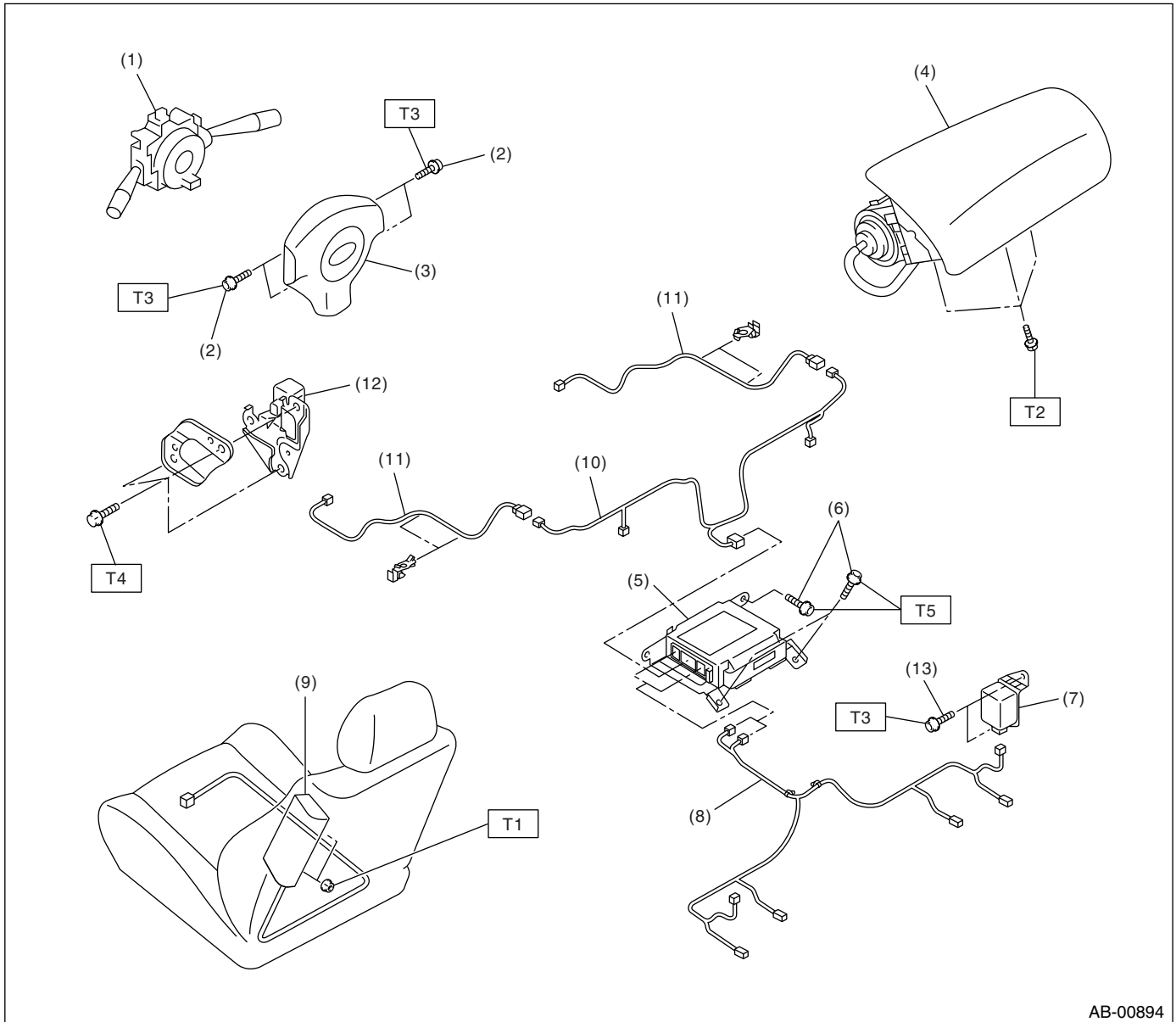


AIRBAG SYSTEM

1. General Description

A: COMPONENT

1. SRS AIRBAG



AB-00894

- (1) Combination switch ASSY with roll connector
- (2) TORX® bolt T30
- (3) Airbag module ASSY (Driver's side)
- (4) Airbag module ASSY (Passenger's side)
- (5) Airbag control module

- (6) Hexagon head bolt (exclusive use)
- (7) Side airbag sensor
- (8) Side airbag harness
- (9) Side airbag module
- (10) Airbag main harness
- (11) Front sub sensor harness
- (12) Front sub sensor
- (13) TORX® bolt T30

Tightening torque: N·m (kgf-m, ft-lb)

T1: 5.9 (0.60, 4.4)

T2: 7.5 (0.76, 5.5)

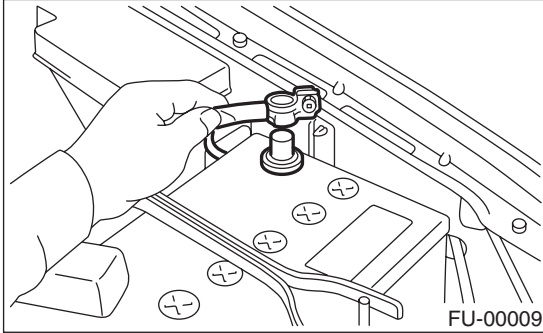
T3: 10 (1.0, 7.4)

T4: 20 (2.0, 14.8)

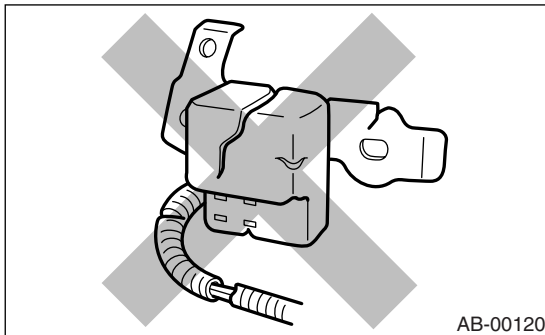
T5: 25 (2.5, 18.4)

B: CAUTION

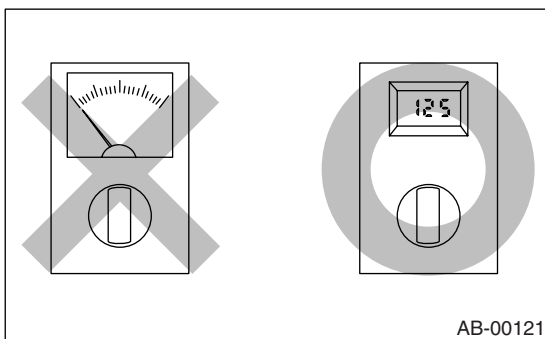
- When servicing a vehicle, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait for more than 20 seconds before starting work.
- The airbag system is fitted with a backup power source. If the airbag system is serviced within 20 seconds after the ground cable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



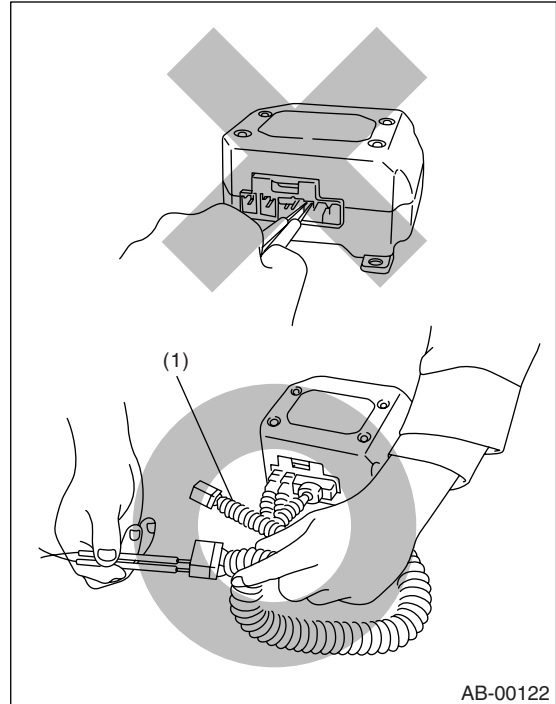
- If the airbag warning light illuminates, repair the vehicle immediately. Airbag or pretensioner may inflate incorrectly, or not inflate in collision.
- If sensors, airbag module, airbag control module, pretensioner, and harness are deformed or damaged, replace them with new genuine parts.



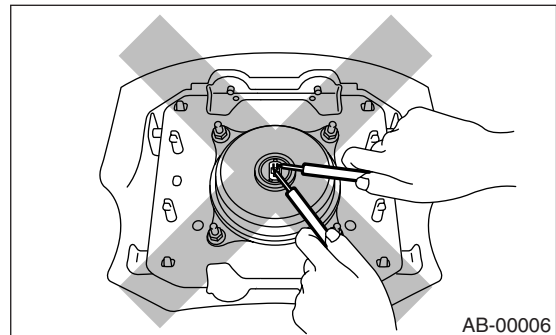
- When checking the airbag system, be sure to use a digital circuit tester. Infinitesimal electric current in an analog circuit tester may cause the airbag to activate erroneously.



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



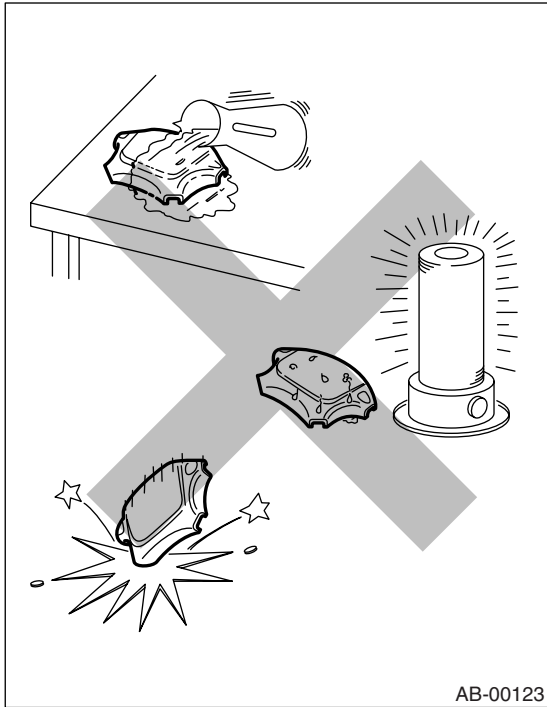
- Do not check continuity of either of the airbag modules for driver, passenger or side, or pretensioner.



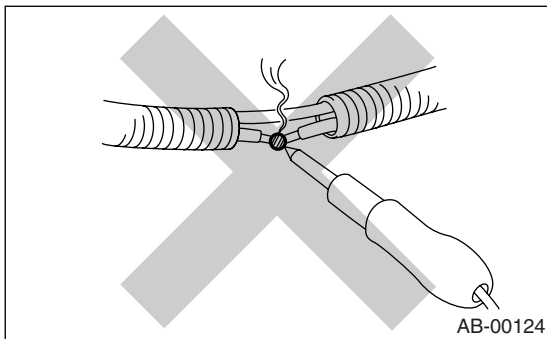
General Description

AIRBAG SYSTEM

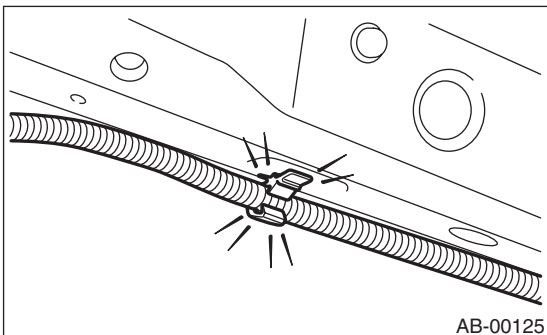
- Do not drop the airbag modulator parts, subject them to high temperature over 93°C (199°F), or let water, oil, or grease get on them; otherwise, the internal parts may be damaged and reliability greatly lowered.



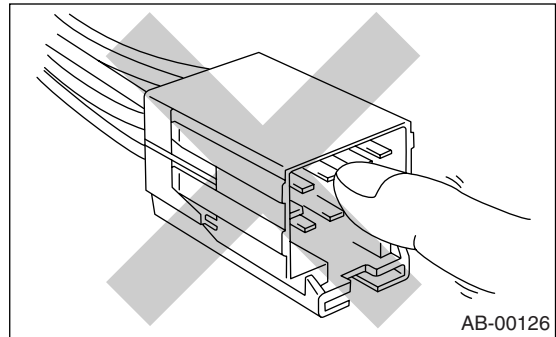
- If any damage, opening, or rust is found on the airbag system wire harness, do not attempt to repair using soldering equipment. Be sure to replace the faulty harness with a new genuine part.



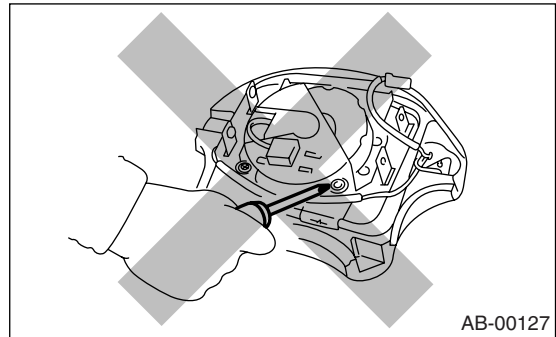
- Install the wire harness securely with the specified clips to avoid interference or tangled up with other parts.



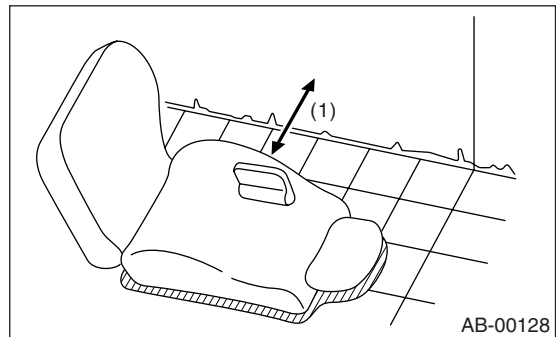
- Do not allow water or oil to come in contact with the connector terminals. Do not touch the connector terminals.



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



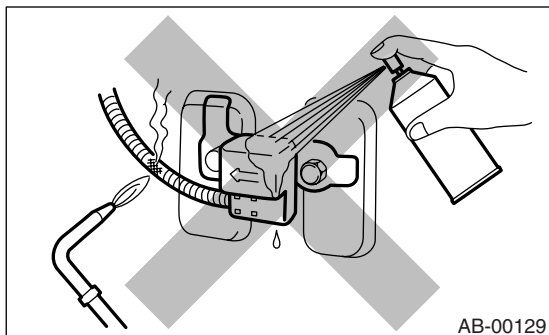
- The removed front seat with the airbag module must be kept at least 200 mm (8 in) away from walls and other objects.



(1) More than 200 mm (8 in)

- Do not use the airbag or pretensioner parts from other vehicles. Always replace defective parts with new parts.
- Never reuse 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 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 side airbag sensors and wire harness of the airbag system.

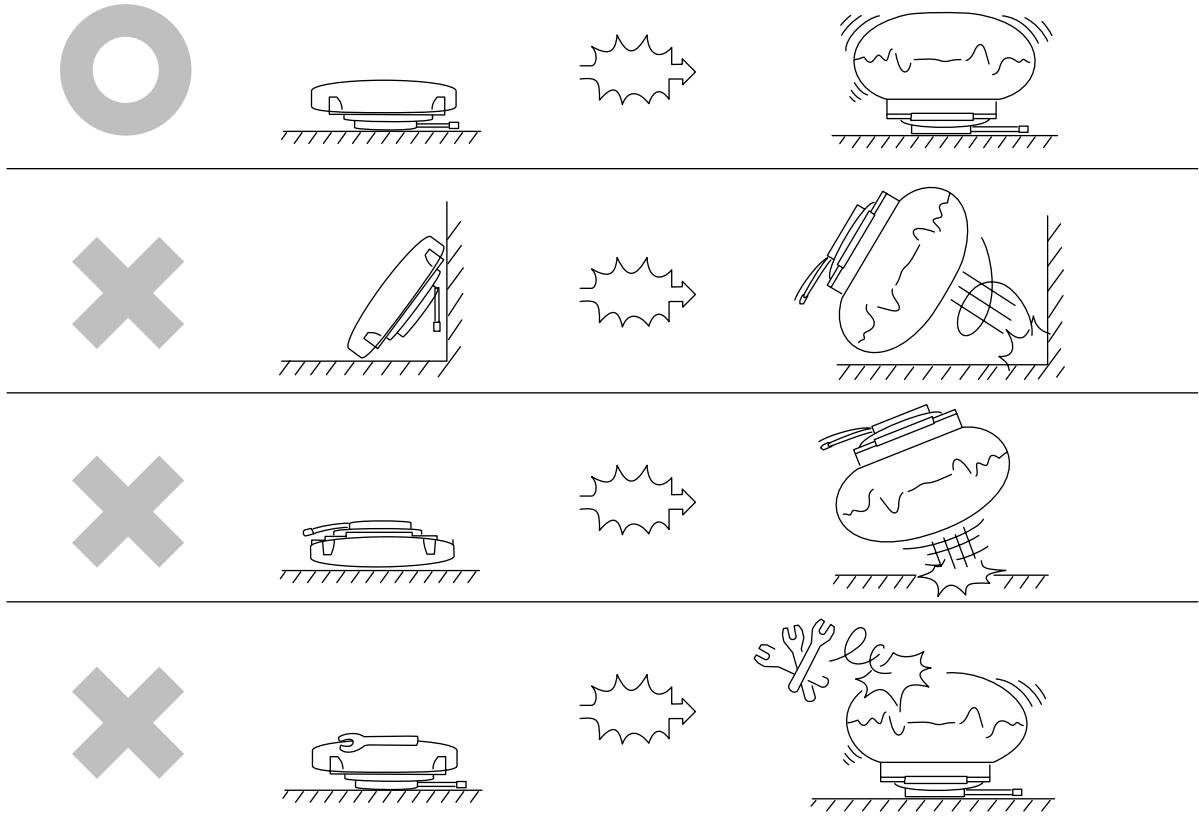


General Description

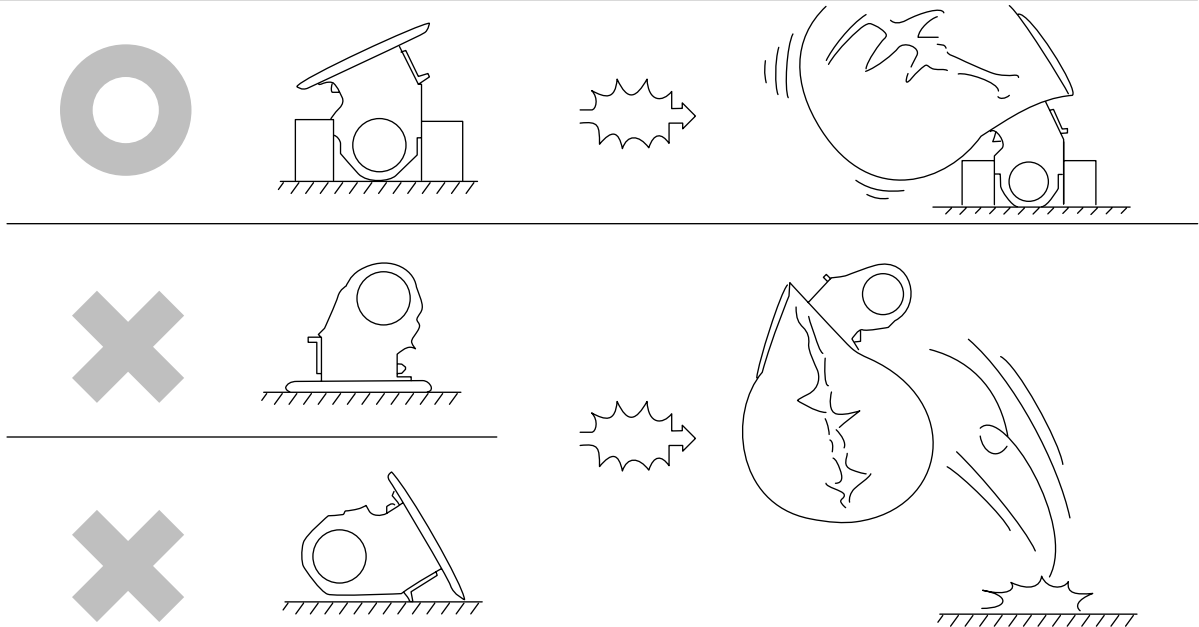
AIRBAG SYSTEM

- 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)



(2)



AB-00130

(1) Driver's airbag module

(2) Passenger's airbag module

C: PREPARATION TOOL

1. GENERAL TOOL

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

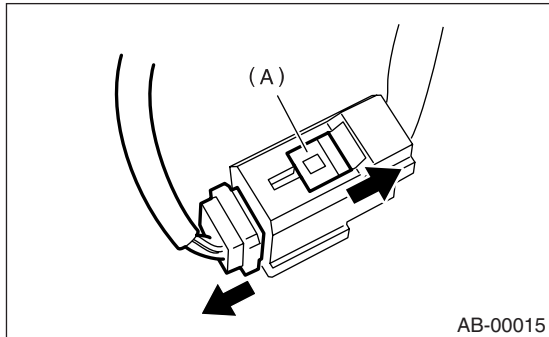
2. Airbag Connector

A: PROCEDURE

1. POWER SUPPLY

1) How to disconnect:

- (1) Move the slide lock (A) in the direction of the arrow.
- (2) Disconnect the connector with slide lock (A) moved.

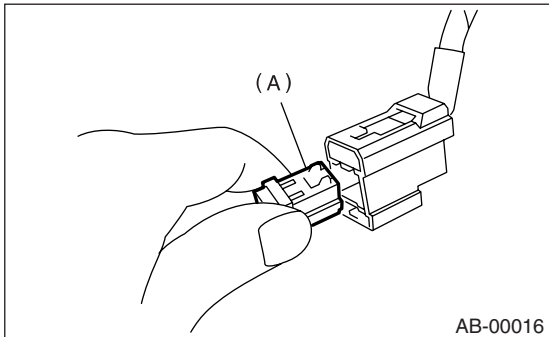


CAUTION:

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

2) How to connect:

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



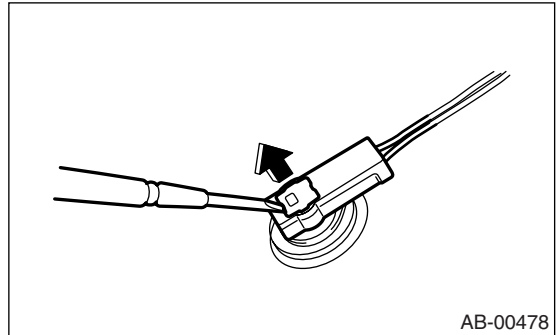
CAUTION:

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

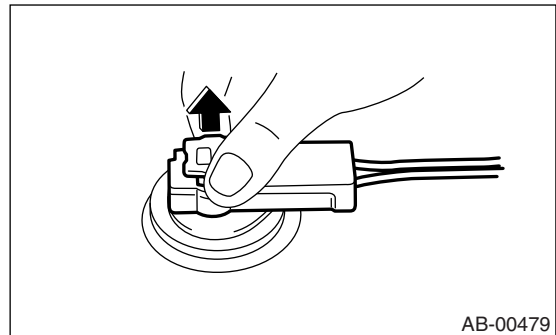
2. DRIVER'S AIRBAG MODULE AND PRE-TENSIONER

1) How to disconnect:

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



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

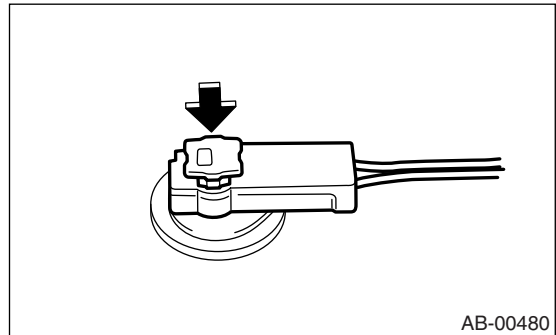


2) How to connect:

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

CAUTION:

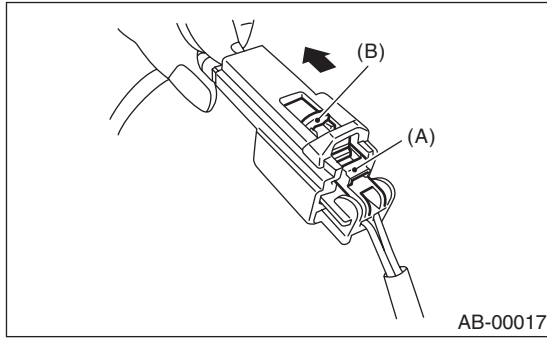
- Be sure to insert the connector in until it locks. Then pull on it gently to make sure that it is locked.
- At this time, be sure to insert the push lock in.



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

1) How to disconnect:

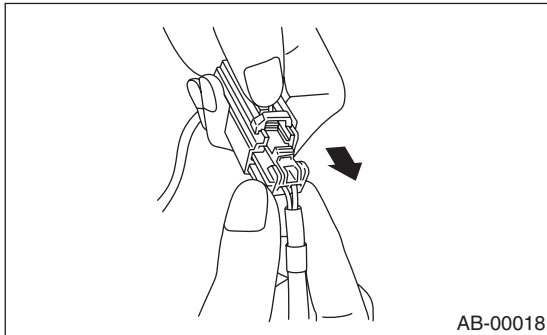
- (1) Push the lock arm (A).
- (2) With the lock arm (A) pushed in, move the slide lock (B) in the direction of arrow.



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

CAUTION:

When pulling the side lock or disconnecting the connector, be sure to hold onto the connector and not the wire.



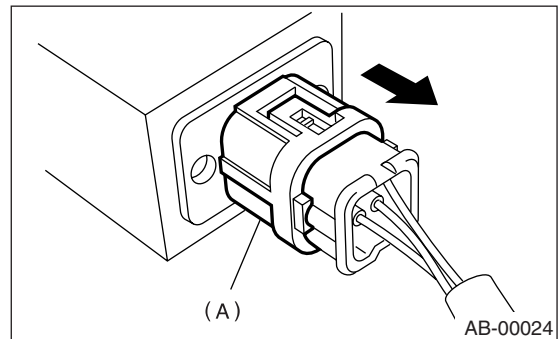
4. FRONT SUB-SENSOR AND SIDE AIRBAG SENSOR

1) How to disconnect:

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

CAUTION:

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

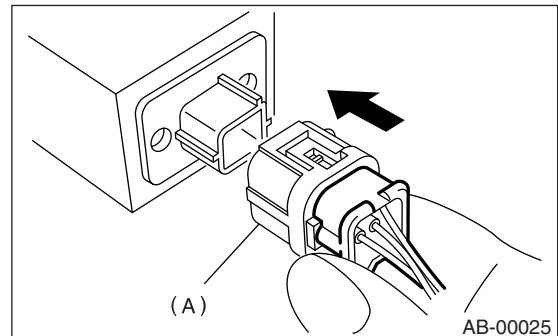


2) How to connect:

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. Inspection Locations After a Collision

A: REPLACEMENT

When airbag system is deployed, replace the following parts.

1. FRONT COLLISION

- 1) Driver's airbag module
- 2) Passenger's airbag module
- 3) Driver's seat belt (pretensioner)
- 4) Passenger's seat belt (pretensioner)
- 5) Airbag control module
- 6) Front sub-sensor
- 7) Roll connector

2. SIDE COLLISION

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

3. INSPECTION OF OTHER PARTS

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

- 1) Steering wheel and steering shaft

Check the steering wheel and steering shaft for mounting condition and deflection of axial and radial, upward and downward direction. Check the steering shaft for deflection of axial and radical direction with tilt lever released. (After a collision, absorbing part of steering shaft may inflate.)

- 2) Check the direct type connector of driver's airbag module, pretensioner, etc. for damage, and also check each harness for pinch and connector damage. If damage is found, replace the harness as a unit.

B: INSPECTION

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

1. DRIVER'S AIRBAG MODULE

- 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.
 - The module surface is fouled with grease, oil, water or cleaning solvent.
- 2) When installing a new driver's airbag module, check the following, and replace the damaged parts with new ones.
 - The steering wheel is in the way, making it difficult to install the airbag module.

- The clearance between the driver's airbag module and steering wheel is not constant.
- The steering wheel deformation in axial and radial directions exceed limits.

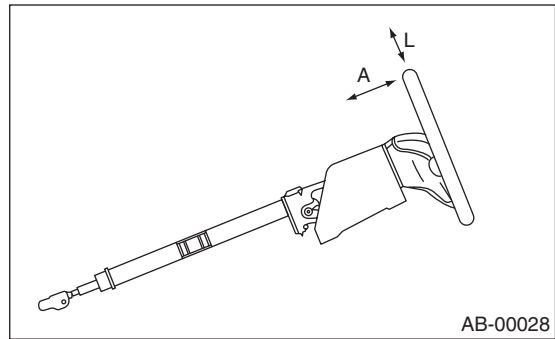
Specifications:

Height deflection A

Less than 6 mm (0.24 in)

O.D. deflection L

Less than 17 mm (0.67 in)



2. PASSENGER'S AIRBAG MODULE

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.

3. SIDE AIRBAG MODULE

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

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

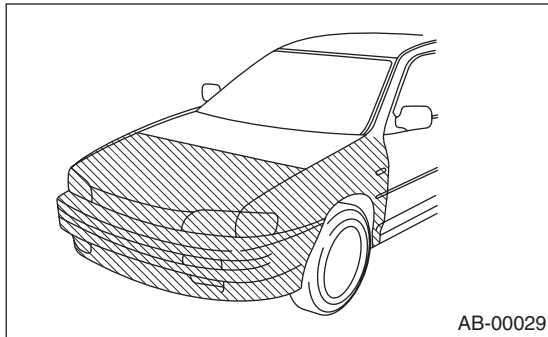
4. AIRBAG CONTROL MODULE

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, cracked or deformed.
- Airbag is deployed.
- Side airbag is deployed.

5. 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.

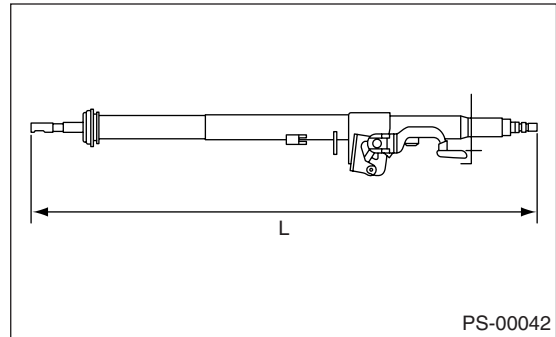


- Front sub sensor is cracked or deformed.
- Mounting bracket is cracked or deformed.
- Connector is scratched, cracked or deformed.
- Airbag is deployed.

Specifications:

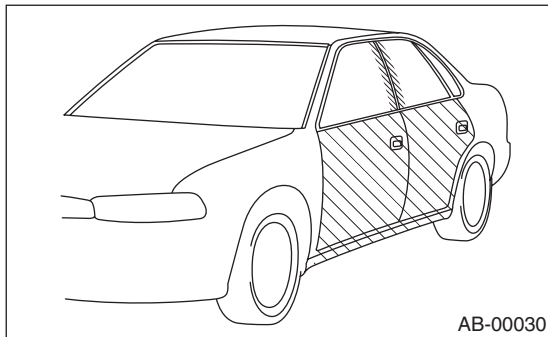
Overall length L

$818.7 \pm 1.5 \text{ mm}$ ($32.23 \pm 0.06 \text{ in}$)



6. SIDE AIRBAG SENSOR

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



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

7. ROLL CONNECTOR

Check for the following, and replace 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.

- Overall length of steering column should be within specifications.

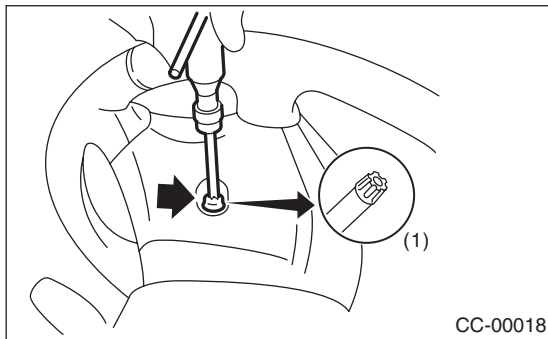
4. Driver's Airbag Module

A: REMOVAL

CAUTION:

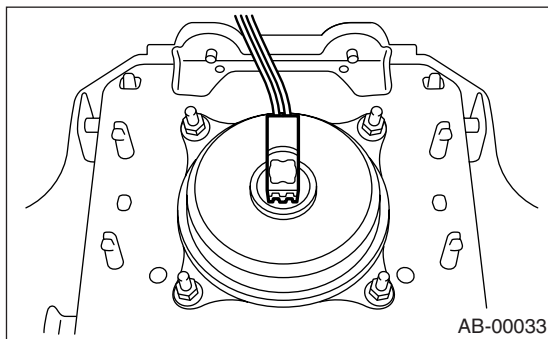
Refer to "CAUTION" in General Description before handling the airbag module. <Ref. to AB-3, CAUTION, General Description.>

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



(1) TORX® BIT T30

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



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

B: INSTALLATION

Install in the reverse order of removal.

CAUTION:

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

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

Tightening torque:

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

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. <Ref. to AB-10, DRIVER'S AIRBAG MODULE, INSPECTION, Inspection Locations After a Collision.>

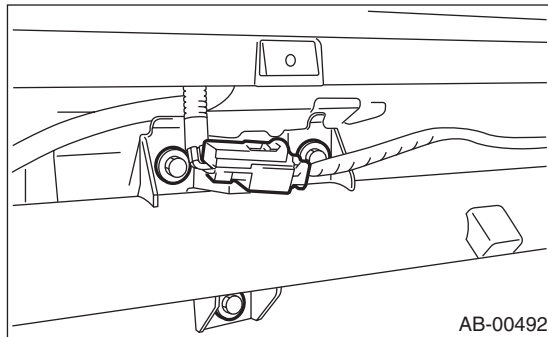
5. Passenger's Airbag Module

A: REMOVAL

CAUTION:

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

- 1) Turn the ignition switch to OFF.
- 2) Disconnect the ground cable from battery, and wait for at least 20 seconds before starting work.
- 3) Remove the glove box. <Ref. to EI-44, REMOVAL, Glove Box.>
- 4) Detach the airbag connector from support beam bracket, and then disconnect the airbag connector.



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

B: INSTALLATION

Install in the reverse order of removal.

CAUTION:

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

Tightening torque:

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

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. <Ref. to AB-10, PASSENGER'S AIRBAG MODULE, INSPECTION, Inspection Locations After a Collision.>

6. Side Airbag Module

A: REMOVAL

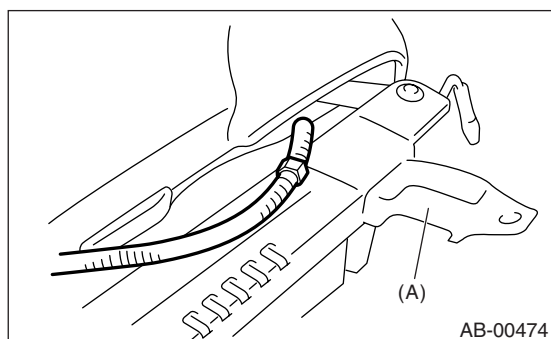
CAUTION:

Before working on the airbag module, refer to the “CAUTION” in General Description. <Ref. to AB-3, CAUTION, General Description.>

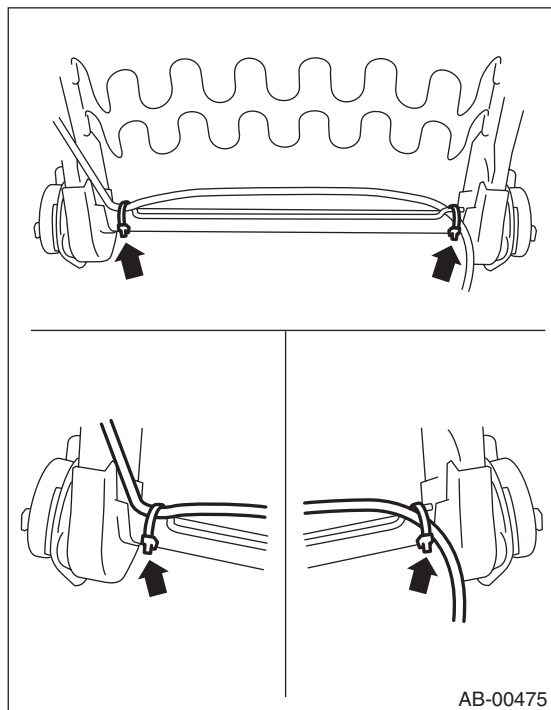
NOTE:

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

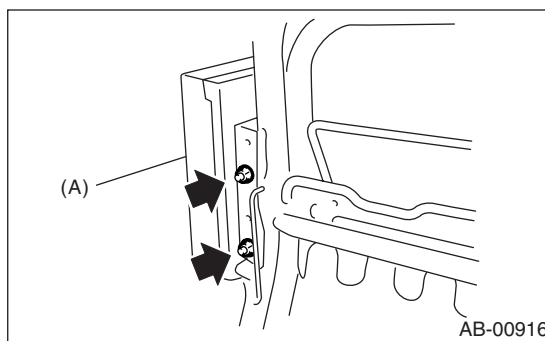
- 1) Turn the ignition switch to OFF.
- 2) Disconnect the ground cable from battery, and wait for at least 20 seconds before starting work.
- 3) Remove the front seats. <Ref. to SE-6, REMOVAL, Front Seat.>
- 4) Remove the clip, and then remove the side airbag harness from slide rail IN (A) and reverse side of seat cushion assembly.



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



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



B: INSTALLATION

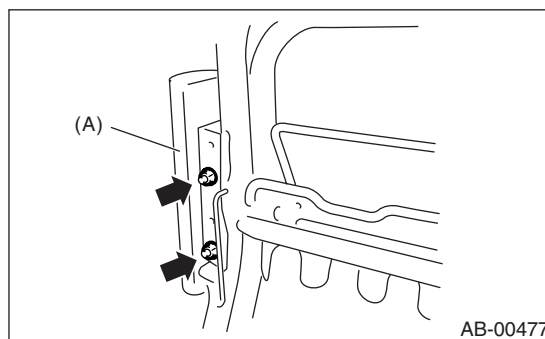
CAUTION:

Before working on the airbag module, refer to the “CAUTION” in General Description. <Ref. to AB-3, CAUTION, General Description.>

- 1) Ensure there are no foreign particles on side airbag module.
- 2) Install the side airbag module (A) to backrest frame assembly.

Tightening torque:

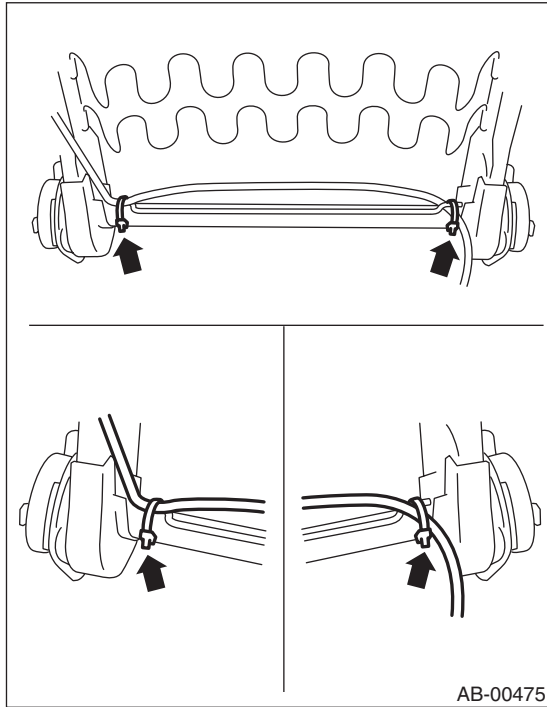
5.9 N·m (0.60 kgf·m, 4.4 ft·lb)



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

NOTE:

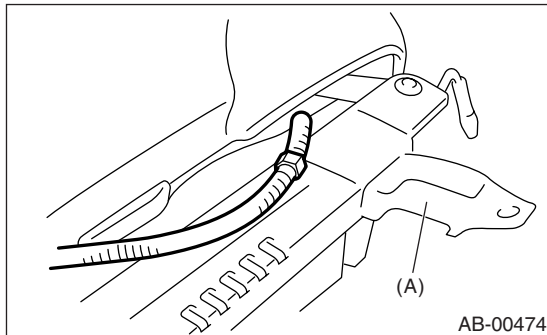
Secure the harness to its original position of seat.



