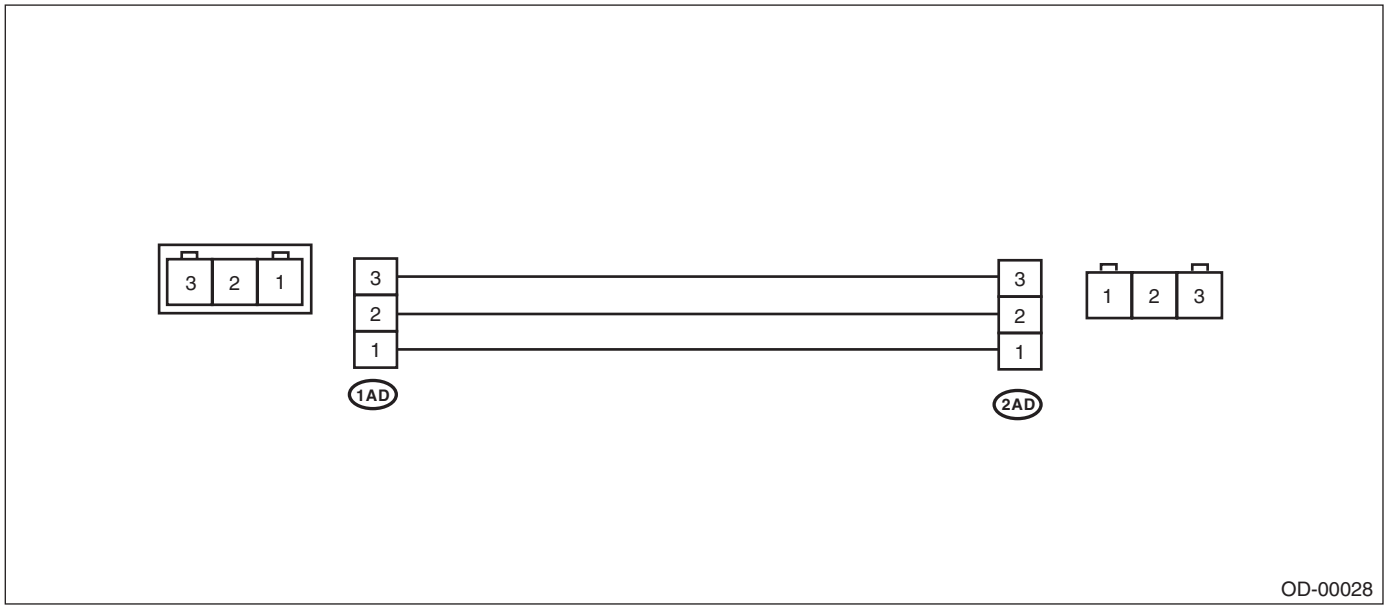
- TEST HARNESS AC

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



- TEST HARNESS AD

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

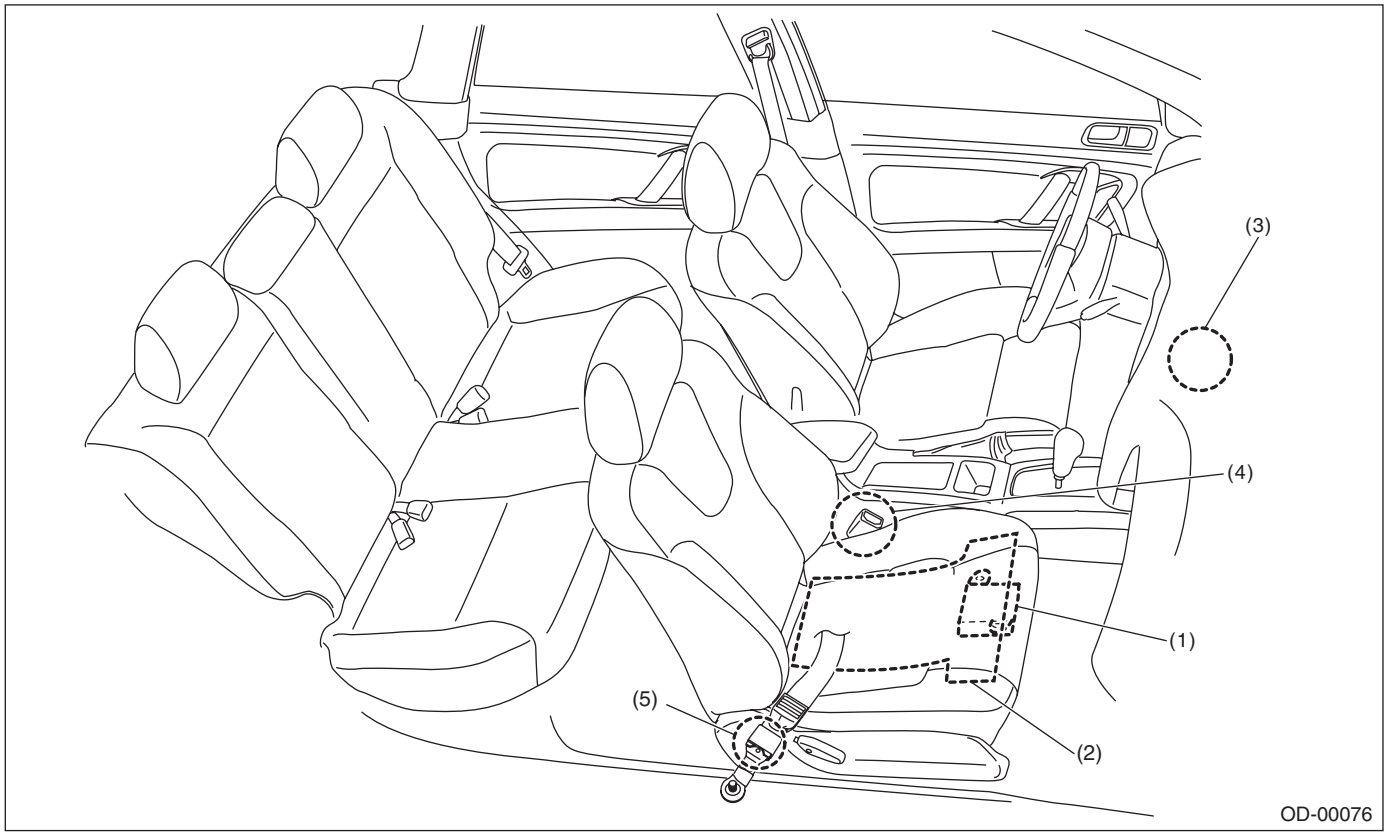


2. GENERAL TOOL

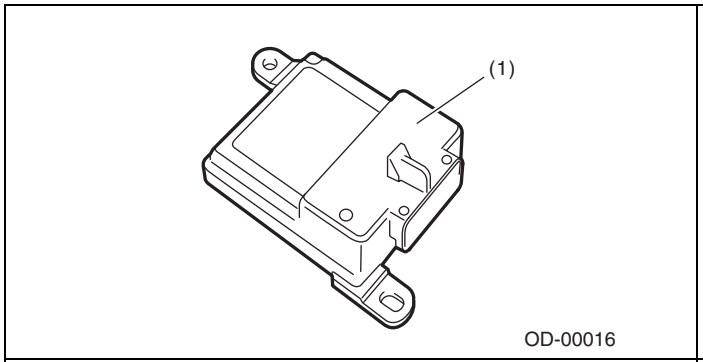
TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance, voltage and current.

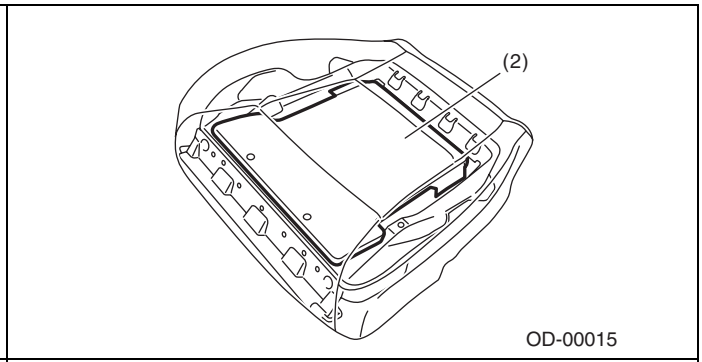
4. Electrical Component Location

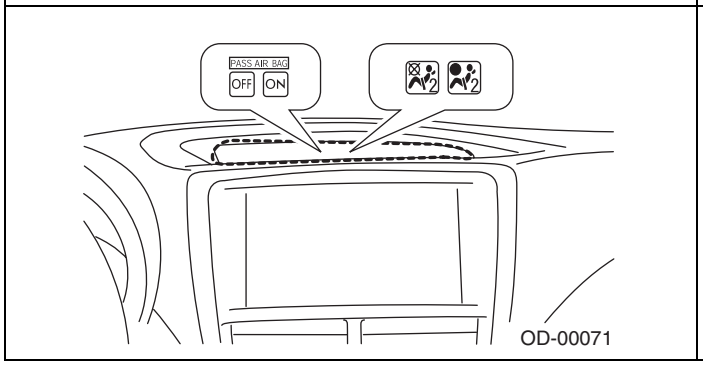
A: LOCATION

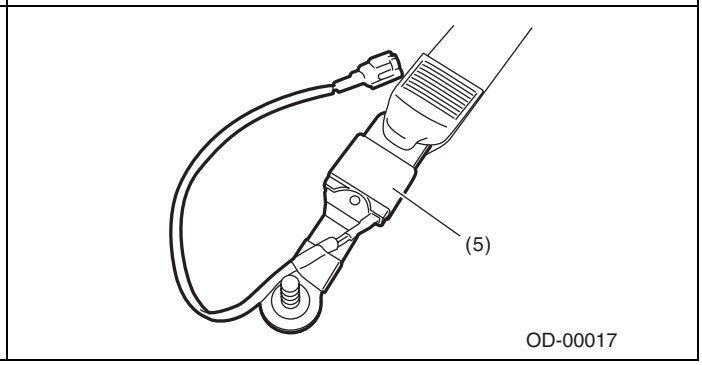


(1) Occupant detection control module
(2) Occupant detection sensor
(3) Airbag ON/OFF indicator light
(4) Buckle switch (Passenger's seat)
(5) Seat belt tension sensor









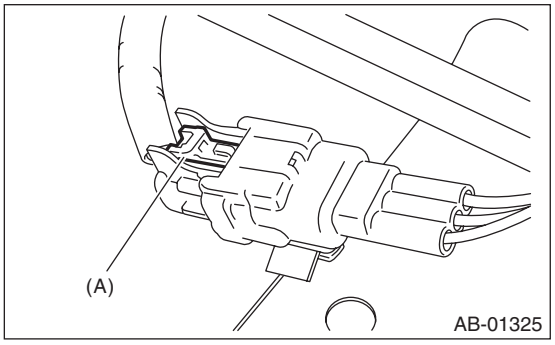
5. Airbag Connector

A: PROCEDURE

1. OCCUPANT DETECTION SYSTEM (BETWEEN AIRBAG REAR HARNESS AND SEAT HARNESS) AND BELT TENSION SENSOR

1) How to disconnect:
Press the lock arm (A) 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.

2. AIRBAG CONTROL MODULE

Refer to the airbag system section. <Ref. to AB-8, AIRBAG CONTROL MODULE, PROCEDURE, Airbag Connector.>

3. BUCKLE SWITCH RH

Refer to the airbag system section. <Ref. to AB-10, BUCKLE SWITCH RH, PROCEDURE, Airbag Connector.>

6. Control Module I/O Signal

A: ELECTRICAL SPECIFICATION

CAUTION:
Never remove the occupant detection control module, occupant detection sensor or seat frame because they are integrated into one unit.

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	Ignition voltage when switch ON
Buckle switch	(GND)	2	0 V	Switch ground

B: WIRING DIAGRAM

Refer to the electrical wiring diagram. <Ref. to WI-94, WIRING DIAGRAM, Occupant Detection System.>

7. Subaru Select Monitor

A: OPERATION

1. READ DIAGNOSTIC TROUBLE CODE (DTC)

When malfunction of the airbag system and the occupant detection system occur, the DTC stored in airbag control module will be read out.
Refer to the READ DIAGNOSTIC TROUBLE CODE (DTC) of the Airbag system (diagnostics). <Ref. to AB(diag)-24, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>

NOTE:
- For details concerning the operation procedure, refer to “PC application help for Subaru Select Monitor”.
- For details concerning DTCs, refer to the List of Diagnostic Trouble Code (Airbag system, Occupant detection system). <Ref. to AB(diag)-37, List of Diagnostic Trouble Code (DTC).> <Ref. to OD(diag)-21, 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 «Main Menu» display, select {Each System Check}.
2) On «System Selection Menu» display, select {Airbag System}.
3) Select the {Status Data} in «Airbag System».
The following table is for support data.

Item	Display Contents
Seat position sensor LH	—*2
Seat position sensor RH	—*2
Seat belt buckle switch LH	—*6
Seat belt buckle switch RH	Equipped*3/Unequipped*4/Other*5/Initial Setting*1/—*6
Passenger’s airbag control 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 input.
*6: Seat belt buckle switch not supported
*7: Passenger’s airbag operating state
*8: Passenger’s airbag non-operating state

NOTE:
For details concerning the operation procedure, refer to “PC application help for Subaru Select Monitor”.

3. CLEAR MEMORY MODE

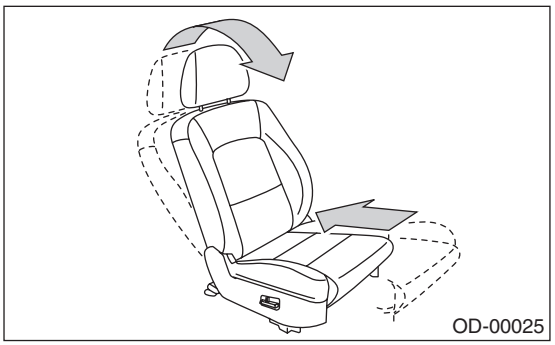
Clear the DTC stored in the airbag control module after repairing the airbag system and occupant detection system.(After the breakdown is recovered, the breakdown code for completed recoveries are read out when the next breakdown occurs if the memory clear work is not performed.)
1) On «Main Menu» display,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

NOTE:
For details concerning the operation procedure, refer to “PC application help for Subaru Select Monitor”.

4. SYSTEM CALIBRATION (REZEROING)

NOTE:
When replacing the occupant detection system, or removing and disassembling the passenger’s seat, always perform the system calibration after installing a seat in the vehicle.

CAUTION:
When the trouble occurs in the system during calibration process, “Occupant detection calibration failure” is detected in the DTC 2A of the airbag system 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) On «Main Menu» display, select {Each System Check}.
3) On «System Selection Menu» display, select {Occupant Detection System}.
4) On the {Occupant Detection System} display, select {Rezeroing}.
5) «See service manual. And check vehicle condition for successfully completing the rezeroing» is displayed. Check the following to adjust the condition of the vehicle.
• Adjust the seat backrest to be fully upright. (For models with power seats, press the power seat button until the backrest comes to a stop.)
• Adjust the seat slide position all the way back. (For models with power seats, press the power seat button until the seat slide does not move any further.)
• 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 to 40°C.
6) When the «Re-zeroing Adjust the passenger seat to the condition shown in service manual» is displayed, slide the passenger seat all the way to the back, check that the backrest is adjusted to all the way up, and select the [OK].



7) When the «Re-zeroing Unbelt the Passenger seatbelt Continue: OK, Quit: NO» is displayed, make sure the passengers seatbelt is disconnected from the buckle and select the [OK].
8) When the Re-zeroing Empty the passenger seat Continue: OK, Quit: NO is displayed, make sure that the passengers seat is empty, airbag OFF indicator illuminates and airbag ON indicator does not illuminate, and select the [OK].

NOTE:
• After selecting the [OK], «In process...Please wait for a while without touching vehicle» 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 ended normally, the «Re-zeroing is successfully completed Press OK to END» is displayed. And then turn the ignition switch to OFF to finish the diagnosis.

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)-24, READ DIAGNOSTIC TROUBLE CODE (DTC), 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)-14, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>

NOTE:
When the re-zeroing is unsuccessful, there could be occupant detection system failure or improper seat and vehicle status. 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 (DTC). <Ref. to AB(diag)-24, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.> <Ref. to AB(diag)-37, 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 “COMMUNICATION FOR INITIALIZING IMPOSSIBLE” in the Airbag system (diagnostics). <Ref. to AB(diag)-26, COMMUNICATION FOR INITIALIZING IMPOSSIBLE, INSPECTION, Subaru Select Monitor.>

2. WITHOUT DTC

DETECTING CONDITION:
- Defective combination meter
- Open circuit of harness

TROUBLE SYMPTOM:
- Airbag warning light remains ON.
- “No diagnostic Code Present” will be displayed on the Subaru Select Monitor.

NOTE:
- For detailed operation procedures, refer to “Airbag Warning Light Failure”. <Ref. to AB(diag)-33, Airbag Warning Light Failure.>
- When the airbag warning light is OFF and “No diagnostic Code Present” is displayed on Subaru Select Monitor, the system is operating properly.

8. Read Diagnostic Trouble Code (DTC)

A: OPERATION

For details on reading DTCs, refer to “Airbag System (Diagnostics) Subaru Select Monitor”. <Ref. to AB(diag)-24, Subaru Select Monitor.>

9. Inspection Mode

A: PROCEDURE

Recreate the circumstance by referring to the conditions described in the checklist.

10.Clear Memory Mode

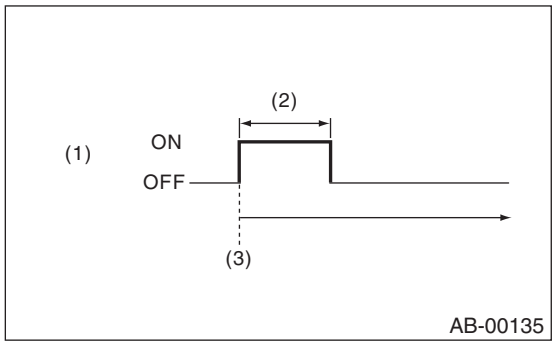
A: OPERATION

• Clear the memory in the following steps after the malfunction is repaired.
• For details to clear the DTC, refer to “Airbag System (Diagnostics) Subaru Select Monitor”. <Ref. to AB(diag)-24, Subaru Select Monitor.>

11.Airbag Warning Light Illumination Pattern

A: INSPECTION

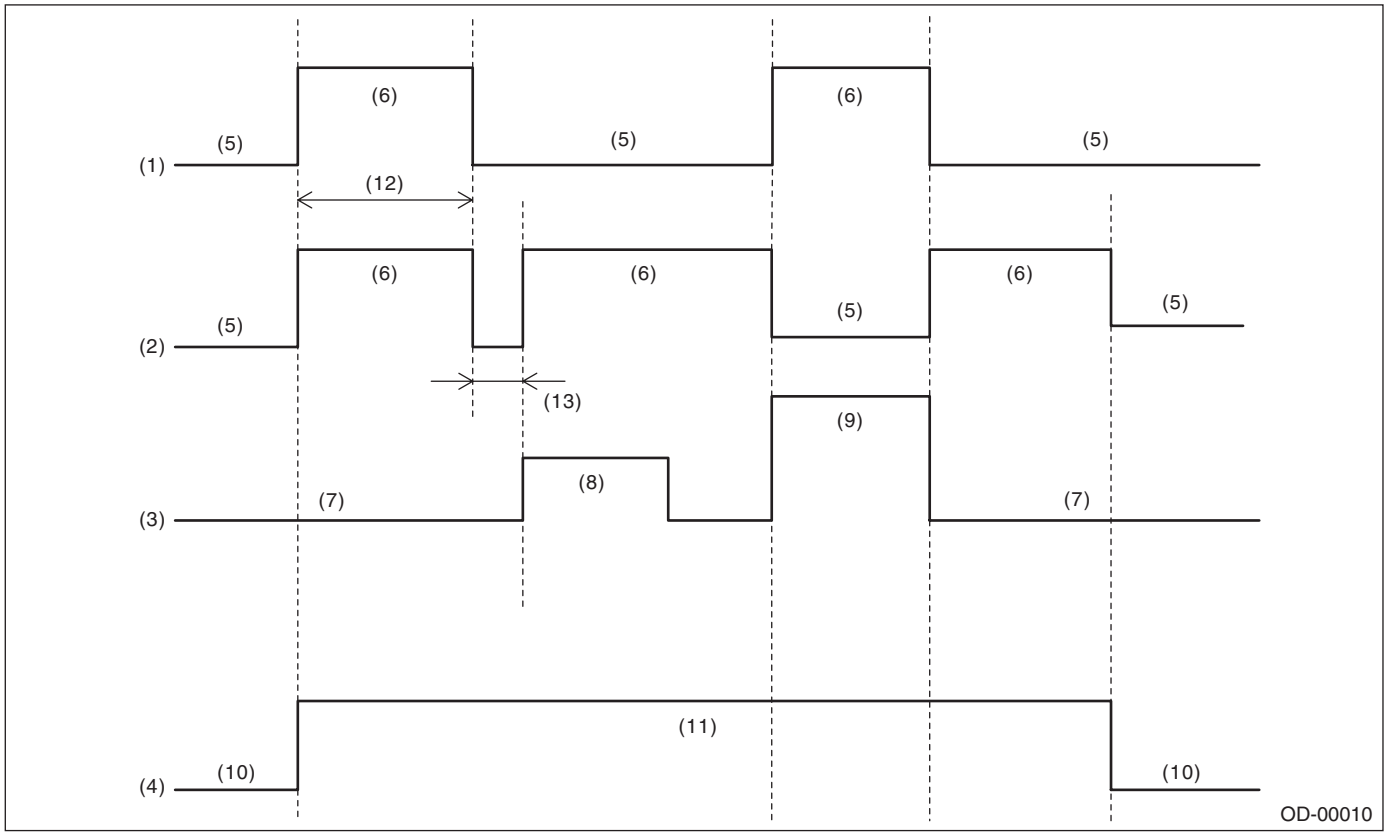
Turn the ignition switch to ON, and confirm that the airbag warning light remains on for approx. 6 seconds then turns off afterwards.



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

12.Passenger's Airbag ON/OFF Indicator Light Illumination Pattern

A: INSPECTION



(1)	Passenger's airbag ON indicator light	(6)	Light ON	(10)	OFF
(2)	Passenger's airbag OFF indicator light	(7)	Empty	(11)	ON
(3)	Occupant seating	(8)	Child	(12)	Approx. 6 sec.
(4)	Ignition switch	(9)	Adult	(13)	Approx. 2 sec.
(5)	Light OFF				

13.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)-22, DTC 2A ODS CALIBRATION ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
2B	ODS System Wrong Parts	• Wrong airbag control module is installed. • Wrong occupant detection system is installed. • Occupant detection system is faulty.	<Ref. to OD(diag)-22, 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 main harness circuit is open or shorted. • Occupant detection system is faulty. • Occupant detection harness is faulty.	<Ref. to OD(diag)-23, DTC 2C BELT TENSION SENSOR FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
27	ODS Communication Error	• Occupant detection control module and airbag control module communication is faulty. • Airbag rear harness circuit is open, shorted, shorted to ground or shorted to power supply. • Occupant detection harness is faulty. • Occupant detection system is faulty. • Airbag control module is faulty.	<Ref. to OD(diag)-25, DTC 27 ODS COMMUNICATION ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
29	ODS Failure	• Occupant detection sensor is faulty. • Occupant detection control module is faulty. • Occupant detection harness is faulty. • Fuse No. 25 (in joint box) is blown.	<Ref. to OD(diag)-25, 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)-26, DTC 37 BUCKLE SWITCH RH FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

14.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 system calibration using the Subaru Select Monitor. <Ref. to OD(diag)-14, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>	Did the system calibration complete properly?	Finish the diagnosis.	Follow the system calibration procedures. <Ref. to OD(diag)-14, SYSTEM CALIBRATION (REZEROING), 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.

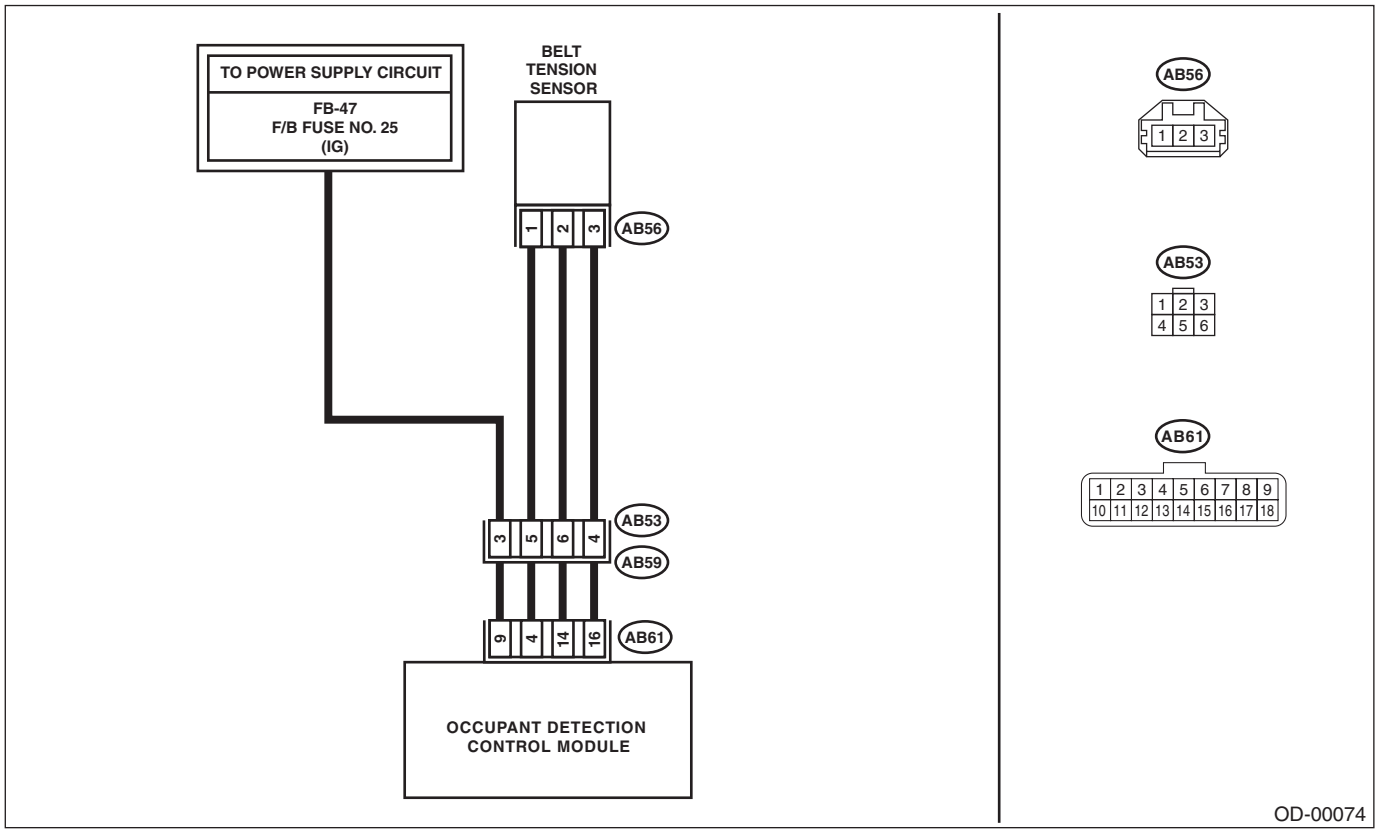
	Step	Check	Yes	No
1	**CHECK OCCUPANT DETECTION SYSTEM.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Replace the passenger's seat cushion pad frame assembly. <Ref. to SE-6, REMOVAL, Front Seat.> <Ref. to SE-9, PASSENGER'S SEAT, DISASSEMBLY, Front Seat.> 3) Connect the ground cable to battery. 4) Connect Subaru Select Monitor to the vehicle and perform the system calibration. <Ref. to OD(diag)-14, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>	Did the system calibration complete properly?	Finish the diagnosis.	Go to step **2**.
2	**CHECK AIRBAG CONTROL SYSTEM.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Replace the airbag control module. <Ref. to AB-21, REMOVAL, Airbag Control Module.> 3) Connect the ground cable to battery. 4) Connect Subaru Select Monitor to the vehicle and perform the system calibration. <Ref. to OD(diag)-14, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>	Did the system calibration complete properly?	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 the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 2) Disconnect the belt tension sensor connector (AB56) from the airbag harness. 3) Connect the test harness AC to the connector (AB56). 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-17, OUTER SEAT BELT ASSEMBLY, REMOVAL, Front Seat Belt.>	Go to step **3**.

	Step	Check	Yes	No
3	**CHECK AIRBAG HARNESS.** 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more. 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 (AB53), 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 along with chassis 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 along with chassis 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 along with chassis harness.	Check the seat harness, and if any fault is found, replace the seat harness. If no fault is found in the seat harness, replace the seat cushion frame assembly. <Ref. to SE-9, PASSENGER'S SEAT, DISASSEMBLY, Front Seat.>

D: DTC 27 ODS COMMUNICATION ERROR

Perform the diagnosis following diagnostic procedures for the airbag system. <Ref. to AB(diag)-56, 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.
- Rear airbag harness is faulty.
- Fuse No. 25 (in joint box) is blown.

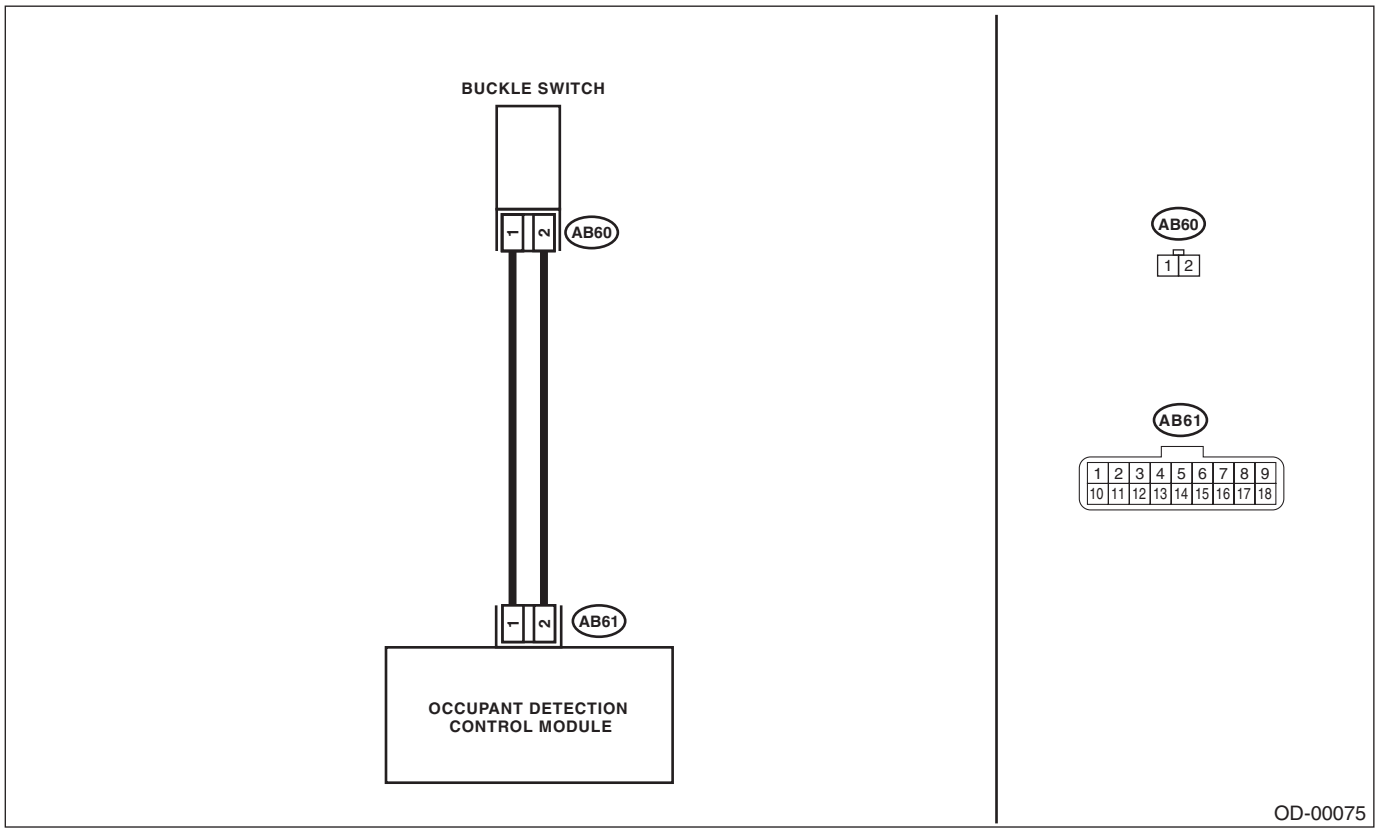
	Step	Check	Yes	No
1	**CHECK POOR CONTACT OF CONNECTORS.** Check for poor contact of the connectors between the occupant detection control module and airbag control module.	Is there poor contact?	Reconnect the connector. If the fault is not fixed, replace the airbag harness.	Go to step **2**.
2	**CHECK DTC.** Read diagnostic trouble code (DTC) for the airbag system.	Is “2C Belt Tension Sensor failure” or “37 Buckle Switch failure” displayed in the diagnostics code?	Perform the diagnosis according to each DTC.	Check the seat harness, and if any fault is found, replace the seat harness. If the fault is not fixed, replace the occupant detection system. <Ref. to SE-9, PASSENGER’S SEAT, DISASSEMBLY, Front Seat.>

F: DTC 37 BUCKLE SWITCH RH FAILURE

DTC DETECTING CONDITION:

- Passenger's 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 CONNECTORS.** 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 terminal, and wait for 20 seconds. 2) Disconnect the buckle switch connector (AB60). 3) Connect the test harness AE and test harness Y to the buckle switch connector (AB60). 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-17, INNER SEAT BELT ASSEMBLY, REMOVAL, Front Seat Belt.>	Check the seat harness, and if any fault is found, replace the seat harness. If the fault is not fixed, replace the occupant detection system.

SEAT BELT SYSTEM

SB

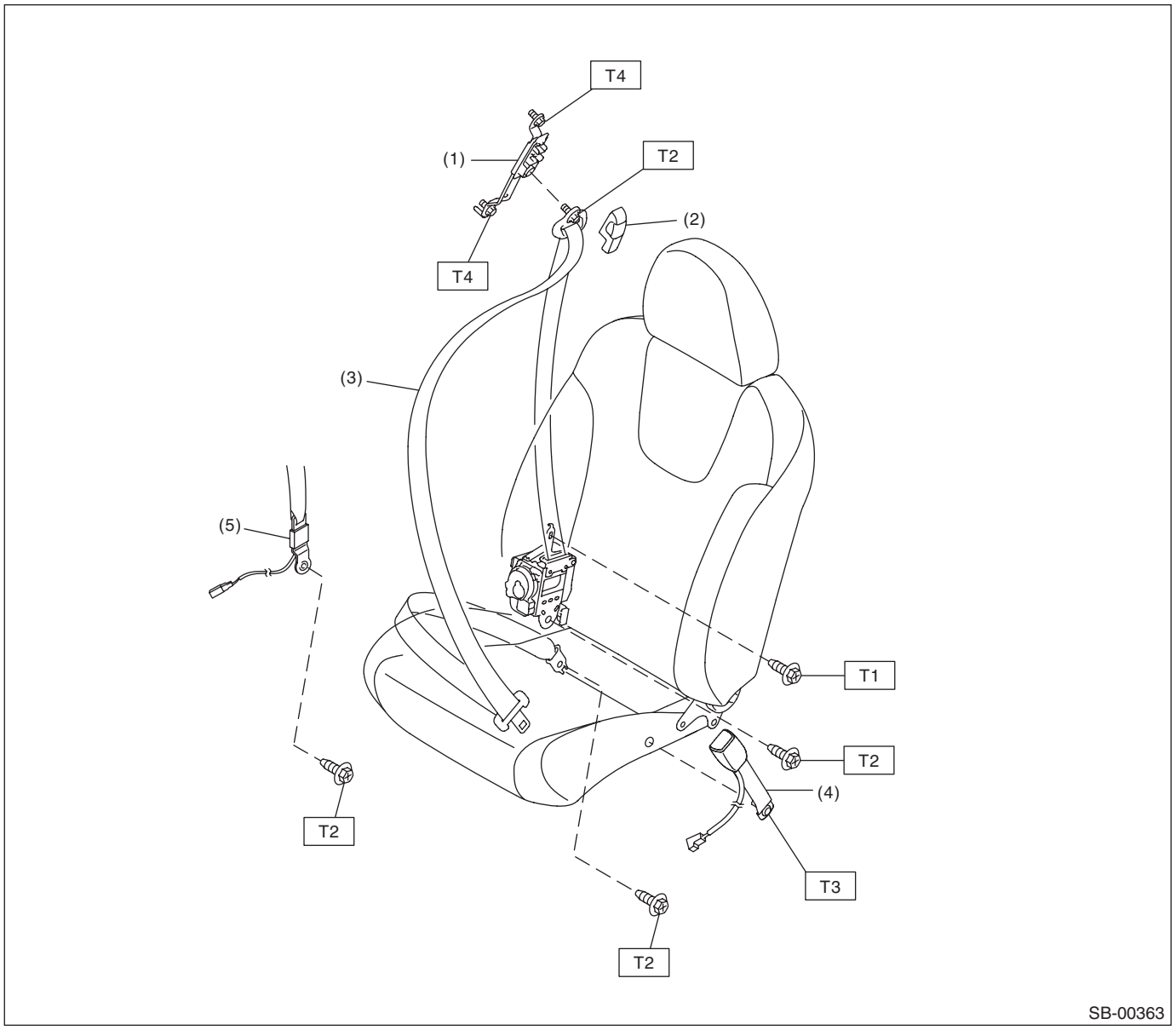
Page

1. General Description 2
2. Pretensioner Connector 11
3. Inspection Locations After a Collision 12
4. Seat Belt Warning System 13
5. Front Seat Belt 17
6. Rear Seat Belt 19

1. General Description

A: COMPONENT

1. FRONT SEAT BELT



(1)	Adjustable anchor ASSY	(4)	Inner seat belt ASSY
(2)	Anchor cover	(5)	Belt tension sensor (Passenger's side only)
(3)	Outer seat belt ASSY		

Tightening torque:N·m (kgf-m, ft-lb)

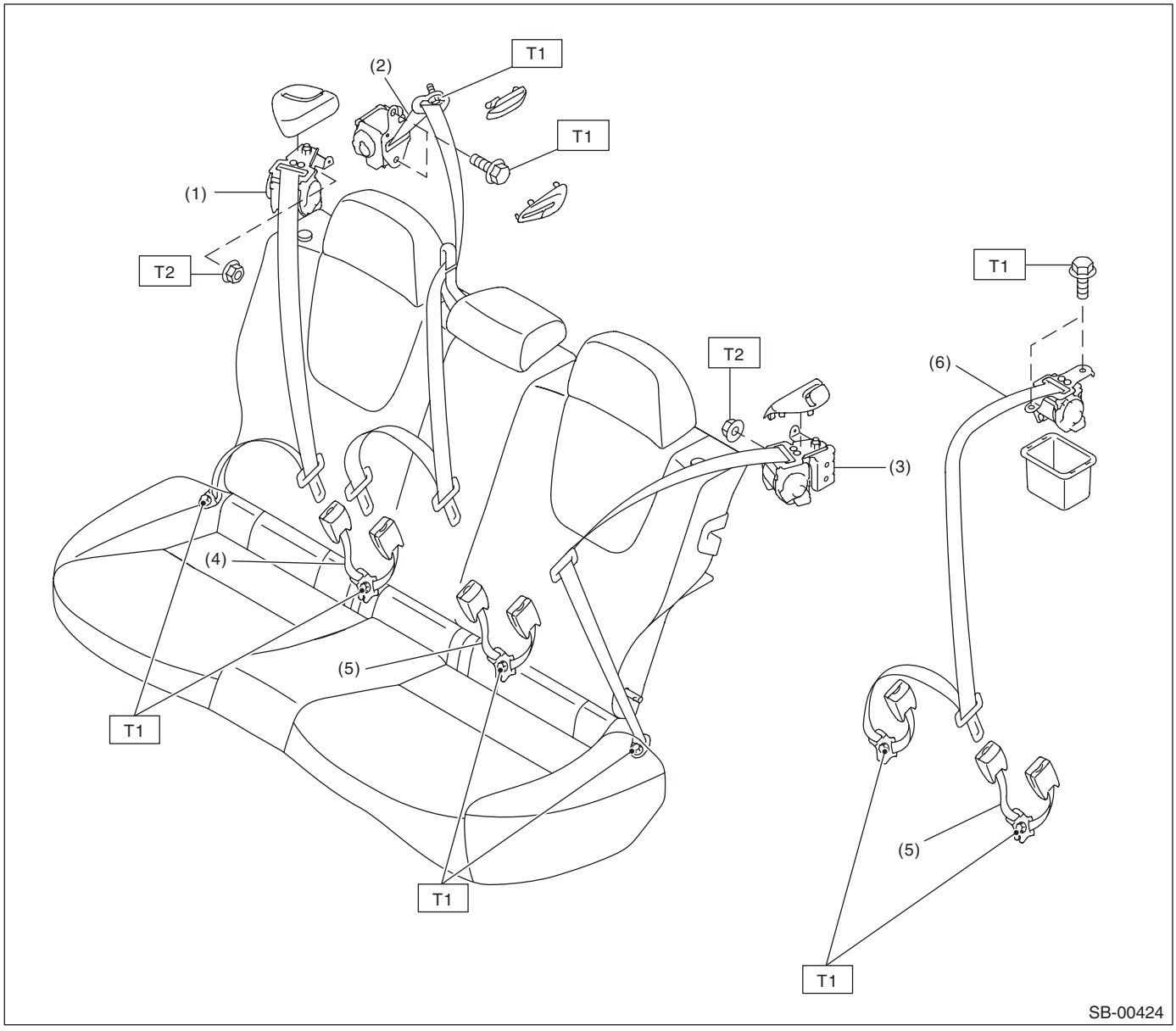
T1: 7.5 (0.76, 5.5)

T2: 30 (3.1, 22.1)

T3: 38 (3.9, 28.0)

T4: 53 (5.4, 39.1)

2. REAR SEAT BELT



(1)	Outer seat belt ASSY RH	(4)	Center seat belt ASSY RH	***Tightening torque:N·m (kgf-m, ft-lb)***
(2)	Shoulder seat belt center ASSY (5 door model)	(5)	Center seat belt ASSY LH (3-point type)	***T1: 30 (3.1, 22.1)***
(3)	Outer seat belt ASSY LH	(6)	Shoulder seat belt center ASSY (4 door model)	***T2: 53 (5.4, 39.1)***

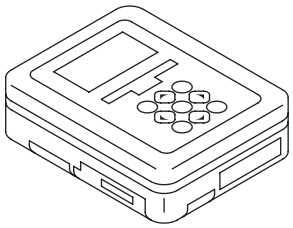
B: CAUTION

- 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 back-up power supply. Be aware that 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 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.

