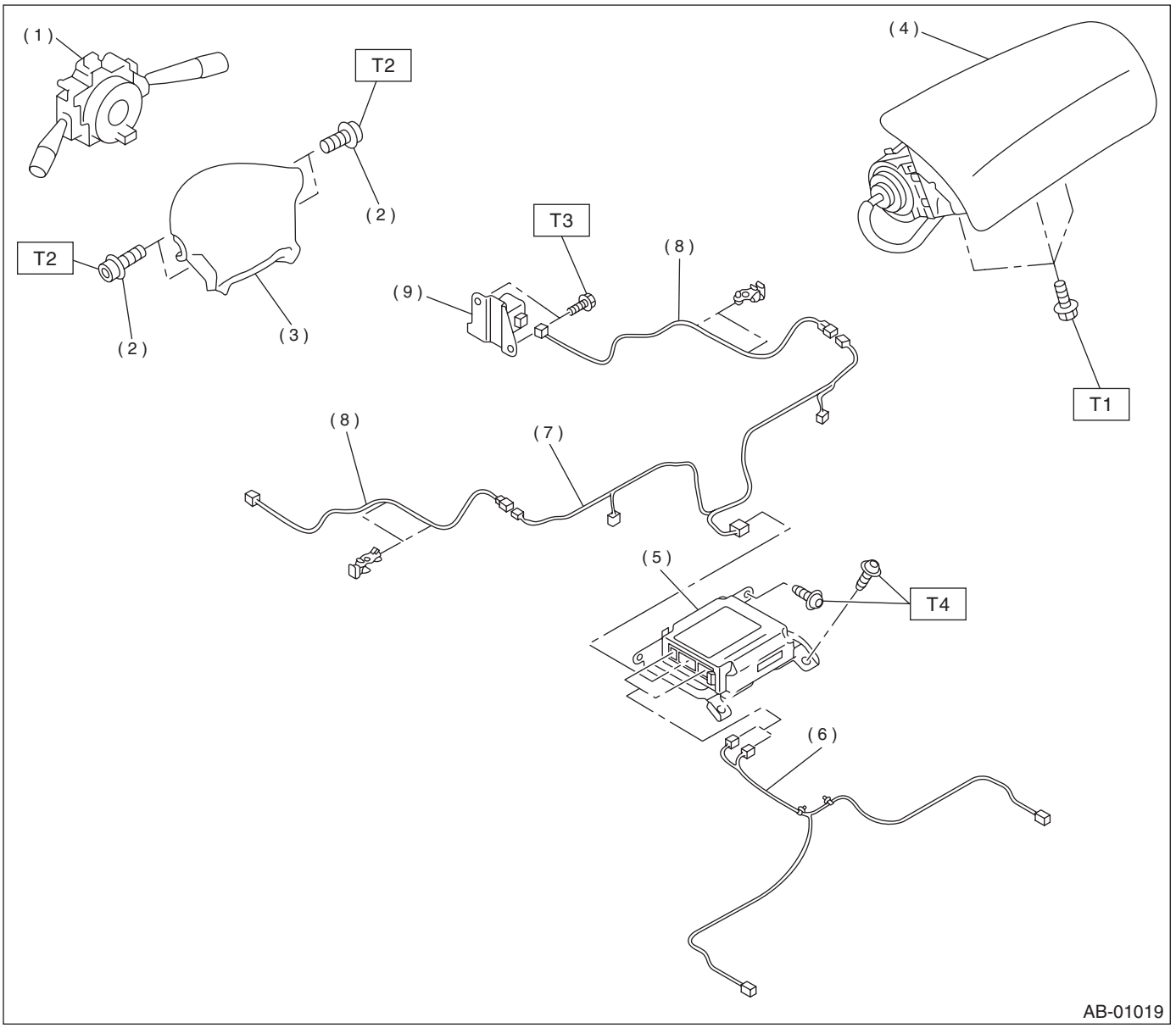
1. General Description

A: COMPONENT

1. SRS AIRBAG

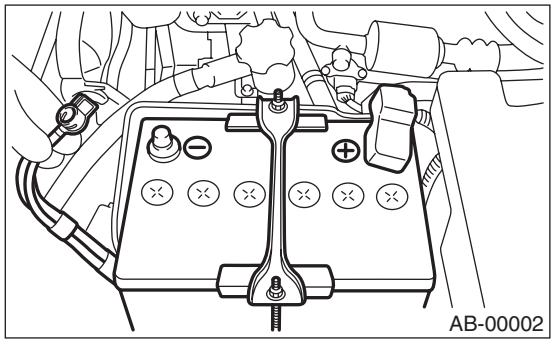


(1) Combination switch ASSY with roll connector
(2) TORX® bolt T30
(3) Airbag module ASSY (Driver)
(4) Airbag module ASSY (Passenger)
(5) Airbag control module
(6) Pretensioner harness
(7) Airbag main harness
(8) Front sub sensor harness
(9) Front sub sensor

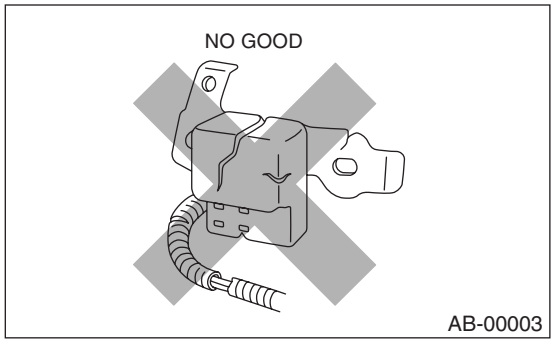
Tightening torque: N·m (kgf-m, ft-lb)
T1: 7.4 (0.75, 5.4)
T2: 10 (1.0, 7.2)
T3: 20 (2.0, 14.5)
T4: 25 (2.5, 18.1)

B: CAUTION

• When servicing a vehicle, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait for more than 20 seconds before starting work.
• The airbag system is fitted with a backup power source. If the airbag system is serviced within 20 seconds after the ground cable is disconnected, it may inflate.

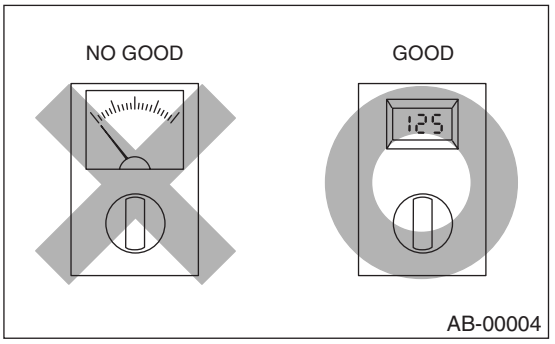


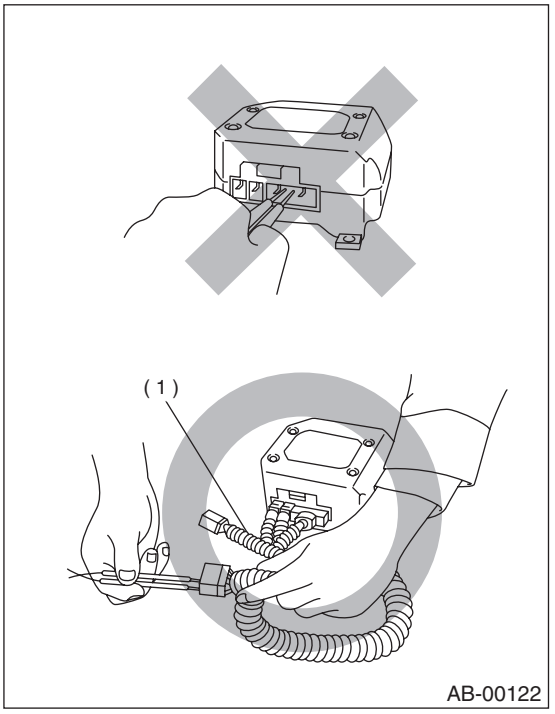
• If sensors, airbag module, airbag control module, pretensioner, and harness are deformed or damaged, replace them with new genuine parts.



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

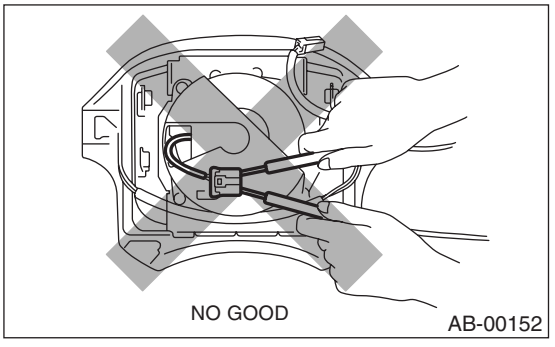
• When checking, use a test harness. Do not directly apply the tester probe to any connector terminal of the airbag.



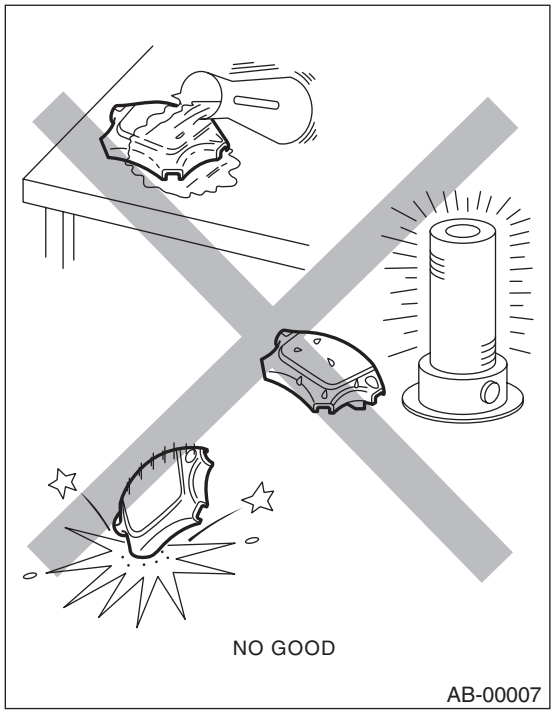


(1) Test harness

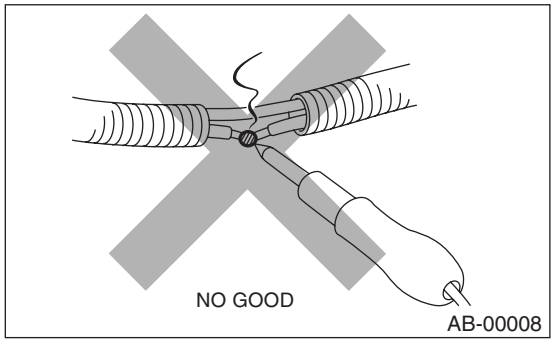
• Do not check continuity of the airbag modules for driver, passenger or pretensioner.



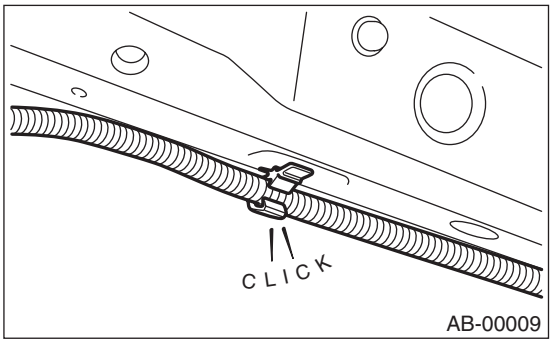
• Do not drop the airbag modulator parts, subject them to high temperature over 93°C (199°F), or let water, oil, or grease get on them; otherwise, the internal parts may be damaged and reliability greatly lowered.



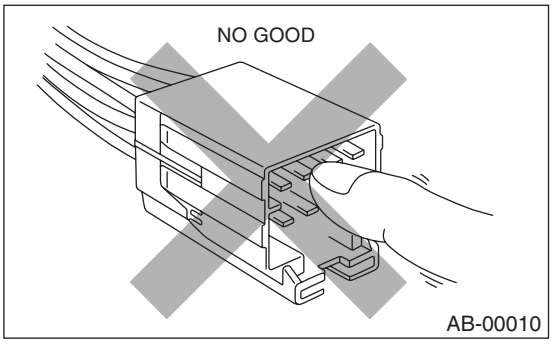
• If any damage, opening, or rust is found on the airbag system wire harness, do not attempt to repair using soldering equipment. Be sure to replace the faulty harness with a new genuine part.



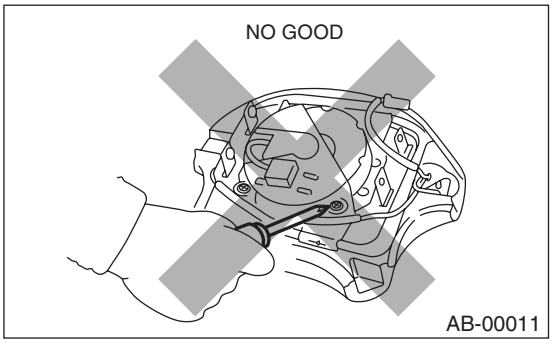
• Install the wire harness securely with the specified clips to avoid interference or tongled up with other parts.



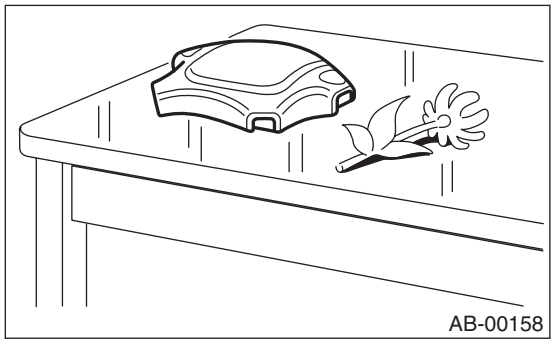
• Do not allow water or oil to come in contact with the connector terminals. Do not touch the connector terminals.



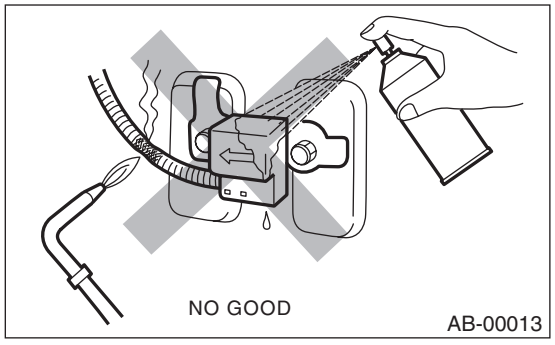
• Either of the airbag parts, or pretensioner must not be disassembled.



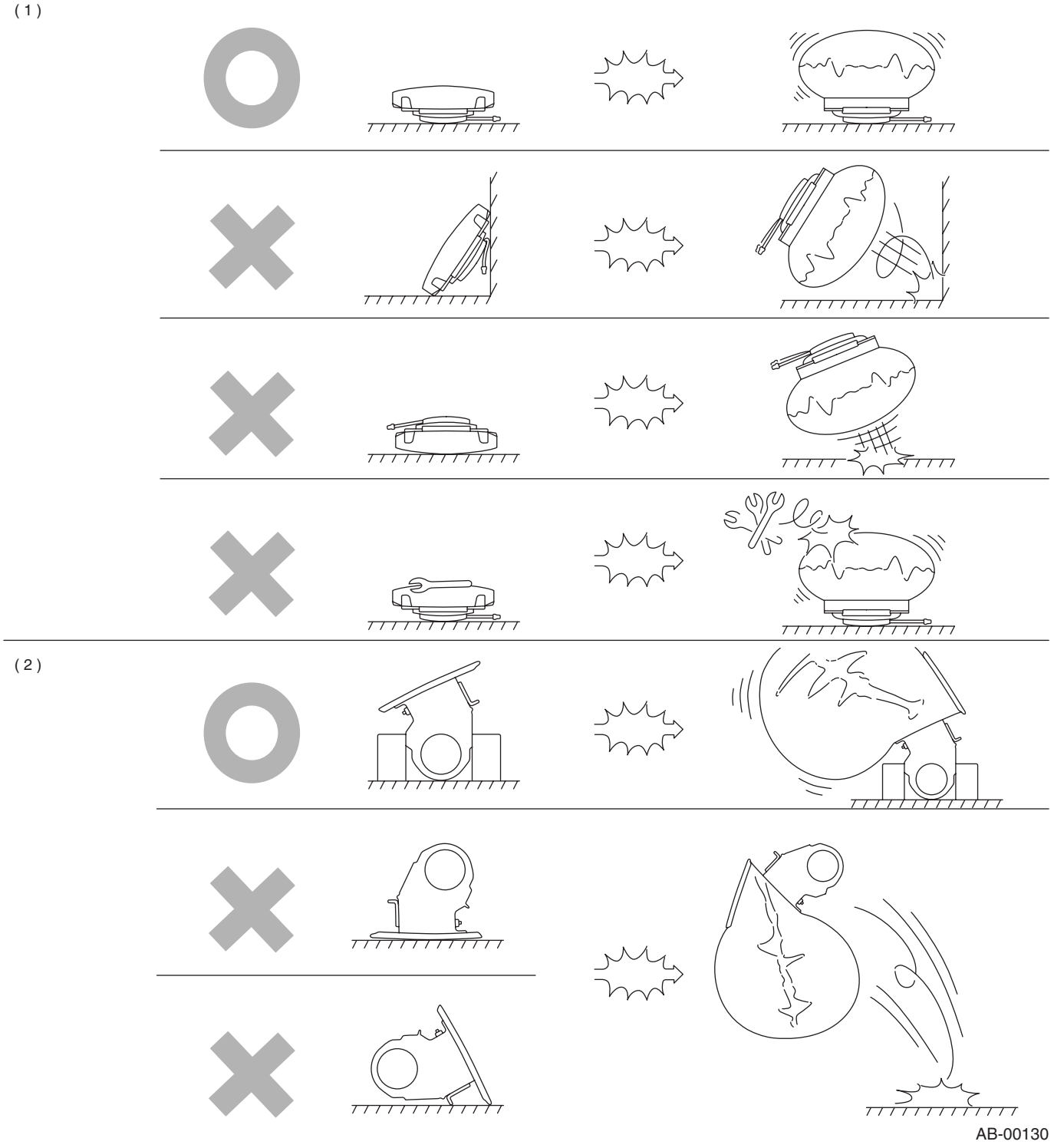
• After removal, keep the airbag module with the pad facing upward on a dry, clean, and flat surface away from heat and light sources, and moisture and dust.



• Do not use the airbag or pretensioner parts from other vehicles. Always replace defective parts with new parts.
• Never re-use a deployed airbag or pretensioner.
• When painting or performing sheet metal work on the front part of the vehicle, including the front wheel apron, front fender, and front side frame, remove parts and take utmost care not to apply paint or the flame of the welding burner directly to the front sub sensors and wire harness of the airbag system.



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



(1) Driver side

(2) Passenger side

C: PREPARATION TOOL

1. GENERAL TOOL

TOOL NAME	REMARKS
TORX® T30	Used for removal/installation of drivers airbag module

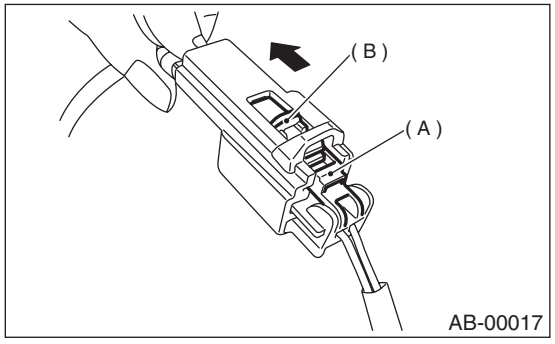
2. Airbag Connector

A: OPERATION

1. DRIVER'S AIRBAG, FRONT SUB SENSOR HARNESS TO AIRBAG MAIN HARNESS AND PRETENSIONER

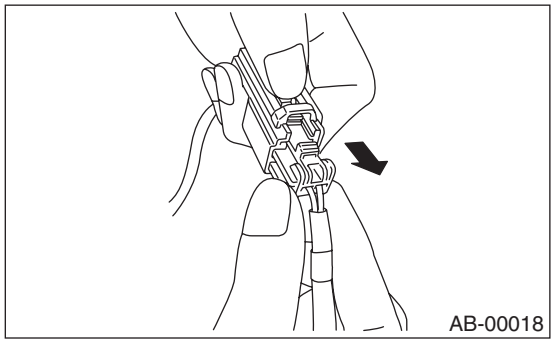
• How to disconnect:

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



3) With slide lock (B) pulled, remove lock arm (A) to its original position, and then pull in the direction of the arrow and separate the connector.

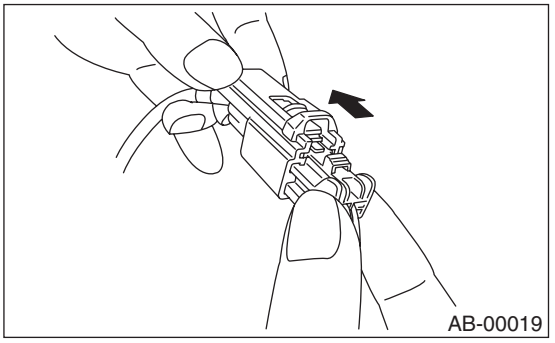
CAUTION:
When pulling, be sure to hold onto the connector and not the wire.



• How to connect:

Holding the connector, and push it in carefully until a connecting sound is heard.

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

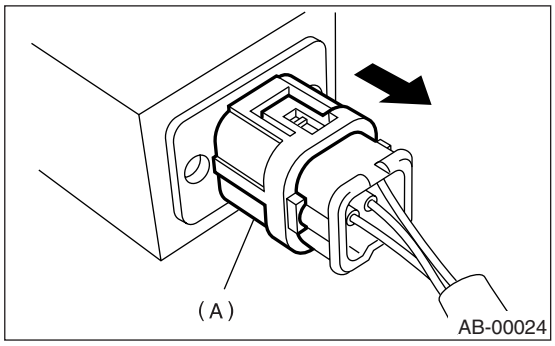


2. FRONT SUB-SENSOR

• How to disconnect:

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

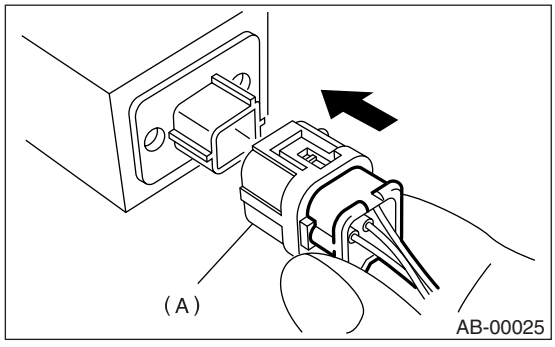
CAUTION:
When pulling, be sure to hold onto the connector and not the wire.



• How to connect:

Holding the connector, and push it in carefully until a connecting sound is heard.

CAUTION:
• Outer (A) moves back, and so do not put your hand on the outer part.
• Be sure to insert the connector in until it locks. Then pull on it gently to make sure that it is locked.

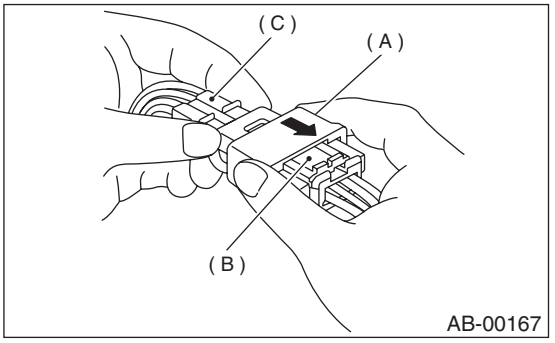


3. PASSENGER'S AIRBAG

• How to disconnect:

Holding male connector (C) in one hand, use your other hand to pull slide lock (A) in the direction of the arrow.

CAUTION:
When pulling, be sure to hold onto the slide lock and not the male connector or wire.

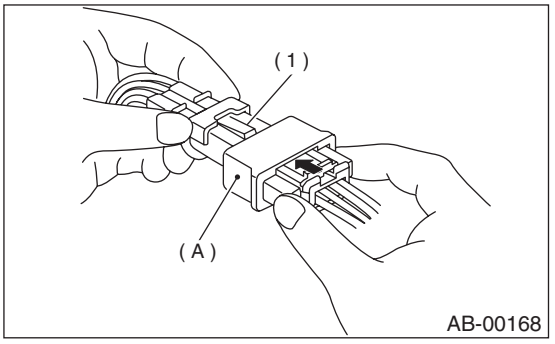


• How to connect:

1) Insert male connector (C) over female connector socket (B), and push slide lock (A) into the male connector tabs.

CAUTION:
Do not hold onto the slide lock.

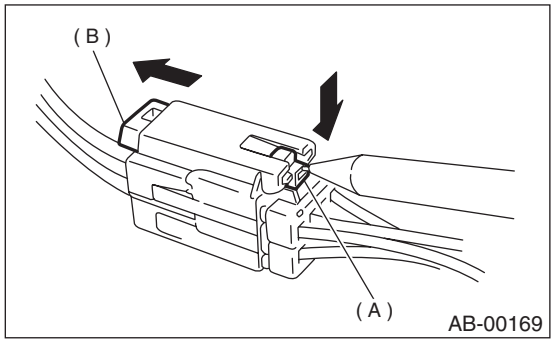
2) If the female connector socket (B) is pushed, slide lock (A) will go past slide lock hook and connect.



(1) Hook

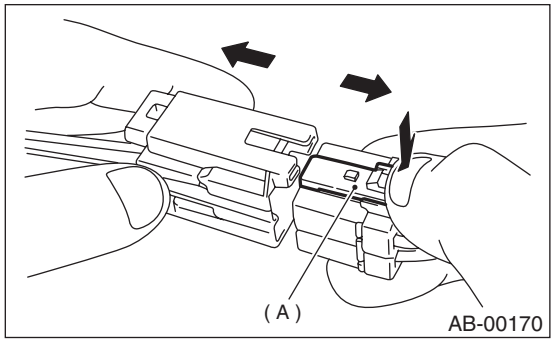
4. AIRBAG MAIN HARNESS TO BODY HARNESS CONNECTOR

1) How to disconnect:
(1) Push lock arm (A) to let green lever (B) pop out.



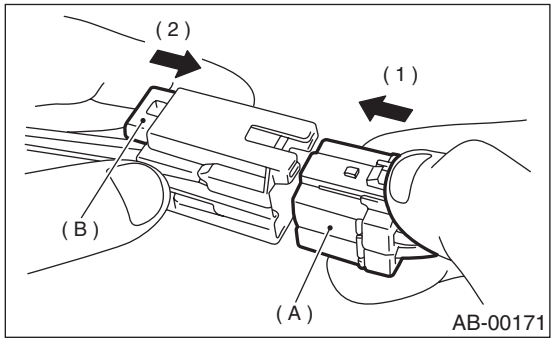
(2) Then separate the connector halves by pulling them apart while pressing lever (A).

CAUTION:
When pulling, be sure to hold onto the connector and not the wire.



2) How to connect:
(1) Insert the (A) connector half into the other until a “click” is heard.
(2) Push in green lever (B) until a “click” is heard.
This engages the double lock mechanism.

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



3. Inspection Locations After a Collision

A: INSPECTION

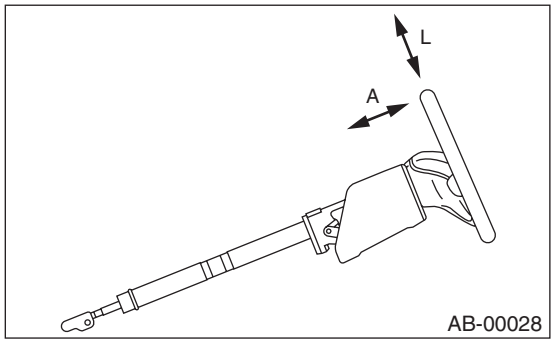
If the vehicle is involved in a collision on any side, even if it is a slight collision, be sure to check the following system parts.

1. AIRBAG MODULE (DRIVER)

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

2) When installing a new driver's airbag module, check the following. If necessary, install a new airbag module and steering wheel.
- The clearance between the driver's airbag module and steering wheel is not constant.
- Free play of the steering wheel is over specifications in axial and radial directions.

Specifications:
Height deflection A
Less than 6 mm (0.24 in)
O.D. deflection L
Less than 7 mm (0.28 in) [Excluding steering offset 5 mm (0.20 in)]



2. AIRBAG MODULE (PASSENGER)

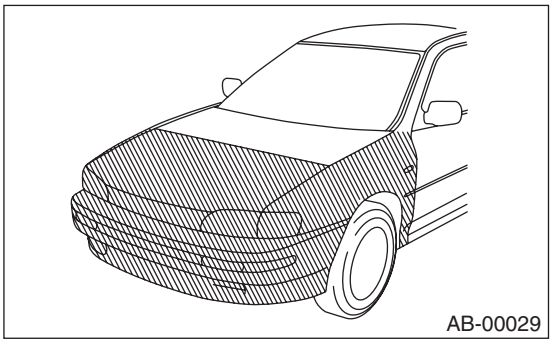
Check for the following, and replace damaged parts with new parts.
- Airbag module is cracked or deformed.
- Harness and/or connector is cracked, deformed or open. Lead wire is exposed.
- Mounting bracket is cracked or deformed.
- The module surface is fouled with grease, oil, water or cleaning solvent.

3. AIRBAG CONTROL MODULE

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

4. FRONT SUB SENSOR

If the front section of vehicle as shown in the figure is damaged:



Check for the following, and replace damaged parts with new parts.
- Front sub sensor is cracked or deformed.
- Mounting bracket is cracked or deformed.
- Connector is scratched or cracked.
- Airbag is deployed.

5. FRONT SUB SENSOR HARNESS

Check for the following, and replace damaged parts with new parts.
- Harness is open, lead wire is exposed, and corrugated tube is noticeably cracked.
- Connector is scratched or cracked.

6. MAIN HARNESS

Check for the following, and replace damaged parts with new parts.
- Harness is open, lead wire is exposed, and corrugated tube is noticeably cracked.
- Connector is scratched or cracked.

7. ROLL CONNECTOR

Check for the following, and replace damaged parts with new parts.
- Combination switch or steering roll connector is cracked or deformed.

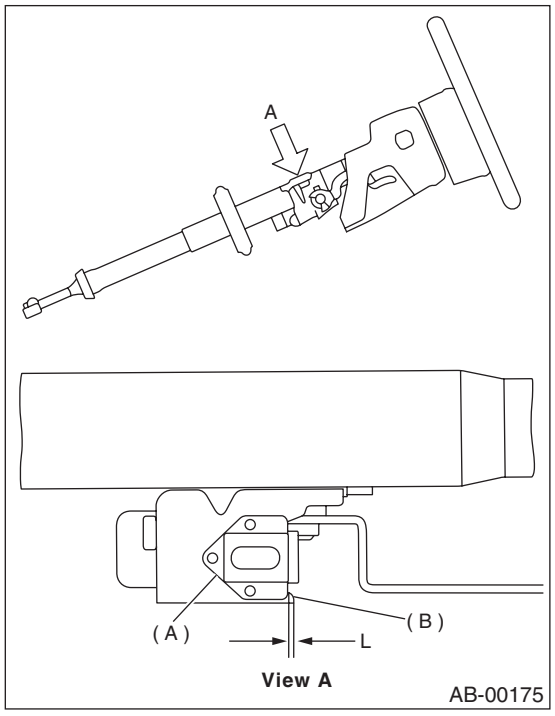
8. STEERING SHAFT

Check for the following, and replace damaged parts with new parts.
The clearance between capsule (A) and tip of column bracket (B) on steering column upper side should be within specifications.

Specifications:

Clearance between capsule and tip of column bracket L

More than 1.3 mm (0.051 in)



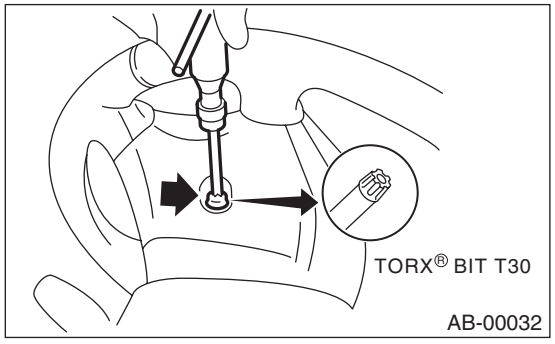
If necessary, replace them with new parts.

4. Driver's Airbag Module

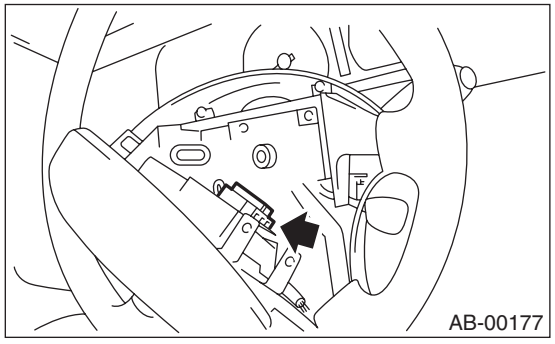
A: REMOVAL

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

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



5) Disconnect airbag connector on back of airbag module, and then remove airbag module.



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

B: INSTALLATION

1) Install in the reverse order of removal.

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

C: INSPECTION

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

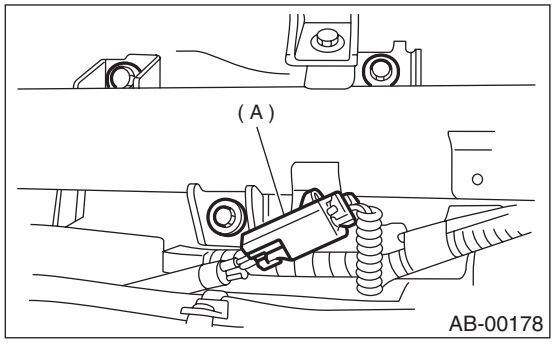
Check for the following, and replace damaged parts with new parts.
• Airbag module, harness, connector, and mounting bracket are damaged.

5. Passenger's Airbag Module

A: REMOVAL

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

1) Turn ignition switch OFF.
2) Disconnect the ground cable from the battery, and wait for at least 20 seconds before starting work.
3) Open the glove box lid. Pull out two stopper pins and lower the globe box. <Ref. to EI-34, REMOVAL, Glove Box.>
4) Disconnect airbag connector (A), and then detach airbag connector from support beam bracket.
5) Remove three bolts, and then carefully remove airbag module.



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

B: INSTALLATION

Install in the reverse order of removal.

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

C: INSPECTION

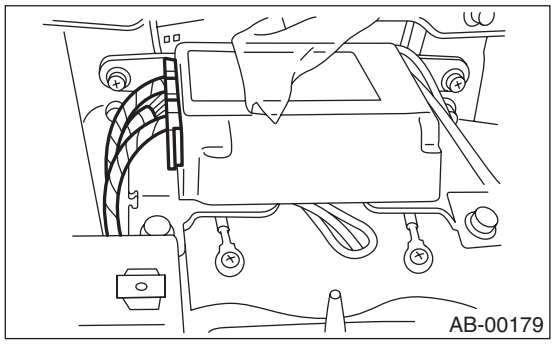
CAUTION:
Refer to "CAUTION" in General Description before handling the airbag module. <Ref. to AB-3, CAUTION, General Description.>

Check for the following, and replace damaged parts with new parts.
• Airbag module, harness, connector, and mounting bracket are damaged.

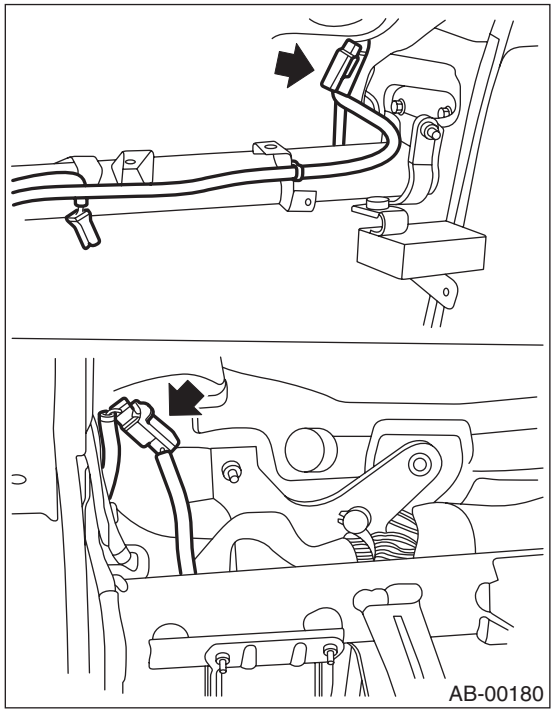
6. Main Harness

A: REMOVAL

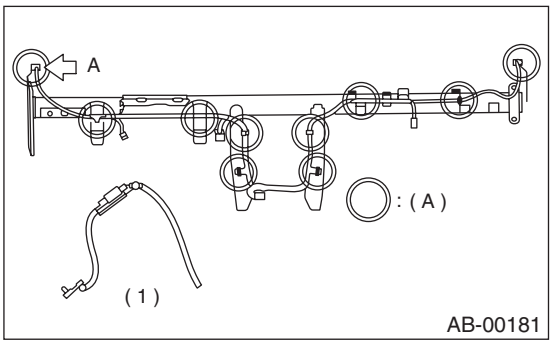
1) Turn ignition switch OFF.
2) Disconnect the ground cable from the battery and wait for at least 20 seconds before starting work.
3) Remove instrument panel. <Ref. to EI-37, REMOVAL, Instrument Panel Assembly.>
4) Disconnect connector from airbag control module.



5) Disconnect front sub sensor connector (blue) from airbag main harness.



6) Detach clips (A) from steering support beam, and remove main harness.



(1) View A

B: INSTALLATION

Install in the reverse order of removal.

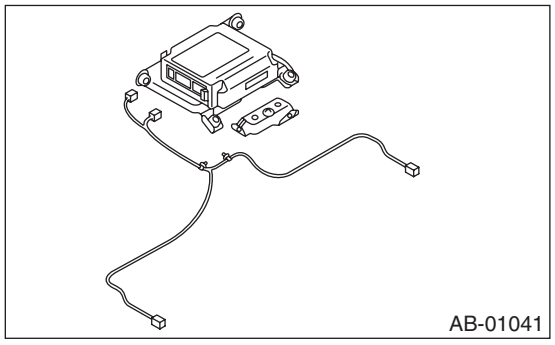
C: INSPECTION

Check for the following, and replace damaged parts with new parts.
- Harness and/or connector is damaged.

7. Pretensioner Harness

A: REMOVAL

1) Turn ignition switch OFF.
2) Disconnect the ground cable from the battery, and wait for at least 20 seconds before starting work.
3) Remove front seat. <Ref. to SE-6, REMOVAL, Front Seat.>
4) Remove console box. <Ref. to EI-36, REMOVAL, Console Box.>
5) Roll up floor mat, and then disconnect two 12-pin yellow connectors from airbag control module.
6) Detach clips, and then remove pretensioner harness.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

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

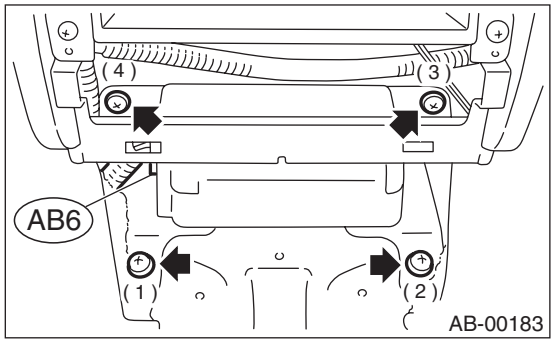
- Harness and/or connector is damaged.

8. Airbag Control Module

A: REMOVAL

CAUTION:
• Do not disassemble the airbag control module.
• If the airbag control module is deformed or if water damage is suspected, replace the airbag control module with a new genuine 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 ignition switch OFF.
2) Disconnect the ground cable from the battery, and wait for at least 20 seconds before starting work.
3) Remove console box. <Ref. to EI-36, REMOVAL, Console Box.>
4) Disconnect connector from airbag control module.
5) Remove four airbag control module mounting bolts in the order shown in the figure.



B: INSTALLATION

CAUTION:
Use new mounting bolts during re-assembly.
Install in the reverse order of removal.

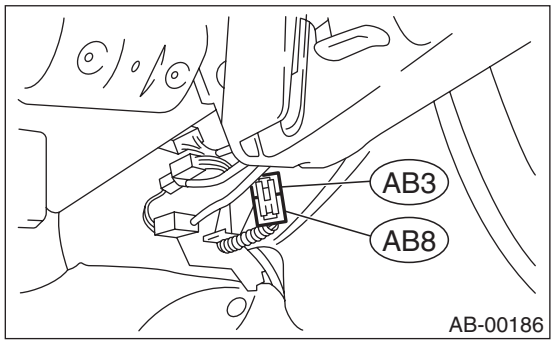
C: INSPECTION

Check for the following, and replace damaged parts with new parts.
• Control module, connector, and mounting bracket are damaged.
• Airbag is deployed.
• Side airbag is deployed.

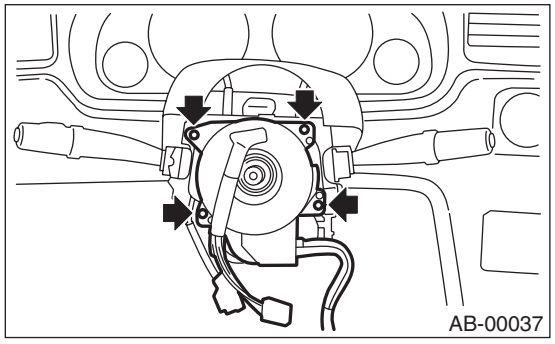
9. Roll Connector

A: REMOVAL

1) Turn ignition switch OFF.
2) Disconnect the ground cable from the battery, and wait for at least 20 seconds before starting work.
3) Remove instrument panel lower cover.
4) Disconnect airbag connector (AB3) and (AB8) below steering column.



5) Remove driver's airbag module. <Ref. to AB-13, Driver's Airbag Module.>
6) Remove steering wheel. <Ref. to PS-17, REMOVAL, Steering Wheel.>
7) Remove steering column cover.
8) Remove screws, and then remove roll connector.



B: INSTALLATION

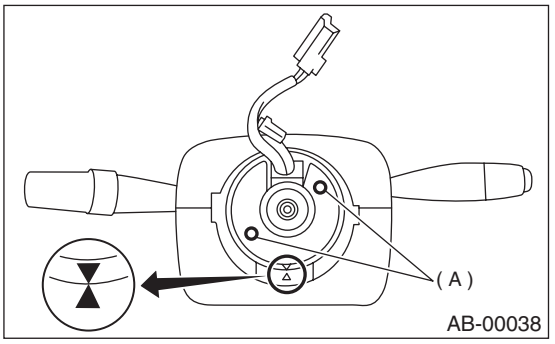
Install in the reverse order of removal.

C: INSPECTION

Check for the following, and replace damaged parts with new parts.
• Combination switch and roll connector is cracked or deformed.

D: ADJUSTMENT

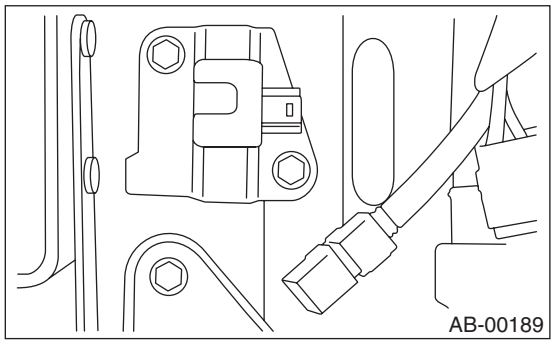
1) Check that front wheels are positioned in straight ahead direction.
2) Turn roll connector pin (A) clockwise until it stops.
3) Turn roll connector pin (A) counterclockwise approximately 2.65 turns until "▲" marks are aligned.



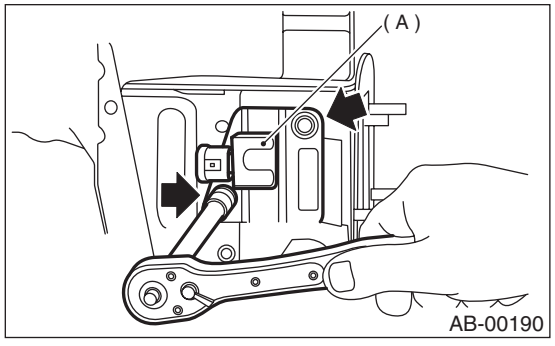
10.Front Sub Sensor

A: REMOVAL

1) Turn ignition switch OFF.
2) Disconnect the ground cable from the battery, and wait for at least 20 seconds before starting work.
3) Remove front bumper. <Ref. to EI-18, REMOVAL, Front Bumper.>
4) Disconnect connector from front sub sensor.



5) Remove front sub sensor (A).



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

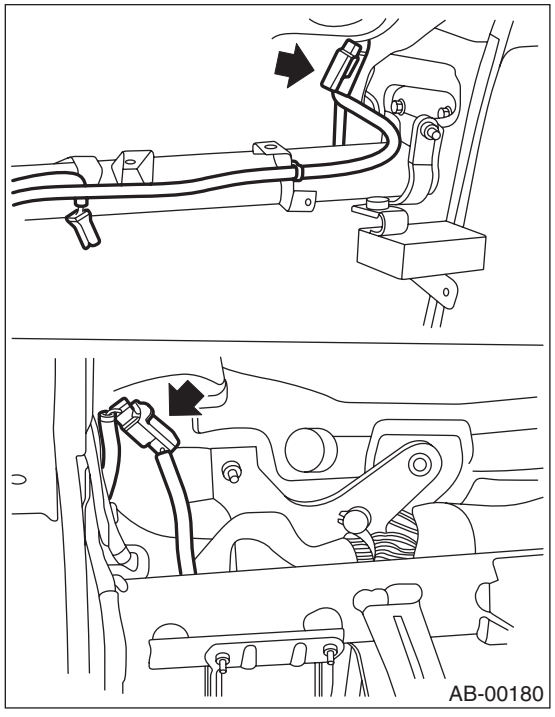
Check for the following, and replace damaged parts with new parts.

• Front sub sensor, mounting bracket, and connector are damaged.

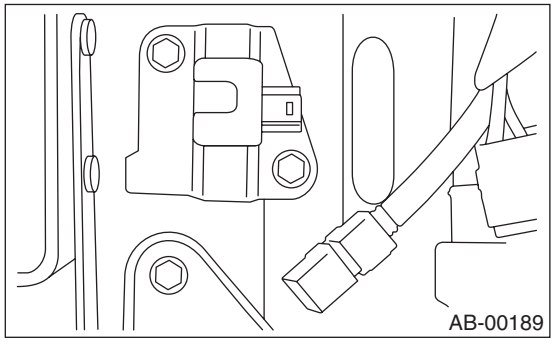
11.Front Sub Sensor Harness

A: REMOVAL

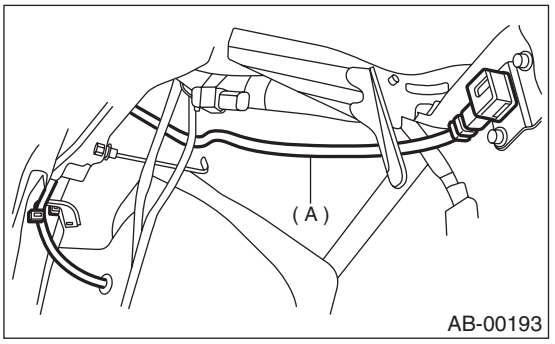
1) Turn ignition switch OFF.
2) Disconnect the ground cable from the battery, and wait for at least 20 seconds before starting work.
3) Remove instrument panel. <Ref. to EI-37, REMOVAL, Instrument Panel Assembly.>
4) Disconnect front sub sensor connector (blue) from airbag main harness.



5) Remove front bumper. <Ref. to EI-18, REMOVAL, Front Bumper.>
6) Disconnect connector from front sub sensor.



7) Remove wiring harness clips.
8) Remove grommet, and then detach front sub sensor harness (A).



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Check for the following, and replace damaged parts.

- Harness and/or connector is damaged.

1. Basic Diagnostic Procedure

A: PROCEDURE

	Step	Check	Yes	No
1	**Read DTC.** <Ref. to AB-19, Read Diagnostic Trouble Code (DTC).>	Is the normal code being detected?	Finish the diagnosis.	Go to step **2.**
2	**Read DTC.** <Ref. to AB-19, Read Diagnostic Trouble Code (DTC).>	Is the DTC being detected?	Go to step **3.**	Go to “Airbag Warning Light Failure”.<Ref. to AB-22, Airbag Warning Light Failure.>
3	**Perform the diagnosis.** 1) Judge the possible cause from “List of Diagnostic Trouble Code (DTC)” <Ref. to AB-26, List of Diagnostic Trouble Code (DTC).>. 2) Inspect using “Diagnostic Chart with Diagnostic Trouble Code (DTC)”. 3) Repair the cause of the trouble. 4) Perform the clear memory mode. <Ref. to AB-21, Clear Memory Mode.> 5) Perform the inspection mode. <Ref. to AB-20, Inspection Mode.> 6) Read DTC.	Is the DTC being detected?	Perform the procedure 1) to 5) in step 3 again.	Finish the diagnosis.

2. Check List for Interview

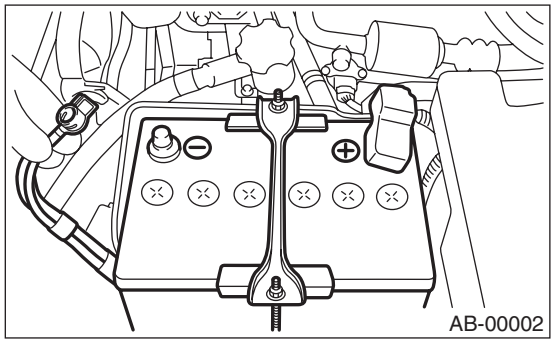
A: CHECK

Customer's Name		Inspector's Name	
Date Vehicle Brought In	/ /	Registration No.	
Odometer Reading	km Miles	Vin No.	
Date Problem Occurred	/ /	Registration Year	/ /
Weather	❑ Fine ❑ Cloudy ❑ Rainy ❑ Snowy ❑ Other:		
Temperature	°C (°F)		
Road Condition	❑ Level road ❑ Uphill ❑ Downhill ❑ Rough road ❑ Others:		
Vehicle Operation	❑ Starting ❑ Idling ❑ Driving (❑ Constant Speed ❑ Acceleration ❑ Deceleration ❑ Steering wheel turn ❑ Other:)		
Details of Problem			
Check Airbag Warning Light	❑ Remains ON ❑ Remains OFF		
Check DTC	❑ Normal Code ❑ Trouble Code: (Code:)		

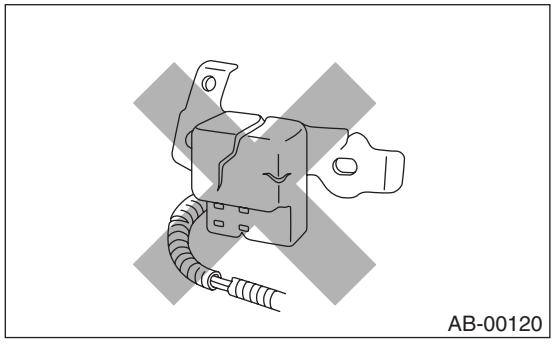
3. General Description

A: CAUTION

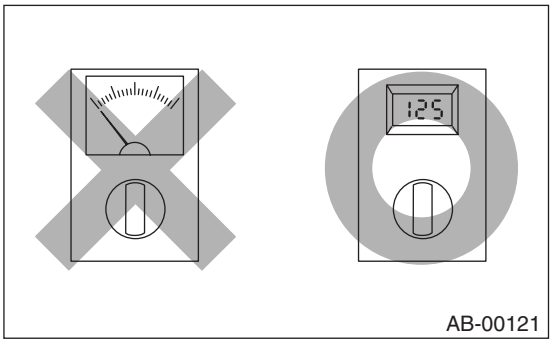
• When servicing a vehicle, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait for more than 20 seconds before starting work.
• The airbag system is fitted with a backup power source. If the airbag system is serviced within 20 seconds after the ground cable is disconnected, it may inflate.



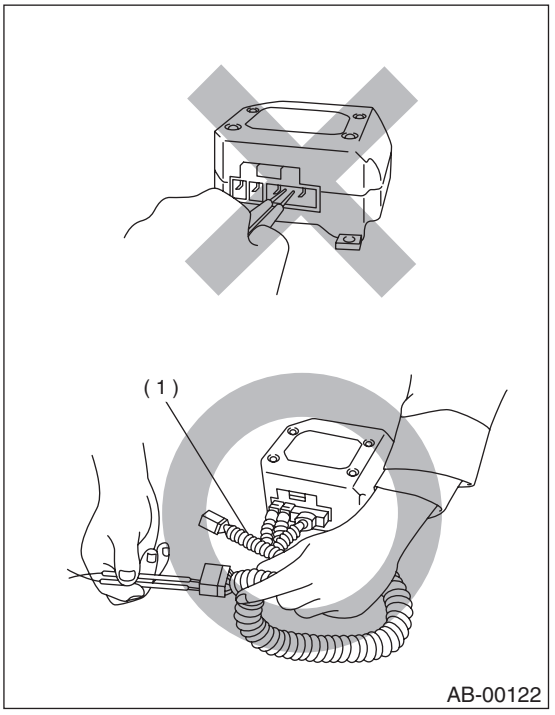
• If the airbag warning light illuminates, repair the vehicle immediately. Airbag or pretensioner may inflate incorrectly, or not inflate in collision.
• If sensors, airbag module, airbag control module pretensioner, and harness are deformed or damaged, replace them with new genuine parts.
• Do not use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



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



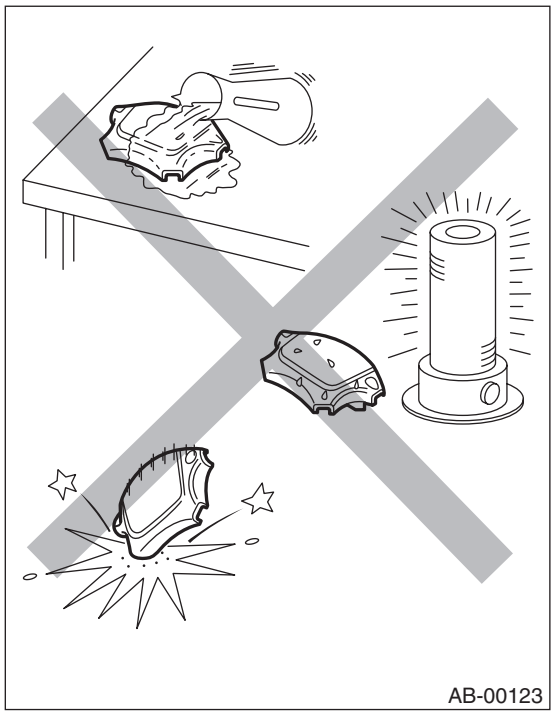
• When checking, use a test harness. Do not directly apply the tester probe to any connector terminal of the airbag.



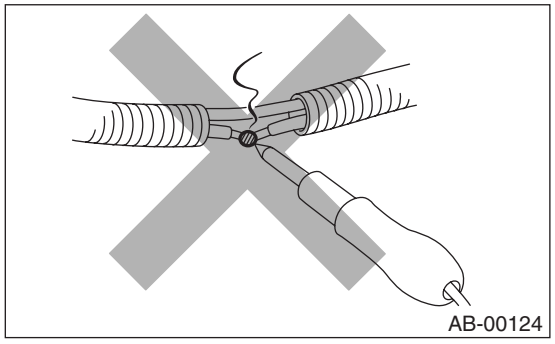
(1) Test harness

• Do not drop the airbag modulator parts, subject them to high temperature over 93°C (199°F), or let water, oil, or grease get on them; otherwise, the in-

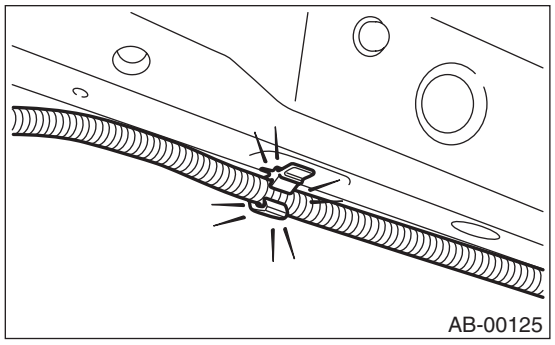
ternal parts may be damaged and reliability greatly lowered.


AB-00123

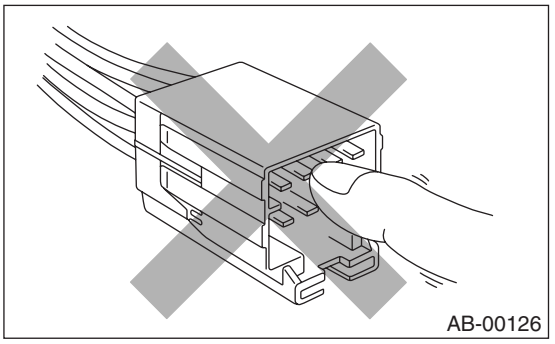
• If any damage, opening or rust is found on the airbag system wire harness, do not attempt to repair using soldering equipment. Be sure to replace the faulty harness with a new genuine part.


AB-00124

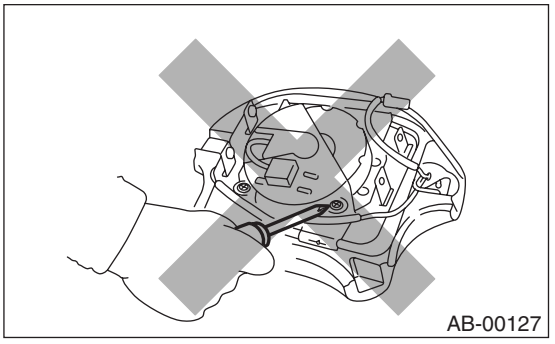
• Install the wire harness securely with the specified clips to avoid interference or tangled up with other parts.


AB-00125

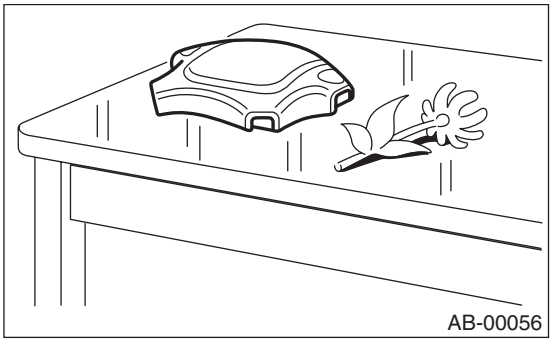
• Do not allow water or oil to come in contact with the connector terminals. Do not touch the connector terminals.


AB-00126

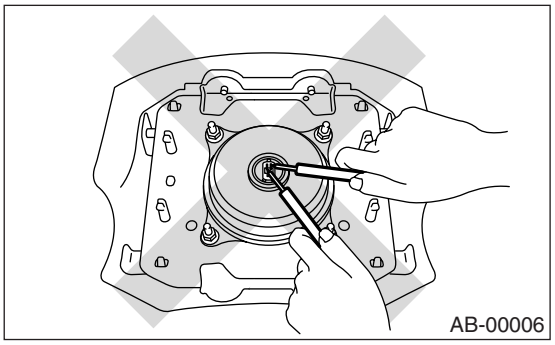
• The airbag module (driver, passenger, and pretensioner) must not be disassembled.
• The airbag module cannot be used again once inflated.


AB-00127

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

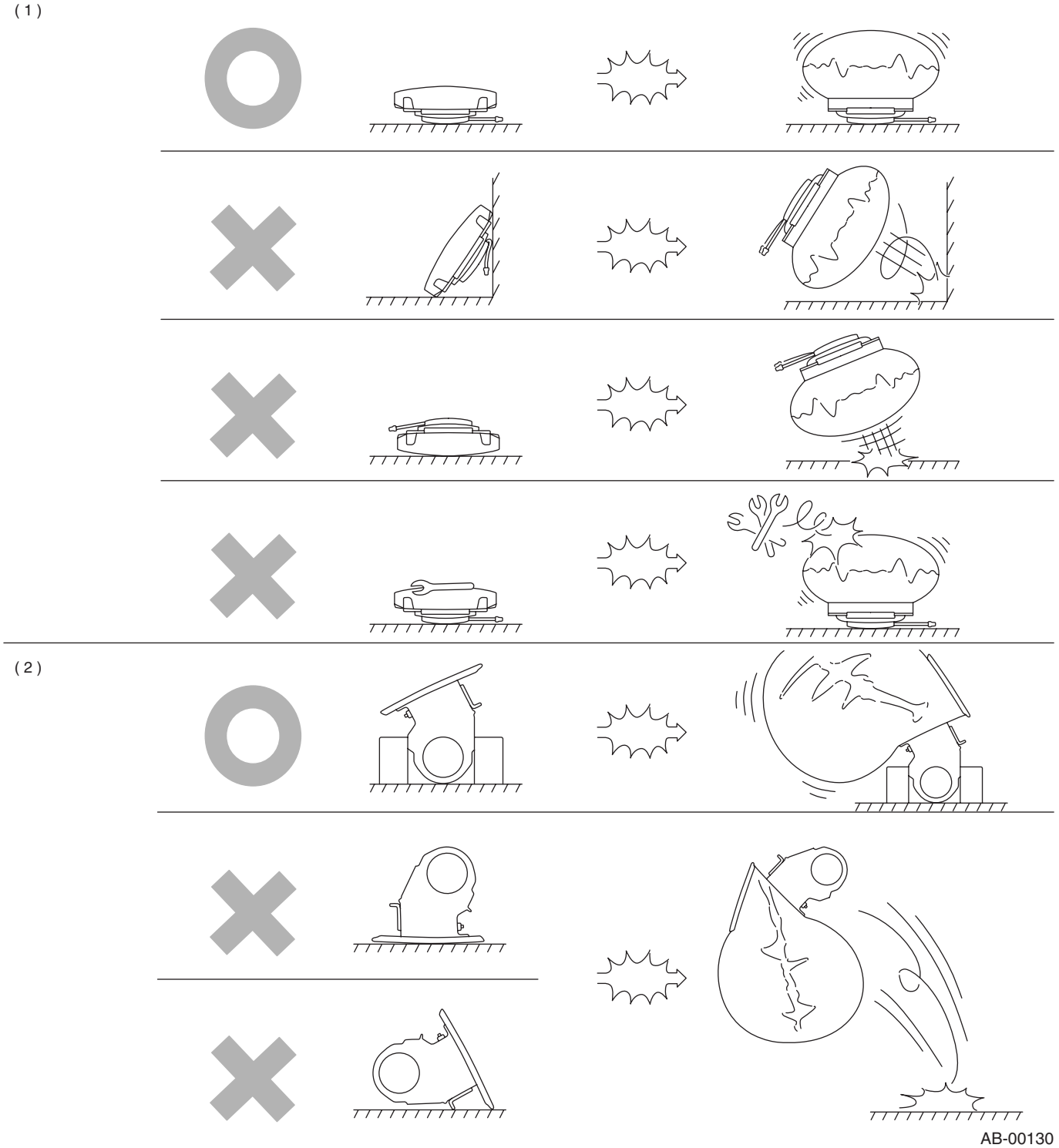

AB-00056

• Do not check continuity of the airbag module (driver, passenger, and pretensioner).



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

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



(1) Driver side (2) Passenger side

• Do not discard undeployed airbag modules. They could easily cause a serious accident if accidentally deployed.
• Do not damage the airbag module or drop it.

B: INSPECTION

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

1. BATTERY

Measure battery voltage and specific gravity of electrolyte.

Standard voltage: 12 V

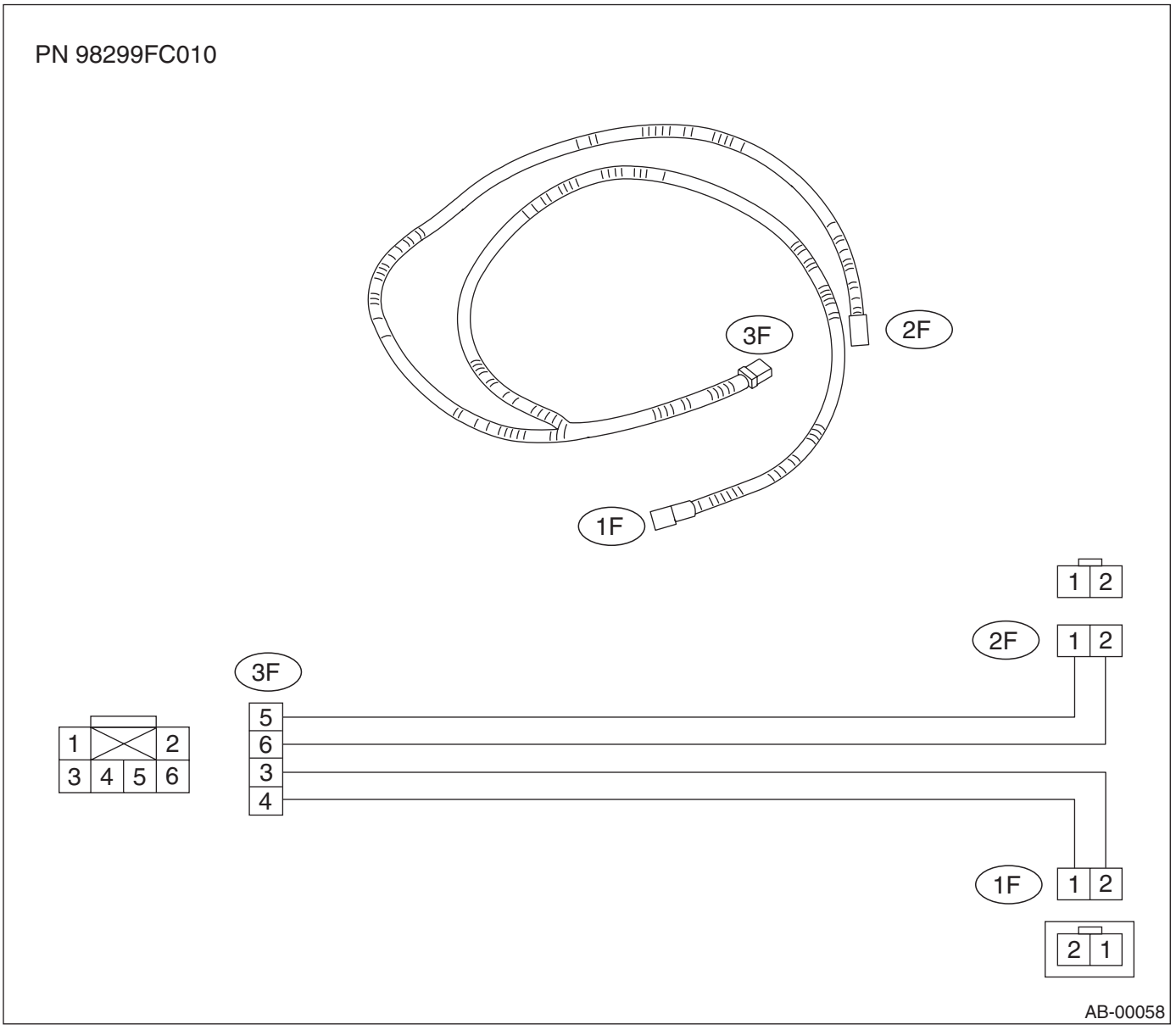
Specific gravity: Above 1.260

C: PREPARATION TOOL

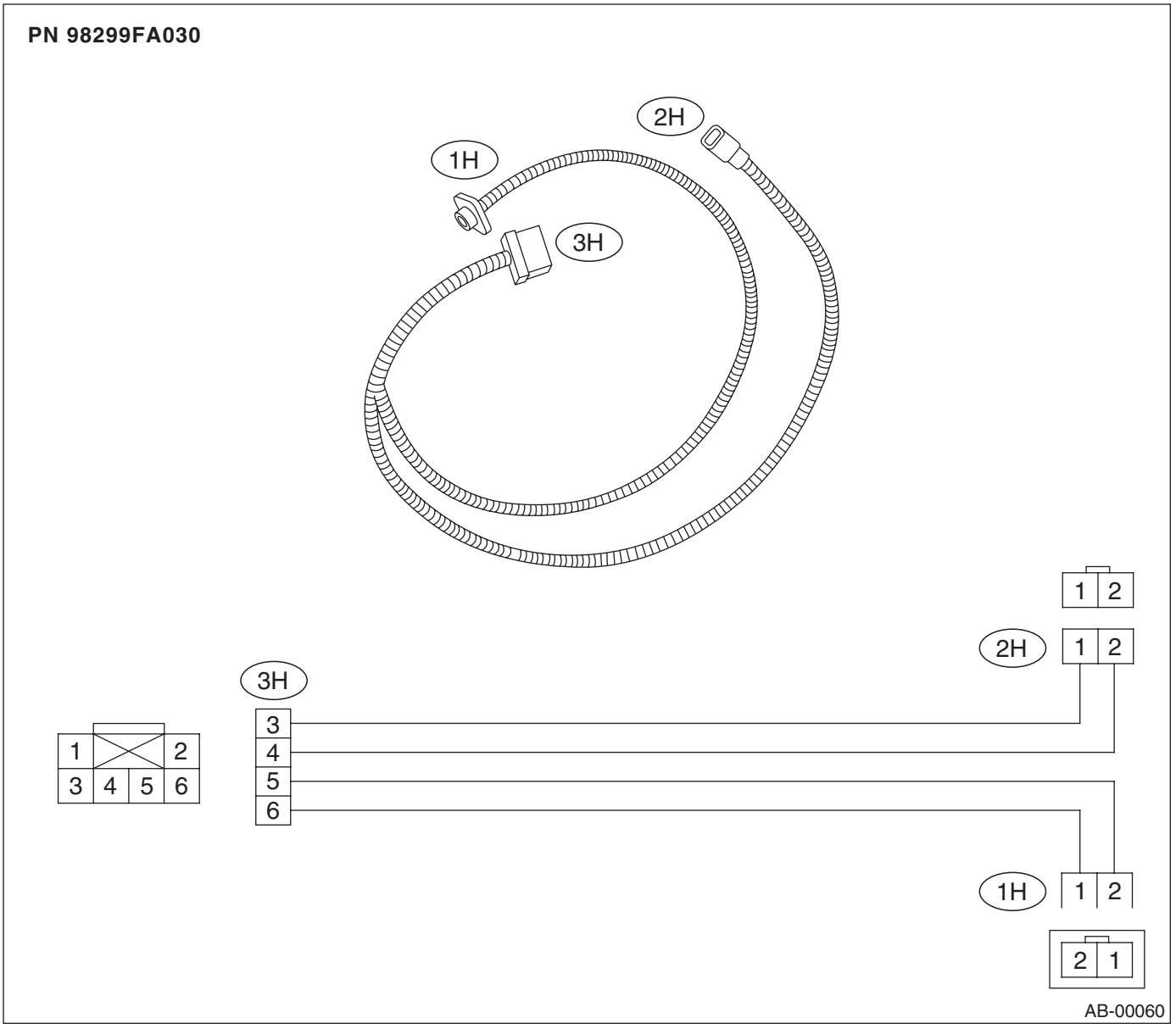
CAUTION:
Be sure to use specified test harness F, G, H, K and I or I2 when measuring voltage, resistance, etc. of AIRBAG system component parts.

1. TEST HARNESS F

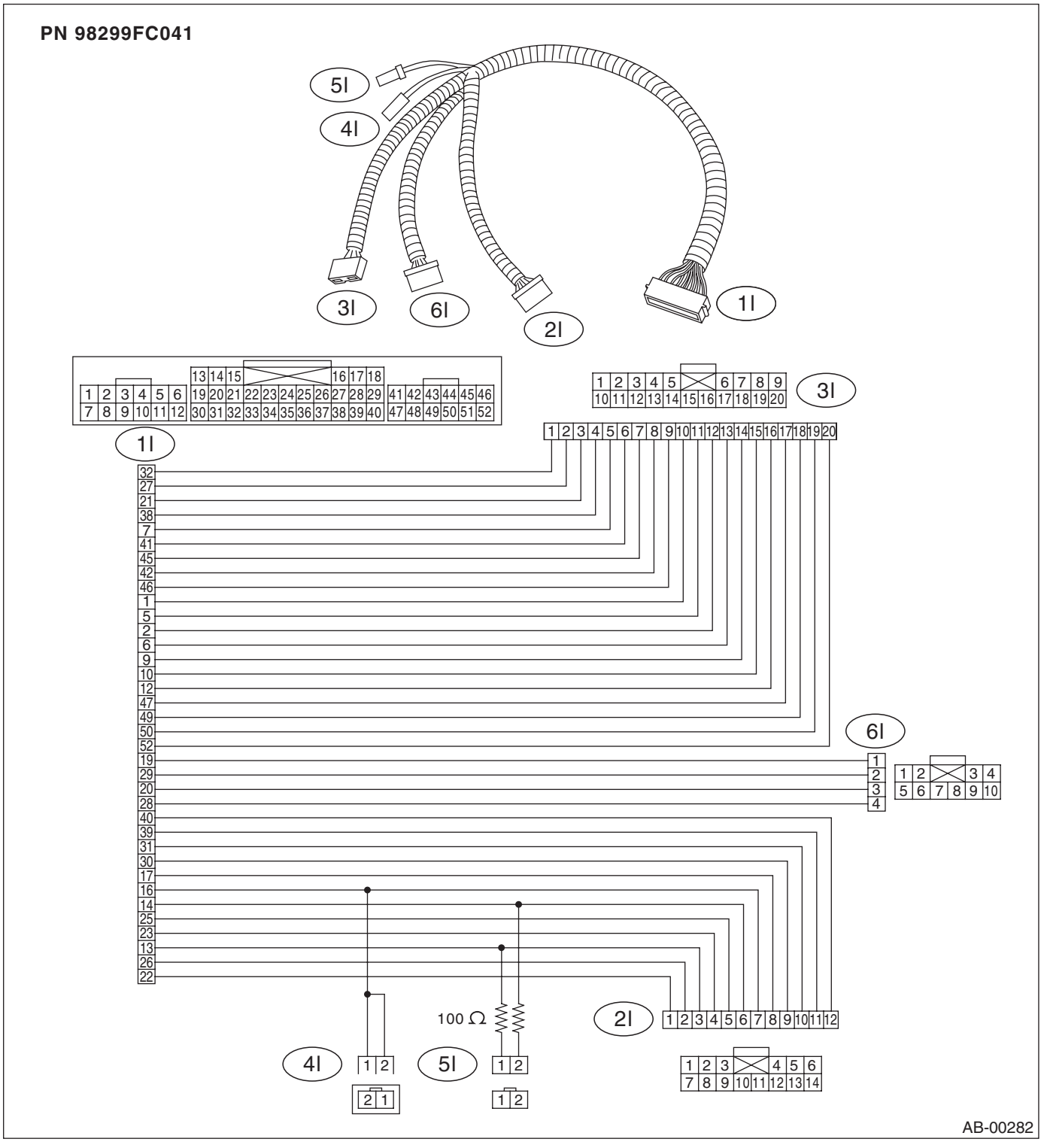
PN 98299FC010



2. TEST HARNESS H

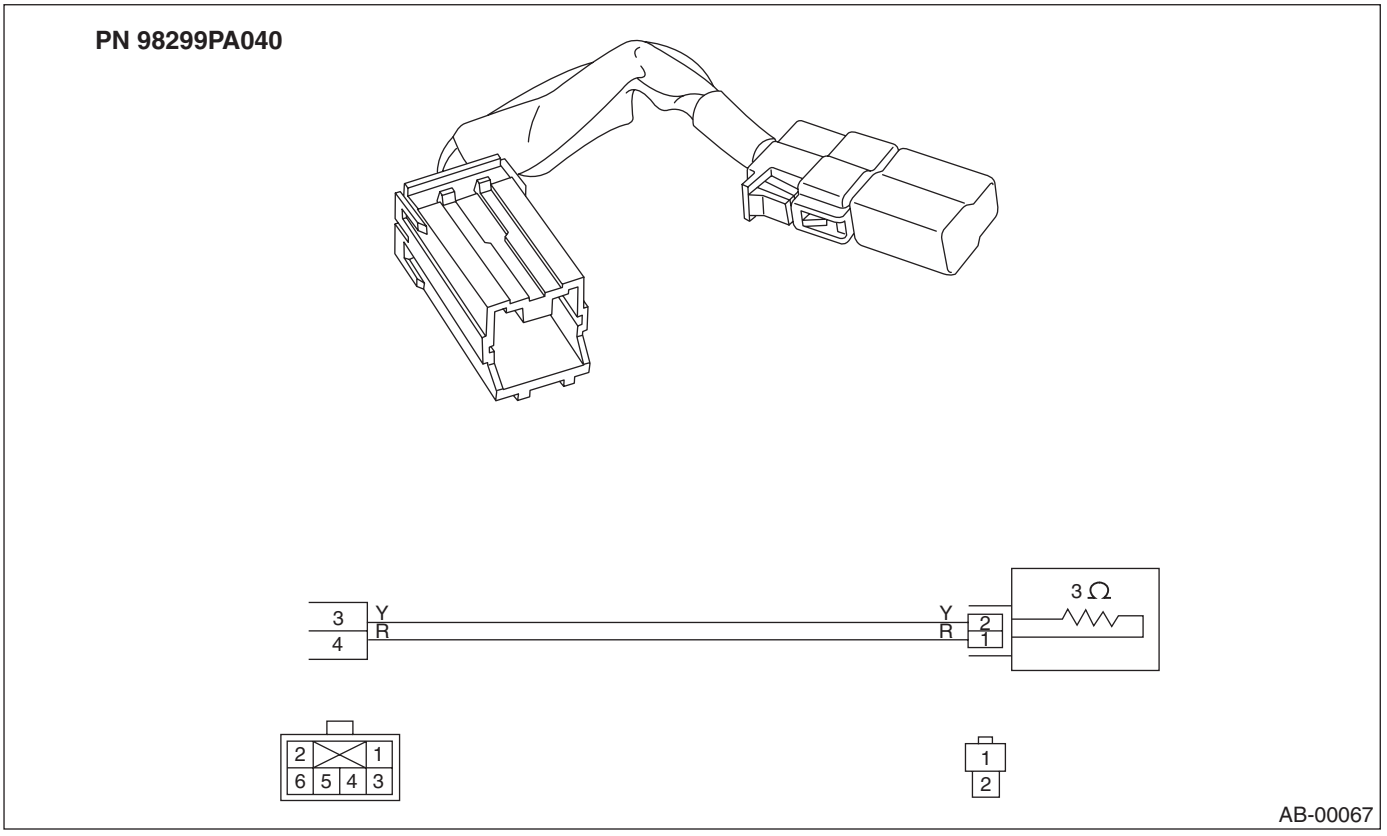


3. TEST HARNESS I2

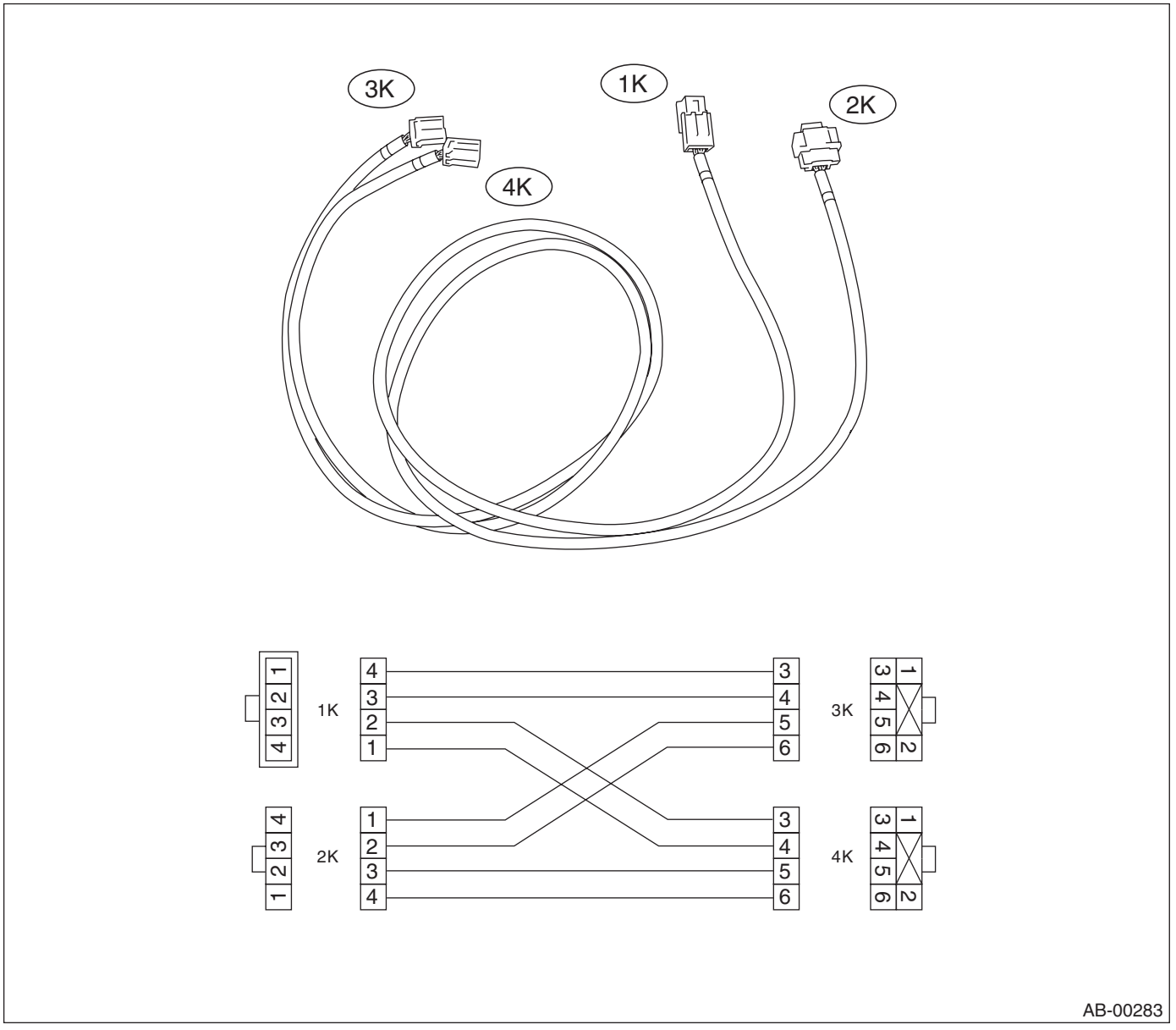


4. AIRBAG RESISTOR

The airbag resistor is used during diagnostics. The airbag resistor has the same resistance as the airbag module and thus provides safety when used instead of the airbag module. It also makes it possible to finish, diagnostics in less time.

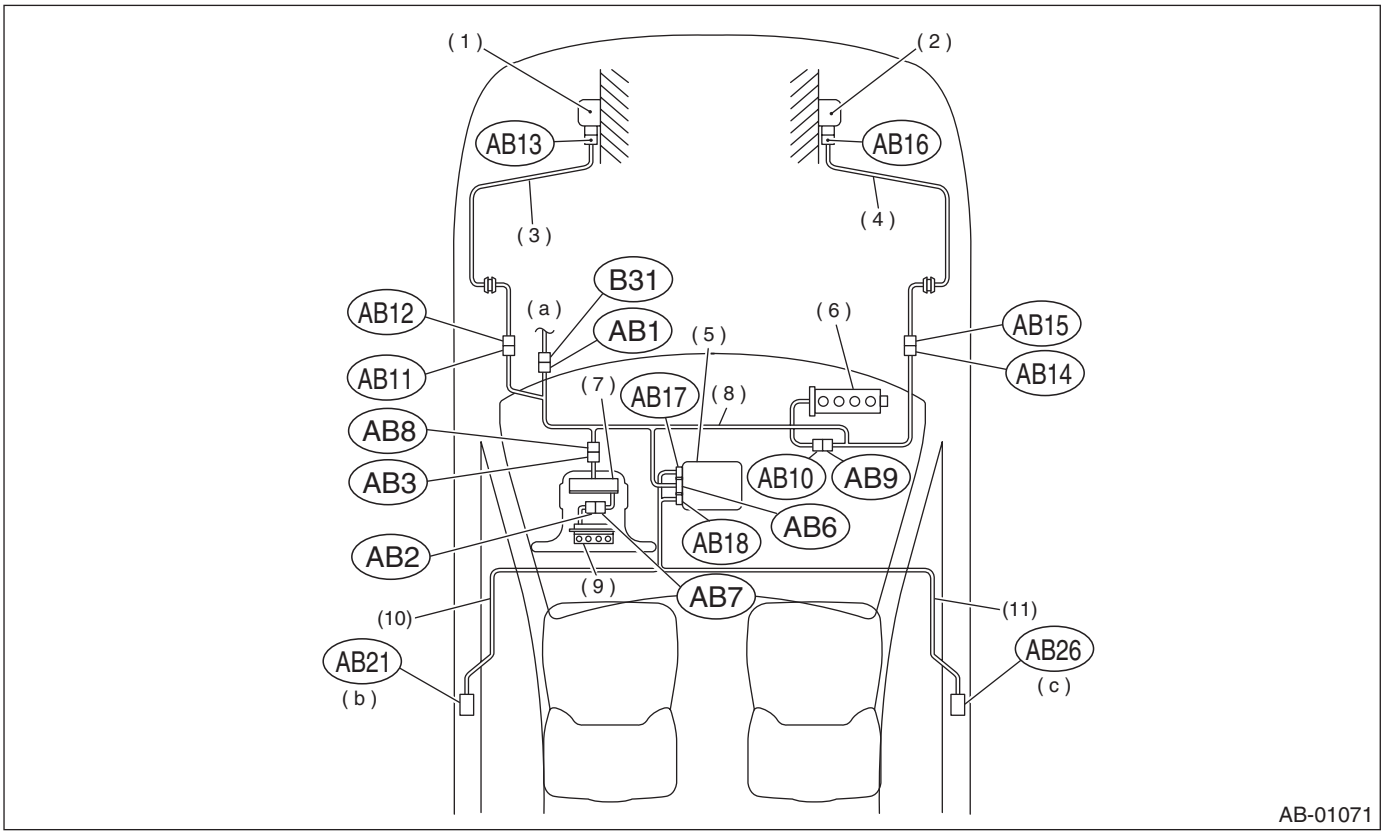


5. TEST HARNESS K



4. Electrical Components Location

A: LOCATION



(1) Front sub sensor (LH)
(2) Front sub sensor (RH)
(3) Front sub sensor harness (LH)
(4) Front sub sensor harness (RH)
(5) Airbag control module with safety sensor and electric sensor
(6) Inflator (Passenger)
(7) Roll connector
(8) Airbag main harness
(9) Inflator (Driver)
(10) Pretensioner harness (LH)
(11) Pretensioner harness (RH)
(a) To body harness
(b) To seal belt pretensioner (LH)
(c) To seal belt pretensioner (RH)

Connector No.	(AB1)	(AB2)	(AB3)	(AB6)	(AB7)	(AB8)	(AB9)	(AB10)	(AB11)
Pole	12	2	2	28	2	2	4	4	2
Color	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Blue
Male/Female	Male	Male	Male	Female	Female	Female	Female	Male	Male

Connector No.	(AB12)	(AB13)	(AB14)	(AB15)	(AB16)	(AB17)	(AB18)	(AB21)	(AB26)
Pole	2	2	2	2	2	12	12	2	2
Color	Blue	Yellow	Blue	Blue	Yellow	Yellow	Yellow	Yellow	Yellow
Male/Female	Female	Female	Male	Female	Female	Female	Female	Female	Female

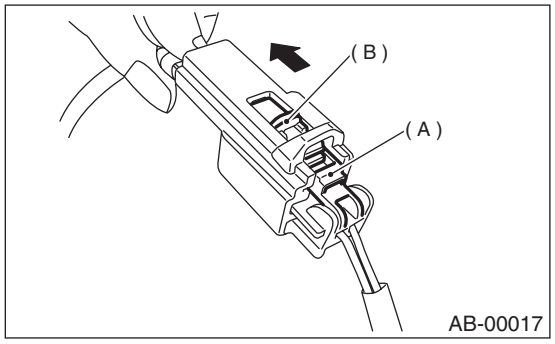
5. Airbag Connector

A: OPERATION

1. DRIVER'S AIRBAG (AIRBAG MAIN HARNESS AND ROLL CONNECTOR), FRONT SUB SENSOR HARNESS TO AIRBAG MAIN HARNESS AND PRETENSIONER

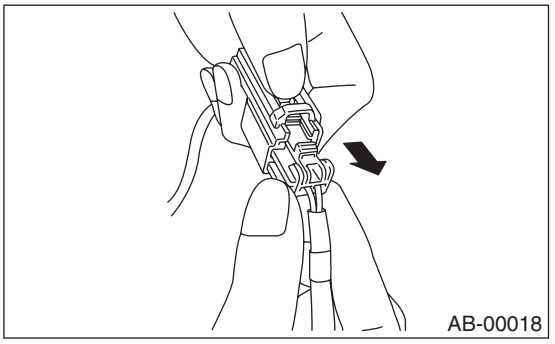
• How to disconnect:

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



3) With slide lock (B) pulled, remove lock arm (A) to its original position, and then pull in the direction of the arrow and separate the connector.

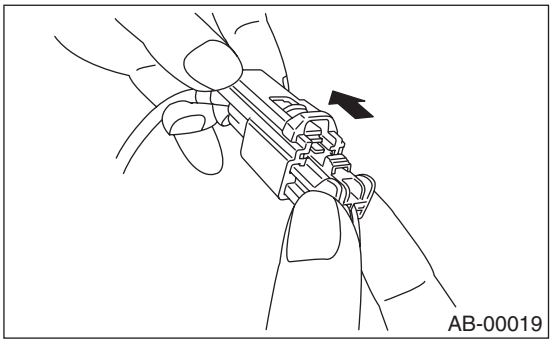
CAUTION:
When pulling, be sure to hold onto the connector and not the wire.



• How to connect:

Holding the connector, and push it in carefully until a connecting sound is heard.

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

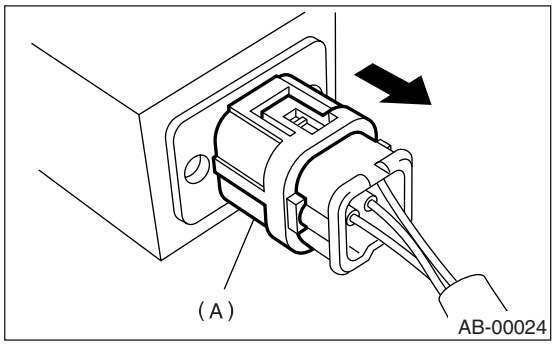


2. FRONT SUB-SENSOR

• How to disconnect:

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

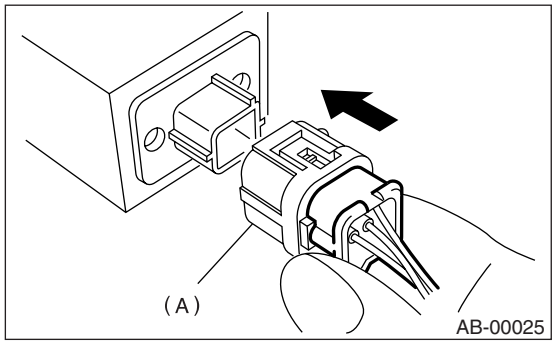
CAUTION:
When pulling, be sure to hold onto the connector and not the wire.



• How to connect:

Holding the connector, and push it in carefully until a connecting sound is heard.

CAUTION:
• Outer (A) moves back, and so do not put your hand on the outer part.
• Be sure to insert the connector in until it locks. Then pull on it gently to make sure that it is locked.

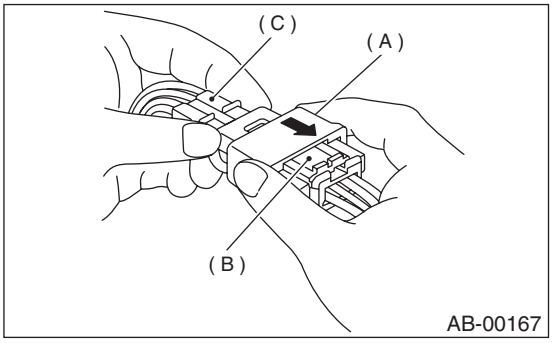


3. PASSENGER'S AIRBAG

• How to disconnect:

Holding female connector (C) in one hand, use your other hand to pull slide lock (A) in the direction of the arrow.

CAUTION:
When pulling, be sure to hold onto the slide lock and not the male connector or wire.

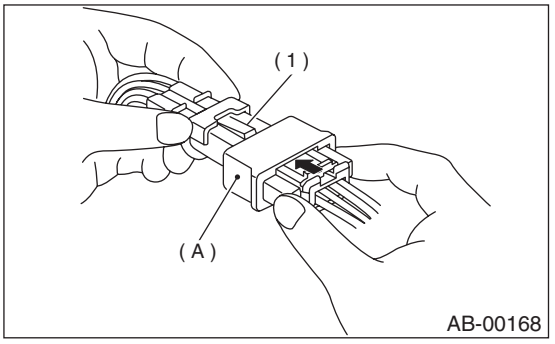


• How to connect:

1) Insert female connector (C) over male connector socket (B), and push slide lock (A) into the female connector tabs.

CAUTION:
Do not hold onto the slide lock.

2) If the male connector socket is pushed too hard, slide lock (A) will go past slide lock (A) tabs and connect.

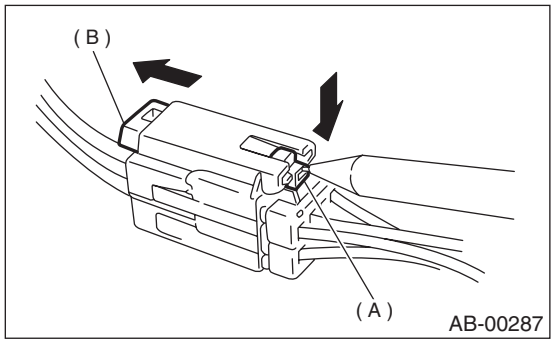


(1) Hook

4. AIRBAG MAIN HARNESS TO BODY HARNESS CONNECTOR

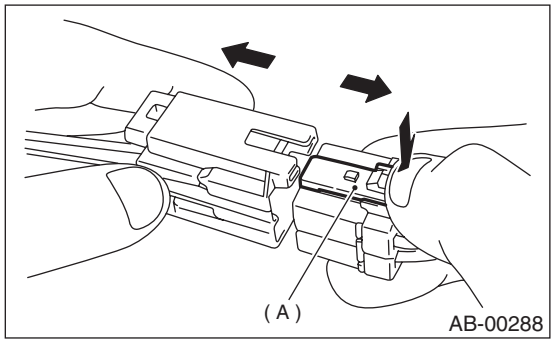
• How to disconnect:

1) Push lock arm (A) to let green lever (B) pop out.



2) Then separate the connector halves by pulling them apart while pressing lever (A).

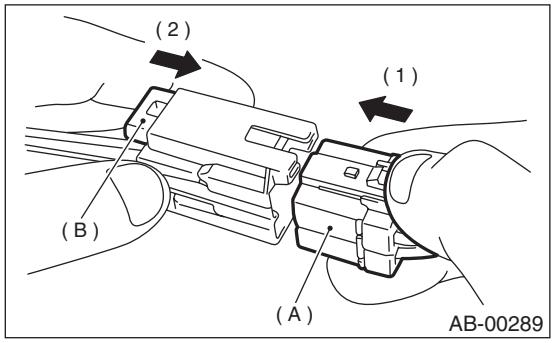
CAUTION:
When pulling, be sure to hold onto the connector and not the wire.



• How to connect:

1) Insert the (A) connector half into the other until a “click” is heard.
2) Push in green lever (B) until a “click” is heard. This engages the double lock mechanism.

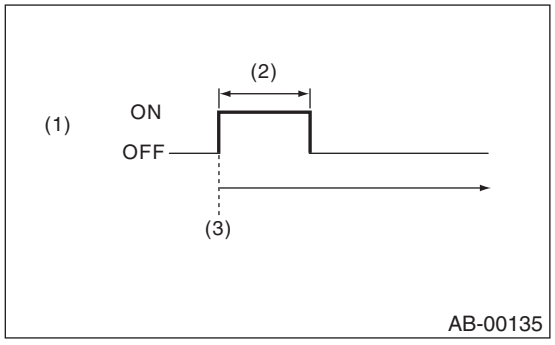
CAUTION:
Be sure to insert the connector in until it locks. Then pull on it gently to make sure that it is locked.



6. Airbag Warning Light Illumination Pattern

A: INSPECTION

Keep the ignition switch ON, and confirm that the airbag warning light remains off approximately 6 seconds after being turned on.

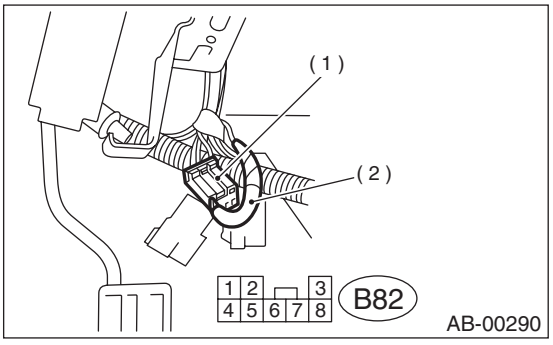


(1) Airbag warning light
(2) Approx. 6 seconds
(3) Ignition switch ON

7. Read Diagnostic Trouble Code (DTC)

A: OPERATION

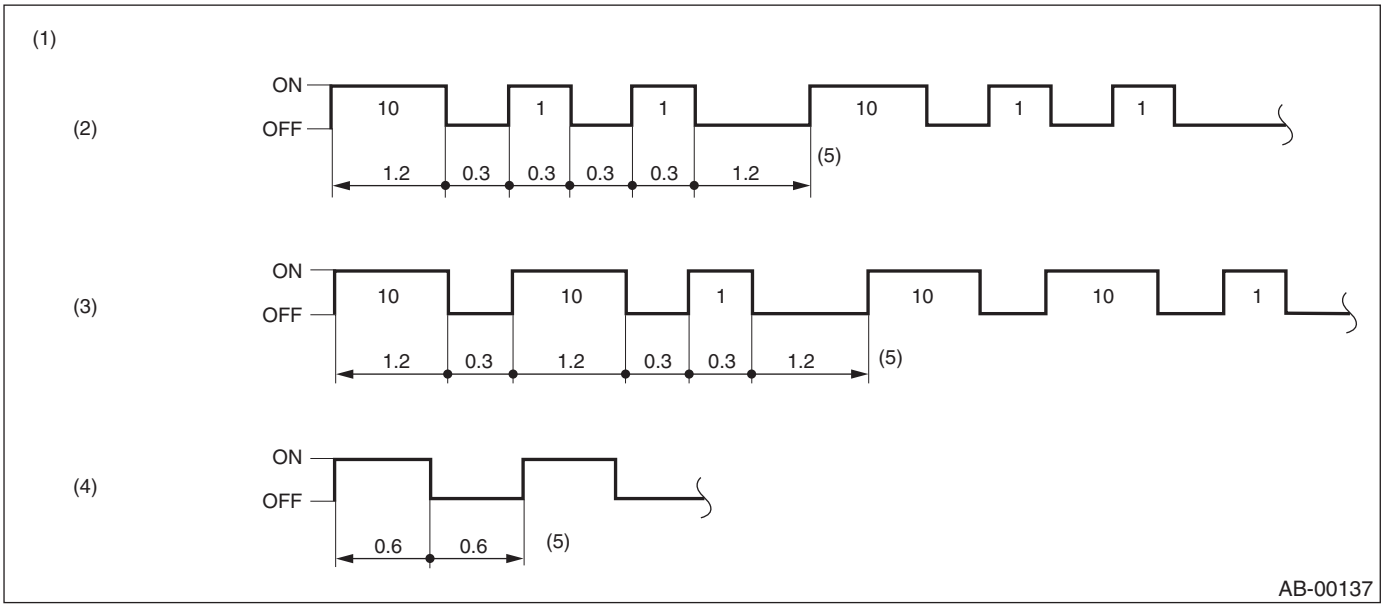
1) Turn the ignition switch ON.
2) Connect the ground terminal to diagnosis connector terminal No. 2 in the driver's seat lower cover area.



(1) Diagnosis connector
(2) Ground terminal

3) Read DTC by identifying the way the air bag warning light flashes.
The airbag warning light flashes a DTC corresponding to the faulty parts.
The long segment (1.2 sec on) indicates a “ten”, and the short segment (0.3 sec on) indicates a “one”.

NOTE:
• “List of Diagnostic Trouble Code (DTC)” <Ref. to AB-26, List of Diagnostic Trouble Code (DTC).>
• “Airbag Warning Light Failure” <Ref. to AB-22, Airbag Warning Light Failure.>



(1) Example
(2) Flashing code 12
(3) Flashing code 21
(4) Flashing normal code
(5) Sec.

4) Turn the ignition switch OFF, and disconnect the ground terminal from the diagnosis connector terminal No. 2.
5) Wind tape around the ground terminal and return it to its original position.

8. Inspection Mode

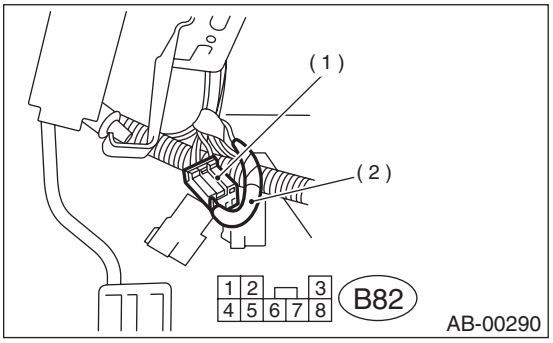
A: OPERATION

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

9. Clear Memory Mode

A: OPERATION

1) Turn the ignition switch ON.
2) Connect the ground terminal to diagnosis connector terminal No. 2 in the driver's seat lower cover area.



(1) Diagnosis connector
(2) Ground terminal

3) While the warning light flashes, connect ground terminal to diagnosis connector terminal No. 3.
4) Once the memory is erased, the warning light returns to the normal flash rate (0.6 sec on). The failure to recover the normal flash rate indicates that trouble parts still remain. Having repaired such parts, erase the memory again and confirm that the normal flash rate has returned.
5) When the memory has been cleared, disconnect the ground terminal from the diagnosis connector.
6) Wind tape around the ground terminal and return it to its original position.

10.Airbag Warning Light Failure

A: AIRBAG WARNING LIGHT REMAINS ON.

DIAGNOSIS:

- 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.
- (AB1) and (B31) are not connected properly.
- (AB6) is not connected properly to airbag control module.

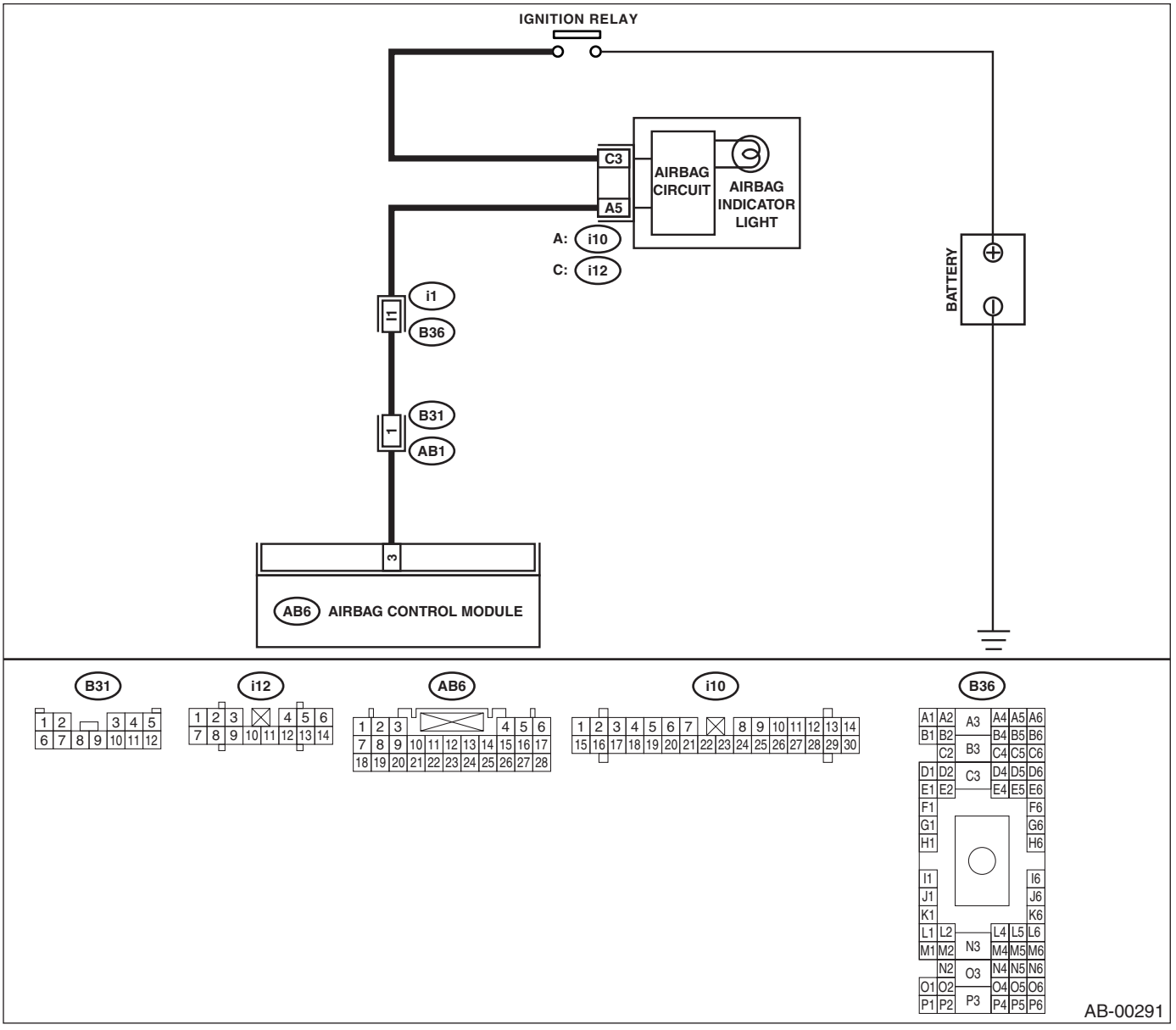
CAUTION:

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

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the airbag main harness, disconnect the airbag module connector of the driver and passenger seats for safety reasons.

WIRING DIAGRAM:



AIRBAG WARNING LIGHT FAILURE

	Step	Check	Yes	No
1	**CHECK POOR CONTACT IN CONNECTORS (AB1) AND (B31).** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Remove side sill cover. (Driver's side) 3) Confirm that firm contact is secured between connectors (AB1) and (B31).	Is the poor contact in connectors (AB1) and (B31)?	Repair the body harness or replace airbag main harness. <Ref. to AB-15, Main Harness.>	Go to step **2.**
2	**CHECK POOR CONTACT.** Confirm that firm contact is secured between the air bag control module and the connector (AB6). <Ref. to AB-17, Airbag Control Module.>	Is the poor contact in connector (AB6)?	Replace airbag main harness. <Ref. to AB-15, Main Harness.> Or replace the airbag control module. <Ref. to AB-17, Airbag Control Module.>	Go to step **3.**
3	**CHECK AIRBAG MAIN HARNESS.** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Connect the connector (AB1) to (B31). 3) Disconnect connectors (AB3) and (AB8). 4) Pull out the two stopper pins and lower the glove box and disconnect connectors (AB10) and (AB9). 5) Disconnect the connector (AB6) from the airbag control module, and connect the connector (1I) in test harness I2. <Ref. to AB-17, Airbag Control Module.> 6) Connect the battery ground cable and turn the ignition switch ON. 7) Connect connectors (4I) and (5I) in test harness I2. NOTE: After problem has been eliminated, disconnect connectors (4I) and (5I).	Is the airbag warning light turned off?	Go to step **4.**	Replace airbag main harness. <Ref. to AB-15, Main Harness.> Or replace combination meter printed circuit. <Ref. to IDI-13, Combination Meter Assembly.> Or repair the body harness.
4	**CHECK AIRBAG MAIN HARNESS.** 1) Connect the connector (AB1) to (B31). 2) Disconnect the connector (AB6) from the airbag control module, and connect the connector (1I) in test harness I2. <Ref. to AB-17, Airbag Control Module.> 3) Measure the resistance between connector (2I) in test harness I2 and the chassis ground. ***Connector & terminal*** ***(2I) No. 9 — Chassis ground:*** ***(2I) No. 10 — Chassis ground:***	Is the measured value less than 10 Ω?	Replace the airbag control module. <Ref. to AB-17, Airbag Control Module.>	Replace airbag main harness. <Ref. to AB-15, Main Harness.> Or repair the body harness.

B: AIRBAG WARNING LIGHT REMAINS OFF.

DIAGNOSIS:

- Fuse No. 5 (in fuse box) is blown.
- Body harness circuit is open.
- Airbag warning light is faulty.
- Airbag main harness is faulty.
- Airbag control module is faulty.

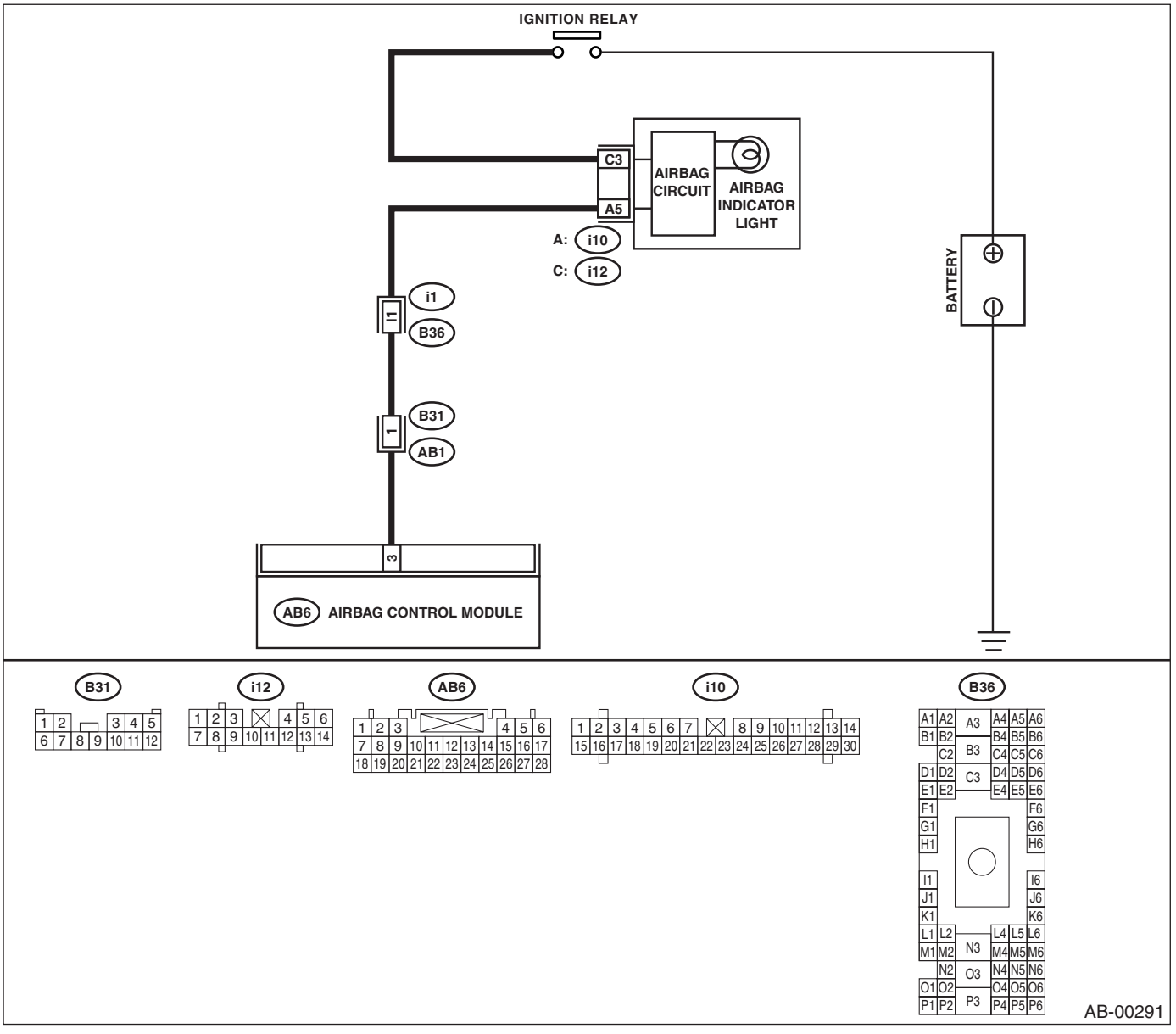
CAUTION:

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

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the airbag main harness, disconnect the airbag module connector of the driver and passenger seats for safety reasons.

WIRING DIAGRAM:



AIRBAG WARNING LIGHT FAILURE

	Step	Check	Yes	No
1	**CHECK COMBINATION METER.** Turn the ignition switch ON, and confirm that warning lights equipped in the combination meter are turned on.	Do warning lights not for the airbag turn on?	Go to step **2.**	Repair combination meter power supply. <Ref. to IDI-4, Combination Meter System.>
2	**CHECK FUSE NO. 5 (IN MAIN FUSE BOX).** Remove fuse No. 5 and perform visual inspection.	Is fuse No. 5 (in main fuse box) blown?	Replace fuse No. 5. If fuse No. 5 blows again, go to step 3.	Go to step **3.**
3	**CHECK AIRBAG WARNING LIGHT CIRCUIT (IN COMBINATION METER).** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB1) from (B31). 3) Connect the battery ground cable and turn the ignition switch ON.	Is the airbag warning light turned on?	Go to step **4.**	Replace airbag warning light bulb or combination meter printed circuit. <Ref. to IDI-13, Combination Meter Assembly.> Or repair the body harness.
4	**CHECK AIRBAG MAIN HARNESS.** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Connect the connector (AB1) to (B31). 3) Disconnect the connector (AB6) from the airbag control module. <Ref. to AB-17, Airbag Control Module.> 4) Connect the battery ground cable and turn the ignition switch ON.	Is the airbag warning light turned on?	Replace the airbag control module. <Ref. to AB-17, Airbag Control Module.>	Replace airbag main harness. <Ref. to AB-17, Airbag Control Module.>

11.List of Diagnostic Trouble Code (DTC)

A: LIST

DTC	Memory function	Contents of diagnosis	Index No.
11	Provided.	• Airbag main harness circuit is open, shorted or shorted to ground. • Airbag module harness (driver) 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-28, DTC 11, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
12	Provided.	• Airbag main harness circuit is open, shorted or shorted to ground. • Airbag module harness (passenger) circuit is open, shorted or shorted to ground. • Airbag control module is faulty. • Passenger's airbag module is faulty.	<Ref. to AB-30, DTC 12, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
15	Provided.	• Airbag main harness circuit (driver) is shorted to power supply. • Airbag module harness (driver) 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-32, DTC 15, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
16	Provided.	• Airbag main harness circuit (passenger) is shorted to power supply. • Airbag module harness (passenger) is shorted to power supply. • Airbag control module is faulty. • Passenger's airbag module is faulty.	<Ref. to AB-34, DTC 16, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
21	Provided.	Airbag control module is faulty.	<Ref. to AB-35, DTC 21, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
22	Provided.	Front airbag module and seat belt pretensioner (LH/RH) are inflated.	<Ref. to AB-36, DTC 22, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
23	Not provided.	(AB6), (AB17) and (AB18) are not connected properly to airbag control module.	<Ref. to AB-37, DTC 23, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
24	Not provided.	• Airbag control module is faulty. • Airbag main harness circuit is open. • Fuse No. 11 (in joint box) is blown. • Body harness circuit is open.	<Ref. to AB-38, DTC 24, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
25	Provided.	• Airbag control module is faulty. • Airbag main harness circuit is open. • Fuse No. 6 (in joint box) is blown. • Body harness circuit is open.	<Ref. to AB-40, DTC 25, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
31	Provided.	• Front sub-sensor harness (RH) circuit is shorted. • Front sub-sensor harness (RH) circuit is open. • Front sub-sensor (RH) is faulty. • Airbag control module is faulty.	<Ref. to AB-42, DTC 31, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

DTC	Memory function	Contents of diagnosis	Index No.
32	Provided.	• Front sub-sensor harness (LH) circuit is shorted. • Front sub-sensor harness (LH) circuit is open. • Front sub-sensor (LH) is faulty. • Airbag control module is faulty.	<Ref. to AB-46, DTC 32, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
61	Provided.	• 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-50, DTC 61, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
62	Provided.	• 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-52, DTC 62, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
65	Provided.	• 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-54, DTC 65, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
66	Provided.	• 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-56, DTC 66, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
72	Provided.	• Airbag harness is open, shorted or shorted to ground. • Airbag module harness (passenger) circuit is open, shorted or shorted to ground. • Airbag control module is faulty. • Passenger's airbag module is faulty.	<Ref. to AB-58, DTC 72, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
76	Provided.	• Airbag harness (passenger) is shorted or shorted to power supply. • Airbag module harness (passenger) is shorted to power supply. • Airbag control module is faulty. Passenger's airbag module is faulty.	<Ref. to AB-60, DTC 76, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

12.Diagnostic Procedure with Diagnostic Trouble Code (DTC)

A: DTC 11

DIAGNOSIS:

- Airbag main harness circuit is open, shorted or shorted to ground.
- Airbag module harness (Driver) 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.

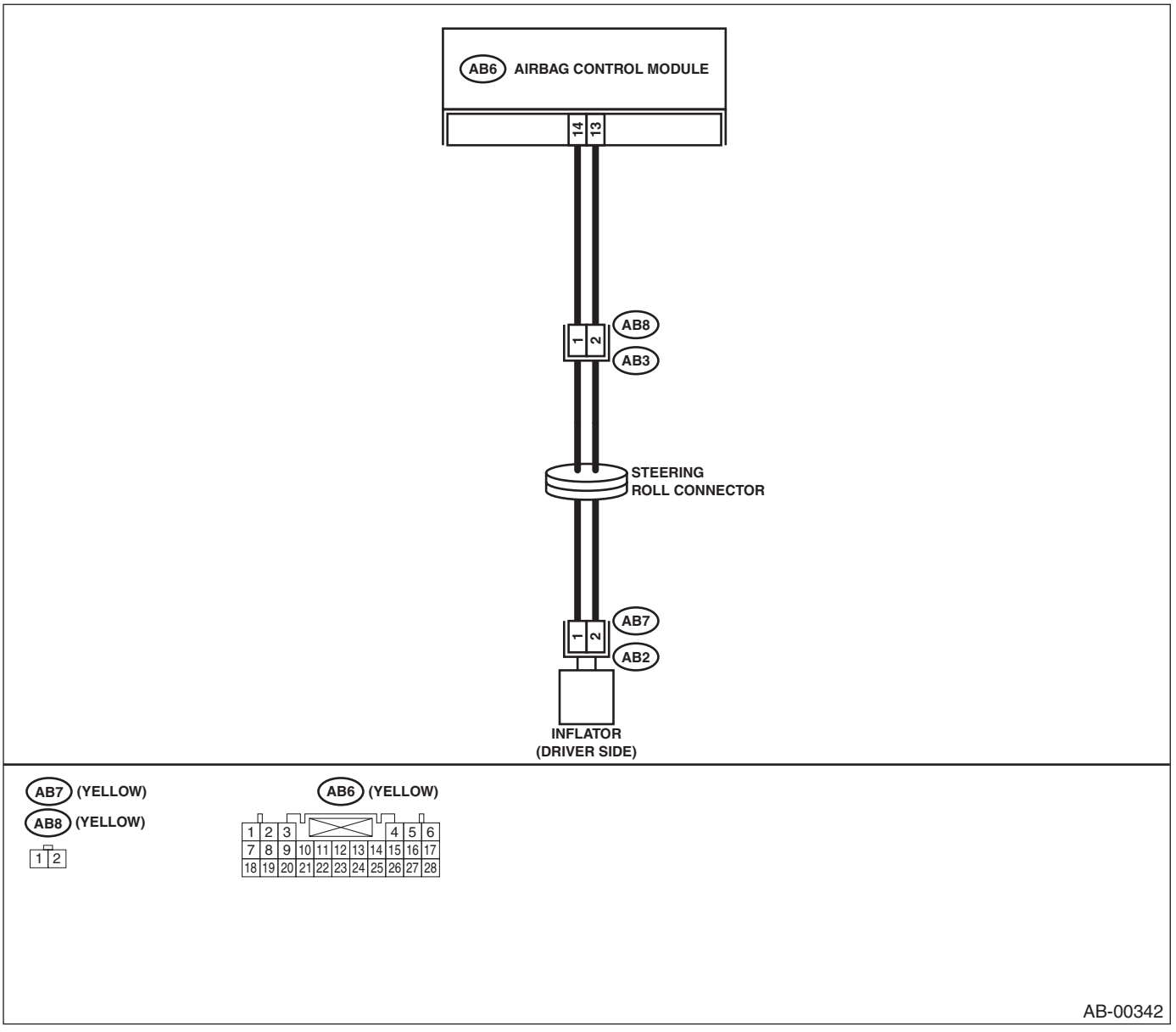
CAUTION:

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

• Before replacing the airbag module, roll controller, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

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

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK DRIVER'S AIRBAG MODULE.** 1) Turn the ignition switch OFF, disconnect battery ground cable, and wait more than 20 seconds. 2) Remove the driver's airbag module. <Ref. to AB-13, Driver's Airbag Module.> 3) Connect the connector (1F) in test harness F to connector (AB7). 4) Connect airbag resistor to connector (3F) in test harness F. 5) Connect the battery ground cable and turn the ignition switch ON.	Does the airbag warning light operate properly?	Replace the driver's airbag module. <Ref. to AB-13, Driver's Airbag Module.>	Go to step **2.**
2	**CHECK ROLL CONNECTOR.** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 second. 2) Disconnect the test harness from the connector (AB7). 3) Remove the lower cover panel, disconnect the connector (AB3) from (AB8) and connect the connector (1F) in test harness F to connector (AB8). 4) Connect the airbag resistor to connector (3F) in test harness F. 5) Connect the battery ground cable and turn the ignition switch ON.	Does the airbag warning light operate properly?	Replace the roll connector. <Ref. to AB-18, Roll Connector.>	Go to step **3.**
3	**CHECK AIRBAG MAIN HARNESS.** 1) Turn the ignition switch OFF, disconnect the ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from the connector (3F) in test harness F. 3) Remove the glove box, <Ref. to AB-<Ref. to AB-14, Passenger's Airbag Module.>, REMOVAL, Passenger's Airbag Module.> and disconnect connectors (AB10) and (AB9). 4) Disconnect the connector (AB6) from the airbag control module, and connect the connector (1I) in test harness I2. <Ref. to AB-17, Airbag Control Module.> 5) Measure the resistance between connector (2I) in test harness I2 and the connector (3F) in test harness F. ***Connector & terminal*** ***(2I) No. 1 — (3F) No. 4:*** ***(2I) No. 4 — (3F) No. 3:***	Is the measured value less than 10 Ω?	Go to step **4.**	Replace airbag main harness. <Ref. to AB-15, Main Harness.>
4	**CHECK AIRBAG MAIN HARNESS.** Measure the resistance of the connector (2I) in test harness I2. ***Connector & terminal*** ***(2I) No. 1 — No. 4:*** ***(2I) No. 4 — Chassis ground:*** ***(2I) No. 1 — Chassis ground:***	Is the measured value more than 1 MΩ?	Replace the airbag control module. <Ref. to AB-17, Airbag Control Module.>	Replace airbag main harness. <Ref. to AB-15, Main Harness.>

B: DTC 12

DIAGNOSIS:

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

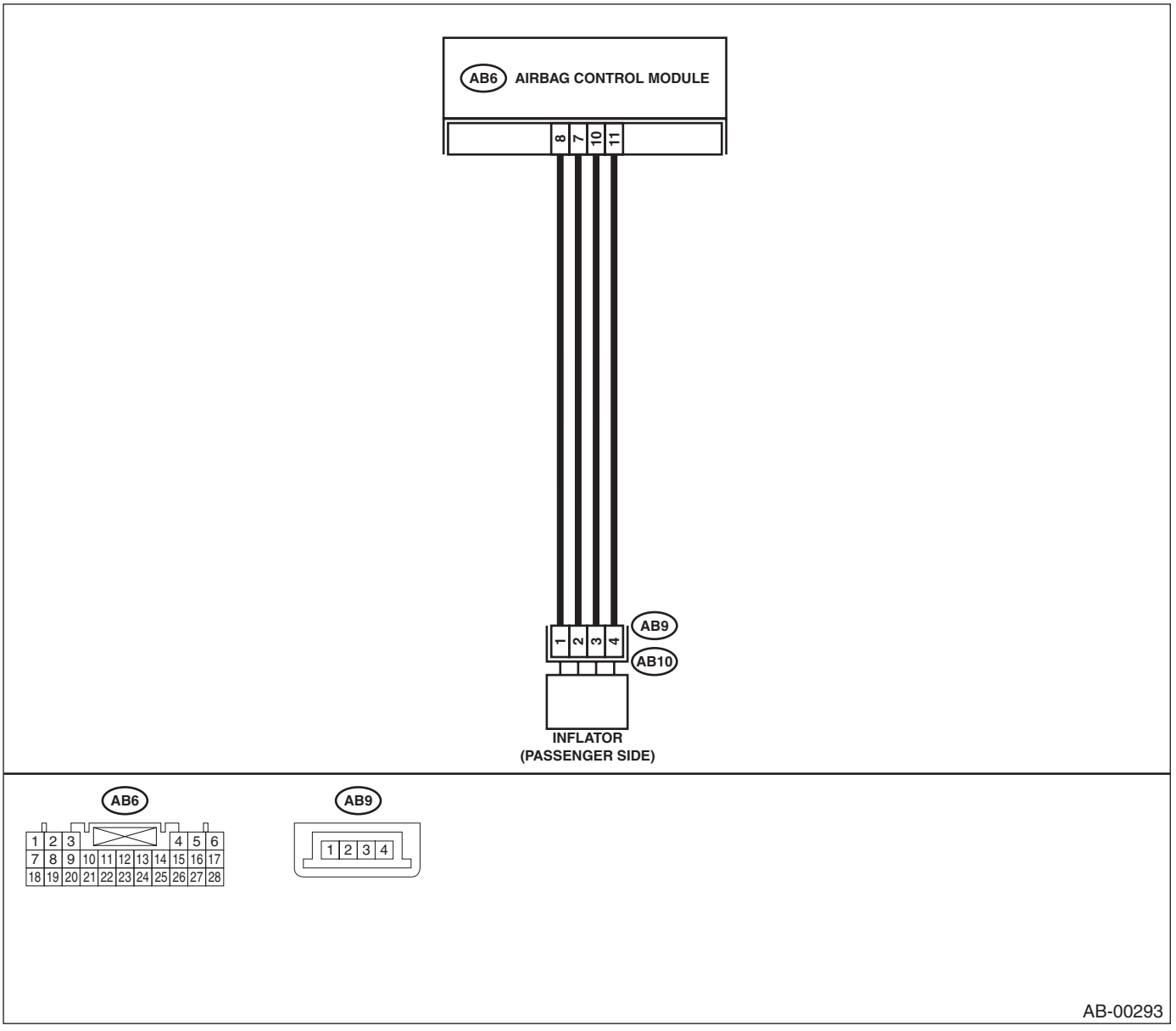
CAUTION:

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

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the airbag main harness, disconnect the airbag module connector of the driver and passenger seats for safety reasons.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK PASSENGER'S AIRBAG MODULE.** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Pull out the two stopper pins and lower the glove box. 3) Disconnect the connector (AB10) from (AB9). 4) Connect the connector (1K) in test harness K to connector (AB9). 5) Connect two airbag resistors to connectors (3K) and (4K) in test harness K. 6) Connect the battery ground cable and turn the ignition switch ON.	Does the airbag warning light operate properly?	Replace the passenger airbag module. <Ref. to AB-14, Passenger's Airbag Module.>	Go to step **2.**
2	**CHECK AIRBAG MAIN HARNESS.** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect two airbag resistors from the connectors (3K) and (4K) in test harness K. 3) Remove lower cover and disconnect the connector (AB3) from (AB8). 4) Disconnect the connector (AB6) from the airbag control module, and connect the connector (1I) in test harness I2. <Ref. to AB-17, Airbag Control Module.> 5) Measure the resistance between connector (2I) in test harness I2 and the connector (3K) in test harness K. ***Connector & terminal*** ***(2I) No. 2 — (3K) No. 4:*** ***(2I) No. 5 — (3K) No. 3:***	Is the measured value less than 10 Ω?	Go to step **3.**	Replace airbag main harness. <Ref. to AB-15, Main Harness.>
3	**CHECK AIRBAG MAIN HARNESS.** Measure the resistance of the connector (2I) in test harness I2. ***Connector & terminal*** ***(2I) No. 2 — No. 5:*** ***(2I) No. 2 — Chassis ground:*** ***(2I) No. 5 — Chassis ground:***	Is the measured value more than 1 MΩ?	Replace airbag control module. <Ref. to AB-17, Airbag Control Module.>	Replace airbag main harness. <Ref. to AB-15, Main Harness.>

C: DTC 15

DIAGNOSIS:

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

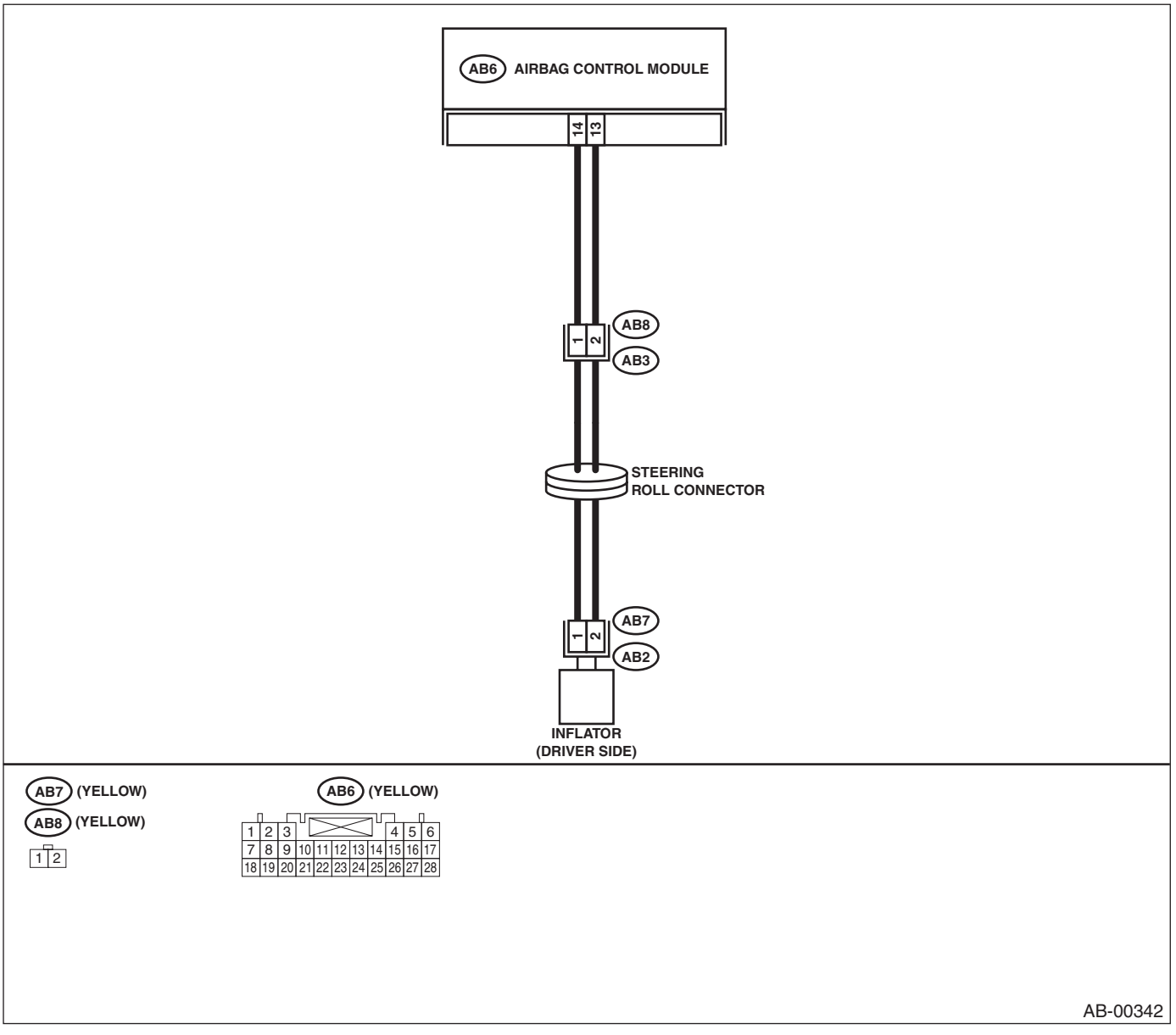
CAUTION:

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

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

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

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK DRIVER'S AIRBAG MODULE.** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Remove the driver's airbag module. <Ref. to AB-13, Driver's Airbag Module.> 3) Connect the connector (AB7) to connector (1F) in test harness F. 4) Connect the airbag resistor to connector (3F) in test harness F. 5) Connect the battery ground cable and turn the ignition switch ON.	Does the airbag warning light operate properly?	Replace the driver's airbag module. <Ref. to AB-13, Driver's Airbag Module.>	Go to step **2.**
2	**CHECK ROLL CONNECTOR.** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the test harness from the connector (AB7). 3) Remove the lower cover panel and disconnect the connector (AB3) from (AB8). 4) Connect the connector (1F) in test harness F to connector (AB8). 5) Connect the airbag resistor to connector (3F) in test harness F. 6) Connect the battery ground cable and turn the ignition switch ON.	Does the airbag warning light operate properly?	Replace the roll connector. <Ref. to AB-18, Roll Connector.>	Go to step **3.**
3	**CHECK AIRBAG MAIN HARNESS.** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from the connector (3F) in test harness F. 3) Pull out the two stopper pins and lower the glove box, and disconnect connectors (AB10) and (AB9). 4) Disconnect the connector (AB6) from the airbag control module, and connect the connector (1I) in test harness I2. <Ref. to AB-17, Airbag Control Module.> 5) Connect the battery ground cable and turn the ignition switch ON. (Engine OFF) 6) Measure the voltage between connector (2I) in test harness I2 and the chassis ground. ***Connector & terminal*** ***(2I) No. 4 (+) — Chassis ground (–):*** ***(2I) No. 1 (+) — Chassis ground (–):***	Is the measured value less than 1 V?	Replace the airbag control module. <Ref. to AB-17, Airbag Control Module.>	Replace airbag main harness. <Ref. to AB-15, Main Harness.>

D: DTC 16

DIAGNOSIS:

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

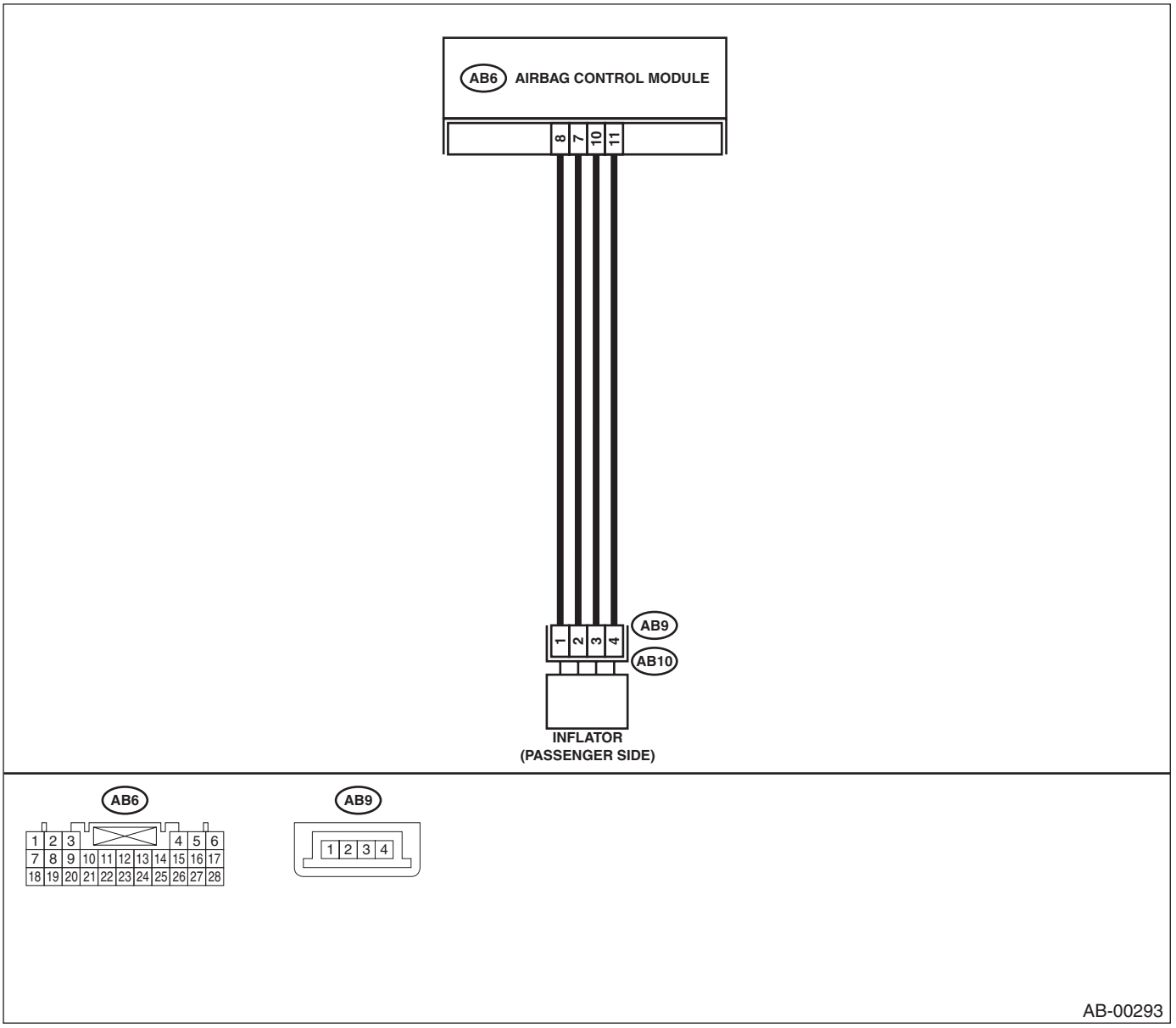
CAUTION:

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

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the airbag main harness, disconnect the airbag module connector of the driver and passenger seats for safety reasons.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK PASSENGER'S AIRBAG MODULE.** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Pull out the two stopper pins and lower the glove box. 3) Disconnect the connector (AB10) from (AB9) 4) Connect the connector (1K) in test harness K to connector (AB9). 5) Connect two airbag resistors to connectors (3K) and (4K) in test harness K. 6) Connect the battery ground cable and turn the ignition switch ON.	Does the airbag warning light operate properly?	Replace the passenger airbag module. <Ref. to AB-14, Passenger's Airbag Module.>	Go to step **2.**
2	**CHECK AIRBAG MAIN HARNESS.** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect two airbag resistors from the connectors (3K) and (4K) in test harness K. 3) Remove the lower cover and disconnect the connector (AB3) from (AB8). 4) Disconnect the connector (AB6) from the airbag control module, and connect the connector (1I) in test harness I2. <Ref. to AB-17, Airbag Control Module.> 5) Measure the voltage between connector (2I) in test harness I2 and the chassis ground. ***Connector & terminal*** ***(2I) No. 2 — Chassis ground:*** ***(2I) No. 5 — Chassis ground:***	Is the measured value less than 1 V?	Replace the airbag control module. <Ref. to AB-17, Airbag Control Module.>	Replace airbag main harness. <Ref. to AB-15, Main Harness.>

E: DTC 21

DIAGNOSIS:

- Airbag control module is faulty.

CAUTION:

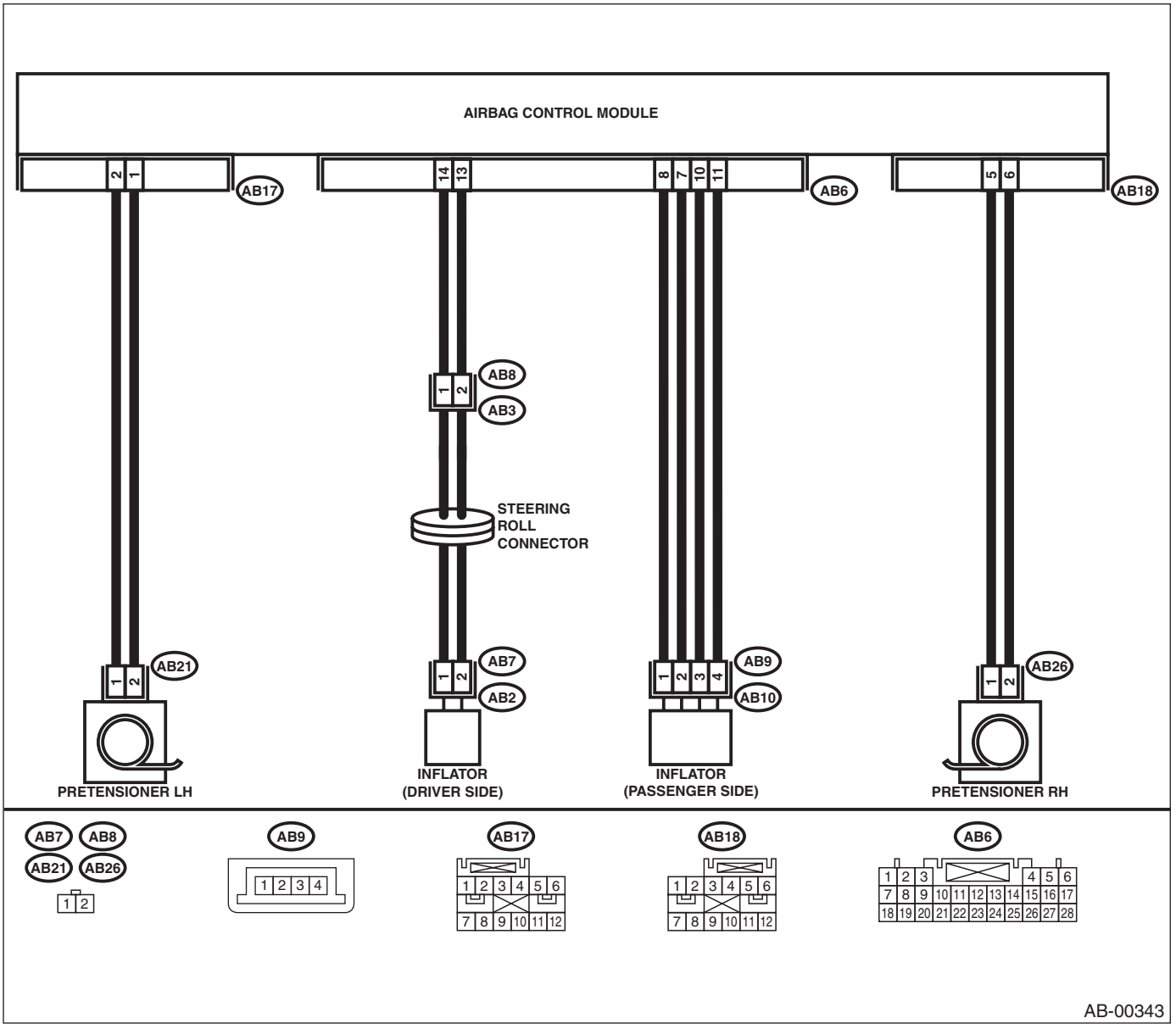
• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

	Step	Check	Yes	No
1	**CHECK IF DTC 21 IS INDICATED.** Read Diagnostic Trouble Code. <Ref. to AB-19, Read Diagnostic Trouble Code (DTC).>	Is airbag warning light trouble code 21 indicated?	Replace the airbag control module. <Ref. to AB-17, Airbag Control Module.>	Perform clear memory. <Ref. to AB-21, Clear Memory Mode.>

F: DTC 22

WIRING DIAGRAM:



This code is indicated when the front airbag and the pretensioner are in operation.
Once this code is indicated, memory is not erasable; therefore change the following parts.

- Airbag control module. <Ref. to AB-17, Airbag Control Module.>
- Driver's airbag module. <Ref. to AB-13, Driver's Airbag Module.>
- Passenger's airbag module. <Ref. to AB-14, Passenger's Airbag Module.>
- Front sub-sensor of both sides. <Ref. to AB-19, Front Sub Sensor.>
- Front seat belt outer with pretensioner of both sides. <Ref. to SB-6, Front Seat Belt.>

G: DTC 23

DIAGNOSIS:

(AB6), (AB17) and (AB18) are not connected properly to airbag control module.

CAUTION:

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

	Step	Check	Yes	No
1	**CHECK POOR CONTACT IN CONNECTORS (AB6), (AB17) and (AB18).** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connectors (AB6), (AB17) and (AB18) from the airbag control module. <Ref. to AB-17, Airbag Control Module.>	Does if rust or damage appear on the harness connector and the control module connector?	Replace the airbag control module. <Ref. to AB-17, Airbag Control Module.> Replace airbag main harness. <Ref. to AB-15, Main Harness.> Replace pretensioner harness. <Ref. to AB-16, Pretensioner Harness.>	Go to step **2.**
2	**CHECK POOR CONTACT IN CONNECTORS (AB6), (AB17) and (AB18).** 1) Ensure that connectors are firmly reconnected. 2) Connect the battery ground cable and turn the ignition switch ON.	Does the air bag warning light operate properly?	Finish the diagnosis.	Replace the airbag control module. <Ref. to AB-17, Airbag Control Module.>

H: DTC 24

DIAGNOSIS:

- Airbag control module is faulty.
- Airbag main harness circuit is open.
- Fuse No, 11 (in fuse and relay box) is blown.
- Body harness circuit is open.