AB-00475

4) Install the backrest cover. <Ref. to SE-11, ASSEMBLY, Front Seat.>

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



AB-00474

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

C: INSPECTION

CAUTION:

Before working on the airbag module, refer to the “CAUTION” in General Description. <Ref. to AB-3, CAUTION, General Description.>

Perform the inspection of following items, and replace the damaged parts with new ones. <Ref. to AB-10, SIDE AIRBAG MODULE, INSPECTION, Inspection Locations After a Collision.>

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

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

2) Other replacement parts, which found to be damaged by visual check

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

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

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

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

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

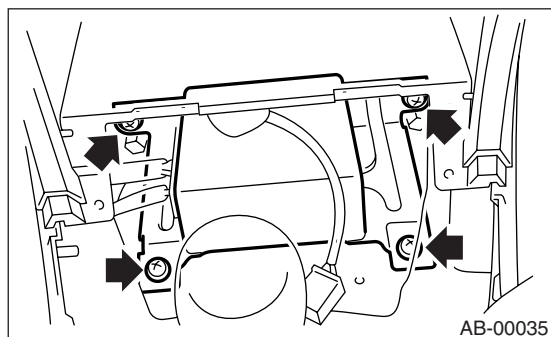
7. Airbag Control Module

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 one.
- Do not drop the airbag control module.
- After removal, keep the airbag control module on a dry, clean surface away from moisture, heat, and dust.

- 1) Turn the ignition switch to OFF.
- 2) Disconnect the ground cable from battery, and wait for at least 20 seconds before starting work.
- 3) Remove the console cover. <Ref. to EI-47, REMOVAL, Console Box.>
- 4) Remove the center console panel. <Ref. to EI-48, REMOVAL, Instrument Panel Assembly.>
- 5) Disconnect the connector from airbag control module.
- 6) Remove the four bolts and remove airbag control module.



B: INSTALLATION

CAUTION:

Use new hexagon head bolts (for airbag control module only) during installation.

Install in the reverse order of removal.

Tightening torque:

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

C: INSPECTION

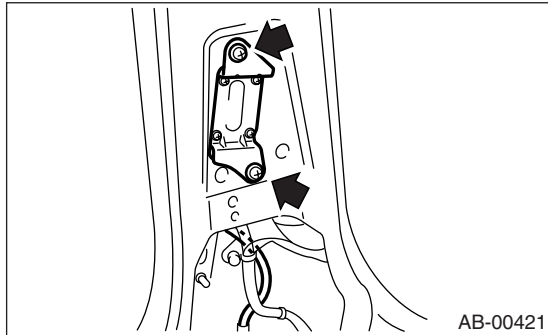
Check for the following, and replace damaged parts with new parts.

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

8. Side Airbag Sensor

A: REMOVAL

- 1) Turn the ignition switch to OFF.
- 2) Disconnect the ground cable from battery, and wait for at least 20 seconds before starting work.
- 3) Remove the outer seat belt (FRONT). <Ref. to SB-8, INNER SEAT BELT ASSEMBLY, REMOVAL, Front Seat Belt.>
- 4) Detach the side airbag sensor, and then disconnect the airbag connector.



B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:

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

C: INSPECTION

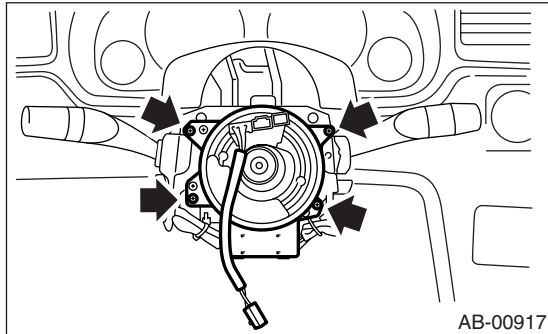
Check for the following, and replace damaged parts with new parts.

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

9. Roll Connector

A: REMOVAL

- 1) Turn the ignition switch to OFF.
- 2) Disconnect the ground cable from battery, and wait for at least 20 seconds before starting work.
- 3) Remove the driver's airbag module. <Ref. to AB-12, Driver's Airbag Module.>
- 4) Remove the steering wheel. <Ref. to PS-21, REMOVAL, Steering Wheel.>
- 5) Remove the steering column cover.
- 6) Remove the screws, and then remove the roll connector.



B: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Before installing the steering wheel, be sure the direction of roll connector is adjusted with steering. <Ref. to AB-18, ADJUSTMENT, Roll Connector.>

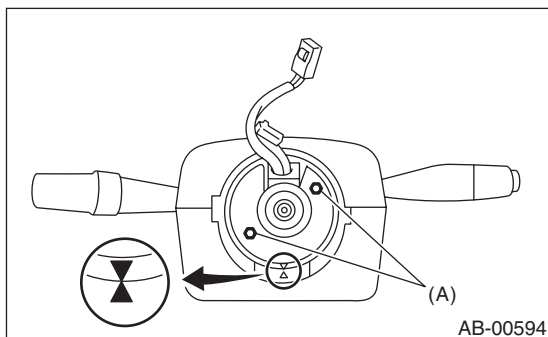
C: INSPECTION

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

- Combination switch and roll connector is cracked or deformed.

D: ADJUSTMENT

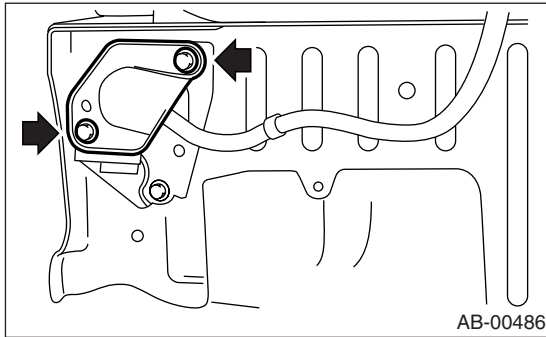
- 1) Check that the front wheels are positioned in straight ahead direction.
- 2) Turn the roll connector pin (A) clockwise until it stops.
- 3) Turn the roll connector pin (A) counterclockwise approx. 3.25 turns until “▲” marks are aligned.



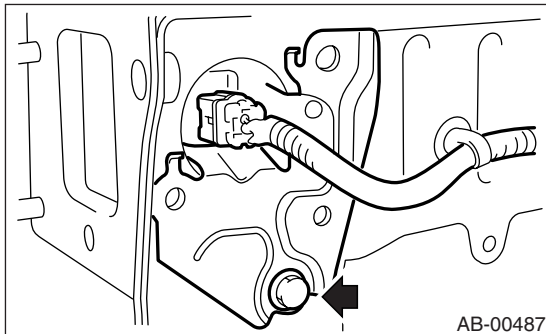
10. Front Sub Sensor

A: REMOVAL

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



- 5) Remove the bolt, and then detach the front sub sensor.
- 6) Disconnect the connector from front sub sensor.



B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:

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

C: INSPECTION

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

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

AIRBAG SYSTEM (DIAGNOSTICS)

Basic Diagnostic Procedure

AIRBAG SYSTEM (DIAGNOSTICS)

1. Basic Diagnostic Procedure

A: PROCEDURE

Step	Check	Yes	No
1 READ DTC. <Ref. to AB(diag)-23, Read Diagnostic Trouble Code (DTC).>	Is the normal code being detected?	Finish the diagnosis.	Go to step 2 .
2 READ DTC. <Ref. to AB(diag)-23, Read Diagnostic Trouble Code (DTC).>	Is the DTC being detected?	Go to step 3 .	Go to "Airbag Warning Light Failure". <Ref. to AB(diag)-26, Airbag Warning Light Failure.>
3 PERFORM THE DIAGNOSIS. 1) Judge the possible cause from "List of Diagnostic Trouble Code (DTC)". <Ref. to AB(diag)-31, 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(diag)-25, Clear Memory Mode.> 5) Perform the inspection mode. <Ref. to AB(diag)-24, Inspection Mode.> 6) Read any DTC again.	Is the DTC being detected?	Perform the procedure 1) to 5) in step 3.	Finish the diagnosis.

Check List for Interview

AIRBAG SYSTEM (DIAGNOSTICS)

2. Check List for Interview

A: CHECK

Customer's Name		Inspector's Name	
Date Vehicle Brought In	/ /	Registration No.	
Odometer Reading	km Miles	VIN	
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	☐ Driving (☐ Starting ☐ Idling ☐ Constant Speed ☐ Acceleration ☐ Deceleration ☐ Steering wheel turn ☐ Other:)		
Details of Problem			
Check Airbag Warning Light	☐ Remains ON ☐ Remains OFF		
Check DTC	☐ Normal Code ☐ DTC: (Code:)		

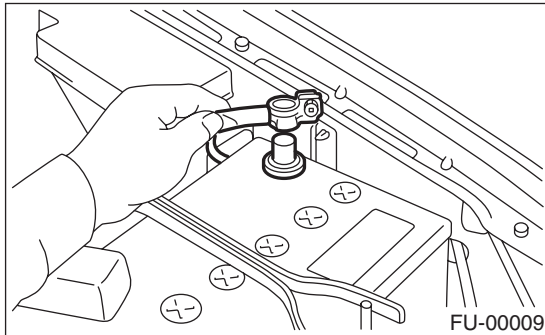
General Description

AIRBAG SYSTEM (DIAGNOSTICS)

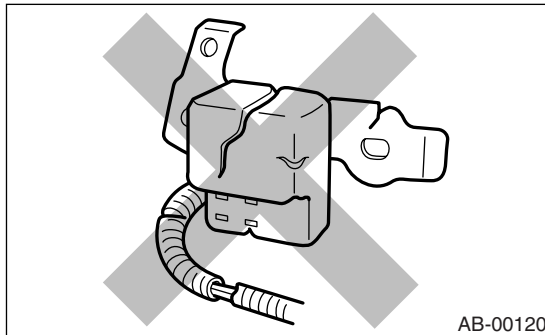
3. General Description

A: CAUTION

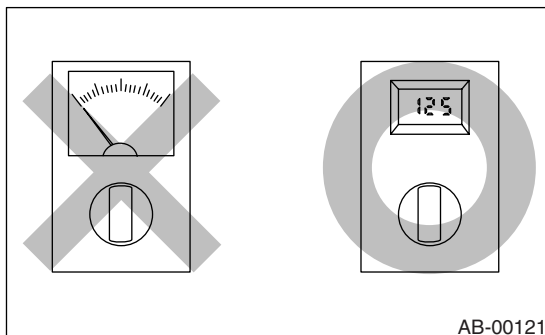
- When servicing a vehicle, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait for more than 20 seconds before starting work.
- The airbag system is fitted with a backup power source. If the airbag system is serviced within 20 seconds after the ground cable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



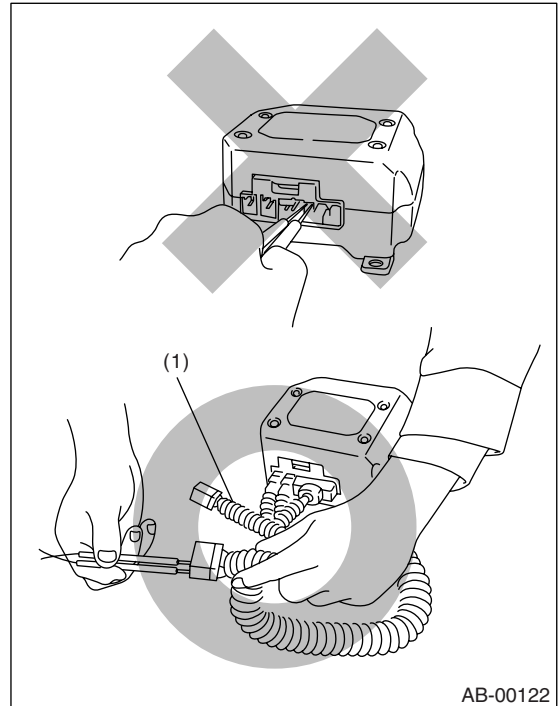
- If sensors, airbag module, airbag control module, pretensioner, and harness are deformed or damaged, replace them with new genuine parts.



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

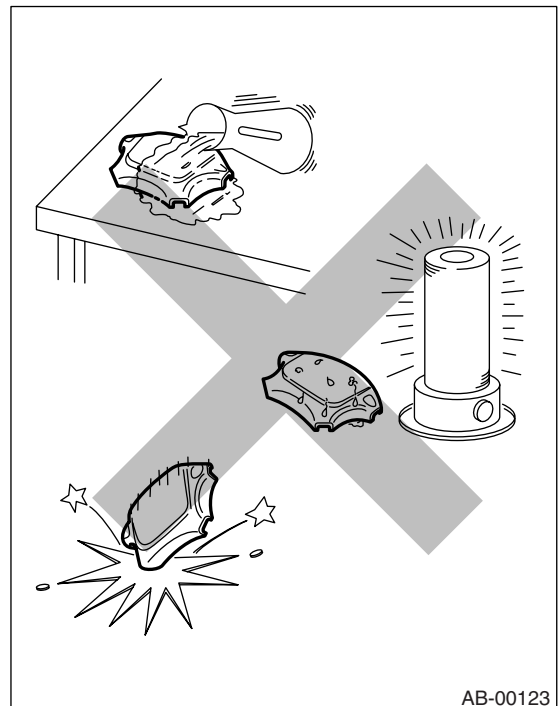


- When checking, use a test harness. Do not directly apply the tester probe to any connector terminal of the airbag.



(1) Test harness

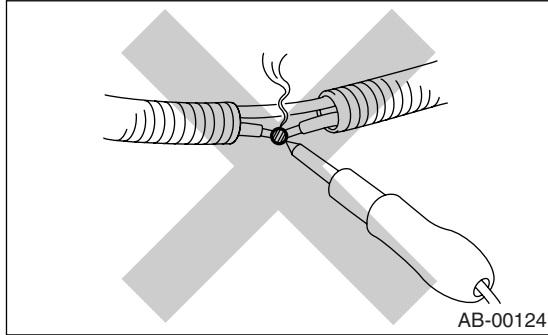
- Do not drop the airbag modulator parts, subject them to high temperature over 93°C (199°F), or let water, oil, or grease get on them; otherwise, the internal parts may be damaged and may be reliability greatly lowered.



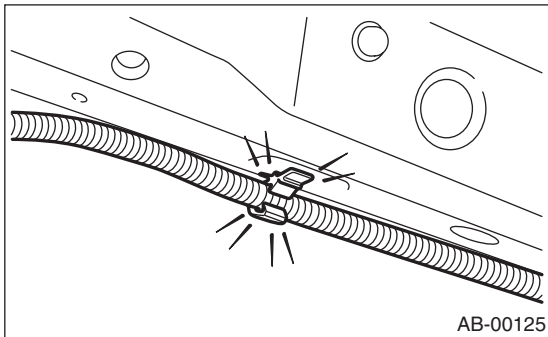
General Description

AIRBAG SYSTEM (DIAGNOSTICS)

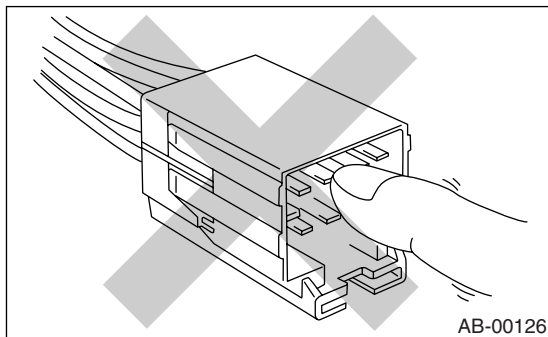
- If any damage, opening, or rust is found on the airbag system wire harness, do not attempt to repair using soldering equipment. Be sure to replace the faulty harness with a new genuine part.



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

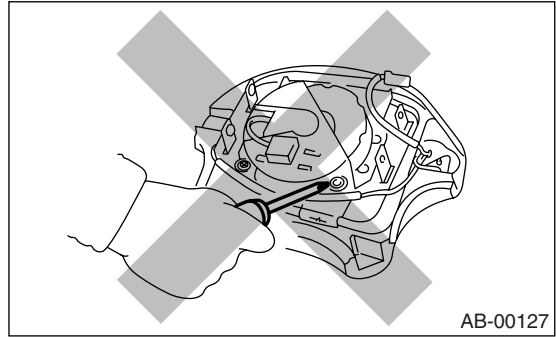


- Do not allow water or oil to come in contact with the connector terminals. Do not touch the connector terminals.

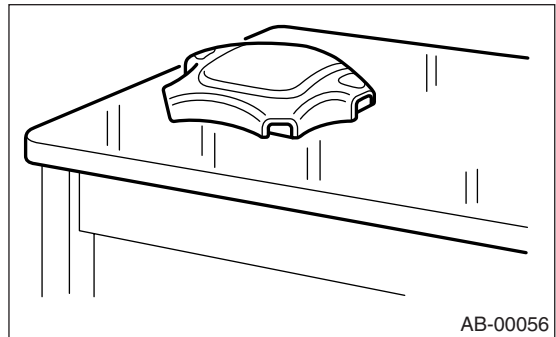


- Either of the airbag modules for driver, passenger or side, or pretensioner must not be disassembled.

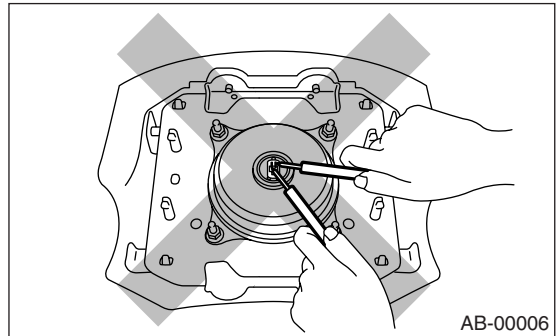
- The airbag module cannot be used again if once inflated.



- 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.



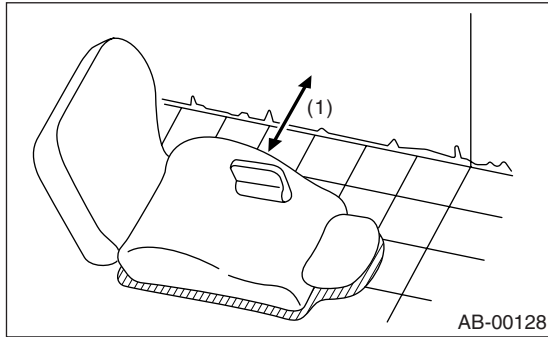
- Do not check continuity of either of the airbag modules for driver, passenger or side, or pretensioner.



General Description

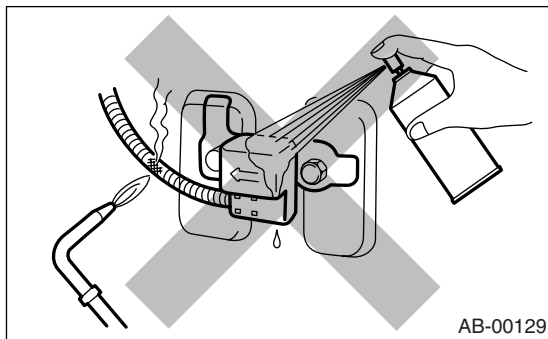
AIRBAG SYSTEM (DIAGNOSTICS)

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



(1) More than 200 mm (8 in)

- 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 side airbag sensors and wire harness of the airbag system.



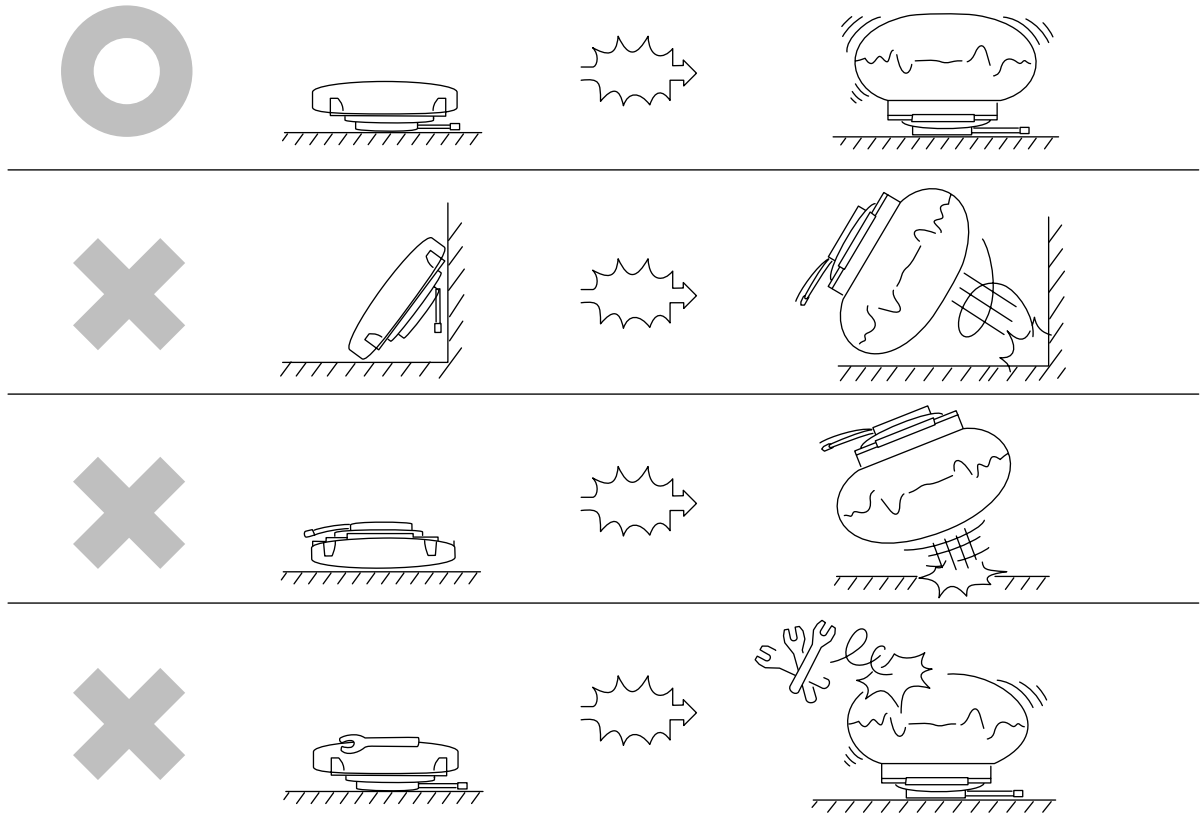
- Do not discard undeployed airbag modules. They could easily cause a serious accident if accidentally deployed.

General Description

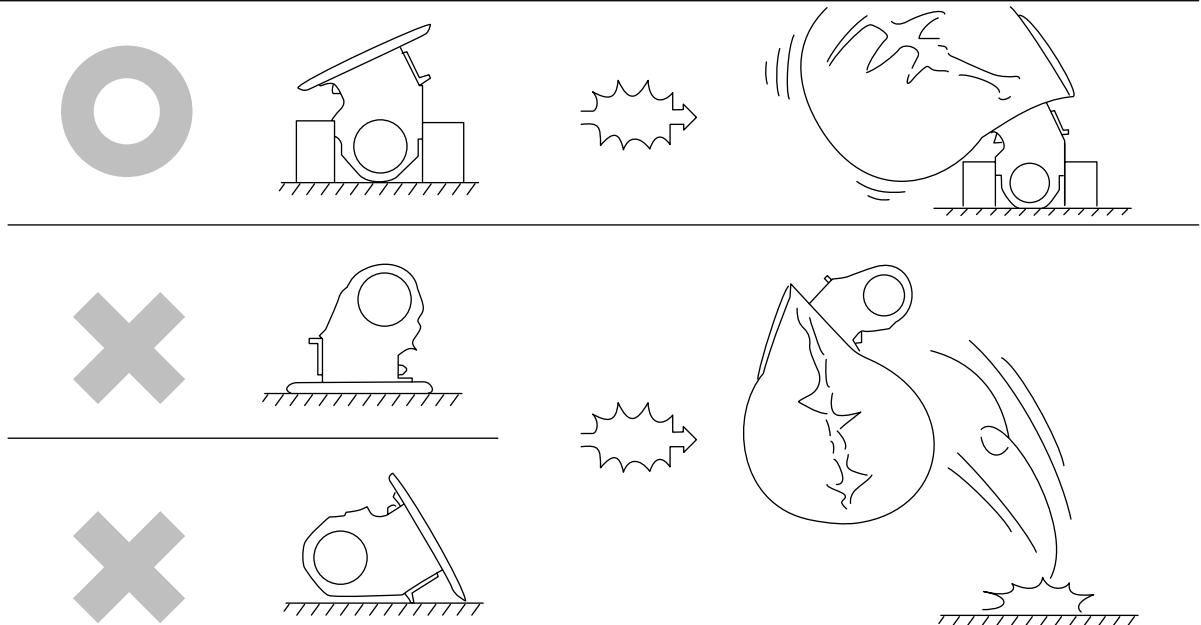
AIRBAG SYSTEM (DIAGNOSTICS)

- 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)



(2)



AB-00130

(1) Driver side airbag module

(2) Passenger side airbag module

General Description

AIRBAG SYSTEM (DIAGNOSTICS)

B: INSPECTION

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

1. BATTERY

Measure the battery voltage and specific gravity of electrolyte.

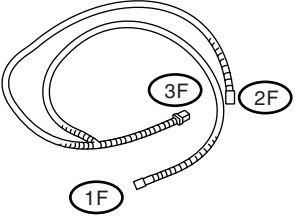
Standard voltage: 12 V

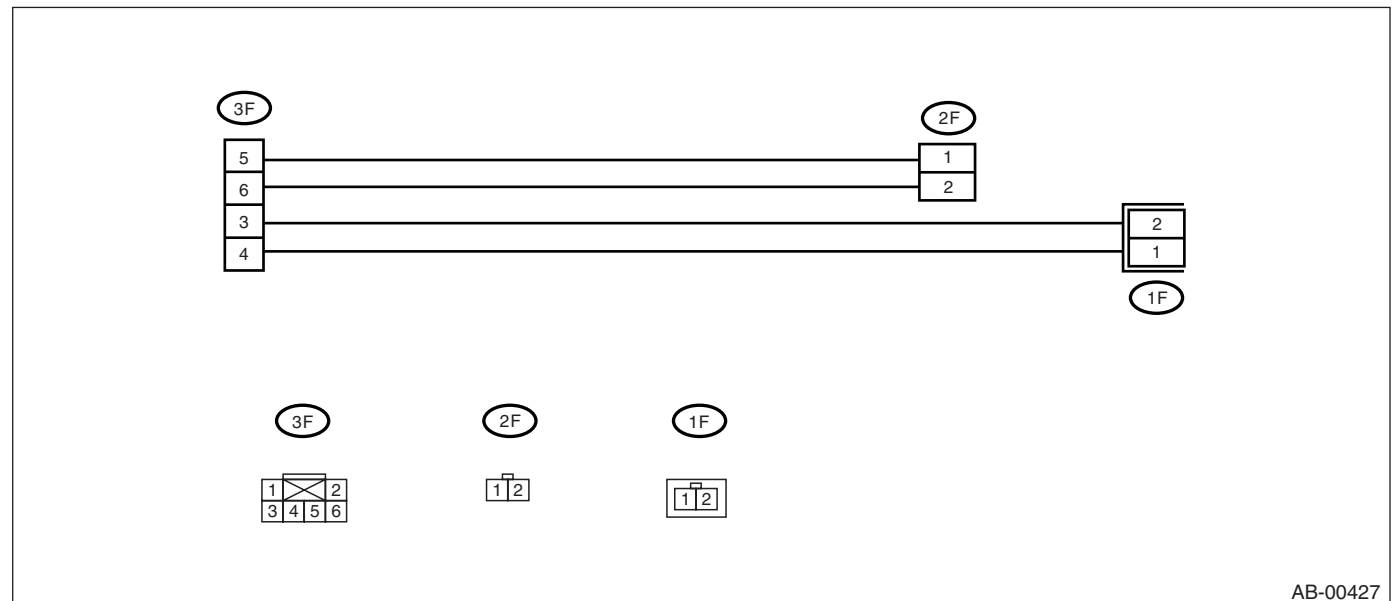
Specific gravity: Above 1.260

C: PREPARATION TOOL

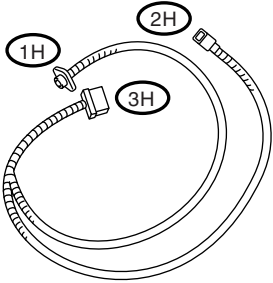
1. SPECIAL TOOL

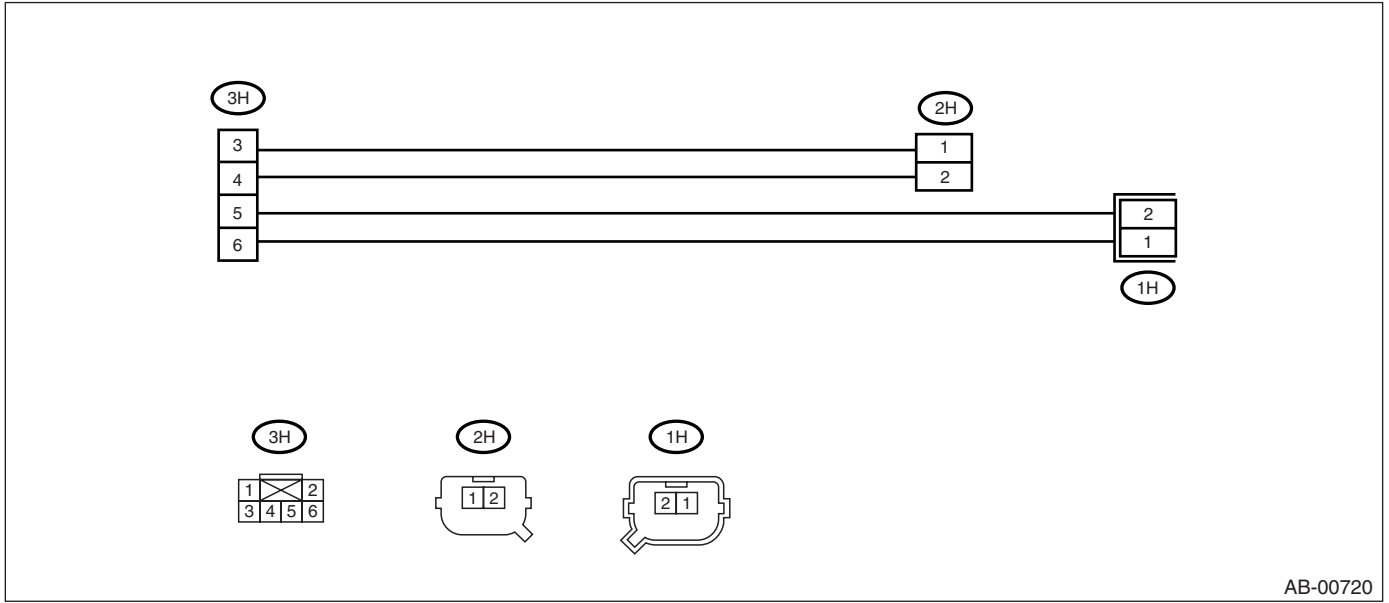
• TEST HARNESS F

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299FC010	98299FC010	TEST HARNESS F	Used when measuring voltage, resistance of air-bag module harness.



• TEST HARNESS H

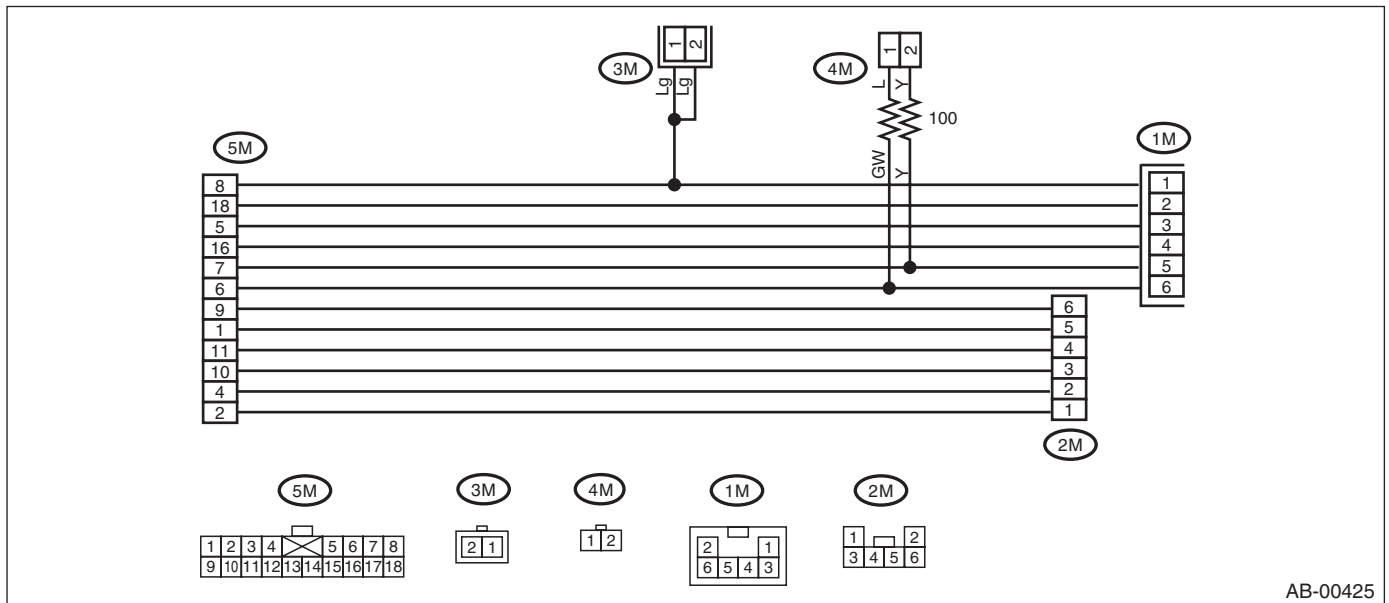
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299FA030	98299FA030	TEST HARNESS H	Used when measuring voltage, resistance of front sub sensor.



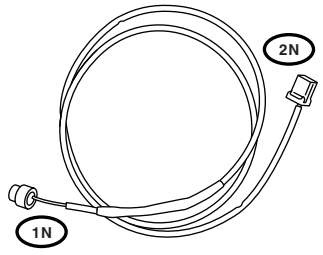
AB-00720

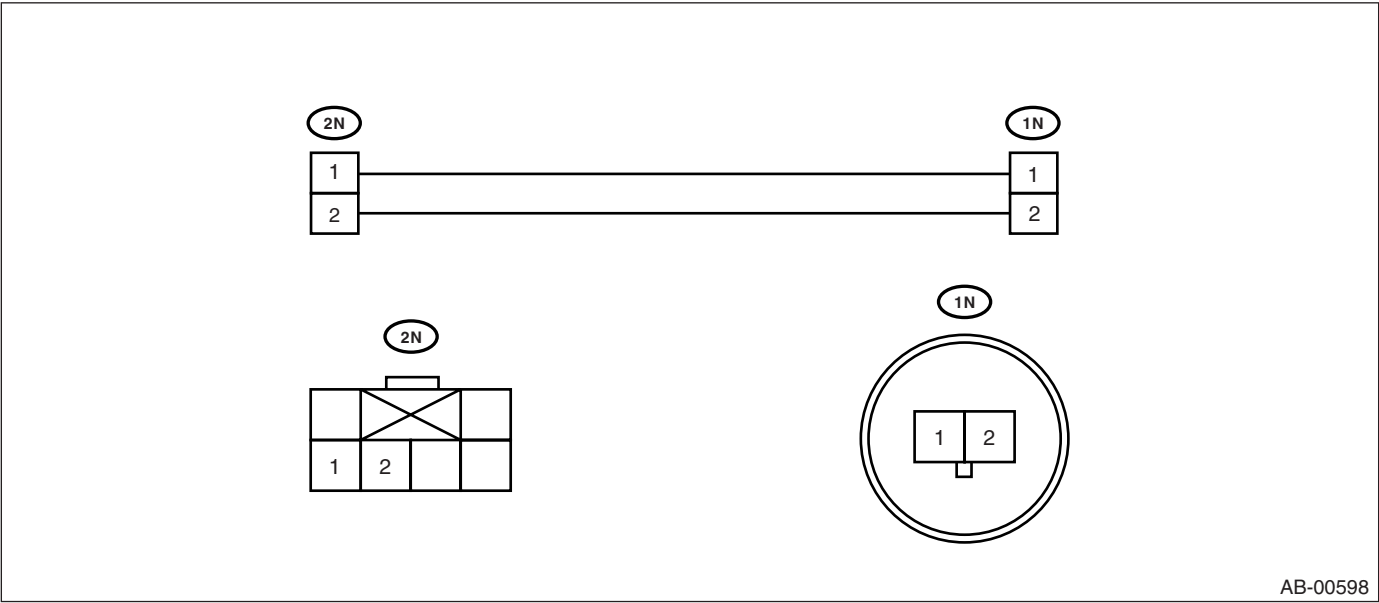
AIRBAG SYSTEM (DIAGNOSTICS)

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
ST98299FE020	98299FE020	TEST HARNESS M	• Used when measuring voltage, resistance of airbag system. • Used with test harness T (98299SA060).



• TEST HARNESS N

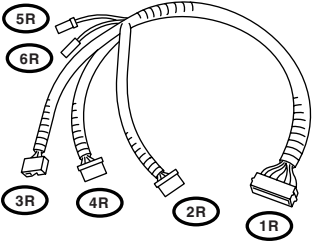
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299SA000	98299SA000	TEST HARNESS N	Used when measuring voltage, resistance of driver's airbag module and seat belt pretensioner.