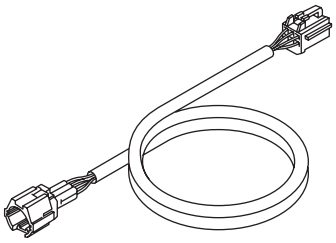
C: PREPARATION TOOL

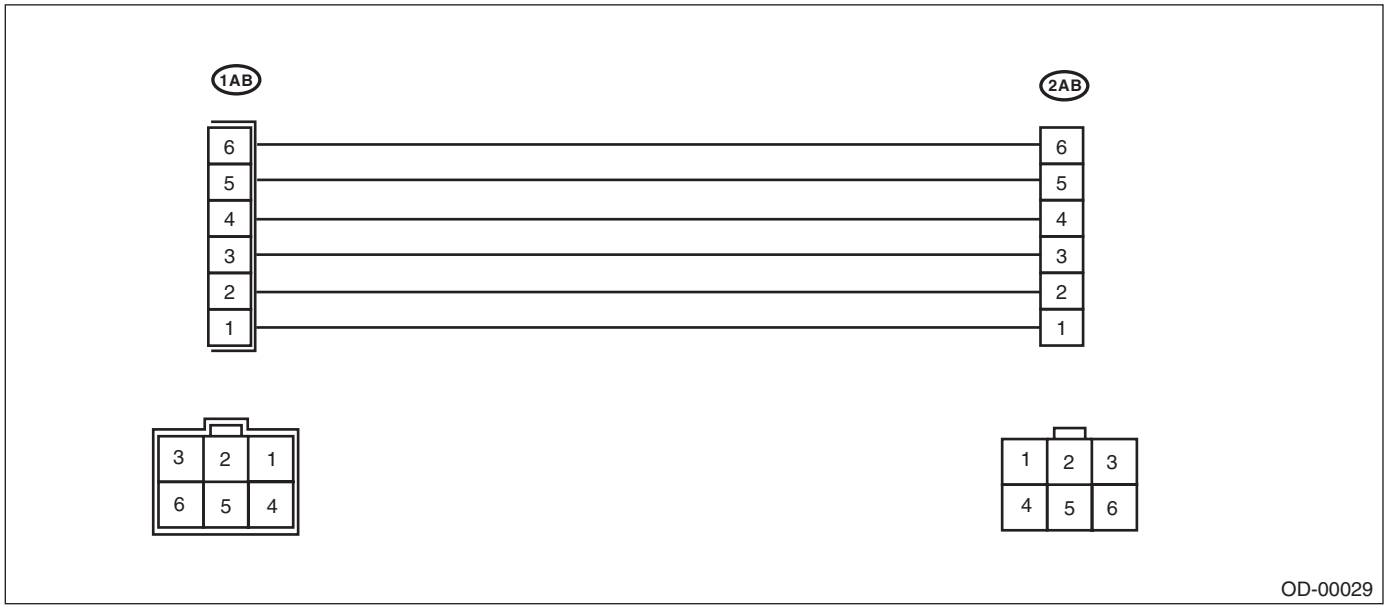
1. SPECIAL TOOL

- SUBARU SELECT MONITOR

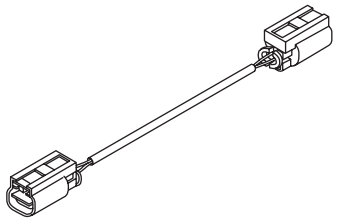
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST1B022XU0	1B022XU0	SUBARU SELECT MONITOR III KIT	Used for setting of each function and trouble-shooting for electrical system.

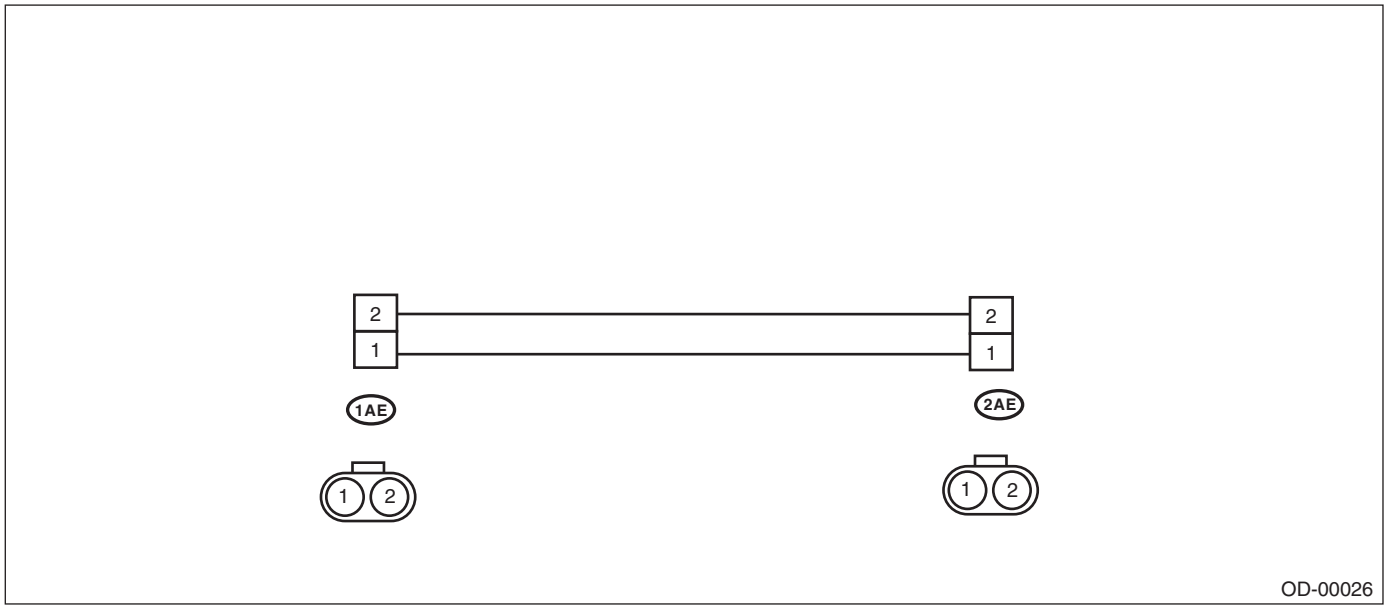
- TEST HARNESS AB

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

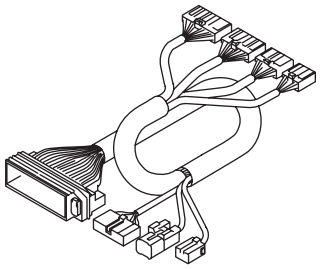


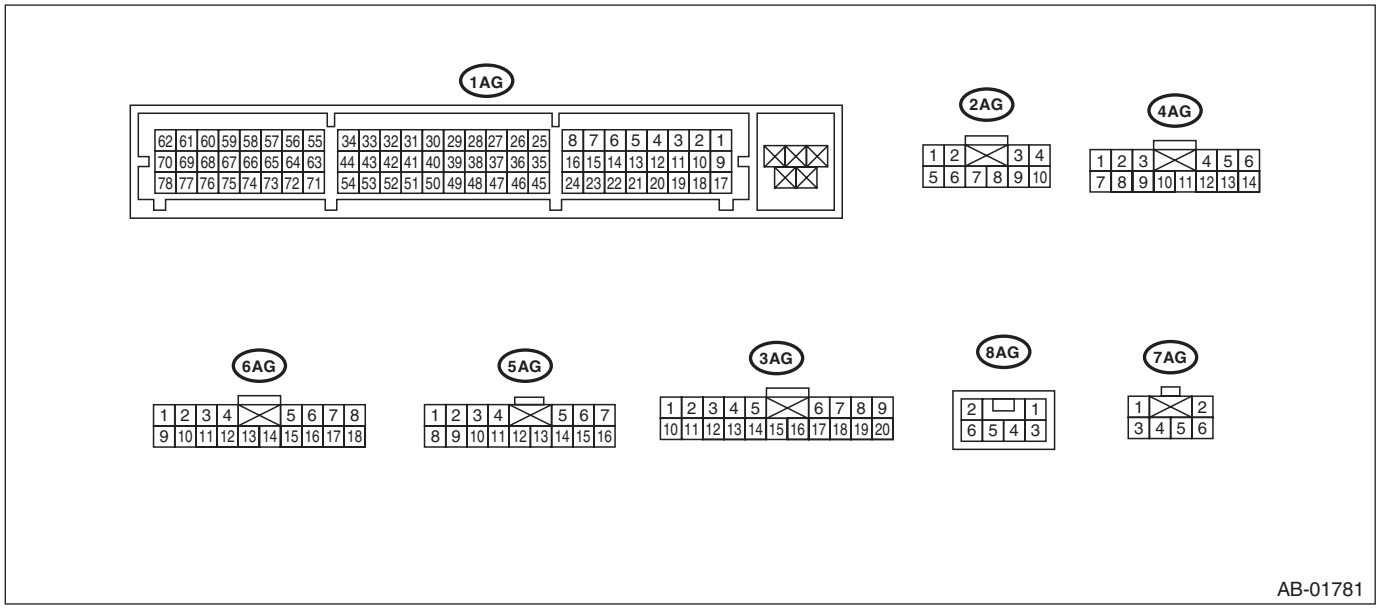
- TEST HARNESS AE

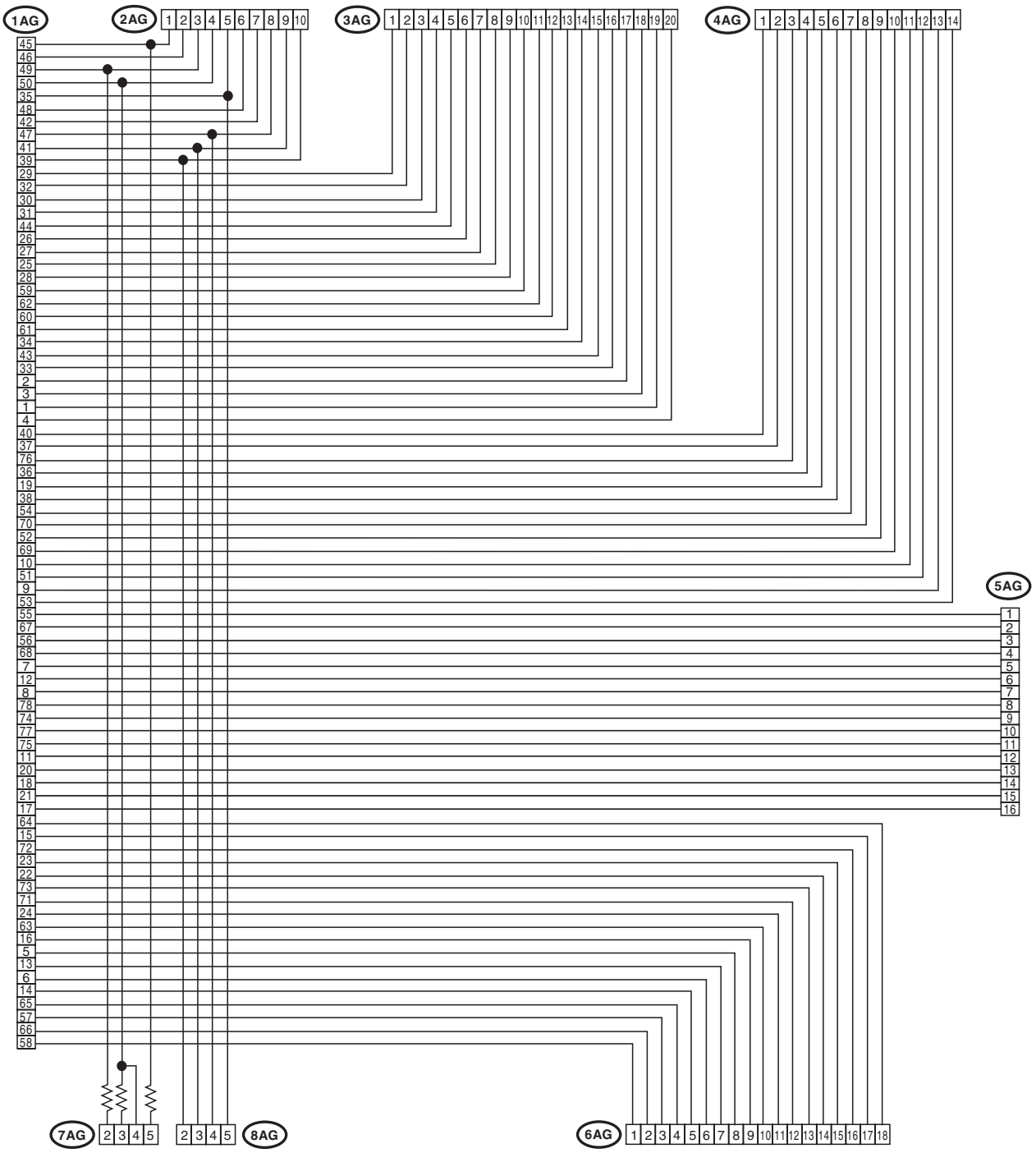
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299XA030	98299XA030	TEST HARNESS AE	• Used for diagnosing seat belt tension sensor. • Used together with test harness Y.



- TEST HARNESS AG

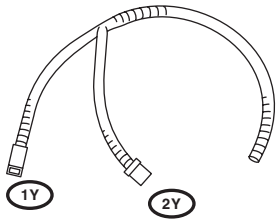
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299AG070	98299AG070	TEST HARNESS AG	Used when measuring voltage and resistance of airbag control module.

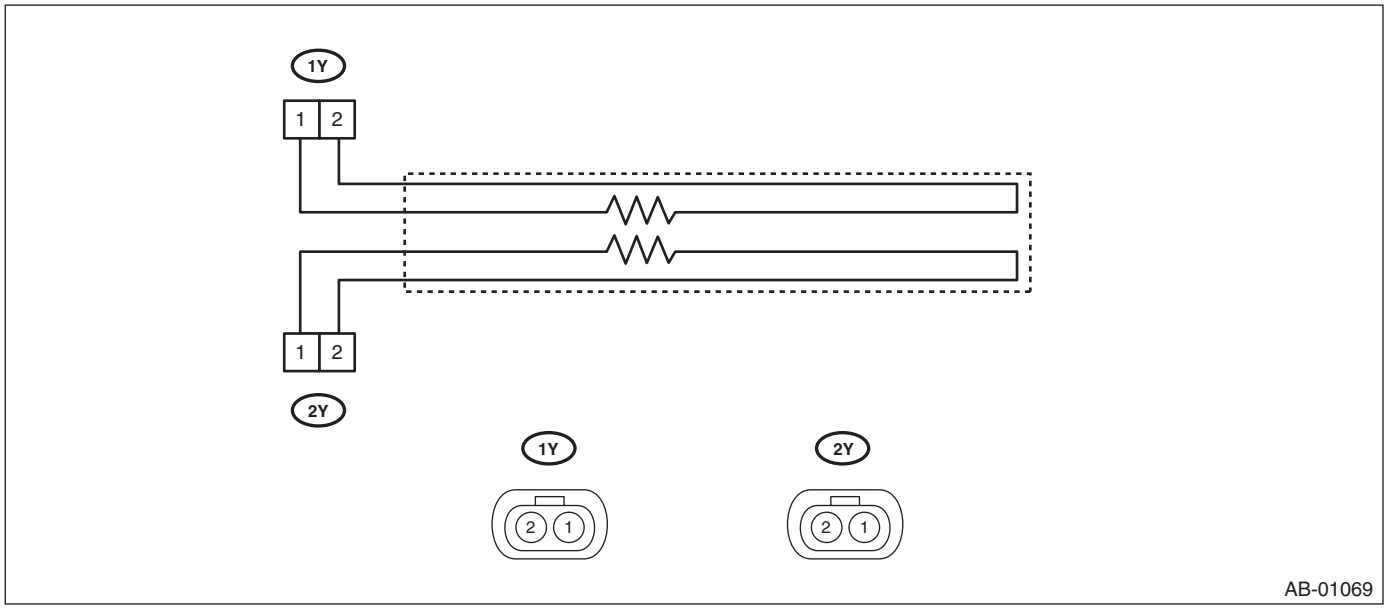




AB-01902

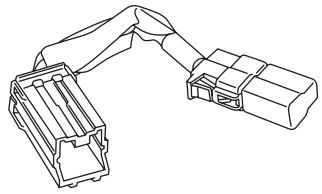
- TEST HARNESS Y

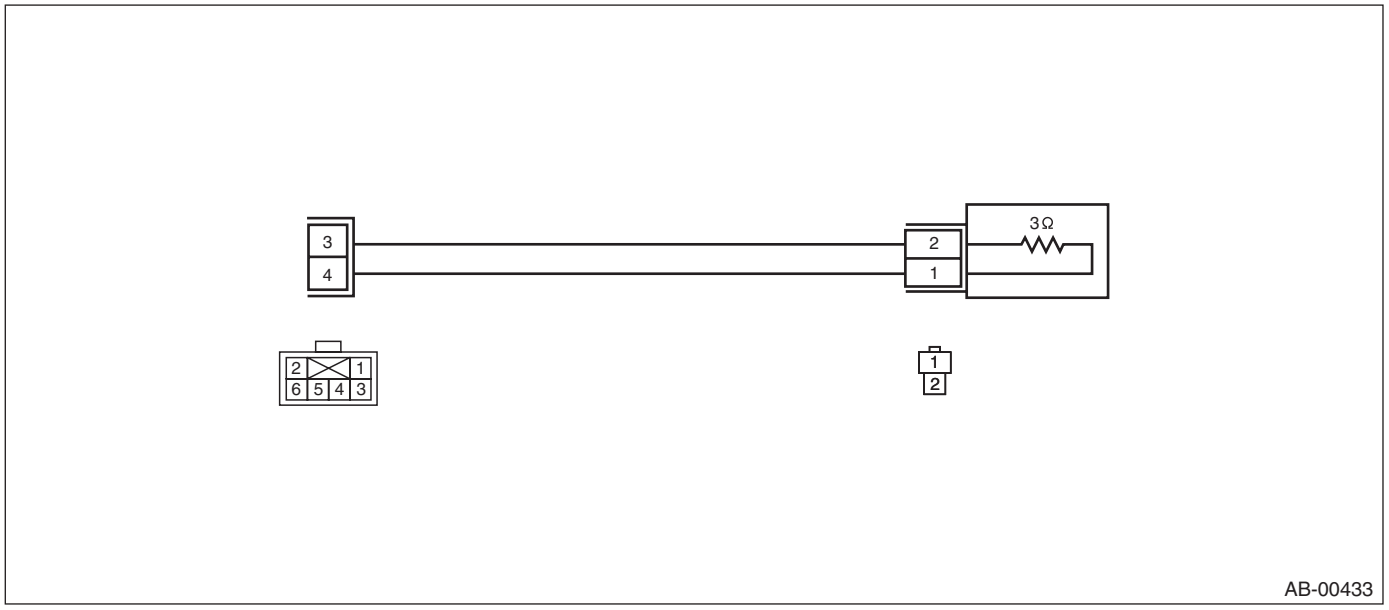
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299AG040	98299AG040	TEST HARNESS Y	Used for troubleshooting seat belt buckle switch.



AB-01069

- AIRBAG RESISTOR

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299PA040	98299PA040	AIRBAG RESISTOR	Used in replacement of airbag module for which resistance value is same as airbag module. Two ST are required for diagnosis of two-stage inflator type airbag module.



2. GENERAL TOOL

TOOL NAME	REMARKS
TORX® T50	Used for removing and installing the inner seat belt assembly.
Circuit tester	Used for measuring resistance and voltage.

2. Pretensioner Connector

A: PROCEDURE

Refer to “Airbag Connector” of Airbag section for the connectors of the seat belt pretensioners and buckle switch RH. <Ref. to AB-8, PROCEDURE, Airbag Connector.>

3. Inspection Locations After a Collision

A: INSPECTION

Refer to “Inspection Locations After a Collision” of Airbag section. <Ref. to AB-12, Inspection Locations After a Collision.>

4. Seat Belt Warning System

A: WIRING DIAGRAM

<Ref. to WI-93, WIRING DIAGRAM, Seat Belt Warning System.>

B: INSPECTION

CAUTION:
• Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground terminal from battery, and wait 20 seconds or more 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 of the driver's and passenger's seats for safety.
• When inspecting the airbag rear harness, disconnect the side airbag module connector, curtain airbag module connector and seat belt pretensioner connector for safety reasons.
TROUBLE SYMPTOM:
- Driver's side seat belt warning light does not illuminate or it remains illuminating.
- Warning buzzer does not beep.

	Step	Check	Yes	No
1	**CHECK CURRENT SETTINGS.** 1) Prepare the Subaru Select Monitor. 2) Turn the ignition switch to ON (engine OFF), and run the "PC application for Subaru Select Monitor". 3) Select "Current Data Display" and read the data of "Belt Warning Switch".	Is the belt warning display ON?	Go to step **2**.	Turn the belt warning ON with unit customizing.
2	**CHECK CURRENT DATA.** 1) Select "Current Data Display" and read the data of "IG power supply voltage". 2) Turn the ignition switch ON ←→ OFF.	Does the voltage change between 9 V or higher ←→ less than 1.5 V, matching the ignition switch ON ←→ OFF operation?	Go to step **3**.	Check the ignition switch circuit.
3	**CHECK FUNCTION.** 1) Sit in the driver's seat and passenger's seat, and disconnect the seat belts of both seats. 2) Turn the ignition switch to ON (engine OFF). 3) Check the illumination of the driver's seat belt warning light in the combination meter and the passenger's seat belt warning light in the clock unit, and the sounding of the buzzer.	Do the driver's and passenger's warning lights flash, and does the buzzer sound while the warning lights are flashing?	Go to step **4**.	• Malfunction of the driver's seat belt warning light → Go to step **10**. • Malfunction of the passenger's seat belt warning light → Go to step **16**. • The buzzer does not sound. → Go to step **6**.
4	**CHECK FUNCTION.** 1) Wait until the buzzer sound stops in step 3. (Approximately 6 seconds from starting to sound) 2) Fasten and detach the driver's and passenger's seat belts. 3) Check the illumination of the driver's seat belt warning light in the combination meter, and the passenger's seat belt warning light in the clock unit, and the sounding of the buzzer.	Does each seat belt warning light illuminate ←→ turn off according to the action?	Go to step **5**.	• Malfunction of the driver's seat belt warning light → Go to step **6**. • Malfunction of the passenger's seat belt warning light → Go to step **12**.

	Step	Check	Yes	No
5	**CHECK FUNCTION.** 1) Wait until the buzzer sound stops in step 3. (Approximately 6 seconds from starting to sound) 2) Start the engine, and set the vehicle speed to 15 km/h (9 MPH) or faster. 3) Check the driver's and passenger's seat belt warning lights, and sounding of the alarm buzzer.	Do the driver's and passenger's warning lights flash, and does the buzzer sound while the warning lights are flashing?	The seat belt warning system is normal.	Go to step **19**.
6	**CHECK CURRENT DATA.** 1) Select "Current Data Display" and read the data of the driver's seat belt switch. 2) Fasten and detach the seat belt buckle.	Does the seat belt SW display turn ON ←→ OFF according to the operation?	Go to step **10**.	Go to step **7**.
7	**CHECK HARNESS.** 1) Disconnect the negative terminal from the battery, and wait for 20 seconds or more. 2) Disconnect the connectors of the body integrated unit and the seat belt buckle switch. 3) Check for a short circuit to battery, open circuit and short circuit to ground between the body integrated unit and the seat belt buckle switch LH. ***Connector & terminal*** ***(B281) No. 16 — (R107) No. 3:***	Is the harness normal?	Go to step **8**.	Repair or replace the harness.
8	**CHECK HARNESS.** Measure the resistance between the seat belt buckle switch LH and chassis ground. ***Connector & terminal*** ***(R107) No. 1 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **9**.	Repair or replace the harness.
9	**CHECK SEAT BELT BUCKLE SWITCH LH.** Measure the resistance between the connector terminals of the driver's seat belt switch when the driver's seat belt is fastened and detached. ***Connector & terminal*** ***(R107) No. 1 — (R107) No. 3:***	Is the resistance when the belt is fastened 1 MΩ or higher, and less then 10 Ω when the belt is detached?	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>	Replace the inner belt assembly LH. <Ref. to SB-17, INNER SEAT BELT ASSEMBLY, REMOVAL, Front Seat Belt.>
10	**CHECK DTC.** Read the DTC using the Subaru Select Monitor.	Are any body CAN related DTC detected?	Check the CAN according to DTC.	Go to step **11**.
11	**CHECK COMBINATION METER.** Perform self-diagnosis of the combination meter. <Ref. to IDI-4, SELF-DIAGNOSIS, INSPECTION, Combination Meter System.>	At the start of combination meter self diagnosis, did the buzzer sound and the seat belt warning light illuminate?	Replace the body integrated unit or the combination meter. Or, replace both. There may be a communication malfunction of the body integrated unit, or a reception malfunction of the combination meter.	Replace the combination meter. <Ref. to IDI-15, REMOVAL, Combination Meter.>
12	**CHECK CURRENT DATA.** 1) Sit in the passenger's seat. 2) Select "Current Data Display" and display the data of "P seatbelt SW input". 3) Fasten and detach the passenger's side seat belt buckle, and read the data of the seat belt switch. <Ref. to LAN(diag)-32, OPERATION, Read Current Data.>	Does the seat belt switch display turn ON ←→ OFF according to the operation of the seat belt buckle?	Go to step **16**.	Go to step **13**.

	Step	Check	Yes	No
13	**CHECK AIRBAG SYSTEM AND OCCUPANT DETECTION SYSTEM.** Perform the check in accordance with the diagnostic procedure DTC 27 of the airbag system. <Ref. to AB(diag)-56, DTC 27 ODS COMMUNICATION ERROR, Diagnostic Chart with Trouble Code.>	Is there any problem on the inspection result?	Go to step **14**.	Replace with new parts according to DTC 27.
14	**CHECK BUCKLE SWITCH RH.** Perform the check in accordance with the diagnostic procedure DTC 37 of the occupant detection system. <Ref. to OD(diag)-26, DTC 37 BUCKLE SWITCH RH FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any problem on the inspection result?	Go to step **15**.	Replace with new parts according to DTC 37.
15	**CHECK AIRBAG CONTROL MODULE AND BODY INTEGRATED UNIT.** Check the airbag control module, occupant detection sensor and seat belt buckle switch RH. Perform the check in accordance with the diagnostic procedure DTC 39 of the airbag system. <Ref. to AB(diag)-58, DTC 39 SEAT BELT WARNING FAILURE, Diagnostic Chart with Trouble Code.>	Is there any problem on the inspection result?	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>	Replace with new parts according to DTC 39.
16	**CHECK HARNESS.** 1) Disconnect the clock connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between the body integrated unit and the clock. ***Connector & terminal*** ***(i59) No. 8 (+) — Chassis ground (–):***	Is the voltage 10 V or higher?	Go to step **17**.	Repair or replace the harness.
17	**CHECK HARNESS.** 1) Turn the ignition switch to ON. 2) Disconnect the connector of body integrated unit. 3) Check for a short circuit to battery, open circuit and short circuit to ground between the body integrated unit and the clock. ***Connector & terminal*** ***(i84) No. 25 — (i59) No. 2:***	Is the harness normal?	Go to step **18**.	Repair or replace the harness.
18	**CHECK CLOCK.** 1) Connect the clock connector. 2) Turn the ignition switch to ON. 3) Use an appropriate wiring harness to create a short between the body integrated unit and the clock. ***Connector & terminal*** ***(i84) No. 25 — Chassis ground:*** ***(i59) No. 2 — Chassis ground:***	Does passenger's seat belt warning light in the clock illuminate?	Replace the body integrated unit. <Ref. to SL-49, REMOVAL, Body Integrated Unit.>	Replace the clock. <Ref. to IDI-20, REMOVAL, Clock.>
19	**CHECK DTC.** Read the DTCs for all systems using the Subaru Select Monitor.	Is a DTC detected?	Perform a check according to the DTC.	Go to step **20**.

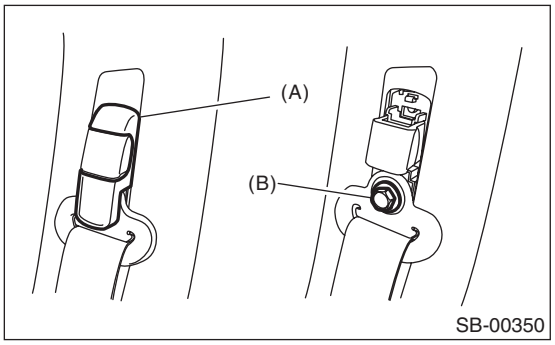
Step		Check	Yes	No
20	**CHECK CURRENT DATA.** Select “Current Data Display” and read the data of the “Front Wheel Speed” of the body integrated unit. <Ref. to LAN(diag)-32, OPERATION, Read Current Data.>	Does the data indicate the normal vehicle speed?	Go to step **11**.	Check the following items. • LAN system <Ref. to LAN(diag)-68, DTC U1223 CAN-HS VDC/ABS NO-RECEIVE DATA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> • VDC <Ref. to VDC(diag)-2, Basic Diagnostic Procedure.>

5. Front Seat Belt

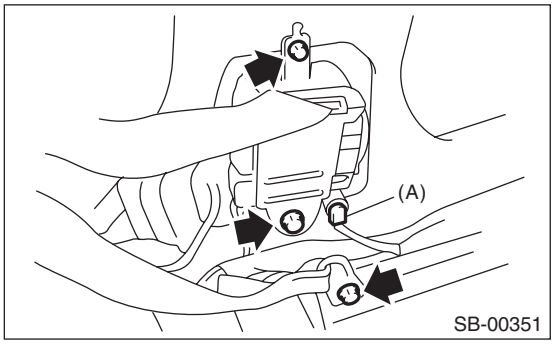
A: REMOVAL

1. OUTER SEAT BELT ASSEMBLY

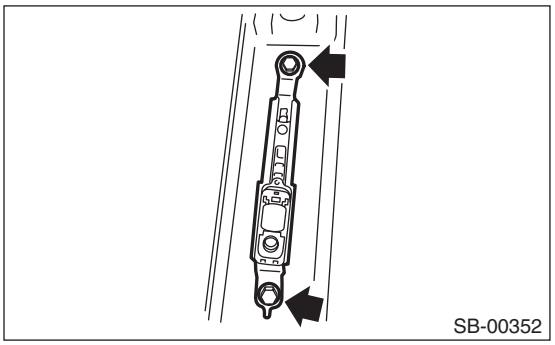
CAUTION:
• Do not drop or subject the pretensioner to any impact.
• Since the pretensioner and bracket are integrated as a unit, do not disassemble them.
1) Before starting the work, turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more.
2) Fold the backrest all the way forward, and then move the front seat all the way forward.
3) Remove the center pillar lower trim. <Ref. to EI-55, REMOVAL, Lower Inner Trim.>
4) Remove the anchor cover (A).
5) Loosen the shoulder anchor bolt (B), and then detach the shoulder anchor from center pillar.



6) Turn over the floor mat and disconnect the pretensioner connector (A).
7) Remove the bolts, then remove the front outer seat belt.

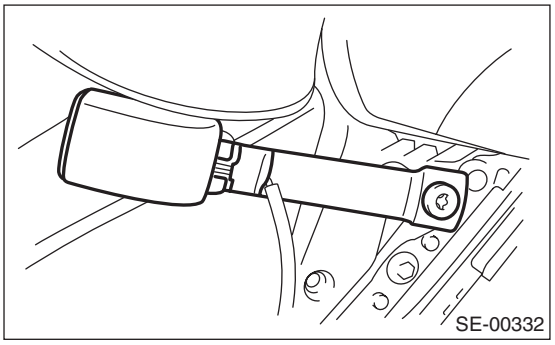


8) Remove the center pillar upper trim. <Ref. to EI-57, REMOVAL, Upper Inner Trim.>
9) Remove the bolts and then remove adjustable anchor assembly.



2. INNER SEAT BELT ASSEMBLY

1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait for 20 seconds or more.
2) Remove the front seats. <Ref. to SE-6, REMOVAL, Front Seat.>
3) Disconnect the seat belt warning light connector under the seat.
4) Remove the seat belt harness from the harness holder on the backside of seat cushion assembly.
5) Remove the TORX® bolt, and then remove the inner seat belt assembly.



B: INSTALLATION

CAUTION:
• The parts of the driver and passenger sides are not the same. Before installation, make sure that the correct part is used.
• Be careful not to twist the seat belts during installation.
Install in the reverse order of removal.

Tightening torque:
Seat belt:<Ref. to SB-2, FRONT SEAT BELT, COMPONENT, General Description.>
Upper inner trim: 7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

C: INSPECTION

Check for the following, and replace with new parts if necessary.

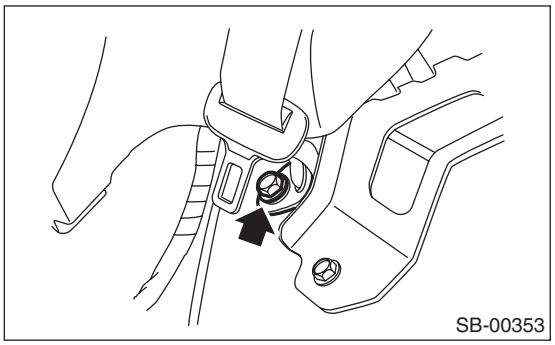
- Pretensioner is cracked or deformed.
- Seat belt is slackened, bent or worn.
- Seat belt is abnormally wound or extended.
- Inner seat belt assembly is deformed or damaged.
- Seat belt buckle cannot be engaged properly.

6. Rear Seat Belt

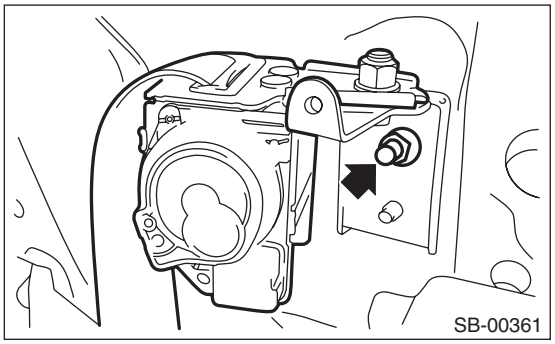
A: REMOVAL

1. OUTER SEAT BELT ASSEMBLY RH & LH

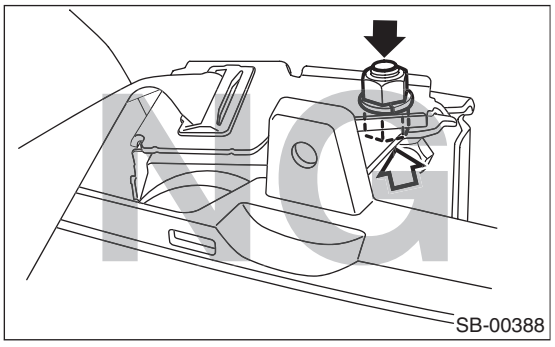
1) Remove the luggage floor mat.
2) Remove the rear seat cushion. <Ref. to SE-12, REMOVAL, Rear Seat.>
3) Remove the seat belt lower anchor bolt.


SB-00353

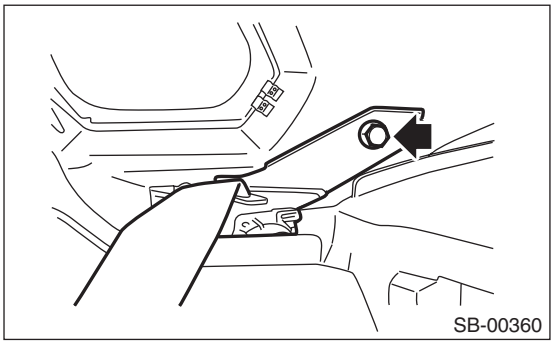
4) Remove the rear quarter trim. <Ref. to EI-58, REMOVAL, Rear Quarter Trim.>
5) Remove the outer seat belt assembly.
• 5 DOOR MODEL
Remove the nut.


SB-00361

CAUTION:
Do not remove the bolt and nut securing the retractor and bracket.

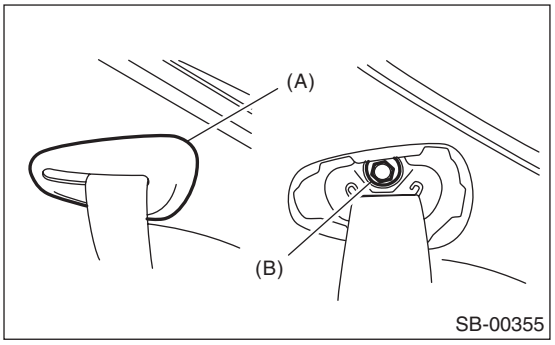

SB-00388

• 4 DOOR MODEL
Remove the bolt.


SB-00360

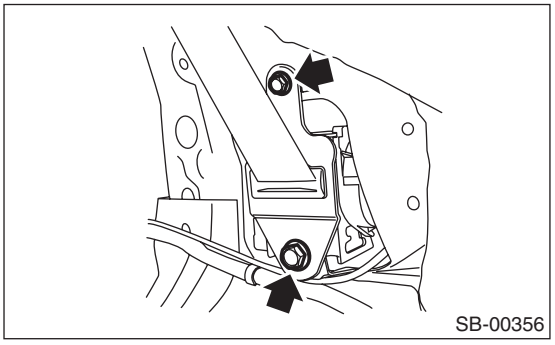
2. SHOULDER SEAT BELT CENTER ASSEMBLY (5 DOOR MODEL)

1) Remove the shoulder anchor bolt cover (A).
2) Remove the shoulder anchor bolt (B) and remove the shoulder anchor from the quarter pillar.



SB-00355

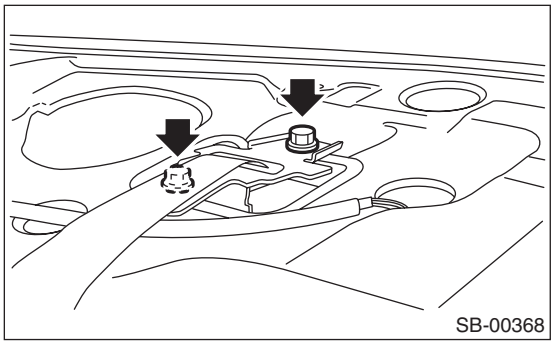
3) Remove the rear quarter trim. <Ref. to EI-58, REMOVAL, Rear Quarter Trim.>
4) Remove the bolts, and then detach the outer seat belt center assembly.


SB-00356

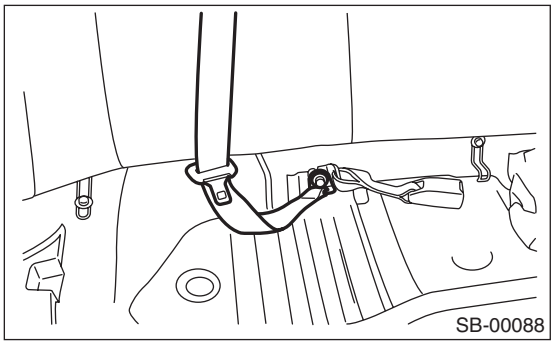
3. SHOULDER SEAT BELT CENTER ASSEMBLY (4 DOOR MODEL)

1) Remove the rear seat. <Ref. to SE-12, REMOVAL, Rear Seat.>
2) Remove the rear quarter trim. <Ref. to EI-58, REMOVAL, Rear Quarter Trim.>
3) Remove the rear shelf trim. <Ref. to EI-60, REMOVAL, Rear Shelf Trim.>

4) Remove the bolts, then remove the shoulder seat belt assembly.

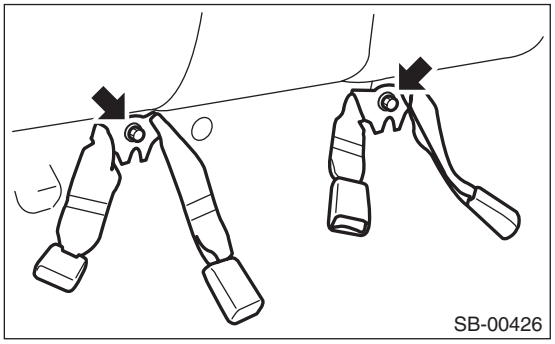

SB-00368

5) Remove the seat belt lower anchor bolt.


SB-00088

4. CENTER SEAT BELT ASSEMBLY

1) Remove the rear seat cushion.
2) Remove the bolts, then remove the center seat belt assembly.


SB-00426

B: INSTALLATION

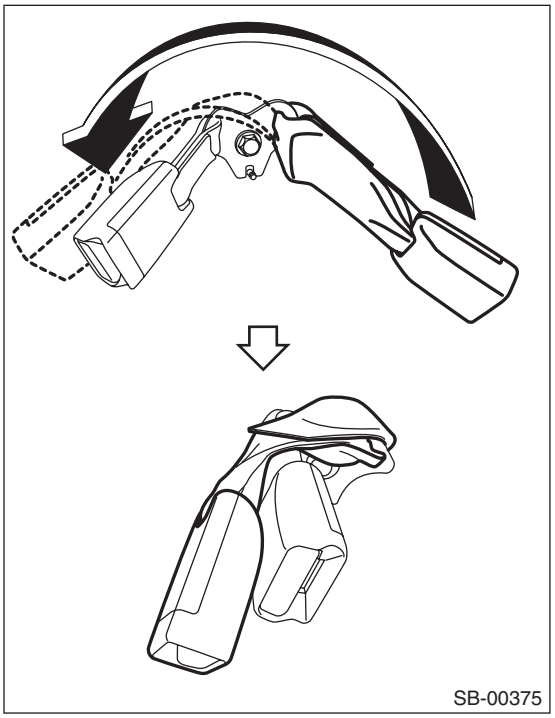
CAUTION:
• During installation, make sure that the seat belts are not twisted.
• After installation, make sure that the seat belts are smoothly extended and wound.
• Make sure that the center seat belt is securely installed.

1) Install in the reverse order of removal.