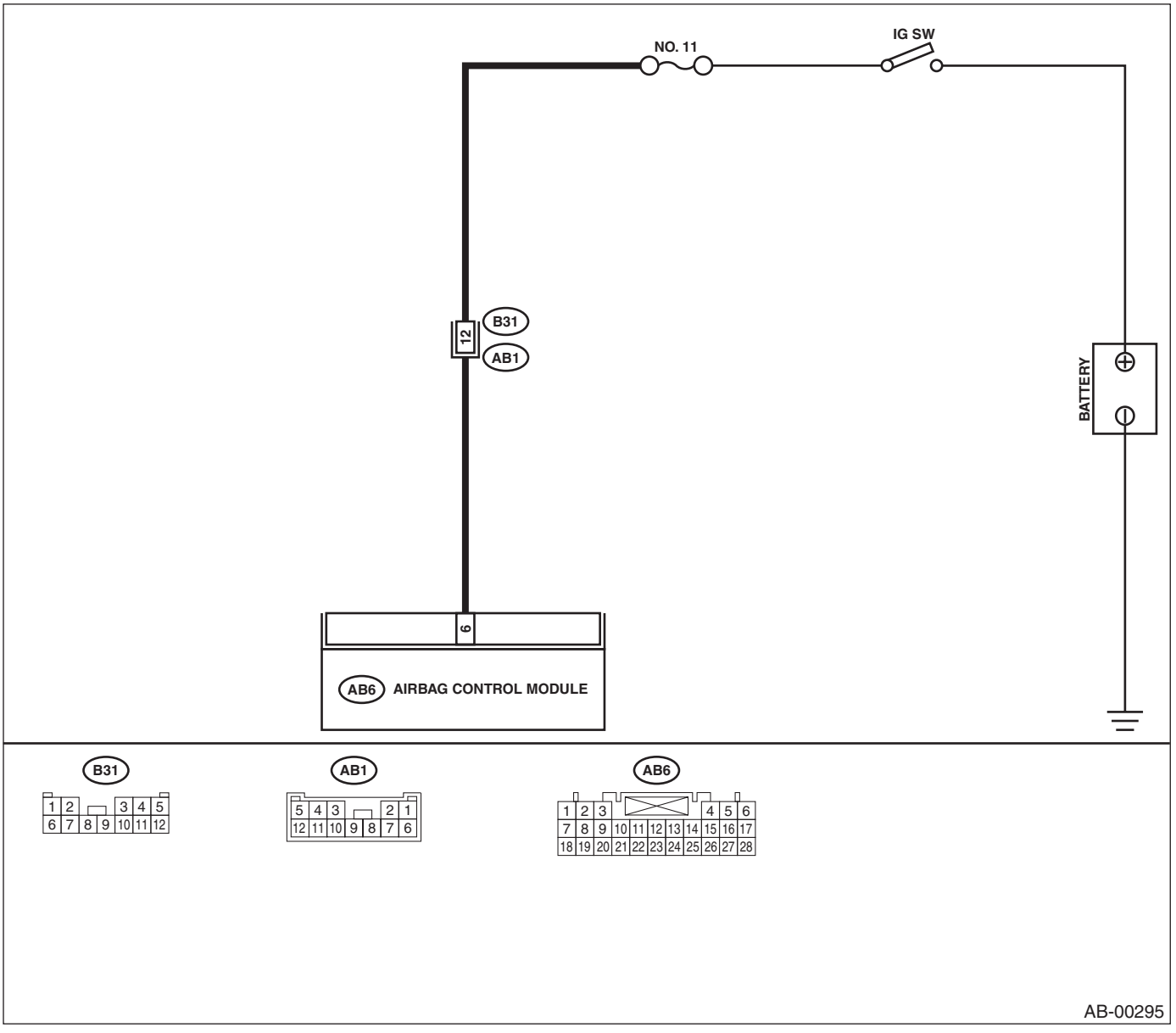
CAUTION:

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

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

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

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK FUSE No. 11 (IN FUSE AND RELAY BOX).** 1) Confirm that the ignition switch is turned OFF. 2) Remove fuse No. 11 (in fuse and relay box) and perform visual inspection.	Is fuse No.11 blown?	Replace fuse No. 11. If fuse No. 11 blows again, repair the body harness.	Go to step **2.**
2	**CHECK AIRBAG CONTROL MODULE.** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB6) from the airbag control module. <Ref. to AB-17, Airbag Control Module.> 3) Connect the connector (1I) in test harness I2 to connector (AB6). 4) Connect the battery ground cable and turn the ignition switch ON. 5) Measure the voltage between connector (2I) in test harness I2 and chassis ground. ***Connector & terminal*** ***(2I) No. 3 (+) — Chassis ground (–):***	Is the measured value more than 10 V?	Replace the airbag control module. <Ref. to AB-17, Airbag Control Module.>	Go to step **3.**
3	**CHECK BODY MAIN HARNESS.** 1) While checking control module, turn the ignition switch OFF and disconnect the battery ground cable. Wait more than 20 seconds before operation. 2) Disconnect the airbag connector (AB1) from the body harness (B31). 3) Measure the voltage between the connector (B31) and the chassis ground. ***Connector & terminal*** ***(B31) No. 12 (+) — Chassis ground (–):***	Is the measured value more than 10 V?	Replace airbag main harness. <Ref. to AB-15, Main Harness.>	Repair the body harness.

I: DTC 25

DIAGNOSIS:

- Airbag control module is faulty.
- Airbag main harness circuit is open.
- Fuse No. 6 (in fuse and relay box) is blown.
- Body harness circuit is open.

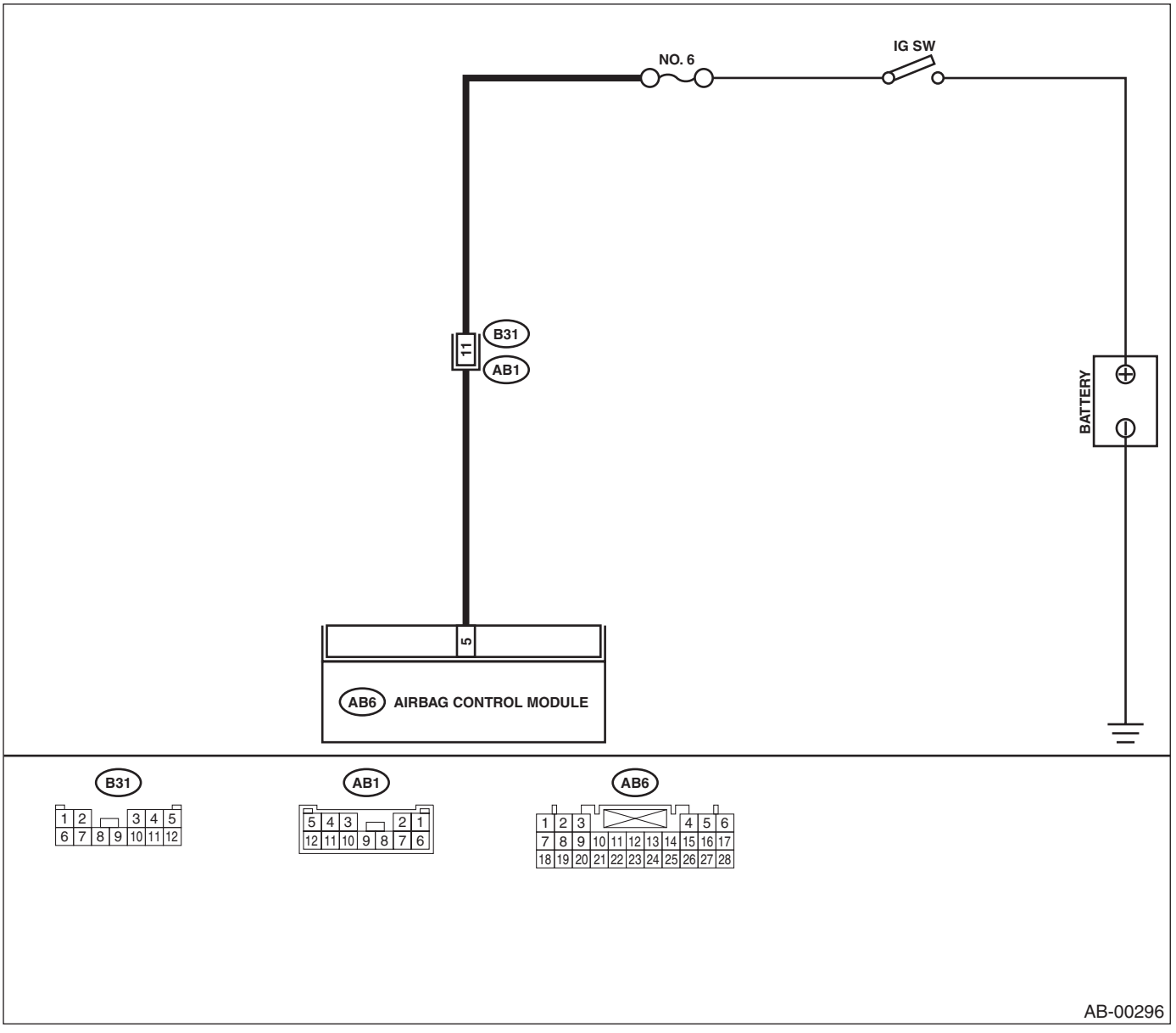
CAUTION:

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

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

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

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK FUSE NO. 6 (IN FUSE AND RELAY BOX).** 1) Confirm that the ignition switch is turned OFF. 2) Remove No. 6 fuse (in fuse and relay box) and perform visual inspection.	Is fuse No. 6 blown?	Replace fuse No. 6. If fuse No. 6 is blown again, repair the body harness.	Go to step **2.**
2	**CHECK AIRBAG CONTROL MODULE.** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB6) from air-bag control module. <Ref. to AB-17, Airbag Control Module.> 3) Connect the connector (1I) in test harness I2 to connector (AB6). 4) Connect the battery ground cable, and turn the ignition switch ON. 5) Measure the voltage between the connector (2I) in test harness I2 and the chassis ground. ***Connector & terminal*** ***(2I) No. 6 (+) — Chassis ground (–):***	Is the measured value more than 10 V?	Replace the airbag control module. <Ref. to AB-17, Airbag Control Module.>	Go to step **3.**
3	**CHECK AIRBAG MAIN HARNESS.** 1) While checking control module, turn the ignition switch OFF and disconnect the battery ground cable. Wait more than 20 seconds before operation. 2) Disconnect the airbag connector (AB1) from the body harness (B31). 3) Measure the voltage between the connector (B31) and the chassis ground. ***Connector & terminal*** ***(B31) No. 11 (+) — Chassis ground (–):***	Is the measured value more than 10 V?	Replace the airbag main harness. <Ref. to AB-15, Main Harness.>	Repair the body harness.

J: DTC 31

DIAGNOSIS:

- Front sub-sensor harness (RH) circuit is shorted.
- Front sub-sensor harness (RH) circuit is open.
- Front sub-sensor (RH) is faulty.
- Airbag control module is faulty.

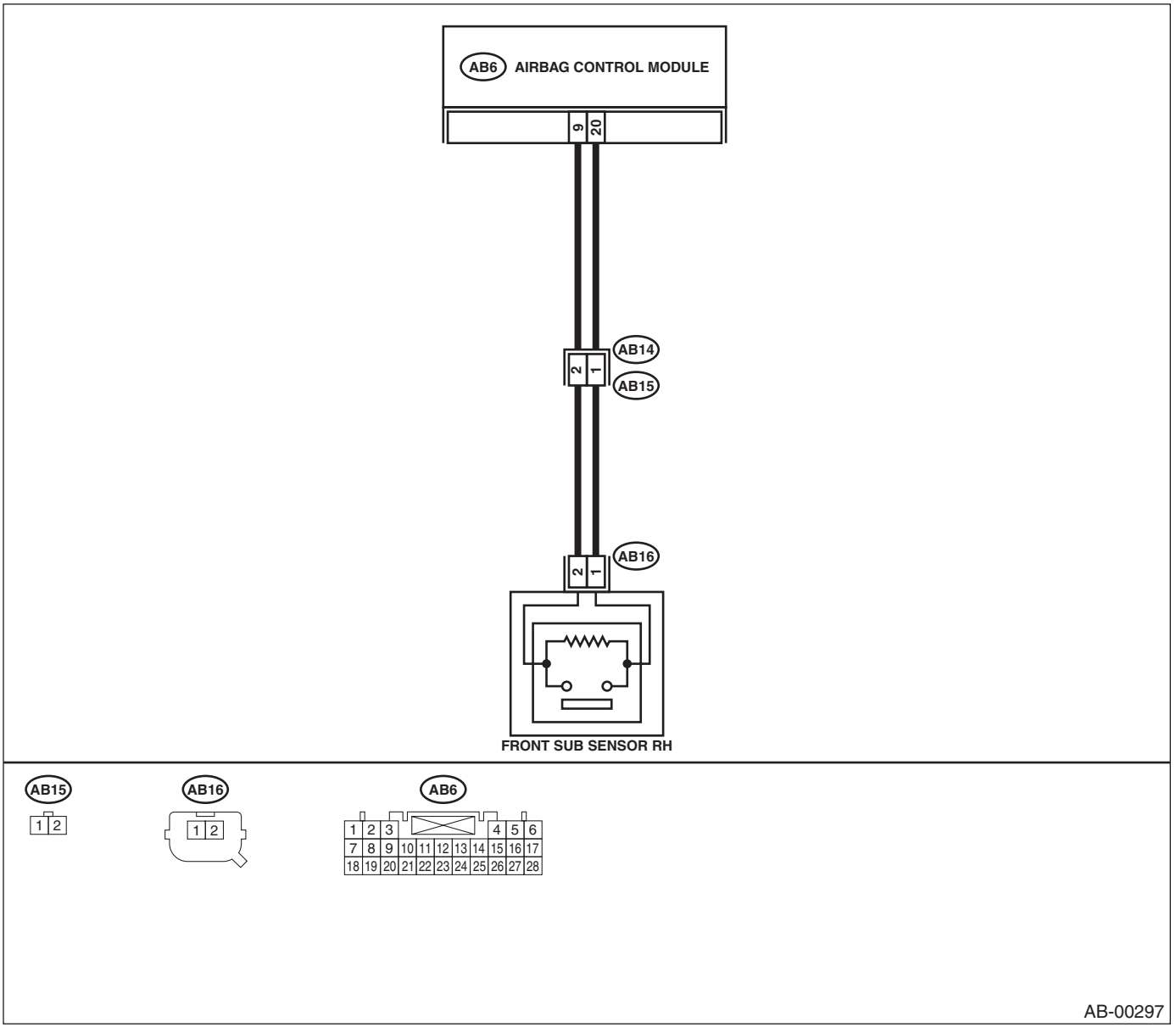
CAUTION:

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

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

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

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK FRONT SUB-SENSOR (RH) AND FRONT SUB-SENSOR HARNESS (RH).** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB6) from the airbag control module, and connect the connector (1I) in test harness I2. <Ref. to AB-17, Airbag Control Module.> 3) Measure the resistance of the connector (3I) in test harness I2. ***Connector & terminal*** ***(3I) No. 2 — No. 4:***	Is the measured value within 750 Ω to 1 KΩ?	Go to step **2.**	Go to step **4.**
2	**CHECK FRONT SUB-SENSOR (RH) AND FRONT SUB-SENSOR HARNESS (RH).** Measure the resistance between connector (3I) in test harness I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 2 — Chassis ground:*** ***(3I) No. 4 — Chassis ground:***	Is the measured value more than 1 MΩ?	Replace the airbag control module. <Ref. to AB-17, Airbag Control Module.>	Go to step **3.**
3	**CHECK AIRBAG MAIN HARNESS AND FRONT SUB-SENSOR HARNESS (RH).** 1) Disconnect connector (AB16) from the front sub-sensor. <Ref. to AB-19, Front Sub Sensor.> 2) Connect connector (IH) in test harness H to connector (AB16). 3) Measure the resistance between connector (3I) in test harness I2 and connector (3H) in test harness H. ***Connector & terminal*** ***(3I) No. 2 — (3H) No. 5:*** ***(3I) No. 4 — (3H) No. 6:***	Is the measured value less than 10 Ω?	Go to step **4.**	Go to step **5.**
4	**CHECK AIRBAG MAIN HARNESS AND FRONT SUB-SENSOR HARNESS (RH).** Measure the resistance between connector (3I) in test harness I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 2 — Chassis ground:*** ***(3I) No. 4 — Chassis ground:***	Is the measured value more than 1 MΩ?	Go to step **9.**	Go to step **5.**
5	**CHECK AIRBAG MAIN HARNESS** 1) Remove the instrument panel. <Ref. to EI-37, Instrument Panel Assembly.> 2) Disconnect connector (AB15) from (AB14), and connect connector (2F) in test harness F to connector (AB14). 3) Measure the resistance between connector (3I) in test harness I2 and connector (3F) in test harness F. ***Connector & terminal*** ***(3I) No. 2 — (3F) No. 6:*** ***(3I) No. 4 — (3F) No. 5:***	Is the measured value less than 10 Ω?	Go to step **6.**	Replace airbag main harness. <Ref. to AB-15, Main Harness.>
6	**CHECK AIRBAG MAIN HARNESS** Measure the resistance between connector (3I) in test harness I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 2 — Chassis ground:*** ***(3I) No. 4 — Chassis ground:***	Is the measured value more than 1 MΩ?	Go to step **7.**	Replace airbag main harness. <Ref. to AB-15, Main Harness.>

	Step	Check	Yes	No
7	**CHECK FRONT SUB-SENSOR HARNESS (RH).** 1) Connect connector (1F) in test harness F to the connector (AB15). 2) Measure the resistance between connector (3H) in test harness H and connector (3F) in the test harness F. ***Connector & terminal*** ***(3F) No. 3 — (3H) No. 5:*** ***(3F) No. 4 — (3H) No. 6:***	Is the measured value less than 10 Ω?	Go to step **8.**	Replace the front sub-sensor harness (RH) <Ref. to AB-20, Front Sub Sensor Harness.>
8	**CHECK FRONT SUB-SENSOR HARNESS (RH).** Measure the resistance between connector (3F) in test harness F and the chassis ground. ***Connector & terminal*** ***(3F) No. 3 — Chassis ground:*** ***(3F) No. 4 — Chassis ground:***	Is the measured value more than 1 MΩ?	Go to step **9.**	Replace the front sub-sensor harness (RH) <Ref. to AB-20, Front Sub Sensor Harness.>
9	**CHECK FRONT SUB-SENSOR (RH).** 1) Connect connector (2H) in test harness H to front sub-sensor (RH). 2) Measure the resistance of the connector (3H) in test harness H. ***Connector & terminal*** ***(3H) No. 3 — No. 4:***	Is the measured value within 750 Ω to 1 KΩ?	Go to step **10.**	Replace the front sub-sensor (RH) <Ref. to AB-19, Front Sub Sensor.>
10	**CHECK FRONT SUB-SENSOR (RH).** Measure the resistance between connector (3H) in test harness H and the chassis ground. ***Connector & terminal*** ***(3H) No. 3 — Chassis ground:*** ***(3H) No. 4 — Chassis ground:***	Is the measured value more than 1 MΩ?	Finish the diagnosis.	Replace the front sub-sensor (RH) <Ref. to AB-19, Front Sub Sensor.>

MEMO:

K: DTC 32

DIAGNOSIS:

- Front sub-sensor harness (LH) circuit is shorted.
- Front sub-sensor harness (LH) circuit is open.
- Front sub-sensor (LH) is faulty.
- Airbag control module is faulty.

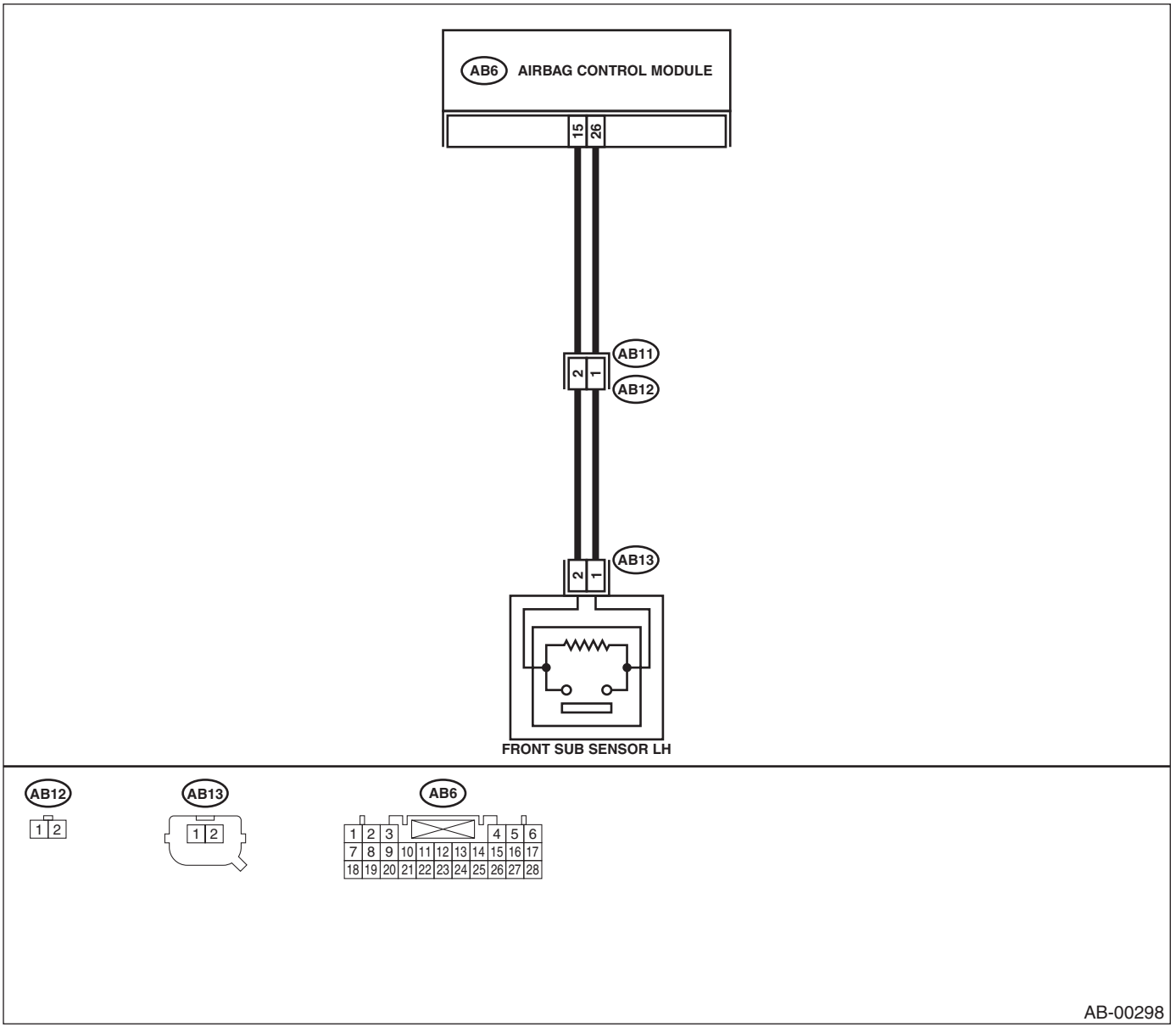
CAUTION:

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

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

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

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK FRONT SUB-SENSOR (LH) AND FRONT SUB-SENSOR HARNESS (RH).** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect connector (AB6) from the air-bag control module, and connect connector (1I) in the test harness I2 to connector (AB6). <Ref. to AB-17, Airbag Control Module.> 3) Measure the resistance of the connector (3I) in the test harness I2. ***Connector & terminal*** ***(3I) No. 1 — No. 3:***	Is the measured value within 750 Ω to 1 KΩ?	Go to step **2.**	Go to step **3.**
2	**CHECK FRONT SUB-SENSOR (LH) AND FRONT SUB-SENSOR HARNESS (RH).** Measure the resistance between connector (3I) in test harness I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 1 — Chassis ground:*** ***(3I) No. 3 — Chassis ground:***	Is the measured value more than 1 MΩ?	Replace the airbag control module. <Ref. to AB-17, Airbag Control Module.>	Go to step **3.**
3	**CHECK AIRBAG MAIN HARNESS AND FRONT SUB-SENSOR HARNESS (LH).** 1) Disconnect the connector (AB13) from the front sub-sensor. <Ref. to AB-19, Front Sub Sensor.> 2) Connect connector (1H) in test harness H to connector (AB13). 3) Measure the resistance between connector (3I) in test harness I2 and connector (3H) in test harness H. ***Connector & terminal*** ***(3I) No. 3 — (3H) No. 5:*** ***(3I) No. 1 — (3H) No. 6:***	Is the measured value less than 10 Ω?	Go to step **4.**	Go to step **5.**
4	**CHECK AIRBAG MAIN HARNESS AND FRONT SUB-SENSOR HARNESS (LH).** Measure the resistance between connector (3I) in test harness I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 3 — Chassis ground:*** ***(3I) No. 1 — Chassis ground:***	Is the measured value more than 1 MΩ?	Go to step **9.**	Go to step **5.**
5	**CHECK AIRBAG MAIN HARNESS.** 1) Remove the instrument panel. <Ref. to EI-37, Instrument Panel Assembly.> 2) Disconnect connector (AB11) from (AB12), and connect connector (2F) in test harness F to (AB11). 3) Measure the resistance between connector (3I) in test harness I2 and connector (3F) in test harness F. ***Connector & terminal*** ***(3I) No. 3 — (3F) No. 6:*** ***(3I) No. 1 — (3F) No. 5:***	Is the measured value less than 10 Ω?	Go to step **6.**	Replace the airbag main harness. <Ref. to AB-15, Main Harness.>
6	**CHECK AIRBAG MAIN HARNESS.** Measure the resistance between connector (3I) in the test harness I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 3 — Chassis ground:*** ***(3I) No. 1 — Chassis ground:***	Is the measured value more than 1 MΩ?	Go to step **7.**	Replace the airbag main harness. <Ref. to AB-15, Main Harness.>

	Step	Check	Yes	No
7	**CHECK FRONT SUB-SENSOR HARNESS (LH).** 1) Connect connector (1F) in test harness F to connector (AB12). 2) Measure the resistance between connector (3H) in test harness H and connector (3F) in test harness F. ***Connector & terminal*** ***(3F) No. 3 — (3H) No. 5:*** ***(3F) No. 4 — (3H) No. 6:***	Is the measured value less than 10 Ω?	Go to step **8.**	Replace the front sub-sensor harness (LH). <Ref. to AB-15, Main Harness.>
8	**CHECK FRONT SUB-SENSOR HARNESS (LH).** Measure the resistance between connector (3F) in test harness F and the chassis ground. ***Connector & terminal*** ***(3F) No. 3 — Chassis ground:*** ***(3F) No. 4 — Chassis ground:***	Is the measured value more than 1 MΩ?	Go to step **9.**	Replace the front sub-sensor harness (LH). <Ref. to AB-15, Main Harness.>
9	**CHECK FRONT SUB-SENSOR (LH).** 1) Connect connector (2H) in test harness H to front sub-sensor (LH). 2) Measure the resistance of the connector (3H) in test harness H. ***Connector & terminal*** ***(3H) No. 3 — No. 4:***	Is the measured value within 750 Ω to 1 KΩ?	Go to step **10.**	Replace the front sub-sensor (LH). <Ref. to AB-19, Front Sub Sensor.>
10	**CHECK FRONT SUB-SENSOR (LH).** Measure the resistance between connector (3H) in test harness H and the chassis ground. ***Connector & terminal*** ***(3H) No. 3 — Chassis ground:*** ***(3H) No. 4 — Chassis ground:***	Is the measured value more than 1 MΩ?	Finish the diagnosis.	Replace the front sub-sensor (LH). <Ref. to AB-19, Front Sub Sensor.>

MEMO:

L: DTC 61

DIAGNOSIS:

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

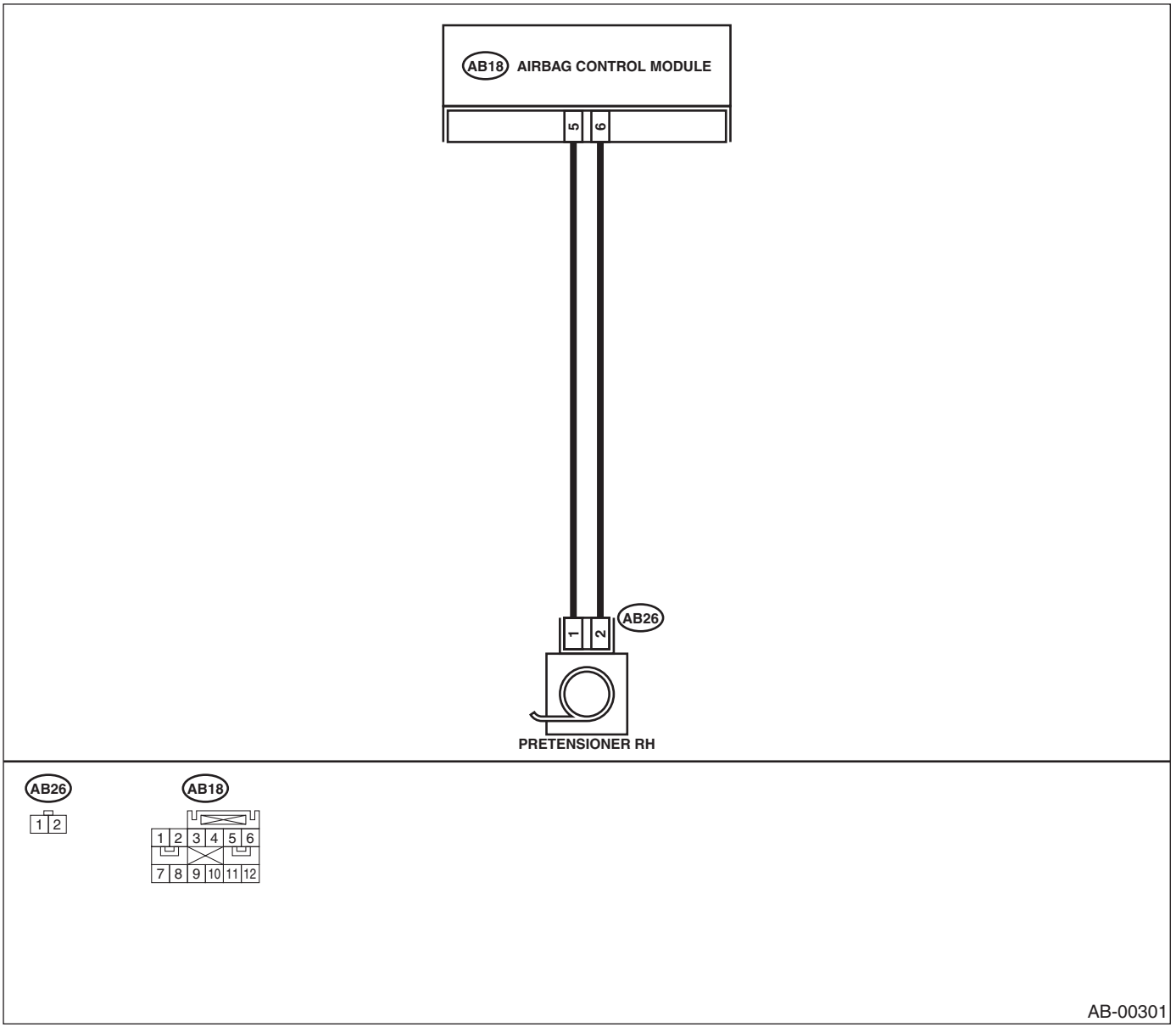
CAUTION:

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

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the pretensioner harness, disconnect the seat belt pretensioner connector for the safety reasons.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK SEAT BELT PRETENSIONER.** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB26) from the seat belt pretensioner (RH). <Ref. to SB-6, Front Seat Belt.> 3) Connect the connector (1F) in test harness F to (AB26). 4) Connect the airbag resistor to connector (3F) in test harness F. 5) Connect the battery ground cable and turn the ignition switch ON.	Does the airbag warning light operate properly?	Replace seat belt pretensioner (RH). <Ref. to SB-6, Front Seat Belt.>	Go to step **2.**
2	**CHECK PRETENSIONER HARNESS (RH).** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from the test harness. 3) Disconnect the connectors (AB17) and (AB18) from the airbag control module. <Ref. to AB-17, Airbag Control Module.> 4) Connect the connector (1I) in test harness I2 to connector (AB18). 5) Measure the resistance between connector (3I) in test harness I2 and connector (3F) in test harness F. ***Connector & terminal*** ***(3I) No. 8 — (3F) No. 4:*** ***(3I) No. 6 — (3F) No. 3:***	Is the measured value less than 10 Ω?	Go to step **3.**	Replace pretensioner harness. <Ref. to AB-16, Pretensioner Harness.>
3	**CHECK PRETENSIONER HARNESS (RH).** Measure the resistance of the connector (3I) in test harness I2. ***Connector & terminal*** ***(3I) No. 6 — No. 8:***	Is the measured value more than 1 MΩ?	Go to step **4.**	Replace pretensioner harness. <Ref. to AB-16, Pretensioner Harness.>
4	**CHECK PRETENSIONER HARNESS (RH).** Measure the resistance between connector (3I) in test harness I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 6 — Chassis ground:*** ***(3I) No. 8 — Chassis ground:***	Is the measured value more than 1 MΩ?	Replace the airbag control module. <Ref. to AB-17, Airbag Control Module.>	Replace pretensioner harness. <Ref. to AB-16, Pretensioner Harness.>

M: DTC 62

DIAGNOSIS:

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

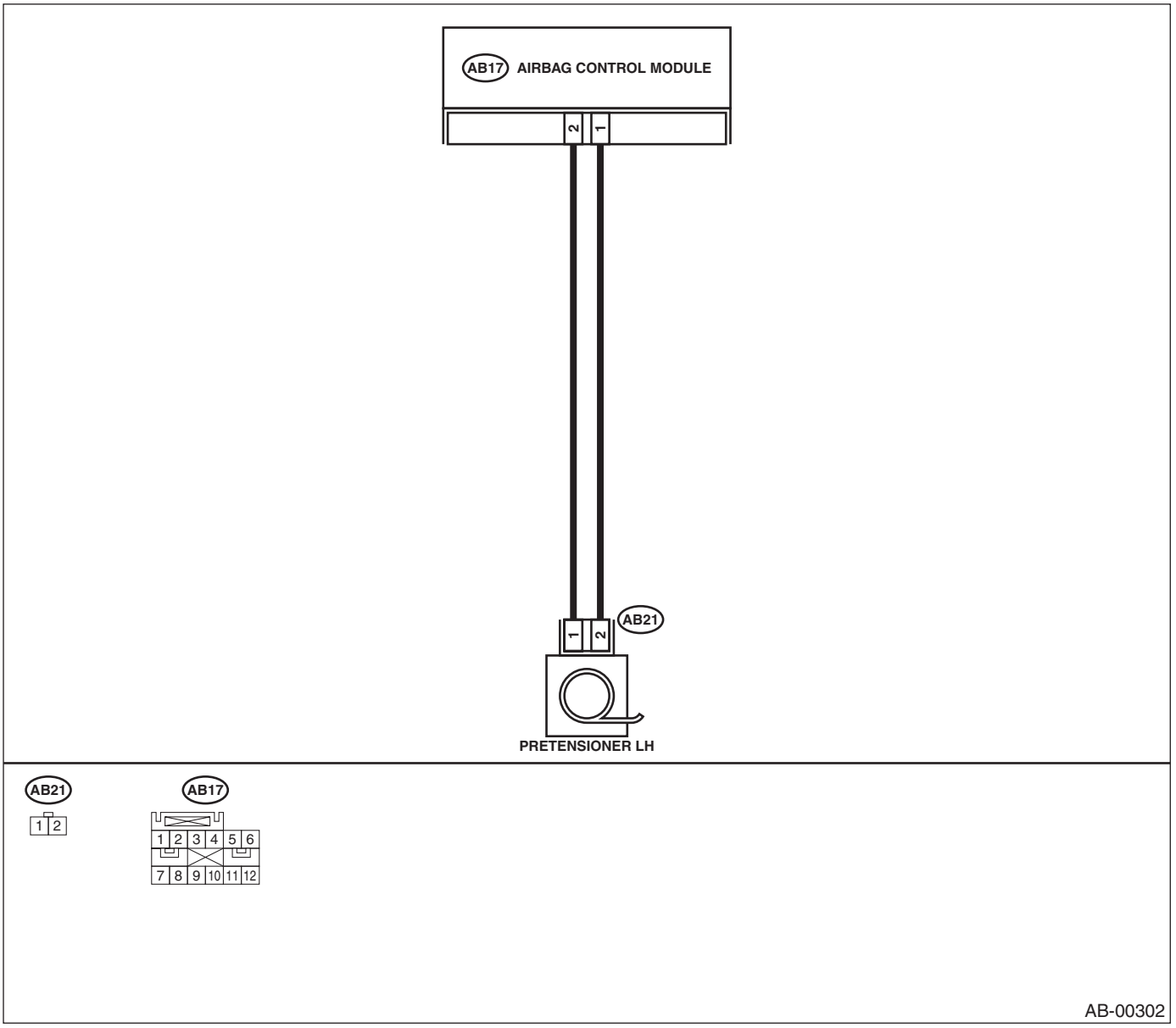
CAUTION:

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

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the pretensioner harness, disconnect the seat belt pretensioner connector for the safety reasons.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK SEAT BELT PRETENSIONER.** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB21) from the stabled pretensioner (LH). <Ref. to SB-6, Front Seat Belt.> 3) Connect the connector (1F) in test harness F to (AB21). 4) Connect the airbag resistor to the connector (3F) in test harness F. 5) Connect the battery ground cable and turn the ignition switch ON.	Does the airbag warning light operate properly?	Replace seat belt pretensioner (LH). <Ref. to SB-6, Front Seat Belt.>	Go to step **2.**
2	**CHECK PRETENSIONER HARNESS (LH).** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from the test harness. 3) Disconnect the connectors (AB17) and (AB18) from the airbag control module. <Ref. to AB-17, Airbag Control Module.> 4) Connect the connector (1I) in test harness I2 to the connector (AB17). 5) Measure the resistance between connector (3I) in test harness I2 and the connector (3F) in test harness F. ***Connector & terminal*** ***(3I) No. 11 — (3F) No. 4:*** ***(3I) No. 13 — (3F) No. 3:***	Is the measured value less than 10 Ω?	Go to step **3.**	Replace pretensioner harness. <Ref. to AB-16, Pretensioner Harness.>
3	**CHECK PRETENSIONER HARNESS (LH).** Measure the resistance of the connector (3I) in test harness I2. ***Connector & terminal*** ***(3I) No. 11 — No. 13:***	Is the measured value more than 1 MΩ?	Go to step **4.**	Replace pretensioner harness. <Ref. to AB-16, Pretensioner Harness.>
4	**CHECK PRETENSIONER HARNESS (LH).** Measure the resistance between the connector (3I) in test harness I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 11 — Chassis ground:*** ***(3I) No. 13 — Chassis ground:***	Is the measured value more than 1 MΩ?	Replace the airbag control module. <Ref. to AB-17, Airbag Control Module.>	Replace pretensioner harness. <Ref. to AB-16, Pretensioner Harness.>

N: DTC 65

DIAGNOSIS:

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

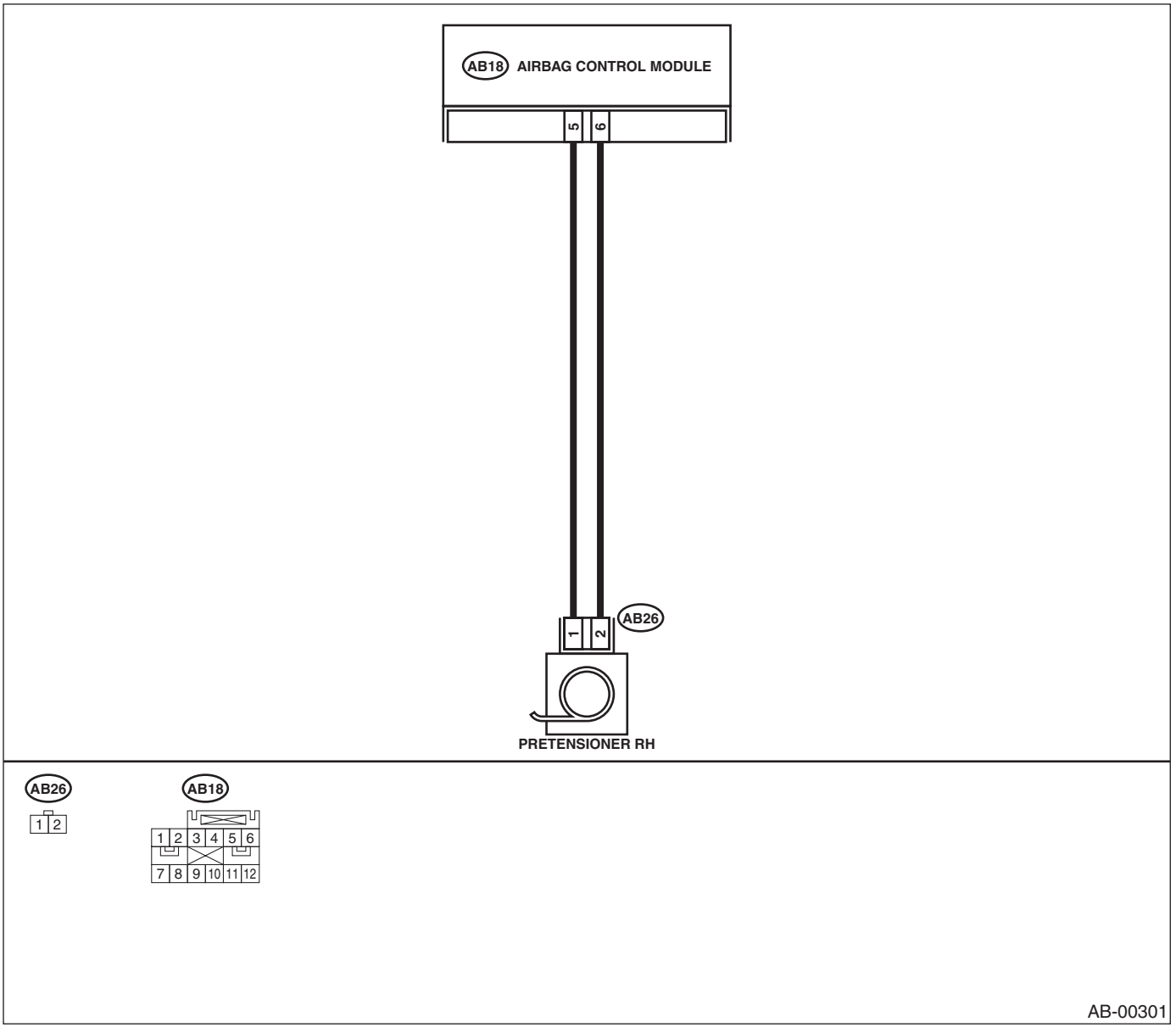
CAUTION:

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

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the pretensioner harness, disconnect the seat belt pretensioner connector for the safety reasons.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK SEAT BELT PRETENSIONER.** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB26) from the seat belt pretensioner (RH). <Ref. to SB-6, Front Seat Belt.> 3) Connect the connector (1F) in test harness F to (AB26). 4) Connect the airbag resistor to connector (3F) in test harness F. 5) Connect the battery ground cable, and turn the ignition switch ON.	Does the airbag warning light operate properly?	Replace seat belt pretensioner (RH). <Ref. to SB-6, Front Seat Belt.>	Go to step **2.**
2	**CHECK PRETENSIONER HARNESS (RH).** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from the test harness. 3) Disconnect the connectors (AB17) and (AB18) from the airbag control module. <Ref. to AB-17, Airbag Control Module.> 4) Connect the connector (1I) in test harness I2 to the connector (AB18). 5) Connect the battery ground cable and turn the ignition switch ON. 6) Measure the voltage between connector (3I) in test harness I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 6 (+) — Chassis ground (–):*** ***(3I) No. 8 (+) — Chassis ground (–):***	Is the measured value less than 1 V?	Replace the airbag control module. <Ref. to AB-17, Airbag Control Module.>	Replace pretensioner harness. <Ref. to AB-16, Pretensioner Harness.>

O: DTC 66

DIAGNOSIS:

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

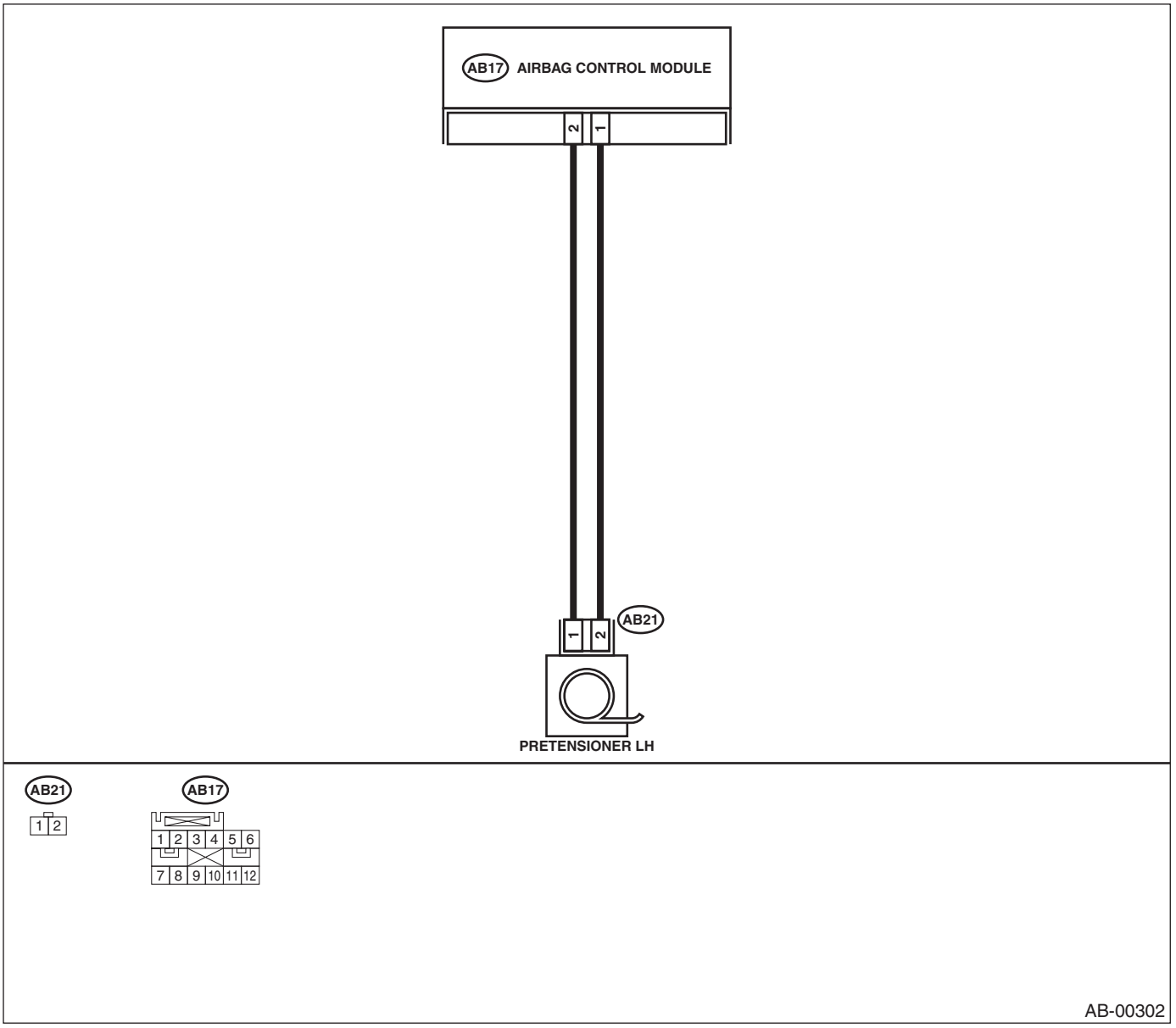
CAUTION:

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

• Before replacing the airbag module, roll connector, control module and the sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the pretensioner harness, disconnect the seat belt pretensioner connector for the safety reasons.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK SEAT BELT PRETENSIONER.** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB21) from the seat belt pretensioner (LH). <Ref. to SB-6, Front Seat Belt.> 3) Connect the connector (1F) in test harness F to (AB21). 4) Connect the airbag resistor to the connector (3F) in test harness F. 5) Connect the battery ground cable and turn the ignition switch ON.	Does the airbag warning light operate properly?	Replace seat belt pre-tensioned (LH). <Ref. to SB-6, Front Seat Belt.>	Go to step **2.**
2	**CHECK PRETENSIONER HARNESS (LH).** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from the test harness. 3) Disconnect the connectors (AB17) and (AB18) from the airbag control module. <Ref. to AB-17, Airbag Control Module.> 4) Connect the connector (1I) in test harness I2 to the connector (AB17). 5) Connect the battery ground cable and turn the ignition switch ON. 6) Measure the voltage between connector (3I) in test harness I2 and the chassis ground. ***Connector & terminal*** ***(3I) No. 11 (+) — Chassis ground (–):*** ***(3I) No. 13 (+) — Chassis ground (–):***	Is the measured value less than 1 V?	Replace the airbag control module. <Ref. to AB-17, Airbag Control Module.>	Replace pretensioner harness. <Ref. to AB-16, Pretensioner Harness.>

P: DTC 72

DIAGNOSIS:

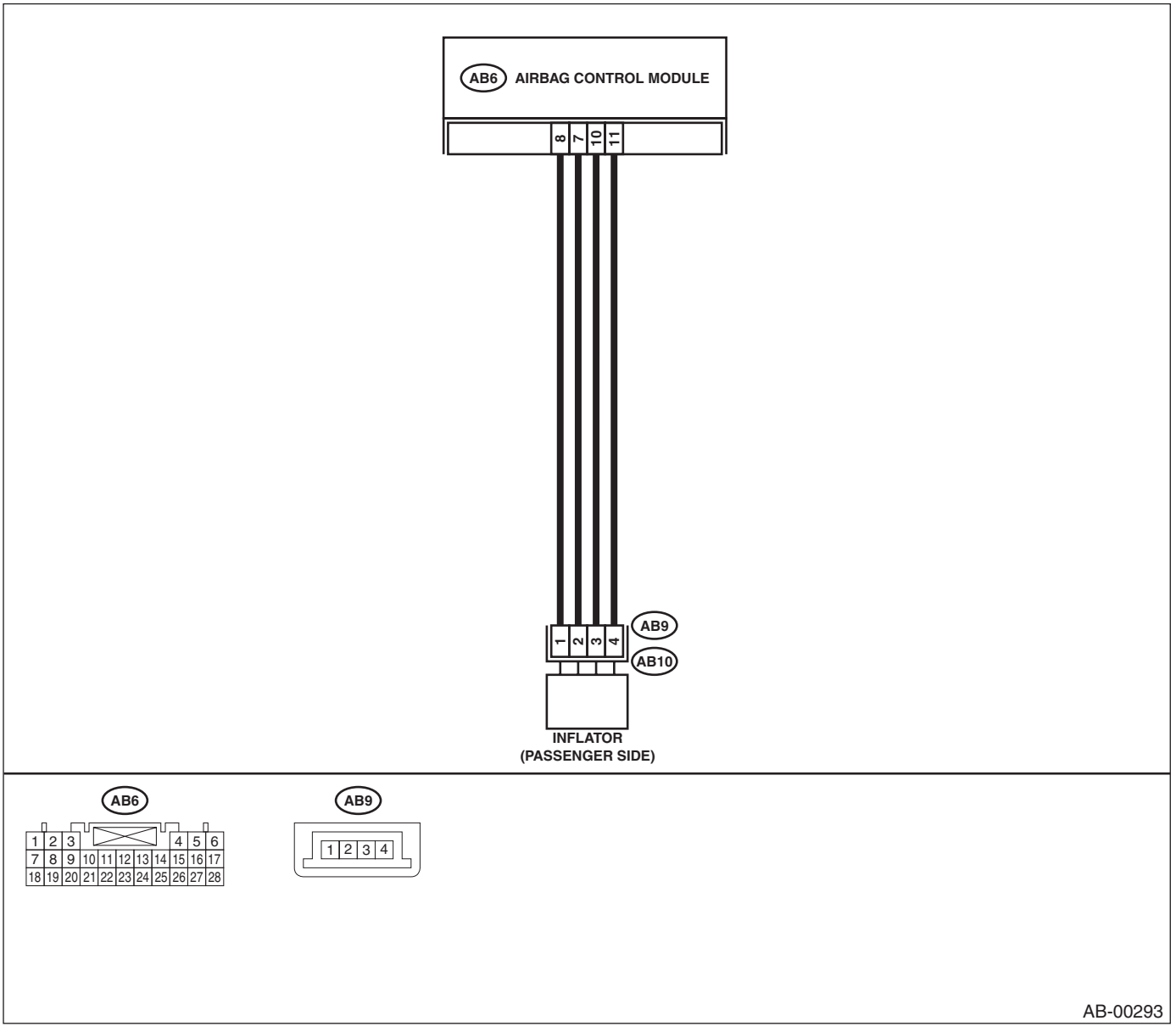
- Airbag harness is open, shorted or shorted to ground.
- Airbag module harness (Passenger) circuit is open, shorted or shorted to ground.
- Passenger's airbag module is faulty.
- Airbag control module is faulty.

CAUTION:

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

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

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK PASSENGER'S AIRBAG MODULE.** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Pull out the two stopper pins and lower the glove box. 3) Disconnect the connector passenger's airbag module from (AB9). 4) Connect the connector (1K) in test harness K to connector (AB9). 5) Connect two airbag resistors to connectors (3K) and (4K) in test harness K. 6) Connect the battery ground cable and turn the ignition switch ON.	Does the airbag warning light operate properly?	Replace the passenger's airbag module. <Ref. to AB-14, Passenger's Airbag Module.>	Go to step **2.**
2	**CHECK AIRBAG MAIN HARNESS.** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect two airbag resistors from the connectors (3K) and (4K) in test harness K. 3) Remove the lower cover and disconnect the connector (AB3) from (AB8). 4) Disconnect the connector (AB6) from the air bag control module, and connect the connector (1I) in test harness I2. 5) Measure the resistance between connector (6I) in test harness I2 and the connector (4K) in test harness K. ***Connector & terminal*** ***(6I) No. 2 — (4K) No. 3:*** ***(6I) No. 4 — (4K) No. 4:***	Is the measured value less than 10 Ω?	Go to step **3.**	Replace the airbag main harness. <Ref. to AB-15, Main Harness.>
3	**CHECK AIRBAG MAIN HARNESS.** Measure the resistance of the connector (6I) in test harness I2. ***Connector & terminal*** ***(6I) No. 2 — No. 4:*** ***(6I) No. 2 — Chassis ground:*** ***(6I) No. 4 — Chassis ground:***	Is the measured value more than 1 MΩ?	Replace the airbag control module. <Ref. to AB-17, Airbag Control Module.>	Replace the airbag main harness. <Ref. to AB-15, Main Harness.>

Q: DTC 76

DIAGNOSIS:

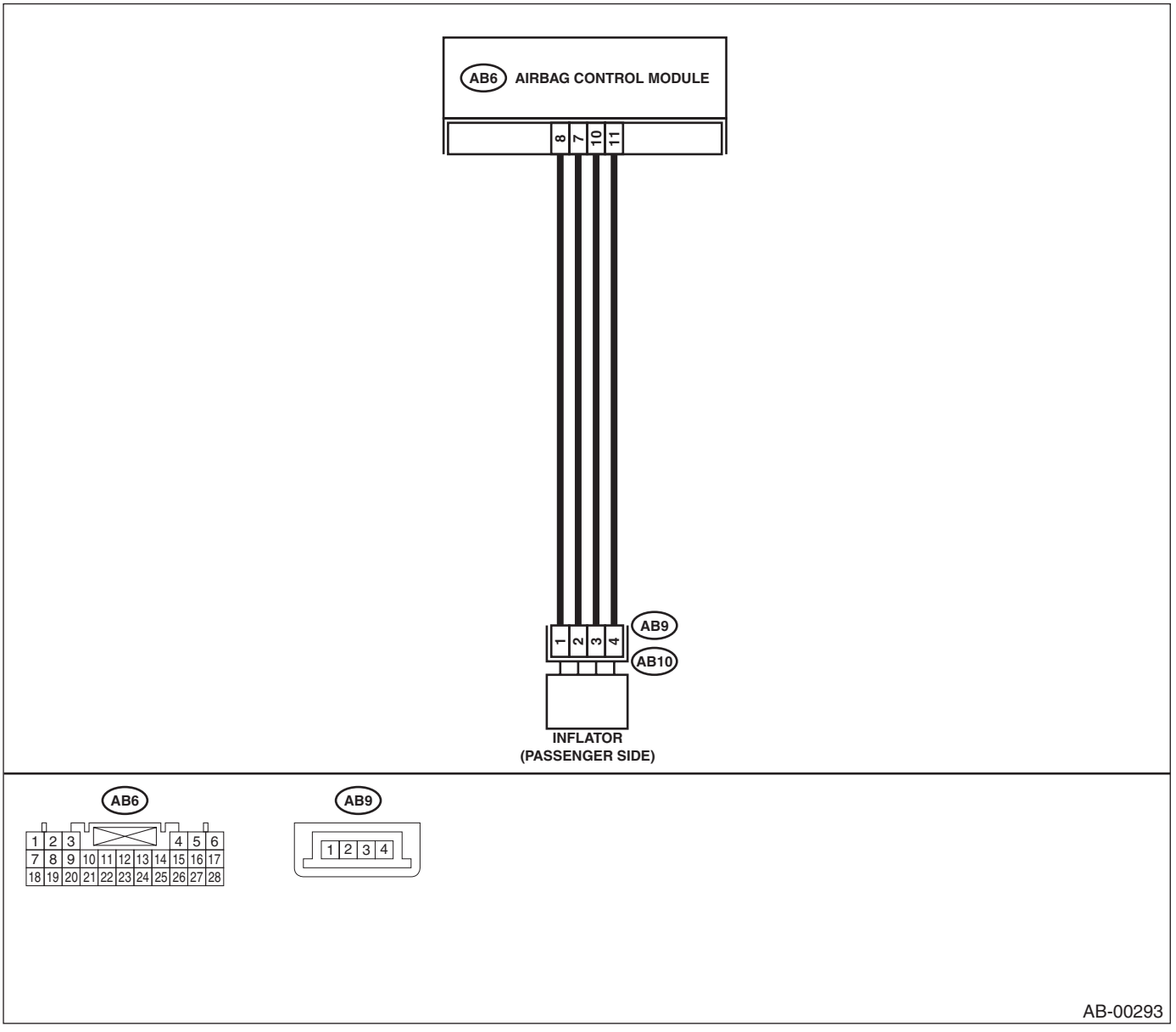
- Airbag main harness (Passenger) circuit is shorted to the power supply.
- Airbag module harness (Passenger) is shorted to the power supply.
- Passenger's airbag module is faulty.
- Airbag control module is faulty.

CAUTION:

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

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

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK PASSENGER'S AIRBAG MODULE.** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Pull out the two stopper pins and lower the glove box. 3) Disconnect the connector (AB9) from passenger's airbag module. 4) Connect the connector (1K) in test harness K to connector (AB9). 5) Connect two airbag resistors to connectors (3K) and (4K) in test harness K. 6) Connect the battery ground cable and turn the ignition switch ON.	Does the airbag warning light operate properly?	Replace the passenger's airbag module. <Ref. to AB-14, Passenger's Airbag Module.>	Go to step **2.**
2	**CHECK AIRBAG MAIN HARNESS.** 1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect two airbag resistors from the connectors (3K) and (4K) in test harness K. 3) Remove the lower cover and disconnect the connector (AB3) from (AB8). 4) Disconnect the connector (AB6) from the airbag control module, and connect the connector (1I) in test harness I2. 5) Measure the voltage between connector (6I) in test harness I2 and the chassis ground. ***Connector & terminal*** ***(6I) No. 2 (+) — Chassis ground (–):*** ***(6I) No. 4 (+) — Chassis ground (–):***	Is the measured value less than 1 V?	Replace the airbag control module. <Ref. to AB-17, Airbag Control Module.>	Replace the airbag main harness. <Ref. to AB-15, Main Harness.>

MEMO:

1. General Description

A: PREPARATION TOOL

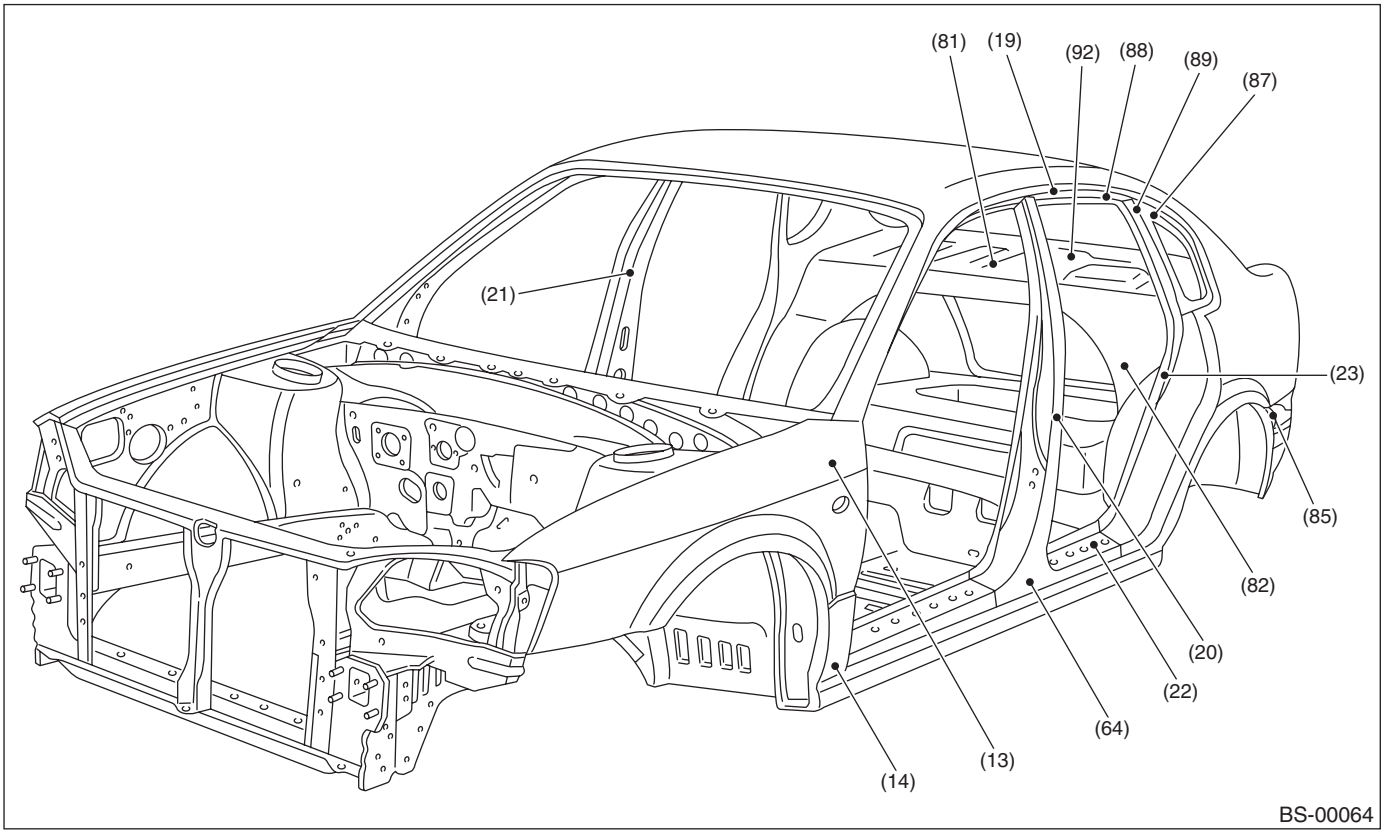
TOOL NAME	REMARKS
Tram tracking gauge	Used for measuring dimension.
Tape measure	Used for measuring dimension

2. Datum Points

A: LOCATION

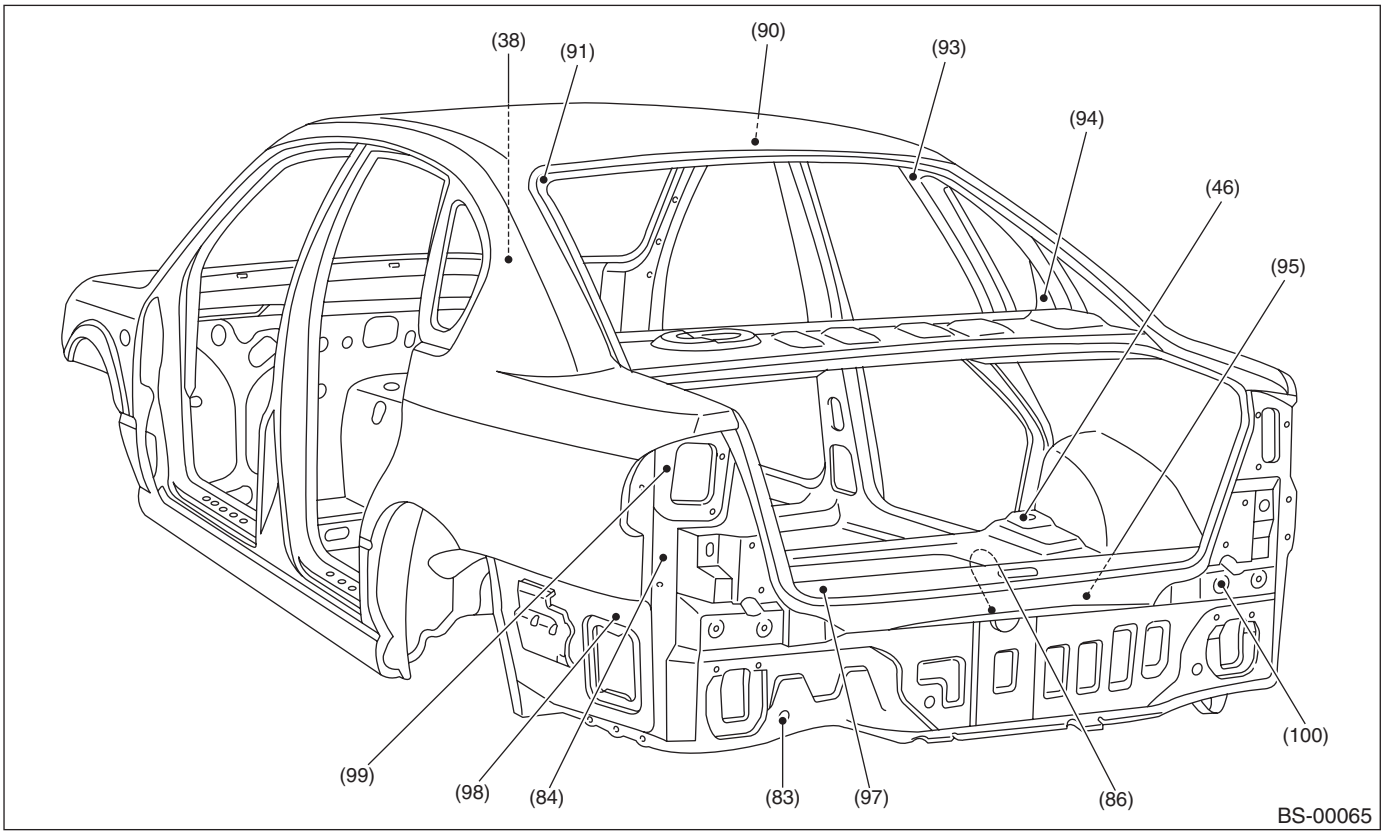
NOTE:
- Datum points are specified for body repair.
- Guide holes, locators, and indents are provided to facilitate panel replacement and to increase alignment accuracy.
- Both right and left reference points are symmetrical.

1. ROOM SECTION



(13) Front fener attaching hole at front pillar center portion M6
(14) Front fender attaching hole at front pillar lower portion M6
(19) Retainer attaching hole at side rail outer 3.2 mm (0.126 in) dia.
(20) Center pillar outer hole 14 mm (0.55 in) dia.
(21) Front seat belt adjust plate attaching hole M10
(22) Side sill outer hole 20 mm (0.79 in) dia.
(23) Rear quarter outer door switch attaching hole 20 mm (0.79 in) dia.
(64) Center pillar (LWR) gauge hole 16 mm (0.63 in) dia.
(81) Panel rear center (UPR) gauge hole 8 mm (0.31 in) dia.
(82) Bulk head rear trim clip hole 7 mm (0.28 in) dia.
(85) Rear quarter outer gauge hole 20 mm (0.79 in) dia.
(87) Six light glass attaching hole 6.2 mm (0.244 in) dia.
(88) Retainer attaching square hole at side rail outer 8 × 8 mm (0.31 × 0.31 in)
(89) Retainer attaching square hole at rear quarter outer 8 × 8 mm (0.31 × 0.31 in)
(92) Rear panel center hole (UPR) 6 mm (0.24 in) dia.

2. REAR SECTION



(38) Front panel instrument panel attaching hole 18 × 36 mm (0.71 × 1.42 in) dia. oblong hole

(46) Rear/front shock absorber floor side attaching hole 13 mm (0.51 in) dia.

(83) Rear skirt outer burring hole 20 mm (0.79 in) dia.

(84) Rear extension attaching hole 6.2 mm (0.244 in) dia.

(86) Reinforce striker trim attaching hole 7 mm (0.28 in) dia.

(90) Rear rale roof trim attaching hole 8 mm (0.31 in) dia.

(91) Rear glass attaching hole
RH: 6.5 mm (0.256 in) dia.
LH: (6.5 × 10 mm (0.256 × 0.394 in) oval

(93) Rear panel inner trim attaching hole (UPR) 8 mm (0.31 in) dia.

(94) Rear panel inner trim attaching hole (LWR) 8 mm (0.31 in) dia.

(95) Rear bumper attaching hole 12.5 × 17 mm (0.492 × 0.669 in) dia. oblong hole

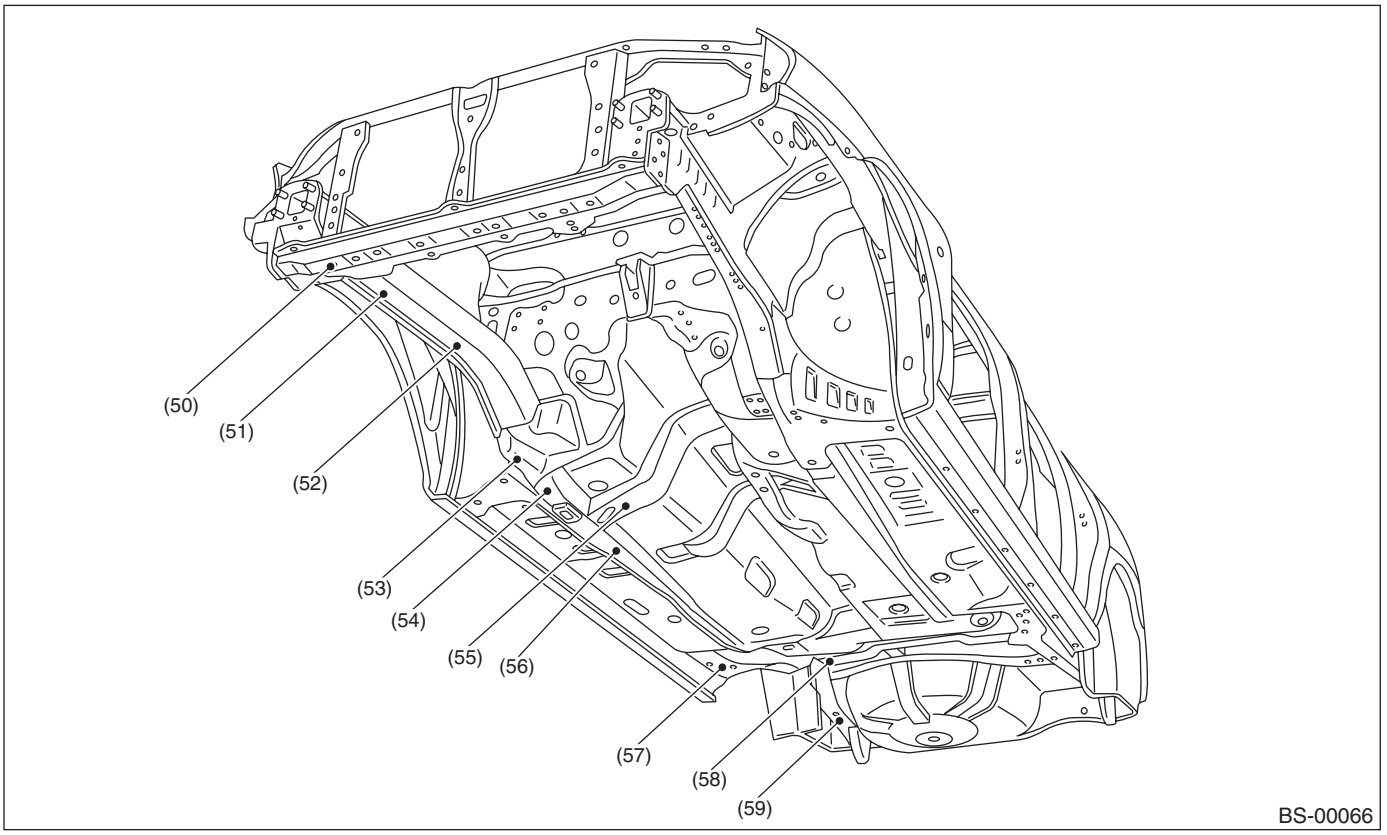
(97) Trunk trim attaching hole at rear skirt 7 mm (0.28 in) dia.

(98) Rear bumper slider attaching hole 6.2 mm (0.244 in) dia.

(99) Rear combination light mounting hole 8 mm (0.31 in) dia.

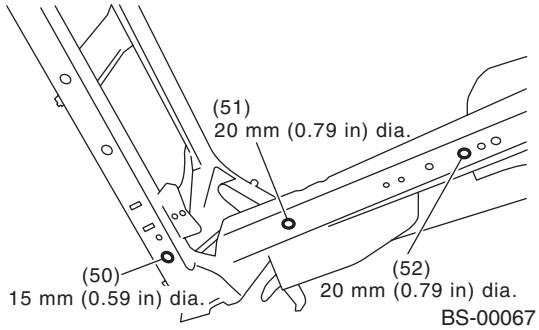
(100) Rear bumper beam attaching hole 8.2 mm (0.323 in) dia.
RH: 8.2 mm (0.323 in)
LH: 8.2 × 12 mm (0.323 × 0.472 in) oval

3. UNDERBODY SECTION

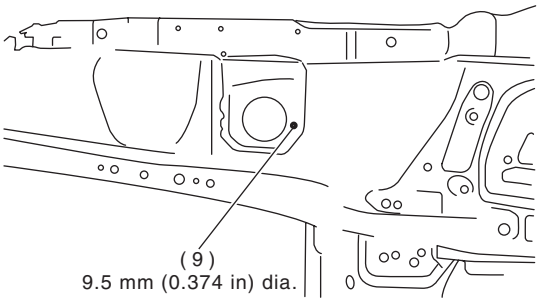


(50) Radiator panel (LWR) frame gauge hole 15 mm (0.59 in) dia.
(51) Front side frame (Ft) gauge hole 20 mm (0.79 in) dia.
(52) Front side frame (Ft) gauge hole 20 mm (0.79 in) dia.
(53) Front suspension bracket COMPL securing nut (M14)
(54) Front side frame (Rr) gauge hole 20 mm (0.79 in) dia.
(55) Crossmember front floor gauge hole M10
(56) Front side frame (Rr) gauge hole 18 mm (0.71 in) dia.
(57) Frame rear floor side gauge hole 25 mm (0.98 in) dia.
(58) Reinforcement crossmember B hole RH: 15 mm (0.59 in) dia., LH: 12 mm (0.47 in) dia.
(59) Frame rear floor side gauge hole 30 mm (1.18 in) dia.

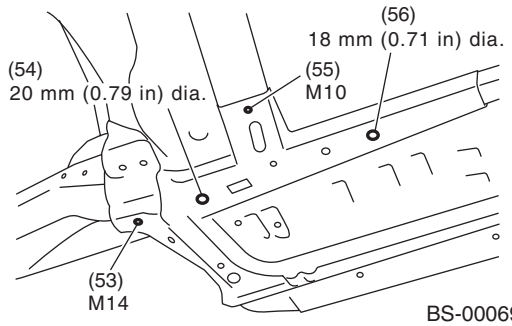
DATUM POINTS



BS-00067



BS-00068



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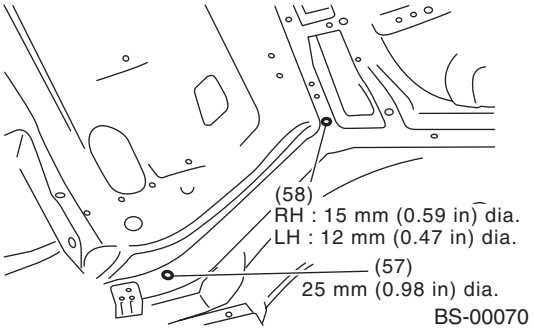

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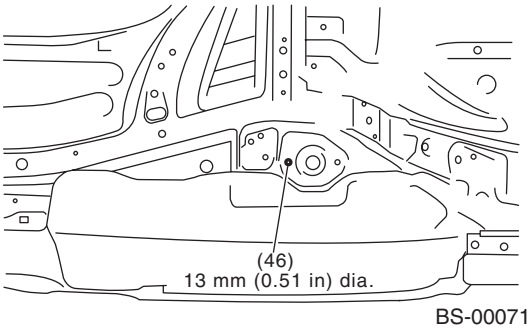

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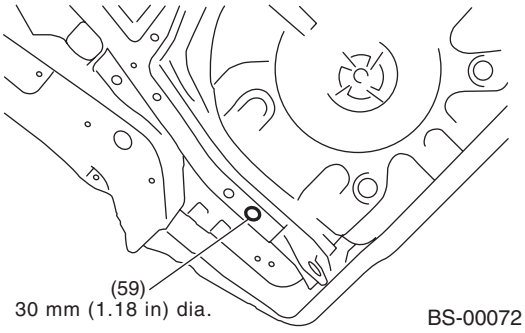

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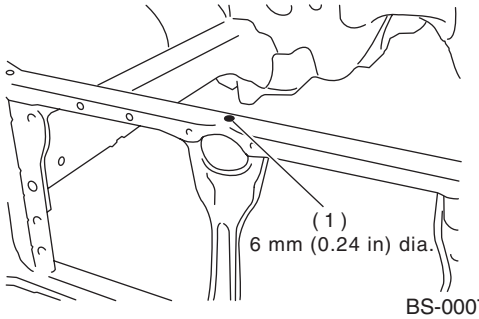

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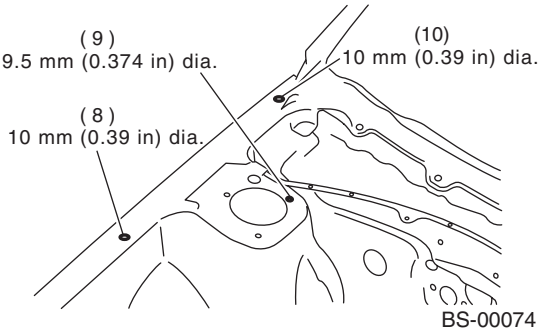
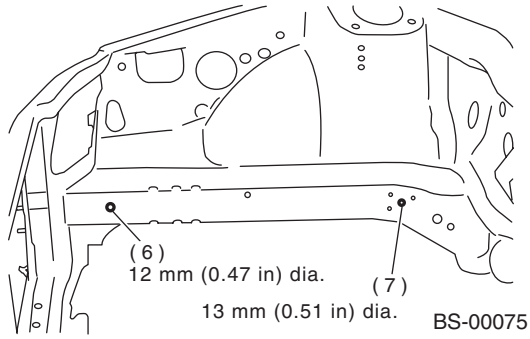
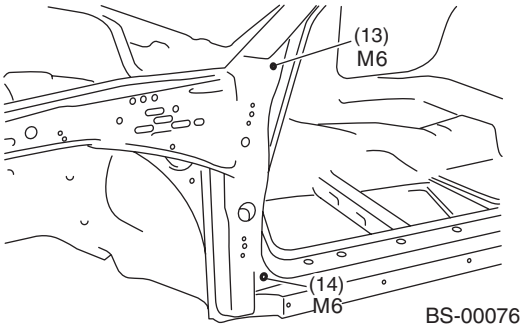


BS-00074

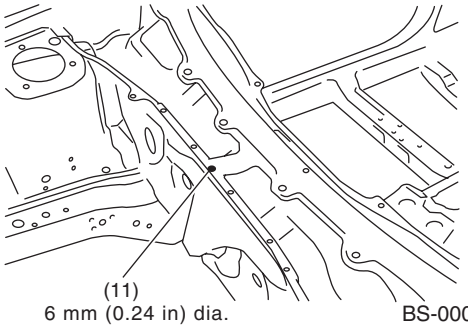
DATUM POINTS



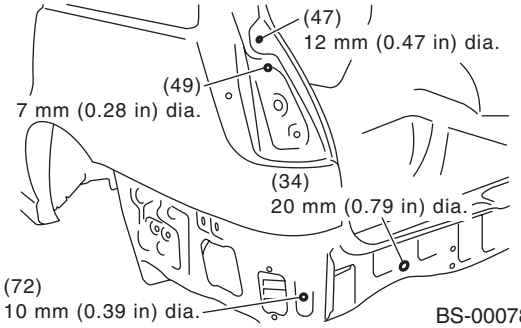
BS-00075



BS-00076



BS-00077



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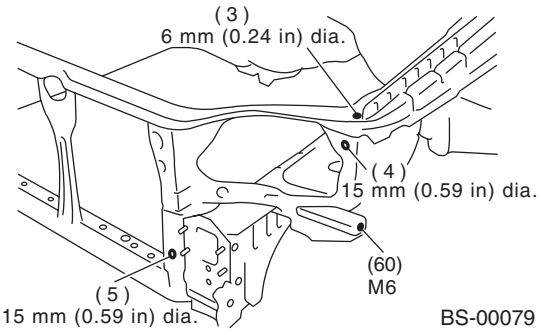

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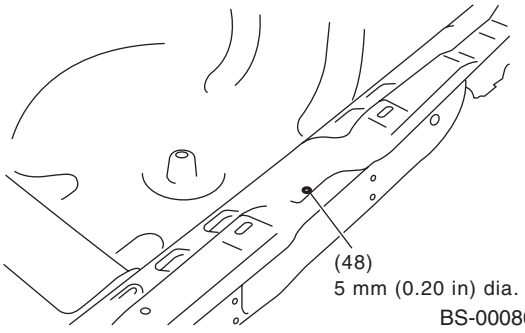

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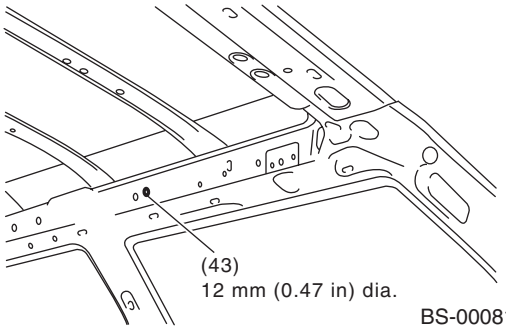
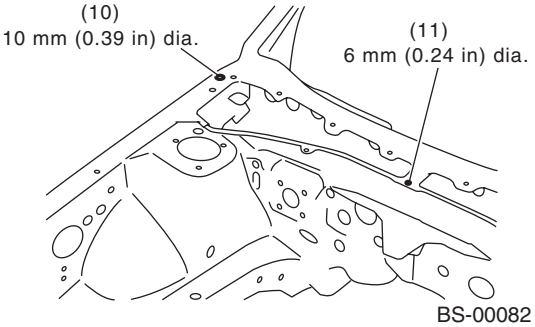
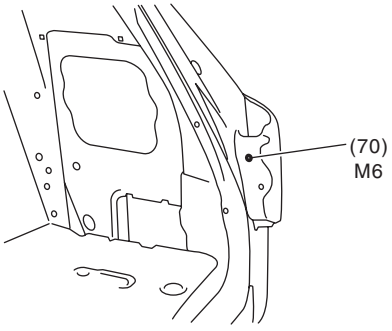


BS-00081

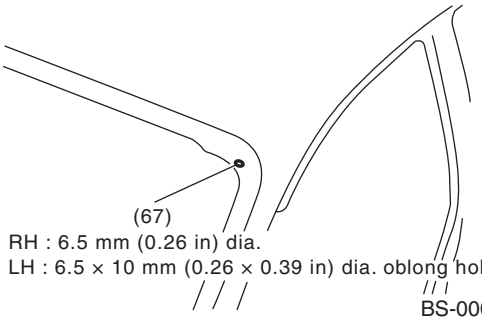


BS-00082

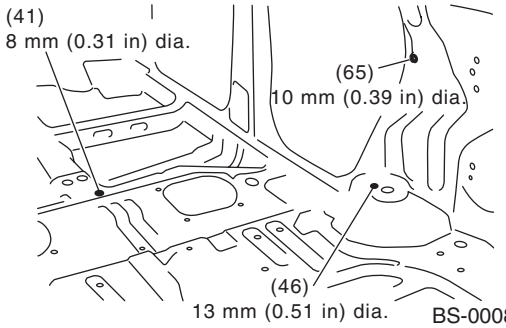
DATUM POINTS



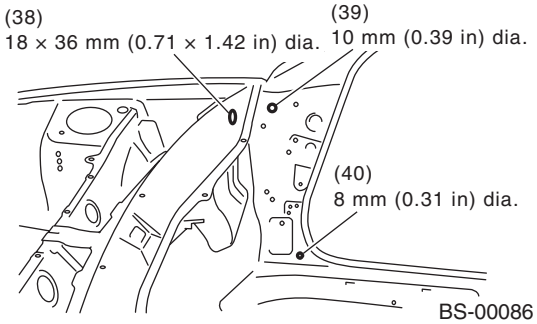
BS-00648



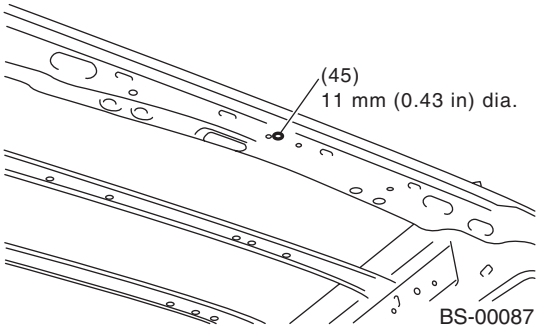
BS-00084



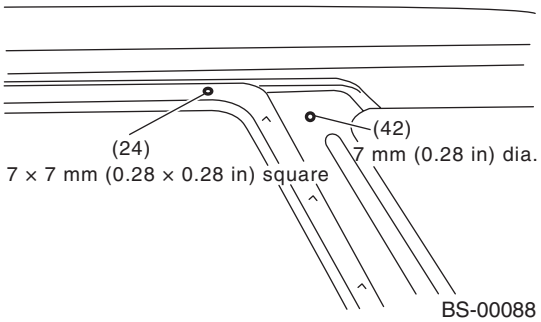
BS-00085



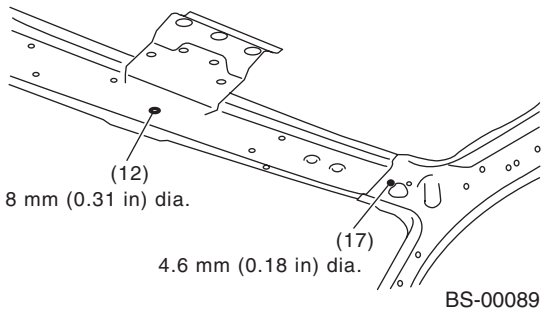
BS-00086



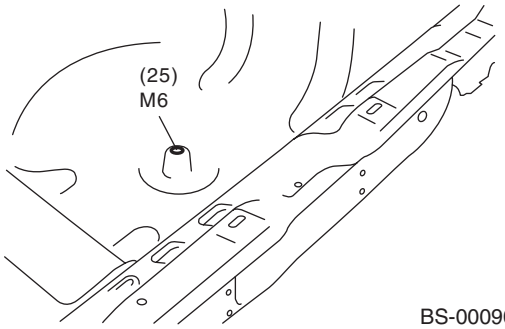
BS-00087



BS-00088

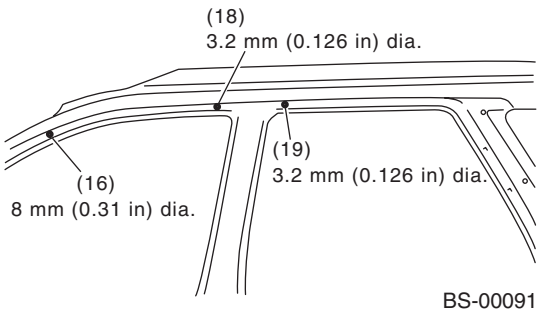


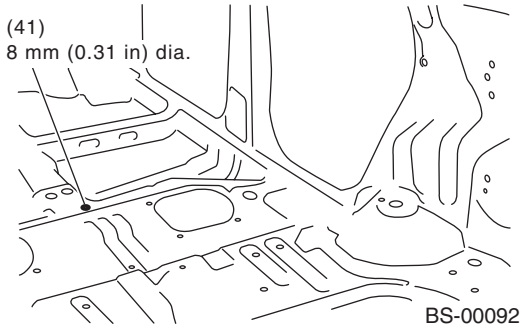
BS-00089

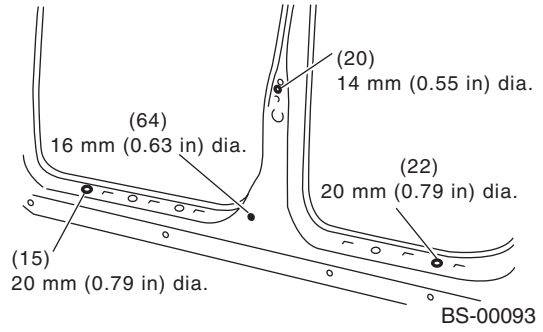


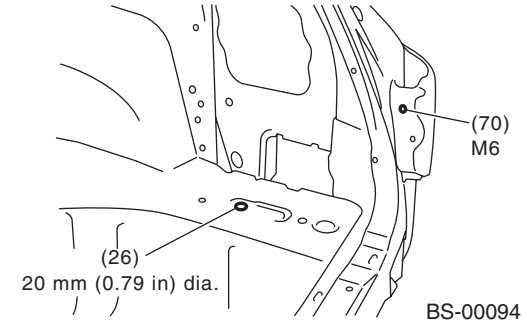
BS-00090

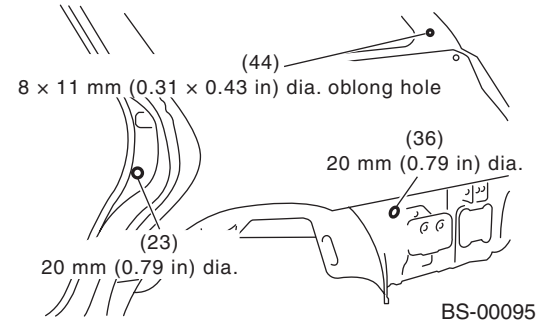
DATUM POINTS

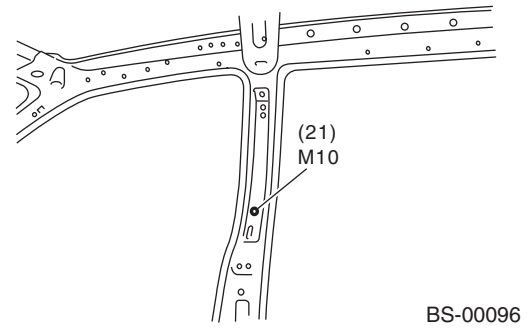












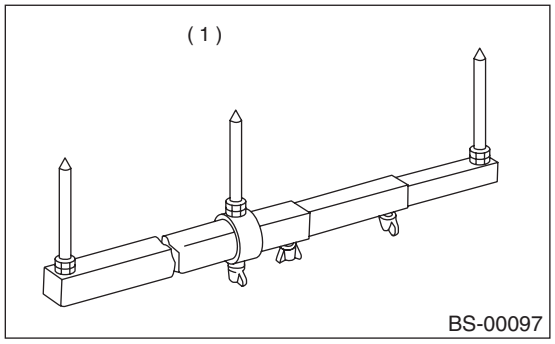
3. Datum Dimensions

A: MEASUREMENT

Refer to LOCATION for details on measurement points. <Ref. to BS-3, LOCATION, Datum Points.>

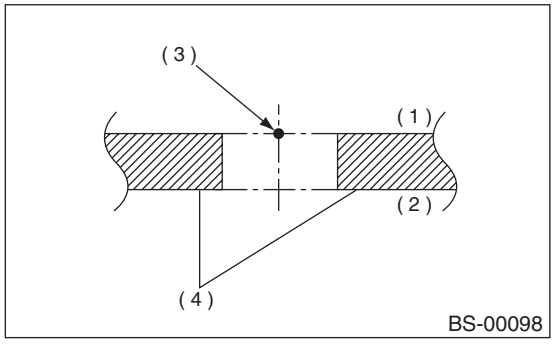
NOTE:

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



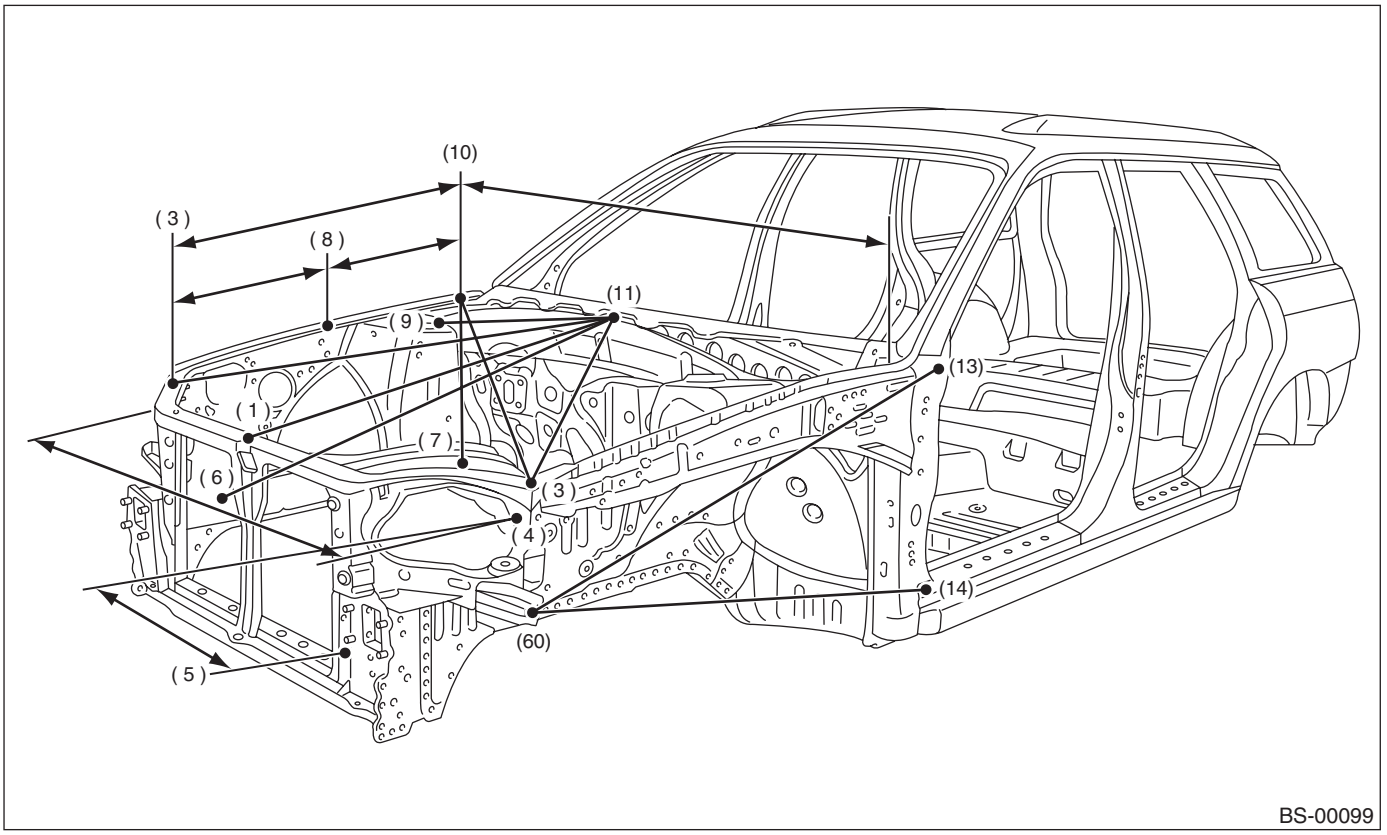
(1) Tram tracking gauge

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



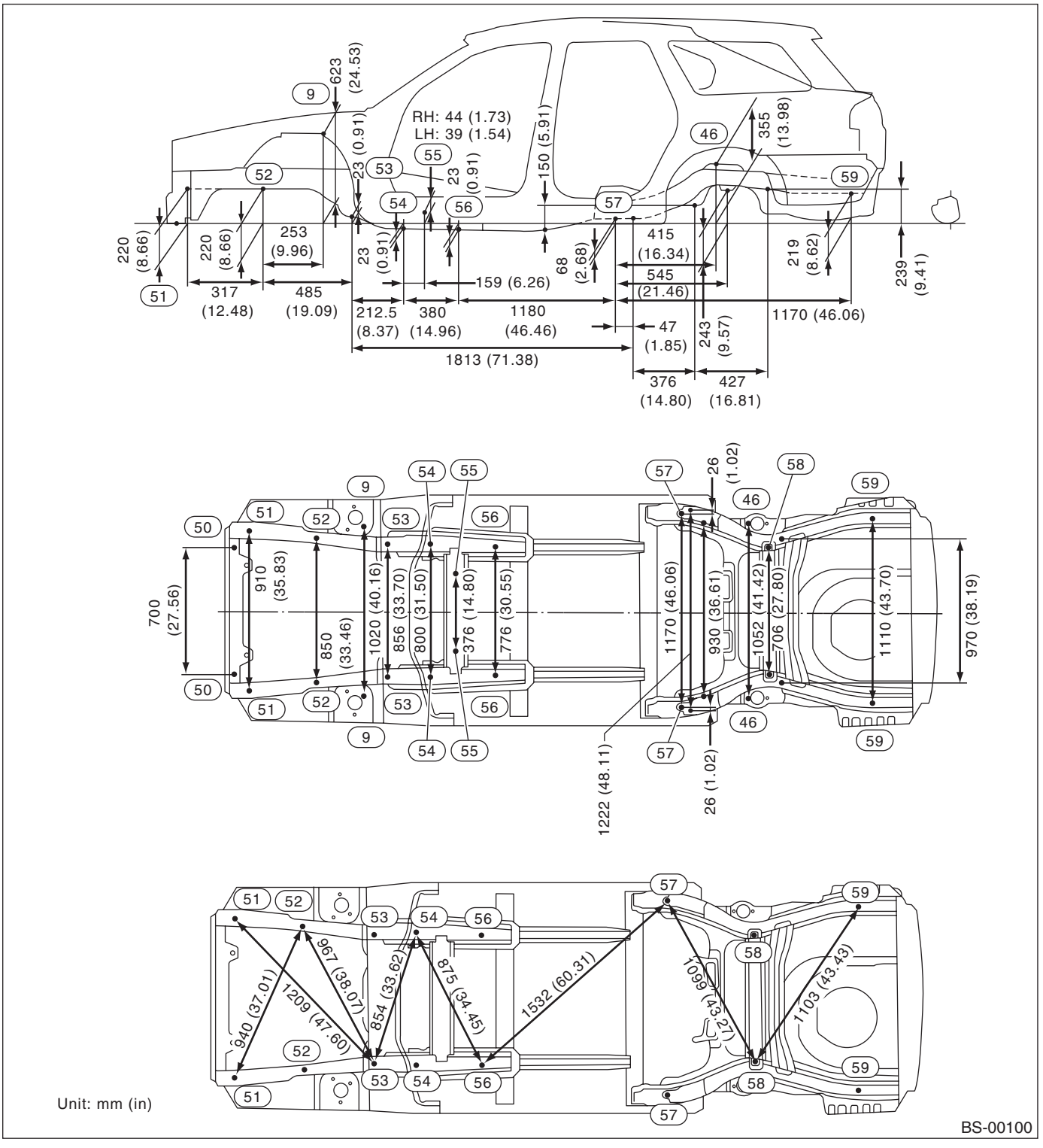
(1) Outside
(2) Inside
(3) Datum point
(4) Body panel

1. FRONT STRUCTURE



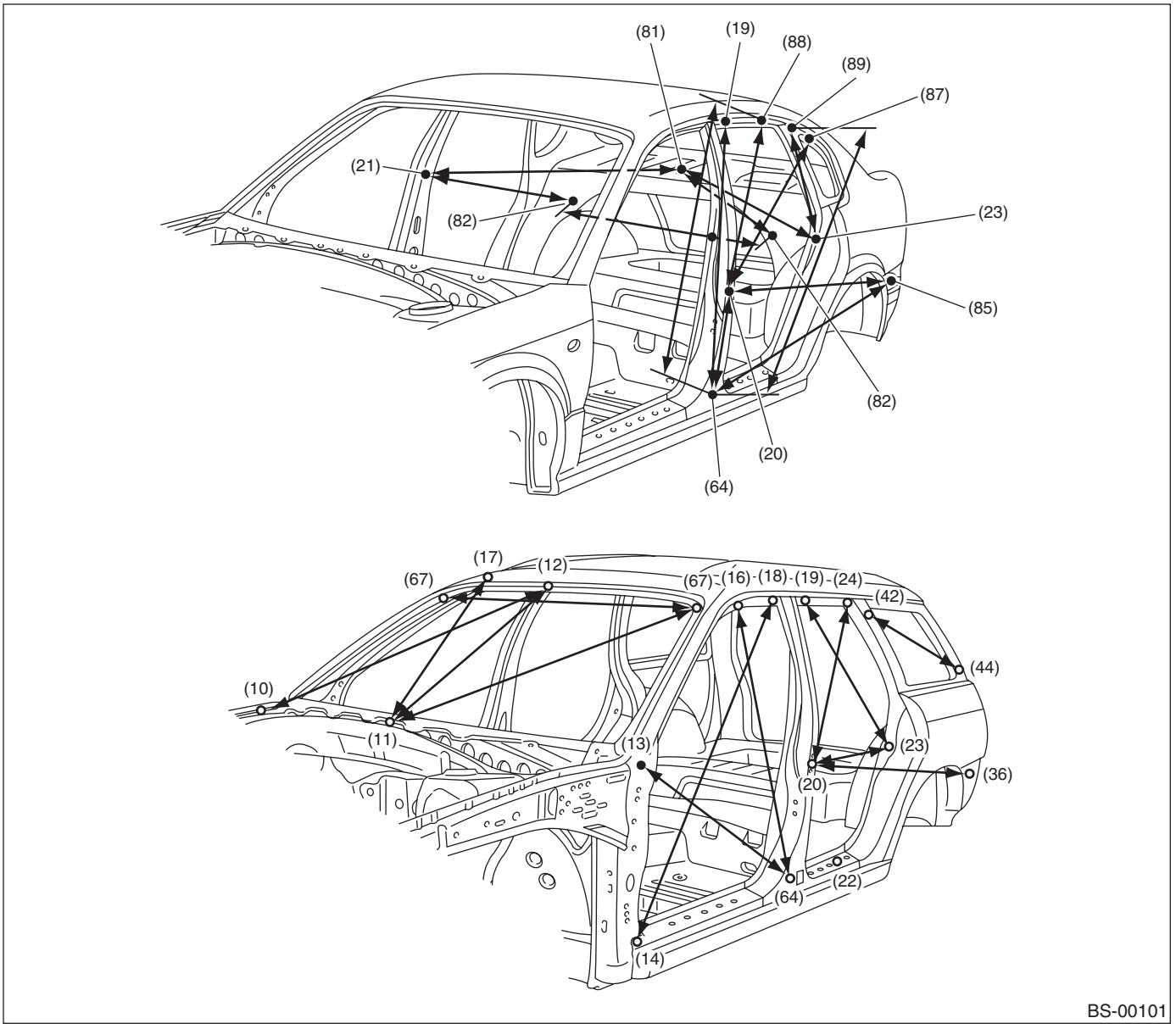
Point to point	Dimension	Point to point	Dimension
(11) to (1)	888 (34.96)	(4) RH to (4) LH	1,320 (51.97)
(11) to (9) RH	519 (20.43)	(5) RH to (4) LH	1,073 (42.24)
(11) to (9) LH	519 (20.43)	(5) LH to (4) RH	1,073 (42.24)
(11) to (6) RH	950 (37.40)	(60) RH to (13) RH	1,179 (46.42)
(11) to (6) LH	950 (37.40)	(60) LH to (13) LH	1,179 (46.42)
(11) to (3) RH	1,008 (39.68)	(60) RH to (14) RH	1,135 (44.68)
(11) to (3) LH	1,008 (39.68)	(60) LH to (14) LH	1,135 (44.68)
(10) RH to (3) RH	897 (35.31)	(10) RH to (3) LH	1,679 (66.10)
(10) RH to (8) RH	504 (19.84)	(10) LH to (3) RH	1,679 (66.10)
(10) LH to (8) LH	504 (19.84)	(8) RH to (8) LH	1,398 (55.04)
(9) RH to (9) LH	1,020 (40.16)	(8) RH to (10) LH	1,519 (59.80)
(6) RH to (6) LH	740 (29.13)	(8) LH to (10) RH	1,519 (59.80)
(6) RH to (10) LH	1,522 (59.92)	(3) RH to (8) LH	1,439 (56.65)
(6) LH to (10) RH	1,522 (59.92)	(3) LH to (8) RH	1,439 (56.65)
(8) RH to (3) RH	395 (15.55)	(7) RH to (7) LH	870 (34.25)
(8) LH to (3) LH	395 (15.55)	(7) RH to (6) LH	943 (37.13)
(10) RH to (10) LH	1,470 (57.87)	(7) LH to (6) RH	943 (37.13)
(3) RH to (3) LH	1,370 (53.94)	(7) RH to (10) LH	1,322 (52.05)
(5) RH to (5) LH	720 (28.35)	(7) LH to (10) RH	1,322 (52.05)
Unit: mm (in)			

2. CENTER STRUCTURE



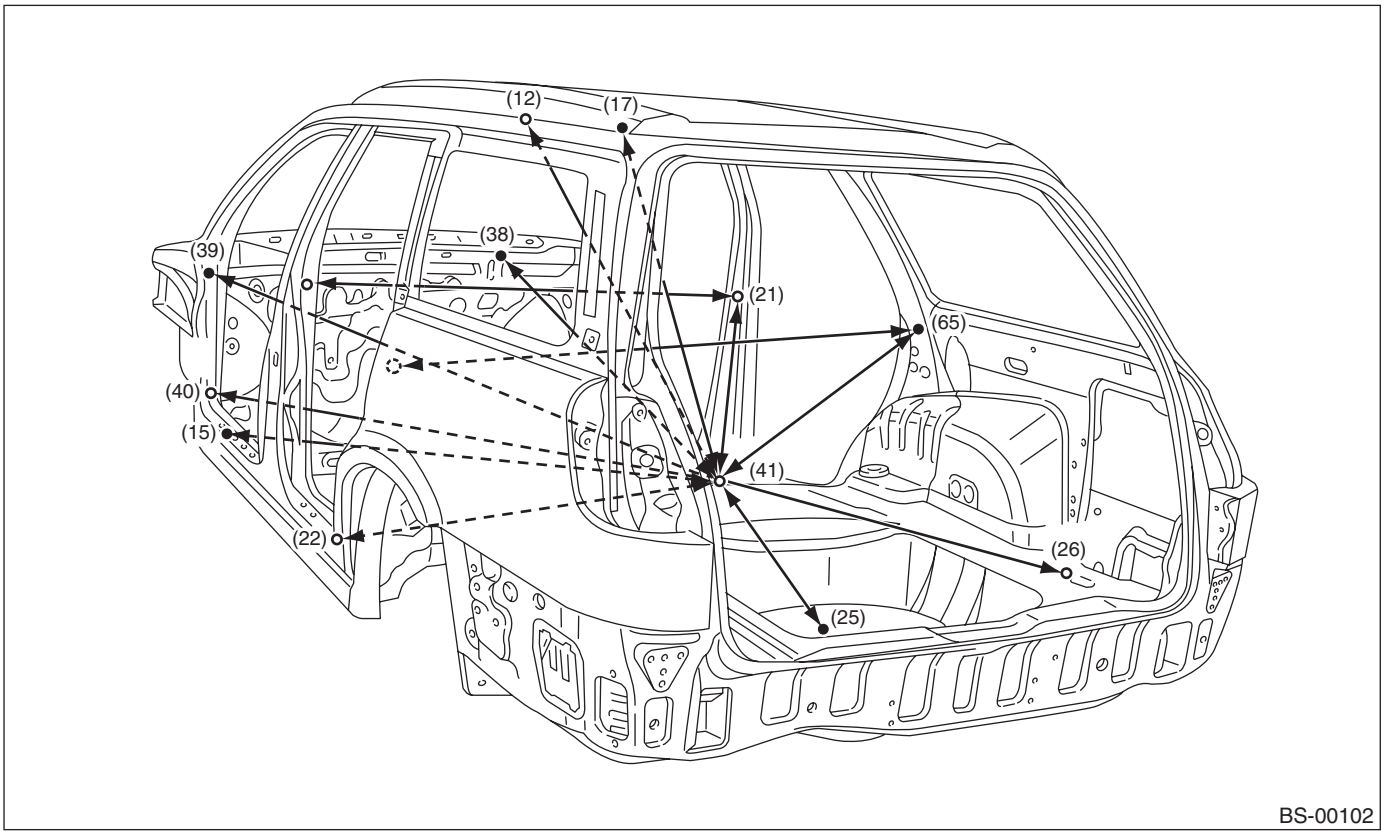
MEMO:

3. WINDSHIELD AND DOORS



Point to point	Dimension	Point to point	Dimension
(14) RH to (18) RH	1,425 (56.10)	(12) to (10) RH	1,136 (44.72)
(14) LH to (18) LH	1,425 (56.10)	(12) to (10) LH	1,136 (44.72)
(13) RH to (64) RH	1,030 (40.55)	(11) to (17) RH	1,130 (44.49)
(13) LH to (64) LH	1,030 (40.55)	(11) to (17) LH	1,130 (44.49)
(16) RH to (64) RH	966 (38.03)	(81) to (82) RH	611 (24.06)
(16) LH to (64) LH	966 (38.03)	(81) to (82) LH	611 (24.06)
(20) RH to (23) RH	864 (34.02)	(81) to (21) RH	1,309 (51.54)
(20) LH to (23) LH	864 (34.02)	(81) to (21) LH	1,309 (51.54)
(20) RH to (24) RH	860 (33.86)	(81) to (23) RH	812 (31.97)
(20) LH to (24) LH	860 (33.86)	(81) to (23) LH	812 (31.97)
(19) RH to (23) RH	899 (35.39)	(82) LH to (21) LH	1,019 (40.12)
(19) LH to (23) LH	899 (35.39)	(82) RH to (21) LH	1,606 (63.23)
(20) RH to (36) RH	1,548 (60.94)	(82) RH to (82) LH	1,140 (44.88)
(20) LH to (36) LH	1,548 (60.94)	(85) LH to (20) LH	1,548 (60.94)
(42) RH to (44) RH	1,037 (40.83)	(85) LH to (64) LH	1,650 (64.96)
(42) LH to (44) LH	1,037 (40.83)	(19) LH to (64) LH	1,029 (40.51)
(11) to (12)	989 (38.94)	(20) LH to (87) LH	911 (35.87)
(67) RH to (67) LH	1,100 (43.31)	(20) LH to (88) LH	842 (33.15)
(11) to (67) RH	1,119 (44.06)	(20) LH to (64) LH	399 (15.71)
(11) to (67) LH	1,119 (44.06)	(23) LH to (89) LH	552 (21.73)
(12) to (67) RH	551 (21.69)	(88) LH to (64) LH	1,192 (46.93)
(12) to (67) LH	551 (21.69)	(89) LH to (64) LH	1,204 (47.40)
Unit: mm (in)			

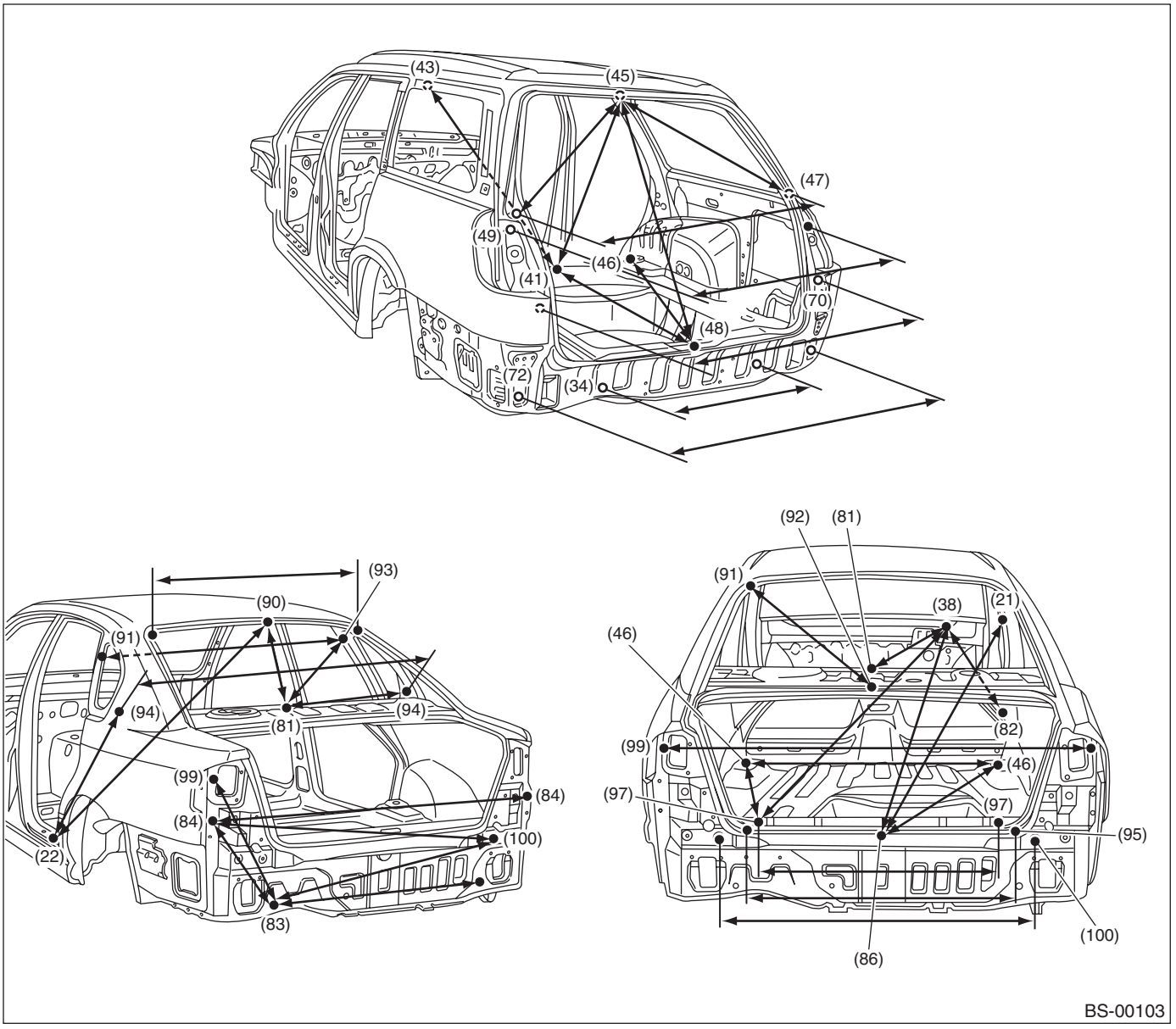
4. COMPARTMENT



Point to point	Dimension	Point to point	Dimension
(21) RH to (21) LH	1,351 (53.19)	(41) to (22) LH	738 (29.06)
(15) RH to (15) LH	1,455 (57.28)	(41) to (26) RH	1,459 (57.44)
(22) RH to (22) LH	1,455 (57.28)	(41) to (26) LH	1,459 (57.44)
(39) RH to (39) LH	1,385 (54.53)	(41) to (25)	1,290 (50.79)
(40) RH to (40) LH	1,392 (54.80)	(41) to (12)	1,228 (48.35)
(41) to (38)	1,639 (64.53)	(41) to (21) RH	940 (37.01)
(41) to (39) RH	1,642 (64.65)	(41) to (21) LH	940 (37.01)
(41) to (39) LH	1,642 (64.65)	(41) to (17) RH	1,261 (49.65)
(41) to (40) RH	1,531 (60.28)	(41) to (17) LH	1,261 (49.65)
(41) to (40) LH	1,531 (60.28)	(65) RH to (65) LH	1,307 (51.46)
(41) to (15) RH	1,342 (52.83)	(41) to (65) RH	969 (38.15)
(41) to (15) LH	1,342 (52.83)	(41) to (65) LH	969 (38.15)
(41) to (22) RH	738 (29.06)		Unit: mm (in)

MEMO:

5. TRUNK LID AND REAR GATE



Point to point	Dimension	Point to point	Dimension
(45) to (48)	974 (38.35)	(84) RH to (84) LH	1,410 (55.51)
(45) to (47) RH	797 (31.38)	(100) RH to (84) LH	1,226 (48.27)
(45) to (47) LH	797 (31.38)	(86) to (21) RH	2,073 (81.61)
(47) RH to (47) LH	1,289 (50.75)	(86) to (21) LH	2,086 (82.13)
(49) RH to (49) LH	1,313 (51.69)	(86) to (38)	3,143 (123.74)
(34) RH to (34) LH	700 (27.56)	(86) to (46) RH	1,121 (44.13)
(41) to (45)	1,482 (58.35)	(86) to (46) LH	1,140 (44.88)
(41) to (43) RH	1,206 (47.48)	(86) to (96)	558 (21.97)
(41) to (43) LH	1,199 (47.20)	(90) to (22) RH	1,319 (51.93)
(41) to (48)	1,663 (65.47)	(90) to (22) LH	1,319 (51.93)
(48) to (46) RH	1,191 (46.89)	(22) RH to (94) LH	1,710 (67.32)
(48) to (46) LH	1,191 (46.89)	(22) LH to (94) RH	1,710 (67.32)
(70) RH to (70) LH	1,215 (47.83)	(38) to (97) RH	3,100 (122.05)
(72) RH to (72) LH	1,320 (51.97)	(38) to (97) LH	3,227 (127.05)
(81) to (38)	2,351 (92.56)	(92) to (91) RH	776 (30.55)
(81) to (90)	444 (17.48)	(92) to (91) LH	776 (30.55)
(81) to (93) RH	719 (28.31)	(91) RH to (91) LH	976 (38.43)
(81) to (93) LH	719 (28.31)	(46) LH to (97) LH	1,008 (39.68)
(81) to (94) RH	632 (24.88)	(46) LH to (97) RH	1,374 (54.09)
(81) to (94) LH	632 (24.88)	(46) LH to (46) RH	1,052 (41.42)
(38) to (82) RH	2,178 (85.75)	(93) RH to (93) LH	1,099 (43.27)
(38) to (82) LH	2,419 (95.24)	(94) RH to (94) LH	1,257 (49.49)
(83) RH to (83) LH	930 (36.61)	(95) RH to (95) LH	1,115 (43.90)
(84) RH to (83) LH	1,216 (47.87)	(97) RH to (97) LH	830 (32.68)
(99) RH to (83) LH	1,246 (49.06)	(99) RH to (99) LH	1,370 (53.94)
(100) RH to (83) LH	991 (39.02)	(100) RH to (100) LH	1,020 (40.16)
Unit: mm (in)			

MEMO:

1. General Description

A: CAUTION

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

B: PREPARATION TOOL

1. GENERAL TOOLS

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

2. Horn System

A: SCHEMATIC

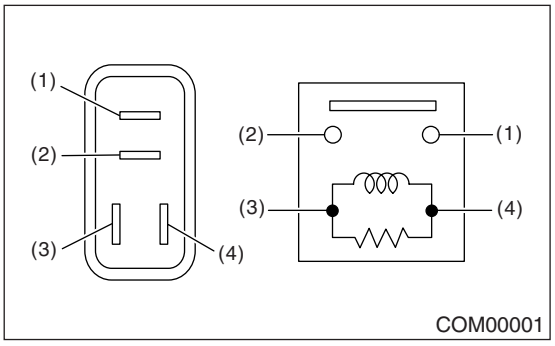
1. HORN

<Ref. to WI-115, SCHEMATIC, Horn System.>

B: INSPECTION

1. HORN RELAY

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

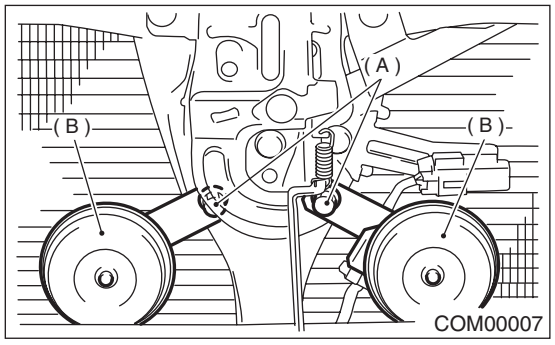


Current	Terminal No.	Standard
Flow	1 and 2	Less than 1 Ω
No flow		More than 1 MΩ

3. Horn

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove horn bracket mounting bolt (A).
3) Disconnect harness connector and remove horn assembly (B).

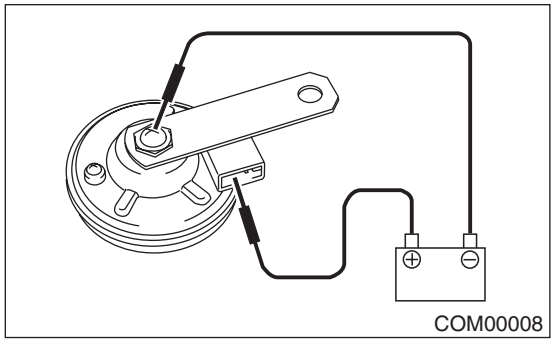


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

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

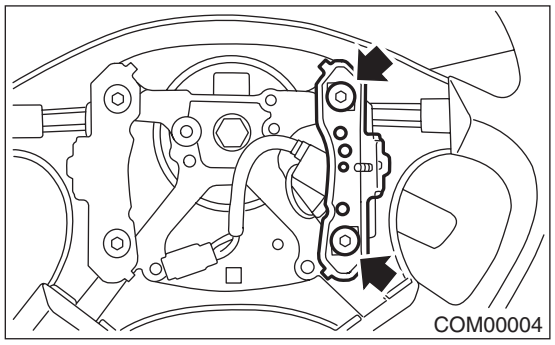


4. Horn Switch

A: REMOVAL

WARNING:
Before servicing, be sure to read the notes in the AB section for proper handling of the driver airbag module. <Ref. to AB-3, CAUTION, General Description.>

1) Disconnect negative cable from battery.
2) Remove the driver's airbag module. <Ref. to AB-13, Driver's Airbag Module.>
3) Remove horn switch from steering wheel.

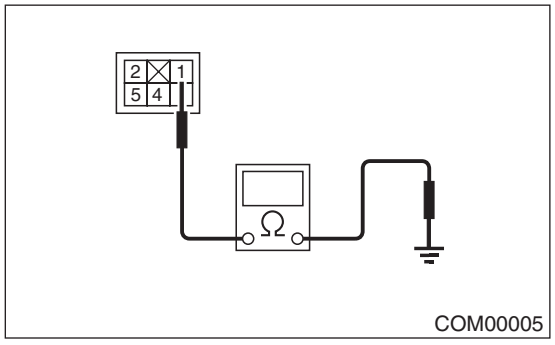


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure horn switch resistance.



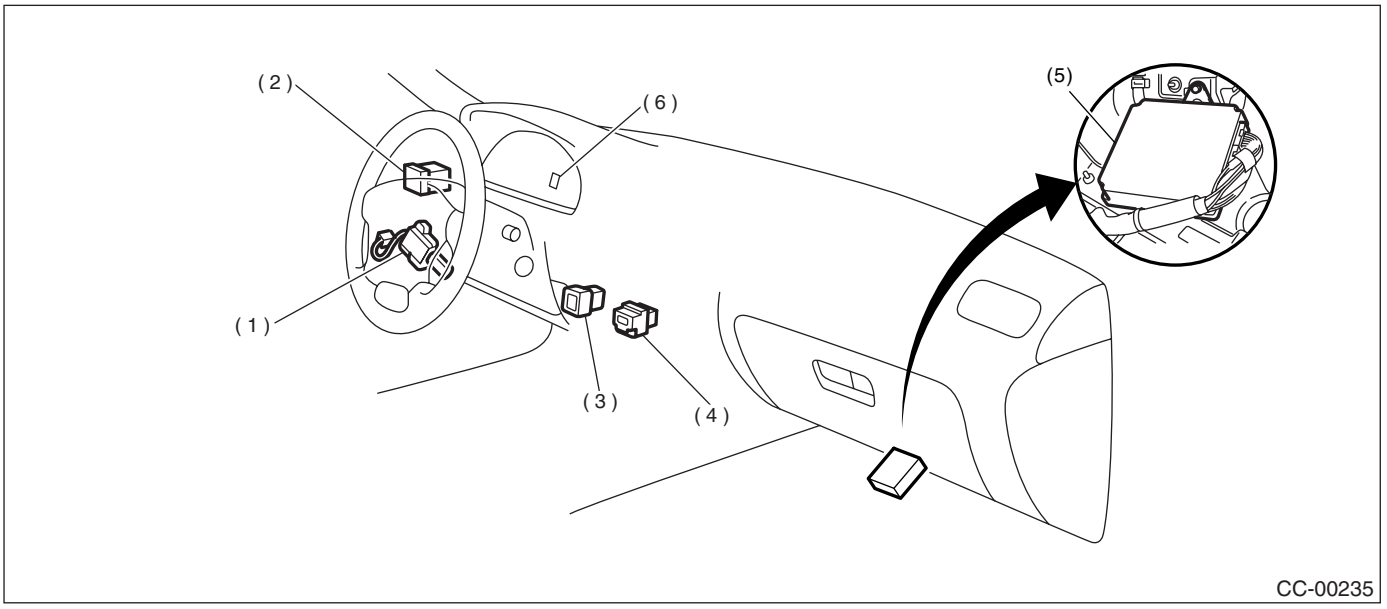
Switch position	Terminal No.	Standard
When horn switch is pushed.	1 and Body ground	Less than 1 Ω
When horn switch is not pushed.		More than 1 MΩ

MEMO:

1. General Description

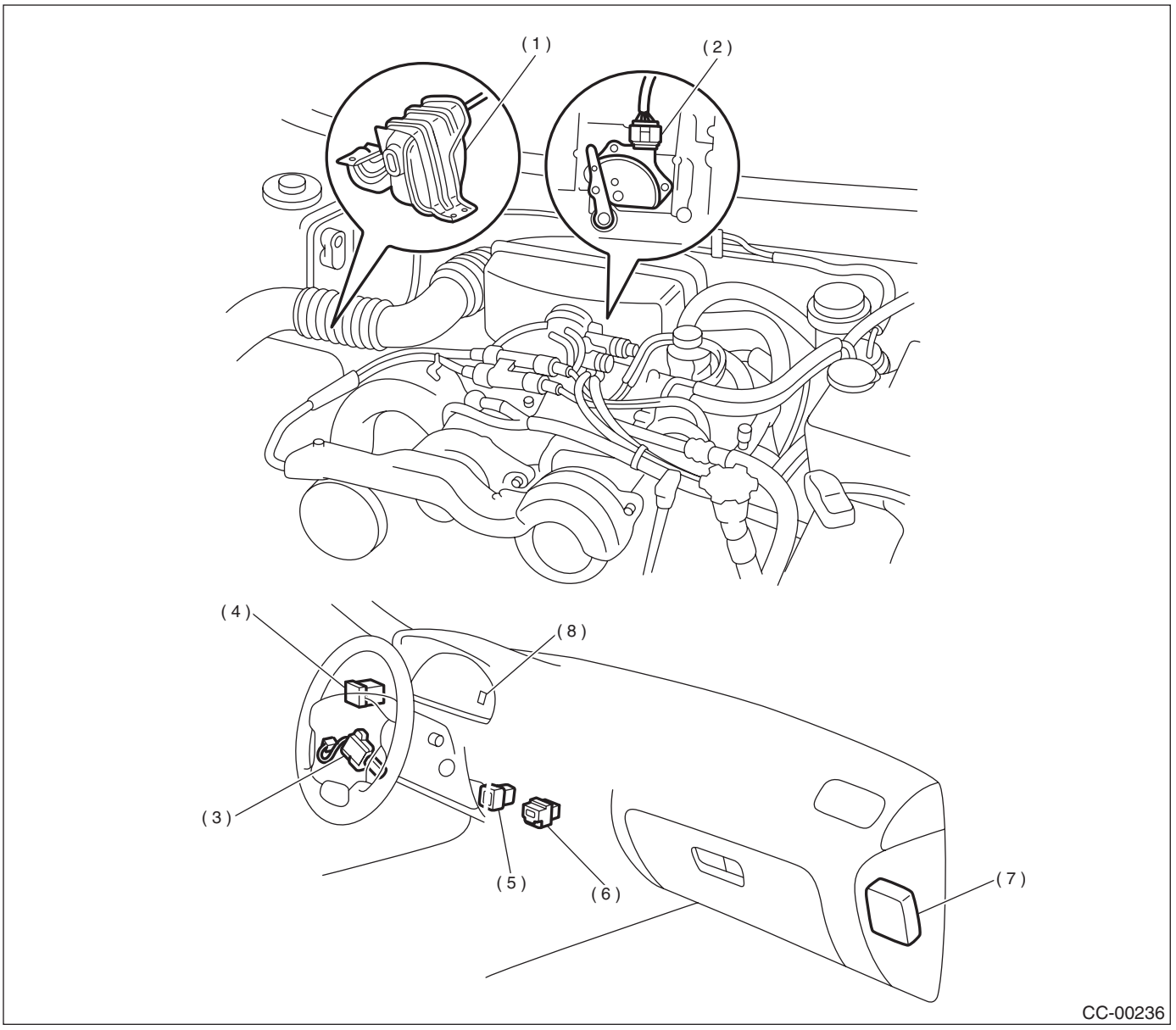
A: COMPONENT

1. MODEL WITH ELECTRONIC CONTROL THROTTLE



(1) Cruise control command switch
(2) Cruise control main switch (Built-in cruise indicator light)
(3) Clutch switch (MT)
(4) Stop and brake switch
(5) Engine control module
(6) Cruise set indicator light

2. MODEL WITHOUT ELECTRONIC CONTROL THROTTLE



(1) Actuator
(2) Inhibitor switch (AT)
(3) Cruise control command switch
(4) Cruise control main switch (Built-in cruise indicator light)
(5) Clutch switch (MT)
(6) Stop and brake switch
(7) Cruise control module
(8) Cruise set indicator light

B: CAUTION

• Before disassembling or reassembling parts, always disconnect the battery ground cable. When repairing the radio, control module and other parts with memory functions, make note of the memory before disconnecting the battery ground cable. All memory will be erased.
• Reassemble parts in the reverse order of disassembly unless otherwise indicated.
• Adjust parts to specifications specified in this manual.
• Connect connectors and hoses securely during reassembly.
• After reassembly, ensure functional parts operate properly.

C: PREPARATION TOOL

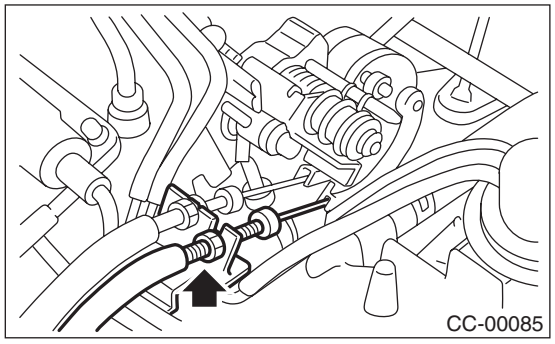
TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance and voltage.

2. Actuator

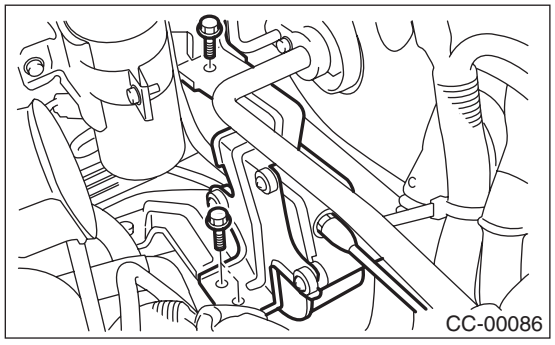
A: REMOVAL

CAUTION:
• Be careful not to apply excessive load to the wire cable when adjusting and/or installing; otherwise, the actuator may be deformed or damaged.
• Do not bend cable sharply with a radius less than 100 mm (3.94 in); otherwise, cable may bend permanently, resulting in poor performance.
• When installing cable, be careful not to sharply bend or pinch the inner cable; otherwise, the cable may break.

1) Disconnect ground cable from battery.
2) Remove clip bands from cruise control cable.
3) Loosen nut which secures cruise control cable end to throttle cam and then remove cable from throttle cam.



4) Remove actuator attaching bolts.
5) Remove actuator while disconnecting connector.

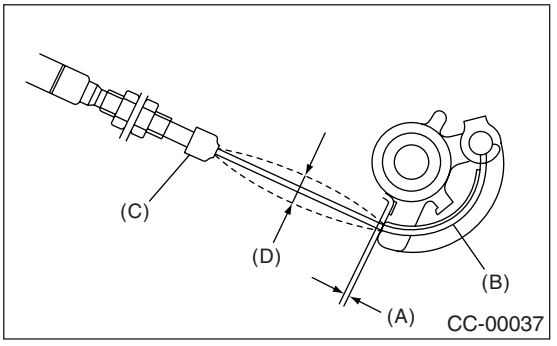


B: INSTALLATION

Install in the reverse order of removal.

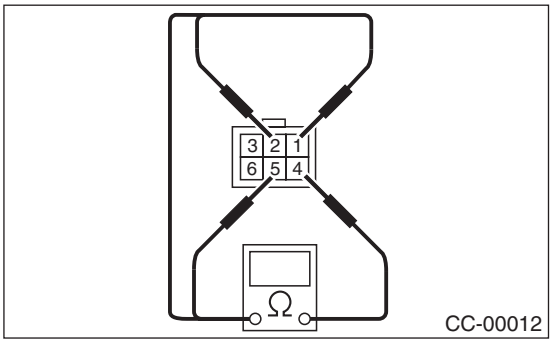
Tightening torque:
Actuator
7.4 N·m (0.75 kgf-m, 5.4 ft-lb)
Cable end nut
12 N·m (1,2 kgf-m, 8.7 ft-lb)

NOTE:
(A): Must be adjusted when cable end outer is fixed in place, so that gap between throttle cam and lever is 0 — 1 mm (0 — 0.04 in), or inner cable deflection (D) is 1 — 8 mm (0.039 — 0.315 in) with specified range of throttle cable play.
(Must be attached while throttle cam is being pulled by wire cable.)
(B): Must be coated evenly on cam end inner connection.
(C): Cover must be inserted securely, until tip of cable touches cover stopper.



C: INSPECTION

Measure cruise control actuator resistance.



Terminal No.	Standard
4 and 1	Approx. 5Ω
4 and 2	Approx. 5Ω
4 and 5	Approx. 5Ω
3 and 6	Approx. 39Ω

If NG, replace cruise control actuator.

3. Cruise Control Module

A: NOTE

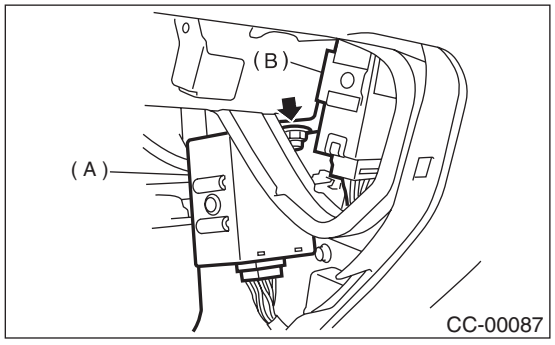
1. MODEL WITH ELECTRONIC CONTROL THROTTLE

Cruise control system is controlled by Engine Control Module (ECM).

B: REMOVAL

1. MODEL WITHOUT ELECTRONIC CONTROL THROTTLE

1) Disconnect ground cable from battery.
2) Remove glove box. <Ref. to EI-34, REMOVAL, Glove Box.>
3) Remove nut, then remove cruise control module (A) and the other electrical control module (B) while disconnecting connector.



4) Disconnect cruise control module and the other electrical control module.

2. MODEL WITH ELECTRONIC CONTROL THROTTLE

<Ref. to FU(H4DOTC)-43, REMOVAL, Engine Control Module (ECM).>

C: INSTALLATION

1. MODEL WITHOUT ELECTRONIC CONTROL THROTTLE

Install is in the reverse order of removal.

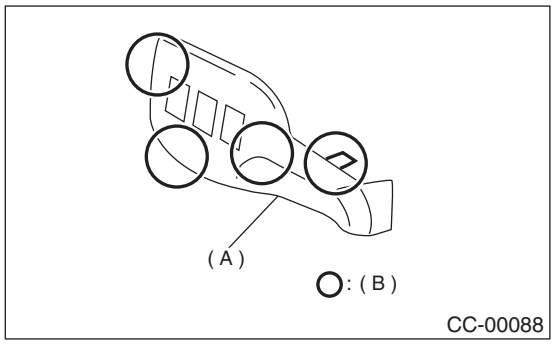
2. MODEL WITH ELECTRONIC CONTROL THROTTLE

<Ref. to FU(H4DOTC)-43, INSTALLATION, Engine Control Module (ECM).>

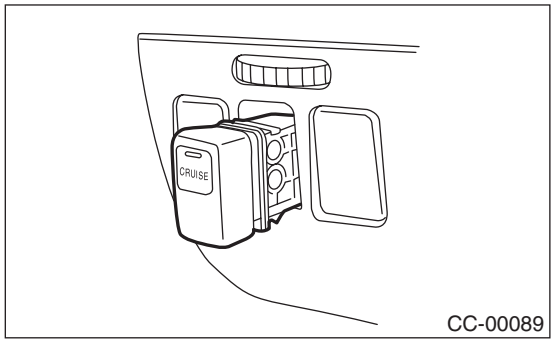
4. Cruise Control Main Switch

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove hook (B) and then remove switch panel (A) while disconnecting connector.



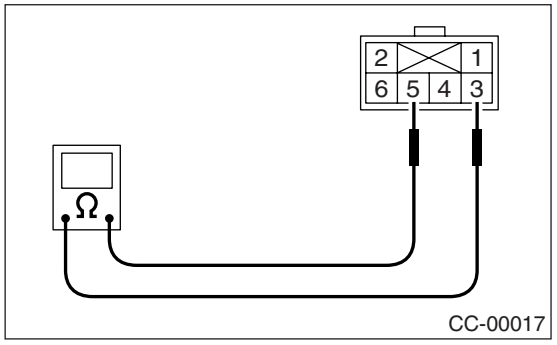
3) Remove main switch by pushing it outward.



B: INSTALLATION

Install is in the reverse order of removal.

C: INSPECTION



Switch position	Terminal No.	Standard
OFF (Released)	3 and 5	More than 1 MΩ
ON (Pushed)	3 and 5	Less than 1 Ω

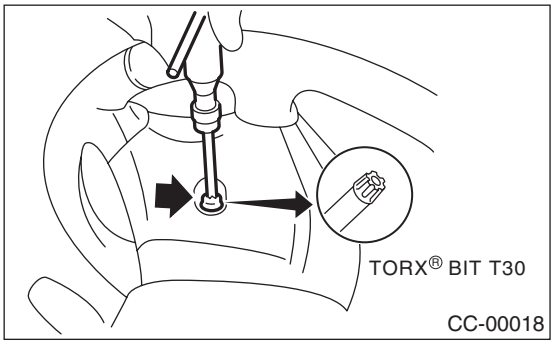
If NG, replace cruise control main switch.

5. Cruise Control Command Switch

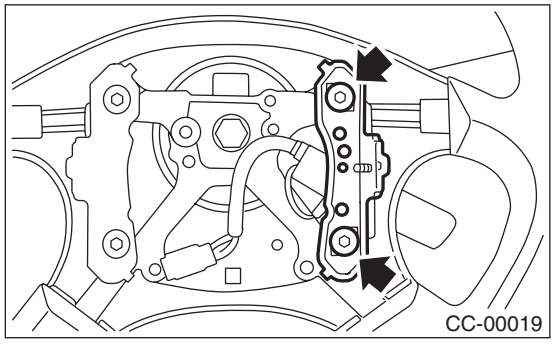
A: REMOVAL

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-3, CAUTION, General Description.>

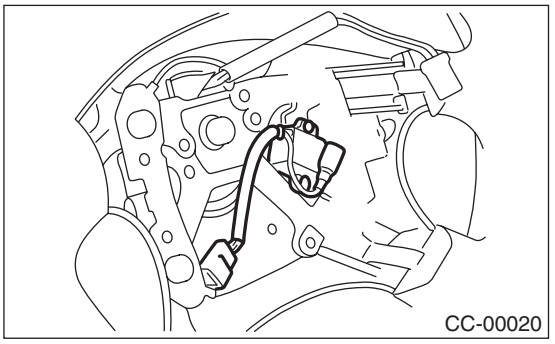
1) Set front wheels in straight ahead position.
2) Turn ignition switch OFF.
3) Disconnect ground cable from battery and wait for at least 20 seconds before starting work.
4) Using TORX® BIT T30 (Tamper resistant type), loosen two TORX® bolts which secure driver's airbag module.



5) Disconnect airbag module connector on back of airbag module.
6) Remove horn switch from steering wheel as shown.



7) Disconnect horn and cruise control command switch connector, then remove cruise control command switch.

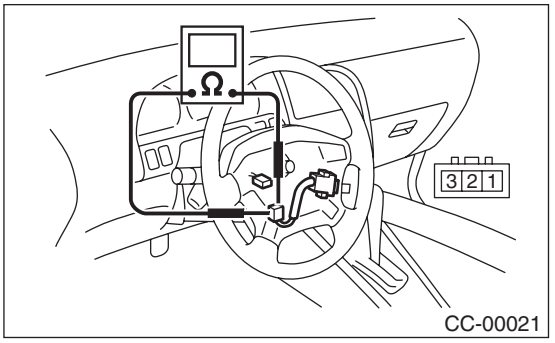


B: INSTALLATION

Install is in the reverse order of removal.

C: INSPECTION

Measure cruise control command switch resistance.



Check continuity between cruise control command switch terminals.

Switch	Position	Terminal No.	Standard
CANCEL	ON	1 (+) and 2 (–)	Less than 1 Ω
	ON	1 (+) and 3 (–)	Less than 1 Ω
SET/ COAST	OFF	1 and 2	More than 1 MΩ
	ON	1 and 2	Less than 1 Ω
RESUME/ ACCEL	OFF	1 and 3	More than 1 MΩ
	ON	1 and 3	Less than 1 Ω

If NG, replace cruise control command switch.

6. Stop and Brake Switch

A: REMOVAL

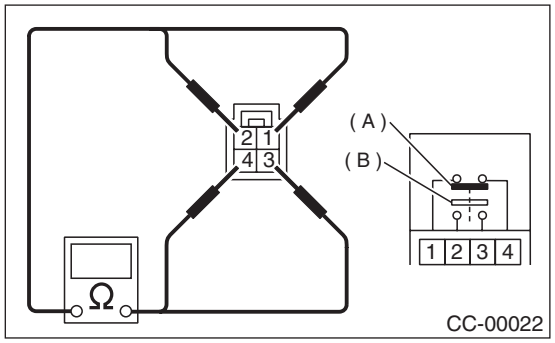
1) Disconnect ground cable from battery.
2) Disconnect connector from stop and brake switch, and then remove the switch. <Ref. to BR-41, REMOVAL, Stop Light Switch.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the brake switch (A) and stop light switch (B) resistance.



Switch	Pedal	Terminal No.	Standard
Brake	Released	1 and 4	Less than 1 Ω
	Depressed	1 and 4	More than 1 MΩ
Stop light	Released	2 and 3	More than 1 MΩ
	Depressed	2 and 3	Less than 1 Ω

If NG, replace stop and brake switch.

7. Clutch Switch

A: REMOVAL

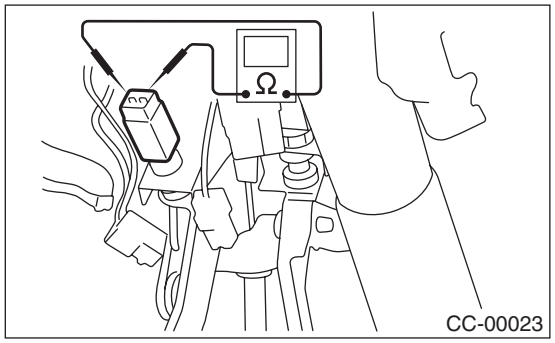
1) Disconnect ground cable from battery.
2) Disconnect the connector from the clutch switch, and then remove the switch. <Ref. to CL-27, REMOVAL, Clutch Pedal.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure clutch switch resistance.



Switch	Pedal	Terminal No.	Standard
Clutch	Released	1 and 2	Less than 1 Ω
	Depressed	1 and 2	More than 1 MΩ

If NG, replace the clutch switch.

8. Inhibitor Switch

A: REMOVAL

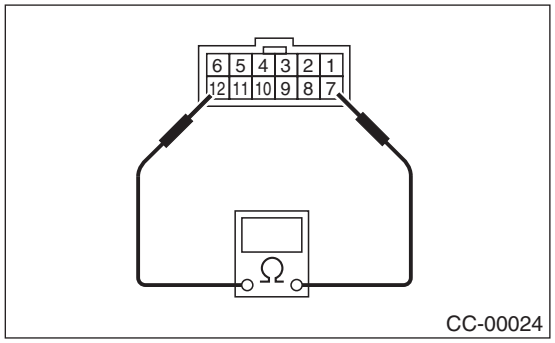
1) Disconnect ground cable from battery.
2) Disconnect connector from inhibitor switch, and then remove the switch. <Ref. to 4AT-51, REMOVAL, Inhibitor Switch.>

B: INSTALLATION

Installation is in the reverse order of removal.

C: INSPECTION

Measure inhibitor switch resistance.



Selector lever position	Terminal No.	Standard
P	7 and 12	Less than 1 Ω
N		Less than 1 Ω
Except P and N		More than 1 MΩ

If NG, replace inhibitor switch.

MEMO:

1. Basic Diagnostic Procedure

A: PROCEDURE

NOTE:
This section is specified for H4SO engine model.