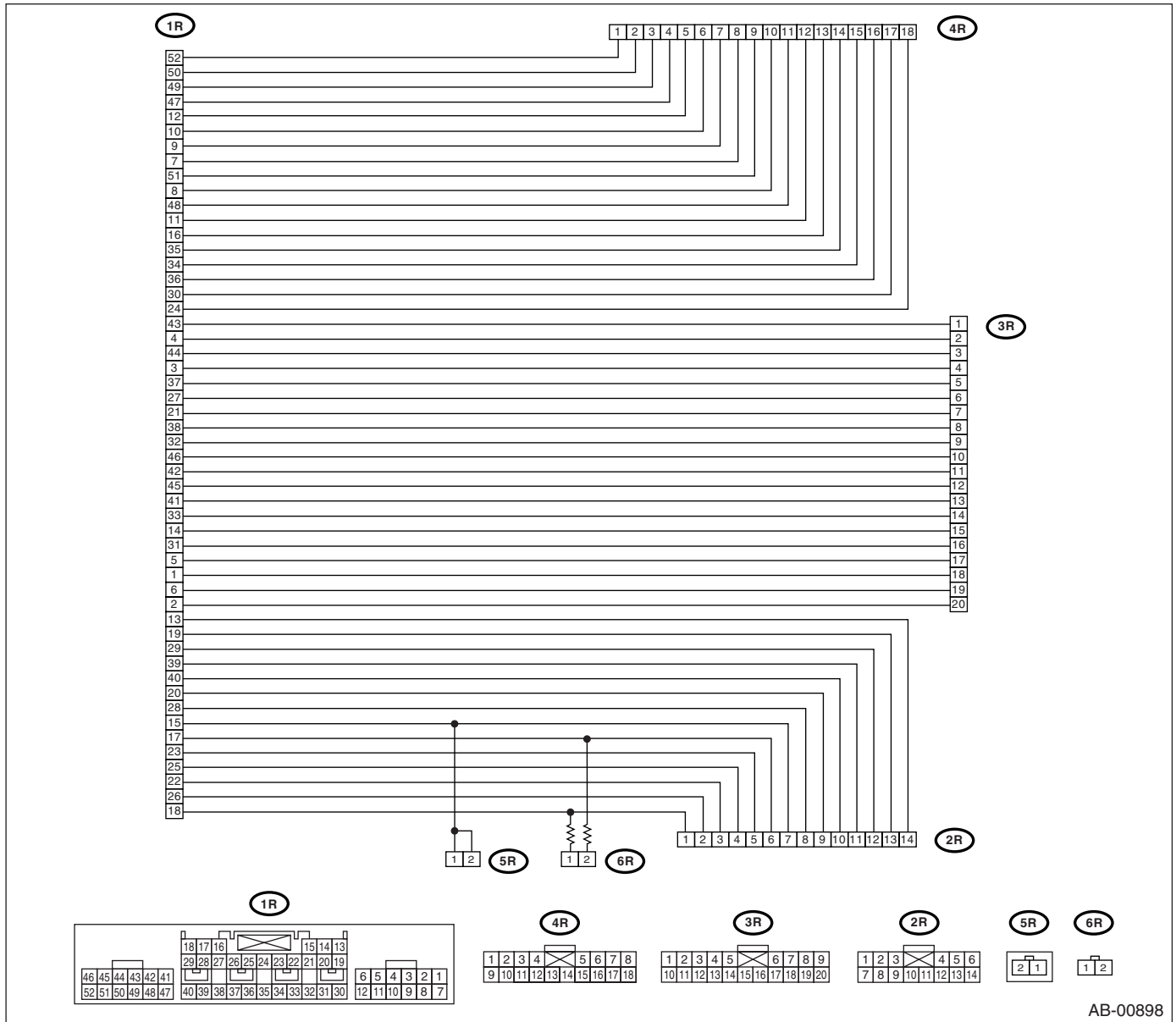


General Description

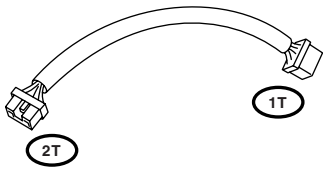
AIRBAG SYSTEM (DIAGNOSTICS)

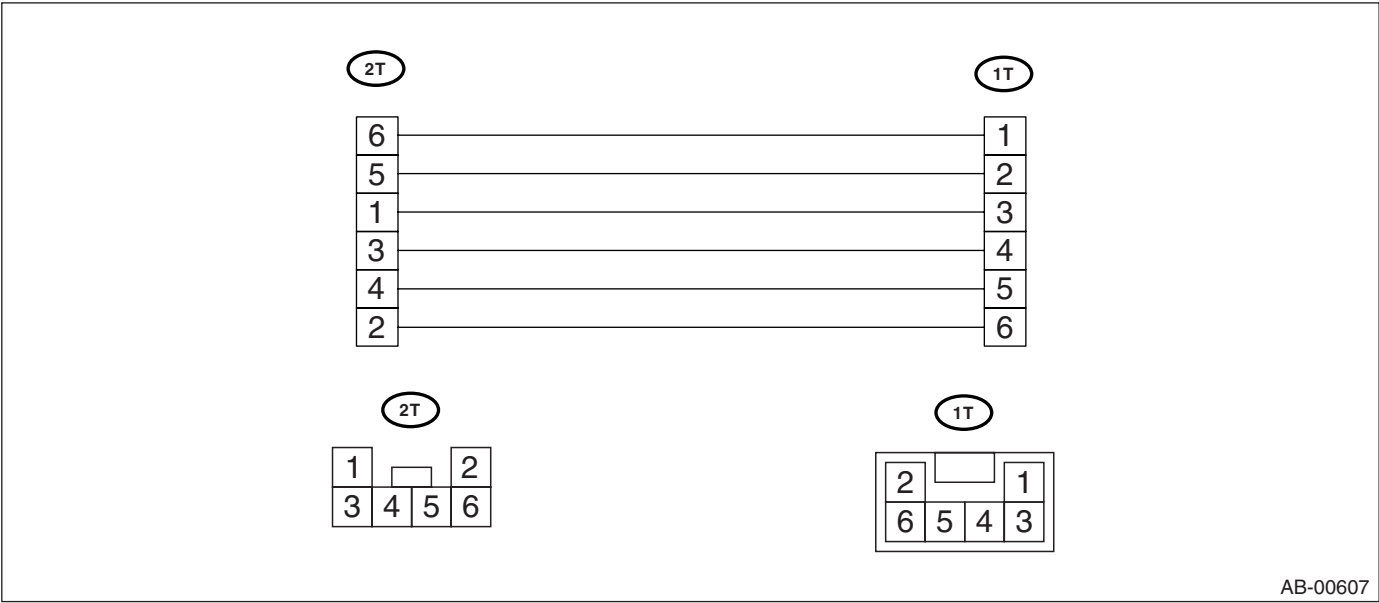
• TEST HARNESS R

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299FE030	98299FE030	TEST HARNESS R	Used when measuring voltage, resistance of air-bag control module.



• TEST HARNESS T

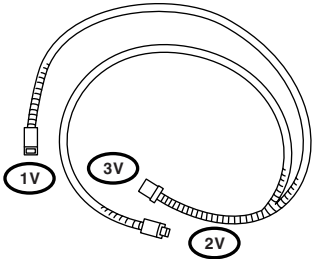
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299SA060	98299SA060	TEST HARNESS T	- Used when measuring voltage, resistance of airbag system. - Used with test harness M (98299FE020).

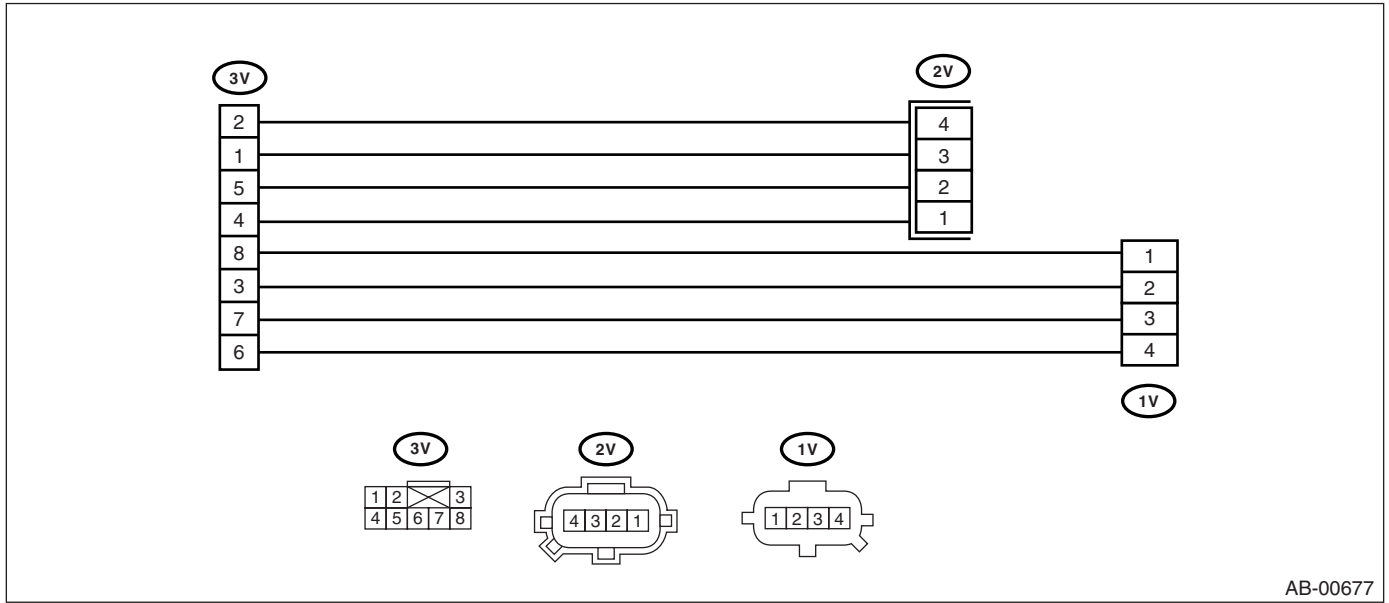


General Description

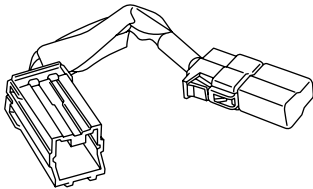
AIRBAG SYSTEM (DIAGNOSTICS)

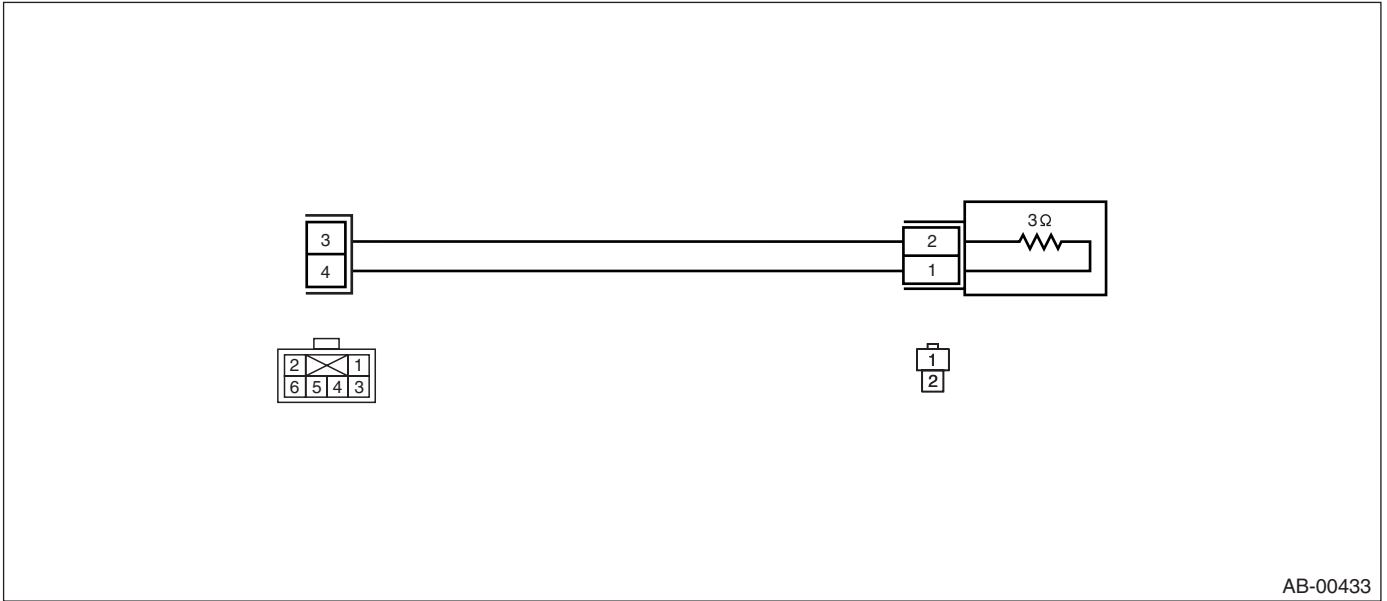
• TEST HARNESS V

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



• AIRBAG RESISTOR

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST98299PA040	98299PA040	AIRBAG RESISTOR	Used in replacement of airbag module which resistance value is same as airbag module.

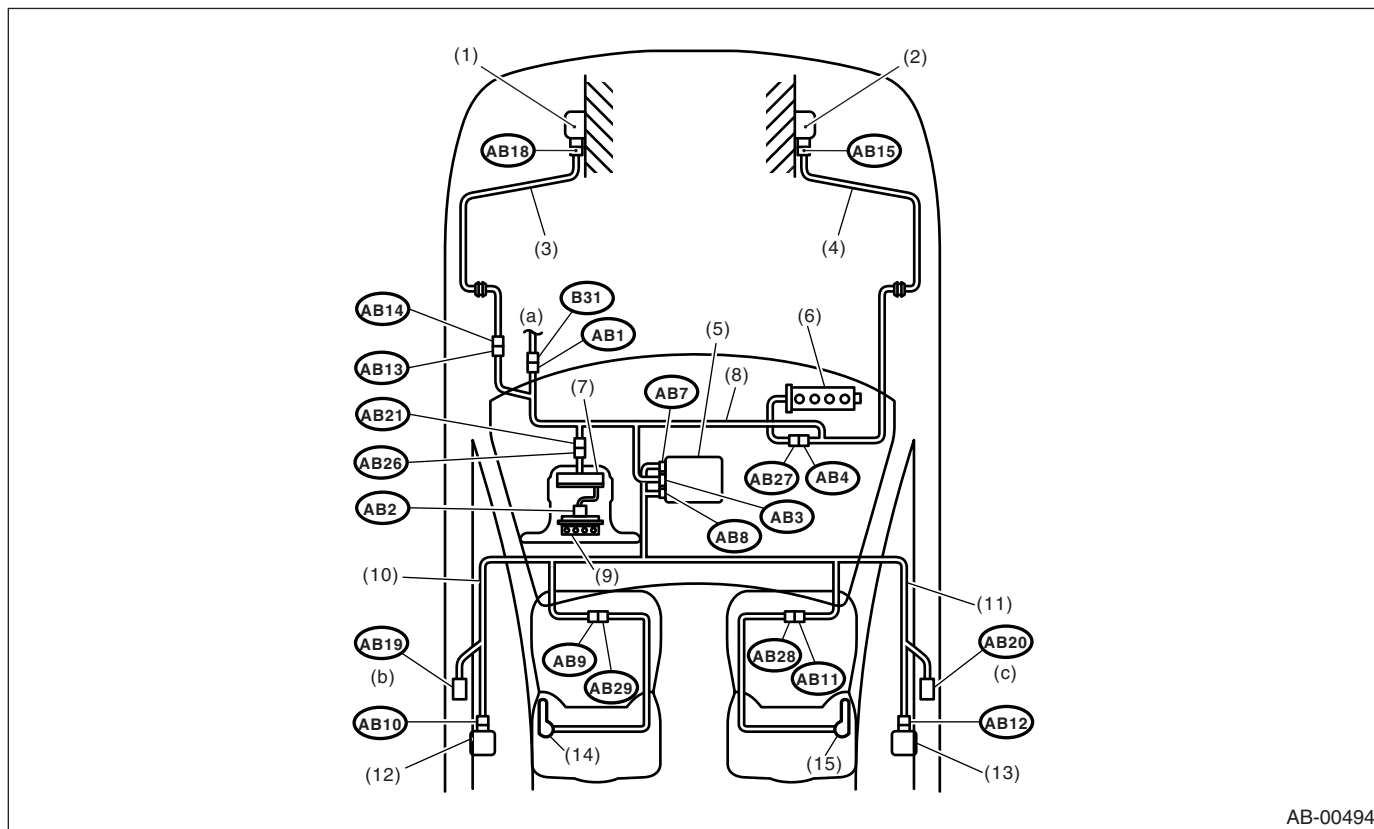


Electrical Component Location

AIRBAG SYSTEM (DIAGNOSTICS)

4. Electrical Component Location

A: LOCATION



AB-00494

(1) Front sub sensor (LH)	(7) Roll connector	(14) Side airbag module (LH)
(2) Front sub sensor (RH)	(8) Airbag main harness	(15) Side airbag module (RH)
(3) Front sub sensor harness (LH)	(9) Driver's airbag module	(a) To body harness
(4) Front sub sensor harness (RH)	(10) Side airbag harness (LH)	(b) To seat belt pretensioner (LH)
(5) Airbag control module with built-in safety and electric sensor	(11) Side airbag harness (RH)	(c) To seat belt pretensioner (RH)
(6) Passenger's airbag module	(12) Side airbag sensor (LH)	
	(13) Side airbag sensor (RH)	

Connector No.	(AB1)	(AB2)	(AB3)	(AB4)	(AB7)	(AB8)	(AB9)	(AB10)	(AB11)	(AB12)	(AB13)	(AB14)
Pole	6	2	28	2	12	12	2	4	2	4	2	2
Color	Yellow	Black	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Male/Female	Male	Female	Female	Female	Female	Female	Female	Female	Female	Female	Female	Male

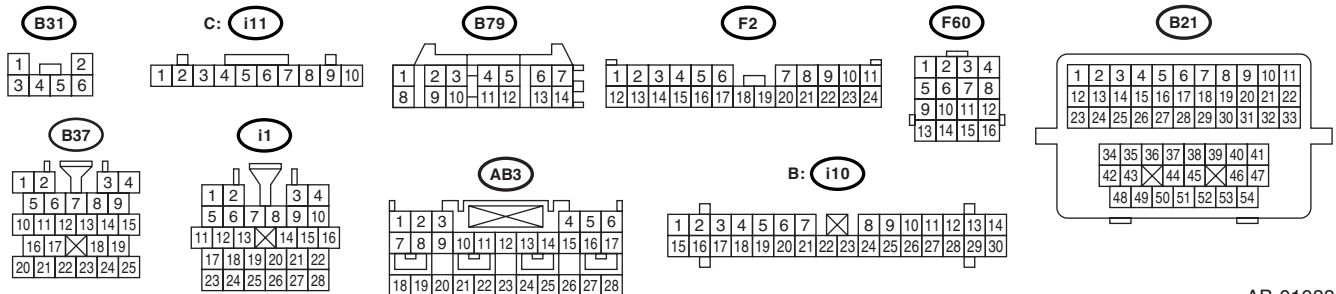
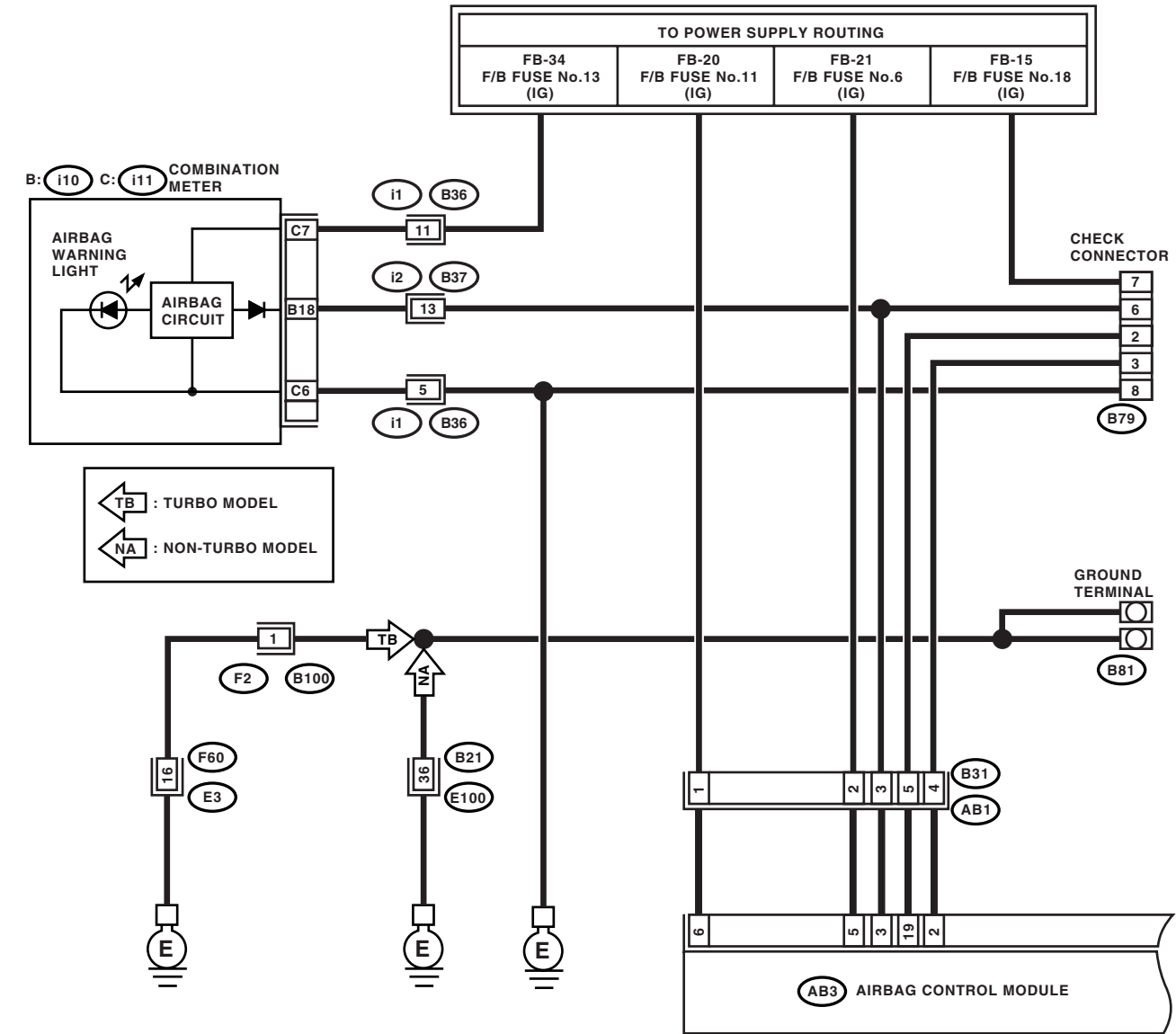
Connector No.	(AB15)	(AB18)	(AB19)	(AB20)	(AB21)	(AB26)	(AB27)	(AB28)	(AB29)			
Pole	2	2	2	2	2	2	2	2	2			
Color	Yellow	Yellow	Black	Black	Yellow	Yellow	Yellow	Yellow	Yellow			
Male/Female	Female	Female	Female	Female	Female	Male	Male	Male	Male			

Airbag Control Module I/O Signal

AIRBAG SYSTEM (DIAGNOSTICS)

5. Airbag Control Module I/O Signal

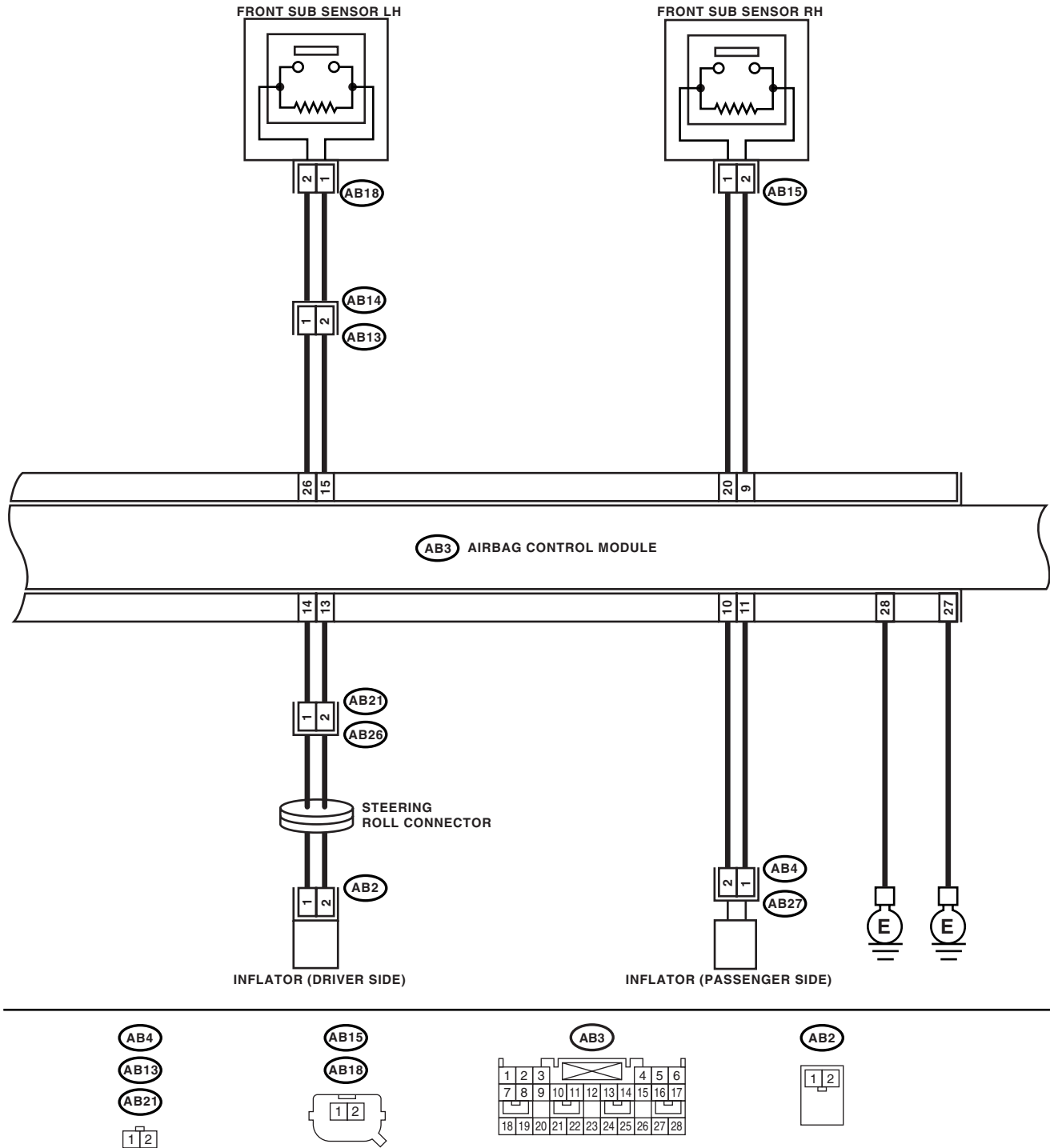
A: WIRING DIAGRAM



AB-01088

Airbag Control Module I/O Signal

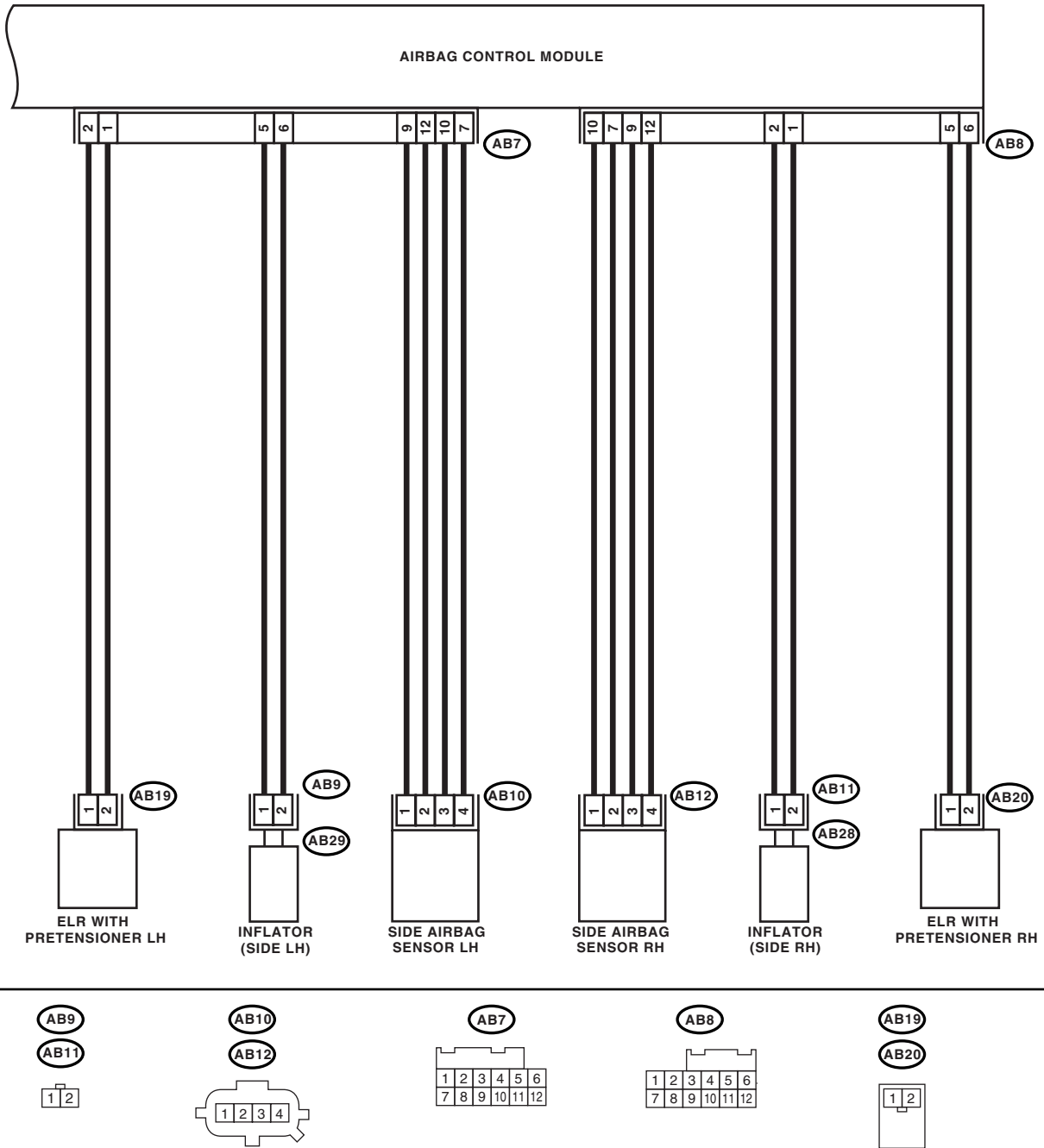
AIRBAG SYSTEM (DIAGNOSTICS)



AB-01010

Airbag Control Module I/O Signal

AIRBAG SYSTEM (DIAGNOSTICS)



AB-00897

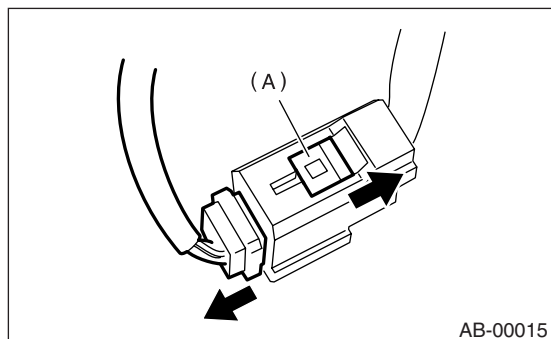
6. Airbag Connector

A: PROCEDURE

1. POWER SUPPLY

1) How to disconnect:

- (1) Move the slide lock (A) in the direction of the arrow.
- (2) Disconnect the connector with the slide lock (A) moved.

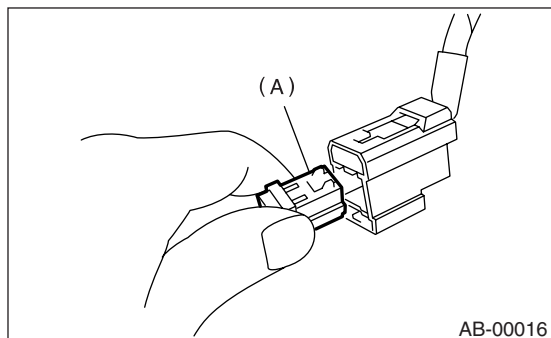


CAUTION:

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

2) How to connect:

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



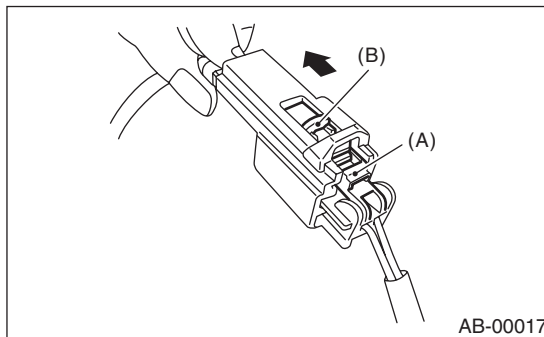
CAUTION:

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

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

1) How to disconnect:

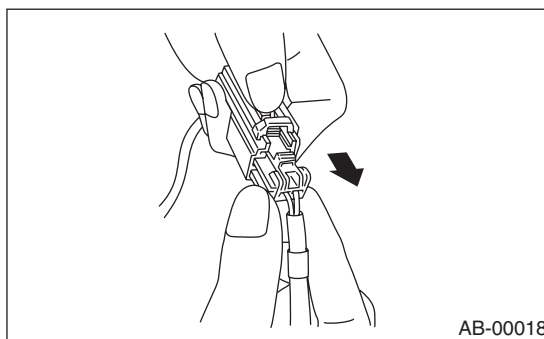
- (1) Push the lock arm (A).
- (2) With the lock arm (A) pushed in, move the slide lock (B) in the direction of the arrow.



- (3) With the slide lock pulled, release the lock arm (to its original position) to separate the connector.

CAUTION:

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

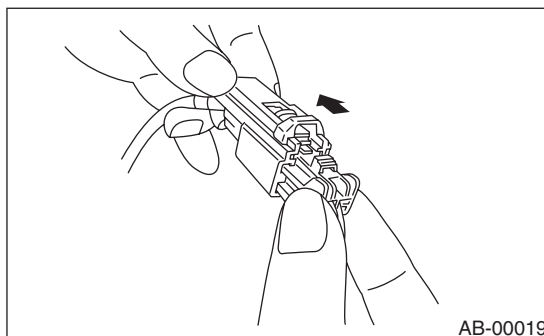


2) How to connect:

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

CAUTION:

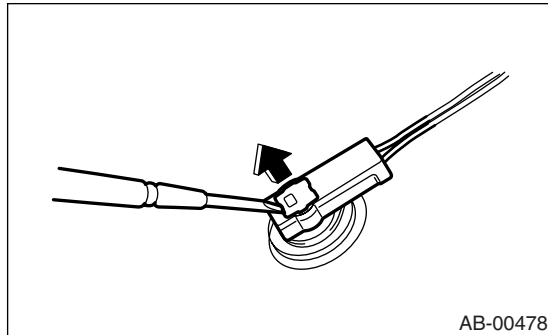
Be sure to insert the connector in until it locks. Then pull on it gently to make sure that it is locked.



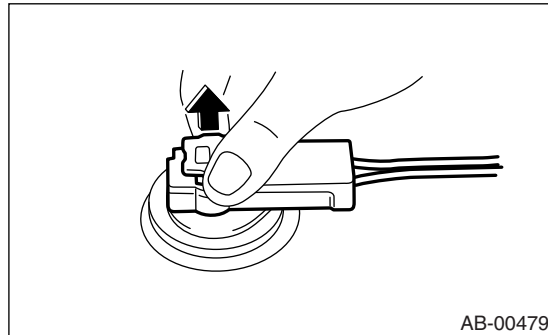
3. DRIVER'S AIRBAG MODULE AND PRE-TENSIONER

1) How to disconnect:

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



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

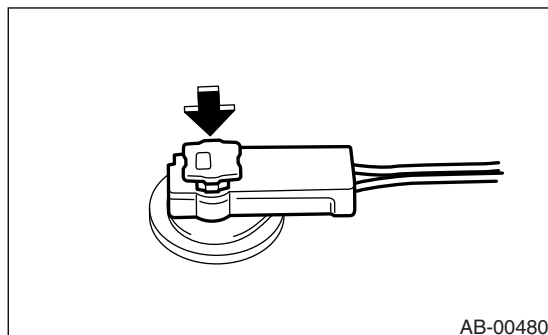


2) How to connect:

Connect the connector in reverse order of disconnecting. At this time, be sure to insert the push lock in until 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.
- Be sure to push the push lock in securely.



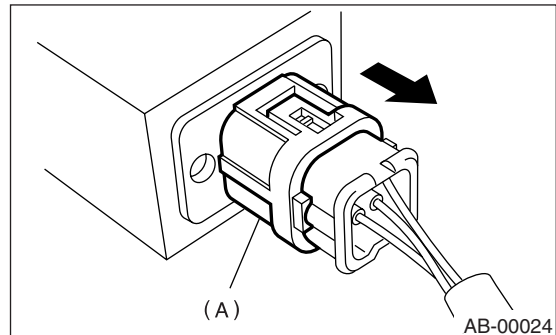
4. FRONT SUB SENSOR AND SIDE AIRBAG SENSOR

1) How to disconnect:

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

CAUTION:

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

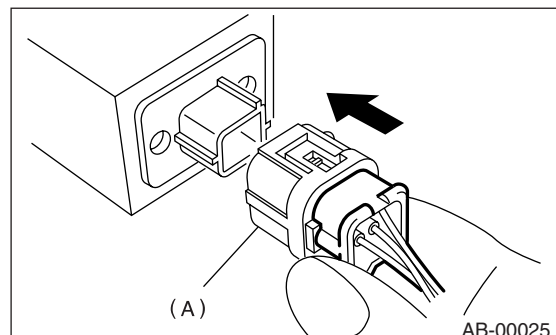


2) How to connect:

- Holding the connector, 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.



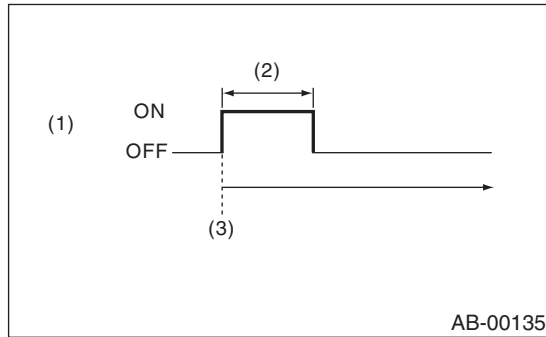
Airbag Warning Light Illumination Pattern

AIRBAG SYSTEM (DIAGNOSTICS)

7. Airbag Warning Light Illumination Pattern

A: INSPECTION

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



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

Read Diagnostic Trouble Code (DTC)

AIRBAG SYSTEM (DIAGNOSTICS)

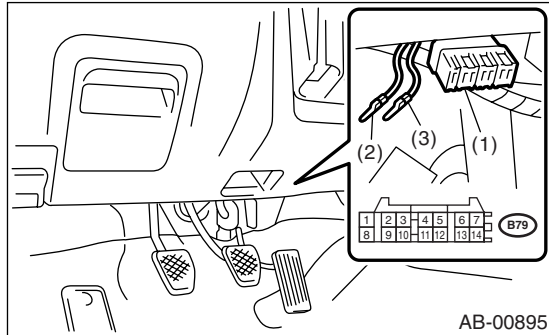
8. Read Diagnostic Trouble Code (DTC)

A: OPERATION

- 1) Turn the ignition switch to ON.
- 2) Connect the ground terminal to check connector terminal No. 2 in the instrument panel lower cover area.

NOTE:

The harness of ground terminal is wrapped by tapes with the harness of check connector.



- (1) Check connector
- (2) Ground terminal
- (3) Ground terminal

- 3) Read the DTC by identifying the way airbag warning light flashes.

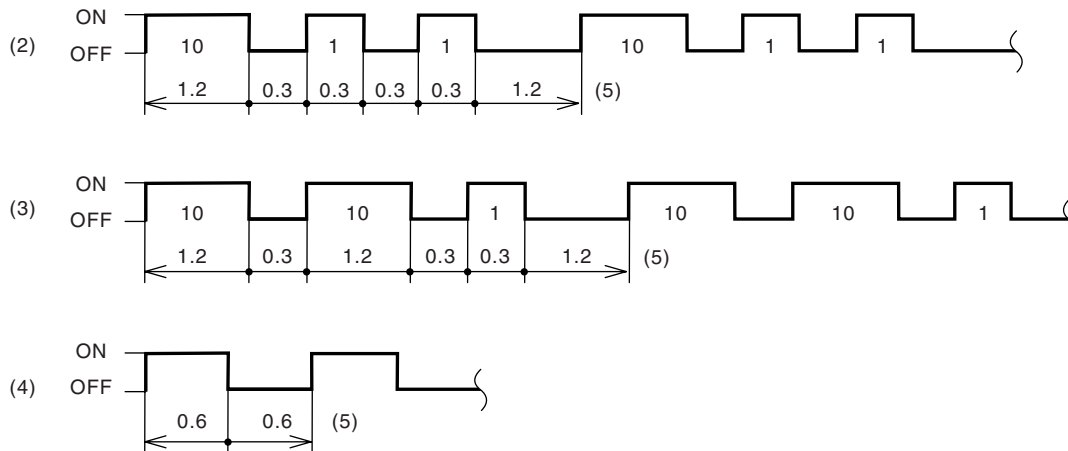
The airbag warning light flashes a code corresponding to the faulty parts.

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(diag)-31, List of Diagnostic Trouble Code (DTC).>
- “Airbag Warning Light Failure” <Ref. to AB(diag)-26, Airbag Warning Light Failure.>

(1)



AB-00137

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

- 4) Turn the ignition switch to OFF, and disconnect the ground terminal from the check connector terminal No. 2.

- 5) Wind tape around the ground terminal and return it to its original position.

9. Inspection Mode

A: PROCEDURE

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

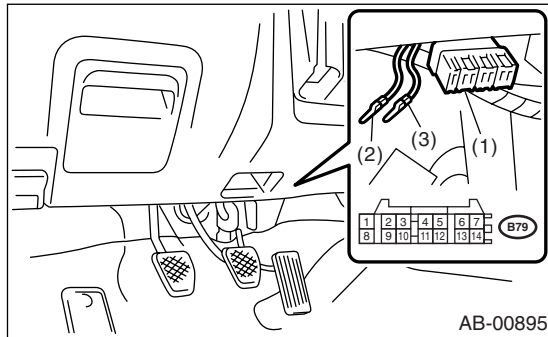
10. Clear Memory Mode

A: OPERATION

- 1) Turn the ignition switch to ON.
- 2) Connect the ground terminal (ground terminal "A") to check connector terminal No. 2 in the instrument panel lower cover area.

NOTE:

The harness of ground terminal is wrapped by tapes with the harness of check connector.



- (1) Check connector
- (2) Ground terminal "B"
- (3) Ground terminal "A"

- 3) While the warning light flashes, connect another diagnosis terminal (ground terminal "B") to the check 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 check connector.
- 6) Wind tape around the ground terminal and return it to its original position.