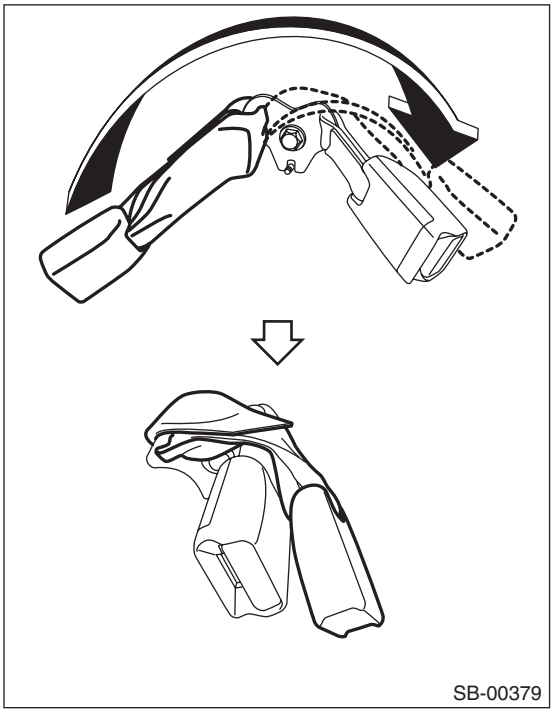
Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to SB-3, REAR SEAT BELT, COMPONENT, General Description.>

2) Turn the seat belt as shown in the figure.

• LH SIDE

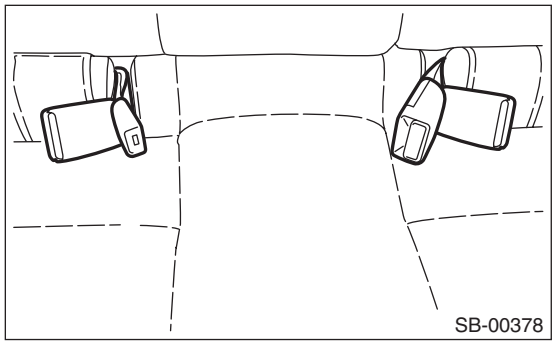

SB-00375

• RH SIDE (5 DOOR MODEL ONLY)

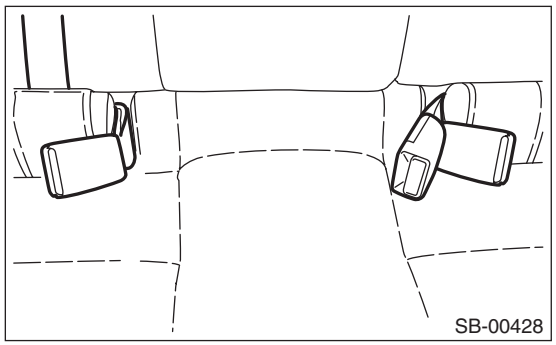

SB-00379

3) Install the seat cushion and pull out the center seat belt assembly.

- 5 DOOR MODEL



- 4 DOOR MODEL



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 seat belt is deformed or damaged.
- Seat belt buckle cannot be engaged properly.

LIGHTING SYSTEM

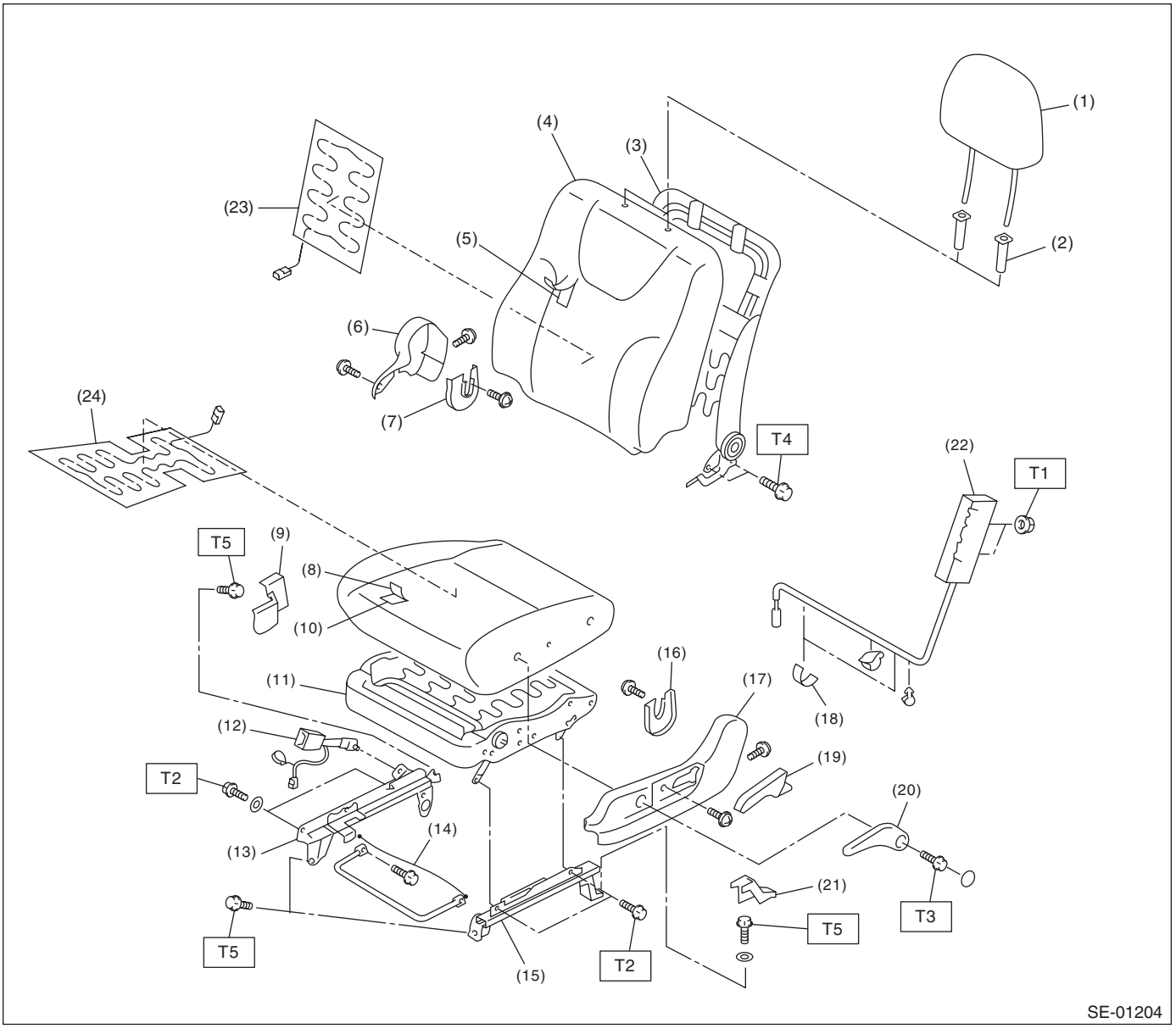
LI

		Page
1.	General Description	2
2.	Headlight and Tail Light System	4
3.	Day Time Running Light System	5
4.	Front Fog Light System	6
5.	Turn Signal Light and Hazard Light System	7
6.	Back-up Light System	8
7.	Stop Light System	9
8.	Room Light System	10
9.	Combination Switch (Light)	11
10.	Combination Base Switch Assembly	13
11.	Headlight Assembly	14
12.	Headlight Bulb	16
13.	Front Turn Signal Light Bulb	18
14.	Clearance/Parking Light Bulb	19
15.	Front Fog Light Assembly	20
16.	Front Fog Light Bulb	22
17.	Rear Combination Light Assembly	23
18.	Tail/Stop Light Bulb	24
19.	Rear Turn Signal Light Bulb	25
20.	Rear Finisher Light Assembly	26
21.	Back-up Light Bulb	27
22.	License Plate Light	28
23.	High-mounted Stop Light	29
24.	Spot Map Light	30
25.	Room Light	31
26.	Luggage Room Light	32
27.	Trunk Room Light	33
28.	Ignition Switch Illumination	34
29.	Reflex Reflector	36
30.	Door Switch	37

1. General Description

A: COMPONENT

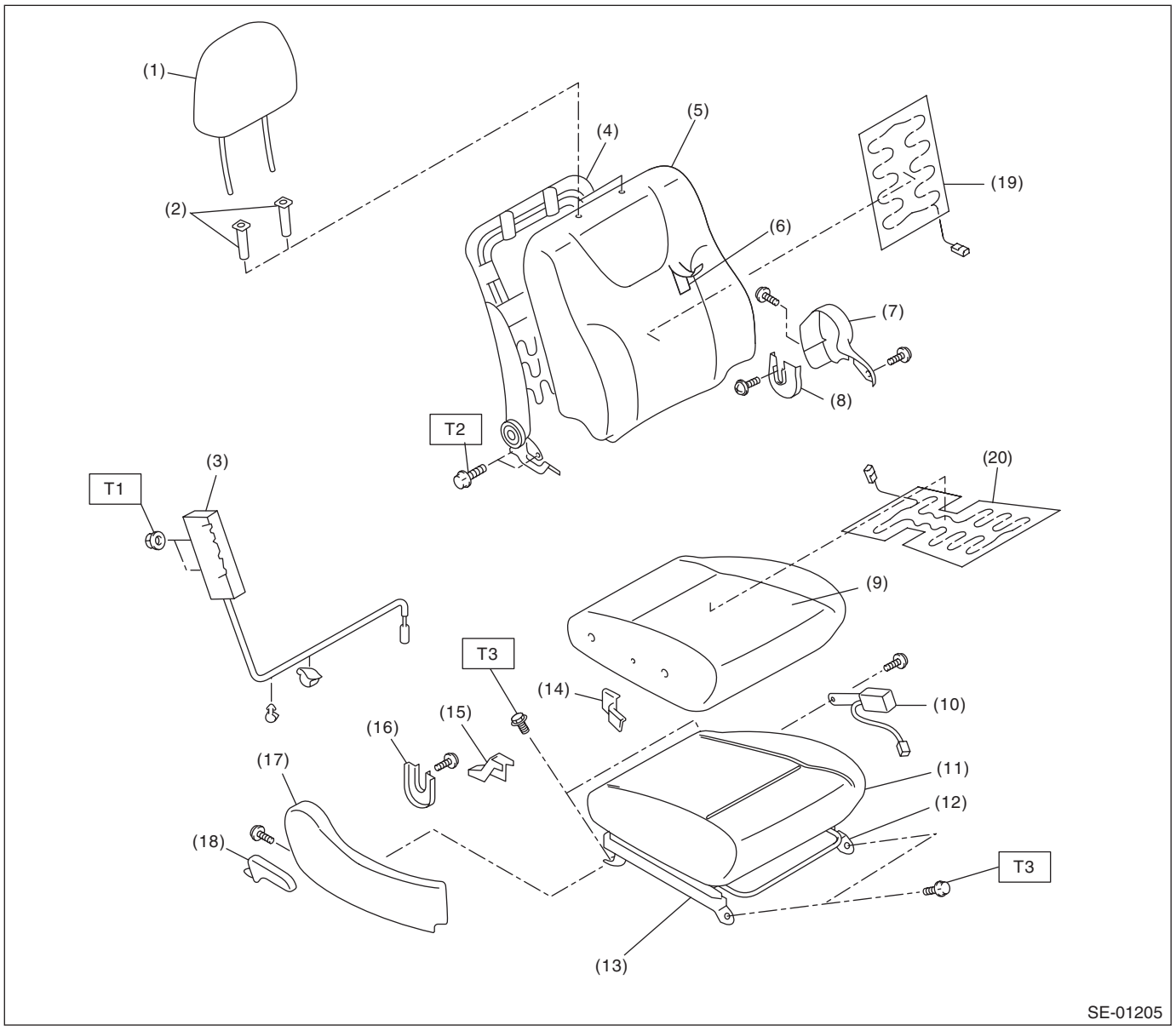
1. FRONT SEAT LH



(1) Headrest ASSY
(2) Headrest lock bushing
(3) Backrest frame ASSY
(4) Backrest cover
(5) Backrest pad
(6) Seat side cover inside
(7) Seat hinge inner cover RH
(8) Seat cushion cover
(9) Rear bolt cover inside
(10) Seat cushion pad
(11) Seat cushion frame ASSY
(12) Inner seat belt ASSY
(13) Inner slide rail
(14) Connecting cable
(15) Outer slide rail
(16) Seat hinge inner cover LH
(17) Seat side cover outside
(18) Tape
(19) Reclining lever
(20) Lifter lever
(21) Rear bolt cover outside
(22) Side airbag module
(23) Seat heater module (backrest)
(24) Seat heater module (seat cushion)

Tightening torque:N·m (kgf-m, ft-lb)
T1: 6 (0.61, 4.4)
T2: 9.8 (1.0, 7.2)
T3: 17.6 (1.79, 13.0)
T4: 52 (5.3, 38.4)
T5: 53 (5.4, 39.1)

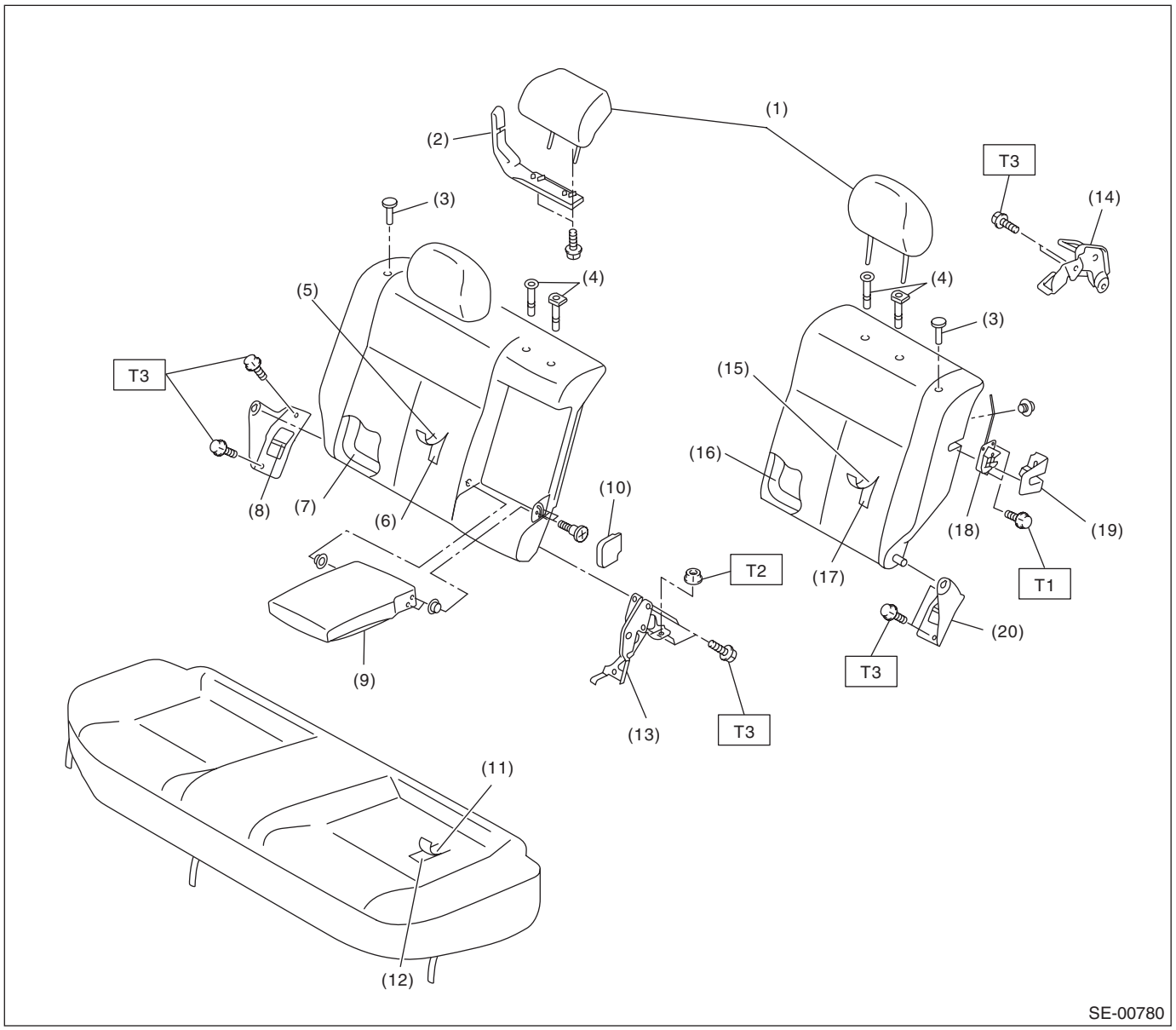
2. FRONT SEAT RH



(1) Headrest ASSY
(2) Headrest lock bushing
(3) Side airbag module
(4) Backrest frame ASSY
(5) Backrest cover
(6) Backrest pad
(7) Seat side cover inside
(8) Hinge inner cover LH
(9) Seat cushion cover
(10) Inner seat belt ASSY
(11) Seat cushion pad and frame ASSY
(12) Inner slide rail
(13) Outer slide rail
(14) Rear bolt cover inside
(15) Rear bolt cover outside
(16) Hinge inner cover RH
(17) Seat side cover outside
(18) Reclining lever
(19) Seat heater module (backrest)
(20) Seat heater module (seat cushion)

Tightening torque:N·m (kgf-m, ft-lb)
T1: 6 (0.61, 4.4)
T2: 52 (5.3, 38.4)
T3: 53 (5.4, 39.1)

3. REAR SEAT



(1)	Headrest	(10)	Armrest hinge cover	(19)	Seat backrest latch cover
(2)	Seat belt guide (5 door model only)	(11)	Seat cushion cover	(20)	Hinge ASSY LH
(3)	Backrest knob (5 door model only)	(12)	Seat cushion pad		
(4)	Headrest bushing	(13)	Hinge ASSY center		
(5)	Backrest cover RH	(14)	Striker		
(6)	Backrest pad RH	(15)	Backrest cover LH		
(7)	Backrest frame RH	(16)	Backrest frame LH		
(8)	Hinge ASSY RH	(17)	Backrest pad LH		
(9)	Armrest ASSY	(18)	Seat back latch		

Tightening torque:N·m (kgf-m, ft-lb)	
T1:	*17.6 (1.79, 13.0)*
T2:	*24.5 (2.5, 18.1)*
T3:	*33 (3.36, 24.3)*

B: CAUTION

• If the seat cushion cover is removed or replaced, make sure to perform passenger detection system adjustment after installing the seat to the vehicle. <Ref. to OD(diag)-13, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>
If system adjustment is not performed, the occupant detection system may not function properly.
• The passenger detection system (passenger seat only) control unit and the passenger detection sensor are fixed to the seat cushion frame. Never remove the passenger detection control unit or the pressure sensor from the seat cushion frame.
• Do not replace the seat cushion pad by itself. Always replace the seat cushion pad and frame assembly as a set. The seat cushion pad and cushion frame are adjusted as a set at the time of manufacture. If cushion pads and cushion frames are combined from those of other vehicles or other sets, the passenger detection system may not operate properly.
• If the seat cushion cover is removed, make sure to replace the hang wire on the seat cushion side with a new wire.
• When removing the front seat from a side airbag loaded vehicle, follow cautions given in the airbag section. <Ref. to AB-5, CAUTION, General Description.>

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.
TORX® T50	Used for removing and installing the inner seat belt assembly.
Circuit tester	Used for checking voltage and continuity.

2. Front Seat

A: REMOVAL

CAUTION:
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 20 seconds before starting the service of airbag system.

1. DRIVER'S SEAT

1) Disconnect the ground cable from battery, and wait for 20 seconds or more before starting work.
2) Remove the headrest.
3) Remove the slide rail installing bolt.
   (1) Tilt the backrest forward, and move the seat to the full forward position.
   (2) Remove the rear bolt cover at the rear end of the slide rail, and remove the two bolts.
   (3) Move the seat to the rearmost position, and remove the two bolts at the front side of the slide rail.
4) Tilt the backrest forward, and move the seat forward.
5) Remove the rear bolt cover, and remove the two bolts at the rear side of the slide rail.
6) Move the seat towards the rear, and remove the two bolts at the front side of the slide rail.
7) Disconnect the connector under the seat.
- Seat belt buckle switch connector
- Side airbag connector
- Seat heater connector (model with seat heater)

8) Remove the seat from vehicle.

2. PASSENGER'S SEAT

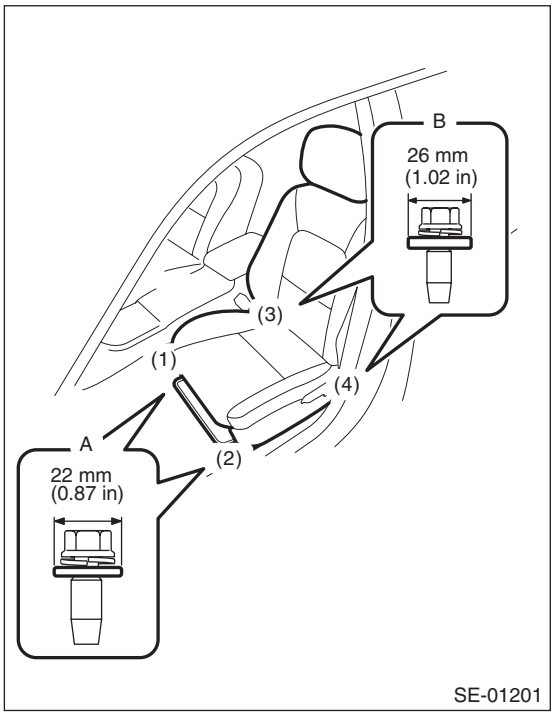
CAUTION:
Refer to "CAUTION" of "General Description" before starting the work. <Ref. to SE-5, CAUTION, General Description.>
1) Disconnect the ground cable from battery, and wait for 20 seconds or more before starting work.
2) Remove the headrest.
3) Tilt the backrest forward, and move the seat forward.
4) Remove the rear bolt cover, and then remove the rear side of slide rail.
5) Move the seat backward, remove the front bolt cover, and then 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.

CAUTION:
• The seat mounting bolts differ between the front mounting points and the rear mounting points. Make sure that you are using correct bolts at correct positions.
• Tighten the slide rail installing bolt gradually in several steps to the specified torque in the order as shown in the figure.



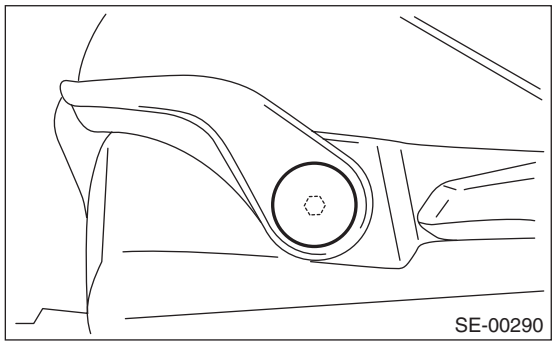
• Front (bolt A): Washer diameter 22 mm (0.87 in)
• Rear (bolt B): Washer diameter 26 mm (1.02 in)

Tightening torque:
53 N·m (5.4 kgf-m, 39.1 ft-lb)

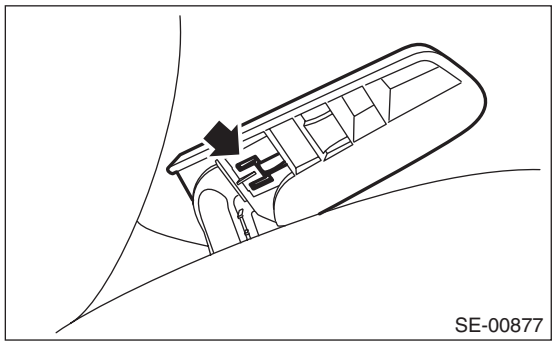
C: DISASSEMBLY

1. STANDARD SEAT

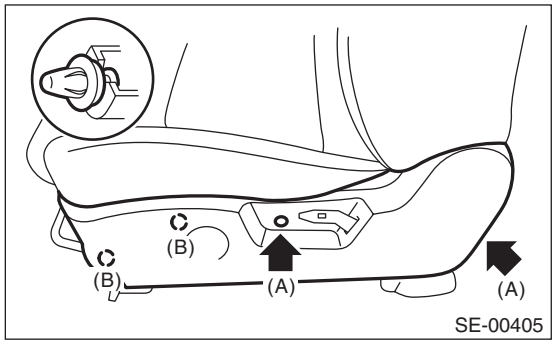
1) Remove the seat from vehicle. <Ref. to SE-6, REMOVAL, Front Seat.>
2) Remove the seat lifter cover using a flat tip screwdriver and loosen the inner bolt to remove the seat lifter lever.


SE-00290

3) Disengage the tab while pulling the reclining lever, and remove the reclining lever cover.

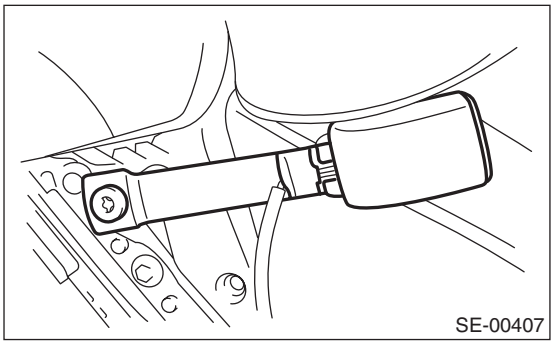

SE-00877

4) Remove screws (A) and clips (B), and then detach the seat side cover outside.

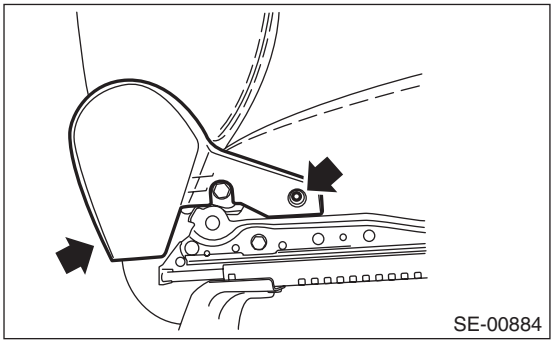


SE-00405

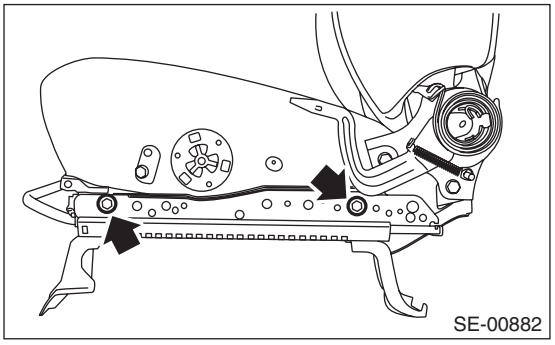
5) Remove the TORX® bolt, and then remove the inner seat belt assembly.


SE-00407

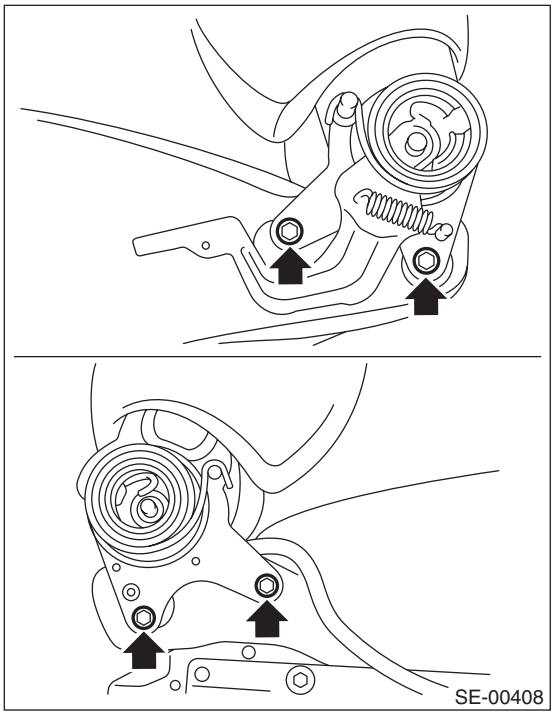
6) Loosen the screws to detach the seat side cover inside.


SE-00884

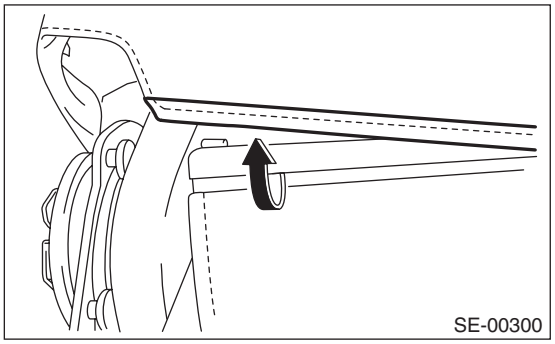
7) Remove the bolts on the side of seat cushion assembly, and then remove the slide rail.


SE-00882

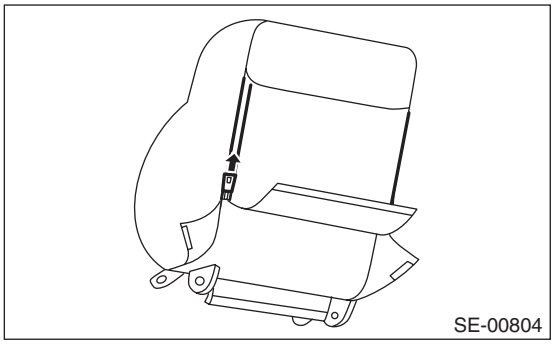
8) Remove the bolts from reclining hinge of both sides.


SE-00408

9) Remove the plastic fastener at the bottom-back side of backrest.

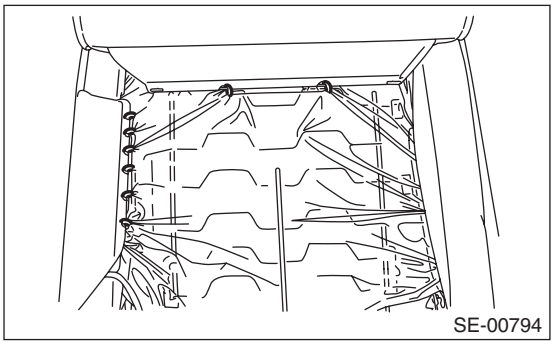

SE-00300

10) Open the fastener at the rear side of backrest.

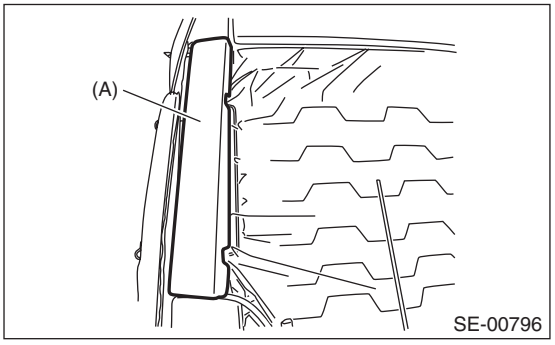

SE-00804

11) Remove the hog rings of backrest cover.

CAUTION:
When removing the hog rings, be careful not to tear the vinyl sheet within the seat.
If torn, replace with a new part.


SE-00794

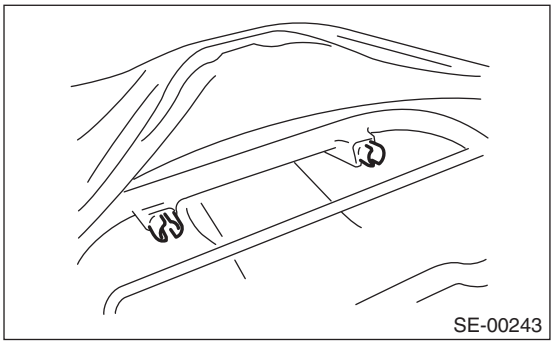
12) Remove the pad (A), and remove the mounting nut from the side airbag module.



SE-00796

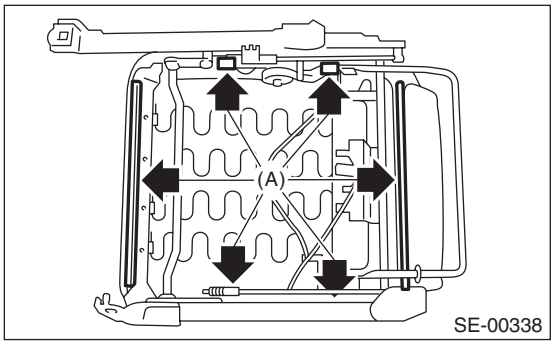
13) Remove the headrest bushing.

NOTE:
Push outside to remove it from the inside of seat.

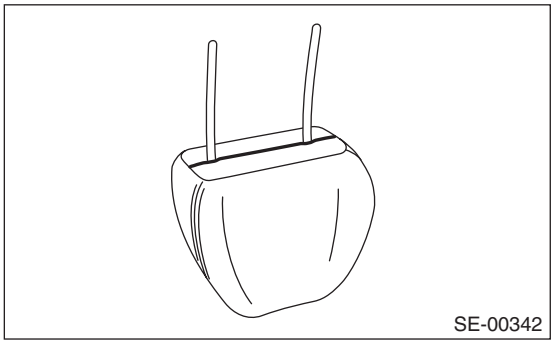

SE-00243

14) Pull out the backrest frame.
15) Remove all the hog rings at front of seat back, and then remove the seat back cover from seat backrest.

16) Remove the plastic hooks (A) of the seat cushion cover, and then remove the seat cushion frame assembly.



17) Remove all the hog rings, and then remove the seat cushion cover from seat cushion pad.
18) Open the plastic fastener on the bottom of the headrest, and then remove the headrest cover from the headrest.

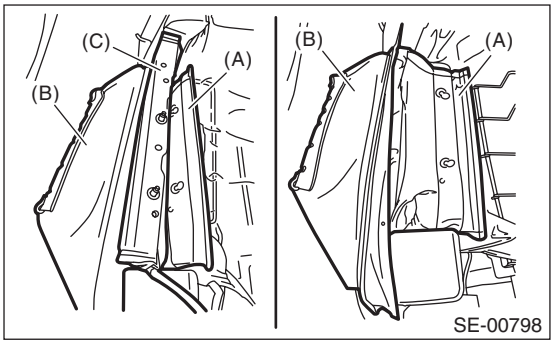


2. PASSENGER'S SEAT

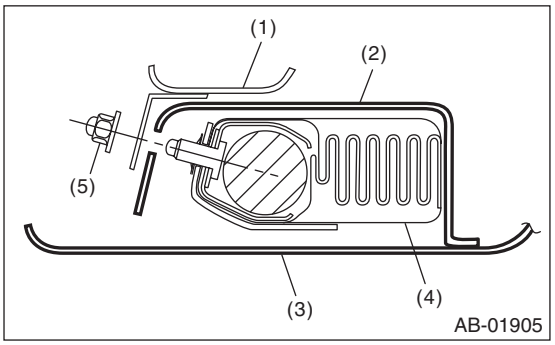
CAUTION:
• If the seat cushion cover is removed or replaced, make sure to perform passenger detection system adjustment after installing the seat to the vehicle. <Ref. to OD(diag)-13, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>
Failure to do so may cause improper activation of passenger's airbag.
• The passenger detection system (passenger seat only) control unit, passenger detection sensor, seat cushion pad and seat cushion frame are considered as a single seat cushion pad and frame assembly. Never remove the passenger detection control unit or the pressure sensor from the seat cushion frame.
• If the seat cushion cover is removed, make sure to replace the hang wire on the seat cushion side with a new wire.
1) Remove the seat from vehicle. <Ref. to SE-6, PASSENGER'S SEAT, REMOVAL, Front Seat.>
2) Refer to the disassembly procedures for the driver's seat.

D: ASSEMBLY

CAUTION:
When installing the side airbag module assembly, be sure to put the side airbag module between backrest cover and airbag guide cloth.



(A) Airbag guide cloth
(B) Backrest cover
(C) Side airbag module ASSY



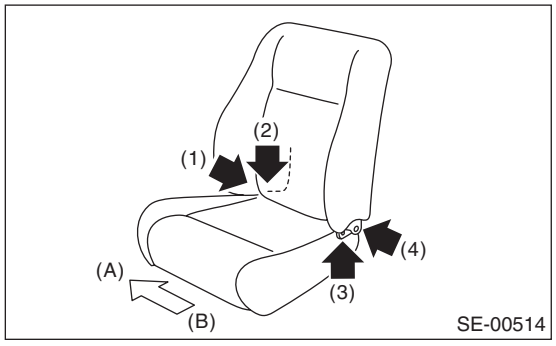
(1) Backrest frame ASSY
(2) Airbag guide cloth
(3) Backrest cover
(4) Side airbag module ASSY
(5) Hexagon cap nut

Besides, 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.
• Always use new 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.
Assemble in the reverse order of disassembly.

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to SE-2, FRONT SEAT LH, COMPONENT, General Description.>

1. DRIVER'S SEAT

NOTE:
• When installing the inner seat belt assembly, follow the procedure described in the seat belt section. <Ref. to SB-17, INSTALLATION, Front Seat Belt.>
• Install the backrest assembly and seat cushion assembly in the following procedure.
1) Temporarily tighten the four reclining hinge bolts.
2) Place the backrest in the most upright position.
3) Tighten the reclining hinge bolts in the order of (1) through (4), in two or three steps by gradually increasing the torque until they reach the specified torque.

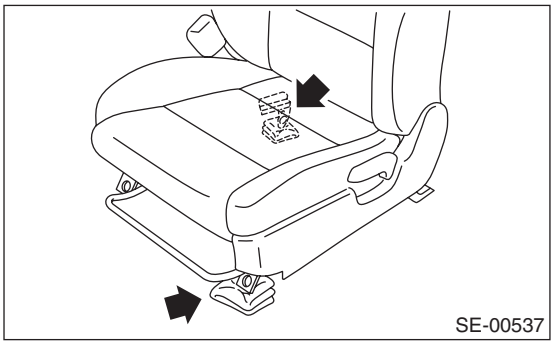


(A) Vehicle inside
(B) Vehicle outside

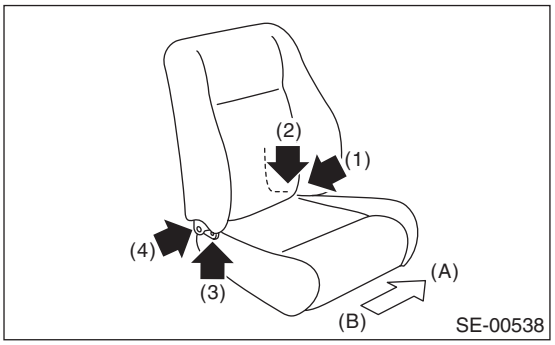
4) Assemble in the reverse order of disassembly.

2. PASSENGER'S SEAT

CAUTION:
Make sure to adhere to the following rules when assembling the passenger seat. Improper work procedures can cause the passenger detection system to not operate properly.
• 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)-13, SYSTEM CALIBRATION (REZEROING), OPERATION, Subaru Select Monitor.>
Failure to do so may prevent the passenger's airbag from operating properly.
• The passenger detection system (passenger seat only) control unit, passenger detection sensor, seat cushion pad and seat cushion frame are considered as a single seat cushion pad and frame assembly. Never remove the passenger detection control unit or the pressure sensor from the seat cushion frame.
• If the seat cushion cover is removed, make sure to replace the hang wire on the seat cushion side with a new wire.
• Make sure to install the hog rings/clips to the specified locations. Do not reuse hog rings.
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.



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.



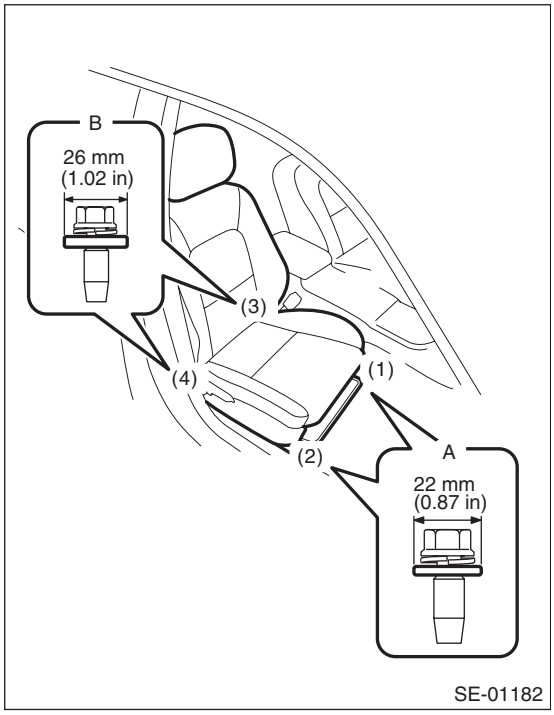
(A) Vehicle inside
(B) Vehicle outside

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 belt assembly and each cover in the reverse order of removal.

8) Install the seat assembly.

CAUTION:
• The seat mounting bolts differ between the front mounting points and the rear mounting points. Make sure that you are using correct bolts at correct positions.
• Tighten the slide rail installing bolt gradually in several steps to the specified torque in the order as shown in the figure.



- **Front (bolt A): Washer diameter 22 mm (0.87 in)**
- **Rear (bolt B): Washer diameter 26 mm (1.02 in)**

Tightening torque:
53 N·m (5.4 kgf-m, 39.1 ft-lb)

E: INSPECTION

Check that no tear or fray on the backrest cover and seat cushion cover.

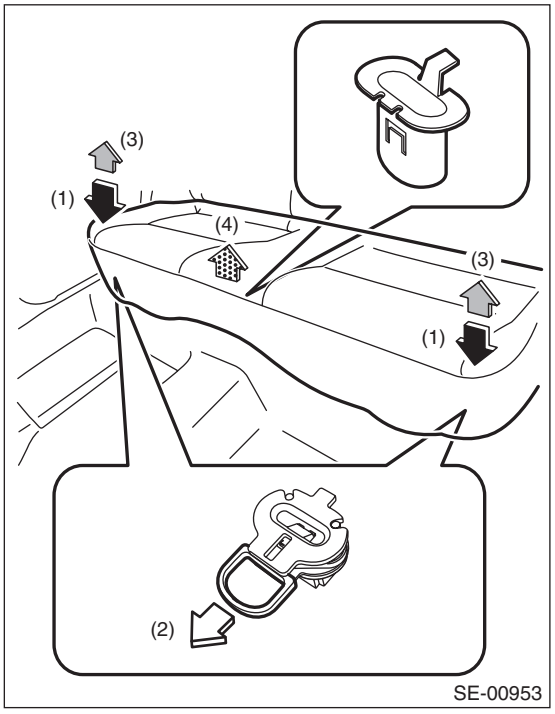
NOTE:
If the door side of the backrest cover is torn or frayed, the side airbag may not be deployed properly. In this case, replace the backrest cover.

3. Rear Seat

A: REMOVAL

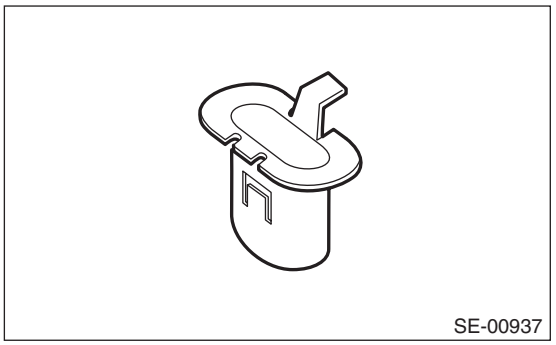
CAUTION:
• Airbag system satellite safing sensor is located in the lower of the rear seat cushion center. Read the cautions and warnings indicated in the AB section before removing the rear seat. <Ref. to AB-5, CAUTION, General Description.>
• The airbag system is fitted with a backup power supply. After disconnecting the battery ground cable, the airbag may deploy if you do not wait for 20 seconds before starting the service of airbag system.