	Step	Check	Yes	No
1	**START DIAGNOSIS.** 1) Perform pre-inspection. <Ref. to CC-5, INSPECTION, General Description.> 2) Check cruise control main switch operation.	Is cruise control main switch turned ON?	Go to step **2.**	Go to symptom 1. <Ref. to CC-12, SYMPTOM CHART, Diagnostics Chart with Symptom.>
2	**PREPARE SUBARU SELECT MONITOR.**	Is the Subaru select monitor available?	Go to step **3.**	Go to step **4.**
3	**PERFORM CRUISE CANCEL CONDITIONS DIAGNOSIS.** Perform cruise cancel conditions diagnosis. <Ref. to CC-10, Subaru Select Monitor.>	Is trouble code indicated?	Go to "List of Diagnostic Trouble Code (DTC)". <Ref. to CC-28, List of Diagnostic Trouble Code (DTC).>	Go to step **4.**
4	**CHECK CRUISE CONTROL SET OPERATION.** Check cruise control set operation.	Can cruise control be set while driving at 40 km/h (25 MPH)?	Go to step **5.**	Go to symptom 2. <Ref. to CC-12, SYMPTOM CHART, Diagnostics Chart with Symptom.>
5	**CHECK VEHICLE SPEED IS HELD WITHIN SET SPEED.** Make sure vehicle speed is held within set speed.	Is vehicle speed held within set speed ±3 km/h (±2 MPH) ?	Go to step **6.**	Go to symptom 3. <Ref. to CC-12, SYMPTOM CHART, Diagnostics Chart with Symptom.>
6	**CHECK RESUME/ACCEL OPERATION.** Check RESUME/ACCEL operation.	Does vehicle speed increase or return to set speed after RESUME/ACCEL switch has been pressed?	Go to step **7.**	Go to symptom 4. <Ref. to CC-12, SYMPTOM CHART, Diagnostics Chart with Symptom.>
7	**CHECK SET/COAST OPERATION.** Check SET/COAST operation.	Does vehicle speed decrease after SET/COAST switch has been pressed?	Go to step **8.**	Go to symptom 5. <Ref. to CC-12, SYMPTOM CHART, Diagnostics Chart with Symptom.>
8	**CHECK CANCEL OPERATION.** Check CANCEL operation.	Is cruise control released after CANCEL switch has been pressed?	Go to step **9.**	Go to symptom 6. <Ref. to CC-12, SYMPTOM CHART, Diagnostics Chart with Symptom.>
9	**CHECK CRUISE CONTROL RELEASE OPERATION.** Check cruise control release operation.	Is cruise control released after brake pedal has been depressed?	Go to step **10.**	Go to symptom 7. <Ref. to CC-12, SYMPTOM CHART, Diagnostics Chart with Symptom.>

	Step	Check	Yes	No
10	**CHECK CRUISE CONTROL RELEASE OPERATION.** Check cruise control release operation.	Is cruise control released after clutch pedal has been depressed? (MT)	Finish the diagnostics.	Go to symptom 8. <Ref. to CC-12, SYMPTOM CHART, Diagnostics Chart with Symptom.>

2. General Description

A: CAUTION

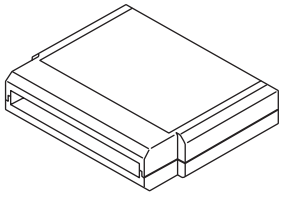
1. SUPPLEMENTAL RESTRAINT SYSTEM "AIRBAG"

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

CAUTION:
• All airbag system wiring harness and connectors are colored yellow. Do not use electrical test equipment on these circuits.
• Be careful not to damage airbag system wiring harness when servicing the cruise control module and cruise control command switch.

B: PREPARATION TOOL

1. SPECIAL TOOLS

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST24082AA260	24082AA260	CARTRIDGE	Troubleshooting for electrical systems.
ST22771AA030	22771AA030	SUBARU SELECT MONITOR KIT	Troubleshooting for electrical systems. • English: 22771AA030 (Without printer)

2. GENERAL TOOLS

TOOL NAME	REMARKS
Circuit Tester	Used for measuring resistance, voltage and ampere.

C: INSPECTION

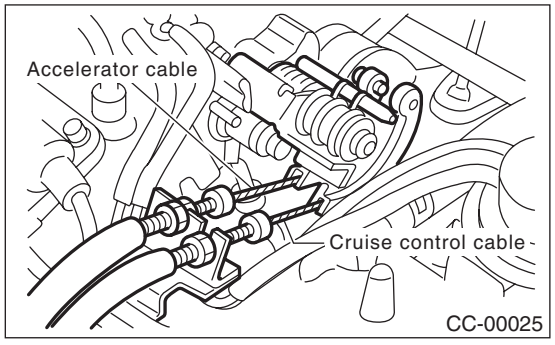
1. BATTERY

Measure battery voltage and specific gravity of electrolyte.

Standard voltage:
12 V, or more

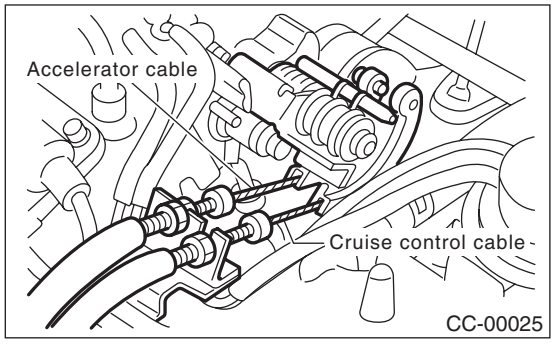
Specific gravity:
Above 1.260

2. CRUISE CONTROL CABLE



Check the cruise control cable installation.
If NG, install the cable securely.

3. ACCELERATOR CABLE

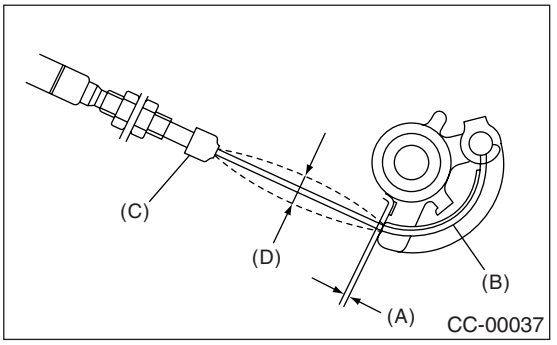


Check movement of the accelerator cable when the cruise control throttle is moved by hand.
If NG, check throttle cam.

4. THROTTLE CAM

Check that the throttle cam moves smoothly.
If NG, repair throttle cam.

5. CABLE FREE PLAY



Check that the clearance (A) between throttle cam (B) and lever or cable deflection (D) is within specifications.

Throttle cam-to-lever clearance:
0 — 1 mm (0 — 0.04 in)

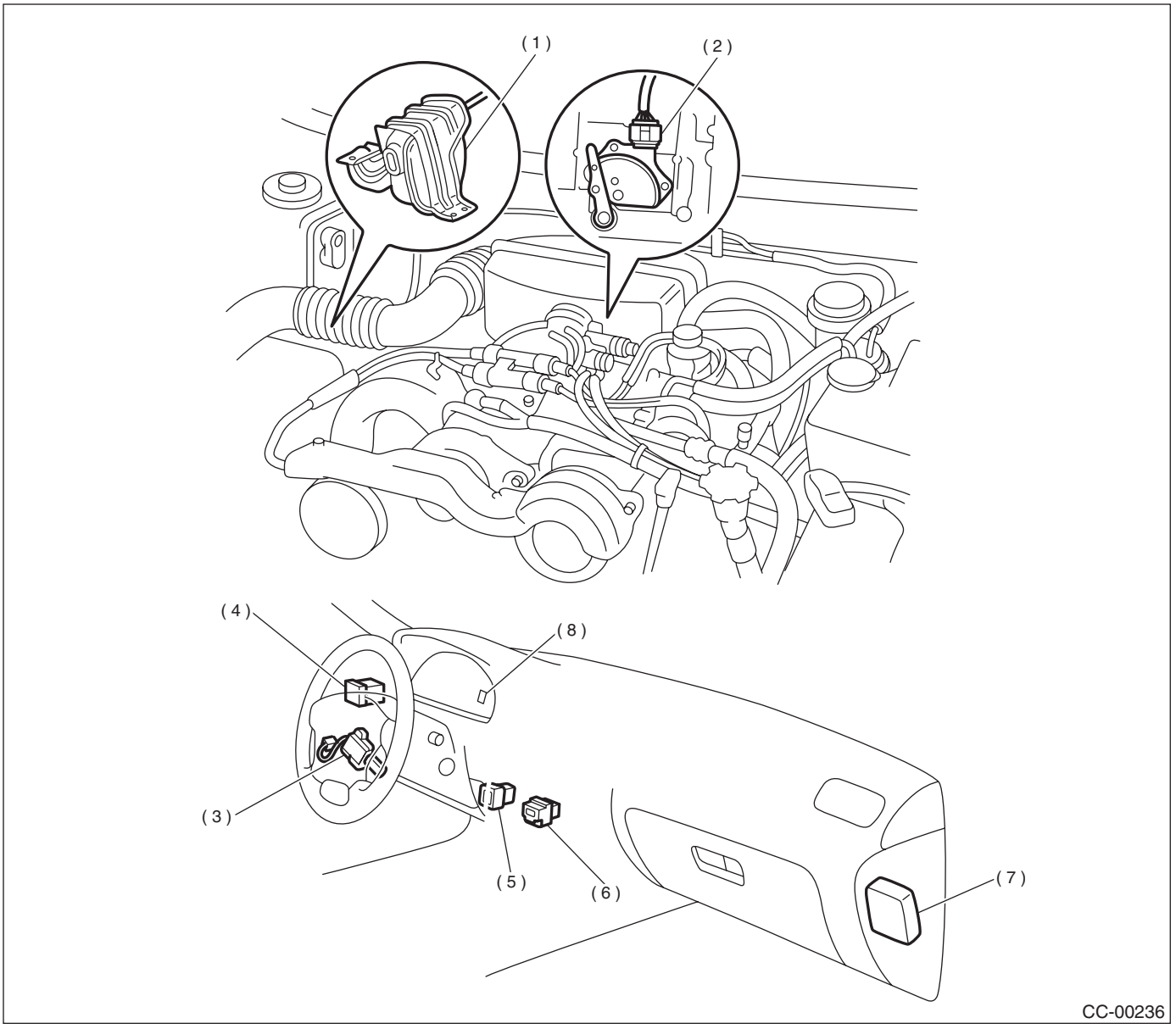
Inner cable deflection:
1 — 8 mm (0.04 — 0.31 in)

If NG, adjust the clearance or the deflection with the adjust nut.

NOTE:
Check that the cap (C) is positioned in the groove.

3. Electrical Components Location

A: LOCATION

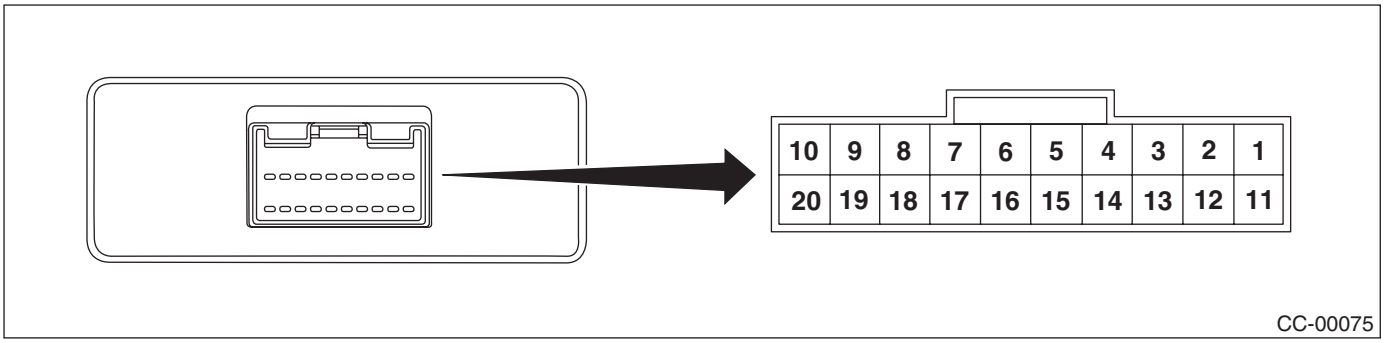


(1) Actuator
(2) Inhibitor switch (AT)
(3) Cruise control command switch
(4) Cruise control main switch (Built-in cruise indicator light)
(5) Clutch switch (MT)
(6) Stop and brake switch
(7) Cruise control module
(8) Cruise set indicator light

MEMO:

4. Cruise Control Module I/O Signal

A: ELECTRICAL SPECIFICATION



Content	Terminal No.	Measuring conditions and I/O signals (ignition switch ON and engine idling)
Cruise Control Indicator Light	1	• Battery voltage is present when main switch is turned OFF. • “0” volt is present when main switch is turned ON.
Inhibitor switch (AT)	4	• Battery voltage is present when selector lever is other than “P” or “N” position. • “0” volt is present when selector lever is set to “P” or “N” position.
Cruise set indicator light	3	• “0” volt is present when cruise control is setted (cruise control is operating). • Battery voltage is present when cruise control is not setted (cruise contorol is not operating).
Motor B	5	• ON-and-OFF (“0”-and-battery voltage) operation is alternately repeated while cruise control is operating. • “0” volt is present when main switch is turned OFF.
Ground	6	—
Motor A	7	• ON-and-OFF (“0”-and-battery voltage) operation is alternately repeated while cruise control is operating. • “0” volt is present when main switch is turned OFF.
RESUME/ACCEL switch	9	• Battery voltage is present when command switch is turned to RESUME/ACCEL position. • “0” volt is present when command switch is released.
SET/COAST switch	10	• Battery voltage is present when command switch is turned to SET/COAST position. • “0” volt is present when command switch is released.
Main power supply	11	• Battery voltage is present when main switch is turned ON. • “0” volt is present when main switch is turned OFF.
Ignition switch	12	• Battery voltage is present when ignition switch is turned ON. • “0” volt is present when ignition switch is turned OFF.
Motor C	13	• ON-and-OFF (“0”-and-battery voltage) operation is alternately repeated while cruise control is operating. • “0” volt is present when main switch is turned OFF.
Motor clutch	14	• ON-and-OFF (“0”-and-battery voltage) operation is alternately repeated while cruise control is operating. • “0” volt is present when vehicle is stopped.
Cruise control main switch	15	• Battery voltage is present during pressing the main switch. • “0” volt is present when main switch is released.
Brake switch	16	Leave clutch pedal released (MT), while cruise control main switch is turned ON. Then check that; • Battery voltage is present when brake pedal is released. • “0” volt is present when brake pedal is depressed. Additionally only in MT vehicle, keep the cruise control main switch to ON and leave brake pedal released. Then check that; • Battery voltage is present when clutch pedal is released. • “0” volt is present when clutch pedal is depressed.
Data link connector	17	—

Content	Terminal No.	Measuring conditions and I/O signals (ignition switch ON and engine idling)
Data link connector	18	—
Vehicle speed sensor (MT) TCM (AT)	19	Lift-up the vehicle until all four wheels are raised off ground, and then rotate any wheel manually. Approx. “5” and “0” volt pulse signals are alternately input to cruise control module.
Stop light switch	20	Turn ignition switch to OFF. Then check that; • Battery voltage is present when brake pedal is depressed. • “0” volt is present when brake pedal is released.
NOTE: Voltage at terminals 5, 7, 13 and 14 cannot be checked unless vehicle is driving by cruise control operation.		

B: SCHEMATIC

<Ref. to WI-78, SCHEMATIC, Cruise Control System.>

5. Subaru Select Monitor

A: OPERATION

1. GENERAL

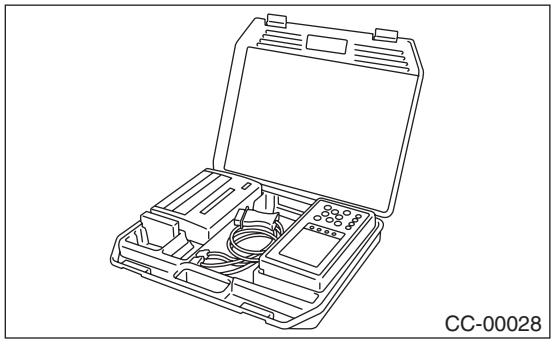
The on-board diagnosis function of the cruise control system uses an external Subaru Select Monitor.
The on-board diagnosis function operates in two categories, which are used depending on the type of problems;
1) Cruise cancel conditions diagnosis
(1) This category of diagnosis requires actual vehicle 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 module memory stores the cancel condition (Code No.) which occurred during driving. When there are plural cancel conditions (Code No.), they are shown on the Subaru Select Monitor.

CAUTION:
• The cruise control memory stores not only the cruise "cancel" which occurred (although "cancel" operation is not entered by the driver), but also the "cancel" condition input by the driver.
• The content of memory is cleared when ignition switch or cruise main switch is turned OFF.

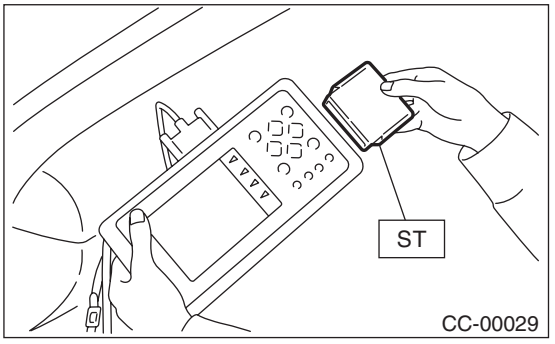
2) Real-time diagnosis
The real-time diagnosis function is used to determine whether or not the input signal system is in good order, according to signal emitted from switches, sensors, etc.
(1) Vehicle cannot be driven at cruise speed because problem occurs in the cruise control system or its associated circuits.
(2) Monitor the signal conditions from switches and sensors.

2. CRUISE CANCEL CONDITIONS DIAGNOSIS

1) Prepare Subaru Select Monitor kit.

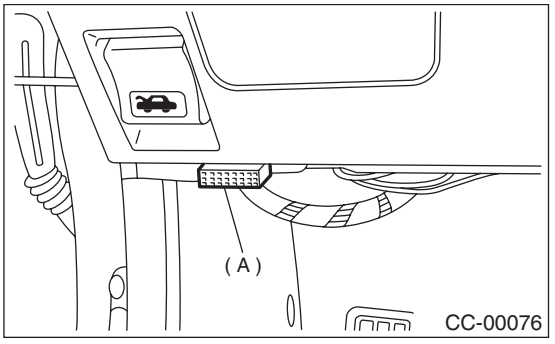

CC-00028

2) Connect diagnosis cable to Subaru Select Monitor.
3) Insert cartridge into Subaru Select Monitor. <Ref. to CC-4, SPECIAL TOOLS, PREPARATION TOOL, General Description.>



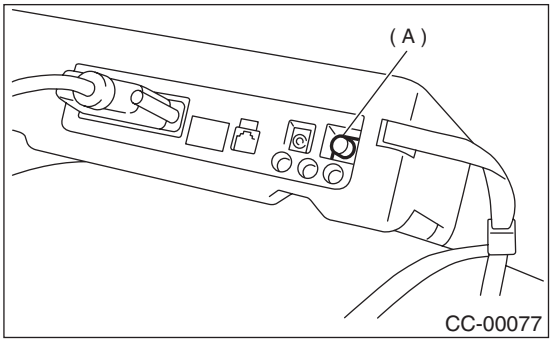
CC-00029

4) Connect Subaru Select Monitor to data link connector.
(1) Data link connector (A) is located in the lower portion of the instrument panel (on the driver's side).



CC-00076

(2) Connect diagnosis cable to data link connector.
5) Start engine and turn cruise control main switch to ON.
6) Turn Subaru Select Monitor switch (A) to ON.



CC-00077

7) On the «Main Menu» display screen, select the {All System Diagnosis} and press the [YES] key.

NOTE:
The diagnostic trouble code (DTC) is also shown in the {Each System Check} mode. This mode is called up on the «Cruise Control Diagnosis» display screen by selecting the item {Cancel Code(s) Display}.

8) Drive vehicle at least 40 km/h (25 MPH) with cruise speed set.
9) If cruise speed is canceled itself (without doing any cancel operations), a diagnostic trouble code (DTC) will appear on select monitor display.

CAUTION:
• A diagnostic trouble code (DTC) will also appear when cruise cancel is effected by driver. Do not confuse.
• Have a co-worker ride in vehicle to assist in diagnosis during driving.

NOTE:
Diagnostic trouble code (DTC) will be cleared by turning ignition switch or cruise control main switch to OFF.

3. REAL-TIME DIAGNOSIS

1) Connect select monitor.
2) Turn ignition switch and cruise control main switch to ON.
3) Turn Subaru Select Monitor switch to ON.
4) On the «Main Menu» display screen, select the {Each System Check} and press the [YES] key.
5) On the «System Selection Menu» display screen, select the {Cruise Control} and press the [YES] key.
6) Press the [YES] key after displayed the information of engine type.
7) On the «Cruise Control Diagnosis» display screen, select the {Current Data Display & Save} and press the [YES] key.
8) Make sure that normal indication is displayed when controls are operated as indicated below:
• Depress/release the brake pedal. (Stop light switch and brake switch turn ON or OFF.)
• Turn ON/OFF the “SET/COAST” switch.
• Turn ON/OFF the “RESUME/ACCEL” switch.
• Depress/release the clutch pedal. (MT)
• Set the selector lever to P or N. (AT)

NOTE:
• For detailed operation procedure, refer to the SUBARU SELECT MONITOR OPERATION MANUAL.
• For detailed concerning diagnostic trouble codes (DTCs), refer to the List of Diagnostic Trouble Code (DTC).
<Ref. to CC-28, List of Diagnostic Trouble Code (DTC).>

6. Diagnostics Chart with Symptom

A: SYMPTOM CHART

Symptom		Repair area	Reference
1	Cruise control main switch is not turned ON.	(1) Check power supply.	<Ref. to CC-14, CHECK POWER SUPPLY, Diagnostics Chart with Symptom.>
		(2) Check cruise control main switch.	<Ref. to CC-16, CHECK CRUISE CONTROL MAIN SWITCH, Diagnostics Chart with Symptom.>
2	Cruise set indicator light is not illuminated.	(1) Check cruise set indicator light.	<Ref. to CC-18, CHECK CRUISE SET INDICATOR LIGHT, Diagnostics Chart with Symptom.>
3	Cruise control cannot be set.	(1) Check SET/COAST switch.	<Ref. to CC-20, CHECK CRUISE CONTROL COMMAND SWITCH, Diagnostics Chart with Symptom.>
		(2) Check stop light switch and brake switch.	<Ref. to CC-22, CHECK STOP LIGHT SWITCH AND BRAKE SWITCH, Diagnostics Chart with Symptom.>
		(3) Check clutch switch (MT).	<Ref. to CC-24, CHECK CLUTCH SWITCH (MT), Diagnostics Chart with Symptom.>
		(4) Check inhibitor switch (AT).	<Ref. to CC-26, CHECK INHIBITOR SWITCH (AT), Diagnostics Chart with Symptom.>
		(5) Check vehicle speed sensor.	<Ref. to CC-30, DTC 22 VEHICLE SPEED SENSOR, Diagnostics Chart with Trouble Code.>
		(6) Check motor drive system.	<Ref. to CC-34, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostics Chart with Trouble Code.>
		(7) Check motor clutch drive system.	<Ref. to CC-36, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostics Chart with Trouble Code.>
4	Vehicle speed is not held within set speed ±3 km/h (±2 MPH).	(1) Check vehicle speed sensor.	<Ref. to CC-30, DTC 22 VEHICLE SPEED SENSOR, Diagnostics Chart with Trouble Code.>
		(2) Check motor drive system.	<Ref. to CC-34, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostics Chart with Trouble Code.>
		(3) Check motor clutch drive system.	<Ref. to CC-36, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostics Chart with Trouble Code.>
5	Vehicle speed does not increase or does not return to set speed after RESUME/ACCEL switch has been pressed.	(1) Check RESUME/ACCEL switch.	<Ref. to CC-20, CHECK CRUISE CONTROL COMMAND SWITCH, Diagnostics Chart with Symptom.>
		(2) Check motor drive system.	<Ref. to CC-34, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostics Chart with Trouble Code.>
		(3) Check motor clutch drive system.	<Ref. to CC-36, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostics Chart with Trouble Code.>
6	Vehicle speed does not decrease after SET/COAST switch has been pressed.	(1) Check SET/COAST switch.	<Ref. to CC-20, CHECK CRUISE CONTROL COMMAND SWITCH, Diagnostics Chart with Symptom.>
		(2) Check motor drive system.	<Ref. to CC-34, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostics Chart with Trouble Code.>
		(3) Check motor clutch drive system.	<Ref. to CC-36, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostics Chart with Trouble Code.>
7	Cruise control is not released after CANCEL switch has been pressed.	(1) Check CANCEL switch.	<Ref. to CC-20, CHECK CRUISE CONTROL COMMAND SWITCH, Diagnostics Chart with Symptom.>
		(2) Check motor drive system.	<Ref. to CC-34, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostics Chart with Trouble Code.>
		(3) Check motor clutch drive system.	<Ref. to CC-36, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostics Chart with Trouble Code.>
8	Cruise control is not released after brake pedal has been depressed.	(1) Check stop light switch and brake switch.	<Ref. to CC-22, CHECK STOP LIGHT SWITCH AND BRAKE SWITCH, Diagnostics Chart with Symptom.>
		(2) Check motor drive system.	<Ref. to CC-34, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostics Chart with Trouble Code.>
		(3) Check motor clutch drive system.	<Ref. to CC-36, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostics Chart with Trouble Code.>

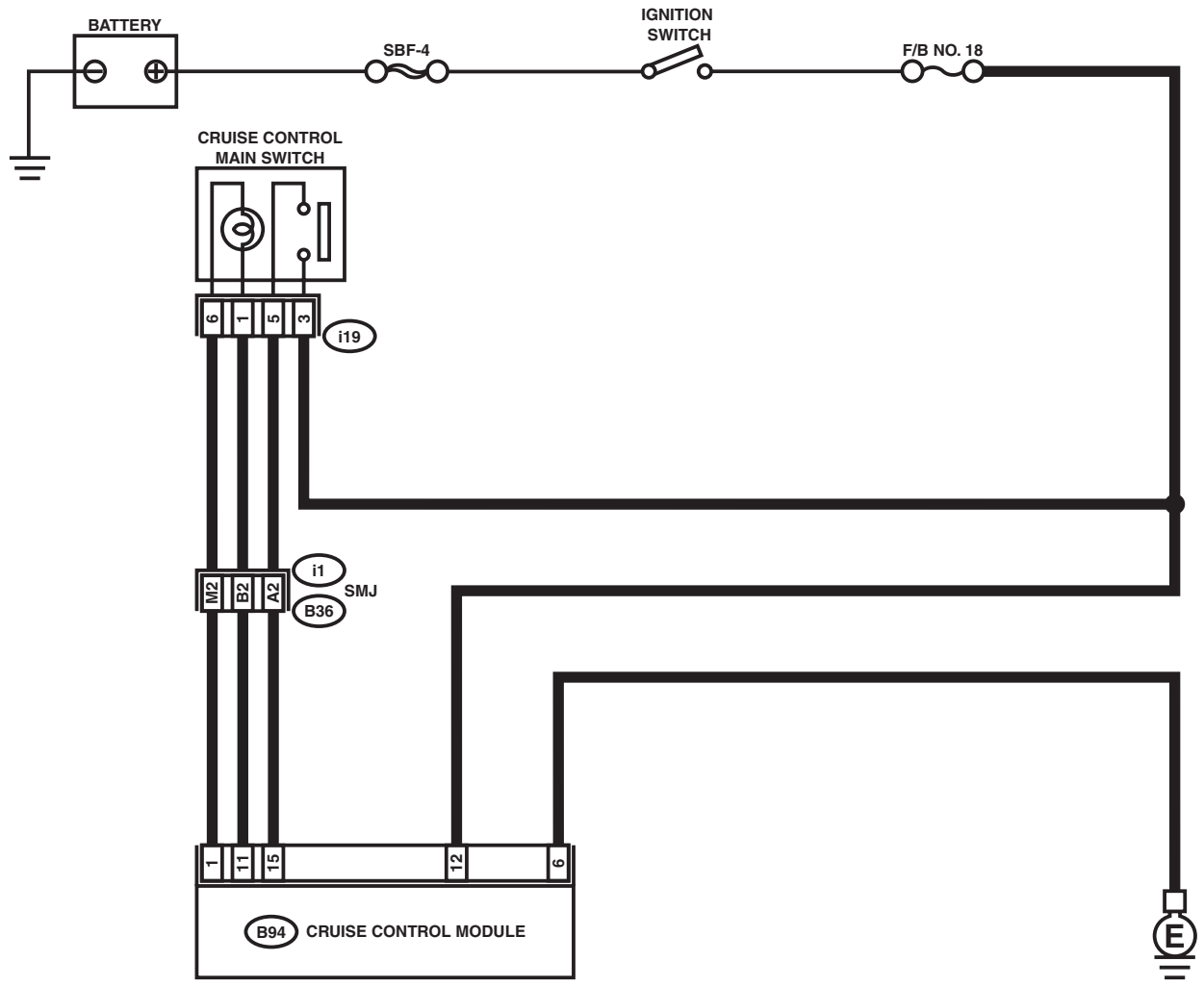
Symptom		Repair area	Reference
9	Cruise control is not released after clutch pedal has been depressed (MT).	(1) Check clutch switch.	<Ref. to CC-24, CHECK CLUTCH SWITCH (MT), Diagnostics Chart with Symptom.>
		(2) Check motor drive system.	<Ref. to CC-34, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostics Chart with Trouble Code.>
		(3) Check motor clutch drive system.	<Ref. to CC-36, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostics Chart with Trouble Code.>

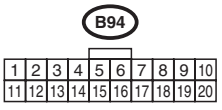
B: CHECK POWER SUPPLY

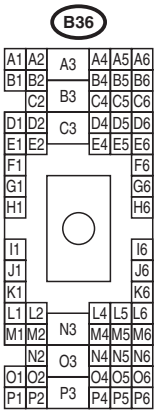
TROUBLE SYMPTOM:

Cruise control cannot be set, and indicator does not come on. (When main switch is pressed.)

WIRING DIAGRAM:







CC-00078

	Step	Check	Yes	No
1	**CHECK POWER SUPPLY.** 1) Turn ignition switch OFF. 2) Disconnect cruise control module harness connector. 3) Turn ignition switch ON. 4) Measure voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B94) No. 12 (+) — Chassis ground (–):***	Is the measured value less than 10 V?	Go to step **2.**	• Check fuse No. 18 (in fuse & relay box). • Check harness for open or short between cruise control module and fuse & relay box.
2	**CHECK GROUND CIRCUIT.** 1) Turn ignition switch OFF. 2) Measure resistance between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B94) No. 6 — Chassis ground:***	Is the measured value less than 10 Ω?	Power supply and ground circuit are OK.	Repair harness.

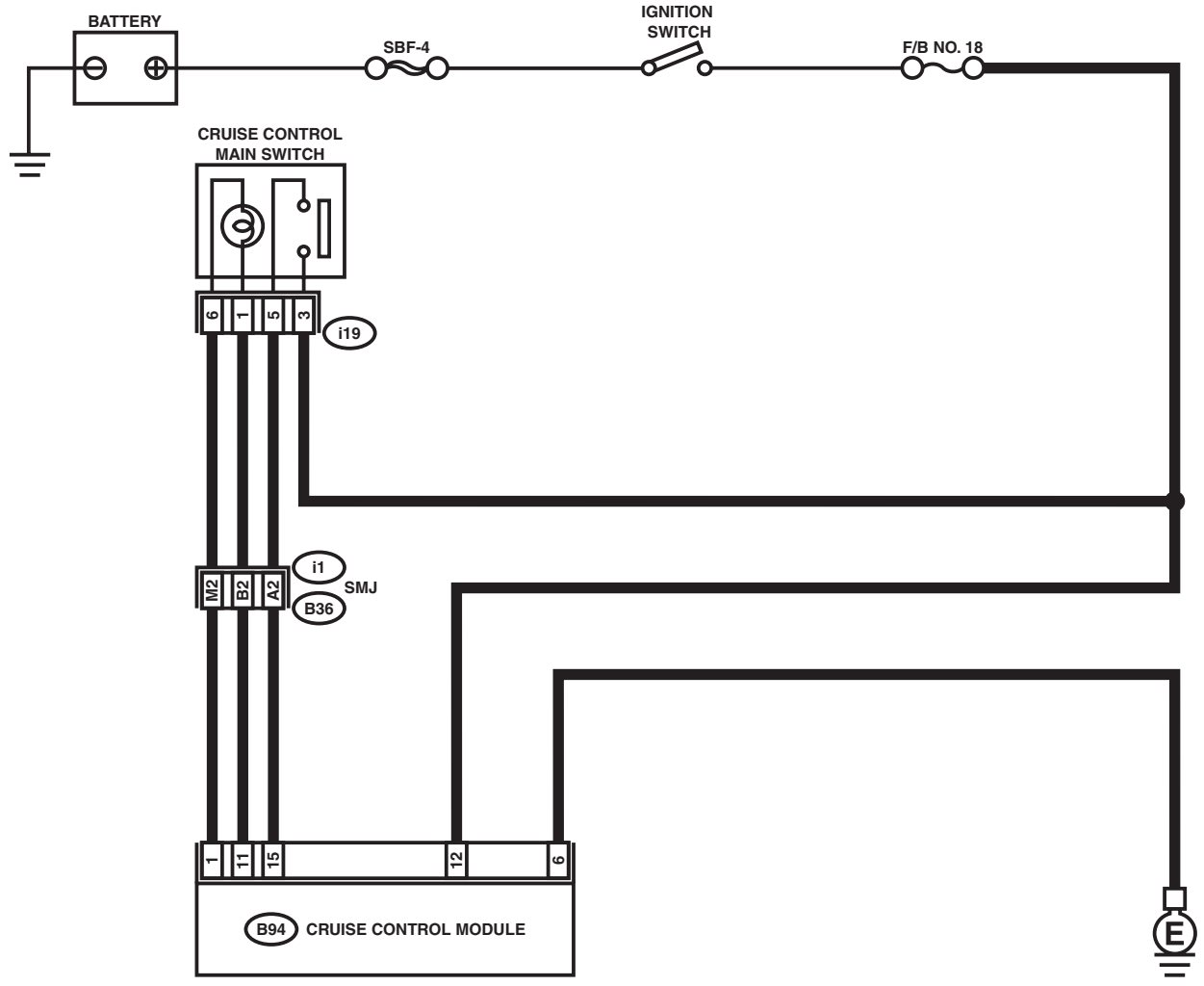
C: CHECK CRUISE CONTROL MAIN SWITCH

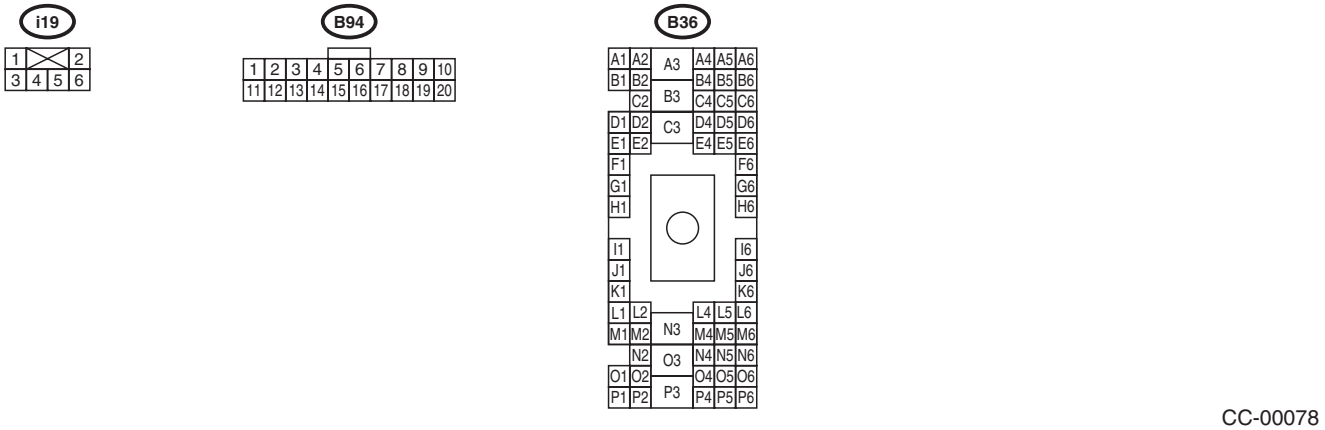
TROUBLE SYMPTOM:

Cruise control main switch is not turned ON and cruise control cannot be set.

NOTE:
When the main relay (built-in cruise control module) operates, the main switch circuit is in normal condition.
The main relay operation can be checked by hearing the operation sounds.
This operation sounds will be heard when ignition switch and cruise control main switch is turned to ON.

WIRING DIAGRAM:





CC-00078

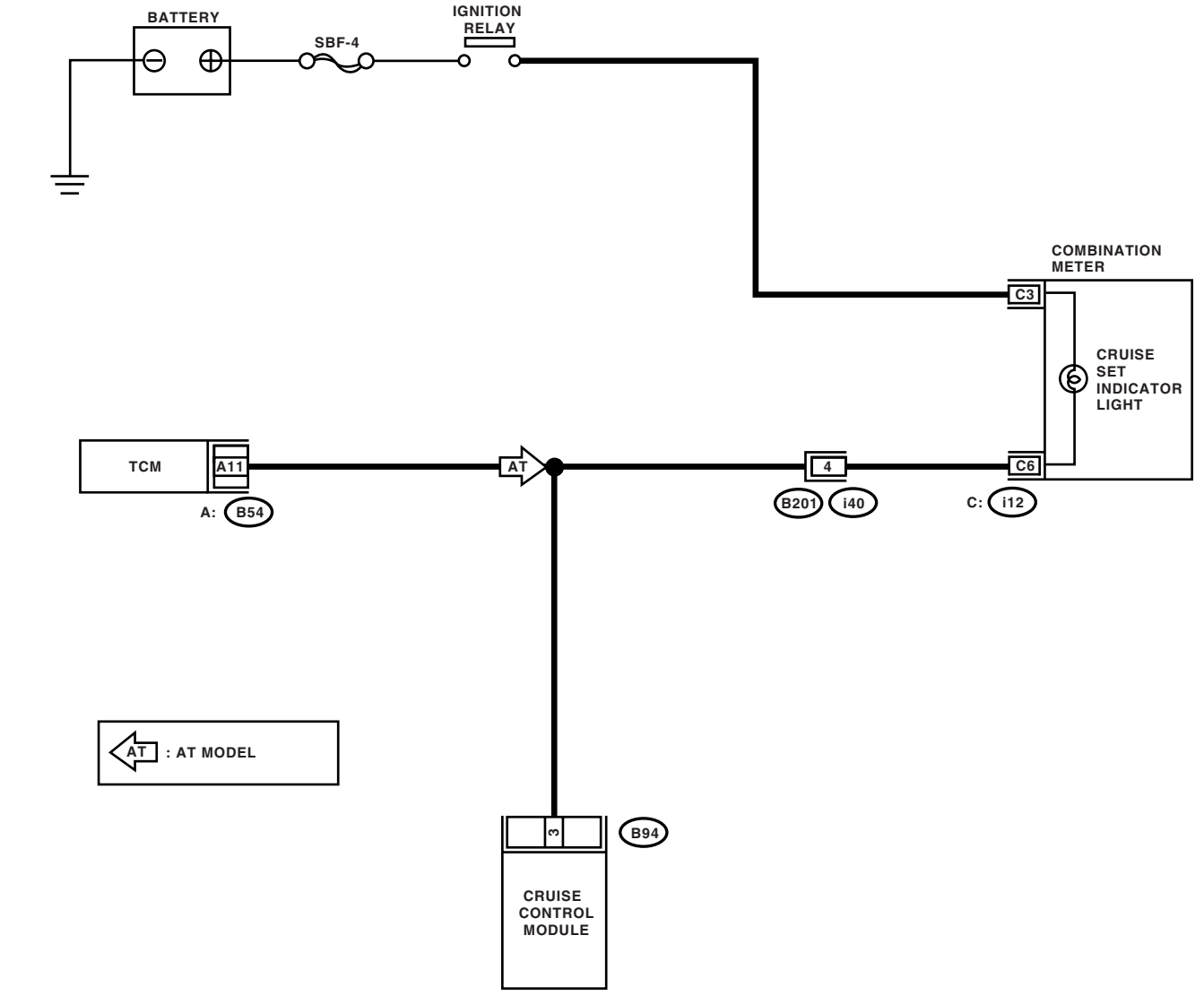
	Step	Check	Yes	No
1	**CHECK CRUISE CONTROL MAIN SWITCH CIRCUIT.** 1) Turn ignition switch OFF. 2) Disconnect cruise control main switch harness connector. 3) Turn ignition switch ON. 4) Measure voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(i19) No. 3 (+) — Chassis ground (−):***	Is the measured value less than 10 V?	Go to step **2.**	• Check fuse No. 18 (in fuse & relay box). • Check harness for open or short between cruise control main switch and fuse & relay box.
2	**CHECK CRUISE CONTROL MAIN SWITCH CIRCUIT.** 1) Turn ignition switch OFF. 2) Disconnect cruise control module harness connector. 3) Measure resistance between cruise control module harness connector terminal and cruise control main switch harness connector terminal. ***Connector & terminal*** ***(B94) No. 15 — (i19) No. 5:*** ***(B94) No. 1 — (i19) No. 6:*** ***(B94) No. 11 — (i19) No. 1:***	Is the measured value less than 10 Ω?	Go to step **3.**	Repair harness.
3	**CHECK CRUISE CONTROL MAIN SWITCH.** Remove and check cruise control main switch. <Ref. to CC-7, Cruise Control Main Switch.>	Is cruise control main switch OK?	Replace cruise control module.	Replace cruise control main switch.

D: CHECK CRUISE SET INDICATOR LIGHT

TROUBLE SYMPTOM:

Cruise control cannot be set, but cruise set indicator light dose not illuminate.

WIRING DIAGRAM:



CC-00325

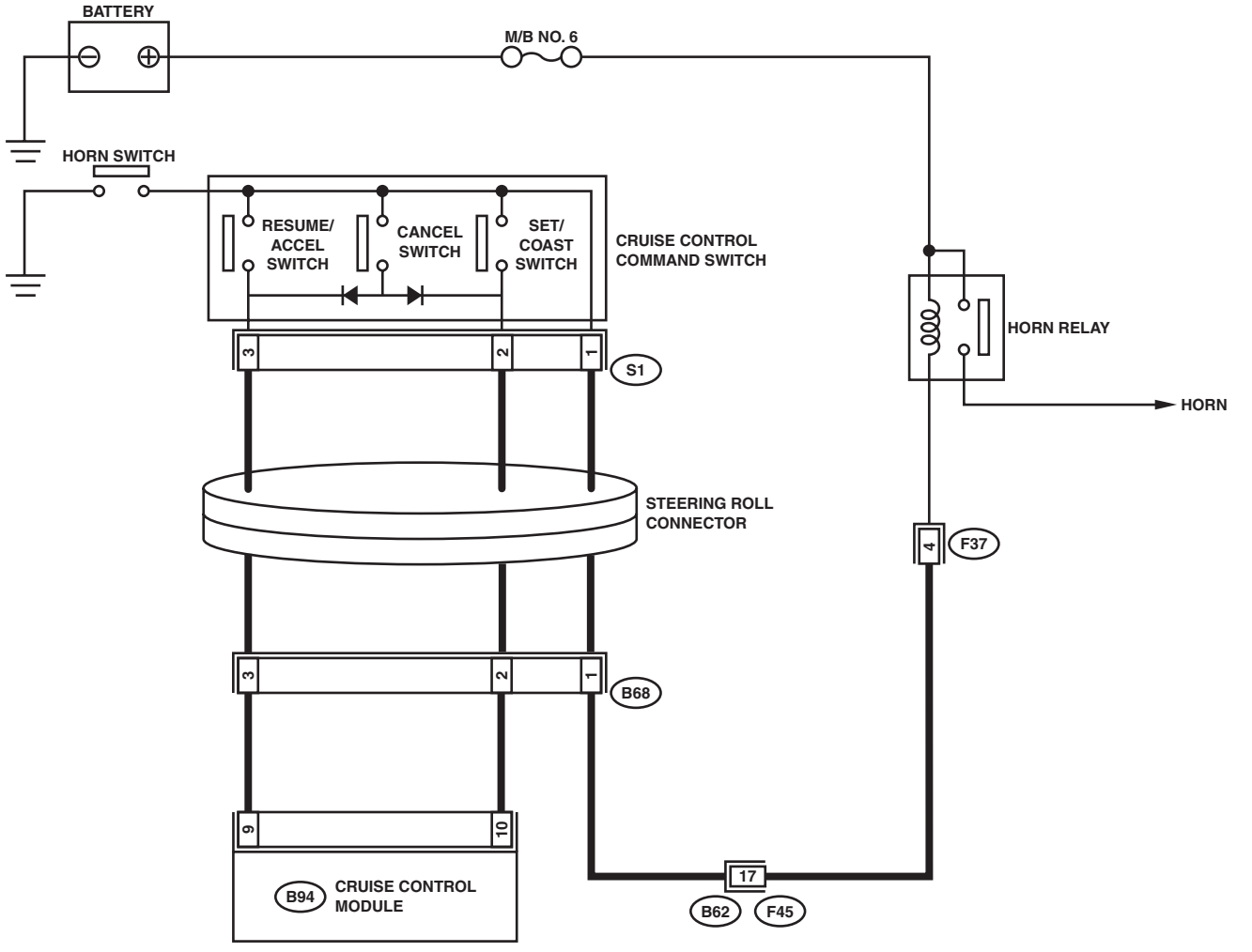
	Step	Check	Yes	No
1	**CHECK CRUISE SET INDICATOR LIGHT CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the combination meter harness connector. 3) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(i12) No. 3 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **2.**	Check the harness for open or short between combination meter and ignition relay.
2	**CHECK CRUISE SET INDICATOR LIGHT CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the cruise control module harness connector. 3) Measure the resistance between cruise control module harness connector terminal and combination meter harness connector terminal. ***Connector & terminal*** ***(i12) No. 61 — (B94) No. 3:***	Is the resistance less than 10 Ω?	Go to step **3.**	Repair the harness.
3	**CHECK CRUISE SET INDICATOR LIGHT CIRCUIT.** Ground the cruise control module harness connector terminal with a suitable wire. ***Connector & terminal*** ***(B94) No. 3 — Chassis ground:***	Does the cruise set indicator light illuminate?	Replace the cruise control module.	Check the cruise set indicator light bulb in combination meter, and replace it if malfunction occurred. No malfunction found, replace the printed circuit of combination meter.

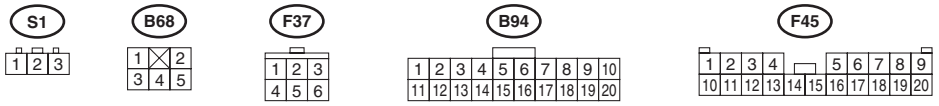
E: CHECK CRUISE CONTROL COMMAND SWITCH

TROUBLE SYMPTOM:

Cruise control cannot be set. (Cancelled immediately.)

WIRING DIAGRAM:





CC-00326

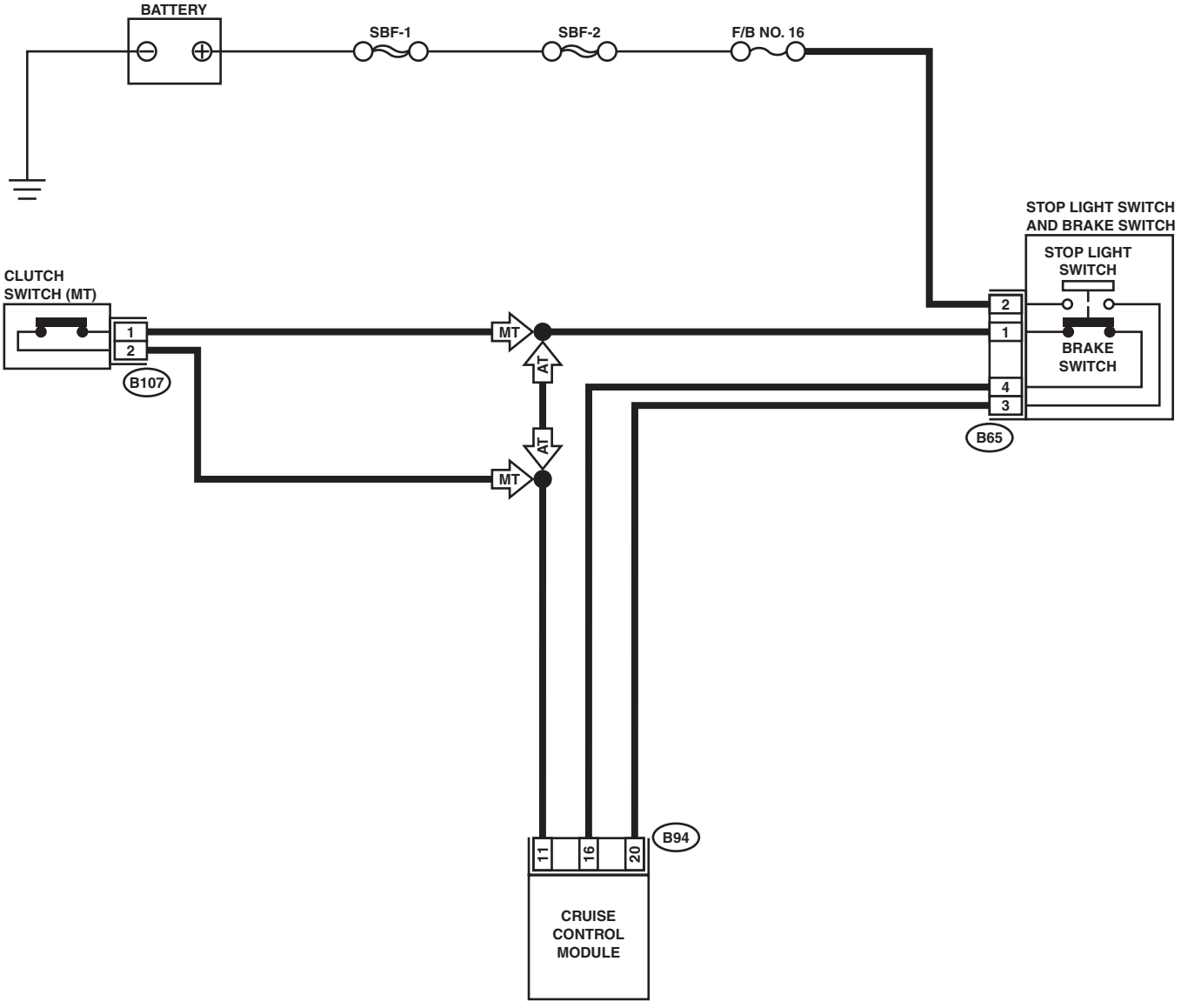
	Step	Check	Yes	No
1	**CHECK SET/COAST SWITCH CIRCUIT.** 1) Turn ignition switch OFF. 2) Disconnect cruise control module harness connector. 3) Measure voltage between harness connector terminal and chassis ground when SET/COAST switch is pressed and not pressed. ***Connector & terminal*** ***(B94) No. 10 (+) — Chassis ground (–):***	Is the measured value less than 0 V, when SET/COAST switch is not pressed? Is the measured value less than 10 V, when SET/COAST switch is not pressed?	Go to step **2.**	Go to step **4.**
2	**CHECK RESUME/ACCEL SWITCH CIRCUIT.** Measure voltage between harness connector terminal and chassis ground when RESUME/ACCEL switch is pressed and not pressed. ***Connector & terminal*** ***(B94) No. 9 (+) — Chassis ground (–):***	Is the measured value less than 0 V, when RESUME/ACCEL switch is not pressed? Is the measured value less than 10 V, when RESUME/ACCEL switch is not pressed?	Go to step **3.**	Go to step **4.**
3	**CHECK CANCEL SWITCH CIRCUIT.** Measure voltage between harness connector terminal and chassis ground when CANCEL switch is pressed and not pressed. ***Connector & terminal*** ***(B94) No. 9 (+) — Chassis ground (–):*** ***(B94) No. 10 (+) — Chassis ground (–):***	Is the measured value less than 0 V, when CANCEL switch is not pressed? Is the measured value less than 10 V, when CANCEL switch is not pressed?	Cruise control command switch circuit is OK.	Go to step **4.**
4	**CHECK POWER SUPPLY FOR COMMAND SWITCH.** Check horn operation.	Does horn sound?	Go to step **5.**	• Check fuse No. 6 (in main fuse box). • Check horn relay. <Ref. to COM-3, HORN RELAY, INSPECTION, Horn System.> • Check harness for open or short between cruise control command switch and fuse & relay box.
5	**CHECK CRUISE CONTROL COMMAND SWITCH.** Remove and check cruise control command switch. <Ref. to CC-8, Cruise Control Command Switch.>	Is cruise control command switch OK?	Check harness between cruise control command switch and cruise control module.	Replace cruise control command switch.

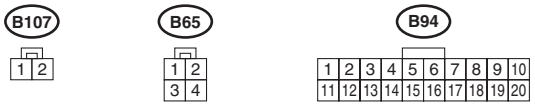
F: CHECK STOP LIGHT SWITCH AND BRAKE SWITCH

TROUBLE SYMPTOM:

Cruise control cannot be set.

WIRING DIAGRAM:





CC-00080

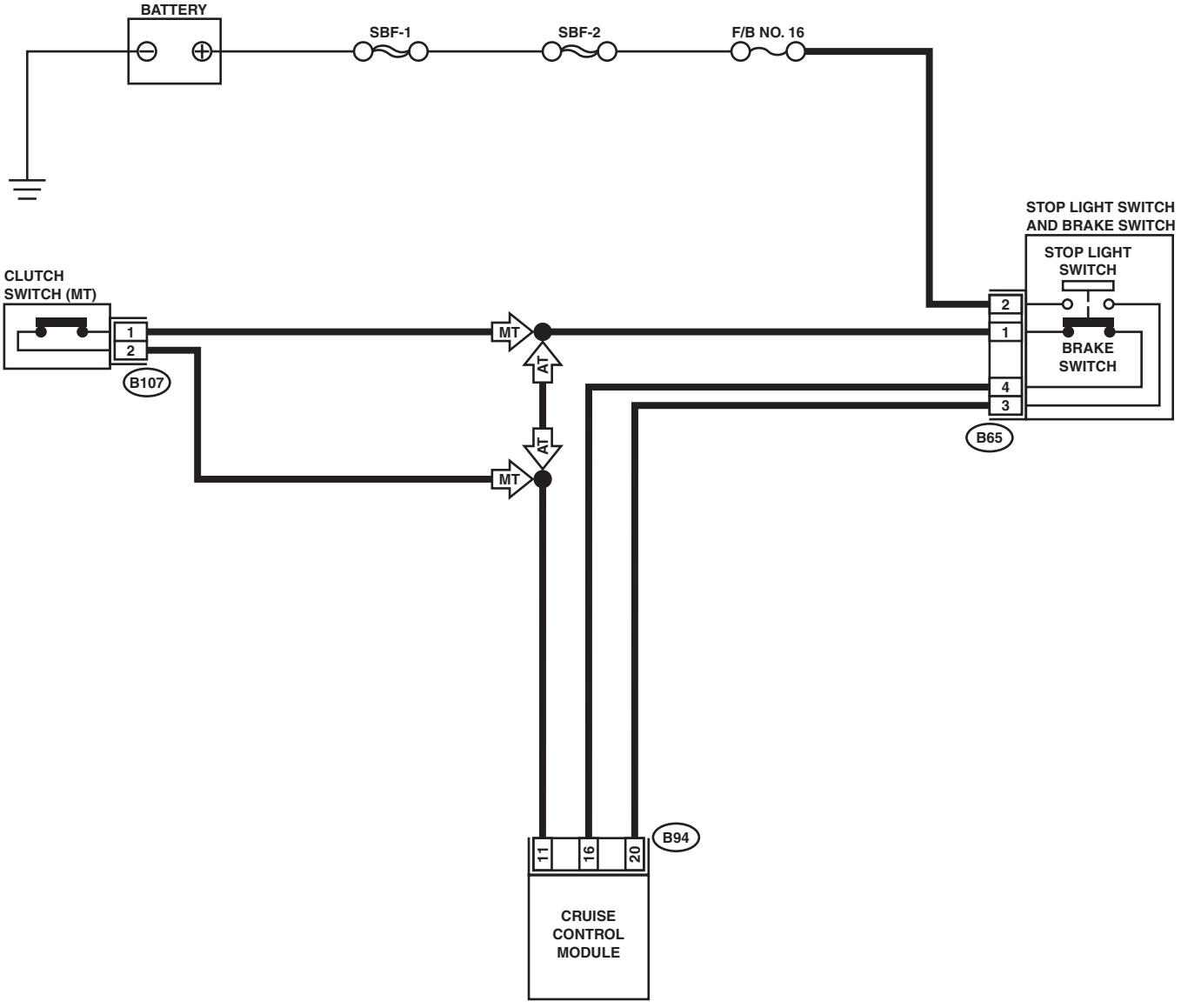
	Step	Check	Yes	No
1	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.** 1) Turn ignition switch OFF. 2) Disconnect stop light switch and brake switch harness connector. 3) Turn ignition switch ON. 4) Turn cruise control main switch ON. 5) Measure voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B65) No. 2 (+) — Chassis ground (−):***	Is the measured value less than 10 V?	Go to step **2.**	• Check fuse No. 16 (in fuse & relay box). • Check harness for open or short between stop light/brake switch and fuse & relay box.
2	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.** Measure voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B65) No. 1 (+) — Chassis ground (−):***	Is the measured value less than 10 V?	Go to step **3.**	• Check harness for open or short between stop light/brake switch and cruise control module (AT). • Check clutch switch and the circuit (MT).
3	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.** 1) Turn cruise control main switch and ignition switch OFF. 2) Disconnect cruise control module harness connector. 3) Measure resistance between cruise control module harness connector terminal and stop light switch and brake switch harness connector terminal. ***Connector & terminal*** ***(B94) No. 20 — (B65) No. 3:*** ***(B94) No. 16 — (B65) No. 4:***	Is the measured value less than 10 Ω?	Go to step **4.**	Repair harness.
4	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH.** Remove and check stop light switch and brake switch. <Ref. to CC-9, Stop and Brake Switch.>	Are stop light switch and brake switch OK?	Stop light switch and brake switch circuit are OK.	Replace stop light switch and brake switch.

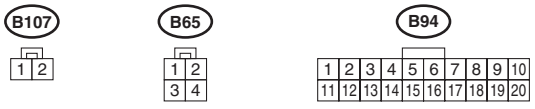
G: CHECK CLUTCH SWITCH (MT)

TROUBLE SYMPTOM:

Cruise control cannot be set.

WIRING DIAGRAM:





CC-00080

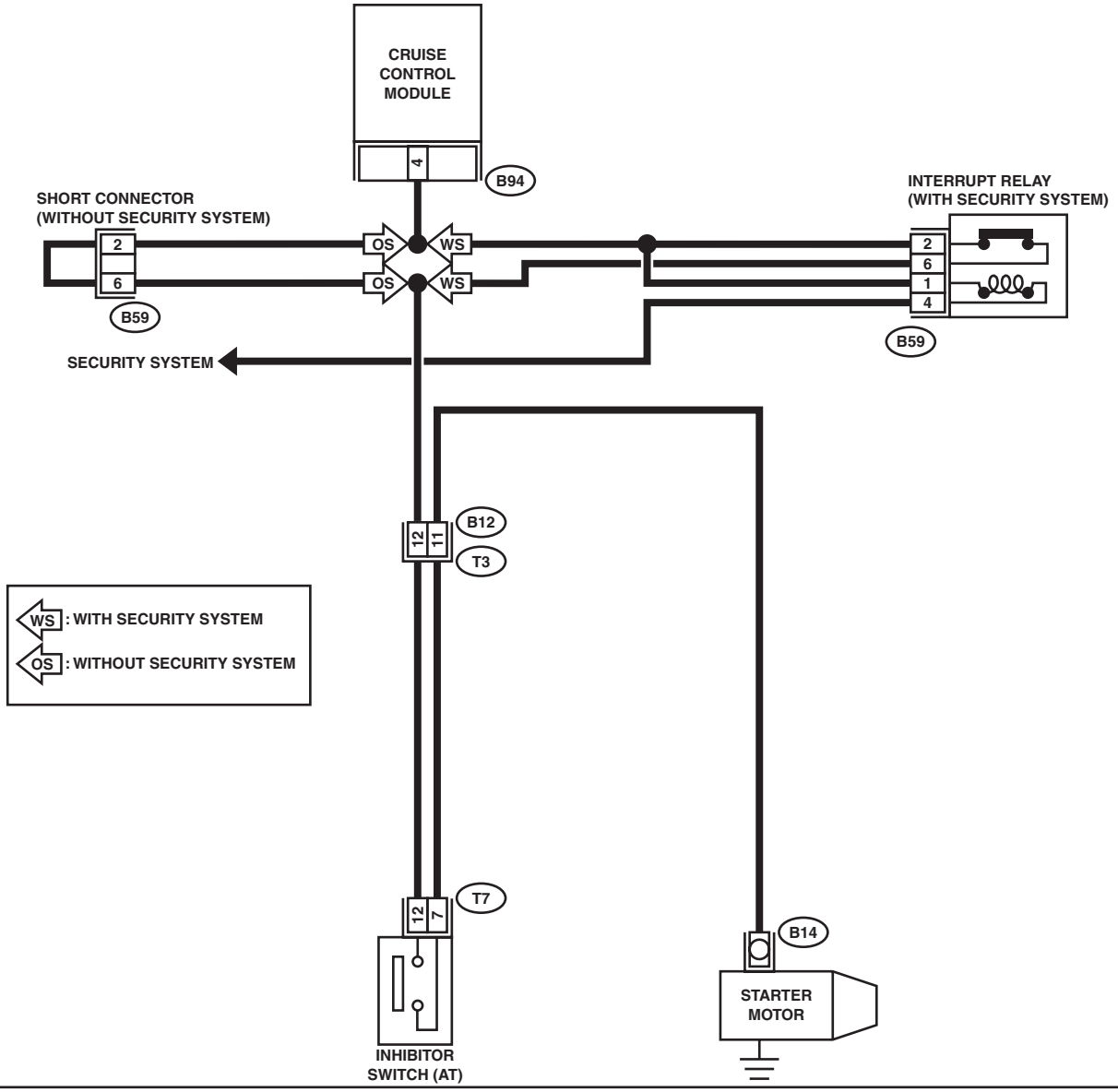
	Step	Check	Yes	No
1	**CHECK CLUTCH SWITCH CIRCUIT.** 1) Turn ignition switch OFF. 2) Disconnect clutch switch harness connector. 3) Turn ignition switch ON. 4) Turn cruise control main switch ON. 5) Measure voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B107) No. 2 (+) — Chassis ground (−):***	Is the measured value less than 10 V?	Go to step **2.**	Check harness for open or short between clutch switch and cruise control module.
2	**CHECK CLUTCH SWITCH CIRCUIT.** 1) Turn cruise control main switch and ignition switch OFF. 2) Disconnect stop light switch and brake switch harness connector. 3) Measure resistance between clutch switch harness connector terminal and stop light switch and brake switch harness connector terminal. ***Connector & terminal*** ***(B107) No. 1 — (B65) No. 1:***	Is the measured value less than 10 Ω?	Go to step **3.**	Repair harness.
3	**CHECK CLUTCH SWITCH.** Remove and check clutch switch. <Ref. to CC-10, Clutch Switch.>	Is clutch switch OK?	Clutch switch circuit is OK.	Replace clutch switch.

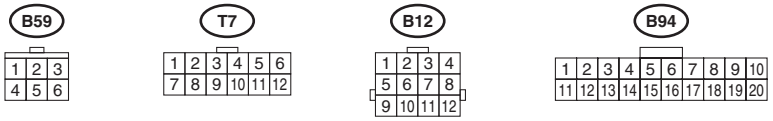
H: CHECK INHIBITOR SWITCH (AT)

TROUBLE SYMPTOM:

Cruise control cannot be set.

WIRING DIAGRAM:





CC-00327

	Step	Check	Yes	No
1	**CHECK INHIBITOR SWITCH CIRCUIT.** 1) Turn ignition switch OFF. 2) Disconnect inhibitor switch harness connector. 3) Turn ignition switch ON. 4) Turn cruise control main switch ON. 5) Measure voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(T7) No. 12 (+) — Chassis ground (−):***	Is the measured value less than 10 V?	Go to step **2.**	Check harness for open or short between inhibitor switch and cruise control module.
2	**CHECK INHIBITOR SWITCH CIRCUIT.** 1) Turn cruise control main switch and ignition switch OFF. 2) Disconnect starter motor harness connector. 3) Measure resistance between inhibitor switch harness connector terminal and chassis ground. ***Connector & terminal*** ***(T7) No. 7 — (B14) No. 1:***	Is the measured value less than 10 Ω?	Go to step **3.**	Repair harness.
3	**CHECK INHIBITOR SWITCH.** Remove and check inhibitor switch. <Ref. to CC-11, Inhibitor Switch.>	Is inhibitor switch OK?	Inhibitor switch circuit is OK.	Replace inhibitor switch.

7. List of Diagnostic Trouble Code (DTC)

A: LIST

DTC	Item	Contents of diagnosis	Reference
21	Inner relay is seized.	Cruise control module inner relay is seized when main switch is OFF.	<Ref. to CC-29, DTC 21, 24, 25 AND 2A CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM, Diagnostics Chart with Trouble Code.>
22	Vehicle speed sensor	Vehicle speed signal changes more than 10 km/h (6 MPH) within 350 ms.	<Ref. to CC-30, DTC 22 VEHICLE SPEED SENSOR, Diagnostics Chart with Trouble Code.>
24	Cruise control module is abnormal.	Two vehicle speed values stored in cruise control module memory are not the same.	<Ref. to CC-29, DTC 21, 24, 25 AND 2A CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM, Diagnostics Chart with Trouble Code.>
25	Cruise control module is abnormal.	Two output values stored in cruise control module memory are not the same.	<Ref. to CC-29, DTC 21, 24, 25 AND 2A CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM, Diagnostics Chart with Trouble Code.>
28	Wiring harness opened.	Open wiring harness circuit is detected via control module relay when main switch is ON.	<Ref. to CC-33, DTC 28 WIRING HARNESS OPENED., Diagnostics Chart with Trouble Code.>
35	Motor drive system is abnormal.	• Motor output circuit is open or shorted. • Motor drive circuit is open or shorted.	<Ref. to CC-34, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostics Chart with Trouble Code.>
36	Trouble of motor turning speed	Motor turning speed is low.	<Ref. to CC-34, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostics Chart with Trouble Code.>
37	Motor clutch drive system is abnormal.	• Motor clutch output circuit is open or shorted. • Motor clutch drive circuit is open or shorted.	<Ref. to CC-36, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostics Chart with Trouble Code.>
38	Motor drive shaft does not engage properly.	Motor drive gear engagement is not properly adjusted.	<Ref. to CC-38, DTC 38 MOTOR DRIVE SHAFT DOES NOT ENGAGE PROPERLY., Diagnostics Chart with Trouble Code.>
39	Motor is overloaded.	Current flows through motor more frequently than under normal conditions.	<Ref. to CC-38, DTC 39 MOTOR IS OVERLOADED., Diagnostics Chart with Trouble Code.>
2A	Cruise control module is abnormal.	Cruise control module self-diagnosis function senses abnormality.	<Ref. to CC-29, DTC 21, 24, 25 AND 2A CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM, Diagnostics Chart with Trouble Code.>

8. Diagnostics Chart with Trouble Code

A: DTC 21, 24, 25 AND 2A CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM

DIAGNOSIS:

- Poor welding of built-in relay of cruise control module.
- Failure of built-in CPU RAM of cruise control module.

TROUBLE SYMPTOM:

- Cruise control is canceled and memorized cruise speed is also canceled.
- Once cruise control is canceled, cruise control cannot be set until the ignition switch and cruise control main switch turns OFF, and then turns ON again.

NOTE:
Check input/output signal and vehicle speed signal with select monitor. When signals are in good condition, failure is in cruise control module. (Check power supply and ground conditions of cruise control module.)

B: DTC 22 VEHICLE SPEED SENSOR

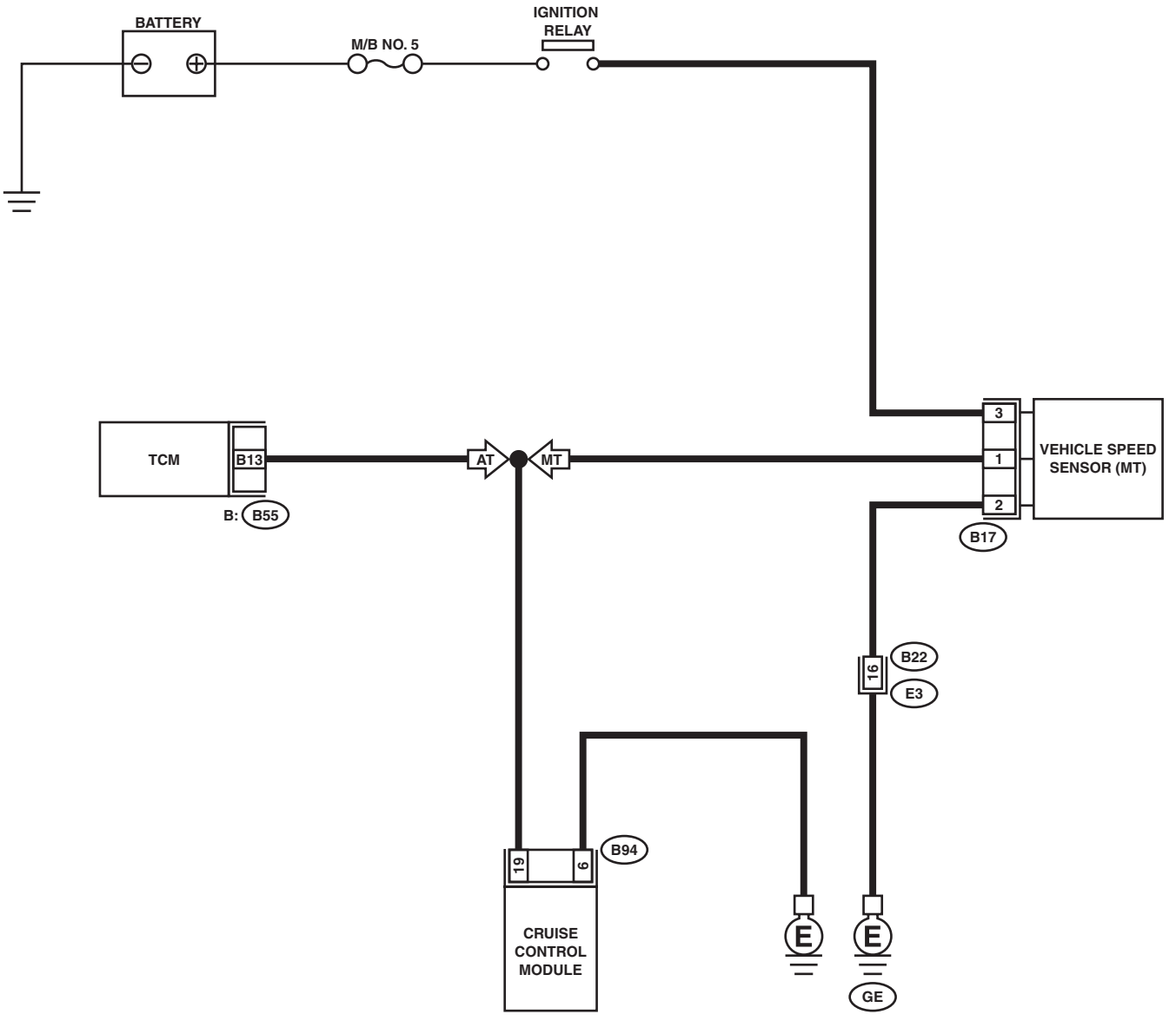
DIAGNOSIS:

Disconnection or short circuit of vehicle speed sensor system.

TROUBLE SYMPTOM:

Cruise control cannot be set. (Cancelled immediately.)

WIRING DIAGRAM:



CC-00328

	Step	Check	Yes	No
1	**CHECK TRANSMISSION TYPE.**	Is the transmission type MT?	Go to step **2.**	Go to step **6.**
2	**CHECK HARNESS BETWEEN BATTERY AND VEHICLE SPEED SENSOR.** 1) Turn ignition switch to OFF. 2) Disconnect harness connector from vehicle speed sensor. 3) Turn ignition switch to ON. 4) Measure voltage between vehicle speed sensor harness connector terminal and chassis ground. ***Connector & terminal*** ***(B17) No. 3 (+) — Chassis ground (–):***	Is the measured value less than 10 V?	Go to step **3.**	Check harness for open or short between ignition relay and vehicle speed sensor.
3	**CHECK HARNESS BETWEEN CRUISE CONTROL MODULE AND VEHICLE SPEED SENSOR.** 1) Turn ignition switch to OFF. 2) Disconnect harness connector from cruise control module. 3) Measure resistance between vehicle speed sensor harness connector terminal and cruise control module harness connector terminal. ***Connector & terminal*** ***(B17) No. 1 — (B94) No. 19:***	Is the measured value less than 10 Ω?	Go to step **4.**	Repair harness.
4	**CHECK HARNESS BETWEEN VEHICLE SPEED SENSOR AND ENGINE GROUND.** Measure resistance between vehicle speed sensor harness connector terminal and engine ground. ***Connector & terminal*** ***(B17) No. 2 (+) — Engine ground (–):***	Is the measured value less than 10 Ω?	Go to step **5.**	Repair harness.
5	**CHECK VEHICLE SPEED SENSOR.** 1) Connect harness connector to vehicle speed sensor. 2) Lift-up the vehicle and support with safety stands. 3) Drive the vehicle at speed greater than 20 km/h (12 MPH). **Warning:** **Be careful not to be caught up by the running wheels.** 4) Measure voltage between cruise control module harness connector terminal and chassis ground. ***Connector & terminal*** ***(B94) No. 19 (+) — Chassis ground (–):***	Is the measured value less than 0V or more than 5 V?	Replace cruise control module. <Ref. to CC-6, Cruise Control Module.>	Replace vehicle speed sensor.
6	**CHECK HARNESS BETWEEN CRUISE CONTROL MODULE AND TRANSMISSION CONTROL MODULE.** 1) Turn ignition switch to OFF. 2) Disconnect harness connector from transmission control module and cruise control module. 3) Measure resistance between cruise control module harness connector terminal and transmission control module harness connector terminal. ***Connector & terminal*** ***(B94) No. 19 — (B55) No. 13:***	Is the measured value less than 10 Ω?	Go to step **7.**	Repair harness.

	Step	Check	Yes	No
7	**CHECK TRANSMISSION CONTROL MODULE.** 1) Connect harness connector to transmission control module. 2) Lift-up the vehicle and support with safety stands. 3) Drive the vehicle faster than 10 km/h (6 MPH). **Warning:** **Be careful not to be caught by the running wheels.** 4) Measure voltage between transmission control module harness connector terminal and chassis ground. ***Connector & terminal*** ***(B55) No. 13 (+) — Chassis ground (−):***	Is the measured value less than 0V or more than 5 V?	Replace cruise control module. <Ref. to CC-6, Cruise Control Module.>	Replace transmission control module. <Ref. to 4AT-77, Transmission Control Module (TCM).>

C: DTC 28 WIRING HARNESS OPENED.

Step		Check	Yes	No
1	**CHECK BATTERY.** Measure battery specific gravity of electrolyte.	Is the measured battery specific gravity more than 1.250?	Go to step **2.**	Charge or replace battery. Go to step **2.**
2	**CHECK FUSES, CONNECTORS AND HARNESSES.** Check the condition of the main and other fuses, and harnesses and connectors. Also check for proper grounding.	Is there any malfuncton of main fuse, fuse, harness, connector and grounding?	End of inspection.	Repair or replace faulty parts.

D: DTC 35 AND 36 ACTUATOR MOTOR

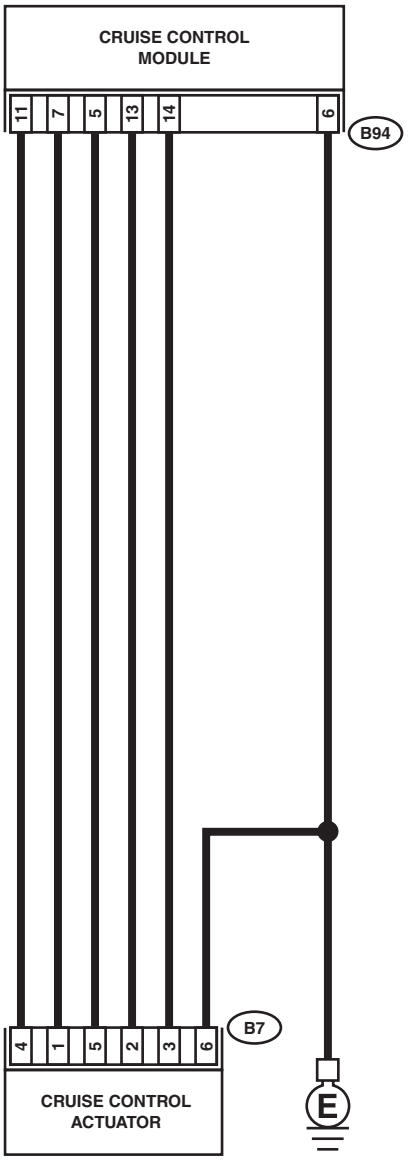
DIAGNOSIS:

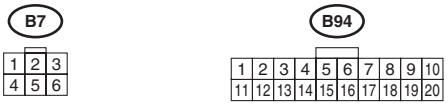
Open or poor contact of cruise control actuator motor.

TROUBLE SYMPTOM:

Cruise control cannot be set. (Cancelled immediately.)

WIRING DIAGRAM:





CC-00083

	Step	Check	Yes	No
1	**CHECK POWER SUPPLY.** 1) Turn ignition switch OFF. 2) Disconnect harness connector from cruise control actuator. 3) Turn ignition switch ON. 4) Turn cruise control main switch ON. 5) Measure voltage between cruise control actuator harness connector terminal and chassis ground. ***Terminals*** ***(B7) No. 4 (+) — Chassis ground (−):***	Is the measured value less than 10 V?	Go to step **2.**	Check harness for open or short between cruise control module and cruise control actuator.
2	**CHECK GROUND CIRCUIT OF ACTUATOR.** 1) Turn ignition switch and cruise control main switch OFF. 2) Measure resistance between cruise control actuator harness connector terminal and chassis ground. ***Terminals*** ***(B7) No. 6 — Chassis ground:***	Is the measured value less than 10 Ω?	Go to step **3.**	Repair harness.
3	**MEASURE RESISTANCE OF ACTUATOR.** Measure resistance of cruise control actuator motor. ***Terminals*** ***No. 4 — No. 1:*** ***No. 4 — No. 2:*** ***No. 4 — No. 5:***	Is the measured value approximately 5 Ω?	Go to step **4.**	Replace cruise control actuator. <Ref. to CC-5, Actuator.>
4	**CHECK HARNESS BETWEEN ACTUATOR AND CRUISE CONTROL MODULE.** 1) Disconnect harness connector from cruise control module. 2) Measure resistance between cruise control module harness connector terminal and cruise control actuator harness connector terminal. ***Connector & terminal*** ***(B7) No. 1 — (B94) No. 7:***	Is the measured value less than 10 Ω?	Go to step **5.**	Repair harness.
5	**CHECK HARNESS BETWEEN ACTUATOR AND CRUISE CONTROL MODULE.** Measure resistance between cruise control module harness connector terminal and cruise control actuator harness connector terminal. ***Connector & terminal*** ***(B7) No. 5 — (B94) No. 5:***	Is the measured value less than 10 Ω?	Replace cruise control module. <Ref. to CC-6, Cruise Control Module.>	Repair harness.

E: DTC 37 ACTUATOR MOTOR CLUTCH

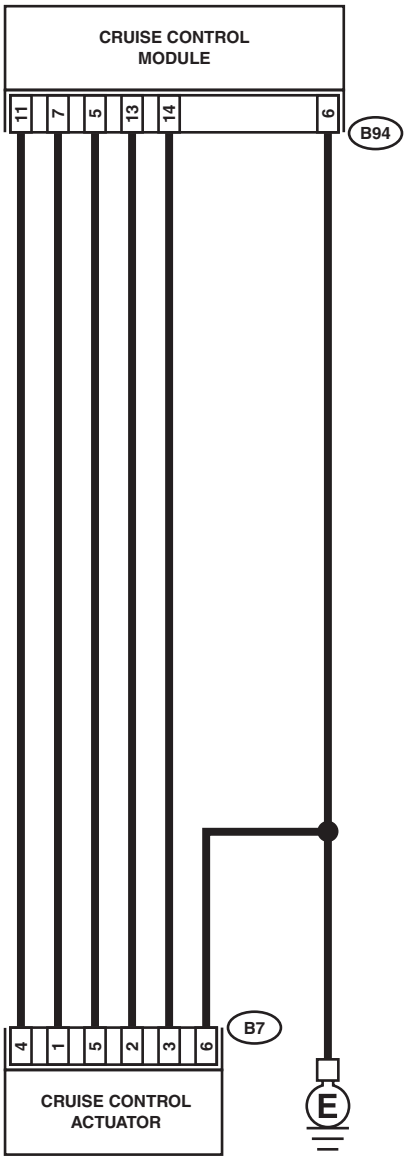
DIAGNOSIS:

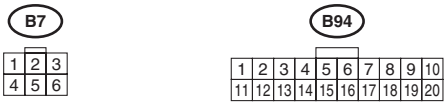
Open or poor contact of cruise control actuator motor clutch.

TROUBLE SYMPTOM:

Cruise control cannot be set. (Cancelled immediately.)

WIRING DIAGRAM:





CC-00083

Step		Check	Yes	No
1	**CHECK POWER SUPPLY.** 1) Turn ignition switch OFF. 2) Disconnect harness connector from cruise control actuator. 3) Turn ignition switch ON. 4) Turn cruise control main switch ON. 5) Measure voltage between cruise control actuator harness connector terminal and chassis ground. ***Terminals*** ***(B7) No. 4 (+) — Chassis ground (−):***	Is the measured value less than 10 V?	Go to step **2.**	Check harness for open or short between cruise control module and cruise control actuator.
2	**CHECK GROUND CIRCUIT OF ACTUATOR.** 1) Turn ignition switch and cruise control main switch OFF. 2) Measure resistance between cruise control actuator harness connector terminal and chassis ground. ***Terminals*** ***(B7) No. 6 — Chassis ground:***	Is the measured value less than 10 Ω?	Go to step **3.**	Repair harness.
3	**MEASURE RESISTANCE OF ACTUATOR CLUTCH.** Measure resistance of cruise control actuator clutch. ***Terminals*** ***No. 3 — No. 6:***	Is the measured value approximately 39 Ω?	Go to step **4.**	Replace cruise control actuator. <Ref. to CC-5, Actuator.>
4	**CHECK HARNESS BETWEEN ACTUATOR AND CRUISE CONTROL MODULE.** 1) Disconnect harness connector from cruise control module. 2) Measure resistance between cruise control module harness connector terminal and cruise control actuator harness connector terminal. ***Connector & terminal*** ***(B7) No. 2 — (B94) No. 13:***	Is the measured value less than 10 Ω?	Go to step **5.**	Repair harness.
5	**CHECK HARNESS BETWEEN ACTUATOR AND CRUISE CONTROL MODULE.** Measure resistance between cruise control module harness connector terminal and cruise control actuator harness connector terminal. ***Connector & terminal*** ***(B7) No. 3 — (B94) No. 14:***	Is the measured value less than 10 Ω?	Replace cruise control module. <Ref. to CC-6, Cruise Control Module.>	Repair harness.

F: DTC 38 MOTOR DRIVE SHAFT DOES NOT ENGAGE PROPERLY.

	Step	Check	Yes	No
1	**CHECK ACTUATOR MOTOR.** 1) Turn ignition switch to OFF. 2) Disconnect harness connector from cruise control actuator. 3) Remove cruise control actuator from mounting bracket. 4) Pull cable by hand to check for looseness or status of inner gear engagement.	Are foreign particles caught in inner gear or does inner gear engage and disengage improperly?	Replace cruise control actuator. <Ref. to CC-5, Actuator.>	Check the cruise control cable adjustment.<Ref. to CC-5, CABLE FREE PLAY, INSPECTION, General Description.>

G: DTC 39 Motor Is Overloaded.

	Step	Check	Yes	No
1	**CHECK THE OPERATING CURRENT TO ACTUATOR MOTOR.** 1) Connect Subaru Select Monitor to data link connector. 2) Try to drive the vehicle while operating the cruise control system. 3) Measure the operation current to the cruise control actuator motor.	Is the current valve less than 10 A?	Replace cruise control module. <Ref. to CC-6, Cruise Control Module.>	Check the power supply circuit. <Ref. to CC-14, CHECK POWER SUPPLY, Diagnostics Chart with Symptom.>

1. Basic Diagnostic Procedure

A: PROCEDURE

NOTE:
This section is specified for H4DOTC engine model.

	Step	Check	Yes	No
1	**CHECK MALFUNCTION INDICATOR LIGHT.** Check the malfunction indicator light illuminates.	Does the malfunction indicator light illuminate?	Go to step **5.**	Go to step **2.**
2	**CHECK CRUISE INDICATOR LIGHT.** Check the cruise indicator light blinks.	Does the cruise indicator light blink?	Go to step **5.**	Go to step **3.**
3	**CHECK CRUISE CONTROL MAIN SWITCH OPERATION.** Check the cruise control main switch operation. (Check the cruise indicator light illuminates.)	Is the cruise control main switch set to on? (Does the cruise indicator light illuminate?)	Go to step **4.**	Go to symptom 1. <Ref. to CC(ETC)-11, SYMPTOM CHART, Diagnostic Procedure with Symptom.>
4	**CHECK CRUISE CONTROL SET OPERATION.** Check the cruise control set operation.	Can the cruise control be set while driving at 40 km/h (25 MPH)?	Go to step **6.**	Go to step **5.**
5	**PERFORM CRUISE CONTROL CANCEL CONDITION DIAGNOSIS.** Perform the cruise control cancel condition diagnosis.	Are any DTC indicated?	Go to “List of DTC”. <Ref. to CC(ETC)-16, List of DTC.>	Go to symptom 2. <Ref. to CC(ETC)-11, SYMPTOM CHART, Diagnostic Procedure with Symptom.>
6	**CHECK CRUISE SET INDICATOR LIGHT.** Check the cruise set indicator light illuminates.	Does the cruise set indicator light illuminate?	Go to step **7.**	Go to symptom 3. <Ref. to CC(ETC)-11, SYMPTOM CHART, Diagnostic Procedure with Symptom.>
7	**CHECK VEHICLE SPEED IS HELD WITHIN SET SPEED.** Make sure the vehicle speed is held within set speed.	Is the vehicle speed held within set speed ±3 km/h (±2 MPH)?	Go to step **8.**	Go to symptom 4. <Ref. to CC(ETC)-11, SYMPTOM CHART, Diagnostic Procedure with Symptom.>
8	**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 **9.**	Go to symptom 5. <Ref. to CC(ETC)-11, SYMPTOM CHART, Diagnostic Procedure with Symptom.>
9	**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 **10.**	Go to symptom 6. <Ref. to CC(ETC)-11, SYMPTOM CHART, Diagnostic Procedure with Symptom.>
10	**CHECK CANCEL OPERATION.** Check the CANCEL switch operation.	Is the cruise control released after CANCEL switch has been pressed?	Go to step **11.**	Go to symptom 7. <Ref. to CC(ETC)-11, SYMPTOM CHART, Diagnostic Procedure with Symptom.>

Step		Check	Yes	No
11	**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 **12.**	Go to symptom 8. <Ref. to CC(ETC)-11, SYMPTOM CHART, Diagnostic Procedure with Symptom.>
12	**CHECK CRUISE CONTROL RELEASE OPERATION.** Check the cruise control release operation.	Is the cruise control released after clutch pedal has been depressed?	Go to step **13.**	Go to symptom 9. <Ref. to CC(ETC)-11, SYMPTOM CHART, Diagnostic Procedure with Symptom.>
13	**CHECK CRUISE CONTROL RELEASE OPERATION.** Check the cruise control release operation.	Is the cruise control released after shifting to neutral position?	Finish the diagnosis.	Go to symptom 10. <Ref. to CC(ETC)-11, SYMPTOM CHART, Diagnostic Procedure with Symptom.>

2. General Description

A: CAUTION

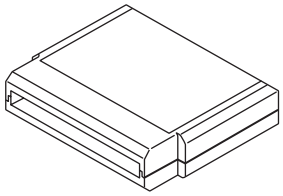
1. SUPPLEMENTAL RESTRAINT SYSTEM "AIRBAG"

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

CAUTION:
• All airbag system wiring harness and connectors are colored yellow. Do not use electrical test equipment on these circuits.
• Be careful not to damage the airbag system wiring harness when servicing the cruise control command switch.

B: PREPARATION TOOL

1. SPECIAL TOOLS

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST24082AA260	24082AA260	CARTRIDGE	Troubleshooting for electrical systems.
ST22771AA030	22771AA030	SUBARU SELECT MONITOR KIT	Troubleshooting for electrical systems.

2. GENERAL TOOLS

TOOL NAME	REMARKS
Circuit T ester	Used for measuring resistance, voltage and ampere.

C: INSPECTION

1. BATTERY

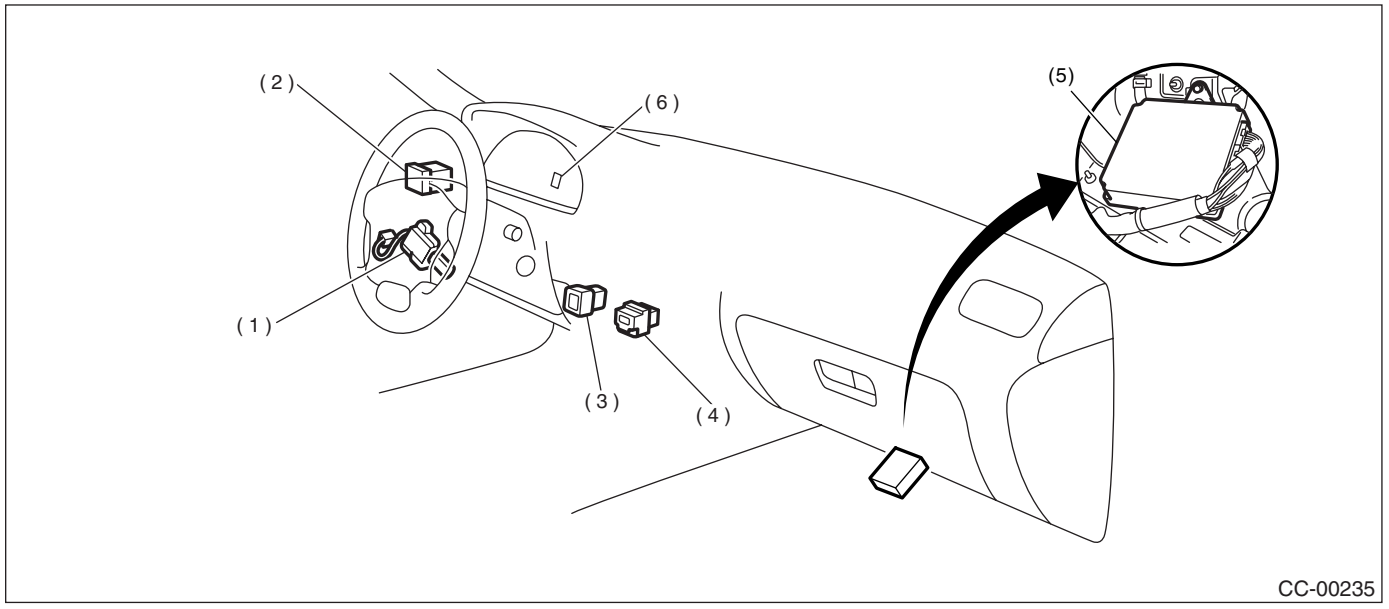
Measure the battery voltage and specific gravity of electrolyte.

Standard voltage:
12 V, or more

Specific gravity:
Above 1.260

3. Electrical Components Location

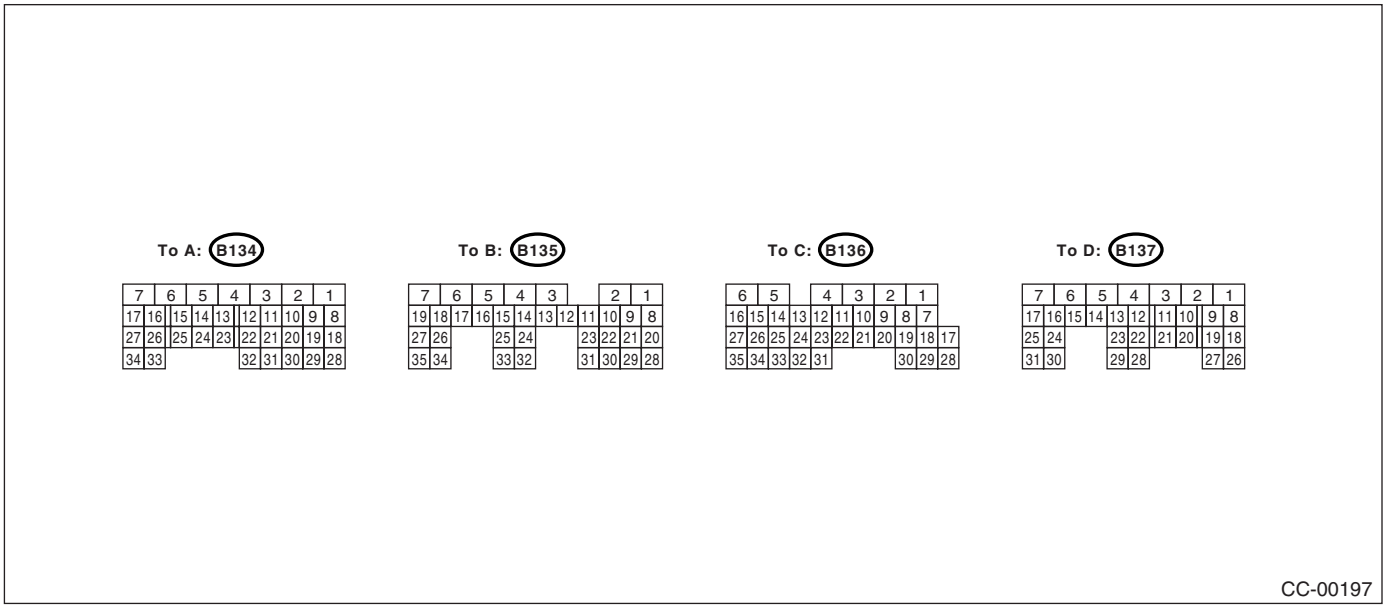
A: LOCATION



(1) Cruise control command switch
(2) Cruise control main switch (Built-in cruise indicator light)
(3) Clutch switch
(4) Stop light and brake switch
(5) Engine control module (ECM)
(6) Cruise set indicator light

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

A: ELECTRICAL SPECIFICATION



Content		Terminal No.	Measuring conditions and I/O signals (ignition switch ON and engine idling)
Clutch switch		A1	• Battery voltage is present when the clutch pedal is released. • "0" volt is present when the clutch pedal is depressed.
Cruise set indicator light		A16	(Press the main switch and drive the vehicle at 40 km/h (25 MPH) or more.) • Battery voltage is present when the set switch is turned to OFF. • "0" volt is present when the set switch is turned to ON.
Cruise indicator light		A15	• Battery voltage is present when the main switch is turned to OFF. • "0" volt is present when the main switch is turned to ON.
Main power supply	VB (CONTROL 1) VB (CONTROL 2)	B6 B5	• Battery voltage is present when the main power supply is turned to ON. • "0" volt is present when the main power supply is turned to OFF.
Vehicle speed signal		B27	Lift-up the vehicle until all four wheels are raised off the ground, and then rotate any wheel manually. Approx. "5 V" and "0 V" pulse signals are alternately input to ECM.
SET/COAST switch		C11	• Battery voltage is present when the command switch is turned to SET/COAST position. • "0" volt is present when the command switch is released.
RESUME/ACCEL switch		C10	• Battery voltage is present when the command switch is turned to RESUME/ACCEL position. • "0" volt is present when the command switch is released.
Brake switch 1 (Brake switch)		C9	• Battery voltage is present when the brake pedal is released. • "0" volt is present when the brake pedal is depressed.
Brake switch 2 (Stop light switch)		C8	• Battery voltage is present when the brake pedal is depressed. • "0" volt is present when the brake pedal is released.
Main switch		C7	• Battery voltage is present while the main switch is depressed or is turned to ON. • "0" volt is present when the main switch is turned to OFF.
Ground	GND (CONTROL 1) GND (CONTROL 2)	D2 D1	—
Ignition switch		D15	• Battery voltage is present with the ignition switch is turned to ON. • "0" volt is present when the ignition switch is turned to OFF.
Neutral switch		D9	• Battery voltage is present when the shift lever is in anywhere except neutral position. • "0" volt is present when the shift lever is in neutral position.

B: SCHEMATIC

<Ref. to WI-78, SCHEMATIC, Cruise Control System.>

5. Subaru Select Monitor

A: OPERATION

1. GENERAL

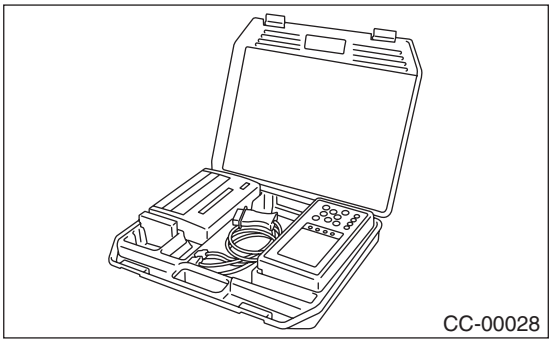
The on-board diagnosis function of the cruise control system uses the Subaru Select Monitor.
The on-board diagnosis function operates in two categories, which are used depending on the type of problems;
1) Cruise cancel conditions diagnosis:
(1) This category of diagnosis requires actual vehicle driving 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 of ECM stores the cancel condition (Code No.) which occurred during driving. When there are plural cancel conditions (Code No.), they are shown on the Subaru Select Monitor.

CAUTION:
• The cruise control memory stores not only the cruise "cancel" which occurred (although "cancel" operation is not entered by the driver), but also the "cancel" condition input by the driver.
• The content of memory is cleared when ignition switch or cruise main switch is turned OFF.

2) Real-time diagnosis:
The 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 because problem occurs in the cruise control system or its associated circuits.
(2) Monitor the signal conditions from switches and sensors.

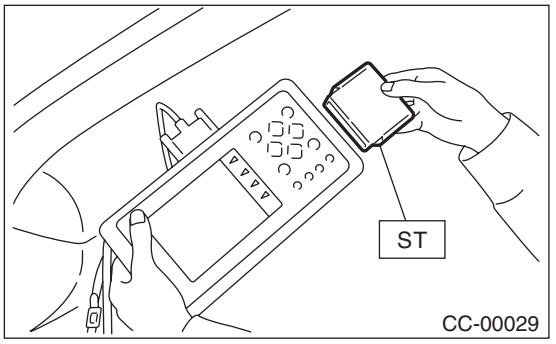
2. CRUISE CANCEL CONDITIONS DIAGNOSIS

1) Prepare the Subaru Select Monitor kit.


CC-00028

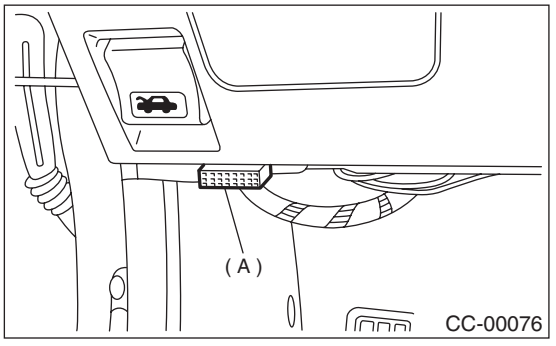
2) Connect the diagnosis cable to Subaru Select Monitor.

3) Insert the cartridge into Subaru Select Monitor. <Ref. to CC(ETC)-4, SPECIAL TOOLS, PREPARATION TOOL, General Description.>



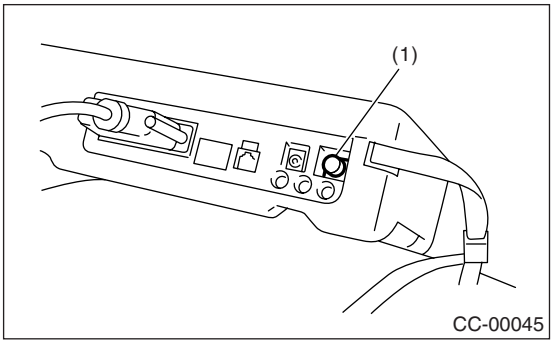
CC-00029

4) 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).



CC-00076

(2) Connect the diagnosis cable to data link connector.
5) Start the engine and turn the cruise control main switch to ON.
6) Turn the Subaru Select Monitor switch to ON.



CC-00045

(1) Power switch

7) On the Main Menu display screen, select the {2. Each System Diagnosis} and press [YES] key.
Select the {Engine} on the System Selection display screen and press [YES] key. Press [YES] key after the engine type displayed.
8) Drive the vehicle at least 40 km/h (25 MPH) with cruise speed set.

9) If the cruise speed is canceled itself (without doing any cancel operations), a DTC will appear on select monitor display after {Check Cancel Code(s) Display} is selected on the Engine Diagnosis display screen and [YES] key is pressed.

CAUTION:
• A DTC will also appear when cruise cancel is effected by driver. Do not confuse.
• Have a co-worker ride in the vehicle to assist in diagnosis during driving.

NOTE:
DTC will be cleared by turning the ignition switch or cruise control main switch to OFF.

3. REAL-TIME DIAGNOSIS

1) Connect the select monitor.
2) Turn the ignition switch and cruise control main switch to ON.
3) Turn the Subaru Select Monitor switch to ON.
4) On the Main Menu display screen, select the {2. Each System Check} and press [YES] key.
5) On the System Selection display screen, select the {Engine} and press [YES] key.
6) Press the [YES] key after the model name of engine displayed.
7) On the Engine Diagnosis display screen, select the {Current Data Display & Save} and press [YES] key.
8) Make sure that normal indication is displayed when controls are operated as indicated below:
• Depress/release the brake pedal. (Stop light switch and brake switch turn ON.)
• Turn ON the “SET/COAST” switch.
• Turn ON the “RESUME/ACCEL” switch.
• Turn ON the “CANCEL” switch. (The “SET/COAST” and “RESUME/ACCEL” switch are turned ON at same time.)
• Depress/release the clutch pedal.
• Set the shift lever to except for neutral position.

NOTE:
• For detailed operation procedure, refer to the SUBARU SELECT MONITOR OPERATION MANUAL.
• For details concerning DTCs, refer to the List of DTC. <Ref. to CC(ETC)-16, List of DTC.>

MEMO:

6. Diagnostic Procedure with Symptom

A: SYMPTOM CHART

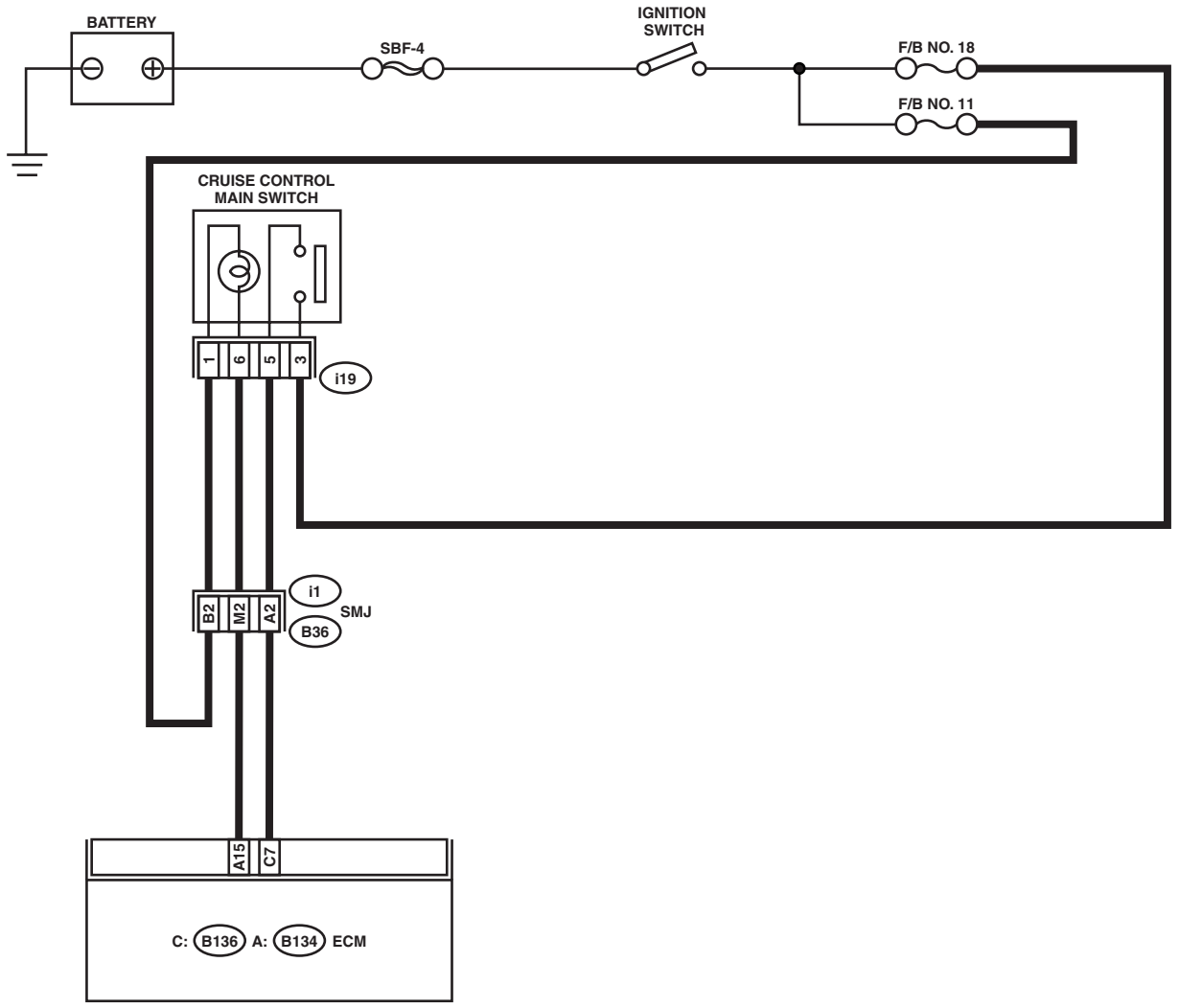
Symptom		Repair area	Reference
1	Cruise control main switch is not turned to ON. (Cruise indicator light does not illuminate)	(1) Check the cruise indicator light.	<Ref. to CC(ETC)-12, CHECK CRUISE INDICATOR LIGHT, Diagnostic Procedure with Symptom.>
		(2) Check the cruise control command switch.	<Ref. to CC(ETC)-18, DTC 11, 15, 21 AND 24 CRUISE CONTROL SWITCH, Diagnostic Procedure with DTC.>
2	Cruise control cannot be set.	(1) Check the cruise control command switch	<Ref. to CC(ETC)-18, DTC 11, 15, 21 AND 24 CRUISE CONTROL SWITCH, Diagnostic Procedure with DTC.>
		(2) Check the stop light switch and brake switch.	<Ref. to CC(ETC)-22, DTC 12 AND 25 STOP LIGHT SWITCH AND BRAKE SWITCH, Diagnostic Procedure with DTC.>
		(3) Check the clutch switch.	<Ref. to CC(ETC)-24, DTC 13 CLUTCH SWITCH, Diagnostic Procedure with DTC.>
		(4) Check the neutral switch.	<Ref. to CC(ETC)-26, DTC 14 NEUTRAL POSITION SWITCH, Diagnostic Procedure with DTC.>
		(5) Check the vehicle speed sensor.	<Ref. to CC(ETC)-30, DTC 22 AND 32 VEHICLE SPEED SENSOR, Diagnostic Procedure with DTC.>
3	Cruise set indicator light does not illuminate.	Check the cruise set indicator light.	<Ref. to CC(ETC)-14, CHECK CRUISE SET INDICATOR LIGHT, Diagnostic Procedure with Symptom.>
4	Vehicle speed is not held within set speed ±3 km/h (±2 MPH).	Check the vehicle speed sensor.	<Ref. to CC(ETC)-30, DTC 22 AND 32 VEHICLE SPEED SENSOR, Diagnostic Procedure with DTC.>
5	Vehicle speed does not increase or does not return to set speed after RESUME/ ACCEL switch has been pressed.	Check the RESUME/ACCEL switch.	<Ref. to CC(ETC)-18, DTC 11, 15, 21 AND 24 CRUISE CONTROL SWITCH, Diagnostic Procedure with DTC.>
6	Vehicle speed does not decrease after SET/COAST switch has been pressed.	Check the SET/COAST switch.	<Ref. to CC(ETC)-18, DTC 11, 15, 21 AND 24 CRUISE CONTROL SWITCH, Diagnostic Procedure with DTC.>
7	Cruise control is not released after CANCEL switch has been pressed.	Check the CANCEL switch.	<Ref. to CC(ETC)-18, DTC 11, 15, 21 AND 24 CRUISE CONTROL SWITCH, Diagnostic Procedure with DTC.>
8	Cruise control is not released after the brake pedal has been depressed.	Check the stop light switch and brake switch.	<Ref. to CC(ETC)-22, DTC 12 AND 25 STOP LIGHT SWITCH AND BRAKE SWITCH, Diagnostic Procedure with DTC.>
9	Cruise control is not released after the clutch pedal has been depressed.	Check the clutch switch.	<Ref. to CC(ETC)-24, DTC 13 CLUTCH SWITCH, Diagnostic Procedure with DTC.>
10	Cruise control is not released after shifting to neutral position.	Check the neutral switch.	<Ref. to CC(ETC)-26, DTC 14 NEUTRAL POSITION SWITCH, Diagnostic Procedure with DTC.>

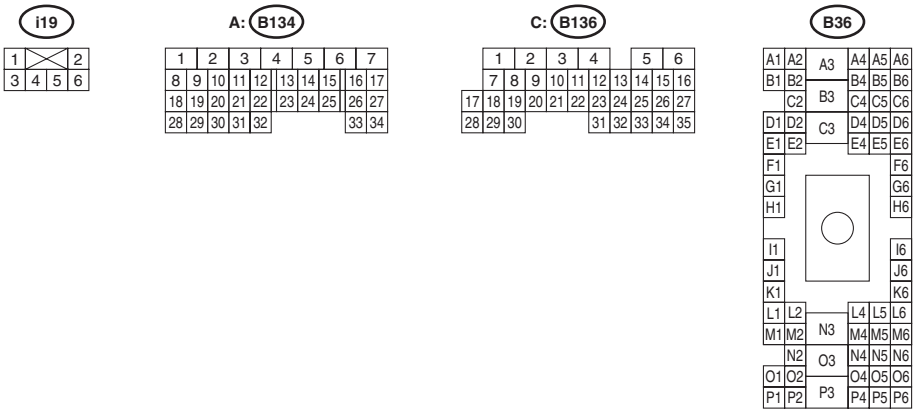
B: CHECK CRUISE INDICATOR LIGHT

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:





CC-00329

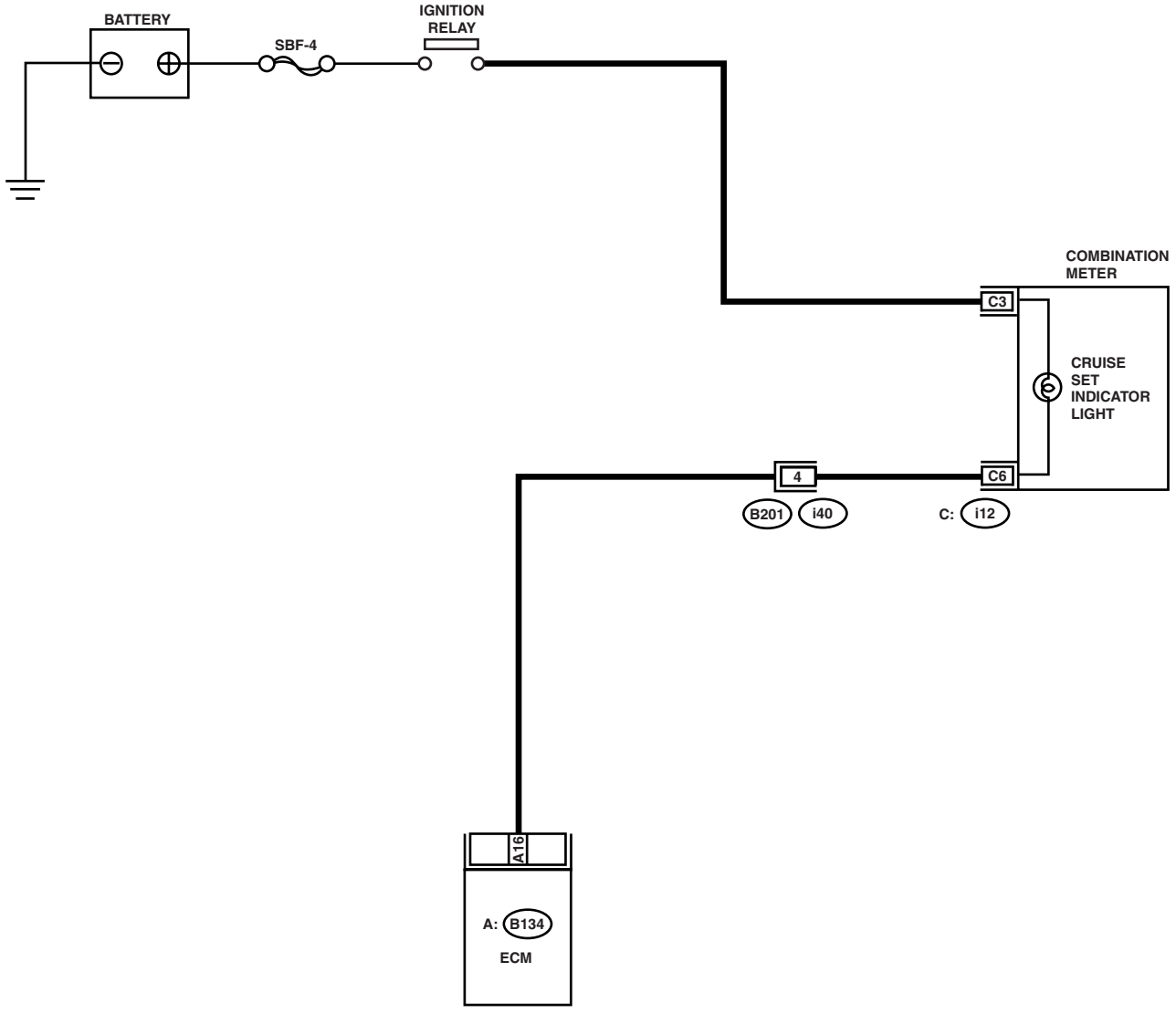
	Step	Check	Yes	No
1	**CHECK CRUISE INDICATOR LIGHT CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the cruise control main switch harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(i19) No. 1 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **2.**	• Check the fuse No. 11 (in fuse & relay box). • Check the harness for open or short between cruise control main switch and fuse & relay box.
2	**CHECK CRUISE INDICATOR LIGHT CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the ECM harness connector. 3) Measure the resistance between ECM harness connector terminal and cruise control main switch harness connector terminal. ***Connector & terminal*** ***(B134) No. 15 — (i19) No. 6:***	Is the resistance less than 10 Ω?	Go to step **3.**	Repair the harness.
3	**CHECK CRUISE INDICATOR LIGHT CIRCUIT.** Ground the ECM harness connector terminal with a suitable wire. ***Connector & terminal*** ***(B134) No. 15 — Chassis ground:***	Does the cruise indicator light illuminate?	Check the poor contact of ECM connector.	Replace the cruise control main switch.

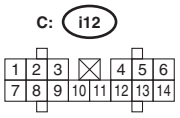
C: CHECK CRUISE SET INDICATOR LIGHT

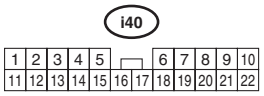
TROUBLE SYMPTOM:

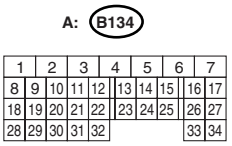
Cruise control can be set, but cruise set indicator light does not illuminate.

WIRING DIAGRAM:









CC-00330

	Step	Check	Yes	No
1	**CHECK CRUISE SET INDICATOR LIGHT CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the combination meter harness connector. 3) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(i12) No. 3 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **2.**	Check the harness for open or short between combination meter and ignition relay.
2	**CHECK CRUISE SET INDICATOR LIGHT CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the ECM harness connector. 3) Measure the resistance between ECM harness connector terminal and combination meter harness connector terminal. ***Connector & terminal*** ***(i12) No. 6 — (B134) No. 16:***	Is the resistance less than 10 Ω?	Go to step **3.**	Repair the harness.
3	**CHECK CRUISE SET INDICATOR LIGHT CIRCUIT.** Ground the ECM harness connector terminal with a suitable wire. ***Connector & terminal*** ***(B134) No. 16 — Chassis ground:***	Does the cruise set indicator light illuminate?	Check the poor contact of ECM connector.	Replace the meter main assembly.

7. List of DTC

A: LIST

DTC	Item	Contents of diagnosis	Reference
11	Main switch	Cruise control is released after the main switch of cruise control command switch is turned to OFF.	This DTC is indicated without operating the main switch. <Ref. to CC(ETC)-18, DTC 11, 15, 21 AND 24 CRUISE CONTROL SWITCH, Diagnostic Procedure with DTC.>
12	Stop and brake switch	Cruise control is released after the stop light switch or brake switch is turned to ON.	This DTC is indicated without depressing the brake pedal. <Ref. to CC(ETC)-22, DTC 12 AND 25 STOP LIGHT SWITCH AND BRAKE SWITCH, Diagnostic Procedure with DTC.>
13	Clutch switch	Cruise control is released after the clutch switch is turned to ON.	This DTC is indicated without depressing the clutch pedal. <Ref. to CC(ETC)-24, DTC 13 CLUTCH SWITCH, Diagnostic Procedure with DTC.>
14	Neutral switch	Cruise control is released after the neutral switch is turned to ON.	This DTC is indicated without shifting to neutral position. <Ref. to CC(ETC)-26, DTC 14 NEUTRAL POSITION SWITCH, Diagnostic Procedure with DTC.>
15	Cancel switch	Cruise control is released after the cancel switch is turned to ON.	This DTC is indicated without operating the cancel switch. <Ref. to CC(ETC)-18, DTC 11, 15, 21 AND 24 CRUISE CONTROL SWITCH, Diagnostic Procedure with DTC.>
16	Ignition switch	Cruise control is released after the ignition switch is turned to OFF.	This DTC is indicated without operating the ignition switch. <Ref. to CC(ETC)-28, DTC 16 IGNITION SWITCH, Diagnostic Procedure with DTC.>
21	Cruise control switch is abnormal when the ignition switch is turned to ON.	Each switch of cruise control command switch has already been ON when the ignition switch is turned to ON.	This DTC is indicated without operating the command switch. <Ref. to CC(ETC)-18, DTC 11, 15, 21 AND 24 CRUISE CONTROL SWITCH, Diagnostic Procedure with DTC.>
22	Vehicle speed variation is abnormal.	Abnormality of vehicle speed variation is detected.	<Ref. to CC(ETC)-30, DTC 22 AND 32 VEHICLE SPEED SENSOR, Diagnostic Procedure with DTC.>

DTC	Item	Contents of diagnosis	Reference
23	Engine-related sensor is abnormal.	Abnormality related to engine is detected.	<Ref. to EN(H4DOTC)-2, Basic Diagnostic Procedure.>
24	Cruise control-related switch is abnormal.	Abnormality of command switch is detected. (Open circuit is detected when continuing to be ON for an extremely long time [approx. two minutes].)	This DTC is indicated with normal operation. <Ref. to CC(ETC)-18, DTC 11, 15, 21 AND 24 CRUISE CONTROL SWITCH, Diagnostic Procedure with DTC.>
25	Brake switch input circuit is abnormal.	Abnormality of brake switch input circuit in ECM is detected.	<Ref. to CC(ETC)-22, DTC 12 AND 25 STOP LIGHT SWITCH AND BRAKE SWITCH, Diagnostic Procedure with DTC.>
26	Engine speed signal.	• Abnormal increase of engine speed is detected. • Gear is shifted to neutral, 1st or reverse position.	Cruise with more than 2nd shift position.
32	Out of vehicle speed range of cruise control operation.	• Vehicle speed becomes under the control limit during cruise driving. • Set operation is conducted out of vehicle speed range for setting • RESUME operation is conducted without vehicle speed memory.	This DTC is also indicated when increasing the speed to the cruise set available vehicle speed and conducting the set operation again. <Ref. to CC(ETC)-30, DTC 22 AND 32 VEHICLE SPEED SENSOR, Diagnostic Procedure with DTC.>
33	Prohibition of WAIT after acceleration operation.	Vehicle speed becomes over the control limit during cruise driving.	This DTC is indicated when running at the high speed which is not suitable for cruise control. In this case, conduct the cruise set operation again after decreasing the speed to the cruise set available vehicle speed.
34	Prohibition when accelerator position is continued to be large.	Vehicle is driven at the higher speed than set vehicle speed for an extremely long time (approx. 10 minutes) during cruise driving.	This DTC is indicated when running for a long time at the higher speed than cruise set available vehicle speed by accelerator operation. In this case, release the cruise set.
35	Prohibition when vehicle speed feedback is impossible.	During cruise driving, set vehicle speed cannot be maintained for some reasons such as sharp upslope, parking brake and engine output abnormal decrease.	This DTC is indicated when the driving condition is not suitable for cruise control. Conduct the cruise set operation again after clearing the estimated reasons.

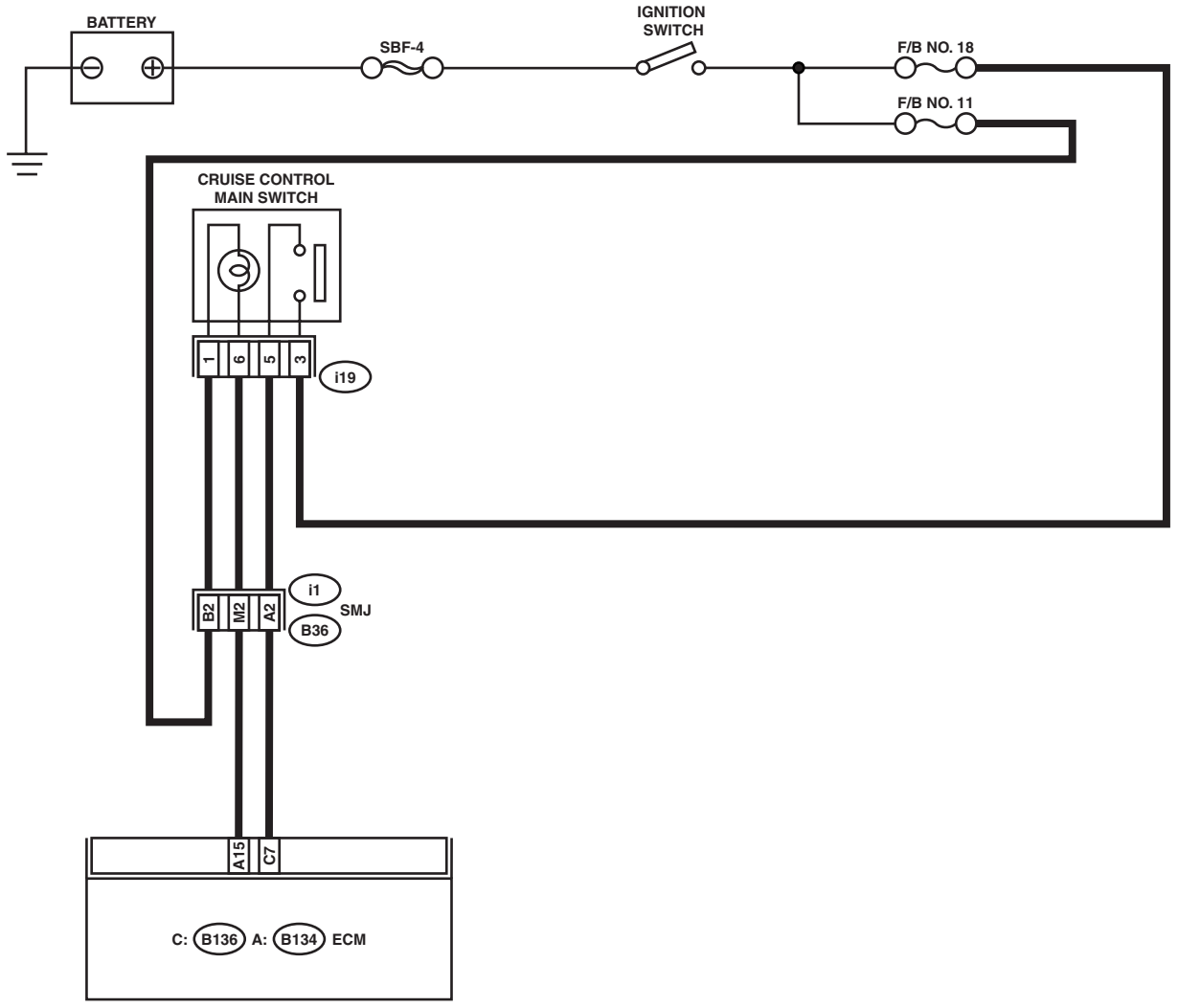
8. Diagnostic Procedure with DTC

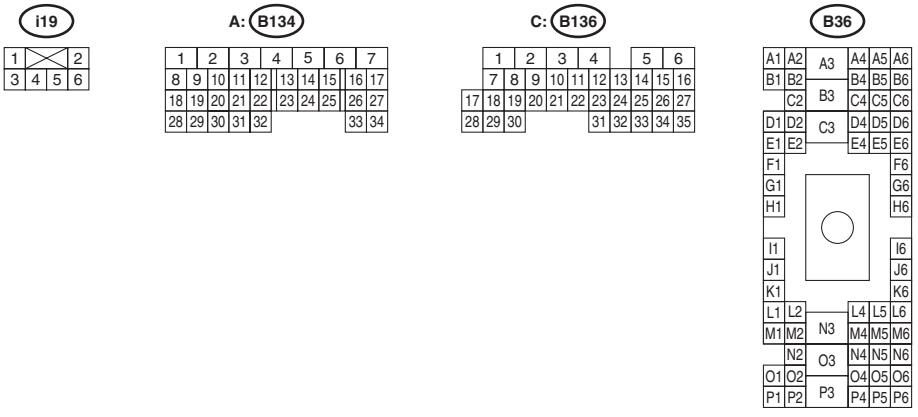
A: DTC 11, 15, 21 AND 24 CRUISE CONTROL SWITCH

TROUBLE SYMPTOM:

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

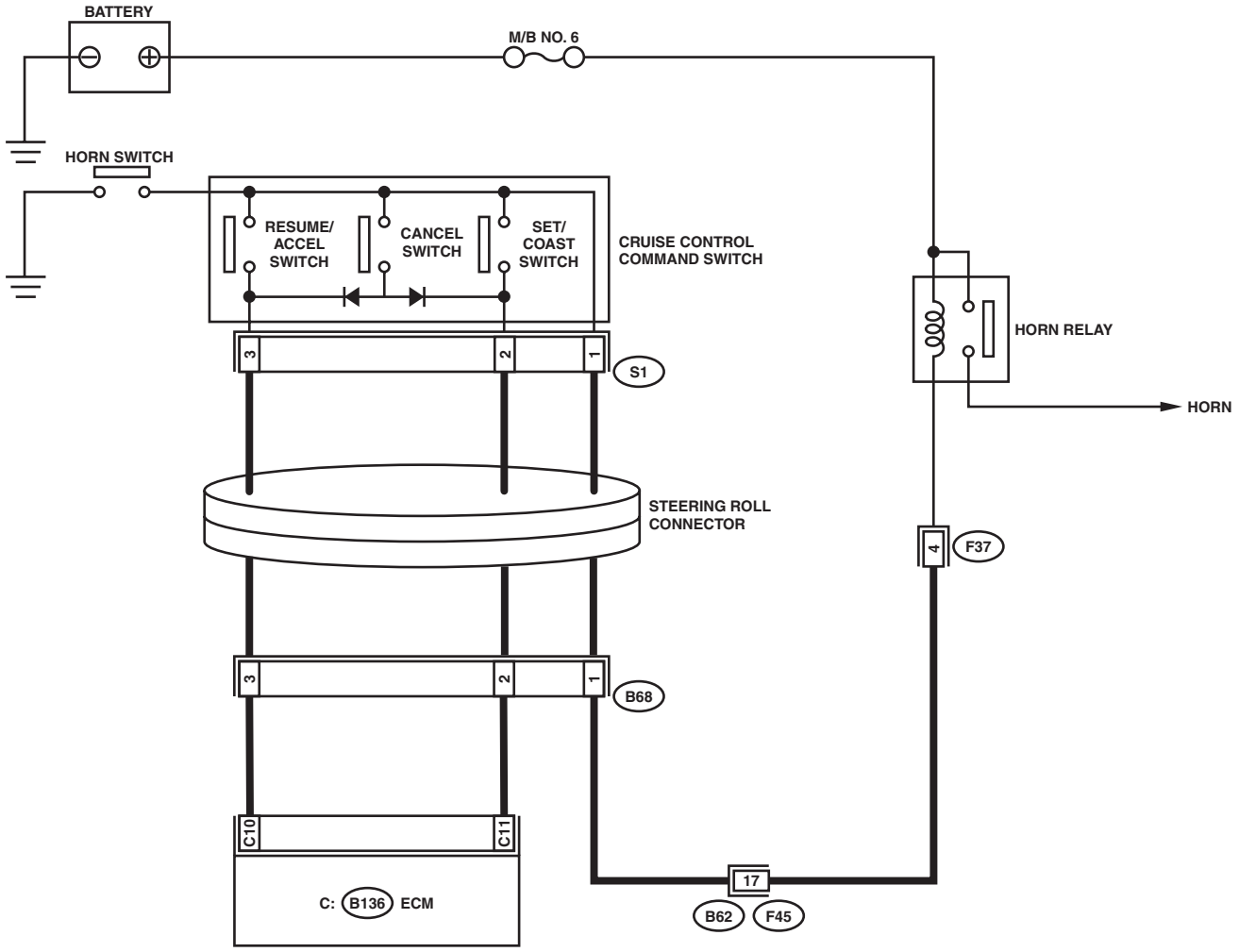
WIRING DIAGRAM (MAIN SWITCH):

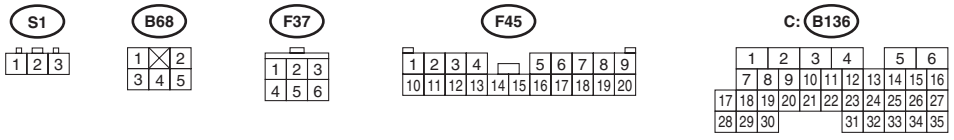




CC-00329

WIRING DIAGRAM (COMMAND SWITCH):





CC-00331

	Step	Check	Yes	No
1	**CHECK CRUISE CONTROL MAIN 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 when the main switch is pressed and is not pressed. ***Connector & terminal*** ***(B136) No. 7 (+) — Chassis ground (–):***	Is the voltage 0 V when the main switch is not pressed? Is the voltage more than 10 V when the main switch is pressed?	Go to step **2.**	• Check the fuse No. 18 (in fuse & relay box). • Check the harness for open or short between cruise control main switch and fuse & relay box. If no malfunction is found after checking above, Go to step **6.**
2	**CHECK SET/COAST SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the ECM harness connector. 3) Measure the voltage between harness connector terminal and chassis ground when SET/COAST switch is pressed and not pressed. ***Connector & terminal*** ***(B136) No. 11 (+) — Chassis ground (–):***	Is the voltage 0 V when SET/COAST switch is not pressed? Is the voltage more than 10 V when SET/COAST switch is pressed?	Go to step **3.**	Go to step **5.**
3	**CHECK RESUME/ACCEL SWITCH CIRCUIT.** Measure the voltage between harness connector terminal and chassis ground when RESUME/ACCEL switch is pressed and not pressed. ***Connector & terminal*** ***(B136) No. 10 (+) — Chassis ground (–):***	Is the voltage 0 V when RESUME/ACCEL switch is not pressed? Is the voltage more than 10 V when RESUME/ACCEL switch is pressed?	Go to step **4.**	Go to step **5.**
4	**CHECK CANCEL SWITCH CIRCUIT.** Measure the voltage between harness connector terminal and chassis ground when CANCEL switch is pressed and not pressed. ***Connector & terminal*** ***(B136) No. 10 (+) — Chassis ground (–):*** ***(B136) No. 11 (+) — Chassis ground (–):***	Is the voltage 0 V when CANCEL switch is not pressed? Is the voltage more than 10 V when CANCEL switch is pressed?	Cruise control command switch circuit is OK.	Go to step **5.**
5	**CHECK POWER SUPPLY FOR COMMAND SWITCH.** Check the horn operation.	Does the horn sound?	Go to step **6.**	• Check the fuse No. 6 (in main fuse box). • Check the horn relay. <Ref. to COM-3, INSPECTION, Horn System.> • Check the harness for open or short between cruise control command switch and fuse & relay box.
6	**CHECK CRUISE CONTROL COMMAND SWITCH.** Remove and check the cruise control command switch. <Ref. to CC-8, Cruise Control Command Switch.>	Is the cruise control command switch OK?	Check the harness between cruise control command switch and ECM.	Replace the cruise control command switch.

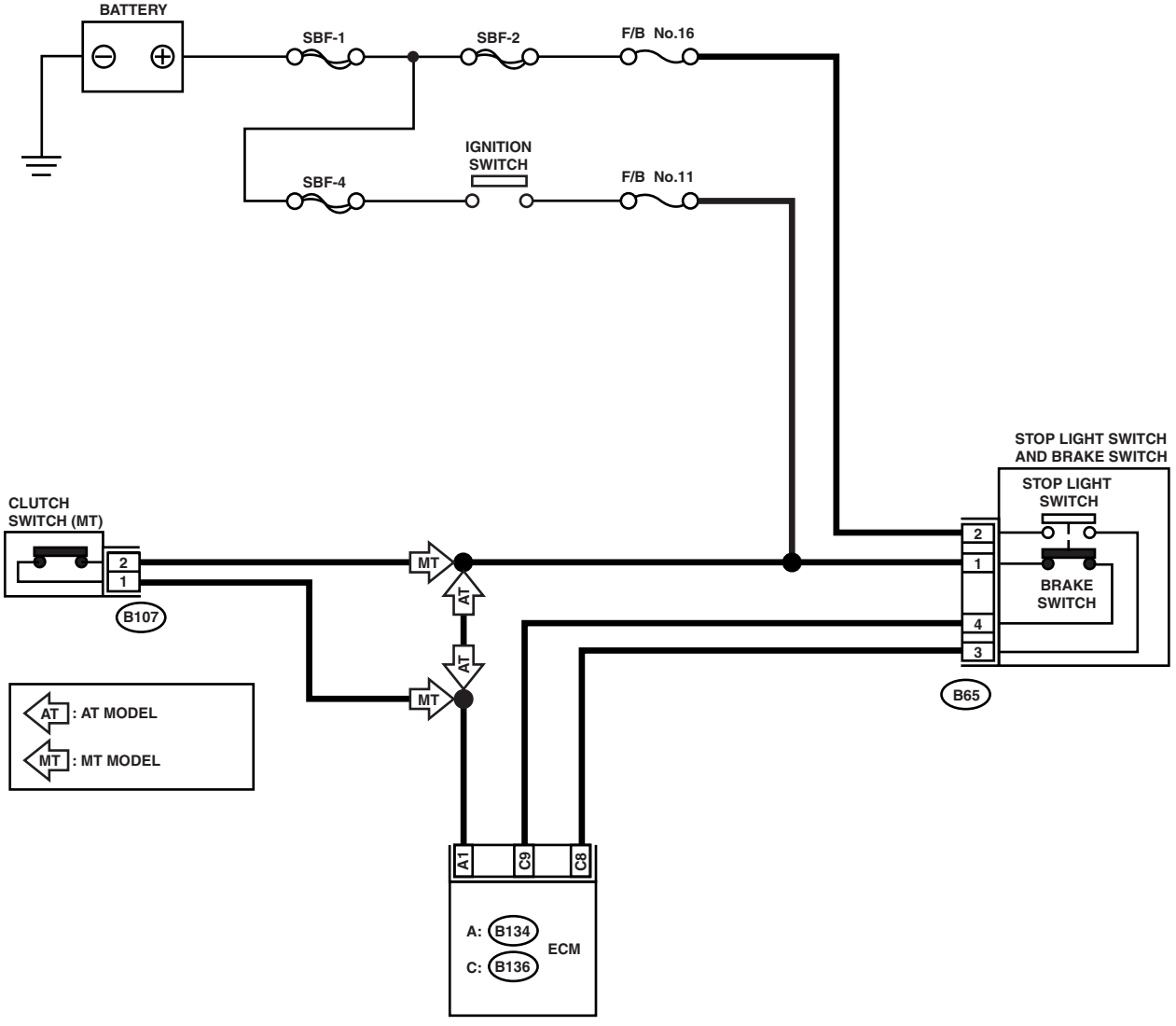
MEMO:

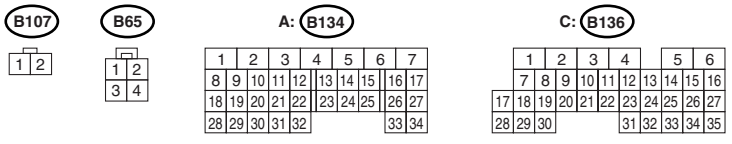
B: DTC 12 AND 25 STOP LIGHT SWITCH AND BRAKE SWITCH

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:





CC-00332

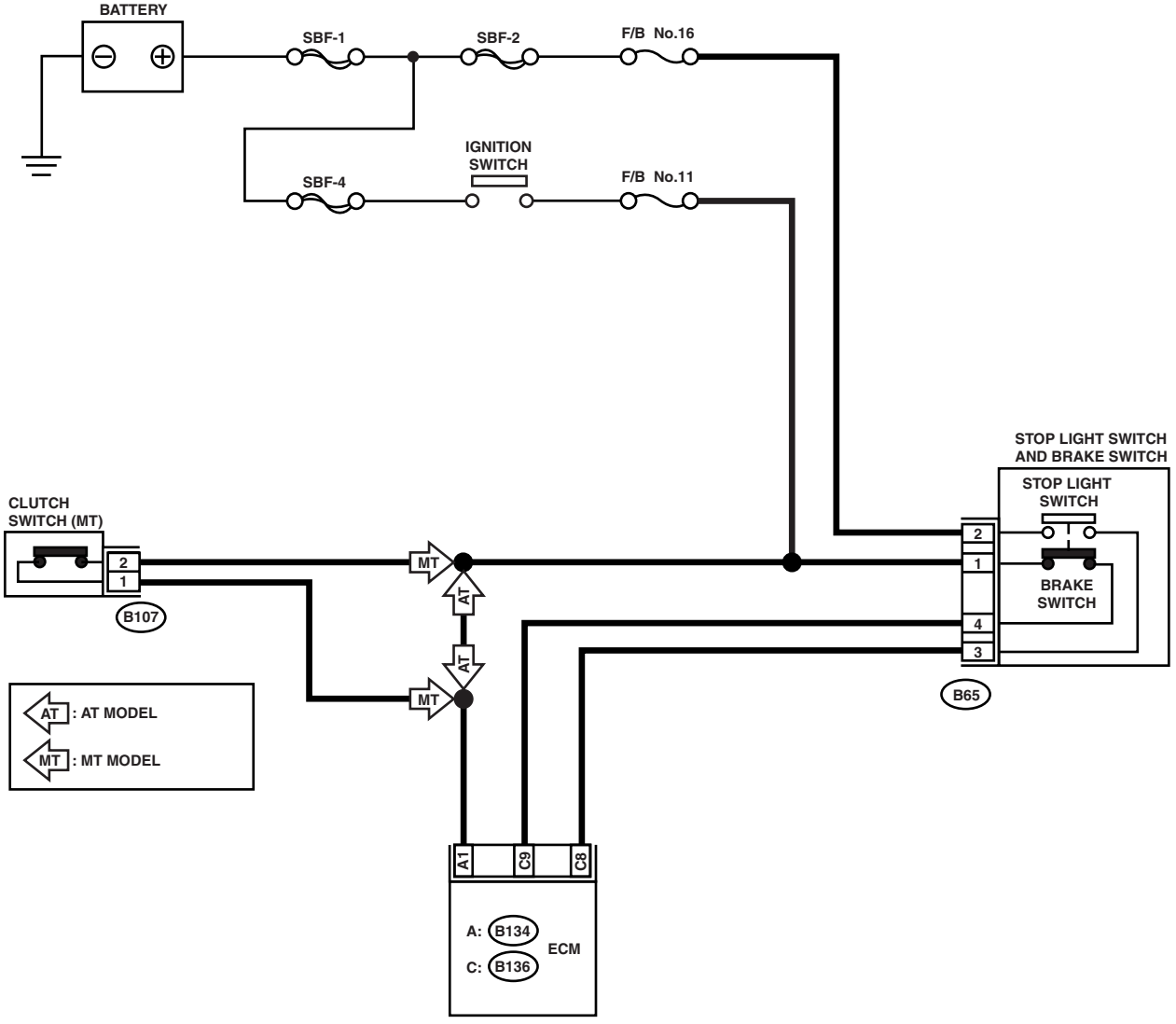
	Step	Check	Yes	No
1	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the stop light switch and brake switch harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B65) No. 2 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **2.**	• Check the fuse No. 16 (in fuse & relay box). • Check the harness for open or short between stop light/brake switch and fuse & relay box.
2	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.** Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B65) No. 1 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **3.**	• Check the fuse No. 11 (in fuse & relay box). • Check the harness for open or short between stop light/brake switch and fuse & relay box. • Check the clutch switch and circuit.
3	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the ECM harness connector. 3) Measure the resistance between ECM harness connector terminal and stop light switch and brake switch harness connector terminal. ***Connector & terminal*** ***(B136) No. 8 — (B65) No. 3:*** ***(B136) No. 9 — (B65) No. 4:***	Is the resistance less than 10 Ω?	Go to step **4.**	Repair the harness.
4	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH.** Remove and check the stop light switch and brake switch. <Ref. to CC-9, Stop and Brake Switch.>	Are the stop light switch and brake switch OK?	Stop light switch and brake switch circuit are OK.	Replace the stop light switch and brake switch.

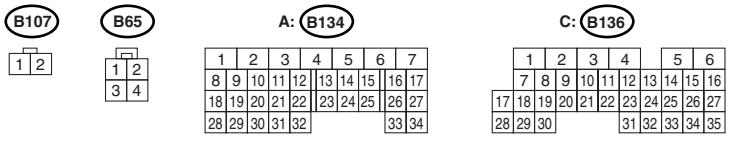
C: DTC 13 CLUTCH SWITCH

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:





CC-00332

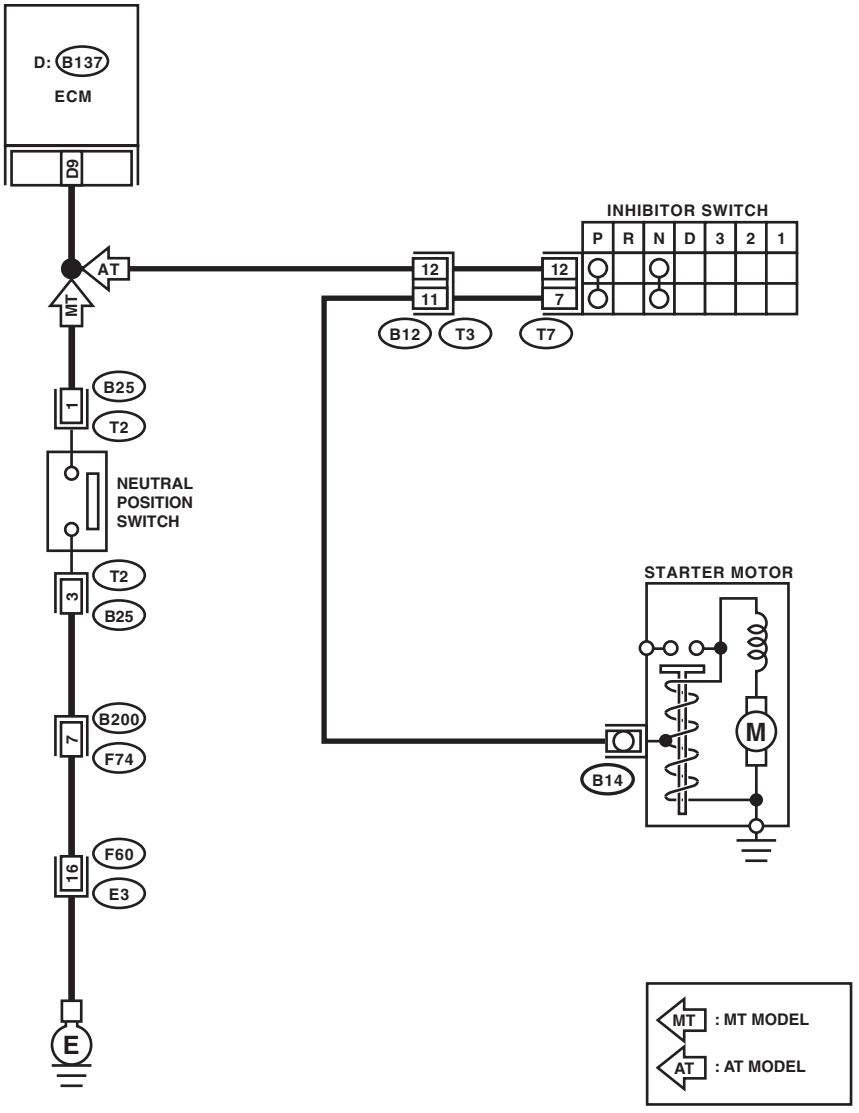
	Step	Check	Yes	No
1	**CHECK CLUTCH SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the clutch switch harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B107) No. 2 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **2.**	• Check the fuse No. 11 (fuse & relay box). • Check the harness for open or short between clutch switch and fuse & relay box.
2	**CHECK CLUTCH SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the ECM harness connector. 3) Measure the resistance between clutch switch harness connector terminal and ECM harness connector terminal. ***Connector & terminal*** ***(B107) No. 1 — (B134) No. 1:***	Is the resistance less than 10 Ω?	Go to step **3.**	Repair the harness.
3	**CHECK CLUTCH SWITCH.** Remove and check the clutch switch. <Ref. to CC-10, Clutch Switch.>	Is the clutch switch OK?	Clutch switch circuit is OK.	Replace the clutch switch.

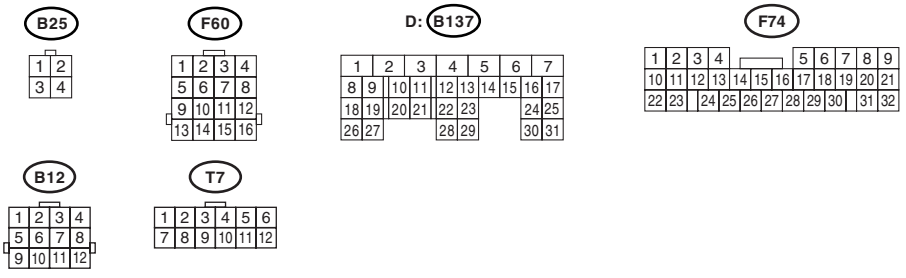
D: DTC 14 NEUTRAL POSITION SWITCH

TROUBLE SYMPTOM:

Cruise control cannot be set.