Airbag Warning Light Failure

AIRBAG SYSTEM (DIAGNOSTICS)

11. Airbag Warning Light Failure

A: AIRBAG WARNING LIGHT REMAINS ON

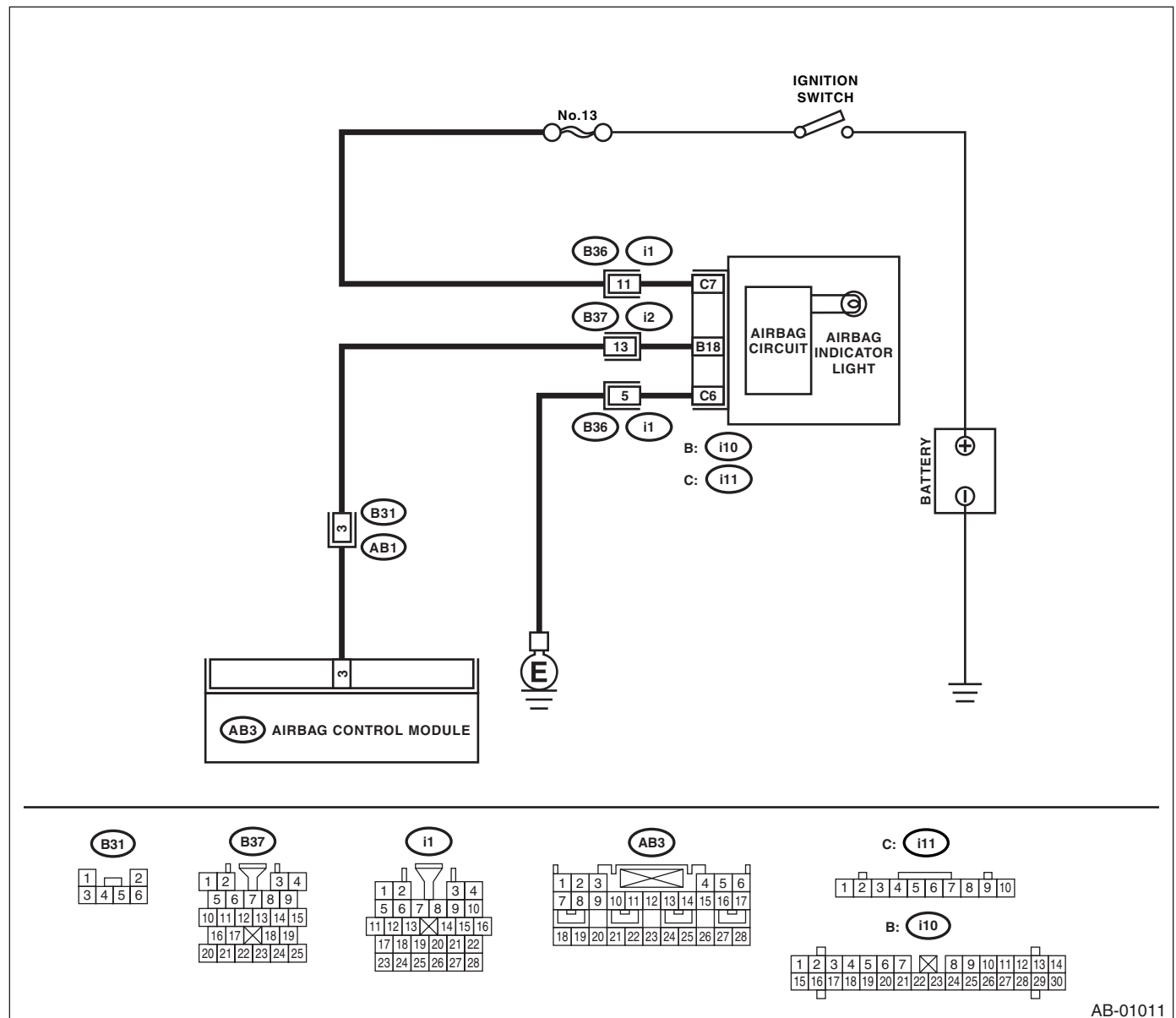
DIAGNOSIS:

- Airbag warning light unit 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.
- (AB3) is not connected properly to the airbag control module.

CAUTION:

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



AB-01011

Airbag Warning Light Failure

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK POOR CONTACT IN CONNECTORS (AB1) AND (B31). 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Remove the 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 the body harness with airbag main harness.	Go to step 2.
2 CHECK AIRBAG WARNING LIGHT. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Connect the connector (1T) in test harness T to the body harness connector (B31). 3) Connect the connector (1M) in test harness M to the connector (2T) in test harness T. 4) Connect the battery ground cable and turn the ignition switch to ON. 5) Connect two connectors, (3M) and (4M) in test harness M.	Is the airbag warning light turned off?	Go to step 4.	Go to step 3.
3 CHECK BODY HARNESS. Check the body harness. NOTE: After problem has been eliminated, disconnect the connectors (3M) and (4M).	Is the anything unusual to body harness?	Repair the body harness.	Replace the combination meter printed circuit. <Ref. to IDI-10, Combination Meter.>
4 CHECK POOR CONTACT. Confirm that firm contact is secured between the airbag control module and the connector (AB3). <Ref. to AB-16, Airbag Control Module.>	Is the poor contact in connector (AB3)?	Replace the body harness with airbag main harness or replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Go to step 5.
5 CHECK AIRBAG MAIN HARNESS. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Connect the connector (AB1) to (B31). 3) Disconnect the connectors (AB26) and (AB21). 4) Remove the glove box and disconnect the connectors (AB27) and (AB4). 5) Disconnect the connector (AB3) from the airbag control module, and connect the connector (1R) in test harness R. <Ref. to AB-16, Airbag Control Module.> 6) Connect the battery ground cable and turn the ignition switch to ON. 7) Connect the connectors (5R) and (6R) in test harness R. NOTE: After problem has been eliminated, disconnect the connectors (5R) and (6R).	Is the airbag warning light turned off?	Go to step 6.	Replace the body harness with airbag main harness.

Airbag Warning Light Failure

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
6 CHECK GROUNDING CIRCUIT. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB3) from the airbag control module. 3) Connect the connector (1R) in test harness R to body harness connector (AB3). 4) Measure the resistance between connector (2R) in test harness R and the chassis ground. Connector & terminal (2R) No. 10 — Chassis ground: (2R) No. 11 — Chassis ground:	Is the resistance less than 10 Ω ?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Repair the body-grounding circuit.

B: AIRBAG WARNING LIGHT REMAINS OFF

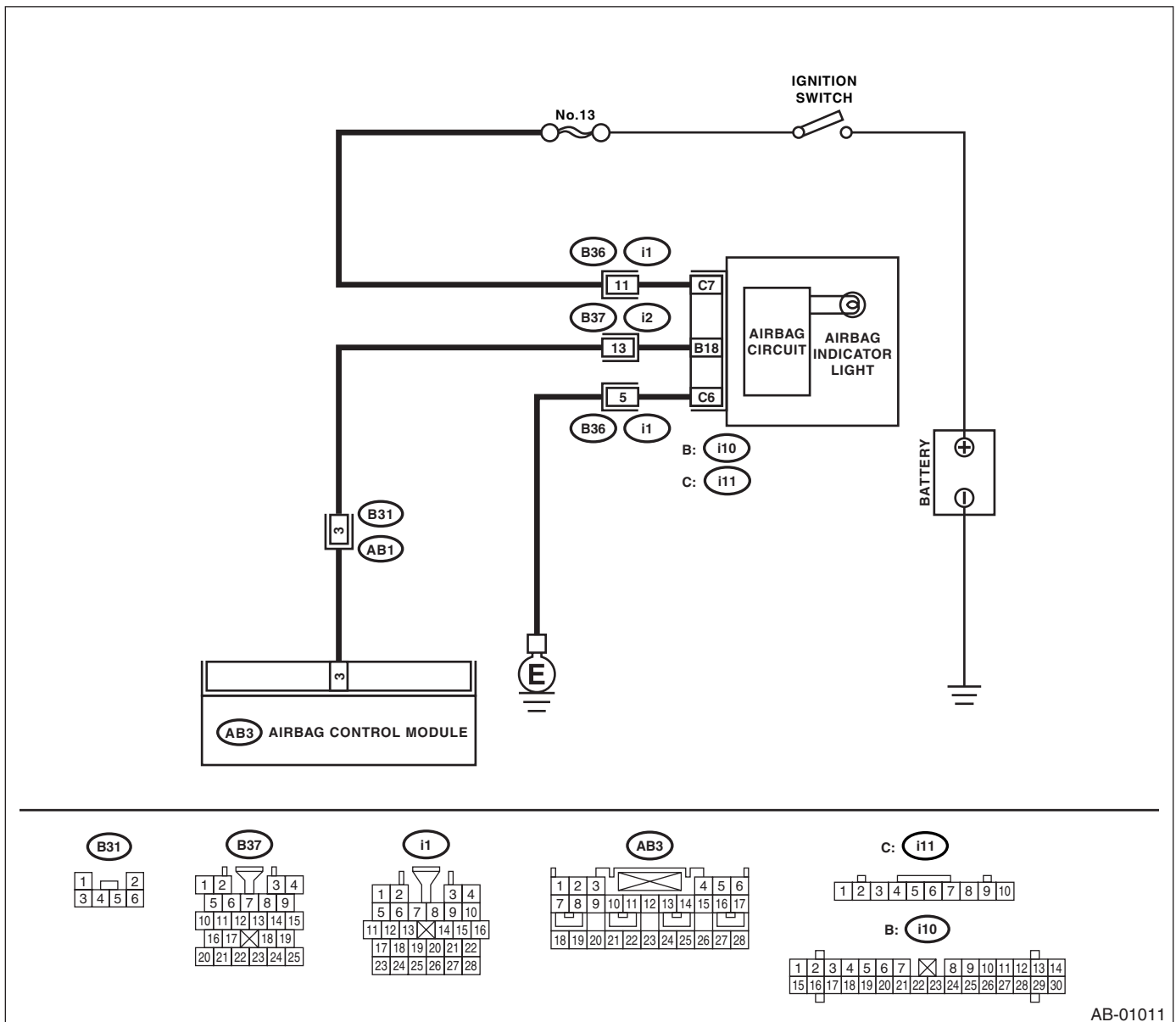
DIAGNOSIS:

- Fuse No. 13 (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 to OFF, disconnect the ground cable from battery, and wait more than 20 seconds before starting to work.
- Before replacing the airbag module, seat belt pretensioner 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:



AB-01011

Airbag Warning Light Failure

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK COMBINATION METER. Turn the ignition switch to ON, and confirm that warning lights equipped in the combination meter are turned on.	Do the warning lights not for airbag turn on?	Go to step 2.	Repair the combination meter power supply. <Ref. to IDI-3, Combination Meter System.>
2 CHECK FUSE No. 13 (IN MAIN FUSE BOX). Remove the fuse No. 13 and perform visual inspection.	Is the fuse No. 13 (in main fuse box) blown out?	Replace the fuse No. 13. If fuse No. 13 is blown out again, go to step 3.	Go to step 3.
3 CHECK AIRBAG WARNING LIGHT CIRCUIT (IN COMBINATION METER). 1) Turn the ignition switch to 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 to ON.	Is the airbag warning light turned on?	Go to step 4.	Replace the airbag warning light bulb or combination meter printed circuit. <Ref. to IDI-10, Combination Meter.>
4 CHECK AIRBAG MAIN HARNESS. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Connect the connector (AB1) to (B31). 3) Disconnect the connector (AB3) from the airbag control module. <Ref. to AB-16, Airbag Control Module.> 4) Connect the battery ground cable and turn the ignition switch to ON.	Is the airbag warning light turned on?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Replace the body harness with airbag main harness.

List of Diagnostic Trouble Code (DTC)

AIRBAG SYSTEM (DIAGNOSTICS)

12.List of Diagnostic Trouble Code (DTC)

A: LIST

DTC	Memory function	Contents of diagnosis	Reference
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(diag)-33, DTC 11, Diagnostic Chart with Trouble Code.>
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(diag)-35, DTC 12, Diagnostic Chart with Trouble Code.>
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(diag)-37, DTC 15, Diagnostic Chart with Trouble Code.>
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(diag)-39, DTC 16, Diagnostic Chart with Trouble Code.>
21	Provided.	Airbag control module is faulty.	<Ref. to AB(diag)-40, DTC 21, Diagnostic Chart with Trouble Code.>
22	Provided.	Front airbag module and seat belt pretensioner (LH/RH) are inflated.	<Ref. to AB(diag)-41, DTC 22, Diagnostic Chart with Trouble Code.>
23	Not provided.	(AB3), (AB7) and (AB8) are not connected properly to airbag control module.	<Ref. to AB(diag)-42, DTC 23, Diagnostic Chart with Trouble Code.>
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(diag)-43, DTC 24, Diagnostic Chart with Trouble Code.>
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(diag)-45, DTC 25, Diagnostic Chart with Trouble Code.>
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(diag)-47, DTC 31, Diagnostic Chart with Trouble Code.>
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(diag)-49, DTC 32, Diagnostic Chart with Trouble Code.>
41	Provided.	- Side airbag harness (RH) is faulty. - Side airbag module (RH) is faulty. - Airbag control module is faulty.	<Ref. to AB(diag)-52, DTC 41, Diagnostic Chart with Trouble Code.>

List of Diagnostic Trouble Code (DTC)

AIRBAG SYSTEM (DIAGNOSTICS)

DTC	Memory function	Contents of diagnosis	Reference
42	Provided.	- Side airbag harness (LH) is faulty. - Side airbag module (LH) is faulty. - Airbag control module is faulty.	<Ref. to AB(diag)-54, DTC 42, Diagnostic Chart with Trouble Code.>
45	Provided.	- Side airbag harness (RH) is shorted to power supply. - Airbag control module is faulty.	<Ref. to AB(diag)-56, DTC 45, Diagnostic Chart with Trouble Code.>
46	Provided.	- Side airbag harness (LH) is shorted to power supply. - Airbag control module is faulty.	<Ref. to AB(diag)-58, DTC 46, Diagnostic Chart with Trouble Code.>
51	Provided.	- Side airbag sensor (RH) is faulty. - Side airbag harness (RH) is faulty. - Airbag control module is faulty.	<Ref. to AB(diag)-60, DTC 51, Diagnostic Chart with Trouble Code.>
52	Provided.	- Side airbag sensor (LH) is faulty. - Side airbag harness (LH) is faulty. - Airbag control module is faulty.	<Ref. to AB(diag)-62, DTC 52, Diagnostic Chart with Trouble Code.>
53	Provided.	Side airbag sensor (RH) is faulty.	<Ref. to AB(diag)-64, DTC 53, Diagnostic Chart with Trouble Code.>
54	Provided.	Side airbag sensor (LH) is faulty.	<Ref. to AB(diag)-64, DTC 54, Diagnostic Chart with Trouble Code.>
55	Provided.	Side airbag module is inflated.	<Ref. to AB(diag)-64, DTC 55, Diagnostic Chart with Trouble Code.>
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(diag)-65, DTC 61, Diagnostic Chart with Trouble Code.>
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(diag)-67, DTC 62, Diagnostic Chart with Trouble Code.>
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(diag)-69, DTC 65, Diagnostic Chart with Trouble Code.>
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(diag)-71, DTC 66, Diagnostic Chart with Trouble Code.>

13.Diagnostic Chart with Trouble Code

A: DTC 11

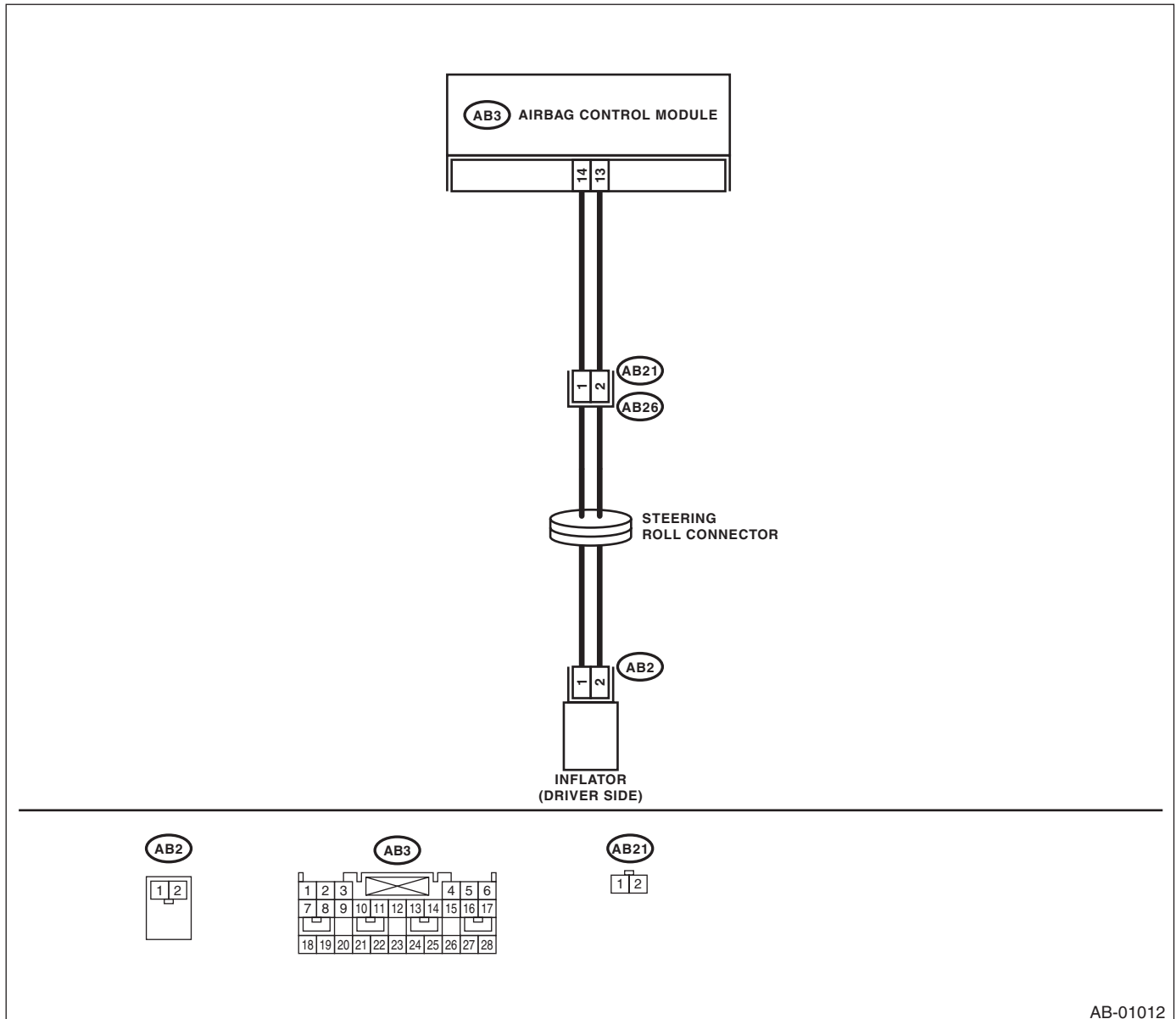
DTC DETECTING CONDITION:

- 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 to OFF, disconnect the ground cable from battery, and wait more than 20 seconds before starting to work.
- Before replacing the airbag module, seat belt pretensioner 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:



AB-01012

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK DRIVER'S AIRBAG MODULE. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Remove the driver's airbag module. <Ref. to AB-12, Driver's Airbag Module.> 3) Connect the connector (1N) in test harness N to connector (AB2). 4) Connect the airbag resistor to connector (2N) in test harness N. 5) Connect the battery ground cable and turn the ignition switch to ON.	Does the airbag warning light operate properly?	Replace the driver's airbag module. <Ref. to AB-12, Driver's Airbag Module.>	Go to step 2.
2 CHECK ROLL CONNECTOR. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 second. 2) Disconnect the test harness N from the connector (AB2). 3) Remove the instrument panel lower cover, disconnect the connector (AB26) from (AB21) and connect the connector (1F) in test harness F to connector (AB21). 4) Connect the airbag resistor to connector (3F) in test harness F. 5) Connect the battery ground cable and turn the ignition switch to 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 to 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, and disconnect connectors (AB27) and (AB4). <Ref. to AB-13, Passenger's Airbag Module.> 4) Disconnect the connector (AB3) from the airbag control module, and connect the connector (1R) in test harness R. <Ref. to AB-16, Airbag Control Module.> 5) Measure the resistance between connector (2R) in test harness R and the connector (3F) in test harness F. Connector & terminal (2R) No. 2 — (3F) No. 3: (2R) No. 4 — (3F) No. 4:	Is the resistance less than 10 Ω ?	Go to step 4.	Replace the body harness with airbag main harness.
4 CHECK AIRBAG MAIN HARNESS. Measure the resistance of the connector (2R) in test harness R. Connector & terminal (2R) No. 2 — (2R) No. 4: (2R) No. 4 — Chassis ground: (2R) No. 2 — Chassis ground:	Is the resistance more than 1 M Ω ?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Replace the body harness with airbag main harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

B: DTC 12

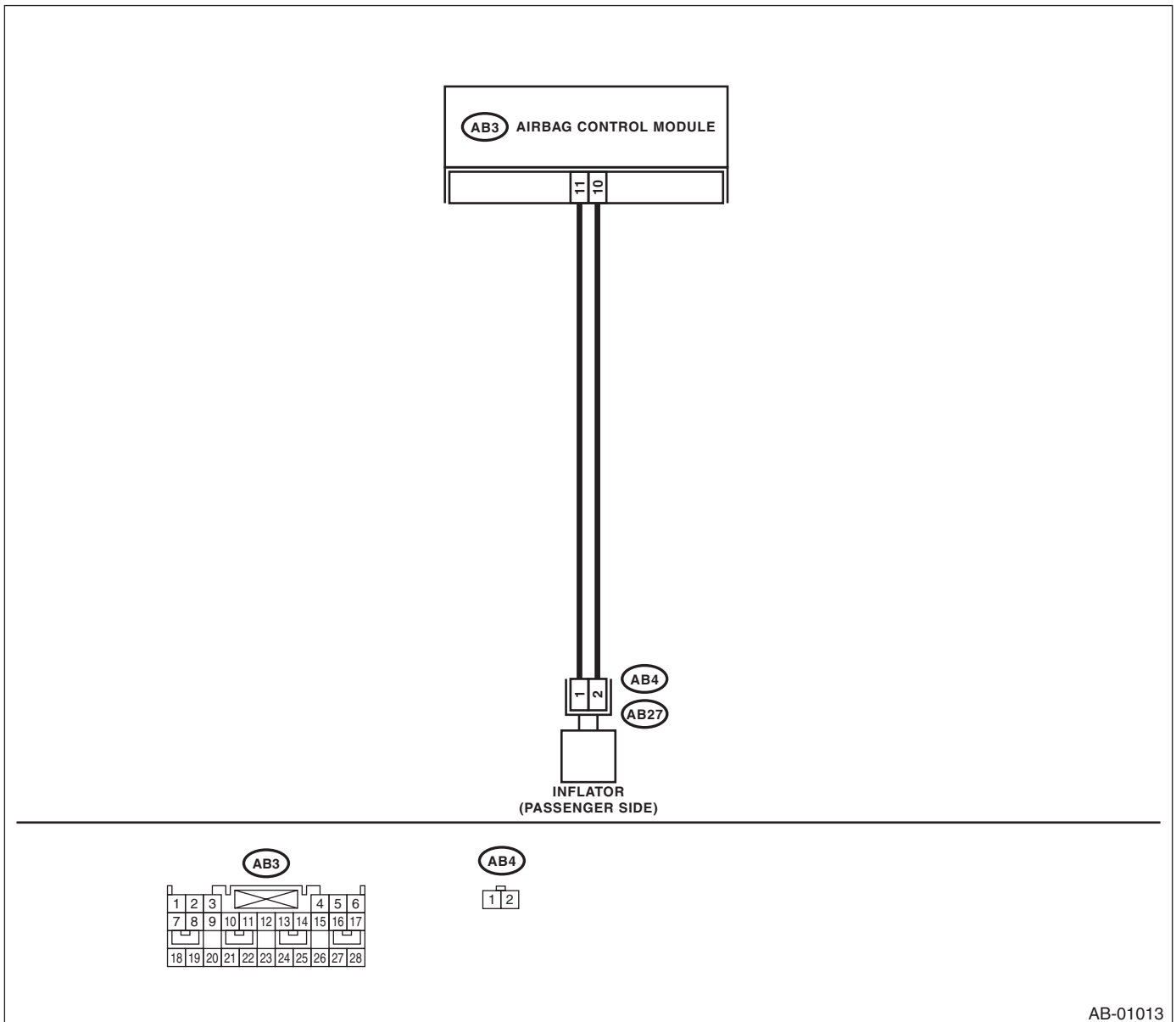
DTC DETECTING CONDITION:

- 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 to OFF, disconnect the ground cable from battery, and wait more than 20 seconds before starting to work.
- Before replacing the airbag module, seat belt pretensioner 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:



Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK PASSENGER'S AIRBAG MODULE. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Remove the glove box. 3) Disconnect the connector (AB27) from (AB4). 4) Connect the connector (1F) in test harness F to connector (AB4). 5) Connect the airbag resistor to connector (3F) in test harness F. 6) Connect the battery ground cable and turn the ignition switch to ON.	Does the airbag warning light operate properly?	Replace the passenger's airbag module. <Ref. to AB-13, Passenger's Airbag Module.>	Go to step 2.
2 CHECK AIRBAG MAIN HARNESS. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from the connector (3F) in test harness F. 3) Remove the instrument panel lower cover and disconnect the connector (AB26) from (AB21). 4) Disconnect the connector (AB3) from the airbag control module, and connect the connector (1R) in test harness R. <Ref. to AB-16, Airbag Control Module.> 5) Measure the resistance between connector (2R) in test harness R and the connector (3F) in test harness F. Connector & terminal (2R) No. 3 — (3F) No. 4: (2R) No. 5 — (3F) No. 3:	Is the resistance less than 10 Ω ?	Go to step 3.	Replace the body harness with airbag main harness.
3 CHECK AIRBAG MAIN HARNESS. Measure the resistance of the connector (2R) in test harness R. Connector & terminal (2R) No. 3 — (2R) No. 5: (2R) No. 3 — Chassis ground: (2R) No. 5 — Chassis ground:	Is the resistance more than 1 M Ω ?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Replace the body harness with airbag main harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

C: DTC 15

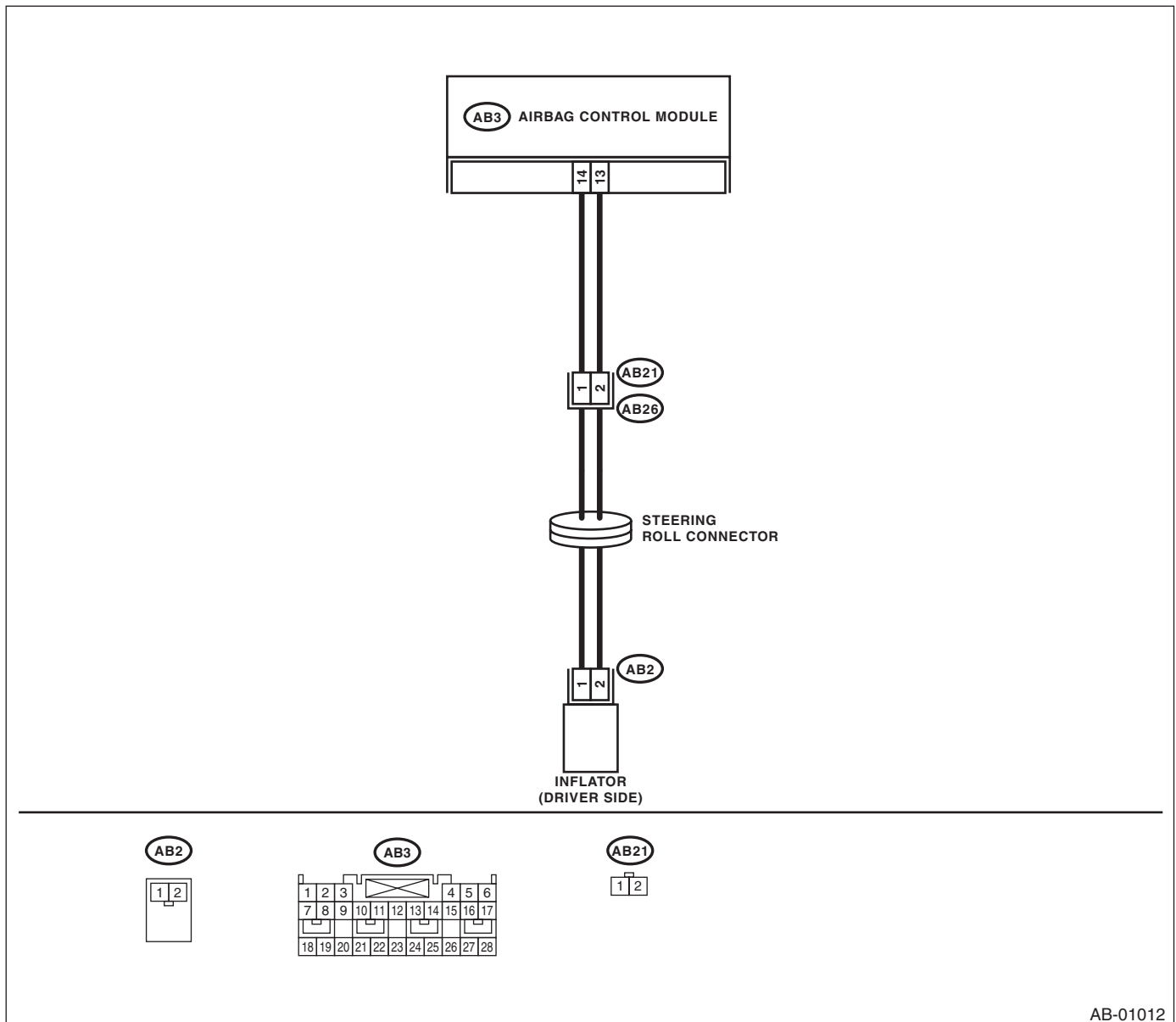
DTC DETECTING CONDITION:

- 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 to OFF, disconnect the ground cable from battery, and wait more than 20 seconds before starting to work.
- Before replacing the airbag module, seat belt pretensioner 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:



AB-01012

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK DRIVER'S AIRBAG MODULE. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Remove the driver's airbag module. <Ref. to AB-12, Driver's Airbag Module.> 3) Connect the connector (AB2) to connector (1N) in test harness N. 4) Connect the airbag resistor to connector (2N) in test harness N. 5) Connect the battery ground cable and turn the ignition switch to ON.	Does the airbag warning light operate properly?	Replace the driver's airbag module. <Ref. to AB-12, Driver's Airbag Module.>	Go to step 2.
2 CHECK ROLL CONNECTOR. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the test harness N from the connector (AB2). 3) Remove the instrument panel lower cover panel and disconnect the connector (AB26) from (AB21). 4) Connect the connector (1F) in test harness F to connector (AB21). 5) Connect the airbag resistor to connector (3F) in test harness F. 6) Connect the battery ground cable and turn the ignition switch to 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 to 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) Remove the glove box, and disconnect the connectors (AB27) and (AB4). 4) Disconnect the connector (AB3) from the airbag control module, and connect the connector (1R) in test harness R. <Ref. to AB-16, Airbag Control Module.> 5) Connect the battery ground cable and turn the ignition switch to ON. (engine OFF) 6) Measure the voltage between connector (2R) in test harness R and the chassis ground. Connector & terminal (2R) No. 4 (+) — Chassis ground (-): (2R) No. 2 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Replace the body harness with airbag main harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

D: DTC 16

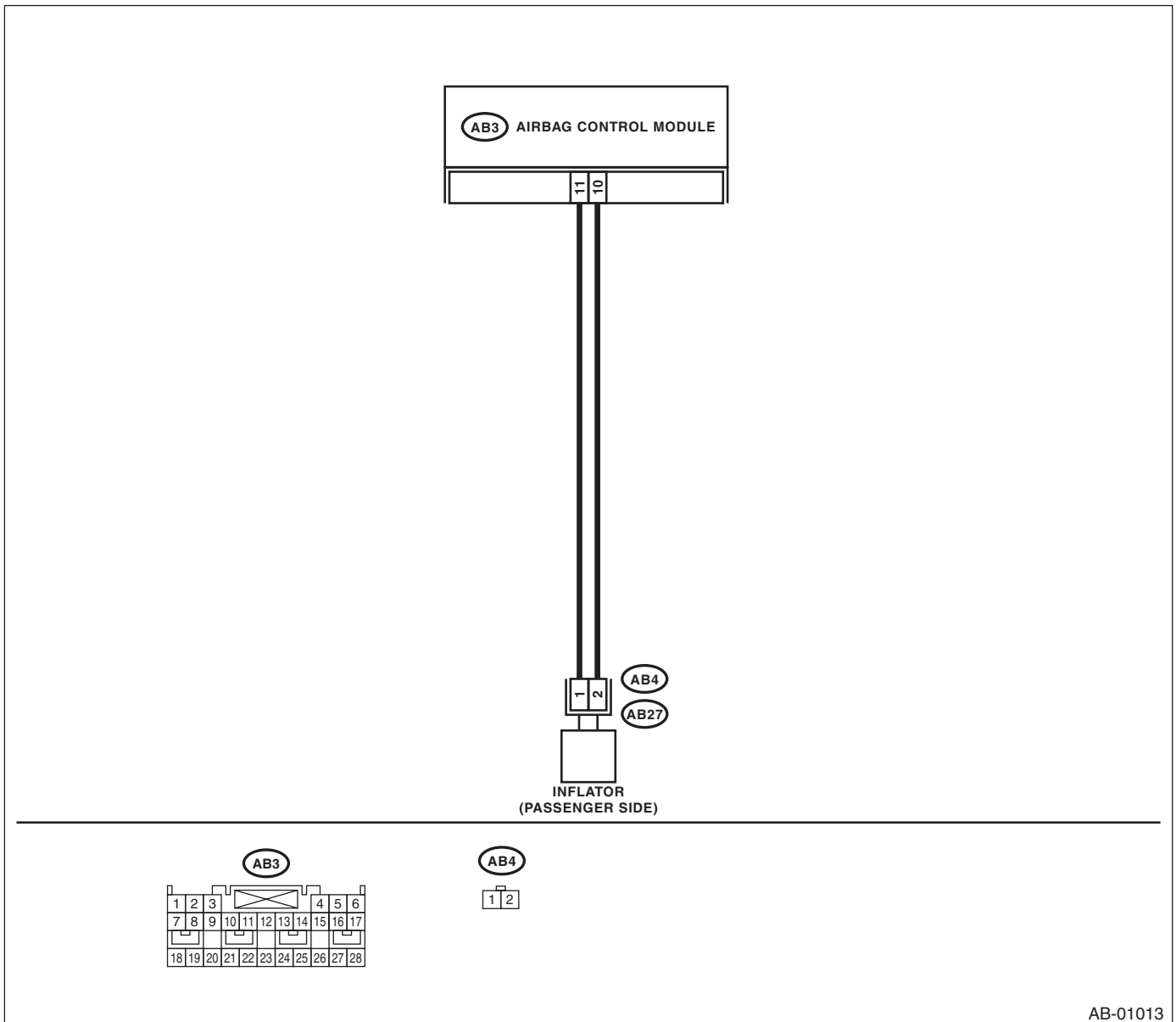
DTC DETECTING CONDITION:

- 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 to OFF, disconnect the ground cable from battery, and wait more than 20 seconds before starting to work.
- Before replacing the airbag module, seat belt pretensioner 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:



Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK PASSENGER'S AIRBAG MODULE. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Remove the glove box. 3) Disconnect the connector (AB27) from (AB4) 4) Connect the connector (1F) in test harness F to connector (AB4). 5) Connect the airbag resistor to connector (3F) in test harness F. 6) Connect the battery ground cable and turn the ignition switch to ON.	Does the airbag warning light operate properly?	Replace the passenger's airbag module. <Ref. to AB-13, Passenger's Airbag Module.>	Go to step 2.
2 CHECK AIRBAG MAIN HARNESS. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from the connector (3F) in test harness F. 3) Remove the instrument panel lower cover and disconnect the connector (AB26) from (AB21). 4) Disconnect the connector (AB3) from the airbag control module, and connect the connector (1R) in test harness R. <Ref. to AB-16, Airbag Control Module.> 5) Measure the voltage between connector (2R) in test harness R and the chassis ground. Connector & terminal (2R) No. 3 (+) — Chassis ground (-): (2R) No. 5 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Replace the body harness with airbag main harness.

E: DTC 21

DTC DETECTING CONDITION:

Airbag control module is faulty.

CAUTION:

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

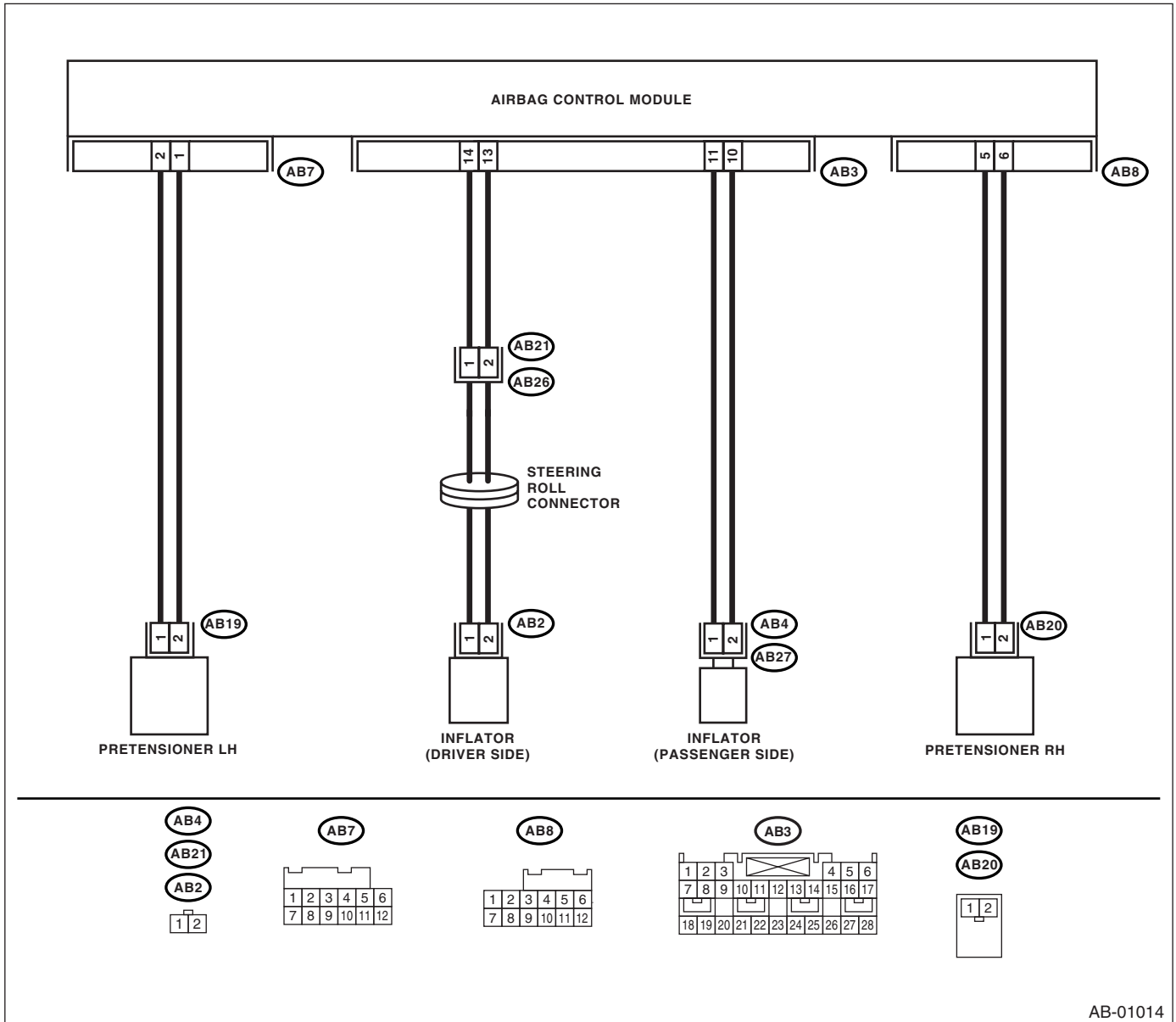
Step	Check	Yes	No
1 CHECK IF DTC 21 IS INDICATED. Read the DTC. <Ref. to AB(diag)-23, Read Diagnostic Trouble Code (DTC).>	Is the airbag warning light DTC 21 indicated?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Perform clear memory mode. <Ref. to AB(diag)-25, Clear Memory Mode.>

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

F: DTC 22

WIRING DIAGRAM:



AB-01014

This DTC is indicated when the front airbag and the pretensioner are deployed.

Once this DTC is indicated, memory is not erasable; therefore replace the following parts.