1) Disconnect the ground cable from battery, and wait for 20 seconds or more before starting work.
2) Remove the rear seat cushion.

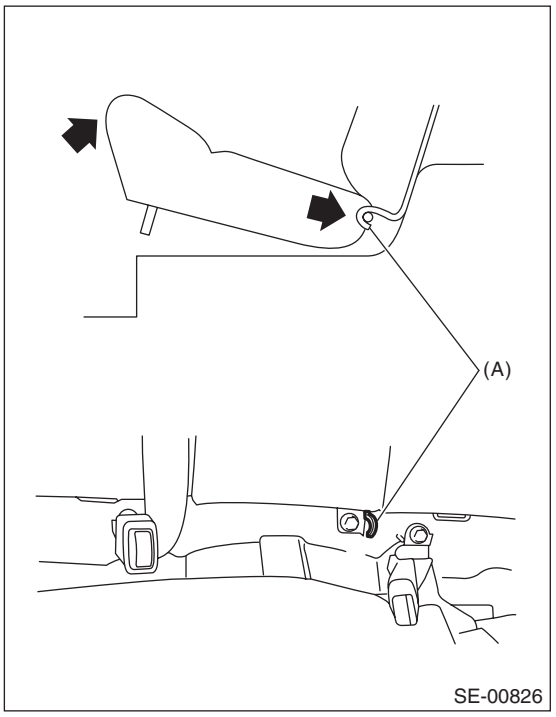


(1) Press the corner of the seat cushion from above.
(2) While pressing the corner of the seat cushion, pull the knob of the seat cushion hook toward you.
(3) While pulling the knob toward you, detach the hook by lifting the seat cushion.
(4) Pull up the front center part of the seat cushion and disconnect the center hook.

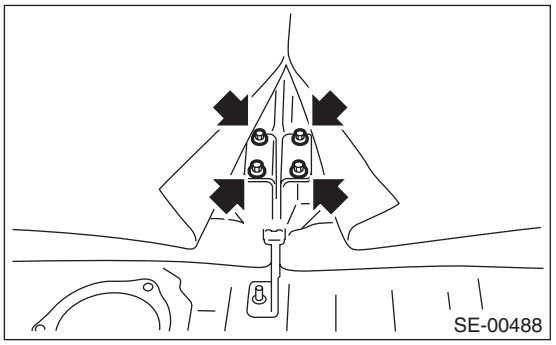
CAUTION:
If the center hook is disconnected from the vehicle body, replace the hook with the new part to prevent the decline of the fixed force of the seat.



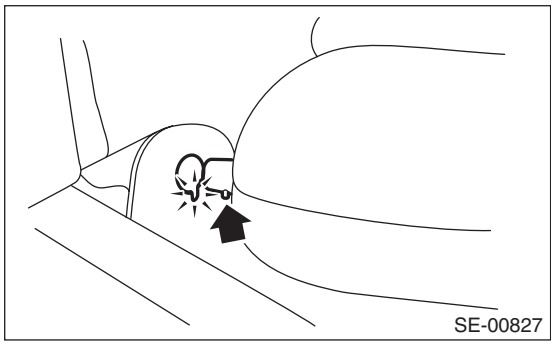
(5) Remove the hook (A) by pushing it back while lifting the front side of the seat cushion, and remove the seat cushion.



3) Remove the headrest, and then tilt the backrest forward.
4) Remove the luggage floor mat. (5 door model)
5) Turn over the mat to remove the bolt.



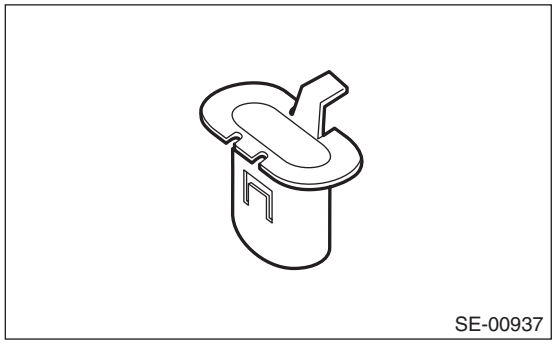
6) Remove the backrest from the hinge assembly LH (hinge assembly RH).


SE-00827

NOTE:
The backrest cannot be detached while the hinge assembly side and the backrest pin are not aligned.

B: INSTALLATION

CAUTION:
If the hooks on the vehicle body side disengage (remained on the seat cushion side), when the rear seat cushion is removed, always replace with new hooks.

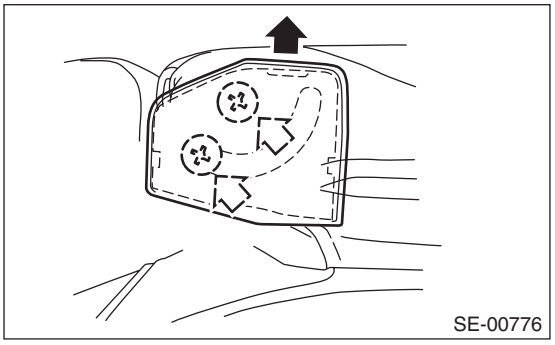

SE-00937

Install in the reverse order of removal.

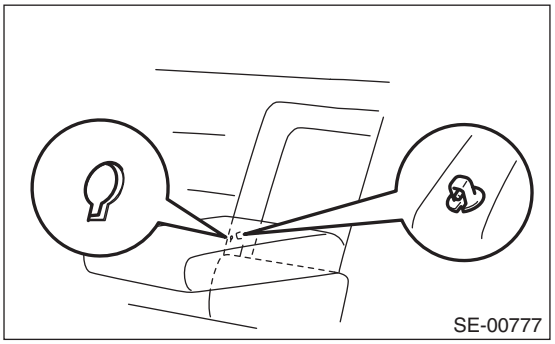
Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to SE-4, REAR SEAT, COMPONENT, General Description.>

C: DISASSEMBLY

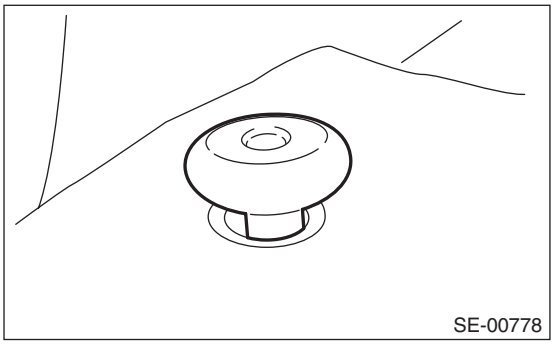
1) Remove the rear seat. <Ref. to SE-12, REMOVAL, Rear Seat.>
2) Remove the armrest hinge cover in the direction of arrow (black), and loosen the screws to remove the armrest.


SE-00776

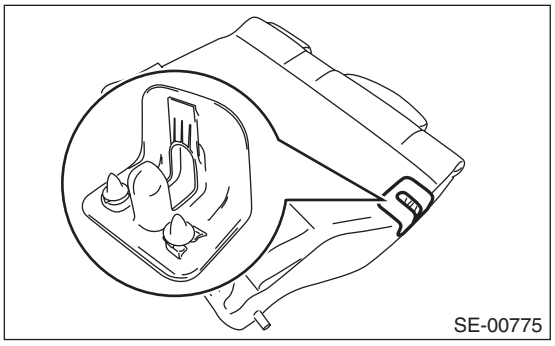
NOTE:
The armrests cannot be detached while the backrest assembly RH and armrest side pin positions are not aligned.


SE-00777

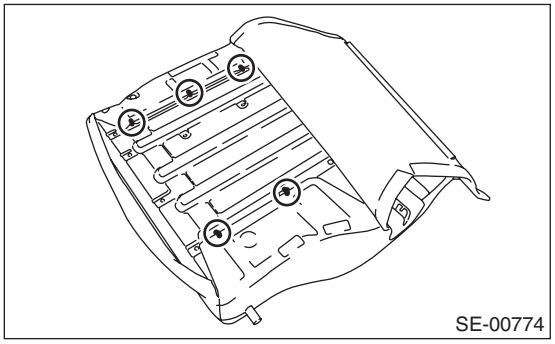
3) Remove the backrest knob. (Screw-in type) (5 door model)


SE-00778

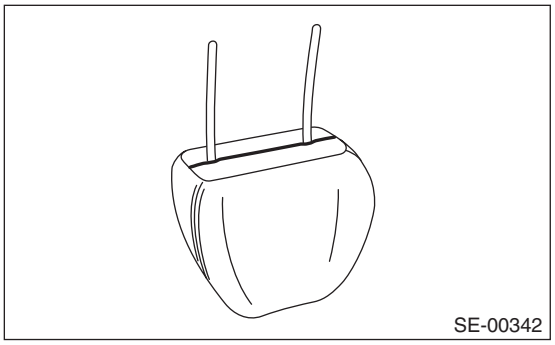
4) Remove the seat back latch cover.



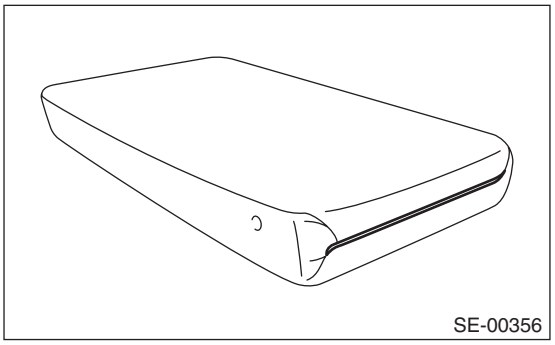
5) Peel the backrest cover, and remove the hog rings.



6) Remove all the hog rings which fix the backrest frame and backrest pad.
7) Remove the headrest bushing.
8) Remove the backrest pad and backrest cover from the backrest frame.
9) Disassemble the backrest assembly LH following the procedures described above.
10) Remove all the hog rings of the seat cushion, and separate the seat cushion cover and seat cushion pad.
11) Open the plastic fastener, and then remove the headrest cover from the headrest.



12) Remove the plastic fastener and hog rings, and then remove the armrest cover.



D: ASSEMBLY

CAUTION:
- **Always use new 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.**

Assemble in the reverse order of disassembly.

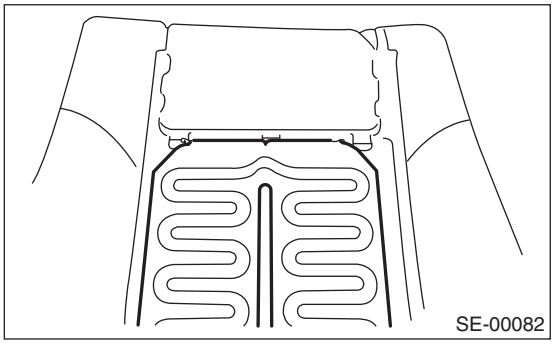
NOTE:
- Do not contaminate or damage the cover.
- While installing the hog rings, prevent the seat from getting wrinkled.

4. Seat Heater System

A: REMOVAL

1. SEAT HEATER MODULE

1) Remove the front seats. <Ref. to SE-6, REMOVAL, Front Seat.>
2) Remove the backrest cover of front seat and seat cushion cover. <Ref. to SE-7, DISASSEMBLY, Front Seat.>
3) Remove the seat heater module.



2. SEAT HEATER SWITCH

1) Remove the console box. <Ref. to EI-48, REMOVAL, Console Box.>
2) Remove the seat heater switch from the console box.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

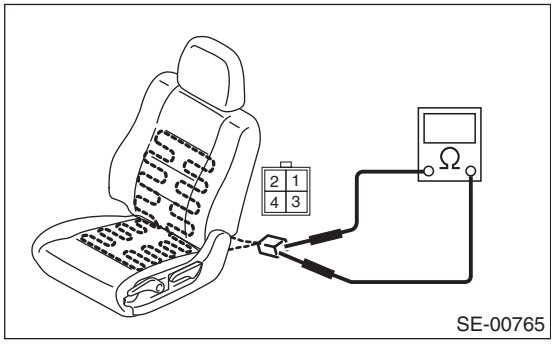
1. WIRING DIAGRAM

<Ref. to WI-95, WIRING DIAGRAM, Seat Heater System.>

2. SEAT HEATER MODULE

1) Disconnect the seat heater module connector, and check the continuity between terminals of connector.

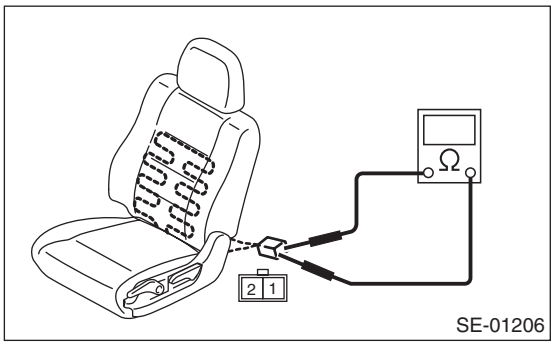
Connector & terminal
No. 1 — No. 3:
No. 1 — No. 4:
No. 3 — No. 4:



Is there continuity between connector terminals?
- **Continuity exists.→**

Seat heater module is normal. If there is a malfunction, check the seat heater switch and vehicle body side harness.
- **Continuity does not exist.→**
  No. 1 — No. 3: → Go to step 2).
  No. 1 — No. 4: → Go to step 2).
  No. 3 — No. 4: → Replace the seat heater module of seat cushion side.

2) Disconnect the seat heater module of backrest side, and check the continuity between connector terminals of the seat heater module unit of backrest side.

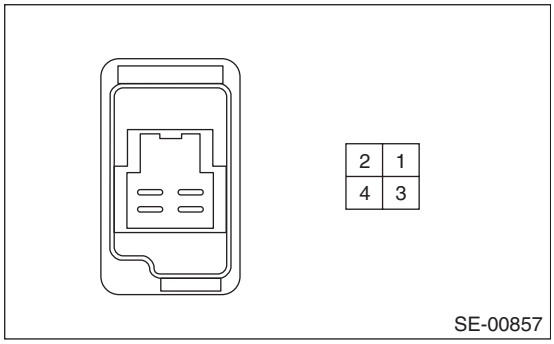


Is there continuity between connector terminals?
- **Continuity exists.→**

Replace the seat heater module of seat cushion side.
- **Continuity does not exist.→**

Replace the seat heater module of backrest side.

3. SEAT HEATER SWITCH



Inspect the continuity between the seat heater switch terminals.

Connector & terminal
HI
No. 2 — No. 1:
No. 2 — No. 3:
No. 1 — No. 3:
No. 4 — No. 3:
LOW
No. 2 — No. 4:
No. 2 — No. 3:
No. 4 — No. 3:

If no continuity exists, replace the seat heater switch with a new part.

SECURITY AND LOCKS

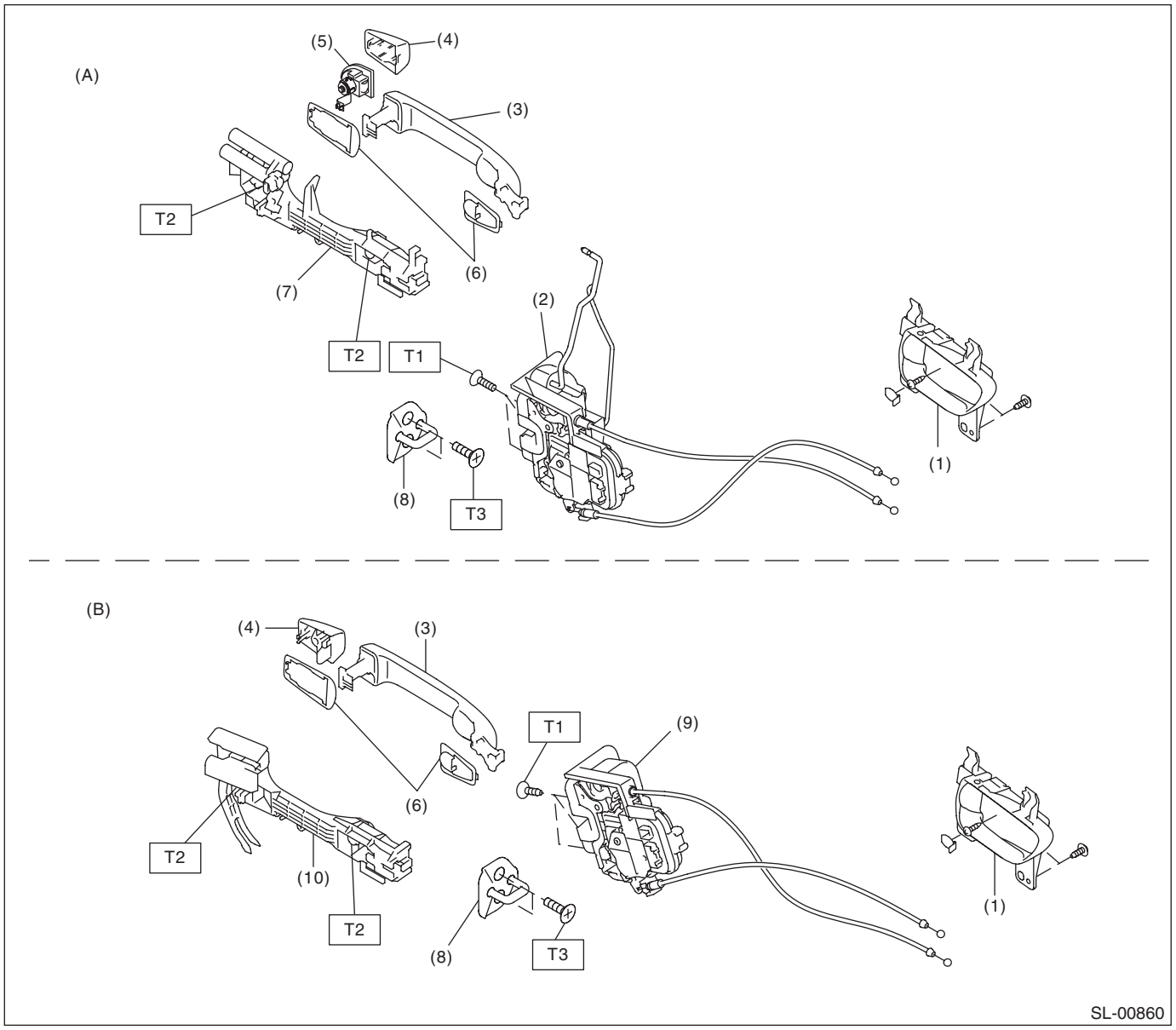
SL

		Page
1.	General Description	2
2.	Door Lock Control System	8
3.	Keyless Entry System	13
4.	Security System	25
5.	Front Inner Remote	31
6.	Front Outer Handle	32
7.	Front Door Latch and Door Lock Actuator Assembly	33
8.	Rear Inner Remote	34
9.	Rear Outer Handle	35
10.	Rear Door Latch and Door Lock Actuator Assembly	36
11.	Rear Gate Opener Button	37
12.	Rear Gate Latch and Actuator Assembly	38
13.	Trunk Lid Latch and Actuator Assembly	39
14.	Front Hood Lock Assembly	40
15.	Remote Openers	41
16.	Ignition Key Lock	43
17.	Key Lock Cylinders	44
18.	Security Control Module	45
19.	Impact Sensor	46
20.	Keyless Entry Control Module	47
21.	Keyless Buzzer	48
22.	Body Integrated Unit	49
23.	Transmitter	50
24.	Immobilizer Control Module	52
25.	Immobilizer Antenna	53

1. General Description

A: COMPONENT

1. DOOR LOCK ASSEMBLY

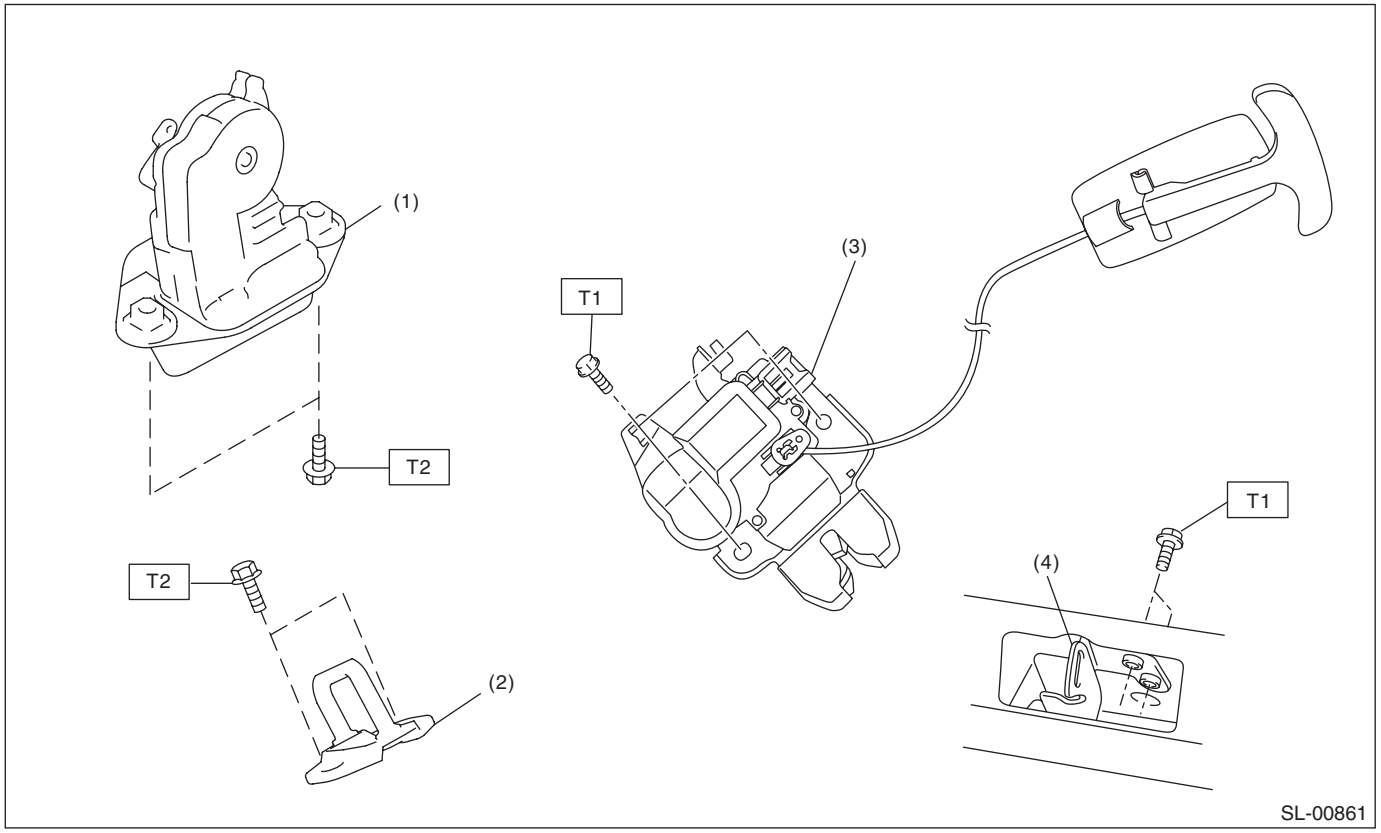


(A) Front
(B) Rear

(1) Inner remote ASSY
(2) Front door latch and door lock actuator ASSY
(3) Door outer handle
(4) Door outer handle cover
(5) Key cylinder (driver's side only)
(6) Door outer handle spacer
(7) Front door outer handle frame ASSY
(8) Striker
(9) Rear door latch and door lock actuator ASSY
(10) Rear door outer handle frame ASSY

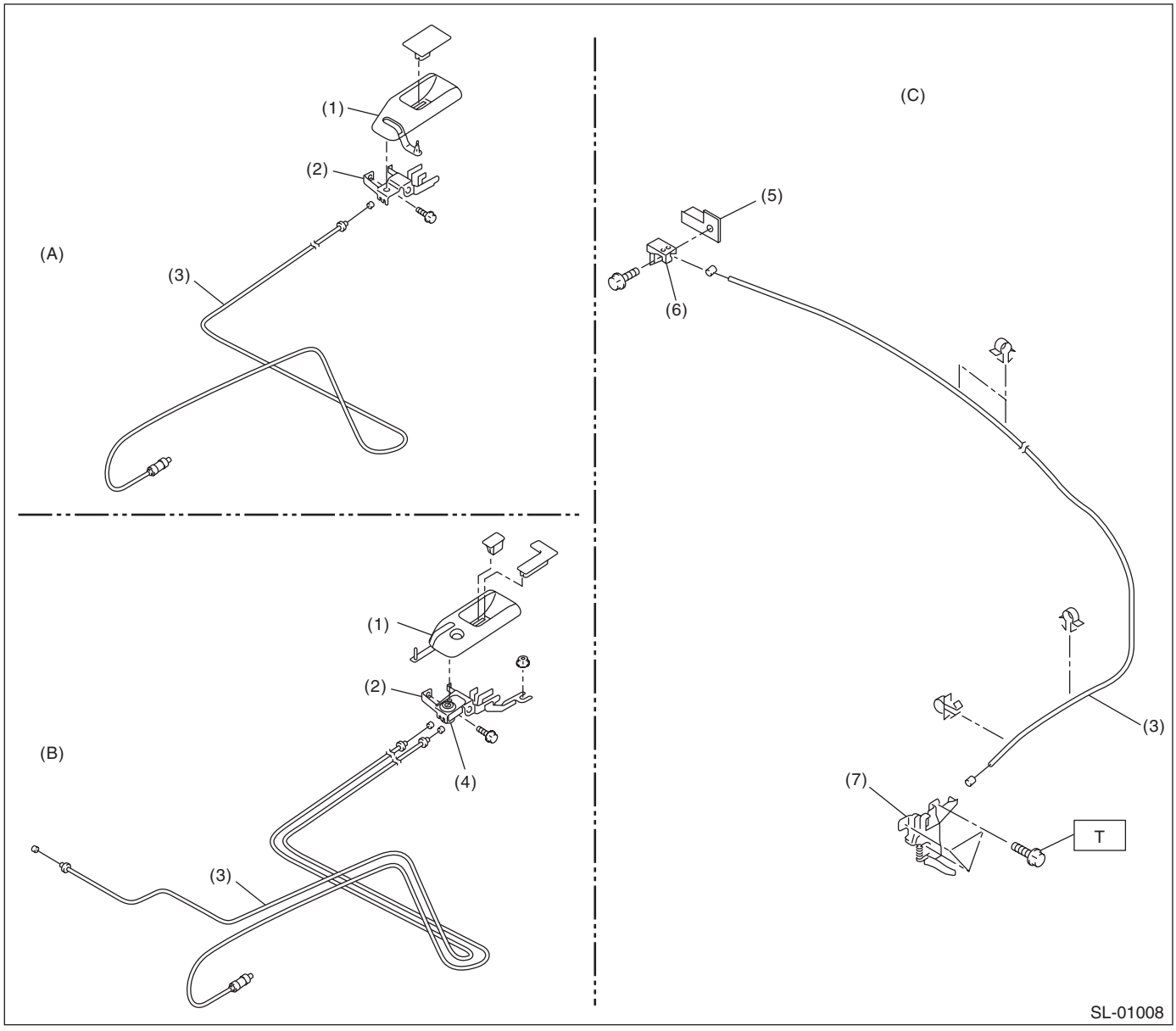
Tightening torque:N·m (kgf-m, ft-lb)
T1: 6.5 (0.66, 4.8)
T2: 7.5 (0.76, 5.5)
T3: 18 (1.8, 13.3)

2. REAR GATE LOCK AND TRUNK LID



(1)	Rear gate latch and actuator ASSY	(3)	Trunk lid latch and actuator ASSY	***Tightening torque:N·m (kgf-m, ft-lb)***
(2)	Rear gate striker	(4)	Trunk lid striker	***T1: 7.5 (0.76, 5.5)***
				T2: 25 (2.5, 18.4)

3. FRONT HOOD LOCK AND REMOTE OPENERS

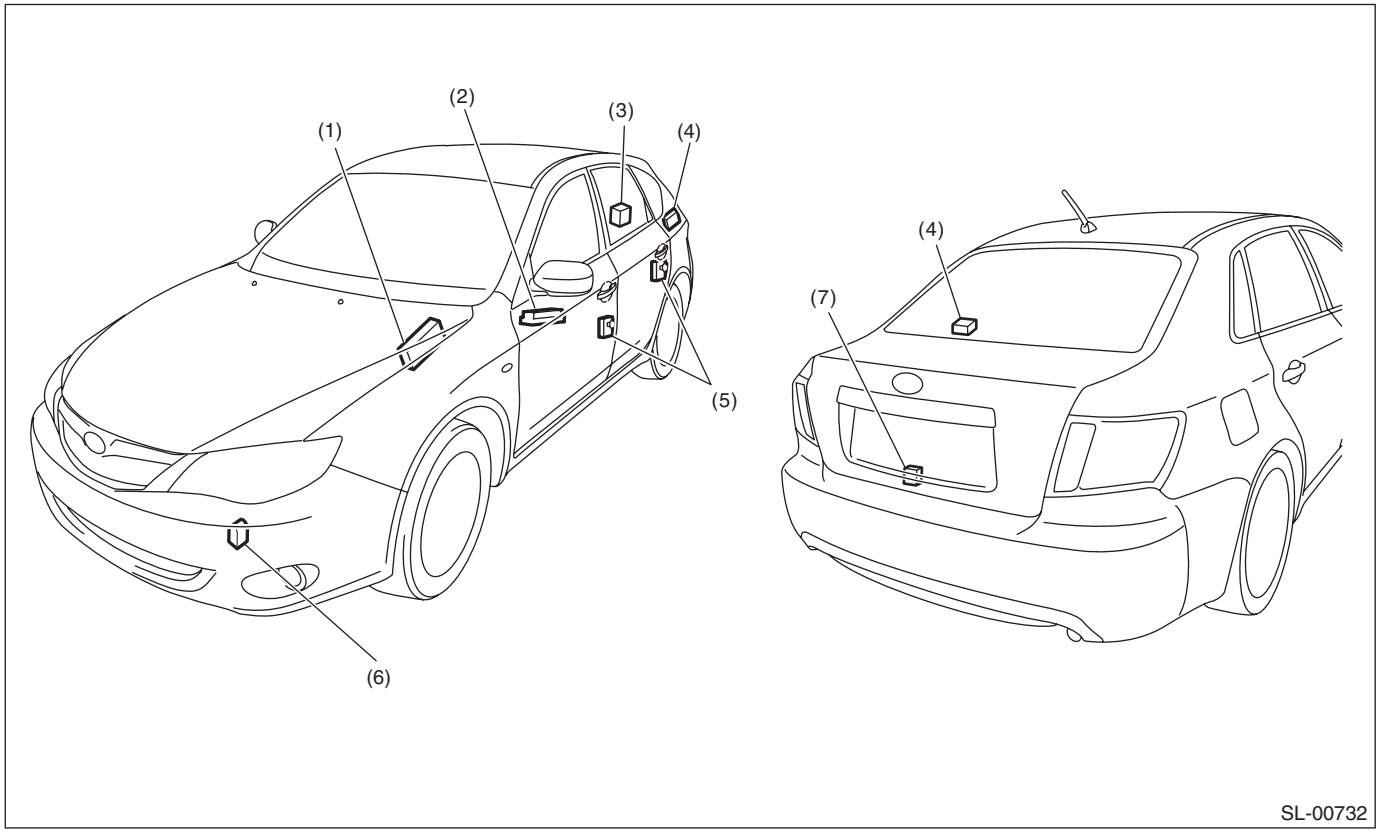


(A) Fuel lock release
(B) Fuel and trunk lock release
(C) Hood lock release

(1) Cover
(2) Pull handle ASSY
(3) Cable
(4) Key cylinder
(5) Lever ASSY bracket
(6) Lever ASSY
(7) Front hood lock ASSY

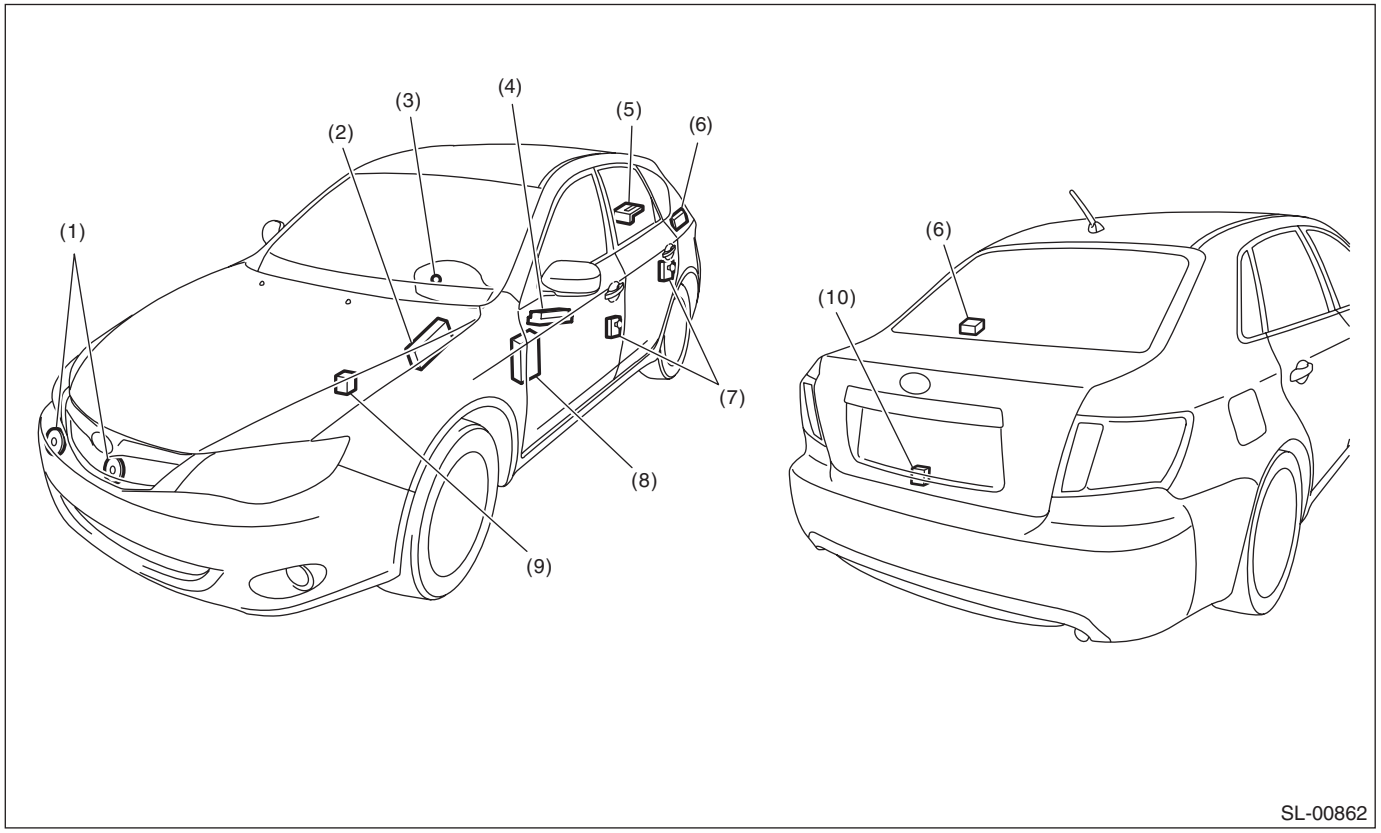
Tightening torque:N·m (kgf-m, ft-lb)
T: 33 (3.36, 24.2)

4. KEYLESS ENTRY SYSTEM



(1) Body integrated unit
(2) Power window main switch
(3) Rear gate latch switch (5 door model)
(4) Keyless entry control module
(5) Door switch
(6) Keyless buzzer
(7) Trunk lid latch switch (4 door model)

5. SECURITY SYSTEM



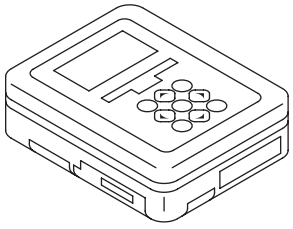
(1) Horn
(2) Body integrated unit
(3) Security indicator light (in combination meter)
(4) Power window main switch
(5) Rear gate latch switch (5 door model)
(6) Keyless entry control module
(7) Door switch
(8) Impact sensor (driver's seat instrument panel side) (dealer option)
(9) Horn relay (in main fuse box)
(10) Trunk lid latch switch (4 door model)

B: CAUTION

• Before disassembling or reassembling parts, always disconnect the battery ground cable from battery. When repairing the audio, 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.
• When performing a check after disconnecting the battery or restoring from a dead battery condition, perform the check after turning the ignition to ON and OFF, then opening and closing the driver's side door a few times.
• 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 securely during reassembly.
• After reassembly, make sure all the functional parts operate smoothly.
• The airbag system wiring harness is routed near electrical parts and switches.
• Do not use electrical test devices on any airbag system wiring harnesses or connector 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
 ST1B022XU0	1B022XU0	SUBARU SELECT MONITOR III KIT	Used for troubleshooting the electrical system.

2. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance and voltage.
Drill	Used for replacing ignition key lock.
TORX® T30	Used for removing and installing the door outer handle.
Clip remover	Used for removing trim clip

2. Door Lock Control System

A: WIRING DIAGRAM

Refer to “Keyless Entry System” in WI section. <Ref. to WI-155, WIRING DIAGRAM, Keyless Entry System.>

B: ELECTRICAL SPECIFICATION

1. BODY INTEGRATED UNIT

Refer to the Control Module I/O Signal of the LAN SYSTEM (DIAGNOSTICS). <Ref. to LAN(diag)-10, ELECTRICAL SPECIFICATION, Control Module I/O Signal.>

C: INSPECTION

1. SYMPTOM CHART

Symptom	Repair order	Index
The door lock control system does not operate.	1. Remove and visually inspect the following fuses. • No. 3 (in fuse & relay box) • No. 7 (in fuse & relay box) • No. 8 (in main fuse box)	If the fuse is blown out, replace the fuse with a new part. When there is no defective with the fuse, check the power supply and ground circuit. <Ref. to SL-9, 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-9, 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, INSPECTION, Door Lock Control System.>
	4. Check the rear gate opener button and the circuit.	<Ref. to SL-10, CHECK REAR GATE OPENER BUTTON CIRCUIT, INSPECTION, Door Lock Control System.>
	5. Check the door lock actuator and the circuit.	<Ref. to SL-11, CHECK DOOR LOCK ACTUATOR 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-11, 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*** ***(i84) No. 34 (+) — Chassis ground (–):*** ***(B280) No. 6 (+) — Chassis ground (–):*** ***(B281) 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*** ***(i84) No. 28 — Chassis ground:*** ***(B280) No. 17 — Chassis ground:*** ***(B281) No. 20 — Chassis ground:*** ***(B279) No. 27 — Chassis ground:***	Is the resistance less than 10 Ω?	The power supply and ground circuit are OK.	Repair or replace the harness.

3. CHECK DOOR LOCK SWITCH

	Step	Check	Yes	No
1	**CHECK DOOR LOCK SWITCH.** 1) Prepare the Subaru Select Monitor kit. 2) Turn the ignition switch to ON (engine OFF) and run the “PC application for Subaru Select Monitor”. 3) On «System Selection Menu» display, select {Integ. unit mode}. 4) Select the {Current Data Display & Save}. 5) Select the {Manual lock SW input}.	Does the display switch between OFF ⇔ ON when each door lock switch is moved to LOCK?	Go to step **2**.	Go to step **3**.
2	**CHECK DOOR LOCK SWITCH.** From the condition in step 1), operate each door lock switch (driver’s and passenger’s) in the UNLOCK direction.	Does the display switch between OFF ⇔ ON?	The door lock switch is OK.	Go to step **4**.
3	**CHECK DOOR LOCK SWITCH.** 1) Disconnect the door lock switch harness connector. 2) Check the continuity when the door lock switch is operated to the LOCK side. ***Connector & terminal*** ***Driver’s side:*** ***(D102) No. 2 — (D102) No. 3:*** ***Passenger’s side:*** ***(D125) No. 4 — (D125) No. 5:***	Did the indicator change from “No continuity” (1 MΩ or more) to “Continuity exists” (less than 10 Ω)?	Go to step **4**.	Replace the power window main switch or door lock switch.
4	**CHECK DOOR LOCK SWITCH.** Check the continuity when the door lock switch is operated to the UNLOCK side. ***Connector & terminal*** ***Driver’s side:*** ***(D102) No. 1 — (D102) No. 3:*** ***Passenger’s side:*** ***(D125) No. 2 — (D125) No. 5:***	Did the indicator change from “No continuity” (1 MΩ or more) to “Continuity exists” (less than 10 Ω)?	Go to step **5**.	Replace the power window main switch or door lock switch.

	Step	Check	Yes	No
5	**CHECK HARNESS.** measure the resistance between the door lock switch harness connector and chassis ground. ***Connector & terminal*** ***Driver's side:*** ***(D102) No. 3 — Chassis ground:*** ***Passenger's side:*** ***(D125) No. 5 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **6**.	Repair or replace the harness.
6	**CHECK HARNESS.** 1) Disconnect the harness connector of body integrated unit. 2) Measure the resistance between the body integrated unit and door lock switch. ***Connector & terminal*** ***Driver's side:*** ***(D102) No. 2 — (i84) No. 15:*** ***(D102) No. 1 — (i84) No. 29:*** ***Passenger's side:*** ***(D125) No. 4 — (i84) No. 15:*** ***(D125) No. 2 — (i84) No. 29:***	Is the resistance less than 10 Ω?	Replace the body integrated unit. <Ref. to SL-49, Body Integrated Unit.>	Repair or replace the harness.