WIRING DIAGRAM:





CC-00333

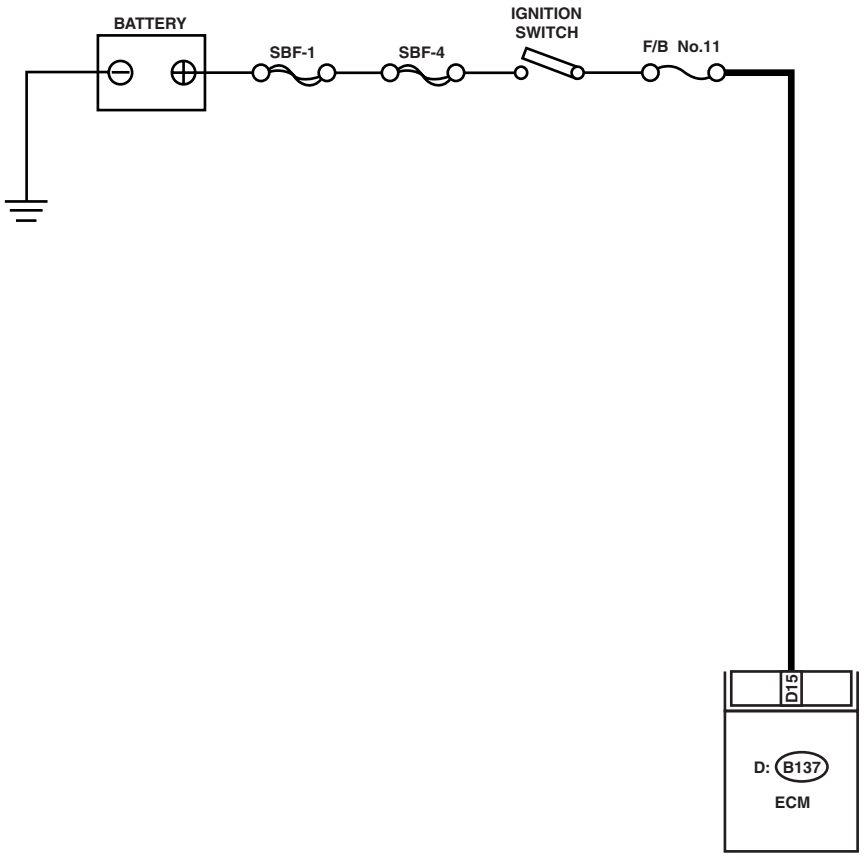
	Step	Check	Yes	No
1	**CHECK TRANSMISSION TYPE.**	Is the transmission type AT?	Go to step **2.**	Go to step **5.**
2	**CHECK INHIBITOR SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the inhibitor switch harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(T7) No. 12 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **3.**	Check the harness for open or short 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 chassis ground. ***Connector & terminal*** ***(T7) No. 7 — (B14) No. 1:***	Is the resistance less than 10 Ω?	Go to step **4.**	Repair the harness.
4	**CHECK INHIBITOR SWITCH.** Remove and check the inhibitor switch.	Is the inhibitor switch OK?	Inhibitor switch circuit is OK.	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*** ***(B25) No. 1 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **6.**	Check the harness for open or short between neutral position switch and ECM.
6	**CHECK NEUTRAL POSITION SWITCH CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Measure the resistance between neutral position switch harness connector terminal and chassis ground. ***Connector & terminal*** ***(B25) No. 3 (+) — 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-37, Switches and Harness.>	Is the neutral position switch OK?	Neutral position switch circuit is OK.	Replace the neutral position switch.

E: DTC 16 IGNITION SWITCH

TROUBLE SYMPTOM:

Cruise control cannot be set.

WIRING DIAGRAM:



D: B137

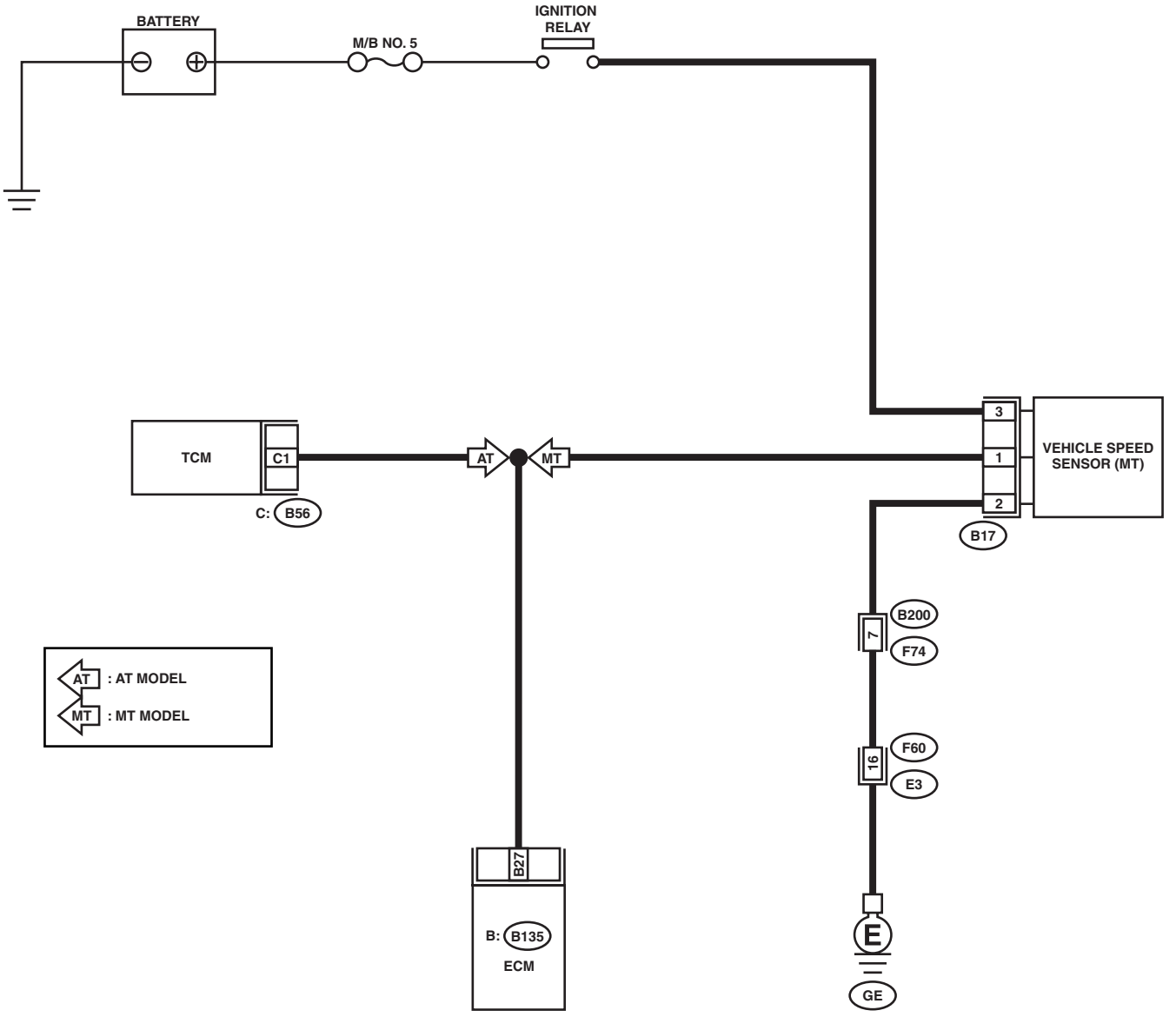
1	2	3	4	5	6	7
8	9	10	11	12	13	14	15	16	17
18	19	20	21	22	23			24	25
26	27			28	29			30	31

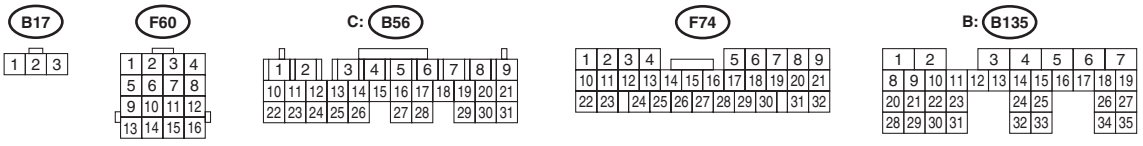
CC-00334

	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*** ***(B137) No. 15 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Check the poor contact of ECM connector.	• Check the fuse No. 11 (fuse & relay box). • Check the harness for open or short between ignition switch and ECM.

F: DTC 22 AND 32 VEHICLE SPEED SENSOR

DIAGNOSIS:
Disconnection or short circuit of vehicle speed sensor system.
TROUBLE SYMPTOM:
Cruise control cannot be set. (Cancelled immediately.)
WIRING DIAGRAM:





CC-00335

	Step	Check	Yes	No
1	**CHECK TRANSMISSION TYPE.**	Is the transmission type MT?	Go to step **2.**	Go to step **6.**
2	**CHECK HARNESS BETWEEN BATTERY AND VEHICLE SPEED SENSOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from vehicle speed sensor. 3) Turn the ignition switch to ON. 4) Measure the voltage between vehicle speed sensor harness connector terminal and chassis ground. ***Connector & terminal*** ***(B17) No. 3 (+) — Chassis ground (−):***	Is the measured valve more than 10 V?	Go to step **3.**	Check the harness for open or short between ignition relay and vehicle speed sensor.
3	**CHECK HARNESS BETWEEN CRUISE CONTROL MODULE AND VEHICLE SPEED SENSOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from cruise control module. 3) Measure the resistance between vehicle speed sensor harness connector terminal and ECM harness connector terminal. ***Connector & terminal*** ***(B17) No. 1 — (B135) No. 27:***	Is the measured valve less than 10 Ω?	Go to step **4.**	Repair the harness.
4	**CHECK HARNESS BETWEEN VEHICLE SPEED SENSOR AND ENGINE GROUND.** 1) Turn the ignition switch to OFF. 2) Measure the resistance between vehicle speed sensor harness connector terminal and engine ground. ***Connector & terminal*** ***(B17) No. 2 — Engine ground:***	Is the measured valve less than 10 Ω?	Go to step **5.**	Repair the harness.
5	**CHECK VEHICLE SPEED SENSOR.** 1) Connect the harness connector to vehicle speed sensor. 2) Lift-up the vehicle and support with safety stands. 3) Drive the vehicle at speed greater than 20 km/h (12 MPH). **Warning:** **Be careful not to be caught up by the running wheels.** 4) Measure the voltage between ECM harness connector terminal and chassis ground. ***Connector & terminal*** ***(B135) No. 27 (+) — Chassis ground (−):***	Is the measured valve less than 1 V or more than 5 V?	Check the poor contact in ECM connector.	Replace the vehicle speed sensor.
6	**CHECK HARNESS BETWEEN CRUISE CONTROL MODULE AND TRANSMISSION CONTROL MODULE.** 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from transmission control module and ECM. 3) Measure the resistance between ECM harness connector terminal and transmission control module harness connector terminal. ***Connector & terminal*** ***(B135) No. 27 — (B56) No. 1:***	Is the measured valve less than 10 Ω?	Go to step **7.**	Repair the harness.

	Step	Check	Yes	No
7	**CHECK TRANSMISSION CONTROL MODULE.** 1) Connect the harness connector to transmission control module. 2) Lift-up the vehicle and support with safety stands. 3) Drive the vehicle faster than 10 km/h (6 MPH). **Warning:** **Be careful not to be caught by the running wheels.** 4) Measure the voltage between transmission control module harness connector terminal and chassis ground. ***Connector & terminal*** ***(B56) No. 1 (+) — Chassis ground (−):***	Is the measured valve less than 1 V or more than 5 V?	Check the poor contact in ECM connector.	Replace the transmission control module.

1. General Description

A: CAUTION

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

B: PREPARATION TOOL

1. GENERAL TOOLS

TOOL NAME	REMARKS
Circuit Tester	Used for measuring resistance and voltage.
Heat wire repairing agent (DUPONT NO. 4817 or equivalent)	Used for repairing antenna wire.

2. Radio System

A: SCHEMATIC

1. AUDIO SYSTEM

<Ref. to WI-64, SCHEMATIC, Audio System.>

B: INSPECTION

Symptom	Repair order
Display does not illuminate and no sound from speakers.	(1) Check fuse and power supply for radio. (2) Check radio ground. (3) Remove radio for repair.
No sound from specitic speaker.	(1) Check speaker. (2) Check output circuit between radio and speaker.
Radio generates noise with engine running.	(1) Check radio ground. (2) Check generator. (3) Check ignition coil. (4) Remove radio for repair.
Weak signal or noisy sound when receiving AM and FM.	(1) Check antenna. (2) Check antenna amplifier. (3) Check radio ground. (4) Remove radio for repair.

3. Front Accessory Power Socket System

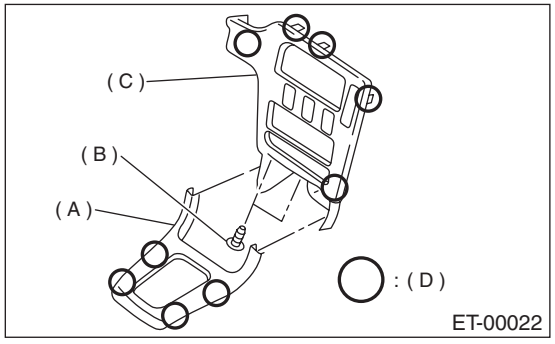
A: SCHEMATIC

<Ref. to WI-114, SCHEMATIC, Front Accessory Power Supply System.>

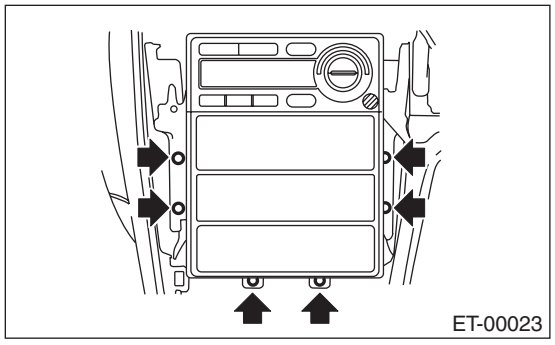
4. Radio

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove hook (D) and then remove front cover (A).
3) Remove two screws (B), then remove center panel (C) while disconnecting connector from front cover (A).



4) Remove fitting screws, and slightly pull radio out from center console.



5) Remove harness connectors and antenna feeder cord and then detach A/C control unit.

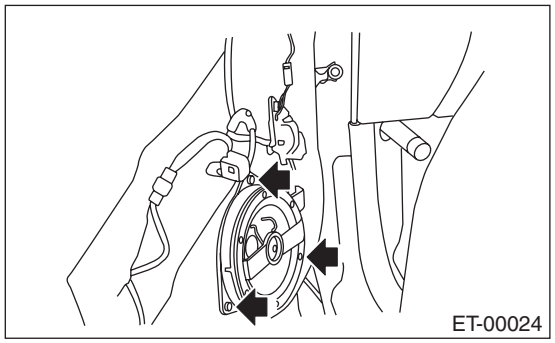
B: INSTALLATION

Install in the reverse order of removal.

5. Front Speaker

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove front door trim. <Ref. to EI-32, REMOVAL, Front Door Trim.>
3) Remove front speaker mounting screws.



4) Disconnect harness connector and remove front speaker.

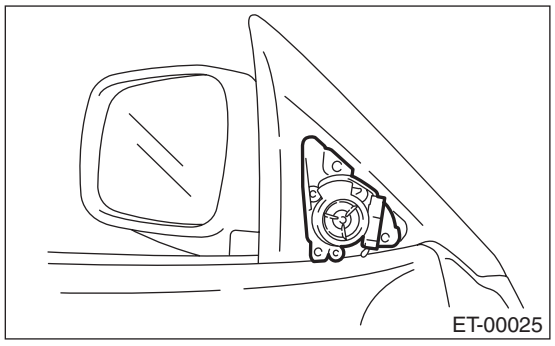
B: INSTALLATION

Install in the reverse order of removal.

6. Front Tweeter

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove gusset cover.



3) Disconnect harness connector and remove tweeter.

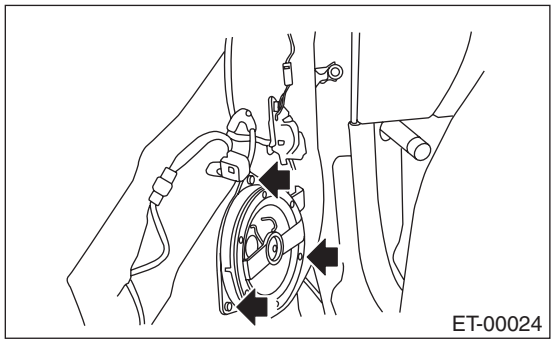
B: INSTALLATION

Install in the reverse order of removal.

7. Rear Speaker

A: REMOVAL

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



4) Disconnect harness connector and remove rear speaker.

B: INSTALLATION

Install in the reverse order of removal.

8. Antenna

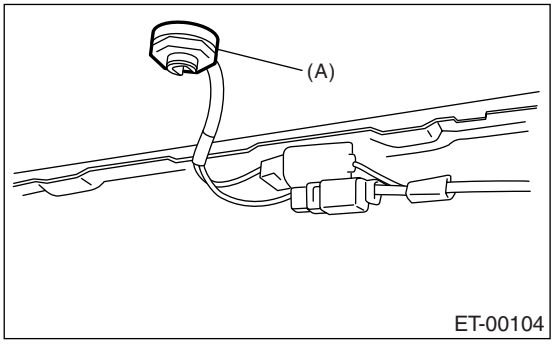
A: REMOVAL

1. PILLAR ANTENNA

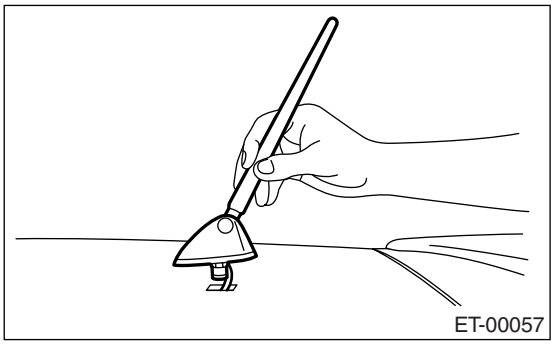
1) Remove the antenna plug located at the foot of the driver's seat.
2) Remove the mounting screws and detach the antenna.

2. ROOF ANTENNA

1) Remove the roof trim.
<Ref. to EI-44, REMOVAL, Roof Trim.>
2) Disconnect the harness connector, and remove the nut (A).



3) Pull the antenna out from roof.



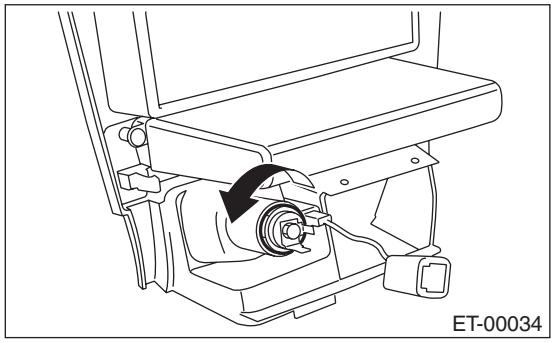
B: INSTALLATION

Install in the reverse order of removal.

9. Front Accessory Power Socket

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove center panel. <Ref. to ET-5, REMOVAL, Radio.>
3) Disconnect harness connectors and remove front accessory power socket.



B: INSTALLATION

Install in the reverse order of removal.

10.Rear Accessory Power Socket

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove console box. <Ref. to EI-36, REMOVAL, Console Box.>
3) Disconnect harness connectors and remove rear accessory power socket from console box.

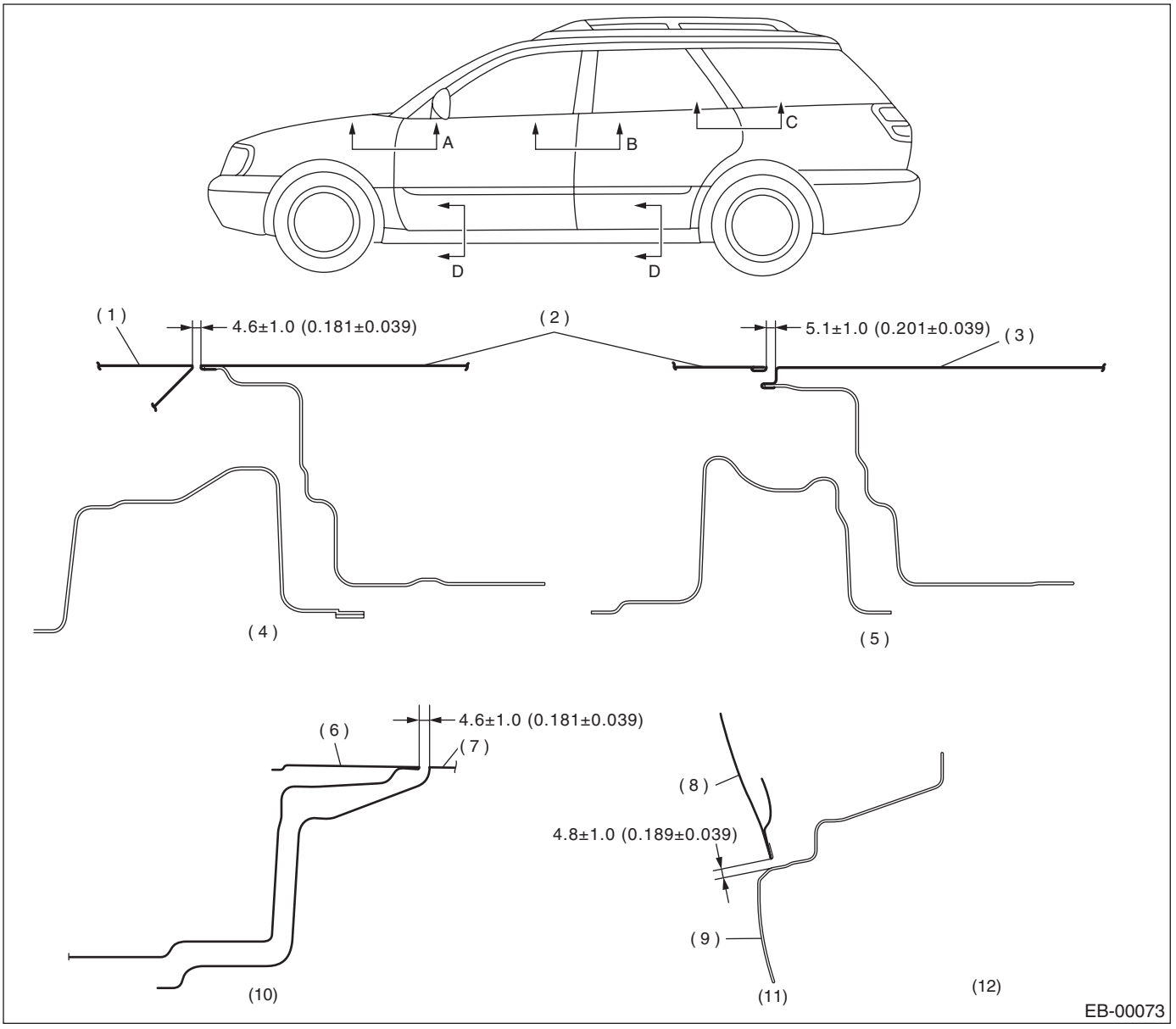
B: INSTALLATION

Install in the reverse order of removal.

MEMO:

1. General Description

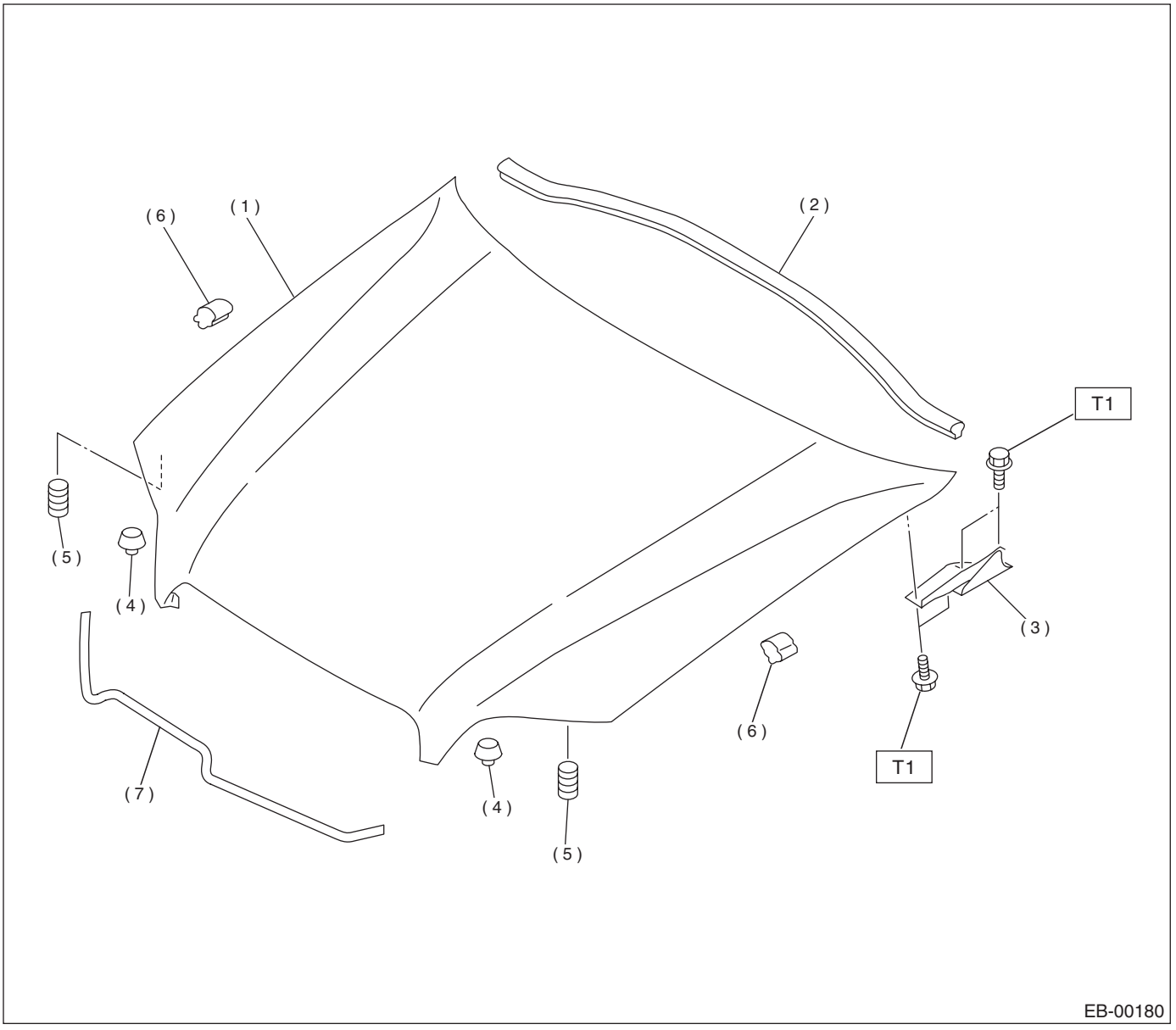
A: SPECIFICATIONS



(1) Front fender
(2) Front door outer
(3) Rear door outer
(4) Section A
(5) Section B
(6) Rear door outer
(7) Rear quarter outer
(8) Door panel
(9) Side sill
(10) Section C
(11) Section D
(12) Unit: mm (in)

B: COMPONENT

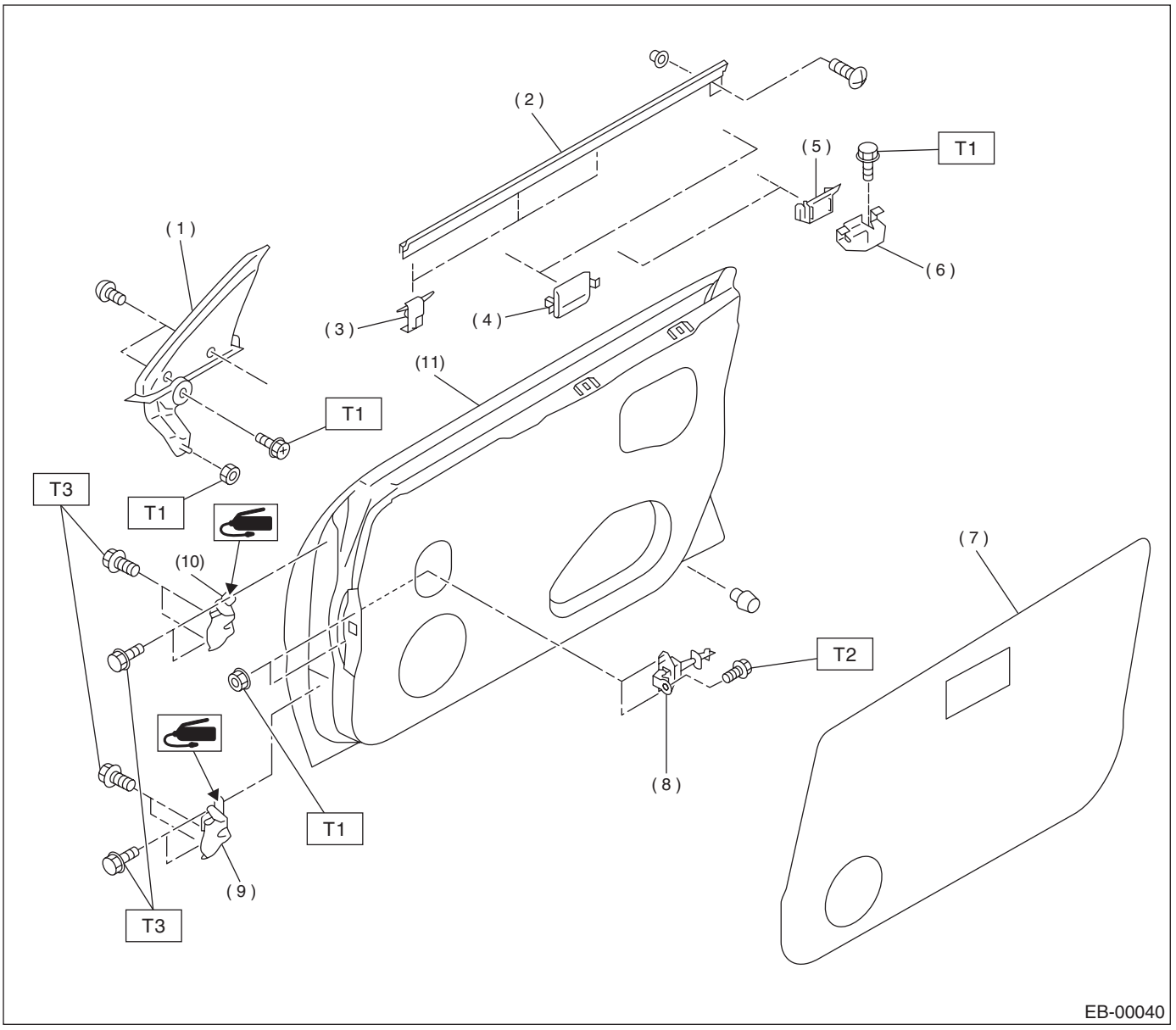
1. FRONT HOOD



(1) Front hood
(2) Seal (Front hood)
(3) Hinge
(4) Buffer C
(5) Buffer A
(6) Buffer B
(7) Seal ASSY

Tightening torque: N·m (kgf-m, ft-lb)
T1: 24.5 (2.5, 18.1)

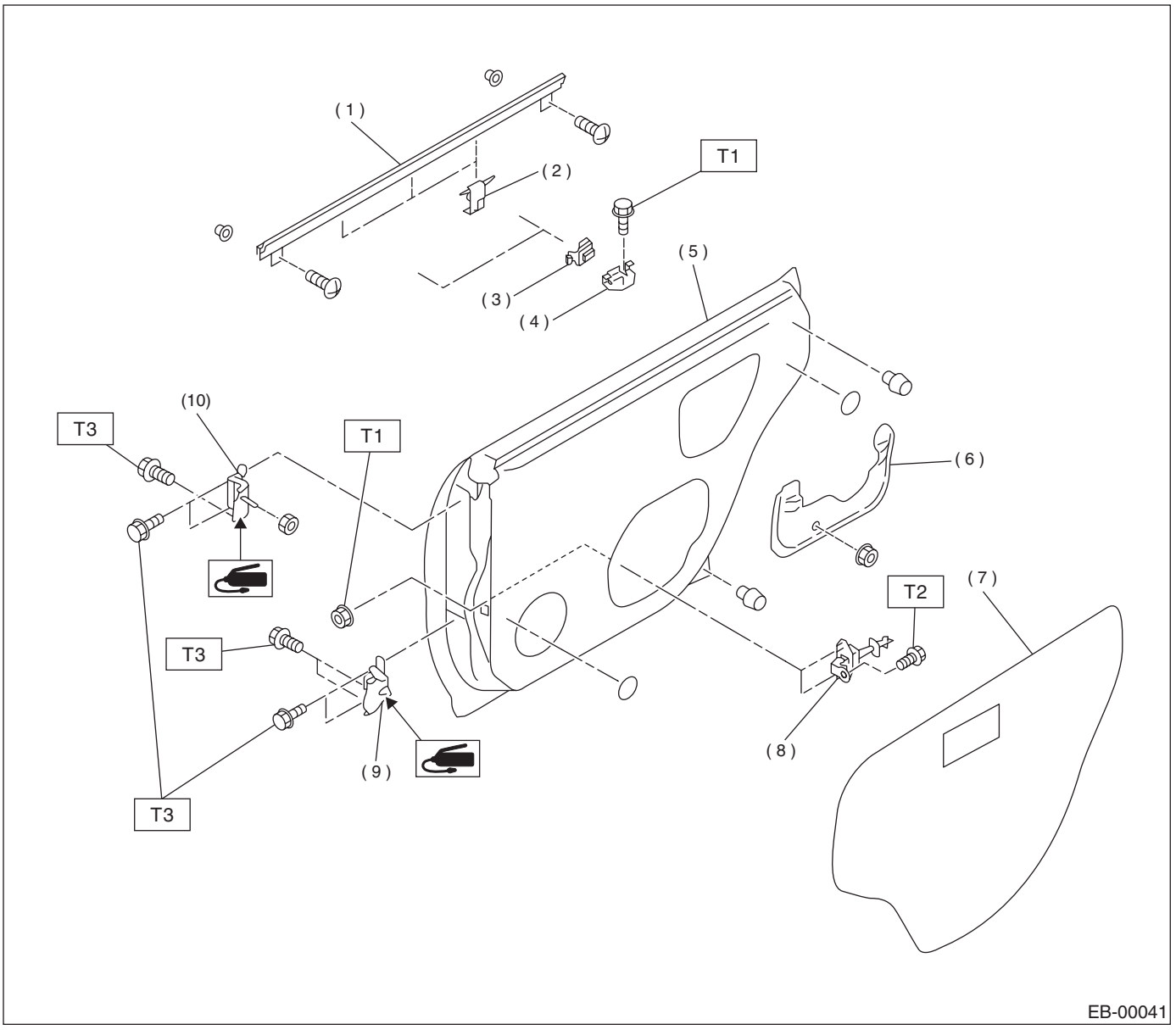
2. FRONT DOOR PANEL



(1) Gusset
(2) Weatherstrip (Outer)
(3) Clip (Weatherstrip, outer)
(4) Stabilizer (Lifter)
(5) Stabilizer (Outer)
(6) Stabilizer (Inner)
(7) Sealing cover
(8) Checker
(9) Lower hinge
(10) Upper hinge
(11) Door panel

Tightening torque: N·m (kgf-m, ft-lb)
T1: 7.35 (0.75, 5.4)
T2: 18 (1.8, 13)
T3: 30 (3.1, 22.4)

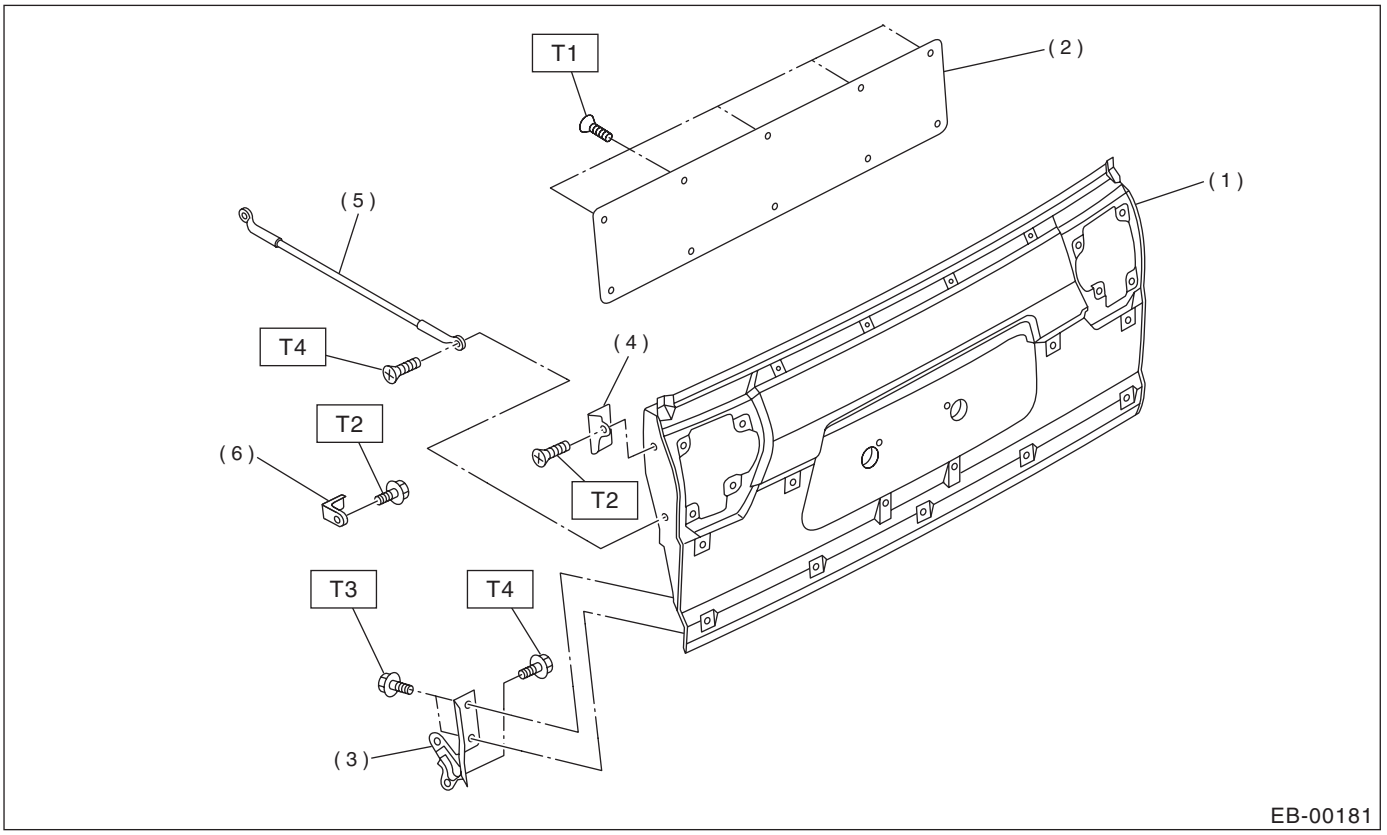
3. REAR DOOR PANEL



(1) Weatherstrip (Outer)
(2) Clip (Weatherstrip, outer)
(3) Stabilizer (Outer)
(4) Stabilizer (Inner)
(5) Door panel
(6) Bracket
(7) Sealing cover
(8) Checker
(9) Lower hinge
(10) Upper hinge

Tightening torque: N·m (kgf-m, ft-lb)
T1: 7.35 (0.75, 5.4)
T2: 18 (1.8, 13)
T3: 30 (3.1, 22.4)

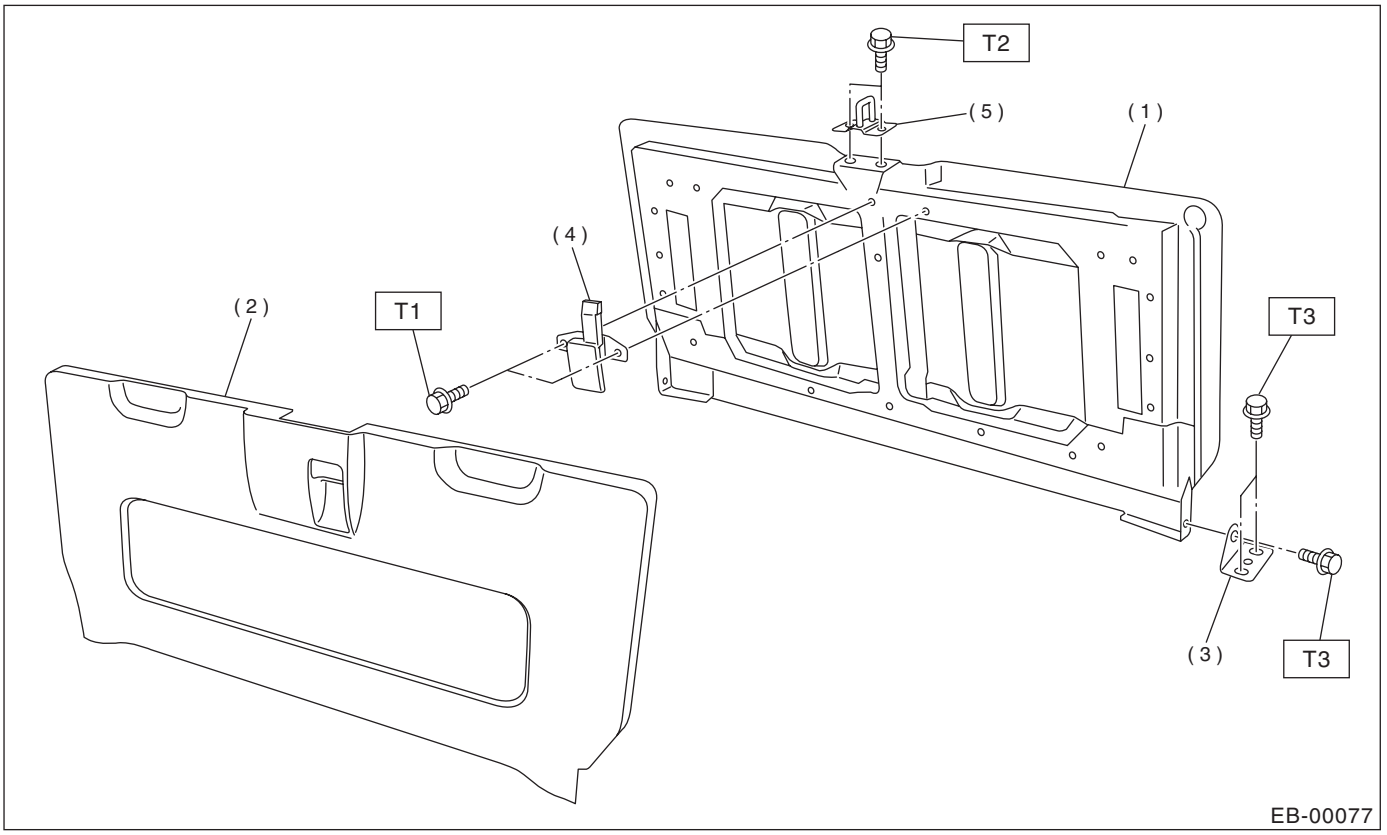
4. TAIL GATE PANEL



(1) Tail gate
(2) Tail gate cover
(3) Hinge
(4) Protector
(5) Tail gate cable
(6) Buffer

Tightening torque: N·m (kgf-m, ft-lb)
T1: 2 (0.2, 1.4)
T2: 7.5 (0.76, 5.5)
T3: 25 (2.5, 18.1)
T4: 30 (3.1, 22.4)

5. SWITCH BACK GATE

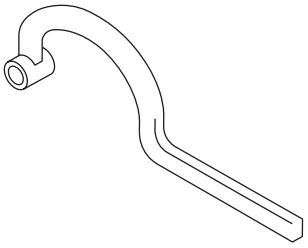


(1) Switch back gate
(2) Cover
(3) Hinge
(4) Release lever
(5) Striker

Tightening torque: N·m (kgf-m, ft-lb)
T1: 7.5 (0.76, 5.5)
T2: 18 (1.8, 13)
T3: 27.5 (2.80, 20.3)

C: PREPARATION TOOL

1. SPECIAL TOOLS

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

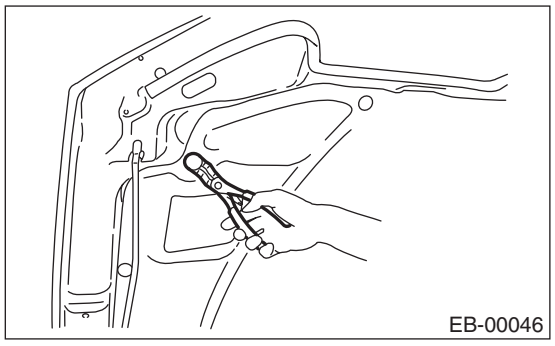
2. GENERAL TOOL

TOOL NAME	REMARKS
Support Jack	Used for supporting door panel.

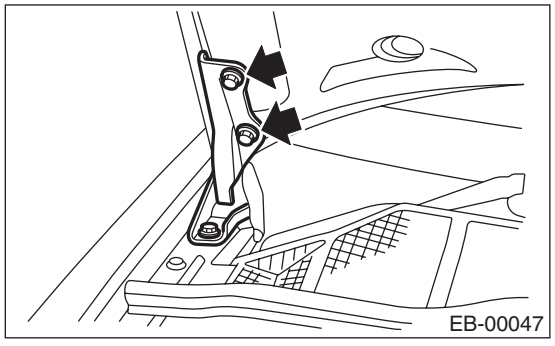
2. Front Hood

A: REMOVAL

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



3) Remove bolts to disconnect hood from hinges.



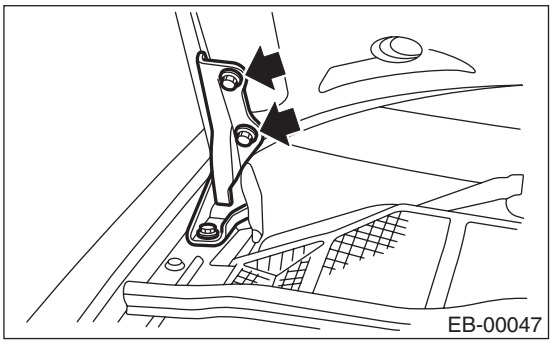
B: INSTALLATION

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

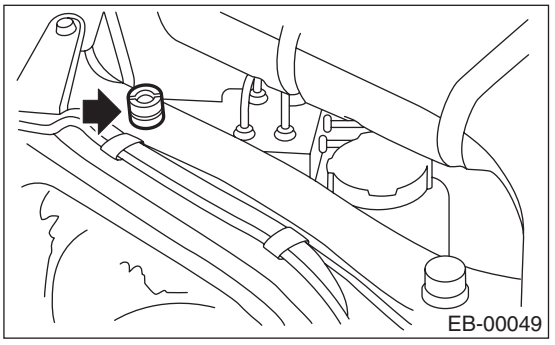
Tightening torque:
24.5 N·m (2.5 kgf-m, 18.1 ft-lb)

C: ADJUSTMENT

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



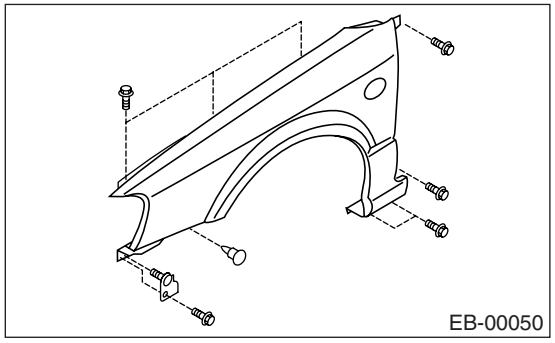
2) Adjust height at front end of hood.
<Ref. to SL-40, ADJUSTMENT, Front Hood Lock Assembly.>
3) Rotate hood buffer to adjust lateral height.



3. Fender Panel

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove side protectors and fender protectors.
3) Remove front bumper face. <Ref. to EI-18, REMOVAL, Front Bumper.>
4) Remove headlights. <Ref. to LI-11, REMOVAL, Headlight Assembly.>
5) Remove mud guard. <Ref. to EI-26, REMOVAL, Mud Guard.>
6) Remove bolts and clips to remove front fender.



B: INSTALLATION

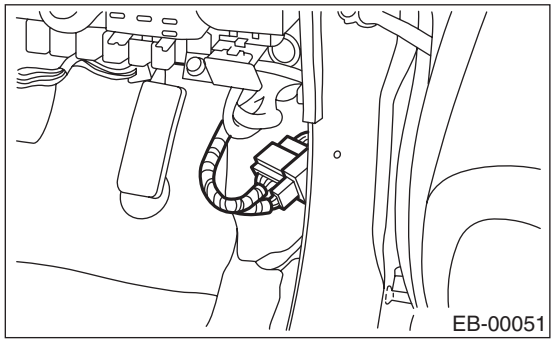
1) Install in the reverse order of removal.
2) When fender panel is installed, clearance between fender panel and hood or front fender must be equal.

Tightening torque:
7.35 N·m (0.75 kgf-m, 5.4 ft-lb)

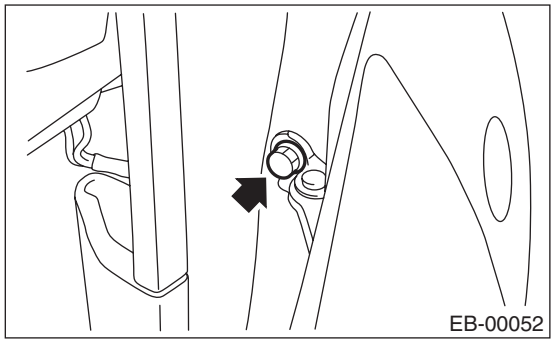
4. Front Door Panel

A: REMOVAL

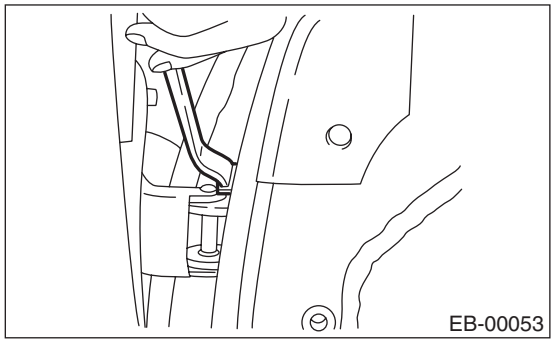
1) Disconnect ground cable from battery.
2) Remove front door trim. <Ref. to EI-32, REMOVAL, Front Door Trim.>
3) Remove outer mirror assembly. <Ref. to GW-30, REMOVAL, Outer Mirror Assembly.>
4) Remove front door regulator and motor. <Ref. to GW-16, REMOVAL, Front Regulator and Motor Assembly.>
5) Remove front door latch assembly. <Ref. to SL-34, REMOVAL, Front Door Latch Assembly.>
6) Remove front outer handle. <Ref. to SL-33, REMOVAL, Front Outer Handle.>
7) Remove front pillar lower trim to disconnect connector from body harness.


EB-00051

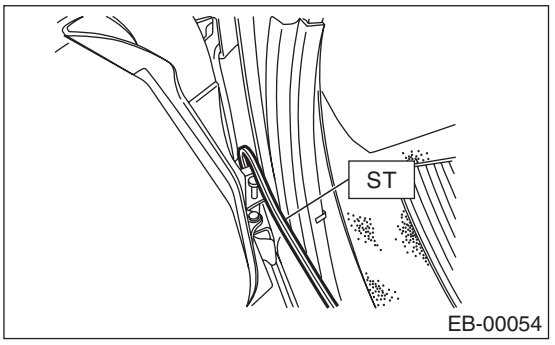
8) Put wooden block on jack and place jack under door. Support door with a jack to protect it from damage.
9) Remove checker bolts.


EB-00052

10) Remove door-side bolts for upper and lower hinges to remove door.


EB-00053

11) Using special tool, remove body-side bolts for upper and lower hinges, and remove door hinges.
ST 925610000 DOOR HINGE WRENCH



EB-00054

CAUTION:
• During removal and installation of doors, do not damage body.
• Doors are heavy. Be careful not to drop and damage them.

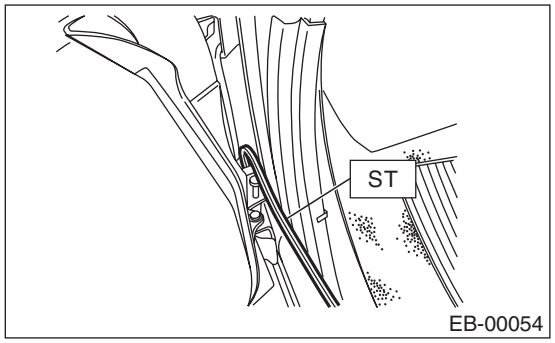
B: INSTALLATION

1) Install in the reverse order of removal.
2) Apply grease to sliding area of door hinges.

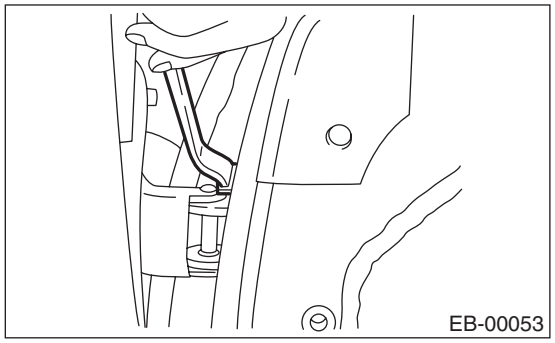
Tightening torque:
Refer to COMPONENT in General Description. <Ref. to EB-4, FRONT DOOR PANEL, COMPONENT, General Description.>

C: ADJUSTMENT

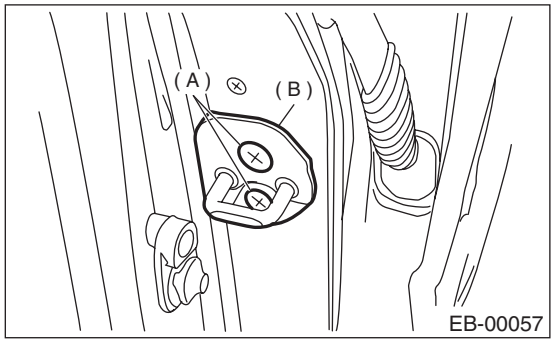
1) Using special tool, loosen body-side bolts of upper and lower hinges to align the position of front door panel longitudinally and vertically.
ST 925610000 DOOR HINGE WRENCH



2) Loosen door-side bolts of upper and lower hinges to align the position of front door panel vertically and laterally at the front end.



3) Loosen screw (A) and tap striker (B) using plastic hammer to adjust striker.



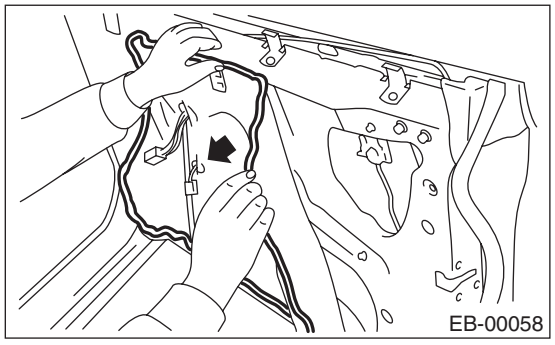
CAUTION:
Do not use impact wrench. Welding area on striker nut plate is easily broken.

5. Front Sealing Cover

A: REMOVAL

1) Remove front door trim. <Ref. to EI-32, REMOVAL, Front Door Trim.>
2) Remove front speaker. <Ref. to ET-6, REMOVAL, Front Speaker.>

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



B: INSTALLATION

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

Butyl tape:
3M8626 or equivalent

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

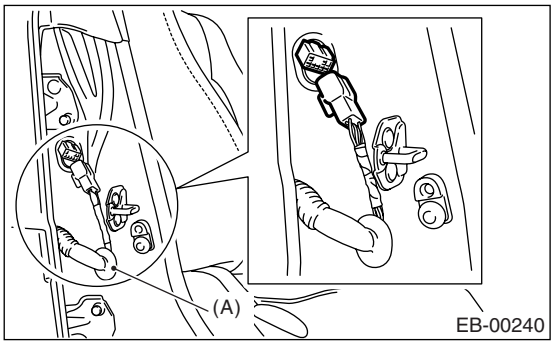
C: INSPECTION

If sealing cover is damaged, replace it with a new one.

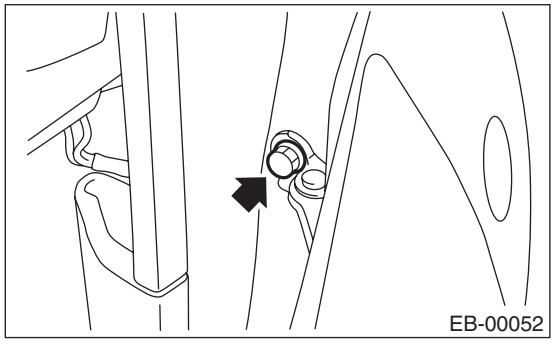
6. Rear Door Panel

A: REMOVAL

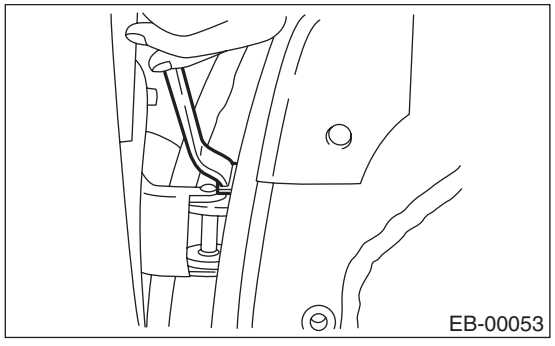
1) Disconnect ground cable from battery.
2) Remove rear door trim. <Ref. to EI-33, REMOVAL, Rear Door Trim.>
3) Remove rear door regulator and motor assembly. <Ref. to GW-19, REMOVAL, Rear Regulator and Motor Assembly.>
4) Remove rear door latch. <Ref. to SL-38, REMOVAL, Rear Door Latch Assembly.>
5) Remove rear outer handle. <Ref. to SL-37, REMOVAL, Rear Outer Handle.>
6) Remove rubber duct (A) connection from center pillar. Pull out and disconnect door harness connector.



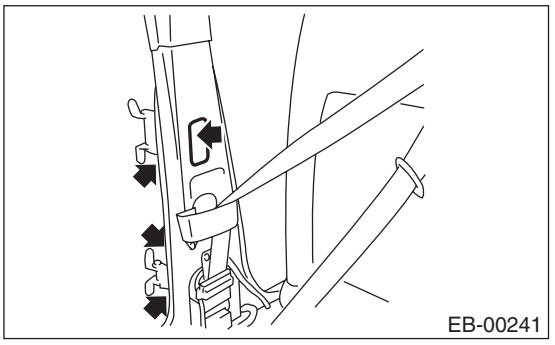
7) Put a wooden block on the jack and place the jack under the door. Support the door with the jack to protect it.
8) Remove checker bolts.



9) Remove door-side bolts for upper and lower hinges to remove door.



10) Remove center pillar lower trim. <Ref. to EI-42, REMOVAL, Lower Inner Trim.>
11) Remove body-side bolts and nuts for upper and lower hinges, and remove door hinges.



CAUTION:
• During removal and installation of doors, do not damage body.
• Doors are heavy. Be careful not to drop and damage them.

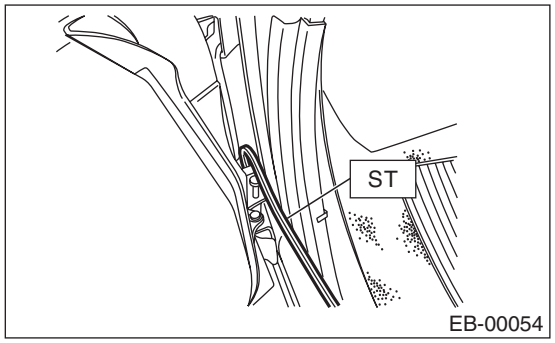
B: INSTALLATION

1) Install in the reverse order of removal.
2) Apply grease to sliding area of door hinges.

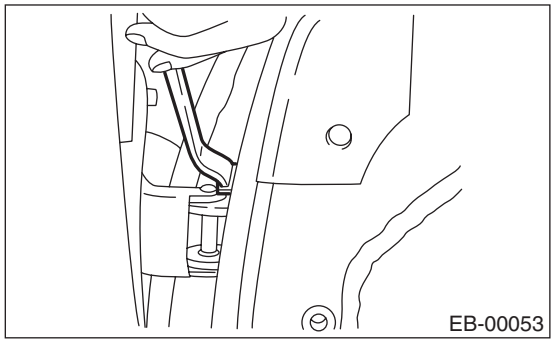
Tightening torque:
Refer to COMPONENT in General Description. <Ref. to EB-5, REAR DOOR PANEL, COMPONENT, General Description.>

C: ADJUSTMENT

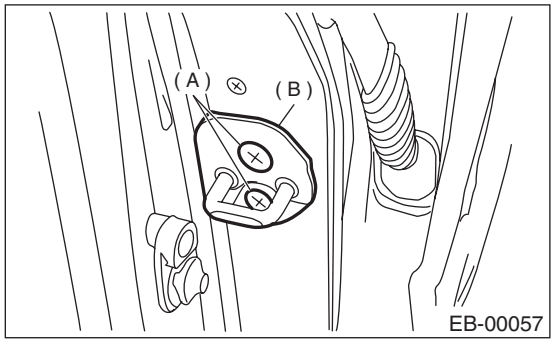
1) Using special tool, loosen body-side bolts of upper and lower hinges to align the position of rear door panel longitudinally and vertically.
ST 925610000 WRENCH



2) Loosen door-side bolts of upper and lower hinges to align the position of rear door panel vertically and laterally at front-end.



3) Loosen screw (A) and tap striker (B) using plastic hammer to adjust striker.



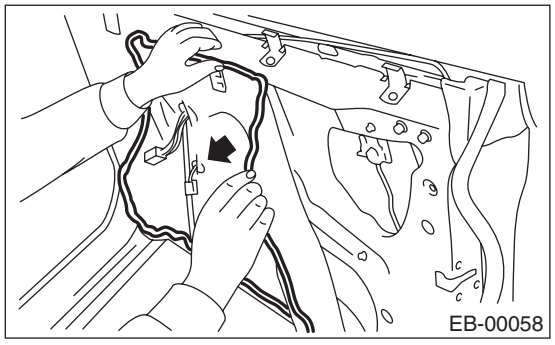
CAUTION:
Do not use an impact wrench. The welding area on the striker nut plate is easily broken.

7. Rear Sealing Cover

A: REMOVAL

1) Remove rear door trim. <Ref. to EI-33, REMOVAL, Rear Door Trim.>
2) Remove rear speaker. <Ref. to ET-8, REMOVAL, Rear Speaker.>

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



B: INSTALLATION

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

Butyl tape:
3M8626 or equivalent

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

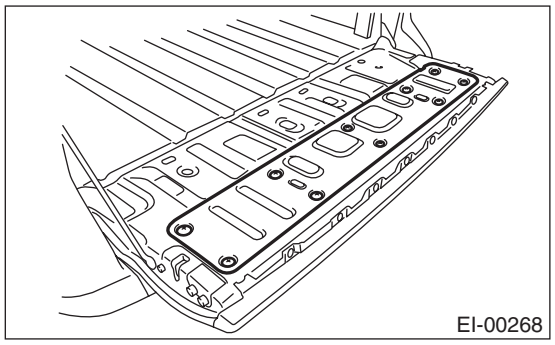
C: INSPECTION

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

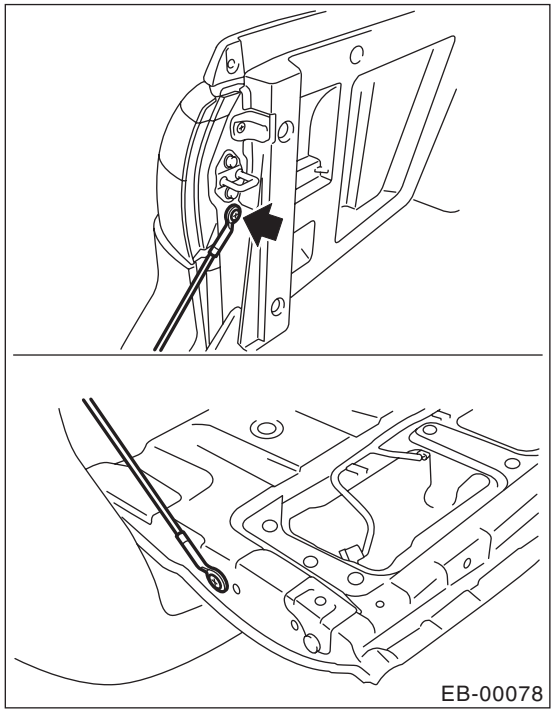
8. Tail Gate Panel

A: REMOVAL

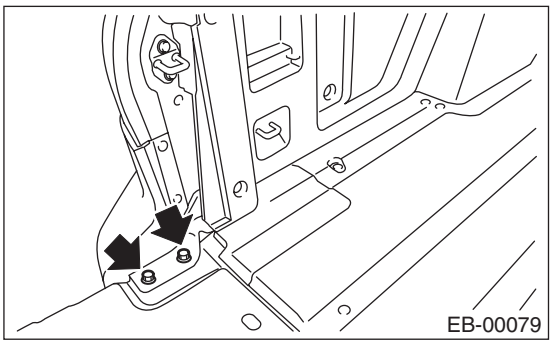
1) Remove tail gate tray. <Ref. to EI-56, REMOVAL, Tail Gate Tray.>
2) Remove tail gate cover.



3) Remove rear finisher right. <Ref. to LI-20, REMOVAL, Rear Finisher Light Assembly.>
4) Remove tail gate garnish. <Ref. to EI-55, REMOVAL, Tail Gate Garnish.>
5) Remove tail gate latch. <Ref. to SL-56, REMOVAL, Tail Gate Latch Assembly.>
6) Remove tail gate outer handle. <Ref. to SL-55, REMOVAL, Tail Gate Outer Handle.>
7) Remove wire harness.
8) Remove tail gate cable.



9) Remove bolts and detach tail gate.



B: INSTALLATION

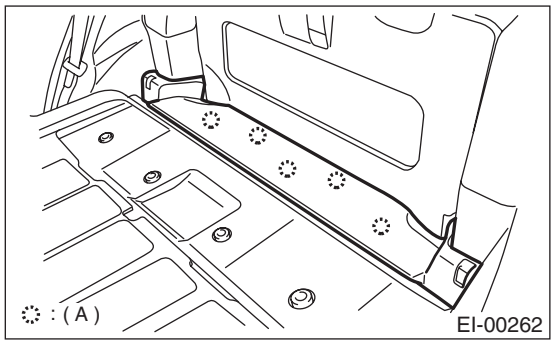
Install in the reverse order of removal.

Tightening torque:
25 N·m (2.6 kgf-m, 18 ft-lb)

9. Switch Back Gate

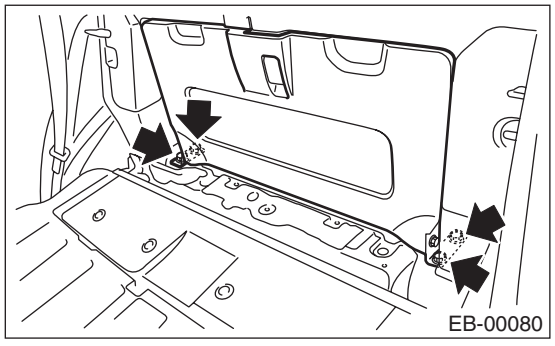
A: REMOVAL

1) Pull up rear seat cushion, put down rear seat backrest.
2) Remove floor trim panel.



(A) Clip

3) Remove bolts, and detach switch back gate.

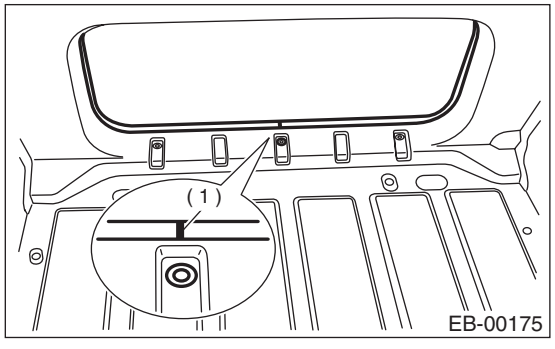


4) Remove weatherstrip.

B: INSTALLATION

Install in the reverse order of removal.

NOTE:
Mount weatherstrip by aligning silver line mark with back panel tray center bolt.

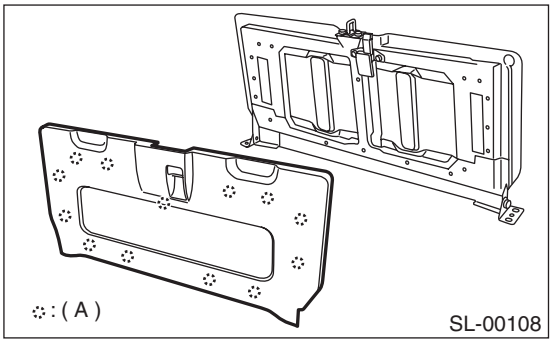


(1) White line mark

Tightening torque:
27.5 N·m (2.80 kgf-m, 20.3 ft-lb)

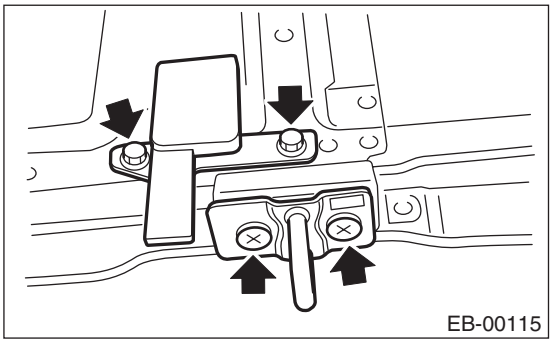
C: DISASSEMBLY

1) Remove switch back gate. <Ref. to EB-18, REMOVAL, Switch Back Gate.>
2) Remove switch back gate inner cover.



(A) Clip

3) Remove switch back gate handle and striker.

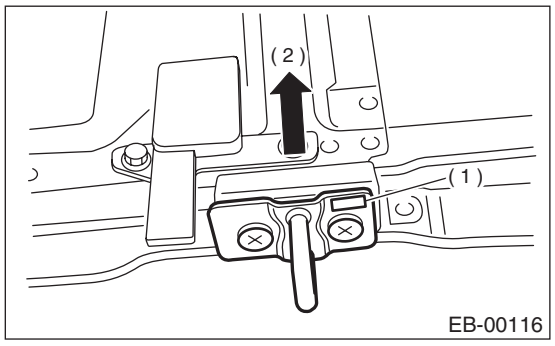


D: ASSEMBLY

Install in the reverse order of removal.

NOTE:

• Install striker with marked portion facing vehicle front.



(1) Marking
(2) Vehicle front

• There are left/right indicating marks on the switch back gate hinge. When installing, do not mistake the direction.

	Marking
RH	65R
LH	65L

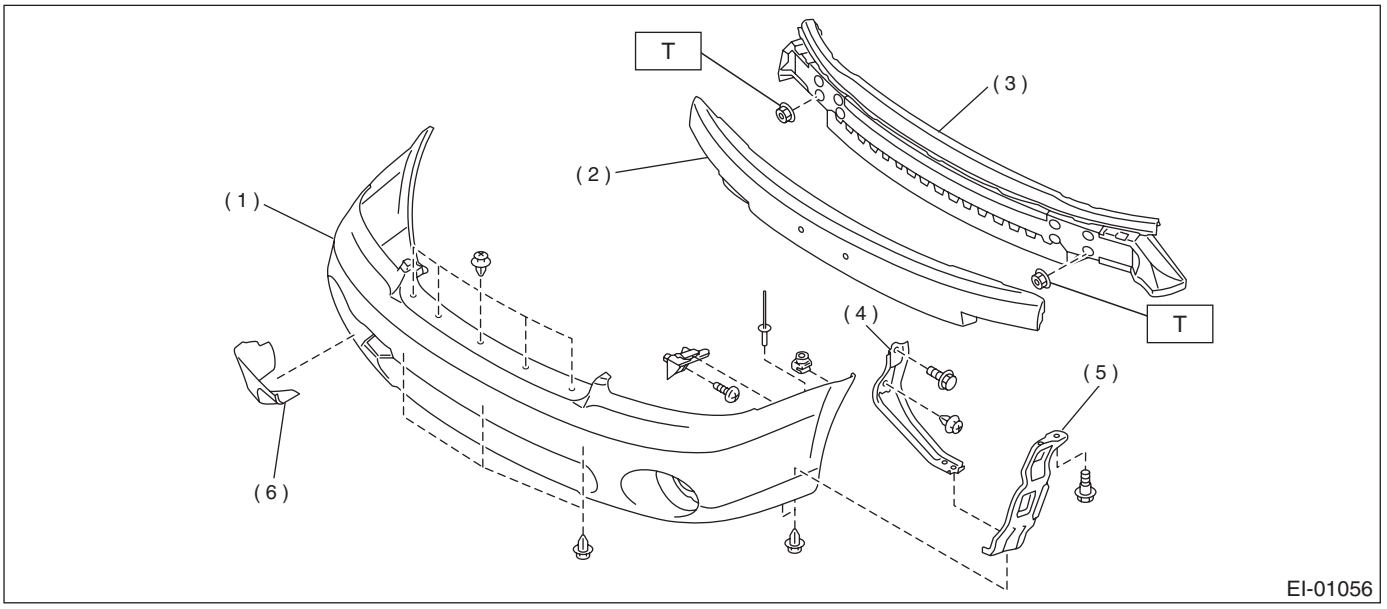
Tightening torque:
Release lever:
7.5 N·m (0.76 kgf-m, 5.5 ft-lb)
Striker:
18 N·m (1.8 kgf-m, 13 ft-lb)

MEMO:

1. General Description

A: COMPONENT

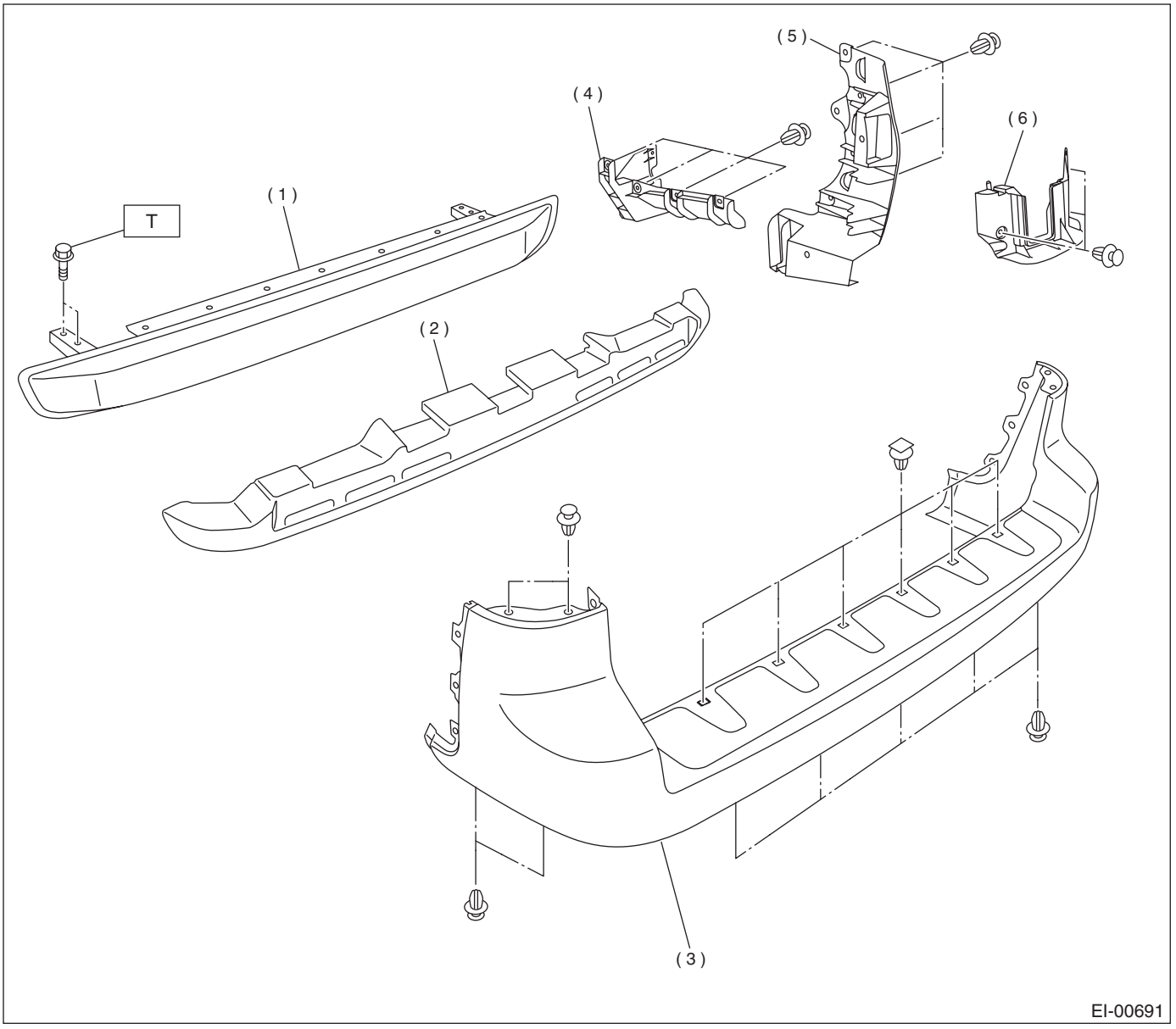
1. FRONT BUMPER



(1) Bumper face
(2) Bumper energy absorber
(3) Bumper beam
(4) Side stay
(5) Side bracket
(6) Cover (Tie down hook)
(7) Cover

Tightening torque: N·m (kgf-m, ft-lb)
T: 33 (3.4, 25)

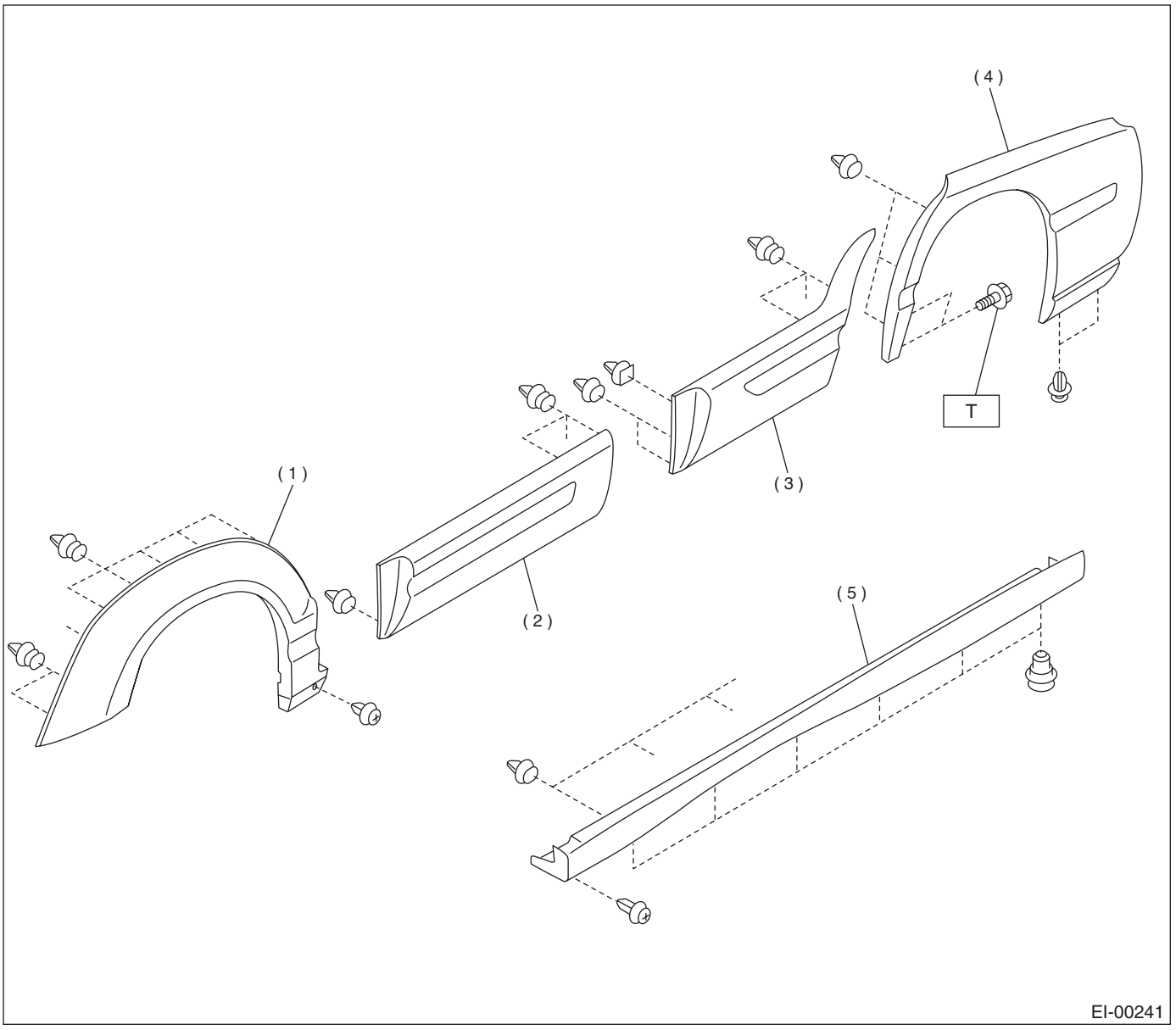
2. REAR BUMPER



(1) Bumper beam
(2) Bumper energy absorber
(3) Bumper face
(4) Side lower cover
(5) Side bracket
(6) Lower cover

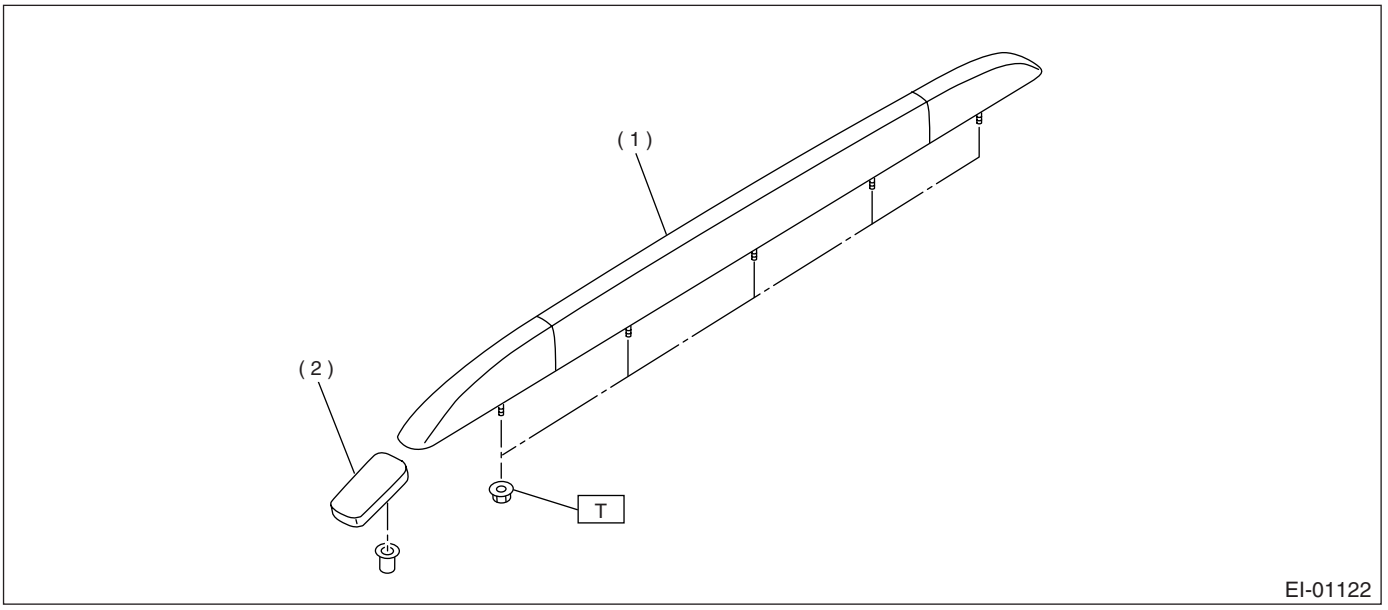
Tightening torque: N·m (kgf-m, ft-lb)
T: 95 (9.7, 70)

3. SIDE PROTECTOR



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

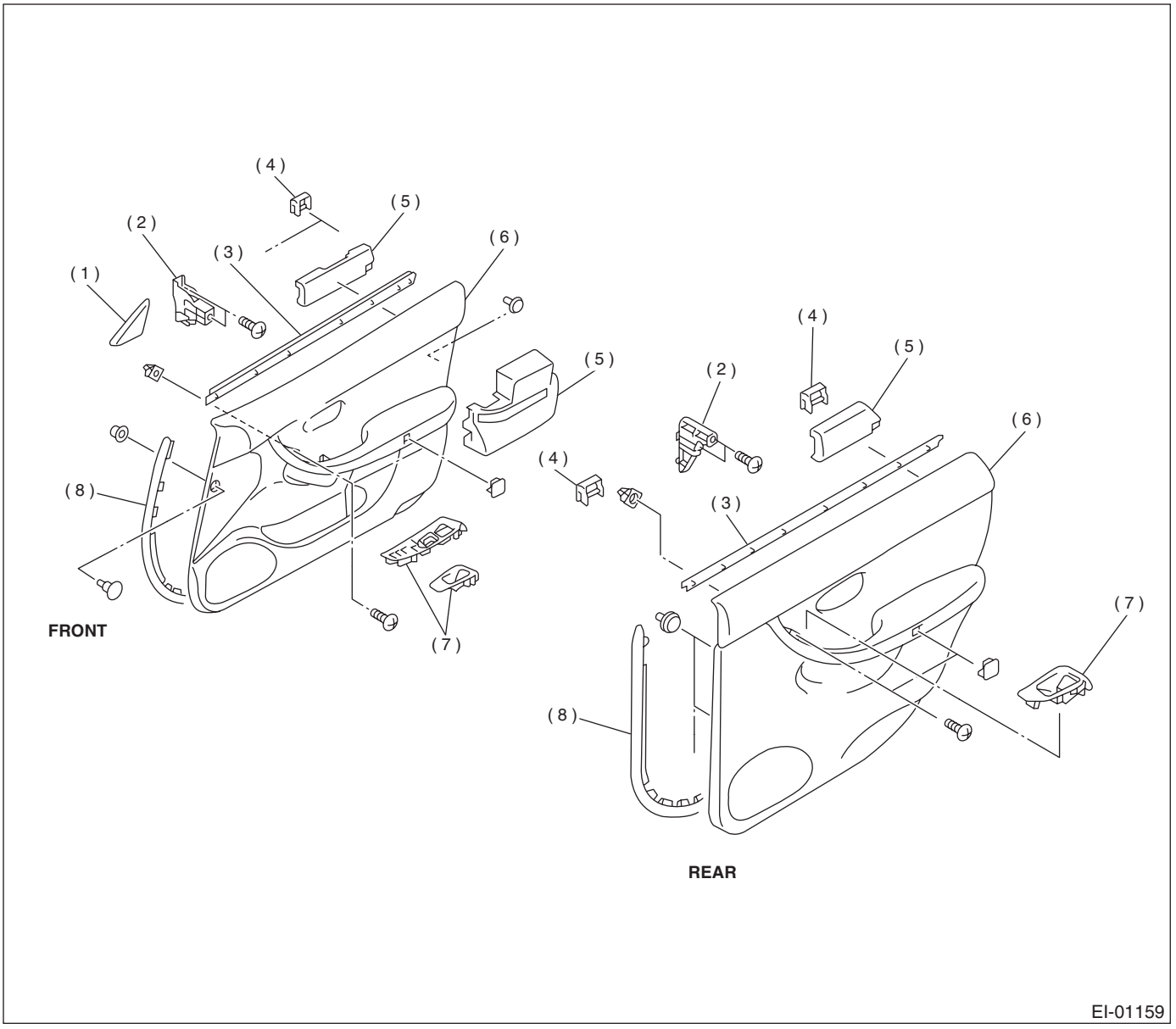
4. ROOF RAIL



(1) Roof rail
(2) Roof molding

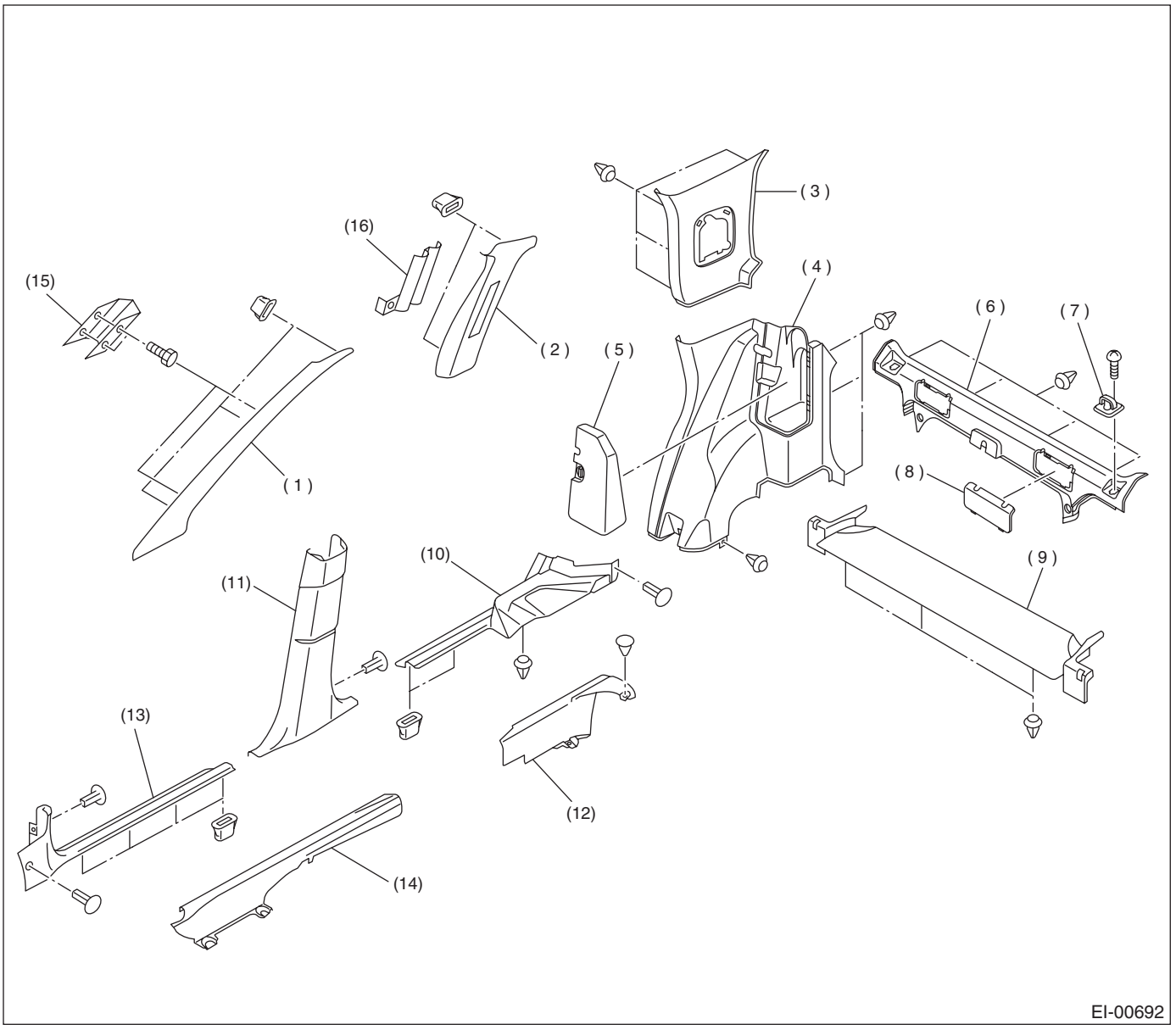
Tightening torque: N·m (kgf-m, ft-lb)
T: 7.5 (0.76, 5.53)

5. DOOR TRIM



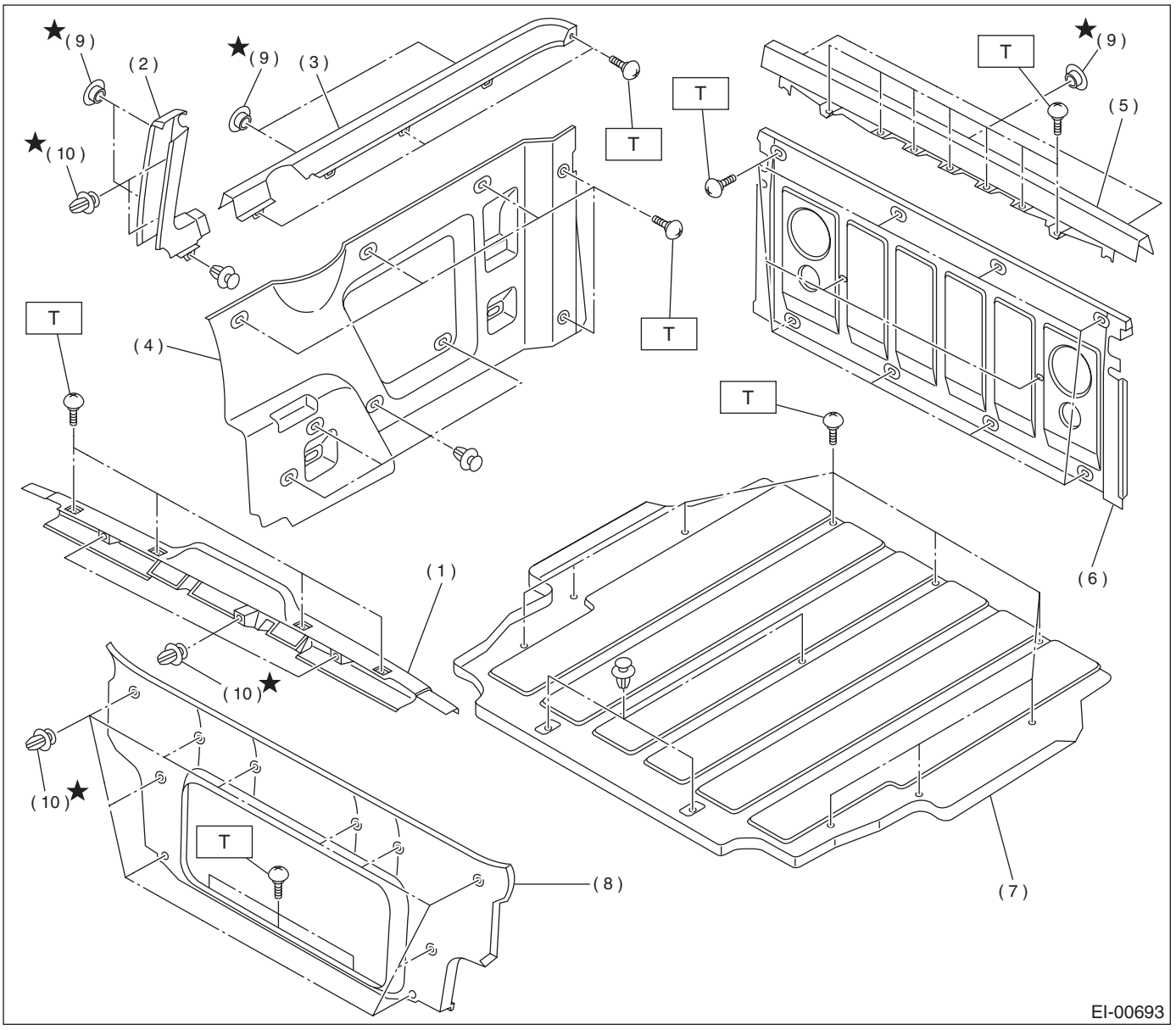
(1) Gusset cover
(2) Bracket
(3) Weatherstrip upper
(4) Clip
(5) Pad
(6) Trim panel
(7) Power window switch cover
(8) Weatherstrip lower

6. INNER TRIM



(1) Front pillar upper trim
(2) Center pillar upper trim
(3) Rear pillar upper trim
(4) Rear pillar lower trim
(5) Lid
(6) Rear bulk head trim
(7) Hook
(8) Cover
(9) Floor trim panel
(10) Side sill rear upper cover
(11) Center pillar lower trim
(12) Side sill rear lower cover
(13) Front pillar lower trim
(14) Side sill front lower cover
(15) Pad stopper A pillar
(16) Pad B pillar upper

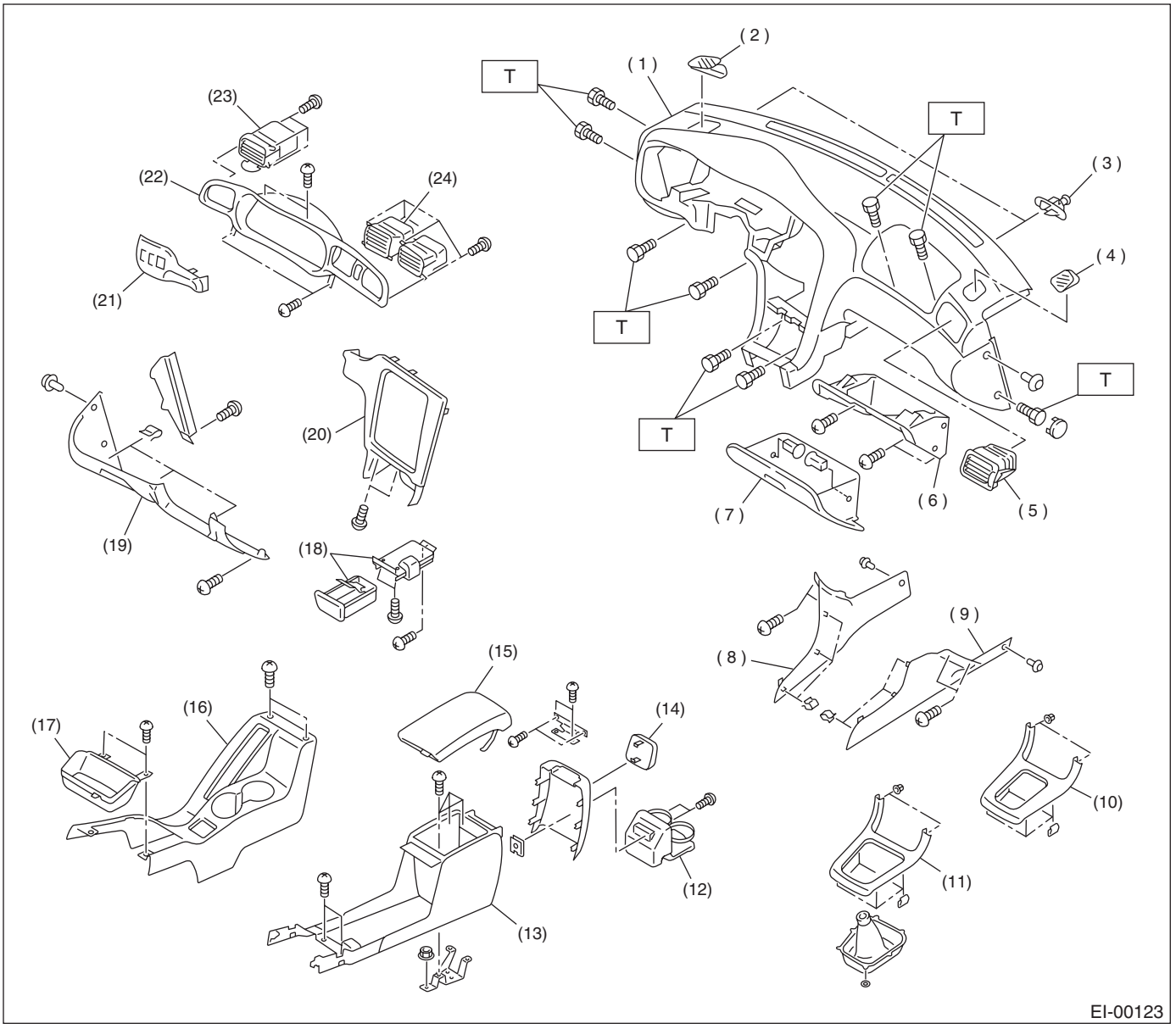
7. CARGO BED TRIM



(1) Cargo bed upper molding
(2) Cargo bed C pillar molding
(3) Cargo bed side molding
(4) Cargo bed side tray
(5) Tail gate molding
(6) Tail gate tray
(7) Cargo bed floor tray
(8) Back panel tray
(9) Clip
(10) Clip

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

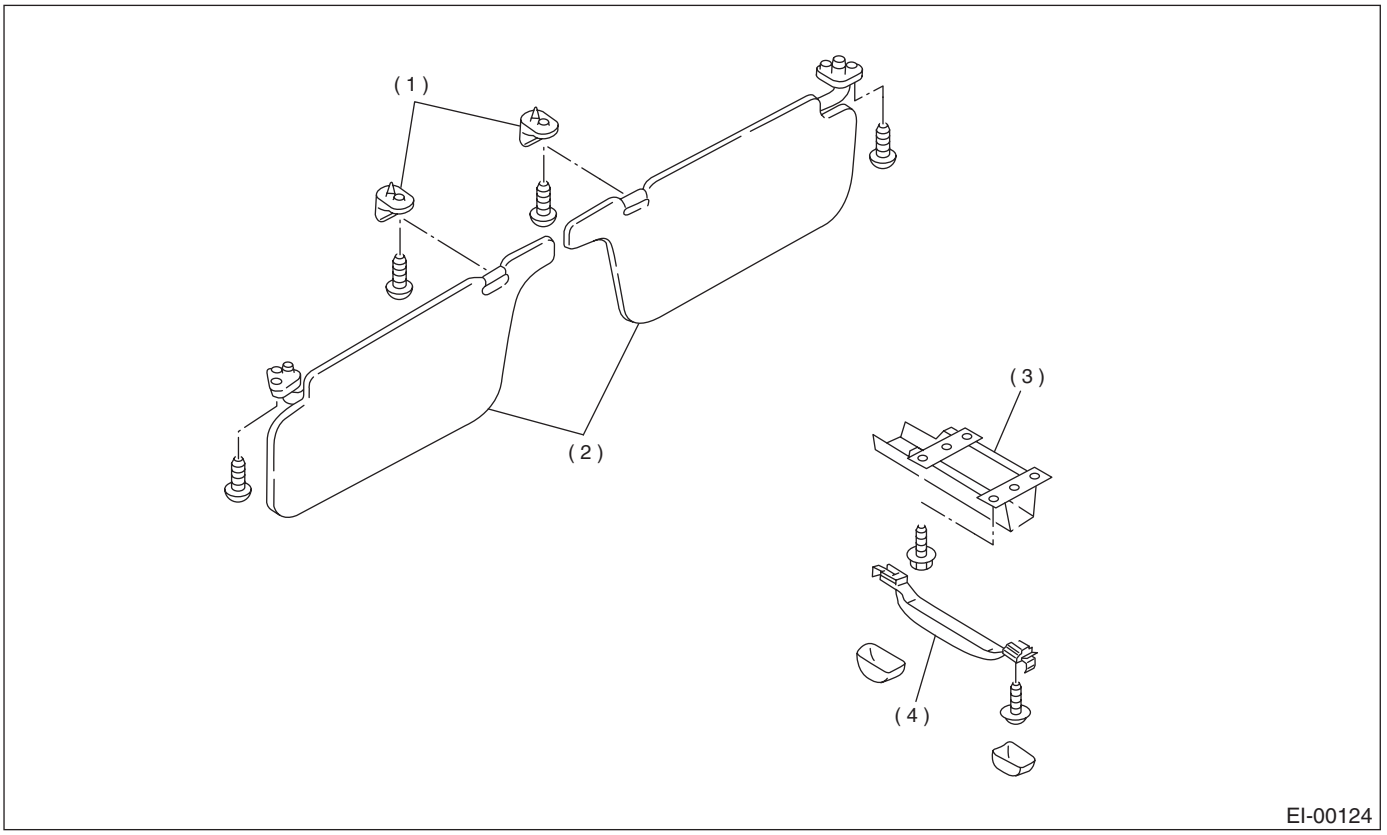
8. INSTRUMENT PANEL



(1) Pad & frame
(2) Grille side (D)
(3) Hook
(4) Grille side (P)
(5) Grille vent (P)
(6) Glove box panel
(7) Glove box lid
(8) Center panel side (D)
(9) Center panel side (P)
(10) Front cover (AT)
(11) Front cover (MT)
(12) Rear cup holder
(13) Console box
(14) Cap
(15) Console lid
(16) Console cover
(17) Tray
(18) Ash tray
(19) Lower cover
(20) Center panel
(21) Switch panel
(22) Meter visor
(23) Grille vent (D)
(24) Grille center

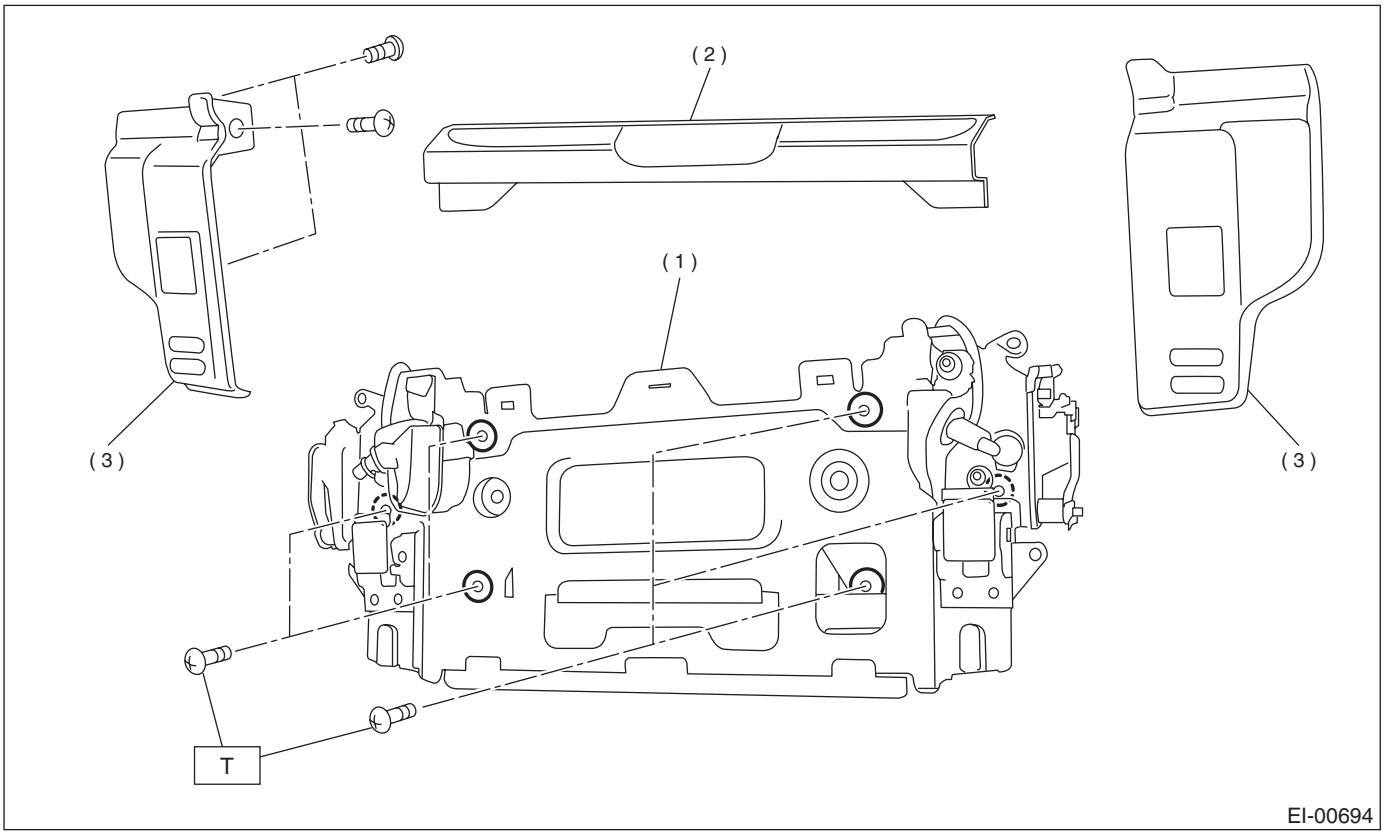
Tightening torque: N·m (kgf-m, ft-lb)
T: 7 (0.7, 5.1)

9. INNER ACCESSORIES



(1) Hook
(2) Sun visor
(3) Pad side rail
(4) Assist grip

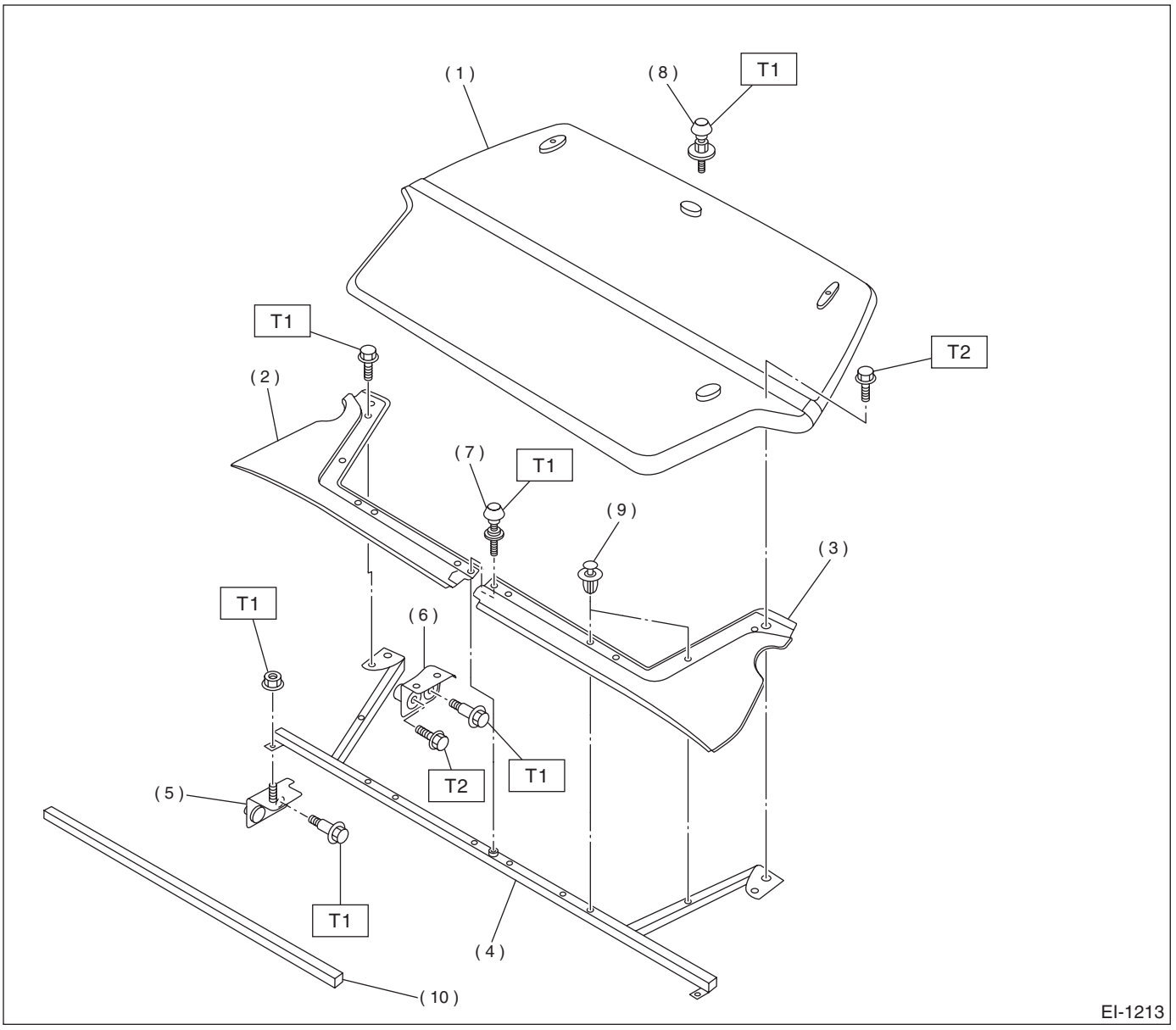
10.LICENSE PLATE BRACKET



(1) License plate bracket
(2) Upper cover
(3) Side cover

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

11.HARD BED COVER



(1) Hard bed cover
(2) Front cover RH
(3) Front cover LH
(4) Crossbar
(5) Front bracket
(6) Rear bracket
(7) Front striker
(8) Rear striker
(9) Clip
(10) Seal

Tightening torque: N·m (kgf-m, ft-lb)
T1: 7.5 (0.76, 5.53)
T2: 70 (7.1, 52)

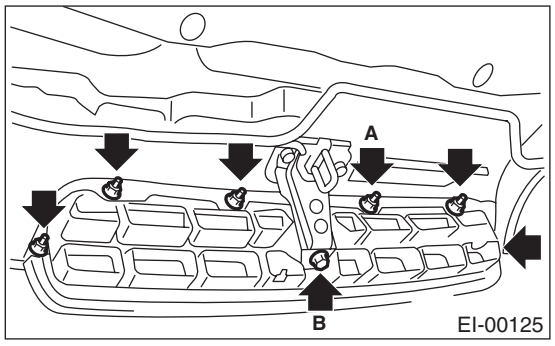
B: PREPARATION TOOL

TOOL NAME	REMARKS
Clip remover	Used for removal of trim.
Adhesive remover	Used for removal of side protector.
Primer	Used for installation of side protector.
Infrared lamp	Used for disassembly/assembly of side protector.
Tow-sided tape	Used for installation of side protector.
TORX® T30	Used for disassembly/assembly of crossbar, removal/installation of cargo bed.
TORX® T25	Used for removal/installation of cargo bed.

2. Front Grille

A: REMOVAL

1) Open hood.
2) Remove bolts and nuts to remove front grill.



B: INSTALLATION

Install in the reverse order of removal.

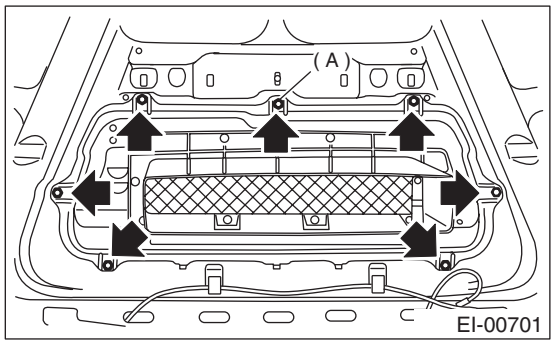
Tightening torque:

A: 4.4±1.5 N·m (0.4±0.1 kgf-m, 3.2±1.0 ft-lb)
B: 7.0±2.0 N·m (0.7±0.2 kgf-m, 5.1±1.4 ft-lb)

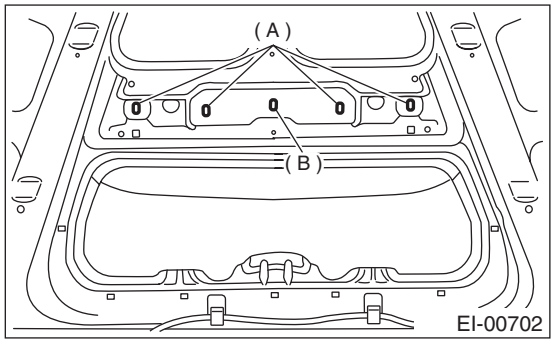
3. Hood Grille

A: REMOVAL

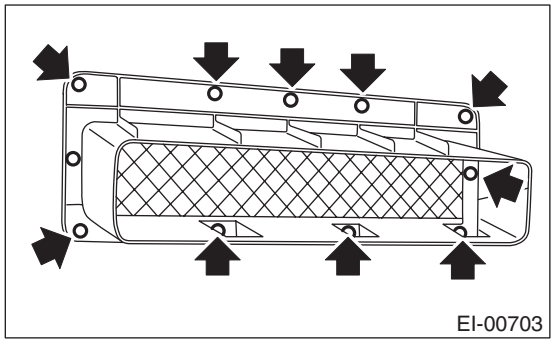
1) Remove hood insulator.
2) Remove six bolts and clip (A) to remove hood duct.



3) Loosen the nut (B), remove four clips (A), and then remove hood grille.



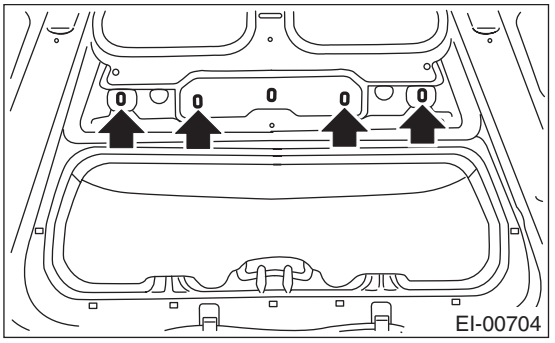
4) Remove eleven clips to remove air duct.



B: INSTALLATION

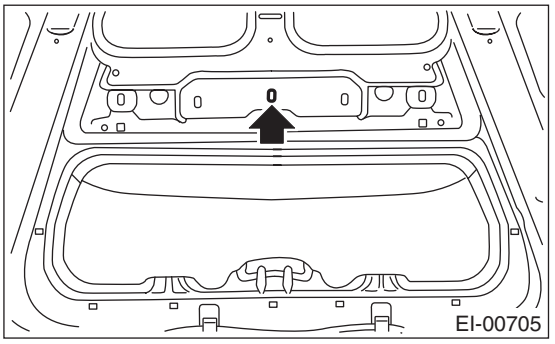
1) Engage four clips of hood grille to front hood panel.

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

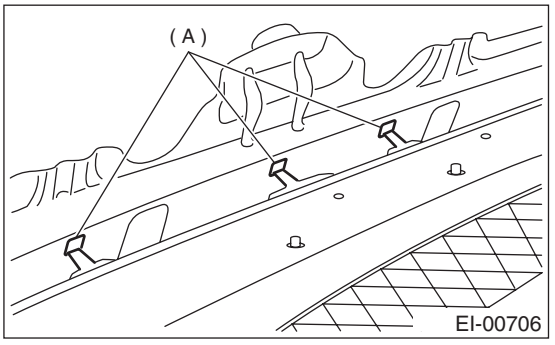


2) Install a nut.

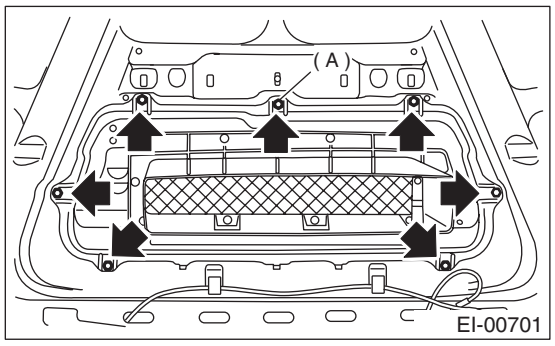
Tightening torque:
4.5 N·m (0.46 kgf-m, 3.32 ft-lb)



3) Catch three hooks (A) of hood duct to hood holes.



4) Install hood duct with clip (A) and six bolts.



5) Install the hood insulator with new clips.

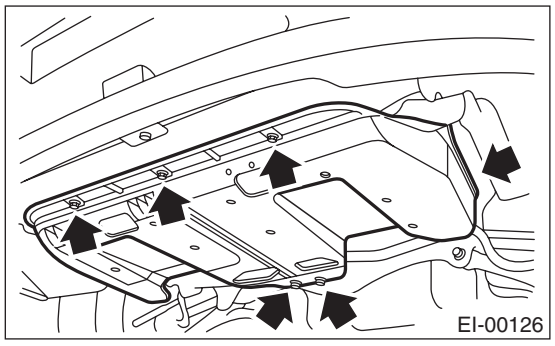
C: INSPECTION

Make sure that clips are firmly engaged.
Make sure that there is no abnormal gap at whole periphery of hood grille.
Make sure that there is no damage on hood grille.

4. Front Under Cover

A: REMOVAL

1) Lift-up the vehicle.
2) Remove bolts and clips to remove under cover.



B: INSTALLATION

Install in the reverse order of removal.

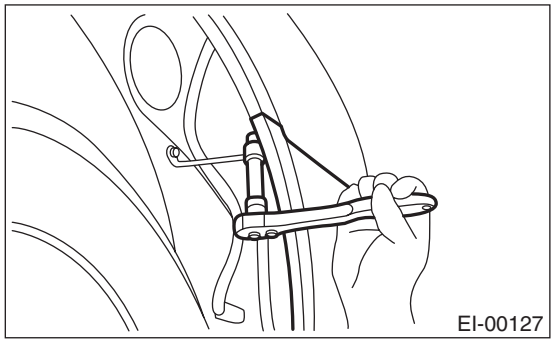
Tightening torque:
18 N·m (1.84 kgf-m, 13.3 ft-lb)

5. Front Bumper

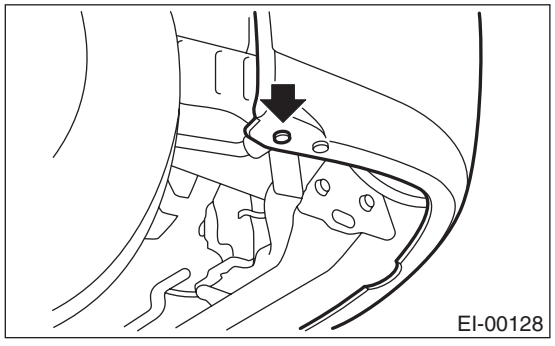
A: REMOVAL

CAUTION:
• Handle bumper carefully to avoid damage to bumper face.
• Do not damage body during removal or installation of bumper.
• To avoid damage to bumper, lay removed bumper on sheet spread on the floor. Do not lay it directly on the floor.

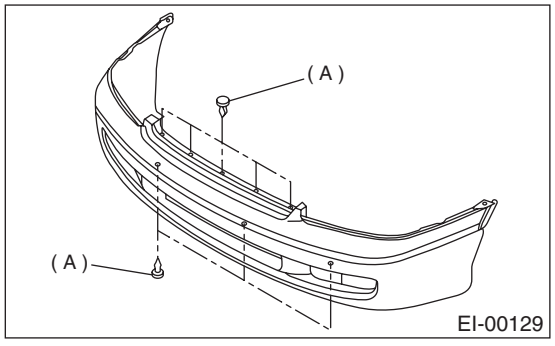
1) Open hood.
2) Disconnect ground cable from battery.
3) Pull off front side of front mat guard to remove bolts.


EI-00127

4) Remove clip at bottom of bumper.


EI-00128

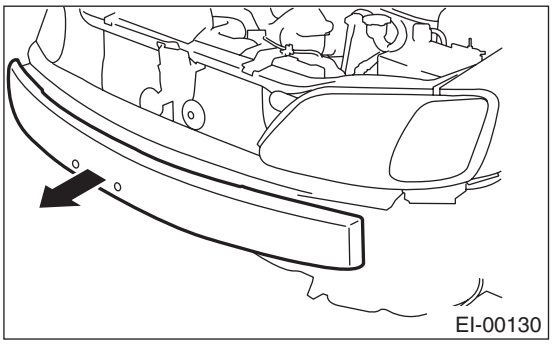
5) Remove clip (A), and pull out bumper slightly.
6) Disconnect harness connector of fog light to remove bumper.



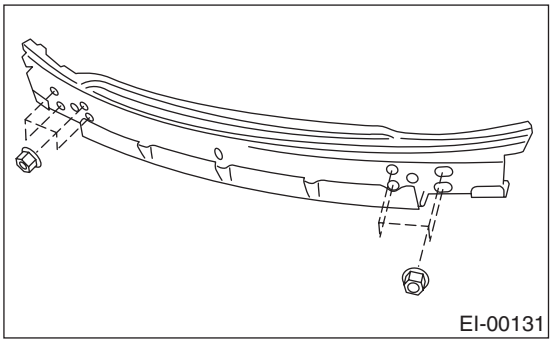
EI-00129

7) Remove Bumper energy absorber form from bumper beam.

CAUTION:
E/A FOAM is easy to brak. Do not apply excessive force to it during removal.


EI-00130

8) Remove bumper beam.


EI-00131

B: INSTALLATION

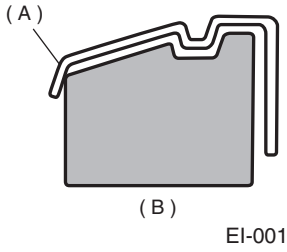
Install in the reverse order of removal.

CAUTION:
• Handle bumper carefully to avoid damage to bumper face.
• Do not damage body during removal or installation of bumper.

Tightening torque:
Refer to COMPONENT in General Description. <Ref. to EI-2, FRONT BUMPER, COMPONENT, General Description.>

C: REPAIR

1. COATING METHOD FOR PP BUMPER

Process No.	Process name	Job contents	
1	Bumper mounting	Set bumper (A) on paint worktable if required. Use paint worktable conforming to inner shape of bumper when possible (B).	 EI-00132
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 one to all parts to be painted, using air gun. Use primer (clear).	
5	Drying	Dry at normal temperature [10 to 15 min. at 20°C (68°F)]. In half-dried condition, PP primer paint is dissolved by solvent, e.g. thinner, etc. Therefore, if dust or dirt must be removed, use ordinary alcohol, etc.	
6	Top coat paint (I)	Solid color	Metallic color
		Use section (block) paint for top coat. • Paint in use (for each color): Solid paint Hardener PB Thinner T-301 • Mixing ratio: Main agent vs. hardener = 4:1 • Viscosity: 10 — 13 sec/20°C (68°F) • Film thickness: 35 — 45μ • Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kg/cm^2, 36 — 50 psi)	Use section (block) paint for top coat. • Paint in use (for each color): Metallic paint Hardener PB Thinner T-306 • Mixing ratio: Main agent vs. hardener = 10 : 1 • Viscosity: 10 — 13 sec/20°C (68°F) • Film thickness: 15 — 20μ • Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kg/cm^2, 36 — 50 psi)
7	Drying	Not required.	Dry at normal temperature [10 min. or more 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 in use: Metallic paint Hardener PB Thinner T-301 • Mixing ratio: Clear vs. hardener = 6 : 1 • Viscosity: 14 — 16 sec/20°C (68°F) • Film thickness: 25 — 30μ • Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kg/cm^2, 36 — 50 psi)
9	Drying	60°C (140°F), 60 min. or 80°C (176°F), 30 min. If higher than 80°C (176°F), PP may be deformed. Keep maximum temperature of 80°C (176°F).	
10	Inspection	Paint check.	
11	Masking removal	Remove masking in process No. 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. Damage limited to shallow scratches that cause only a change in the lustre of the base material or coating, can be almost fully restored. Before repairing a damaged area, explain this point to the customer and get an understanding about the matter. Repair methods are outlined below, based on a classification of the extent of damage.

• Minor damage causing only a change in the lustre 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 a soft cloth (such as flannel). Recommended wax: NITTO KASEI Soft 99 TIRE WAX BLACK, or equivalent.</td><td rowspan="2">Perform either the same operation as for the resin section or process No. 18 and subsequent operations in the “(3)” section, depending on the degree and nature of damage.</td></tr>
<tr><td>Polish the waxed area with a clean cloth after 5 to 10 minutes.</td></tr>
</table>

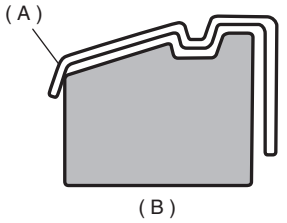
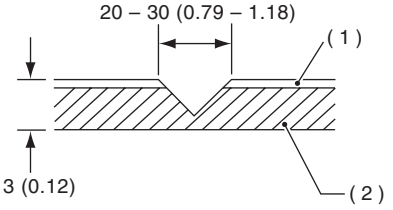
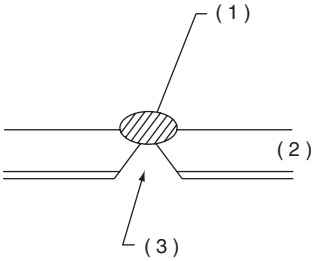
• Deep damage caused by scratching fences, etc.

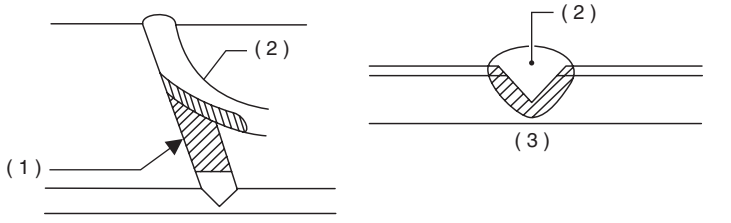
A dent cannot be repaired but a whitened or swelled part can be removed.

<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 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 to #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>

• Deep damage such as a break or hole that requires filling

Much of the peripheral grained surface must be sacrificed for repair, and 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 bumper as required.	
2	Part removal	Remove parts built into bumper as required.	
3	Bumper placement	Place bumper (A) on a paint worktable as required. It is recommended that contour of worktable accommodate internal shape of bumper (B).	 EI-00132
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).	
5	Cutting	If nature of damage are cracks or holes, cut a guide slit of 20 to 30 mm (0.79 to 1.18 in) in length along the crack or hole up to the bumper's base surface. Then, bevel or “vee-out” the affected area using a knife or grinder.	Unit: mm (in)  EI-00134 (1) Paint surface (2) PP base surface
6	Sanding (I)	Grind beveled surface with sand paper (#40 to #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 to #60) and clean using a solvent. Temporarily spot-weld the side, using a PP welding rod and heater gun.	 EI-00135 (1) Welded spot (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 the rod and damaged area.
		 EI-00136 (1) Melt hatched area (2) Welding rod (3) Section NOTE: • Melt the sections indicated by hatched area. • Do not melt 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 one coat of primer at a spraying pressure of 245 to 343 kPa (2.5 to 3.5 kg/cm^2, 36 to 50 psi) with a spray gun.
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 dampended with alcohol. (Do not use thinner since the coated area tends to melt.)
15	Primer surfacer coating	Apply a coat of primer surfacer to the repaired area two or three times at an interval of 3 to 5 minutes. Recommended surfacer: • UPS 300 Flex Primer • No. 303 UPS 300 Exclusive hardener • NPS 725 Exclusive Reducer (thinner) • Mixing ratio: 2 : 1 (UPS 300: No. 303) • Viscosity: 12 — 14 sec/20°C (68°F) • Coated film thickness: 40 — 50μ
16	Drying	Allow the coated surface to dry for 60 minutes at 20°C (68°F) [or 30 minutes at 60°C (140°F)].
17	Sanding (III)	Sand the coated surface and its surrounding areas using #400 sand paper and water.

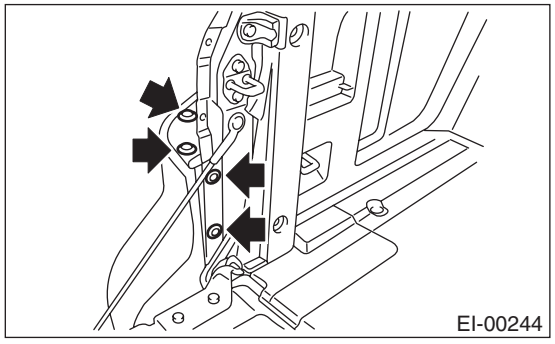
Process No.	Process name	Job contents	
18	Cleaning/ degreasing	Same as Process No. 12.	
19	Top coat (I)	Solid color	Metallic color
		Use a “block” coating method. • Recommended paint: Suncryl (SC) No. 307 Flex Hardener SC Reducer (thinner) • Mixing ratio: 3 : 1 Suncryl (SC) vs. No. 307 Flex Hardener • Viscosity: 11 — 13 sec/20°C (68°F) • Coated film thickness: 40 — 50μ • Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kg/cm^2, 36 — 50 psi)	Use a “block” coating method. • Recommended paint: Suncryl (SC) No. 307 Flex Hardener SC Reducer (thinner) • Mixing ratio: 3 : 1 Suncryl (SC) vs. No. 307 Flex Hardener • Viscosity: 11 — 13 sec/20°C (68°F) • Coated film thickness: 20 — 30μ • Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kg/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) • Mixing ratio: 3 : 1 Suncryl (SC) vs. No. 307 Flex Hardener • Viscosity: 10 — 13 sec/20°C (68°F) • Coated film thickness: 20 — 30μ • Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kg/cm^2, 36 — 50 psi)
22	Drying	Allow the coated surface to dry at 20°C (68°F) for two hours or 60°C (140°F) for 30 minutes. 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	Masking removal	Remove masking tape applied in Process No. 11 and 13.	
25	Parts installation	Install parts on bumper in reverse order of removal.	
26	Bumper installation	Install bumper.	

6. Rear Bumper

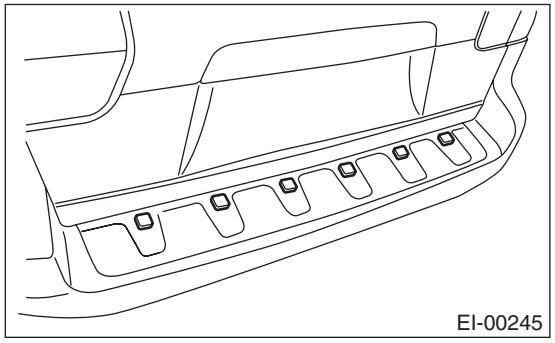
A: REMOVAL

CAUTION:
• Handle bumper carefully to avoid damage to bumper face.
• Do not damage body during removal or installation of bumper.
• To avoid damage to bumper, lay removed bumper on sheet spread on the floor. Do not lay it directly on the floor.

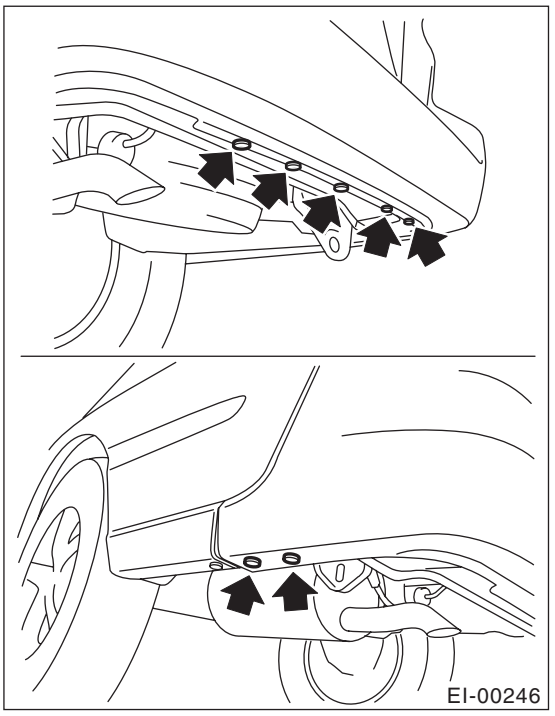
1) Remove rear combination light. <Ref. to LI-19, REMOVAL, Rear Combination Light Assembly.>
2) Remove clip.


EI-00244

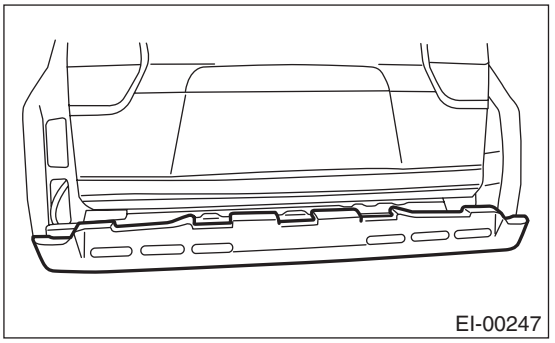
3) Remove clip.


EI-00245

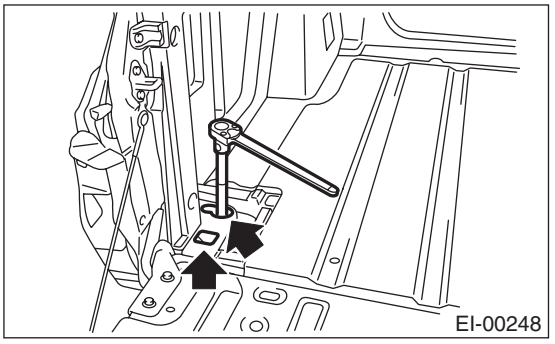
4) Remove clip.


EI-00246

5) Remove bumper face.
6) Remove Bumper energy absorber.


EI-00247

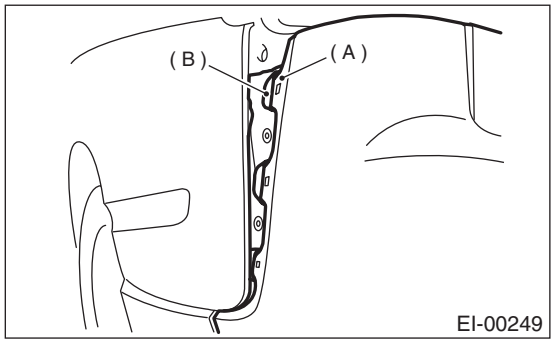
7) Remove bolt and bumper beam.


EI-00248

B: INSTALLATION

CAUTION:
• Handle bumper carefully to avoid damage to bumper face.
• Do not damage body during removal or installation of bumper.

1) Install in the reverse order of removal.
2) Securely fix bumper edge portion (A) to side bracket (B).



Tightening torque:
Bumper beam; 95 N·m (9.7 kgf-m, 70 ft-lb)

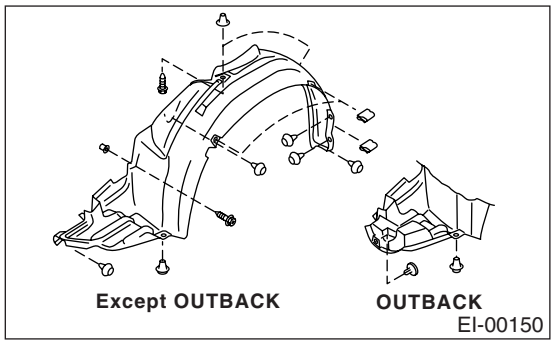
C: REPAIR

Refer to front bumper repair. <Ref. to EI-18, REMOVAL, Front Bumper.>

7. Mud Guard

A: REMOVAL

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

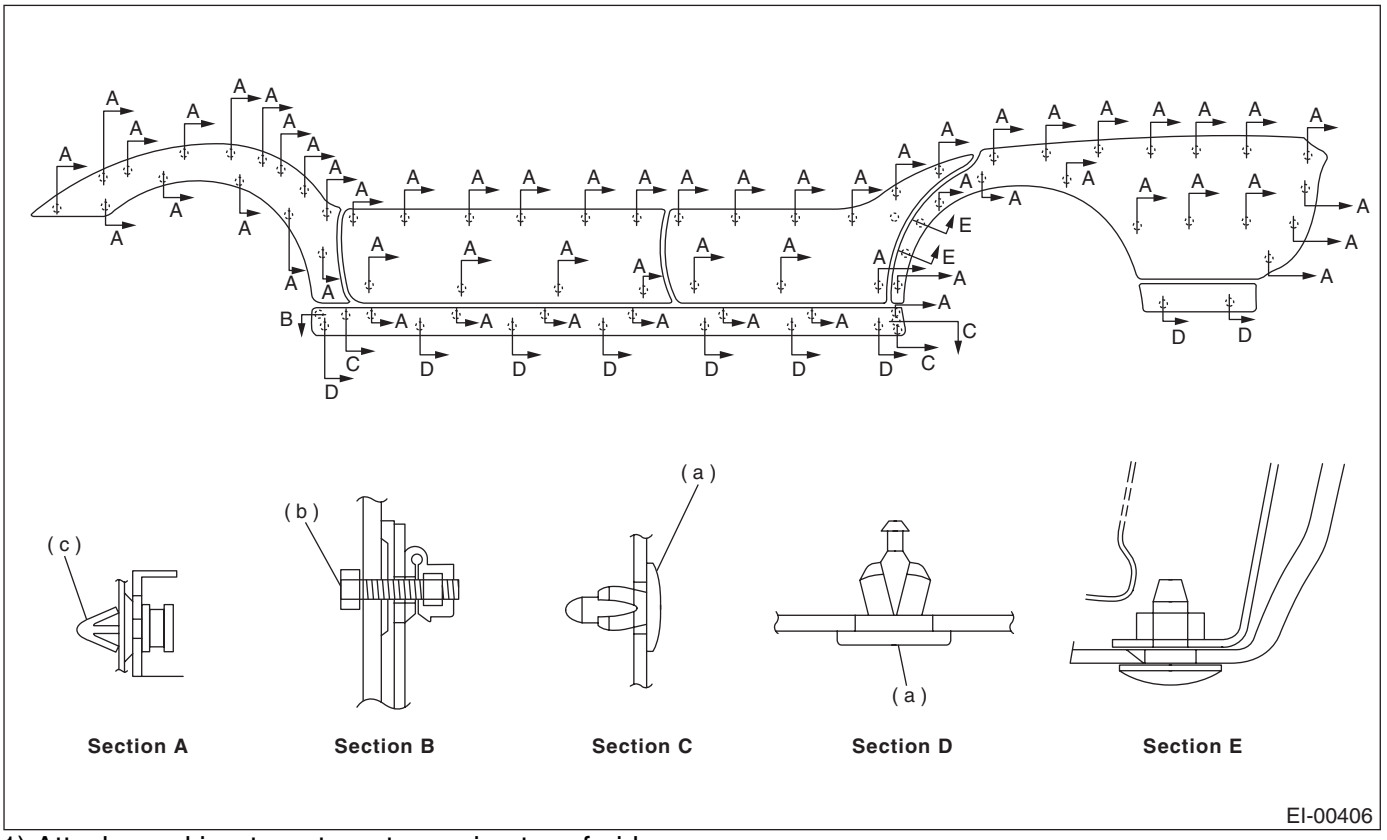


B: INSTALLATION

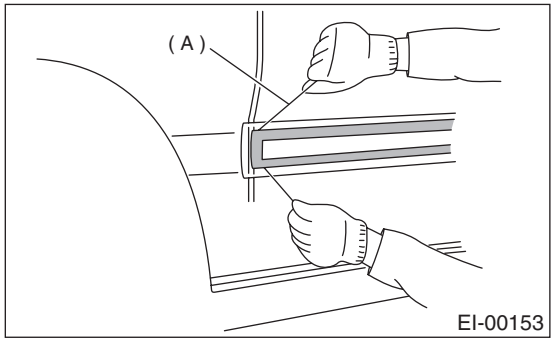
Insert hook into body, and tighten it with screw and clip.

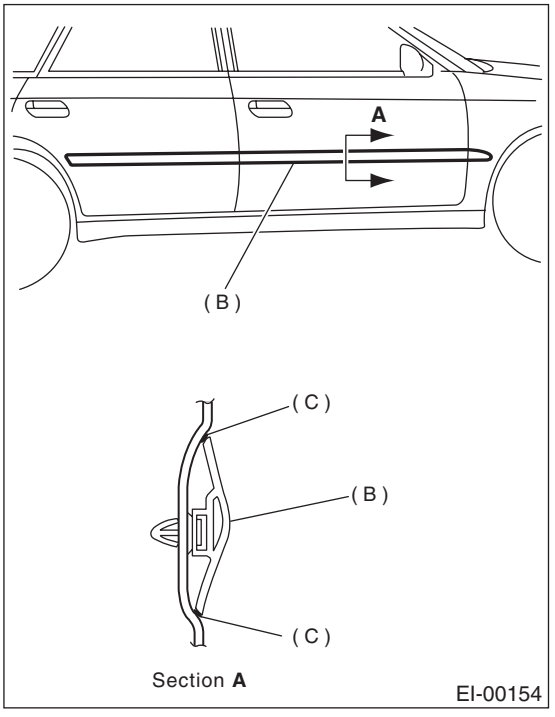
8. Protector

A: REMOVAL



1) Attach masking tape to outer perimeter of side protector. (If original side protector is re-installed, tape the entire protector.)
2) Insert fishing line [0.8 mm (0.031 in) dia.] (A) between side protector (B) and vehicle body. Cut (pull the line) through two-sided tape (C) along side protector on the body. Using a puller, remove clips from vehicle body while pulling side protector towards yourself as required.





NOTE:
• To increase adhesive remover strength, leave two-sided tape on body and side protector.
• If two-sided tape is too thick, use a putty knife to cut it thin so that adhesive remover is ready for use.
• If two-sided tape is hard to remove, heat to approximately 40°C (104°F).

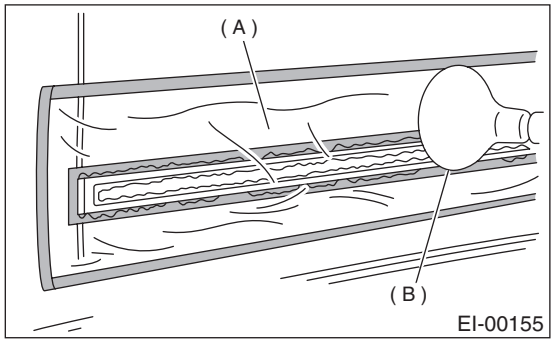
3) Apply an even coat of adhesive remover to the two-sided tape.

Recommended adhesive remover:
SUMITOMO 3M4000 or equivalent

CAUTION:
Do not apply adhesive remover to lacquer base coated body panels.

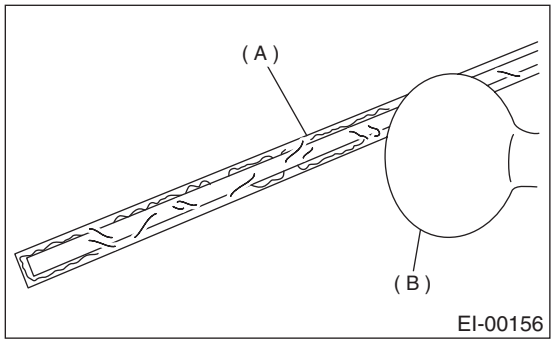
4) Attach plastic wrap (A) to adhesive remover coated areas and heat to 40 to 60°C (104 to 140°F) for 5 to 10 minutes using an infrared lamp (B).

CAUTION:
Do not overheat until plastic wrap is somewhat white.



5) Using a plastic spatula, remove traces of two-sided tape from body panel.
6) Remove masking tape and clean traces of two-sided tape using a cloth dampened with white gasoline.
7) Similarly, clean traces of adhesive from two-sided tape on side protector.

CAUTION:
Make sure side protector is clean and free of adhesive remover. Clean if necessary.