- Airbag control module <Ref. to AB-16, Airbag Control Module.>
- Driver's airbag module <Ref. to AB-12, Driver's Airbag Module.>
- Passenger's airbag module <Ref. to AB-13, 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-8, Front Seat Belt.>

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

G: DTC 23

DTC DETECTING CONDITION:

(AB3), (AB7) and (AB8) are not connected properly to airbag control module.

CAUTION:

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

Step	Check	Yes	No
1 CHECK POOR CONTACT IN CONNECTORS (AB3), (AB7) AND (AB8). 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connectors (AB3), (AB7) and (AB8) from the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Check if rust or damage appear on the harness connector and the control module connector.	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.> Replace the body harness with airbag main harness. Replace the body harness with side airbag harness.	Go to step 2.
2 CHECK POOR CONTACT IN CONNECTORS (AB3), (AB7) AND (AB8). 1) Ensure that connectors are firmly reconnected. 2) Connect the battery ground cable and turn the ignition switch to ON.	Does the airbag warning light operate properly?	Finish the diagnosis.	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

H: DTC 24

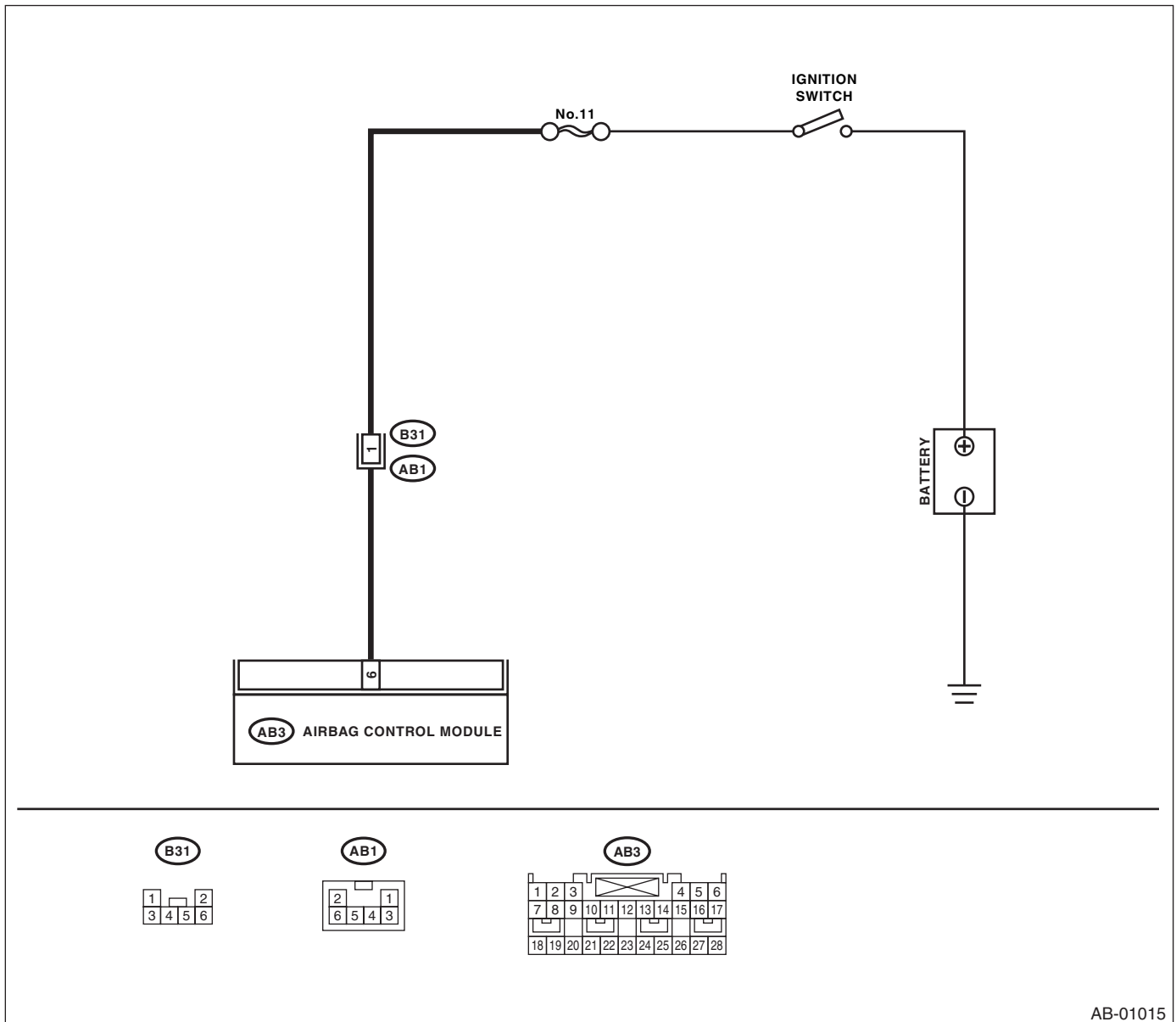
DTC DETECTING CONDITION:

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

CAUTION:

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



AB-01015

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK AIRBAG CONTROL MODULE. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB3) from the airbag control module. <Ref. to AB-16, Airbag Control Module.> 3) Connect the connector (1R) in test harness R to connector (AB3). 4) Connect the battery ground cable and turn the ignition switch to ON. 5) Measure the voltage between connector (2R) in test harness R and chassis ground. Connector & terminal (2R) No. 1 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Go to step 2.
2 CHECK AIRBAG MAIN HARNESS. 1) While checking control module, turn the ignition switch to 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) Connect the connector (2M) in test harness M to connector (AB1). 4) Measure the resistance between connector (5M) in test harness M and the connector (2R) in test harness R. Connector & terminal (5M) No. 2 — (2R) No. 1:	Is the resistance less than 10 Ω ?	Go to step 3.	Replace the body harness with air-bag main harness.
3 CHECK AIRBAG MAIN HARNESS. Measure the following resistance with the above-mentioned condition maintained. Connector & terminal (5M) No. 2 — Chassis ground: (2R) No. 1 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 4.	Replace the body harness with air-bag main harness.
4 CHECK FUSE No. 11 (IN JOINT BOX). 1) Confirm that the ignition switch is turned OFF. 2) Remove the fuse No. 11 (in joint box) and perform visual inspection.	Is the fuse No. 11 blown out?	Replace the fuse No. 11. If fuse No. 11 is blown out again, repair the body harness.	Repair the body harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

I: DTC 25

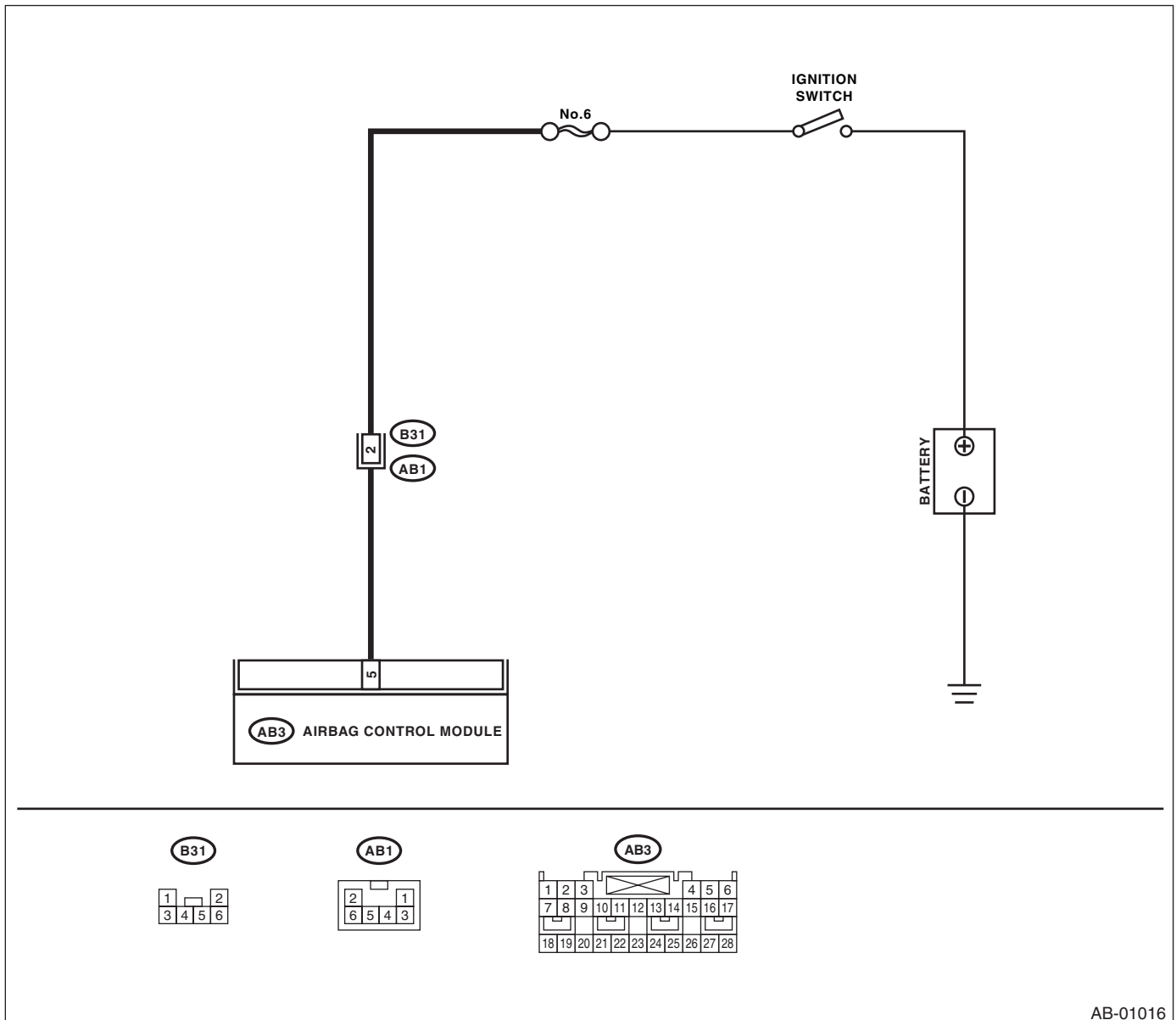
DTC DETECTING CONDITION:

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

CAUTION:

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



AB-01016

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK AIRBAG CONTROL MODULE. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB3) from air-bag control module. <Ref. to AB-16, Airbag Control Module.> 3) Connect the connector (1R) in test harness R to connector (AB3). 4) Connect the battery ground cable, and turn the ignition switch to ON. 5) Measure the voltage between the connector (2R) in test harness R and the chassis ground. Connector & terminal (2R) No. 6 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Go to step 2.
2 CHECK AIRBAG MAIN HARNESS. 1) While checking control module, turn the ignition switch to 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) Connect the connector (2M) in test harness M to the airbag connector (AB1). 4) Measure the resistance between the connector (5M) in test harness M and the connector (2R) in test harness R. Connector & terminal (5M) No. 4 — (2R) No. 6:	Is the resistance less than 10 Ω ?	Go to step 3.	Replace the body harness with air-bag main harness.
3 CHECK AIRBAG MAIN HARNESS. Measure the following resistance with the above-mentioned condition maintained. Connector & terminal (5M) No. 4 — Chassis ground: (2R) No. 6 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 4.	Replace the body harness with air-bag main harness.
4 CHECK FUSE No. 6 (IN JOINT BOX). 1) Confirm that the ignition switch is turned OFF. 2) Remove the No. 6 fuse (in joint box) and perform visual inspection.	Is the fuse No. 6 blown out?	Replace the fuse No. 6. If fuse No. 6 is blown out again, repair the body harness.	Repair the body harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

J: DTC 31

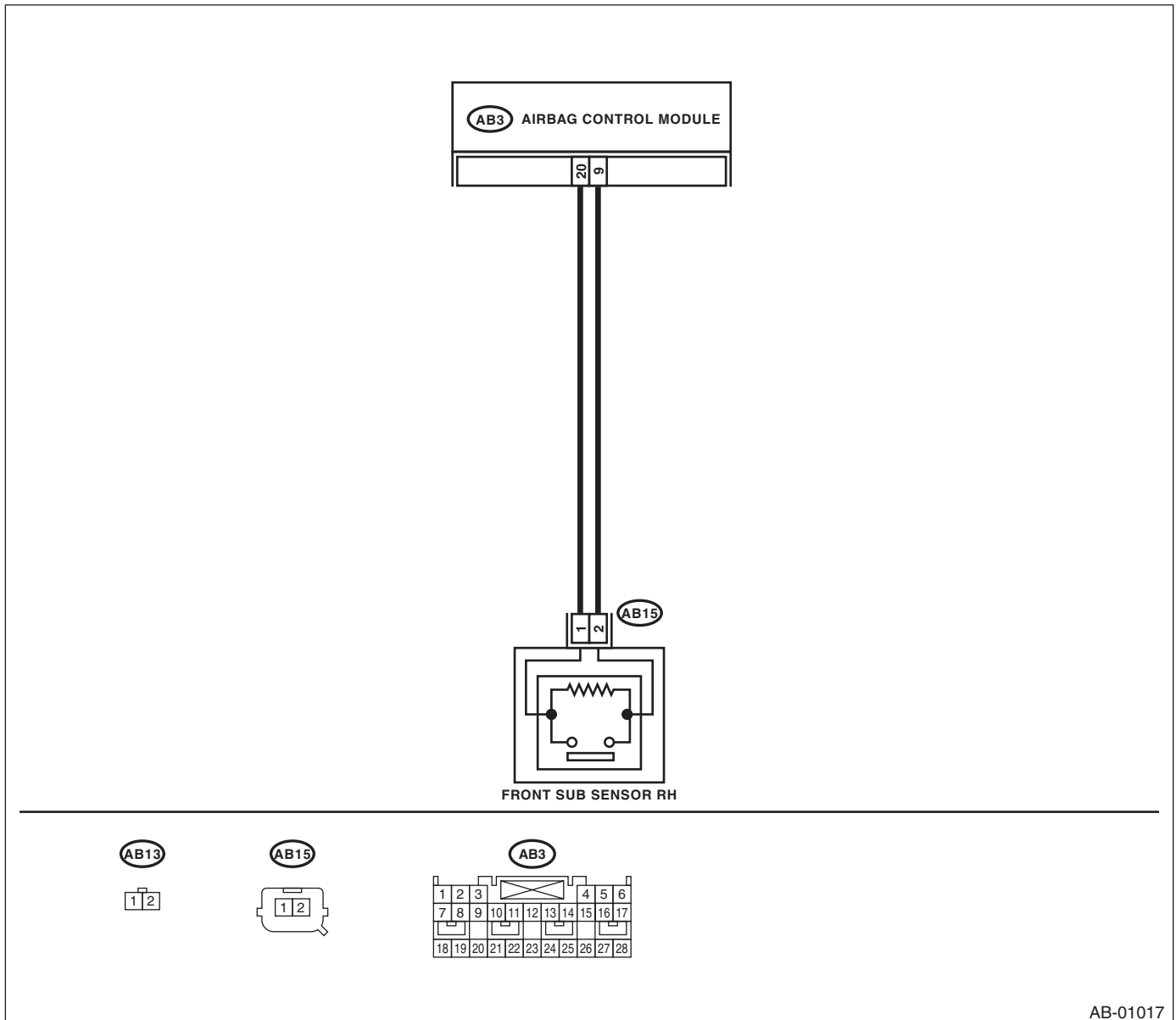
DTC DETECTING CONDITION:

- 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 to OFF, disconnect the ground cable from battery, and wait more than 20 seconds before starting to work.
- Before replacing the airbag module, seat belt pretensioner 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:



Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK FRONT SUB SENSOR (RH) AND FRONT SUB SENSOR HARNESS (RH). 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB3) from the airbag control module, and connect the connector (1R) in test harness R. <Ref. to AB-16, Airbag Control Module.> 3) Measure the resistance of the connector (3R) in test harness R. Connector & terminal (3R) No. 7 — (3R) No. 9:	Is the resistance 750 Ω — 1 k Ω ?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Go to step 2.
2 CHECK FRONT SUB SENSOR (RH) AND FRONT SUB SENSOR HARNESS (RH). Measure the resistance between connector (3R) in test harness R and the chassis ground. Connector & terminal (3R) No. 7 — Chassis ground: (3R) No. 9 — Chassis ground:	Is the resistance more than 1 M Ω ?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Go to step 3.
3 CHECK AIRBAG MAIN HARNESS AND FRONT SUB SENSOR HARNESS (RH). 1) Disconnect the connector (AB15) from the front sub sensor. <Ref. to AB-19, Front Sub Sensor.> 2) Connect the connector (1H) in test harness H to connector (AB15). 3) Measure the resistance between connector (3R) in test harness R and connector (3H) in test harness H. Connector & terminal (3R) No. 7 — (3H) No. 6: (3R) No. 9 — (3H) No. 5:	Is the resistance less than 10 Ω ?	Go to step 4.	Replace the body harness with airbag main harness.
4 CHECK AIRBAG MAIN HARNESS AND FRONT SUB SENSOR HARNESS (RH). Measure the resistance between connector (3R) in test harness R and the chassis ground. Connector & terminal (3R) No. 7 — Chassis ground: (3R) No. 9 — Chassis ground:	Is the resistance more than 1 M Ω ?	Finish the diagnosis.	Replace the front sub sensor (RH). <Ref. to AB-19, Front Sub Sensor.>

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

K: DTC 32

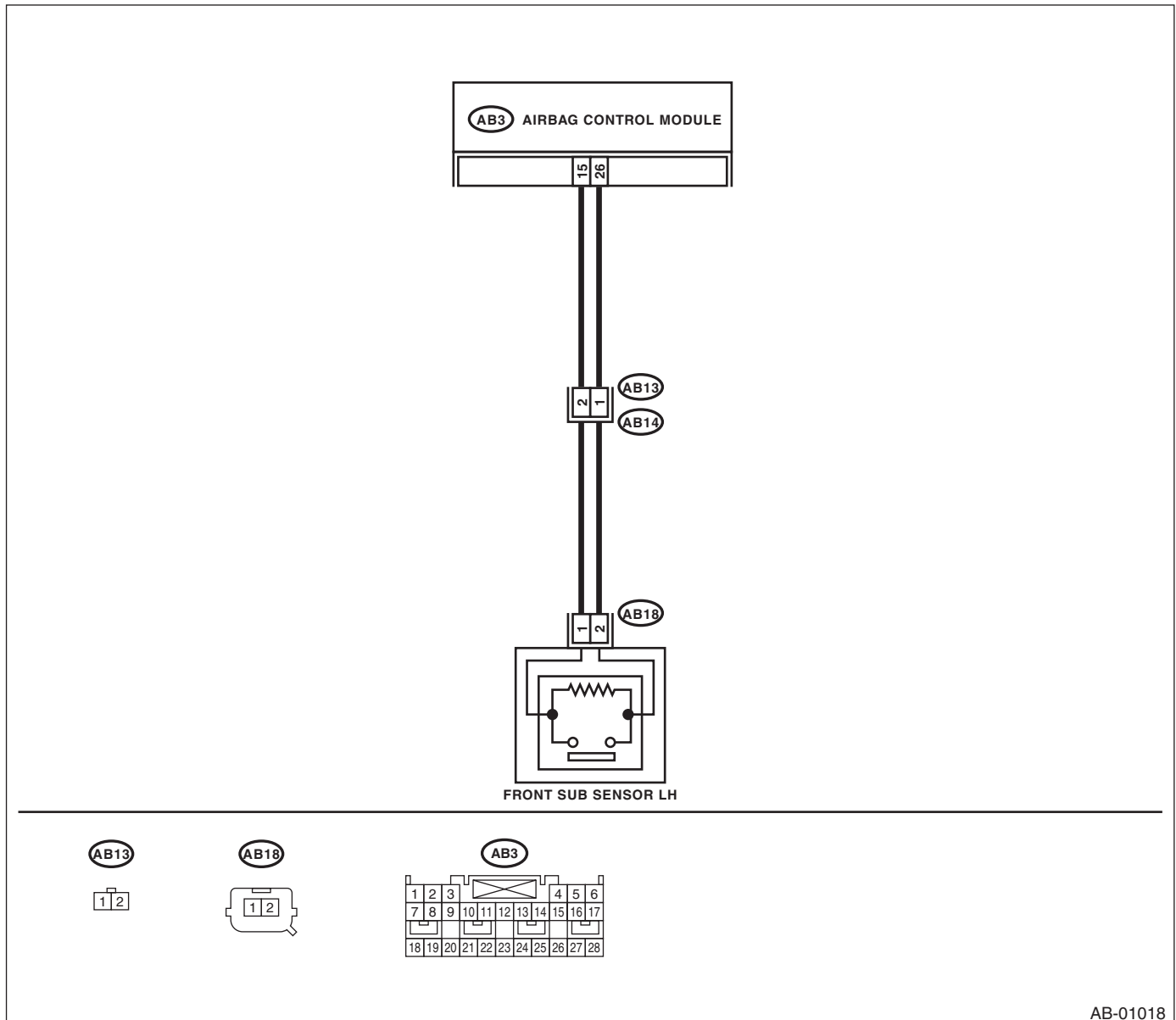
DTC DETECTING CONDITION:

- 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 to OFF, disconnect the ground cable from battery, and wait more than 20 seconds before starting to work.
- Before replacing the airbag module, seat belt pretensioner 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:



Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK FRONT SUB SENSOR (LH) AND FRONT SUB SENSOR HARNESS (LH). 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB3) from the airbag control module, and connect connector (1R) in the test harness R to connector (AB3). <Ref. to AB-16, Airbag Control Module.> 3) Measure the resistance of the connector (3R) in the test harness R. Connector & terminal (3R) No. 8 — (3R) No. 6:	Is the resistance 750 Ω — 1 k Ω ?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Go to step 2.
2 CHECK FRONT SUB SENSOR (LH) AND FRONT SUB SENSOR HARNESS (LH). Measure the resistance between connector (3R) in test harness R and the chassis ground. Connector & terminal (3R) No. 8 — Chassis ground: (3R) No. 6 — Chassis ground:	Is the resistance more than 1 M Ω ?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Go to step 3.
3 CHECK AIRBAG MAIN HARNESS AND FRONT SUB SENSOR HARNESS (LH). 1) Disconnect the connector (AB18) from the front sub sensor. <Ref. to AB-19, Front Sub Sensor.> 2) Connect the connector (1H) in test harness H to connector (AB18). 3) Measure the resistance between connector (3R) in test harness R and connector (3H) in test harness H. Connector & terminal (3R) No. 6 — (3H) No. 5: (3R) No. 8 — (3H) No. 6:	Is the resistance less than 10 Ω ?	Go to step 4.	Go to step 5.
4 CHECK AIRBAG MAIN HARNESS AND FRONT SUB SENSOR HARNESS (LH). Measure the resistance between connector (3R) in test harness R and the chassis ground. Connector & terminal (3R) No. 6 — Chassis ground: (3R) No. 8 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 9.	Go to step 5.
5 CHECK AIRBAG MAIN HARNESS. 1) Disconnect the connector (AB13) from (AB14), and connect the connector (1F) in test harness F to (AB13). 2) Measure the resistance between connector (3R) in test harness R and connector (3F) in test harness F. Connector & terminal (3R) No. 6 — (3F) No. 3: (3R) No. 8 — (3F) No. 4:	Is the resistance less than 10 Ω ?	Go to step 6.	Replace the body harness with air-bag main harness.
6 CHECK AIRBAG MAIN HARNESS. Measure the resistance between connector (3R) in the test harness R and the chassis ground. Connector & terminal (3R) No. 6 — Chassis ground: (3R) No. 8 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 7.	Replace the body harness with air-bag main harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
7 CHECK FRONT SUB SENSOR HARNESS (LH). 1) Connect the connector (2F) in test harness F to connector (AB14). 2) Measure the resistance between connector (3H) in test harness H and connector (3F) in test harness F. Connector & terminal (3F) No. 5 — (3H) No. 5: (3F) No. 6 — (3H) No. 6:	Is the resistance less than 10 Ω ?	Go to step 8.	Replace the body harness with front sub sensor harness (LH).
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. 5 — Chassis ground: (3F) No. 6 — Chassis ground:	Is the resistance more than 1 M Ω ?	Go to step 9.	Replace the body harness with front sub sensor harness (LH).
9 CHECK FRONT SUB SENSOR (LH). 1) Connect the 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 — (3H) No. 4:	Is the resistance 750 Ω — 1 k Ω ?	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 resistance more than 1 M Ω ?	Finish the diagnosis.	Replace the front sub sensor (LH). <Ref. to AB-19, Front Sub Sensor.>

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

L: DTC 41

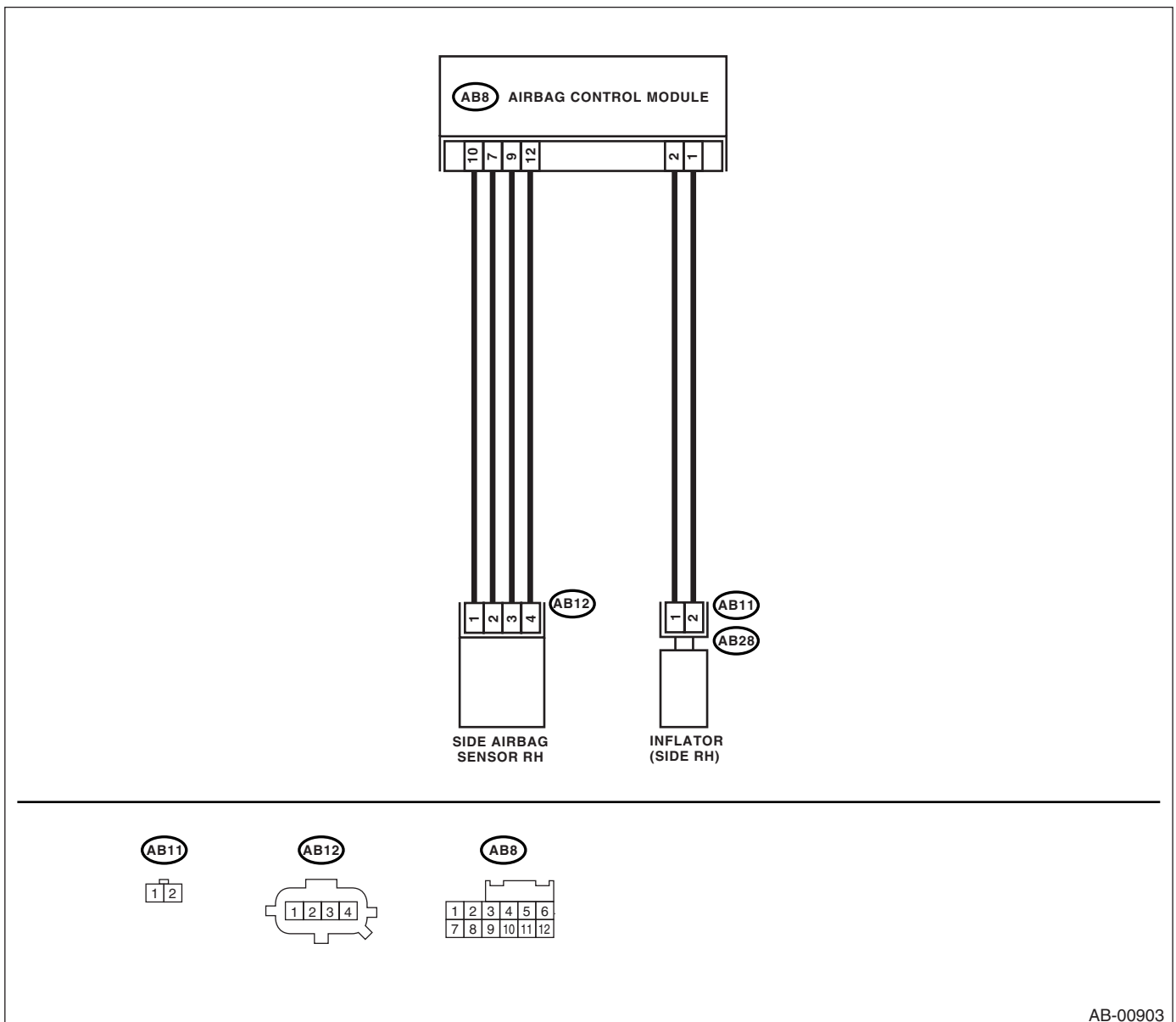
DTC DETECTING CONDITION:

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

CAUTION:

- Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait more than 20 seconds before starting to work.
- Before replacing the airbag module, seat belt pretensioner 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.
- When inspecting the side airbag harness, disconnect the side airbag module connector and seat belt pretensioner connector for the safety reasons.

WIRING DIAGRAM:



AB-00903

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK SIDE AIRBAG MODULE. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB20) from the seat belt pretensioner (RH). <Ref. to SB-8, Front Seat Belt.> 3) Disconnect the connector (AB28) from (AB11), and connect the connector (1F) in test harness F to (AB11). 4) Connect the airbag resistor to connector (3F) in test harness F. 5) Connect the battery ground cable, and turn the ignition switch to ON.	Does the airbag warning light operate properly?	Replace the front seat with side airbag module (RH). <Ref. to SE-6, Front Seat.>	Go to step 2.
2 CHECK SIDE AIRBAG HARNESS (RH). 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from test harness F. 3) Disconnect the connector (AB8) from air bag control module. <Ref. to AB-16, Airbag Control Module.> 4) Connect the connector (1R) in test harness R to connector (AB8). 5) Measure the resistance between connector (3R) in test harness R and connector (3F) in test harness F. Connector & terminal (3R) No. 20 — (3F) No. 4: (3R) No. 18 — (3F) No. 3:	Is the resistance less than 10 Ω ?	Go to step 3.	Replace the body harness with side airbag harness.
3 CHECK SIDE AIRBAG HARNESS (RH). Measure the resistance of the connector (3R) in test harness R. Connector & terminal (3R) No. 20 — (3R) No. 18:	Is the resistance more than 1 M Ω ?	Go to step 4.	Replace the body harness with side airbag harness.
4 CHECK SIDE AIRBAG HARNESS (RH). Measure the resistance of the connector (3F) in test harness F. Connector & terminal (3F) No. 3 — (3F) No. 4:	Is the resistance more than 1 M Ω ?	Go to step 5.	Replace the body harness with side airbag harness.
5 CHECK SIDE AIRBAG 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 resistance more than 1 M Ω ?	Go to step 6.	Replace the body harness with side airbag harness.
6 CHECK SIDE AIRBAG HARNESS (RH). Measure the resistance between connector (3R) in test harness R and the chassis ground. Connector & terminal (3R) No. 20 — Chassis ground: (3R) No. 18 — Chassis ground:	Is the resistance more than 1 M Ω ?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Replace the body harness with side airbag harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

M: DTC 42

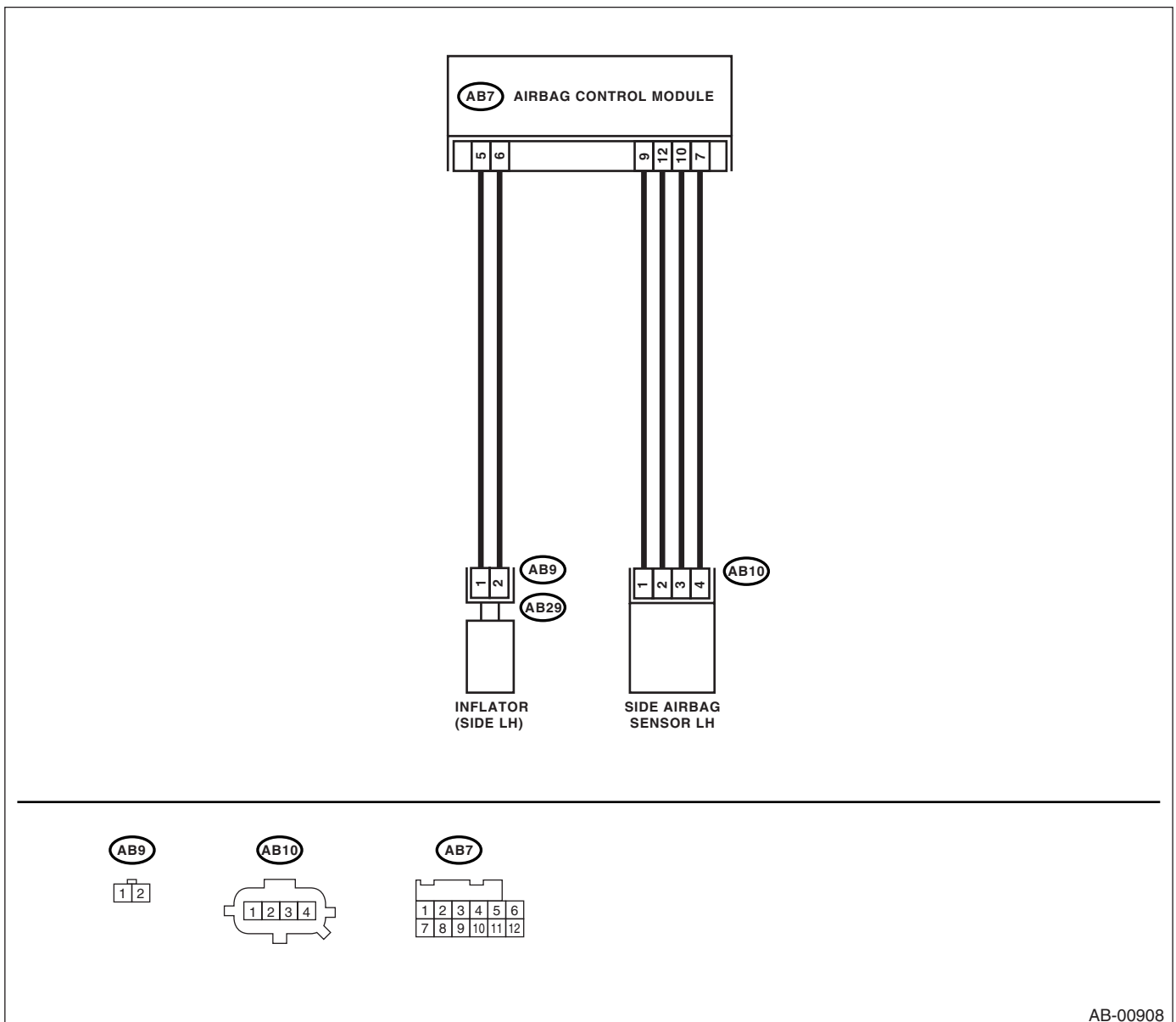
DTC DETECTING CONDITION:

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

CAUTION:

- Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait more than 20 seconds before starting to work.
- Before replacing the airbag module, seat belt pretensioner 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.
- When inspecting the side airbag harness, disconnect the side airbag module connector and seat belt pretensioner connector for the safety reasons.

WIRING DIAGRAM:



Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK SIDE AIRBAG MODULE. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB19) from the seat belt pretensioner (LH). <Ref. to SB-8, Front Seat Belt.> 3) Disconnect the connector (AB29) from (AB9), and connect the connector (1F) in test harness F to (AB9). 4) Connect the airbag resistor to connector (3F) in test harness F. 5) Connect the battery ground cable, and turn the ignition switch to ON.	Does the airbag warning light operate properly?	Replace the front seat with side airbag module (LH). <Ref. to SE-6, Front Seat.>	Go to step 2.
2 CHECK SIDE AIRBAG HARNESS (LH). 1) Turn ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from the test harness. 3) Disconnect the connector (AB7) from the airbag control module. <Ref. to AB-16, Airbag Control Module.> 4) Connect the connector (1R) in test harness R to connector (AB7). 5) Measure the resistance between connector (3R) in test harness R and connector (3F) in test harness F. Connector & terminal (3R) No. 12 — (3F) No. 3: (3R) No. 10 — (3F) No. 4:	Is the resistance less than 10 Ω ?	Go to step 3.	Replace the body harness with side airbag harness.
3 CHECK SIDE AIRBAG HARNESS (LH). Measure the resistance of the connector (3R) in test harness R. Connector & terminal (3R) No. 12 — (3R) No. 10:	Is the resistance more than 1 M Ω ?	Go to step 4.	Replace the body harness with side airbag harness.
4 CHECK SIDE AIRBAG HARNESS (LH). Measure the resistance of the connector (3F) in test harness F. Connector & terminal (3F) No. 3 — (3F) No. 4:	Is the resistance more than 1 M Ω ?	Go to step 5.	Replace the body harness with side airbag harness.
5 CHECK SIDE AIRBAG 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 resistance more than 1 M Ω ?	Go to step 6.	Replace the body harness with side airbag harness.
6 CHECK SIDE AIRBAG HARNESS (LH). Measure the resistance between connector (3R) in test harness R and the chassis ground. Connector & terminal (3R) No. 12 — Chassis ground: (3R) No. 10 — Chassis ground:	Is the resistance more than 1 M Ω ?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Replace the body harness with side airbag harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

N: DTC 45

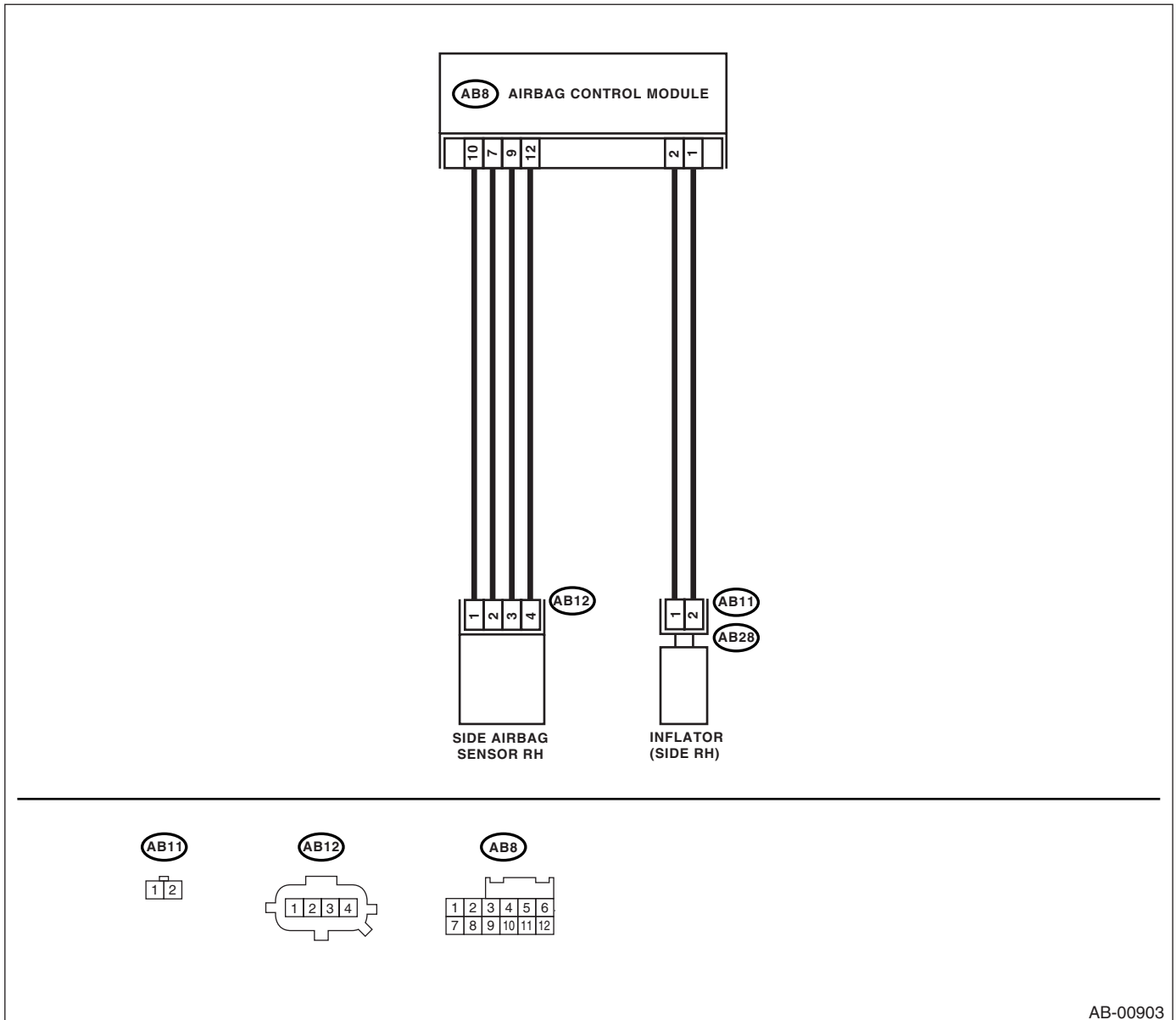
DTC DETECTING CONDITION:

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

CAUTION:

- Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait more than 20 seconds before starting to work.
- Before replacing the airbag module, seat belt pretensioner 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.
- When inspecting the side airbag harness, disconnect the side airbag module connector and seat belt pretensioner connector for the safety reasons.