4. CHECK REAR GATE OPENER BUTTON CIRCUIT

	Step	Check	Yes	No
1	**CHECK REAR GATE OPENER BUTTON.** 1) Prepare the Subaru Select Monitor kit. 2) Turn the ignition switch to ON (engine OFF) and run the "PC application for Subaru Select Monitor". 3) On «System Selection Menu» display, select {Integ. unit mode}. 4) Select the {Current Data Display & Save}. 5) Select the {R Gate Release SW input}.	Is the display change to OFF ⇔ ON, when the rear gate opener button is operated?	Rear gate opener button is normal.	Go to step **2**.
2	**CHECK HARNESS.** Measure the resistance between the body integrated unit and rear gate opener button. ***Connector & terminal*** ***(B281) No. 24 — (D47) No. 1:***	Is the resistance less than 10 Ω?	Go to step **3**.	Repair or replace the harness.
3	**CHECK HARNESS.** Measure the resistance between the rear gate opener button and chassis ground. ***Connector & terminal*** ***(D47) No. 2 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **4**.	Repair or replace the harness.
4	**CHECK REAR GATE OPENER BUTTON.** Measure the resistance between connector terminals when the rear gate opener button is pressed, and when it is released. ***Connector & terminal*** ***(D47) No. 1 — (D47) No. 2:***	Is the resistance when the switch is pressed less than 10 Ω, and 1 MΩ or more when released?	Replace the body integrated unit. <Ref. to SL-49, Body Integrated Unit.>	Replace the rear gate opener button. <Ref. to SL-37, Rear Gate Opener Button.>

5. CHECK DOOR LOCK ACTUATOR AND CIRCUIT

	Step	Check	Yes	No
1	**CHECK HARNESS (DOOR LOCK).** 1) Disconnect the body integrated unit connector and each door lock actuator. 2) Measure the resistance between body integrated unit and each door lock actuator. ***Connector & terminal*** ***(i84) No. 7 — (D72) No. 1: (front door LH)*** ***(i84) No. 7 — (D18) No. 1: (front door RH)*** ***(i84) No. 7 — (D26) No. 1: (rear door LH)*** ***(i84) No. 7 — (D32) No. 1: (rear door RH)***	Is the resistance less than 10 Ω?	Go to step **2**.	Repair or replace the harness.
2	**CHECK HARNESS (DOOR UNLOCK).** Measure the resistance between body integrated unit and each door lock actuator. ***Connector & terminal*** ***(i84) No. 23 — (D72) No. 2: (front door LH)*** ***(i84) No. 8 — (D18) No. 2: (front door RH)*** ***(i84) No. 8 — (D26) No. 2: (rear door LH)*** ***(i84) No. 8 — (D32) No. 2: (rear door RH)***	Is the resistance less than 10 Ω?	Go to step **3**.	Repair or replace the harness.
3	**CHECK HARNESS (TRUNK OR REAR GATE UNLOCK).** Measure the resistance between body integrated unit and trunk lid lock actuator or rear gate lock actuator. ***Connector & terminal*** ***(i84) No. 22 — (R186) No. 2: (4 door model)*** ***(i84) No. 22 — (D46) No. 1: (5 door model)***	Is the resistance less than 10 Ω?	Go to step **4**.	Repair or replace the harness.
4	**CHECK HARNESS (TRUNK OR REAR GATE UNLOCK).** Measure the resistance between the trunk lid lock actuator or rear gate lock actuator and chassis ground. ***Connector & terminal*** ***(R186) No. 1 — Chassis ground: (4 door model)*** ***(D46) No. 2 — Chassis ground: (5 door model)***	Is the resistance less than 10 Ω?	Go to step **5**.	Repair or replace the harness.
5	**CHECK BODY INTEGRATED UNIT OUTPUT SIGNAL.** Measure the voltage between the connector terminals of the body integrated unit when moving the door lock switch to LOCK. ***Connector & terminal*** ***Except for front door LH*** ***(i84) No. 7 (+) — (i84) No. 8 (–):*** ***Front door LH*** ***(i84) No. 7 (+) — (i84) No. 23 (–):***	Does the voltage change from less than 1.5 V → 10 V or more? (During lock output)	Go to step **6**.	Replace the body integrated unit. <Ref. to SL-49, Body Integrated Unit.>
6	**CHECK BODY INTEGRATED UNIT OUTPUT SIGNAL.** Measure the voltage between the connector terminals of the body integrated unit when moving the door lock switch to UNLOCK. ***Connector & terminal*** ***Except for front door LH*** ***(i84) No. 8 (+) — (i84) No. 7 (–):*** ***Front door LH*** ***(i84) No. 23 (+) — (i84) No. 7 (–):***	Does the voltage change from less than 1.5 V → 10 V or more? (During unlock output)	Go to step **7**.	Replace the body integrated unit. <Ref. to SL-49, Body Integrated Unit.>

	Step	Check	Yes	No
7	**CHECK BODY INTEGRATED UNIT OUTPUT SIGNAL.** Measure the voltage between body integrated unit and chassis ground when moving the rear gate opener button. ***Connector & terminal*** ***(i84) No. 22 (+) — Chassis ground (–):***	Does the voltage change from less than 1.5 V → 10 V or more? (During unlock output)	Go to step **8**.	Replace the body integrated unit. <Ref. to SL-49, Body Integrated Unit.>
8	**CHECK DOOR LOCK ACTUATOR.** Check the door lock actuator. • Front door lock actuator <Ref. to SL-33, INSPECTION, Front Door Latch and Door Lock Actuator Assembly.> • Rear door lock actuator <Ref. to SL-36, INSPECTION, Rear Door Latch and Door Lock Actuator Assembly.>	Is the door lock actuator OK?	Go to step **9**.	Replace the door latch and door lock actuator assembly.
9	**CHECK TRUNK LID LOCK ACTUATOR OR REAR GATE LOCK ACTUATOR.** • Trunk lid lock actuator <Ref. to SL-39, INSPECTION, Trunk Lid Latch and Actuator Assembly.> • Rear gate lock actuator <Ref. to SL-38, INSPECTION, Rear Gate Latch and Actuator Assembly.>	Is trunk lid lock actuator or rear gate lock actuator normal?	Check the connection status of the harness and connector that may have a temporary poor contact.	Replace the trunk lid latch and actuator assembly or rear gate latch and actuator assembly.

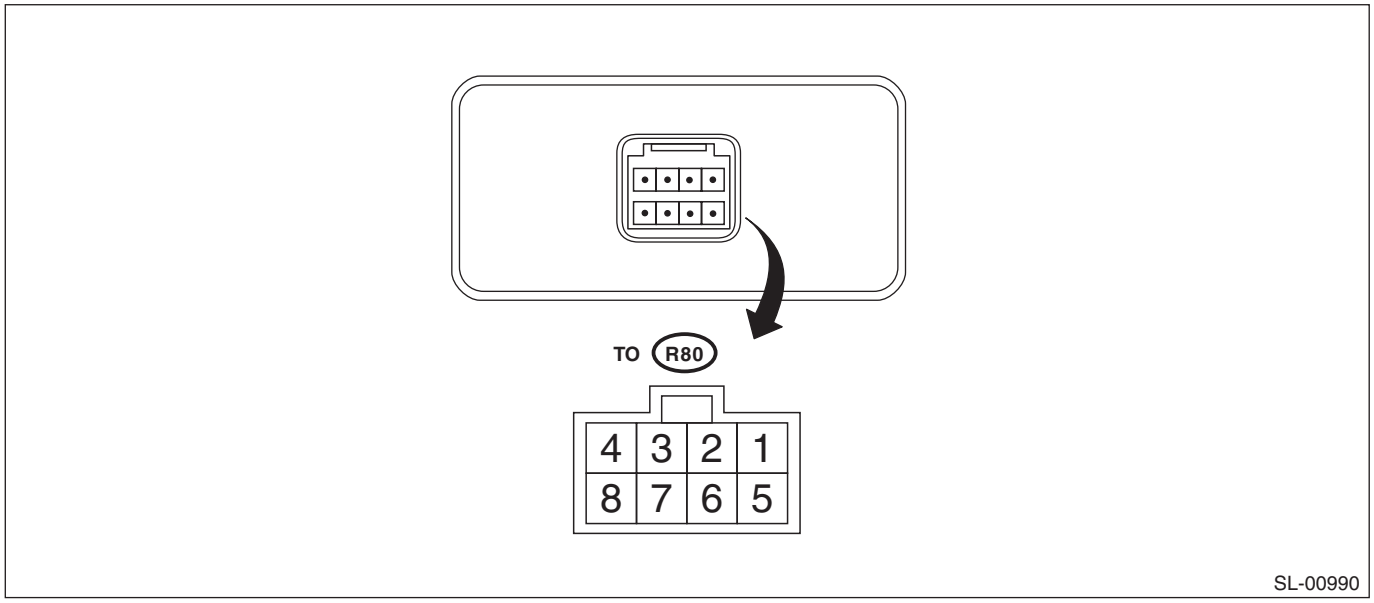
3. Keyless Entry System

A: WIRING DIAGRAM

Refer to “Keyless Entry System” in WI section. <Ref. to WI-155, WIRING DIAGRAM, Keyless Entry System.>

B: ELECTRICAL SPECIFICATION

1. KEYLESS ENTRY CONTROL MODULE



Content	Terminal No.	Measuring condition
—	1	—
—	2	—
Body integrated unit	3 (OUTPUT)	Battery voltage cannot be measured because of digital signal.
Power supply (Backup)	4	Battery voltage is constantly present.
—	5	—
—	6	—
Ground	7	0 V is constantly present.
—	8	—

2. BODY INTEGRATED UNIT

Refer to the Control Module I/O Signal of the LAN SYSTEM (DIAGNOSTICS). <Ref. to LAN(diag)-10, ELECTRICAL SPECIFICATION, Control Module I/O Signal.>

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.	<Ref. to SL-16, CHECK KEYLESS TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	2. Remove and visually check fuse No. 31 (in the fuse & relay box) and No. 7 (in the fuse & relay box).	If the fuse is blown out, replace the fuse with a new part. When there is no defective with the fuse, check the power supply and ground circuit. <Ref. to SL-9, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Door Lock Control System.>
	3. Check the keyless entry control module.	<Ref. to SL-17, CHECK KEYLESS ENTRY CONTROL MODULE, INSPECTION, Keyless Entry System.>
	4. Check the power supply and ground circuit for body integrated unit.	<Ref. to SL-17, CHECK BODY INTEGRATED UNIT POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Keyless Entry System.>
	5. Check the key warning switch.	<Ref. to SL-20, CHECK KEY WARNING SWITCH, INSPECTION, Keyless Entry System.>
	6. Check the door switch.	<Ref. to SL-18, CHECK DOOR SWITCH, INSPECTION, Keyless Entry System.>
	7. Check the body integrated unit.	<Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>
The keyless transmitter cannot be registered.	1. Check the keyless transmitter battery.	<Ref. to SL-16, CHECK KEYLESS TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	2. Check the key warning switch.	<Ref. to SL-20, CHECK KEY WARNING SWITCH, INSPECTION, Keyless Entry System.>
	3. Check the door lock switch signal.	<Ref. to SL-23, CHECK DOOR LOCK SWITCH, INSPECTION, Keyless Entry System.>
	4. Check the body integrated unit.	<Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

Symptom	Repair order	Reference
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.	<Ref. to SL-16, CHECK KEYLESS TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	2. Check the keyless entry control module.	<Ref. to SL-17, CHECK KEYLESS ENTRY CONTROL MODULE, INSPECTION, Keyless Entry System.>
	3. Check the key warning switch.	<Ref. to SL-20, CHECK KEY WARNING SWITCH, INSPECTION, Keyless Entry System.>
	4. Check the door switch.	<Ref. to SL-18, CHECK DOOR SWITCH, INSPECTION, Keyless Entry System.>
	5. Check the body integrated unit.	<Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>
Trunk lid unlock does not operate. (4 door model)	1. Check the keyless transmitter battery.	<Ref. to SL-16, CHECK KEYLESS TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	2. Check the keyless entry control module.	<Ref. to SL-17, CHECK KEYLESS ENTRY CONTROL MODULE, INSPECTION, Keyless Entry System.>
	3. Check the key warning switch.	<Ref. to SL-20, CHECK KEY WARNING SWITCH, INSPECTION, Keyless Entry System.>
	4. Check the trunk lid lock actuator.	<Ref. to SL-23, CHECK TRUNK LID LOCK ACTUATOR, INSPECTION, Keyless Entry System.>
	5. Check the body integrated unit.	<Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>
Buzzer and hazard light do not operate.	1. Check the buzzer operation.	<Ref. to SL-22, CHECK KEYLESS BUZZER, INSPECTION, Keyless Entry System.>
	2. Check the hazard light operation.	<Ref. to SL-21, CHECK HAZARD LIGHT OPERATION, INSPECTION, Keyless Entry System.>
	3. Check the body integrated unit.	<Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>
Room light does not operate.	1. Check the room light operation.	<Ref. to SL-21, CHECK ROOM LIGHT OPERATION, INSPECTION, Keyless Entry System.>
	2. Check the body integrated unit.	<Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>
Ignition switch illumination does not operate.	1. Check the ignition switch illumination.	<Ref. to SL-24, CHECK IGNITION SWITCH ILLUMINATION, INSPECTION, Keyless Entry System.>
	2. Check the body integrated unit.	<Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

2. CHECK KEYLESS TRANSMITTER BATTERY AND FUNCTION

CAUTION:
Be sure to reset keyless transmitter of other vehicles registered to the inspection target vehicle, and vehicles to which keyless transmitters were registered for inspection, to the condition before performing the inspection. (Re-register the keyless transmitters.)

	Step	Check	Yes	No
1	**CHECK KEYLESS TRANSMITTER BATTERY.** 1) Remove the battery from the keyless transmitter. <Ref. to SL-50, REMOVAL, Transmitter.> 2) Check the battery voltage. <Ref. to SL-50, INSPECTION, Transmitter.>	Is the voltage 2.5 V or more?	Go to step **2**.	Replace the keyless transmitter battery. <Ref. to SL-50, Transmitter.>
2	**CHECK KEYLESS TRANSMITTER.** Register the keyless transmitter which operates normally on other vehicles to the inspection target vehicle. <Ref. to SL-50, REGISTRATION OF KEYLESS TRANSMITTER WITH SUBARU SELECT MONITOR, REPLACEMENT, Transmitter.> 1) Close all the doors and rear gate (5 door model) or trunk lid (4 door model) of the inspection target vehicle. 2) Using the keyless transmitter, lock and unlock the doors and rear gate of vehicle. For the 4 door model, unlock the trunk lid.	Can lock, unlock of doors and unlock of the trunk lid be performed properly on the inspection target vehicle?	Go to step **3**.	Due to vehicle malfunction, continue the keyless entry system diagnosis.
3	**CHECK KEYLESS TRANSMITTER.** Register the keyless transmitter of the inspected vehicle to another vehicle whose keyless system operates normally. <Ref. to SL-50, 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-50, 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 which keyless system operates normally. 2) Using the keyless transmitter, lock and unlock the doors and rear gate of vehicle. For the 4 door model, unlock the trunk lid.	Can lock, unlock of doors and unlock of the trunk lid be performed properly on the vehicle?	Keyless transmitter is OK.	Replace the keyless transmitter. <Ref. to SL-50, REGISTRATION OF KEYLESS TRANSMITTER WITH SUBARU SELECT MONITOR, REPLACEMENT, Transmitter.>

3. CHECK KEYLESS ENTRY CONTROL MODULE

	Step	Check	Yes	No
1	**CHECK DIAGNOSTIC TROUBLE CODE (DTC).** 1) Prepare the Subaru Select Monitor kit. 2) Turn the ignition switch to ON (engine OFF) and run the “PC application for Subaru Select Monitor”. 3) On «System Selection Menu» display, select {Integ. unit mode}. 4) Select the {Diagnostic Code(s) Display}. 5) Check that the DTC is displayed.	Is DTC B1500 “Keyless UART com. Malfunction” displayed?	Go to step **2**.	Keyless entry control module is normal.
2	**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*** ***(R80) No. 4 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **3**.	Check the harness for open circuits and shorts between the keyless entry control module and fuse.
3	**CHECK GROUND CIRCUIT.** Measure the resistance between harness connector terminal and chassis ground. ***Connector & terminal*** ***(R80) No. 7 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **4**.	Repair or replace the harness.
4	**CHECK KEYLESS ENTRY CONTROL MODULE CIRCUIT.** 1) Disconnect the harness connector of body integrated unit. 2) Measure the resistance between harness connector terminals. ***Connector & terminal*** ***(i84) No. 24 — (R80) No. 3:***	Is the resistance less than 10 Ω?	Replace the keyless entry control module. <Ref. to SL-47, Keyless Entry Control Module.>	Repair or replace the harness.

4. CHECK BODY INTEGRATED UNIT POWER SUPPLY AND GROUND CIRCUIT

Refer to the INSPECTION of POWER SUPPLY AND GROUND CIRCUIT of the Door Lock Control System for detailed procedures. <Ref. to SL-9, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Door Lock Control System.>

5. CHECK DOOR SWITCH

Step		Check	Yes	No
1	**CHECK INPUT CIRCUIT.** 1) Prepare the Subaru Select Monitor kit. 2) Turn the ignition switch to ON (engine OFF) and run the “PC application for Subaru Select Monitor”. 3) On «System Selection Menu» display, select {Integ. unit mode}. 4) Select the {Current Data Display}. 5) Select the {Driver’s door SW input}, {P-door SW input}, {Rear right door SW input}, {Rear left door SW input}, and {R Gate SW input}.	Does the display switch between OFF ⇔ ON when each door or rear gate, trunk lid is opened/closed?	The door switch circuit is OK.	Go to step **2**.
2	**CHECK HARNESS.** 1) Disconnect the harness connector of body integrated unit. 2) Disconnect the door switch harness connector that the display does not change. 3) Check the harness for open or short circuits between the body integrated unit terminal and the faulty door switch terminal. ***Connector & terminal*** ***Front door RH*** ***(i84) No. 32 — (R12) No. 1:*** ***Front door LH*** ***(i84) No. 19 — (R9) No. 1:*** ***Rear door RH*** ***(i84) No. 6 — (R16) No. 1:*** ***Rear door LH*** ***(i84) No. 20 — (R22) No. 1:*** ***Trunk lid switch*** ***(i84) No. 33 — (R186) No. 3:*** ***Rear gate latch switch*** ***(i84) No. 33 — (D46) No. 3:***	Is harness normal?	Go to step **3**.	Repair or replace the harness.
3	**CHECK HARNESS.** Measure the resistance between faulty door switch harness connector terminal and chassis ground. ***Connector & terminal*** ***Front door RH*** ***(R12) No. 3 — Chassis ground:*** ***Front door LH*** ***(R9) No. 3 — Chassis ground:*** ***Rear door RH*** ***(R16) No. 3 — Chassis ground:*** ***Rear door LH*** ***(R22) No. 3 — Chassis ground:*** ***Trunk lid switch*** ***(R186) No. 1 — Chassis ground:*** ***Rear gate latch switch*** ***(D46) No. 4 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **4**.	Repair or replace the harness.

Step		Check	Yes	No
4	**CHECK DOOR SWITCH.** Measure the resistance between faulty door switch terminals. ***Connector & terminal*** ***Front RH door switch*** ***(R12) No. 1 — No. 3:*** ***Front LH door switch*** ***(R9) No. 1 — No. 3:*** ***Rear RH door switch*** ***(R16) No. 1 — No. 3:*** ***Rear LH door switch*** ***(R22) No. 1 — No. 3:*** ***Trunk lid switch*** ***(R186) No. 1 — No. 3:*** ***Rear gate latch switch*** ***(D46) No. 3 — No. 4:***	Is the resistance 1 MΩ or more when switch is pushed?	Go to step **5**.	Replace the faulty parts. • Door switch • Trunk lid latch and actuator ASSY • Rear gate latch and actuator ASSY
5	**CHECK DOOR SWITCH.** Measure the resistance between faulty door switch terminals. ***Connector & terminal*** ***Front RH door switch*** ***(R12) No. 1 — No. 3:*** ***Front LH door switch*** ***(R9) No. 1 — No. 3:*** ***Rear RH door switch*** ***(R16) No. 1 — No. 3:*** ***Rear LH door switch*** ***(R22) No. 1 — No. 3:*** ***Trunk lid switch*** ***(R186) No. 1 — No. 3:*** ***Rear gate latch switch*** ***(D46) No. 3 — No. 4:***	Is the resistance less than 10 Ω when switch is released?	Replace the body integrated unit. <Ref. to SL-49, Body Integrated Unit.>	Replace the faulty parts. • Door switch • Trunk lid latch and actuator ASSY • Rear gate latch and actuator ASSY

6. CHECK KEY WARNING SWITCH

	Step	Check	Yes	No
1	**CHECK KEY WARNING SWITCH.** 1) Prepare the Subaru Select Monitor kit. 2) On «System Selection Menu» display, select {Integ. unit mode}. 3) Select the {Current Data Display & Save}. 4) Select the {key-lock warning SW}.	Is the proper input signal displayed when the key is inserted and removed from the ignition switch?	The key warning switch is OK.	Go to step **2**.
2	**CHECK FUSE.** Remove and visually check fuse No. 14 (in the main fuse box).	Is the fuse blown out?	Replace the fuse with a new part.	Go to step **3**.
3	**CHECK KEY WARNING SWITCH CIRCUIT.** 1) Disconnect the harness connector of body integrated unit. 2) Insert the key into ignition switch. (LOCK position) 3) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B279) No. 2 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **4**.	Go to step **5**.
4	**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*** ***(B279) No. 2 (+) — Chassis ground (–):***	Is the voltage 0 V?	Replace the body integrated unit. <Ref. to SL-49, Body Integrated Unit.>	Go to step **5**.
5	**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*** ***(B350) No. 3 — No. 4:***	Is the resistance less than 1 Ω?	Go to step **6**.	Replace the key warning switch.
6	**CHECK KEY WARNING SWITCH.** 1) Remove the key from ignition switch. 2) Measure the resistance between key warning switch terminals. ***Connector & terminal*** ***(B350) No. 3 — No. 4:***	Is the resistance 1 MΩ or more?	Check the following: • Harness for open circuits and shorts between the key warning switch and fuse. • Harness for open or short between the body integrated unit and key warning switch	Replace the key warning switch.

7. 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 ON, and goes off when the switch is OFF.	Does the room light illuminate or go off?	Go to step **2**.	Check the harness between the fuse and main fuse box and room light.
2	**CHECK ROOM LIGHT OPERATION.** 1) Turn the room light switch to the "DOOR" position. 2) Open/close any door (other than trunk).	Does the room light illuminate ⇔ go off (including off delay) when the door is opened and closed?	Go to step **3**.	Go to step **4**.
3	**CHECK KEYLESS ENTRY OPERATION.** Press the LOCK/UNLOCK button of the keyless transmitter.	Does it operate properly?	Replace the body integrated unit. <Ref. to SL-49, Body Integrated Unit.>	Check the bulb or room light assembly, and replace if necessary.
4	**CHECK HARNESS.** 1) Disconnect the body integrated unit harness connector and room light harness connector. 2) Measure the resistance between harness connector terminals. ***Connector & terminal*** ***(B279) No. 5 — (R52) No. 2:***	Is the resistance less than 10 Ω?	Go to step **5**.	Repair or replace the harness.
5	**CHECK HARNESS.** Measure the voltage between room light harness connector terminal and chassis ground. ***Connector & terminal*** ***(R52) No. 3 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Replace the body integrated unit. <Ref. to SL-49, Body Integrated Unit.>	Repair or replace the harness.

8. 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 TO HAZARD LIGHT.** 1) Turn the ignition switch to OFF. 2) Disconnect the key warning switch harness connector. 3) Prepare the Subaru Select Monitor kit. 4) Turn the ignition switch to ON (engine OFF) and run the "PC application for Subaru Select Monitor". 5) On «System Selection Menu» display, select {Integ. unit mode}. 6) Select {ECM customizing}. 7) Check {Hazard answer-back setup}, and then switch to ON setting if necessary. 8) Select the {Current Data Display & Save}. 9) Remove the key from ignition switch. 10) Select the {Hazard Output}.	Is output signal present when operating the transmitter LOCK/UNLOCK button?	Go to step **3**.	Check body integrated unit. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>
3	**CHECK CIRCUIT OF HAZARD LIGHT.** 1) Disconnect the harness connector of body integrated unit. 2) Disconnect the turn signal and hazard unit harness connector. 3) Measure the resistance between harness connector terminals. ***Connector & terminal*** ***(B281) No. 22 — (B32) No. 8:***	Is the resistance less than 10 Ω?	Check body integrated unit. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>	Repair or replace the harness.

9. CHECK KEYLESS BUZZER

	Step	Check	Yes	No
1	**CHECK FUNCTION.** Using the Subaru Select Monitor, check {Answer-back buzzer setup}. <Ref. to LAN(diag)-21, CONFIRM CURRENT SETTING., OPERATION, Subaru Select Monitor.>	Is it ON?	Go to step **2**.	Change the setting to ON. <Ref. to LAN(diag)-25, USER CUSTOMIZING, OPERATION, Subaru Select Monitor.>
2	**CHECK OUTPUT TO KEYLESS BUZZER.** 1) Remove the key from ignition switch. 2) Display the {Keyless Buzzer Output} of the body integrated unit using the Subaru Select Monitor. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.> 3) Press the LOCK/UNLOCK button of the keyless transmitter. NOTE: Due to the screen refresh timing of the Subaru Select Monitor, repeat the operation a few times to confirm, as there may be no change of OFF → ON at first.	Does display change from OFF → ON?	Go to step **3**.	Replace the body integrated unit. <Ref. to SL-49, Body Integrated Unit.>
3	**CHECK KEYLESS BUZZER.** 1) Remove the keyless buzzer. 2) Install the keyless buzzer to another vehicle which operates keyless buzzer normally, check the buzzer sounds.	Does the keyless buzzer sound?	Go to step **4**.	Replace the keyless buzzer.
4	**CHECK HARNESS.** 1) Disconnect the harness connector of body integrated unit. 2) Disconnect the keyless buzzer harness connector. 3) Measure the resistance between harness connector terminals. ***Connector & terminal*** ***(B279) No. 24 — (B164) No. 1:***	Is the resistance less than 10 Ω?	Go to step **5**.	Repair or replace the harness.
5	**CHECK HARNESS.** Measure the resistance between the keyless buzzer harness connector and chassis ground. ***Connector & terminal*** ***(B164) No. 2 — Chassis ground:***	Is the resistance less than 10 Ω?	Replace the body integrated unit. <Ref. to SL-49, Body Integrated Unit.>	Repair or replace the harness.

10.CHECK TRUNK LID LOCK ACTUATOR

	Step	Check	Yes	No
1	**CHECK UNLOCK OPERATION OF TRUNK ALONE.** By using the keyless transmitter, perform the UNLOCK operation of trunk alone.	Does answer-back occur?	Go to step **3**.	Go to step **2**.
2	**CHECK KEYLESS ENTRY SYSTEM CIRCUIT.** 1) Remove the keyless entry control module from the vehicle with faults. 2) Install the keyless control module that was removed to the other vehicle which is working normally. 3) Perform the UNLOCK operation by using the keyless transmitter of vehicle with faults.	Does UNLOCK occur?	Check body integrated unit. <Ref. to SL-49, Body Integrated Unit.>	Check the following: • Keyless entry control module • Transmitter
3	**CHECK HARNESS.** 1) Disconnect the harness connector of body integrated unit. 2) Disconnect the trunk lid lock actuator harness connector. 3) Measure the resistance between harness connectors. ***Connector & terminal*** ***(i84) No. 22 — (R186) No. 2:***	Is the resistance less than 10 Ω?	Go to step **4**.	Repair or replace the harness.
4	**CHECK HARNESS.** Measure the resistance between harness connector terminal and chassis ground. ***Connector & terminal*** ***(R186) No. 1 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **5**.	Repair or replace the harness.
5	**CHECK TRUNK LID LOCK ACTUATOR.** Check the trunk lid lock actuator. <Ref. to SL-39, Trunk Lid Latch and Actuator Assembly.>	Is trunk lid lock actuator normal?	Replace the body integrated unit. <Ref. to SL-49, Body Integrated Unit.>	Replace the trunk lid lock actuator. <Ref. to SL-39, Trunk Lid Latch and Actuator Assembly.>

11.CHECK DOOR LOCK SWITCH

For operation procedure, refer to the door lock switch inspection of the door lock control system. <Ref. to SL-9, CHECK DOOR LOCK SWITCH, INSPECTION, Door Lock Control System.>

12.CHECK IGNITION SWITCH ILLUMINATION

	Step	Check	Yes	No
1	**CHECK IGNITION CIRCUIT.** Check the ignition circuit.	Is the circuit normal?	Go to step **2**.	Repair or replace.
2	**CHECK DOOR SWITCH CIRCUIT.** Inspect door switch circuit.	Is the circuit normal?	Go to step **3**.	Repair or replace.
3	**CHECK FUSE.** Remove and visually check fuse No. 14 (in the main fuse box).	Is the fuse blown out?	Replace the fuse with a new part.	Go to step **4**.
4	**CHECK HARNESS.** 1) Disconnect the ignition switch illumination harness connector. 2) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B224) No. 2 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **5**.	Check the harness for open or short circuits between the ignition switch illumination and fuse.
5	**CHECK IGNITION SWITCH ILLUMINATION CIRCUIT.** 1) Disconnect the harness connector of body integrated unit and ignition switch illumination harness connector. 2) Check the harness for open circuits and shorts between the body integrated unit harness connector terminal and the ignition switch illumination harness connector terminal. ***Connector & terminal*** ***(B281) No. 23 — (B224) No. 1:***	Is harness normal?	Go to step **6**.	Check the harness for open circuits and shorts between the body integrated unit and ignition switch illumination.
6	**CHECK IGNITION SWITCH ILLUMINATION BULB.** Apply battery voltage to the bulb.	Does the bulb illuminate?	Replace the body integrated unit. <Ref. to SL-49, Body Integrated Unit.>	Replace the ignition switch illumination bulb. <Ref. to LI-34, REMOVAL, Ignition Switch Illumination.>

4. Security System

A: WIRING DIAGRAM

Refer to “Security System” in WI section. <Ref. to WI-150, WIRING DIAGRAM, Security System.>

B: ELECTRICAL SPECIFICATION

1. BODY INTEGRATED UNIT

Refer to the Control Module I/O Signal of the LAN SYSTEM (DIAGNOSTICS). <Ref. to LAN(diag)-10, ELECTRICAL SPECIFICATION, Control Module I/O Signal.>

C: INSPECTION

1. BASIC DIAGNOSTIC PROCEDURE

	Step	Check	Yes	No
1	**INITIAL CHECK.** Check keyless entry system.	Does the keyless entry system operate normally?	Go to step **2**.	Check keyless entry system. <Ref. to SL-14, INSPECTION, Keyless Entry System.>
2	**CHECK SECURITY ON/OFF SETTING.** 1) Remove the key from ignition switch or turn the ignition to OFF, and close all doors. 2) Press the UNLOCK button of the keyless transmitter. 3) Check the security indicator light blinking patterns.	Does the security indicator light blink at 3 second intervals?	Go to step **3**.	Check the security indicator light circuit. <Ref. to SL-29, CHECK SECURITY INDICATOR LIGHT CIRCUIT, INSPECTION, Security System.>
3	**CHECK SECURITY ON/OFF SETTING.** 1) Press the LOCK button of the keyless transmitter. 2) Check the security indicator light blinking patterns.	Is the security indicator light blinking patterns as follows? / When monitoring lag is set to 0 seconds: flashes twice within 0.5 seconds, in 2 second intervals / When monitoring lag is set to 30 seconds: flashes 3 times per second, in 0.4 second intervals.	Go to step **6**.	Go to step **4**.
4	**CHANGE SETTING OF SECURITY SYSTEM.** Change the setting of security system to ON. <Ref. to SL-27, SECURITY SYSTEM ON/OFF SETTING, INSPECTION, Security System.>	Is setting change completed correctly?	Go to step **5**.	• Check the ignition switch circuit. <Ref. to SL-30, CHECK IGNITION SWITCH CIRCUIT, INSPECTION, Security System.> • Check the door lock switch circuit. <Ref. to SL-23, CHECK DOOR LOCK SWITCH, INSPECTION, Keyless Entry System.>

	Step	Check	Yes	No
5	**CHECK SETTING CHANGE OF SECURITY SYSTEM.** 1) Remove the key from ignition switch, and then close all doors. 2) Press the LOCK button of the keyless transmitter. 3) Check the security indicator light blinking patterns.	Is the security indicator light blinking patterns as follows? / When monitoring lag is set to 0 seconds: flashes twice within 0.5 seconds, in 2 second intervals / When monitoring lag is set to 30 seconds: flashes 3 times per second, in 0.4 second intervals.	Go to step **6**.	Replace the body integrated unit. <Ref. to SL-49, Body Integrated Unit.>
6	**CHECK SECURITY SYSTEM OPERATION.** Press the LOCK button of keyless transmitter, and wait for 30 seconds.	Is the blinking pattern of security indicator light blink twice within 0.5 seconds in 2 second cycles?	Go to step **7**.	Replace the body integrated unit. <Ref. to SL-49, Body Integrated Unit.>
7	**CHECK SECURITY ALARM OPERATION.** 1) Unlock all doors using the door lock switch on driver's door. 2) Open any door, trunk or rear gate.	Does the security alarm operate when opening any door, trunk or rear gate?	Go to step **8**.	Check the door switch, trunk lid switch or rear gate latch switch. <Ref. to SL-18, CHECK DOOR SWITCH, INSPECTION, Keyless Entry System.>
8	**CHECK SECURITY ALARM OPERATION.** Check the security alarm operation.	Do all security alarms operate? / Horn sound / Hazard lights flash / Security indicator light illuminates	Go to step **9**.	• Check the horn. <Ref. to SL-29, CHECK HORN, INSPECTION, Security System.> • Check the hazard light. <Ref. to SL-29, CHECK HAZARD LIGHT OPERATION, INSPECTION, Security System.>
9	**CHECK SECURITY ALARM CANCEL OPERATION.** Press any button of transmitter while the security alarm is operating. Or turn the ignition switch to ON.	Do all security alarms stop? / Horn / Hazard lights	Go to step **10**.	Check the ignition switch circuit. <Ref. to SL-30, CHECK IGNITION SWITCH CIRCUIT, INSPECTION, Security System.>
10	**CHECK SECURITY SYSTEM CONDITION MEMORY.** Check that the system functions properly even when the battery is not connected temporarily. <Ref. to SL-27, CHECK SECURITY SYSTEM CONDITION MEMORY, INSPECTION, Security System.>	Does the system function properly when the battery is not connected temporarily?	Go to step **11**.	Replace the body integrated unit. <Ref. to SL-49, Body Integrated Unit.>
11	**CHECK IMPACT SENSOR (DEALER OPTION).** Check the sensibility of impact sensor. <Ref. to SL-46, CHECK IMPACT SENSOR, ADJUSTMENT, Impact Sensor.>	Is the sensibility set properly?	Press the UNLOCK button of keyless transmitter, and finish the diagnosis.	Adjust the sensitivity. <Ref. to SL-46, IMPACT SENSITIVITY ADJUSTMENT, ADJUSTMENT, Impact Sensor.>

NOTE:
Check the function settings of the body integrated unit if any of the following symptoms appear. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>
• The horn does not sound even when the security alarm is triggered and operating. As a cause, it is possible that the siren ON/OFF setting is set to ON in the customization function.
• The horn sounds when setting the security to ON (Monitoring condition) using the keyless transmitter. As a cause, it is possible that the impact sensor present (ON) / not present (OFF) setting is set to ON in the customization function though there is no impact sensor.

2. CHECK SECURITY SYSTEM CONDITION MEMORY

1) Pull out the key from the ignition switch, or turn the ignition to OFF.
2) Close all the doors, trunk lid and rear gate.
3) Open the front hood.
4) Press the LOCK button of the keyless transmitter.

NOTE:
Wait until the security indicator light blinks twice within 0.5 seconds at 2 second intervals.
If the 30 second monitoring lag has been set, wait 30 seconds.
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 0.5 seconds at 2 second intervals. When it does not blink, replace the body integrated unit.

3. SECURITY SYSTEM ON/OFF SETTING

1) Close all doors, trunk lid and rear gate, and sit down on the driver seat. Press the UNLOCK button of the keyless transmitter.
2) Turn the ignition switch to ON.
3) Push the centralized door lock switch down and open the driver's side door at the same time, and hold in this condition for 10 seconds.
4) If the security system is ON, it will turn OFF. If OFF, it will turn ON.

4. CHECK DOOR SWITCH

For operation procedure, refer to the door switch inspection of the keyless entry system. <Ref. to SL-18, CHECK DOOR SWITCH, INSPECTION, Keyless Entry System.>

5. CHECK TRUNK LID SWITCH (4 DOOR MODEL) OR REAR GATE LATCH SWITCH (5 DOOR MODEL)

	Step	Check	Yes	No
1	**CHECK INPUT FROM TRUNK LID SWITCH OR REAR GATE LATCH SWITCH.** 1) Prepare the Subaru Select Monitor kit. 2) Turn the ignition switch to ON (engine OFF) and run the “PC application for Subaru Select Monitor”. 3) On «System Selection Menu» display, select {Integ. unit mode}. 4) Select the {Current Data Display & Save}. 5) Select the {R Gate SW input}.	Is the input signal present when opening the trunk lid or rear gate?	The trunk lid switch or rear gate latch switch circuit is OK.	Go to step **2**.
2	**CHECK CIRCUIT FOR TRUNK LID SWITCH OR REAR GATE LATCH SWITCH.** 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of body integrated unit. 3) Disconnect the harness connector of the trunk lid switch or the rear gate latch switch. 4) Measure the resistance between harness connector terminals. ***Connector & terminal*** ***(i84) No. 33 — (D46) No. 3: (5 door model)*** ***(i84) No. 33 — (R186) No. 3: (4 door model)***	Is the resistance less than 10 Ω?	Go to step **3**.	Repair or replace the harness.
3	**CHECK GROUND CIRCUIT OF TRUNK LID SWITCH OR REAR GATE LATCH SWITCH.** 1) Disconnect the harness connector of the trunk lid switch or the rear gate latch switch. 2) Measure the resistance between harness connector terminal and chassis ground. ***Connector & terminal*** ***(D46) No. 4 — Chassis ground: (5 door model)*** ***(R186) No. 1 — Chassis ground: (4 door model)***	Is the resistance less than 10 Ω?	Go to step **4**.	Repair or replace the harness.
4	**CHECK TRUNK LID SWITCH OR REAR GATE LATCH SWITCH.** 1) Disconnect the harness connector of the trunk lid switch or the rear gate latch switch. 2) Measure the resistance between switch terminals. ***Terminals*** ***No. 4 — No. 3: (5 door model)*** ***No. 1 — No. 3: (4 door model)***	Is the resistance 1 MΩ or more when switch is pushed?	Go to step **5**.	Replace the trunk lid latch and actuator assembly or rear gate latch and actuator assembly.
5	**CHECK TRUNK LID SWITCH OR REAR GATE LATCH SWITCH.** Measure the resistance between switch terminals. ***Terminals*** ***No. 4 — No. 3: (5 door model)*** ***No. 1 — No. 3: (4 door model)***	Is the resistance less than 1 Ω when switch is released?	Check body integrated unit. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>	Replace the trunk lid latch and actuator assembly or rear gate latch and actuator assembly.

6. CHECK SECURITY INDICATOR LIGHT CIRCUIT

	Step	Check	Yes	No
1	**CHECK SECURITY INDICATOR LIGHT.** 1) Disconnect the harness connector of body integrated unit. 2) Place a 100 Ω resistance on the harness connector terminal using a suitable lead wire, and connect to ground through the resistance. ***Connector & terminal*** ***(i84) No. 10 — Chassis ground:***	Does the security indicator light illuminate?	Check body integrated unit. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>	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 the combination meter harness connector terminal and chassis ground. ***Connector & terminal*** ***(i10) No. 1 (+) — 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 the security control unit harness connector terminal. ***Connector & terminal*** ***(i10) No. 39 — (i84) No. 10:***	Is the resistance less than 10 Ω?	Replace the combination meter. <Ref. to IDI-15, Combination Meter.>	Check the harness for open or short circuits between the combination meter and body integrated unit.

7. CHECK HORN

	Step	Check	Yes	No
1	**CHECK HORN OPERATION.** Check the horn sounds when the horn switch is pushed.	Does the horn sound?	Go to step **2**.	Check the horn circuit.
2	**CHECK OUTPUT TO HORN RELAY.** 1) Connect the Subaru Select Monitor Kit. 2) Turn the ignition switch to ON (engine OFF) and run the “PC application for Subaru Select Monitor”. 3) On «System Selection Menu» display, select {Integ. unit mode}. 4) Select {Function check}. 5) Select {Horn Output} and execute.	Does the horn sound?	Horn circuit is OK.	Go to step **3**.
3	**CHECK HORN RELAY CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of body integrated unit. 3) Disconnect the main fuse box harness connector (B186). 4) Measure the resistance between harness connector terminals. ***Connector & terminal*** ***(B279) No. 29 — (B186) No. 1:***	Is the resistance less than 10 Ω?	Check body integrated unit. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>	Repair or replace the harness.

8. CHECK HAZARD LIGHT OPERATION

For operation procedure, refer to the hazard light inspection of the keyless entry system. <Ref. to SL-22, CHECK KEYLESS BUZZER, INSPECTION, Keyless Entry System.>

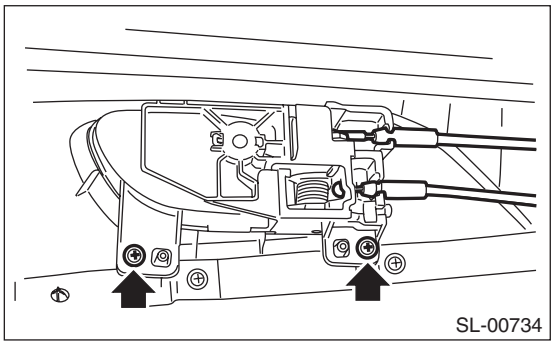
9. CHECK IGNITION SWITCH CIRCUIT

	Step	Check	Yes	No
1	**CHECK IGNITION SWITCH VOLTAGE.** 1) Prepare the Subaru Select Monitor kit. 2) Turn the ignition switch to ON (engine OFF) and run the “PC application for Subaru Select Monitor”. 3) On «System Selection Menu» display, select {Integ. unit mode}. 4) Select the {Current Data Display & Save}. 5) Select the {BATT voltage} and {IG power supply}.	Is the {IG power supply voltage} within ±1 V against {BATT voltage}?	The ignition switch input circuit is OK.	Go to step **2**.
2	**CHECK IGNITION SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of body integrated unit. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B280) No. 1 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Check body integrated unit. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>	Check the harness for open or short circuit between the body integrated unit and fuse.

5. Front Inner Remote

A: REMOVAL

1) Remove the door trim. <Ref. to EI-43, REMOVAL, Door Trim.>
2) Remove the cable from the cable holder.
3) Remove the screws, and remove the inner remote handle.



B: INSTALLATION

Install in the reverse order of removal.

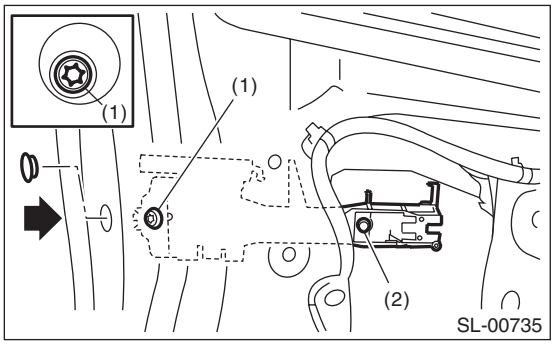
C: INSPECTION

1) Check the cable of the door opener and door lock for deformation. When it is deformed, straighten it because failure operations may occur. When it is unrepairable, replace the front door latch and door lock actuator assembly.
2) Check the lever, rod and wire for smooth operation.