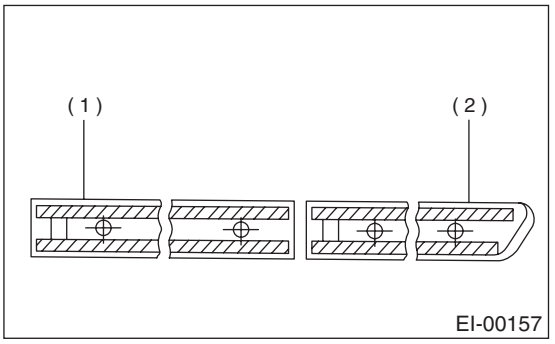
B: INSTALLATION

1) Apply primer to original side protector (if used), and attach two-sided tape to side protectors as shown.

Two-sided tape:
Thickness; 1.2 mm (0.047 in)
Width; 5 mm (0.20 in)

Recommended primer:
SUMITOMO 3MK-500 or equivalent

Recommended two-sided tape:
SUMITOMO 3M4210 or equivalent



(1) Front door part
(2) Rear door part

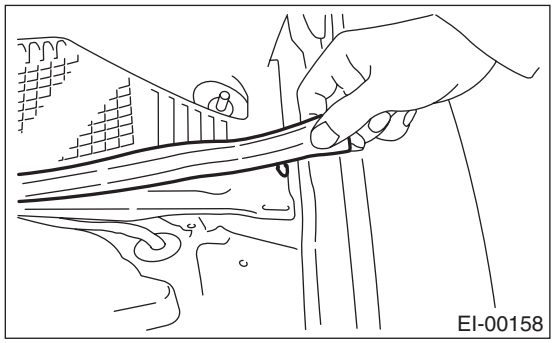
2) Using an infrared lamp, heat body panel to 40 to 60°C (104 to 140°F) and rear surface of side protector to 20 to 30°C (68 to 86°F).
3) Remove tack paper from two-sided paper. While aligning clips with holes in body panel, attach two-sided tape to side protector and body panel with a force of more than 49 N (5 kgf, 11 lb) with roller. Do not allow air to enter mating surface of the two.

CAUTION:
• To maintain adhesive power, do not wash the vehicle for 24 hours after tape application.
• Push clip in securely using hands.
(To prevent deformation, do not use excessive force.)

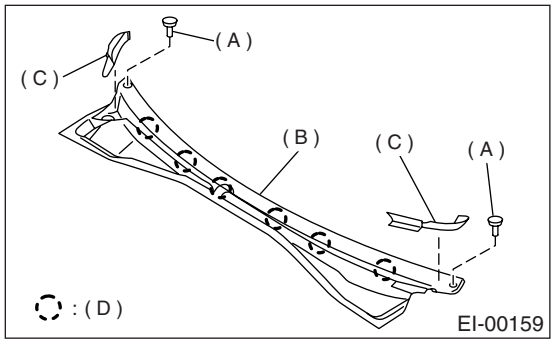
9. Cowl Panel

A: REMOVAL

1) Open hood.
2) Remove wiper arm. <Ref. to WW-10, REMOVAL, Front Wiper Arm.>
3) Remove front panel seal.



4) Remove clips (A) and cowl side panel (C). Loosen clips (D) on six positions, and remove cowl side panel (B).



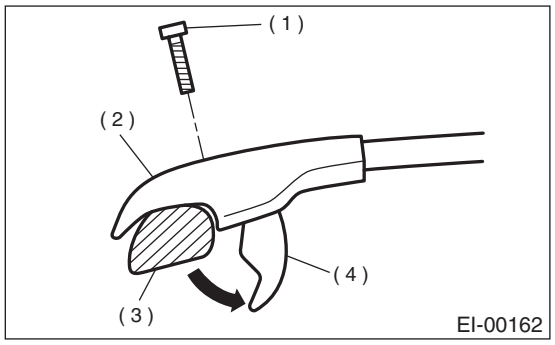
B: INSTALLATION

Install in the reverse order of removal.

10.Crossbar

A: REMOVAL

1) Remove TORX® bolt T30 from each cross end support.
2) Rotate lower clamp of each end support about 90 degrees downward to remove crossbar.



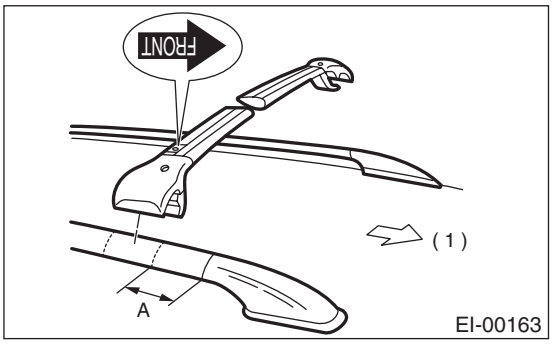
(1) TORX® bolt T30
(2) End support
(3) Roof rail
(4) Lower clamp

CAUTION:
Do not damage roof panel during removal or installation.

B: INSTALLATION

1) Rotate lower clamp of each end support about 90 degrees downward.
2) Set crossbar so that front direction arrow on the right top face of crossbar points in the direction of vehicle front, and place crossbar end support at position 152.4 mm (6.00 in) back from joint of front roof rail support and roof rail.

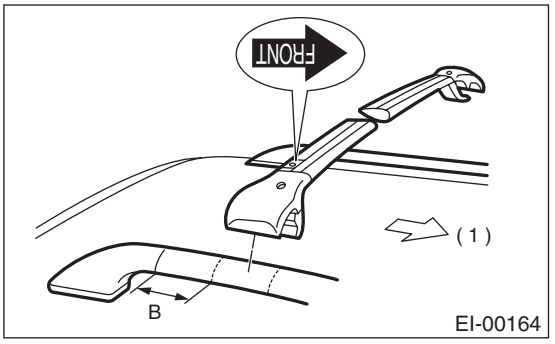
Length A:
152.4 mm (6.00 in)



(1) Front of vehicle

3) Set crossbar so that front direction arrow on the right top face of crossbar points in the direction of vehicle front, and place crossbar end support at position 152.4 mm (6.00 in) back from joint of rear roof rail support and roof rail.

Length B:
152.4 mm (6.00 in)



(1) Front of vehicle

4) Tighten end support and lower clamp using TORX® bolt T30.

11.Trailer Hitch

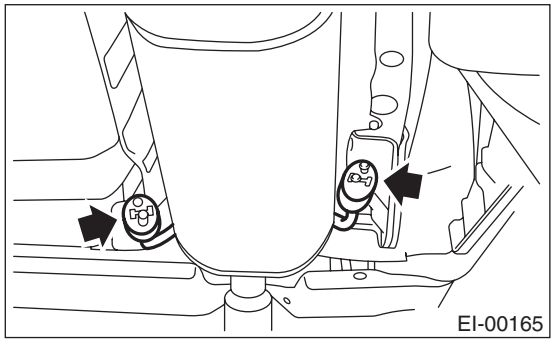
A: REMOVAL

CAUTION:
Because trailer hitch is heavy, two people are required to remove it.

1) Lift-up the vehicle.
2) Remove rubber cushion from body.

NOTE:
If rubber cushion is hard to remove, apply SUBARU CRC.

SUBARU CRC (Part No. 004301003)

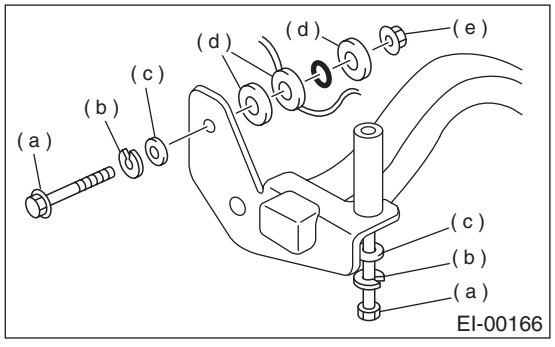


3) Remove strap (a).
4) Remove bolts. Remove trailer hitch while lowering muffler.

B: INSTALLATION

CAUTION:
Because trailer hitch is heavy, two people are required to remove it.

1) Install in the reverse order of removal.
2) For installation method of bolt, see the figure.



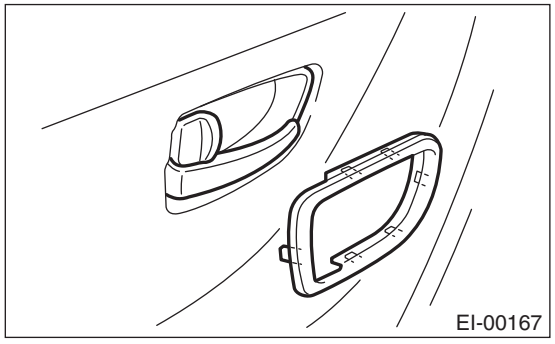
(a) Bolt
(b) Spring washer
(c) Flat washer
(d) Plate
(e) Nut

12.Front Door Trim

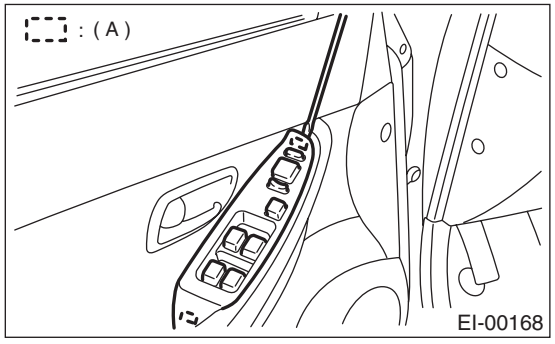
A: REMOVAL

CAUTION:
Do not apply excessive force to clip. Otherwise the clip may be broken.

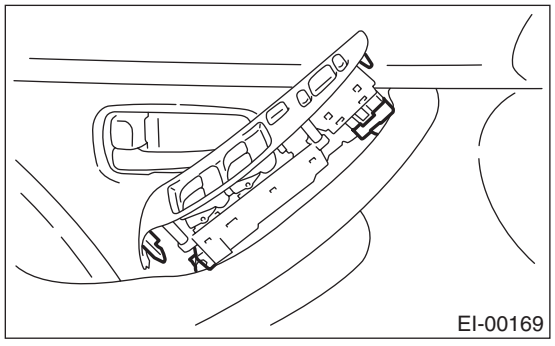
1) Pull up inner remote cover toward you to remove upper hook. Pull down it to remove lower claw. Remove inner remote cover.



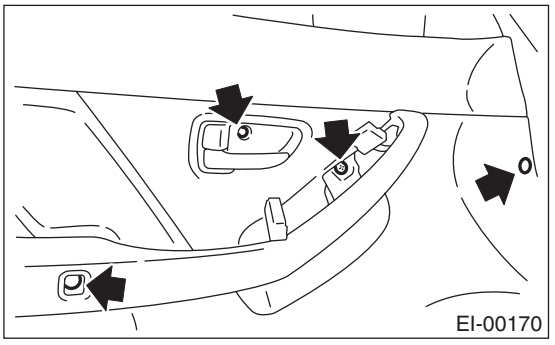
2) Remove two hook (A) of switch panel to remove power window main switch.



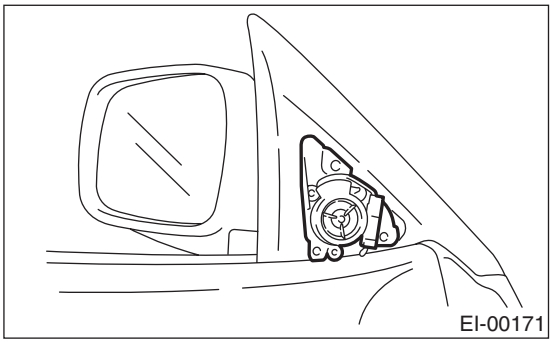
3) Disconnect electrical connectors from power window main switch and mirror switch.



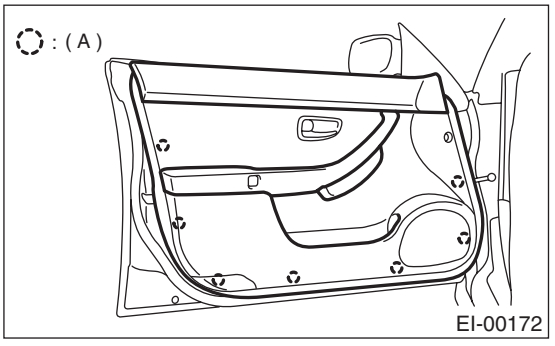
4) Remove three screws and clips.



5) Remove gusset cover. Disconnect electrical connectors to remove speaker.



6) Remove seven clips (A) of trim panel using clip remover to remove trim panel.



B: INSTALLATION

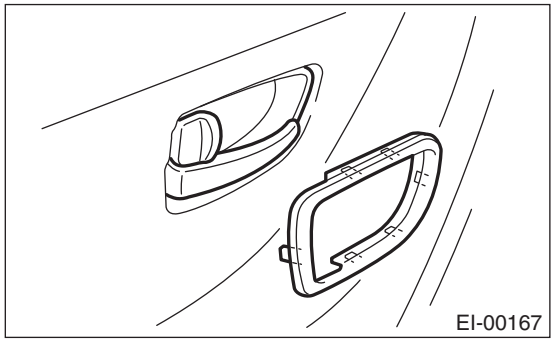
Install in the reverse order of removal.

13.Rear Door Trim

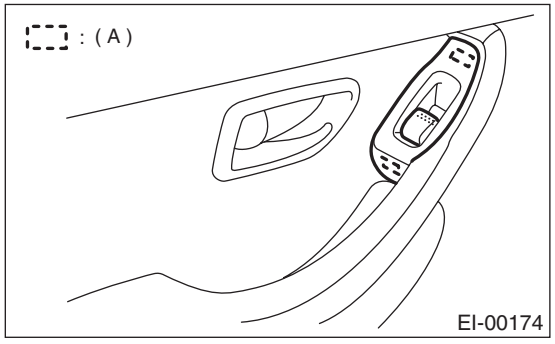
A: REMOVAL

CAUTION:
Do not apply excessive force to clip. Otherwise the clip may be broken.

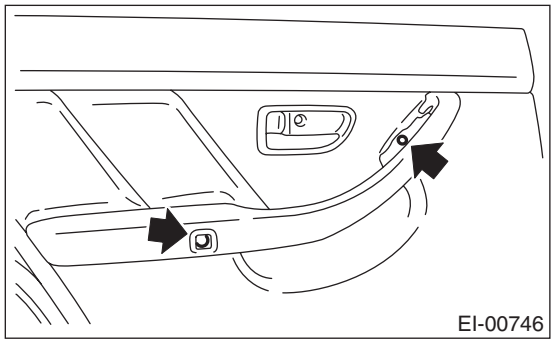
1) Pull up inner remote cover toward you to remove upper hook. Pull down it to remove lower claw. Remove inner remote cover.



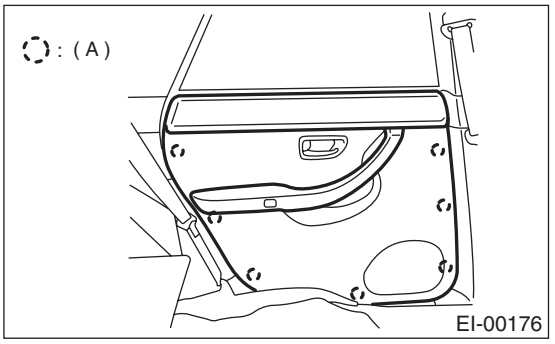
2) Remove two hook (A) of switch panel to remove power window sub switch and disconnect electrical connector.



3) Remove two screws and clips.



4) Remove seven clips (A) of trim panel using clip remover to remove trim panel.



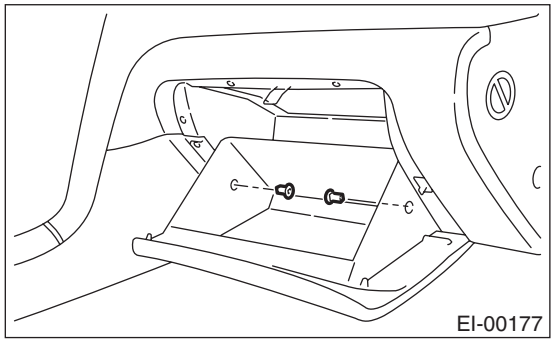
B: INSTALLATION

Install in the reverse order of removal.

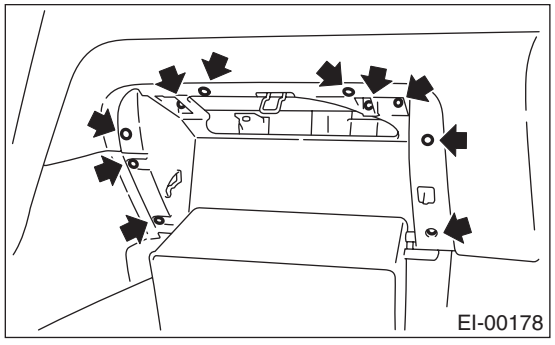
14.Glove Box

A: REMOVAL

1) Remove stoppers.



2) Removal screws to remove glove box.



B: INSTALLATION

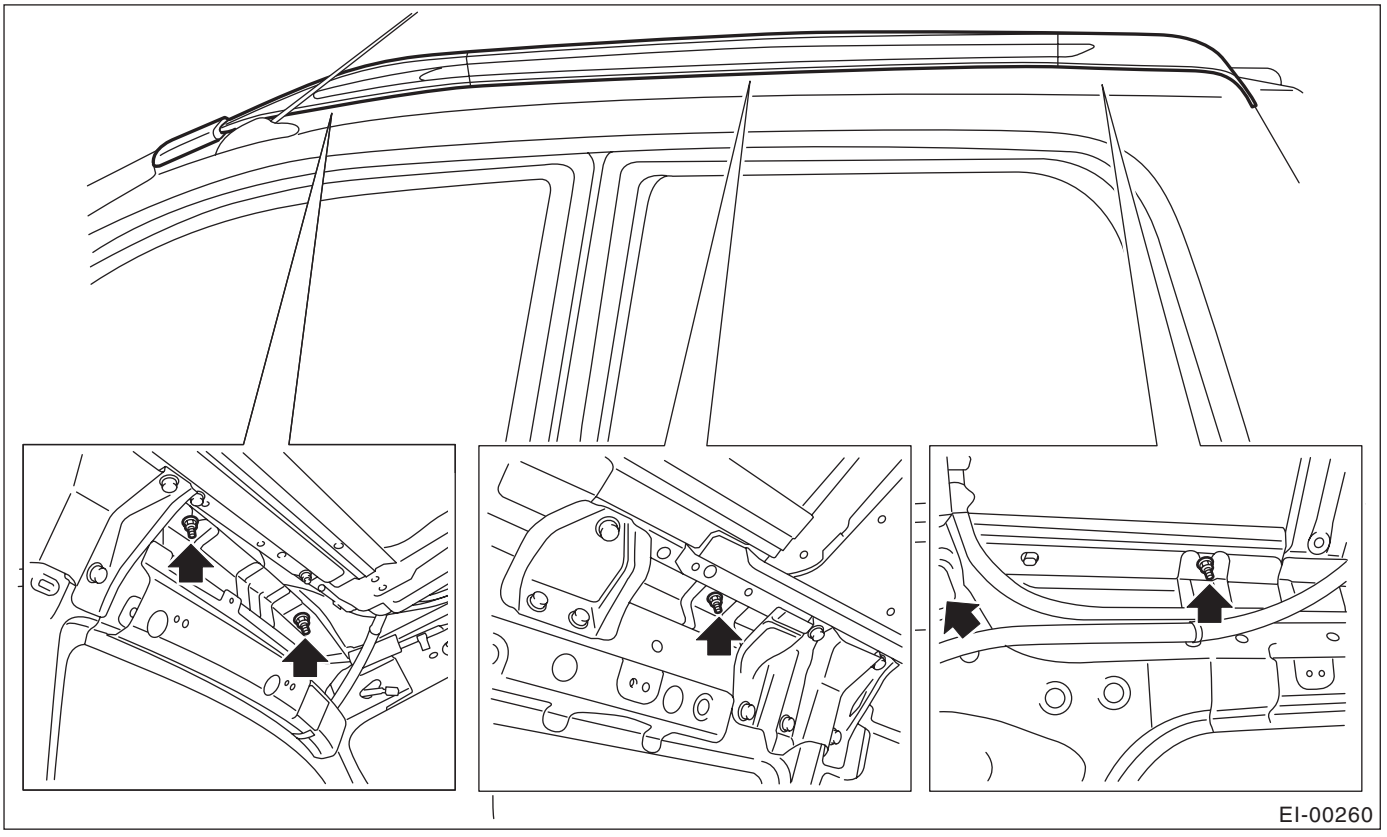
Install in the reverse order of removal.

15.Roof Rail

A: REMOVAL

CAUTION:
When removing roof rail, use great care not to damage body panel by stud bolt.

1) Remove cargo bed upper molding. <Ref. to EI-49, REMOVAL, Cargo Bed Upper Molding.>
2) Remove roof trim. <Ref. to EI-44, REMOVAL, Roof Trim.>
3) Remove five nuts and roof rail.
4) Remove roof molding.



B: INSTALLATION

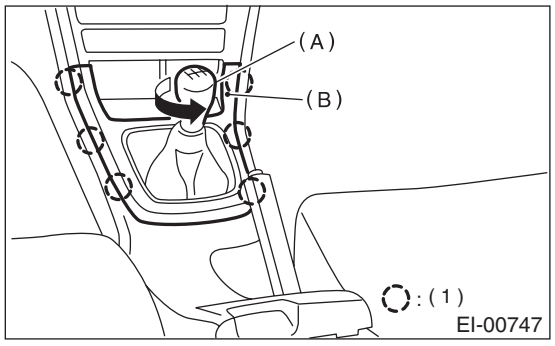
Install in the reverse order of removal.

CAUTION:
Be careful not to scratch body panels with roof rail stud bolts when installing them.

16.Console Box

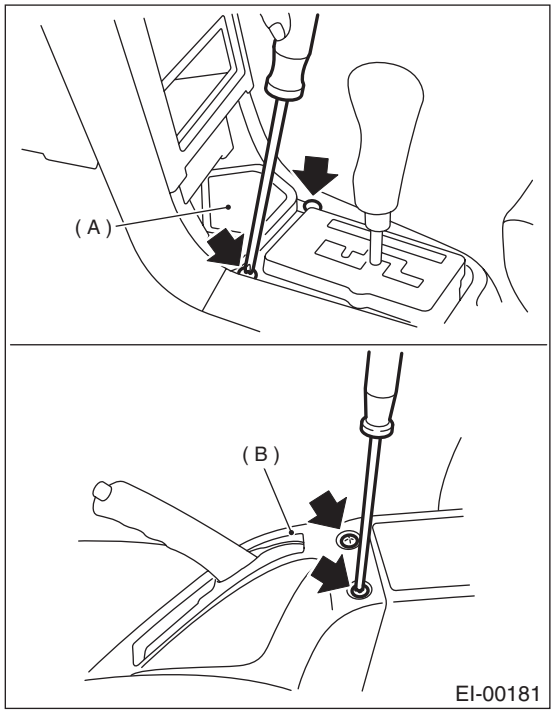
A: REMOVAL

1) Remove shift knob (A) (MT model) and front cover (B).

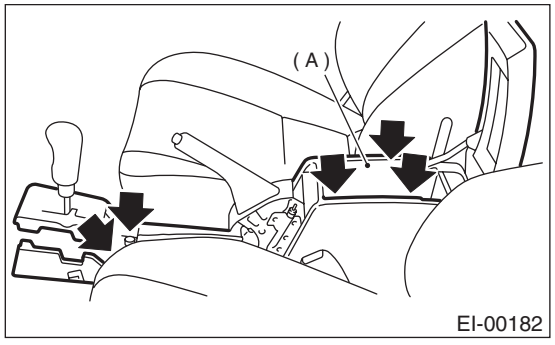


(1) Hook pawl

2) Remove tray (A) and console cover (B).



3) Remove console box (A).



B: INSTALLATION

Install in the reverse order of removal.

17.Instrument Panel Assembly

A: REMOVAL

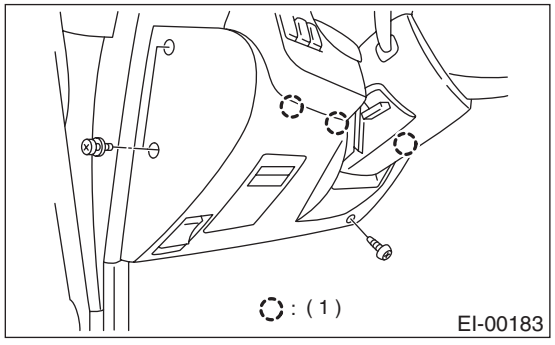
Airbag system wiring harness is routed near the combination meter.

WARNING:

• All airbag system wiring harness and connectors are colored yellow. Do not use electrical test equipment on these circuits.

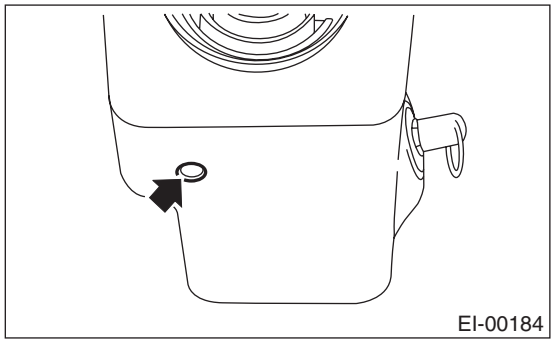
• Be careful not to damage airbag system harness when servicing the instrument panel.

1) Disconnect ground cable from battery.
2) Remove lower cover.



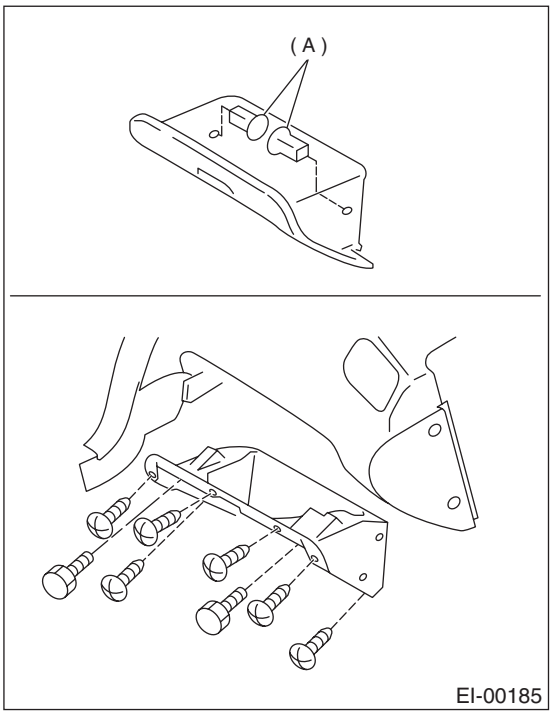
(1) Hook pawl

3) Remove lower column cover and disconnect harness connectors to steering column.

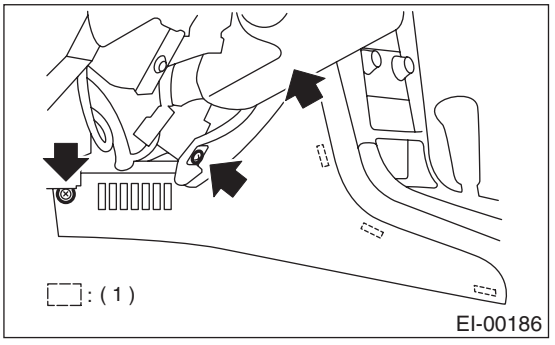


4) Remove steering column assembly (with steering wheel). <Ref. to PS-20, REMOVAL, Tilt Steering Column.>

5) Remove stopper (A) then remove glove box.

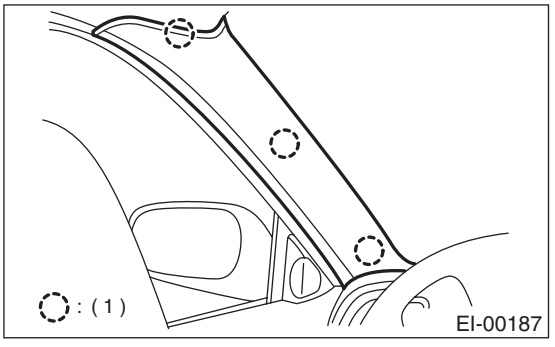


6) Remove side panel of both sides.



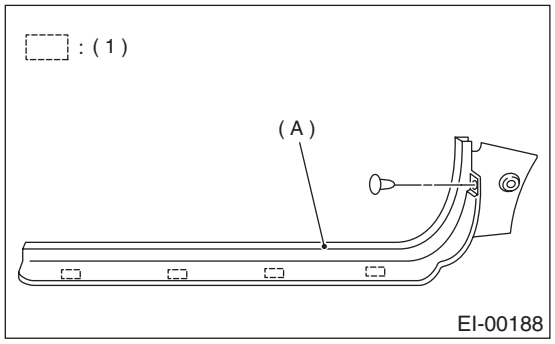
(1) Hook pawl

7) Remove passenger's airbag module. <Ref. to AB-14, REMOVAL, Passenger's Airbag Module.>
8) Remove console box. <Ref. to EI-36, REMOVAL, Console Box.>
9) Remove front pillar upper trim of both sides.



(1) Hook pawl

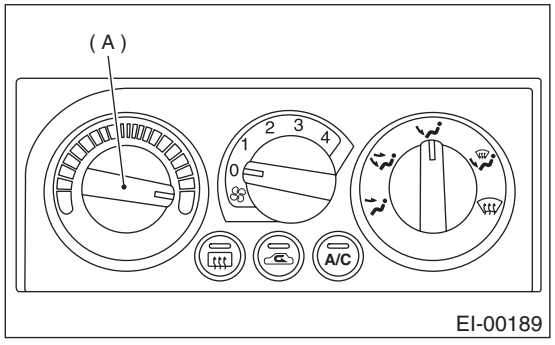
10) Remove front pillar lower trim (A) of passenger side.



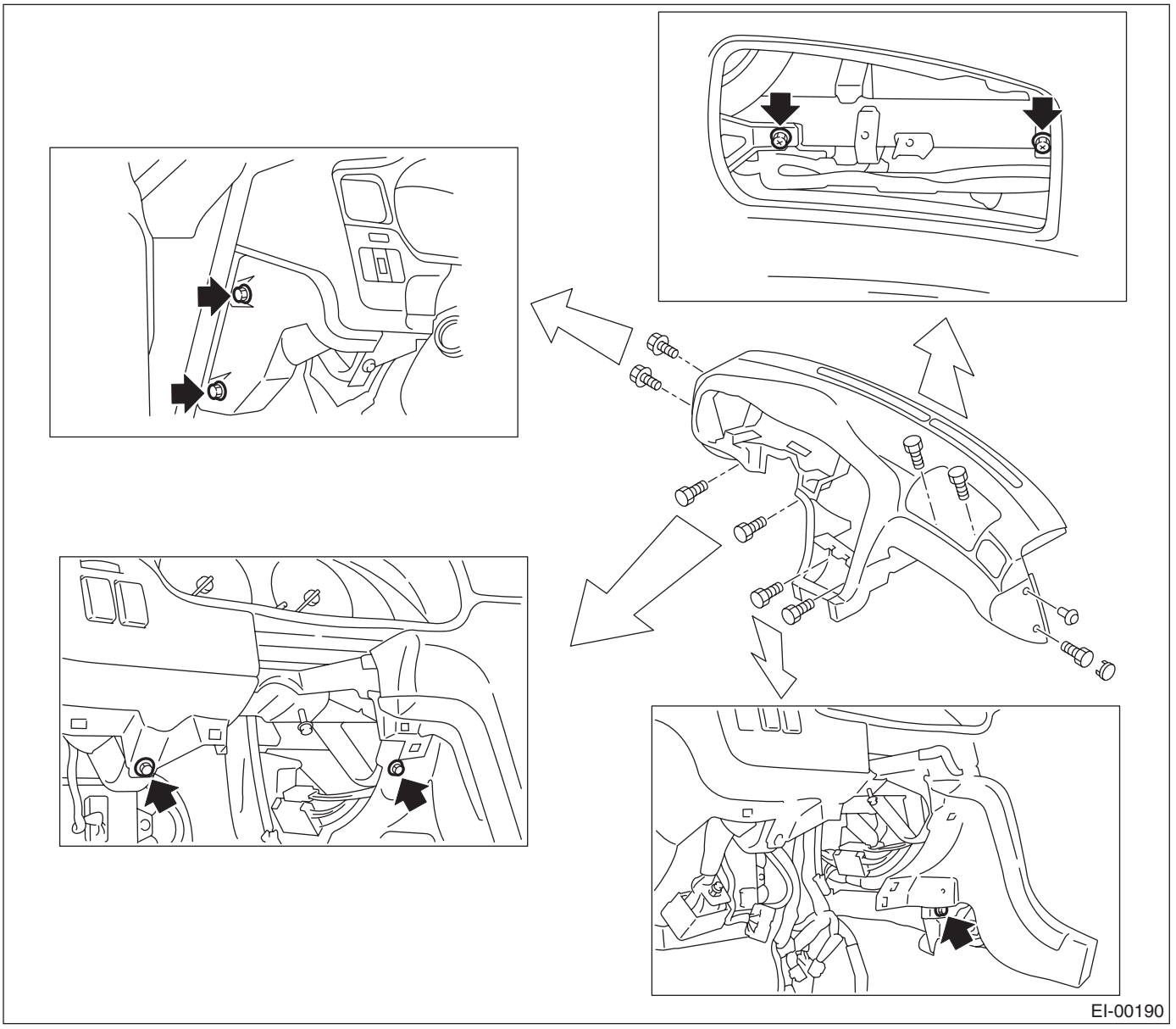
(1) Hook pawl

11) Set temperature control switch (A) to “FULL HOT” and then disconnect temperature control cable from bottom of heater unit. (Manual A/C equipped model)

NOTE:
Do not move the switch and link when installing.



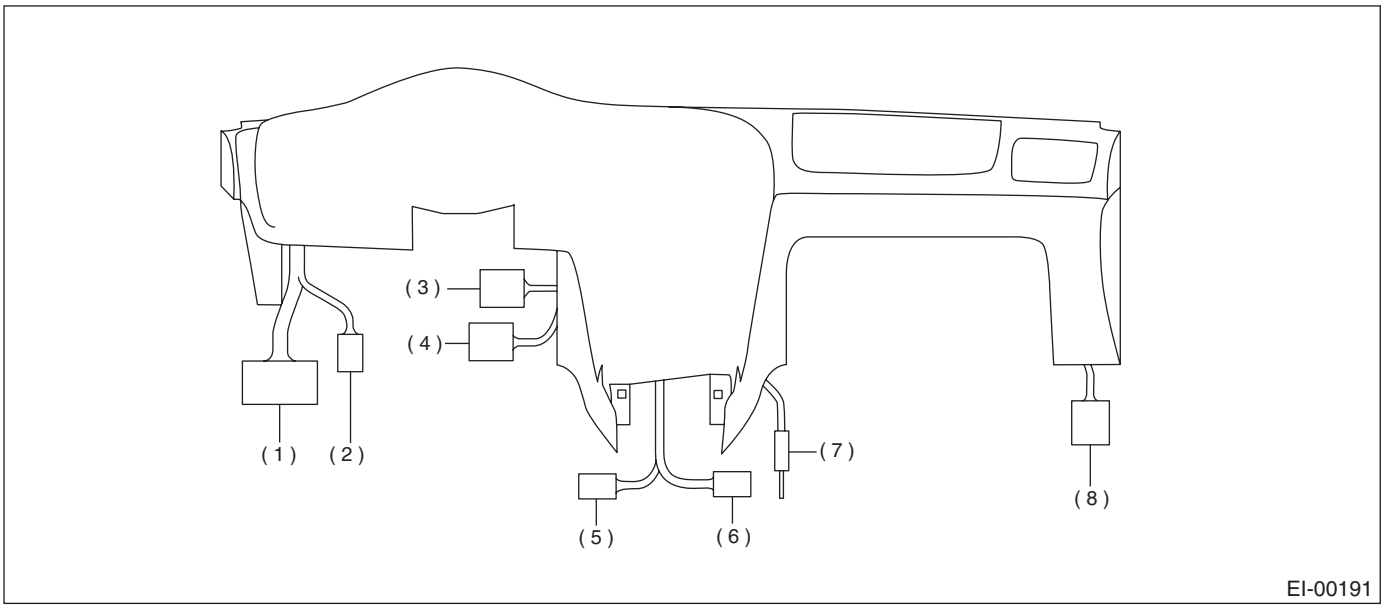
12) Remove instrument panel mounting bolts.



13) Disconnect harness connectors and remove instrument panel ASSY carefully.

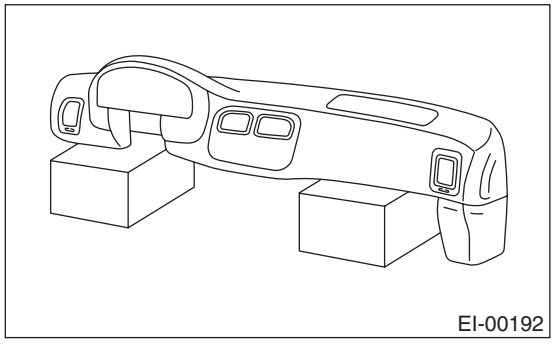
CAUTION:
Do not pull the harness when disconnecting the connector.

NOTE:
If necessary, make matching marks for easy reassembly.



(1) SMJ/White
(2) 2P/Blue
(3) 10P/White
(4) 8P/White
(5) 1P/Black
(6) 1P/Black
(7) Antenna feeder
(8) 16P/Blue

CAUTION:
• Take care not to scratch the instrument panel and related parts.
• When storing the removed instrument panel, place it standing up on the floor.

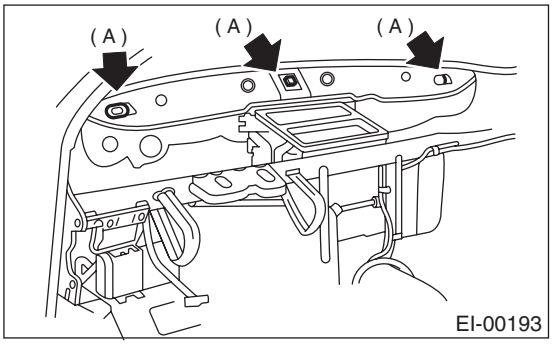


B: INSTALLATION

Install in the reverse order of removal.

CAUTION:
• Be careful not to snag the harness.
• Make sure to connect harness connector.
• Take care not to scratch the instrument panel and related parts.

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

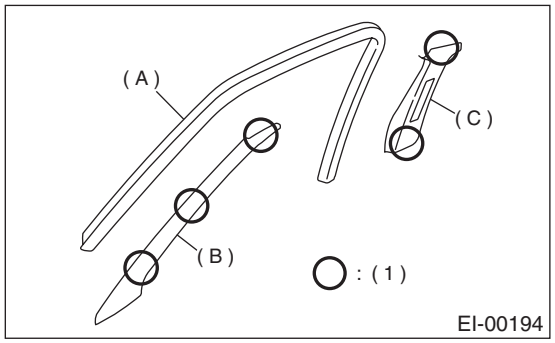


Tightening torque:
Refer to COMPONENT in General Description. <Ref. to EI-9, INSTRUMENT PANEL, COMPONENT, General Description.>

18.Upper Inner Trim

A: REMOVAL

1) Remove front mole (A).
2) Remove front pillar upper trim (B).
3) Detach front seat belt shoulder anchor, then remove center pillar upper trim (C).



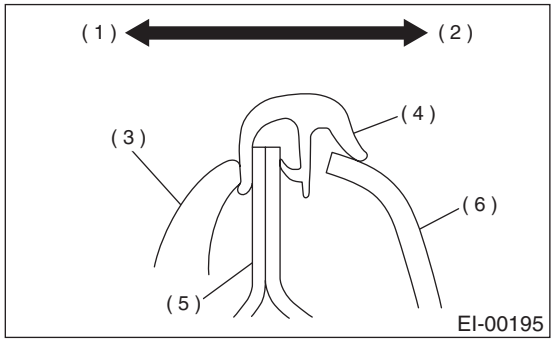
(1) Hook pawl

B: INSTALLATION

Install in the reverse order of removal.

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

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

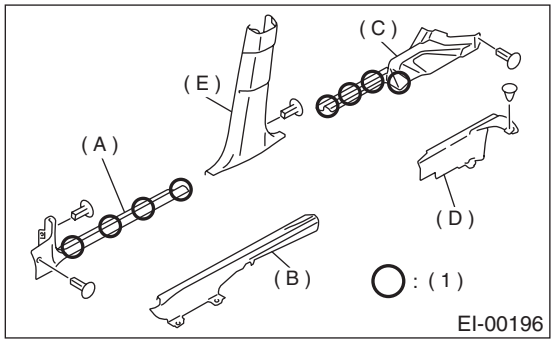


(1) Outside
(2) Inside
(3) Weatherstrip
(4) Mole
(5) Body
(6) Trim

19.Lower Inner Trim

A: REMOVAL

1) Remove front pillar lower trim (A).
2) Remove side sill front lower cover (B).
3) Remove rear seat cushion <Ref. to SE-14, REMOVAL, Rear Seat.>, then remove side sill rear upper cover (C).
4) Remove center pillar lower trim (E).



(1) Hook pawl

B: INSTALLATION

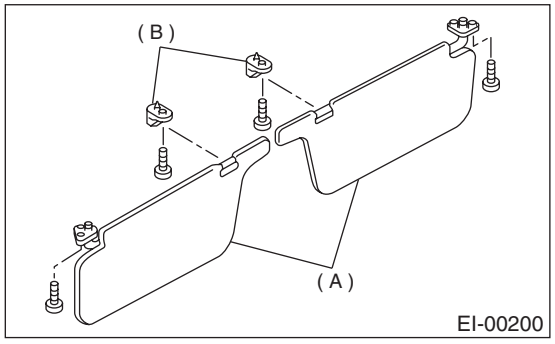
Install in the reverse order of removal.

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

20.Sun Visor

A: REMOVAL

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



B: INSTALLATION

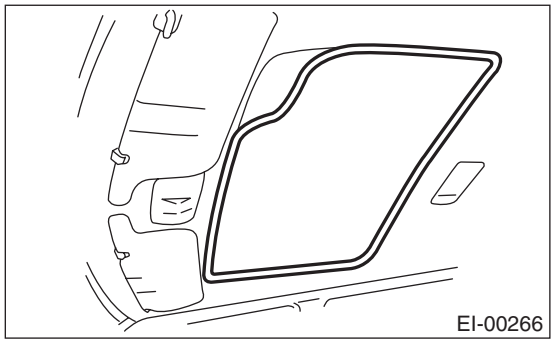
Install in the reverse order of removal.

21.Roof Trim

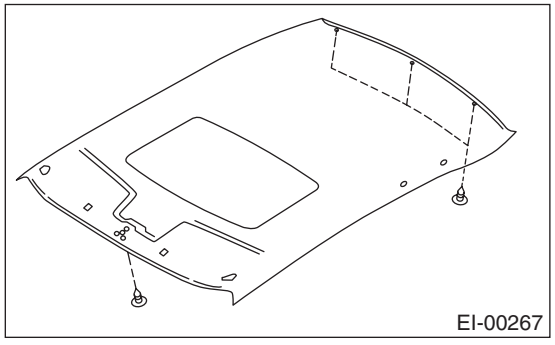
A: REMOVAL

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

1) Disconnect ground cable from battery.
2) Remove sunroof switch. <Ref. to SR-10, REMOVAL, Sunroof Switch.>
3) Remove room light. <Ref. to LI-27, REMOVAL, Room Light.>
4) Remove sun visor and hook. <Ref. to EI-43, REMOVAL, Sun Visor.>
5) Remove assist grip.
6) Remove sunroof garnish.


EI-00266

7) Remove rear pillar upper trim. <Ref. to EI-52, REMOVAL, Rear Pillar Trim.>
8) Remove clip and roof trim.


EI-00267

B: INSTALLATION

Install in the reverse order of removal.

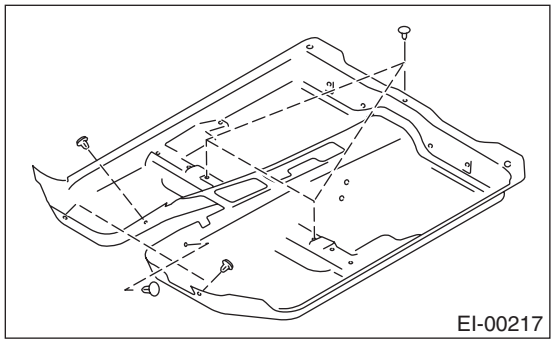
22.Floor Mat

A: REMOVAL

1) Remove front seats. <Ref. to SE-6, REMOVAL, Front Seat.>
2) Remove rear seat cushion. <Ref. to SE-14, REMOVAL, Rear Seat.>
3) Remove console box. <Ref. to EI-36, Console Box.>
4) Remove front pillar lower trim, side sill rear upper cover and center pillar lower trim. <Ref. to EI-42, REMOVAL, Lower Inner Trim.>
5) Remove clips from floor mat.

NOTE:
When pulling out edge, do not pull mat alone; pull mat together with edge. Ply off two steel clips on side sill front cover and one on side sill rear cover using screwdriver.

6) Remove mat hook.
7) Remove mat from toe board area.
8) Remove mat from rear heater duct.
9) Roll mat, and then take it out of opened rear door.


EI-00217

B: INSTALLATION

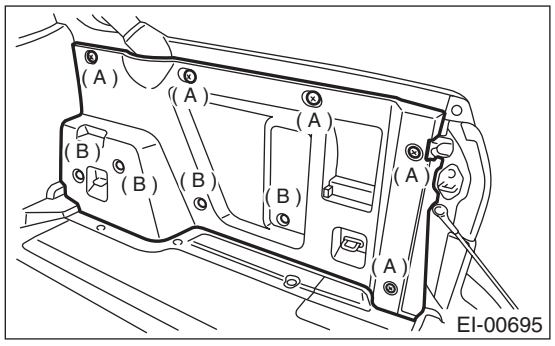
Install in the reverse order of removal.

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

23.Cargo Bed Side Tray

A: REMOVAL

1) Open tail gate.
2) Remove bolt using TORX® bit T30. Remove clip.



(A) Bolt
(B) Clip

B: INSTALLATION

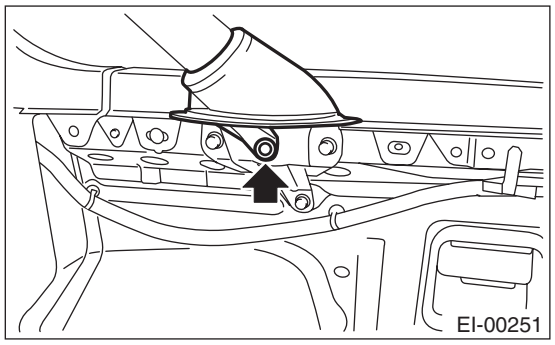
Install in the reverse order of removal.

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

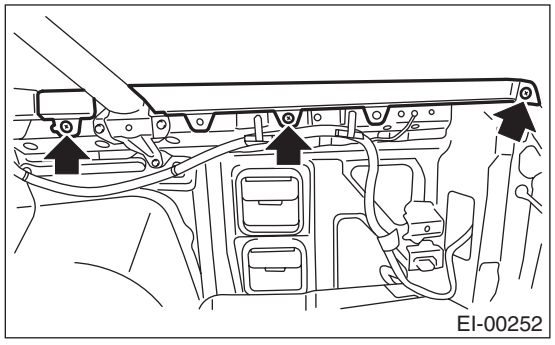
24.Cargo Bed Side Molding

A: REMOVAL

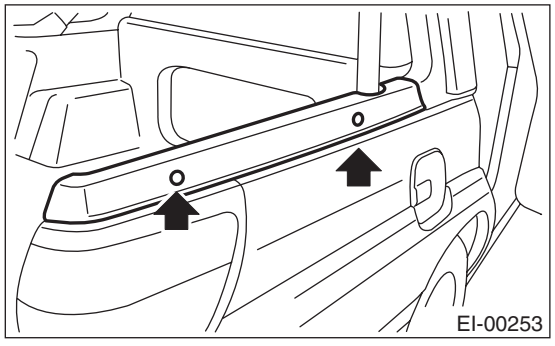
1) Remove cargo bed side tray. <Ref. to EI-46, REMOVAL, Cargo Bed Side Tray.>
2) Using TORX® bit T25, remove bolt to remove luggage pipe lower cover.



3) Remove bolt using TORX® bit T25.



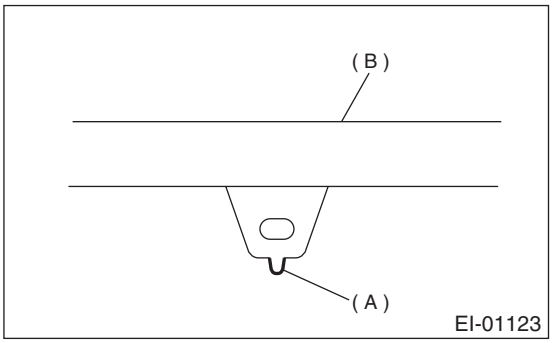
4) Remove clip and cargo bed side molding.



B: INSTALLATION

Install in the reverse order of removal.

NOTE:
- Do not reuse the removed clips; use new ones.
- When installing the cargo bed side molding, 2 front bolts are installed in the mark (protrusion) on the flange lower end of the molding.



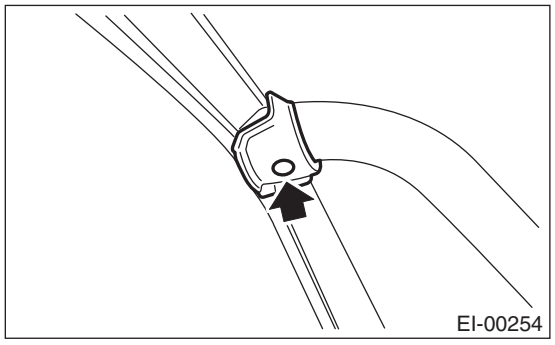
(A) Mark
(B) Cargo bed side molding

Tightening torque:
Cargo bed side molding;
7.5 N·m (0.76 kgf-m, 5.53 ft-lb)
Luggage pipe lower cover;
7.5 N·m (0.76 kgf-m, 5.53 ft-lb)
Cargo bed side tray;
7.5 N·m (0.76 kgf-m, 5.53 ft-lb)

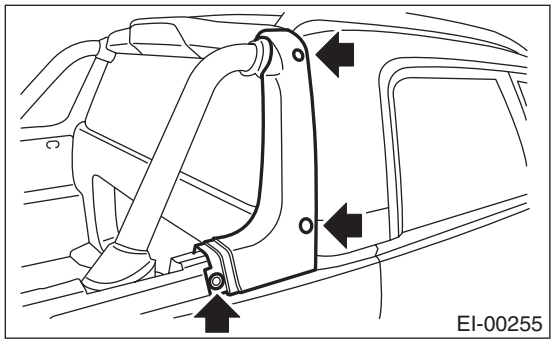
25.Cargo Bed C Pillar Molding

A: REMOVAL

1) Remove cargo bed side tray. <Ref. to EI-46, REMOVAL, Cargo Bed Side Tray.>
2) Remove cargo bed side molding. <Ref. to EI-47, REMOVAL, Cargo Bed Side Molding.>
3) Remove clip and luggage pipe upper cover.


EI-00254

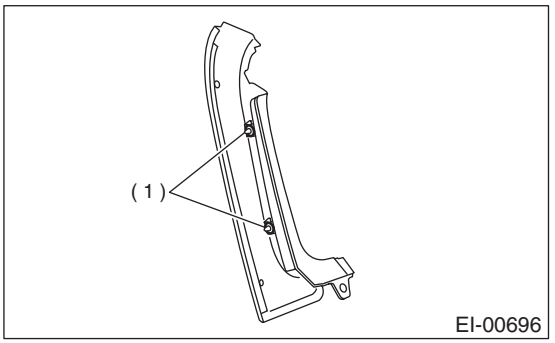
4) Remove clip and cargo bed C pillar molding.


EI-00255

NOTE:
Do not reuse the removed clips; use new ones.

B: INSTALLATION

1) Replace all clips on the reverse of cargo bed C pillar molding with new ones.



EI-00696

(1) Clip

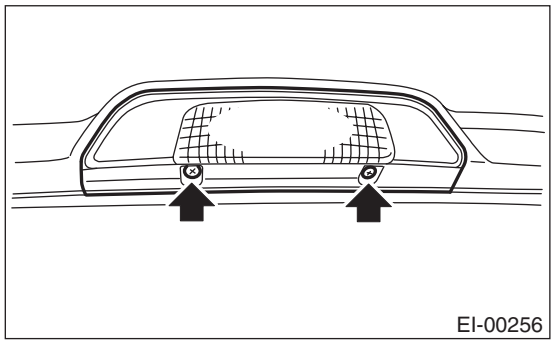
2) Install in the reverse order of removal.

Tightening torque:
Cargo bed side molding;
7.5 N·m (0.76 kgf-m, 5.53 ft-lb)
Cargo bed side tray;
7.5 N·m (0.76 kgf-m, 5.53 ft-lb)

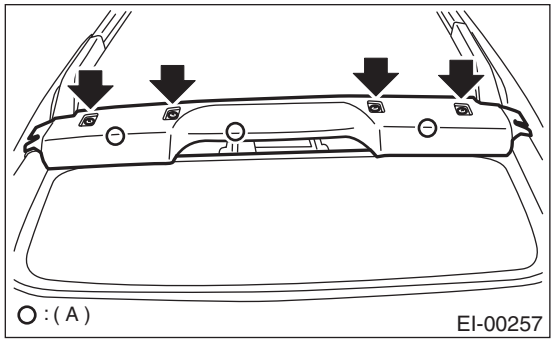
26.Cargo Bed Upper Molding

A: REMOVAL

1) Remove cargo bed side tray. <Ref. to EI-46, REMOVAL, Cargo Bed Side Tray.>
2) Remove cargo bed side molding. <Ref. to EI-47, REMOVAL, Cargo Bed Side Molding.>
3) Remove cargo bed C pillar molding. <Ref. to EI-48, REMOVAL, Cargo Bed C Pillar Molding.>
4) Remove high-mounted stop light.


EI-00256

5) Remove cap and bolt using TORX® bit T25.



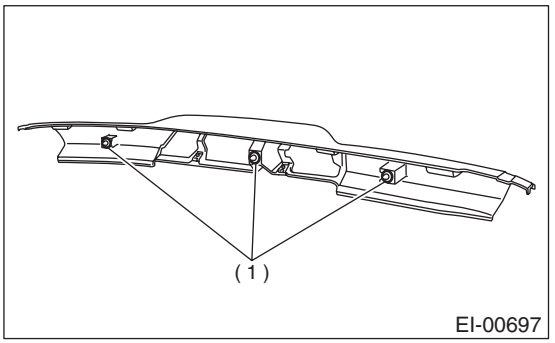
EI-00257

(A) Clip

NOTE:
Do not reuse the removed clips; use new ones.

B: INSTALLATION

1) Replace all clips on the reverse of cargo bed upper molding with new ones.



EI-00697

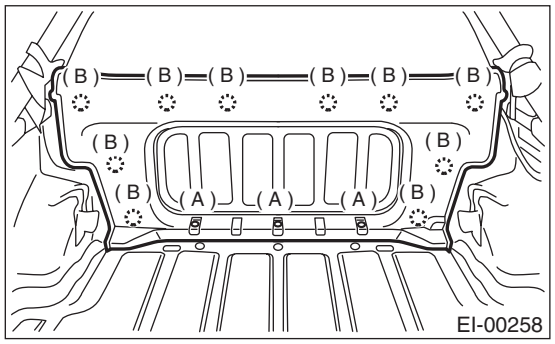
2) Install in the reverse order of removal.

Tightening torque:
Cargo bed upper molding;
7.5 N·m (0.76 kgf-m, 5.53 ft-lb)
Cargo bed side molding;
7.5 N·m (0.76 kgf-m, 5.53 ft-lb)
Cargo bed side tray;
7.5 N·m (0.76 kgf-m, 5.53 ft-lb)

27.Back Panel Tray

A: REMOVAL

1) Remove cargo bed side tray. <Ref. to EI-46, REMOVAL, Cargo Bed Side Tray.>
2) Remove cargo bed side molding. <Ref. to EI-47, REMOVAL, Cargo Bed Side Molding.>
3) Remove cargo bed C pillar molding. <Ref. to EI-48, REMOVAL, Cargo Bed C Pillar Molding.>
4) Remove screw and back panel tray.

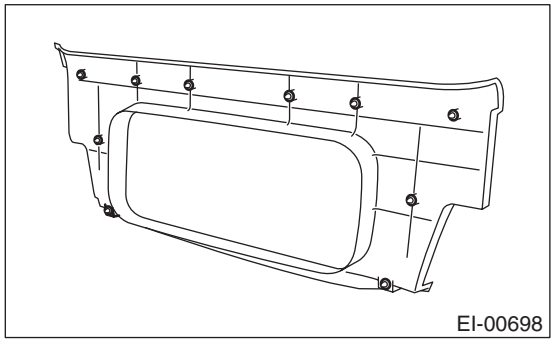


(A) Screw
(B) Clip

NOTE:
Do not reuse the removed clips; use new ones.

B: INSTALLATION

1) Replace all clips on the reverse of back panel tray with new ones.



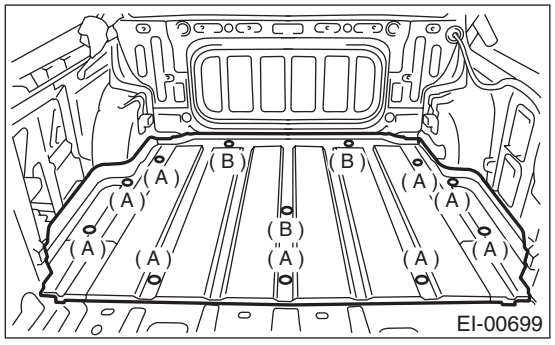
2) Install in the reverse order of removal.

Tightening torque:
Cargo bed side molding;
7.5 N·m (0.76 kgf-m, 5.53 ft-lb)
Cargo bed side tray;
7.5 N·m (0.76 kgf-m, 5.53 ft-lb)

28.Cargo Bed Floor Tray

A: REMOVAL

1) Remove cargo bed side tray. <Ref. to EI-46, REMOVAL, Cargo Bed Side Tray.>
2) Remove cargo bed side molding. <Ref. to EI-47, REMOVAL, Cargo Bed Side Molding.>
3) Remove cargo bed C pillar molding. <Ref. to EI-48, REMOVAL, Cargo Bed C Pillar Molding.>
4) Remove back panel tray. <Ref. to EI-50, REMOVAL, Back Panel Tray.>
5) Remove bolt using TORX® bit T25. Remove clip.



(A) Bolt
(B) Clip

B: INSTALLATION

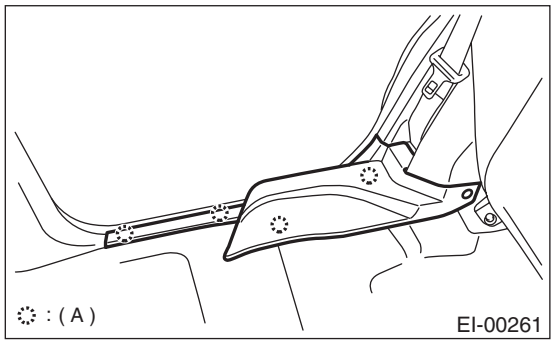
Install in the reverse order of removal.

Tightening torque:
Cargo bed floor tray;
7.5 N·m (0.76 kgf-m, 5.53 ft-lb)
Cargo bed side molding;
7.5 N·m (0.76 kgf-m, 5.53 ft-lb)
Cargo bed side tray;
7.5 N·m (0.76 kgf-m, 5.53 ft-lb)

29.Rear Pillar Trim

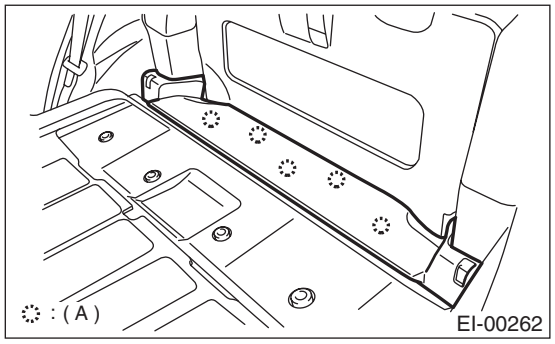
A: REMOVAL

1) Remove side sill rear upper cover.



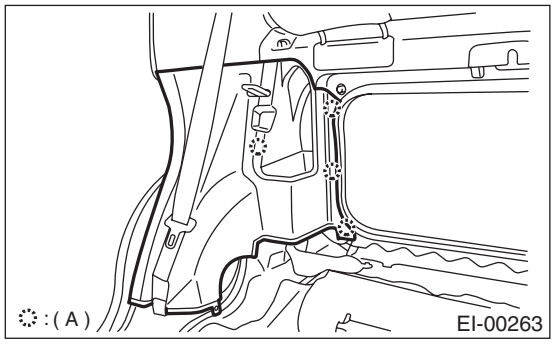
(A) Clip

2) Fold rear seat backrest.
3) Remove floor trim panel.



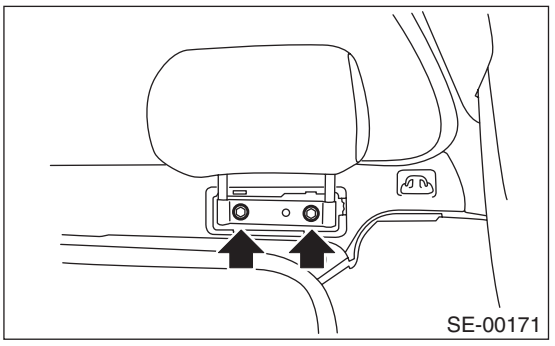
(A) Clip

4) Remove rear pillar lower trim.

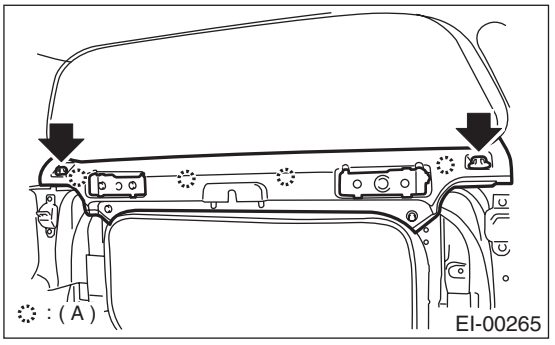


(A) Clip

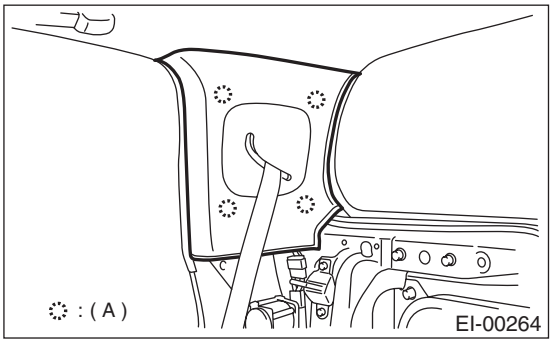
5) Remove rear seat pillow.



6) Remove cargo net hook and remove rear bulkhead trim.



7) Remove rear pillar upper trim.



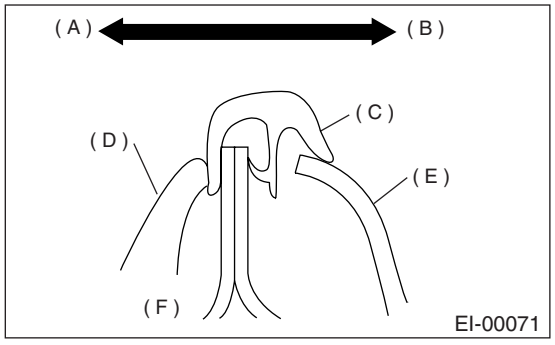
(A) Clip

B: INSTALLATION

Install in the reverse order of removal.

CAUTION:
Make sure that trim panel claw is aligned with body flange.

NOTE:
When installing upper trim, make sure to install molding as shown in the figure.

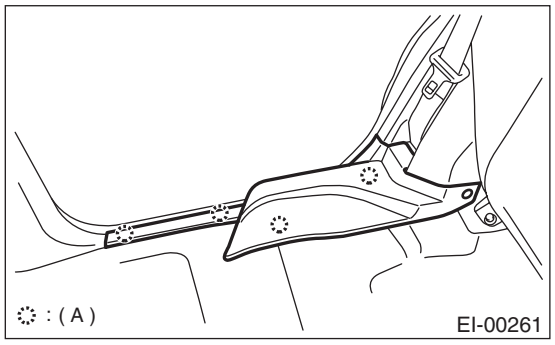


(A) Outside
(B) Inside
(C) Molding
(D) Weatherstrip
(E) Trim
(F) Body panel

30.Rear Bulkhead Trim

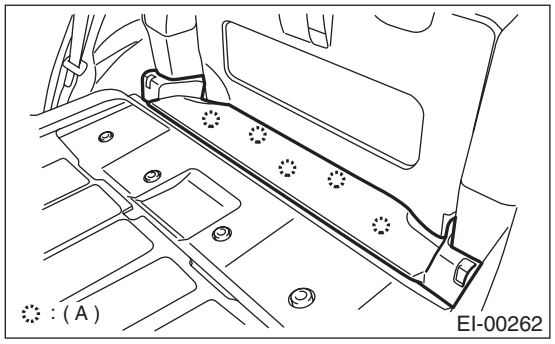
A: REMOVAL

1) Remove side sill rear upper cover.



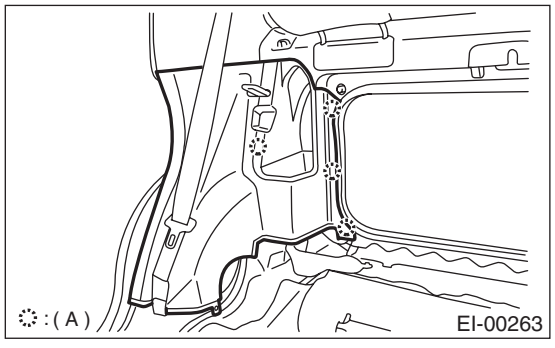
(A) Clip

2) Fold rear seat backrest.
3) Remove floor trim panel.



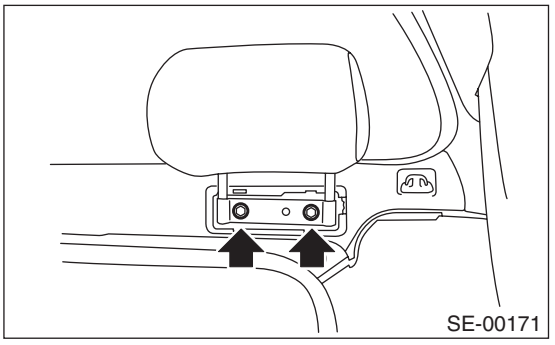
(A) Clip

4) Remove rear pillar lower trim.

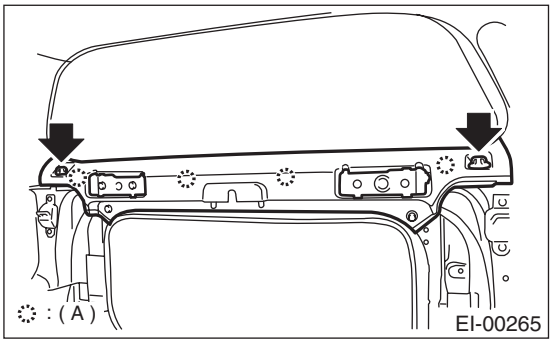


(A) Clip

5) Remove rear seat pillar.



6) Remove cargo net hook and rear bulkhead trim.



(A) Clip

B: INSTALLATION

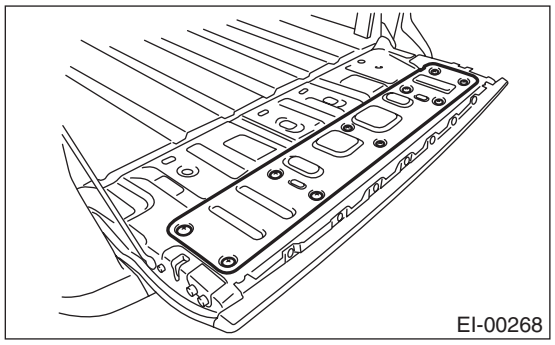
Install in the reverse order of removal.

CAUTION:
Make sure that trim panel claw is securely installed on body panel.

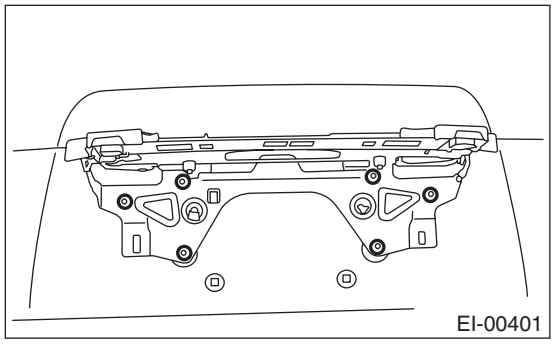
31.Tail Gate Garnish

A: REMOVAL

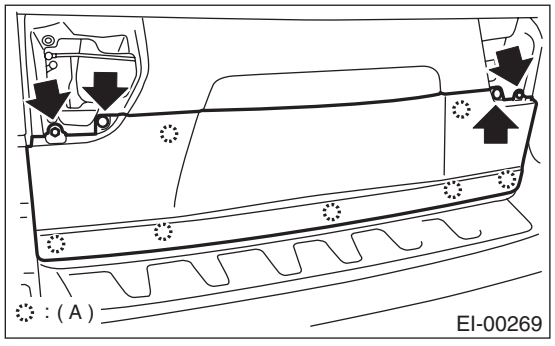
1) Remove tail gate tray. <Ref. to EI-56, REMOVAL, Tail Gate Tray.>
2) Remove tail gate cover.



3) Remove rear finisher light. <Ref. to LI-20, REMOVAL, Rear Finisher Light Assembly.>
4) Remove license plate bracket using TORX® bit T25.



5) Remove clip and bolt and detach tail gate garnish.



(A) Clip

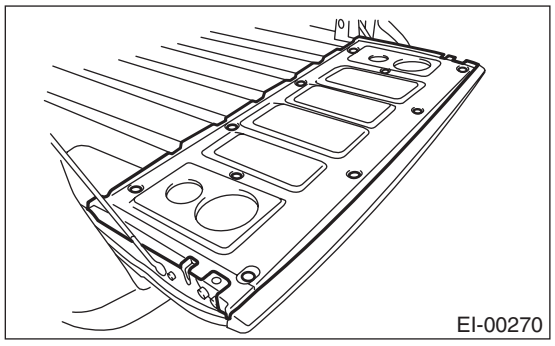
B: INSTALLATION

Install in the reverse order of removal.

32.Tail Gate Tray

A: REMOVAL

1) Open tail gate.
2) Remove bolt using TORX® bit T25.



B: INSTALLATION

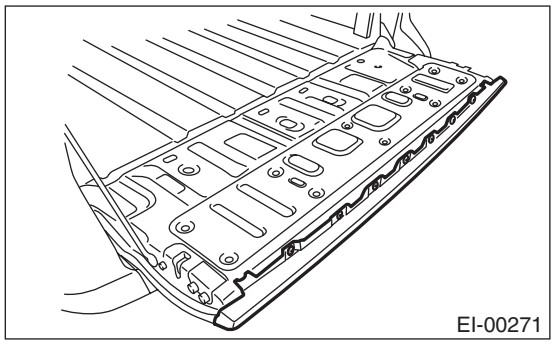
Install in the reverse order of removal.

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

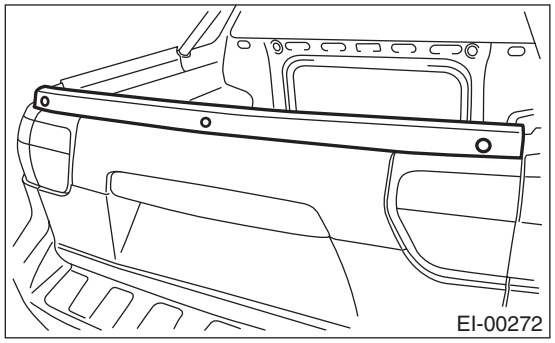
33.Tail Gate Molding

A: REMOVAL

1) Remove tail gate tray. <Ref. to EI-56, REMOVAL, Tail Gate Tray.>
2) Remove bolt using TORX® bit T25.



3) Remove clip and tail gate molding.



B: INSTALLATION

Install in the reverse order of removal.

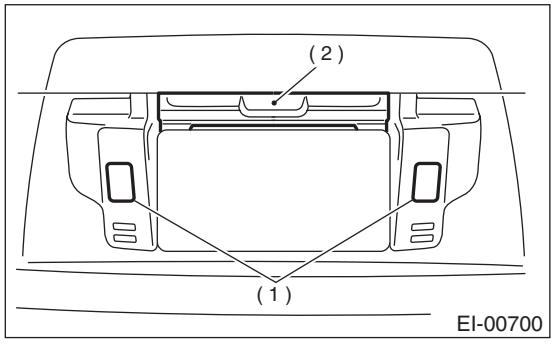
NOTE:
Do not reuse the removed clips; use new ones.

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

34.License Plate Bracket

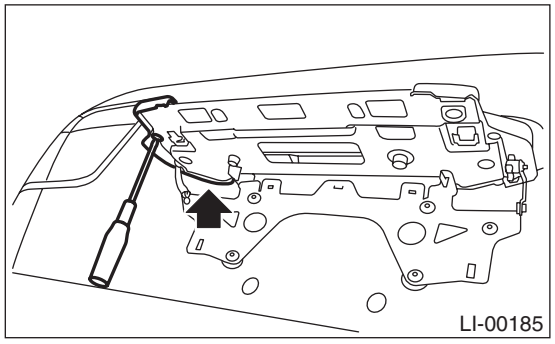
A: REMOVAL

1) Push release button to release the lock. Remove upper cover.

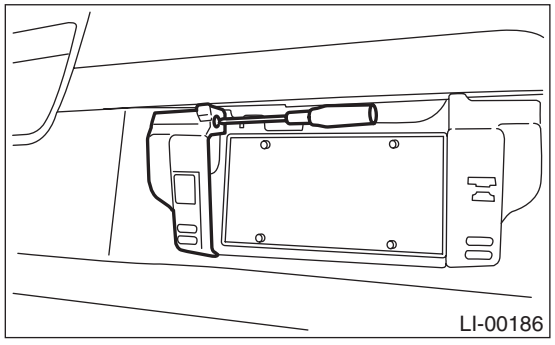


(1) Rease button
(2) Upper cover

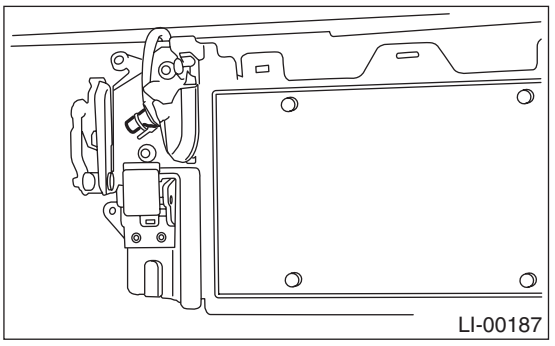
2) Lift up license plate bracket and remove bolts on the reverse



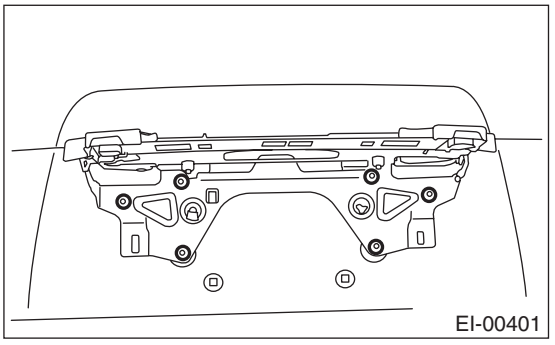
3) Return license plate bracket to its original position and remove bolts.



4) Remove side cover by turning socket.



5) Lift up license plate bracket. Remove bolts using TORX® bit T25.



B: INSTALLATION

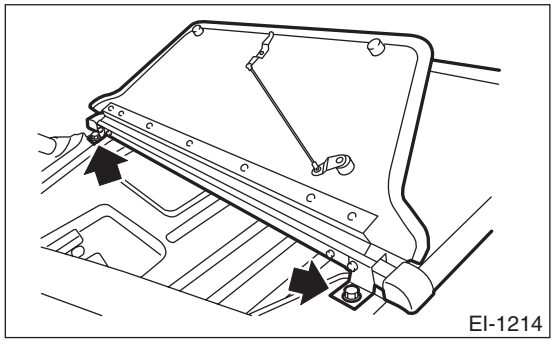
Install in the reverse order of removal.

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

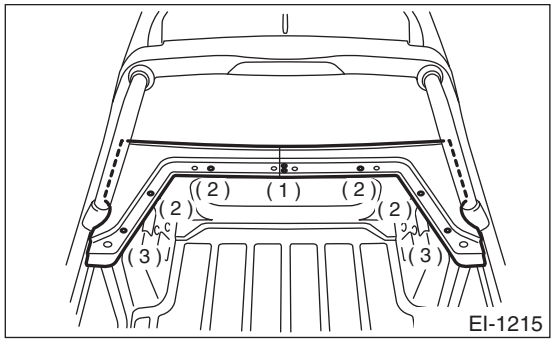
35.Hard Bed Cover

A: REMOVAL

1) Remove two mounting bolts to remove the bed cover.

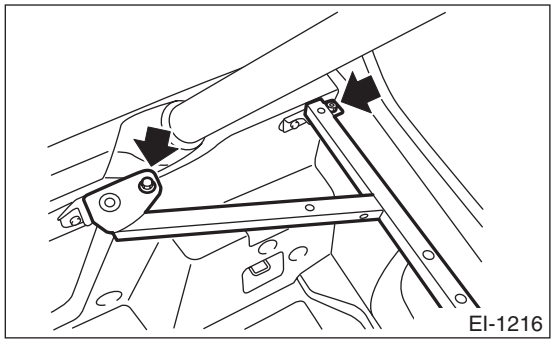


2) Remove the front striker, clips and bolts to remove the front cover.

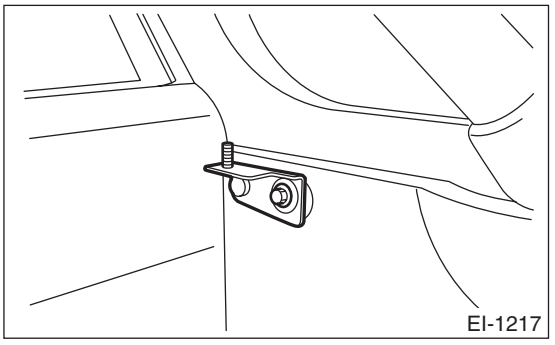


(1) Front striker
(2) Clip
(3) Bolt

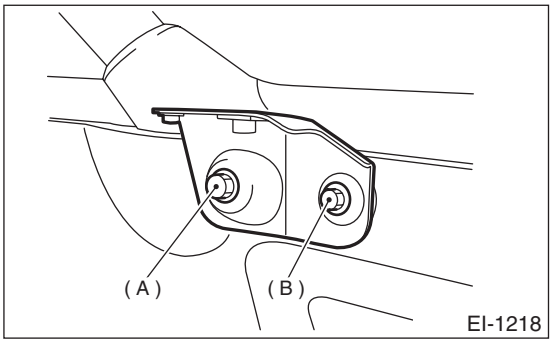
3) Remove bolts and nuts to remove the crossbar.



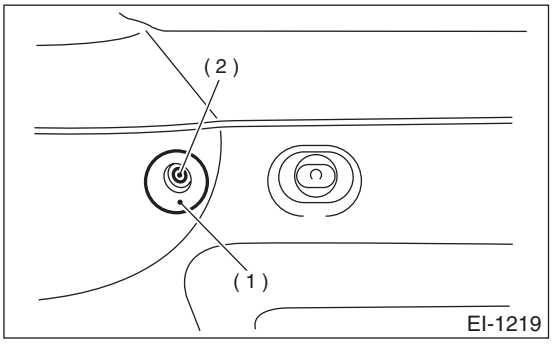
4) Remove the front bracket.



5) Remove the rear bracket.



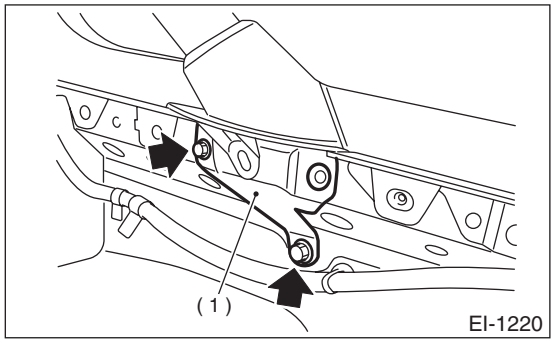
6) Check the aligning positions of the rear bracket mounting bolt (A) hole and the guard pipe lower bracket hole.



(1) Guard pipe lower bracket
(2) Bolt (A) hole

7) If the guard pipe lower bracket hole is not aligned with the bolt (A) hole, adjust the hole position with the following procedure.
(1) Remove the cargo bed side tray. <Ref. to EI-46, REMOVAL, Cargo Bed Side Tray.>

(2) Loosen two guard pipe lower bracket mounting bolts.



(1) Guard pipe lower bracket

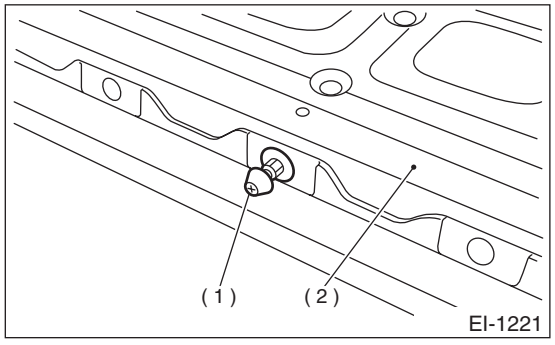
(3) Align the bolt (A) hole with the guard pipe lower bracket hole to tighten two bolts to the specified torque.

Tightening torque:
70 N·m (7.1 kgf-m, 52 ft-lb)

(4) Install the cargo bed side tray.

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

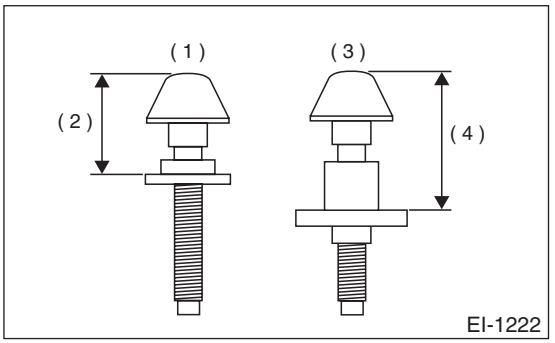
8) Remove the tail gate tray. <Ref. to EI-56, REMOVAL, Tail Gate Tray.>
9) Remove the rear striker.



(1) Rear striker
(2) Tail gate

B: INSTALLATION

1) Adjust the front striker and the rear striker to the specified values.

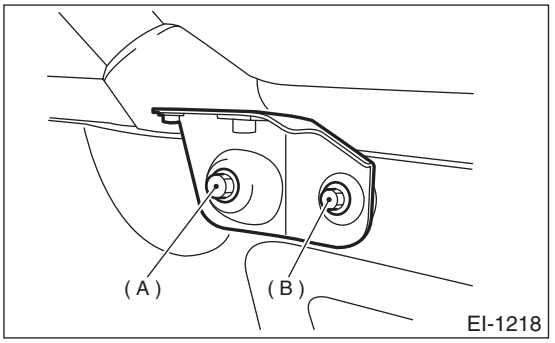


(1) Front striker
(2) 21 mm (0.83 in)
(3) Rear striker
(4) 28.5 mm (1.122)

2) Install the rear striker to the tail gate.

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

3) Install the rear bracket.



Tightening torque:
Bolt (A):
70 N·m (7.1 kgf-m, 52 ft-lb)
Bolt (B):
7.5 N·m (0.76 kgf-m, 5.53 ft-lb)

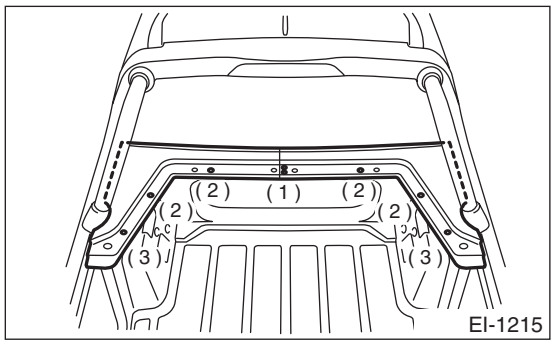
4) Install the front bracket.

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

5) Install the crossbar.

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

6) Install the front cover.



(1) Front striker
(2) Clip
(3) Bolt

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

7) Install the bed cover.

Tightening torque:
70 N·m (7.1 kgf-m, 52 ft-lb)

8) Make sure that the bed cover can be securely locked and unlocked with the key. Adjust the front and rear striker by changing their heights.

9) Install the tail gate tray.

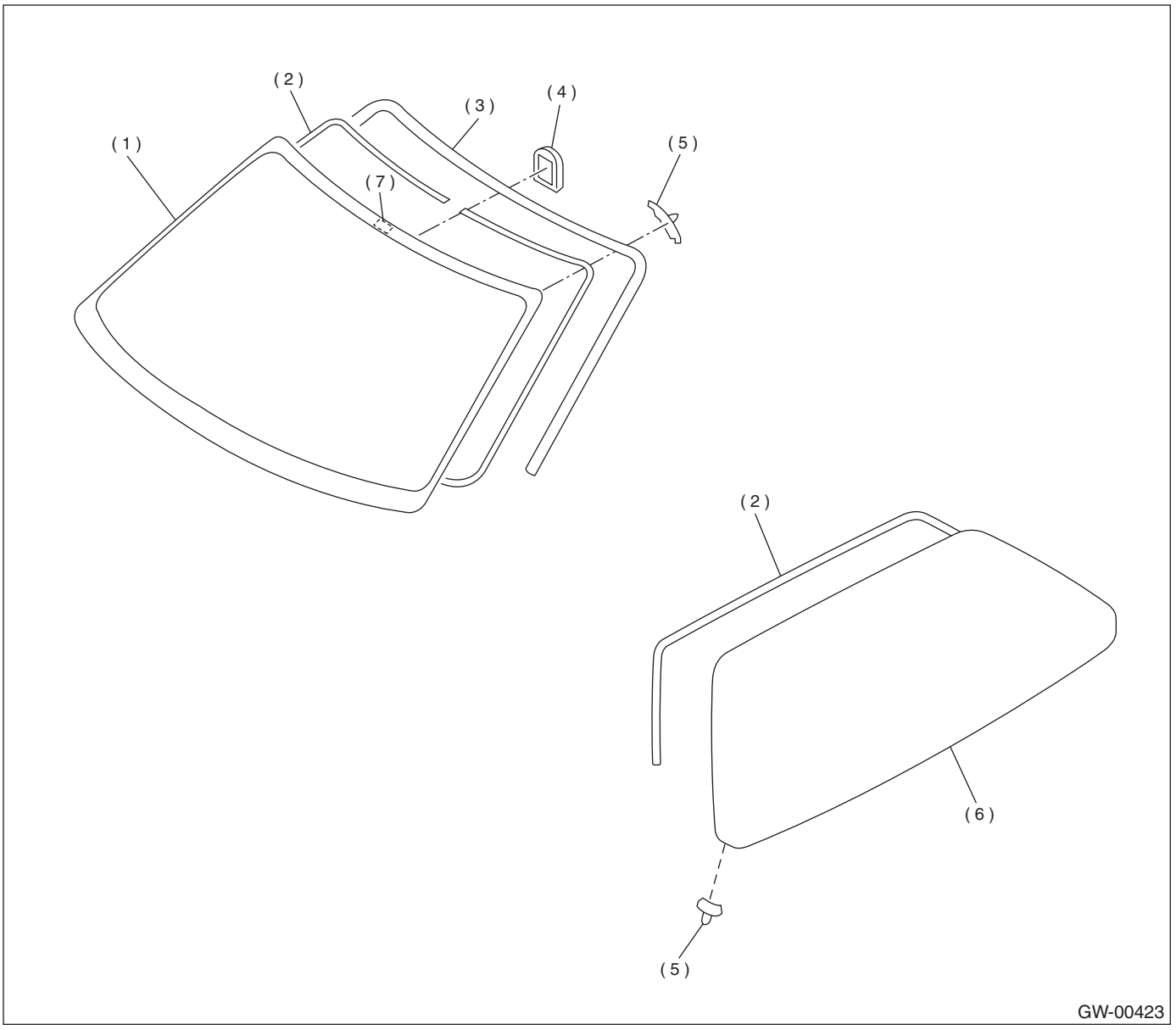
Tightening torque:
7.5 N·m (0.76 kgf-m, 5.53 ft-lb)

MEMO:

1. General Description

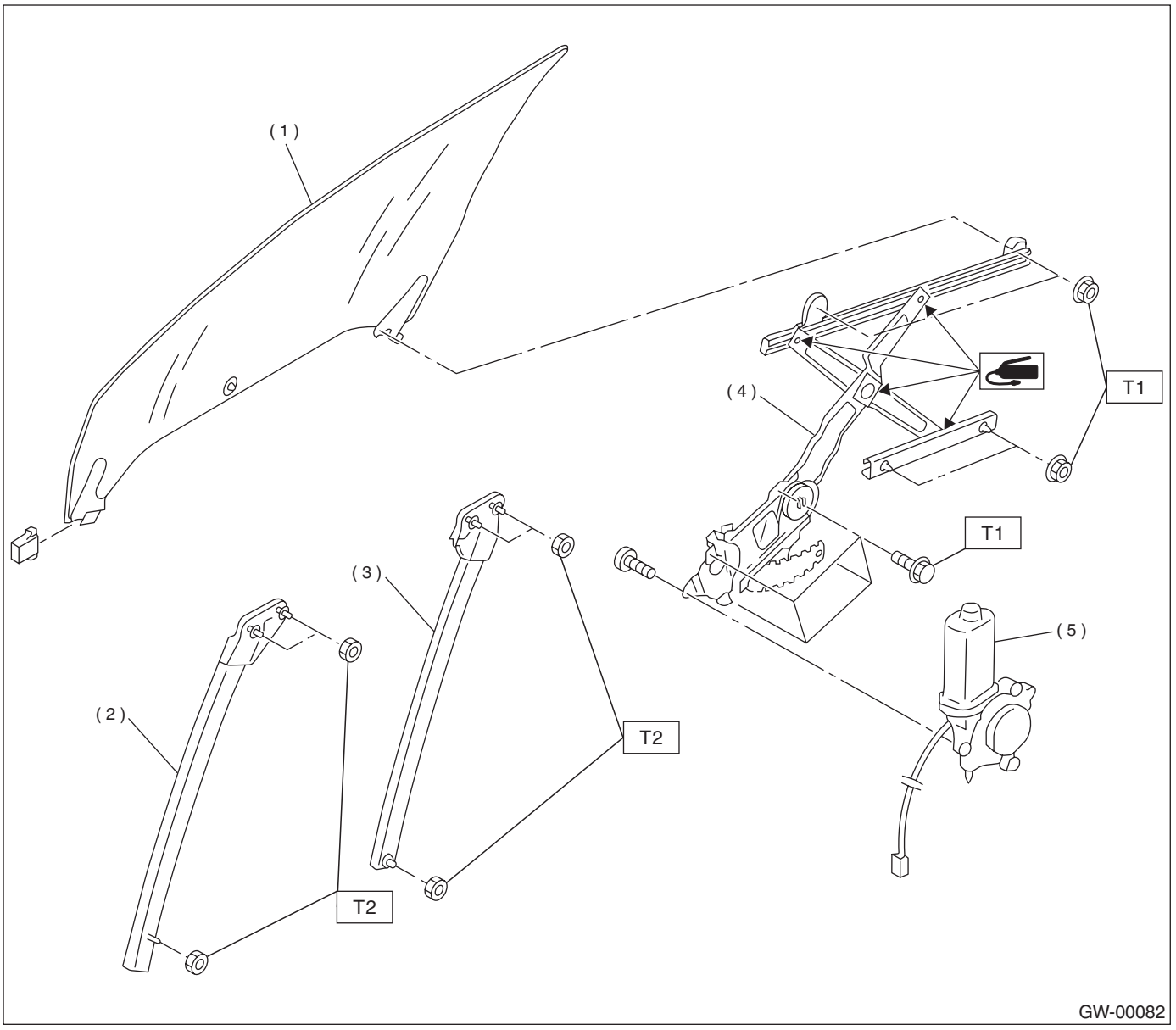
A: COMPONENT

1. FIXED GLASS



(1) Windshield glass
(2) Dam rubber
(3) Molding
(4) Rearview mirror mount
(5) Locate pin
(6) Rear window glass
(7) Fastener

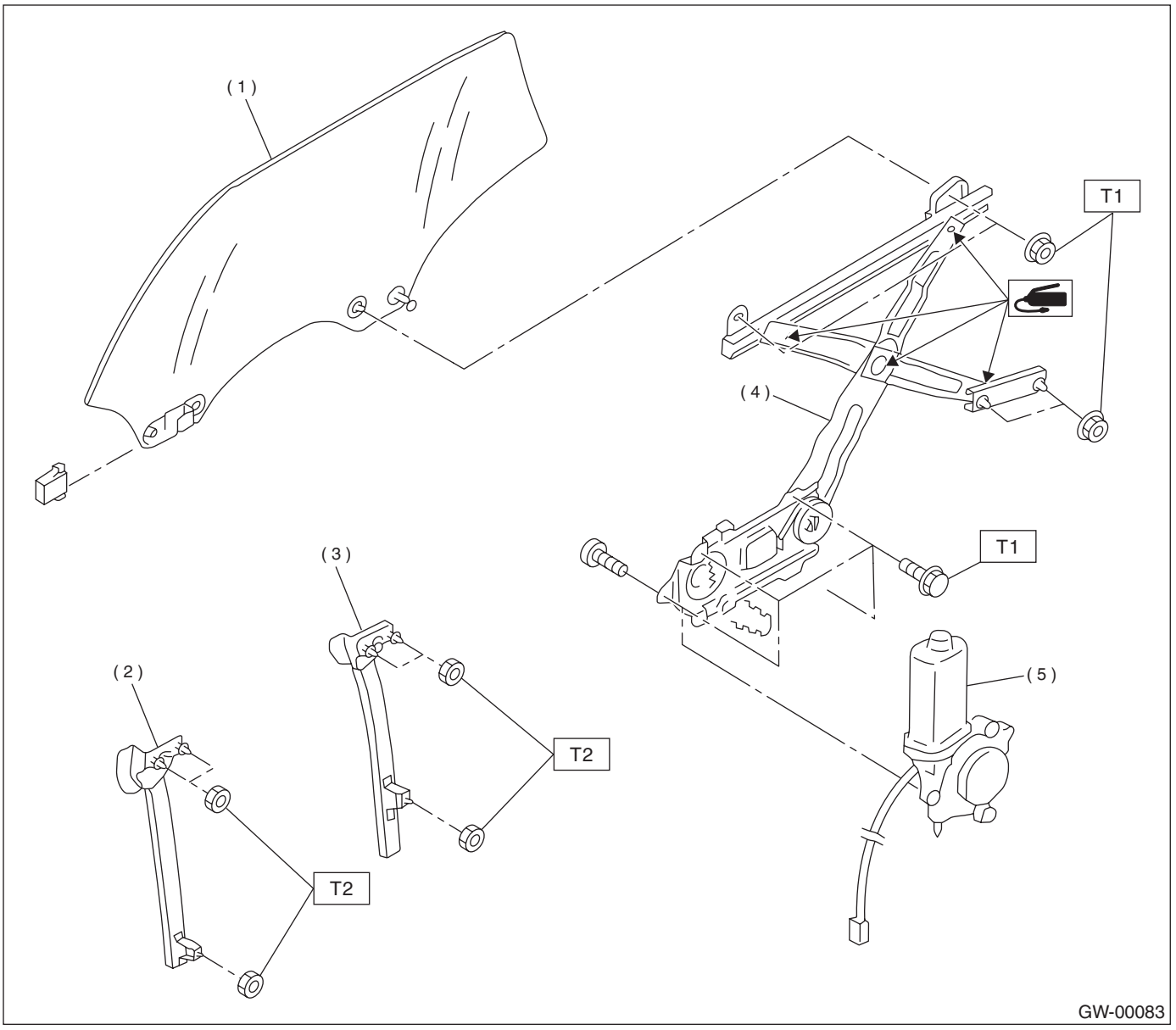
2. FRONT DOOR GLASS



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

Tightening torque: N·m (kgf-m, ft-lb)	
T1:	*7.35 (0.75, 5.4)*
T2:	*14 (1.4, 10.1)*

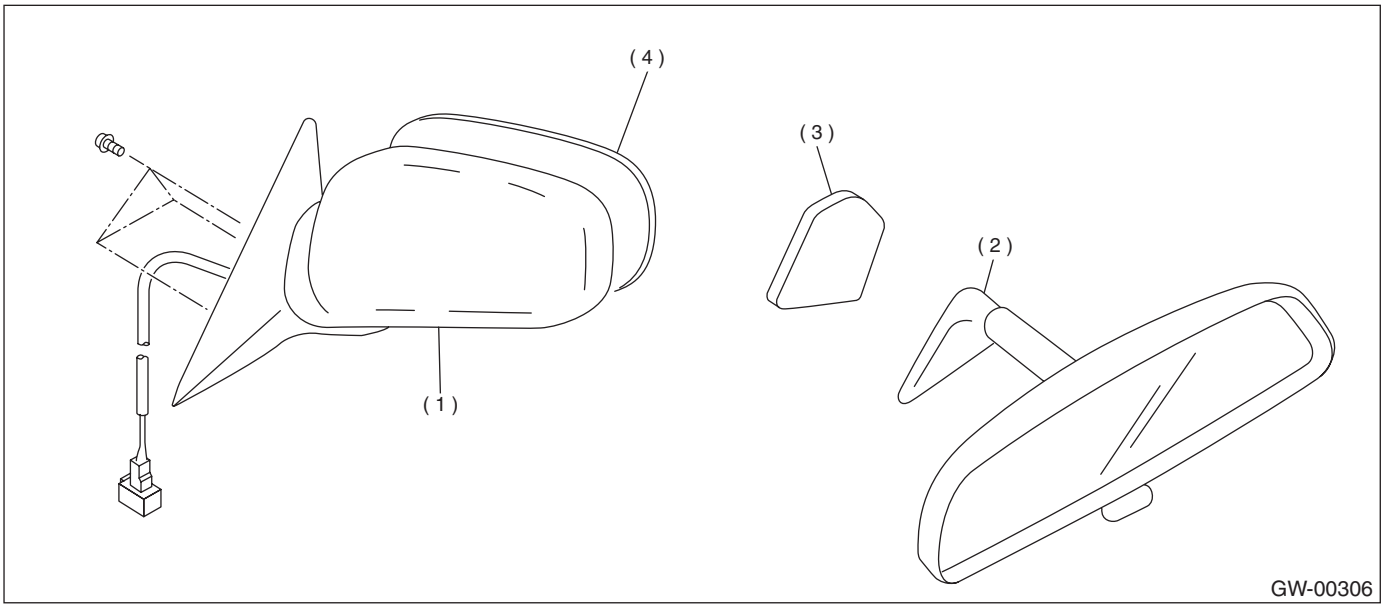
3. REAR DOOR GLASS



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

Tightening torque: N·m (kgf-m, ft-lb)
T1: 7.35 (0.75, 5.4)
T2: 14 (1.4, 10.1)

4. MIRRORS



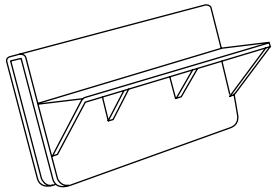
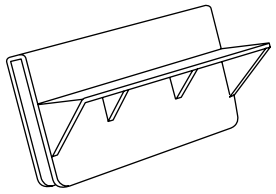
(1) Outer mirror
(2) Inner rearview mirror
(3) Mount
(4) Mirror

B: CAUTION

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

C: PREPARATION TOOL

1. SPECIAL TOOLS

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST61299AE000	61299AE000	SPACER	Used for adjusting position of upper edge of front door glass. [For glass thickness 5 mm (0.197 in)]
 ST61299AE010	61299AE010	SPACER	Used for adjusting position of upper edge of rear door glass. [For glass thickness 4 mm (0.157 in)]

2. GENERAL TOOLS

TOOL NAME	REMARKS
Circuit Tester	Used for checking voltage and continuity.
Piano Wire	Used for window glass removal.
Windshield Knife	Used for window glass removal.

2. Power Window System

A: SCHEMATIC

<Ref. to WI-148, Power Window System.>

B: INSPECTION

Symptom	Repair order
All power windows does not operate.	(1) Fuse (SBF-6) (F/B No. 18) (2) Power window circuit breaker (3) Power window relay (4) Wiring harness
One 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.	(1) Power window main switch

3. Rear Window Defogger System

A: SCHEMATIC

<Ref. to WI-155, SCHEMATIC, Rear Window Defogger System.>

B: INSPECTION

Symptom	Repair order
Rear window defogger does not operate.	(1) Fuse (M/B No. 1) (2) Rear defogger relay (3) Defogger switch (4) Rear defogger condenser (5) Deffogger wire (6) Wiring harness

4. Windshield Wiper Deicer System

A: SCHEMATIC

<Ref. to WI-169, Wiper Deicer System.>

B: INSPECTION

Symptom	Repair order
Wiper deicer does not operate.	(1) Fuse (F/B No. 18, 19) (2) Wiper deicer relay (3) Wiper deicer switch (4) Wiring harness

5. Remote Control Mirror System

A: SCHEMATIC

<Ref. to WI-156, Remote Controlled Rearview Mirror System.>

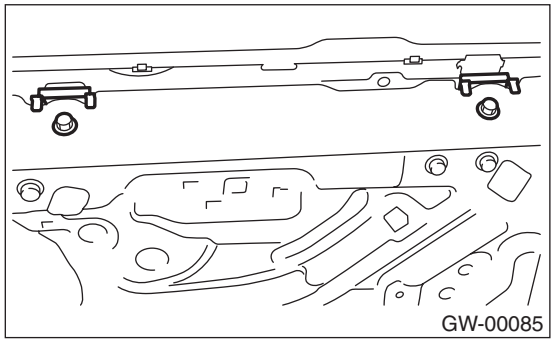
B: INSPECTION

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

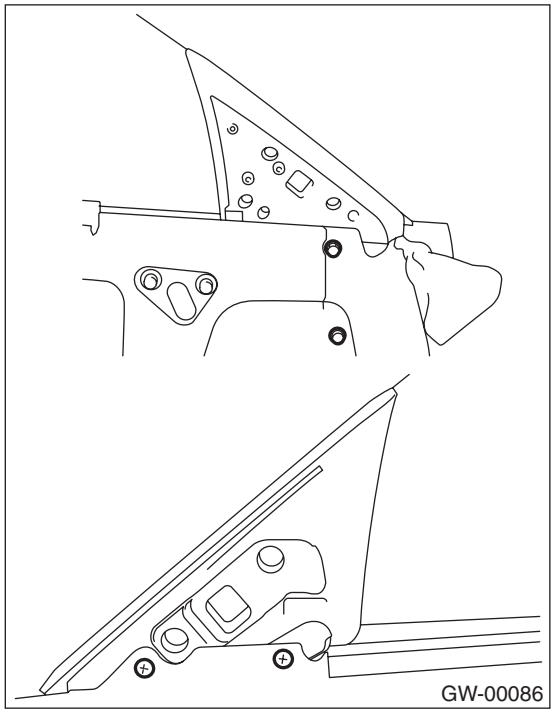
6. Front Door Glass

A: REMOVAL

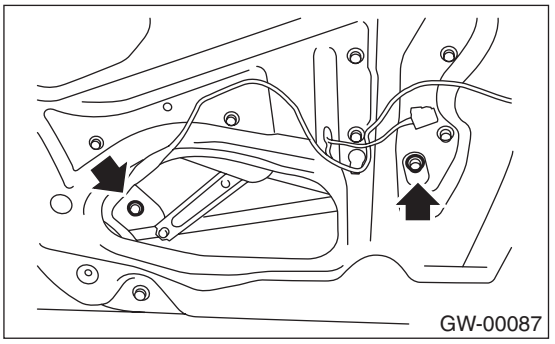
1) Remove door trim. <Ref. to EI-32, REMOVAL, Front Door Trim.>
2) Remove sealing cover. <Ref. to EB-13, REMOVAL, Front Sealing Cover.>
3) Remove outer weatherstrip.
4) Remove inner stabilizer.


GW-00085

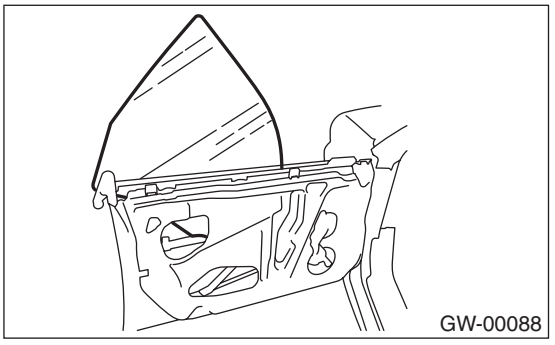
5) Remove outer mirror. <Ref. to GW-30, REMOVAL, Outer Mirror Assembly.>
6) Remove gusset.


GW-00086

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


GW-00087

8) Take out glass from above of door panel.


GW-00088

CAUTION:
• Do not turn regulator in the closing direction after removal of the glass. Otherwise gear may be disengaged.
• Avoid impact and damage to the glass.

B: INSTALLATION

1) Install in the reverse order of removal.

CAUTION:
Make sure that glass stay is placed securely in sash.

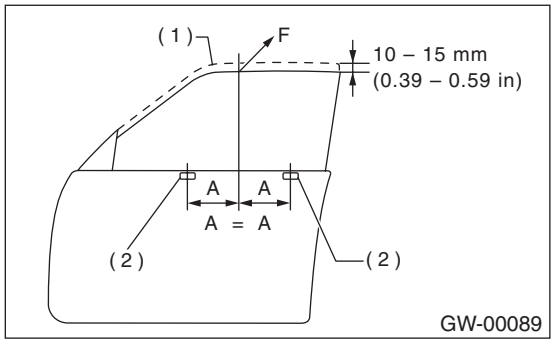
2) Adjust front door glass. <Ref. to GW-12, ADJUSTMENT, Front Door Glass.>

Tightening torque:
Refer to COMPONENT in General Description. <Ref. to EB-4, FRONT DOOR PANEL, COMPONENT, General Description.>and <Ref. to GW-3, FRONT DOOR GLASS, COMPONENT, General Description.>

C: ADJUSTMENT

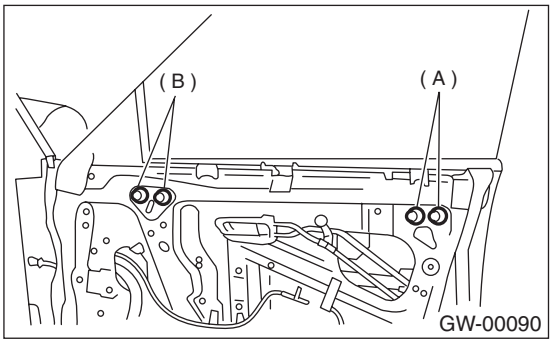
NOTE:
Before adjustment, ensure that all adjusting bolts of stabilizer, upper stopper, and sash are loose and door glass is raised so that it is in contact with weatherstrip.

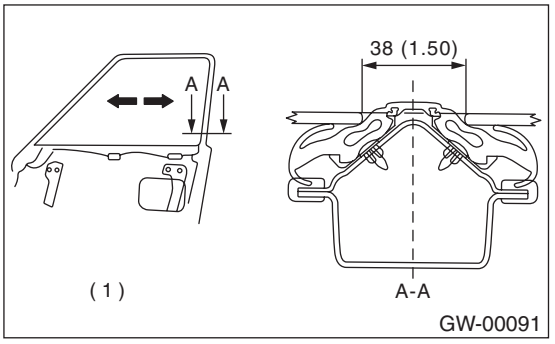
1) Temporarily tighten one adjusting bolt on one side of rear sash at the midpoint of slotted hole in the inner panel.
2) Temporarily tighten regulator B-channel in a position slightly lower than midpoint of slotted hole.
3) Lower door glass 10 to 15 mm (0.39 to 0.59 in) from fully closed position. While applying outward pressure of 45±5 N (4.59±0.51 kgf, 10.1±1.1 lb) (F) to upper edge of glass above midpoint of two outer stabilizers, press inner stabilizer at 10±5 N (1.02±0.51 kgf, 2.2±1.1 lb) until it just touches the glass, then secure it.



(1) Full close
(2) Stabilizer

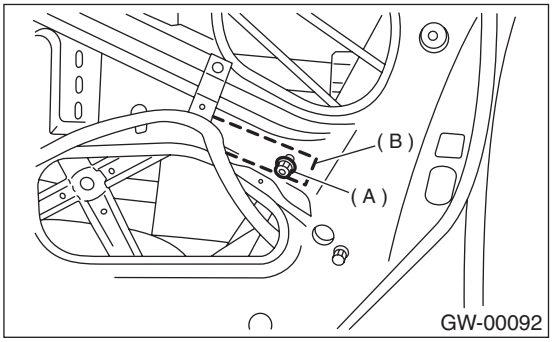
4) For adjustment of clearance between front and rear glasses, loosen nuts (A), and move glass sash back and forth until clearance becomes the value shown.



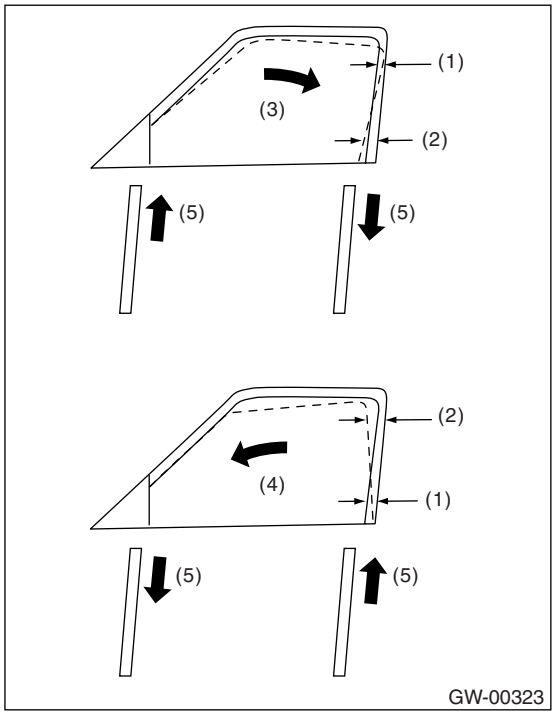


(1) Unit: mm (in)

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

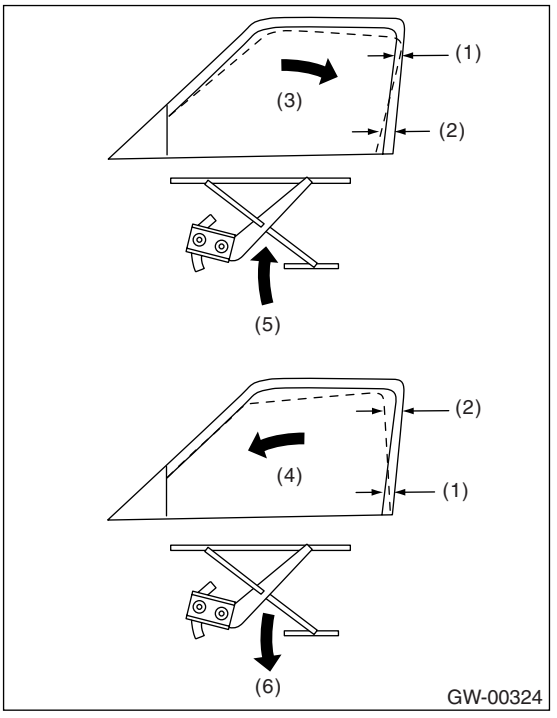


6) Adjust so that upper and lower ends of center pillar are the same size.



(1) Narrow
(2) Wide
(3) Glass tilts too far rearward
(4) Glass tilts too far forward
(5) Stopper adjustment direction

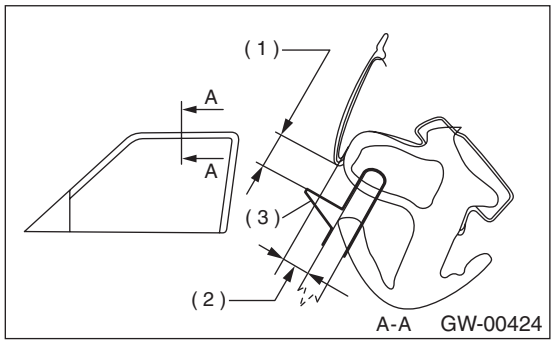
7) After adjusting the clearance between center pillar, up and down the glass several times to check glass contact to stopper when glass is fully closed. Adjust it to contact the front and rear stopper simultaneously.



(1) Narrow
(2) Wide
(3) When the stopper of door sash (rear) contacts first
(4) When the stopper of door sash (front) contacts first
(5) Raise B channel
(6) Lower B channel

8) For glass stroke adjustment, install ST to glass, close door, raise glass until positional relationship between glass and weatherstrip becomes the value shown in the figure. And secure the glass so that the upper stopper correctly touches the glass holder.

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



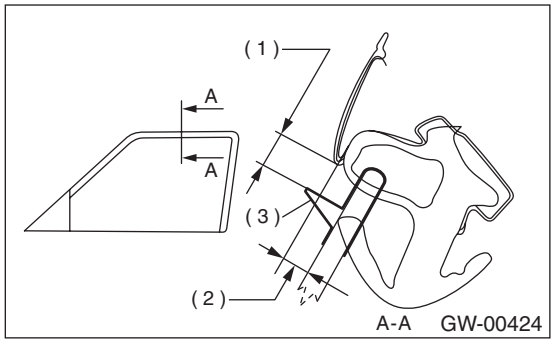
(1) 3.2 - 4.8 mm (0.126 - 0.189 in)
(2) 6 mm (0.24 in)
(3) ST

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

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

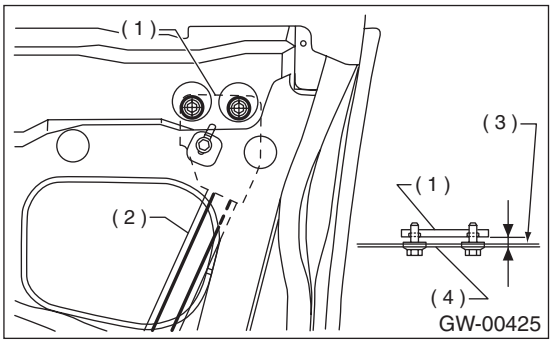
10) Make the same adjustment of two adjusting bolts of rear sash.

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



(1) 3.2 - 4.8 mm (0.126 - 0.189 in)
(2) 6 mm (0.24 in)
(3) ST

CAUTION:
Do not tilt sash bracket to inner panel during adjustment. Otherwise smooth regulator operation cannot be achieved.



(1) Sash bracket
(2) Rear sash
(3) Adjust a line parallel
(4) Inner panel

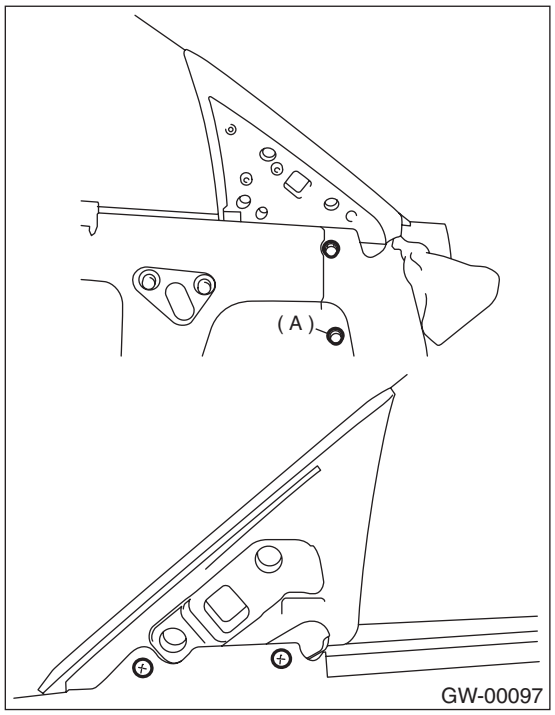
11) Make adjustment of front sash in the same manner as that of rear sash.

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

12) After adjustments, tighten nuts.

13) After adjustment of glass, if there is a gap between outer lip of gusset and glass surface, adjust the gap with adjusting bolt (A) in lower fitting part of gusset to prevent generation of wind noise.

14) During adjustments, loosen other three clamping bolts.

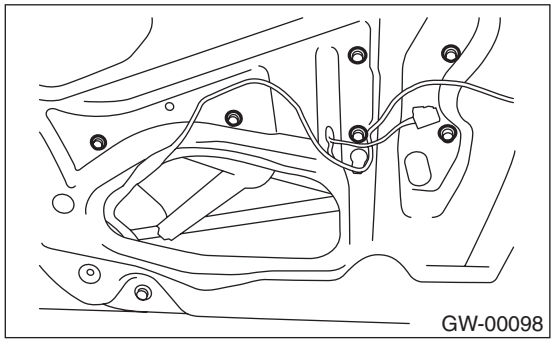


15) After adjustment, tighten bolts and nuts.

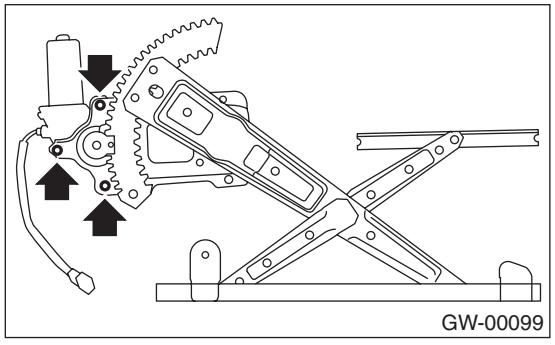
7. Front Regulator and Motor Assembly

A: REMOVAL

1) Remove door trim. <Ref. to EI-32, REMOVAL, Front Door Trim.>
2) Remove sealing cover. <Ref. to EB-13, REMOVAL, Front Sealing Cover.>
3) Remove inner remote. <Ref. to SL-32, REMOVAL, Front Inner Remote.>
4) Remove door glass. <Ref. to GW-11, REMOVAL, Front Door Glass.>
5) Disconnect electrical connector of regulator motor.
6) Loosen four bolts and two nuts to pull out regulator assembly.


GW-00098

7) Loosen screws to remove motor assembly.


GW-00099

B: INSTALLATION

1) Install in the reverse order of removal.
2) Adjust front door glass. <Ref. to GW-12, Adjustment.>

Tightening torque:
Refer to COMPONENT in General Description. <Ref. to EB-4, FRONT DOOR PANEL, COMPONENT, General Description.> and <Ref. to GW-3, FRONT DOOR GLASS, COMPONENT, General Description.>

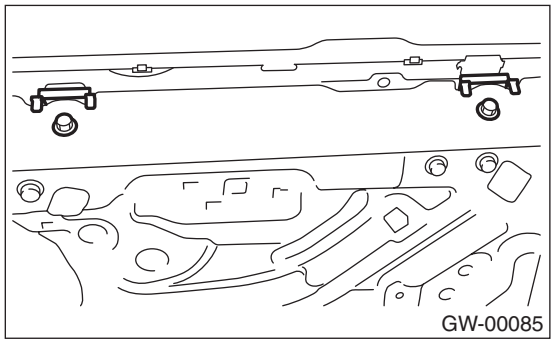
C: INSPECTION

1) Make sure that power window motor rotates properly when battery voltage is applied to terminals of motor connector.
2) Change polarity of battery connections to terminals to ensure that motor rotates in reverse direction.

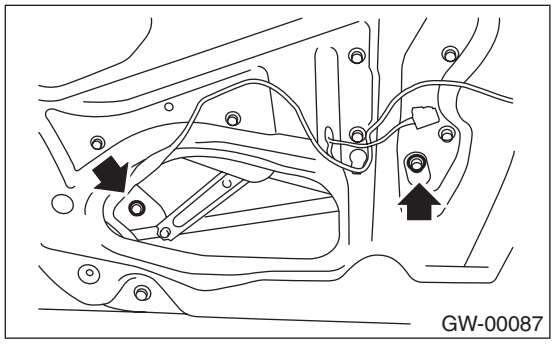
8. Rear Door Glass

A: REMOVAL

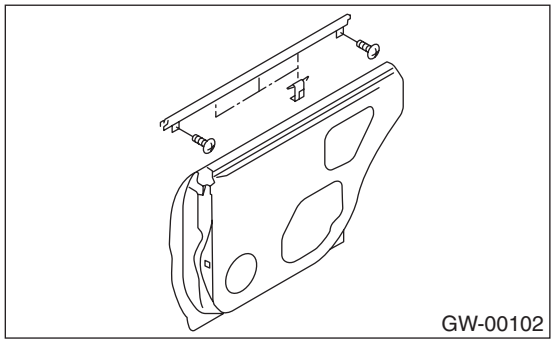
1) Remove door trim. <Ref. to EI-33, REMOVAL, Rear Door Trim.>
2) Remove sealing cover. <Ref. to EB-16, REMOVAL, Rear Sealing Cover.>
3) Remove stabilizer.


GW-00085

4) Operate power window switch to move glass as shown in the figure, and remove two nuts.


GW-00087

5) Loosen two screws to remove weatherstrip.


GW-00102

6) Pull out glass.

CAUTION:
Avoid impact and damage to the glass.

B: INSTALLATION

1) Install in the reverse order of removal.

CAUTION:
Make sure that glass stay is placed securely in sash.

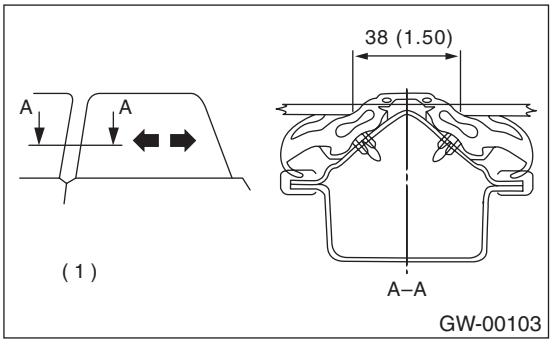
2) Adjust rear door glass. <Ref. to GW-17, ADJUSTMENT, Rear Door Glass.>

Tightening torque:
Refer to COMPONENT in General Description. <Ref. to EB-5, REAR DOOR PANEL, COMPONENT, General Description.> and <Ref. to GW-4, REAR DOOR GLASS, COMPONENT, General Description.>

C: ADJUSTMENT

NOTE:
Rear door glass, as a rule, should be adjusted in the same manner as front glass, although they are different in dimension. Special notes for rear glass are given below.

1) Adjust glass position using the following dimensions as a guide line.



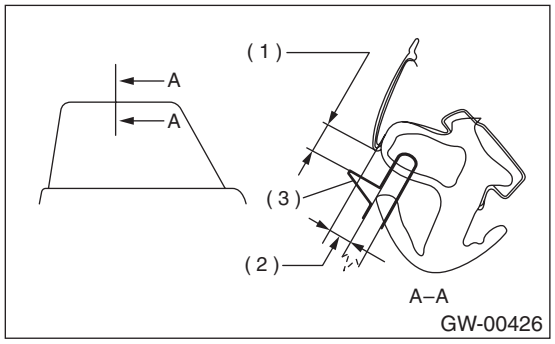
GW-00103

(1) Unit: mm (in)

CAUTION:
• If dimensions are smaller than the given dimensions, glass may get caught in weatherstrip during lifting/lowering operation. In the worst case, it may cause glass not to be opened fully.
• After adjustment, move glass up and down to check whether it is caught.

2) Install ST to glass and adjust degree of adhesion of glass until it becomes the following value.

ST 61299AE010 SPACER [Glass thickness: 4 mm (0.157 in) for rear door glass]



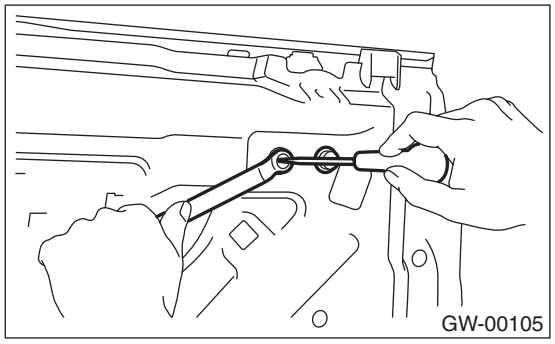
(1) 3.2 - 4.8 mm (0.126 - 0.189 in)
(2) 6 mm (0.24 in)
(3) ST

NOTE:
• If degree of adhesion of rear glass is higher than necessary, glass may get caught in weatherstrip of center pillar corner, resulting in early wear of weatherstrip. Be careful when adjusting.
• After adjustment, move glass up and down to check whether it is caught.

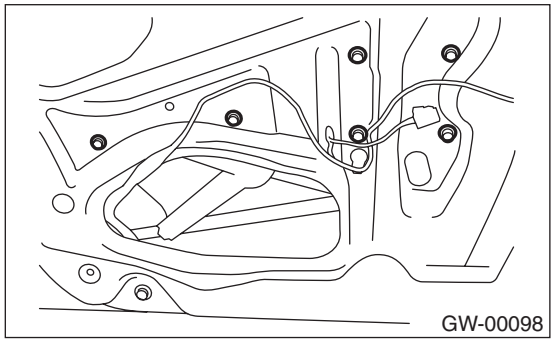
9. Rear Regulator and Motor Assembly

A: REMOVAL

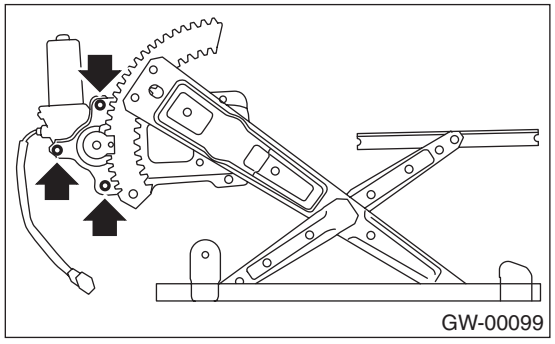
1) Remove door trim. <Ref. to EI-33, REMOVAL, Rear Door Trim.>
2) Remove sealing cover. <Ref. to EB-16, REMOVAL, Rear Sealing Cover.>
3) Remove door glass. <Ref. to GW-17, REMOVAL, Rear Door Glass.>
4) Secure bolts using screwdriver to remove front sash adjusting nut.


GW-00105

5) Remove front sash.
6) Disconnect electrical connector regulator motor.
7) Loosen four bolts and two nuts to remove regulator assembly.


GW-00098

8) Loosen screws to remove motor assembly.


GW-00099

B: INSTALLATION

1) Install in the reverse order of removal.
2) Adjust rear door glass. <Ref. to GW-17, ADJUSTMENT, Rear Door Glass.>

Tightening torque:
Refer to COMPONENT in General Description. <Ref. to EB-5, REAR DOOR PANEL, COMPONENT, General Description.> and <Ref. to GW-4, REAR DOOR GLASS, COMPONENT, General Description.>

C: INSPECTION

1) Make sure that power window motor rotates properly when battery voltage is applied to terminals of motor connector.
2) Change polarity of battery connections to terminals to ensure that motor rotates in reverse direction.

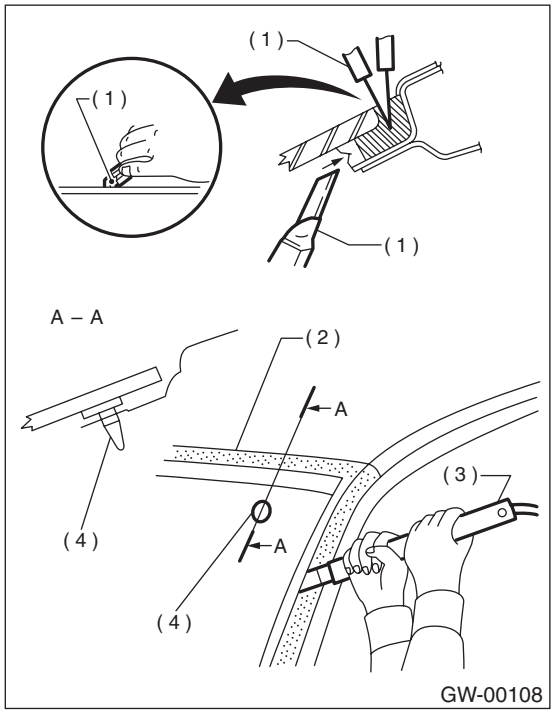
10.Windshield Glass

A: REMOVAL

1. USING WINDSHIELD KNIFE

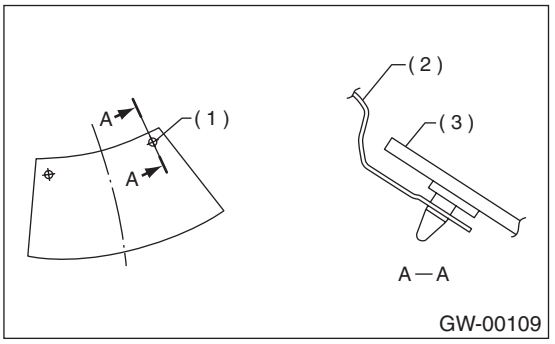
1) Remove cowl panel. <Ref. to EI-29, REMOVAL, Cowl Panel.>
2) Remove front molding.
3) Tape body side of the circumference of windshield glass for protection.
4) Apply sufficient amount of soapy water to adhesive layer.
5) Insert windshield knife into the adhesive layer.
6) While holding the knife edge and windshield glass edge at a right angle, move windshield knife in parallel to windshield glass edge along face and edge of windshield glass to cut the adhesive layer.

CAUTION:
• Do not twist windshield knife.
• Cutting of adhesive layer shall be started with wider gap between windshield glass and body.



(1) Putty knife
(2) Protective tape
(3) Windshield knife
(4) Matching pin

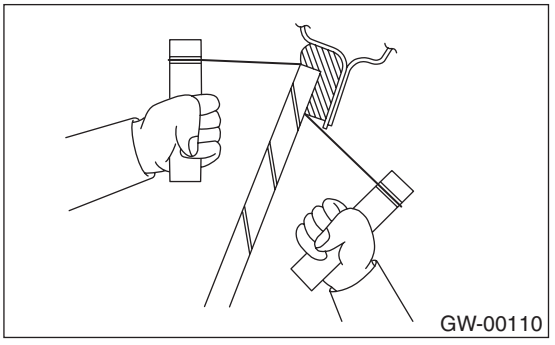
NOTE:
Because matching pins are bonded to the corners of glass, use piano wire to cut the pin.



(1) Matching pin
(2) Body panel
(3) Glass

2. USING PIANO WIRE

1) Remove cowl panel. <Ref. to EI-29, REMOVAL, Cowl Panel.>
2) Remove front molding.
3) Tape the body side of the circumference of windshield glass for protection.
4) Make a hole in adhesive layer using drill or knife.
5) Pass piano wire through the hole, and attach securely both the wire ends to pieces of wood.



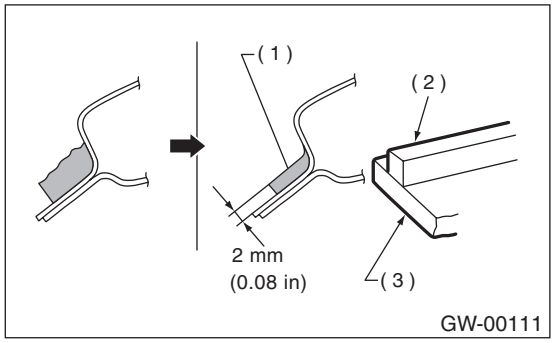
6) Pull the wire ends alternately to cut off the adhesive layer.

CAUTION:
• Do not tightly pull the piano wire against the windshield glass edge.
• Be careful not to damage interior and exterior parts.
• When removal is made with area close to instrument panel, place a protection plate over it. Pay particular attention to the removal.
• Do not cross piano wires. Otherwise they may be cut.

B: INSTALLATION

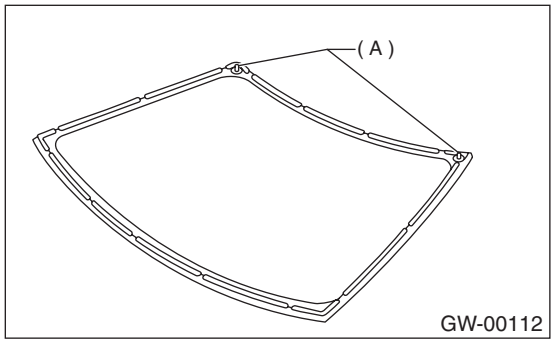
1) Clean external circumference of windshield glass with alcohol or white gasoline.
2) Remove adhesive layer on the body using cutter knife to obtain smooth face 2 mm (0.08 in) thick.

CAUTION:
Be careful not to damage the body and paint surface.



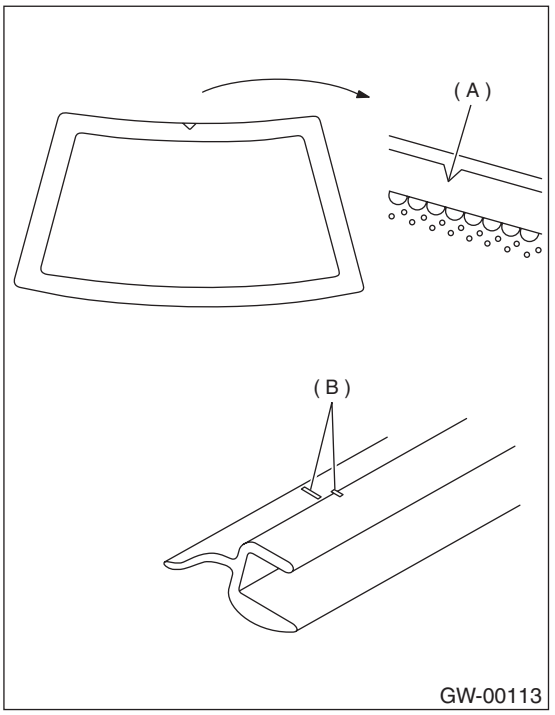
(1) Adhesive
(2) Dam rubber
(3) Glass

3) Clean body with alcohol or white gasoline to remove thoroughly chips, dusts, and dirts from body face.
4) Place glass on body.
5) Adjust glass position to make uniform clearance between body and glass in four corners.
6) Place matching pins (A) and body on glass.



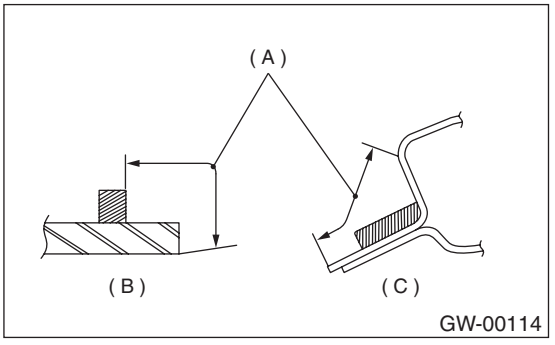
7) Remove glass from body.

8) Fit molding mark (B) to notch (A) of ceramic print.

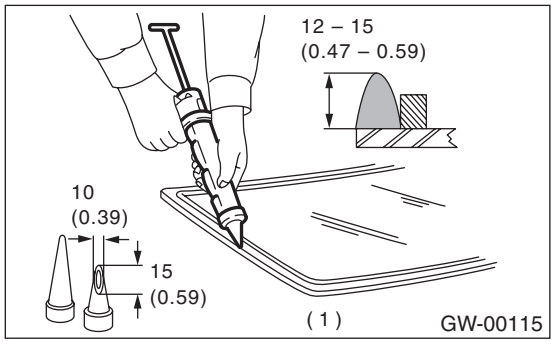


9) Apply primer to adhesive layer (A) of glass (B) using sponge.
10) Apply primer to adhesive layer (A) of body (C).

CAUTION:
• Primer once attached to the painted surface of the body and internal trim is hard to wipe off. Mask the circumference of such areas.
• Let primer dry for about ten minutes before installing the glass.
• Do not touch surface coated with primer.

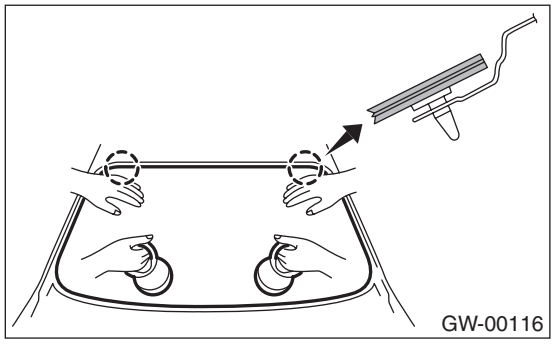


11) Cut off cartridge nozzle tip and set it in sealant gun as shown.



(1) Unit: mm (in)

12) Apply adhesive to glass end surface as shown.
13) Fit matching pins using suction rubber cup to install windshield glass.



14) Lightly press windshield glass for tight fit.
15) Make adhesive surface flush using spatula.

CAUTION:
• When door is opened/closed after glass is bonded, always lower door glass and then open/close it carefully.
• Move vehicle slowly.

16) After completion of all work, allow vehicle to stand for about 24 hours.

NOTE:
For minimum drying time and time the vehicle must be left standing before driving after bonding, follow instructions or instruction manual from the adhesive manufacturer.

17) After curing of adhesive, pour water on external surface of vehicle to check that there are no water leaks.

CAUTION:
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) Install cowl panel. <Ref. to EI-29, INSTALLATION, Cowl Panel.>

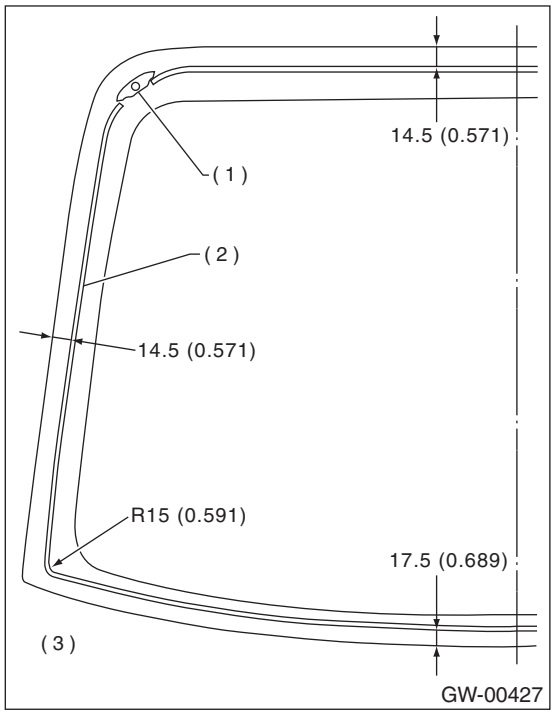
11.Rear Window Glass

A: REMOVAL

1) Disconnect electrical connectors from rear defogger terminals.
2) Remove glass in the same procedure as for windshield glass. <Ref. to GW-20, REMOVAL, Windshield Glass.>

B: INSTALLATION

1) Bond dam rubber and matching pin.



(1) Matching pin
(2) Dam rubber
(3) Unit: mm (in)

2) Install glass in the same procedure as for windshield glass. <Ref. to GW-21, INSTALLATION, Windshield Glass.>
3) Connect rear defogger terminals.

CAUTION:
• When door is opened/closed after glass is bonded, always lower door glass and then open/close door carefully.
• Move vehicle slowly.

4) After completion of all work, allow vehicle to stand for about 24 hours.

NOTE:
For minimum drying time and time the vehicle must be left standing before driving after bonding, follow instructions or instruction manual from the adhesive manufacturer.

5) After curing of adhesive, pour water on external surface of vehicle to check that there are no water leaks.

CAUTION:
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.

12.Roof Window Glass

A: REMOVAL

<Ref. to SR-5, REMOVAL, Sunroof Lid.>

B: INSTALLATION

<Ref. to SR-5, INSTALLATION, Sunroof Lid.>

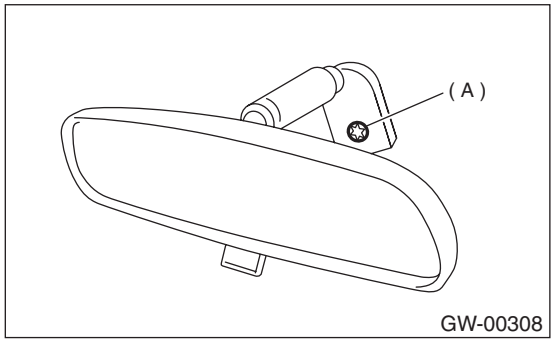
C: ADJUSTMENT

<Ref. to SR-5, ADJUSTMENT, Sunroof Lid.>

13.Inner Rearview Mirror

A: REMOVAL

Loosen TORX screw (A) and remove the inner rearview mirror.



(1) TORX screw

CAUTION:
Be careful not to damage the mirror surface.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

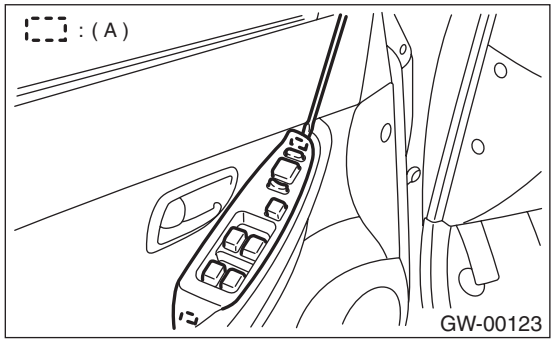
Do not let mirror be damaged.

14.Power Window Control Switch

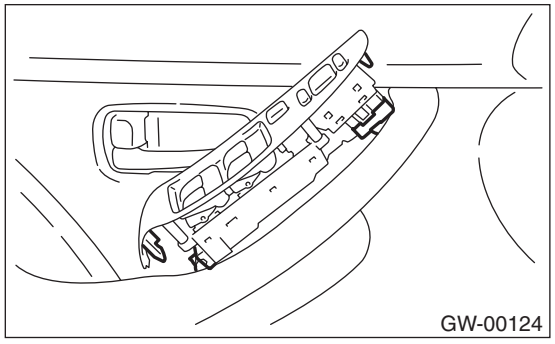
A: REMOVAL

1. MAIN SWITCH

1) Remove two hooks (A) of switch panel to remove power window main switch.

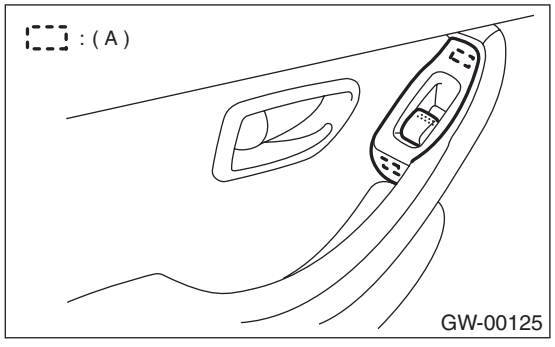


2) Disconnect electrical connectors from power window main switch and mirror switch.



2. SUB-SWITCH

Remove two hooks (A) of switch panel to remove power window sub-switch and disconnect electrical connector.



B: INSTALLATION

1. MAIN SWITCH

Install in the reverse order of removal.

2. SUB-SWITCH

Install in the reverse order of removal.

C: INSPECTION

1. MAIN SWITCH

Measure switch resistance.

Driver's switch:

Switch position	Terminal No.	Standard
UP	3 and 9, 7 and 1	Less than 1 Ω
OFF	3 and 7 and 1	Less than 1 Ω
DOWN	7 and 9, 3 and 1	Less than 1 Ω
AUTO DOWN	7 and 9, 3 and 1	Less than 1 Ω

Front passenger's switch:

Switch position	Terminal No.	Standard
UP	9 and 5, 1 and 4	Less than 1 Ω
OFF	1 and 5 and 4	Less than 1 Ω
DOWN	9 and 4, 1 and 5	Less than 1 Ω

Rear left switch:

Switch position	Terminal No.	Standard
UP	9 and 13, 1 and 8	Less than 1 Ω
OFF	1 and 13 and 8	Less than 1 Ω
DOWN	9 and 8, 1 and 13	Less than 1 Ω

Rear right switch:

Switch position	Terminal No.	Standard
UP	9 and 16, 1 and 14	Less than 1 Ω
OFF	1 and 16 and 14	Less than 1 Ω
DOWN	9 and 14, 1 and 16	Less than 1 Ω

If defective, replace the main switch.

2. SUB-SWITCH

Measure switch resistance.

Front passenger's door switch and rear door switch:

Switch position	Terminal No.	Standard
UP	5 and 1, 6 and 2	Less than 1 Ω
OFF	4 and 1, 6 and 2	Less than 1 Ω
DOWN	5 and 2, 4 and 1	Less than 1 Ω

If defective, replace the sub-switch.

15.Rear Window Defogger Switch

A: REMOVAL

<Ref. to AC-28, REMOVAL, Control Unit.>

B: INSTALLATION

<Ref. to AC-28, INSTALLATION, Control Unit.>

C: INSPECTION

Check continuity between connectors at the back of heater control unit.

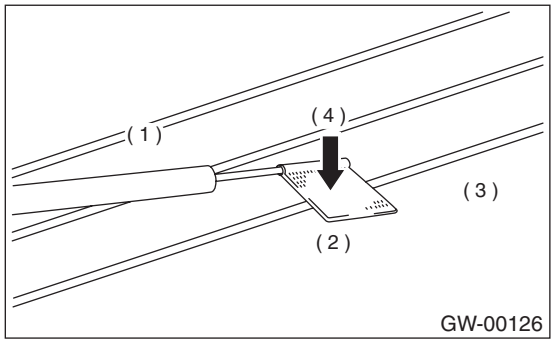
Switch position	Terminal No.	Standard
OFF	—	More than 1 MΩ
OFF	(i17) 14 and (i17) 10	Less than 1 Ω

16.Rear Window Defogger

A: INSPECTION

CAUTION:
When wiping stain on glass off with cloth, use a dry and soft cloth and move it in the direction of the heat wire extension to avoid damage to the heat wire.

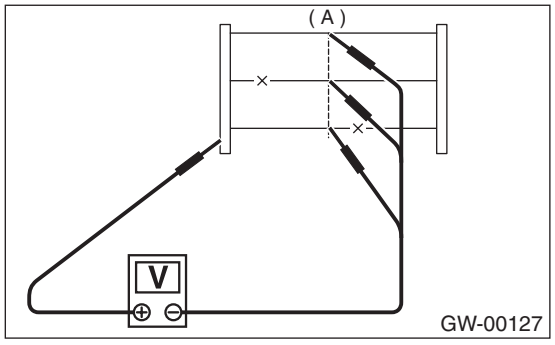
1) Turn ignition switch to ON.
2) Turn defogger switch to ON.
3) Wrap tips of tester pins with aluminum foil to avoid damage to heat wire.