WIRING DIAGRAM:



AB-00903

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK SIDE AIRBAG MODULE. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB20) from the seat belt pretensioner (RH). <Ref. to SB-8, Front Seat Belt.> 3) Disconnect the connector (AB28) from (AB11), and connect the connector (1F) in test harness F to (AB11). 4) Connect the airbag resistor to connector (3F) in test harness F. 5) Connect the battery ground cable, and turn the ignition switch to ON.	Does the airbag warning light operate properly?	Replace the front seat with side airbag module (RH). <Ref. to SE-6, Front Seat.>	Go to step 2.
2 CHECK SIDE AIRBAG HARNESS (RH). 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from the test harness. 3) Disconnect the connector (AB8) from the airbag control module. <Ref. to AB-16, Airbag Control Module.> 4) Connect the connector (1R) in test harness R to connector (AB8). 5) Connect the battery ground cable, and turn the ignition switch to ON. 6) Measure the voltage between connector (3R) in test harness R and the chassis ground. Connector & terminal (3R) No. 20 (+) — Chassis ground (-): (3R) No. 18 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Replace the body harness with side airbag harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

O: DTC 46

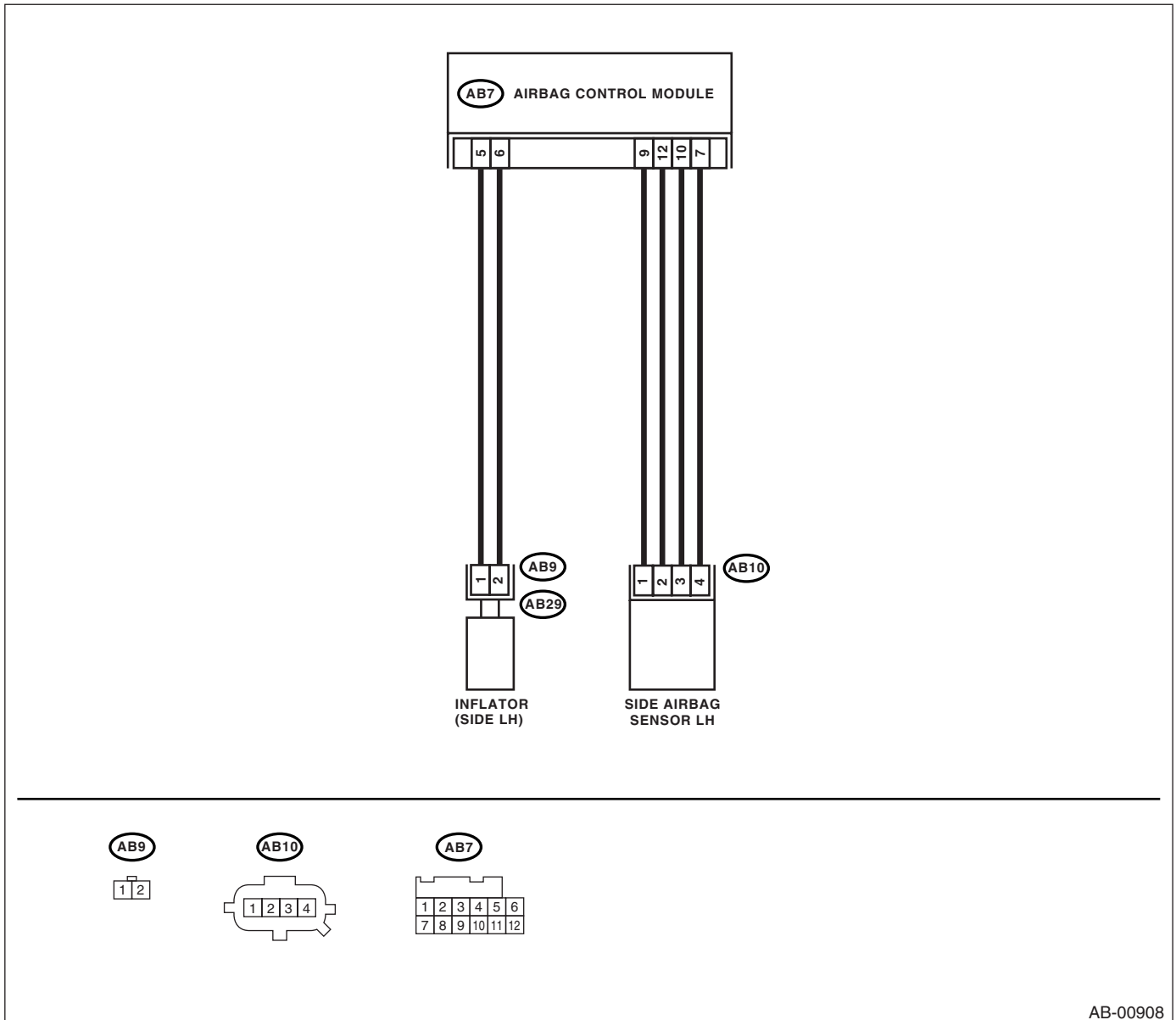
DTC DETECTING CONDITION:

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

CAUTION:

- Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait more than 20 seconds before starting to work.
- Before replacing the airbag module, seat belt pretensioner 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.
- When inspecting the side airbag harness, disconnect the side airbag module connector and seat belt pretensioner connector for the safety reasons.

WIRING DIAGRAM:



AB-00908

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK SIDE AIRBAG MODULE. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB19) from the seat belt pretensioner (LH). <Ref. to SB-8, Front Seat Belt.> 3) Disconnect the connector (AB29) from (AB9), and connect the connector (1F) in test harness F to (AB9). 4) Connect the airbag resistor to connector (3F) in test harness F. 5) Connect the battery ground cable and turn the ignition switch to ON.	Does the airbag warning light operate properly?	Replace the front seat with side airbag module (LH). <Ref. to SE-6, Front Seat.>	Go to step 2.
2 CHECK SIDE AIRBAG HARNESS (LH). 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from the test harness. 3) Disconnect the connector (AB7) from the airbag control module. <Ref. to AB-16, Airbag Control Module.> 4) Connect the connector (1R) in test harness R to connector (AB7). 5) Connect the battery ground cable, and turn the ignition switch to ON. 6) Measure the voltage between connector (3R) in test harness R and the chassis ground. Connector & terminal (3R) No. 12 (+) — Chassis ground (-): (3R) No. 10 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Replace the body harness with side airbag harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

P: DTC 51

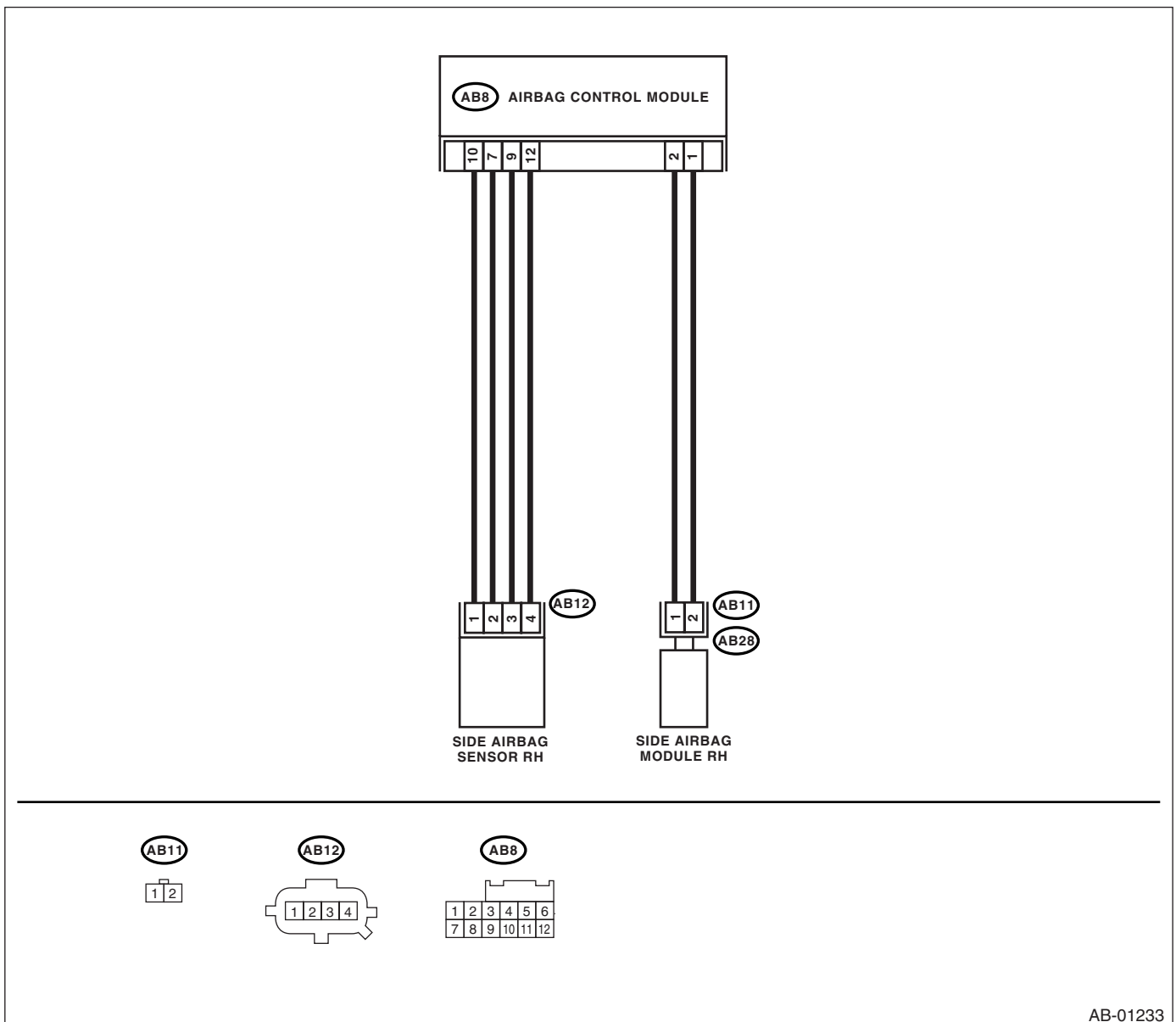
DTC DETECTING CONDITION:

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

CAUTION:

- Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait more than 20 seconds before starting to work.
- Before replacing the airbag module, seat belt pretensioner 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.
- When inspecting the side airbag harness, disconnect the side airbag module connector and seat belt pretensioner connector for the safety reasons.

WIRING DIAGRAM:



AB-01233

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK SIDE AIRBAG HARNESS (RH). 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB20) from the seat belt pretensioner (RH). <Ref. to SB-8, Front Seat Belt.> 3) Disconnect the connector (AB28) from (AB11). 4) Disconnect the connector (AB8) from the airbag control module. <Ref. to AB-16, Airbag Control Module.> 5) Connect the connector (1R) in test harness R to the connector (AB8). 6) Disconnect the connector (AB12) from the side airbag sensor (RH), and connect the connector (2V) in test harness V to connector (AB12). 7) Measure the resistance between connector (4R) in test harness R and connector (3V) in test harness V. Connector & terminal (4R) No. 5 — (3V) No. 2: (4R) No. 7 — (3V) No. 1: (4R) No. 8 — (3V) No. 5: (4R) No. 6 — (3V) No. 4:	Is the resistance less than 10 Ω ?	Go to step 2.	Replace the body harness with side airbag harness.
2 CHECK SIDE AIRBAG HARNESS (RH). Measure the resistance between connector (4R) in test harness R and the chassis ground. Connector & terminal (4R) No. 5 — Chassis ground: (4R) No. 7 — Chassis ground: (4R) No. 8 — Chassis ground: (4R) No. 6 — Chassis ground:	Is the resistance more than 1 M Ω ?	Replace the side airbag sensor (RH). <Ref. to AB-17, Side Airbag Sensor.> When sensor replacement is not OK, replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Replace the body harness with side airbag harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

Q: DTC 52

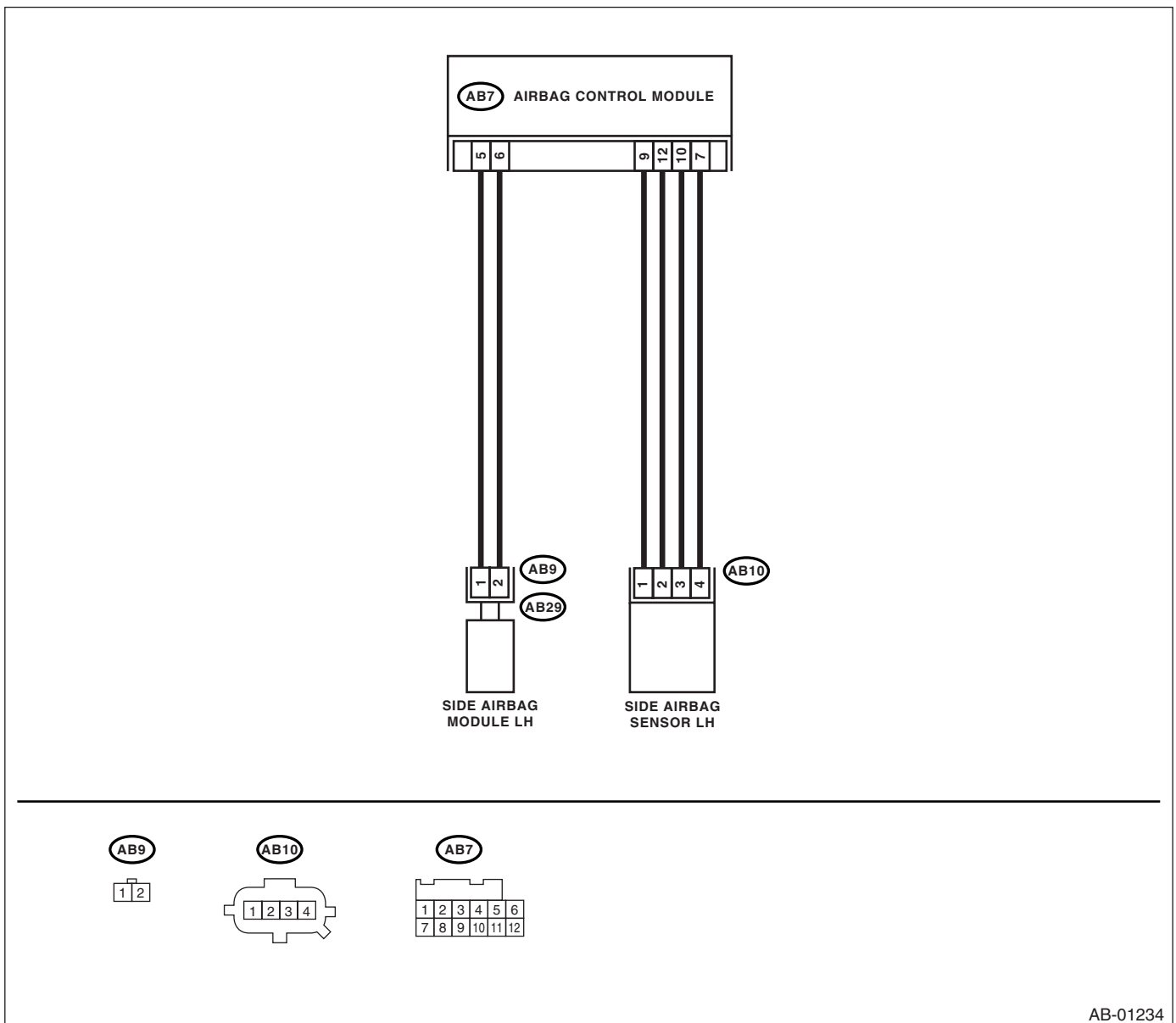
DTC DETECTING CONDITION:

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

CAUTION:

- Before diagnosing the airbag system, be sure to turn the ignition switch to OFF, disconnect the ground cable from battery, and wait more than 20 seconds before starting to work.
- Before replacing the airbag module, seat belt pretensioner 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.
- When inspecting the side airbag harness, disconnect the side airbag module connector and seat belt pretensioner connector for the safety reasons.

WIRING DIAGRAM:



Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK SIDE AIRBAG HARNESS (LH). 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB19) from the seat belt pretensioner (LH). <Ref. to SB-8, Front Seat Belt.> 3) Disconnect the connector (AB29) from (AB9). 4) Disconnect the connector (AB7) from the airbag control module. <Ref. to AB-16, Airbag Control Module.> 5) Connect the connector (1R) in test harness R to connector (AB7). 6) Disconnect the connector (AB10) from the side airbag sensor (LH), and connect the connector (2V) in test harness V to connector (AB10). 7) Measure the resistance between connector (4R) in test harness R and connector (3V) in test harness V. Connector & terminal (4R) No. 3 — (3V) No. 4: (4R) No. 1 — (3V) No. 5: (4R) No. 2 — (3V) No. 1: (4R) No. 4 — (3V) No. 2:	Is the resistance less than 10 Ω?	Go to step 2.	Replace the body harness with side airbag harness.
2 CHECK SIDE AIRBAG HARNESS (RH). Measure the resistance between connector (4R) in test harness R and the chassis ground. Connector & terminal (4R) No. 3 — Chassis ground: (4R) No. 1 — Chassis ground: (4R) No. 2 — Chassis ground: (4R) No. 4 — Chassis ground:	Is the resistance more than 1 MΩ?	Replace the side airbag sensor (LH). <Ref. to AB-17, Side Airbag Sensor.> When sensor replacement is not OK, replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Replace the body harness with side airbag harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

R: DTC 53

DTC DETECTING CONDITION:

Side airbag sensor (RH) is faulty.

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

<Ref. to AB-17, Side Airbag Sensor.>

S: DTC 54

DTC DETECTING CONDITION:

Side airbag sensor (LH) is faulty.

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

<Ref. to AB-17, Side Airbag Sensor.>

T: DTC 55

This DTC is displayed when the side airbag is deployed.

When this DTC is displayed, the memory cannot be erased. Replace the following parts.

- Airbag control module <Ref. to AB-16, Airbag Control Module.>
- Front seat with side airbag module (Operating side) <Ref. to SE-6, Front Seat.>
- Side airbag sensor (Operating side) <Ref. to AB-17, Side Airbag Sensor.>

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

U: DTC 61

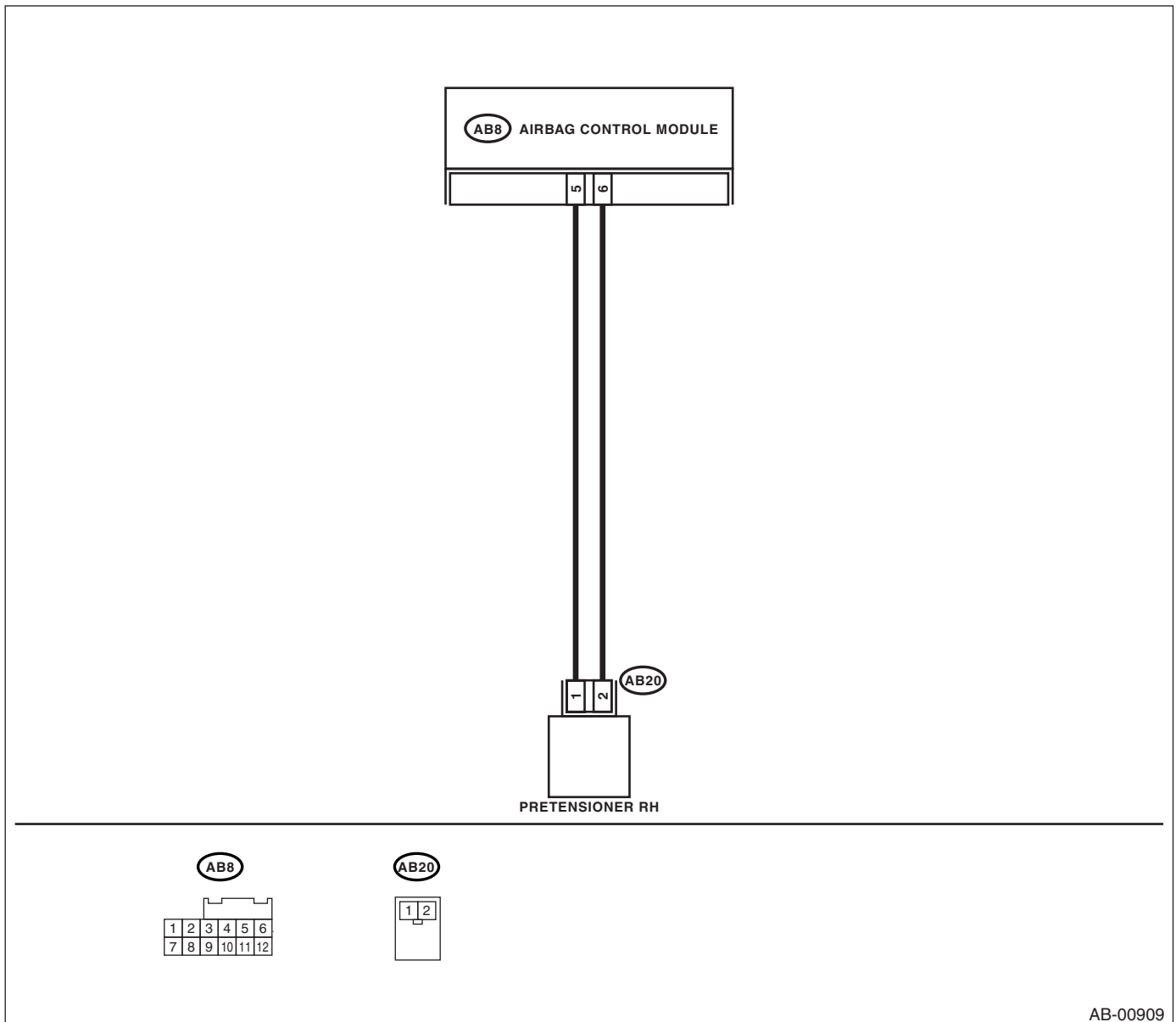
DTC DETECTING CONDITION:

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

CAUTION:

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

WIRING DIAGRAM:



Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK SEAT BELT PRETENSIONER. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB20) from the seat belt pretensioner (RH). <Ref. to SB-8, Front Seat Belt.> 3) Connect the connector (1N) in test harness N to (AB20). 4) Connect the airbag resistor to connector (2N) in test harness N. 5) Connect the battery ground cable and turn the ignition switch to ON.	Does the airbag warning light operate properly?	Replace the seat belt pretensioner (RH). <Ref. to SB-8, Front Seat Belt.>	Go to step 2.
2 CHECK SIDE AIRBAG HARNESS (RH). 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from the test harness. 3) Disconnect the connector (AB28) from (AB11). 4) Disconnect the connectors (AB7) and (AB8) from the airbag control module. <Ref. to AB-16, Airbag Control Module.> 5) Connect the connector (1R) in test harness R to connector (AB8). 6) Measure the resistance between connector (3R) in test harness R and connector (2N) in test harness N. Connector & terminal (3R) No. 19 — (2N) No. 1: (3R) No. 17 — (2N) No. 2:	Is the resistance less than 10 Ω ?	Go to step 3.	Replace the body harness with side airbag harness.
3 CHECK SIDE AIRBAG HARNESS (RH). Measure the resistance of the connector (3R) in test harness R. Connector & terminal (3R) No. 17 — (3R) No. 19:	Is the resistance more than 1 M Ω ?	Go to step 4.	Replace the body harness with side airbag harness.
4 CHECK SIDE AIRBAG HARNESS (RH). Measure the resistance between connector (3R) in test harness R and the chassis ground. Connector & terminal (3R) No. 17 — Chassis ground: (3R) No. 19 — Chassis ground:	Is the resistance more than 1 M Ω ?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Replace the body harness with side airbag harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

V: DTC 62

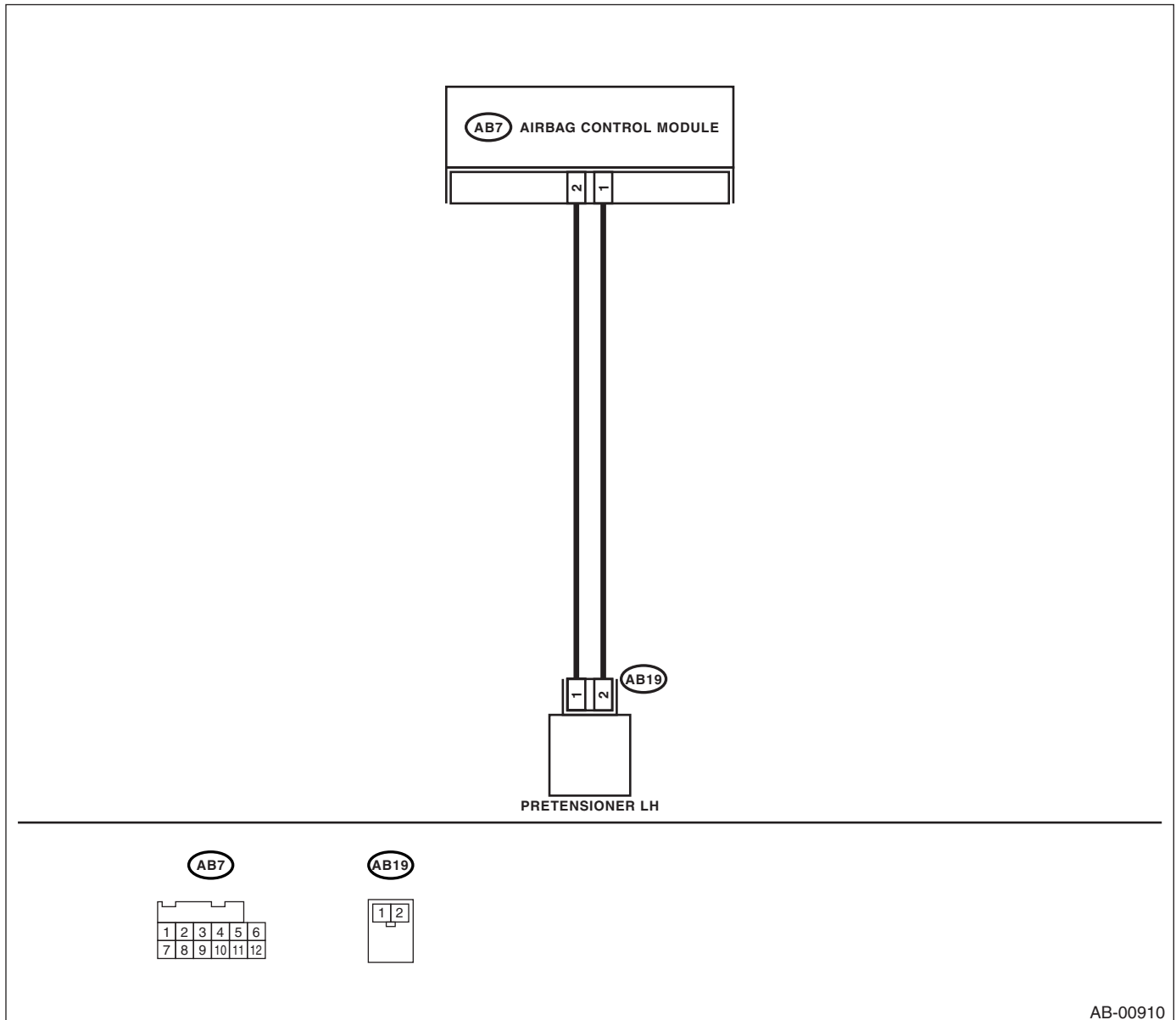
DTC DETECTING CONDITION:

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

CAUTION:

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

WIRING DIAGRAM:



Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK SEAT BELT PRETENSIONER. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB19) from the seat belt pretensioner (LH). <Ref. to SB-8, Front Seat Belt.> 3) Connect the connector (1N) in test harness N to (AB19). 4) Connect the airbag resistor to the connector (2N) in test harness N. 5) Connect the battery ground cable and turn the ignition switch to ON.	Does the airbag warning light operate properly?	Replace the seat belt pretensioner (LH). <Ref. to SB-8, Front Seat Belt.>	Go to step 2.
2 CHECK SIDE AIRBAG HARNESS (LH). 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from the test harness. 3) Disconnect the connector (AB29) from (AB9). 4) Disconnect the connectors (AB7) and (AB8) from the airbag control module. <Ref. to AB-16, Airbag Control Module.> 5) Connect the connector (1R) in test harness R to the connector (AB7). 6) Measure the resistance between connector (3R) in test harness R and the connector (2N) in test harness N. Connector & terminal (3R) No. 11 — (2N) No. 2: (3R) No. 13 — (2N) No. 1:	Is the resistance less than 10 Ω ?	Go to step 3.	Replace the body harness with side airbag harness.
3 CHECK SIDE AIRBAG HARNESS (LH). Measure the resistance of the connector (3R) in test harness R. Connector & terminal (3R) No. 11 — (3R) No. 13:	Is the resistance more than 1 M Ω ?	Go to step 4.	Replace the body harness with side airbag harness.
4 CHECK SIDE AIRBAG HARNESS (LH). Measure the resistance between the connector (3R) in test harness R and the chassis ground. Connector & terminal (3R) No. 11 — Chassis ground: (3R) No. 13 — Chassis ground:	Is the resistance more than 1 M Ω ?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Replace the body harness with side airbag harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

W: DTC 65

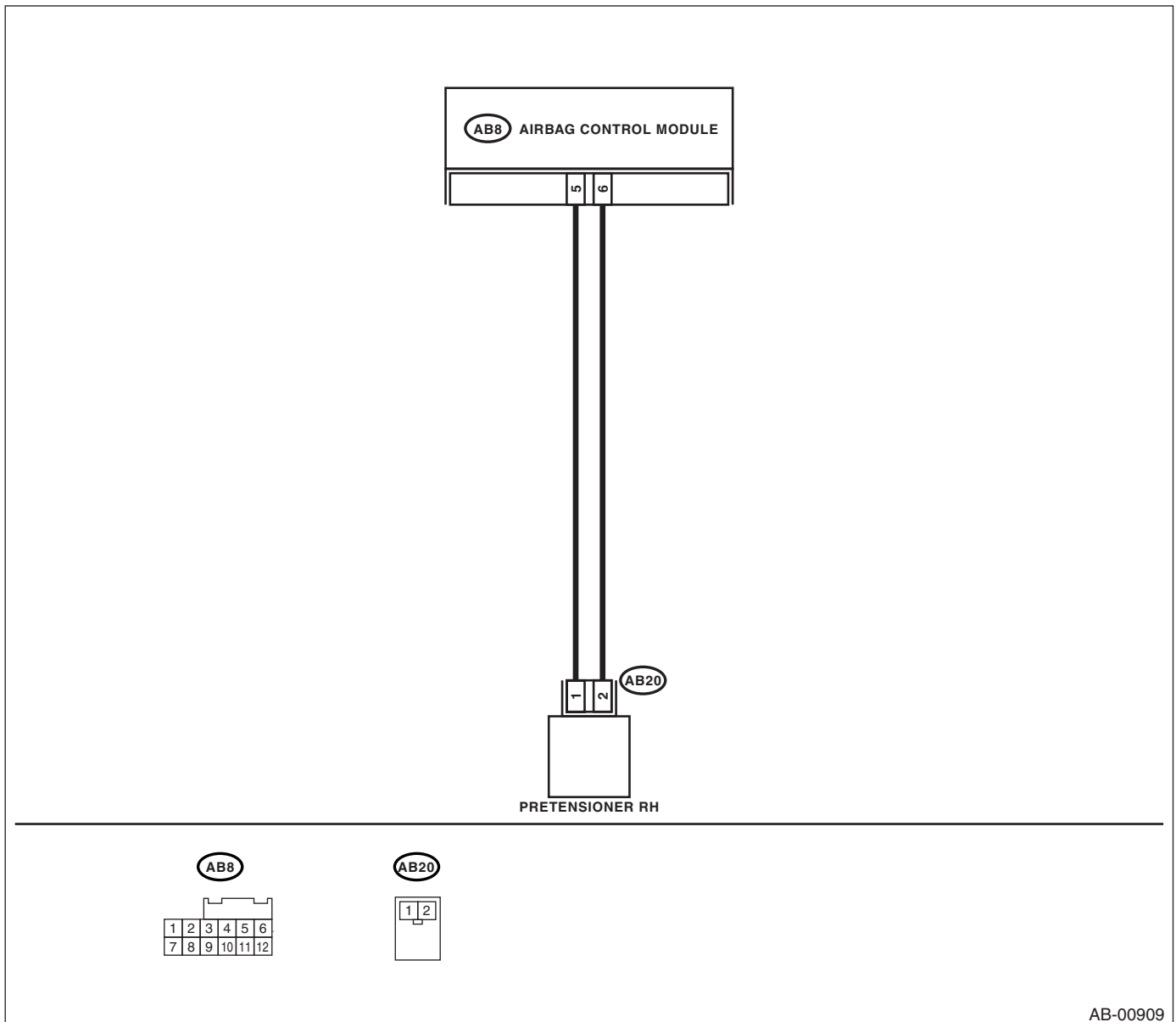
DTC DETECTING CONDITION:

- 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 to OFF, disconnect the ground cable from battery, and wait more than 20 seconds before starting to work.
- Before replacing the airbag module, seat belt pretensioner roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.
- When inspecting the side airbag harness, disconnect the side airbag module connector and seat belt pretensioner connector for the safety reasons.

WIRING DIAGRAM:



Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK SEAT BELT PRETENSIONER. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB20) from the seat belt pretensioner (RH). <Ref. to SB-8, Front Seat Belt.> 3) Connect the connector (1N) in test harness N to (AB20). 4) Connect the airbag resistor to connector (2N) in test harness N. 5) Connect the battery ground cable, and turn the ignition switch to ON.	Does the airbag warning light operate properly?	Replace the seat belt pretensioner (RH). <Ref. to SB-8, Front Seat Belt.>	Go to step 2.
2 CHECK SIDE AIRBAG HARNESS (RH). 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from the test harness. 3) Disconnect the connector (AB28) from (AB11). 4) Disconnect the connectors (AB7) and (AB8) from the airbag control module. <Ref. to AB-16, Airbag Control Module.> 5) Connect the connector (1R) in test harness R to the connector (AB8). 6) Connect the battery ground cable and turn the ignition switch to ON. 7) Measure the voltage between connector (3R) in test harness R and the chassis ground. Connector & terminal (3R) No. 17 (+) — Chassis ground (-): (3R) No. 19 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Replace the body harness with side airbag harness.

Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

X: DTC 66

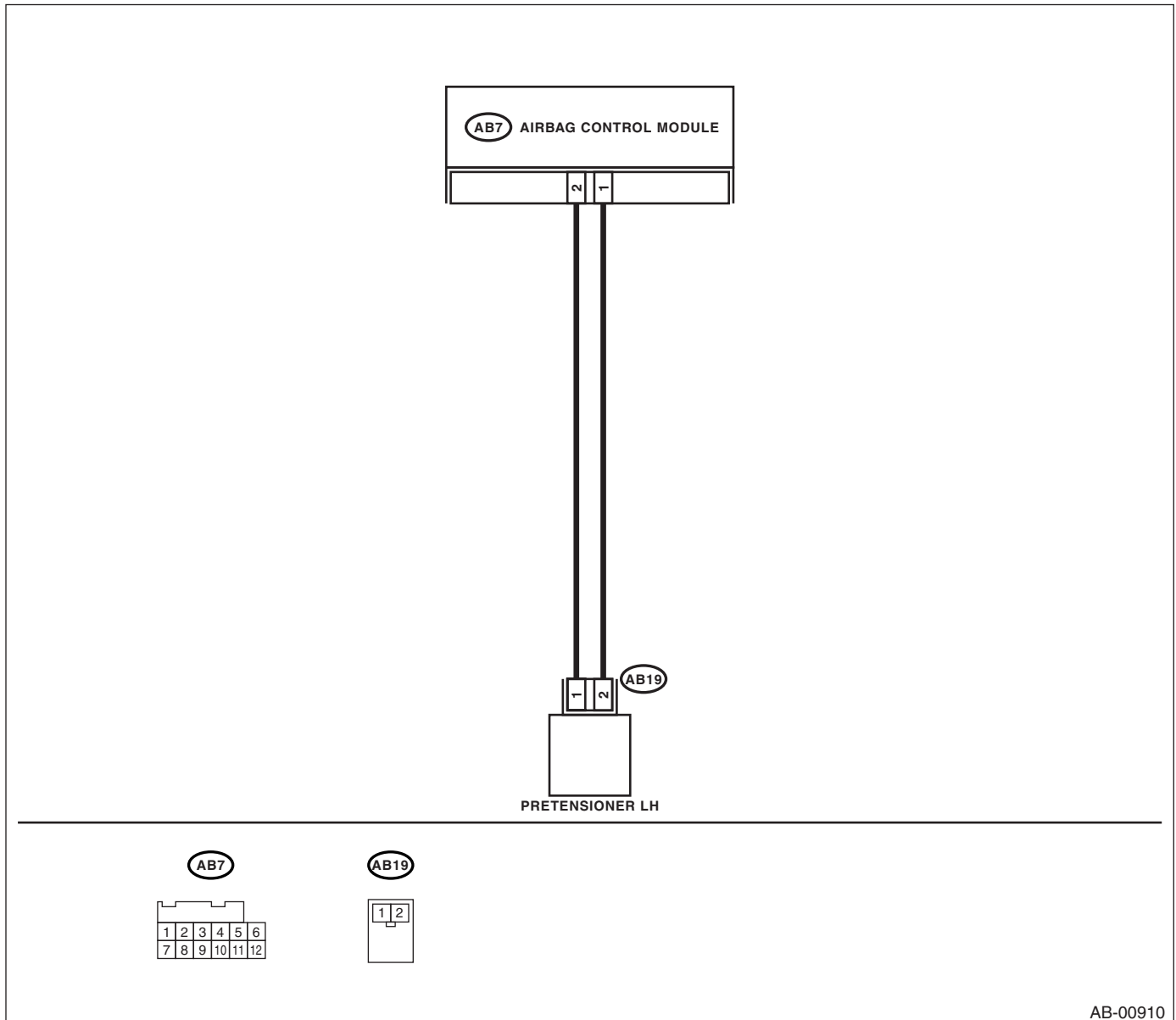
DTC DETECTING CONDITION:

- 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 to OFF, disconnect the ground cable from battery, and wait more than 20 seconds before starting to work.
- Before replacing the airbag module, seat belt pretensioner roll connector, control module and the sensor, reconnect each part and confirm that the warning light operates properly.
- When inspecting the side airbag harness, disconnect the side airbag module connector and seat belt pretensioner connector for the safety reasons.

WIRING DIAGRAM:



Diagnostic Chart with Trouble Code

AIRBAG SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK SEAT BELT PRETENSIONER. 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the connector (AB19) from the seat belt pretensioner (LH). <Ref. to SB-8, Front Seat Belt.> 3) Connect the connector (1N) in test harness N to (AB19). 4) Connect the airbag resistor to the connector (2N) in test harness N. 5) Connect the battery ground cable and turn the ignition switch to ON.	Does the airbag warning light operate properly?	Replace the seat belt pretensioner (LH). <Ref. to SB-8, Front Seat Belt.>	Go to step 2.
2 CHECK SIDE AIRBAG HARNESS (LH). 1) Turn the ignition switch to OFF, disconnect the battery ground cable, and wait more than 20 seconds. 2) Disconnect the airbag resistor from the test harness. 3) Disconnect the connector (AB29) from (AB9). 4) Disconnect the connectors (AB7) and (AB8) from the airbag control module. <Ref. to AB-16, Airbag Control Module.> 5) Connect the connector (1R) in test harness R to the connector (AB7). 6) Connect the battery ground cable and turn the ignition switch to ON. 7) Measure the voltage between connector (3R) in test harness R and the chassis ground. Connector & terminal (3R) No. 11 (+) — Chassis ground (-): (3R) No. 13 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Replace the airbag control module. <Ref. to AB-16, Airbag Control Module.>	Replace the body harness with side airbag harness.