6. Front Outer Handle

A: REMOVAL

1) Raise the front door glass to the top position.
2) Remove the door trim. <Ref. to EI-43, REMOVAL, Door Trim.>
3) Remove the sealing cover. <Ref. to EB-21, REMOVAL, Front Sealing Cover.>
4) Remove the rod clamp.
5) Remove the plug at the rear of the door panel, and loosen the TORX® bolt (1).



6) Remove the door outer handle cover.
7) Move the front outer handle towards the rear, and remove the front outer handle.

CAUTION:
Do not apply excessive force to remove the handle from the door panel. The door panel may become deformed.
8) Remove the outer side spacer.
9) Loosen TORX® bolt (2).
10) Remove the frame assembly from inside the door panel.

B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to SL-2, DOOR LOCK ASSEMBLY, COMPONENT, General Description.>

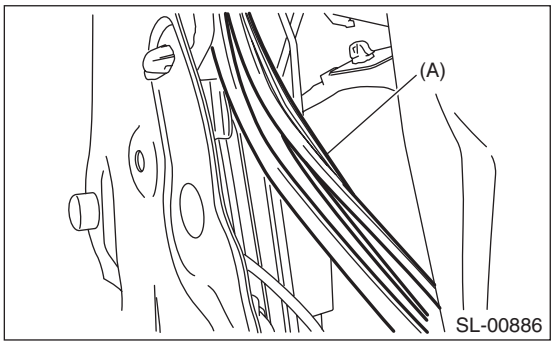
C: INSPECTION

1) Check the rod for deformation.
2) Check the lever and rod for smooth operation.

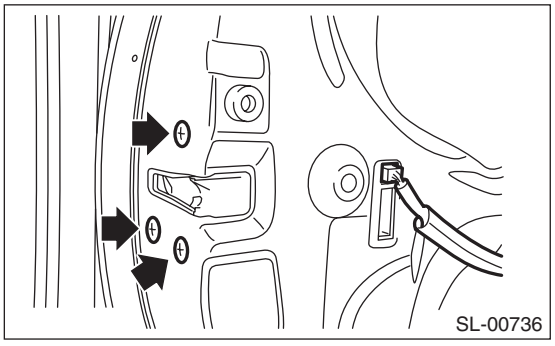
7. Front Door Latch and Door Lock Actuator Assembly

A: REMOVAL

1) Raise the front door glass to the top position.
2) Disconnect the ground cable from battery.
3) Remove the front door trim. <Ref. to EI-43, REMOVAL, Door Trim.>
4) Remove the sealing cover. <Ref. to EB-21, REMOVAL, Front Sealing Cover.>
5) Remove the glass run rubber (A) partially.



6) Remove the rear sash.
7) Remove the rod from the outer handle rod clamp.
8) Disconnect the harness connector.
9) Remove the three screws, and then remove the front door latch and door lock actuator assembly.



B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to SL-2, DOOR LOCK ASSEMBLY, COMPONENT, General Description.>

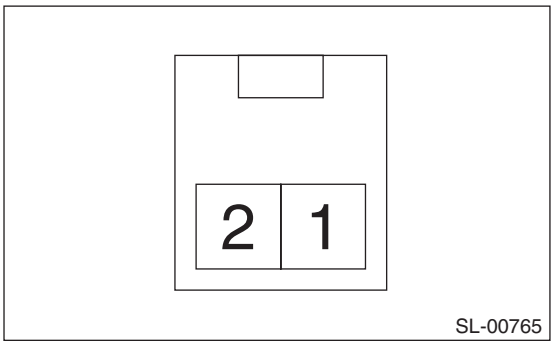
C: INSPECTION

1. DOOR LATCH

1) Check the rod, door opener and door lock cable for deformation. When it is deformed, straighten it because failure operations may occur. When it is unrepairable, replace the front door latch and door lock actuator assembly.
2) Check the lever, rod and wire for smooth operation.

2. LOCK ACTUATOR

1) Disconnect the door lock actuator harness connector.
2) Connect the battery to door lock actuator terminals.



Actuator operation	Terminals	
	No. 1	No. 2
Lock → Unlock	–	+
Unlock → Lock	+	–

If defective, replace the front door latch and door lock actuator assembly.

8. Rear Inner Remote

A: REMOVAL

Refer to “Front Inner Remote” for the removal procedure. <Ref. to SL-31, REMOVAL, Front Inner Remote.>

B: INSTALLATION

Install in the reverse order of removal.

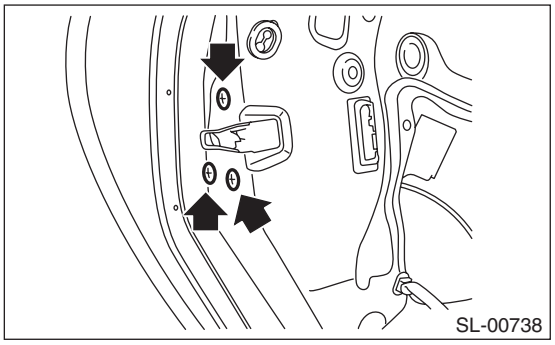
C: INSPECTION

1) Check the cable of the door opener and door lock for deformation. When it is deformed, straighten it because failure operations may occur. When it is unrepairable, replace the rear door latch and door lock actuator assembly.
2) Check the lever, rod and wire for smooth operation.
3) Check the child safety lock for correct operations.

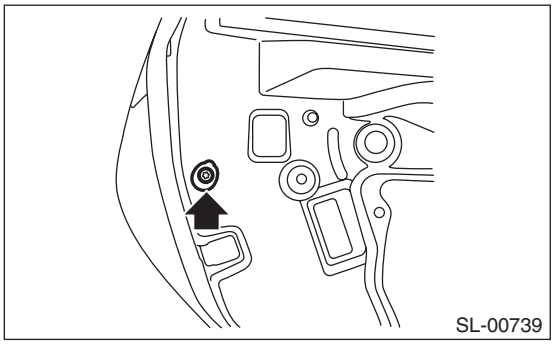
9. Rear Outer Handle

A: REMOVAL

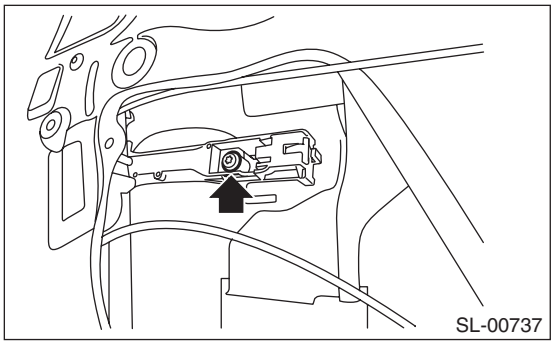
1) Raise the rear door glass to the top position.
2) Remove the rear door trim. <Ref. to EI-43, REMOVAL, Door Trim.>
3) Remove the sealing cover. <Ref. to EB-24, REMOVAL, Rear Sealing Cover.>
4) Remove the three screws, and move aside the rear door latch and door lock actuator assembly.


SL-00738

5) Remove the child protector cover, and loosen the TORX® bolt.


SL-00739

6) Remove the outer handle cover.
7) Move the rear outer handle towards the rear, and remove the rear outer handle.
8) Remove the outer spacer, and remove the frame assembly from the inner side.
9) Remove the TORX® bolt.


SL-00737

10) Remove the frame assembly from inside the door panel.

CAUTION:
Do not apply excessive force to remove the handle from the door panel. The door panel may become deformed.

B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to SL-2, DOOR LOCK ASSEMBLY, COMPONENT, General Description.>

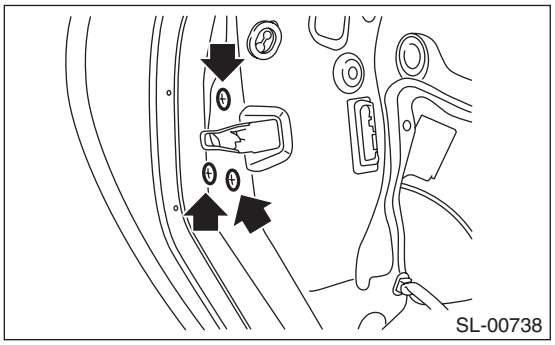
C: INSPECTION

1) Check that the latch joins securely.
2) Check the handle and wire for smooth operation.

10.Rear Door Latch and Door Lock Actuator Assembly

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the rear door trim. <Ref. to EI-43, REMOVAL, Door Trim.>
3) Remove the wire from the rear inner remote. <Ref. to SL-34, REMOVAL, Rear Inner Remote.>
4) Remove the sealing cover. <Ref. to EB-24, REMOVAL, Rear Sealing Cover.>
5) Remove the rear door glass. <Ref. to GW-18, REMOVAL, Rear Door Glass.>
6) Disconnect the harness connector.
7) Remove the three screws, and remove the rear door latch and door lock actuator assembly.



B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to SL-2, DOOR LOCK ASSEMBLY, COMPONENT, General Description.>

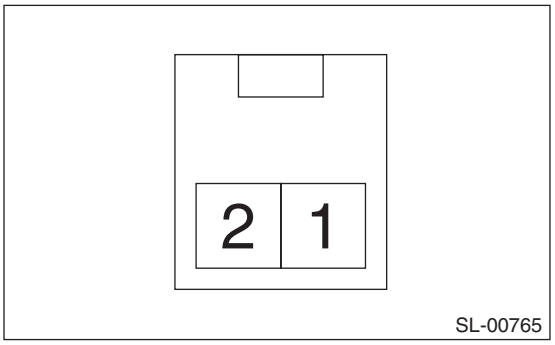
C: INSPECTION

1. DOOR LATCH

1) Check the cable for deformation. When it is deformed, straighten it because failure operations may occur. When it is unrepairable, replace the rear door latch and door lock actuator assembly.
2) Check the lever and wire for smooth operation.

2. LOCK ACTUATOR

1) Disconnect the door lock actuator harness connector.
2) Connect the battery to door lock actuator terminals.



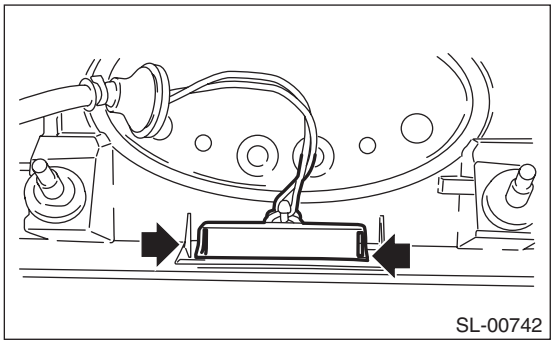
Actuator operation	Terminals	
	No. 1	No. 2
Lock → Unlock	–	+
Unlock → Lock	+	–

If defective, replace the rear door latch and door lock actuator assembly.

11.Rear Gate Opener Button

A: REMOVAL

1) Remove the rear gate trim. <Ref. to EI-67, REMOVAL, Rear Gate Trim.>
2) Remove the rear gate garnish. <Ref. to EI-70, REMOVAL, Rear Gate Garnish.>
3) Disconnect the rear gate opener button harness connector.
4) Hold down the rear gate opener button hook, and remove the rear gate opener button.



B: INSTALLATION

CAUTION:
Make sure that the harness grommet is securely installed.
If not properly installed, this may cause water immersion.
Install in the reverse order of removal.

C: INSPECTION

1) Disconnect the rear gate opener button harness connector.
2) Inspect the continuity between the rear gate opener button connector terminals.

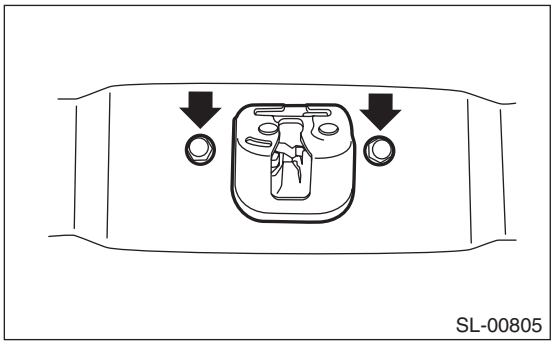
Switch	Terminals	Standard
Open	No. 1 and No. 2	Less than 1 Ω
Close		1 MΩ or more

If defective, replace the rear gate opener button.

12. Rear Gate Latch and Actuator Assembly

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the rear gate trim. <Ref. to EI-67, REMOVAL, Rear Gate Trim.>
3) Disconnect the harness connector.
4) Remove the two bolts to remove the rear gate latch and actuator assembly.


SL-00805

B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to SL-3, REAR GATE LOCK AND TRUNK LID, COMPONENT, General Description.>

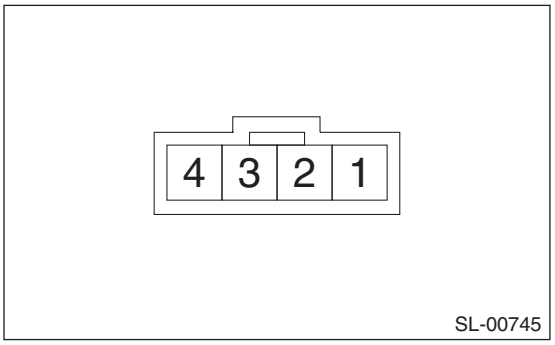
C: INSPECTION

1. REAR GATE LATCH

1) Check the latch for deformation or abnormal wear.
2) Check other levers and springs for rust formation or unsmooth movement.

2. LOCK ACTUATOR

1) Disconnect the harness connector of rear gate latch and actuator assembly.
2) Connect the battery to the rear gate latch and actuator assembly terminals.



SL-00745

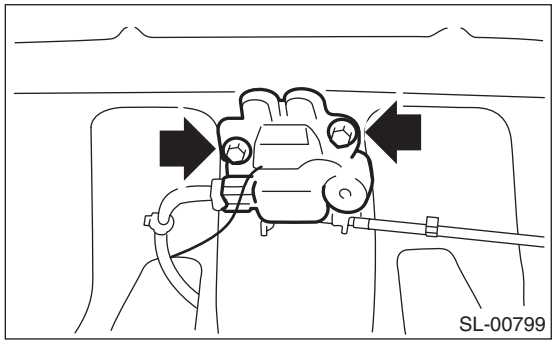
Actuator operation	Terminals	
	No. 1	No. 2
Lock → Unlock	+	–

Replace the rear gate latch and actuator assembly if faulty.

13. Trunk Lid Latch and Actuator Assembly

A: REMOVAL

1) Disconnect the connector to remove the trunk opener cable.
2) Remove the two bolts to remove the trunk lid latch and actuator assembly.



B: INSTALLATION

CAUTION:
Route the safety lever wire so that it runs inside the trunk panel.
Install in the reverse order of removal.

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to SL-3, REAR GATE LOCK AND TRUNK LID, COMPONENT, General Description.>

NOTE:
Apply grease to the movable part.

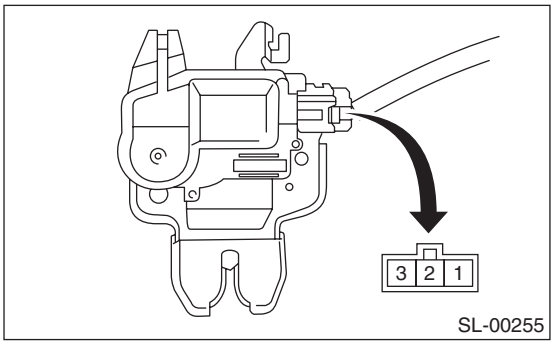
C: INSPECTION

1. TRUNK LID LATCH

1) Check the latch for deformation or abnormal wear.
2) Check the safety lever for improper movement.
3) Check other levers and springs for rust formation or unsmooth movement.
4) Check the trunk opener cable for smooth operation.

2. LOCK ACTUATOR

1) Disconnect the harness connector of trunk lid latch and actuator assembly.
2) Connect the battery to the trunk lid latch and actuator assembly terminals.



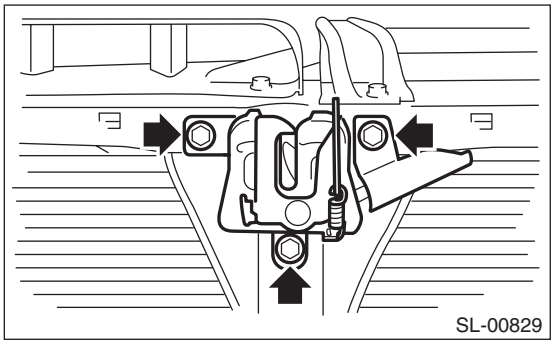
Actuator operation	Terminals	
	No. 1	No. 2
Lock → Unlock	–	+

Replace the trunk lid latch and actuator assembly if faulty.

14.Front Hood Lock Assembly

A: REMOVAL

1) Open the front hood.
2) Remove the front bumper face. <Ref. to EI-29, FRONT BUMPER FACE, REMOVAL, Front Bumper.>
3) Remove the bolts, and then detach the front hood lock assembly.
4) Remove the release cable from the lock assembly.



B: INSTALLATION

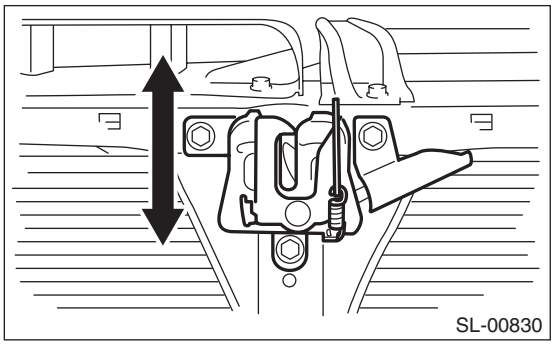
Install in the reverse order of removal.

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to SL-4, FRONT HOOD LOCK AND REMOTE OPENERS, COMPONENT, General Description.>

NOTE:
Apply grease to the movable part.

C: ADJUSTMENT

Loosen the bolt, and adjust the lock assembly while moving it up and down.



D: INSPECTION

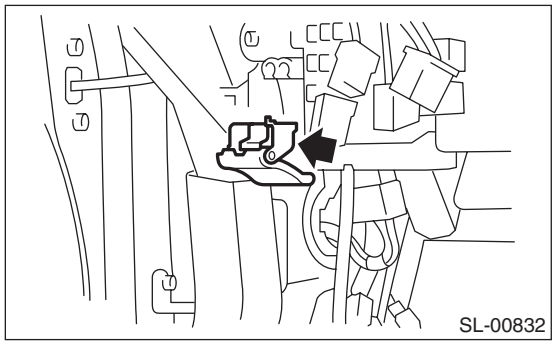
1) Check the striker for deformation or abnormal wear.
2) Check the safety lever for improper movement.
3) Check other levers and springs for rust formation or unsmooth movement.

15.Remote Openers

A: REMOVAL

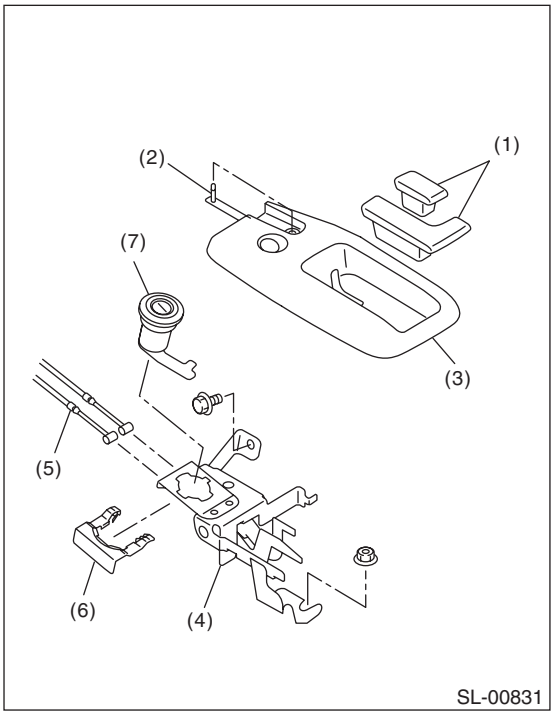
1. FRONT HOOD OPENER

1) Remove the cable from the front hood lock.
2) Remove the bolt, and then detach the opener lever.



2. TRUNK LID OPENER

1) Remove the rear seat. <Ref. to SE-12, REMOVAL, Rear Seat.>
2) Remove the lower inner trim, rear quarter trim and floor mat on the driver's side. Remove the clip holding the cable.
3) Remove the opener lever (1).
4) Remove the pin (2) and remove front cover (3).
5) Remove the bolt and nut, and remove the pull handle assembly (4).



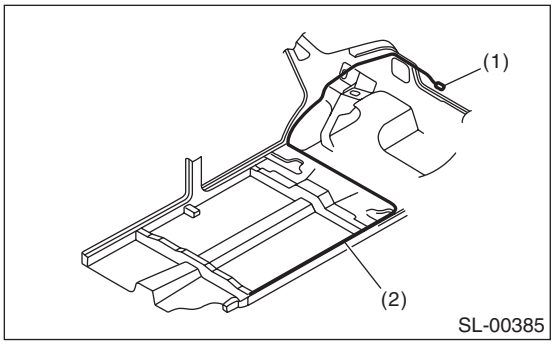
(1) Opener lever
(2) Pin
(3) Front cover
(4) Pull handle ASSY
(5) Cable
(6) Clamp
(7) Key cylinder

6) Remove the cable (5) from the pull handle assembly (4).
7) Remove clamp (6) to remove the key cylinder (7).

CAUTION:
Remove the key cylinder in the UNLOCK position.

8) Remove the trunk lid lock assembly from the trunk lid.

9) Remove the cable from the trunk lid lock assembly.



(1) Trunk lid lock ASSY
(2) Cable

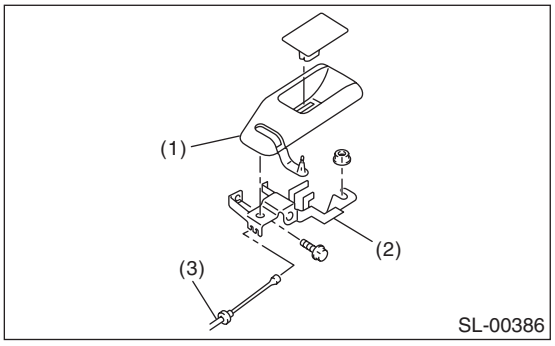
3. FUEL FILLER LID OPENER

4 DOOR MODEL

Refer to the trunk lid opener. <Ref. to SL-41, TRUNK LID OPENER, REMOVAL, Remote Openers.>

5 DOOR MODEL

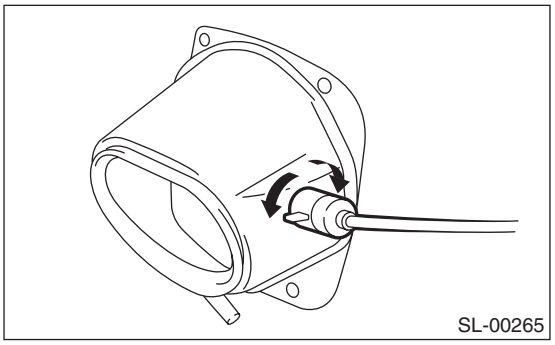
1) Remove the rear seat. <Ref. to SE-12, REMOVAL, Rear Seat.>
2) Remove the lower inner trim, rear quarter trim and floor mat on the driver's side. Remove the clip holding the cable.
3) Remove the opener lever and detach the cover (1).
4) Remove the bolt and nut, and remove the pull handle assembly (2).



(1) Cover
(2) Pull handle ASSY
(3) Cable

5) Remove the cable (3) from the pull handle assembly (2).

6) Rotate the fuel lock inside the quarter panel to 90° and remove. (Either right or left turn)



B: INSTALLATION

Install in the reverse order of removal.

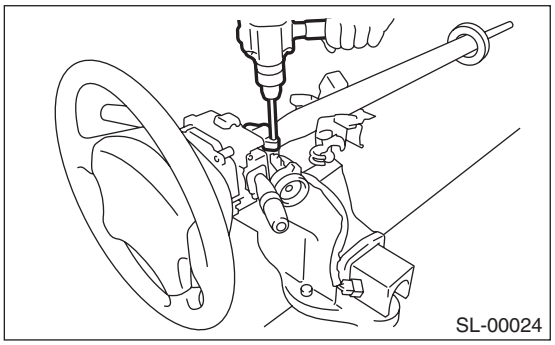
C: INSPECTION

Make sure the front hood, trunk lid and fuel flap open and close smoothly.

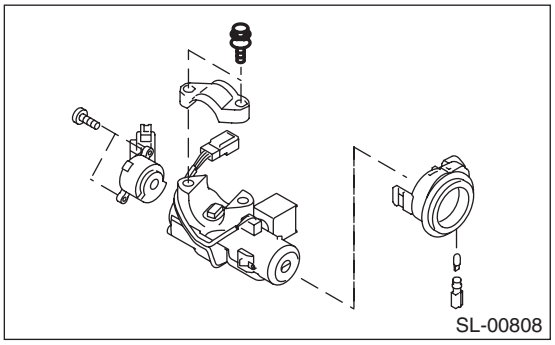
16.Ignition Key Lock

A: REPLACEMENT

1) Disconnect the ground cable from battery.
2) Remove the steering column. <Ref. to PS-15, REMOVAL, Tilt Steering Column.>
3) Secure the steering column in a vise. Remove the bolt with a drill.

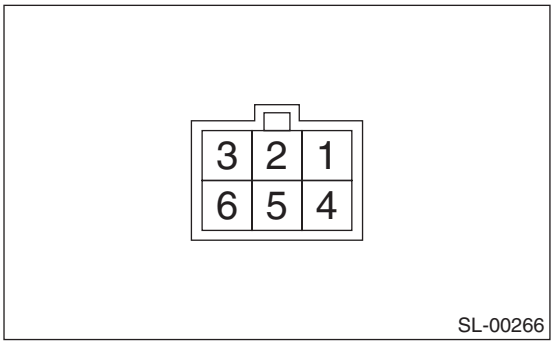


4) Remove the ignition key lock.
5) Use new bolts. Tighten the bolt until the bolt head is broken (bolt head wrenched off).



B: INSPECTION

1) Remove the instrument panel lower cover.
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 position	Terminal No.	Standard
LOCK	—	—
ACC	No. 3 and No. 5	Less than 1 Ω
ON	No. 3, No. 1 and No. 4 No. 3 and No. 5	Less than 1 Ω
ST	No. 3 and No. 2 No. 3, No. 1 and No. 6	Less than 1 Ω

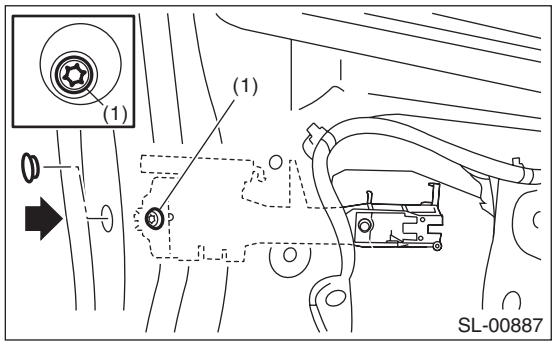
If NG, replace the ignition switch.

17.Key Lock Cylinders

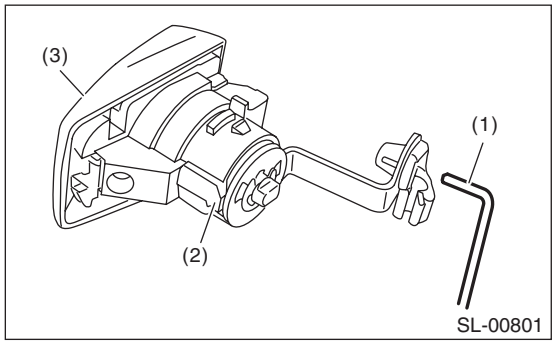
A: REPLACEMENT

1. FRONT DOOR

1) Raise the front door glass to the top position.
2) Remove the door trim. <Ref. to EI-43, REMOVAL, Door Trim.>
3) Remove the sealing cover. <Ref. to EB-21, REMOVAL, Front Sealing Cover.>
4) Remove the rod clamp.
5) Remove the plug to the rear of the door panel.
6) Remove the TORX® bolt (1).



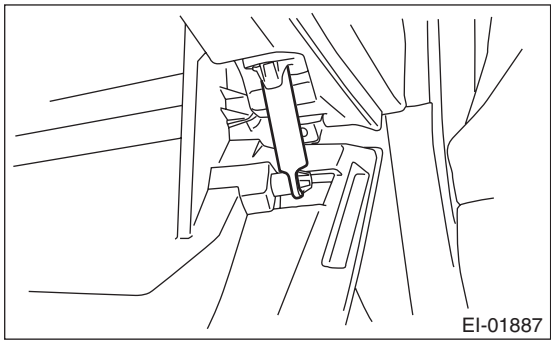
7) Remove the key cylinder along with the handle cover.
8) Remove the key cylinder from the cover, and replace the key cylinder.



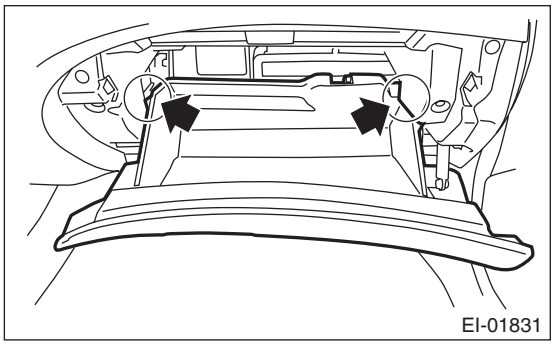
(1) Latch connection rod
(2) Key cylinder
(3) Door outer handle cover

2. GLOVE BOX LID

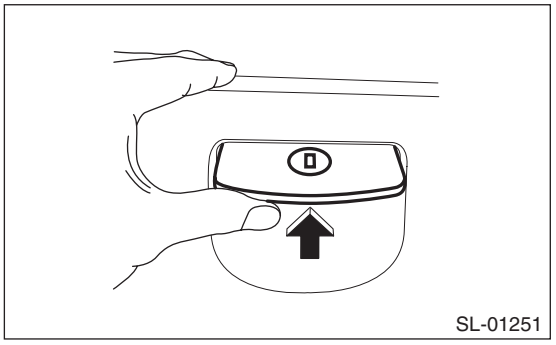
1) Remove the glove box damper.



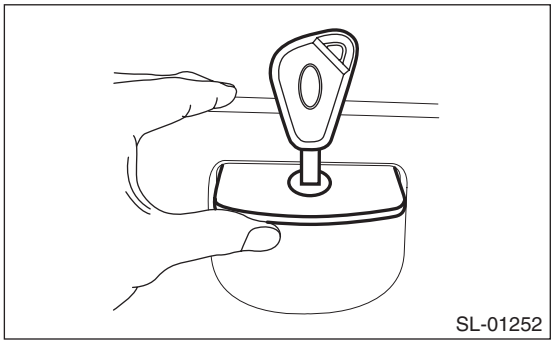
2) Remove the stoppers and pull the glove box lid assembly forward to remove.



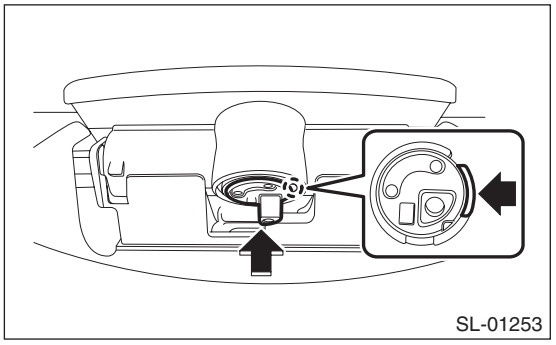
3) Pull up the lock knob with the key cylinder in UNLOCK.



4) Insert the key while holding the condition of step 3), and pull out the key in LOCK status.



5) Remove the key cylinder from lock knob while pushing in the metal plate, and replace the key cylinder.



18.Security Control Module

A: NOTE

The control of security system is carried out in body integrated unit. Refer to the section on the body integrated unit for the work procedures.

- Removal <Ref. to SL-49, REMOVAL, Body Integrated Unit.>
- Installation <Ref. to SL-49, INSTALLATION, Body Integrated Unit.>

19.Impact Sensor

A: REMOVAL

1) Remove the key from 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) Remove the impact sensor.
6) Change the setting of impact sensor using Subaru Select Monitor.

B: INSTALLATION

1) Remove the key from 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) 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) On the “System Selection Menu”, select {Integ. unit mode}.
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 ignition switch.
2) Close all the windows.
3) Close all the doors, trunk lid and rear gate. Leave open the front hood.
4) Press the LOCK button of the keyless transmitter from outside of vehicle.
5) Check that the security indicator light blinks twice within 0.5 seconds in 2 second cycles after 30 seconds.
6) Hit all windows with the palm with force repeatedly, to check for whether 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) On the “System Selection Menu”, select {Impact Sensor}.
4) Make a {Sensitivity Adjustment Mode}.
- Sensitivity can be adjusted in 11 levels (0 to 10).
- Initial setting is 5.
- Smaller number means more sensitive.
- Larger number means less sensitive.

5) Turn the ignition switch to OFF, and then remove the Subaru Select Monitor.

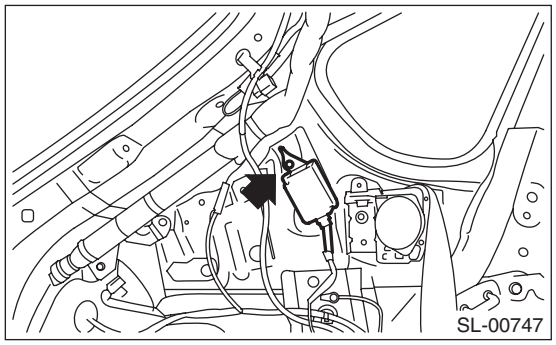
NOTE:
- Set the sensor so as not to let the alarm on normal vibration (reclining to the door, hit the ball and etc.).
- Set the sensor to operate the alarm with hitting the door or window glass, etc. continuously like a mayhem by robbery.
- Even if there is no burglary attempt, if there is vibration (road construction, elevated parking lots, passage of trains or boarding of ferries), the alarm can be triggered. Because of this, ask the customer about their parking conditions, and set an appropriate sensitivity level after discussion.
- The impact sensitivity can also be adjusted on the manufacturer’s optional display, and it can be set in 11 levels from 0 to 10. The sensitivity is set to 5 by default. (Unlike the specification of the Subaru Select Monitor, the setting becomes duller as the setting value becomes smaller, and more sensitive as the number becomes larger.)
- If the sensitivity setting was not performed properly, a buzzer will sound four times. In this case, check the following:
  - Is there an error in CAN communication?
  - Is there an open circuit in the harness between the body integrated unit and the impact sensor?
  - Is there a malfunction in the display, body integrated unit or impact sensor?

20.Keyless Entry Control Module

A: REMOVAL

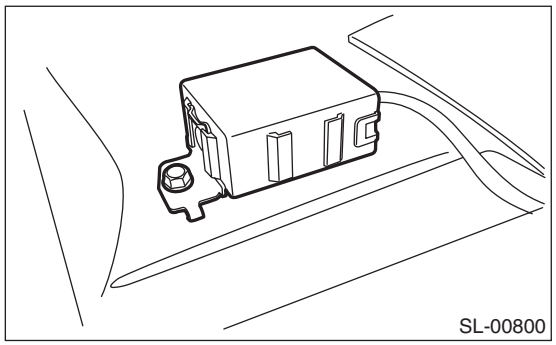
1. 5 DOOR MODEL

1) Disconnect the ground cable from battery.
2) Remove the left rear quarter trim. <Ref. to EI-58, REMOVAL, Rear Quarter Trim.>
3) Disconnect the harness connector.
4) Remove the bolt and then remove the keyless entry control module.



2. 4 DOOR MODEL

1) Disconnect the ground cable from battery.
2) Remove the rear shelf trim. <Ref. to EI-60, REMOVAL, Rear Shelf Trim.>
3) Disconnect the harness connector.
4) Remove the bolt and then remove the keyless entry control module.



B: INSTALLATION

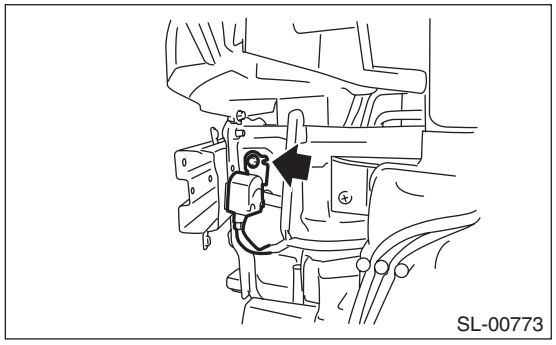
Install in the reverse order of removal.

Tightening torque:
13 N·m (1.33 kgf-m, 9.6 ft-lb)

21.Keyless Buzzer

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Turn over the left front mud guard.
3) Remove the bolt, and then remove the keyless buzzer.



B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
13 N·m (1.33 kgf-m, 9.6 ft-lb)

C: INSPECTION

Using the Subaru Select Monitor, perform forced operation of the keyless buzzer. <Ref. to LAN(diag)-15, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>

NOTE:
If it does not sound, replace the buzzer.

22.Body Integrated Unit

A: NOTE

1. WHEN REPLACING THE BODY INTEGRATED UNIT

1) Check and record the current setting. <Ref. to LAN(diag)-21, CONFIRM CURRENT SETTING., OPERATION, Subaru Select Monitor.>
2) Prepare the followings.
- Security ID plate
- The required number of new (unregistered) immobilizer keys

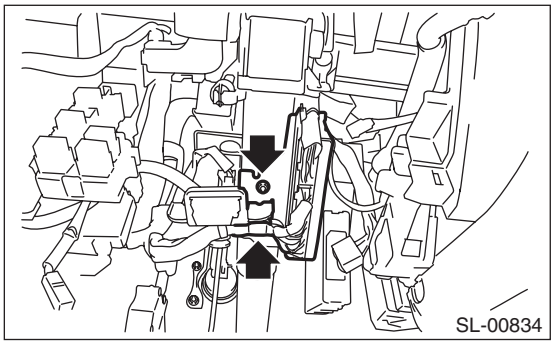
2. AFTER REPLACING THE BODY INTEGRATED UNIT

1) Register the immobilizer. For detailed operation procedures, refer to “PC application help for Subaru Select Monitor”.
2) Set the current settings as recorded.

B: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the driver’s side instrument panel lower cover. <Ref. to EI-46, REMOVAL, Instrument Panel Lower Cover.>
3) Remove the knee guard panel.
4) Disconnect the harness connector of body integrated unit.

CAUTION:
Be careful to keep water and other foreign materials away from body integrated unit.
5) Remove two mounting bolts for body integrated unit bracket, and remove the body integrated unit.



C: INSTALLATION

Install in the reverse order of removal.

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

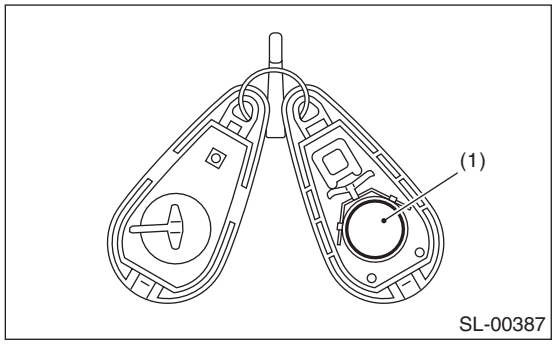
NOTE:
Make sure that there are no differences from the contents of the current settings after installation. <Ref. to LAN(diag)-21, CONFIRM CURRENT SETTING., OPERATION, Subaru Select Monitor.>

23.Transmitter

A: REMOVAL

1. TRANSMITTER BATTERY

CAUTION:
To prevent static electricity damage to the keyless transmitter printed circuit board, touch the steel area of building with hand to discharge static electricity carried on body or clothes before disassembling the keyless transmitter.
Remove the battery (1) from the transmitter.



B: INSTALLATION

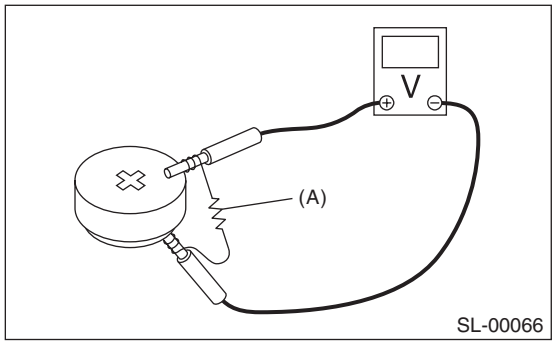
Install in the reverse order of removal.

C: INSPECTION

1. TRANSMITTER BATTERY

Measure the voltage between the keyless transmitter battery (+) terminal and (–) terminal.

NOTE:
Battery discharge occurs during the measurement. Complete the measurement within 5 seconds.



(A) Resistance (47 Ω)

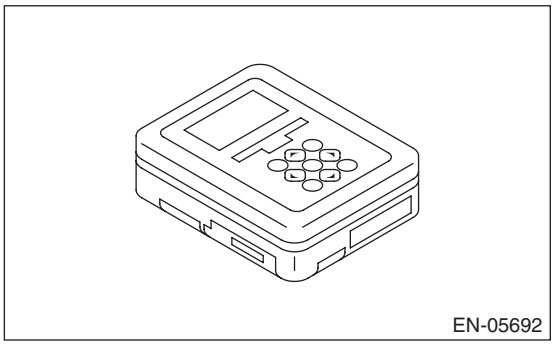
Tester connection		Standard
(+)	(–)	
Battery Positive terminal	Battery Ground terminal	2.5 — 3.0 V

If NG, replace the battery. (Use CR2025 or equivalent.)

D: REPLACEMENT

1. REGISTRATION OF KEYLESS TRANSMITTER WITH SUBARU SELECT MONITOR

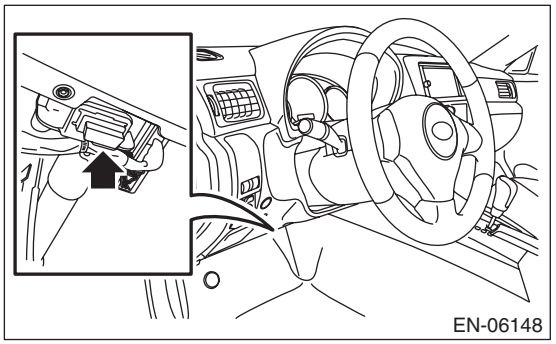
NOTE:
• A maximum of four keyless transmitter can be registered for each individual vehicle.
• When replacing or adding the keyless transmitter, new registration of transmitter is necessary.
1) Prepare the Subaru Select Monitor kit. <Ref. to SL-7, SPECIAL TOOL, PREPARATION TOOL, General Description.>



2) Prepare PC with Subaru Select Monitor installed.
3) Connect the USB cable to SDI (Subaru Diagnosis Interface) and USB port on the personal computer (dedicated port for the Subaru Select Monitor).