(1) Tester probe
(2) Tin foil
(3) Heat wire
(4) PRESS

4) Measure voltage at wire center (A) with DC voltmeter.

Standard voltage:
Approx. 6 volts



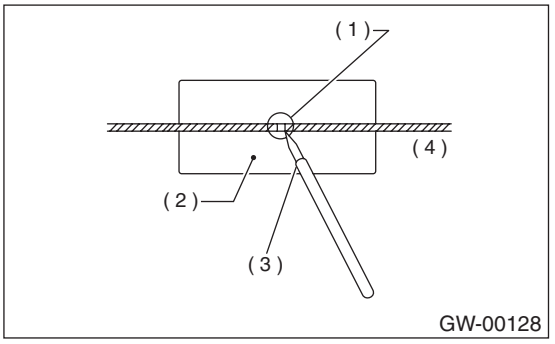
Voltage	Criteria
Approx. 6 V	OK
Approx. 12 V or 0 V	Broken

NOTE:
• If the measured value is 12 volts, heat wire is open between wire center and positive (+) end.
• If zero volt, heat wire is open between wire center and ground.

5) Apply positive lead of voltmeter to positive terminal of voltmeter, and then move negative lead along the wire up to the negative terminal end. If voltage changes from zero to several volts during movement of lead, heat wire is open at the voltage change point.

B: REPAIR

1) Clean broken portion with alcohol or white gasoline.
2) Mask both side of wire with thin film.
3) Apply conductive silver composition (DUPONT No. 4817) to broken portion.



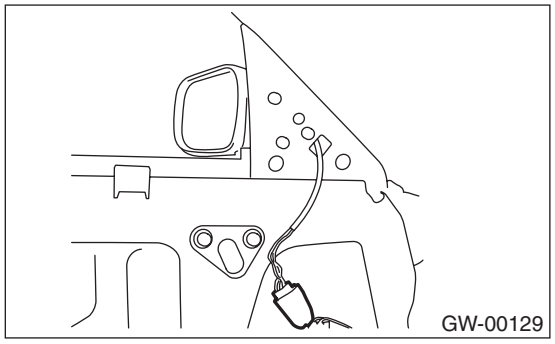
(1) Broken portion
(2) Masking thin film
(3) Conductive silver composition
(4) Broken wire

4) After repair, check wire.

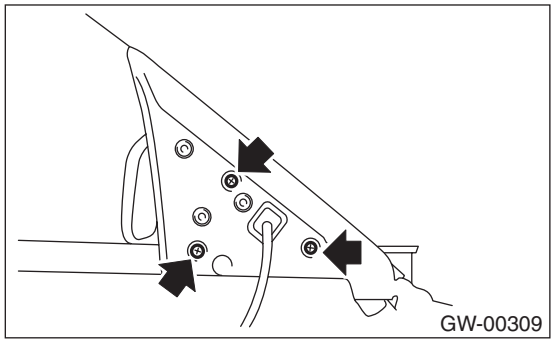
17.Outer Mirror Assembly

A: REMOVAL

1) Remove door trim. <Ref. to EI-32, REMOVAL, Front Door Trim.>
2) Pull off sealing cover to disconnect outer mirror harness connector.



3) Remove screws to remove outer mirror assembly.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Check to ensure that outer mirror moves properly when battery voltage is applied to outer mirror harness connector terminals.

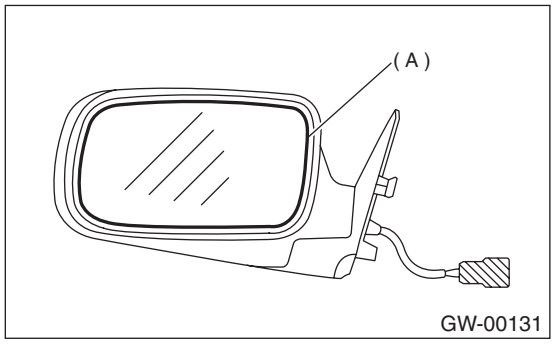
Switch position	Terminal No.
OFF	—
UP	1 (+) and 3 (–)
DOWN	3 (+) and 1 (–)
LEFT	2 (+) and 3 (–)
RIGHT	3 (+) and 2 (–)

If defective, replace the outer mirror.

18.Outer Mirror

A: REPLACEMENT

1) Remove the outer mirror assembly. <Ref. to GW-30, REMOVAL, Outer Mirror Assembly.>
2) Warm the area around the mirror holder (A) with a hair drier until the edges of the mirror holder become soft (about 2 or 3 minutes with a 1,000 W drier.)
3) Use a flat-bladed screwdriver without sharp edges to lift the mirror out of the mirror holder (A). (Also remove the connector from the back of mirrors with heaters.)



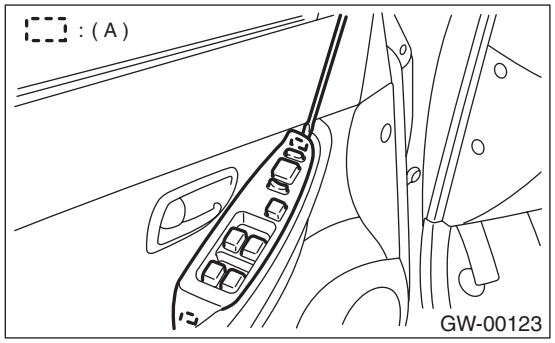
4) Warm the area around the mirror holder (A) with a hair drier until the edges of the mirror holder (A) become soft (about 2 or 3 minutes with a 1,000 W drier.)
5) With heater models, connect the connector on the back of mirror.
6) Remove the backing of the new two-sided tape, and push the mirror in to install it.

CAUTION:
Unless the mirror holder is warmed sufficiently, the mirror holder edges may be damaged or the mirror cracked.

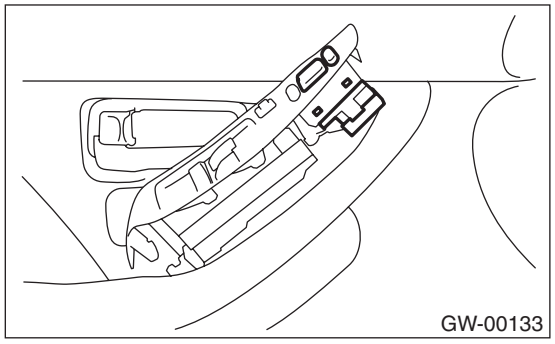
19.Remote Control Mirror Switch

A: REMOVAL

1) Remove power window main switch panel.



2) Remove four hook (A) to remove remote control mirror switch.

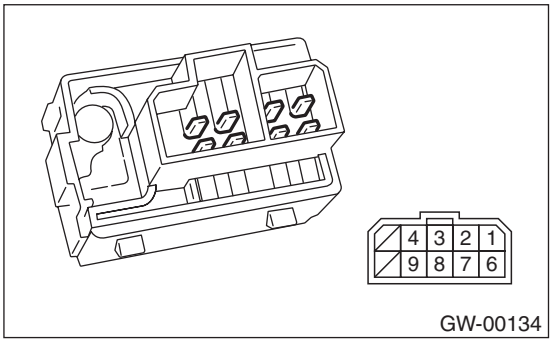


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

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



Change over switch left position:

Switch position	Terminal No.	Standard
OFF	—	More than 1 MΩ
UP	7 and 4, 2 and 1	Less than 1 Ω
DOWN	7 and 2, 4 and 1	Less than 1 Ω
LEFT	9 and 4, 2 and 1	Less than 1 Ω
RIGHT	9 and 2, 4 and 1	Less than 1 Ω

Change over switch right position:

Switch position	Terminal No.	Standard
OFF	—	More than 1 MΩ
UP	6 and 4, 2 and 1	Less than 1 Ω
DOWN	6 and 2, 4 and 1	Less than 1 Ω
LEFT	8 and 4, 2 and 1	Less than 1 Ω
RIGHT	8 and 2, 4 and 1	Less than 1 Ω

If defective, replace the switch.

20.Wiper Deicer

A: INSPECTION

Refer to INSPECTION under Rear Window Defogger. <Ref. to GW-29, INSPECTION, Rear Window Defogger.>

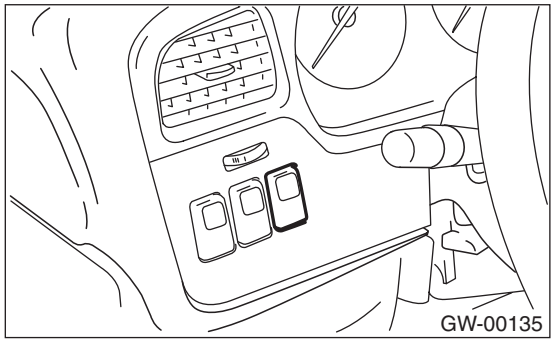
B: REPAIR

Refer to REPAIR under Rear Window Defogger. <Ref. to GW-29, REPAIR, Rear Window Defogger.>

21.Wiper Deicer Switch

A: REMOVAL

Remove driver side switch panel, and then remove wiper deicer switch.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Move wiper deicer switch to each position and check continuity between terminals.

Switch position	Terminal No.	Standard
OFF	—	More than 1 MΩ
ON	3 and 5	Less than 1 Ω

If defective, replace the switch.

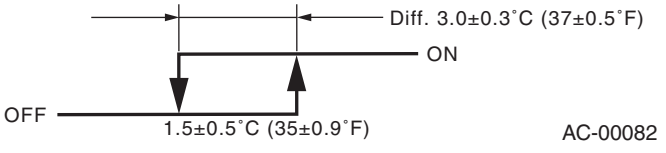
1. General Description

A: SPECIFICATIONS

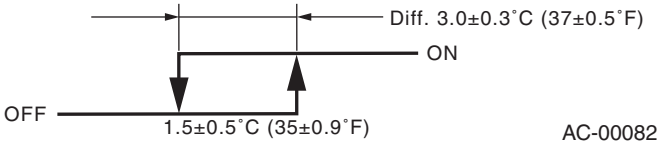
1. HEATER SYSTEM

Item		Specifications	Condition
Heating capacity		5.0 kW (4,300 kcal/h, 17,062 BTU/h) or more	• Mode selector switch: HEAT • Temperature control switch: FULL HOT • Temperature difference between hot water and inlet air: 65°C (149°F) • Hot water flow rate: 360 ℓ (95.1 US gal, 79.2 Imp gal)/h
Air flow rate		300 m^3 (10,593 cu ft)/h	Heat mode (FRESH), FULL HOT at 12.5 V
Max air flow rate		500 m^3 (17,655 cu ft)/h	• Temperature control switch: FULL COLD • Blower fan speed: 4th position • Mode selector lever: RECIRC
Heater core size (height × length × width)		193.5 × 152 × 35.0 mm (7.62 × 5.98 × 1.378 in)	—
Blower motor	Type	Magnet motor 220 W or less	at 12 V
	Fan type and size (diameter × width)	Sirocco fan type 150 × 75 mm (5.91 × 2.95 in)	—

2. A/C SYSTEM (NON-TURBO MODEL)

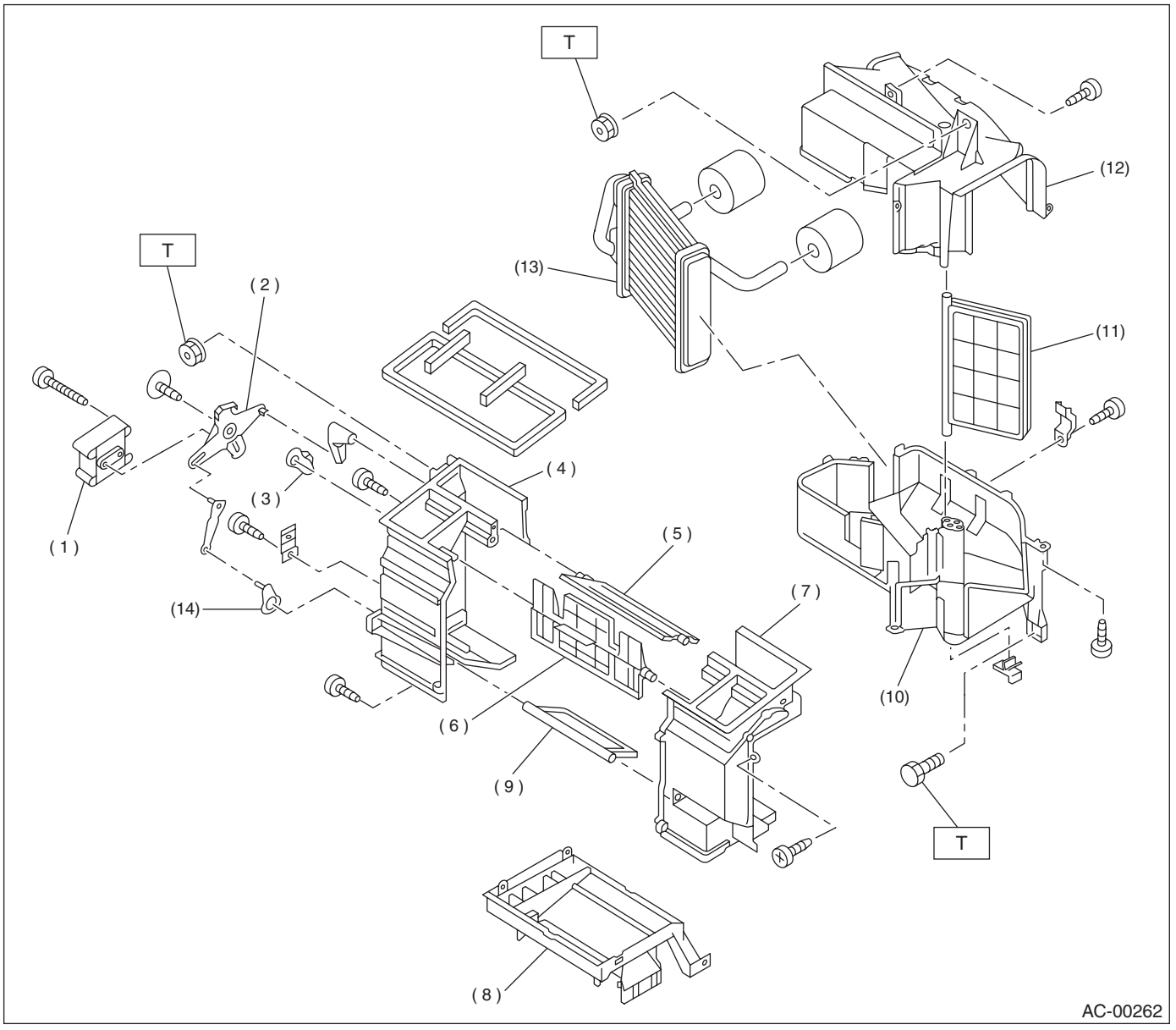
Item			Specifications
Type of air conditioner			Reheat air-mix type
Cooling capacity			5.2 kW (4,471 kcal/h, 17,741 BTU/h)
Refrigerant			HFC-134a (CH_2FCF_3) [0.65±0.05 kg (1.43±0.11 lb)]
Compressor		Type	5-vane rotary, fix volume (DKV-14G)
		Discharge	140 cm^3 (8.54 cu in)/rev
		Max. permissible speed	7,000 rpm
Magnet clutch		Type	Dry, single-disc type
		Power consumption	45 W
		Type of belt	V-Ribbed 4 PK
		Pulley dia. (effective dia.)	125 mm (4.92 in)
		Pulley ratio	1.064
Condenser		Type	Corrugated fin (Multi-flow)
		Core face area	0.21 m^2 (2.26 sq ft)
		Core thickness	24 mm (0.94 in)
		Radiation area	6.52 m^2 (70 sq ft)
Receiver drier		Effective inner capacity	250 cm^3 (15.26 cu in)
Expansion valve		Type	External equalizing
Evaporator		Type	Single tank
		Dimensions (W × H × T)	235 × 224 × 60 mm (9.25 × 8.82 × 2.36 in)
Blower fan		Fan type	Sirocco fan
		Outer diameter × width	150 × 75 mm (5.91 × 2.95 in)
		Power consumption	220 W at 12 V
Condenser fan (Sub fan)		Motor type	Magnet
		Power consumption	75 W at 12 V
		Fan outer diameter	300 mm (11.81 in)
Radiator fan (Main fan)		Motor type	Magnet
		Power consumption	75 W at 12 V
		Fan outer diameter	300 mm (11.81 in)
Idling speed (A/C ON)		MPFI model	850±100 rpm
Dual switch (Pressure switch)	Low-pressure switch operating pressure	ON → OFF	177±25 kPa (1.80±0.25 kg/cm^2, 25.6±3.6 psi)
		OFF → ON	$216^{+39}/_{-25}$ kPa ($2.2^{+0.4}/_{-0.25}$ kg/cm^2, $31^{+5.7}/_{-3.6}$ psi)
	High-pressure switch operating pressure	ON → OFF	2,942±196 kPa (30±2 kg/cm^2, 427±28 psi)
		DIFF	588±196 kPa (6±2 kg/cm^2, 85±28 psi)
Thermo control amplifier working temperature (Evaporator outlet air)			 AC-00082

3. A/C SYSTEM (TURBO MODEL)

Item			Specifications
Type of air conditioner			Reheat air-mix type
Cooling capacity			5.2 kW (4,471 kcal/h, 17,741 BTU/h)
Refrigerant			HFC-134a (CH_2FCF_3) [0.65±0.05 kg (1.43±0.11 lb)]
Compressor		Type	5-vane rotary, fix volume (DKV-14G)
		Discharge	140 cm^3 (8.54 cu in)/rev
		Max. permissible speed	7,000 rpm
Magnet clutch		Type	Dry, single-disc type
		Power consumption	45 W
		Type of belt	V-Ribbed 4 PK
		Pulley dia. (effective dia.)	125 mm (4.92 in)
		Pulley ratio	1.064
Condenser		Type	Corrugated fin (Multi-flow)
		Core face area	0.21 m^2 (2.26 sq ft)
		Core thickness	24 mm (0.94 in)
		Radiation area	6.52 m^2 (70 sq ft)
Receiver drier		Effective inner capacity	250 cm^3 (15.26 cu in)
Expansion valve		Type	External equalizing
Evaporator		Type	Single tank
		Dimensions (W × H × T)	235 × 224 × 60 mm (9.25 × 8.82 × 2.36 in)
Blower fan		Fan type	Sirocco fan
		Outer diameter × width	150 × 75 mm (5.91 × 2.95 in)
		Power consumption	220 W at 12 V
Condenser fan (Sub fan)		Motor type	Magnet
		Power consumption	120 W at 12 V
		Fan outer diameter	320 mm (12.60 in)
Radiator fan (Main fan)		Motor type	Magnet
		Power consumption	120 W at 12 V
		Fan outer diameter	320 mm (12.60 in)
Idling speed (A/C ON)		MPFI model	850±100 rpm
Triple switch (Pressure switch)	Low-pressure switch operating pressure	ON → OFF	177±25 kPa (1.80±0.25 kg/cm^2, 25.60±3.56 psi)
		OFF → ON	206±30 kPa (2.10±0.31 kg/cm^2, 29.86±4.41 psi)
	High-pressure switch operating pressure	ON → OFF	2,940±200 kPa (29.98±2.03 kg/cm^2, 426.32±28.87 psi)
		DIFF	590±200 kPa (6.02±2.03 kg/cm^2, 85.6±28.87 psi)
	Middle-pressure switch operating pressure	ON → OFF	1,370±120 kPa (13.97±1.22 kg/cm^2, 198.65±17.35 psi)
		OFF → ON	1,770±100 kPa (18.05±1.02 kg/cm^2, 256.81±14.50 psi)
Thermo control amplifier working temperature (Evaporator outlet air)			

B: COMPONENT

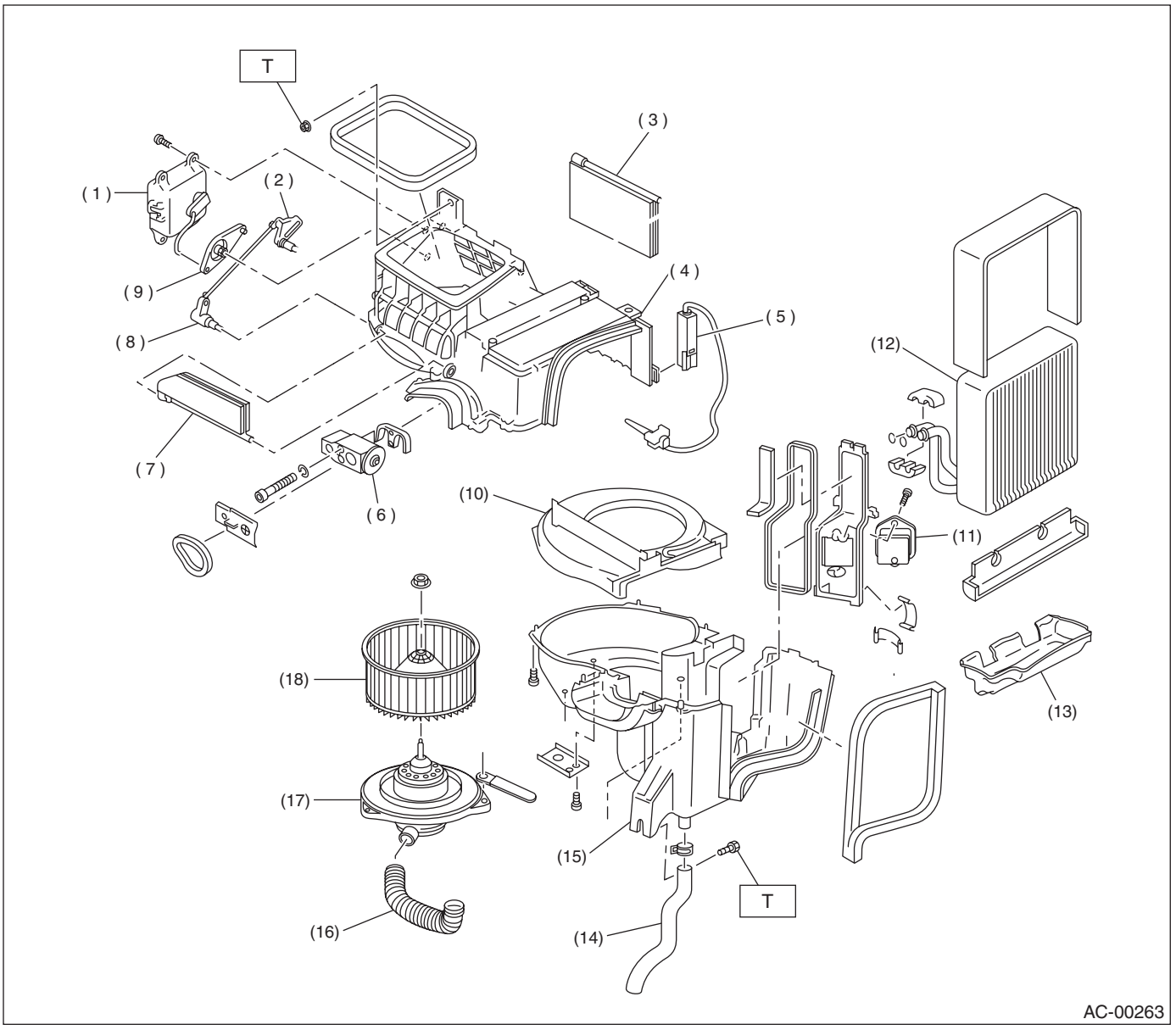
1. HEATER UNIT



(1) Vent door actuator
(2) Side link
(3) Vent door lever
(4) Case A
(5) DEF door
(6) Vent door
(7) Case B
(8) Foot duct
(9) Foot door
(10) Case D
(11) Mix door
(12) Case C
(13) Heater core
(14) Foot door lever

Tightening torque: N·m (kgf-m, ft-lb)
T: 7.35 (0.750, 5.421)

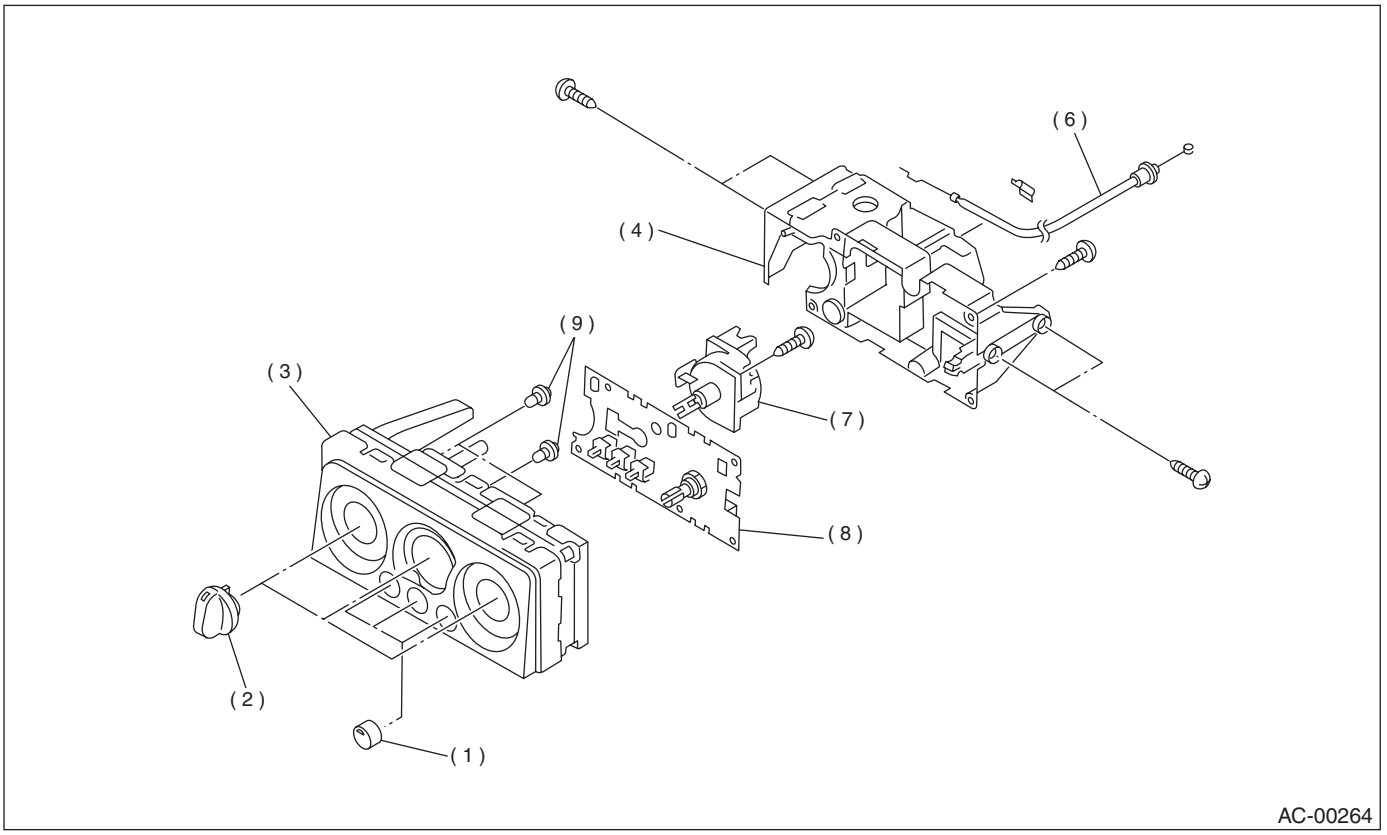
2. INTAKE UNIT WITH EVAPORATOR



(1) Intake door actuator
(2) Lever (A)
(3) Door (A)
(4) Intake unit case upper
(5) Thermistor (With A/C model)
(6) Expansion valve (With A/C model)
(7) Door (B)
(8) Lever (B)
(9) Lever (C)
(10) Blower plate
(11) Resistor
(12) Evaporator (With A/C model)
(13) Evaporator case (With A/C model)
(14) Drain hose
(15) Intake unit case lower
(16) Aspirator pipe
(17) Blower motor
(18) Fan

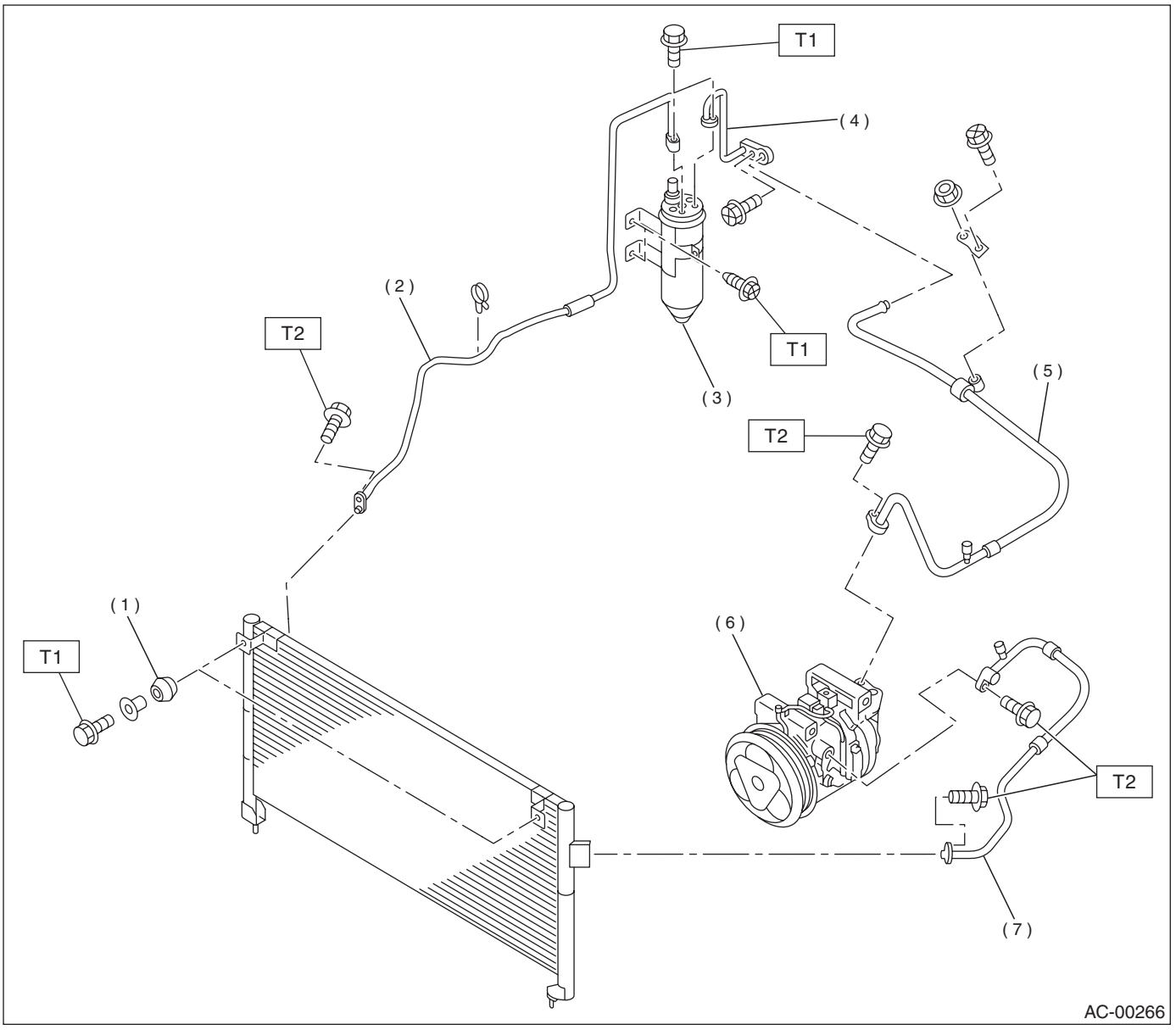
Tightening torque: N·m (kgf-m, ft-lb)
T: 7.4 (0.75, 5.4)

3. CONTROL UNIT



(1) Switch
(2) Dial knob
(3) Panel ASSY
(4) Base unit
(5) Cover
(6) Temperature control cable
(7) Fan switch ASSY
(8) Circuit ASSY
(9) Bulb

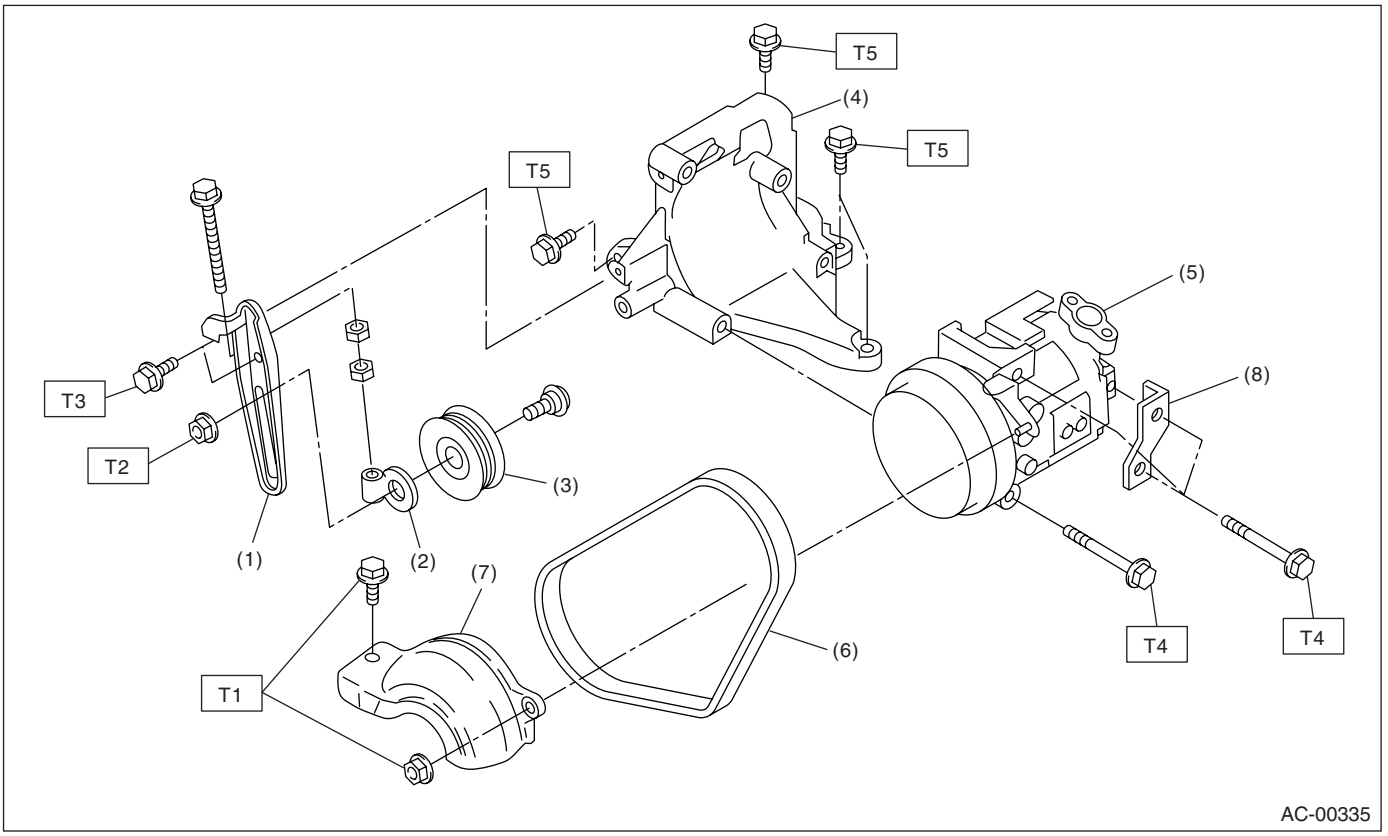
4. AIR CONDITIONING UNIT



(1) Condenser
(2) Pipe (Condenser — Receiver drier)
(3) Receiver drier
(4) Pipe (Receiver drier — Cooling unit)
(5) Hose (Low-pressure)
(6) Compressor
(7) Hose (High-pressure)

Tightening torque: N·m (kgf-m, ft-lb)
T1: 7.4 (0.75, 5.4)
T2: 15 (1.5, 10.8)

5. COMPRESSOR



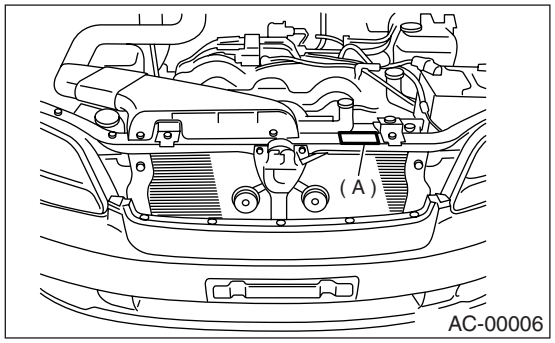
(1) Idler pulley bracket
(2) Idler pulley adjuster
(3) Idler pulley
(4) Compressor bracket
(5) Compressor
(6) V-belt
(7) Compressor belt cover (Non-TURBO model)
(8) Compressor stay

Tightening torque: N·m (kgf-m, ft-lb)
T1: 7.4 (0.75, 5.4)
T2: 22.6 (2.3, 16.6)
T3: 23.0 (2.35, 17.0)
T4: 28.9 (2.95, 21.3)
T5: 35 (3.6, 26)

C: CAUTION

1. HFC-134A A/C SYSTEM

• Unlike the old conventional HFC-12 system components, the cooling system components for the HFC-134a system such as the refrigerant and compressor oil are incompatible.
• Vehicles with the HFC-134a system can be identified by the label “A” attached to the vehicle.
Before maintenance, check which A/C system is installed in the vehicle.



2. COMPRESSOR OIL

• HFC-134a compressor oil has no compatibility with that for R12 system.
• Use only the manufacturer-authorized compressor oil for the HFC-134a system; only use ZXL200PG.
• Do not mix multiple compressor oils.
If HFC-12 compressor oil is used in a 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 HFC-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 the atmosphere using a plug or tape. In order to avoid moisture, store the oil in a container with its cap tightly closed.

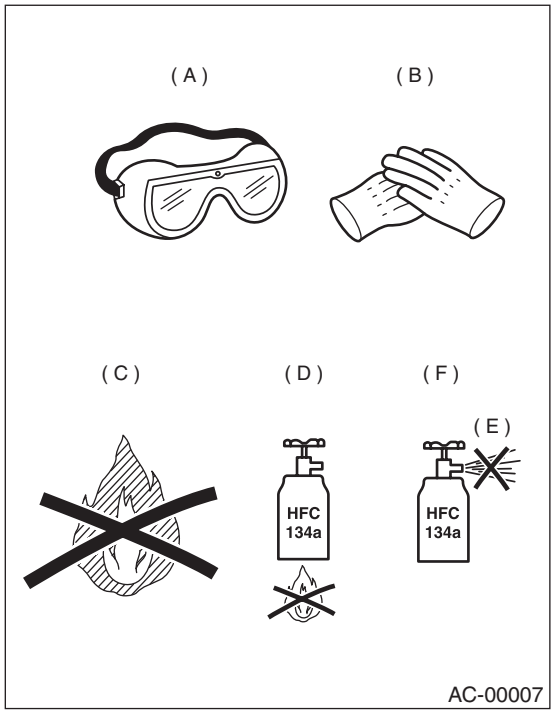
3. REFRIGERANT

• The HFC-12 refrigerant cannot be used in the HFC-134a A/C system. The HFC-134a refrigerant, also, cannot be used in the HFC-12 A/C system.
• If an incorrect or no refrigerant is used, poor lubrication will result 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 safety goggles and protective gloves. Direct contact of the refrigerant with skin may cause frostbite.
If the refrigerant gets into your eye, avoid rubbing your eyes with your hands. Wash your eye with plenty of water, and receive medical treatment from an eye doctor.
• Do not heat a service can. If a service can is directly heated, or put into boiling water, the inside pressure will become extremely high. This may cause the can to explode. If a service can must be warmed up, use hot water in 40°C (104°F) max.
• Do not drop or impact a service can. (Observe the precautions and operation procedure described on the refrigerant can.)
• When the engine is running, do not open the high-pressure valve of the manifold gauge. The high-pressure gas will back-flow resulting in an explosion of the can.
• The refrigerant is non-toxic and harmless under normal operating circumstance, but it may change to phosgene (a noxious fume) under open flames or high temperatures (caused by a cigarette or heater).
• Provide good ventilation and do not work in a closed area.

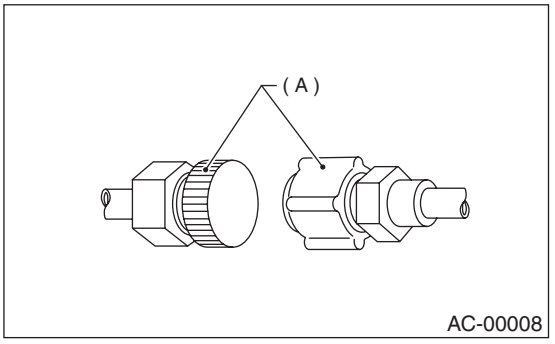
• In order to avoid destroying the ozone layer, prevent HFC-134a from being released into the atmosphere. Using a refrigerant recovery system, discharge and reuse it.



(A) Goggles
(B) Gloves
(C) Avoid open flame
(D) No direct heat on container
(E) Do not discharge
(F) Loosen

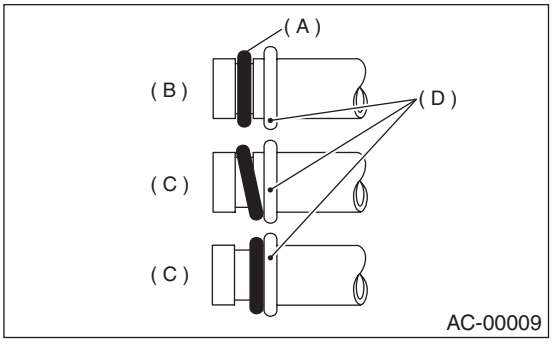
5. O-RING CONNECTIONS

• Use new O-rings.
• In order to keep the O-rings free of lint which will cause a refrigerant gas leak, perform operations without gloves and shop towels.
• Apply the compressor oil to the O-rings to avoid sticking, then install them.
• Use a torque wrench to tighten the O-ring fittings: Over-tightening will damage the O-ring and tube end distortion.
• If the operation is interrupted before completing a pipe connection, recap the tubes, components, and fittings with a plug or tape to prevent contamination from entering.



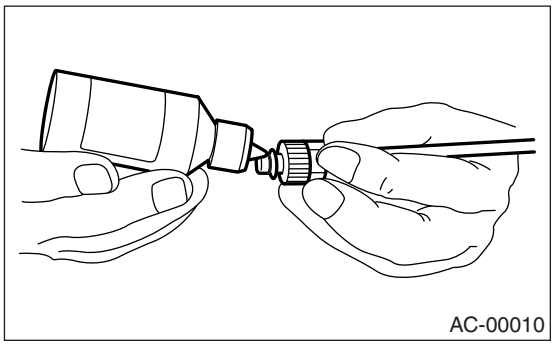
(A) Seal

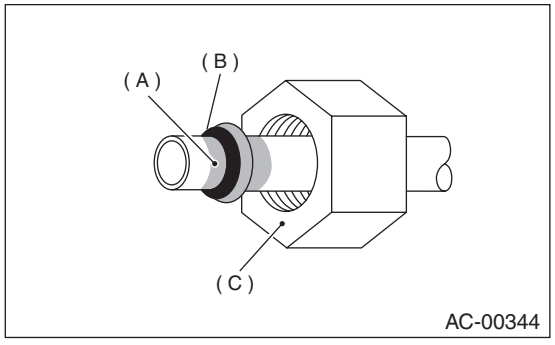
• Visually check the surfaces and mating surfaces of O-rings, threads, and connecting points. If a failure is found, replace the applicable parts.
• Install the O-rings at right angle to the tube bead.



(A) O-ring
(B) OK
(C) NG
(D) Bead

• Use the oil specified in the service manual to lubricate the O-rings.
Apply the oil to the top and sides of the O-rings before installation.
Apply the oil to the O-rings and tube limb.


AC-00010

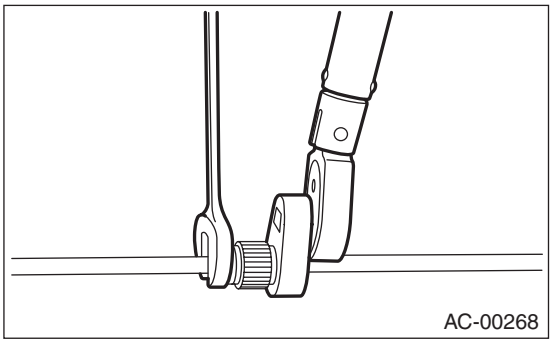


AC-00344

(A) Apply refrigerant oil
(B) O-ring
(C) Do not apply refrigerant oil to the threads.

• When connecting hoses or pipes, use 2 wrenches (a torque wrench for tightening). While securing one side with a wrench, tighten the other side to the specified torque with a torque wrench.
If only one wrench is used to tighten, the tightening torque will be excessive or insufficient. This may cause a pipe distortion or gas leak, resulting in damage to hoses and pipes.
• After tightening, using a clean shop towel to remove excess oil from the connections and any oil which may have run on the vehicle body or other parts.

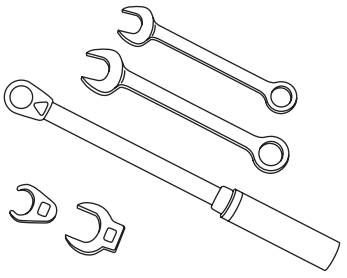
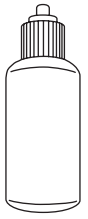
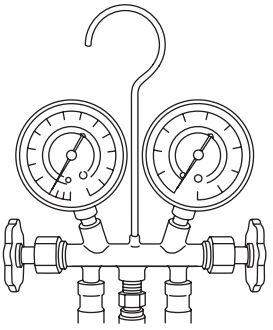
• If any leakage is suspected after tightening, do not retighten the connections, Disconnect the connections, remove the O-rings, and check the O-rings, threads, and connections.

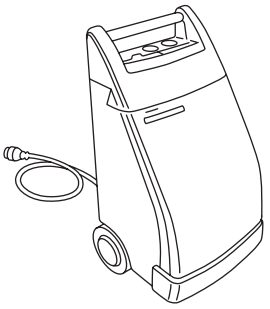
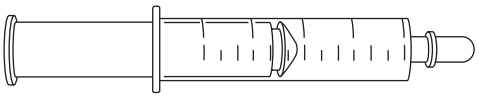
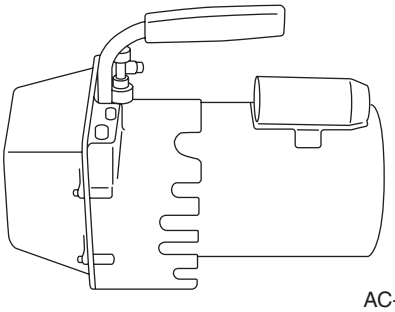
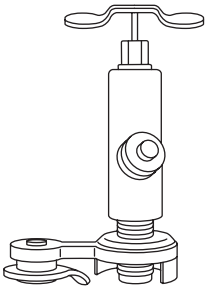
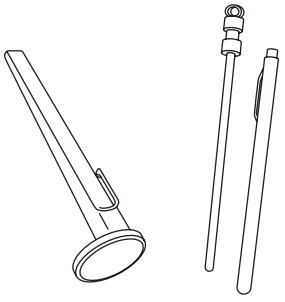

AC-00268

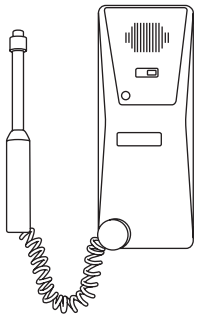
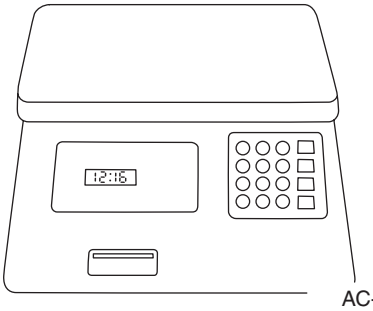
D: PREPARATION TOOL

CAUTION:
When working on vehicles with the HFC-134a system, only use HFC-134a specified tools and parts. Do not mix with CFC-12 tools and parts. If HFC-134a and CFC-12 refrigerant or compressor oil is mixed, poor lubrication will result and the compressor itself may be destroyed.
In order to help prevent mixing HFC-134a and CFC-12 parts and liquid, the tool and screw type and the type of service valves used are different. The gas leak detectors for the HFC-134a and CFC-12 systems must also not be interchanged.

	HFC-134a	CFC-12
Tool & screw type	Millimeter size	Inch size
Valve type	Quick joint type	Screw-in type

Tools and Equipment	Description
Wrench Various **WRENCHES** will be required to service any A/C system. A 7 to 40 N·m (0.7 to 4.1 kg-m, 5 to 30 ft-lb) torque wrench with various crowfoot wrenches will be needed. Open end or flare nut wrenches will be needed for back-up on the tube and hose fittings.	 AC-00347
Applicator bottle A small **APPLICATOR BOTTLE** is recommended to apply refrigerant oil to the various parts. They can be obtained at a hardware or drug store.	 AC-00348
Manifold gauge set A **MANIFOLD GAUGE SET** (with hoses) can be obtained from either a commercial refrigeration supply house or from an auto shop equipment supplier.	 AC-00349

Tools and Equipment	Description
Refrigerant recovery system A **REFRIGERANT RECOVERY SYSTEM** is used for the recovery and reuse of A/C system refrigerant after contaminants and moisture have been removed from the refrigerant.	 AC-00350
Syringe A graduated plastic **SYRINGE** will be needed to add oil back into the system. The syringe can be found at a pharmacy or drug store.	 AC-00351
Vacuum pump A **VACUUM PUMP** (in good working condition) is necessary, and may be obtained from either a commercial refrigeration supply house or an automotive equipment supplier.	 AC-00352
Can tap A **CAN TAP** for the 397 g (14 oz) can is available from an auto supply store.	 AC-00353
Thermometer Pocket **THERMOMETERS** are available from either industrial hardware store or commercial refrigeration supply houses.	 AC-00354

Tools and Equipment	Description
Electronic leak detector An **ELECTRONIC LEAK DETECTOR** can be obtained from either a specialty tool supply or an A/C equipment supplier.	 AC-00355
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.	 AC-00356

2. Refrigerant Pressure with Manifold Gauge Set

A: OPERATION

1) Place the vehicle in the shade and draftless condition.
2) Connect the manifold gauge set.
3) Open the front windows and close all doors.
4) Open the hood.
5) Increase engine speed to 1,500 rpm.
6) Turn ON the A/C switch.
7) Turn the temperature control switch to MAX COOL.
8) Put in RECIRC position.
9) Turn the blower control switch to HI.
10) Read the gauge.

Standard:

Low pressure: 127 — 196 kPa (1.3 — 2.0 kg/cm^2, 18 — 28 psi)
High pressure: 1,471 — 1,667 kPa (15 — 17 kg/cm^2, 213 — 242 psi)
Ambient temperature: 30 — 35 °C (86 — 95 °F)

B: INSPECTION

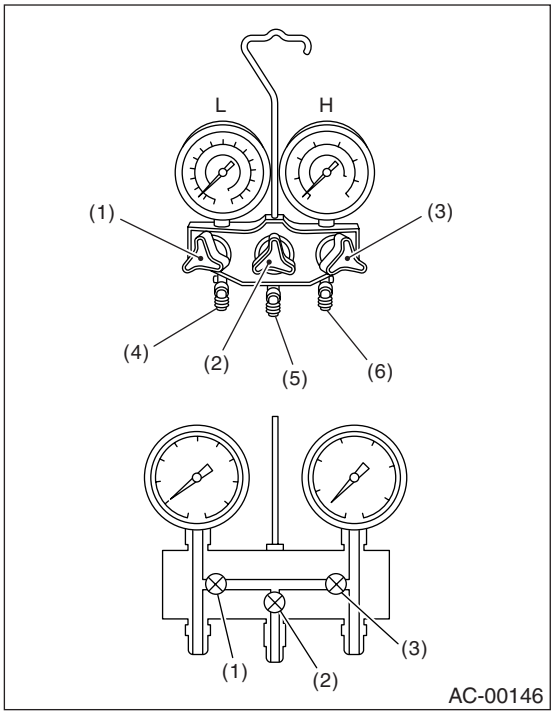
Symptom	Probable cause	Repair order
High-pressure side is unusually high.	• Defective condenser fan motor • Clogged condenser fan • Too much refrigerant • Air inside the system • Defective receiver dryer	• Replace the fan motor. • Clean the condenser fin. • Discharge refrigerant. • Replace the receiver dryer.
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.
Low-pressure side is unusually high.	• Defective compressor • Defective expansion valve • Too much refrigerant	• Replace the compressor. • Replace the expansion valve. • Discharge refigerant.
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: OPERATION

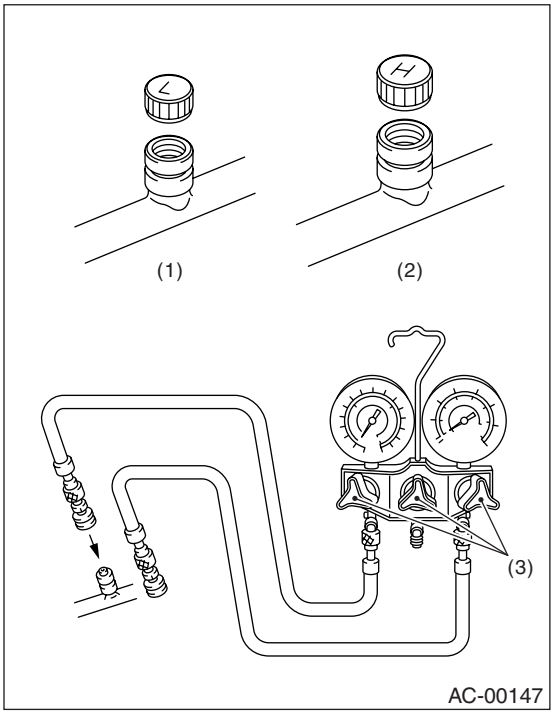
CAUTION:
• During operation, be sure to wear safety goggles and protective gloves.
• Connect the refrigerant recovery system with the manifold gauge set to discharge the refrigerant from the A/C system and reuse it.
• When reusing the discharged refrigerant, keep service cans on hand. Because the discharge rate with the recovery system is approx. 90%, service cans are necessary to charge the refrigerant.
• Follow the detailed operation procedure described in the operation manual attached to the refrigerant recovery system.

1) Perform the compressor oil return operation. <Ref. to AC-23, OPERATION, 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 service port
(2) High service port
(3) Close

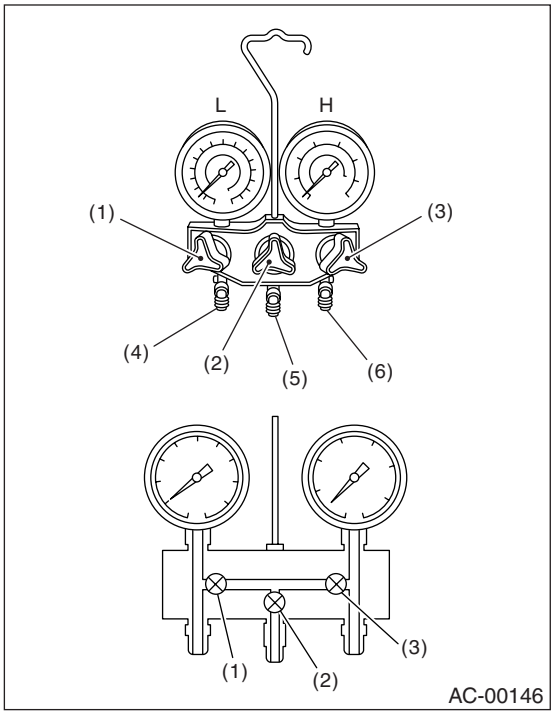
5) Connect the center hose to the refrigerant recovery system.
6) Follow the operation manual to activate the refrigerant recovery system.

4. Refrigerant Charging Procedure

A: OPERATION

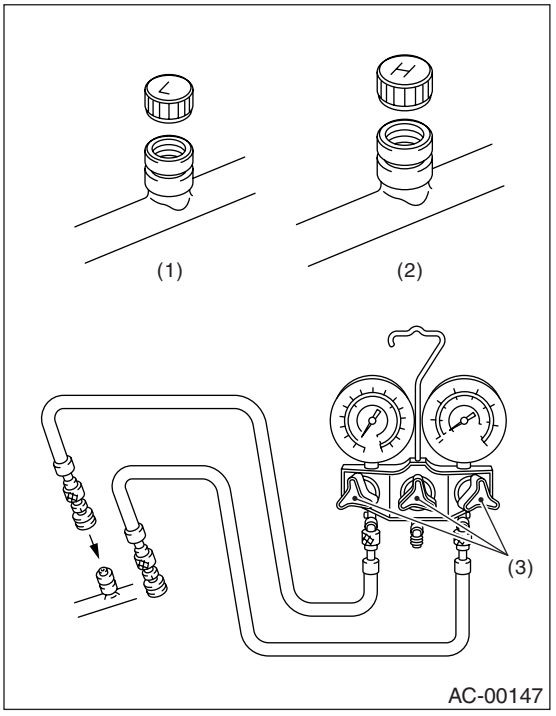
CAUTION:
• During operation, be sure to wear safety goggles and protective gloves.
• If air is mixed in refrigeration cycle, poor cooling may result, and also if moisture is mixed in refrigeration cycle, clogging (freezing) or rust may result.
Before charging the refrigerant, evacuate the system using vacuum pump to remove air and moisture in the system. Moisture can be evaporated and removed easily even at normal temperature, if the system is evacuated using vacuum pump.

1) Close all valves of manifold gauge.



L: Low-pressure gauge
H: High-pressure gauge
(1) Low-pressure valve
(2) Vacuum pump valve
(3) High-pressure valve
(4) For low-pressure
(5) For vacuum pump
(6) For high-pressure

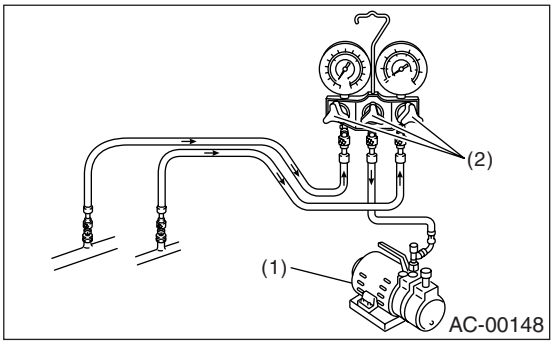
2) Install the low-/high-pressure hoses to corresponding service ports on vehicle.



(1) Low service port
(2) High service port
(3) Close

CAUTION:
Be sure that the hoses are securely connected.

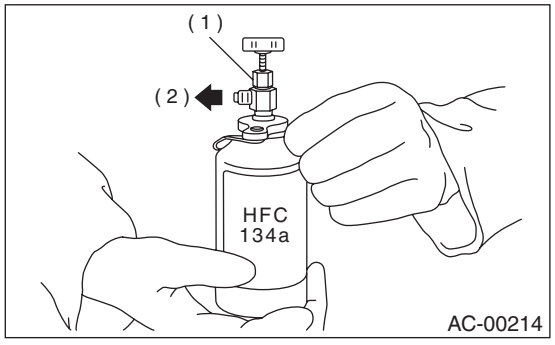
3) Connect the center hose of manifold gauge with vacuum pump.
4) Activate the vacuum pump and then open the valves on low-/high-pressure sides.



(1) Vacuum pump
(2) Open

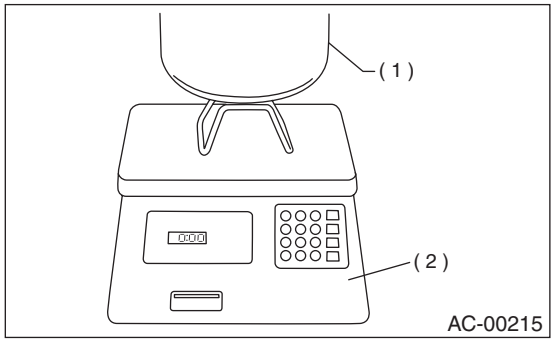
CAUTION:
Be sure to evacuate the system using vacuum pump.

5) After at least 5 minutes of evacuation, if the low-pressure gauge reading shows 100.0 kPa (750 mmHg, 29.5 inHg) or higher, close the valves on center hose to stop the vacuum pump.
6) Leave it at least 5 to 10 minutes after closing the valves on low-/high-pressure sides, and then check the low-pressure gauge reading for any changes. When the gauge reading changes, this is a sign of leakage. Check the pipe or hose connector points, and repair if necessary. Repeat the procedure from 1) after repairing the faulty part.
7) If there are no leaks, further evacuate the system 20 to 30 minutes.
8) Close all valves and stop the vacuum pump.
9) Following the can tap operation manual instructions, install it to refrigerant can.



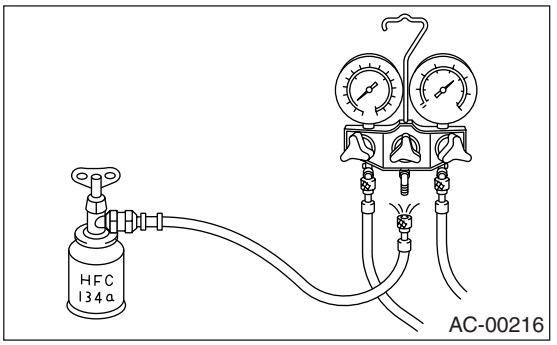
(1) Tap valve
(2) Connect to center hose

10) Disconnect the vacuum pump from center hose, and connect the hose to tap valve.
11) When a refrigerant recovery container is used, measure the refrigerant amount in use using a weighting scale before connecting to center hose.

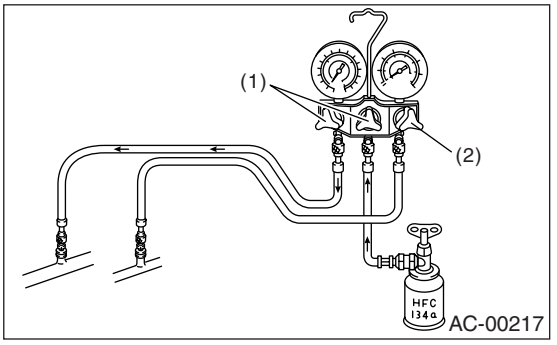


(1) Refrigerant recovery container
(2) Weighting scale

12) Open the valve on HFC-134a source.
13) Loosen the center hose connection on manifold gauge (if applicable, press a purge valve on manifold gauge) only for a couple of seconds to allow the air in the center hose to escape by the refrigerant.



14) Make sure that the high-pressure valve of manifold gauge is closed, and then open the low-pressure side valve only to charge the refrigerant.



(1) Open
(2) Close

CAUTION:
Do not open the high-pressure valve. Be sure to open the low-pressure valve.

15) Close the low-pressure valve when the low-pressure gauge reading reaches 200 kPa (1,500 mmHg, 59.1 inHg).
16) Using a leak tester, check the system for refrigerant leaks.
17) After confirming that there are no leaks with the leak test, charge the required amount of refrigerant.
18) If the HFC-134a source is empty, close the low-pressure valve and then close the valve on can tap before replacing the empty source. Restart charging operation after replacing the HFC-134a source with a new one and purging.
19) Close the low-pressure valve if the charge rate of refrigerant becomes worse.
20) Confirm that both the low-/high-pressure valves are closed. Start the engine with A/C switch OFF.

21) Quickly repeat A/C switch ON-OFF cycles a few times to prevent initial compressor damage.
22) Set up the vehicle to the following status:
- 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

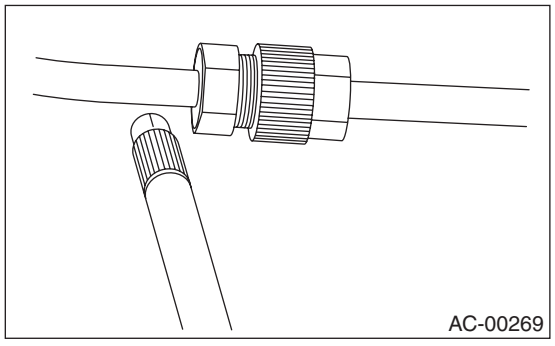
23) Open the low-pressure valve and charge the specified amount of refrigerant.
24) Close all valves and disconnect the hoses from service port after charging the refrigerant.
25) Install the cap to service port.

5. Refrigerant Leak Check

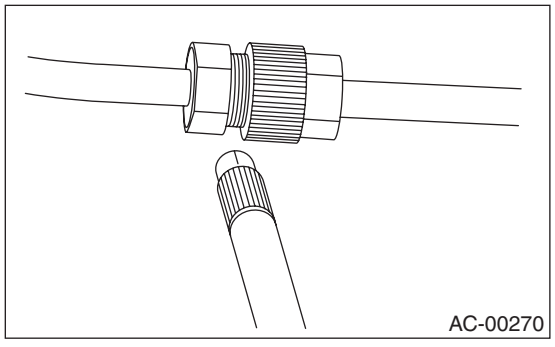
A: INSPECTION

1) Operate the A/C system for approx. 10 minutes, and confirm that the high-side pressure shows at least 690 kPa (7.03 kg/cm^2, 100 psi). Then stop the engine to start the leak test.
2) Starting from the connection between the high-pressure tube and evaporator, check the system for leaks along the high-pressure side through the compressor. The following items must be checked thoroughly.

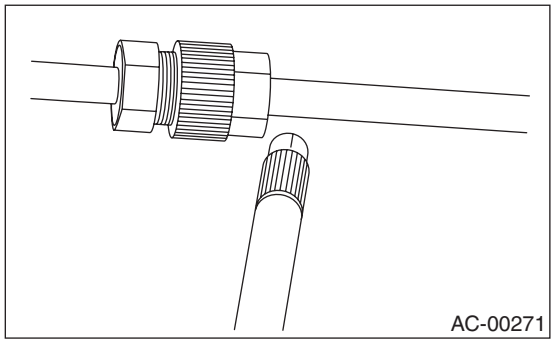
- Connection between the tube and tube fitting



- Connection between 2 parts

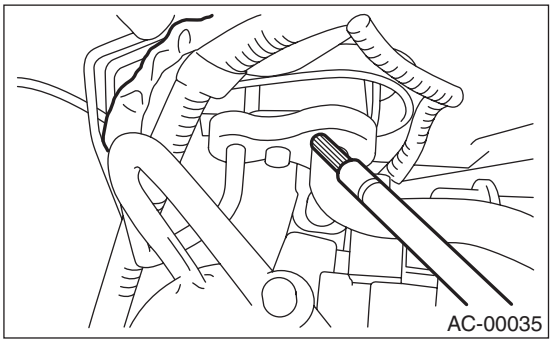


- Connection between the tube and nut



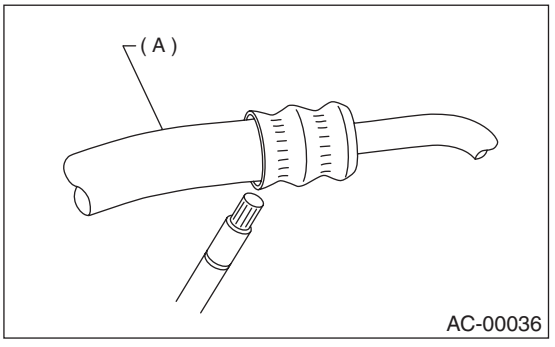
3) Check the joint between the pressure switch (dual switch) and receiver dryer.
4) Check the connections between the condenser and tubes, and welded joints on the condenser.
The leak tester may detect the oil on the condenser fins as a leak.
5) Check the joint between the compressor and hoses.
6) Check the machined area of compressor and other joints on the compressor.
7) Check the thermal limiter (if equipped) on the compressor housing.
8) Check the compressor shaft seal at the area near the center of compressor clutch pulley.
Some shaft seals show a slight amount of leakage about 10 g (0.35 oz) per year. This is not a problem.
9) Starting from the connection between the low-pressure tube and evaporator, check the system for leakage along the high-pressure side through the compressor. The following items must be checked thoroughly.

- Connection between the tube and tube fitting
- Connection between 2 parts
- Connection between the tube and nut



10) Visually check the rubber area of the flexible hose for cracks.
Check the entire length of the flexible hose, especially the connection with the metal hose end.

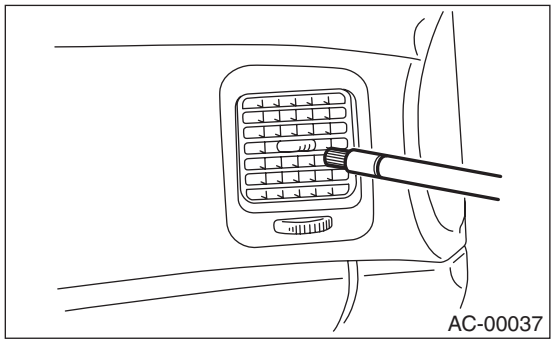
CAUTION:
Carefully check the external surface of hoses and tubes at approx. 25 mm (0.98 in) per second.



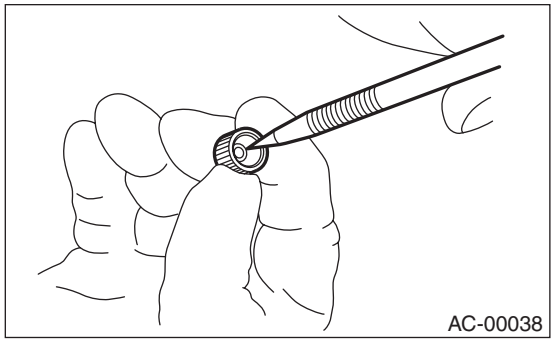
(A) Flexible hose

11) Disconnect the drain hose from the evaporator case, and check the hose end for at least 10 seconds.
After the test is finished, reconnect the drain hose.

12) Turn the ignition key to ON position, and run the blower at high speed for 1 minute. Stop the blower to check the ventilation grille on the instrument panel. While moving the tester closer to the grille, run the blower for 1 or 2 seconds, then stop it. Check the grille at that point for at least 10 seconds.


AC-00037

13) Check the valve in the service port.
14) Visually check the rubber seal in the service port cap.


AC-00038

6. Compressor Oil

A: OPERATION

NOTE:
Before making repairs, conduct the oil return operation to return the compressor oil in circulation with the refrigerant to the compressor.

1) Increase engine speed to 1,500 rpm.
2) Turn ON the A/C switch.
3) Turn the temperature control switch to MAX COOL.
4) Put in RECIRC position.
5) Turn the blower control switch to HI.
6) Leave in this condition for 10 minutes.

B: REPLACEMENT

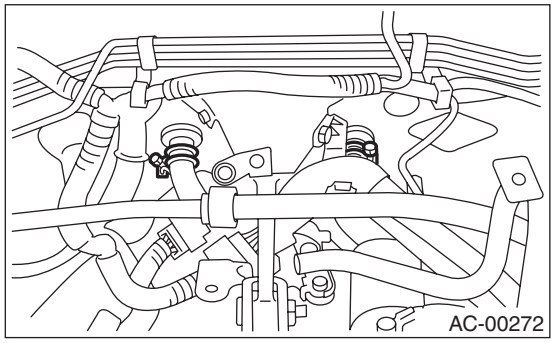
NOTE:
• If a component is replaced, add an appropriate amount of compressor oil.
• When replacing the compressor, the new compressor will already have the specified amount of oil in it. Install the new compressor after removing the same amount of oil that is remaining in the compressor removed.

Replacement parts	Amount of oil replenishment
Evaporator	114 m ℓ (3.9 US fl oz, 4.0 Imp fl oz)
Receiver drier	5 m ℓ (0.2 US fl oz, 0.2 Imp fl oz)
Condenser	2 m ℓ (0.07 US fl oz, 0.07 Imp fl oz)
Hose	1 m ℓ (0.03 US fl oz, 0.04 Imp fl oz)

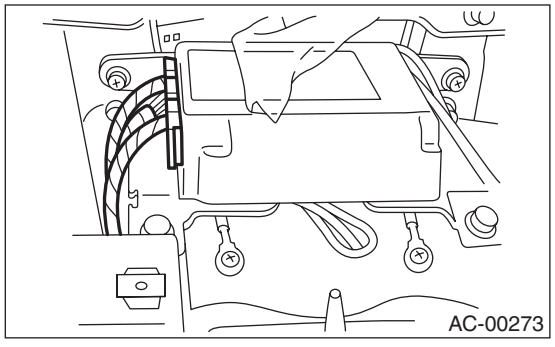
7. Heater Unit

A: REMOVAL

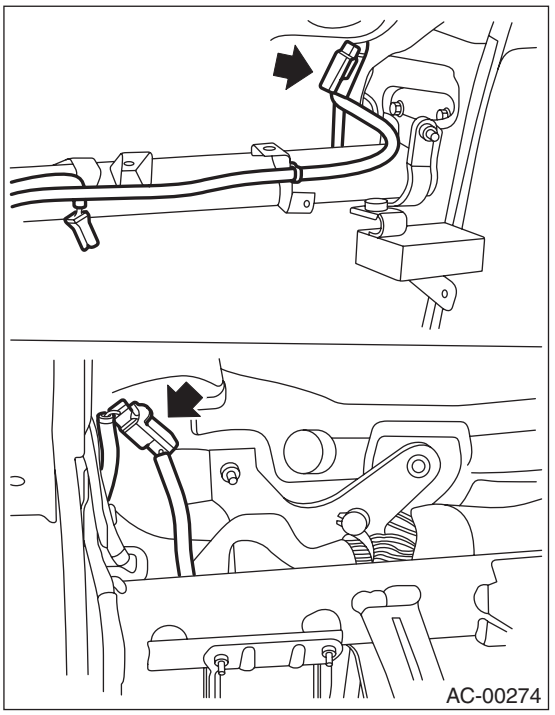
1) Disconnect ground cable from battery.
2) Pull out LLC.
3) Remove air cleaner case.
4) Release heater hose clamps in engine compartment to remove the hoses.



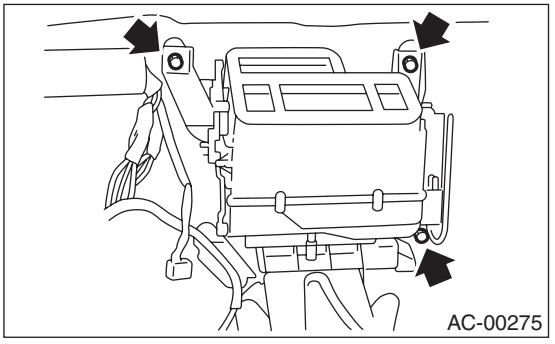
5) Remove A/C unit. <Ref. to AC-33, Intake Unit.>
6) Using a Torx® wrench, remove airbag control unit.



7) Disconnect connector of airbag main harness near steering support beam.



8) Loosen bolts and nuts of support beam to remove support beam.
9) Disconnect servo connector.
10) Loosen bolts and nuts of heater unit to remove heater unit.



B: INSTALLATION

Install in the reverse order of removal.

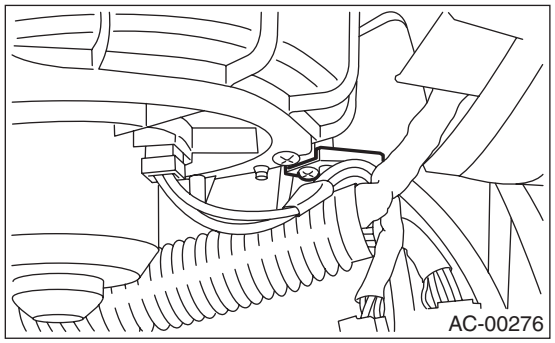
Tightening torque:

Refer to COMPONENT of General Description
<Ref. to AC-5, HEATER UNIT, COMPONENT, General Description.>

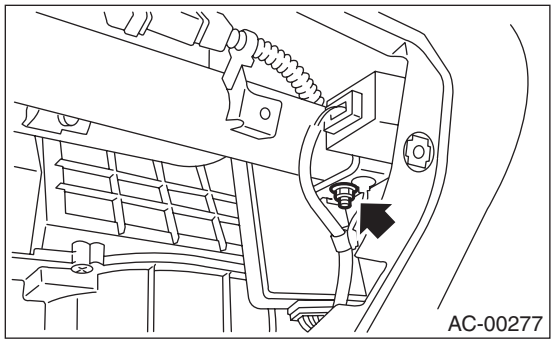
8. Blower Motor Assembly

A: REMOVAL

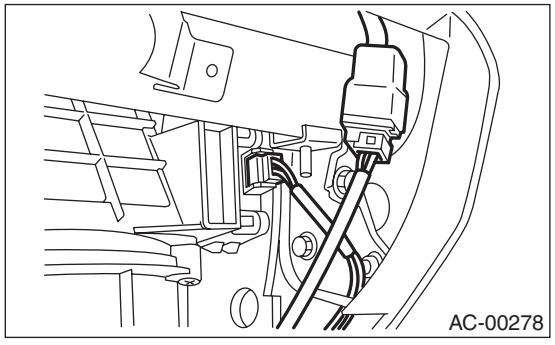
1) Disconnect ground cable from battery.
2) Remove glove box. <Ref. to EI-34, REMOVAL, Glove Box.>
3) Remove mounting bolts of harness stay.



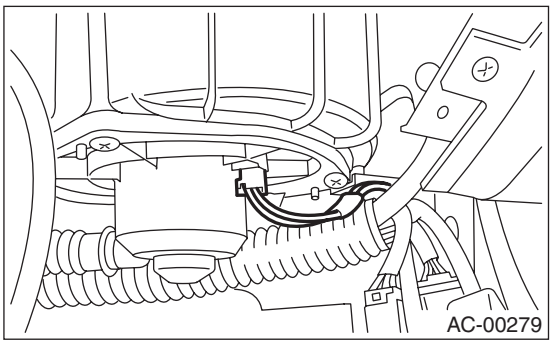
4) Remove nuts of keyless unit stay and cruise unit stay.



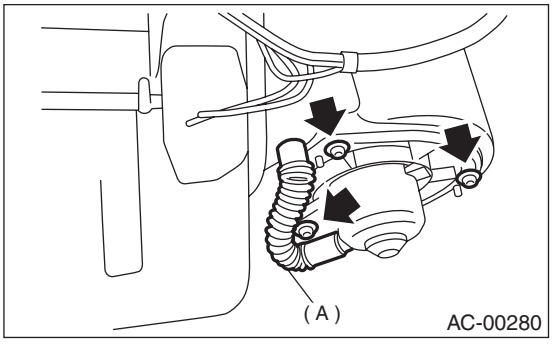
5) Disconnect connector of sunroof.
6) Disconnect servo connector.



7) Disconnect motor connector.



8) Remove 3 screws.
9) Disconnect aspirator pipe (A) and remove blower motor.

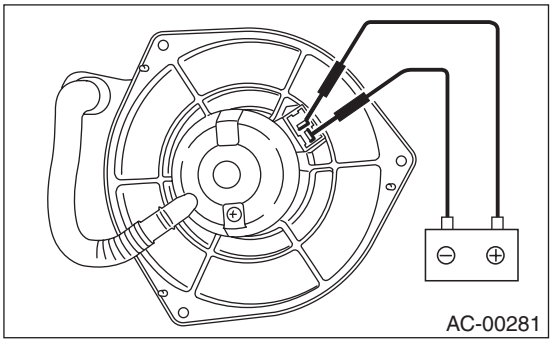


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

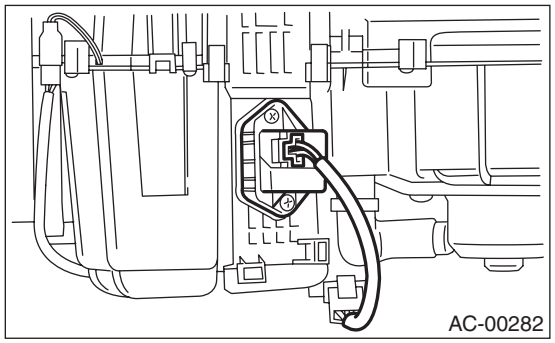
Connect motor connector terminal 1 from the battery to the positive (+) lead and terminal 2 to the negative (–) lead. Make sure the motor runs smoothly.



9. Heater Blower Resistor

A: REMOVAL

1) Remove glove box. <Ref. to EI-34, REMOVAL, Glove Box.>
2) Disconnect blower resistor connector.
3) Loosen 2 screws to remove blower resistor.

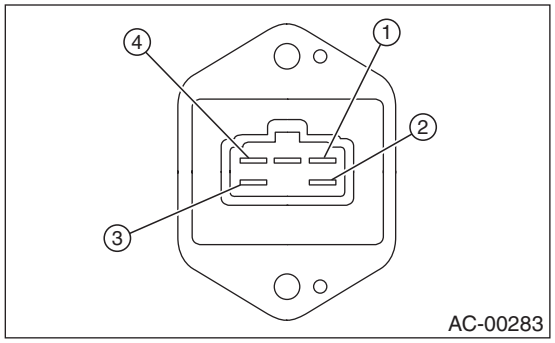


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

1. MANUAL A/C



Measure switch resistance.

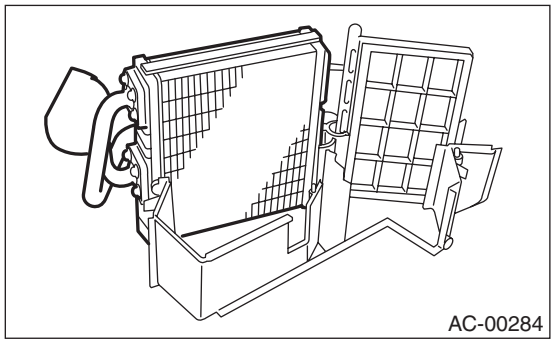
Terminal No.	Condition	Standard
4 and 3	Constant	Approx. 0.46 Ω
3 and 2	Constant	Approx. 0.85 Ω
2 and 1	Constant	Approx. 1.77 Ω

If NG, replace the blower resistor.

10.Heater Core

A: REMOVAL

1) Remove heater unit. <Ref. to AC-24, REMOVAL, Heater Unit.>
2) Remove screws to separate heater unit case.
3) Remove heater core.



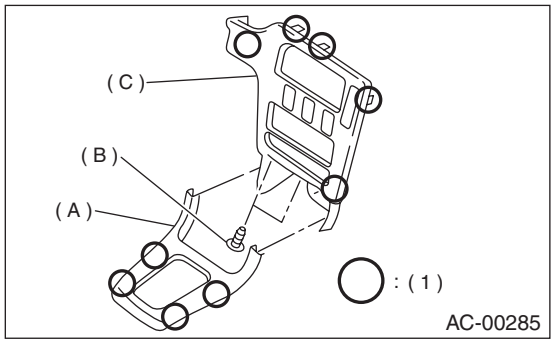
B: INSTALLATION

Install in the reverse order of removal.

11.Control Unit

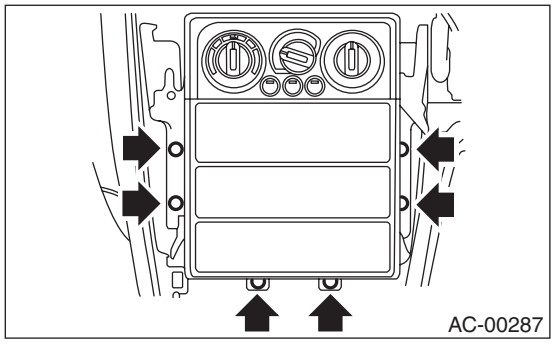
A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove front cover (A).
3) Loosen 2 screws (B) to remove center panel (C).



(1) Hook pawl

4) Set temperature control switch to “FULL HOT”, and disconnect temperature control cable from heater unit.
5) Loosen screws to pull control unit slightly out of center console.



6) Disconnect connector from antenna cable to remove control unit.

B: INSTALLATION

1) Install in the reverse order of removal.
2) Before installation, set temperature control switch to “FULL HOT”.

12.Compressor

A: INSPECTION

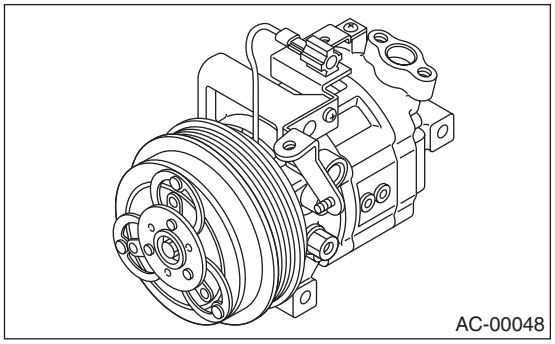
1. MAGNETIC CLUTCH CLEARANCE

1) Check the clearance of the entire circumference around the drive plate and pulley.

Standard:
0.45±0.15 mm (0.0177±0.0059 in)

2. MAGNETIC CLUTCH OPERATION

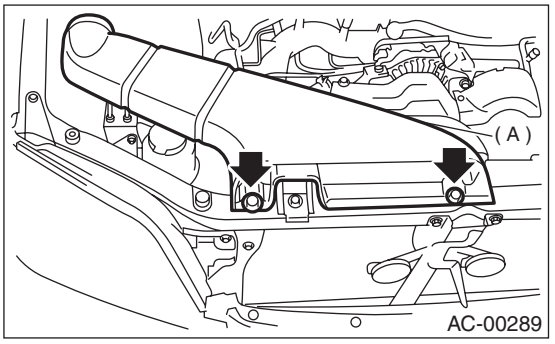
1) Disconnect the compressor connector.
2) Connect the No. 3 terminal of the compressor connector from the battery to the positive (+) lead. Ground the negative (–) lead to the body.


AC-00048

3) Make sure the magnet clutch engages.
If NG, replace the compressor.

B: REMOVAL

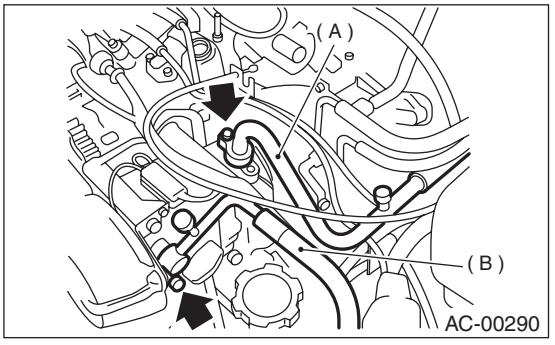
1) Perform oil return operation. <Ref. to AC-23, OPERATION, Compressor Oil.>
2) Turn A/C switch OFF and stop the engine.
3) Using refrigerant recovery system, discharge refrigerant. <Ref. to AC-17, OPERATION, Refrigerant Recovery Procedure.>
4) Disconnect ground cable from battery.
5) Remove duct (A).



AC-00289

6) Disconnect low-pressure hose (A) and high-pressure hose (B).

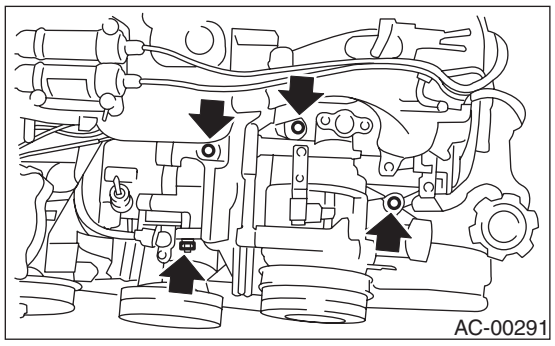
CAUTION:
Be careful not to lose O-rings on hose. Immediately seal hose with a plug or vinyl tape to prevent the entry of contamination.



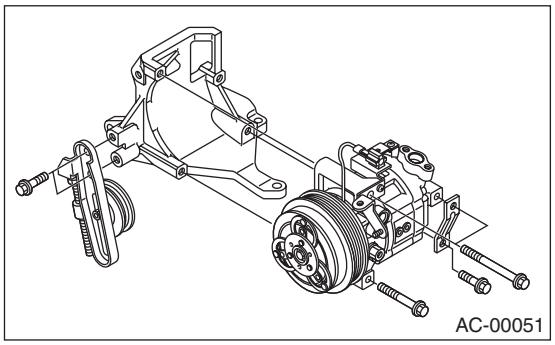
AC-00290

7) Remove V-belt. <Ref. to ME(H4SO)-40, REMOVAL, V-belt.> or <Ref. to ME(H4DOTC)-45, REMOVAL, V-belt.>
8) Remove generator. <Ref. to SC(H4SO)-15, REMOVAL, Generator.>
9) Disconnect compressor harness from body harness.

10) Remove bolts from compressor bracket.



11) Loosen bolts to remove compressor from bracket.



C: INSTALLATION

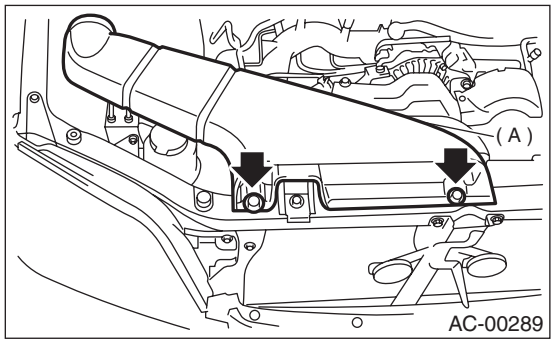
1) Install in the reverse order of removal.
2) Replace O-rings on low-/high-pressure hoses with new ones, then apply compressor oil.
3) When replacing compressor, adjust amount of compressor oil. <Ref. to AC-23, Compressor Oil.>
4) Charge refrigerant. <Ref. to AC-18, OPERATION, Refrigerant Charging Procedure.>

Tightening torque:
Refer to COMPONENT of General Description
<Ref. to AC-8, AIR CONDITIONING UNIT, COMPONENT, General Description.>

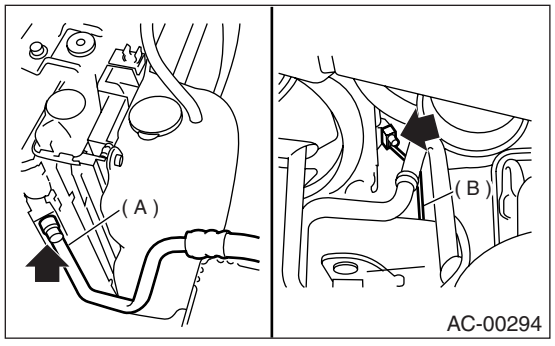
13.Condenser

A: REMOVAL

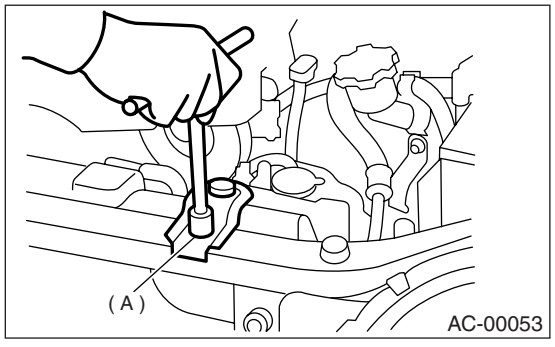
1) Using refrigerant recovery system, discharge refrigerant. <Ref. to AC-17, OPERATION, Refrigerant Recovery Procedure.>
2) Disconnect ground cable from battery.
3) Remove duct (A).



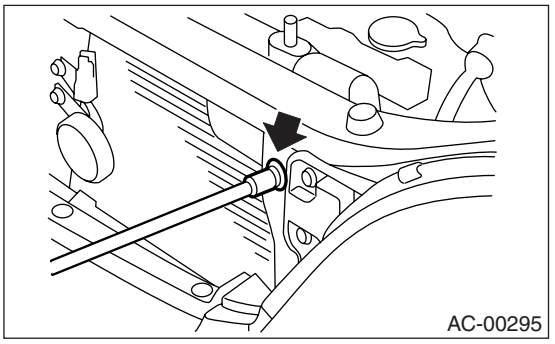
4) Disconnect high-pressure hose (A) and low-pressure hose (B) from condenser.



5) Remove radiator bracket (A).



6) Remove 2 bolts. While lifting condenser, pull it out through the space between the radiator and the radiator panel.

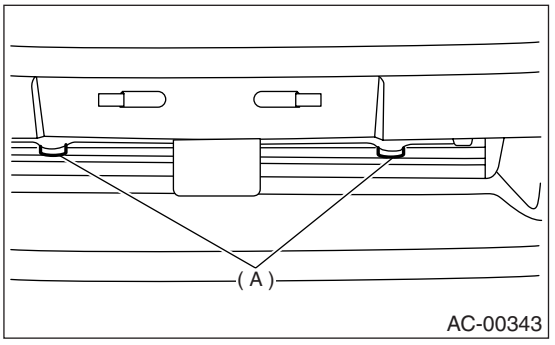


CAUTION:
Be careful not to damage condenser fins. If a damaged fin is found, repair it using a thin screwdriver.
If condenser is replaced, add appropriate amount of compressor oil to the compressor. <Ref. to AC-23, REPLACEMENT, Compressor Oil.>

B: INSTALLATION

1) Install in the reverse order of removal.

CAUTION:
Replace O-rings on hoses or pipes with new ones, and then apply compressor oil. Confirm that lower guide of condenser has been fitted into holes on radiator panel.



2) Charge refrigerant. <Ref. to AC-18, OPERATION, Refrigerant Charging Procedure.>

C: INSPECTION

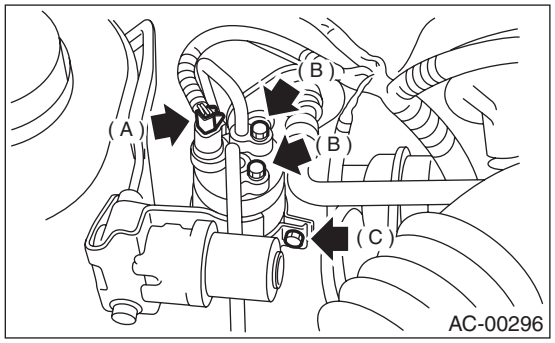
1) Confirm that no dust or insects are found on the condenser fins. Air-blow or flush fins with water as needed.
2) Confirm that no oil leaks from condenser. If a failure is found, replace condenser with a new one.

Tightening torque:
Refer to COMPONENT of General Description
<Ref. to AC-8, AIR CONDITIONING UNIT, COMPONENT, General Description.>

14.Receiver Drier

A: REMOVAL

1) Disconnect ground cable from battery.
2) Using refrigerant recovery system, discharge refrigerant. <Ref. to AC-17, OPERATION, Refrigerant Recovery Procedure.>
3) Disconnect pressure switch harness (A).
4) Disconnect pipe (B).
5) Loosen mounting bolts (C) to remove receiver dryer.



CAUTION:
The receiver drier contains a desiccant. After disconnecting receiver drier, plug it to avoid moisture.
If receiver drier is replaced, add appropriate amount of compressor oil to the compressor. <Ref. to AC-23, REPLACEMENT, Compressor Oil.>

B: INSTALLATION

1) Install in the reverse order of removal.

CAUTION:
Replace O-rings with new ones, and apply compressor oil.

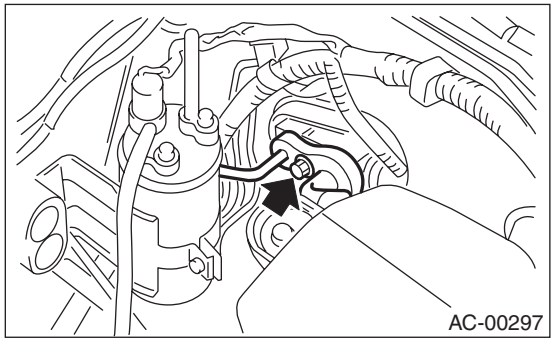
2) Charge refrigerant. <Ref. to AC-18, OPERATION, Refrigerant Charging Procedure.>

Tightening torque:
Refer to COMPONENT of General Description
<Ref. to AC-8, AIR CONDITIONING UNIT, COMPONENT, General Description.>

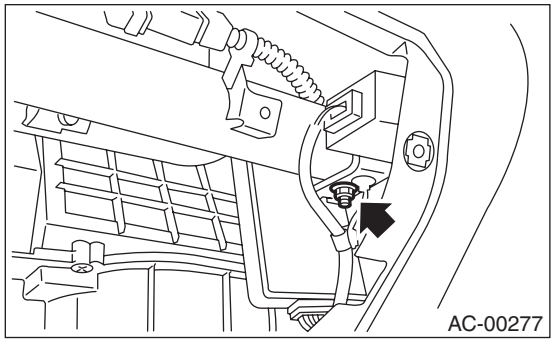
15.Intake Unit

A: REMOVAL

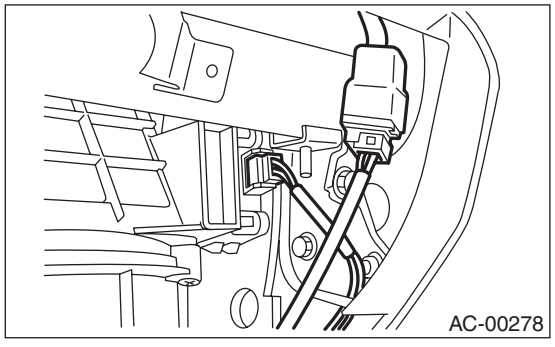
1) Using refrigerant recovery system, discharge refrigerant. <Ref. to AC-17, OPERATION, Refrigerant Recovery Procedure.>
2) Disconnect ground cable from battery.
3) Remove bolts securing expansion valve and pipe in engine compartment.


AC-00297

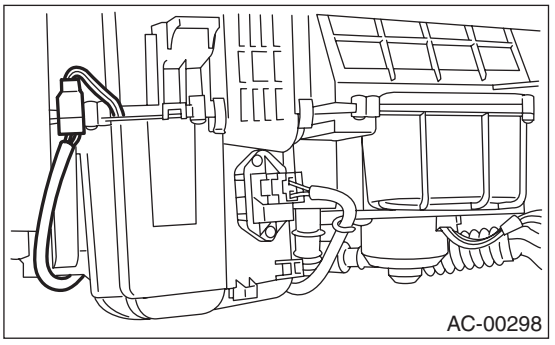
4) Remove instrument panel. <Ref. to EI-37, REMOVAL, Instrument Panel Assembly.>
5) Remove keyless unit and cruise unit.


AC-00277

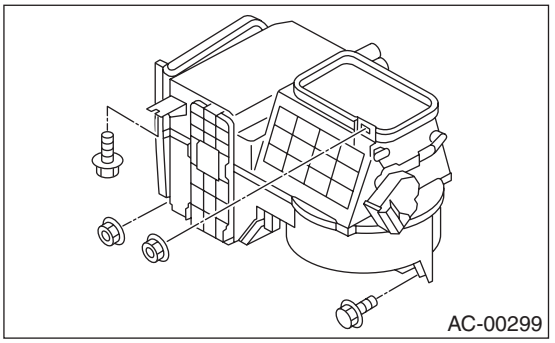
6) Disconnect sunroof connector.
7) Disconnect servo motor connector.


AC-00278

8) Disconnect blower power transistor connector.
9) Disconnect blower motor connector.
10) Disconnect evaporator sensor connector.


AC-00298

11) Remove bolts and nuts on the intake unit.


AC-00299

12) Disconnect drain hose.
13) Remove the intake unit.

B: INSTALLATION

1) Install in the reverse order of removal.

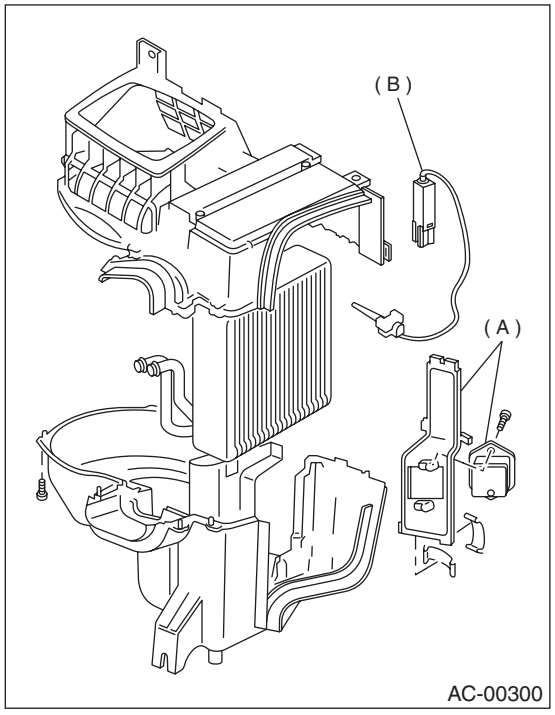
CAUTION:
Replace O-rings with new ones, and apply compressor oil.

Tightening torque:
Refer to COMPONENT of General Description
<Ref. to AC-6, INTAKE UNIT WITH EVAPORATOR, COMPONENT, General Description.>

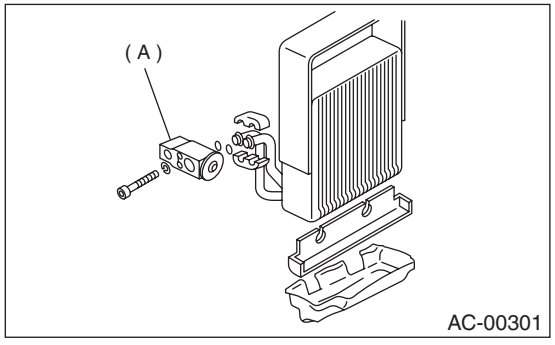
2) Charge refrigerant. <Ref. to AC-18, OPERATION, Refrigerant Charging Procedure.>

C: DISASSEMBLY

1) Remove resistor (A) and thermistor (B) from intake unit case.
2) Remove screws and clips to separate intake unit.



3) Remove expansion valve (A) from evaporator.



CAUTION:
If evaporator is replaced, add appropriate amount of compressor oil to evaporator. <Ref. to AC-23, REPLACEMENT, Compressor Oil.>

D: ASSEMBLY

Assemble in the reverse order of disassembly.

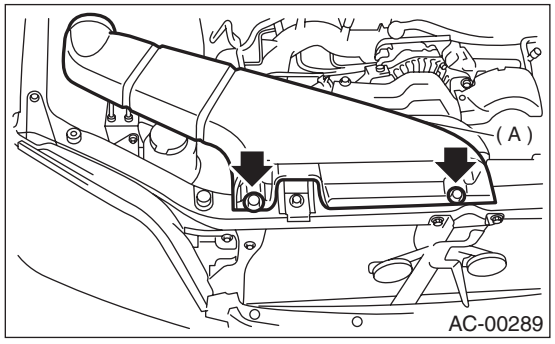
CAUTION:
Replace O-rings with new ones, and then apply compressor oil.

16.Flexible Hose

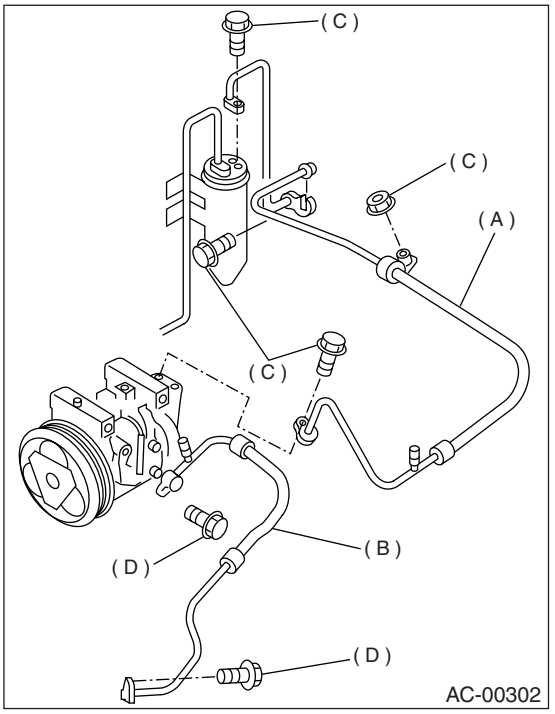
A: REMOVAL

CAUTION:
• When disconnecting/connecting hoses, do not apply excessive force them. Confirm that no torsion and excessive tension exist after installing.
• Seal the disconnected hose with a plug or vinyl tape to prevent contamination from entering.

1) Disconnect ground cable from battery.
2) Using refrigerant recovery system, discharge refrigerant. <Ref. to AC-17, OPERATION, Refrigerant Recovery Procedure.>
3) Remove duct (A).



4) Remove hose attaching bolts (C).
5) Disconnect hose from evaporator unit.
6) Disconnect hose from compressor.
7) Remove low-pressure hose (A) from the vehicle.
8) Remove hose attaching bolts (D).
9) Disconnect hose from compressor.
10) Disconnect hose from condenser.
11) Disconnect high-pressure hose (B) from the vehicle.



B: INSTALLATION

CAUTION:
When disconnecting/connecting hoses, do not apply an excessive force them. Confirm that no torsion and excessive tension exist after installing. Seal the disconnected hose with a plug or vinyl tape to prevent contamination from entering.

1) Install in the reverse order of removal.
2) Charge refrigerant. <Ref. to AC-18, OPERATION, Refrigerant Charging Procedure.>

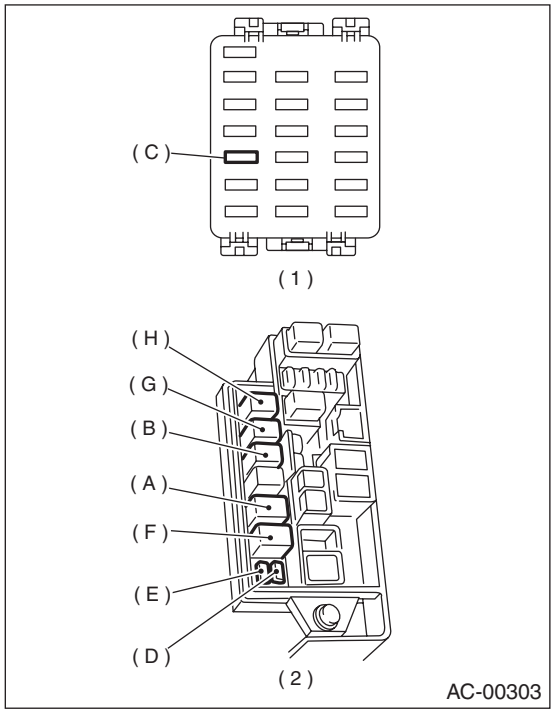
Tightening torque:
Refer to COMPONENT of General Description
<Ref. to AC-8, AIR CONDITIONING UNIT, COMPONENT, General Description.>

C: INSPECTION

NOTE:
If cracking, damage, or swelling is found on a hose, replace it with a new one.

17.Relay and Fuse

A: LOCATION

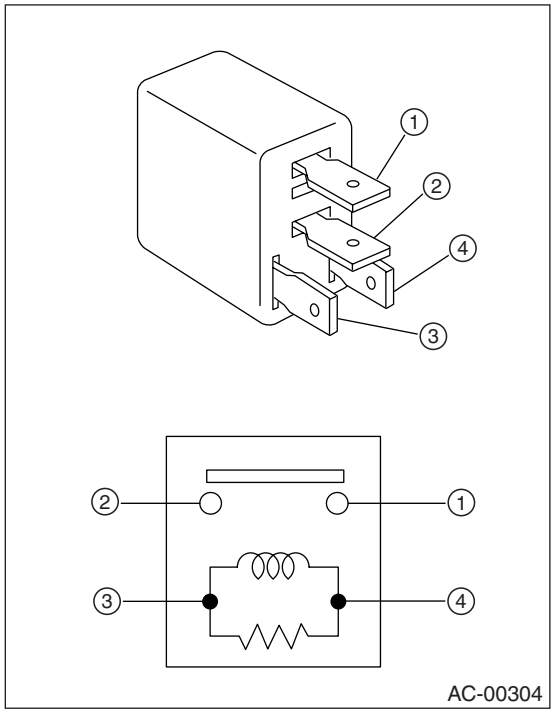


(1) Joint box
(2) Main fuse box

	Non-TURBO model	TURBO model
Main fan relay	F	F
Sub fan relay	B	B
Fan mode relay	—	H
A/C relay	A	A
A/C fuse	C	C
Main fan fuse	E (20 A)	E (30 A)
Sub fan fuse	D (20 A)	D (30 A)

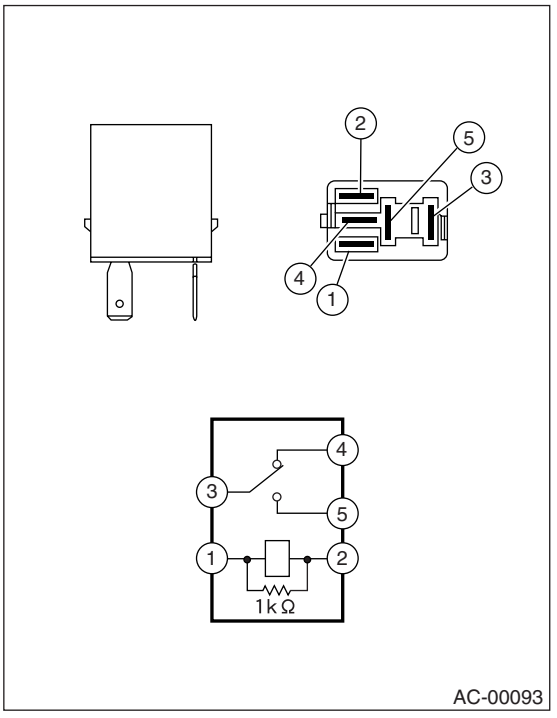
B: INSPECTION

1. 4-TERMINAL TYPE



(3) — (4): Continuity exists.
(1) — (2): No continuity
While applying battery voltage to the terminal between (3) and (4), check continuity between (1) and (2).
If no continuity exists, replace the relay with a new one.

2. 5-TERMINAL TYPE

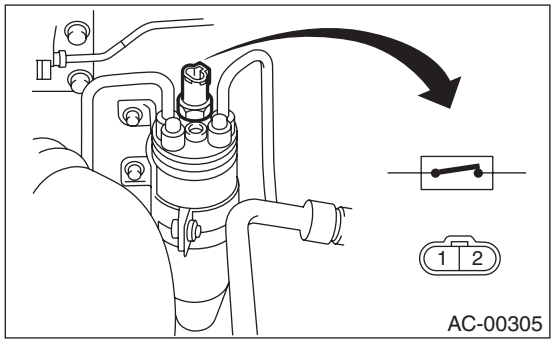


(1) — (2): Continuity exists.
(3) — (4): Continuity exists.
(3) — (5): No continuity
While applying battery voltage to the terminal between (1) and (2), check continuity between (3) and (5).
If no continuity exists, replace the relay with a new one.

18.Pressure Switch (Dual Switch)

A: INSPECTION

1) Connect the manifold gauge to the service valve on the high-pressure side.
2) Remove the pressure switch harness connector. Using a circuit tester, inspect the ON-OFF operation of the pressure switch.

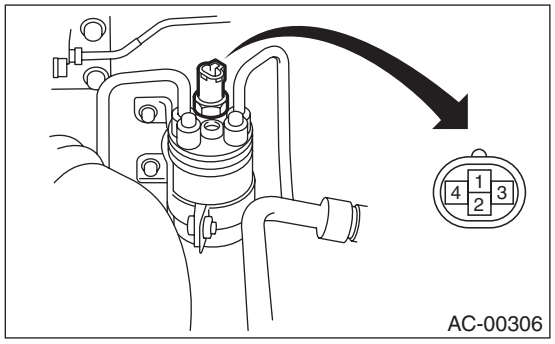


	Tester connection	Operation	Specified condition kPa (kg/cm^2, psi)
High and low pressure switch	1 — 2	Turns OFF.	Increasing to 2,942±196 (30±2, 427±28)
			Decreasing to 177±25 (1.8±0.25, 25.6±3.6)
		Turns ON.	Increasing to 216 (2.2, 31) or less
			Decreasing to 2,354±196 (24±2, 341±28)

19.Pressure Switch (Triple Switch)

A: INSPECTION

1) Connect the manifold gauge to the service manifold on the high-pressure side.
2) Remove the pressure switch harness connector. Using a circuit tester, inspect the ON-OFF operation of the pressure switch.



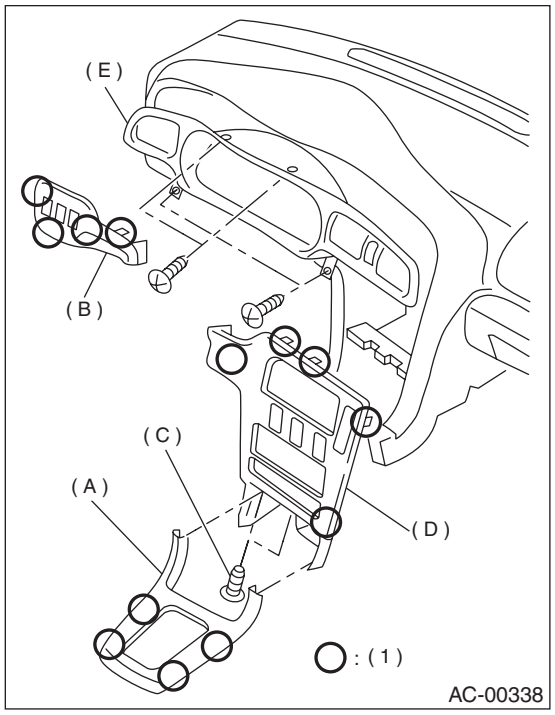
	Tester connection	Operation	Specified condition kPa (kg/cm^2, psi)
High and low pressure switch	1 — 2	Turns OFF.	Increasing to 2,940±196 (29.98±2.00, 426±28)
			Decreasing to 177±20 (1.8±0.2, 26±3)
		Turns ON.	Increasing to 216 or less (2.2, 31)
			Decreasing to 2,350±196 (23.97±2.00, 341±28)
Middle pressure switch	3 — 4	Turns OFF.	1,370±120 (13.97±1.22, 199±17)
		Turns ON.	1,770±100 (18.05±1.02, 257±15)

20.Air Vent Grille

A: REMOVAL

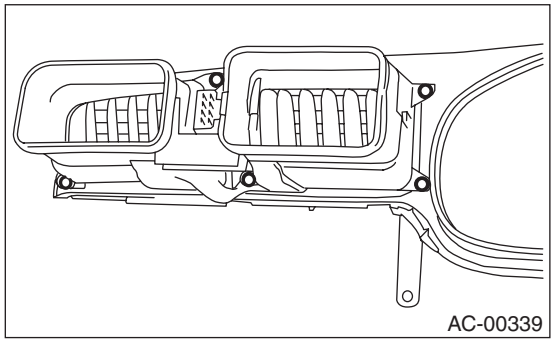
1. AIR VENT GRILLE DRIVER SIDE

1) Disconnect ground cable from battery.
2) Set tilt steering to the lowest position.
3) Disconnect each harness connector to remove front cover (A) and switch panel (B).
4) Loosen screw (C) to remove center panel (D).
5) Remove meter visor (E).



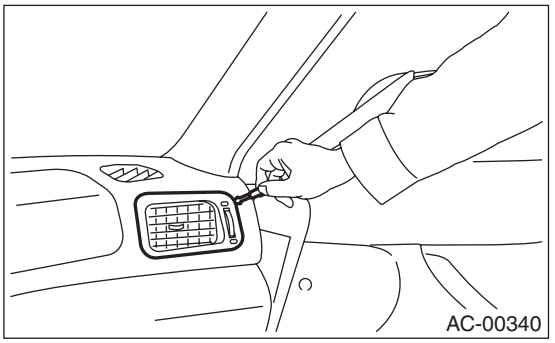
(1) Hook pawl

6) Loosen screws to remove grille.



2. AIR VENT GRILLE PASSENGER SIDE

1) Remove grille using screwdriver.



CAUTION:
Wrap screwdriver with vinyl tape to prevent damage to interior parts.

B: INSTALLATION

Install in the reverse order of removal.

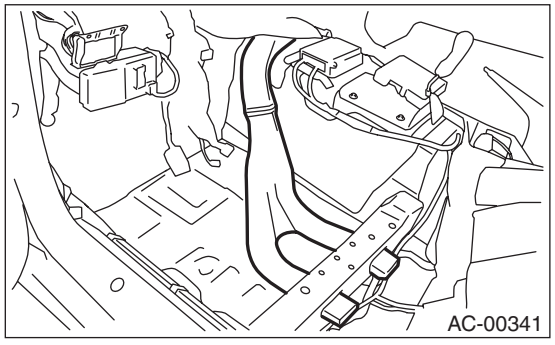
C: INSPECTION

The direction and amount of air should be adjusted smoothly.
The adjustment should be kept in each position.

21.Heater Duct

A: REMOVAL

1) Remove heater unit. <Ref. to AC-24, REMOVAL, Heater Unit.>
2) Remove front seat. <Ref. to SE-6, REMOVAL, Front Seat.>
3) Remove front side sill cover.
4) Pull off floor mat to remove heater duct.



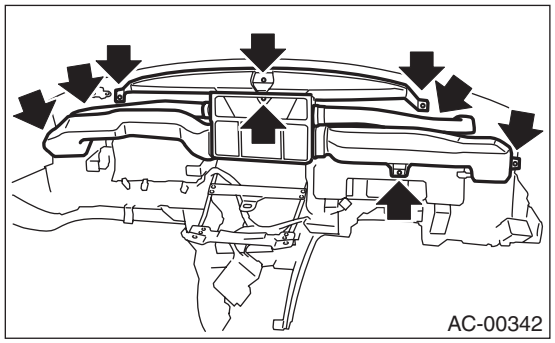
B: INSTALLATION

Install in the reverse order of removal.

22.Heater Vent Duct

A: REMOVAL

1) Remove instrument panel. <Ref. to EI-37, REMOVAL, Instrument Panel Assembly.>
2) Remove 9 screws.
3) Remove heater vent duct.



B: INSTALLATION

Install in the reverse order of removal.

23.General Diagnostics

A: INSPECTION

Symptom		Repair order
Blower motor	Doesn't move.	Fuse
		Blower motor relay
		Blower motor
		Blower motor resistor
		Blower switch
		Wire harness
	Strange noise.	Blower motor
Compressor	Doesn't move.	Refrigerant
		Fuse
		Air conditioning relay
		Magnet clutch
		Compressor
		Pressure switch
		A/C switch
		Blower switch
		Wire harness
	Strange noise	V-Belt
		Magnet clutch
		Compressor
Cold air not emitted.		Refrigerant
		V-Belt
		Magnet clutch
		Compressor
		Pressure switch
		A/C switch
		Blower switch
		Wire harness
		Heater duct
		Heater vent duct
Warm air not emitted.		Engine coolant
		Blower switch
		Heater core
Temperature of air from vents does not change.		Engine coolant
		Mode actuator
		Wire harness
Unable to switch blow vents.		Mode actuator
		Air flow switch
		Wire harness
Unable to switch suction vents.		Air inlet select switch
		FRESH/RECIRC actuator
		Wire harness

MEMO:

1. General Description

A: SPECIFICATIONS

Combination meter	Speedometer	Electric pulse type
	Temperature gauge	Cross coil type
	Fuel gauge	Cross coil type
	Tachometer	Electric pulse type
	Turn signal indicator light	12 V — 1.4 W
	Charge warning light	12 V — 1.4 W
	Oil pressure warning light	12 V — 1.4 W
	ABS warning light	12 V — 1.4 W
	CHECK ENGINE warning light (Malfunction indicator light)	12 V — 1.4 W
	HI-beam indicator light	12 V — 1.4 W
	Door open warning light	LED
	Seat belt warning light	LED
	Brake fluid and parking brake warning light	12 V — 1.4 W
	AWD warning light	12 V — 1.4 W
	AIRBAG warning light	12 V — 1.4 W
	Meter illumination light	12 V — 3.4 W
	AT OIL TEMP. warning light	12 V — 1.4 W
	Security indicator light	LED
	Low fuel warning light	12 V — 1.4 W
	Cargo light indicator light	LED
	Switch back gate indicator light	LED
	AT select lever position indicator light	12 V — 100 mA
	SPORT shift indicator	LED
	Cruise set indicator light	12 V — 1.4 W
	LCD back light	12 V — 1.4 W

B: CAUTION

- Be careful not to damage meters and instrument panel.
- Be careful not to damage meter glasses.
- Make sure that electrical connector is connected securely.
- After installation, make sure that each meter operates normally.
- Use gloves to avoid damage and getting fingerprints on the glass surface and meter surfaces.
- Do not apply excessive force to printed circuit.
- Do not drop or otherwise apply impact.

C: PREPARATION TOOL

1. GENERAL TOOLS

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

2. Combination Meter System

A: SCHEMATIC

1. COMBINATION METER

<Ref. to WI-68, SCHEMATIC, Combination Meter.>

2. OUTSIDE TEMPERATURE INDICATOR

<Ref. to WI-144, SCHEMATIC, Outside Temperature Display System.>

B: INSPECTION

CAUTION:
• When measuring voltage and resistance of the ECM, TCM, or each sensor, use a tapered pin with a diameter of less than 0.64 mm (0.025 in) in order to avoid poor contact. Do not insert the pin more than 2 mm (0.08 in).

1. SYMPTOM CHART

Symptom	Repair order	Reference
Combination meter assembly does not operate.	(1) Power supply (2) Ground circuit	<Ref. to IDI-5, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Combination Meter System.>
Speedometer does not operate.	(1) (MT) Vehicle speed sensor (AT) Transmission control module (2) Harness (3) Speedometer	MT: <Ref. to IDI-6, CHECK VEHICLE SPEED SENSOR, INSPECTION, Combination Meter System.>
		AT: <Ref. to IDI-7, CHECK TRANSMISSION CONTROL MODULE, INSPECTION, Combination Meter System.>
Tachometer does not operate.	(1) Engine control module (2) Harness (3) Tachometer	<Ref. to IDI-8, CHECK ENGINE CONTROL MODULE, INSPECTION, Combination Meter System.>
Fuel gauge does not operate.	(1) Fuel level sensor (2) Harness (3) Fuel gauge	<Ref. to IDI-9, CHECK FUEL LEVEL SENSOR, INSPECTION, Combination Meter System.>
Water temperature gauge does not operate.	(1) Engine coolant temperature sensor (2) Harness (3) Water temperature gauge	<Ref. to IDI-11, CHECK ENGINE COOLANT TEMPERATURE SENSOR, INSPECTION, Combination Meter System.>
Outside temperature indicator does not operate.	(1) Ambient sensor (2) Harness (3) Combination meter	<Ref. to IDI-12, CHECK OUTSIDE TEMPERATURE INDICATOR, INSPECTION, Combination Meter System.>

2. CHECK POWER SUPPLY AND GROUND CIRCUIT

	Step	Check	Yes	No
1	**CHECK POWER SUPPLY FOR COMBINATION METER.** 1) Remove combination meter. <Ref. to IDI-13, REMOVAL, Combination Meter Assembly.> 2) Disconnect combination meter harness connector. 3) Turn ignition switch to ON. 4) Measure voltage between combination meter connector and chassis ground. ***Connector & terminal*** ***(i12) No. 3 (+) — Chassis ground (–):***	Is the measured value more than 10 V?	Go to step **2.**	Check harness for open or short between ignition relay and combination meter.
2	**CHECK POWER SUPPLY FOR COMBINATION METER.** Measure voltage between combination meter connector and chassis ground. ***Connector & terminal*** ***(i12) No. 7 (+) — Chassis ground (–):***	Is the measured value more than 10 V?	Go to step **3.**	Check harness for open or short between fuse and combination meter.
3	**CHECK GROUND CIRCUIT OF COMBINATION METER.** 1) Turn ignition switch to OFF. 2) Measure resistance of harness between combination meter connector and chassis ground. ***Connector & terminal*** ***(i10) No. 20 (+) — Chassis ground (–):***	Is the measured value less than 10 Ω?	Go to step **4.**	Repair wiring harness.
4	**CHECK GROUND CIRCUIT OF COMBINATION METER.** Measure resistance of harness between combination meter connector and chassis ground. ***Connector & terminal*** ***(i11) No. 16 (+) — Chassis ground (–):***	Is the measured value less than 10 Ω?	Replace combination meter.	Repair wiring harness.

3. CHECK VEHICLE SPEED SENSOR

	Step	Check	Yes	No
1	**CHECK VEHICLE SPEED SENSOR.** 1) Lift-up the vehicle and support it with safety stands. 2) Remove the combination meter with harness connector. 3) Drive the vehicle at a speed greater than 20 km/h (12 MPH). **Warning:** **Be careful not to get caught in the running wheels.** 4) Measure voltage between combination meter connector and chassis ground. ***Connector & terminal*** ***(i10) No. 13 (+) — Chassis ground (–):***	Is the measured value less than 1 V or more than 5 V?	Check speedometer. <Ref. to IDI-15, REMOVAL, Speedometer.>	Go to step **2.**
2	**CHECK VEHICLE SPEED SENSOR POWER SUPPLY.** 1) Turn ignition switch to OFF. 2) Disconnect vehicle speed sensor harness connector. 3) Turn ignition switch to ON. 4) Measure voltage between vehicle speed sensor connector and engine ground. ***Connector & terminal*** ***(B17) No. 3 (+) — Engine ground (–):***	Is the measured value more than 10 V?	Go to step **3.**	Check harness for open or short between ignition relay and vehicle speed sensor.
3	**CHECK HARNESS BETWEEN VEHICLE SPEED SENSOR AND ENGINE GROUND.** 1) Turn ignition switch to OFF. 2) Measure resistance between vehicle speed sensor connector and engine ground. ***Connector & terminal*** ***(B17) No. 2 — Engine ground:***	Is the measured value less than 10 Ω?	Go to step **4.**	Repair wiring harness.
4	**CHECK HARNESS BETWEEN VEHICLE SPEED SENSOR AND COMBINATION METER.** 1) Disconnect connector from combination meter. 2) Measure resistance between vehicle speed sensor harness connector and combination meter harness connector. ***Connector & terminal*** ***(B17) No. 1 — (i10) No. 13:***	Is the measured value less than 10 Ω?	Replace vehicle speed sensor.	Repair wiring harness.

4. CHECK TRANSMISSION CONTROL MODULE

	Step	Check	Yes	No
1	**CHECK TRANSMISSION CONTROL MODULE SIGNAL.** 1) Lift-up the vehicle and support it with safety stands. 2) Drive the vehicle faster than 10 km/h (6 MPH). **Warning:** **Be careful not to get caught in the running wheels.** 3) Measure voltage between transmission control module connector and chassis ground. ***Connector & terminal*** ***TURBO model:*** ***(B56) No. 1 (+) — Chassis ground (–):*** ***NON-TURBO model:*** ***(B55) No. 13 (+) — Chassis ground (–):***	Is the measured value less than 1 V or more than 5 V?	Go to step **2.**	Check transmission control module. <Ref. to 4AT-2, Basic Diagnostic Procedure.> or <Ref. to 4AT(D)-2, Basic Diagnostic Procedure.>
2	**CHECK HARNESS BETWEEN TRANSMISSION CONTROL MODULE AND COMBINATION METER.** 1) Turn ignition switch to OFF. 2) Disconnect connector from transmission control module and combination meter. 3) Measure resistance between transmission control module harness connector and combination meter harness connector. ***Connector & terminal*** ***TURBO model:*** ***(B56) No. 1 — (i10) No. 13:*** ***NON-TURBO model:*** ***(B55) No. 13 — (i10) No. 13:***	Is the measured value less than 10 Ω?	Check speed meter. <Ref. to IDI-15, REMOVAL, Speedometer.>	Repair wiring harness.

5. CHECK ENGINE CONTROL MODULE

	Step	Check	Yes	No
1	**CHECK ENGINE CONTROL MODULE SIGNAL.** 1) Start the engine. 2) Measure voltage between engine control module connector and engine ground. ***Connector & terminal*** ***TURBO model:*** ***(B134) No. 23 (+) — Engine ground (−):*** ***NON-TURBO model:*** ***(B134) No. 10 (+) — Engine ground (−):***	Is the measured value within 0 V to 14 V?	Go to step **2.**	Check engine control module. <Ref. to EN(H4SO)-2, Basic Diagnostic Procedure.> or <Ref. to EN(H4DOTC)-2, Basic Diagnostic Procedure.>
2	**CHECK HARNESS BETWEEN COMBINATION METER AND ENGINE CONTROL MODULE.** 1) Turn ignition switch to OFF. 2) Disconnect connector from engine control module and combination meter. 3) Measure resistance between engine control module harness connector and combination meter harness connector. ***Connector & terminal*** ***TURBO model:*** ***(B134) No. 23 — (i11) No. 7:*** ***NON-TURBO model:*** ***(B134) No. 10 — (i11) No. 7:***	Is the measured value less than 10 Ω?	Check tachometer. <Ref. to IDI-16, REMOVAL, Tachometer.>	Repair wiring harness.

6. CHECK FUEL LEVEL SENSOR

	Step	Check	Yes	No
1	**CHECK ENGINE MODEL.**	Is the engine with TURBO?	Go to step **7.**	Go to step **2.**
2	**CHECK FUEL LEVEL SENSOR.** 1) Remove the fuel level sensor. <Ref. to FU(H4SO)-68, REMOVAL, Fuel Level Sensor.> 2) Measure the resistance between the fuel level sensor terminals when setting the float to FULL and EMPTY position. ***Terminals*** ***No. 3 — No. 6***	Is the measured value 0.5 to 2.5 Ω at FULL or 52.5 to 54.5 Ω at EMPTY?	Go to step **3.**	Replace the fuel level sensor.
3	**CHECK FUEL SUB LEVEL SENSOR.** 1) Remove the fuel sub level sensor. <Ref. to FU(H4SO)-69, REMOVAL, Fuel Sub Level Sensor.> 2) Measure the resistance between the fuel sub level sensor terminals when setting the float to FULL and EMPTY position. ***Terminals*** ***No. 1 — No. 2***	Is the measured value 0.5 to 2.5 Ω at FULL or 39.5 to 41.5 Ω at EMPTY?	Go to step **4.**	Replace the fuel sub level sensor.
4	**CHECK HARNESS BETWEEN FUEL SUB LEVEL SENSOR AND COMBINATION METER.** 1) Disconnect the connector from the combination meter. 2) Measure the resistance between the fuel sub level sensor harness connector terminal and combination meter harness connector terminal. ***Connector & terminal*** ***(R59) No. 1 — (i10) No. 3:***	Is the measured value less than 10 Ω?	Go to step **5.**	Repair wiring harness.
5	**CHECK HARNESS BETWEEN FUEL LEVEL SENSOR AND FUEL SUB LEVEL SENSOR.** Measure the resistance between the fuel level sensor harness connector terminal and fuel sub level sensor harness connector terminal. ***Connector & terminal*** ***(R58) No. 6 — (R59) No. 2:***	Is the measured value less than 10 Ω?	Go to step **6.**	Repair wiring harness.
6	**CHECK FUEL LEVEL SENSOR GROUND CIRCUIT.** Measure the resistance between the fuel level sensor harness connector terminal and chassis ground. ***Connector & terminal*** ***(R58) No. 3 — Chassis ground:***	Is the measured value less than 10 Ω?	Check the fuel gauge. <Ref. to IDI-17, REMOVAL, Fuel Gauge.>	Repair wiring harness.
7	**CHECK FUEL LEVEL SENSOR.** 1) Remove the fuel level sensor. <Ref. to FU(H4DOTC)-70, REMOVAL, Fuel Level Sensor.> 2) Measure the resistance between fuel level sensor terminals when setting the float to FULL and EMPTY position. ***Terminals*** ***No. 2 — No. 3:***	Is the resistance 0.5 to 2.5 Ω (FULL) and 50 to 52 Ω (EMPTY)?	Go to step **8.**	Replace the fuel level sensor.

	Step	Check	Yes	No
8	**CHECK FUEL SUB LEVEL SENSOR.** 1) Remove the fuel sub level sensor. <Ref. to FU(H4DOTC)-71, REMOVAL, Fuel Sub Level Sensor.> 2) Measure the resistance between fuel sub level sensor terminals when setting the float to FULL and EMPTY position. ***Terminals*** ***No. 1 — No. 2:***	Is the resistance 0.5 to 2.5 Ω (FULL) and 42 to 44 Ω (EMPTY)?	Go to step **9.**	Replace the fuel sub level sensor.
9	**CHECK HARNESS BETWEEN FUEL SUB LEVEL SENSOR AND COMBINATION METER.** 1) Disconnect the connector from combination meter. 2) Measure the resistance between fuel sub level sensor harness connector terminal and combination meter harness connector terminal. ***Connector & terminal*** ***(R58) No. 2 — (i10) No. 3:***	Is the resistance less than 10 Ω?	Go to step **10.**	Repair the wiring harness.
10	**CHECK HARNESS BETWEEN FUEL LEVEL SENSOR AND FUEL SUB LEVEL SENSOR.** Measure the resistance between fuel level sensor harness connector terminal and fuel sub level sensor harness connector terminal. ***Connector & terminal*** ***(R58) No. 3 — (R59) No.2:***	Is the resistance less than 10 Ω?	Go to step **11.**	Repair the wiring harness.
11	**CHECK FUEL LEVEL SUB SENSOR GROUND CIRCUIT.** Measure the resistance between fuel level sub sensor harness connector terminal and chassis ground. ***Connector & terminal*** ***(R59) No. 1 — Chassis ground:***	Is the resistance less than 10 Ω?	Check the fuel gauge. <Ref. to IDI-17, Removal.>	Repair the wiring harness.

7. CHECK ENGINE COOLANT TEMPERATURE SENSOR

	Step	Check	Yes	No
1	**CHECK ENGINE COOLANT TEMPERATURE SENSOR.** Check engine coolant temperature sensor. <Ref. to EN(H4SO)-2, Basic Diagnostic Procedure.> or <Ref. to EN(H4DOTC)-2, Basic Diagnostic Procedure.>	Is engine coolant temperature sensor OK?	Go to step **2.**	Replace engine coolant temperature sensor.
2	**CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND COMBINATION METER.** 1) Turn ignition switch to OFF. 2) Disconnect connector from engine coolant temperature sensor and combination meter. 3) Measure resistance between engine coolant temperature sensor harness connector and combination meter harness connector. ***Connector & terminal*** ***Normal meter:*** ***(E8) No. 3 — (i12) No. 8:***	Is the measured value less than 10 Ω?	Go to step **3.**	Repair wiring harness.
3	**CHECK WATER TEMPERATURE GAUGE GROUND CIRCUIT.** Measure resistance between combination meter harness connector terminal and chassis ground. ***Connector & terminal*** ***(i12) No. 9 — Chassis ground:***	Is the measured value less than 10 Ω?	Check water temperature gauge. <Ref. to IDI-18, REMOVAL, Water Temperature Gauge.>	Repair wiring harness.

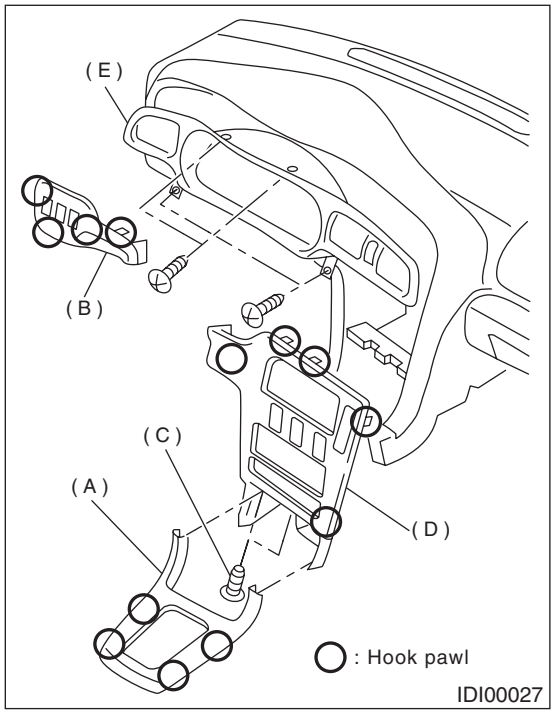
8. CHECK OUTSIDE TEMPERATURE INDICATOR

	Step	Check	Yes	No
1	**CHECK POWER SUPPLY FOR AMBIENT SENSOR.** 1) Turn ignition switch OFF. 2) Disconnect connector from ambient sensor. 3) Turn ignition switch ON. 4) Measure voltage between ambient sensor harness connector terminal and chassis ground. ***Connector & terminal*** ***(F78) No. 1 (+) — Chassis ground (−):***	Is the measured value more than 4 V?	Go to step **2.**	Check harness for open or short between ambient sensor and combination meter.
2	**CHECK AMBIENT SENSOR.** 1) Turn ignition switch OFF. 2) Remove ambient sensor. 3) Check ambient sensor. <Ref. to IDI-19, INSPECTION, Ambient Sensor.>	Is the ambient sensor OK?	Go to step **3.**	Replace the ambient sensor.
3	**CHECK HARNESS BETWEEN AMBIENT SENSOR AND COMBINATION METER.** 1) Disconnect connector from combination meter. 2) Measure resistance between ambient sensor harness connector terminal and combination meter harness connector terminal. ***Connector & terminal*** ***(F78) No. 2 — (i10) No. 22:***	Is the measured value less than 10 Ω?	Go to step **4.**	Repair wiring harness.
4	**CHECK OUTSIDE TEMPERATURE INDICATOR.** 1) Connect combination meter harness connector. 2) Connect a resistor (1.7 kΩ) between terminals of ambient sensor harness connector. 3) Turn ignition switch ON and check the outside temperature indicator display.	Is the outside temperature indicator indicating 25°C (77°F)?	Outside temperature indicator is OK.	Replace combination meter printed circuit.

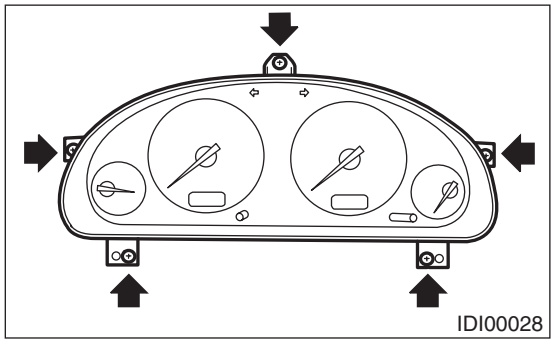
3. Combination Meter Assembly

A: REMOVAL

1) Disconnect ground cable from battery.
2) Set tilt steering at the lowest position.
3) Disconnect each electrical connector to remove front cover (A) and switch panel (B).
4) Loosen screws (C) to remove center panel (D).
5) Remove meter visor (E).



6) Remove screws of combination meter to pull out the meter toward you.
7) Remove connector in the upper area of combination meter to remove meter.



CAUTION:
• Be careful not to damage meter or instrument panel.
• Pay particular attention to avoid damaging the meter glass.

B: INSTALLATION

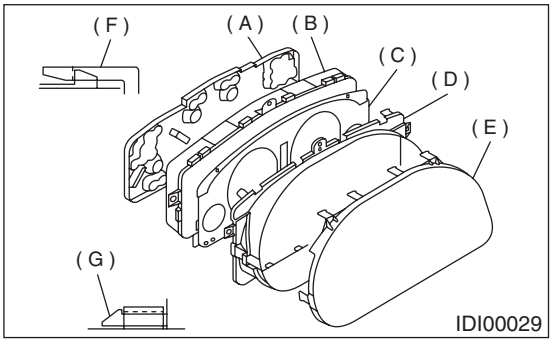
Install in the reverse order of removal.

CAUTION:
• Make sure that electrical connector is connected securely.
• Make sure that each meter operates normally.

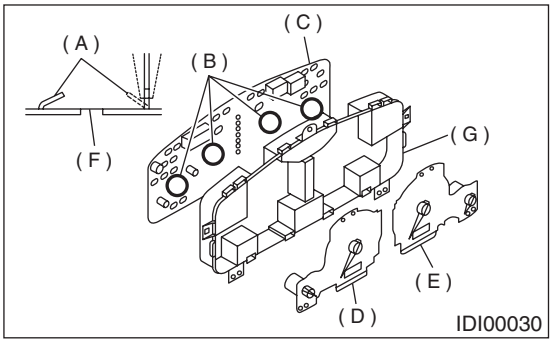
C: DISASSEMBLY

CAUTION:
Use gloves to avoid damage and getting fingerprints on the glass surface and meter surfaces.

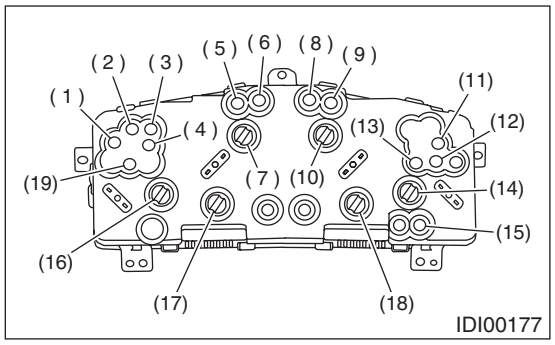
1) Disengage claw (F) to remove case (B) from back cover (A).
2) Disengage claw (G) to remove meter glass (E), reflector (D), and window plate (C) from inner case.



3) Pull up claw (A) in portion (B) of printed circuit (C) with combination pliers. Push out speedometer assembly (D) and tachometer assembly (E) using hole (F).
4) Pull up claw in the center of printed circuit (C), and remove printed circuit from case (G).



1. BULB REPLACEMENT



(1) AT OIL TEMP
(2) Oil pressure
(3) Check engine
(4) Charge
(5) HI-beam
(6) Turn RH
(7) Tachometer
(8) Turn LH
(9) Brake
(10) Speedometer
(11) Airbag
(12) ABS
(13) AWD
(14) Speedometer and fuel gauge
(15) Low fuel
(16) Tachometer and water temperature gauge
(17) LCD
(18) LCD
(19) Curise set

D: ASSEMBLY

Assemble in the reverse order of disassembly.

4. Speedometer

A: REMOVAL

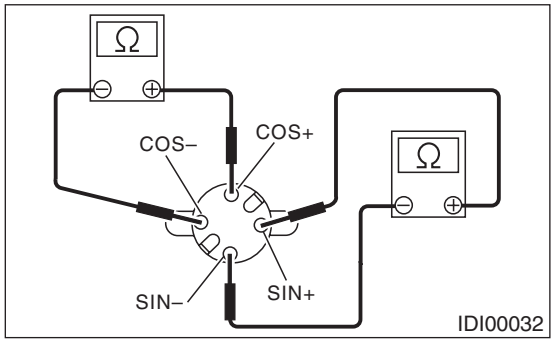
Disassemble combination meter, and then remove speedometer and fuel gauge assembly. <Ref. to IDI-13, DISASSEMBLY, Combination Meter Assembly.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure speedometer resistance.



Terminal	Resistance
Terminals SIN+ and SIN–	200±8 Ω
Terminals COS+ and COS–	200±8 Ω

If NG, replace speedometer and fuel gauge assembly.
If OK, replace combination meter printed circuit.

5. Tachometer

A: REMOVAL

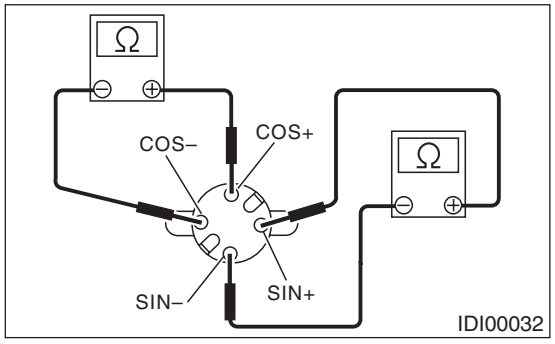
Disassemble combination meter, and then remove tachometer and water temperature gauge assembly. <Ref. to IDI-13, DISASSEMBLY, Combination Meter Assembly.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure tachometer resistance.



Terminal	Resistance
Terminals SIN+ and SIN–	200±8 Ω
Terminals COS+ and COS–	200±8 Ω

If NG, replace tachometer and water temperature gauge assembly.
If OK, replace combination meter printed circuit.

6. Fuel Gauge

A: REMOVAL

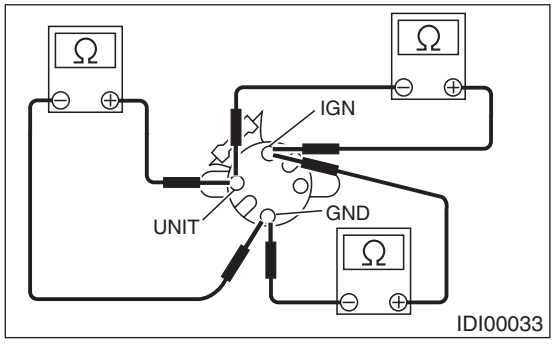
Disassemble combination meter, and then remove speedometer and fuel gauge assembly. <Ref. to IDI-13, DISASSEMBLY, Combination Meter Assembly.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure fuel gauge resistance.



Terminal	Resistance
Terminals IGN and GND	170±10 Ω
Terminals IGN and UNIT	35±10 Ω
Terminals UNIT and GND	136±10 Ω

If NG, replace speedometer and fuel gauge assembly.
If OK, replace combination meter printed circuit.

7. Water Temperature Gauge

A: REMOVAL

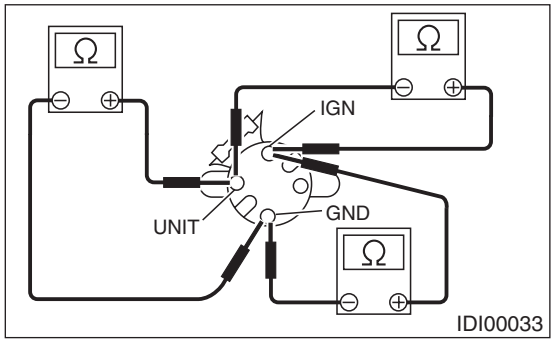
Disassemble combination meter, and then remove tachometer and water temperature gauge assembly. <Ref. to IDI-13, DISASSEMBLY, Combination Meter Assembly.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure water temperature gauge resistance.



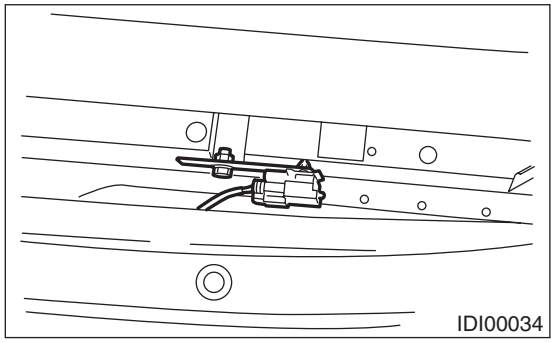
Terminal	Resistance
Terminals IGN and GND	208±10 Ω
Terminals IGN and UNIT	56±10 Ω
Terminals UNIT and GND	264±10 Ω

If NG, replace tachometer and water temperature gauge assembly.
If OK, replace combination meter printed circuit.

8. Ambient Sensor

A: REMOVAL

1) Open front hood.
2) Disconnect ground cable from battery.
3) Disconnect ambient sensor connector.
4) Remove ambient sensor from radiator lower panel.

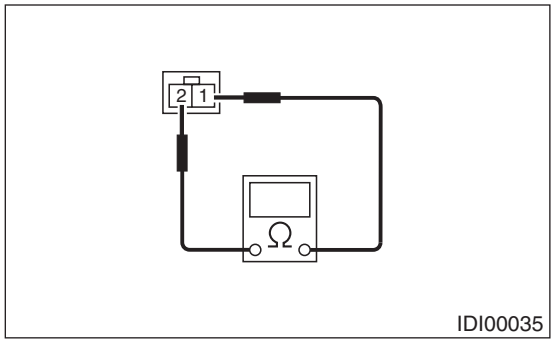


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure ambient sensor resistance.