HVAC SYSTEM

(HEATER, VENTILATOR, AND A/C)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

1. General Description

A: SPECIFICATION

1. HEATER SYSTEM

Item		Specifications	Condition
Heating capacity		5.0 kW (4,300 kcal/h, 17,062 BTU/h) or more	- Mode selector switch: HEAT - Temperature control switch: FULL HOT - Temperature difference between hot water and inlet air: 65°C (149°F) - Hot water flow rate: 360 ℓ (95.1 US gal, 79.2 Imp gal)/h
Air flow rate		280 m ³ (9,888 cu ft)/h	Heat mode (FRESH), FULL HOT at 12.5 V
Max air flow rate		450 m ³ (15,892 cu ft)/h	- Temperature control switch: FULL COLD - Blower fan speed: MAX - Mode selector lever: RECIRC
Heater core size (height × length × width)		163.9 × 200 × 25.0 mm (6.45 × 7.87 × 0.984 in)	—
Blower motor	Type	Magnet motor 200 W or less	at 12 V
	Fan type and size (diameter × width)	Sirocco fan type 150 × 75 mm (5.91 × 2.95 in)	—

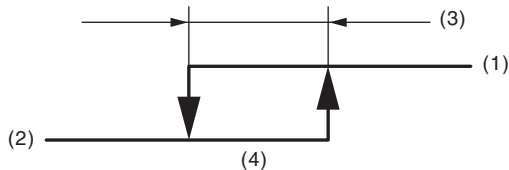
2. A/C SYSTEM

• AUTO A/C MODEL

Item		Specifications
Type of air conditioner		Reheat air-mix type
Cooling capacity		5.1 kW (4,385 kcal/h, 17,402 BTU/h)
Refrigerant		HFC-134a (CH ₂ FCF ₃) [0.5±0.05 kg (0.99±0.11 lb)]
Compressor	Type	Vane rotary, fix volume (CR-14)
	Discharge	144 cm ³ (8.79 cu in)/rev
	Max. permissible speed	7,000 rpm
Magnet clutch	Type	Dry, single-disc type
	Power consumption	47 W
	Type of belt	V-belt 4 PK
	Pulley dia. (effective dia.)	125 mm (4.92 in)
	Pulley ratio	1.064
Condenser	Type	Corrugated fin (Sub cool type)
	Core face area	0.21 m ² (2.26 sq ft)
	Core thickness	16 mm (0.63 in)
	Radiation area	5.34 m ² (57.48 sq ft)
Receiver drier	Effective inner capacity	250 cm ³ (15.26 cu in)
Expansion valve	Type	Internal equalizing
Evaporator	Type	Single tank
	Dimensions (W × H × T)	255 × 200 × 48 mm (10 × 7.87 × 1.89 in)
Blower fan	Fan type	Sirocco fan
	Outer diameter × width	150 × 75 mm (5.91 × 2.95 in)
	Power consumption	200 W

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

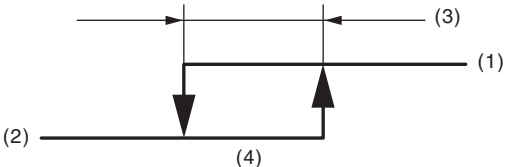
Item		Specifications	
Condenser fan (Sub fan)		Motor type	Magnet
		Power consumption	120 W (Turbo model), 70 W (Non-turbo model)
		Fan outer diameter	320 mm (12.6 in)
Radiator fan (Main fan)		Motor type	Magnet
		Power consumption	120 W (Turbo model), 70 W (Non-turbo model)
		Fan outer diameter	320 mm (12.6 in)
Idling speed (A/C ON)		MPFI model	850±100 rpm
Dual switch (Pressure switch)	Low-pressure switch operating pressure	ON → OFF	278±29 kPa (2.83±0.3 kg/cm ² , 40.3±4.2 psi)
		OFF → ON	287 ⁺³⁹ / ₋₂₅ kPa (2.9 ^{+0.4} / _{-0.25} kg/cm ² , 42 ^{+5.7} / _{-3.6} psi)
	High-pressure switch operating pressure	ON → OFF	2,800±100 kPa (29±1 kg/cm ² , 406±15 psi)
		Difference	600±200 kPa (6.12±2 kg/cm ² , 87±29 psi)
Thermo control amplifier working temperature (Evaporator outlet air)			
		AC-00601 (1) ON (2) OFF (3) 2.5±0.5°C (36.5±0.9°F) (4) 1.5±0.5°C (35±0.9°F)	

• MANUAL A/C MODEL

Item		Specifications
Type of air conditioner		Reheat air-mix type
Cooling capacity		5.1 kW (4,385 kcal/h, 17,402 BTU/h)
Refrigerant		HFC-134a (CH ₂ FCF ₃) [0.5±0.05 kg (1.10±0.11 lb)]
Compressor	Type	Vane rotary, fix volume (CR-14)
	Discharge	144 cm ³ (8.79 cu in)/rev
	Max. permissible speed	7,000 rpm
Magnet clutch	Type	Dry, single-disc type
	Power consumption	47 W
	Type of belt	V-belt 4 PK
	Pulley dia. (effective dia.)	125 mm (4.92 in)
	Pulley ratio	1.064
Condenser	Type	Corrugated fin (Sub cool type)
	Core face area	0.21 m ² (2.26 sq ft)
	Core thickness	16 mm (0.63 in)
	Radiation area	5.34 m ² (57.48 sq ft)
Receiver drier	Effective inner capacity	250 cm ³ (15.26 cu in)
Expansion valve	Type	Externally equalizing

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

Item		Specifications	
Evaporator	Type	Single tank	
	Dimensions (W × H × T)	255 × 200 × 48 mm (10 × 7.87 × 1.89 in)	
Blower fan	Fan type	Sirocco fan	
	Outer diameter × width	150 × 75 mm (5.91 × 2.95 in)	
	Power consumption	200 W	
Condenser fan (Sub fan)	Motor type	Magnet	
	Power consumption	120 W (Turbo model), 70 W (Non-turbo model)	
	Fan outer diameter	320 mm (12.6 in)	
Radiator fan (Main fan)	Motor type	Magnet	
	Power consumption	120 W (Turbo model), 70 W (Non-turbo model)	
	Fan outer diameter	320 mm (12.6 in)	
Idle speed (A/C ON)		MPFI model	850±100 rpm
Dual switch (Pressure switch)	Low-pressure switch operating pressure	ON → OFF	278±29 kPa (2.83±0.3 kg/cm ² , 40.3±4.2 psi)
		OFF → ON	287 ⁺³⁹ / ₋₂₅ kPa (2.9 ^{+0.4} / _{-0.25} kg/cm ² , 42 ^{+5.7} / _{-3.6} psi)
	High-pressure switch operating pressure	ON → OFF	2,800±100 kPa (29±1 kg/cm ² , 406±15 psi)
		Difference	600±200 kPa (6.12±2 kg/cm ² , 87±29 psi)
Thermo control amplifier working temperature (Evaporator outlet air)		 AC-00601 (1) ON (2) OFF (3) 1.5±0.5°C (35±0.9°F) (4) 3.0±0.5°C (37±0.9°F)	

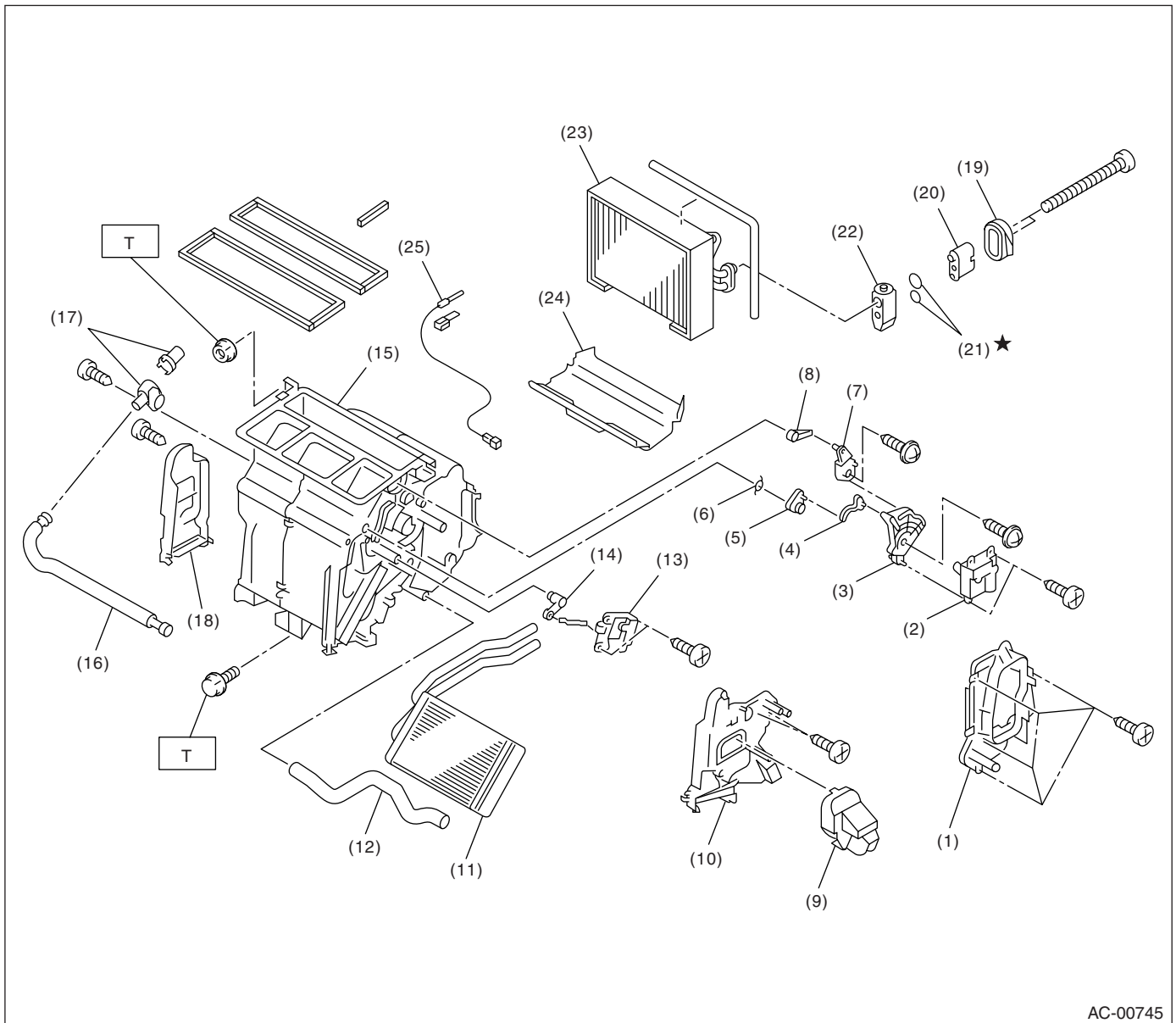
General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

B: COMPONENT

1. HEATER COOLING UNIT

• AUTO A/C MODEL



(1) Unit cover	(11) Heater core	(21) O-ring
(2) Mode actuator	(12) Drain hose	(22) Expansion valve
(3) Side link	(13) Mix actuator	(23) Evaporator
(4) Mode actuator lever	(14) Mix actuator lever	(24) Evaporator cover
(5) Foot lever	(15) Unit ASSY	(25) Thermistor
(6) Spring	(16) Aspirator hose	
(7) Mode actuator link	(17) Aspirator	
(8) Defroster lever	(18) Foot duct	
(9) Foot nozzle	(19) Packing	
(10) Unit duct cover	(20) Cooling unit block	

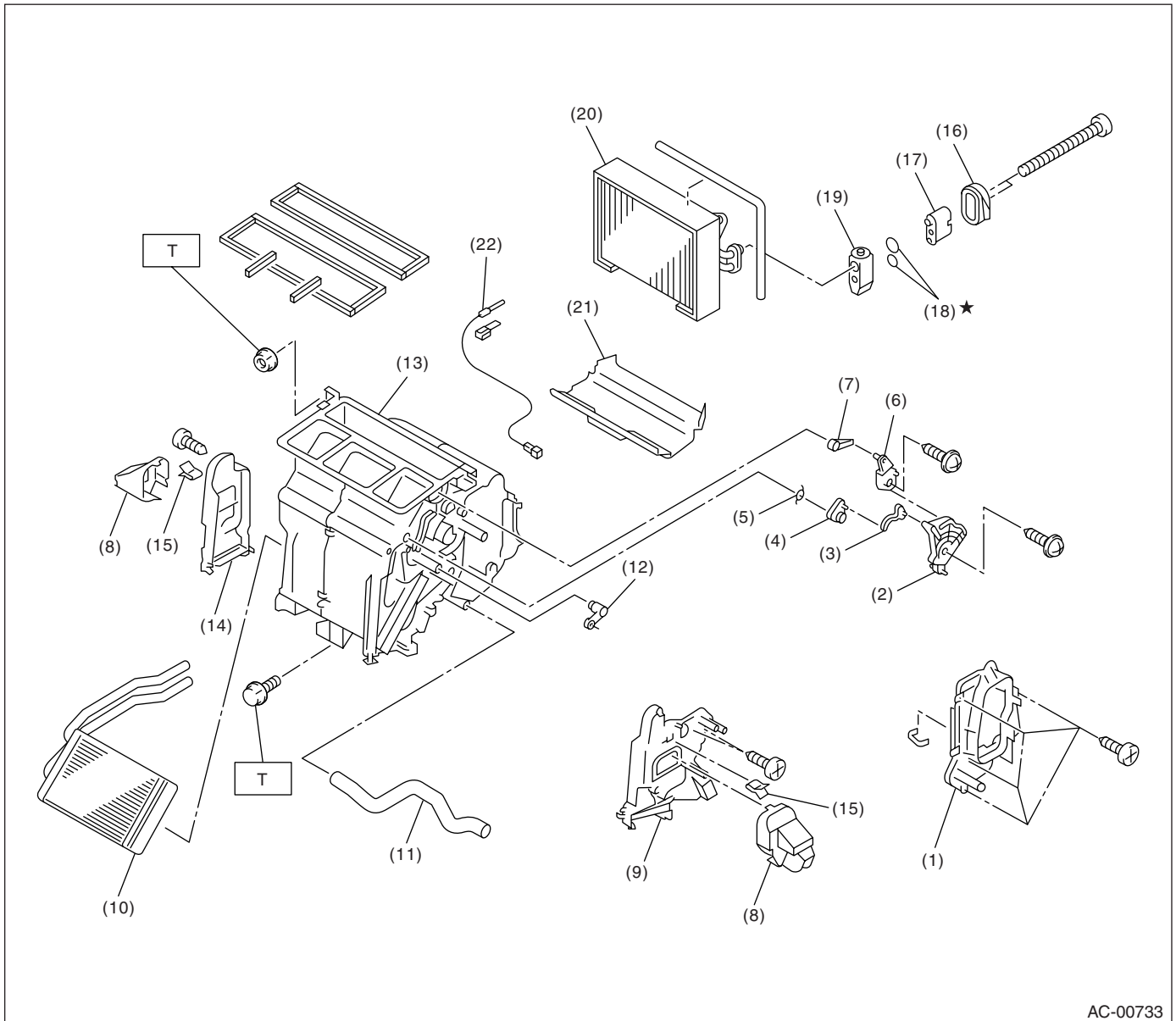
Tightening torque: N·m (kgf-m, ft-lb)

T: 7.4 (0.75, 5.4)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

• MANUAL A/C MODEL



(1) Unit cover	(10) Heater core
(2) Side link	(11) Drain hose
(3) Mode lever	(12) Mix lever
(4) Foot lever	(13) Unit ASSY
(5) Spring	(14) Foot duct
(6) Mode link	(15) Clip
(7) Defroster lever	(16) Packing
(8) Foot nozzle	(17) Cooling unit block
(9) Unit duct cover	(18) O-ring

- | |
|-----------------------|
| (19) Expansion valve |
| (20) Evaporator |
| (21) Evaporator cover |
| (22) Thermistor |

Tightening torque: N·m (kgf-m, ft-lb)

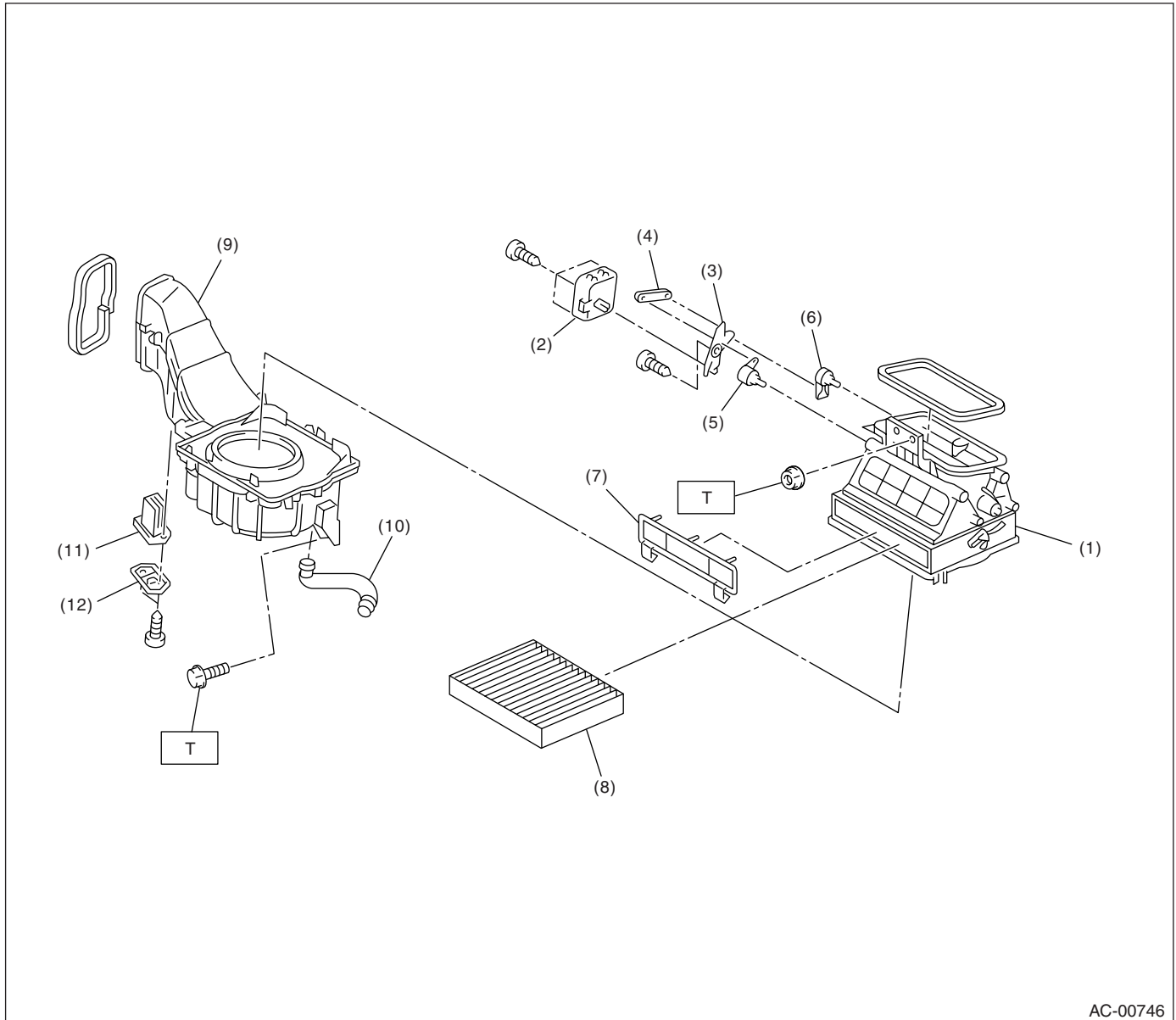
T: 7.4 (0.75, 5.4)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

2. BLOWER MOTOR UNIT

• AUTO A/C MODEL



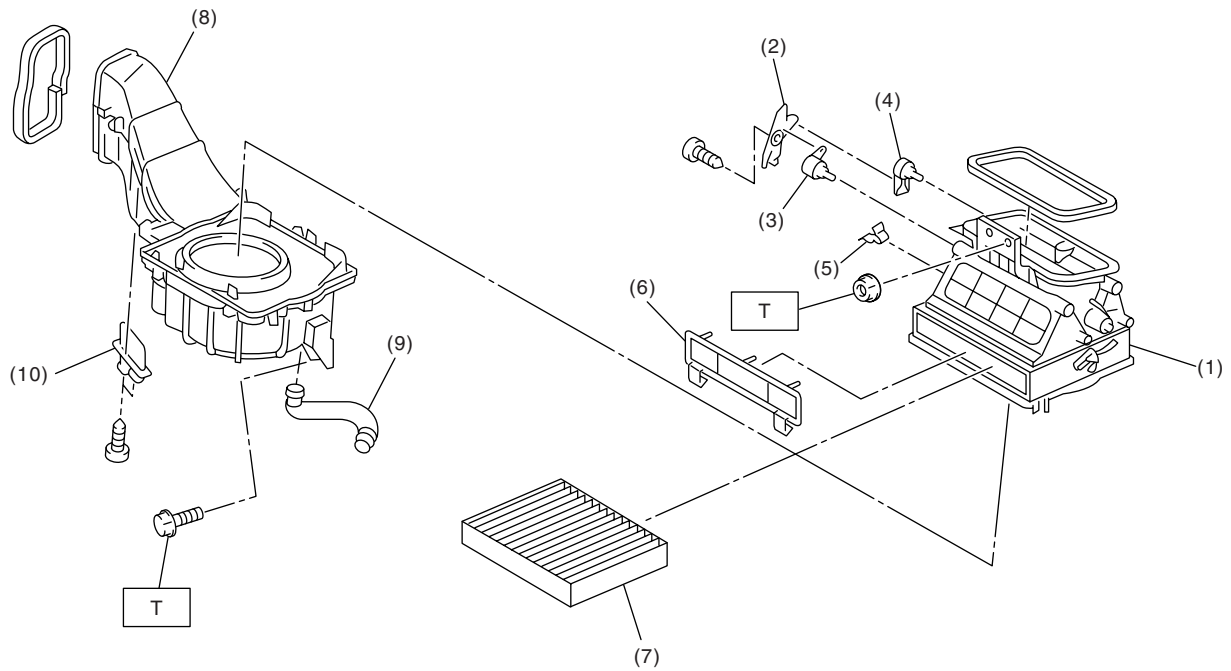
(1) Upper case	(6) Blower link lever C	(11) Power transistor
(2) Servo motor	(7) Filter cover	(12) Power transistor cover
(3) Blower link	(8) Filter	
(4) Blower link lever A	(9) Blower motor ASSY	
(5) Blower link lever B	(10) Hose	

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

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

• MANUAL A/C MODEL



AC-00734

(1) Upper case	(6) Filter cover
(2) Blower link	(7) Filter
(3) Blower link lever A	(8) Blower motor ASSY
(4) Blower link lever B	(9) Hose
(5) Clip	(10) Blower resistor

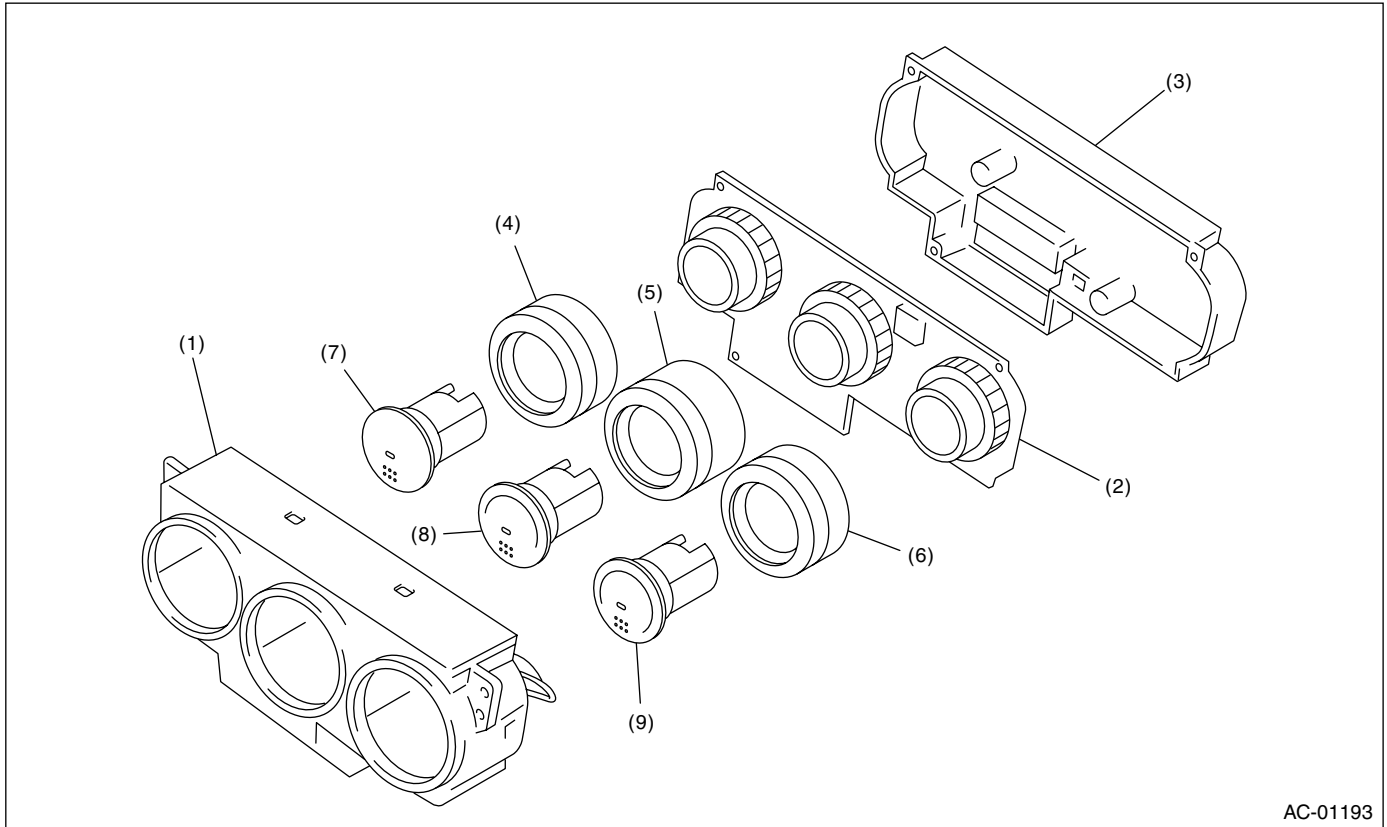
Tightening torque: N·m (kgf-m, ft-lb)
T: 7.4 (0.75, 5.4)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

3. CONTROL UNIT

• AUTO A/C MODEL

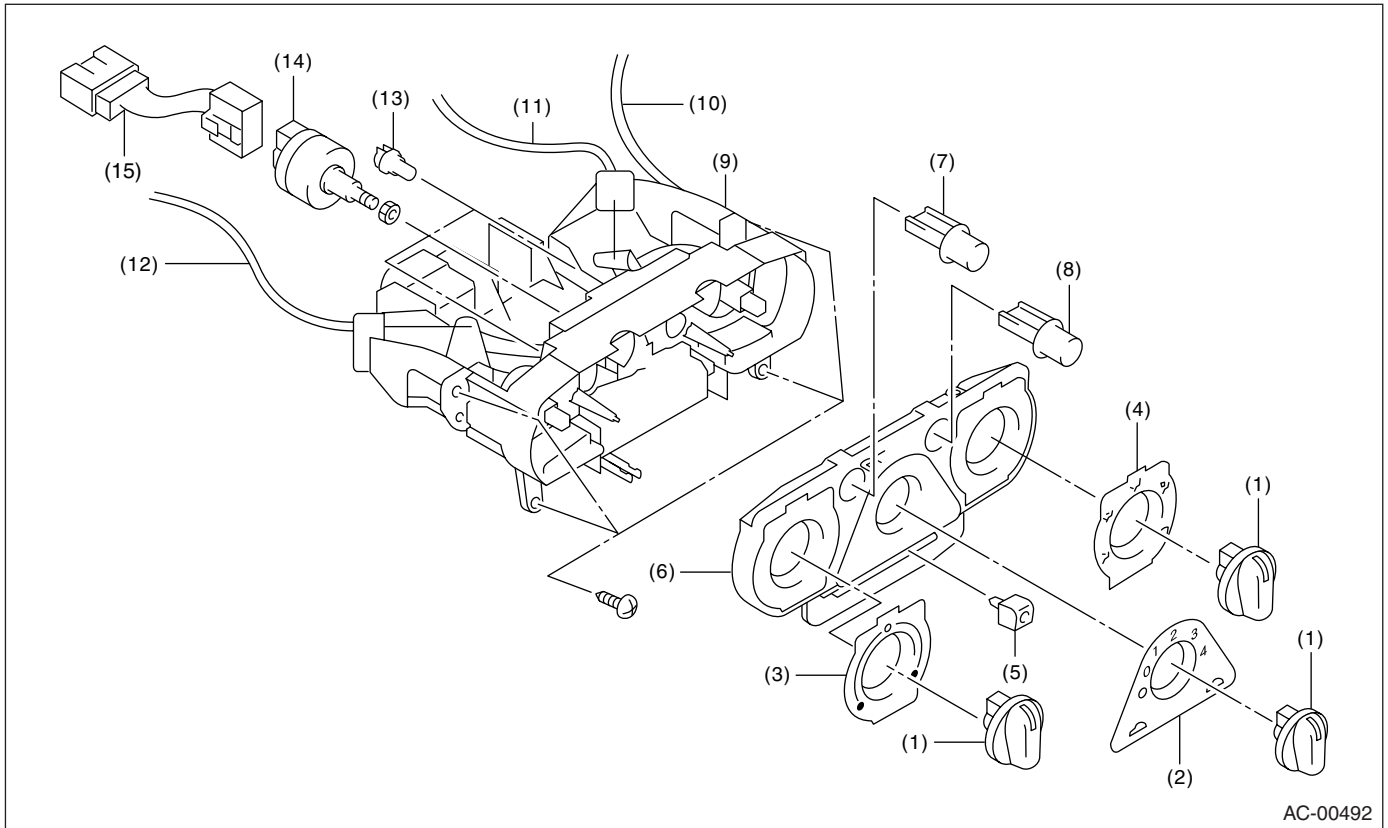


(1) Panel	(4) Mode control dial	(7) Rear window deffogger switch
(2) Switch base	(5) Fan speed control dial	(8) FRESH/RECIRC switch
(3) Control case	(6) Temperature control dial	(9) A/C switch

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

• MANUAL A/C MODEL

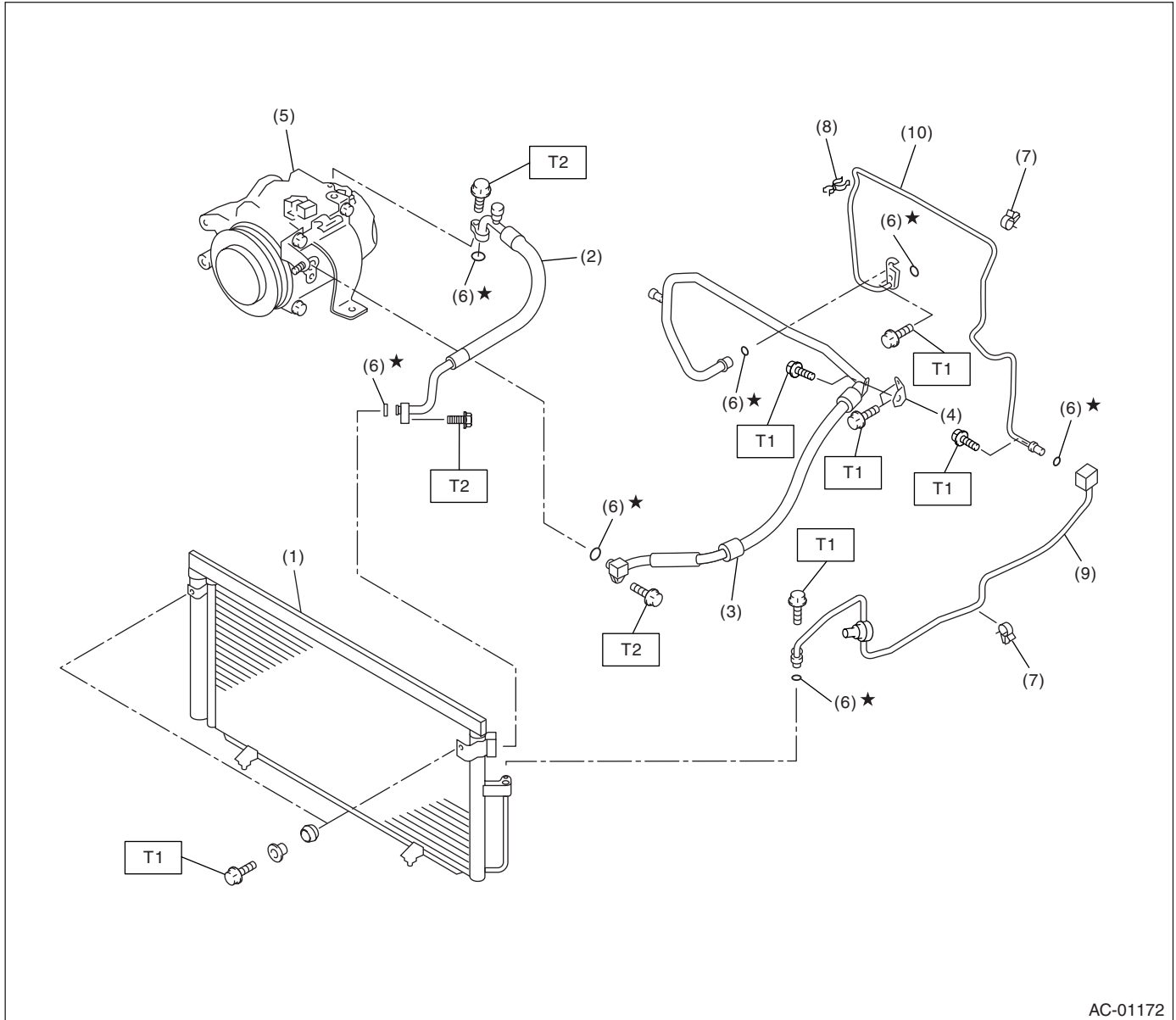


(1) Dial	(6) Heater control panel	(11) Mode cable
(2) Fan control plate	(7) A/C switch	(12) Temperature control cable
(3) Temperature control plate	(8) Rear window defogger switch	(13) Bulb
(4) Mode control plate	(9) Heater control base	(14) Fan switch ASSY
(5) FRESH/RECIRC switching knob	(10) Intake cable	(15) Harness

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

4. AIR CONDITIONING UNIT



(1) Condenser	(6) O-ring
(2) Hose (High-pressure)	(7) Clamp A
(3) Hose (Low-pressure)	(8) Clamp B
(4) Bracket	(9) Tube (To condenser)
(5) Compressor	(10) Tube (To evaporator)

Tightening torque: N·m (kgf-m, ft-lb)

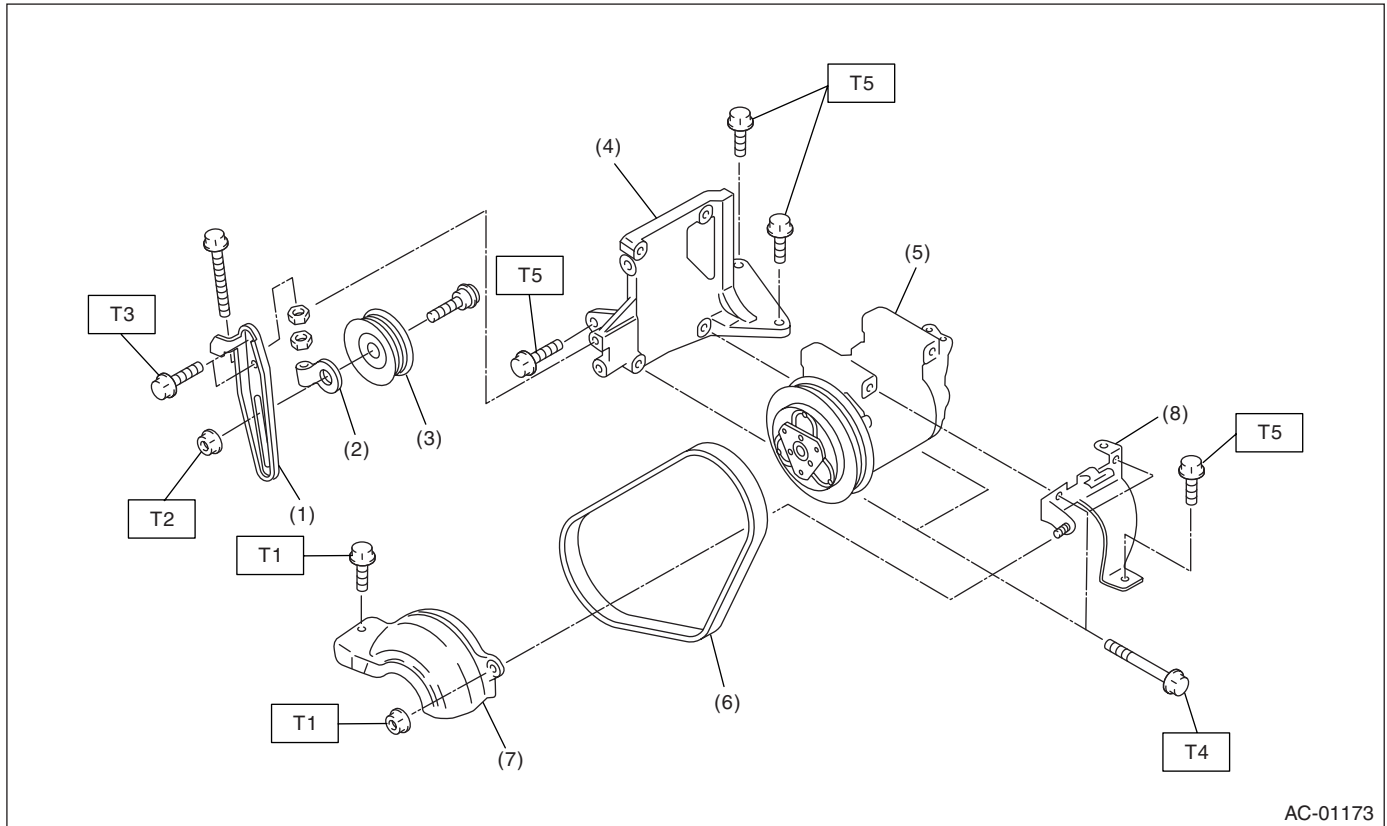
T1: 7.4 (0.75, 5.4)

T2: 15 (1.5, 10.8)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

5. COMPRESSOR



(1) Idler pulley bracket	(7) Compressor belt cover
(2) Idler pulley adjuster	(8) Compressor bracket
(3) Idler pulley	
(4) Compressor upper bracket	
(5) Compressor	
(6) V-belt	

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)

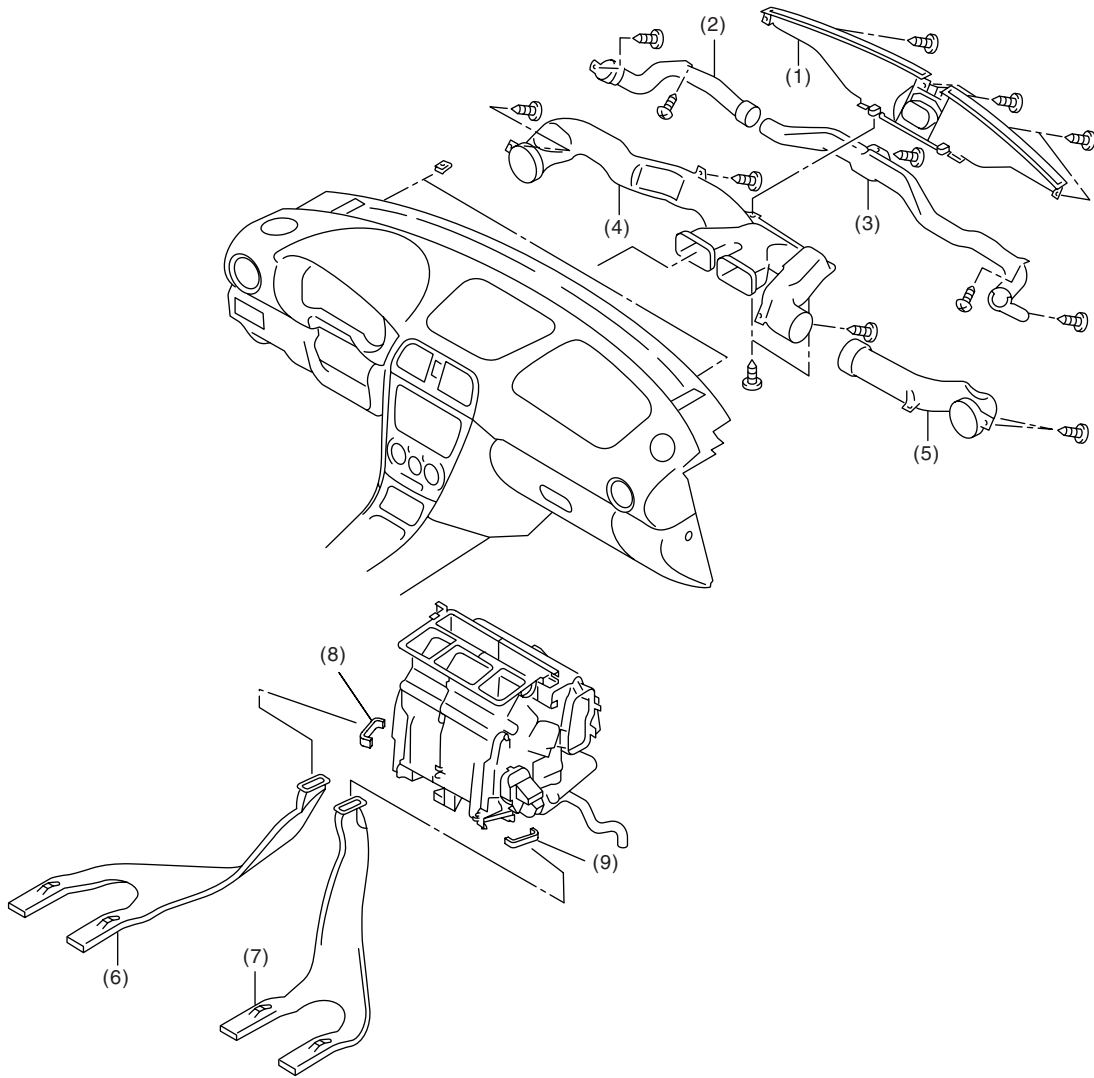
T4: 28.9 (2.95, 21.3)

T5: 35 (3.6, 26)

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

6. HEATER DUCT



AC-01109

(1) Front defroster nozzle	(4) Side ventilation duct (LH)	(7) Rear heater duct (RH)
(2) Side defroster duct (LH)	(5) Side ventilation duct (RH)	(8) Rear heater duct cover (LH)
(3) Side defroster duct (RH)	(6) Rear heater duct (LH)	(9) Rear heater duct cover (RH)

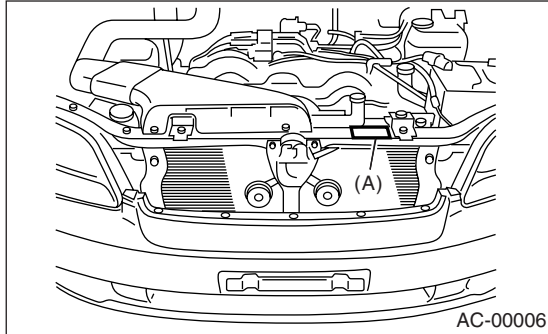
General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

C: CAUTION

1. HFC-134a A/C SYSTEM

- Unlike the old conventional CFC-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

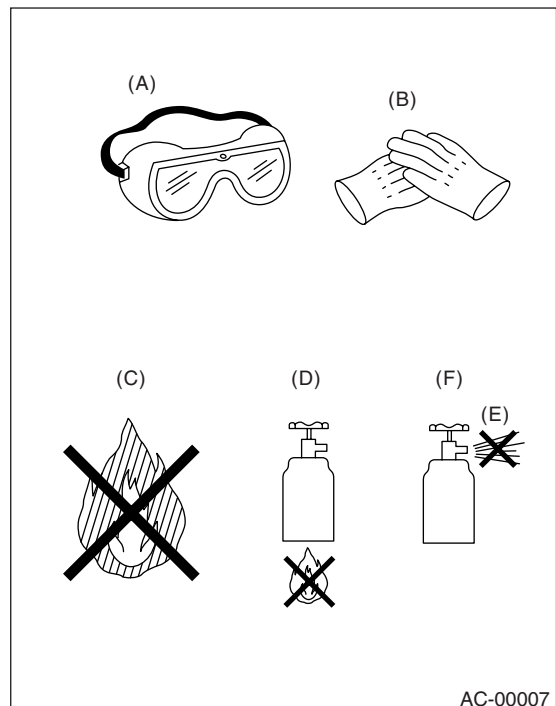
- HFC-134a compressor oil has no compatibility with that for CFC-12 system.
 - Use only the manufacturer-authorized compressor oil for the HFC-134a system; only use DH-PR.
 - Do not mix multiple compressor oils.
- If CFC-12 compressor oil is used in a HFC-134a A/C system, the compressor may become stuck 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 CFC-12 A/C system, the durability of the A/C system will be lowered.
- HFC-134a compressor oil is very hygroscopic. When replacing or installing/removing A/C parts, immediately isolate the oil from 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 CFC-12 refrigerant cannot be used in the HFC-134a A/C system. The HFC-134a refrigerant, also, cannot be used in the CFC-12 A/C system.
- If an incorrect or no refrigerant is used, 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.
- Provide good ventilation and do not work in a closed area.
- In order to prevent global warming, avoid releasing HFC-134a into the atmosphere. Using a refrigerant recovery system, discharge and reuse it.