NOTE:
The dedicated port for the Subaru Select Monitor means the USB port which was used to install the Subaru Select Monitor.
4) Connect the diagnosis cable to SDI.
5) Connect SDI to data link connector located in the lower portion of the instrument panel (on the driver's side).

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



6) Start the PC.
7) Turn the ignition switch to ON (engine OFF) and run the "PC application for Subaru Select Monitor".

8) On the «Main Menu» of the Subaru Select Monitor, select the {Each System Check} → {Integ. unit mode} → {Keyless ID registration}.
9) Input the 8-digit ID number attached to the tag plate of the transmitter or inside the transmitter, from left to right. Press the [OK] key.
10) The ID number you have entered will be shown. Make sure that the ID number shown is the same as that of plastic bag or inside of transmitter.
11) Press the [OK] key if the ID number is correct. Press the [EXIT] key if incorrect, to return to the step 3) and enter the ID number again.
12) «ID is being registered...» is displayed and registration starts.
13) «ID registration completed» will be displayed when the registration process is done.
14) To exit, select «Quit: NO» to return to {Keyless ID registration}. If there are additional keyless transmitters to be registered, select «The following are registered: OK» to return to the step 4).

NOTE:
• If the registration fails, «ID cannot register. Please try again» will be shown. Select the [OK] key to return to the {Keyless ID registration}. And retry from the step 3).
• «Quit: NO» is shown on the Subaru Select Monitor when fourth keyless transmitter has been registered. Select the [NO] key to return to {Keyless ID registration}.

24.Immobilizer Control Module

A: NOTE

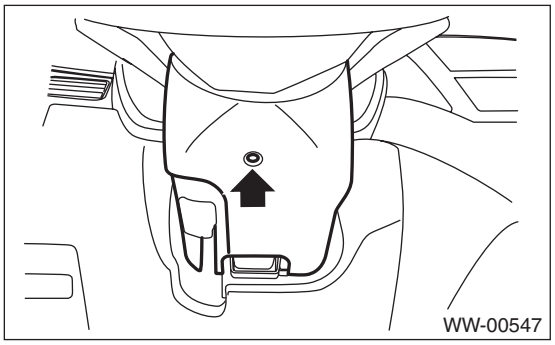
The control of immobilizer system is carried out in body integrated unit. Refer to the section on the body integrated unit for the work procedures.

- Removal <Ref. to SL-49, REMOVAL, Body Integrated Unit.>
- Installation <Ref. to SL-49, INSTALLATION, Body Integrated Unit.>

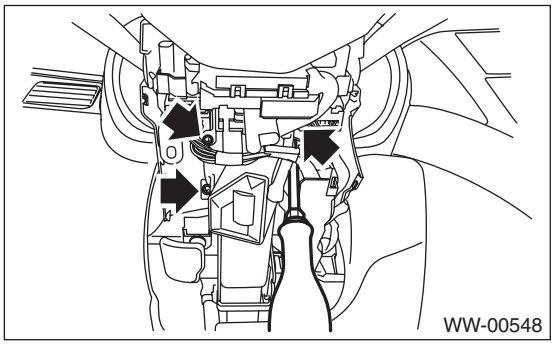
25.Immobilizer Antenna

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the screws and remove the steering column cover lower.

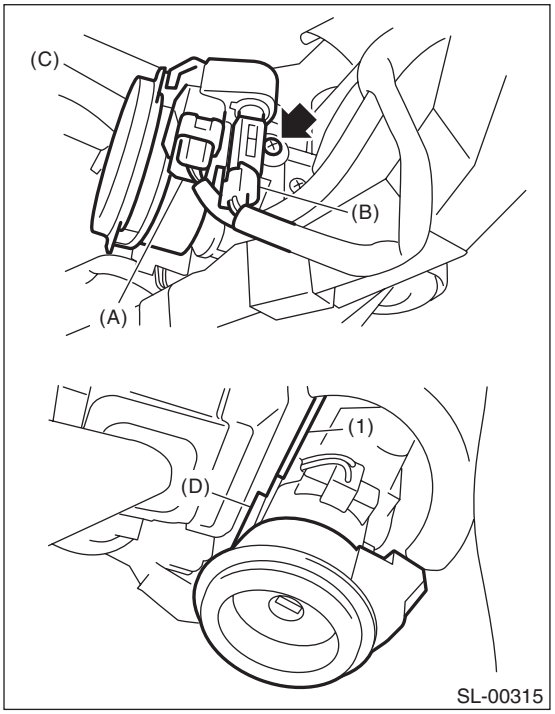


3) Remove the three mounting screws of steering column cover upper.



4) Remove the instrument panel lower cover. <Ref. to EI-46, REMOVAL, Instrument Panel Lower Cover.>
5) Disconnect the immobilizer antenna connector (A) and ignition switch lighting connector (B).
6) Loosen the screw and release the lock (D) at opposite side using flat tip screwdriver (1), and then detach the immobilizer antenna (C).

CAUTION:
Do not apply excessive force to remove the immobilizer antenna and lock. Otherwise they may be broken because those parts are the products made of a plastic.



B: INSTALLATION

Install in the reverse order of removal.

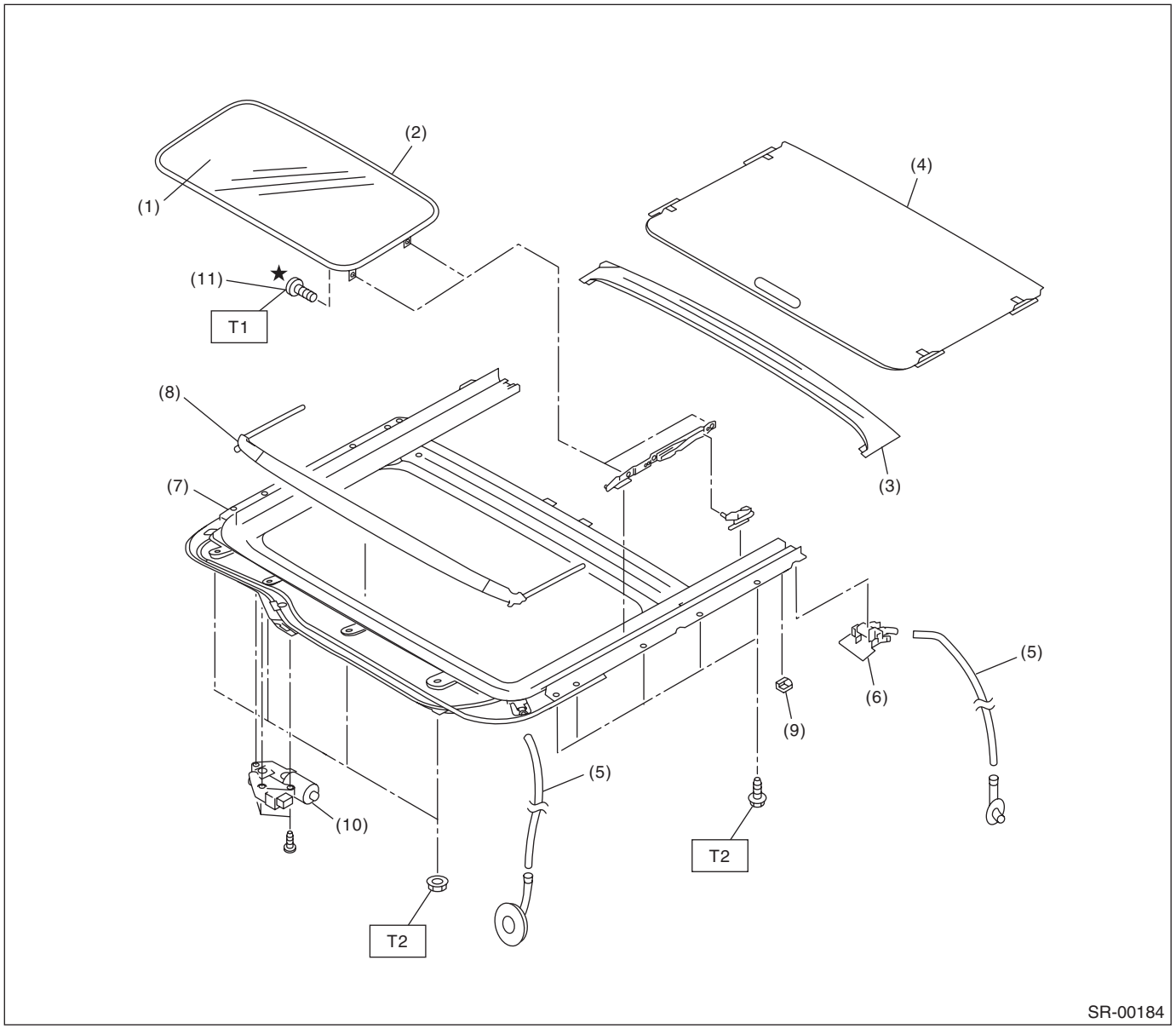
SUNROOF/T-TOP/CONVERTIBLE TOP (SUNROOF)

SR

		Page
1.	General Description	2
2.	Sunroof Control System	4
3.	Glass Lid	5
4.	Sunroof Assembly	6
5.	Sunroof Motor	7
6.	Sunroof Switch	8
7.	Sunshade	9

1. General Description

A: COMPONENT



(1) Glass lid
(2) Weather strip
(3) Drip rail
(4) Sunshade
(5) Drain tube
(6) Drain holder
(7) Frame ASSY
(8) Deflector
(9) Shade stopper
(10) Motor ASSY
(11) TORX® bolt

Tightening torque:N·m (kgf-m, ft-lb)
T1: 4.5 (0.46, 3.3)
T2: 6.0 (0.61, 4.3)

B: CAUTION

• Before disassembling or reassembling parts, always disconnect the battery ground cable from battery. When replacing the audio, 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 securely for 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.
TORX ® T25	Used for removing and installing the glass lid.
Hexagon wrench	Used for forcedly driving the sunroof motor.

2. Sunroof Control System

A: WIRING DIAGRAM

Refer to “Sunroof Control System” in WI section. <Ref. to WI-149, WIRING DIAGRAM, Sunroof Control System.>

B: INSPECTION

Symptom	Inspection order
Water leakage	1. Check roof panel and glass lid for improper or poor sealing. 2. Check drain tube for clogging. 3. Check sunroof frame seal and body for improper fit.
Booming noise, wind noise and other noise	1. Check glass lid and roof panel for improper clearance. 2. Check sunshade and roof trim for improper clearance.
Abnormal motor noise	1. Check installing part of motor 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 guide rail for foreign particles. 2. Check guide rail for improper installation. 3. Check parts for mutual interference. 4. Check cable slider for improper clinching. 5. Check cable for improper installation.
Motor does not rotate or rotate 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.
Failure turn of glass lid	Check guide rail for foreign particles.

- Failure turn of glass lid while driving rough road.

Glass lid has auto-reverse function. When specified or more force is applied to the glass lid, the lid turns back and stops. When operating the glass lid (open or close) while driving the rough road, the lid judges vibration as a force and may causes failure turns. When the failure turn is occurred, need to perform the initialize operation with following procedure.

1. INITIALIZE OPERATION

1) Tilt up the glass lid.
2) Release the switch once, and press the tilt up switch again for 15 seconds.
3) When the glass lid is raised a little and returned to tilt up position, release the switch for the moment. (Initialization of position detecting function)
4) Keep pressing the tilt up switch within 5 seconds from releasing the switch. The glass lid will tilt down → slides open → slides close automatically. (When more than 5 seconds pass, the position detecting function is cancelled.)
5) Initialize operation is completed.

C: NOTE

For procedure of each component in the sunroof control system, refer to the respective section.

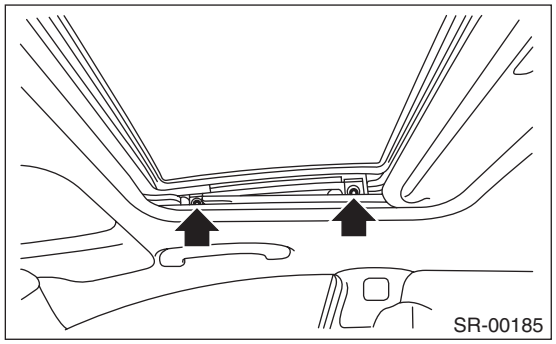
- Glass lid <Ref. to SR-5, Glass Lid.>
- Sunroof assembly <Ref. to SR-6, Sunroof Assembly.>
- Sunroof motor <Ref. to SR-7, Sunroof Motor.>
- Sunroof switch <Ref. to SR-8, Sunroof Switch.>
- Sunshade <Ref. to SR-9, Sunshade.>

3. Glass Lid

A: REMOVAL

1) Open the sunshade.
2) Remove the TORX® bolt, and then remove the glass lid carefully.

CAUTION:
The thread locker is applied to the TORX® bolts, so use the new parts once they are removed.



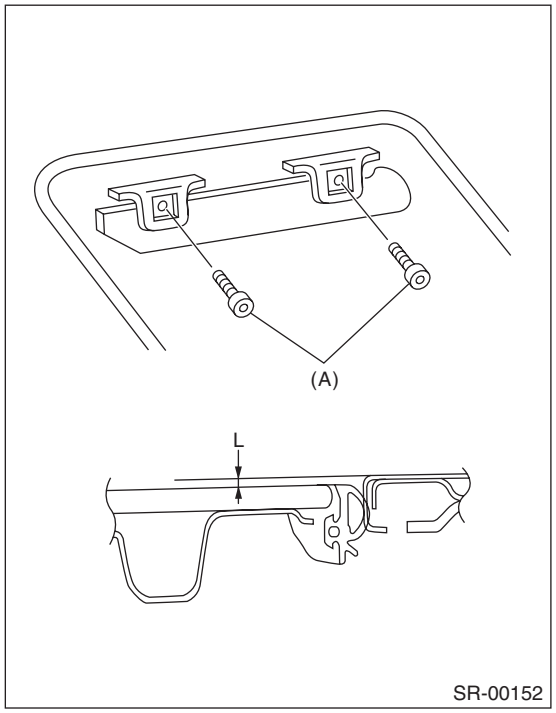
B: INSTALLATION

Install in the reverse order of removal.

C: ADJUSTMENT

1) Open the sunshade.
2) Loosen the glass lid mounting TORX® bolts (A), and then adjust the height with moving the lid side.

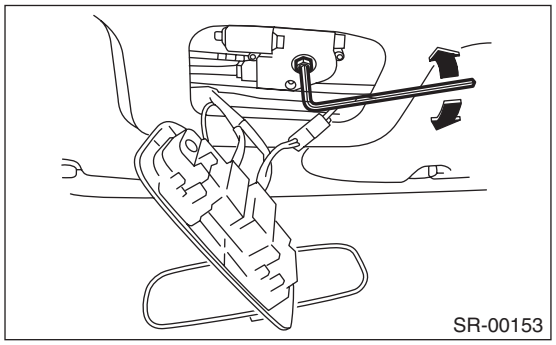
Difference in height between glass lid and roof panel L:
0.75 mm (0.03 in)



D: FORCED DRIVE

CAUTION:
After a forced operation, make sure to perform an initialize operation. <Ref. to SR-4, INSPECTION, Sunroof Control System.>

NOTE:
If the glass lid does not operate or is not supplied with power, move the glass lid using the hexagon wrench.
1) Remove the spot map light. <Ref. to LI-30, REMOVAL, Spot Map Light.>
2) Insert the hexagon wrench securely until it touches the motor shaft end.
3) Turn the hexagon wrench, and move the glass lid.
- Turning right, the glass lid open.
- Turning left, the glass lid close.

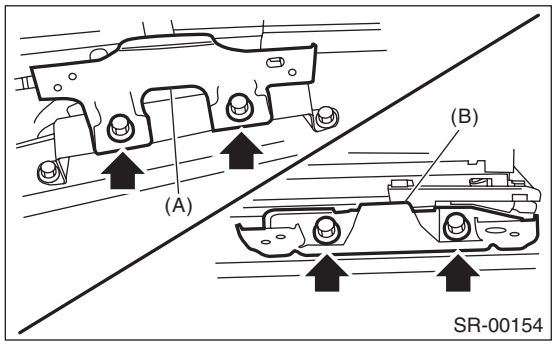


4. Sunroof Assembly

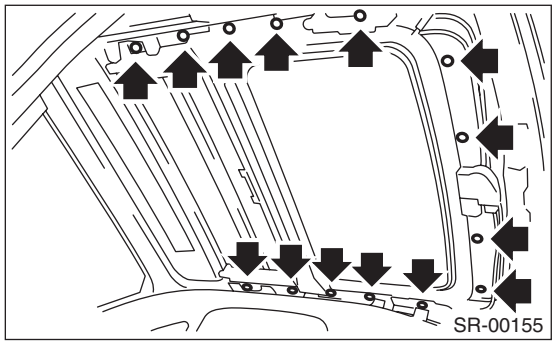
A: REMOVAL

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

1) Disconnect the ground cable from battery.
2) Remove the roof trim. <Ref. to EI-64, REMOVAL, Roof Trim.>
3) Disconnect the harness connector of sunroof motor.
4) Remove the glass lid. <Ref. to SR-5, REMOVAL, Glass Lid.>
5) Remove the four drain tubes from frame assembly.
6) Remove the assist rail bracket (front) (A) and assist rail bracket (rear) (B).



7) Remove the curtain airbag module. (model with curtain airbag module) <Ref. to AB-19, REMOVAL, Curtain Airbag Module.>
8) Remove the bolts and nuts and remove the frame assembly.

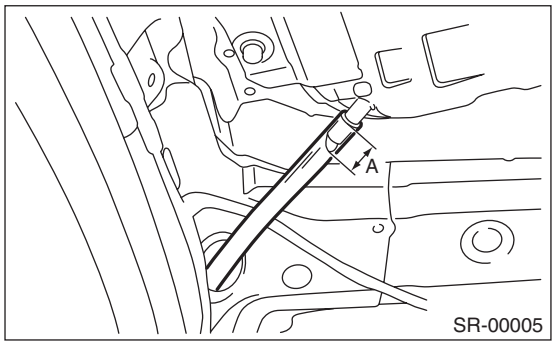


B: INSTALLATION

CAUTION:
Be careful not to snag the harness.
Install in the reverse order of removal.

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



C: DISASSEMBLY

1) Remove the sunroof motor. <Ref. to SR-7, REMOVAL, Sunroof Motor.>
2) Remove the sunshade. <Ref. to SR-9, REMOVAL, Sunshade.>

D: ASSEMBLY

Assemble in the reverse order of disassembly.

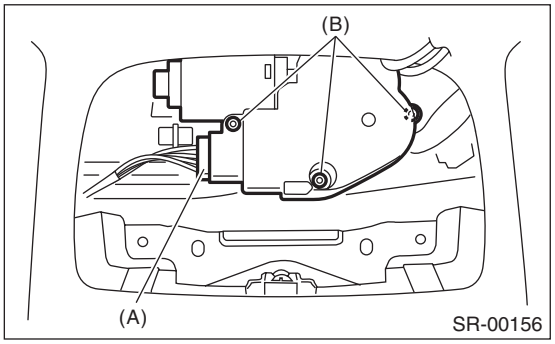
5. Sunroof Motor

A: REMOVAL

CAUTION:
Never rotate the motor assembly after removing it.

1) Completely close the glass lid.
2) Disconnect the ground cable from battery.
3) Remove the spot map light. <Ref. to LI-30, REMOVAL, Spot Map Light.>
4) Remove the motor assembly.

CAUTION:
When removing the motor assembly, secure the cable wires to prevent moves.



(1) Disconnect the harness connector (A).
(2) Remove the attachment screw (B).

B: INSTALLATION

CAUTION:
When installing the motor assembly, be careful not to move the sunroof cable.

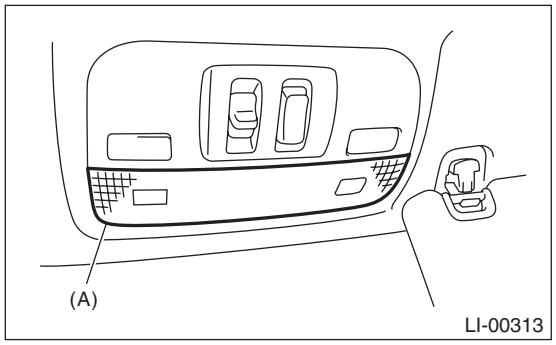
1) Install in the reverse order of removal.
2) Perform the initialize operation of motor.
   (1) Tilt up the glass lid.
   (2) Release the switch once, and press the tilt up switch again for 15 seconds.
   (3) When the glass lid is raised a little and on tilt up position, release the switch for the moment.
   (4) Keep pressing the tilt up switch within 5 seconds from releasing the switch, glass lid automatically performs the tilts down → slides open → slides close operation, then the initialize operation is completed.
3) Check the operation of sunroof with following table.

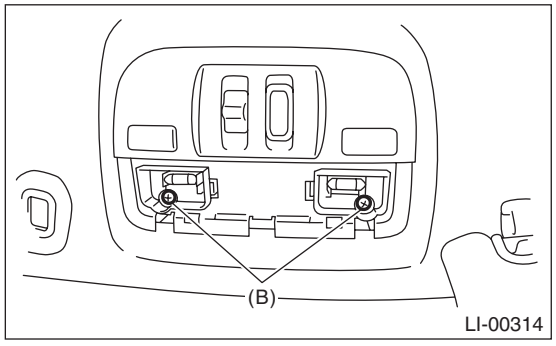
Operation	Switch position
(1) Glass lid closes completely.	Close
(2) Glass lid tilt up to the top position.	Tilt up
(3) Glass lid closes completely.	Tilt down
(4) Glass lid opens completely.	Open
(5) Glass lid closes completely.	Close

6. Sunroof Switch

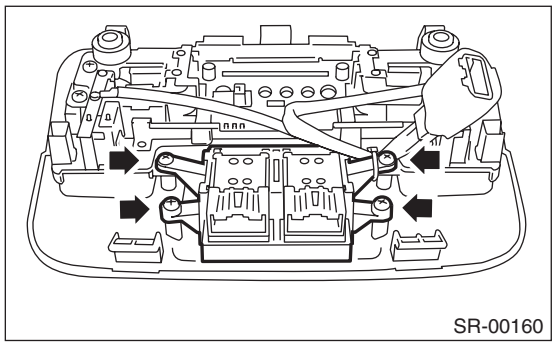
A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the spot map light lens (A) and sunroof switch mounting screws (B).

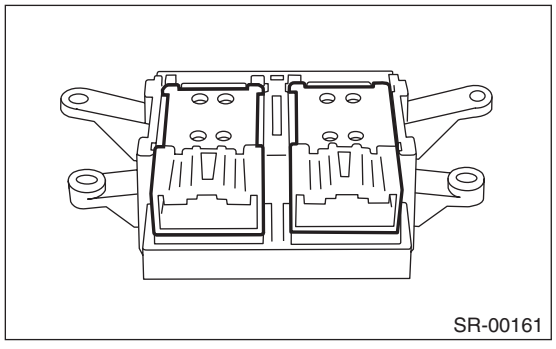




3) Disconnect the harness connector and remove the spot map light.
4) Remove the four screws and remove the sunroof switch bracket from the spot map light.



5) Remove the sunroof switch from the bracket.

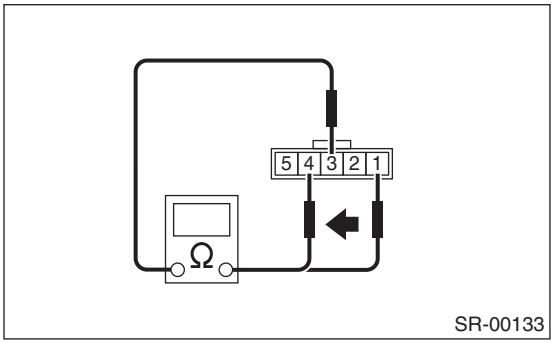


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the sunroof switch resistance.



Switch position	Terminal No.	Standard	Connector No.
Open	1 and 3	Less than 1 Ω	R128
Close	3 and 4	Less than 1 Ω	
Tilt up	1 and 3	Less than 1 Ω	R187
Tilt down	3 and 4	Less than 1 Ω	

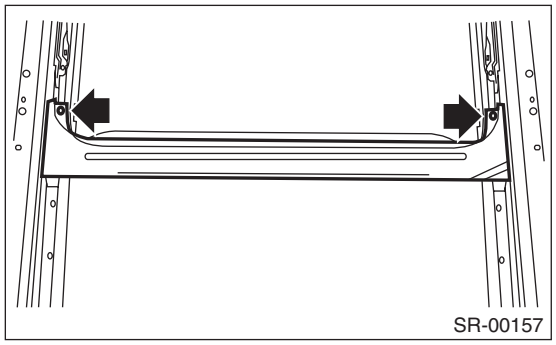
Replace the sunroof switch if defective.

NOTE:
If the glass lid does not operate or is not supplied with power, move the glass lid using the hexagon wrench. <Ref. to SR-5, FORCED DRIVE, Glass Lid.>

7. Sunshade

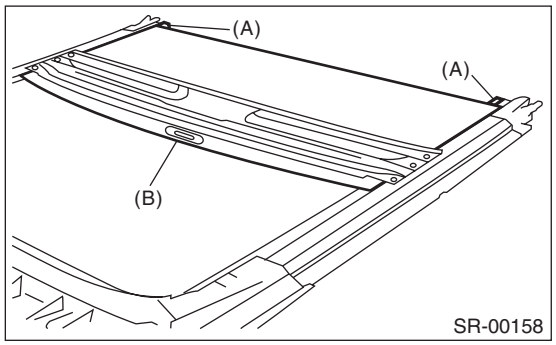
A: REMOVAL

1) Remove the sunroof assembly. <Ref. to SR-6, REMOVAL, Sunroof Assembly.>
2) Remove the two screws to remove the drip rail.



3) Remove the sunshade.

CAUTION:
Being careful not to damage the shade knob, pull out it while bending the sunshade.



(1) Remove the shade stopper (A).
(2) Pull out the sunshade (B) from the frame assembly.

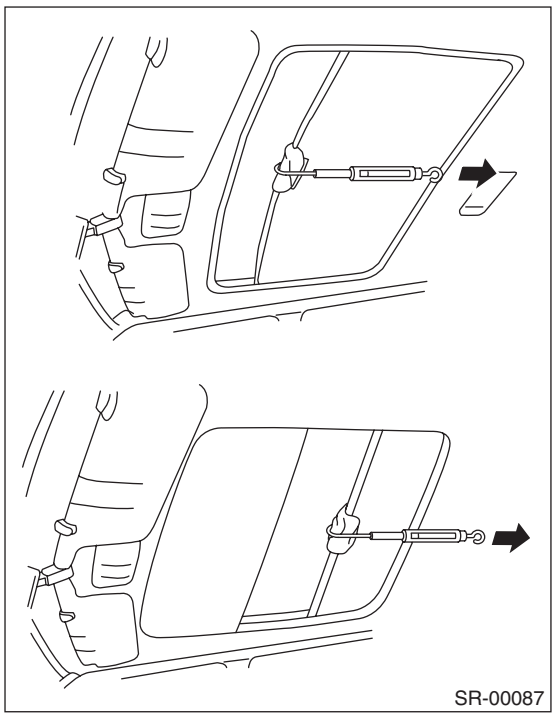
B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

1. CHECK FOR MOVING LOAD OF 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:
Specification
18.0±5.0 N (1.8±0.5 kgf, 13±3.7 lbf)

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 glass lid, sunshade and frame assembly for improper installation.

EXTERIOR/INTERIOR TRIM

EI

		Page
1.	General Description	2
2.	Front Grille	24
3.	Front Hood Grille	25
4.	Front Under Cover	26
5.	Fuel Tank Protector	27
6.	Mud Guard	28
7.	Front Bumper	29
8.	Rear Bumper	36
9.	Cowl Panel	38
10.	Roof Spoiler	39
11.	Rear Spoiler	40
12.	Side Sill Spoiler	41
13.	Roof Molding	42
14.	Door Trim	43
15.	Instrument Panel Lower Cover	46
16.	Glove Box	47
17.	Console Box	48
18.	Center Console	49
19.	Instrument Panel Assembly	52
20.	Lower Inner Trim	55
21.	Upper Inner Trim	57
22.	Rear Quarter Trim	58
23.	Rear Shelf Trim	60
24.	Trunk Room Trim	61
25.	Sun Visor	62
26.	Assist Grip	63
27.	Roof Trim	64
28.	Rear Gate Trim	67
29.	Floor Mat	69
30.	Rear Gate Garnish	70
31.	Trunk Lid Garnish	71
32.	Heat Shield Cover	72
33.	Ornament	73

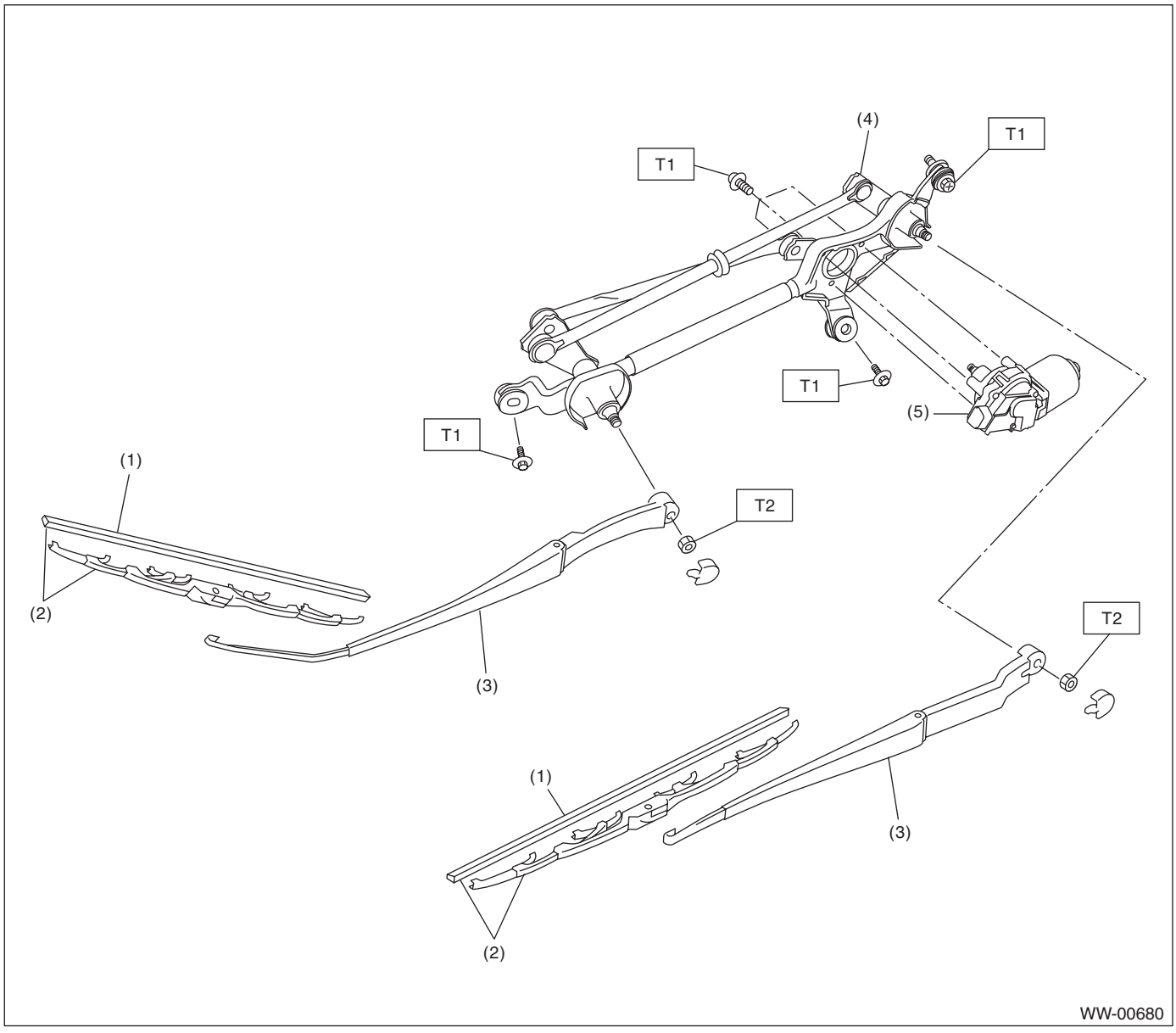
1. General Description

A: SPECIFICATION

Front wiper motor	Input	12 V — 72 W or less
Rear wiper motor	Input	12 V — 42 W or less
Front washer motor	Pump type	Centrifugal
	Input	12 V — 36 W or less
Rear washer motor	Pump type	Centrifugal
	Input	12 V — 36 W or less

B: COMPONENT

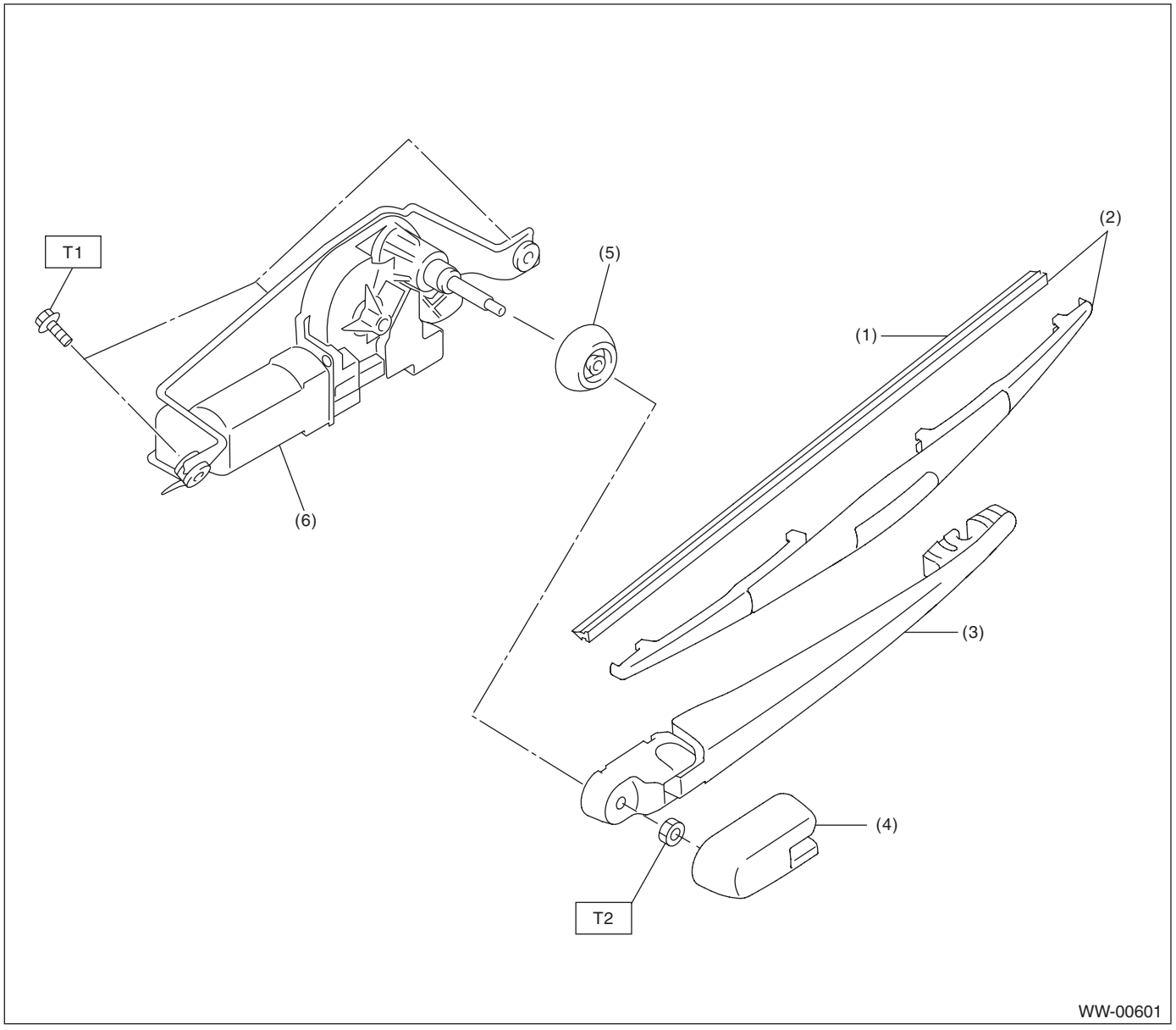
1. FRONT WIPER



(1) Wiper rubber
(2) Wiper blade ASSY
(3) Wiper arm
(4) Wiper link
(5) Wiper motor

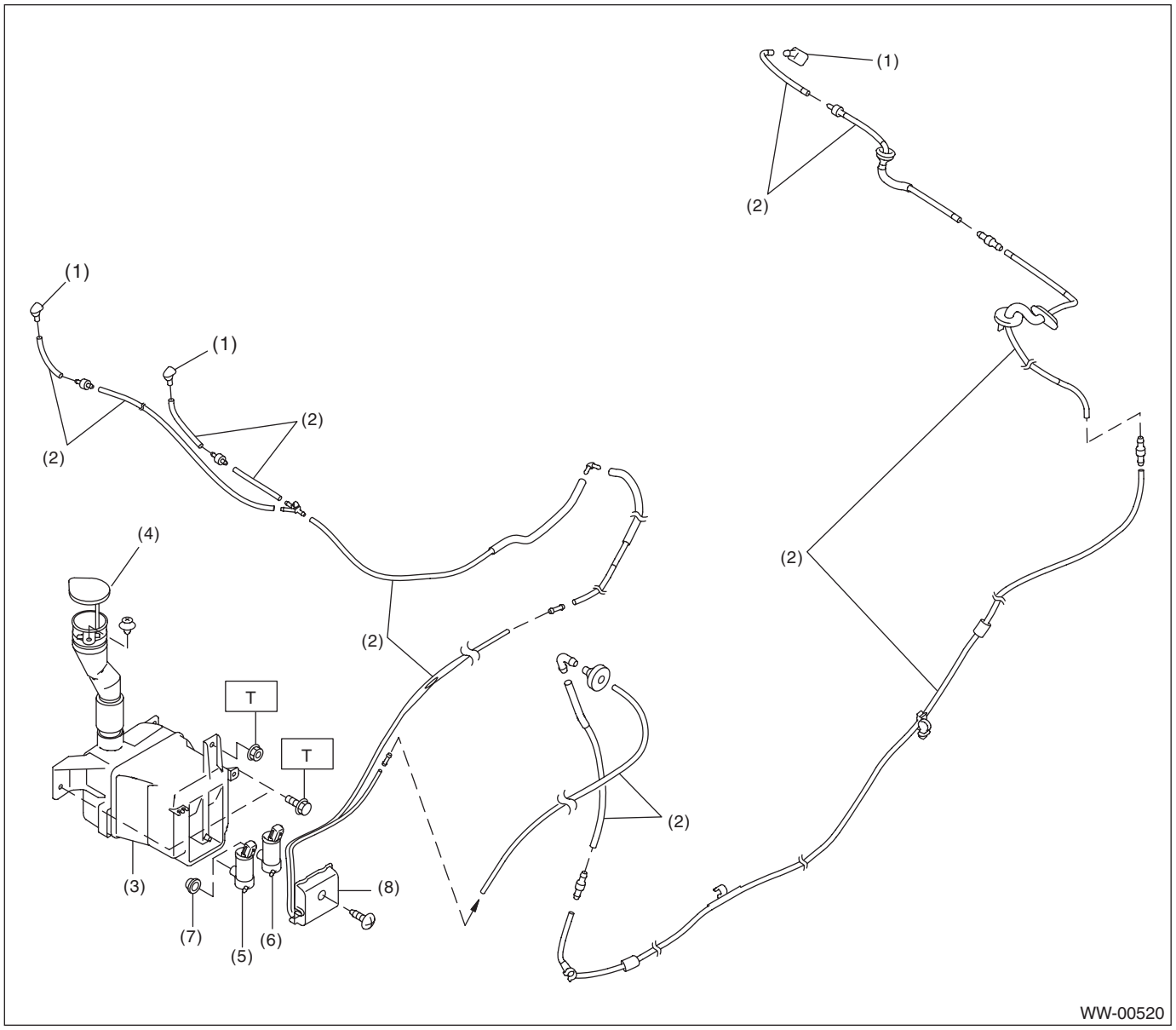
Tightening torque:N·m (kgf-m, ft-lb)
T1: 6.0 (0.61, 4.4)
T2: 22 (2.24, 16.2)

2. REAR WIPER



(1)	Wiper rubber	(4)	Wiper arm cover	***Tightening torque:N·m (kgf-m, ft-lb)***
(2)	Wiper blade ASSY	(5)	Pivot cap	***T1: 6.0 (0.61, 4.4)***
(3)	Wiper arm	(6)	Wiper motor	***T2: 8.0 (0.82, 5.9)***

3. WASHER TANK



(1) Washer nozzle
(2) Washer hose
(3) Washer tank
(4) Washer tank cap & level gauge
(5) Front washer motor
(6) Rear washer motor
(7) Grommet
(8) Washer motor cover

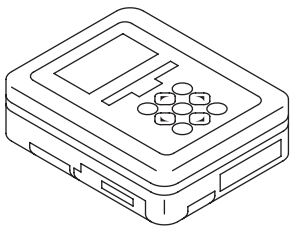
Tightening torque:N·m (kgf-m, ft-lb)
T: 6.0 (0.61, 4.4)

C: CAUTION

- Connect the connectors and hoses securely during reassembly.
- After reassembly, make sure functional parts operates smoothly.
- Be careful with the airbag system wiring harness which passes near electrical parts and switches.
- Airbag system wiring harnesses connectors are yellow. Do not use a tester equipment on these circuits.
- Care must be taken when connecting the hose to the pipe 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. Make sure that no oil comes into contact with the system.

D: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST1B022XU0	1B022XU0	SUBARU SELECT MONITOR III KIT	Used for setting of each function and trouble-shooting for electrical system.

2. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for checking voltage and continuity.

2. Wiper and Washer System

A: WIRING DIAGRAM

1. WIPER AND WASHER (FRONT)

<Ref. to WI-114, WIRING DIAGRAM, Front Wiper and Washer System.>

2. WIPER AND WASHER (REAR)

<Ref. to WI-115, 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 ON.	1. Wiper motor assembly 2. Wiring harness
Washer fluid spray does not operate properly.	1. Washer motor 2. Washer hose and nozzle

C: NOTE

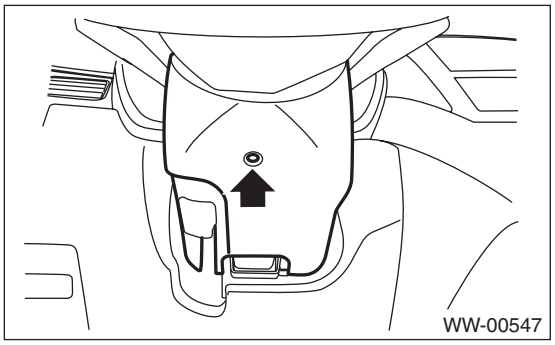
For procedure of each component of the wiper and washer system, refer to the respective sections.