Terminal No.	Resistance
1 and 2	1.7 kΩ/25°C (77°F)

If NG, replace the ambient sensor.

MEMO:

1. General Description

A: SPECIFICATIONS

Headlight	Single-bulb type	12 V — 55/65 W
	Dual-bulb type	12 V — 55 W (Low) 12 V — 60 W (High)
Front turn signal light, side turn signal light, parking light		12 V — 27/8 W
Front fog light		12 V — 51 W
Rear combination light	Tail/Stop/Turn signal light	12 V — 21/5 W
	Back-up light	12 V — 21 W
Rear finisher light	Tail light	12 V — 5 W
License plate light		12 V — 5 W
High-mounted stop light		12 V — 13 W
Room light		12 V — 8 W
Spot light		12 V — 8 W
Door step light		12 V — 3.4 W
Glove box light		12 V — 1.4 W
Cargo light		12 V — 13 W

B: PRECAUTIONS

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

WARNING:
• Airbag system wiring harness is routed near electrical parts and switches. All airbag system wiring harnesses and connectors are yellow. Do not use electric test equipment on these circuits.
• Be careful not to damage the airbag system wiring harness when servicing electrical parts and switches.

C: PREPARATION TOOL

1. GENERAL TOOLS

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

2. Headlight and Tail Light System

A: SCHEMATIC

1. HEADLIGHT 2-LIGHT MODEL

<Ref. to WI-130, 2-LIGHT MODEL, SCHEMATIC, Headlight System.>

2. HEADLIGHT 4-LIGHT MODEL

<Ref. to WI-131, 4-LIGHT MODEL, SCHEMATIC, Headlight System.>

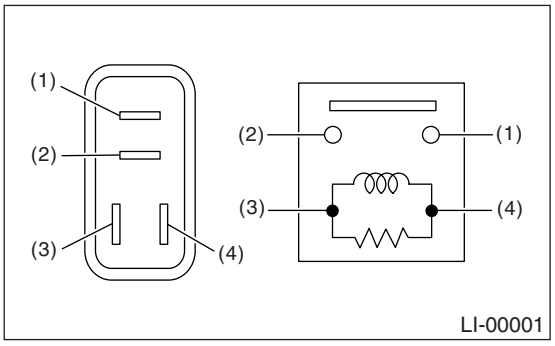
3. CLEARANCE LIGHT AND ILLUMINATION LIGHT

<Ref. to WI-124, SCHEMATIC, Clearance Light and Illumination Light System.>

B: INSPECTION

1. HEADLIGHT RELAY

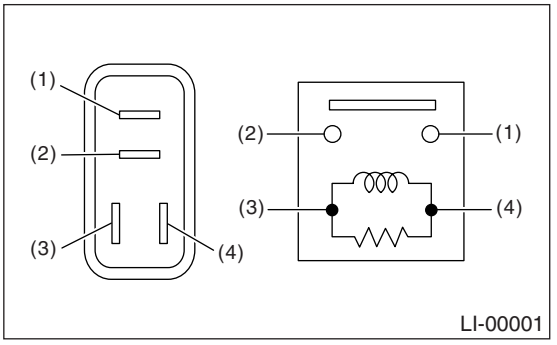
Measure headlight relay resistance between terminals while connecting terminal No. 4 to battery positive terminal No. 3 to battery ground terminal.



Current	Terminal No.	Standard
Flow	1 and 2	Less than 1 Ω
No flow		More than 1 MΩ

2. TAIL AND ILLUMINATION RELAY

Measure tail and illumination relay resistance between terminals while connecting terminal No. 4 to battery positive terminal No. 3 to battery ground terminal.



Current	Terminal No.	Standard
Flow	1 and 2	Less than 1 Ω
No flow		More than 1 MΩ

3. Front Fog Light System

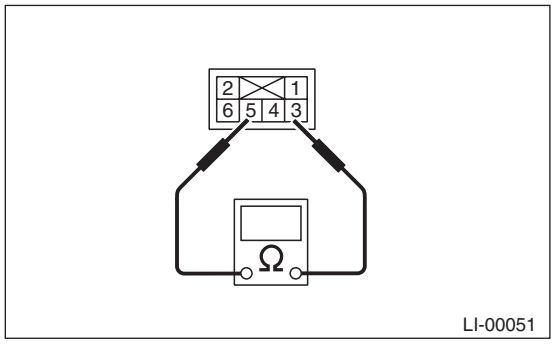
A: SCHEMATIC

<Ref. to WI-128, SCHEMATIC, Front Fog Light System.>

B: INSPECTION

1. FRONT FOG LIGHT SWITCH

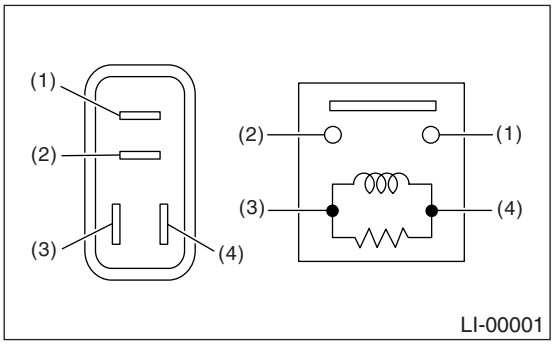
Measure front fog light switch resistance.



Switch position	Terminal No.	Standard
OFF	—	More than 1 MΩ
ON	3 and 5	Less than 1 Ω

2. FRONT FOG LIGHT RELAY

Measure front fog light relay resistance between terminals while connecting terminal No. 4 to battery positive terminal and terminal No. 3 to battery ground terminal.



Current	Terminal No.	Standard
Flow	1 and 2	Less than 1 Ω
No flow		More than 1 MΩ

4. Turn Signal and Hazard Light System

A: SCHEMATIC

<Ref. to WI-138, SCHEMATIC, Turn Signal Light and Hazard Light System.>

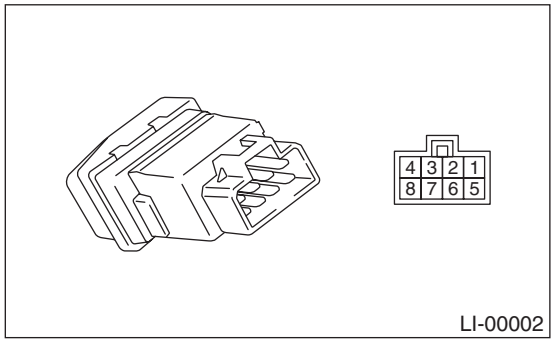
B: INSPECTION

1. TURN SIGNAL SWITCH

<Ref. to LI-10, INSPECTION, Combination Switch (Light).>

2. HAZARD SWITCH

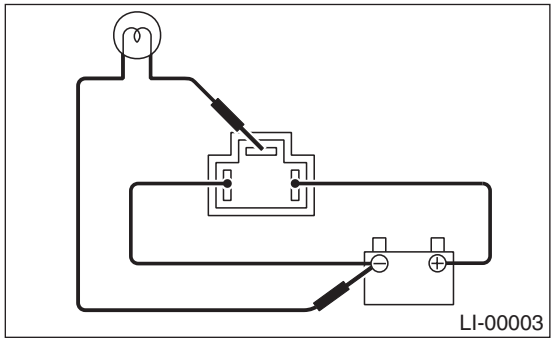
Measure hazard switch resistance.



Switch position	Terminal No.	Standard
OFF	6 and 7	Less than 1 Ω
ON	1, 3 and 4	Less than 1 Ω
	7 and 8	Less than 1 Ω

3. TURN SIGNAL & HAZARD MODULE

Connect battery and turn signal light bulb to the module, as shown in the figure. The module is properly functioning if it blinks when power is supplied to the circuit.



5. Back-up Light System

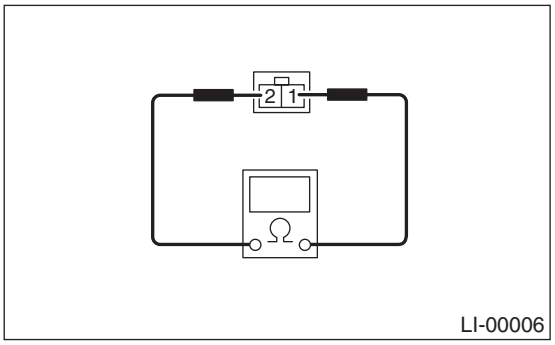
A: SCHEMATIC

<Ref. to WI-120, SCHEMATIC, Back-up Light System.>

B: INSPECTION

1. BACK-UP LIGHT SWITCH (M/T)

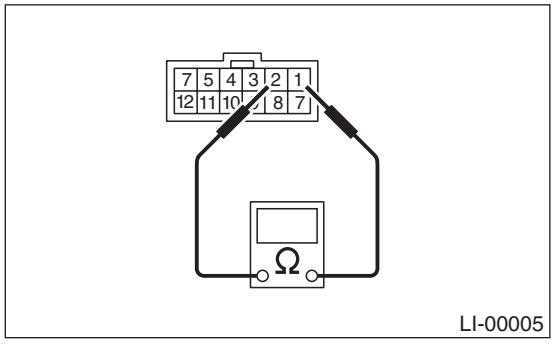
Measure back-up light switch resistance.



Switch position	Terminal No.	Standard
When shift lever is set in reverse position	1 and 2	Less than 1 Ω
Other positions		More than 1 MΩ

2. INHIBITOR SWITCH (A/T)

Measure inhibitor switch resistance.



Switch position	Terminal No.	Standard
When select lever is set in “R” position	1 and 2	Less than 1 Ω
Other positions		More than 1 MΩ

6. Stop Light System

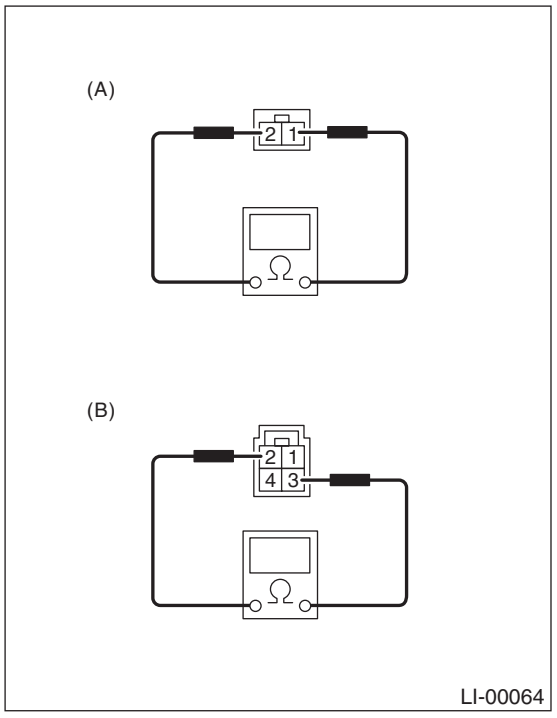
A: SCHEMATIC

<Ref. to WI-137, SCHEMATIC, SCHEMATIC, Stop Light System.>

B: INSPECTION

1. STOP LIGHT SWITCH

Measure stop light switch resistance.



(A) Without cruise control
(B) With cruise control

Switch position	Terminal No.	Standard
When brake pedal is depressed	1 and 2: Without cruise control 2 and 3: With cruise control	Less than 1 Ω
When brake pedal is released		More than 1 MΩ

7. Interior Light System

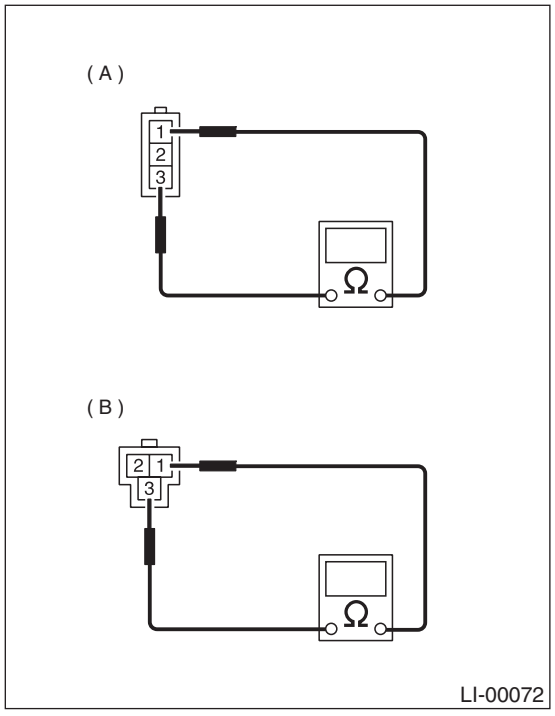
A: SCHEMATIC

<Ref. to WI-134, SCHEMATIC, In Compartment Light System.>

B: INSPECTION

1. DOOR SWITCH

Measure door switch resistance.



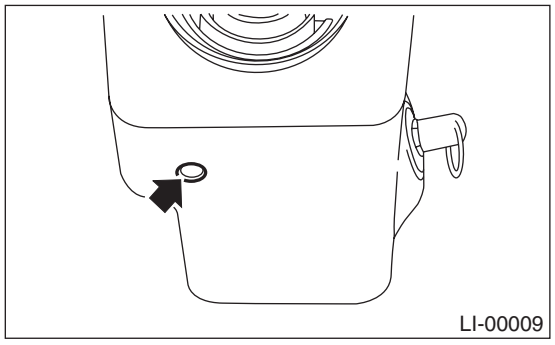
(A) Front door switch
(B) Rear door switch

Switch position	Terminal No.	Standard
When door is open	1 and 3	Less than 1 Ω
When door is closed		More than 1 MΩ

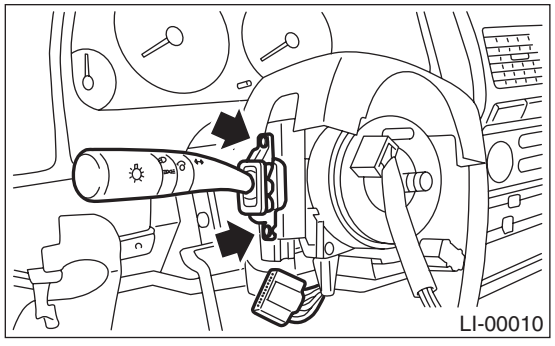
8. Combination Switch (Light)

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove instrument panel lower cover. <Ref. to EI-37, REMOVAL, Instrument Panel Assembly.>
3) Remove screws which secure upper column cover to lower column cover.



4) Disconnect connector from combination switch.
5) Remove screws which secure switch and remove switch.

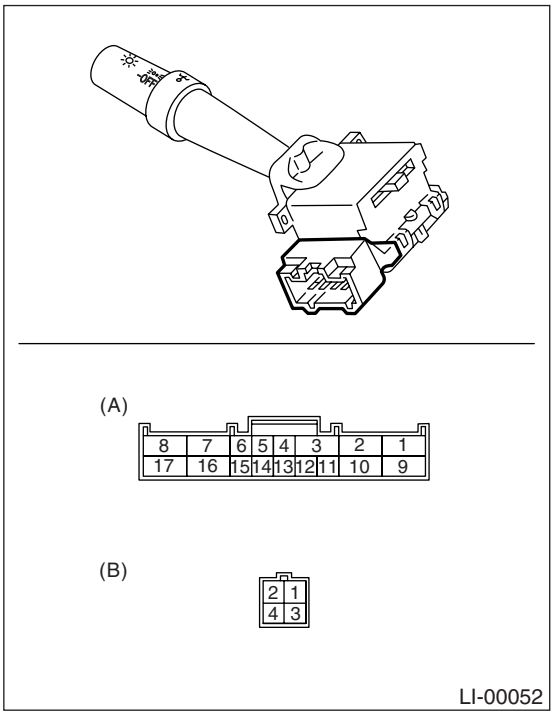


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure combination switch resistance.



(A) Lighting and turn signal switch connector
(B) Parking switch conector

1. LIGHTING SWITCH

Switch position	Terminal No.	Standard
OFF	—	More than 1 MΩ
Tail	14 and 16	Less than 1 Ω
Head	13, 14 and 16	Less than 1 Ω

2. DIMMER AND PASSING SWITCH

Switch position	Terminal No.	Standard
Passing	7, 8 and 16	Less than 1 Ω
Low beam	16 and 17	Less than 1 Ω
High beam	7 and 16	Less than 1 Ω

3. TURN SIGNAL SWITCH

Switch position	Terminal No.	Standard
Left	1 and 2	Less than 1 Ω
Neutral	—	More than 1 MΩ
Right	2 and 3	Less than 1 Ω

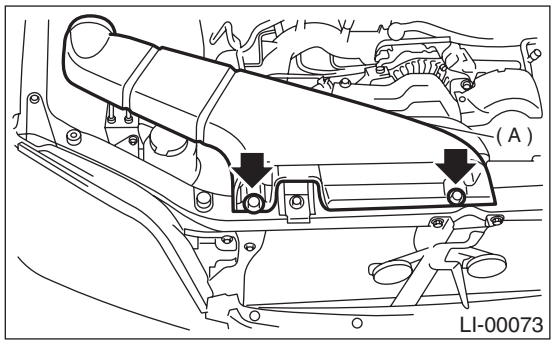
4. PARKING SWITCH

Switch position	Terminal No.	Standard
OFF	2 and 4	Less than 1 Ω
ON	1 and 4	Less than 1 Ω

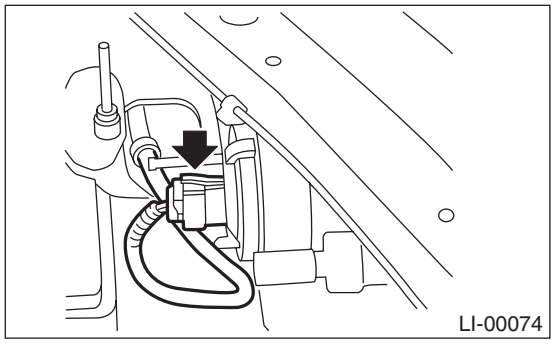
9. Headlight Assembly

A: REMOVAL

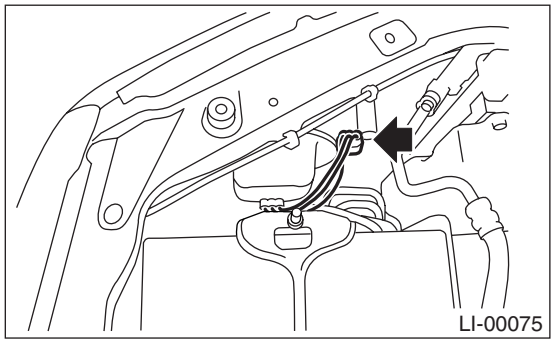
1) Disconnect ground cable from battery.
2) Remove duct (A) (when right side headlight is removed).



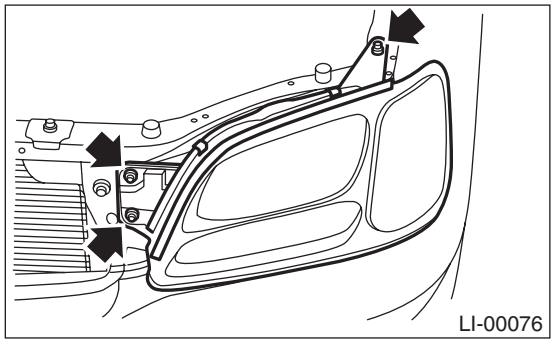
3) Disconnect headlight harness connector.
Single-bulb type



Dual-bulb type



4) Remove three bolts and disconnect connectors, and then detach headlight assembly.



B: INSTALLATION

Install in the reverse order of removal.

C: ADJUSTMENT

1. HEADLIGHT AIMING

NOTE:
As this headlight is the “VISUAL AIMING TYPE”, it is possible to adjust aiming only in the vertical direction. It cannot be adjusted in the horizontal direction.

CAUTION:
Turn off the light before adjusting headlight aiming. If the light is necessary to check aiming, do not turn on for more than two minutes.

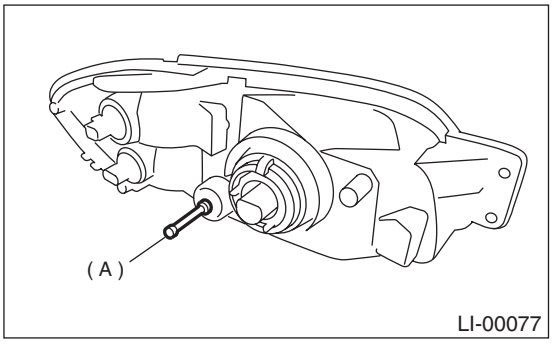
NOTE:
Before checking the headlight aiming, be sure of the following:

- The area around the headlight has not sustained any accident, damage or other type of deformation.
- Vehicle is parked on level ground.
- The inflation pressure of tires is correct.
- Vehicle's gas tank is fully charged.
- Bounce the vehicle several times to normalize the suspension.
- Make certain that someone is seated in the driver's seat.

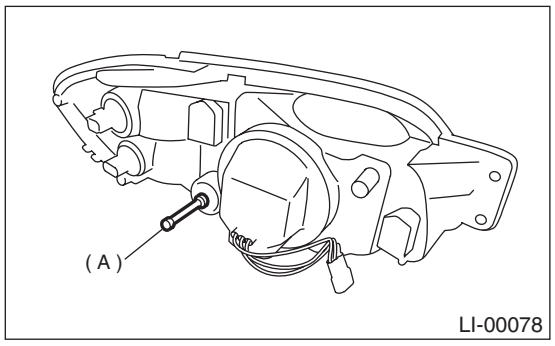
Turn the headlights on and then adjust the low beam pattern to the following positions on the screen.

NOTE:
Adjust the headlight aiming by turning the adjusting screw (A).

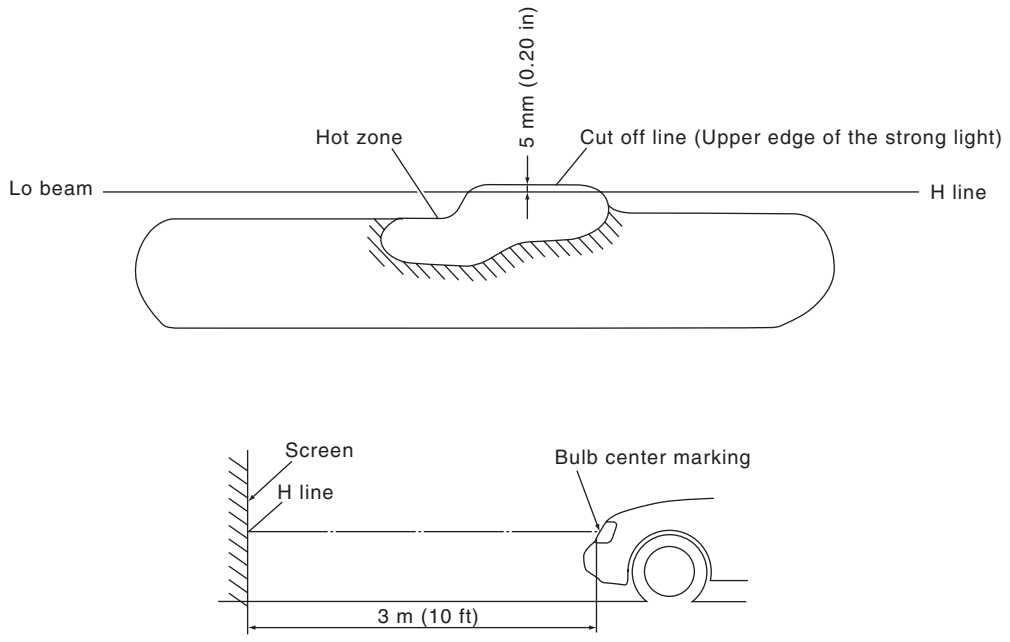
Single-bulb type



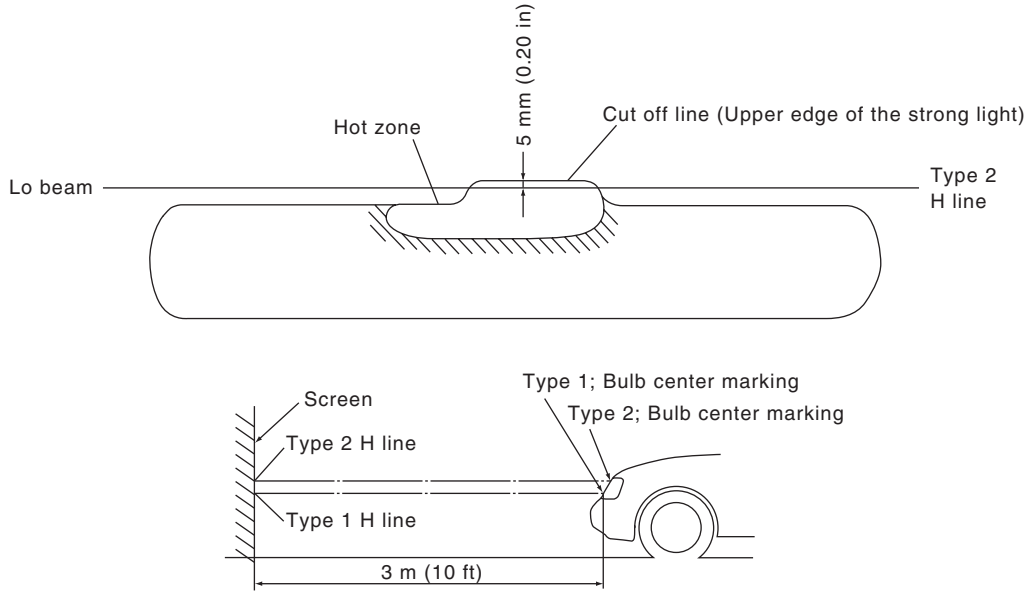
Dual-bulb type



Single-bulb headlight



Dual-bulb headlight



LI-00079

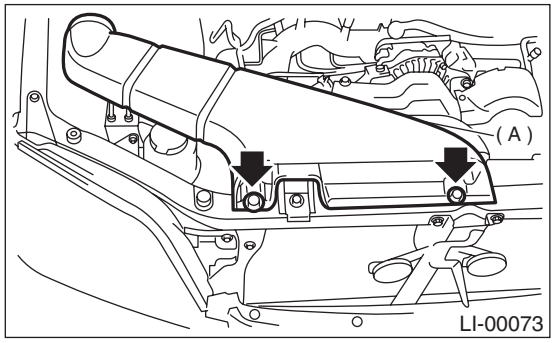
10.Headlight Bulb

A: REMOVAL

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 the performance.

1. SINGLE-BULB TYPE

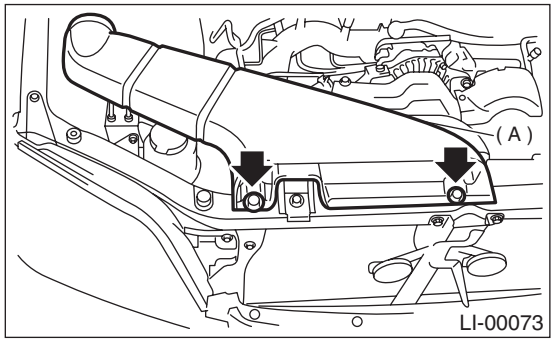
1) Disconnect ground cable from battery.
2) Remove duct (A) (when right side headlight is removed).



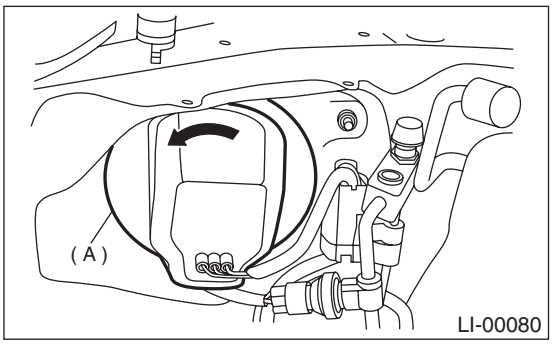
3) Disconnect harness connector.
4) Remove rubber cover.
5) Push to remove spring retainer, and then detach the headlight bulb.

2. DUAL-BULB TYPE

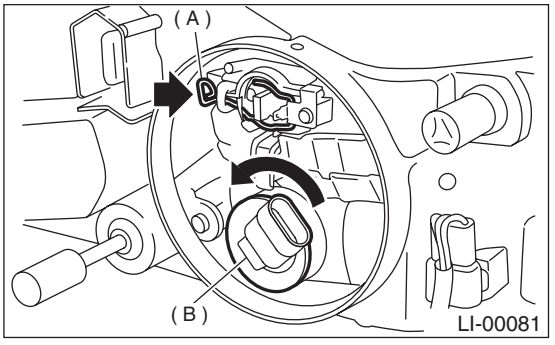
1) Disconnect ground cable from battery.
2) Remove duct (A) (when right side headlight is removed).



3) Remove back cover (A).



4) Disconnect harness connector.
5) Push to remove spring retainer (A) (low beam) or turn bulb assembly (B) counterclockwise (high beam), and then detach headlight bulb.



B: INSTALLATION

Install in the reverse order of removal.

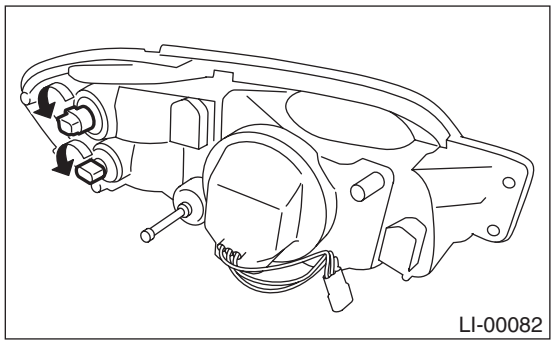
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

11.Front Turn Signal Light Bulb

A: REMOVAL

1) Remove headlight assembly. <Ref. to LI-11, REMOVAL, Headlight Assembly.>
2) Turn the socket and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

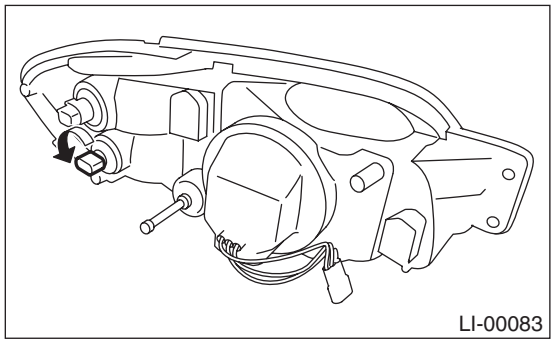
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

12. Parking /Side Marker Light Bulb

A: REMOVAL

1) Remove headlight assembly. <Ref. to LI-11, REMOVAL, Headlight Assembly.>
2) Turn the socket and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

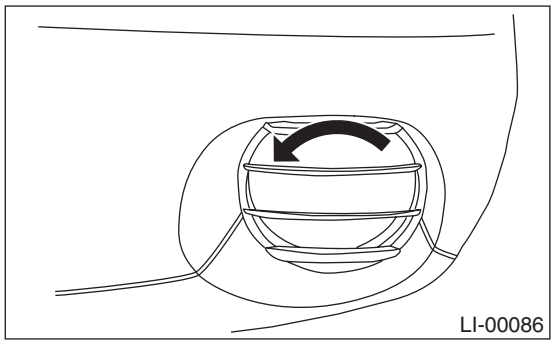
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

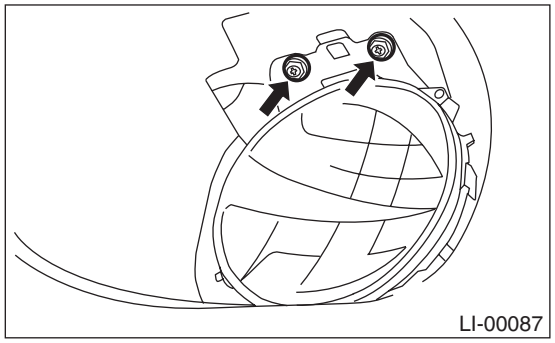
13.Front Fog Light Assembly

A: REMOVAL

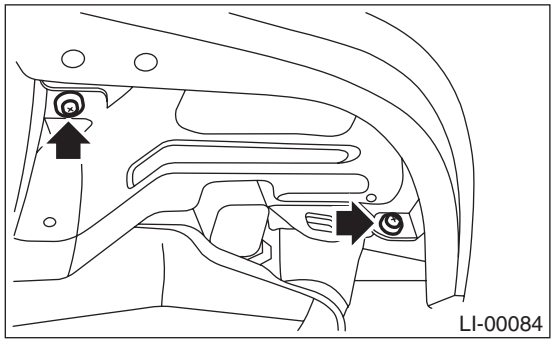
1) Disconnect ground cable from battery.
2) Turn stone guard counterclockwise, and then remove it.



3) Remove mounting bolts.

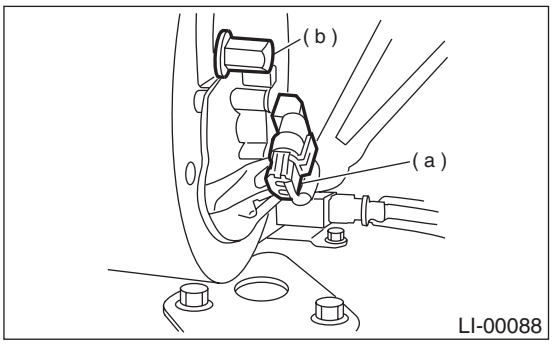


4) Remove two clips and lower the mudguard.



5) Disconnect harness connector (a).

6) Remove nut (b) then detach fog light assembly.



B: INSTALLATION

Install in the reverse order of removal.

14.Front Fog Light Bulb

A: REMOVAL

1) Remove fog light assembly. <Ref. to LI-17, REMOVAL, Front Fog Light Assembly.>
2) Disconnect harness connector.
3) Turn the bulb assembly counterclockwise, and then remove the bulb.

B: INSTALLATION

Install in the reverse order of removal.

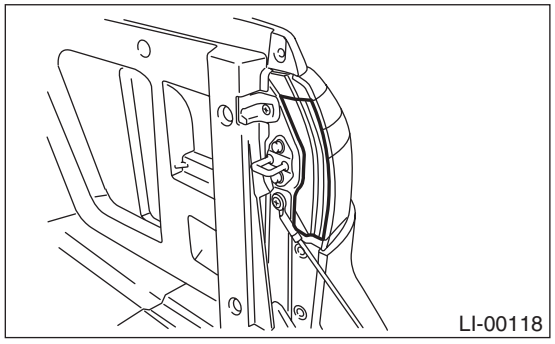
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-3, PRECAUTIONS, General Description.>
3) If NG, replace the bulb with a new one.

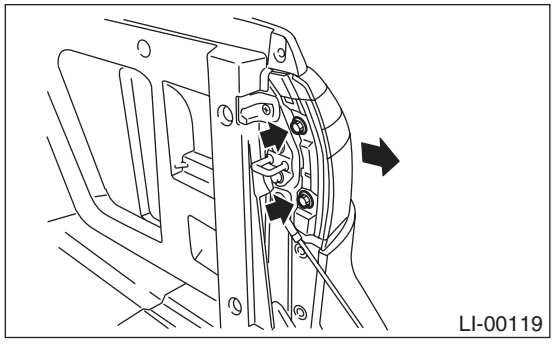
15.Rear Combination Light Assembly

A: REMOVAL

1) Disconnect ground cable from battery.
2) Open tail gate.
3) Remove bolt cover.



4) Remove bolt and detach rear combination light assembly by pulling to the rear.



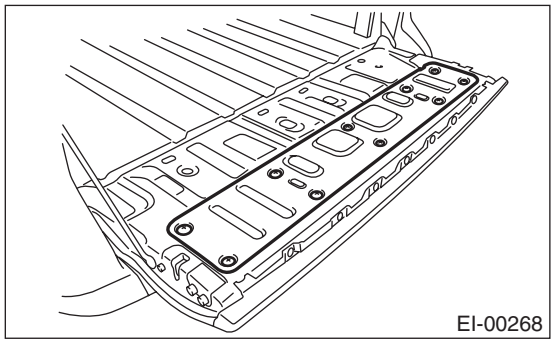
B: INSTALLATION

Install in the reverse order of removal.

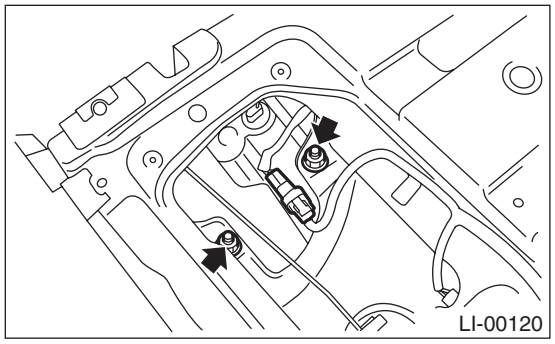
16.Rear Finisher Light Assembly

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove tail gate tray. <Ref. to EI-56, REMOVAL, Tail Gate Tray.>
3) Remove tail gate cover.



4) Separate connector. Remove nuts and detach rear finisher light.



B: INSTALLATION

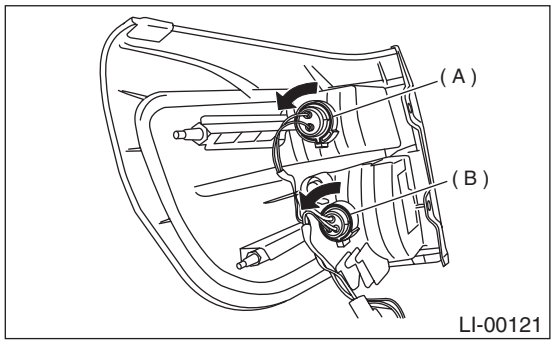
Install in the reverse order of removal.

17.Brake/Tail Light Bulb

A: REMOVAL

1. COMBINATION LIGHT

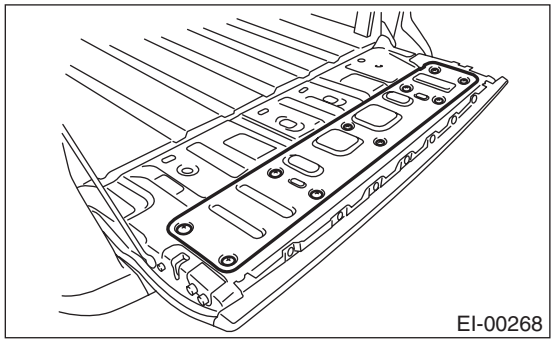
1) Remove combination light assembly. <Ref. to LI-19, REMOVAL, Rear Combination Light Assembly.>
2) Rotate the socket and remove the bulb.



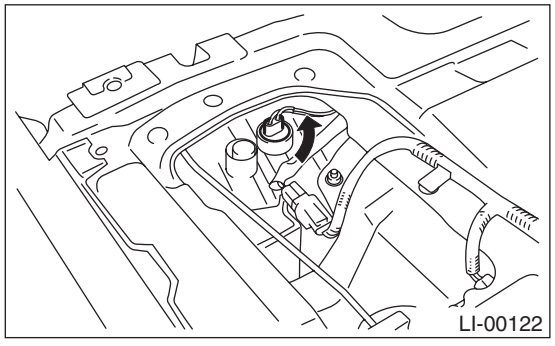
(A) Back-up light bulb
(B) Brake/ Tail/ Rear turn signal light bulb

2. FINISHER LIGHT

1) Remove tail gate tray. <Ref. to EI-56, REMOVAL, Tail Gate Tray.>
2) Remove tail gate cover.



3) Rotate the socket and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

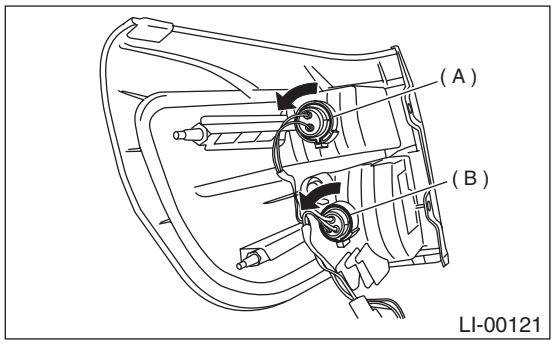
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If the requirement is not satisfied, replace it with a new one.

18.Back-up Light Bulb

A: REMOVAL

1) Remove combination light assembly. <Ref. to LI-19, REMOVAL, Rear Combination Light Assembly.>
2) Rotate socket and remove bulb.



(A) Back-up light bulb
(B) Brake / Tail / Rear turn signal light bulb

B: INSTALLATION

Install in the reverse order of removal.

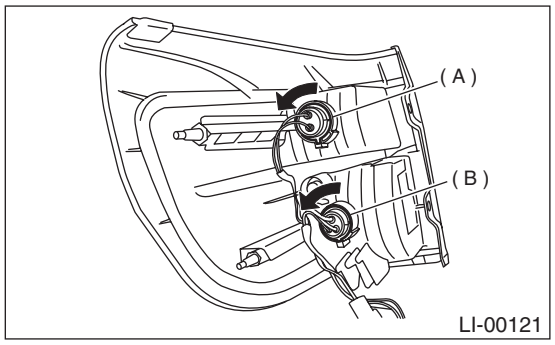
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If the requirement is not satisfied, replace it with a new one.

19.Rear Turn Signal Light Bulb

A: REMOVAL

1) Remove combination light assembly. <Ref. to LI-19, REMOVAL, Rear Combination Light Assembly.>
2) Turn the socket and remove the bulb.



(A) Back-up light bulb
(B) Brake / Tail / Rear / Turn signal light bulb

B: INSTALLATION

Install in the reverse order of removal.

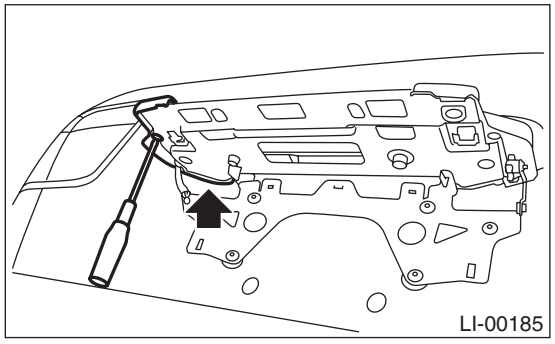
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If the requirement is not satisfied, replace it with a new one.

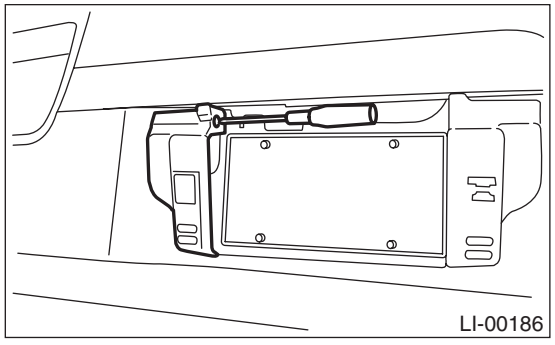
20.License Plate Light

A: REMOVAL

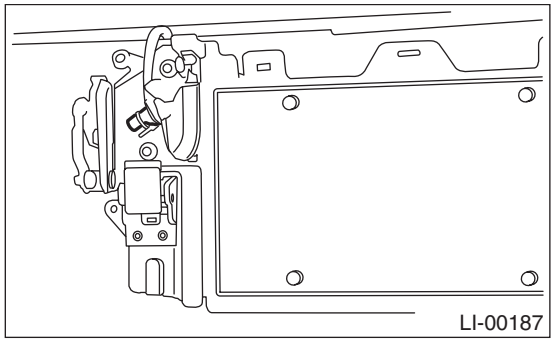
1) Lift up license plate bracket and remove rear bolts.



2) Back off license plate bracket and remove bolts.



3) Remove cover. Turn the socket and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

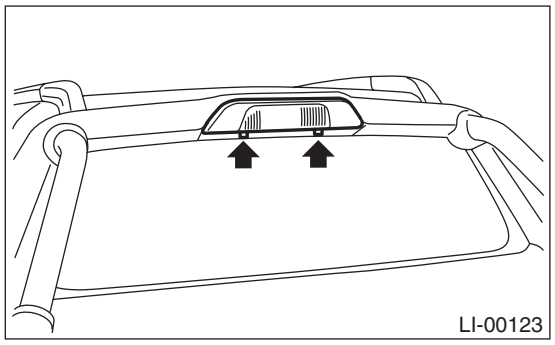
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

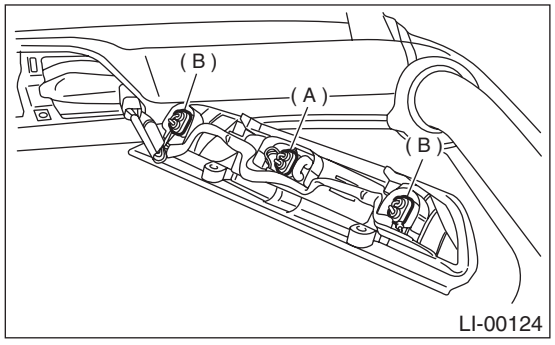
21.High-mounted Stop Light

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove bolts, then detach high-mounted stop light assembly.



3) Turn the socket and remove the bulb.



(A) High-mounted stop lamp
(B) Cargo light bulb

B: INSTALLATION

Install in the reverse order of removal.

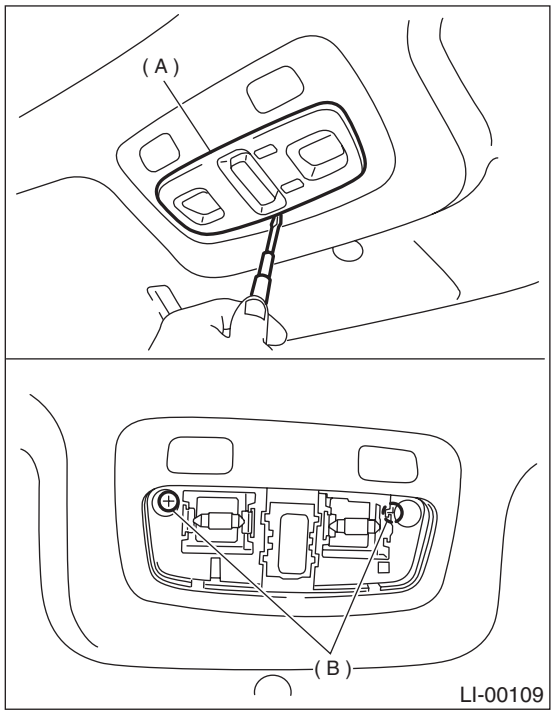
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If the requirement is not satisfied, replace it with a new one.

22.Spot Light

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove lens (A) and spot light mounting screw (B).



3) Disconnect harness connectors and remove spot light.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

1. SPOT LIGHT BULB

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

2. SPOT LIGHT SWITCH

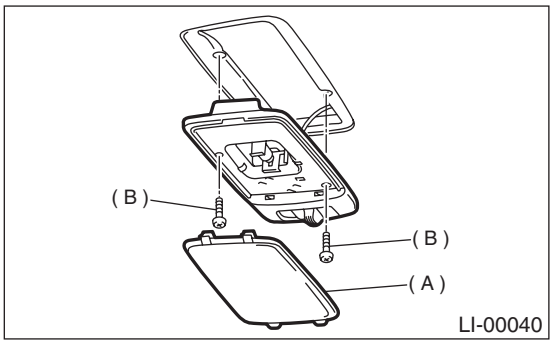
Measure spot light resistance.

Switch position	Terminal No.	Standard
OFF	—	More than 1 MΩ
ON	1 and 2	18±5.4 Ω

23.Room Light

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove lens (A) and room light mounting screws (B).



3) Disconnect harness connectors and remove the light.

B: INSTALLATION

Install in the reverse order of removal.

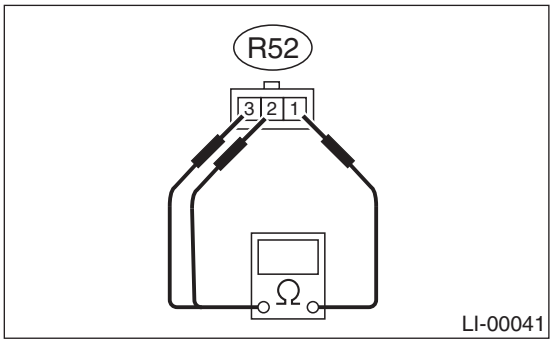
C: INSPECTION

1. ROOM LIGHT BULB

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

2. ROOM LIGHT SWITCH

Measure room light switch resistance.

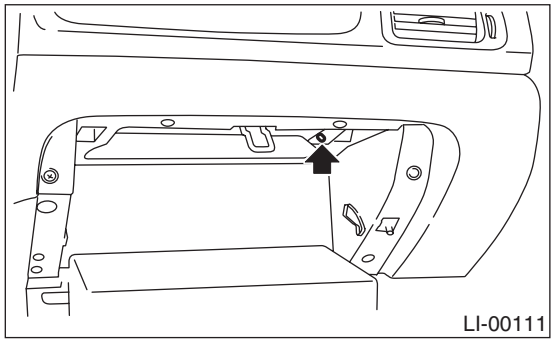


Switch position	Terminal No.	Standard
OFF	—	More than 1 MΩ
ON	1 and 3	1.5±0.5 Ω
DOOR	1 and 2	1.5±0.5 Ω

24.Glove Box Light

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove glove box. <Ref. to EI-34, REMOVAL, Glove Box.>
3) Disconnect harness connector.
4) Remove glove box light.



B: INSTALLATION

Install in the reverse order of removal.

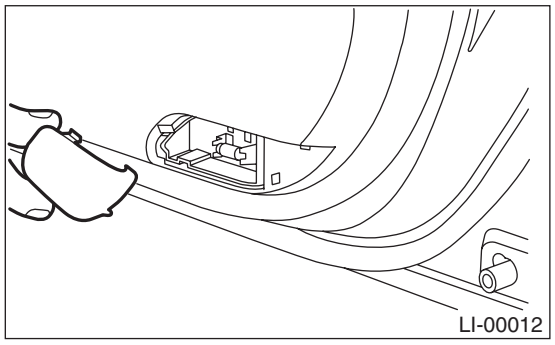
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

25.Door Step Light

A: REMOVAL

Remove the lens then detach the bulb.



B: INSTALLATION

Install in the reverse order of removal.

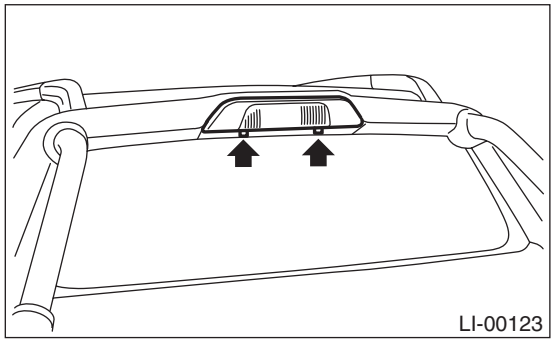
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

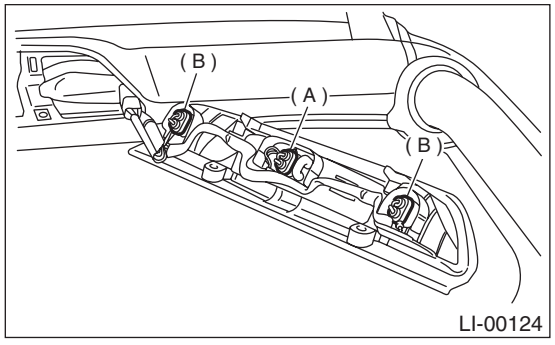
26.Cargo Light System

A: REMOVAL

1) Remove bolts and remove high-mounted stop light.



2) Turn the socket and remove the bulb.



(A) High-mounted stop light bulb
(B) Cargo light bulb

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

1. CARGO LIGHT BULB

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If the requirement is not satisfied, replace it with a new one.

2. CARGO LIGHT SWITCH

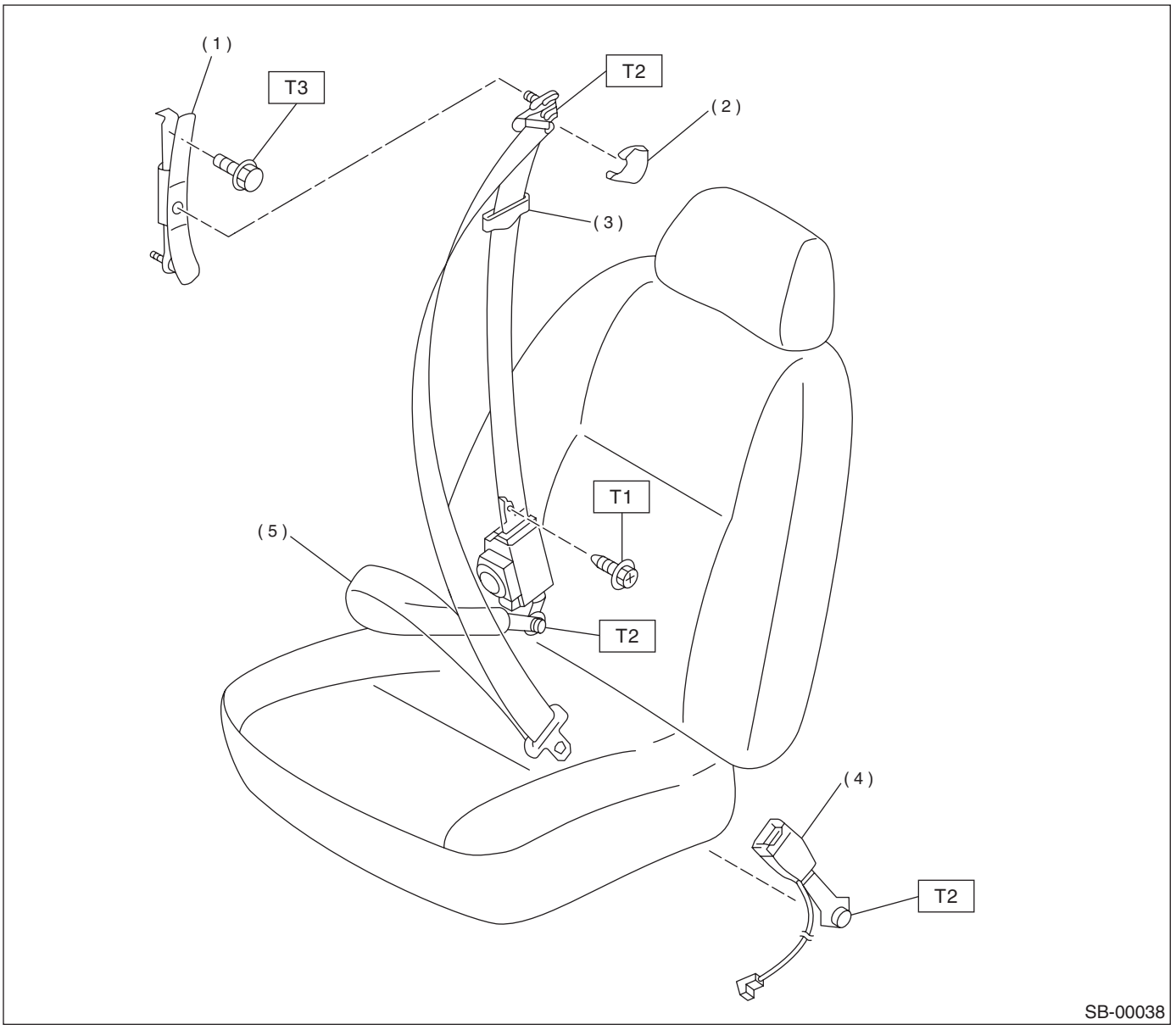
Measure resistance of cargo light switch.

Switch position	Terminal No.	Standard
OFF	—	More than 1 MΩ
ON	3 and 5	1.5±0.5 Ω

1. General Description

A: COMPONENT

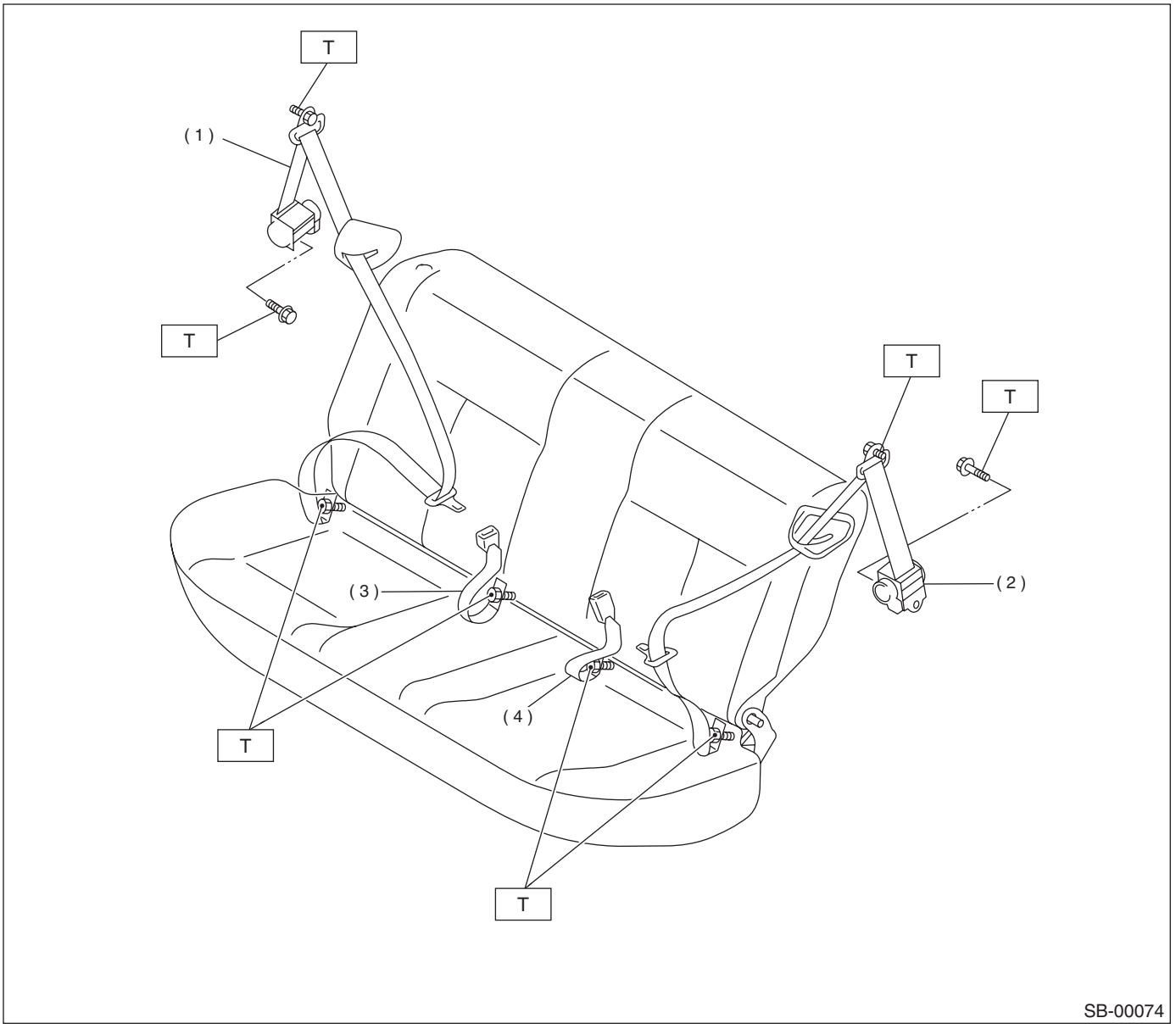
1. FRONT SEAT BELT



(1) Adjuster anchor ASSY
(2) Anchor cover
(3) Webbing guide
(4) Inner belt ASSY
(5) Outer belt ASSY

Tightening torque: N·m (kgf-m, ft-lb)
T1: 7.5 (0.76, 5.5)
T2: 30 (3.1, 22)
T3: 53 (5.4, 39)

2. REAR SEAT BELT



(1) Outer seat belt RH
(2) Outer seat belt LH
(3) Inner seat belt RH
(4) Inner seast belt LH

Tightening torque: N·m (kgf-m, ft-lb)
T: 30 (3.1, 22)

B: CAUTION

- Before starting, turn the ignition switch OFF, disconnect the battery ground cable and wait for 20 seconds or more.
- The pretension system has a backup power source. The pretensioner might deploy if you do not wait for 20 seconds or more before starting
- 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 one.
- Do not use the airbag or pretensioner parts from other vehicles. Always replace parts with new parts
- When handling a seat belt with a deployed pretensioner, wear gloves and goggles. Wash your hands afterwards.
- Do not re-use a seat belt with a deployed pretensioner again.
- If the material gets in your eyes or on your skin during deployment, wash it away with clean water, and then consult a doctor.

2. Inspection Locations After a Collision

A: INSPECTION

Check for the following, and then replace with new parts if necessary.

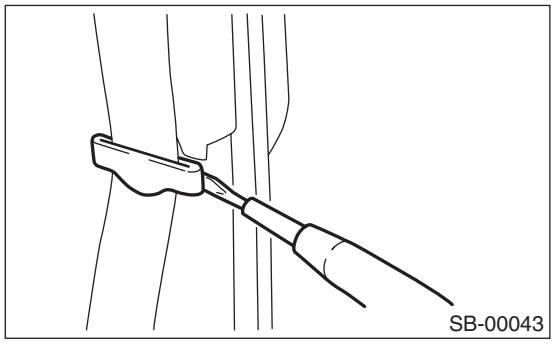
- Center pillar lower garnish is discolored or cracked.
- Wire harness and/or connector is damaged.

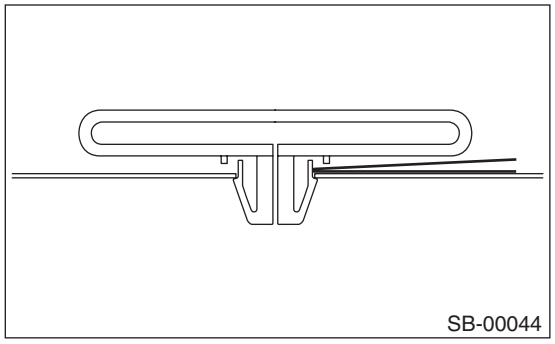
3. Front Seat Belt

A: REMOVAL

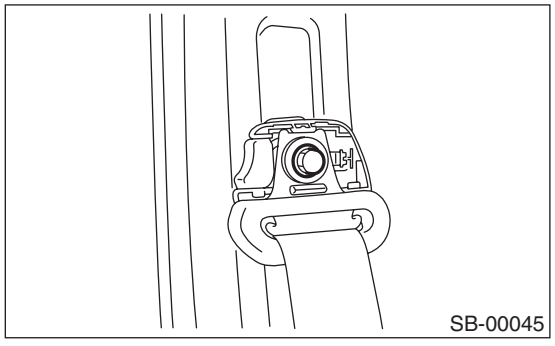
1. OUTER BELT (FRONT)

1) Fold backrest all the way forward, and then move front seat all the way forward.
2) Turn ignition switch OFF, disconnect ground cable from battery, and wait for more than 20 seconds before starting work.
3) Remove center pillar lower trim. <Ref. to EI-42, REMOVAL, Lower Inner Trim.>
4) Remove webbing guide.

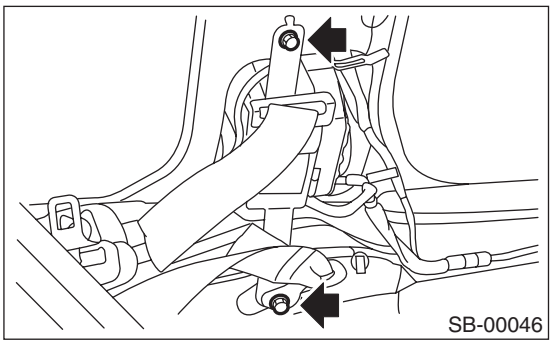

SB-00043


SB-00044

5) Remove anchor cover. Loosen shoulder anchor bolt, and then detach shoulder anchor from center pillar.


SB-00045

6) Turn over the floor mat to remove bolt.

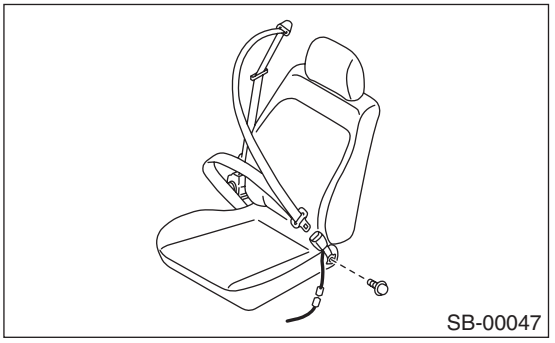

SB-00046

7) Disconnect yellow connector of pretensioner harness, and remove outer belt (front).

CAUTION:
• Do not drop or apply any impat to pretensioner.
• Pretensioner and bracket should be treated as an assembly. Do not attempt to disassemble it.

2. INNER BELT (FRONT)

1) Disconnect connector.
2) Remove anchor bolt, and then detach inner belt.


SB-00047

B: INSTALLATION

1. OUTER BELT (FRONT)

Install in the reverse order of removal.

CAUTION:
• The parts on left and right are not identical. Before installation, make sure that the correct part is used.
• Be careful not to twist belts during installation.

2. INNER BELT (FRONT)

Install in the reverse order of removal.

Tightening torque:
Refer to COMPONENT in General Description, <Ref. to SB-2, FRONT SEAT BELT, COMPONENT, General Description.>.

C: INSPECTION

1. OUTER BELT (FRONT)

Check for the following, and replace with new parts if necessary.
• Pretensioner is cracked or deformed.
• Seat belt is slackened, bent, or frayed. Seat belt is abnormally wound or extended.

2. INNER BELT (FRONT)

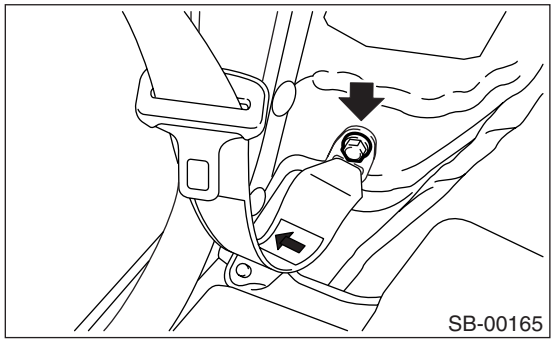
Check for the following, and replace with new parts if necessary.
• Inner belt is deformed or damaged.
• Seat belt buckle is engaged improperly.

4. Rear Seat Belt

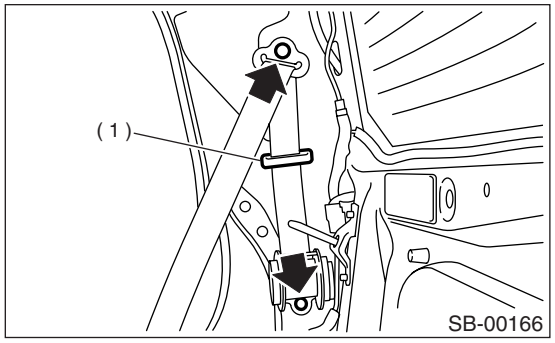
A: REMOVAL

1. OUTER BELT

1) Remove rear pillar trim. <Ref. to EI-52, REMOVAL, Rear Pillar Trim.>
2) Remove lower anchor bolt.



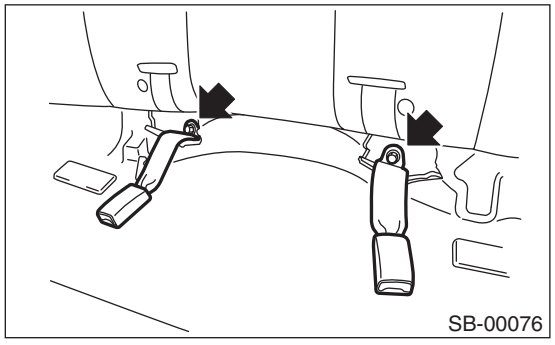
3) Remove webbing guide bolts, and then detach outer belt side.



(1) Webbing guide

2. INNER BELT

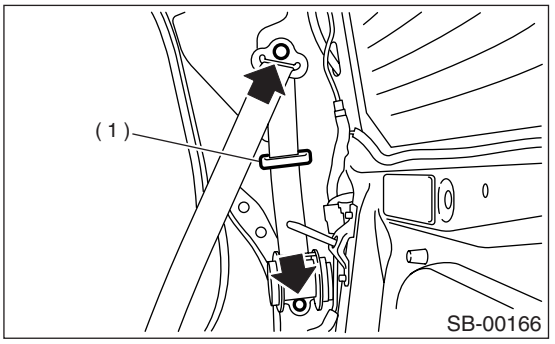
1) Pull up rear cushion.
2) Remove bolts, and then detach inner belt.



B: INSTALLATION

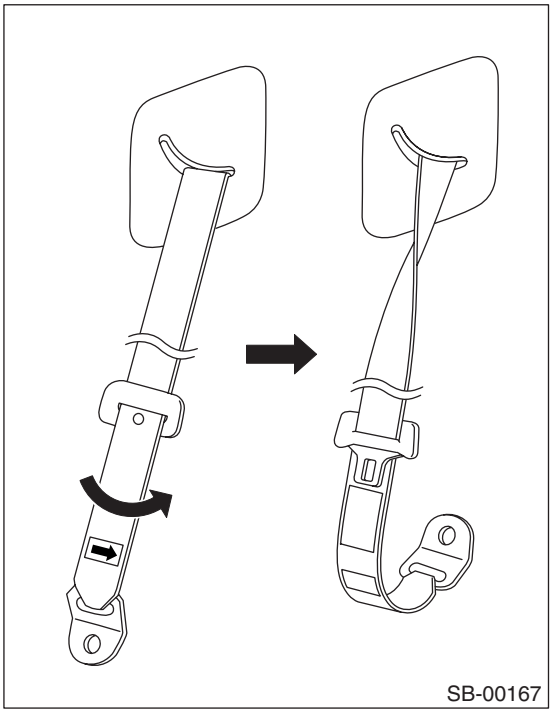
1. OUTER BELT

1) Install webbing guide and bolts.

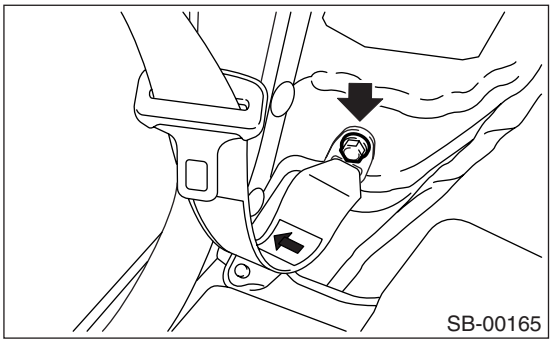


(1) Webbing guide

2) Twist seat belt in the direction indicated by the arrow on the seat belt label.



3) Install lower anchor bolt.



CAUTION:
After installation, make sure that seat belts are smoothly extended and wound.

2. INNER BELT

Install in the reverse order of removal.

CAUTION:
During installation, make sure that seat belts are not twisted.

C: INSPECTION

1. OUTER BELT

Check for the following, and replace with new parts if necessary.
- Outer belt is deformed or damaged.
- Seat belt buckle is engaged improperly.

2. INNER BELT

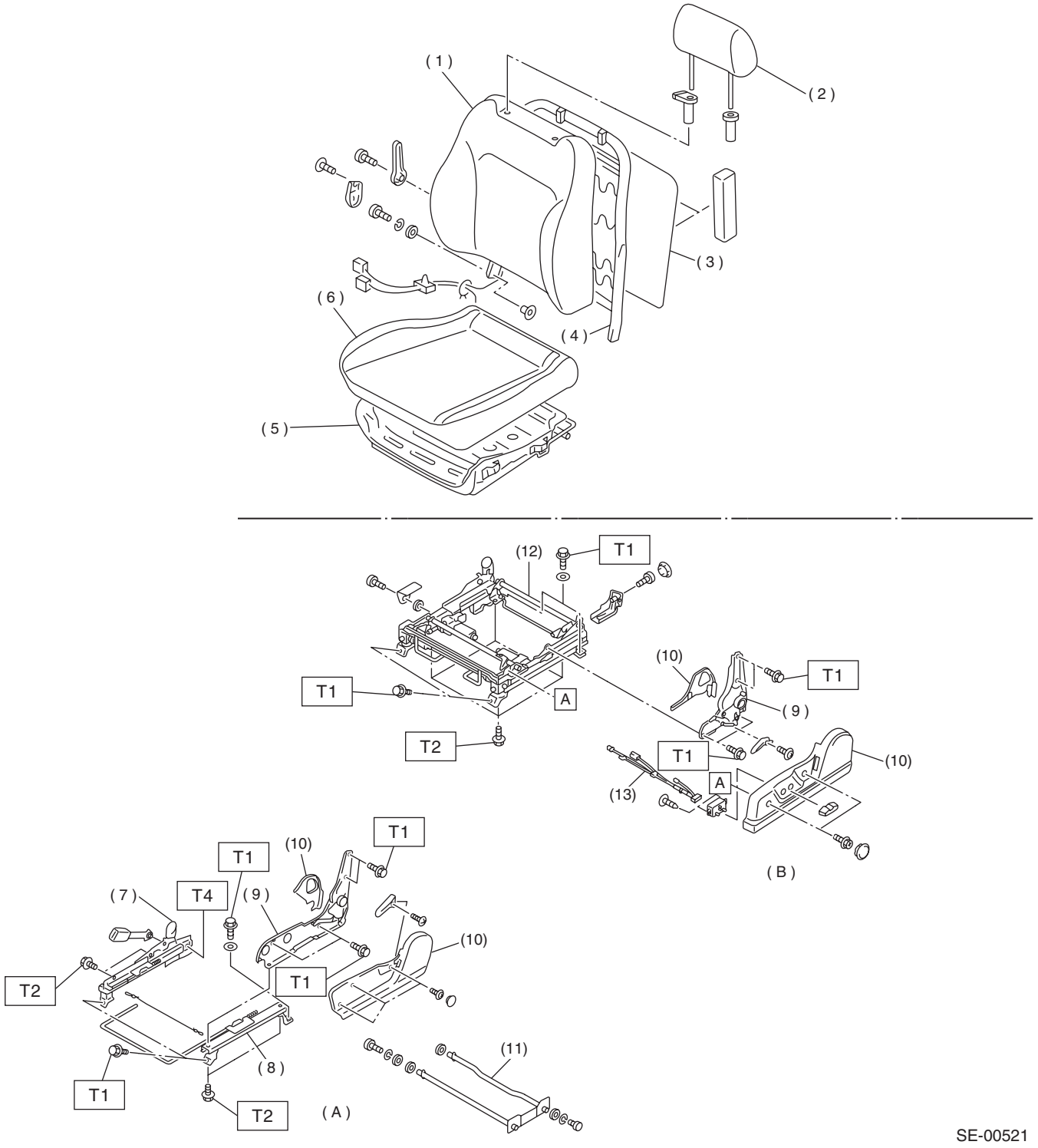
Check for the following, and replace with new parts if necessary.
- Inner belt is deformed or damaged.
- Seat belt buckle is engaged improperly.

MEMO:

1. General Description

A: COMPONENT

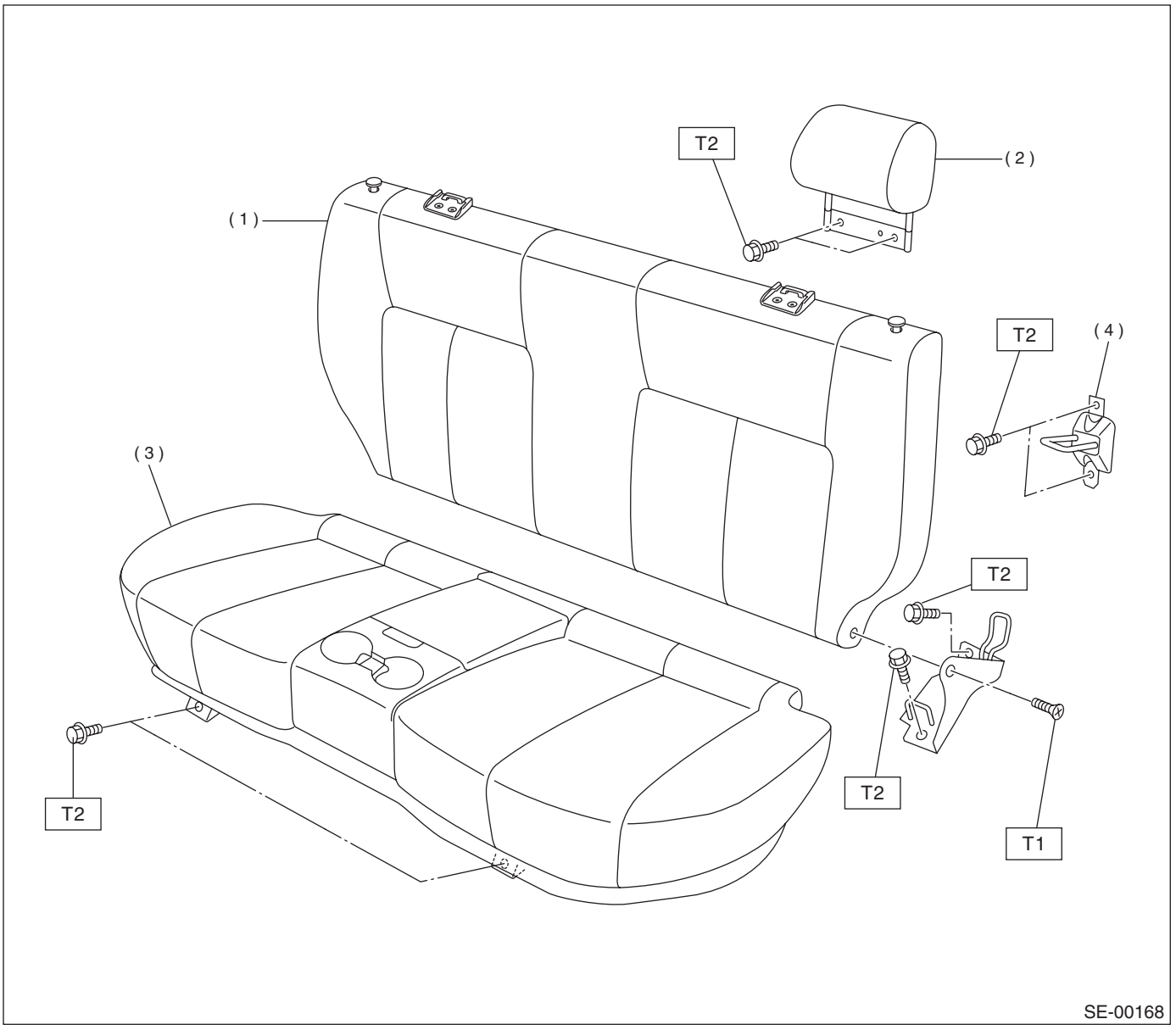
1. FRONT SEAT



(1) Seat back pad
(2) Headrest
(3) Seat back board
(4) Seat back frame ASSY
(5) Seat cushion frame ASSY
(6) Seat cushion pad
(7) Slide rail inner ASSY
(8) Slide rail outer ASSY
(9) Hinge ASSY
(10) Hinge cover
(11) Rod
(12) Slide and unit ASSY
(13) Power seat harness
(A) Standard seat
(B) Power seat

Tightening troque: N·m (kgf-m, ft-lb)
T1: 53 (5.4, 39)
T2: 18 (1.8, 13)
T3: 6 (0.6, 4.3)
T4: 30 (3.1, 22)

2. REAR SEAT



(1) Backrest
(2) Headrest
(3) Cushion
(4) Striker

Tightening torque: N·m (kgf-m, ft-lb)
T1: 9.8 (1.0, 7.2)
T2: 24.5 (2.5, 18.1)

B: CAUTION

• Take care not to contaminate or damage seat surface.
• While loading to or unloading to vehicle, take care not to contact body.

C: PREPARATION TOOL

1. GENERAL TOOL

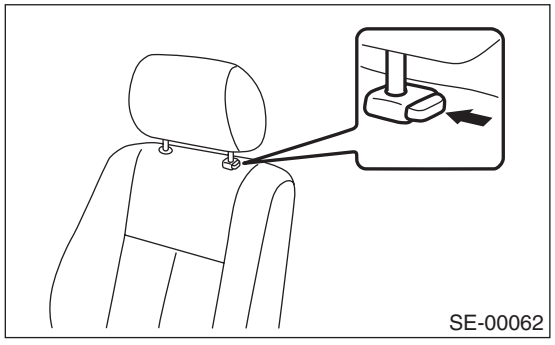
TOOL NAME	REMARKS
Long Nose Pliers	Used for removing and installing hog ring

2. Front Seat

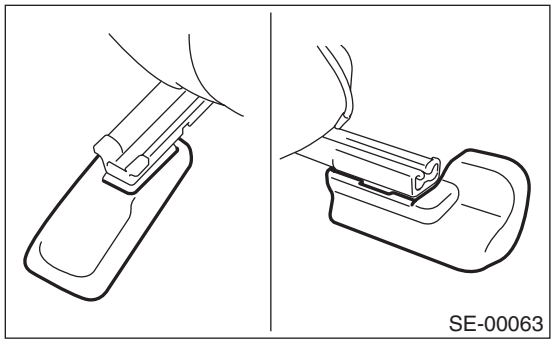
A: REMOVAL

1. STANDARD SEAT

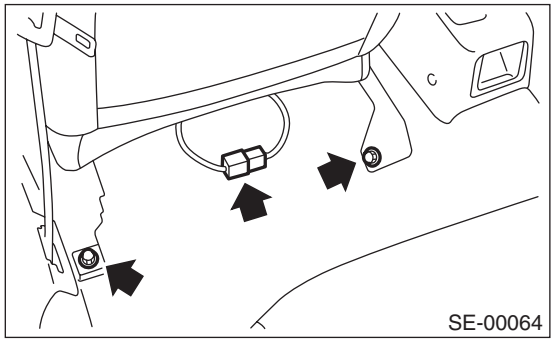
1) Disconnect ground cable from battery.
2) While pressing headrest lock button, remove headrest.



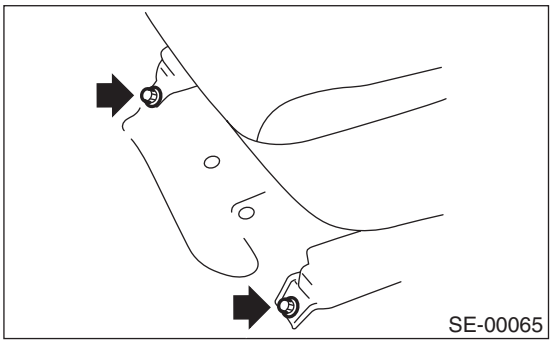
3) Tilt forward backrest.
4) Move seat to full front end.
5) Remove bolt cover at rear end of slide rail.



6) Disconnect connectors of seat heater and seat belt warning. (Seat heater equipped vehicle)
7) Remove two bolts at rear side of seat rail.



8) Move seat to full rear end.
9) Remove two bolts at front side of seat rail.

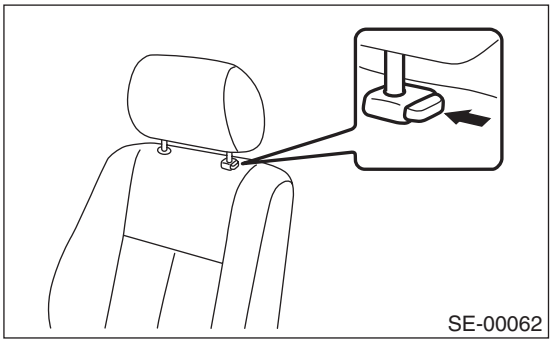


10) Remove front seat from vehicle.

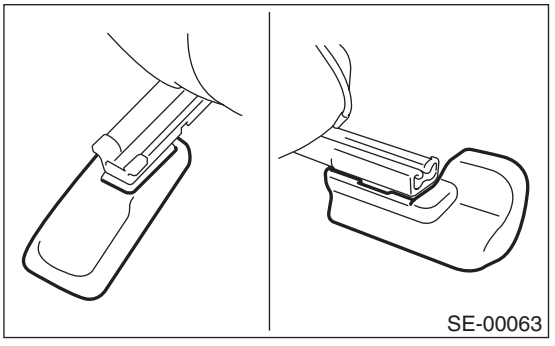
CAUTION:
When removing seat form vehicle, take care not to damage body, seat, or trim.

2. POWER SEAT

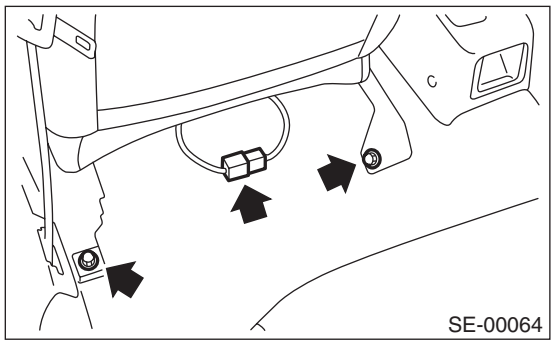
1) While pressing headrest lock button, remove headrest.



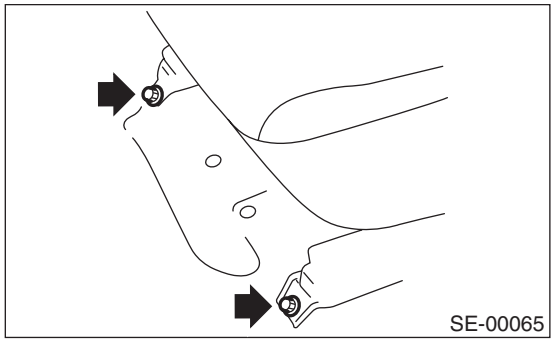
2) Tilt forward backrest.
3) Move seat to full front end.
4) Remove bolt cover at rear end of slide rail.



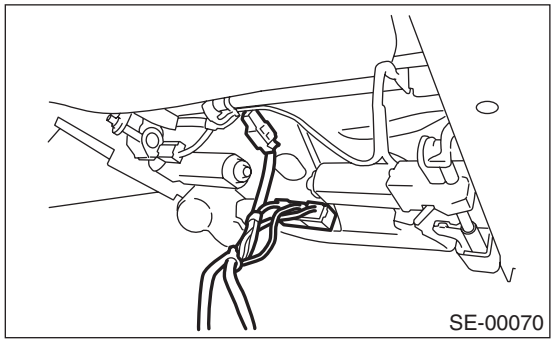
5) Remove two bolts at rear side of seat rail.



6) Move seat to full rear end.
7) Remove two bolts at front side of seat rail.



8) Disconnect ground cable from battery.
9) Disconnect connectors of seat heater and seat belt warning. (Seat heater equipped vehicle)



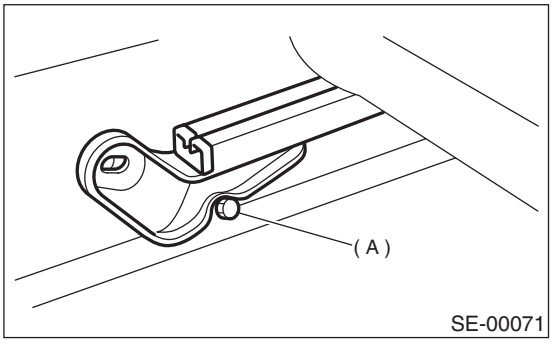
10) Remove front seat from vehicle.

CAUTION:
When removing seat form vehicle, take care not to damage body, seat, or trim.

B: INSTALLATION

1. STANDARD SEAT

1) Install in the reverse order of removal.
2) Place slide rail rear inner on location bolts (A).

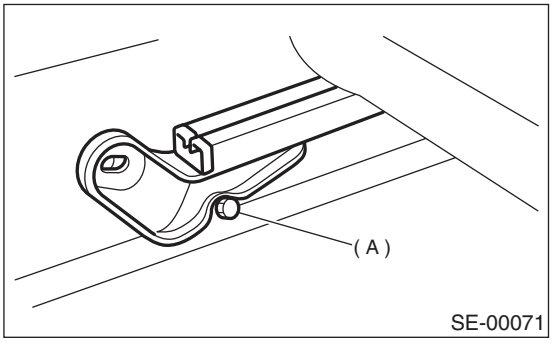


3) Tighten the four bolts of slide rail.

CAUTION:
Confirm that seat can move smoothly and be locked securely at any position.

2. POWER SEAT

1) Install in the reverse order of removal.
2) Place slide rail rear inner on location bolts (A).



3) Tighten the four bolts of slide rail.

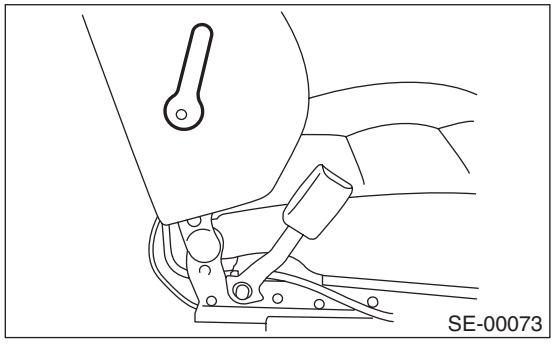
CAUTION:
Confirm that seat can move smoothly.

Tightening torque:
Refer to COMPONENT in General Description.
<Ref. to SE-2, FRONT SEAT, COMPONENT, General Description.>

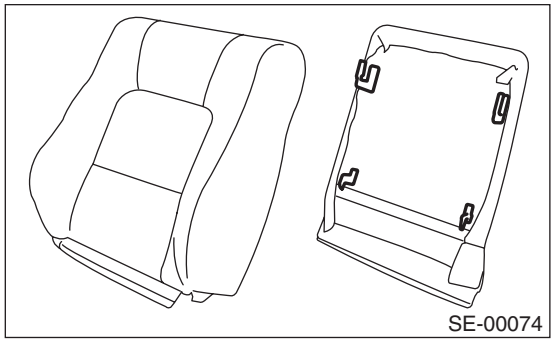
C: DISASSEMBLY

1. STANDARD SEAT

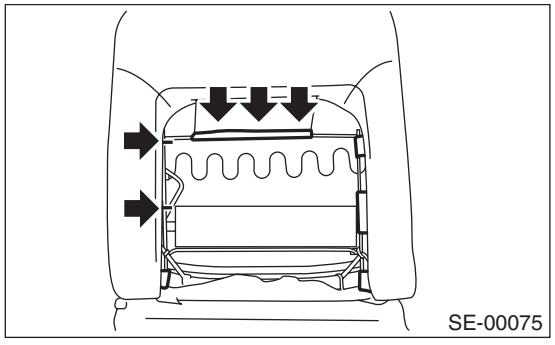
1) Remove seats from vehicle. <Ref. to SE-6, REMOVAL, Front Seat.>
2) Remove lumber lever cover.


SE-00073

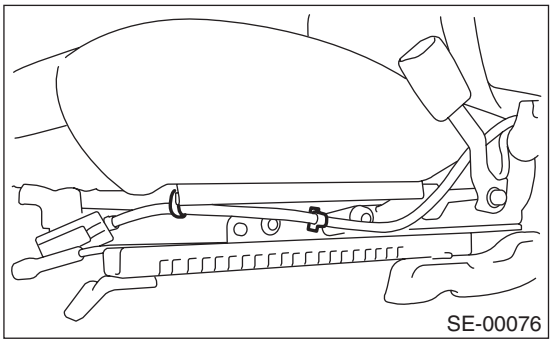
3) Remove hook at bottom, and then remove seat back board.


SE-00074

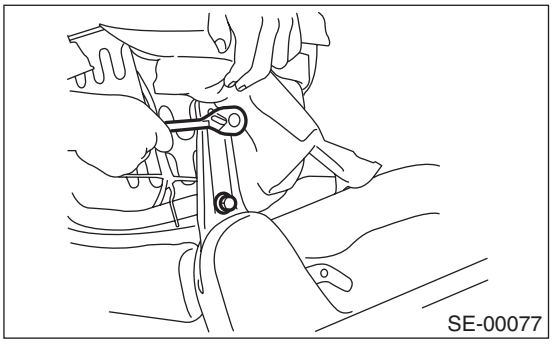
4) Remove hook on back side of seat, and remove hog rings using a plier.


SE-00075

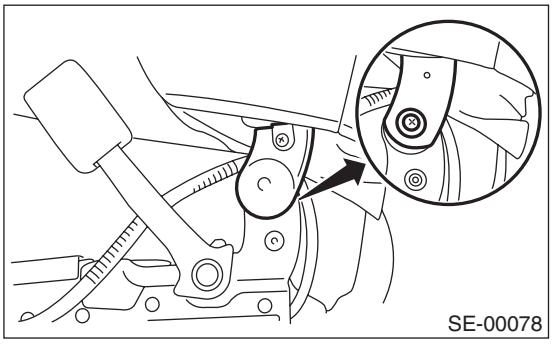
5) Remove clamp of seat heater wire harness. (Seat heater equipped vehicle)


SE-00076

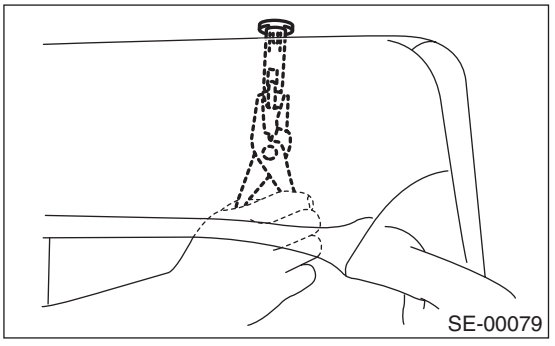
6) Turn cover and cushion, and remove the two bolts from hinge.


SE-00077

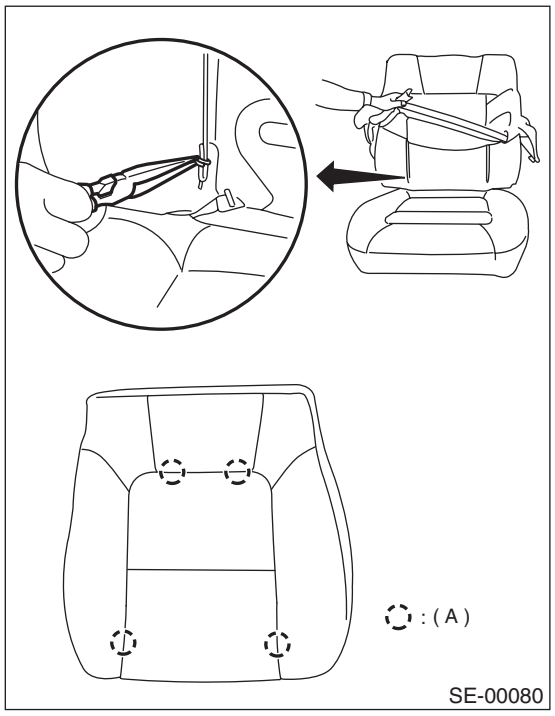
7) Remove hinge screw cover and screws, and remove seat back from hinge.


SE-00078

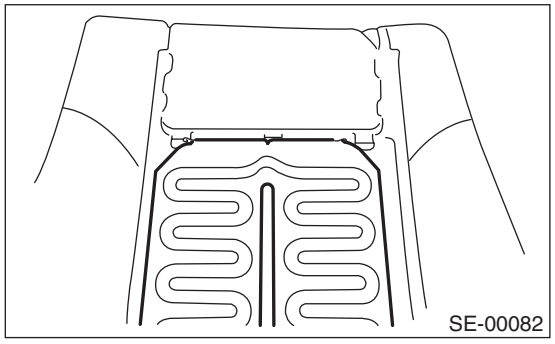
8) While picking up tip with a plier, remove headrest lock bushing.


SE-00079

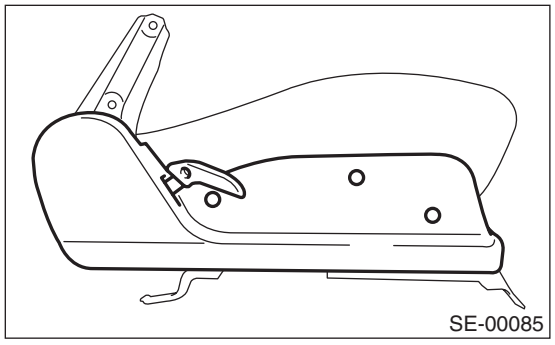
9) Remove hog ring (A) on front face of seat.



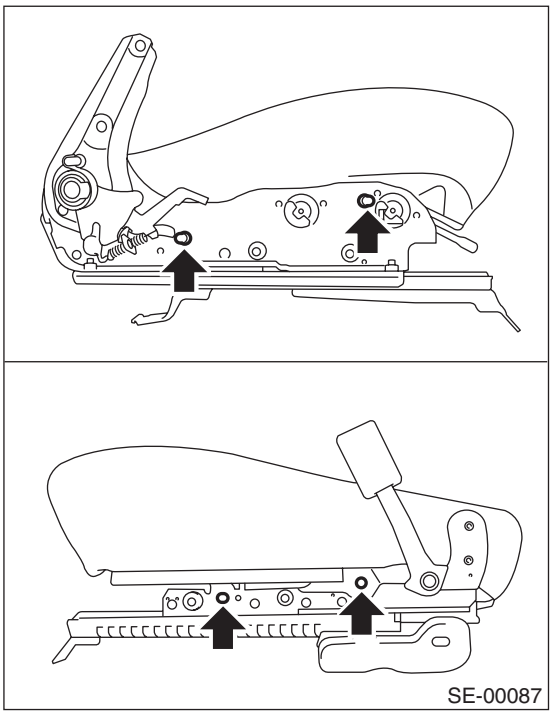
10) Remove hog rings, and then remove seat heater. (Seat heater equipped vehicle)



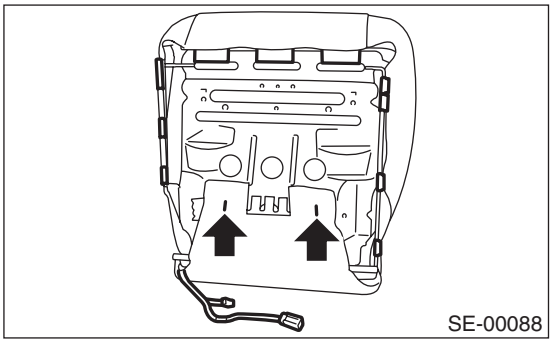
11) Remove seat cover.
12) Remove backrest pad.
13) Remove reclining cover and hinge cover. (Non-tilt type vehicle)



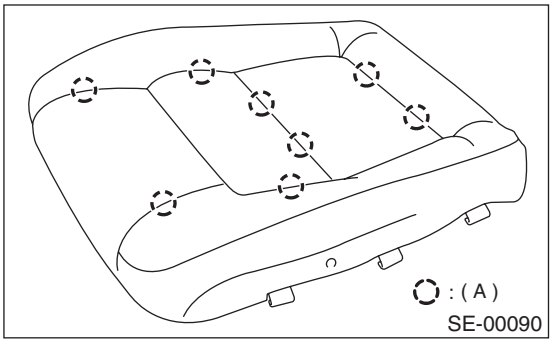
14) Remove the 4 bolts of seat hinge assembly, and then remove seat cushion.



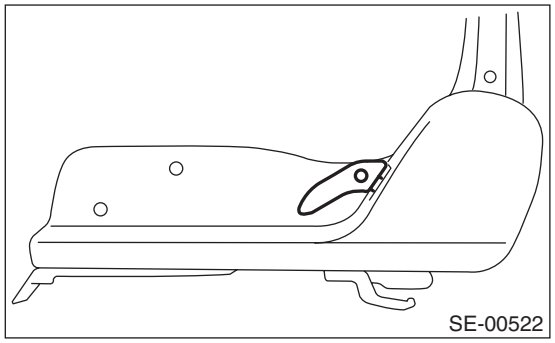
15) Remove hook clips on back side of seat cushion, and remove wire rings.
16) Remove clamp of seat heater wire harness. (Seat heater equipped vehicle)



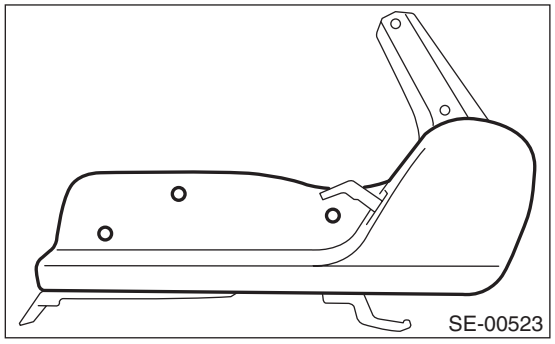
17) Remove hog rings (A).



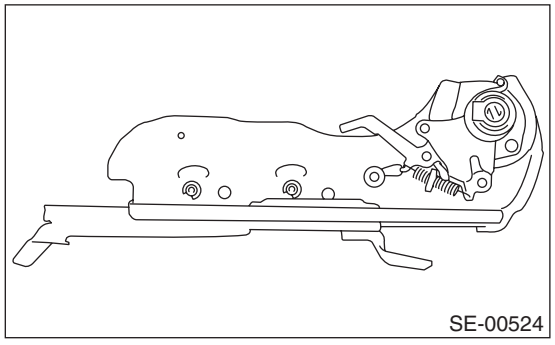
18) Remove cushion cover.
19) Remove cushion pad.
20) Remove reclining lever cover.



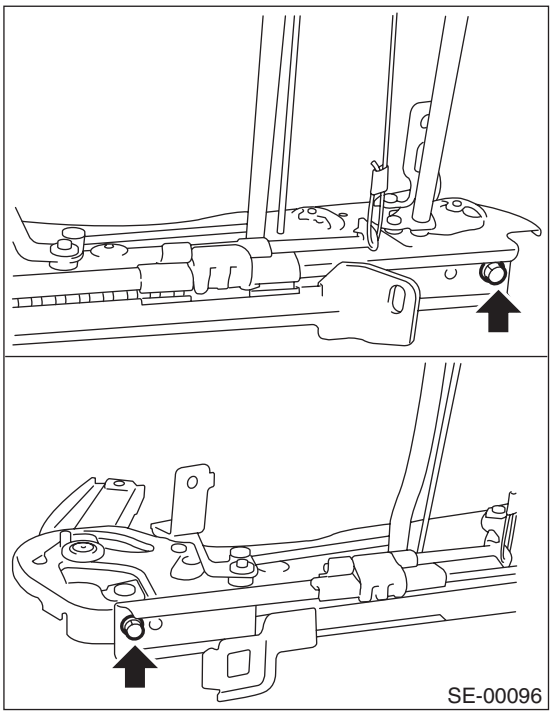
21) Remove hinge cover cap and screws.



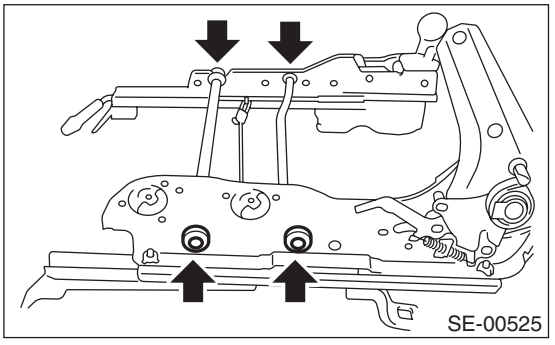
22) Remove seat hinge cover and hinge spring cover.



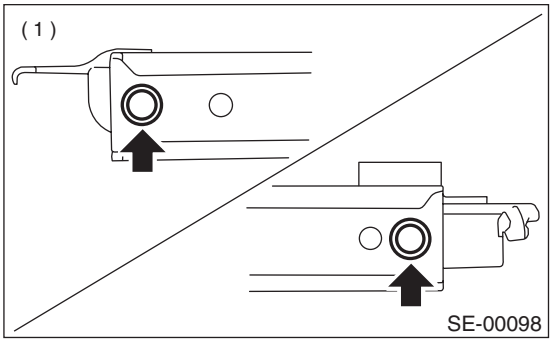
23) Remove 2 bolts, and then remove slide rail.



24) Remove 4 screws, and then remove hinge.



25) Remove 2 bolts, and then remove slide rail.

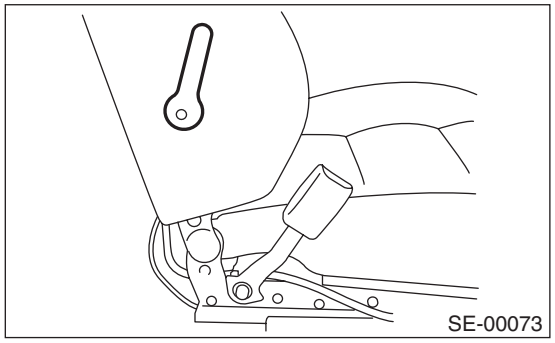


(1) Lower side of seat rail

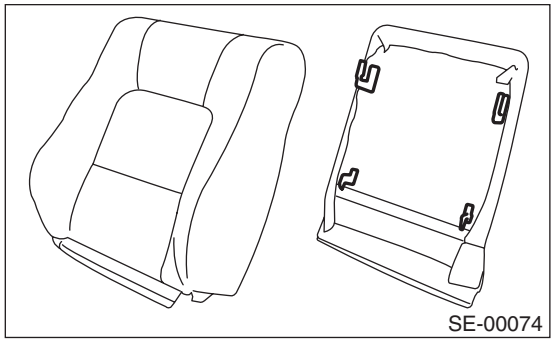
26) Remove connecting wire.

2. POWER SEAT

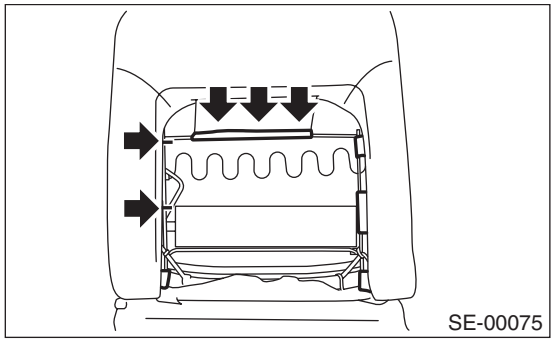
1) Remove seats from vehicle. <Ref. to SE-6, REMOVAL, Front Seat.>
2) Remove lumber lever cover.


SE-00073

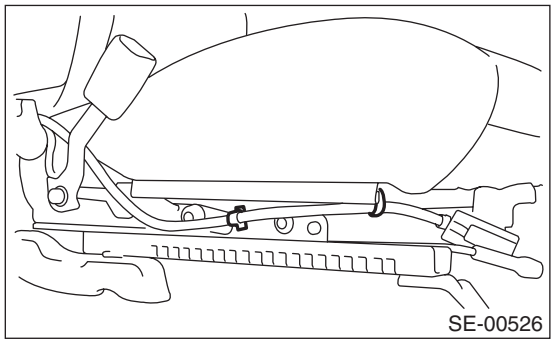
3) Remove hook at bottom, and then remove seat back board.


SE-00074

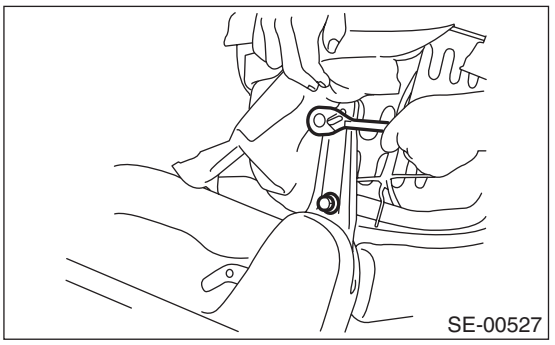
4) Remove hook on back side of seat, and remove wire rings using a plier.


SE-00075

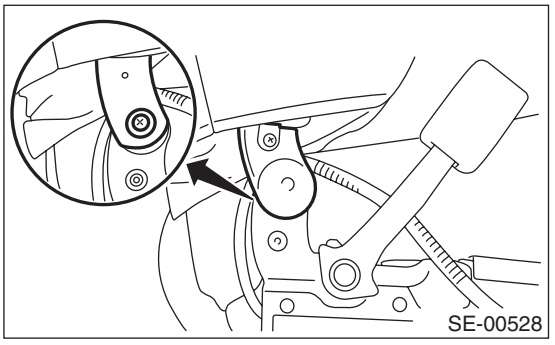
5) Remove clamp of seat heater wire harness. (Seat heater equipped vehicle)


SE-00526

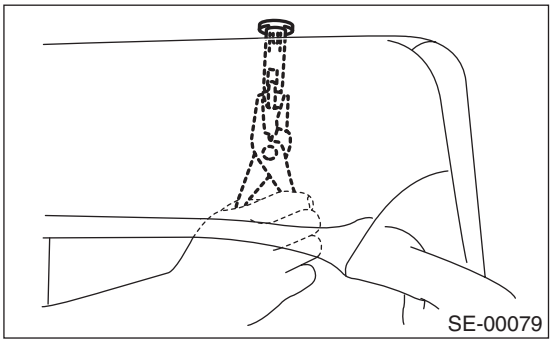
6) Turn cover and cushion, and remove the two bolts from hinge.


SE-00527

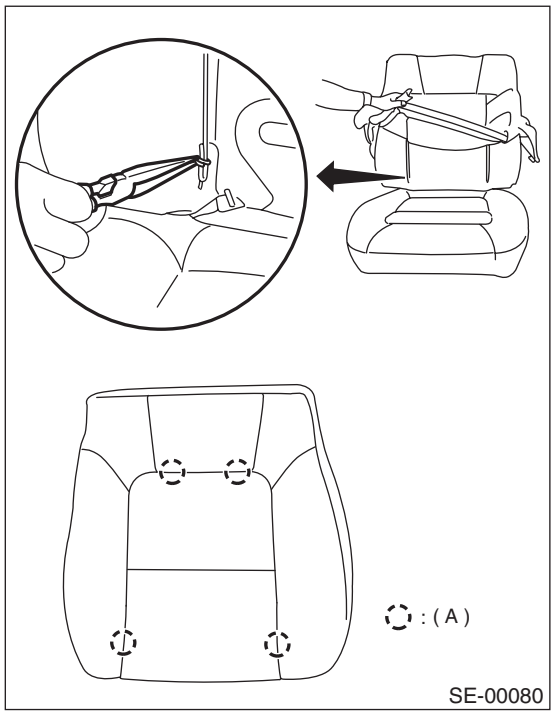
7) Remove hinge screw cover and screws, and remove seat back from hinge.


SE-00528

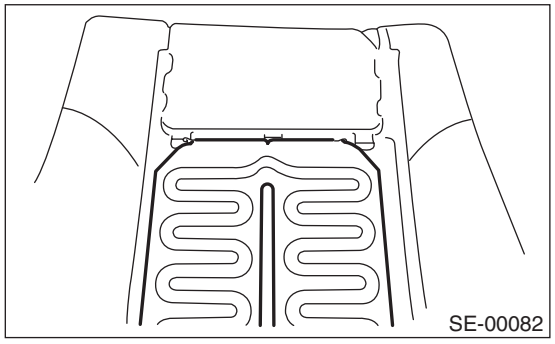
8) While picking up tip with a plier, remove headrest lock bushing.


SE-00079

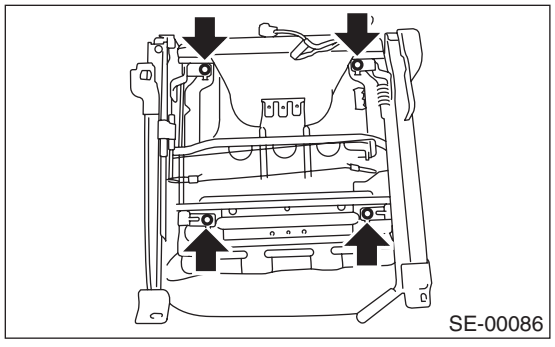
9) Remove hog ring (A) on front face of seat.



10) Remove wire rings, and then remove seat heater. (Seat heater equipped vehicle)

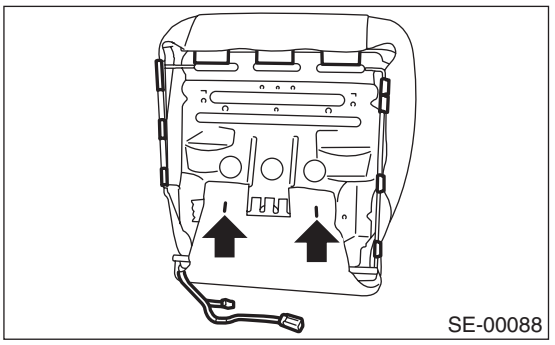


11) Remove seat cover.
12) Remove backrest pad.
13) Remove the 4 bolts of seat hinge assembly, and then remove seat cushion.

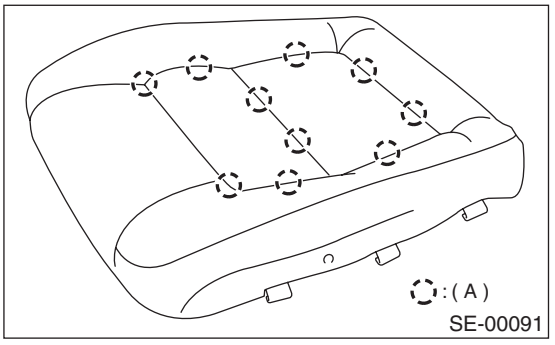


14) Remove hook clips on back side of seat cushion, and remove wire rings.

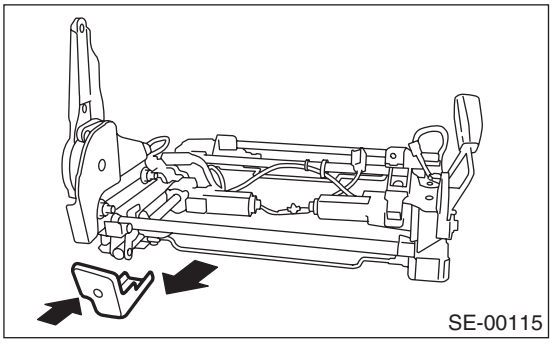
15) Remove clamp of seat heater wire harness. (Seat heater equipped vehicle)



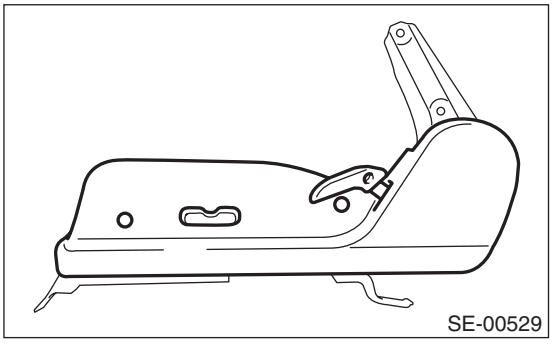
16) Remove hog rings (A).



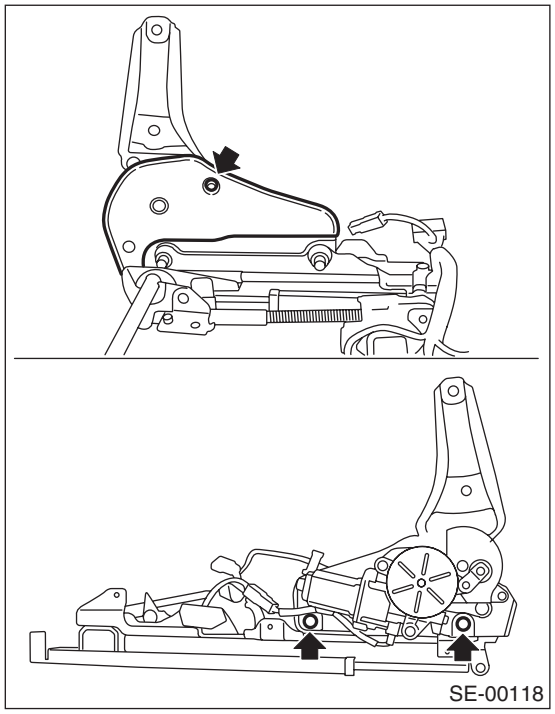
17) Remove cushion cover.
18) Remove cushion pad.
19) Remove the screw and then remove the cover.



20) Remove the reclining lever cover and screw, disconnect the seat switch connector on the underside of the cover, and remove the hinge cover.



21) Remove the cover on the underside of the seat hinge, remove the two bolts, and remove the seat hinge.



D: ASSEMBLY

1. STANDARD SEAT

1) Assemble in the reverse order of disassembly.

NOTE:
- Do not contaminate or damage cover.
- While installing hog rings, prevent seat from getting wrinkled.

2) Attach seat cover end hole to hinge inner.

2. POWER SEAT

1) Assemble in the reverse order of disassembly.

NOTE:
- Do not contaminate or damage cover.
- While installing hog rings, prevent seat from getting wrinkled.
- Make sure the connector is firmly connected.
- Make sure the wire harness is not pinched.

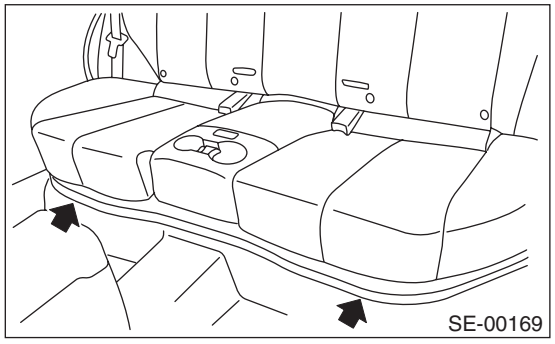
2) Attach seat cover end hole to hinge inner.

Tightening torque:
Refer to COMPONENT in General Description.
<Ref. to SE-2, FRONT SEAT, COMPONENT, General Description.>

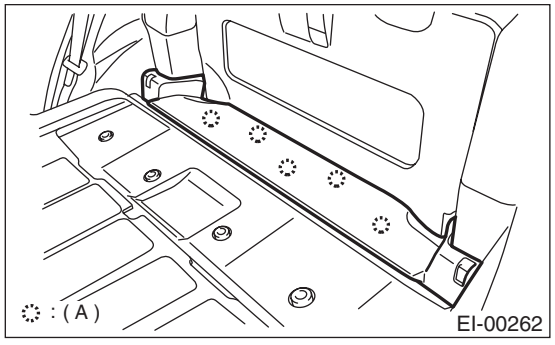
3. Rear Seat

A: REMOVAL

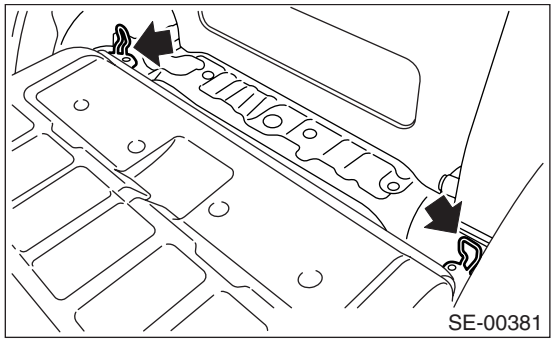
1) Remove bolts and remove seat cushion.



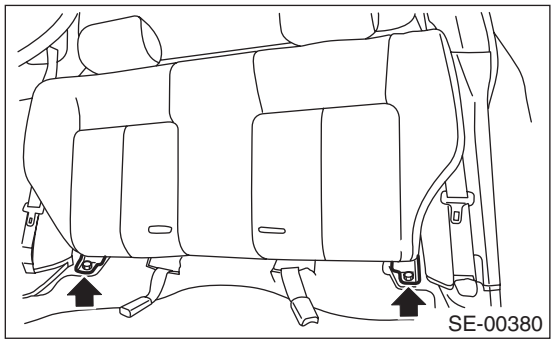
2) Remove floor trim panel.



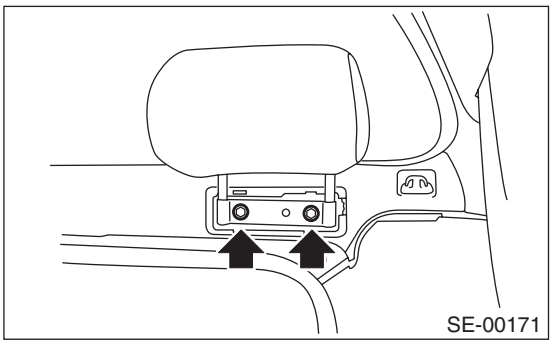
3) Remove rear bolt of bracket hinge.



4) Remove front side bolt of bracket hinge.



5) Remove rear bulk head trim cover. Remove bolt and remove backrest.



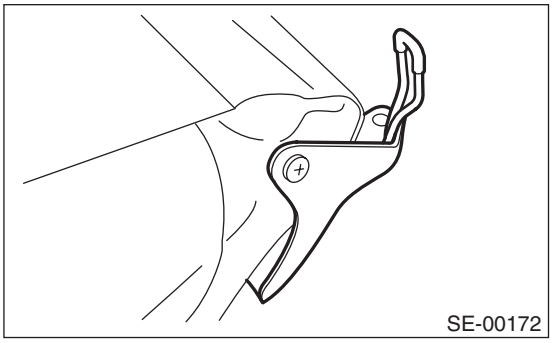
B: INSTALLATION

Install in the reverse order of removal.

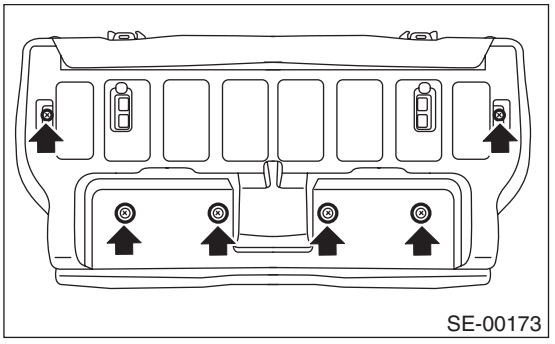
Tightening torque:
Refer to COMPONENT in General Description.
<Ref. to SE-4, REAR SEAT, COMPONENT, General Description.>

C: DISASSEMBLY

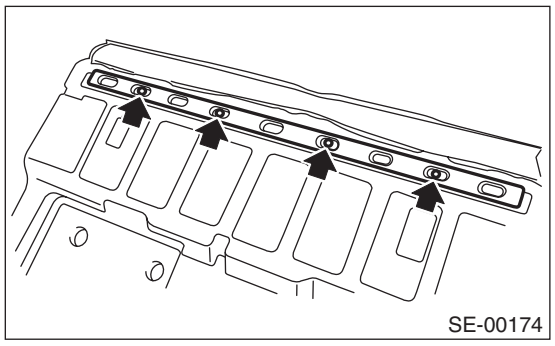
1) Remove rear seat. <Ref. to SE-14, REMOVAL, Rear Seat.>
2) Remove bolts and detach bracket hinge.



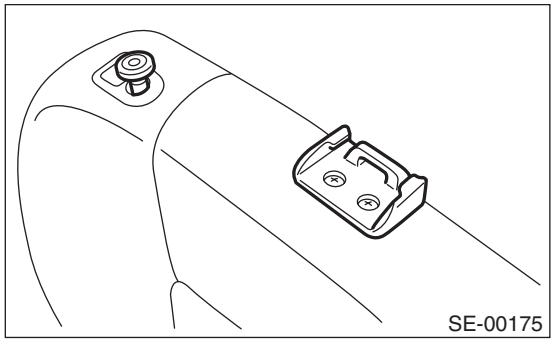
3) Remove seat back screws.



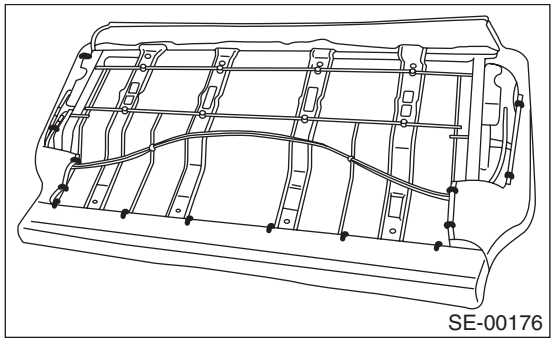
4) Turn over seat upper cover, and remove plate.



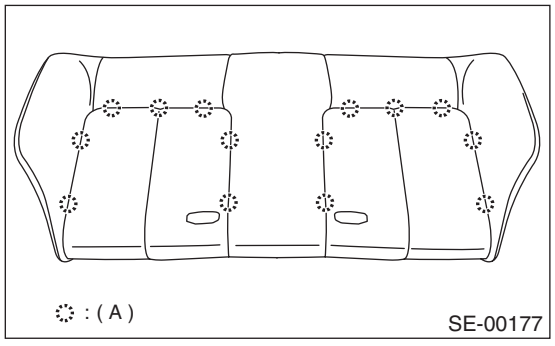
5) Remove seat back.
6) Remove rotating rear back release knob counterclockwise. Remove backrest hook.



7) Remove hog ring.

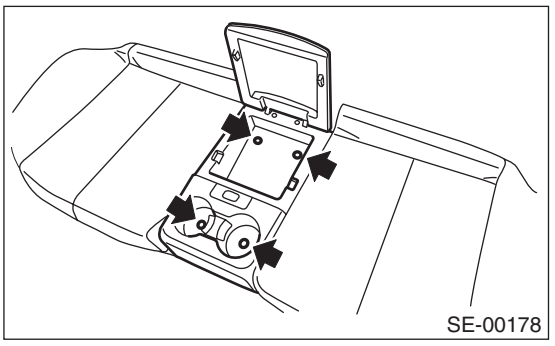


8) Remove hog ring and detach cover.

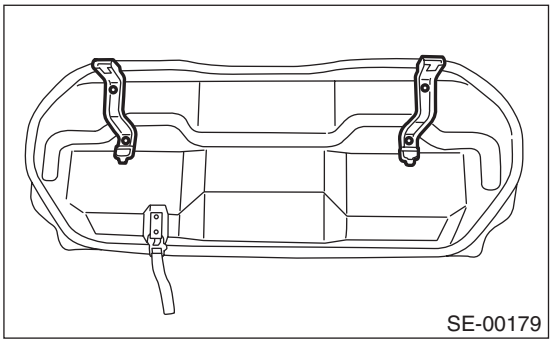


(A) Hog ring

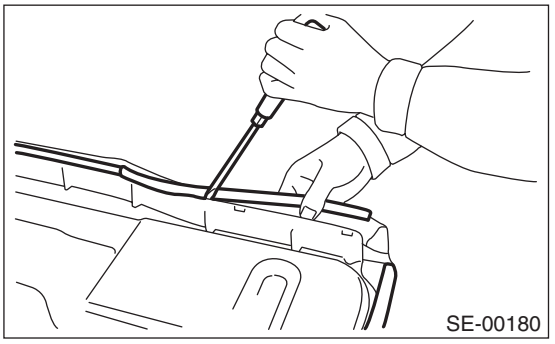
9) Remove rear seat console box.



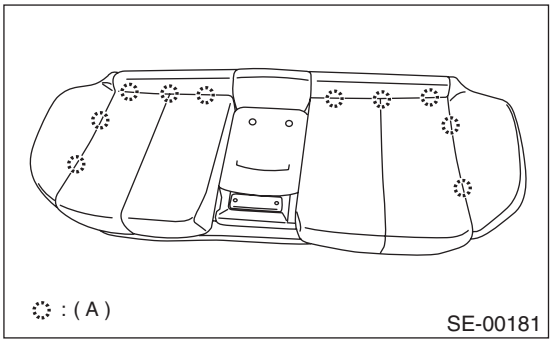
10) Remove bolts and detach cushion hinge.



11) Remove hook and frame.



12) Remove hog rings and detach cover.



(1) Hog ring

D: ASSEMBLY

Install in the reverse order of removal.

NOTE:

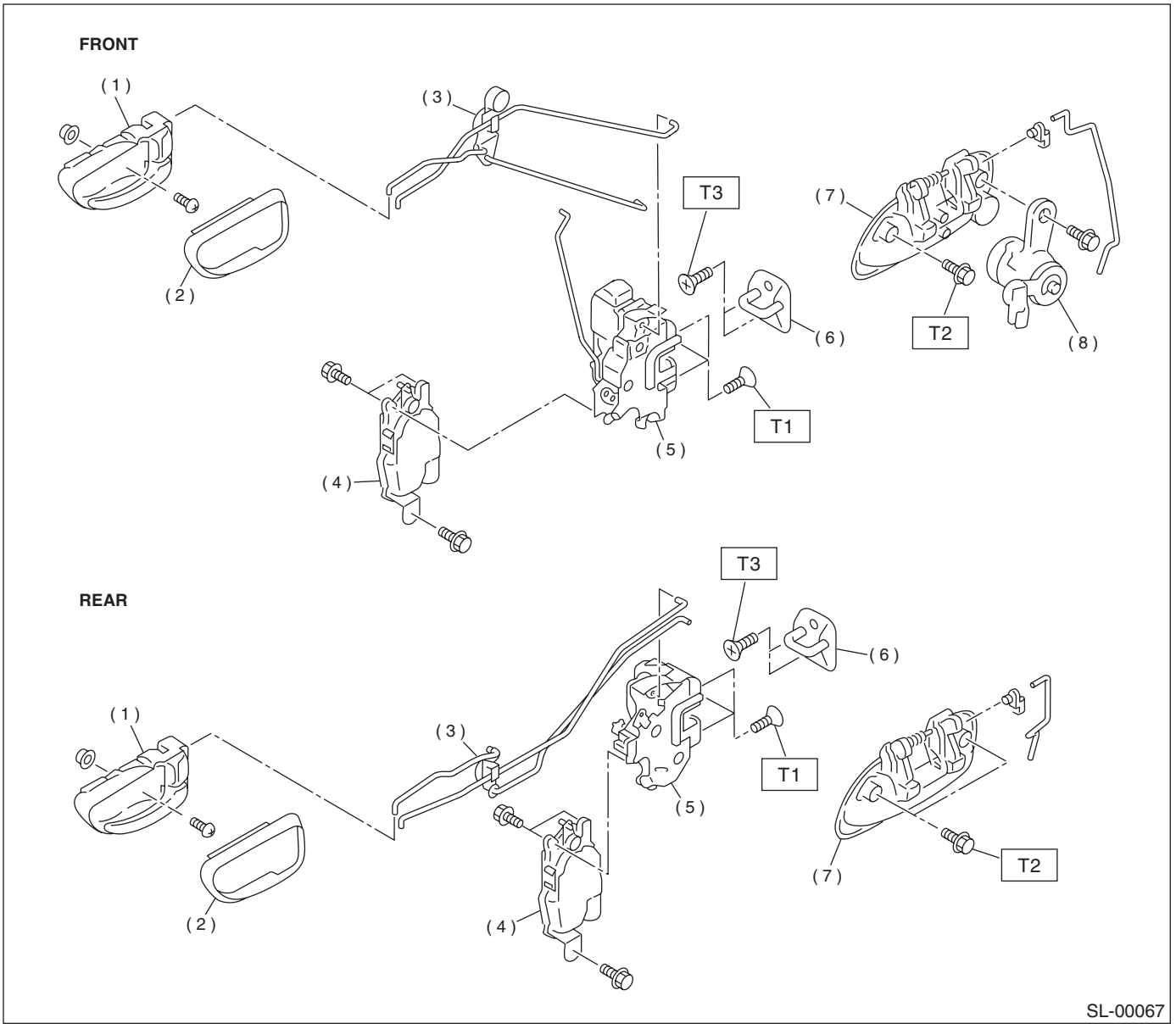
- Do not contaminate or damage cover.
- While installing hog rings, prevent seat from getting wrinkled.

1. General Description

A: SPECIFICATIONS

B: COMPONENT

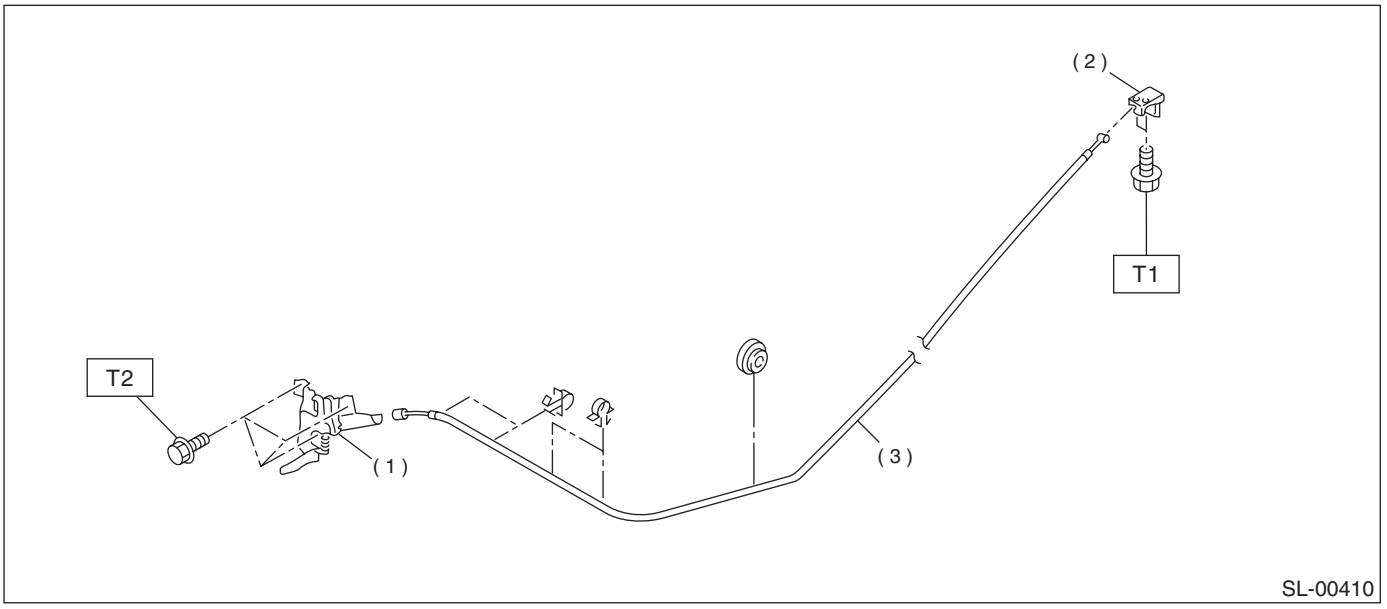
1. DOOR LOCK ASSEMBLY



(1) Inner remote ASSY
(2) Inner remote cover
(3) Bell crank
(4) Auto-door lock actuator
(5) Door latch
(6) Striker
(7) Door outer handle
(8) Key cylinder

Tightening torque: N·m (kgf-m, ft-lb)
T1: 6.4 (0.65, 4.7)
T2: 7.35 (0.75, 5.4)
T3: 18.0 (1.8, 13.0)

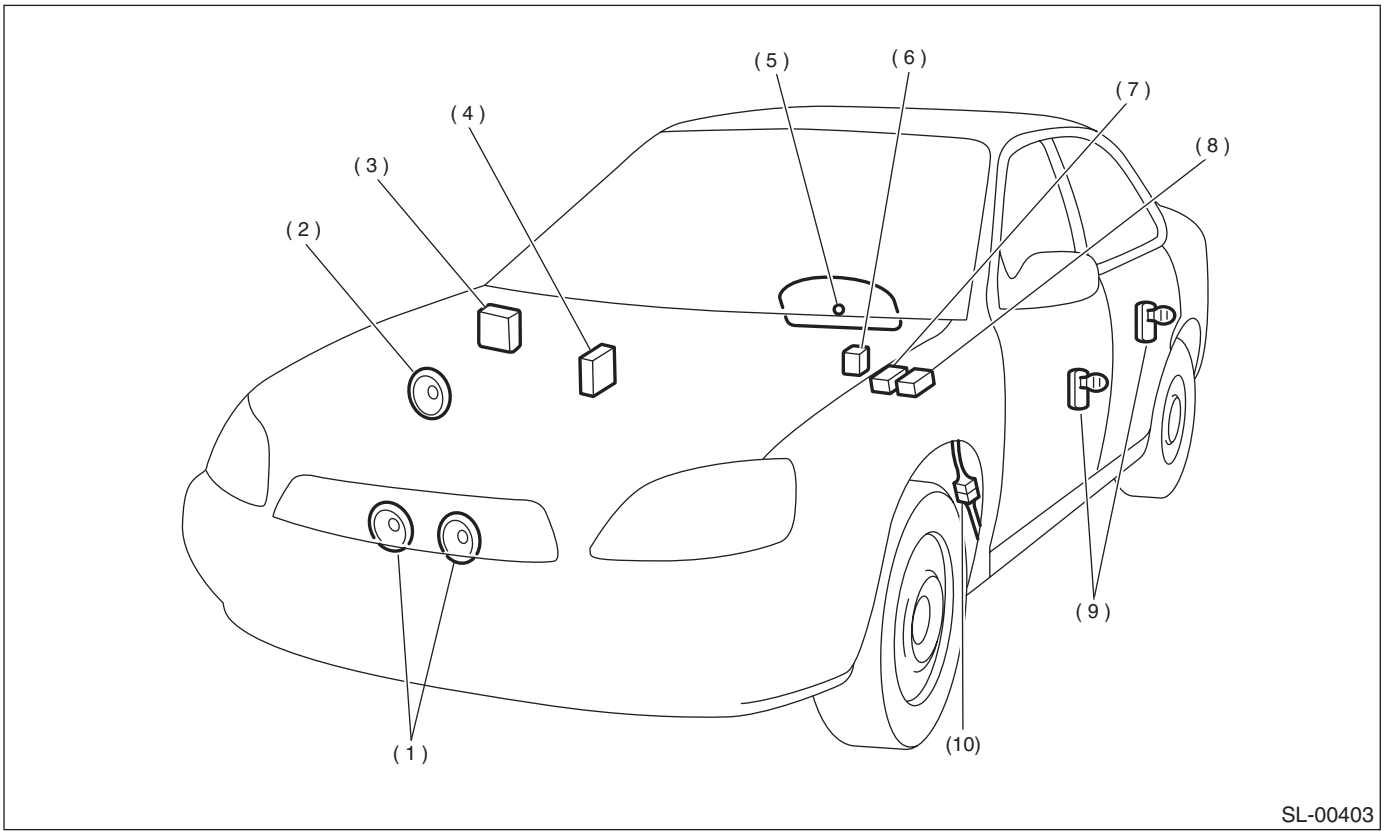
2. HOOD LOCK AND REMOTE OPENERS



(1) Hood lock ASSY
(2) Lever ASSY
(3) Cable

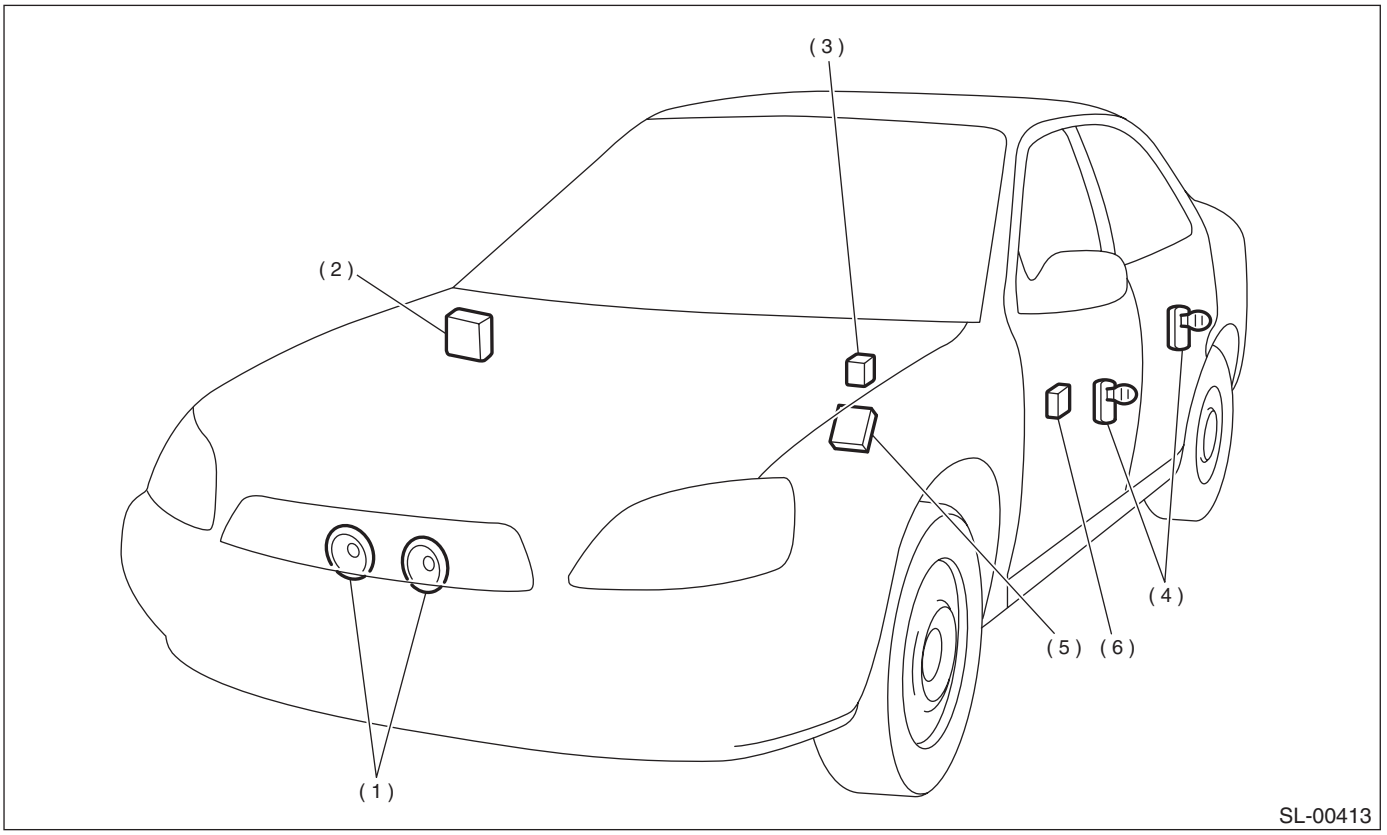
Tightening torque: N·m (kgf-m, ft-lb)
T1: 7.5 (0.76, 5.5)
T2: 32 (3.3, 23.9)

3. SECURITY SYSTEM



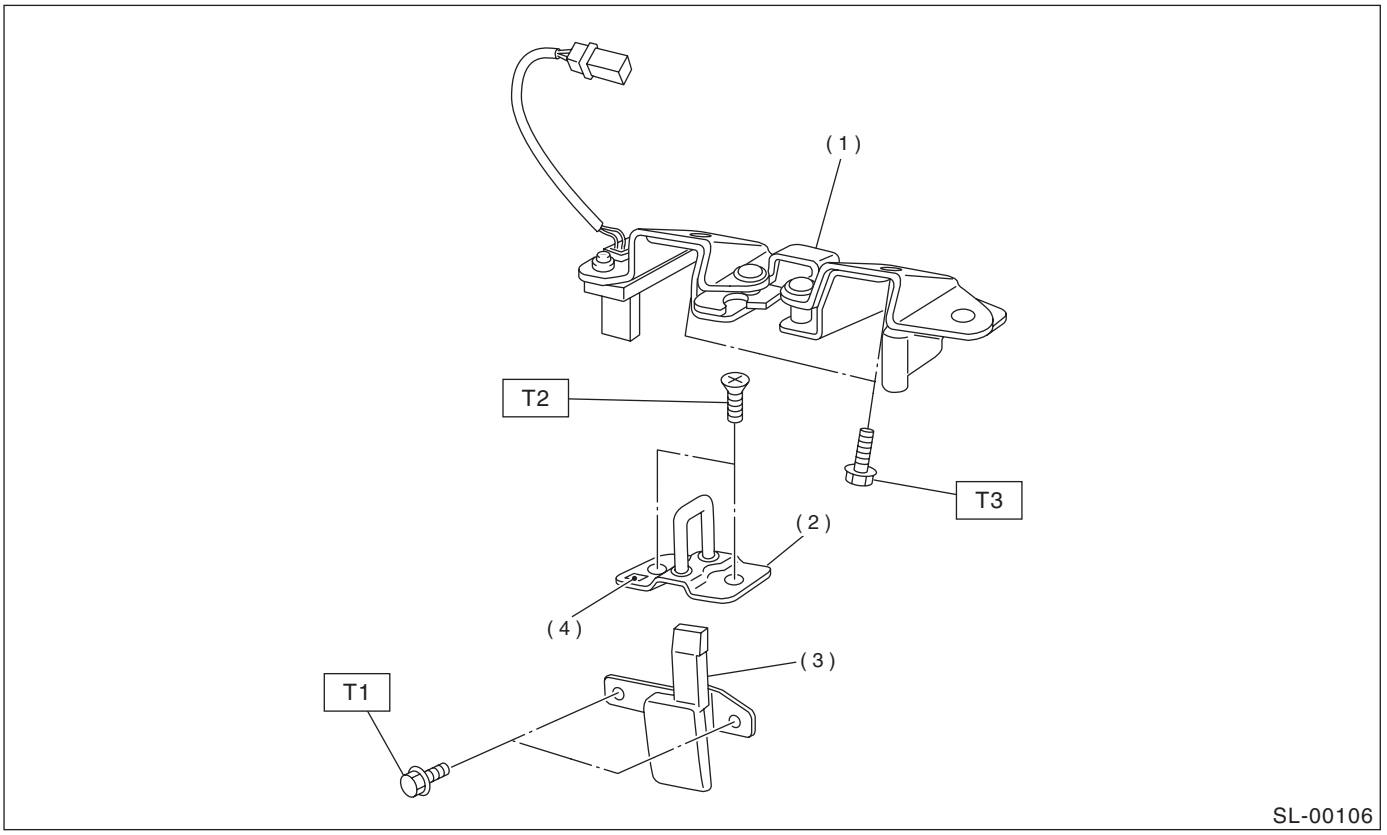
(1) Horn
(2) Security horn
(3) Keyless entry control module
(4) Security control module
(5) Security indicator light (in combination meter)
(6) Horn relay (in main fuse box)
(7) Interrupt relay
(8) Security horn relay
(9) Door switch
(10) Passive arm connector

4. KEYLESS ENTRY SYSTEM



(1) Horn
(2) Keyless entry control module
(3) Horn relay
(4) Door switch
(5) Integrated module
(6) Keyless buzzer

5. SWITCH BACK GATE LOCK

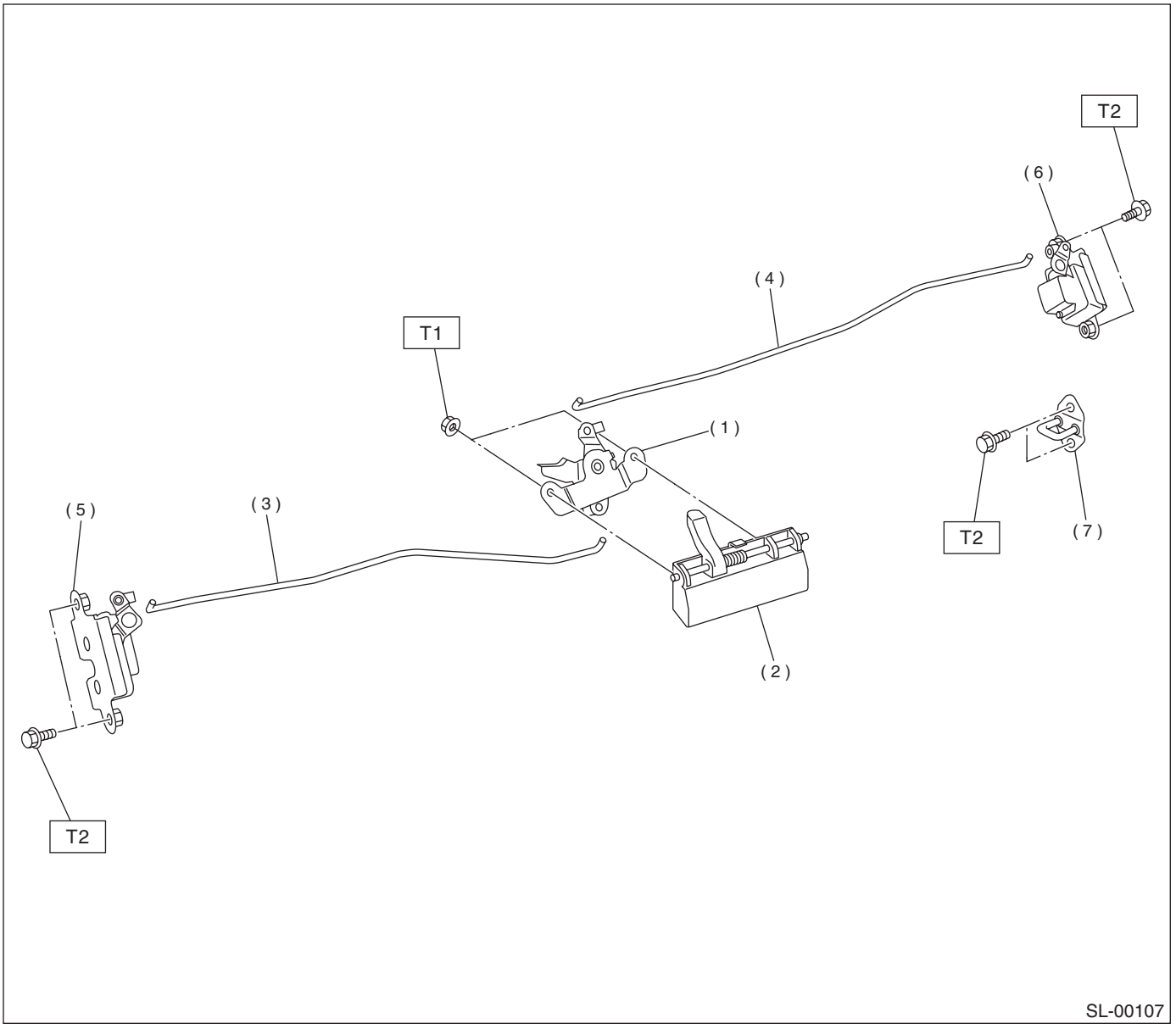


(1) Swtich back gate latch
(2) Striker
(3) Switch back gate release handle
(4) Marking

Tightening torque: N·m (kgf-m, ft-lb)
T1: 7.5 (0.76, 5.5)
T2: 18 (1.8 13.0)
T3: 27.5 (2.80, 20.3)

NOTE:
When installing striker, mount with marked portion facing the vehicle front.

6. TAIL GATE LOCK



(1) Link ASSY
(2) Tail gate outer handle
(3) Rod (LH)
(4) Rod (RH)
(5) Tail gate latch (LH)
(6) Tail gate latch (RH)
(7) Striker

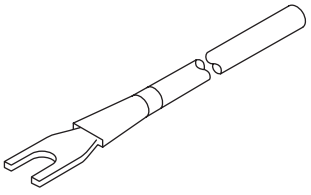
Tightening torque: N·m (kgf-m, ft-lb)
T1: 7.5 (0.76, 5.5)
T2: 25 (2.5, 18.1)

C: CAUTION

• Before disassembling or reassembling parts, always disconnect battery ground cable. When repairing radio, control module, etc. which are provided with memory functions, record memory contents before disconnecting battery ground cable. Otherwise, these contents are cancelled upon disconnection.
• Reassemble parts in reverse order of disassembly procedure unless otherwise indicated.
• Adjust parts to specifications contained in this manual if so designated.
• Connect connectors and hoses securely during reassembly.
• After reassembly, ensure all functional parts operate smoothly.
• Airbag system wiring harness is routed near the electrical parts and switch.
• All airbag system wiring harness and connectors are colored yellow. Do not use electrical test equipment on these circuits.
• Be careful not to damage airbag system wiring harness when servicing the ignition key cylinder.

D: PREPARATION TOOL

1. SPECIAL TOOLS

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-925580000	925580000	PULLER	Used for removing trim clip.

2. GENERAL TOOLS

TOOL NAME	REMARKS
Circuit Tester	Used for measuring resistance and voltage.
Drill	Used for replacing ignition key lock.

2. Door Lock Control System

A: SCHEMATIC

1. DOOR LOCK CONTROL

<Ref. to WI-86, SCHEMATIC, Lock System.>

B: INSPECTION

1. SYMPTOM CHART

Symptom	Repair order	Reference
The door lock control system does not operate.	1. Check the fuse.	<Ref. to SL-9, CHECK FUSE, INSPECTION, Door Lock Control System.>
	2. Check the power supply and ground circuit for the integrated module.	<Ref. to SL-10, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Door Lock Control System.>
	3. Check the door lock switch and the circuit.	<Ref. to SL-10, CHECK DOOR LOCK SWITCH AND CIRCUIT, INSPECTION, Door Lock Control System.>
	4. Check the door lock actuator and the circuit.	<Ref. to SL-11, CHECK DOOR LOCK ACTUATOR AND CIRCUIT, INSPECTION, Door Lock Control System.>
The door lock switch does not operate.	Check the door lock switch and the circuit.	<Ref. to SL-10, CHECK DOOR LOCK SWITCH AND CIRCUIT, INSPECTION, Door Lock Control System.>
A specific door lock actuator does not operate.	Check the door lock actuator and the circuit.	<Ref. to SL-11, CHECK DOOR LOCK ACTUATOR AND CIRCUIT, INSPECTION, Door Lock Control System.>

2. CHECK FUSE

Step		Check	Yes	No
1	**CHECK FUSE.** Remove and visually check the fuse No. 2 (in the main fuse box) and No. 3 (in the fuse & relay box).	In the fuse blown out?	Check the power supply and ground circuit. <Ref. to SL-10, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Door Lock Control System.>	Replace the fuse with a new one.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

	Step	Check	Yes	No
1	**CHECK POWER SUPPLY.** 1) Disconnect the integrated module harness connector. 2) Measure the voltage between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B281) No. 1, 2 (+) — Chassis ground (–):***	Is the measured value more than 10 V?	Go to step **2.**	Check the harness for open circuits or shorts between the integrated module and the fuse.
2	**CHECK GROUND CIRCUIT.** Measure the resistance between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B281) No. 4, 13 — Chassis ground:***	Is the measured value less than 10 Ω?	The power supply and ground circuit is OK.	Repair the harness.

4. CHECK DOOR LOCK SWITCH AND CIRCUIT

	Step	Check	Yes	No
1	**CHECK DOOR LOCK SWITCH CIRCUIT.** 1) Disconnect the integrated module harness connector. 2) Measure the resistance between the harness connector terminal and chassis ground when moving the door lock switch to LOCK. ***Connector & terminal*** ***(B280) No. 12 — Chassis ground:***	Is the measured value less than 10 Ω?	Go to step **2.**	Go to step **3.**
2	**CHECK DOOR LOCK SWITCH CIRCUIT.** Measure the resistance between the harness connector terminal and chassis ground when the door lock switch is moved to UNLOCK. ***Connector & terminal*** ***(B280) No. 11 — Chassis ground:***	Is the measured value less than 10 Ω?	The door lock switch is OK.	Go to step **3.**
3	**CHECK DOOR LOCK SWITCH.** 1) Disconnect the door lock switch harness connector. 2) Measure the resistance between the door lock switch terminals when moving the door lock switch to LOCK. ***Connector & terminal*** ***Driver's side:*** ***(D7) No. 1 — No. 2*** ***Passenger's side:*** ***(D62) No. 2 — No. 5***	Is the measured value less than 1 Ω?	Go to step **4.**	Replace the door lock switch.
4	**CHECK DOOR LOCK SWITCH.** Measure the resistance between the door lock switch terminals when moving the door lock switch to UNLOCK. ***Connector & terminal*** ***Driver's side:*** ***(D7) No. 1 — No. 6*** ***Passenger's side:*** ***(D62) No. 1 — No. 5***	Is the measured value less than 1 Ω?	Check the harness for open circuits or shorts between the integrated module and the door lock switch.	Replace the door lock switch.

5. CHECK DOOR LOCK ACTUATOR AND CIRCUIT

	Step	Check	Yes	No
1	**CHECK OUTPUT SIGNAL.** Measure the voltage between the harness connector terminal of integrated module and chassis ground when moving the door lock switch to LOCK. ***Connector & terminal*** ***(B281) No. 6 (+) — Chassis ground (–):***	Is the measured value more than 10 V?	Go to step **2.**	Replace the integrated module.
2	**CHECK OUTPUT SIGNAL.** Measure the voltage between the harness connector terminal of integrated module and chassis ground when moving the door lock switch to UNLOCK. ***Connector & terminal*** ***(B281) No. 7, 8 (+) — Chassis ground (–):***	Is the measured value more than 10 V?	Go to step **3.**	Replace the integrated module.
3	**CHECK DOOR LOCK ACTUATOR.** Check the door lock actuator. Front door lock actuator: <Ref. to SL-35, Front Door Lock Actuator.> Rear door lock actuator: <Ref. to SL-39, Rear Door Lock Actuator.>	Is the door lock actuator OK?	Check the harness for open circuits or shorts between the integrated module and the door lock actuator.	Replace the door lock actuator.

3. Keyless Entry System

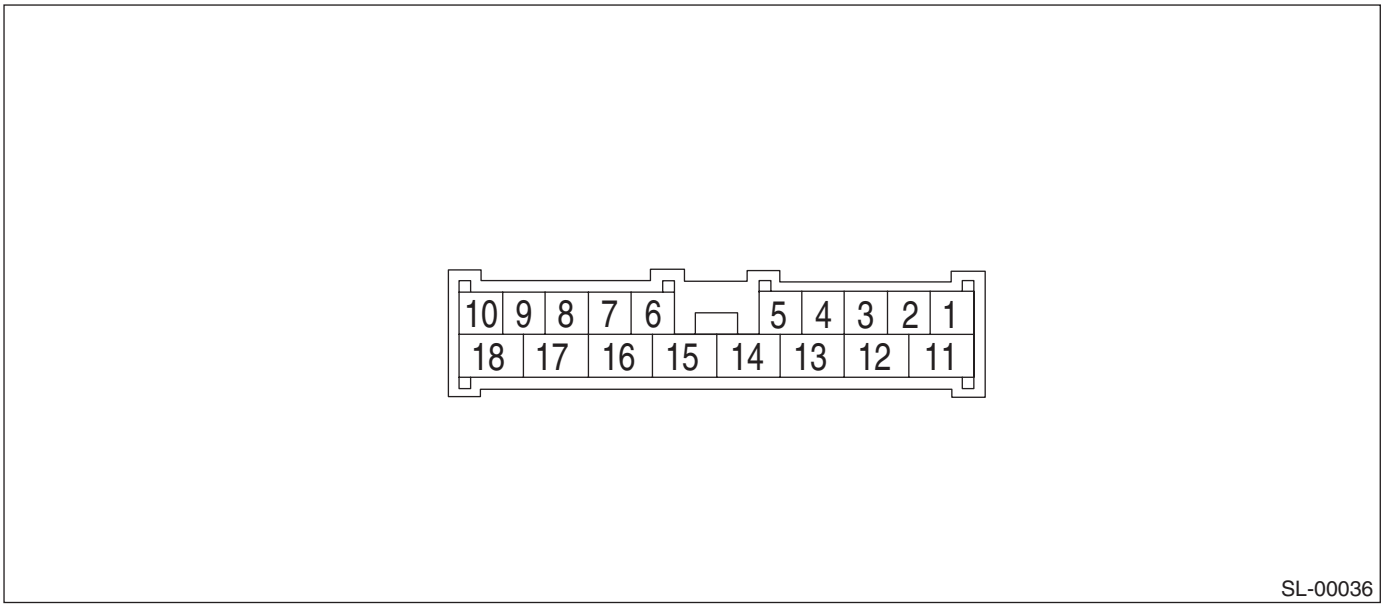
A: SCHEMATIC

1. KEYLESS ENTRY

<Ref. to WI-116, SCHEMATIC, Keyless Entry System.>

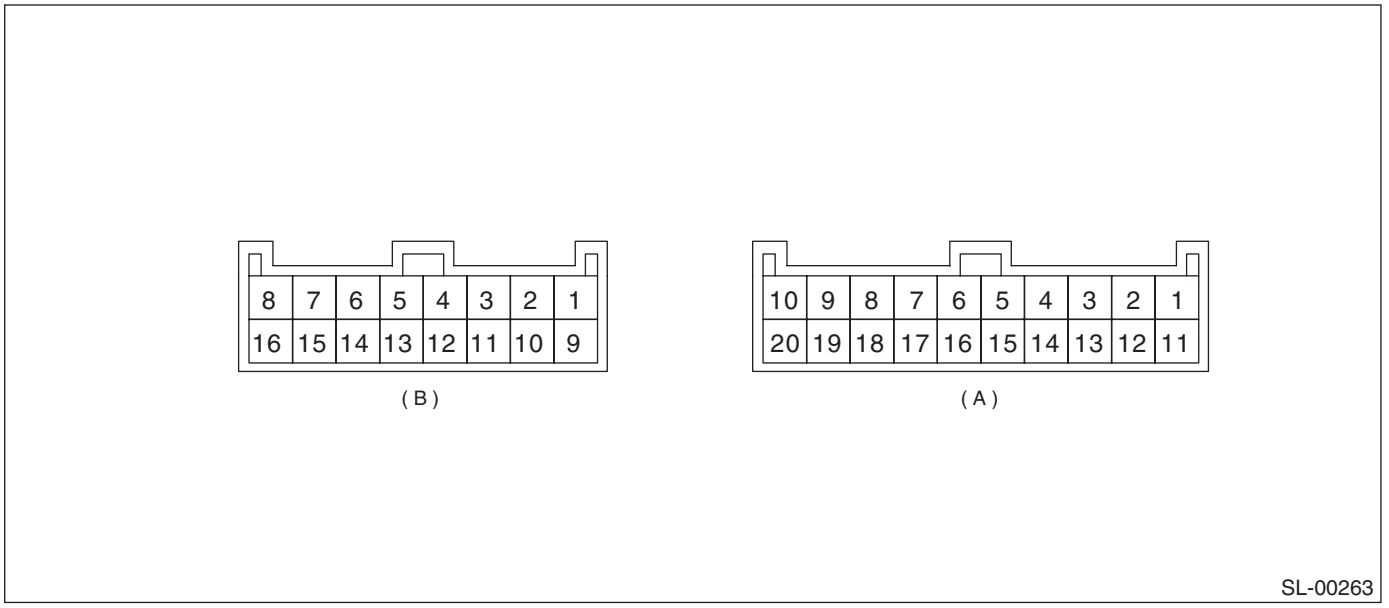
B: ELECTRICAL SPECIFICATION

1. KEYLESS ENTRY CONTROL MODULE



Content	Terminal No.	Measuring condition
Integrated module	1 (OUTPUT)	0 V is present when pressing the transmitter LOCK/ARM button.
Integrated module	2 (OUTPUT)	0 V is present when pressing the transmitter UNLOCK/DISARM button.
Security control module	3	—
Security control module	4	—
Door lock switch	5 (INPUT)	0 V is present when operating the door lock switch.
Ignition switch (ON)	6 (INPUT)	Battery voltage is present when ignition switch is turned to ON.
Key warning switch	7 (INPUT)	Battery voltage is present when inserting the key into the ignition switch.
Door unlock switch	8 (INPUT)	0 V is present when operating the door lock switch.
Trunk room light switch (Sedan), rear gate latch switch (Wagon)	9 (INPUT)	0 V is present when trunk lid or rear gate is open.
Door switch	10 (INPUT)	0 V is present when any door is open.
Ground	11	0 V is constantly present.
Turn signal light (Left)	12 (OUTPUT)	Battery voltage is present when pressing the transmitter UNLOCK/DISARM or LOCK/ARM button.
Horn relay	13 (OUTPUT)	0 V is present when pressing the transmitter LOCK/ARM button three times within 5 seconds.
Power supply	14	Battery voltage is constantly present.
Power supply (Back-up)	15	Battery voltage is constantly present when back-up fuse is energized.
Keyless buzzer	16 (OUTPUT)	0 V is present when pressing the transmitter UNLOCK/DISARM or LOCK/ARM button.
Security control module	17	—
Turn signal light (Right)	18 (OUTPUT)	Battery voltage is present when pressing the transmitter UNLOCK/DISARM or LOCK/ARM button.

2. INTEGRATED MODULE



Content	Terminal No.	Measuring condition
Ignition switch illumination	A2 (OUTPUT)	0 V is present when ignition switch is OFF, and when door is opened and then closed.
Door switch (Except driver's door)	A7 (INPUT)	0 V is present when any door is open (Except driver's door).
Door switch (Driver's door)	A8 (INPUT)	0 V is present when driver's door is open.
Door unlock switch	A11 (INPUT)	0 V is present when operating the door lock switch.
Door lock switch	A12 (INPUT)	0 V is present when operating the door lock switch.
Keyless entry control module	A13 (INPUT)	0 V is present when pressing the transmitter LOCK/ARM button.
Keyless entry control module	A14 (INPUT)	0 V is present when pressing the transmitter UNLOCK/DISARM button.
Ignition switch (ON)	A19 (INPUT)	Battery voltage is present when ignition switch is turned to ON.
Key warning switch	A20 (INPUT)	Battery voltage is present when inserting the key into ignition switch.
Power supply	B1	Battery voltage is constantly present.
Power supply	B2	Battery voltage is constantly present.
Ground	B4	0 V is constantly present.
Room light	B5 (OUTPUT)	0 V is present when all doors are closed and keys are removed, and when pressing the transmitter UNLOCK/DISARM button.
Door and rear gate lock actuator	B6 (OUTPUT)	Battery voltage is present when all doors are closed and keys are removed, and when pressing the transmitter LOCK/ARM button.
Door and rear gate lock actuator (Except driver side)	B7 (OUTPUT)	Battery voltage is present when all doors are closed and keys are removed, and when pressing the transmitter UNLOCK/DISARM button two times.
Door lock actuator (Driver side)	B8 (OUTPUT)	Battery voltage is present when all doors are closed and keys are removed, and when pressing the transmitter UNLOCK/DISARM button one time.
Ground	B13	0 V is constantly present.

C: INSPECTION

1. SYMPTOM CHART

Symptom	Repair order	Reference
None of the functions of the keyless entry system operate.	1. Check the transmitter battery and function.	<Ref. to SL-16, CHECK TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	2. Check the fuse.	<Ref. to SL-17, CHECK FUSE, INSPECTION, Keyless Entry System.>
	3. Check the keyless entry control module power supply and ground circuit.	<Ref. to SL-17, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Keyless Entry System.>
	4. Check the key warning switch.	<Ref. to SL-19, CHECK KEY WARNING SWITCH, INSPECTION, Keyless Entry System.>
	5. Check the door switch.	<Ref. to SL-18, CHECK DOOR SWITCH, INSPECTION, Keyless Entry System.>
	6. Check the output signal to integrated module.	<Ref. to SL-20, CHECK OUTPUT SIGNAL TO INTEGRATED MODULE, INSPECTION, Keyless Entry System.>
	7. Replace the keyless entry control module.	<Ref. to SL-50, Keyless Entry Control Module.>
The transmitter cannot be programmed.	1. Check the transmitter battery and function.	<Ref. to SL-16, CHECK TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	2. Check the ignition switch circuit.	<Ref. to SL-17, CHECK IGNITION SWITCH CIRCUIT, INSPECTION, Keyless Entry System.>
	3. Check the door switch.	<Ref. to SL-18, CHECK DOOR SWITCH, INSPECTION, Keyless Entry System.>
	4. Replace the keyless entry control module.	<Ref. to SL-50, Keyless Entry Control Module.>
The 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-9, INSPECTION, Door Lock Control System.>	1. Check the transmitter battery and function.	<Ref. to SL-16, CHECK TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	2. Check the key warning switch.	<Ref. to SL-19, CHECK KEY WARNING SWITCH, INSPECTION, Keyless Entry System.>
	3. Check the door switch.	<Ref. to SL-18, CHECK DOOR SWITCH, INSPECTION, Keyless Entry System.>
	4. Check the output signal to integrated module.	<Ref. to SL-20, CHECK OUTPUT SIGNAL TO INTEGRATED MODULE, INSPECTION, Keyless Entry System.>
	5. Replace the keyless entry control module.	<Ref. to SL-50, Keyless Entry Control Module.>
The panic alarm does not operate.	1. Check the transmitter battery and function.	<Ref. to SL-16, CHECK TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	2. Check the horn operation.	<Ref. to SL-21, CHECK HORN OPERATION, INSPECTION, Keyless Entry System.>
	3. Replace the keyless entry control module.	<Ref. to SL-50, Keyless Entry Control Module.>

Symptom	Repair order		Reference
The buzzer chirp and hazard light do not operate.	1. Check the buzzer chirp setting.		<Ref. to SL-16, CHECK BUZZER CHIRP SETTING, INSPECTION, Keyless Entry System.>
	2. Check the buzzer and hazard light operation.	Buzzer	<Ref. to SL-22, CHECK KEYLESS BUZZER, INSPECTION, Keyless Entry System.>
		Hazard light (Make sure that room light switch is set with door in engaged position.)	<Ref. to SL-21, CHECK HAZARD LIGHT OPERATION, INSPECTION, Keyless Entry System.>
	3. Check the output signal to integrated module.		<Ref. to SL-20, CHECK OUTPUT SIGNAL TO INTEGRATED MODULE, INSPECTION, Keyless Entry System.>
	4. Replace the keyless entry control module.		<Ref. to SL-50, Keyless Entry Control Module.>
The room light does not turn on.	1. Check the operation of room light.	Room light (Make sure that room light switch is set with door in engaged position.)	<Ref. to SL-20, CHECK ROOM LIGHT OPERATION, INSPECTION, Keyless Entry System.>
	2. Replace the intergrated module.		<Ref. to SL-51, Integrated Module.>
The door ajar warning does not operate.	1. Check the door switch.		<Ref. to SL-18, CHECK DOOR SWITCH, INSPECTION, Keyless Entry System.>
	2. Check the buzzer operation.		<Ref. to SL-22, CHECK KEYLESS BUZZER, INSPECTION, Keyless Entry System.>
	3. Replace the keyless entry control module.		<Ref. to SL-50, Keyless Entry Control Module.>

2. CHECK TRANSMITTER BATTERY AND FUNCTION

	Step	Check	Yes	No
1	**CHECK TRANSMITTER BATTERY.** 1) Remove the battery from the transmitter. <Ref. to SL-52, REMOVAL, Keyless Transmitter.> 2) Check the battery voltage. <Ref. to SL-52, INSPECTION, Keyless Transmitter.>	Is the measured value more than 2.5 V?	Go to step **2.**	Replace the transmitter battery.
2	**CHECK LED OF TRANSMITTER.** 1) Press the LOCK/ARM or UNLOCK/DISARM button six times to synchronize with the keyless entry control module. 2) Press the LOCK/ARM button.	Does the LED blink one time?	Go to step **3.**	Replace the transmitter. <Ref. to SL-52, REPLACEMENT, Keyless Transmitter.>
3	**CHECK LED OF TRANSMITTER.** Keep the LOCK/ARM button pressed.	Does the LED blink one time, and then turn on?	Go to step **4.**	Replace the transmitter. <Ref. to SL-52, REPLACEMENT, Keyless Transmitter.>
4	**CHECK LED OF TRANSMITTER.** Press the UNLOCK/DISARM button.	Does the LED blink one time?	Go to step **5.**	Replace the transmitter. <Ref. to SL-52, REPLACEMENT, Keyless Transmitter.>
5	**CHECK LED OF TRANSMITTER.** Keep the UNLOCK/DISARM button pressed.	Does the LED blink two times?	Transmitter is OK.	Replace the transmitter. <Ref. to SL-52, REPLACEMENT, Keyless Transmitter.>

3. CHECK BUZZER CHIRP SETTING

	Step	Check	Yes	No
1	**CHECK BUZZER CHIRP SETTING.** 1) Check the current setting of the buzzer chirp. 2) Remove the key from the ignition switch. 3) Close all doors and the rear gate. 4) Press the LOCK/ARM or UNLOCK/DISARM button.	Does the buzzer signal chirp?	Buzzer chirp function is OK.	Go to step **2.**
2	**CHECK BUZZER CHIRP SETTING.** 1) Press the UNLOCK/DISARM button once. 2) Press both the LOCK/ARM and UNLOCK/DISARM buttons for more than 2 seconds. 3) Press the LOCK/ARM or UNLOCK/DISARM button.	Does the buzzer signal chirp?	Buzzer chirp function is OK.	Check the transmitter function. <Ref. to SL-16, CHECK TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>

4. CHECK FUSE

	Step	Check	Yes	No
1	**CHECK FUSE.** Remove and visually check the fuse No. 6 (in the main fuse box) and No. 3 (in the fuse and relay box).	Is the fuse blown out?	Check the power supply and ground circuit. <Ref. to SL-17, CHECK POWER SUPPLY AND GROUND CIRCUIT, Keyless Entry System.>	Replace the fuse with a new one.

5. CHECK POWER SUPPLY AND GROUND CIRCUIT

	Step	Check	Yes	No
1	**CHECK POWER SUPPLY.** 1) Disconnect the keyless entry control module harness connector. 2) Measure the voltage between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B176) No. 14, No. 15 (+) — Chassis ground (–):***	Is the measured value more than 10 V?	Go to step **2.**	Check the harness for open circuits and shorts between the keyless entry control module and fuse.
2	**CHECK GROUND CIRCUIT.** Measure the resistance between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B176) No. 11 — Chassis ground:***	Is the measured value less than 10 Ω?	The power supply and ground circuit are OK.	Repair the harness.

6. CHECK IGNITION SWITCH CIRCUIT

	Step	Check	Yes	No
1	**CHECK IGNITION SWITCH SIGNAL.** 1) Disconnect the keyless entry control module harness connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B176) No. 6 (+) — Chassis ground (–):***	Is the measured value more than 10 V?	Ignition switch circuit is OK.	Check the harness for open circuits and shorts between the keyless entry control module and ignition relay.

7. CHECK DOOR SWITCH

Step		Check	Yes	No
1	**CHECK DOOR SWITCH CIRCUIT.** Measure the voltage between the keyless entry control module harness connector terminal and chassis ground. ***Connector & terminal*** ***Front and rear side door:*** ***(B176) No. 10 (+) — Chassis ground (–):*** ***Rear gate or trunk lid:*** ***(B176) No. 9 (+) — Chassis ground (–):***	Is the measured value less than 1.5 V when each door, rear gate or trunk lid is opened?	Go to step **2.**	Go to step **3.**
2	**CHECK DOOR SWITCH CIRCUIT.** Measure the voltage between the keyless entry control module harness connector terminal and chassis ground. ***Connector & terminal*** ***Front and rear side door:*** ***(B176) No. 10 (+) — Chassis ground (–):*** ***Rear gate or trunk lid:*** ***(B176) No. 9 (+) — Chassis ground (–):***	Does the measured value more than 10 V when all doors and rear gate or trunk lid is closed?	The door switch is OK.	Go to step **3.**
3	**CHECK DOOR SWITCH.** 1) Disconnect the door switch harness connector. 2) Measure the resistance between the door switch terminals. ***Terminal*** ***Door switch No. 1 — No. 3:*** ***Rear gate latch switch or trunk room light switch No. 1 — No. 2:***	Is the measured value more than 1 MΩ when the door switch is depressed?	Go to step **4.**	Replace the door switch.
4	**CHECK DOOR SWITCH.** Measure the resistance between the door switch terminals. ***Terminal*** ***Door switch No. 1 — No. 3:*** ***Rear gate latch switch or trunk room light switch No. 1 — No. 2:***	Is the measured value less than 1 Ω when the door switch is released?	Check the harness for open circuits and shorts between the integrated module and door switch.	Replace the door switch.

8. CHECK KEY WARNING SWITCH

	Step	Check	Yes	No
1	**CHECK FUSE.** Remove and visually check the fuse No. 6 (in the main fuse box).	Is the fuse blown out?	Go to step **2.**	Replace the fuse with a new one.
2	**CHECK KEY WARNING SWITCH CIRCUIT.** 1) Disconnect the keyless entry control module harness connector. 2) Insert the key into the ignition switch. (LOCK position) 3) Measure the voltage between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B176) No. 7 (+) — Chassis ground (–):***	Is the measured value more than 10 V?	Go to step **3.**	Go to step **4.**
3	**CHECK KEY WARNING SWITCH CIRCUIT.** 1) Remove the key from the ignition switch. 2) Measure the voltage between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B176) No. 7 (+) — Chassis ground (–):***	Is the measured value less than 1.5 V?	Key warning switch is OK.	Go to step **4.**
4	**CHECK KEY WARNING SWITCH.** 1) Disconnect the key warning switch harness connector. 2) Insert the key into the ignition switch. (LOCK position) 3) Measure the resistance between the key warning switch terminals. ***Terminal*** ***No. 1 — No. 2:***	Is the measured value less than 1 Ω?	Go to step **5.**	Replace the key warning switch.
5	**CHECK KEY WARNING SWITCH.** 1) Remove the key from the ignition switch. 2) Measure the resistance between the key warning switch terminals. ***Terminal*** ***No. 1 — No. 2:***	Is the measured value more than 1 MΩ?	**Check the following:** • Harness for open circuits and shorts between the key warning switch and fuse • Harness for open circuits and shorts between the keyless entry control module and key warning switch	Replace the key warning switch.

9. CHECK ROOM LIGHT OPERATION

	Step	Check	Yes	No
1	**CHECK ROOM LIGHT OPERATION.** Make sure the room light illuminates when the room light switch is turned ON.	Does the room light illuminate?	Go to step **2.**	Check the room light circuit.
2	**CHECK HARNESS BETWEEN ROOM LIGHT AND INTEGRATED MODULE.** 1) Disconnect the integrated module harness connector and room light harness connector. 2) Measure the resistance between the integrated module harness connector terminal and the room light harness connector terminal. ***Connector & terminal*** ***(B281) No. 5 — (R52) No. 2:***	Is the measured value less than 10 Ω?	The room light operation circuit is OK.	Check the harness for open circuits and/or shorts between the integrated module and room light.

10.CHECK OUTPUT SIGNAL TO INTEGRATED MODULE

	Step	Check	Yes	No
1	**CHECK OUTPUT SIGNAL.** Measure the voltage between the keyless entry control module harness connector terminal and chassis ground when UNLOCK/DISARM button of transmitter is pressed. ***Connector & terminal*** ***(B176) No. 2 (+) — Chassis ground (–):***	Is the measured value less than 1.5 V?	Go to step **2.**	Replace the keyless entry control module.
2	**CHECK OUTPUT SIGNAL.** Measure the voltage between the keyless entry control module harness connector terminal and chassis ground when LOCK/ARM button of transmitter is pressed. ***Connector & terminal*** ***(B176) No. 1 (+) — Chassis ground (–):***	Is the measured value less than 1.5 V?	Go to step **3.**	Replace the keyless entry control module.
3	**CHECK HARNESS BETWEEN KEYLESS ENTRY CONTROL MODULE AND INTEGRATED MODULE.** 1) Disconnect the keyless entry control module harness connector and integrated module harness connector. 2) Measure the resistance between the keyless entry control module harness connector terminal and integrated module harness connector terminal. ***Connector & terminal*** ***(B176) No. 2 — (B280) No. 14:*** ***(B176) No. 1 — (B280) No. 13:***	Is the measured value less than 10 Ω?	Replace the integrated module.	Check the harness for open circuit or shorts between the keyless entry control module and integrated module.

11.CHECK HORN OPERATION

	Step	Check	Yes	No
1	**CHECK HORN OPERATION.** Make sure the horn sounds when the horn switch is pushed.	Does the horn sound?	Go to step **2.**	Check the horn circuit.
2	**CHECK HORN OPERATION.** 1) Disconnect the keyless entry control module harness connector. 2) Ground the harness connector terminal with a suitable wire. ***Connector & terminal*** ***(B176) No. 13 — Chassis ground:***	Does the horn sound?	Replace the keyless entry control module.	Check the harness for open circuits and/or shorts between the keyless entry control module and horn relay.

12.CHECK HAZARD LIGHT OPERATION

	Step	Check	Yes	No
1	**CHECK HAZARD LIGHT OPERATION.** Make sure the hazard light blinks when hazard switch is turned ON.	Does the hazard light blink?	Go to step **2.**	Check the hazard light circuit.
2	**CHECK OUTPUT SIGNAL.** 1) Remove the key from ignition switch. 2) Close all doors and rear gate or trunk lid. 3) Measure the voltage between keyless entry control module harness connector terminal and chassis ground when LOCK/ARM button of transmitter is pressed. ***Connector & terminal*** ***(B176) No. 12, 18 (+) — Chassis ground (–):***	Is the measured value more than 10 V?	Check the harness for open or short between keyless entry control module and turn signal lights.	Replace the keyless entry control module.

13.CHECK KEYLESS BUZZER

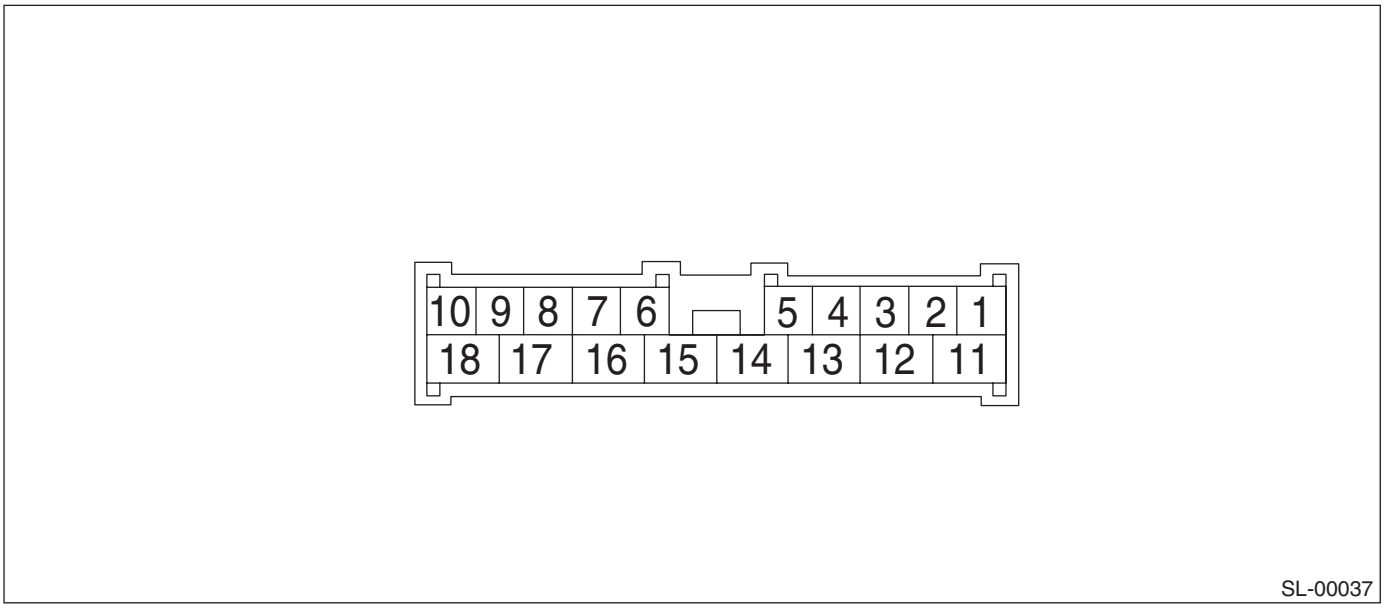
	Step	Check	Yes	No
1	**CHECK FUSE.** Remove and check the fuse No. 3 (located in fuse and relay box).	Is the fuse blown out?	Go to step **2.**	Replace the fuse with a new one.
2	**CHECK KEYLESS BUZZER POWER SUPPLY.** 1) Disconnect the connector from keyless buzzer. 2) Measure the voltage between keyless buzzer harness connector and chassis ground. ***Connector & terminal*** ***(D70) No. 2 (+) — Chassis ground (–):***	Is the measured value more than 10 V?	Go to step **3.**	Check the harness for open or short between fuse and keyless buzzer.
3	**CHECK HARNESS BETWEEN KEYLESS BUZZER AND KEYLESS ENTRY CONTROL MODULE.** 1) Disconnect the connector from keyless entry control module. 2) Measure the resistance between keyless buzzer and keyless entry control module. ***Connector & terminal*** ***(D70) No. 1 (+) — (B176) No. 16:***	Is the measured value less than 10 Ω?	Go to step **4.**	Repair the harness between keyless buzzer and keyless entry control module.
4	**CHECK KEYLESS BUZZER.** Make sure that the buzzer sounds when connecting battery positive terminal to No. 2 terminal of keyless buzzer connector and battery ground terminal to No. 1 terminal of keyless buzzer connector.	Does the buzzer sound?	Replace the keyless entry control module.	Replace the keyless buzzer.

4. Security System

A: SCHEMATIC

<Ref. to WI-160, SCHEMATIC, Security System.>

B: ELECTRICAL SPECIFICATION



Content	Terminal No.	Measuring condition
Empty	1	—
Ignition switch (ON)	2 (INPUT)	Battery voltage is present when ignition switch is turned to ON.
Passive arm	3	—
Rear gate latch switch	4 (INPUT)	0 V is present when rear gate is open.
Door switch	5 (INPUT)	0 V is present when any door is open.
Empty	6	—
Keyless entry control module	7	—
Keyless entry control module	8	—
Security indicator light	9 (OUTPUT)	0 V is present when activating the alarm operation.
Keyless entry control module	10	—
Power supply (Back-up)	13	Battery voltage is constantly present.
Ground	14	0 V is constantly present.
Interrupt relay	15 (OUTPUT)	Battery voltage is present when activating the alarm operation.
Security horn relay	16 (INPUT)	Battery voltage is present when activating the alarm operation.
Security horn	17 (OUTPUT)	Battery voltage is present when activating the alarm operation.
Security horn relay	18 (INPUT)	Battery voltage is present when activating the alarm operation.

C: INSPECTION

1. BASIC DIAGNOSTIC PROCEDURE

	Step	Check	Yes	No
1	**CHECK VALET MODE SETTING.** Check flashing condition of security indicator lamp.	Does security indicator lamp flash 2 times per second?	Go to step **2.**	Go to step **3.**
2	**RESET VALET MODE.** 1) Keep pushing UNLOCK/DISARM button of the transmitter for 2 seconds or more with driver door opened. 2) Check flashing condition of security indicator lamp.	Has the security indicator lamp been turned off?	Go to step **3.**	Go to symptom 6. <Ref. to SL-26, SYMPTOM CHART, INSPECTION, Security System.>
3	**CHECK SECURITY SYSTEM SET OPERATION.** 1) Before starting this diagnosis, open all windows. 2) Remove the key from ignition key cylinder, and then close all doors and rear gate. 3) Press the LOCK/ARM button of transmitter.	Can the security system be set?	Go to step **4.**	Go to symptom 1. <Ref. to SL-26, SYMPTOM CHART, INSPECTION, Security System.>
4	**CHECK SECURITY INDICATOR LIGHT AND HAZARD LIGHT BLINKING.** Check the security indicator light and hazard light blinking.	Do the security indicator light and hazard light blink?	Go to step **5.**	Go to symptom 2. <Ref. to SL-26, SYMPTOM CHART, INSPECTION, Security System.>
5	**CHECK SECURITY ALARM OPERATION.** 1) Unlock all doors using the door lock switch on front door. 2) Open any door, rear gate or trunk lid.	Does the security alarm operate when any door, rear gate or trunk lid is opened?	Go to step **6.**	Go to symptom 3. <Ref. to SL-26, SYMPTOM CHART, INSPECTION, Security System.>
6	**CHECK SECURITY ALARM OPERATION.** Check the security alarm operation.	Does all security alarm (horn, hazard light and security indicator light) operate? And is the starter motor deactivated?	Go to step **7.**	Go to symptom 4. <Ref. to SL-26, SYMPTOM CHART, INSPECTION, Security System.>
7	**CHECK SECURITY ALARM CANCEL OPERATION.** Press the UNLOCK/DISARM button of transmitter.	Do all security alarm (horn and hazard light) stop? And is the starter motor activated?	Go to step **8.**	Go to symptom 5. <Ref. to SL-26, SYMPTOM CHART, INSPECTION, Security System.>
8	**CHECK BATTERY DISCONNECT PROTECTION.** Make sure that the system operates properly if the battery cable is disconnected temporarily. <Ref. to SL-25, CHECK BATTERY DISCONNECT PROTECTION, INSPECTION, Security System.>	Does the system operate properly if the battery cable is disconnected temporarily?	Go to step **9.**	Replace the security control module.
9	**PERFORM IMPACT SENSITIVITY TEST.** Perform the impact sensitivity test. <Ref. to SL-44, IMPACT SENSITIVITY TEST, INSPECTION, Security Control Module.>	Is the impact sensitivity properly set?	Press the UNLOCK/DISARM button of transmitter, and finish the diagnosis.	Adjust the impact sensitivity.<Ref. to SL-44, IMPACT SENSITIVITY, ADJUSTMENT, Security Control Module.>

2. CHECK BATTERY DISCONNECT PROTECTION

1) Remove the key from the ignition switch.
2) Close all the doors, rear gate and trunk lid.
3) Open the front hood.
4) Press the LOCK/ARM button of the transmitter.
5) Disconnect the ground cable from the battery.
6) Reconnect the cable to the battery.
7) Check that the security indicator light blinks after reconnecting the battery cable.

If NG, replace the security control module.

3. SYMPTOM CHART

Symptom			Repair order	Reference
1	Security system cannot be set.		1. Check the transmitter function.	<Ref. to SL-16, CHECK TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
			2. Check the fuse.	<Ref. to SL-27, CHECK FUSE, INSPECTION, Security System.>
			3. Check the security control module power supply and ground circuit.	<Ref. to SL-27, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Security System.>
			4. Check the door switch.	<Ref. to SL-27, CHECK DOOR SWITCH, INSPECTION, Security System.>
			5. Replace the security control module.	<Ref. to SL-44, Security Control Module.>
2	Security system can be set, but the security indicator light or hazard light does not blink.	Security indicator light	Check the security indicator light circuit.	<Ref. to SL-28, CHECK SECURITY INDICATOR LIGHT CIRCUIT, INSPECTION, Security System.>
		Hazard light	Check the hazard light operation.	<Ref. to SL-30, CHECK HAZARD LIGHT OPERATION, INSPECTION, Security System.>
3	Security system does not alarm when one of the door is opened.		Check the door switch.	<Ref. to SL-27, CHECK DOOR SWITCH, INSPECTION, Security System.>
4	Security alarm does not activate.	All functions	Check the door switch.	<Ref. to SL-27, CHECK DOOR SWITCH, INSPECTION, Security System.>
		Security indicator light	Check the security indicator light circuit.	<Ref. to SL-28, CHECK SECURITY INDICATOR LIGHT CIRCUIT, INSPECTION, Security System.>
		Security horn	Check the security horn.	<Ref. to SL-29, CHECK SECURITY HORN, INSPECTION, Security System.>
		Hazard light	Check the hazard light operation.	<Ref. to SL-30, CHECK HAZARD LIGHT OPERATION, INSPECTION, Security System.>
		Starter motor deactivation	Check the interrupt relay circuit.	<Ref. to SL-30, CHECK INTERRUPT RELAY CIRCUIT, INSPECTION, Security System.>
5	Security system cannot be canceled.	Transmitter	Check the transmitter function.	<Ref. to SL-16, CHECK TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
		Ignition switch	Check the ignition switch circuit.	<Ref. to SL-31, CHECK IGNITION SWITCH CIRCUIT, INSPECTION, Security System.>
6	Valet mode cannot be set or reset.		1. Check the transmitter function.	<Ref. to SL-16, CHECK TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
			2. Check the door switch.	<Ref. to SL-27, CHECK DOOR SWITCH, INSPECTION, Security System.>
			3. Replace the security control module.	<Ref. to SL-44, Security Control Module.>

4. CHECK FUSE

	Step	Check	Yes	No
1	**CHECK FUSE.** Remove and visually check the fuse No. 2 (in main fuse box).	Is the fuse blown out?	Check the power supply and ground circuit. <Ref. to SL-27, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Security System.>	Replace the fuse with a new one.

5. CHECK POWER SUPPLY AND GROUND CIRCUIT

	Step	Check	Yes	No
1	**CHECK POWER SUPPLY.** 1) Disconnect the security control module harness connector. 2) Measure the voltage between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B93) No. 13 (+) — Chassis ground (–):***	Is the measured value more than 10 V?	Go to step **2.**	Check the harness for open circuits and shorts between the security control module and fuse.
2	**CHECK GROUND CIRCUIT.** Measure the resistance between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B93) No. 14 — Chassis ground:***	Is the measured value less than 10 Ω?	The power supply and ground circuit are OK.	Repair the harness.

6. CHECK DOOR SWITCH

	Step	Check	Yes	No
1	**CHECK DOOR SWITCH CIRCUIT.** Measure the voltage between the security control module harness connector terminal and chassis ground. ***Connector & terminal*** ***Front and rear door:*** ***(B93) No. 5 (+) — Chassis ground (–):*** ***Rear gate or trunk lid:*** ***(B93) No. 4 (+) — Chassis ground (–):***	Is the measured value less than 1.5 V when each door, rear gate or trunk lid is opened?	Go to step **2.**	Go to step **3.**
2	**CHECK DOOR SWITCH CIRCUIT.** Measure the voltage between the security control module harness connector terminal and chassis ground. ***Connector & terminal*** ***Front and rear door:*** ***(B93) No. 5 (+) — Chassis ground (–):*** ***Rear gate or trunk lid:*** ***(B93) No. 4 (+) — Chassis ground (–):***	Does the measured value exceed the 10 V when all doors and rear gate or trunk lid is closed?	The door switch is OK.	Go to step **3.**

	Step	Check	Yes	No
3	**CHECK DOOR SWITCH.** 1) Disconnect the door switch harness connector. 2) Measure the resistance between the door switch terminals. ***Terminal*** ***Door switch:*** ***No. 1 — No. 3:*** ***Rear gate latch switch or trunk room light:*** ***No. 1 — No. 2:***	Is the measured value more than 1 MΩ when door switch is pushed?	Go to step **4.**	Replace the door switch.
4	**CHECK DOOR SWITCH.** Measure the resistance between the door switch terminals. ***Terminal*** ***Door switch:*** ***No. 1 — No. 3:*** ***Rear gate latch switch or trunk room light switch:*** ***No. 1 — No. 2:***	Is the measured value less than 1Ω when door switch is released?	Check the harness for open circuits and shorts between the security control module and door switch.	Replace the door switch.

7. CHECK SECURITY INDICATOR LIGHT CIRCUIT

	Step	Check	Yes	No
1	**CHECK SECURITY INDICATOR LIGHT.** 1) Disconnect the security control module harness connector. 2) Ground the harness connector terminal with a suitable wire. ***Connector & terminal*** ***(B93) No. 9 — Chassis ground:***	Does the security indicator light illuminate?	Replace the security control module.	Go to step **2.**
2	**CHECK POWER SUPPLY FOR SECURITY INDICATOR LIGHT.** 1) Disconnect the connector from the combination meter. 2) Measure the voltage between the combination meter harness connector terminal and chassis ground. ***Connector & terminal*** ***(i12) No. 7 (+) — Chassis ground (–):***	Is the measured value more than 10 V?	Go to step **3.**	Check the harness for open circuits and shorts between the combination meter and the fuse.
3	**CHECK SECURITY INDICATOR LIGHT CIRCUIT.** Measure the resistance between the combination meter harness connector terminal and security control module harness connector terminal. ***Connector & terminal*** ***(i12) No. 1 — (B93) No. 9:***	Is the measured value less than 10 Ω?	Replace the combination meter printed circuit.	Check the harness for open circuits and shorts between the combination meter and security control module.

8. CHECK SECURITY HORN

	Step	Check	Yes	No
1	**CHECK SECURITY HORN RELAY.** Remove and check the security horn relay. <Ref. to SL-48, Security Horn Relay.>	Is the security horn relay OK?	Go to step **2.**	Replace the security horn relay.
2	**CHECK POWER SUPPLY FOR SECURITY HORN RELAY.** Measure the voltage between the security horn relay harness connector terminal and chassis ground. ***Connector & terminal*** ***(B243) No. 1 (+) — Chassis ground (–):***	Is the measured value more than 10 V?	Go to step **3.**	Check the harness for open circuits and shorts between the security horn relay and horn relay.
3	**CHECK POWER SUPPLY FOR SECURITY HORN RELAY.** Measure the voltage between the security horn relay harness connector terminal and chassis ground. ***Connector & terminal*** ***(B243) No. 2 (+) — Chassis ground (–):***	Is the measured value more than 10 V?	Go to step **4.**	Check the harness for open circuits and shorts between the security horn relay and the fuse.
4	**CHECK HARNESS BETWEEN SECURITY HORN RELAY AND SECURITY CONTROL MODULE.** 1) Disconnect the security control module harness connector. 2) Measure the resistance between the security horn relay harness connector terminal and security control module harness connector terminal. ***Connector & terminal*** ***(B243) No. 3 — (B93) No. 18:***	Is the measured value less than 10 Ω?	Go to step **5.**	Check the harness for open circuits and shorts between the security horn relay and security control module.
5	**CHECK HARNESS BETWEEN SECURITY HORN RELAY AND SECURITY CONTROL MODULE.** Measure the resistance between the security horn relay harness connector terminal and security control module harness connector terminal. ***Connector & terminal*** ***(B243) No. 4 — (B93) No. 16:***	1Is the measured value less than 10 Ω?	Go to step **6.**	Check the harness for open circuits and shorts between the security horn relay and security control module.
6	**CHECK HARNESS BETWEEN SECURITY CONTROL MODULE AND SECURITY HORN.** 1) Disconnect the security horn harness connector. 2) Measure the resistance between the security control module harness connector terminal and security horn harness connector terminal. ***Connector & terminal*** ***(B93) No. 17 — (B204) No. 1:***	Is the measured value less than 10 Ω?	Go to step **7.**	Check the harness for open circuits and shorts between the security control module and security horn.
7	**CHECK SECURITY HORN.** Remove and check the security horn. <Ref. to SL-47, Security Horn.>	Is the security horn OK?	Replace the security control module.	Replace the security horn.

9. CHECK HAZARD LIGHT OPERATION

	Step	Check	Yes	No
1	**CHECK SECURITY CONTROL MODULE OUTPUT SIGNAL.** 1) Remove the key from the ignition switch. 2) Open the driver's window, and then close all doors and rear gate. 3) Lock all doors with the transmitter or door lock switch to arm the security system. 4) Unlock all doors with the door lock switch. 5) Measure the voltage between the security control module harness connector terminal and chassis ground when any door is open. ***Connector & terminal*** ***(B93) No. 10 (+) — Chassis ground (-):***	Is the measured value within 1 to 4 V?	Go to step **2.**	Replace the security control module.
2	**CHECK HARNESS BETWEEN SECURITY CONTROL MODULE AND KEYLESS ENTRY CONTROL MODULE.** 1) Disconnect the security control module harness connector and keyless entry control module harness connector. 2) Measure the resistance between the security control module harness connector terminal and keyless entry control module harness connector terminal. ***Connector & terminal*** ***(B93) No. 10 — (B176) No. 3:***	Is the measured value less than 10 W?	Check the hazard light output of keyless entry control module.<Ref. to SL-21, CHECK HAZARD LIGHT OPERATION, INSPECTION, Keyless Entry System.>	Check the harness for open circuit and shorts between the security control module and keyless entry control module.

10.CHECK INTERRUPT RELAY CIRCUIT

	Step	Check	Yes	No
1	**CHECK INTERRUPT RELAY.** Remove and check the interrupt relay. <Ref. to SL-49, Interrupt Relay.>	Is the interrupt relay OK?	Go to step **2.**	Replace the interrupt relay.
2	**CHECK POWER SUPPLY FOR INTERRUPT RELAY.** Measure the voltage between the interrupt relay harness connector terminal and chassis ground. ***Connector & terminal*** ***(B59) No. 1 (+) — Chassis ground (–):***	Is the measured value more than 10 V when ignition switch is turned to START?	Go to step **3.**	Check the harness for open circuits and shorts between the interrupt relay and ignition switch.
3	**CHECK HARNESS BETWEEN INTERRUPT RELAY AND SECURITY CONTROL MODULE.** 1) Turn the ignition switch to OFF. 2) Disconnect the security control module harness connector. 3) Measure the resistance between the interrupt relay harness connector terminal and security control module harness connector terminal. ***Connector & terminal*** ***(B59) No. 4 — (B93) No. 15:***	Is the measured value less than 10 Ω?	Replace the security control module.	Check the harness for open circuits and shorts between the interrupt relay and security control module.

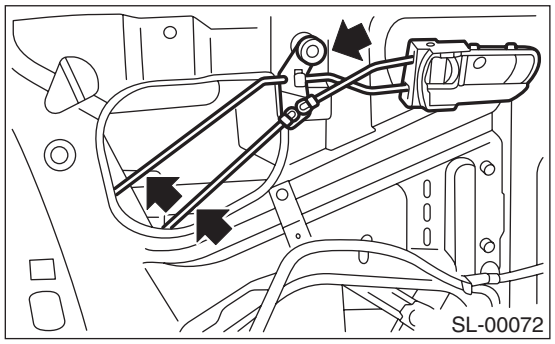
11.CHECK IGNITION SWITCH CIRCUIT

Step		Check	Yes	No
1	**CHECK IGNITION SWITCH SIGNAL.** 1) Disconnect the security control module harness connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B93) No. 2 (+) — Chassis ground (–):***	Is the measured value more than 10 V?	Ignition switch circuit is OK.	Check the harness for open circuits and shorts between the security control module and ignition switch.

5. Front Inner Remote

A: REMOVAL

1) Remove the door trim. <Ref. to EI-32, REMOVAL, Front Door Trim.>
2) Remove the sealing cover. <Ref. to EB-13, REMOVAL, Front Sealing Cover.>
3) Remove the two rod joints.
4) Remove the screw, and detach the front inner remote.



B: INSTALLATION

Install in the reverse order of removal.

NOTE:
Make sure the inner remote works properly after installation.

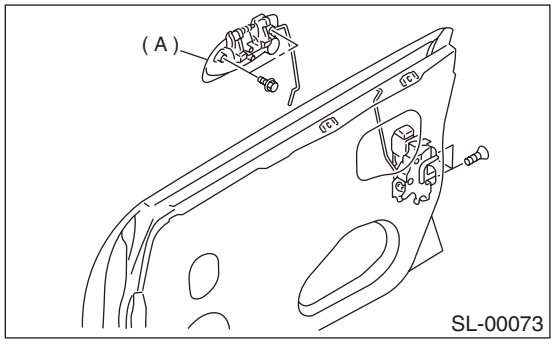
C: INSPECTION

1) Make sure the rod is not deformed.
2) Make sure the lever and rod work smoothly.

6. Front Outer Handle

A: REMOVAL

1) Remove the front door latch assembly. <Ref. to SL-34, REMOVAL, Front Door Latch Assembly.>
2) Remove the two bolts. Remove the front outer handle (A).



CAUTION:
Do not use excessive force to remove the door panel. This will deform it.

B: INSTALLATION

Install in the reverse order of removal.

NOTE:
Make sure the outer handle works properly after installation.

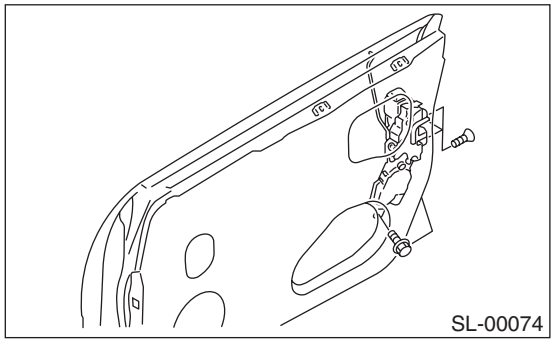
C: INSPECTION

1) Make sure the rod is not deformed.
2) Make sure the lever and rod work smoothly.

7. Front Door Latch Assembly

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove the front door trim. <Ref. to EI-32, REMOVAL, Front Door Trim.>
3) Remove the sealing cover. <Ref. to EB-13, REMOVAL, Front Sealing Cover.>
4) Remove the front inner remote. <Ref. to SL-32, REMOVAL, Front Inner Remote.>
5) Remove the front door glass. <Ref. to GW-11, REMOVAL, Front Door Glass.>
6) Remove three nuts, and detach the front door sash (Rear).
7) Remove the three screws and bolt.



8) Disconnect the connector. Remove the front door latch assembly.

B: INSTALLATION

Install in the reverse order of removal.

NOTE:
Make sure the lock works properly after installation.

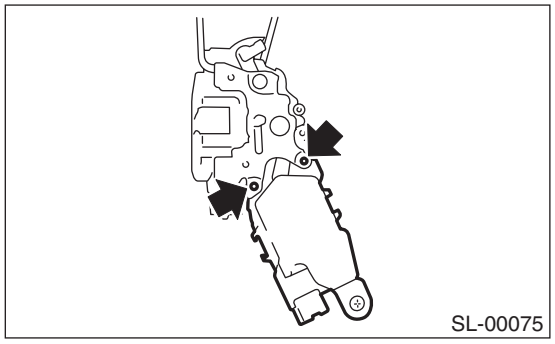
C: INSPECTION

1) Make sure the rod is not deformed.
2) Make sure the lever and rod work smoothly.

8. Front Door Lock Actuator

A: REMOVAL

1) Remove the front door latch assembly. <Ref. to SL-34, REMOVAL, Front Door Latch Assembly.>
2) Remove the bolt. Remove the front door lock actuator.



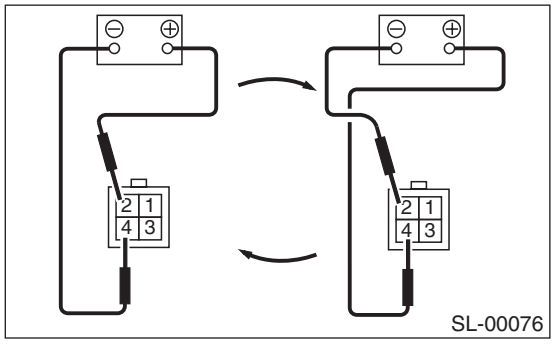
B: INSTALLATION

Install in the reverse order of removal.

NOTE:
Make sure the lock works properly after installation.

C: INSPECTION

1) Disconnect the door lock actuator harness connector.
2) Connect the battery to the door lock actuator terminals.



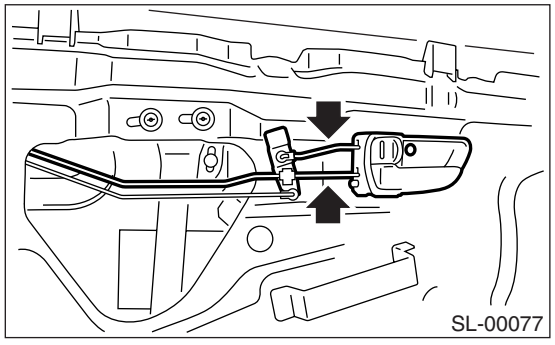
Terminal No.	Actuator operation
No. 2 (+) and No. 4 (–)	Unlocked → Locked
No. 4 (+) and No. 2 (–)	Locked → Unlocked

If NG, replace the door lock actuator.

9. Rear Inner Remote

A: REMOVAL

1) Remove the rear door trim. <Ref. to EI-33, REMOVAL, Rear Door Trim.>
2) Remove the sealing cover. <Ref. to EB-16, REMOVAL, Rear Sealing Cover.>
3) Remove the two rod joints.
4) Remove the screw, and detach the inner remote.



B: INSTALLATION

Install in the reverse order of removal.

NOTE:
Make sure the inner remote works properly after installation.

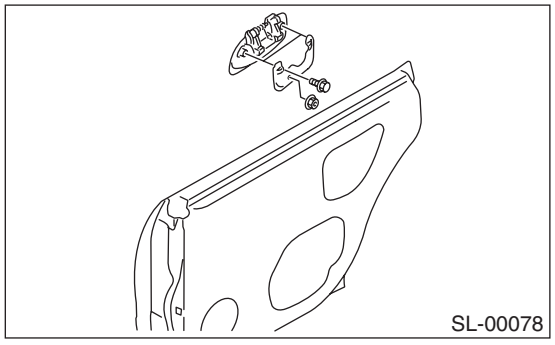
C: INSPECTION

1) Make sure the rod is not deformed.
2) Make sure the lever and rod work smoothly.
3) Make sure the child safety lock on rear doors work properly, when applicable.

10.Rear Outer Handle

A: REMOVAL

1) Remove the rear door trim. <Ref. to EI-33, REMOVAL, Rear Door Trim.>
2) Remove the sealing cover. <Ref. to EB-16, REMOVAL, Rear Sealing Cover.>
3) Remove the rear inner remote. <Ref. to SL-36, REMOVAL, Rear Inner Remote.>
4) Remove the rear door latch assembly. <Ref. to SL-38, REMOVAL, Rear Door Latch Assembly.>
5) Remove the two bolts and nut. Remove the rear outer handle.



CAUTION:
Do not use excessive force to remove the door panel. This will deform it.

B: INSTALLATION

Install in the reverse order of removal.

NOTE:
Make sure the outer handle works properly after installation.

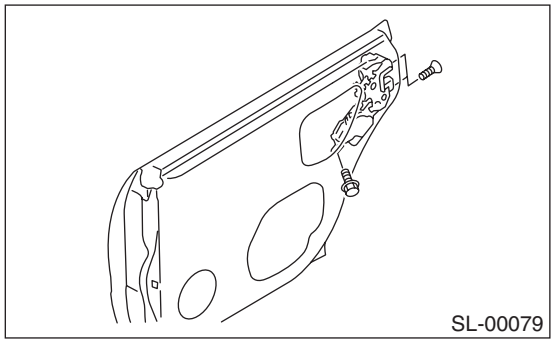
C: INSPECTION

1) Make sure the rod is not deformed.
2) Make sure the lever and rod work smoothly.

11.Rear Door Latch Assembly

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove the rear door trim. <Ref. to EI-33, REMOVAL, Rear Door Trim.>
3) Remove the sealing cover. <Ref. to EB-16, REMOVAL, Rear Sealing Cover.>
4) Remove the rear inner remote. <Ref. to SL-36, REMOVAL, Rear Inner Remote.>
5) Remove the three screws and bolt.



6) Disconnect the connector. Remove the rear door latch assembly.

B: INSTALLATION

Install in the reverse order of removal.

NOTE:
Make sure the lock works properly after installation.

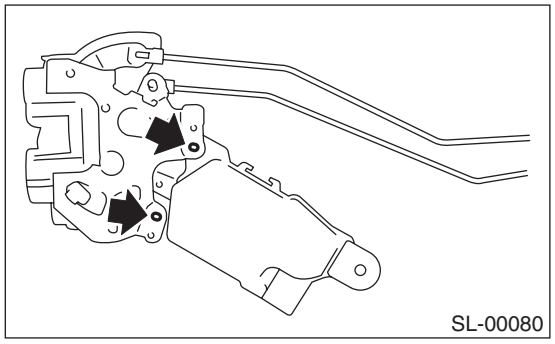
C: INSPECTION

1) Make sure the rod is not deformed.
2) Make sure the lever and rod work smoothly.

12.Rear Door Lock Actuator

A: REMOVAL

1) Remove the rear door latch assembly. <Ref. to SL-38, REMOVAL, Rear Door Latch Assembly.>
2) Remove the bolt. Remove the rear door lock actuator.



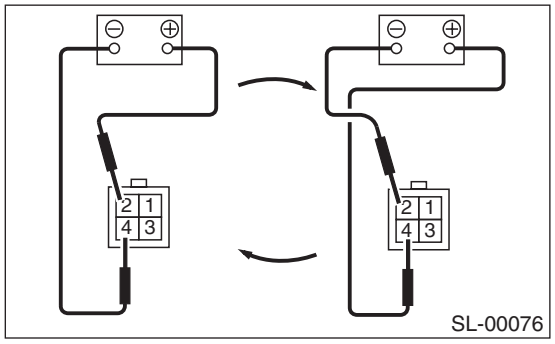
B: INSTALLATION

Install in the reverse order of removal.

NOTE:
Make sure the lock works properly after installation.

C: INSPECTION

1) Disconnect the door lock actuator harness connector.
2) Connect the battery to the door lock actuator terminals.



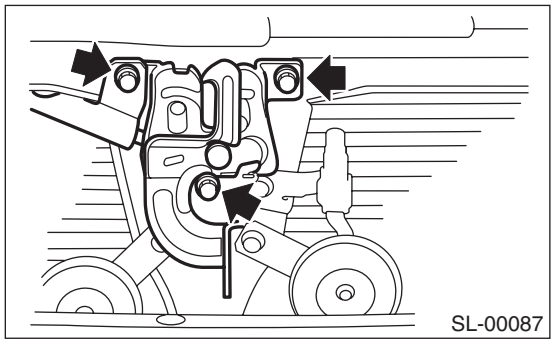
Terminal No.	Actuator operation
No. 2 (+) and No. 4 (–)	Unlocked → Locked
No. 4 (+) and No. 2 (–)	Locked → Unlocked

If NG, replace the door lock actuator.

13.Front Hood Lock Assembly

A: REMOVAL

1) Open the hood.
2) Remove the bolt. Remove the hood lock assembly.
3) Remove the release cable from the lock assembly.



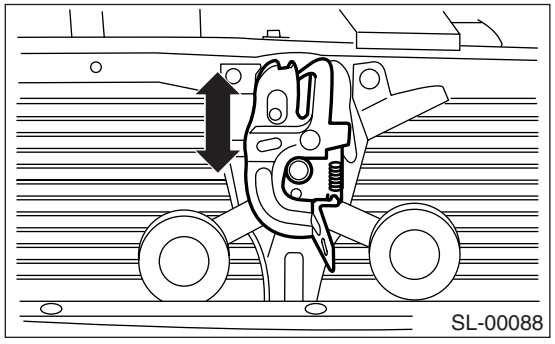
B: INSTALLATION

Install in the reverse order of removal.

NOTE:
- Apply grease to parts that rub.
- Make sure the release cable works properly after installation.

C: ADJUSTMENT

Loosen the bolt. Adjust the lock assembly while moving it up and down.



D: INSPECTION

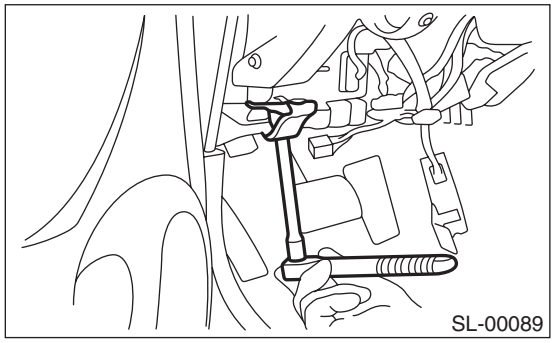
1) Check the striker for bending or abnormal wear.
2) Check the safety lever for improper movement.
3) Check other levers and the spring for rust formation and unsmooth movement.

14.Remote Openers

A: REMOVAL

1. HOOD OPENER

1) Remove the release cable from the hood lock.
2) Remove the bolt. Remove the opener lever.



B: INSTALLATION

1. HOOD OPENER

Install in the reverse order of removal.

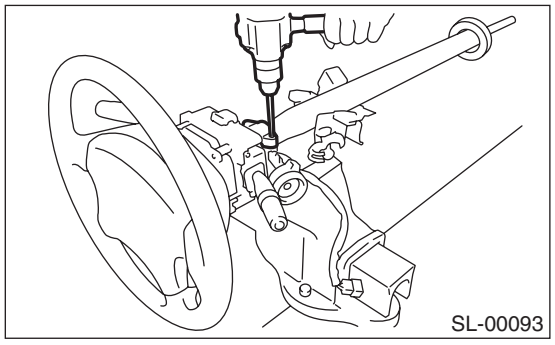
C: INSPECTION

Make sure the hood opens and closes smoothly.

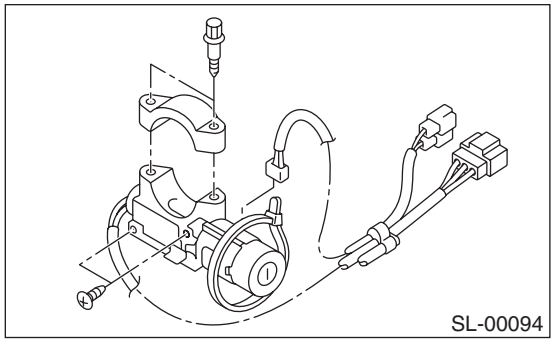
15.Ignition Key Lock

A: REPLACEMENT

1) Disconnect ground cable from battery.
2) Remove the steering column. <Ref. to PS-20, 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 a new torn bolt. Tighten the torn bolt to the end of the thread.



B: INSPECTION

1) Remove the instrument panel lower cover.
2) Remove the lower column cover.
3) Unfasten the hold-down clip which secures the harness and disconnect the connector of the ignition switch from the body harness.
4) Turn the ignition key plate to each position and check the continuity between the terminals of the ignition connector.

Switch position	Terminal No.	Standard
LOCK	—	—
ACC	No. 1 and No. 2	Less than 1 Ω
ON	No. 1 and No. 2 No. 1 and No. 4 No. 2 and No. 4	Less than 1 Ω
ST	No. 1 and No. 3 No. 1 and No. 4 No. 3 and No. 4	Less than 1 Ω

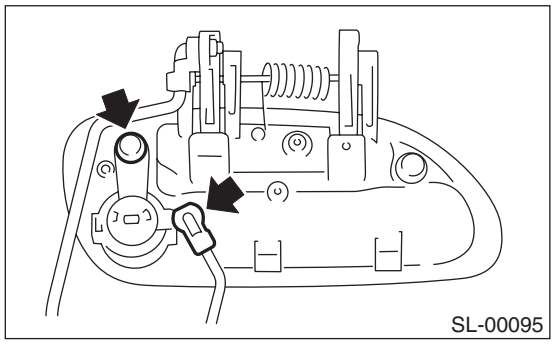
If continuity dose not exist, replace the ignition switch.

16.Key Lock Cylinders

A: REPLACEMENT

1. FRONT DOOR

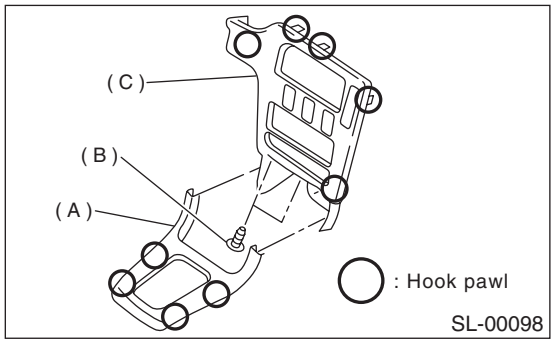
1) Remove the front outer handle. <Ref. to SL-33, REMOVAL, Front Outer Handle.>
2) Remove the rod clamp. Replace the key cylinder.



17.Security Control Module

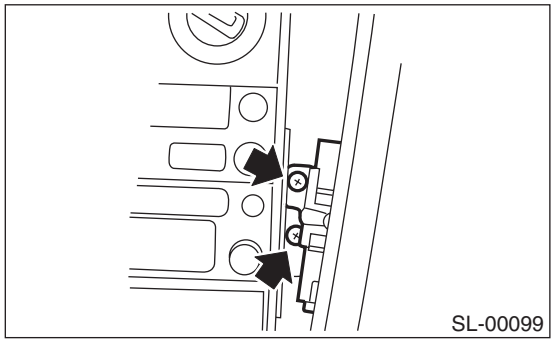
A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove front cover (A).
3) Remove screws (B) and then detach center panel (C) while disconnecting connector.



4) Remove two screws.

NOTE:
Before removing the screw, apply a few turns of butyl tape to the tip of the service tool. This prevents the screw from falling during removal.



5) Remove radio and security control module together while disconnecting connector. <Ref. to ET-5, REMOVAL, Radio.>

B: INSTALLATION

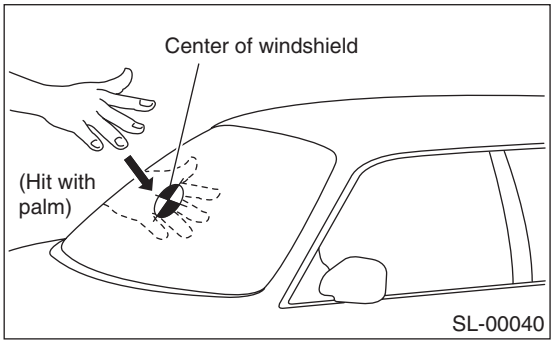
Install in the reverse order of removal.

NOTE:
To install the security control module, tighten the bolts securely so that the bolts do not come loose.

C: INSPECTION

1. IMPACT SENSITIVITY TEST

1) Remove the key from the ignition switch.
2) Close all windows.
3) Close all doors and the rear gate.
4) Cover the hood with a blanket.
5) Press the LOCK/ARM button of the transmitter.
6) Confirm that the security indicator light blinks every 2 seconds.
7) Hit the center of the windshield with your palm and make sure the alarm operates.



If NG, adjust the impact sensitivity. <Ref. to SL-44, ADJUSTMENT, Security Control Module.>

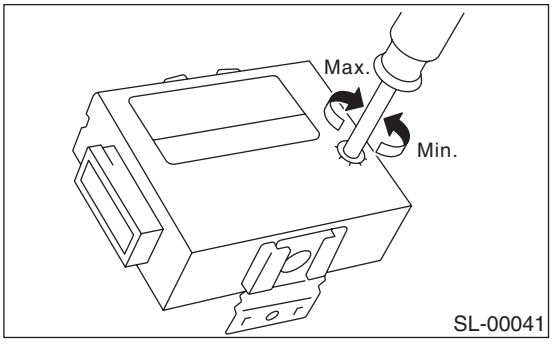
D: ADJUSTMENT

1. IMPACT SENSITIVITY

NOTE:
Before adjustment, make sure the security control module has been securely installed on the bracket.

1) Remove the security control module. <Ref. to SL-44, REMOVAL, Security Control Module.>
2) Adjust the sensitivity adjust screw in the security control module.

NOTE:
After adjusting, be sure to plug the adjust screw hole.



3) Install the security control module.
4) Perform the impact sensitivity test.

E: PROCEDURE

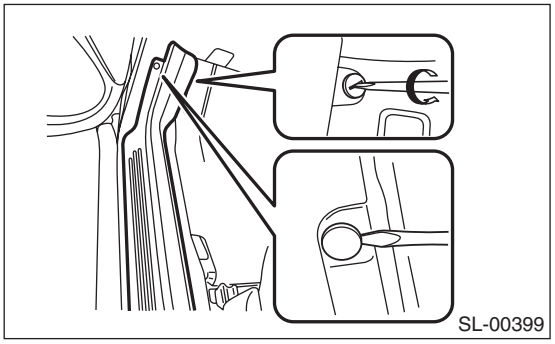
1. PASSIVE ARMING (ENTER THE PASSIVE MODE)

NOTE:
When passive mode has been programmed, arming of the system is automatically accomplished without using the remote transmitter.
Note that in this mode, DOORS MUST BE LOCKED.

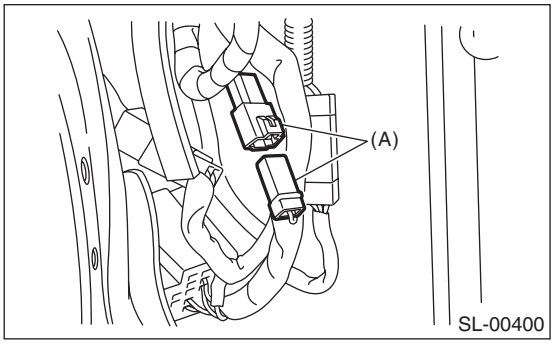
• To enter the passive mode

1) Open the driver's door.

2) Remove the two clips fastening the front portion of the side sill cover with a screwdriver.


SL-00399

3) Remove the side sill cover by pulling it up.
4) Connect the connector (A).



SL-00400

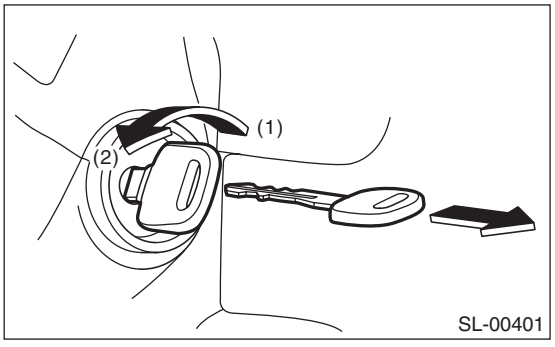
CAUTION:
Use extra care to the airbag system harnesses when setting the passive mode. Disconnection of connector could result in accidental inflation of airbag system.

NOTE:
To place the system in active mode, disconnect the connector (A).

5) Turn the ignition switch from LOCK to ON.
6) Install the side sill cover.

• Arming the system

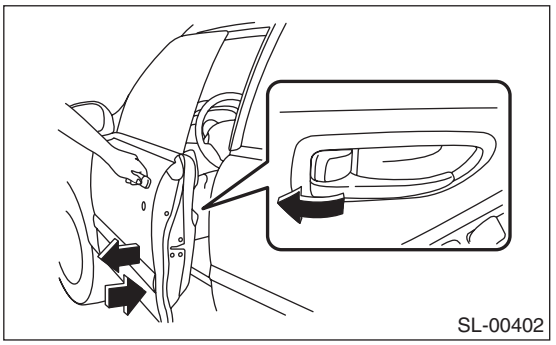
1) Turn the ignition switch to ON.
2) Turn the ignition switch from ON to LOCK, and remove the key from ignition switch.



SL-00401

(1) ON
(2) LOCK

3) Open the door, and get out of the vehicle.
4) Before closing the doors, lock all doors with the inside door lock levers.


SL-00402

5) Close the doors. The system will automatically arm after one minute.

NOTE:
In the passive mode, the system can also be armed with the remote transmitter or with the power door locking switches. If the remote transmitter or power door lock switch is used to lock the vehicle, arming will take place immediately regardless of whether or not the passive mode has been selected.

CAUTION:
In passive mode, the system will automatically activate the alarm but WILL NOT automatically lock the doors. In order to lock the doors, you must either lock them as indicated in step 4) above or with the key once they have been closed. Failure to lock the doors manually will result in a higher security risk.

• Disarming the system

To disarm the system, briefly press the UNLOCK/DISARM button on keyless transmitter.

• Tripped sensor identification

If an electronic chirp sounds four times and the turn signal lights blink four times when you disarm the system, this indicates that the alarm was triggered. The number of times the indicator light blinks indicates what sensor caused the alarm condition.

2. ENTER IDENTIFICATION MODE

1) Open the driver's door and leave it open.

NOTE:
Check if the battery cable is connected.

2) Turn the ignition switch from ON to LOCK two times. (LOCK → ON → LOCK → ON → LOCK)
3) The indicator light will start blinking.

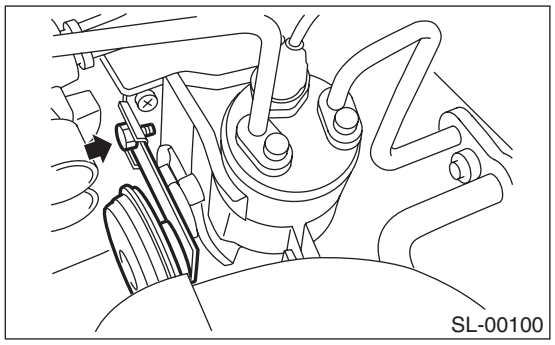
Number of times blinked	Vehicle state
1 time	Any door, rear gate or trunk lid has been opened.
3 times	The impact sensor in the system's unit has been activated. This may indicate that your vehicle has been shocked or tampered with by some outside force and/or unauthorized person.
4 times	The ignition switch has been turned ON, or the battery has been disconnected.

4) Close the door and turn the ignition switch to ON in order to disarm the indentification mode.

18.Security Horn

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the nuts and then detach the security horn while disconnecting the connector.

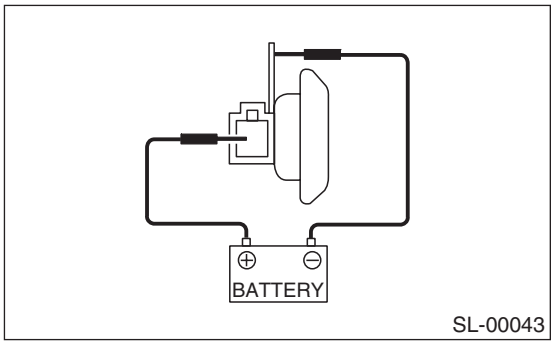


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Connect the battery to the security horn terminal and case ground and make sure the horn sounds properly.

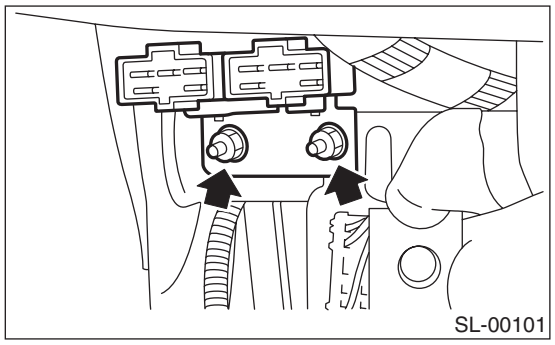


If NG, replace the security horn.

19.Security Horn Relay

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the mounting bolt and detach the security horn relay (near the fuse box).



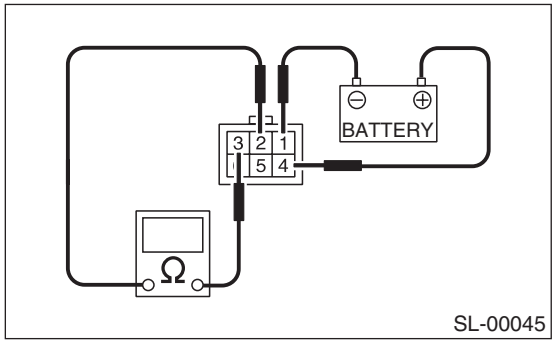
B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the security horn relay resistance between terminals (indicated in the table below) when connecting terminal No. 1 to battery positive terminal and terminal No. 4 to battery ground terminal.

Current	Terminal No.	Standard
Flow	2 — 3	Less than 1 Ω
No flow		More than 1 MΩ

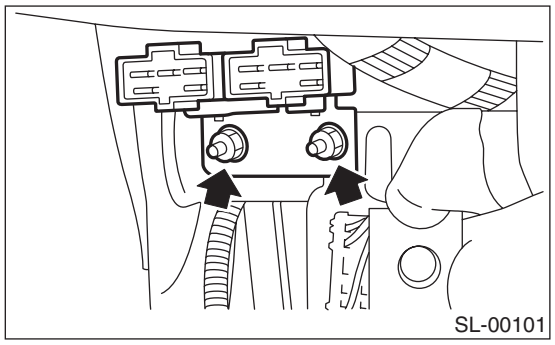


If the measured value is out of specifications indicated in table, replace security horn relay.
If NG, replace door lock actuator.

20.Interrupt Relay

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the mounting nuts and detach the interrupt relay (near the fuse box).



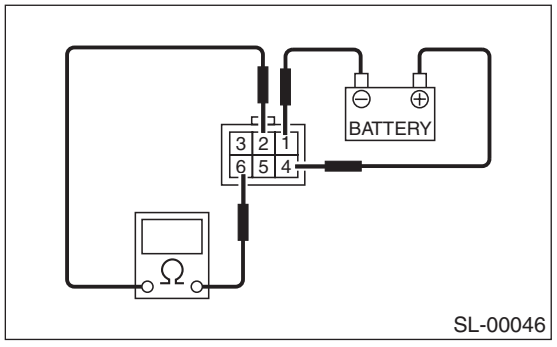
B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the interrupt relay resistance between terminals (indicated in the table below) when connecting terminal No. 1 to battery positive terminal and terminal No. 4 to battery ground terminal.

Current	Terminal No.	Standard
Flow	2 — 6	More than 1 MΩ
No flow		Less than 1 Ω

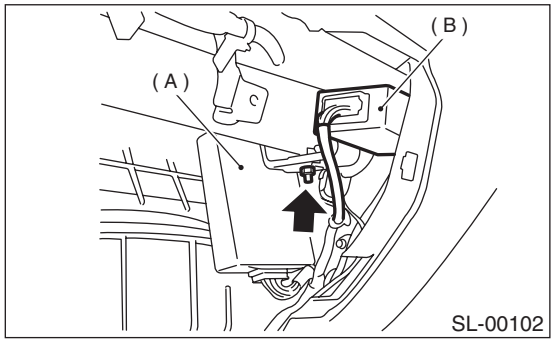


If the measured value is out of specifications indicated in table, replace security horn relay.

21.Keyless Entry Control Module

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove glove box. <Ref. to EI-34, REMOVAL, Glove Box.>
3) Remove nut, then remove keyless entry control module (B) and the other electrical control module (A) while disconnecting connector.



4) Disconnect keyless entry control module and the other control module.

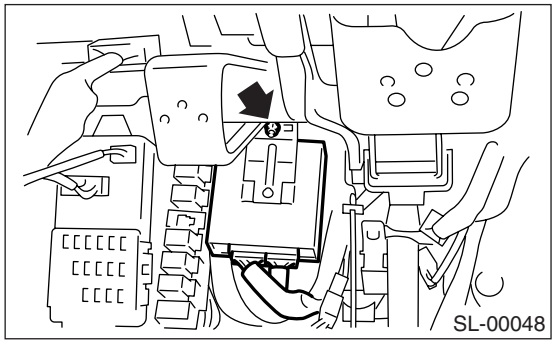
B: INSTALLATION

Install in the reverse order of removal.

22.Integrated Module

A: REMOVAL

1) Disconnect the ground cable from battery.
2) Remove the instrument panel lower cover. <Ref. to EI-37, REMOVAL, Instrument Panel Assembly.>
3) Remove the nut, then remove the integrated module while disconnecting the connector.



B: INSTALLATION

Install in the reverse order of removal.

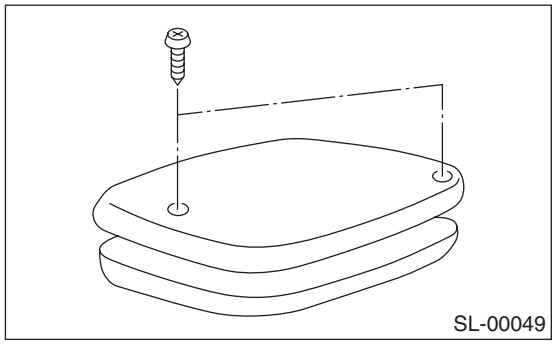
23.Keyless Transmitter

A: REMOVAL

1. TRANSMITTER BATTERY

Remove the battery from transmitter.

NOTE:
To prevent static electricity damage to transmitter printed circuit board, touch the steel area of building with hand to discharge the static electricity carried on body or clothes before disassembling transmitter.



B: INSTALLATION

1. TRANSMITTER BATTERY

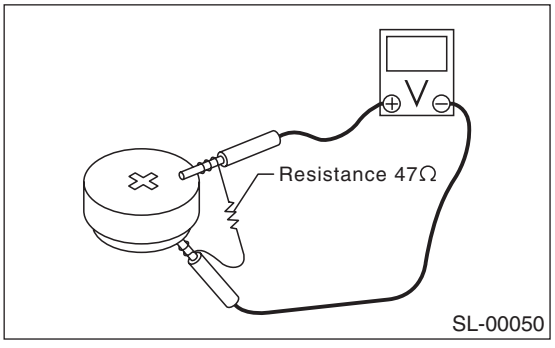
Install in the reverse order of removal.

C: INSPECTION

1. TRANSMITTER BATTERY

Measure the voltage between battery (+) terminal and (–) terminal.

NOTE:
• Battery discharge occurs during measurement. Complete the measurement within 5 seconds.



Tester connection		Standard
(+)	(–)	
Battery (+) terminal	Battery (–) terminal	2.5 — 3.0 V

If NG, replace the battery. (Use CR1620 or equivalent.)

D: REPLACEMENT

1. TRANSMITTER REGISTRATION

NOTE:
• A maximum of four transmitters can be registered for each individual vehicle.
• When replacing or adding the transmitter (key), registration is also necessary.
• Finish the operation from step 1) through 4) within 45 seconds.

1) Sit on the driver's seat and close all doors and rear gate.
2) Open the driver's door.
3) Close the driver's door.
4) Turn the ignition switch from ON to LOCK ten times within 15 seconds.

NOTE:
Do not start the engine at this time.

5) The horn chirps one time to indicate that the system has entered in the programming mode.
6) Open the driver's door.
7) Close the driver's door.
8) Press any button on the transmitter that you wish to program into the system.
9) Horn will chirp two times to indicate that the transmitter has been programmed.

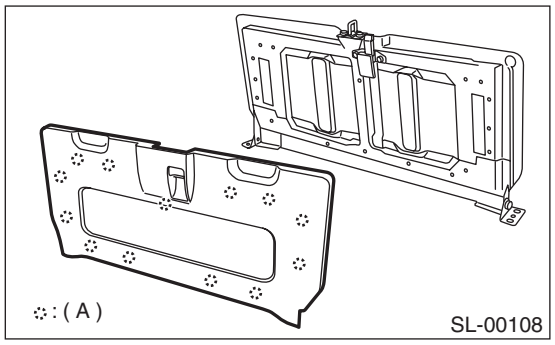
NOTE:
Repeat steps 6) through 9) for an additional transmitter.

10) Remove the ignition key from the ignition switch.
11) The horn will chirp three times to indicate that the system has exited the programming mode.
12) Check the keyless entry system properly operates by operating each transmitter.

24.Switch Back Gate Handle

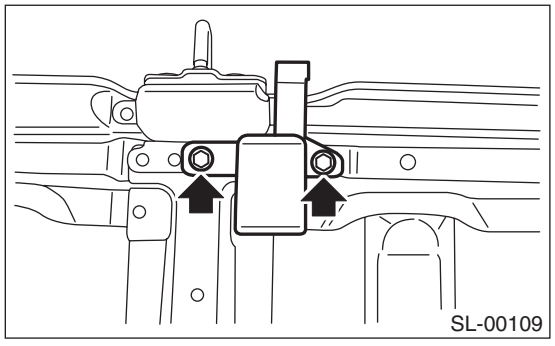
A: REMOVAL

1) Remove switch back gate. <Ref. to EB-18, REMOVAL, Switch Back Gate.>
2) Remove switch back gate inner cover.



(A) Clip

3) Remove bolts and detach switch back gate handle.



B: INSTALLATION

Install in the reverse order of removal.

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

NOTE:
After installing, make sure that switch back gate operates smoothly.

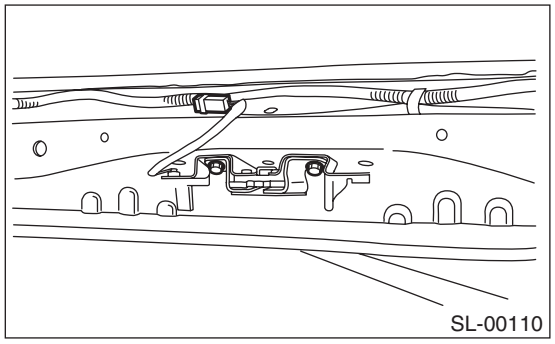
C: INSPECTION

Make sure that lever operates smoothly.

25.Switch Back Gate Latch

A: REMOVAL

1) Remove rear bulk head trim. <Ref. to EI-54, REMOVAL, Rear Bulkhead Trim.>
2) Remove connector. Remove bolts and switch back gate latch.



B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
27.5 N·m (2.80 kgf-m, 20.3 ft-lb)

NOTE:
After installing, make sure that lock operates smoothly.

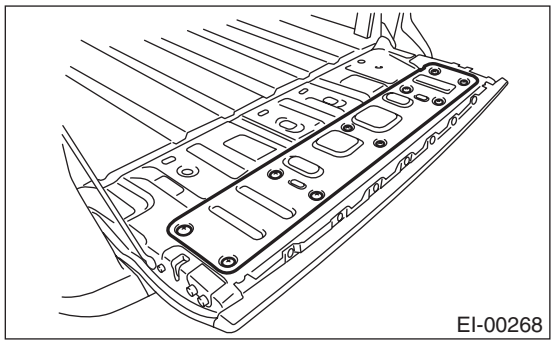
C: INSPECTION

Make sure that lever works smoothly.

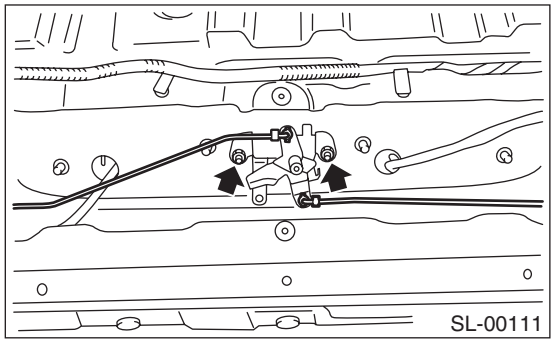
26.Tail Gate Outer Handle

A: REMOVAL

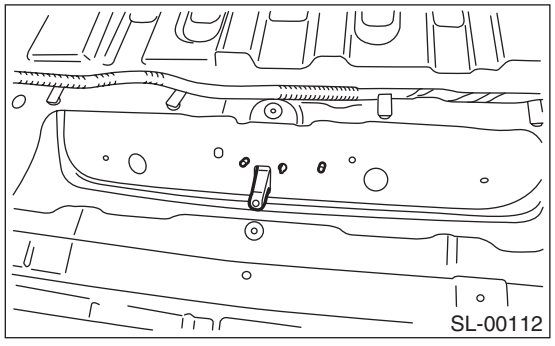
1) Remove tail gate tray. <Ref. to EI-56, REMOVAL, Tail Gate Tray.>
2) Remove tail gate cover.



3) Remove rod clamp. Remove nuts and detach lock handle.



4) Remove tail gate outer handle.



B: INSTALLATION

Install in the reverse order of removal.

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

NOTE:
After installing, make sure that outer handle works properly.

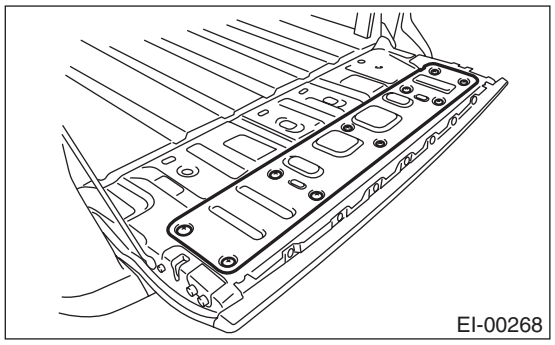
C: INSPECTION

1) Make sure the rod is not deformed.
2) Make sure the lever and rod work smoothly.

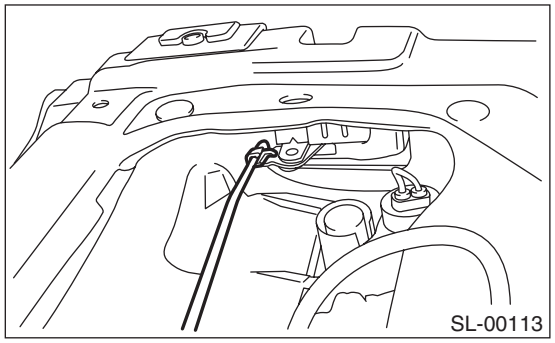
27.Tail Gate Latch Assembly

A: REMOVAL

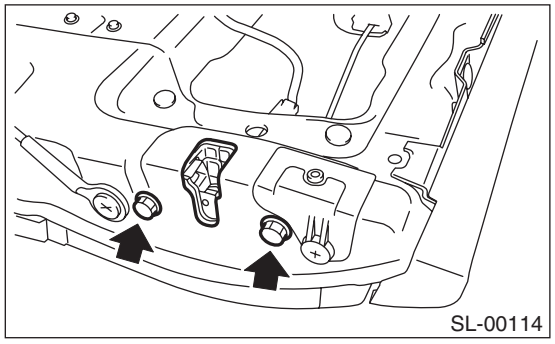
1) Remove tail gate tray. <Ref. to EI-56, REMOVAL, Tail Gate Tray.>
2) Remove tail gate cover.



3) Remove rod clamp.



4) Remove bolts and tail gate latch.



B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
25 N·m (2.5 kgf-m, 18.1 ft-lb)

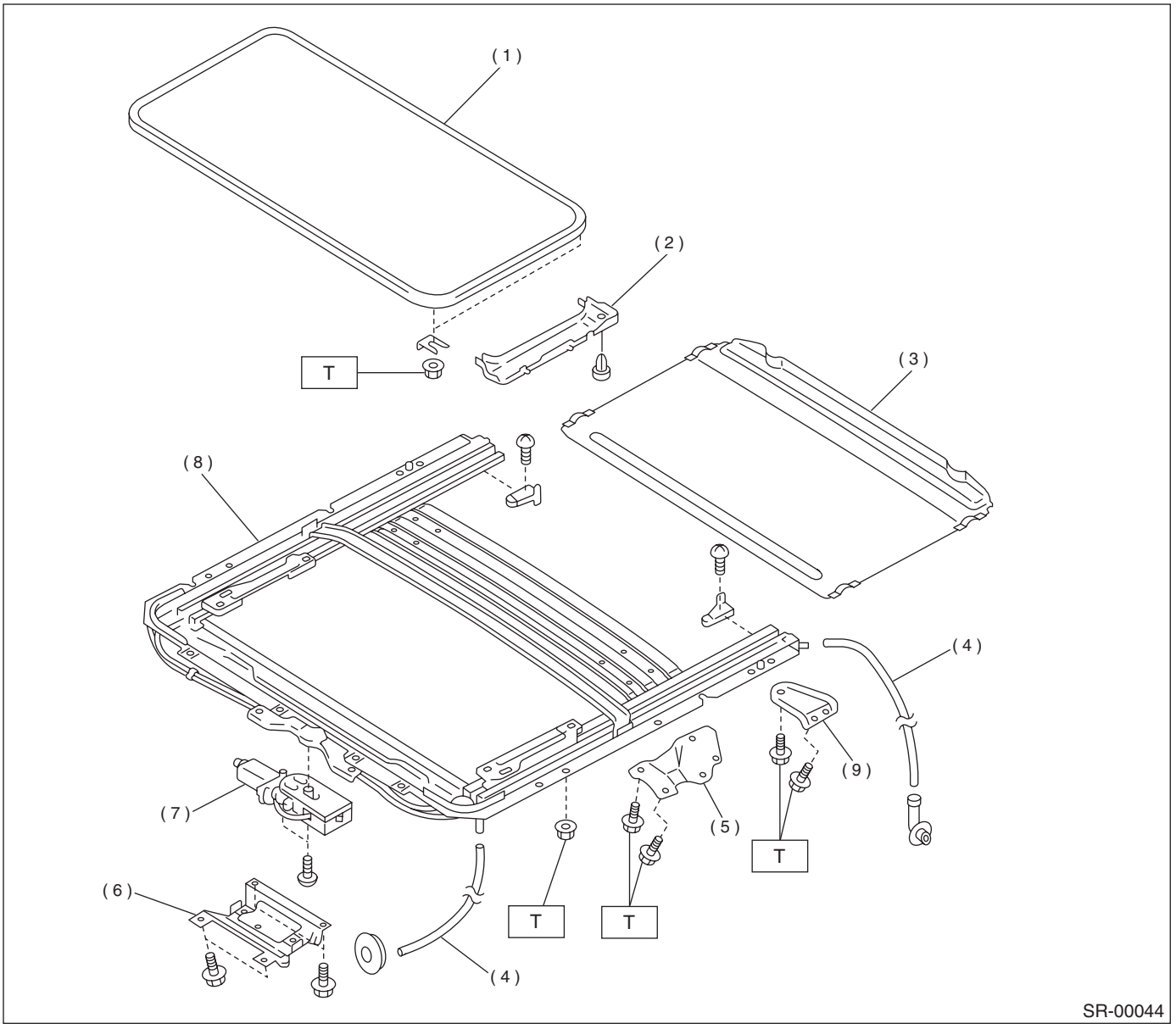
NOTE:
After installing, make sure the lock operates properly.

C: INSPECTION

1) Make sure the rod is not deformed.
2) Make sure the lever and rod work smoothly.

1. General Description

A: COMPONENT



(1) Glass lid
(2) Guide rail cover
(3) Sunshade
(4) Drain tube
(5) Sunroof bracket (Front)
(6) Motor cover
(7) Motor ASSY
(8) Frame ASSY
(9) Sunroof bracket (Rear)

Tightening torque: N·m (kgf-m, ft-lb)
T: 7.4 (0.75, 5.4)

B: CAUTION

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

C: PREPARATION TOOL

1. GENERAL TOOLS

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

2. Sunroof Control System

A: SCHEMATIC

1. SUNROOF

<Ref. to WI-166, SCHEMATIC, Sunroof System.>

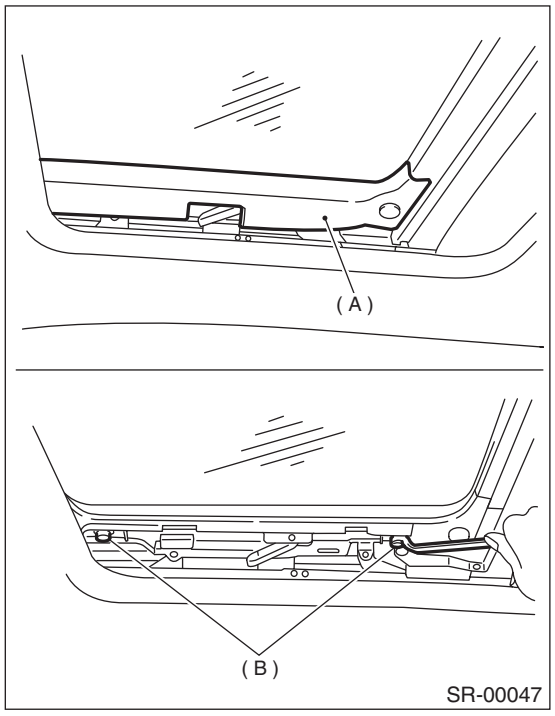
B: INSPECTION

Symptom	Checking order
Water leaks.	(1) Check roof panel and sunroof lid for improper or poor sealing. (2) Check drain tube for clogging on bend. (3) Check sunroof frame seal and body for improper fit.
Booming noise	(1) Check sunroof lid and roof panel for improper clearance. (2) Check sunshade and roof trim for improper clearance.
Abnormal motor noise	(1) Check motor for looseness. (2) Check gears and bearings for wear. (3) Check cables 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. (6) Check clutch adjustment nut for improper tightness.
Motor does not rotate or rotates improperly.	(1) Check fuse for blow-out. (2) Check switch for improper function. (3) Check motor for incorrect terminal voltage. (4) Check relay for improper operation. (5) Check poor grounding system. (6) Check harness for open or short and terminals for poor connections. (7) Check limit switch for improper operation.

3. Sunroof Lid

A: REMOVAL

1) Completely close rear sunroof lid and open sunshade.
2) Remove covers (A) then remove nuts (B).



3) Remove the sunroof lid carefully.

B: INSTALLATION

Install in the reverse order of removal.

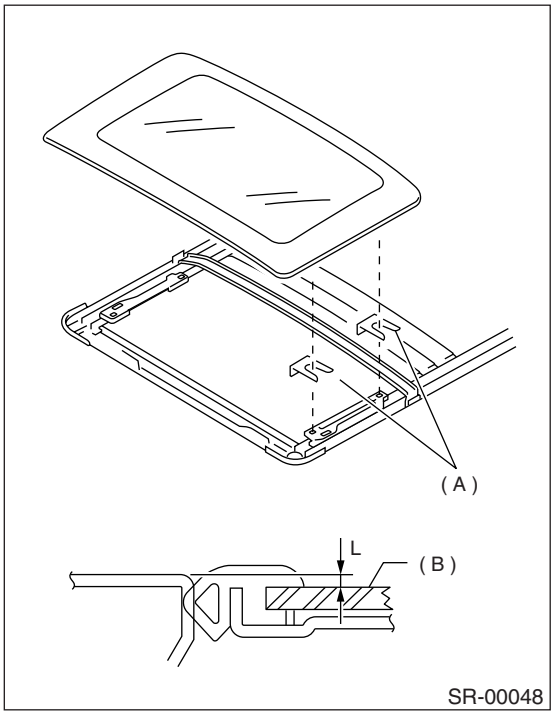
C: ADJUSTMENT

1. ALIGNMENT OF HEIGHT BETWEEN SUNROOF LID AND ROOF PANEL

Loosen sunroof lid mounting nut. Adjust height between sunroof lid and lid bracket by number of shims being inserted into the space.
Number of shims:
Standard : 1 piece
Max. : 3 pieces [1 piece (standard) + 2 pieces (addition)]
Min. : zero piece

Difference in height between sunroof lid and roof panel: L

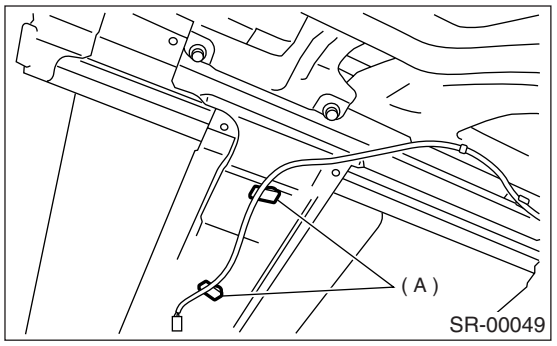
L: 2.0±0.5 mm (0.079±0.020 in)



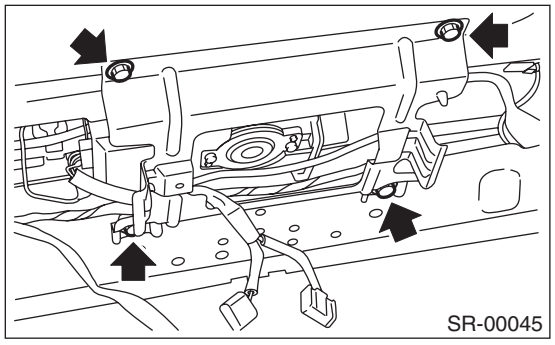
4. Sunroof Assembly

A: REMOVAL

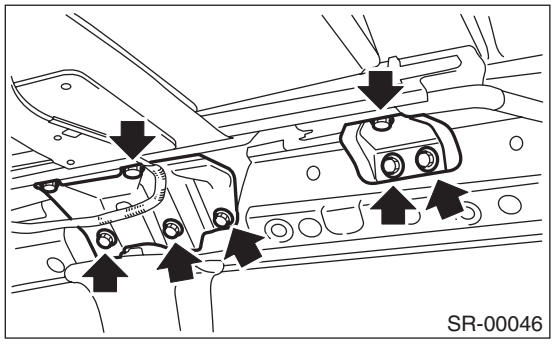
1) Disconnect ground cable from battery.
2) Remove roof trim. <Ref. to EI-44, REMOVAL, Roof Trim.>
3) Remove sunroof lid. <Ref. to SR-5, REMOVAL, Sunroof Lid.>
4) Disconnect drain tube from sunroof frame.
5) Remove room lamp harness clip (A).



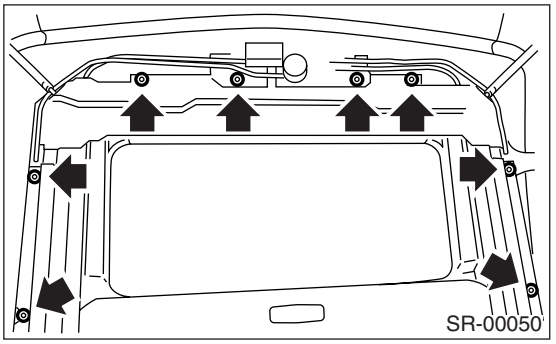
6) Disconnect sunroof harness connector.
7) Remove motor cover.



8) Remove sunroof brackets.



9) Remove nuts then detach the sunroof frame.



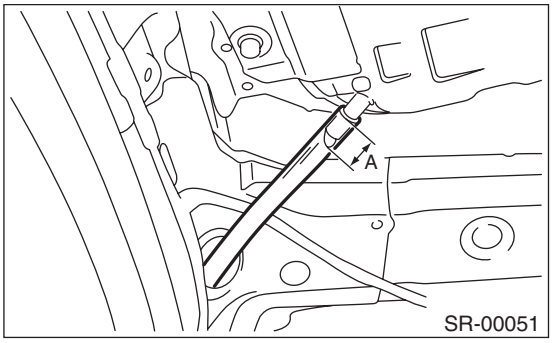
B: INSTALLATION

Install in the reverse order of removal.

CAUTION:
Be careful not to snag the harness.

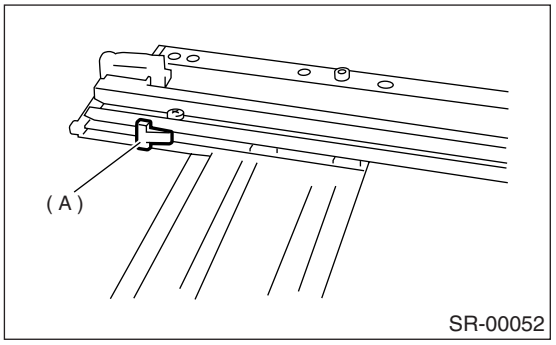
NOTE:
- Make sure to connect harness connector.
- When installing drain tube, insert it securely onto drain pipe.

Length A:
15 mm (0.59 in) or more

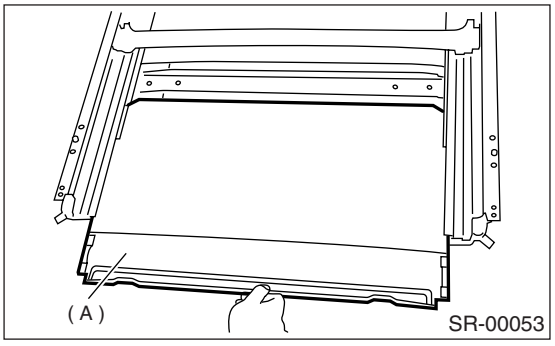


C: DISASSEMBLY

1) Remove sunroof frame.
2) Remove rail stoppers (A).



3) Pull out the sunshade (A) from sunroof frame.



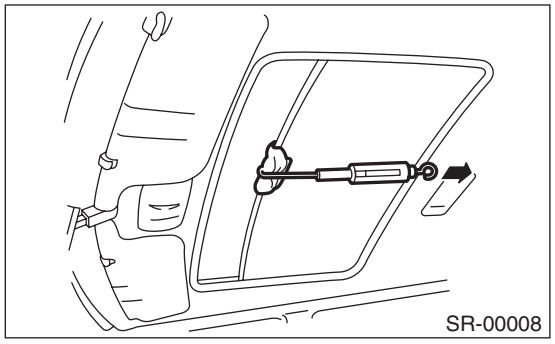
D: ASSEMBLY

Assemble in the reverse order of disassembly.

E: INSPECTION

1. CHECK FOR MOVEMENT OF SUN-SHADE

1) Place a cloth on sunshade edge, and attach a spring scale.



2) Pull spring scale backward, and measure the load to move the sunshade.

Load to move rear sunshade:
Less than 24.5±4.9 N (2.5±0.5 kgf, 5.5±1.1 lb)

NOTE:
Considerable load is required to start pulling spring scale, so take a scale reading when it moves smoothly.

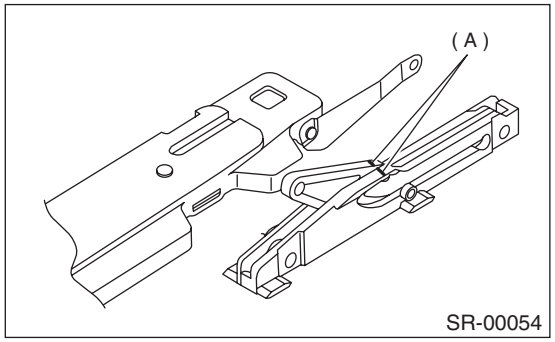
3) If the measured value is more than the specified value, check sunroof lid, sunshade and guide rail assembly for improper installation.

5. Sunroof Motor

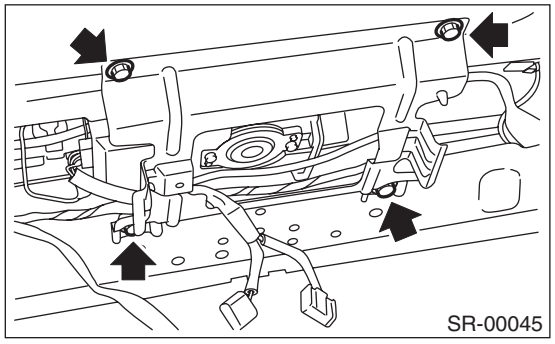
A: REMOVAL

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

1) Completely close the sunroof.
2) Disconnect ground cable from batteryf.
3) Remove sunroof lid. <Ref. to SR-5, REMOVAL, Sunroof Lid.>
4) Confirm the matching mark (A) of rear sunroof bracket link and the guide from sunroof opening. (If the mark does not match, adjust to match the mark.)



5) Remove roof trim. <Ref. to EI-44, REMOVAL, Roof Trim.>
6) Remove motor cover.

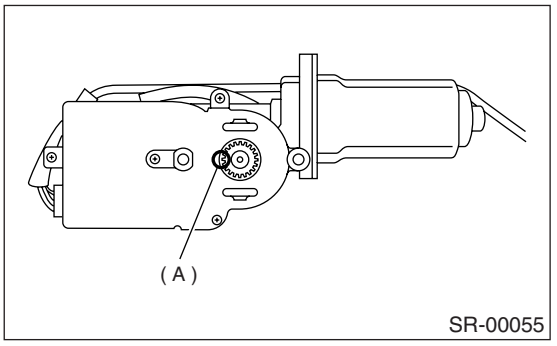


7) Disconnect harness connector and remove sunroof motor mounting screw.

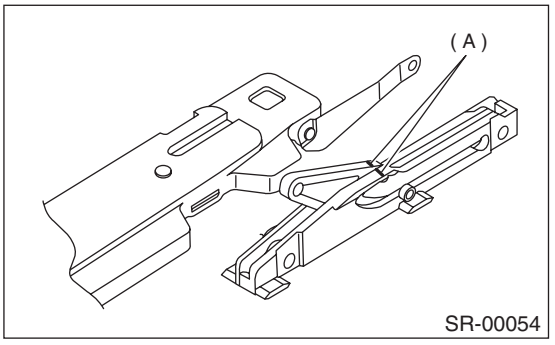
B: INSTALLATION

CAUTION:
• Never rotate the sunroof motor while removed.
• Be careful not to move the sunroof cable when installing sunroof motor.

1) Check the matching mark (A) of sunroof motor.



2) Confirm the matching mark (A) of sunroof bracket link.



3) Install sunroof motor.
4) After installing the motor, reconfirm the matching marks of motor side and sunroof bracket link side.
5) Connect sunroof motor harness connector and then connect battery ground cable.

6) Check the sunroof operation in order as shown in the table.

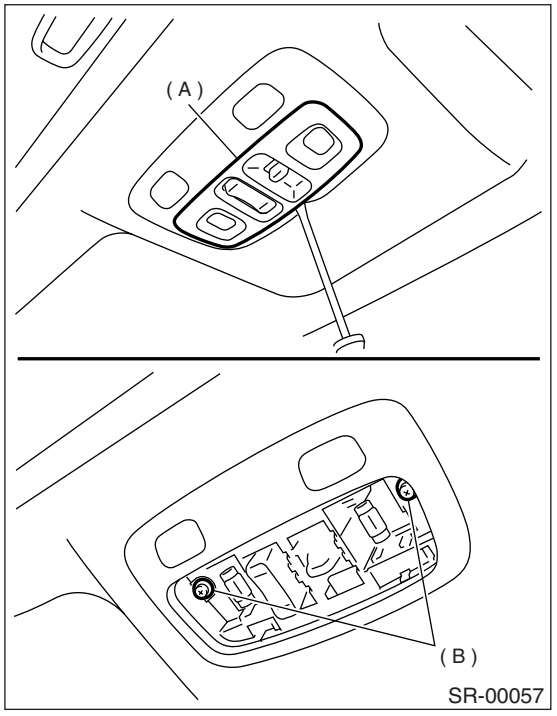
Operation	Switch position
Completely close sunroof.	Closed
Tilt-up sunroof to most upper position.	Tilt up
Completely lower sunroof.	Tilt down
Open sunroof to near the completely open position.	Open
Completely open sunroof.	Open
Close sunroof 150 mm (5.91 in) away from completely closed position.	Closed
Completely close sunroof.	Closed

7) Install sunroof lid and trim in the reverse order of removal.

6. Sunroof Switch

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove spot light lens (A) and sunroof switch mounting screw (B).



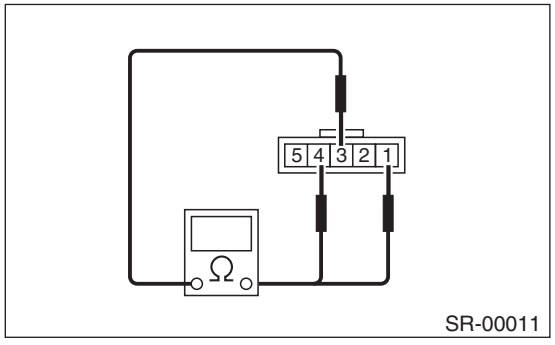
3) Disconnect harness connectors and remove sunroof switch.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure sunroof switch resistance.



Switch position	Terminal No.	Specified condition
Open	3 and 4	Less than 1 Ω
Close	1 and 3	Less than 1 Ω
Tilt up	3 and 4	Less than 1 Ω
Tilt down	1 and 3	Less than 1 Ω

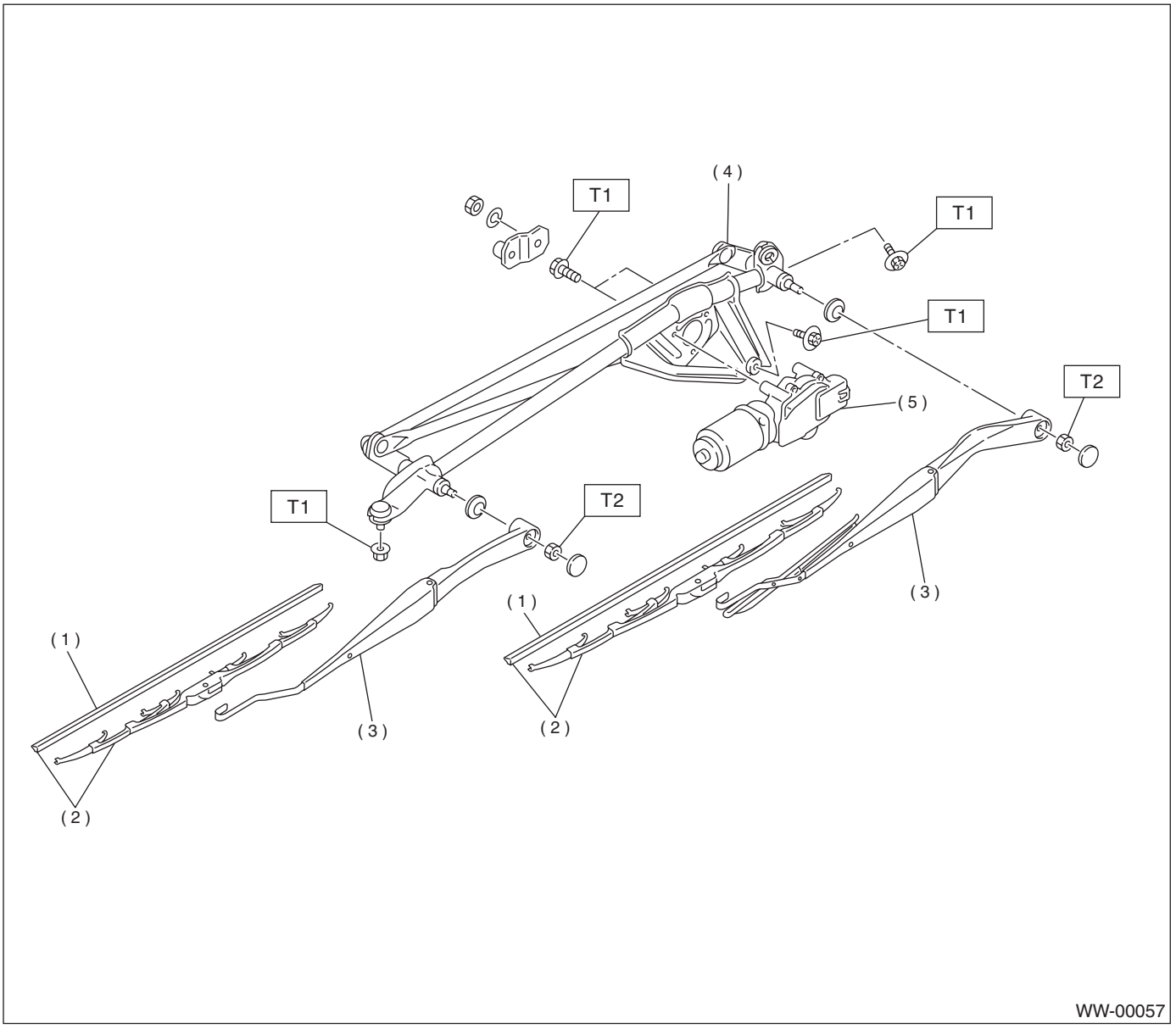
1. General Description

A: SPECIFICATIONS

Front wiper motor	Input	12 V — 72 W or less
Front washer motor	Pump type	Centrifugal
	Input	12 V — 36 W or less

B: COMPONENT

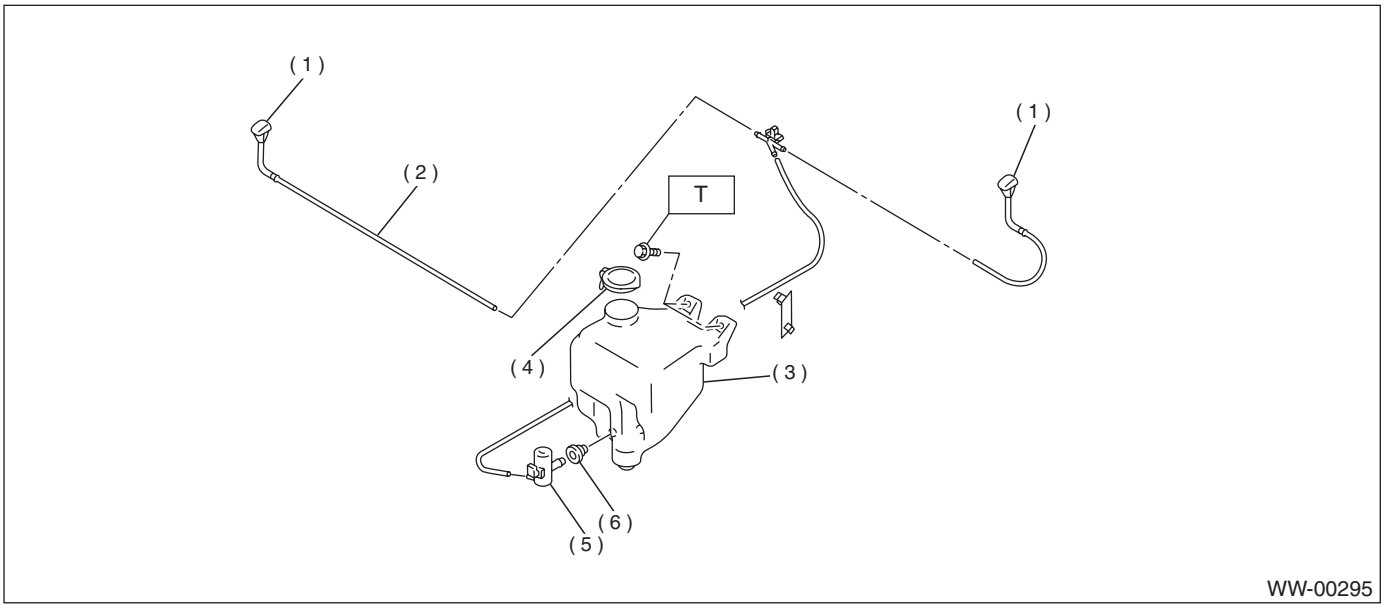
1. FRONT WIPER



(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: 20 (2.0, 14.5)

2. WASHER TANK



(1) Washer nozzle
(2) Washer hose
(3) Washer tank
(4) Washer tank cap
(5) Front washer motor
(6) Grommet

Tightening torque: N·m (kgf-m, ft-lb)
T: 6.0 (0.6, 4.3)

C: CAUTION

- Reconnect connectors and hoses securely.

After reconnecting, confirm that each function operates normally.

- Be careful that wire harnesses of airbag system pass near electrical parts and switches.
- Wire harnesses and connectors of all airbag system are yellow color. Do not use a tester on these circuits.
- Care must be taken when installing the piping hose so that no bending, jamming, etc. are caused.
- If even a little oil or grease such as silicon oil gets in the tank and washer passages, an oil film easily forms on the glass, causing the wiper to chatter and judder. Therefore, be careful not to let this happen.

2. Wiper and Washer System

A: SCHEMATIC

<Ref. to WI-168, Wiper and Washer System (Front).>

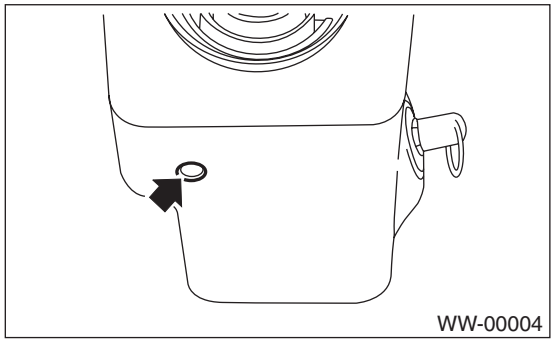
B: INSPECTION

Symptom	Repair order
Wiper and washers do not operate.	(1) Wiper fuse (F/B No. 14, 15) (2) Combination switch (3) Wiper motor (4) Wiring harness
Wipers do not operate in LO or HI.	(1) Combination switch (2) Wiper motor (3) Wiring harness
Wipers do not operate in INT.	(1) Combination switch (2) Wiper motor (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) Washer motor (2) Wiring harness
Washer fluid spray does not spurt normally.	(1) Washer motor (2) Washer hose and nozzle

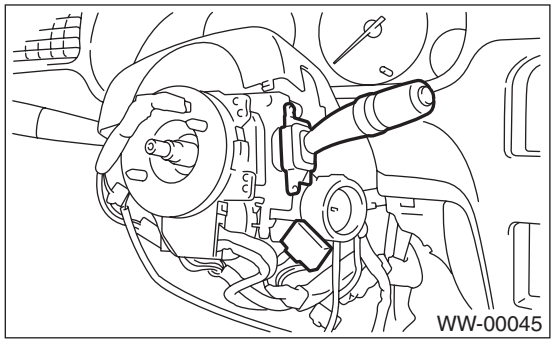
3. Combination Switch (Wiper)

A: REMOVAL

1) Remove screw to remove a steering column cover.



2) Disconnect harness connectors from combination switches.
3) Remove screw to remove combination switch.

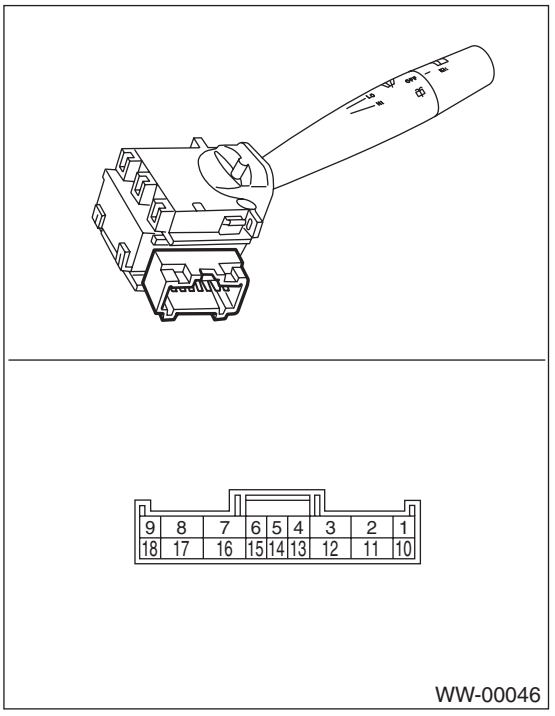


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

• Inspect the continuity between each connector terminal.

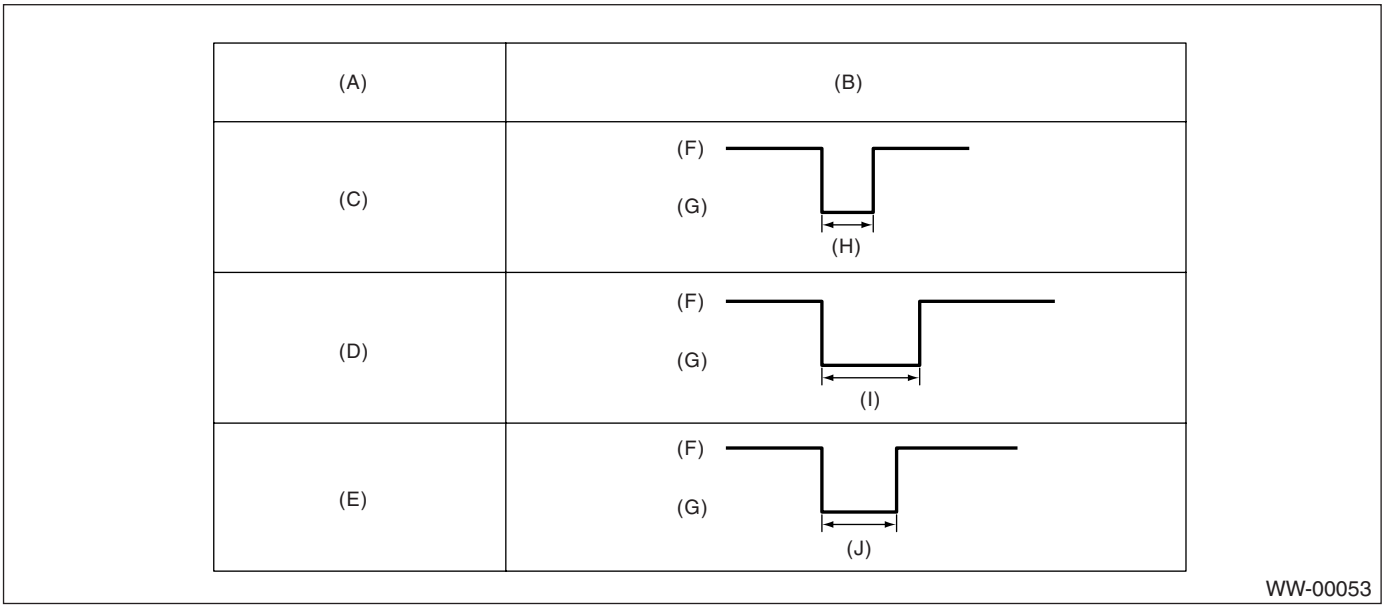


	Switch position	Terminal No.	Standard
FRONT	OFF	7 and 16 7 and 17 8 and 17 2 and 11	More than 1 MΩ
	INT	7 and 16	Less than 1 Ω
	LO	7 and 17	Less than 1 Ω
	HI	8 and 17	Less than 1 Ω
	Washer ON	2 and 11	Less than 1 MΩ

If continuity is not as specified, replace the switch.

- Intermittent operation inspection

1) Turn the wiper switch to INT.
2) Adjust the intermittent control switch to MAX.
3) Apply battery voltage to switch terminals 17 and 2, and inspect the voltage of terminals 7 and 2. (Measure the voltage from after the second time the wiper stops.)



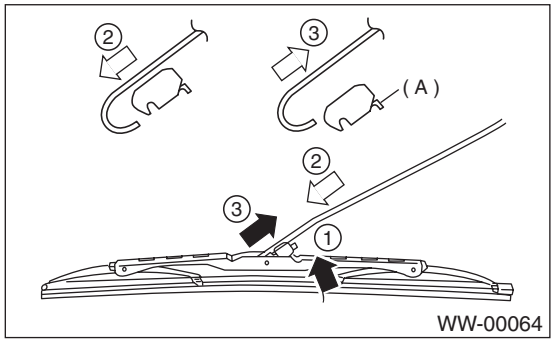
(A) Switch position
(B) Voltage
(C) MIN.
(D) MAX.
(E) Non-variable
(F) 12 V
(G) 0 V
(H) Approx. 2 sec.
(I) 16 ± 6 sec.
(J) 3 ± 1 sec.

If operation is not as specified, replace the switch.

4. Wiper Blade

A: REMOVAL

While pushing locking clip (A) up, pull out blade from arm to arrow direction.

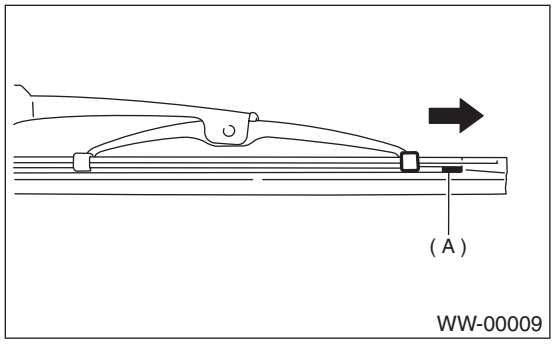


B: INSTALLATION

1) Install in the reverse order of removal.
2) Confirm that clip was locked securely.

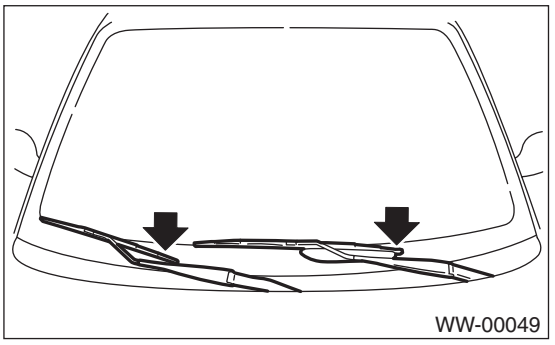
C: DISASSEMBLY

Pull on side (A) of the wiper rubber stopper and remove the rubber from the blade assembly.

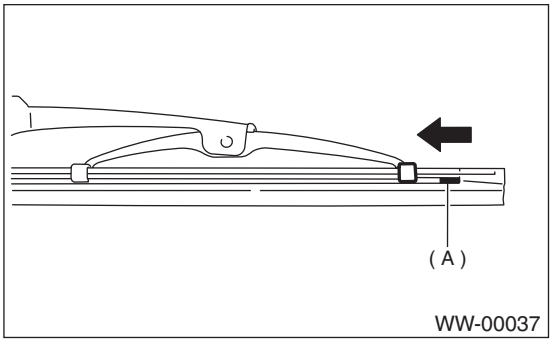


D: ASSEMBLY

1) Insert the wiper rubber onto the blade so that the stopper is in the position shown (at the bottom of the wiper arm).



2) Make sure the wiper rubber is securely fastened to the pull stopper (A).



E: INSPECTION

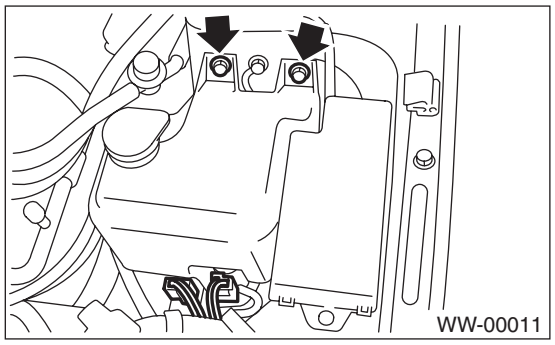
1) When the wiper does not perform well, inspect the following:
- Make sure the movable part of the blade assembly moves smoothly.
- Make sure the wiper rubber is not deformed or damaged.

2) Replace with a new part if damage is found.

5. Washer Tank and Motor

A: REMOVAL

1) Open front hood.
2) Remove the 2 bolts, hose and connector and then remove the tank.



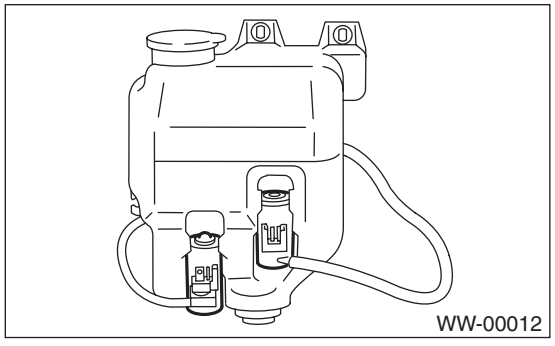
B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
6.0 N·m (0.6 kgf-m, 4.3 ft-lb)

C: DISASSEMBLY

Remove washer motor from tank.

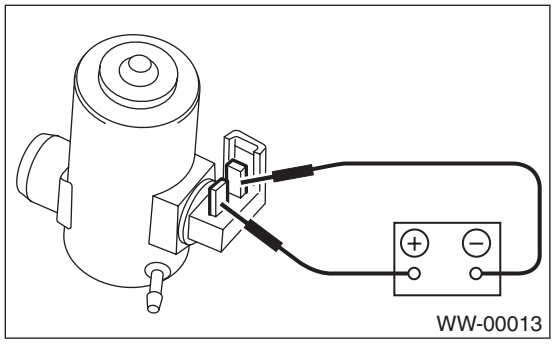


D: ASSEMBLY

1) Assemble in the reverse order of disassembly.
2) Confirm that water does not leak from installation area of motor.

E: INSPECTION

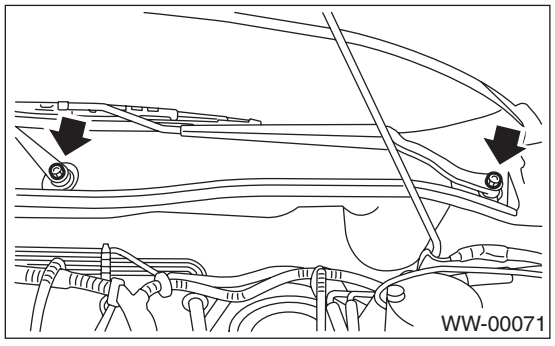
Apply battery voltage to the connector terminal of the washer motor and make sure the motor operates.



6. Front Wiper Arm

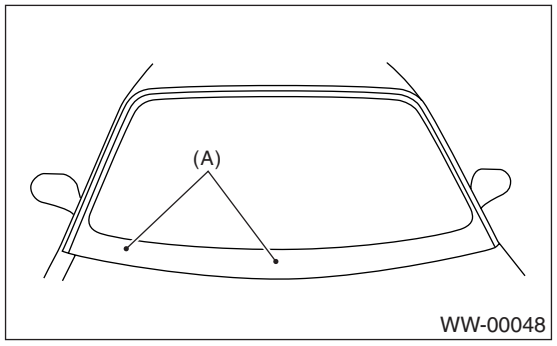
A: REMOVAL

1) Open front hood.
2) Remove cap.
3) Remove nut to remove arm.



B: INSTALLATION

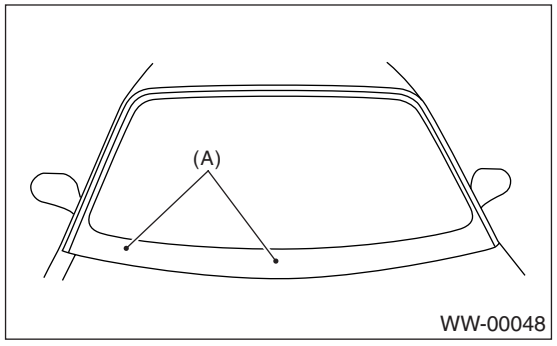
1) Install in the reverse order of removal.
2) Operate wiper once.
3) Align wiper blade to ceramic print point mark (A) of front window pane.



Tightening torque:
Refer to COMPONENT in General Description. <Ref. to WW-2, FRONT WIPER, COMPONENT, General Description.>

C: ADJUSTMENT

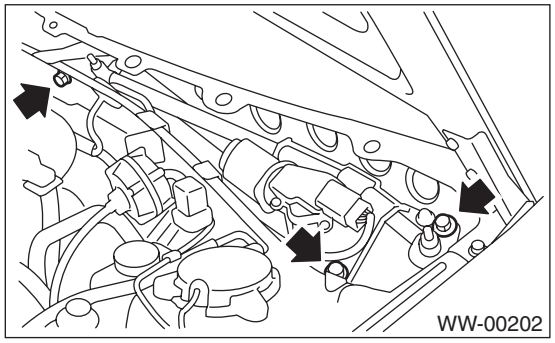
Operate wiper once. Align wiper blade to ceramic print point mark (A) of front window pane.



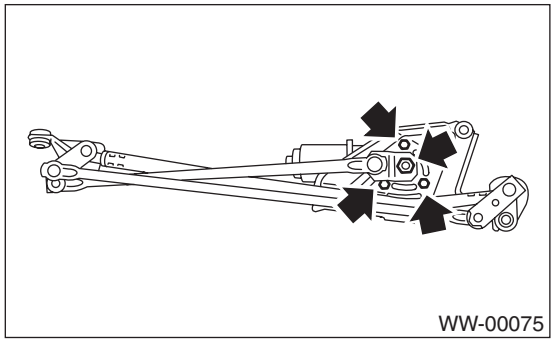
7. Front Wiper Motor and Link

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove cowl panel. <Ref. to EI-29, REMOVAL, Cowl Panel.>
3) Disconnect connector of motor.
4) Remove bolts and nuts to remove wiper link.


WW-00202

5) Remove bolts and nuts to remove motor.


WW-00075

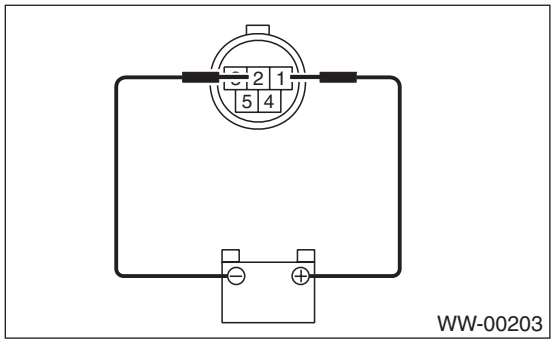
B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:
Refer to COMPONENT in General Description. <Ref. to WW-2, FRONT WIPER, COMPONENT, General Description.>

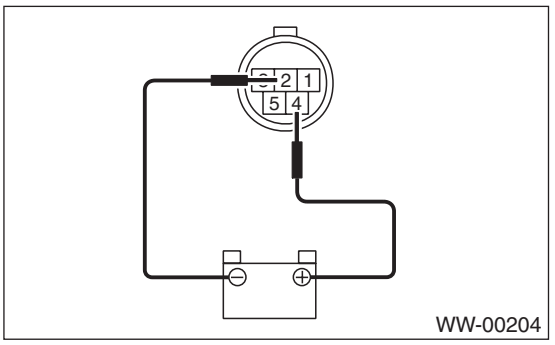
C: INSPECTION

1) When battery is connected to terminal of connectors, confirm that motor operates at low speed.



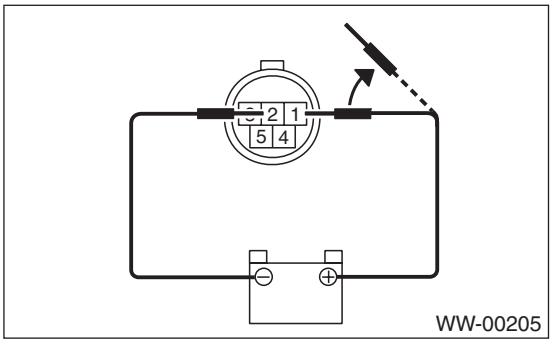
WW-00203

2) When battery is connected to terminal of connectors, confirm that motor operates at high speed.



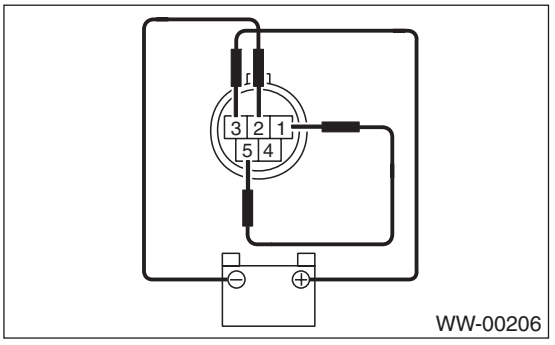
WW-00204

3) Connect battery to terminals of connector, and remove terminal connection with motor rotated at low speed, and stop wiper motor through operation.



WW-00205

4) Connect battery and confirm that motor stops at automatic stop position after motor operates at low speed again.

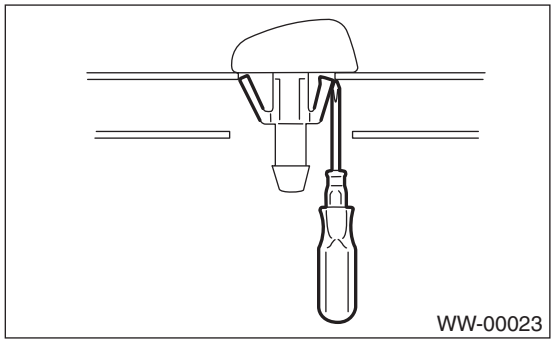


WW-00206

8. Front Washer Nozzle

A: REMOVAL

1) Remove the washer hose from the washer nozzle.
2) Open the clips on the underside of the front hood with a thin screwdriver or other tool, and remove the washer nozzle.



B: INSTALLATION

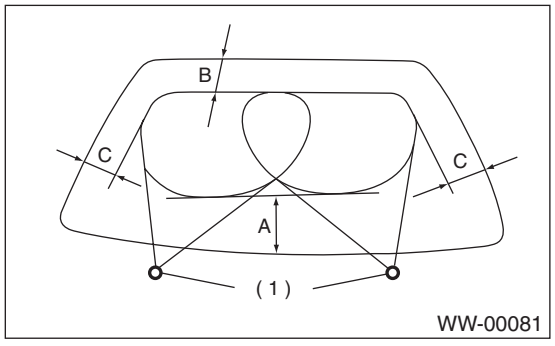
Install in the reverse order of removal.

C: INSPECTION

- Make sure the nozzle and hose are not clogged.
- Make sure the hose is not bent.
- Make sure the washer injection positions are the same as the ones shown in the figure.

Injection position:

A: 300 mm (11.81 in)
B: 100 mm (3.94 in)
C: 200 mm (7.87 in)



(1) Nozzle

If the injection positions are not as specified, replace the nozzle.