- Combination switch (wiper) <Ref. to WW-7, Combination Switch (Wiper).>
- Wiper blade <Ref. to WW-11, Wiper Blade.>
- Front wiper arm <Ref. to WW-14, Front Wiper Arm.>
- Front wiper motor & link <Ref. to WW-15, Front Wiper Motor and Link.>
- Rear wiper arm <Ref. to WW-18, Rear Wiper Arm.>
- Rear wiper motor <Ref. to WW-19, Rear Wiper Motor.>
- Washer tank & motor <Ref. to WW-13, Washer Tank and Motor.>
- Front washer nozzle <Ref. to WW-17, Front Washer Nozzle.>
- Rear washer nozzle <Ref. to WW-20, Rear Washer.>

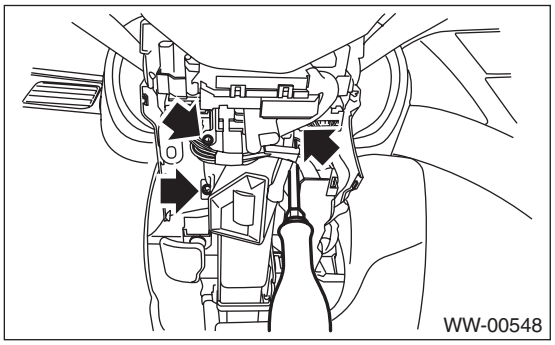
3. Combination Switch (Wiper)

A: REMOVAL

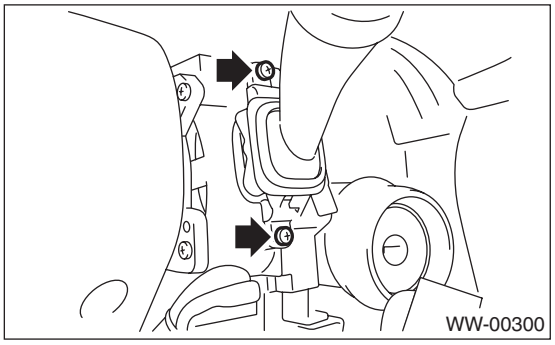
1) Disconnect the ground cable from battery.
2) Remove the screws and remove the steering column cover lower.



3) Remove the three mounting screws of steering column cover upper.



4) Disconnect the connector from wiper switch.
5) Remove the screws and then remove the wiper switch.

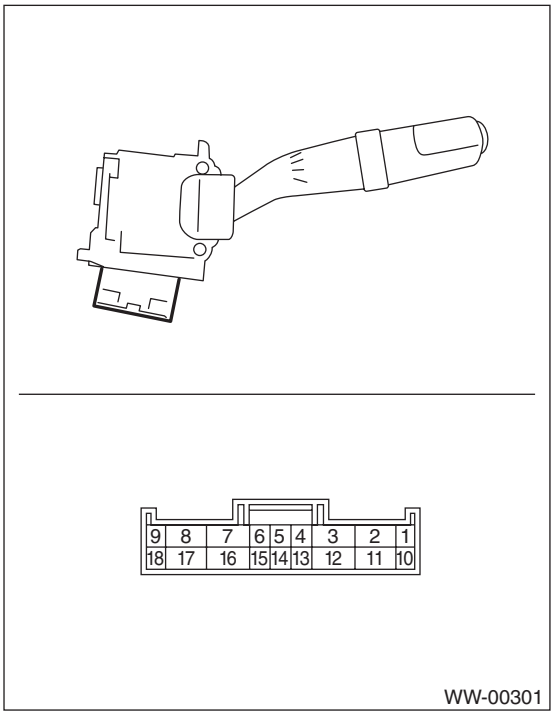


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

• Inspect the continuity between each connector terminal.



	Switch position	Terminal No.	Standard
Front	OFF	7 and 16	Less than 1 Ω
	INT	7 and 16	Less than 1 Ω
	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	2 and 10 10 and 12 2 and 12	1 MΩ or more
	INT	2 and 13	Less than 1 Ω
	ON	2 and 10	Less than 1 Ω
	Washer ON	2 and 12	Less than 1 Ω

If continuity is not at the standard value, replace the switch.

1. FRONT WIPER

1) Check with Subaru Select Monitor
When the front wiper switch is operated, check the input signal using the Subaru Select Monitor.
(1) Prepare the Subaru Select Monitor kit.
(2) Turn the ignition switch to ON.
(3) On «System Selection Menu» display, select {Integ. unit mode}.
(4) Display the {Current Data Display & Save}, and select {Fr wiper input}.
(5) Check the input signal when the front wiper switch is set to LO or HI.
Does the input signal change between ON←→OFF correctly?

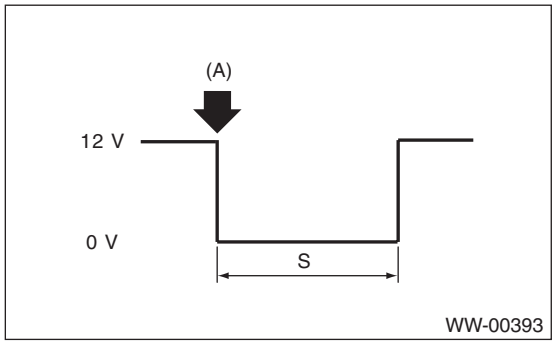
- Yes → Finish the diagnosis.
- No →
  1. Check the harness.
  2. Check the wiper motor.
  3. Check ACC input voltage of body integrated unit.

Connector & terminal
(B281) No. 5 (+) — Chassis ground (–):

4. Replace the body integrated unit. <Ref. to SL-49, Body Integrated Unit.>

2) Check the intermittent operation (inspection of the wiper switch alone)
(1) Set the voltage meter between terminal No. 7 (+) and No. 2 (–).
(2) Connect the battery to connector. (Terminal No. 17 (+), terminal No. 2 & 16 (–))
(3) Turn the front wiper switch to INT.
(4) Connect the battery (+) to the terminal No. 16 for 5 seconds.
(5) Connect the battery (–) to the terminal No. 16, and check the voltage between terminal No. 7 — No. 2 when performing the intermittent operation.
(6) Perform step (1) to (5) above when intermittent control switch is in MIN or MAX, and replace the switch if the operation is not as specified.

Intermittent stationary time
MIN: Approx. 4 seconds
MAX: Approx. 19 seconds



(A): Connect the battery (–) to the terminal No. 16.
S: Intermittent downtime (sec.)

2. REAR WIPER

1) Check with Subaru Select Monitor

	Step	Check	Yes	No
1	**CHECK INPUT OF REAR WIPER SWITCH.** Check the input from body integrated unit using the Subaru Select Monitor. 1) Prepare the Subaru Select Monitor kit. 2) Turn the ignition switch to ON. 3) On «System Selection Menu» display, select {Integ. unit mode}. 4) Select the {Current Data Display & Save}. 5) Check the input of the rear wiper switch.	Is the input normal?	Go to step **4**.	Go to step **2**.
2	**CHECK HARNESS.** 1) Turn the ignition switch to OFF, disconnect the ground cable from battery. 2) Disconnect the connector of body integrated unit. 3) Disconnect the connector from wiper switch. 4) Measure the resistance between body integrated unit and wiper switch, and between wiper switch and chassis ground. ***Connector & terminal*** ***(B281) No. 18 — (B70) No. 10:*** ***(B281) No. 27 — (B70) No. 13:*** ***(B281) No. 28 — (B70) No. 12:*** ***(B70) No. 8 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **3**.	Repair the harness between the body integrated unit and wiper switch, and between wiper switch and chassis ground.
3	**CHECK INPUT VOLTAGE OF BODY INTEGRATED UNIT.** 1) Connect the ground cable to battery. 2) Turn the ignition switch to ACC. 3) Check the input voltage of body integrated unit. ***Connector & terminal*** ***(B280) No. 7 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **4**.	Check the harness and fuse.
4	**CHECK OUTPUT OF BODY INTEGRATED UNIT.** When the rear wiper switch is operated, check the output using the Subaru Select Monitor. 1) Turn the ignition switch to ON. 2) Operate the rear wiper switch and set to each position of ON and INT. 3) At this time, check the body integrated unit output.	When set to ON, is ON output continuous? When set to INT, is ON/OFF output repeated? (INT OFF time (when vehicle parked): 12 seconds)	Check the rear wiper motor circuit.	Replace the body integrated unit. <Ref. to SL-49, Body Integrated Unit.>

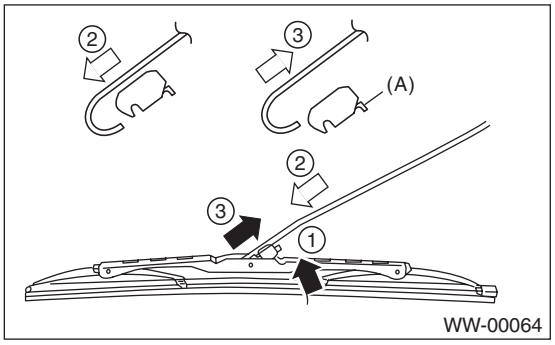
2) Check rear wiper motor circuit

	Step	Check	Yes	No
1	**CHECK POWER SUPPLY CIRCUIT OF THE REAR WIPER MOTOR.** 1) Disconnect the harness connector of the rear wiper motor. 2) Turn the ignition switch to ACC. 3) Measure the voltage between the rear wiper motor harness connector terminal and chassis ground. ***Connector & terminal*** ***(D43) No. 3 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **2**.	• Check the fuse (No. 23 in fuse & relay box). • Check the fusible link (No. 7 in main fuse box).
2	**CHECK GROUND CIRCUIT OF REAR WIPER MOTOR.** 1) Turn the ignition switch to OFF. 2) Measure the resistance between the rear wiper motor harness connector terminal and chassis ground. ***Connector & terminal*** ***(D43) No. 4 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **3**.	Repair the open circuit of the rear wiper motor ground circuit.
3	**CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND REAR WIPER MOTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector of body integrated unit. 3) Disconnect the harness connector of the rear wiper motor. 4) Measure the resistance between the harness connector terminals of the body integrated unit and rear wiper motor. ***Connector & terminal*** ***(B279) No. 8 — (D43) No. 1:*** ***(B279) No. 9 — (D43) No. 2:***	Is the resistance less than 10 Ω?	Go to step **4**.	Repair the open circuit of the harness between body integrated unit and rear wiper motor.
4	**CHECK INPUT VOLTAGE OF BODY INTEGRATED UNIT.** 1) Turn the ignition switch to ACC. 2) Check the input voltage of body integrated unit. ***Connector & terminal*** ***(B279) No. 21 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **5**.	Check the harness and fuse.
5	**CHECK OUTPUT OF BODY INTEGRATED UNIT.** 1) Connect the harness connector of body integrated unit. 2) Disconnect the connector of the rear wiper motor. 3) Turn the ignition switch to ACC. 4) Measure the voltage between rear wiper motor connector and chassis ground. ***Connector & terminal*** ***(D43) No. 2 (+) — Chassis ground (–):***	Is the voltage less than 1.5 V when rear wiper switch is OFF, and is the voltage 10 V or more when rear wiper switch is ON?	Go to step **6**.	Replace the body integrated unit. <Ref. to SL-49, Body Integrated Unit.>
6	**CHECK OPERATION OF REAR WIPER MOTOR.** 1) Remove the rear wiper motor. 2) Check the rear wiper motor. <Ref. to WW-19, INSPECTION, Rear Wiper Motor.>	Does the rear wiper motor rotate normally?	End.	Replace the rear wiper motor.

4. Wiper Blade

A: REMOVAL

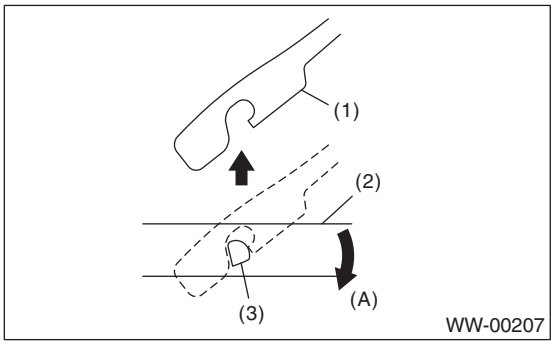
1. FRONT



1) While pushing the locking clip (A), push in the arm to the blade assembly side. (arrow mark 2)
2) Float and pull out the arm (arrow mark 3), and remove the blade assembly from the 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

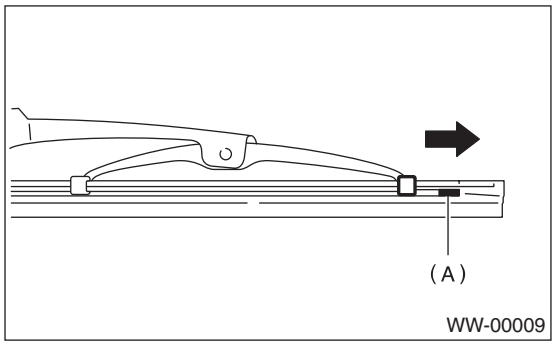
B: INSTALLATION

1) Install in the reverse order of removal.
2) Confirm that the clip is locked securely.

C: DISASSEMBLY

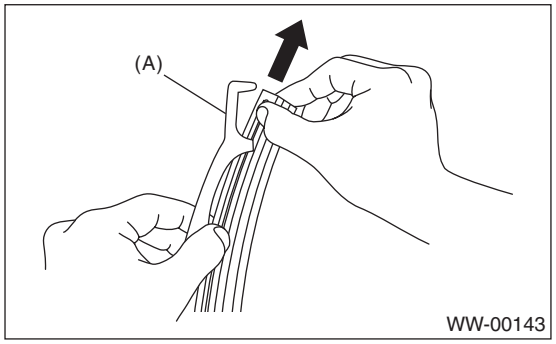
1. FRONT

Pull side (A) of the wiper rubber stopper and remove the rubber from the blade assembly.



2. REAR

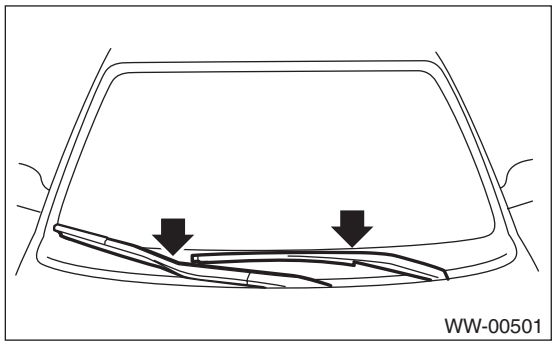
Pull the wiper rubber top slightly from stopper (A) and pull out completely.



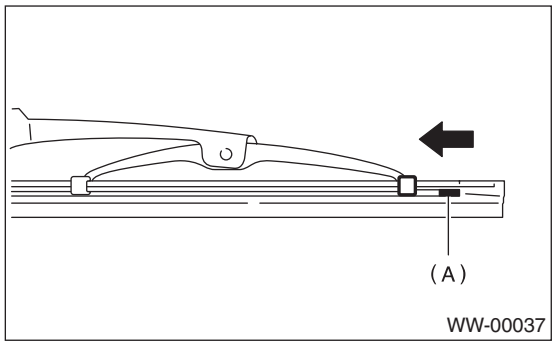
D: ASSEMBLY

1. FRONT

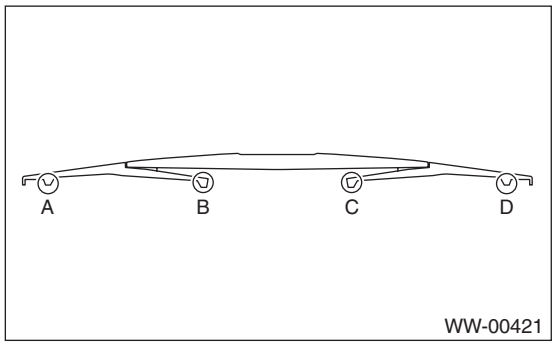
1) Insert the wiper rubber onto the blade so that the stopper is in the position shown in the figure.



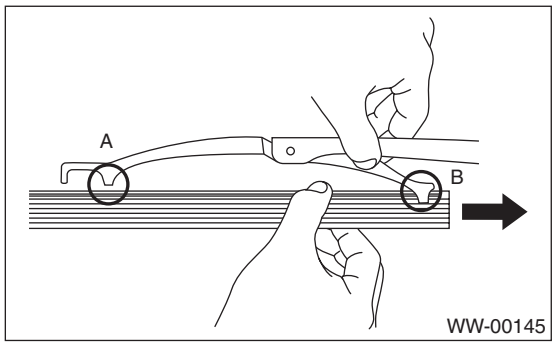
2) Make sure the wiper rubber is securely fastened to the pull stopper (A).



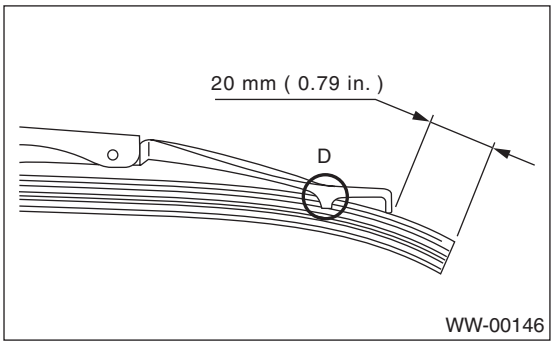
2. REAR



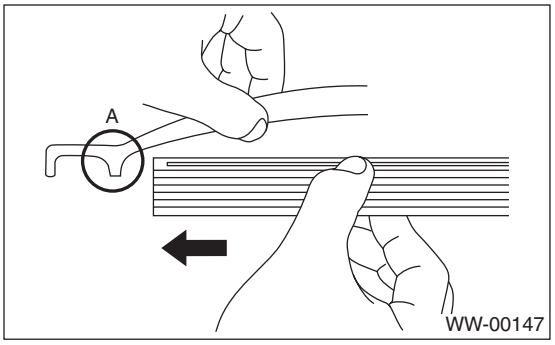
1) Insert the wiper rubber into claw (B).



2) Insert the wiper rubber until its top end protrudes approx. 20 mm (0.79 in) from stopper (D).



3) Insert the wiper rubber into claw (A).



E: INSPECTION

1) When the wiper does not operate properly, inspect the following item.

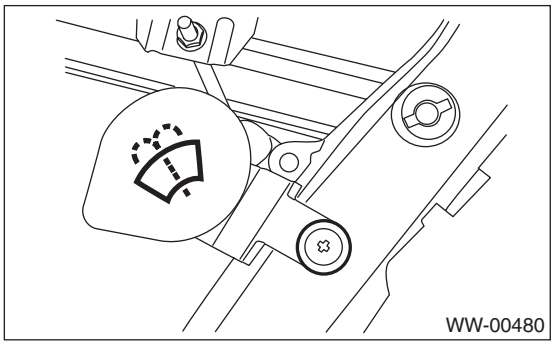
- Make sure the movable part of blade assembly moves smoothly.
- Make sure the wiper rubber is not deformed or damaged.

2) Replace with a new part if damage is found.

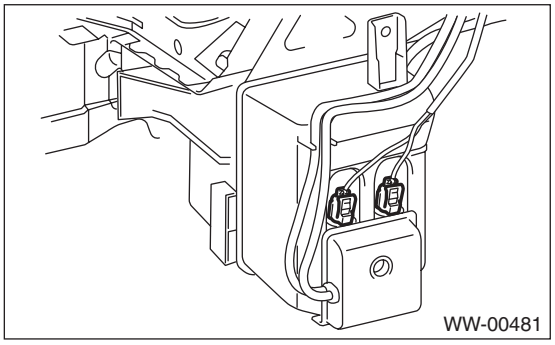
5. Washer Tank and Motor

A: REMOVAL

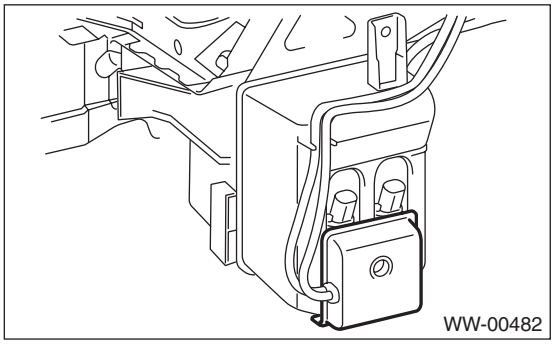
1) Open the front hood.
2) Disconnect the ground cable from battery.
3) Remove the front bumper face. <Ref. to EI-29, REMOVAL, Front Bumper.>
4) Remove the duct clip.



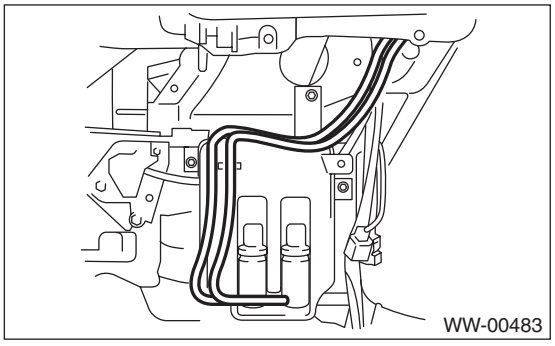
5) Disconnect the connector.



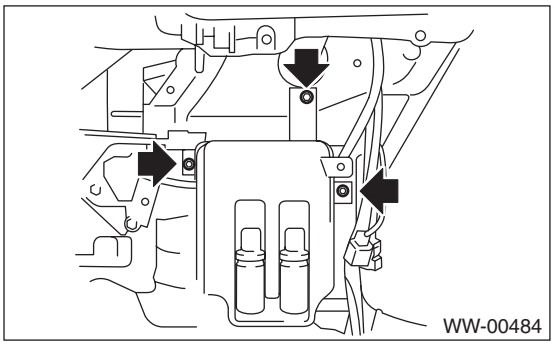
6) Remove the screws and detach the cover.



7) Disconnect the hoses.



8) Remove the bolts and nuts and remove the washer tank.



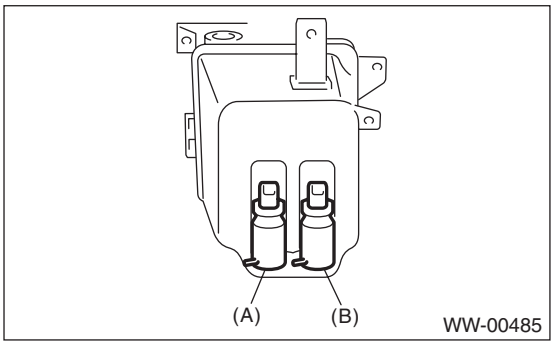
B: INSTALLATION

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 the tank.



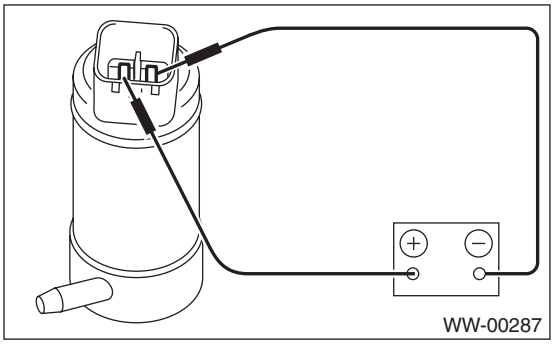
(A) Front
(B) Rear

D: ASSEMBLY

1) Assemble in the reverse order of disassembly.
2) Confirm that water does not leak from installation area of motor.

E: INSPECTION

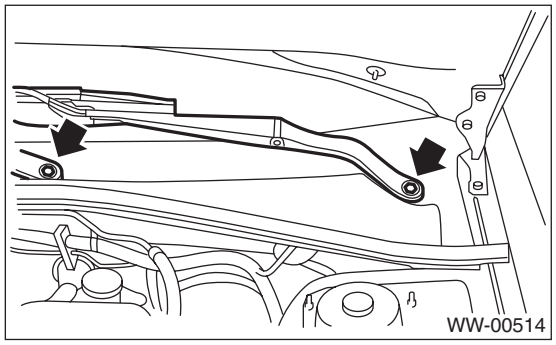
Apply battery voltage to the connector terminal of the washer motor and make sure the motor operates.



6. Front Wiper Arm

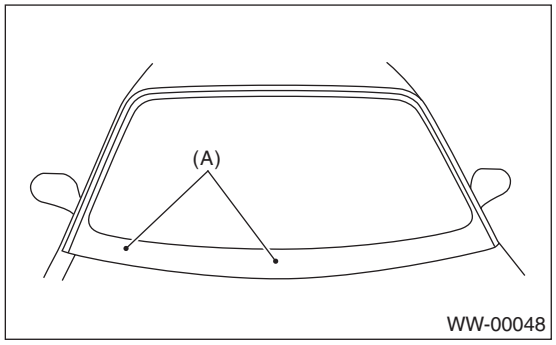
A: REMOVAL

1) Open the front hood.
2) Remove the cap.
3) Remove the nut and remove the arm.



B: INSTALLATION

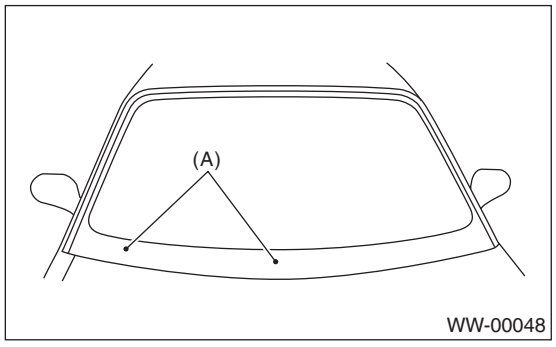
1) Install in the reverse order of removal.
2) Operate the wiper once.
3) Align the wiper blade to ceramic print point mark (A) of front window panel.



Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to WW-2, FRONT WIPER, COMPONENT, General Description.>

C: ADJUSTMENT

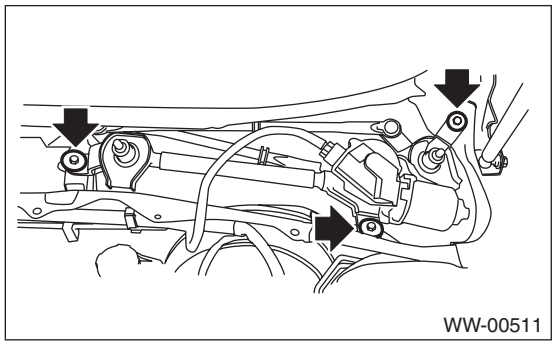
Operate the wiper once. Align the wiper blade to ceramic print point mark (A) of front window panel.



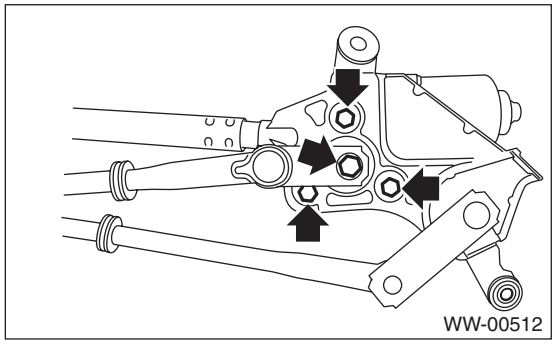
7. Front Wiper Motor and Link

A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the cowl panel. <Ref. to EI-38, REMOVAL, Cowl Panel.>
3) Disconnect the connector of motor.
4) Remove the bolt, and then remove the wiper link.

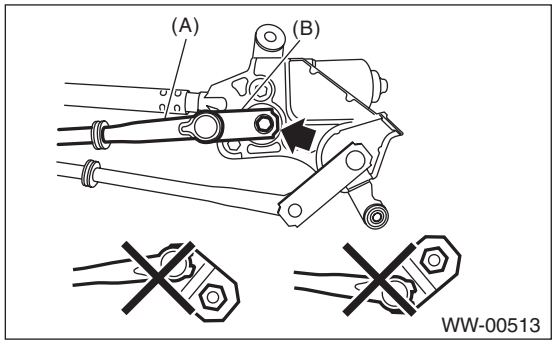

WW-00511

5) Remove the bolts and nuts and remove the motor.


WW-00512

B: INSTALLATION

1) Connect the ground cable to battery.
2) To confirm that the motor is at the auto stop position, connect the harness to the motor and turn the wiper switch to ON/OFF once.
3) Disconnect the ground cable from battery.
4) Tighten the nut where rod (A) and link plate (B) is aligned in a straight line.



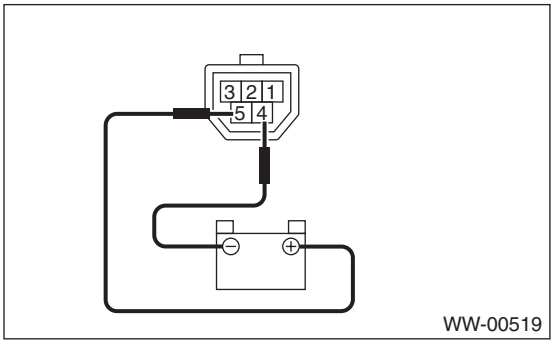
WW-00513

5) Install in the reverse order of removal.

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to WW-2, FRONT WIPER, COMPONENT, General Description.>

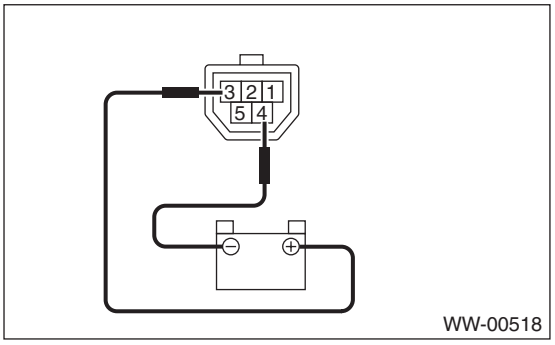
C: INSPECTION

1) When the battery is connected to the terminal of connectors as shown in the figure, confirm that the motor operates at low speed.



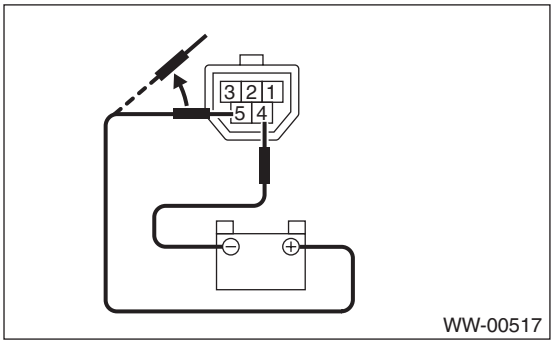
WW-00519

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.



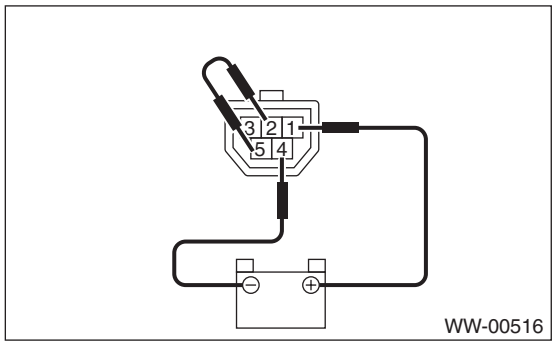
WW-00518

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.



WW-00517

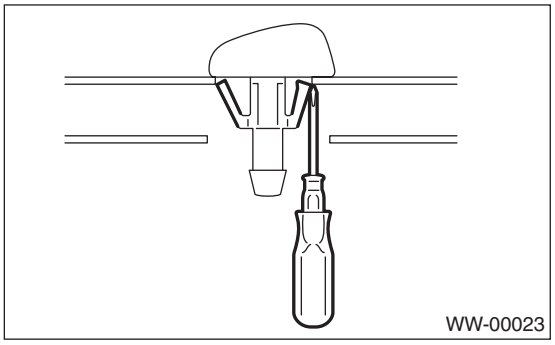
4) Connect the battery and confirm that the motor stops at the automatic stop position after the motor operates at low speed again.



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

1. VISUAL CHECK

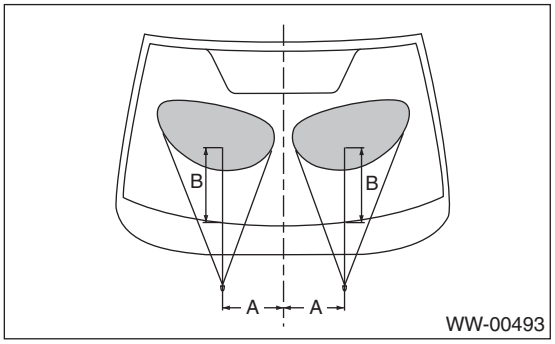
Check the following items, if a failure is found replace the parts.

- Make sure the nozzle and hose are not clogged.
- Make sure the hose is not bent.

2. SPRAY POSITION CHECK

1) Turn the wiper switch to OFF position.
2) While the vehicle is at a standstill, make sure that the washer injection position is as shown in the figure.
3) After check, if the spray position is largely different from the position, replace with a new washer nozzle.

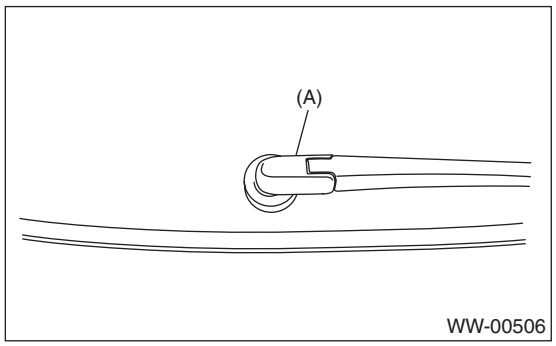
Spray position:
A: 250 mm (9.84 in)
B: 315 mm (12.4 in)



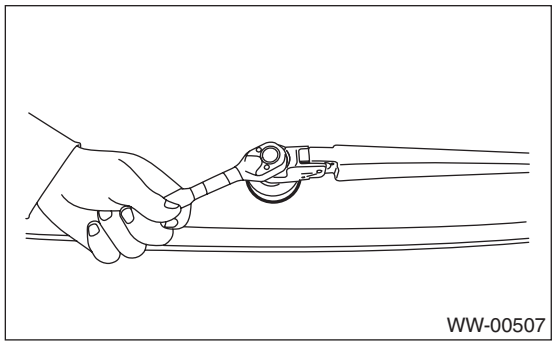
9. Rear Wiper Arm

A: REMOVAL

1) Detach the wiper arm cover (A).

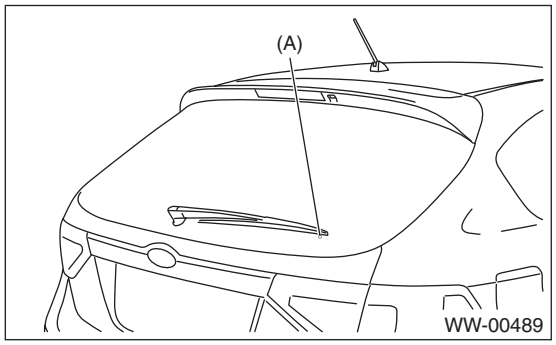


2) Remove the nut and remove the wiper arm.



B: INSTALLATION

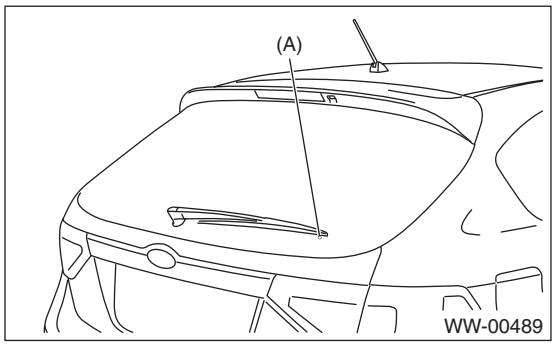
1) Install in the reverse order of removal.
2) Operate the rear wiper once.
3) Align the blade with the marking (A) of the glass.



Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to WW-3, REAR WIPER, COMPONENT, General Description.>

C: ADJUSTMENT

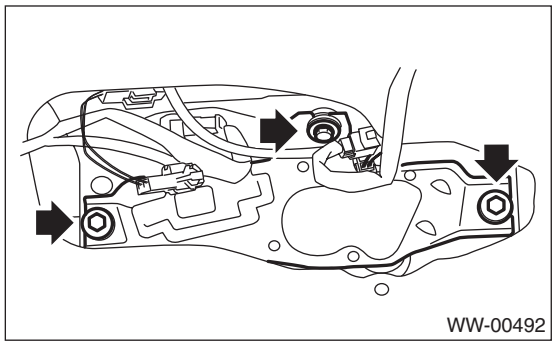
1) Operate the rear wiper once.
2) Align the blade with the marking (A) of the glass.



10.Rear Wiper Motor

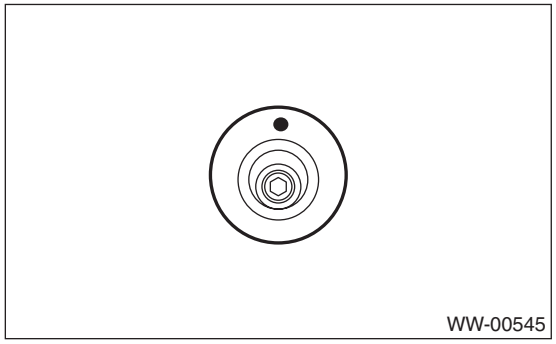
A: REMOVAL

1) Disconnect the ground cable from the battery.
2) Remove the rear wiper arm. <Ref. to WW-18, REMOVAL, Rear Wiper Arm.>
3) Remove the rear gate lower trim. <Ref. to EI-67, REMOVAL, Rear Gate Trim.>
4) Disconnect the harness connector of wiper motor assembly.
5) Remove the bolt, and then remove the wiper motor assembly.


WW-00492

B: INSTALLATION

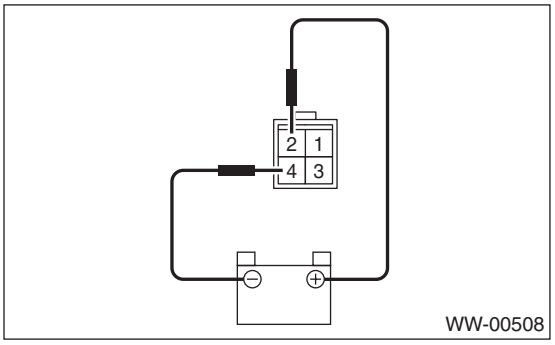
1) Install in the reverse order of removal.
2) Make sure that the pivot cap with the round mark facing up, as shown in the figure.


WW-00545

Tightening torque:
Refer to "COMPONENT" of "General Description". <Ref. to WW-3, REAR WIPER, COMPONENT, General Description.>

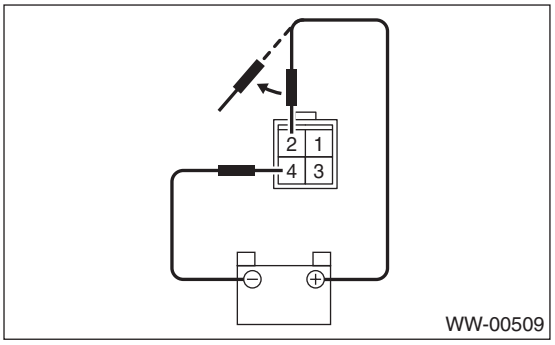
C: INSPECTION

1) Connect the battery to the wiper motor connector and confirm that wiper motor operates.



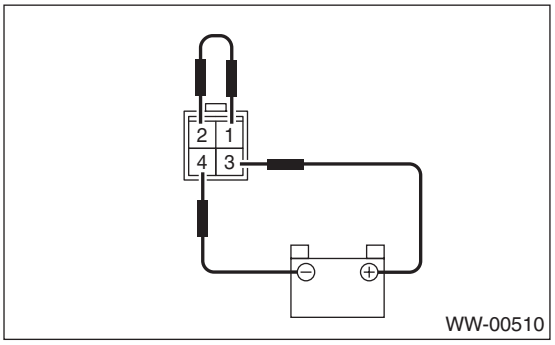
WW-00508

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.



WW-00509

3) Connect the battery and confirm that the motor stops at the automatic stop position after the motor operates at low speed again.

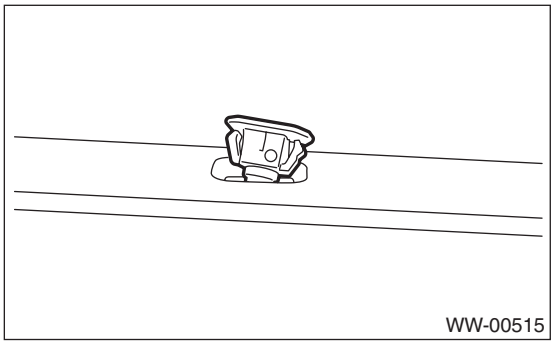


WW-00510

11.Rear Washer

A: REMOVAL

1) Remove the high-mounted stop light. <Ref. to LI-29, REMOVAL, High-mounted Stop Light.>
2) Remove the washer hose from the washer nozzle.
3) Push the claw of the nozzle from the reverse side of roof spoiler with a flat tip screwdriver or equivalent, and remove the washer nozzle.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

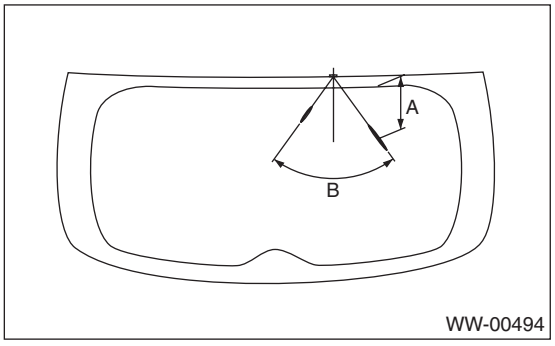
1. VISUAL CHECK

Check the following items, if a failure is found replace the parts.
- Make sure the nozzle and hose are not clogged.
- Make sure the hose is not bent.

2. SPRAY POSITION CHECK

1) Turn the wiper switch to OFF position.
2) While the vehicle is at a standstill, make sure that the washer injection position is as shown in the figure.
3) After check, if the spray position is largely different from the position, replace with a new washer nozzle.

Spray position:
A: 140 mm (5.5 in)
B: 70°



ENTERTAINMENT

ET

		Page
1.	General Description	2
2.	Audio System	3
3.	Navigation System	4
4.	Audio	6
5.	Front Speaker	7
6.	Tweeter	8
7.	Rear Speaker	9
8.	Antenna	10
9.	Steering Satellite Switch	11
10.	Navigation Body	12
11.	GPS Antenna	13
12.	Front Accessory Power Supply Socket	14
13.	Rear Accessory Power Supply Socket	15
14.	AUX Input Terminal	16