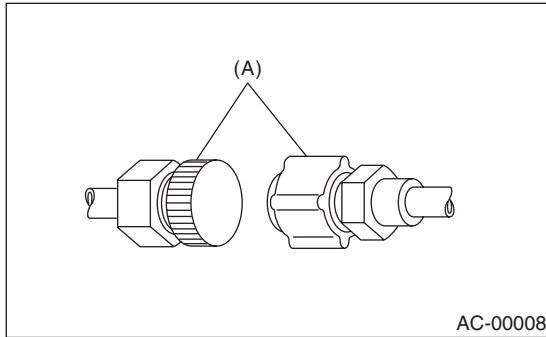
- (A) Safety goggles
- (B) Protective gloves
- (C) Avoid open flame
- (D) No direct heat on container
- (E) Do not discharge
- (F) Loosen

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

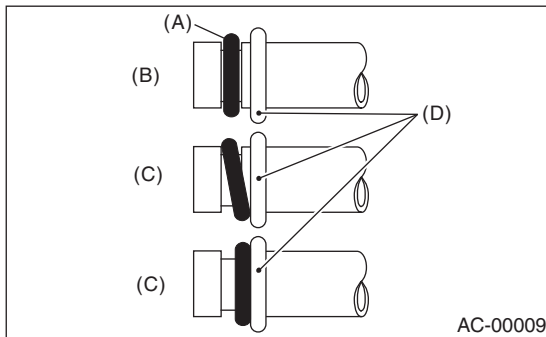
5. O-RING CONNECTIONS

- 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 cloths.
- 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

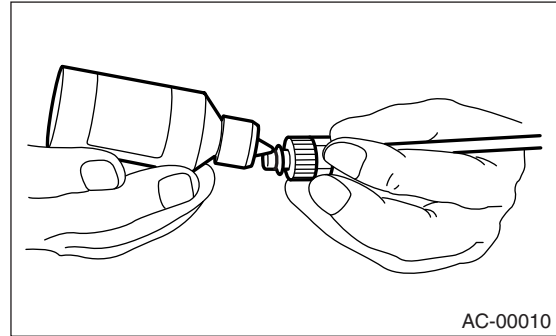
- Visually check the surfaces and mating surfaces of O-rings, threads, and connecting points. If a failure is found, replace the applicable parts.
- Install the O-rings at right angle to the tube beads.



- (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 area including the O-rings and tube beads.



- After tightening, use a clean shop cloth 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.

D: PREPARATION TOOL

CAUTION:

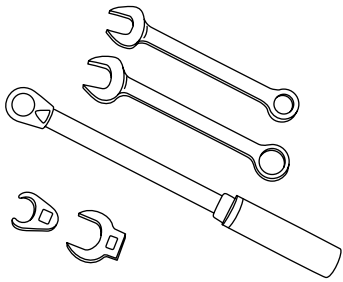
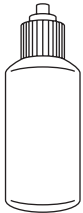
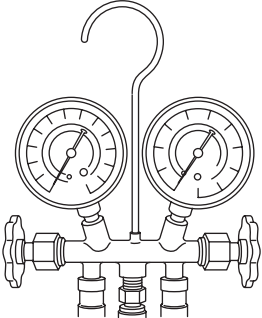
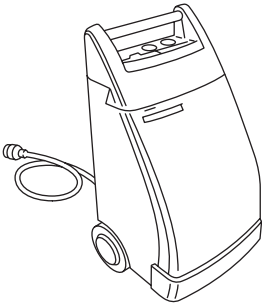
When working on vehicles with the HFC-134a system, only use HFC-134a specified tools and parts. Do not mix with CFC-12 tools and parts. If HFC-134a and CFC-12 refrigerant or compressor oil is mixed, poor lubrication will result and the compressor itself may be destroyed.

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

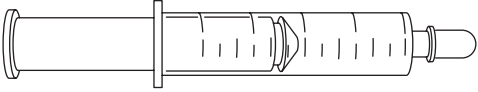
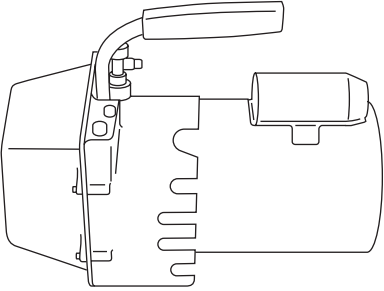
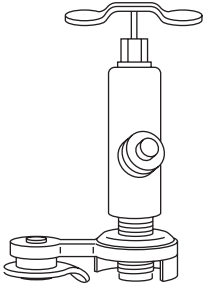
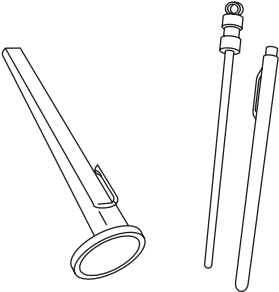
General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

Description	Tools and Equipment
 AC-00213	Wrench Various WRENCHES will be required to service any A/C system. A 7 to 40 N·m (0.7 to 4.1 kgf-m, 5 to 30 ft-lb) torque wrench with various crow-foot wrenches will be needed. Open end or flare nut wrenches will be needed for back-up on the tube and hose fittings.
 AC-00012	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-00013	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-00014	Refrigerant recovery system A REFRIGERANT RECOVERY SYSTEM is used for the recovery and reuse of A/C system refrigerant after contaminants and moisture have been removed from the refrigerant.

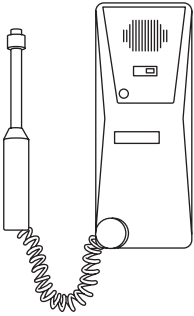
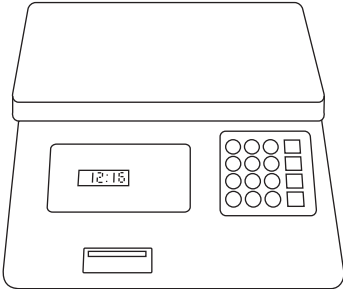
General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

Description	Tools and Equipment
 AC-00015	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-00016	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-00017	Can tap A CAN TAP for the 397 g (14 oz) can is available from an auto supply store.
 AC-00018	Thermometer Pocket THERMOMETERS are available from either industrial hardware store or commercial refrigeration supply houses.

General Description

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

Description	Tools and Equipment
 AC-00019	Electronic leak detector An ELECTRONIC LEAK DETECTOR can be obtained from either a specialty tool supply or an A/C equipment supplier.
 AC-00020	Weight scale A WEIGHT SCALE such as an electronic charging scale or a bathroom scale with digital display will be needed if a 13.6 kg (30 lb) refrigerant container is used.

Refrigerant Pressure with Manifold Gauge Set

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

2. Refrigerant Pressure with Manifold Gauge Set

A: PROCEDURE

- 1) Place the vehicle in the shade and windless condition.
- 2) Connect the manifold gauge set.
- 3) Open the front windows and close all doors.
- 4) Open the front hood.
- 5) Increase the engine to 1,500 rpm.
- 6) Turn ON the A/C switch.
- 7) Turn the temperature control switch to MAX COOL.
- 8) Put in RECIRC position.
- 9) Turn the blower control switch to HI.
- 10) Read the gauge.

Standard:

Low pressure: 127 — 196 kPa (1.3 — 2.0 kg/cm², 18 — 28 psi)

High pressure: 1,471 — 1,667 kPa (15 — 17 kg/cm², 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 fin • Too much refrigerant • Air inside the system • Defective receiver dryer	• Replace the fan motor. • Clean the condenser fin. • Discharge refrigerant. • Replace the receiver dryer. • After vacuuming, charge appropriate amount of refrigerant.
High-pressure side is unusually low.	• Defective compressor • Not enough refrigerant • Clogged expansion valve • Expansion valve frozen temporarily by moisture	• Replace the compressor. • Check for leaks. • Replace the expansion valve. • Fully vacuuming.
Low-pressure side is unusually high.	• Defective compressor • Defective expansion valve • Too much refrigerant	• Replace the compressor. • Replace the expansion valve. • Discharge refrigerant.
Low-pressure side is unusually low.	• Not enough refrigerant • Clogged expansion valve • Expansion valve frozen temporarily by moisture • Saturated receiver dryer	• Check for leaks. • Replace the expansion valve. • Replace the receiver dryer.

Refrigerant Recovery Procedure

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

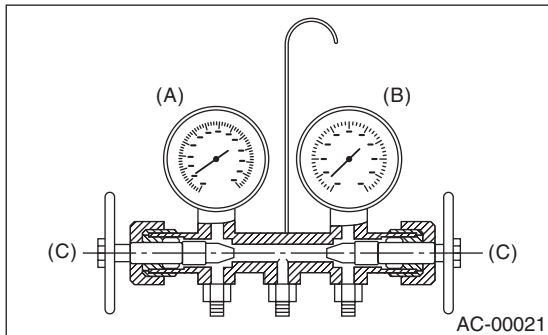
3. Refrigerant Recovery Procedure

A: PROCEDURE

CAUTION:

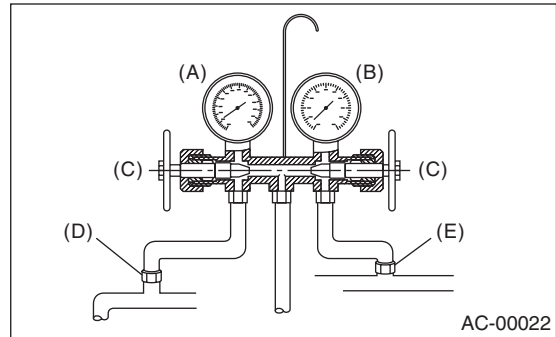
- During operation, be sure to wear safety goggles and protective gloves.
- Connect the refrigerant recovery system with the manifold gauge set to discharge the refrigerant from the A/C system and reuse it.
- When reusing the discharged refrigerant, keep service cans on hand. Because the discharge rate 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-25, PROCEDURE, Compressor Oil.>
- 2) Stop the engine.
- 3) Make sure the valves on low-/high-pressure sides of manifold gauge set are fully closed.



- (A) Low-pressure gauge (Compound pressure gauge)
(B) High-pressure gauge
(C) Close

- 4) Install the low-/high-pressure hoses to the service ports on the low-/high-pressure sides of the vehicle respectively.



- (A) Low-pressure gauge (Compound pressure gauge)
(B) High-pressure gauge
(C) Close
(D) Low-pressure side service port
(E) High-pressure side service port

- 5) Connect the center hose to the refrigerant recovery system.
- 6) Follow the operation manual to activate the refrigerant recovery system.

Refrigerant Charging Procedure

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

4. Refrigerant Charging Procedure

A: PROCEDURE

CAUTION:

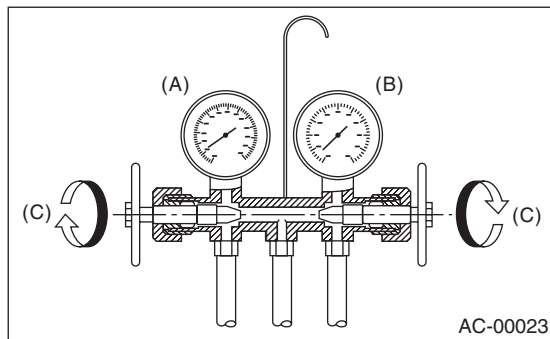
- During operation, be sure to wear safety goggles and protective gloves.
- Before charging the refrigerant, evacuate the system to remove small amounts of moisture remaining in the system.

The moisture in the system can be completely evacuated only under the minimum vacuum level. The minimum vacuum level affects the temperature in the system.

- The list below shows the vacuum values necessary to boil water in various temperature. In addition, the vacuum levels indicated on the gauge are approx. 3.3 kPa (25 mmHg, 0.98 inHg) lower than those measured at 304.8 m (1,000 ft) above sea level.

Vacuum level required to boil water (at sea level)	
Temperature	Vacuum
1.7°C (35°F)	100.9 kPa (757 mmHg, 29.8 inHg)
7.2°C (45°F)	100.5 kPa (754 mmHg, 29.7 inHg)
12.8°C (55°F)	99.8 kPa (749 mmHg, 29.5 inHg)
18.3°C (65°F)	99.2 kPa (744 mmHg, 29.3 inHg)
23.9°C (75°F)	98.5 kPa (739 mmHg, 29.1 inHg)
29.4°C (85°F)	97.2 kPa (729 mmHg, 28.7 inHg)
35°C (95°F)	95.8 kPa (719 mmHg, 28.3 inHg)

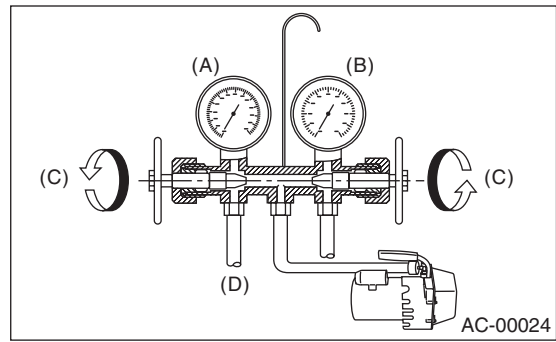
- 1) Close the valves on low-/high-pressure sides of the manifold gauge.



- (A) Low-pressure gauge (Compound pressure gauge)
- (B) High-pressure gauge
- (C) Close

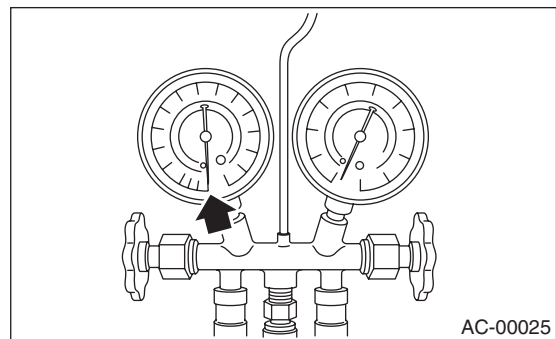
- 2) Install the low-/high-pressure hoses to the corresponding service ports on the vehicle respectively.
- 3) Connect the center hose of the manifold gauge set with the vacuum pump.

- 4) Carefully open the valves on the low-/high-pressure sides to activate the vacuum pump.

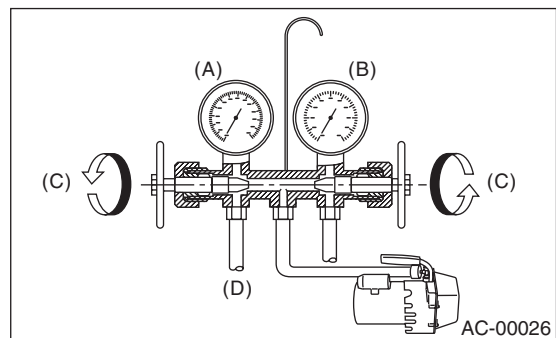


- (A) Low-pressure gauge (Compound pressure gauge)
- (B) High-pressure gauge
- (C) Slowly open
- (D) Vacuum pump turn on

- 5) After the low-pressure gauge reaches 100.0 kPa (750 mmHg, 29.5 inHg) or higher, evacuate the system for approx. 15 minutes (Continue evacuation).



- 6) After 15 minutes of evacuation, if the reading shows 100.0 kPa (750 mmHg, 29.5 inHg) or higher, close the valves on the both sides to stop the vacuum pump.

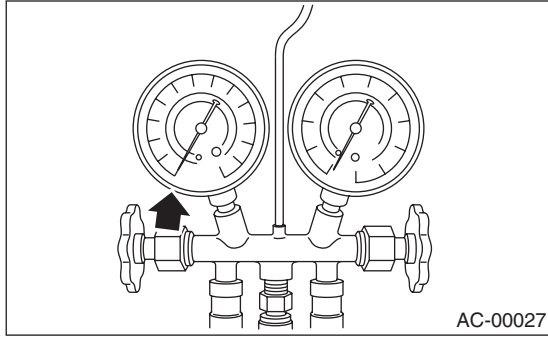


- (A) Low-pressure gauge (Compound pressure gauge)
- (B) High-pressure gauge
- (C) Close
- (D) Vacuum pump turn off

Refrigerant Charging Procedure

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

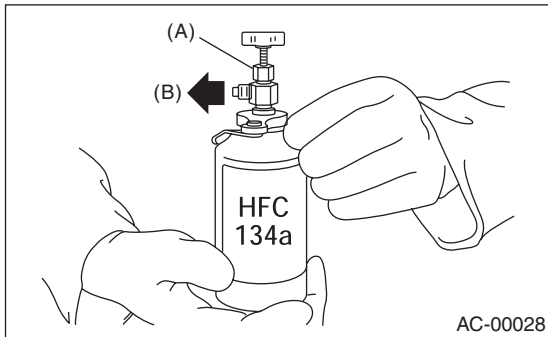
7) Note the low-pressure gauge reading.



8) Leave it at least 5 minutes, and then check the low-pressure gauge reading for any changes.

When a gauge indicator shows near to zero point, this is a sign of leakage. Check pipe connector points, repair them, make sure there is no leakage by air bleeding.

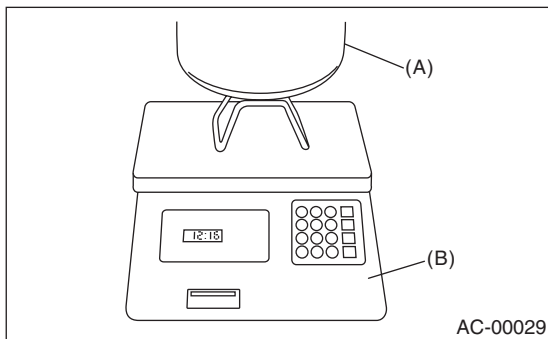
9) Following the can tap operation manual instructions, install it to the refrigerant can.



- (A) Tap valve
- (B) Center manifold hose

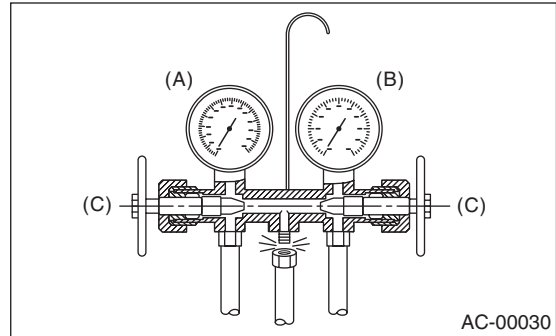
10) Disconnect the center manifold hose from the vacuum pump, and connect the hose to the tap valve.

11) When a 13.6 kg (30 lb) refrigerant container is used, measure the refrigerant amount in use using a weighting scale.



- (A) Refrigerant container (HFC-134a)
- (B) Weight scale

12) Confirm that all the 3 hoses are tightly connected to the manifold gauge set.



- (A) Low-pressure gauge (Compound pressure gauge)
- (B) High-pressure gauge
- (C) Close

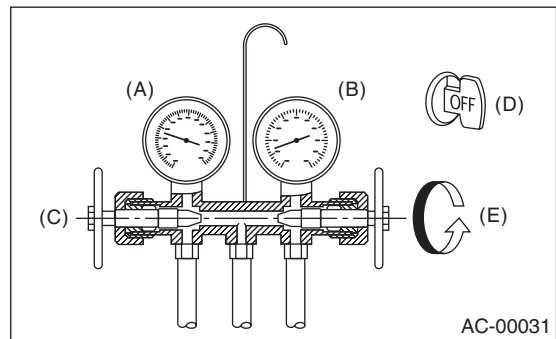
13) Open the valve on the HFC-134a source.

14) Loosen the center hose connection on the manifold gauge set (if applicable, press a purge valve on the manifold gauge set) only for a couple of seconds to allow the air in the center hose to escape by the refrigerant.

15) Carefully open the high-pressure valve with the engine stopping.

CAUTION:

Do not open the low-pressure valve.



- (A) Low-pressure gauge (Compound pressure gauge)
- (B) High-pressure gauge
- (C) Close
- (D) Ignition switch OFF
- (E) Slowly open

CAUTION:

Never run the engine during charging from the high-pressure side.

16) Close the high-pressure valve when the low-pressure gauge reaches 98 kPa (1 kg/cm², 14 psi). Using a leak tester, check the system for leaks. If any leakage is found after the refrigerant recovery is completed, repair the applicable area.

Refrigerant Charging Procedure

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

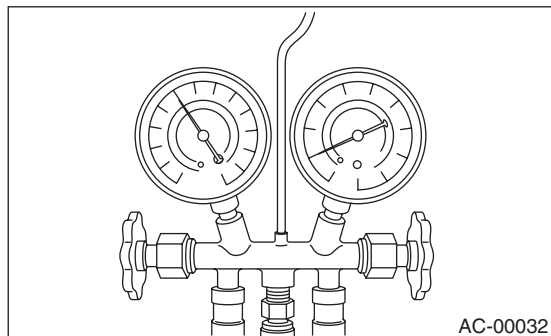
17) After confirming that there are no leaks with the leak test, charge the required amount of refrigerant.

CAUTION:

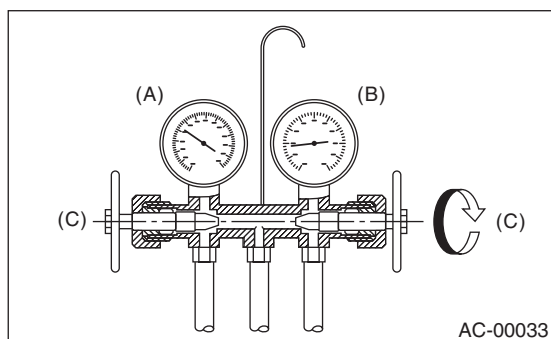
Never run the engine during charging from the high-pressure side.

18) Close the high-pressure valve when;

- the readings of low-/high-pressure gauges become almost equal, after the charging speed is reduced,
- the HFC-134a source becomes empty, or the system is filled with the gas.



19) If the HFC-134a source is empty, close the high-pressure valve, close the valve on the can tap, and replace the HFC-134a source with a new one to restart the operation.



- (A) Low-pressure gauge (Compound pressure gauge)
(B) High-pressure gauge
(C) Close

20) Confirm that both the low-/high-pressure valves can be closed. Start the engine with the A/C switch OFF.

21) Quickly repeat ON-OFF cycles a few times to prevent initial compressor damage.

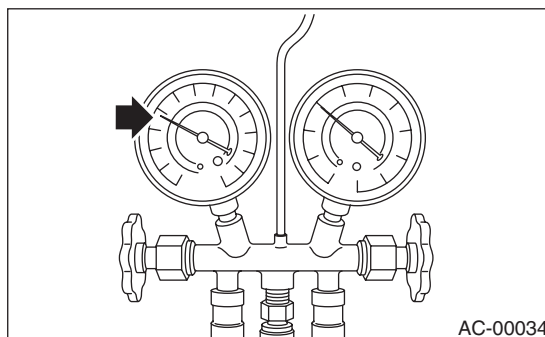
22) Set up the vehicle to the following status:

- 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"
- Windows open

23) While reading the low-pressure gauge, carefully open the low-pressure valve with the refrigerant source connected and the service hose purged.

CAUTION:

Never open the high-pressure valve with the engine running. Doing so may result in a reflow of high-pressure gas and refrigerant can's explosion.



24) Adjust the refrigerant flow to maintain the pressure on the low-pressure side at 276 kPa (2.81 kg/cm², 40 psi) max.

25) After the system is fully charged, close the low-pressure valve.

26) Close the valve on the refrigerant source.

Refrigerant amount		
Refrigerant	Minimum	Maximum
HFC-134a	450 g (0.99 lb)	550 g (1.21 lb)

27) Disconnect the hose from the service port, and install the service port cap.

Refrigerant Leak Check

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

5. Refrigerant Leak Check

A: INSPECTION

1) Operate the A/C system for approx. 10 minutes, and confirm that the high-pressure side shows at least 690 kPa (7.03 kg/cm², 100 psi). Then stop the engine to start the leak test.

2) Starting from the connection between the high-pressure pipe and evaporator, check the system for leaks along the high-pressure side through the compressor. The following items must be checked thoroughly.

3) Check the joint and seam between the pressure switch (dual pressure switch) and high-pressure pipe.

4) Check the connections between the condenser and pipes, and welded joints on the condenser. The leak tester may detect the oil on the condenser fins as a leak.

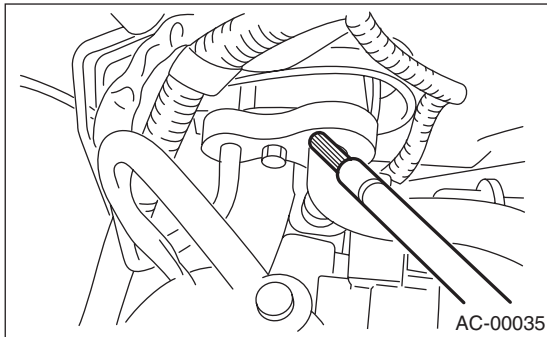
5) Check the joint between the compressor and hoses.

6) Check the machined area of compressor and other joints on the compressor.

7) Check the compressor shaft seal at the area near the center of compressor clutch pulley. Some shaft seals show a slight amount of leakage about 3 g (0.1 oz) per year. This is not a problem.

8) Starting from the connection between the low-pressure pipe and evaporator, check the system for leakage along the low-pressure side through the compressor. The following items must be checked thoroughly.

- Connection between two parts
- Connection between the pipe and plate

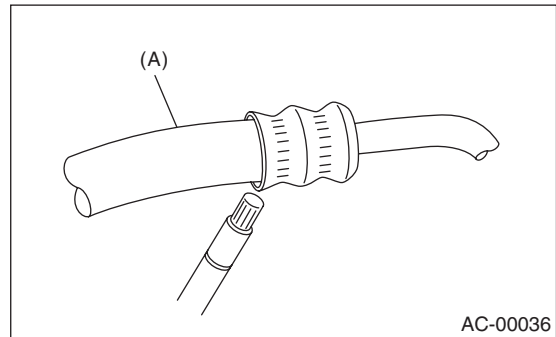


9) Visually check the rubber area of the flexible hose for cracks.

Check the entire length of the flexible hose, especially the connection with the metal hose end.

CAUTION:

Carefully check the external surface of hoses and tubes at approx. 25 mm (0.98 in) per second.

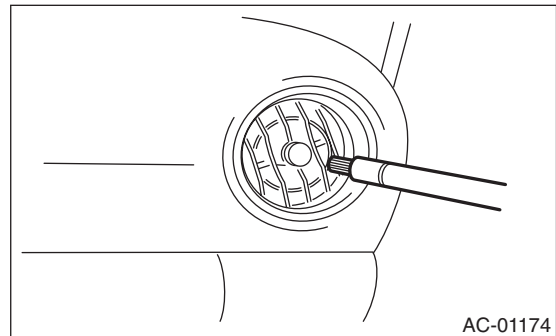


(A) Flexible hose

10) Disconnect the drain hose from the heater case, and check the hose end for at least 10 seconds.

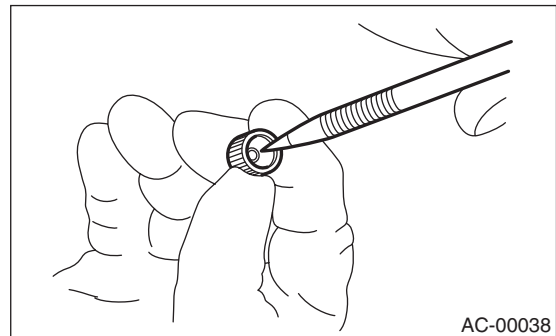
After the test is finished, reconnect the drain hose.

11) 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.



12) Check the valve in the service port.

13) Visually check the rubber seal in service port cap.



6. Compressor Oil

A: PROCEDURE

NOTE:

Before making repairs, conduct the oil return operation to return the compressor oil in circulation with the refrigerant to compressor.

- 1) Increase engine to 1,500 rpm.
- 2) Turn the A/C switch to ON.
- 3) Turn the temperature control switch to MAX COOL.
- 4) Put in RECIRC position.
- 5) Turn the blower control switch to HI.
- 6) Leave in this condition for 10 minutes.

B: REPLACEMENT

NOTE:

- If a component 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)
Condenser	7 m l (0.24 US fl oz, 0.25 Imp fl oz)
Hose	1 m l (0.03 US fl oz, 0.04 Imp fl oz)

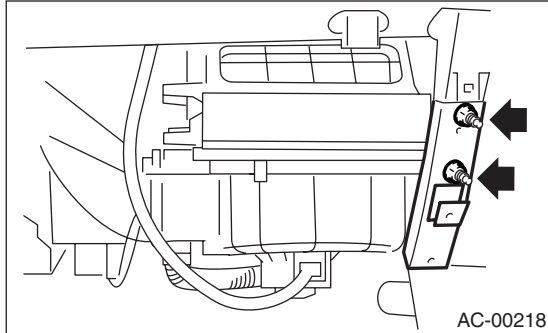
Blower Motor Unit Assembly

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

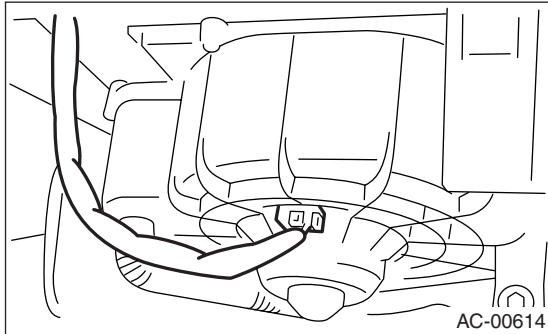
7. Blower Motor Unit Assembly

A: REMOVAL

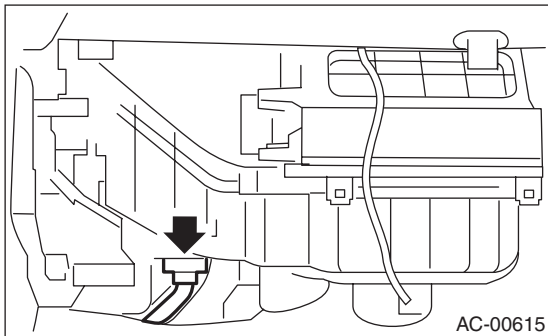
- 1) Disconnect the ground cable from battery.
- 2) Remove the glove box. <Ref. to EI-44, REMOVAL, Glove Box.>
- 3) Loosen the nut to remove the support beam stay.



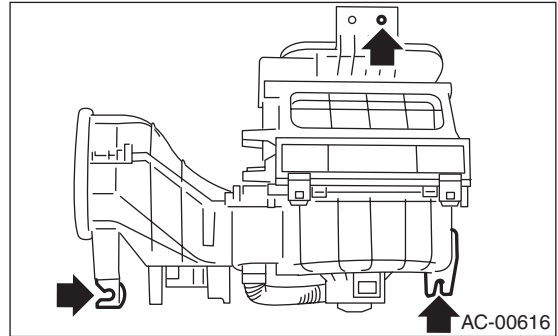
- 4) Disconnect the blower motor connector.



- 5) Disconnect the power transistor or blower resistor connector.



- 6) Loosen the bolt and nut to remove the blower motor unit assembly.



B: INSTALLATION

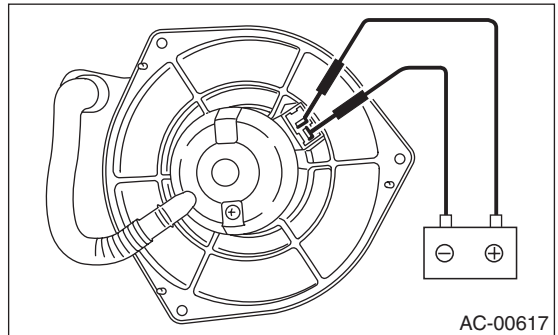
Install in the reverse order of removal.

Tightening torque:

Refer to COMPONENT in General Description. <Ref. to AC-5, HEATER COOLING UNIT, COMPONENT, General Description.> and <Ref. to AC-7, BLOWER MOTOR UNIT, COMPONENT, General Description.>

C: INSPECTION

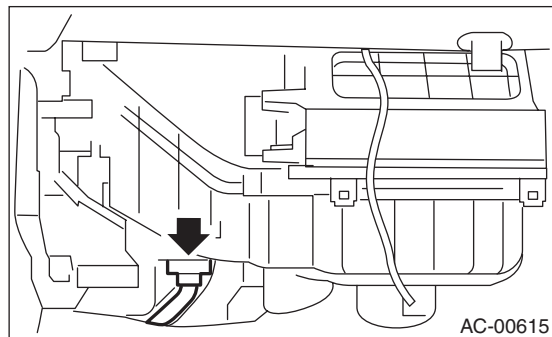
Connect the motor connector terminal 1 from the battery to the positive (+) lead and terminal 2 to the negative (-) lead. Make sure the motor runs smoothly.



8. Power Transistor (Auto A/C Model)

A: REMOVAL

- 1) Remove the glove box. <Ref. to EI-44, REMOVAL, Glove Box.>
- 2) Disconnect the power transistor connector.
- 3) Loosen the two screws to remove the power transistor.



B: INSTALLATION

Install in the reverse order of removal.

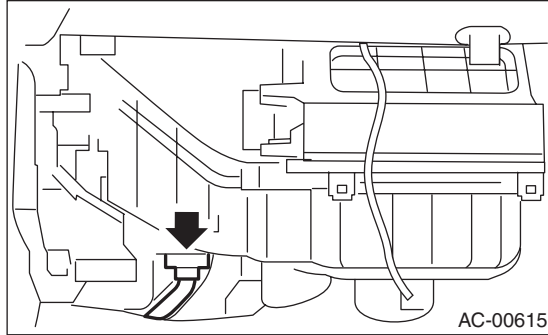
Blower Resistor (Manual A/C Model)

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

9. Blower Resistor (Manual A/C Model)

A: REMOVAL

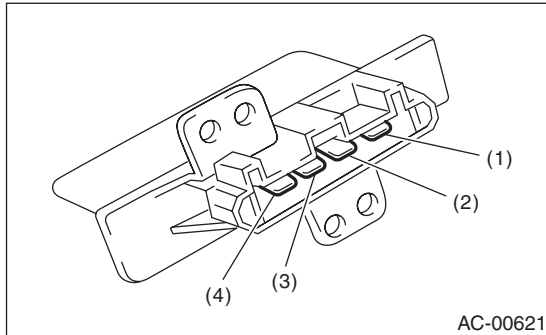
- 1) Remove the glove box. <Ref. to EI-44, REMOVAL, Glove Box.>
- 2) Disconnect the blower resistor connector.
- 3) Loosen the two screws to remove the blower resistor.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION



Measure the blower resistor resistance.

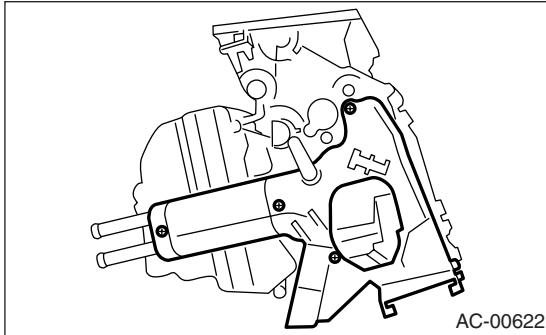
Terminal No.	Standard
3 and 1	Approx. 0.51 Ω
3 and 2	Approx. 2.70 Ω
3 and 4	Approx. 1.43 Ω

If NG, replace the blower resistor.

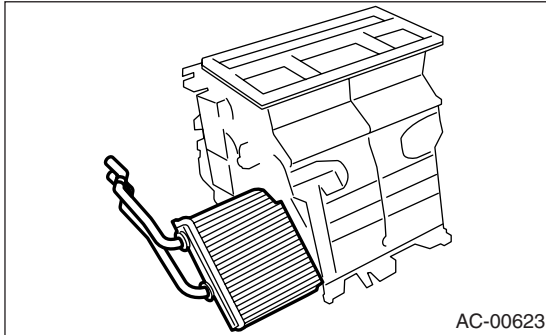
10.Heater Core

A: REMOVAL

- 1) Remove the heater and cooling unit. <Ref. to AC-34, REMOVAL, Heater and Cooling Unit.>
- 2) Loosen the screws to remove the heater core cover.



- 3) Remove the heater core.



B: INSTALLATION

Install in the reverse order of removal.

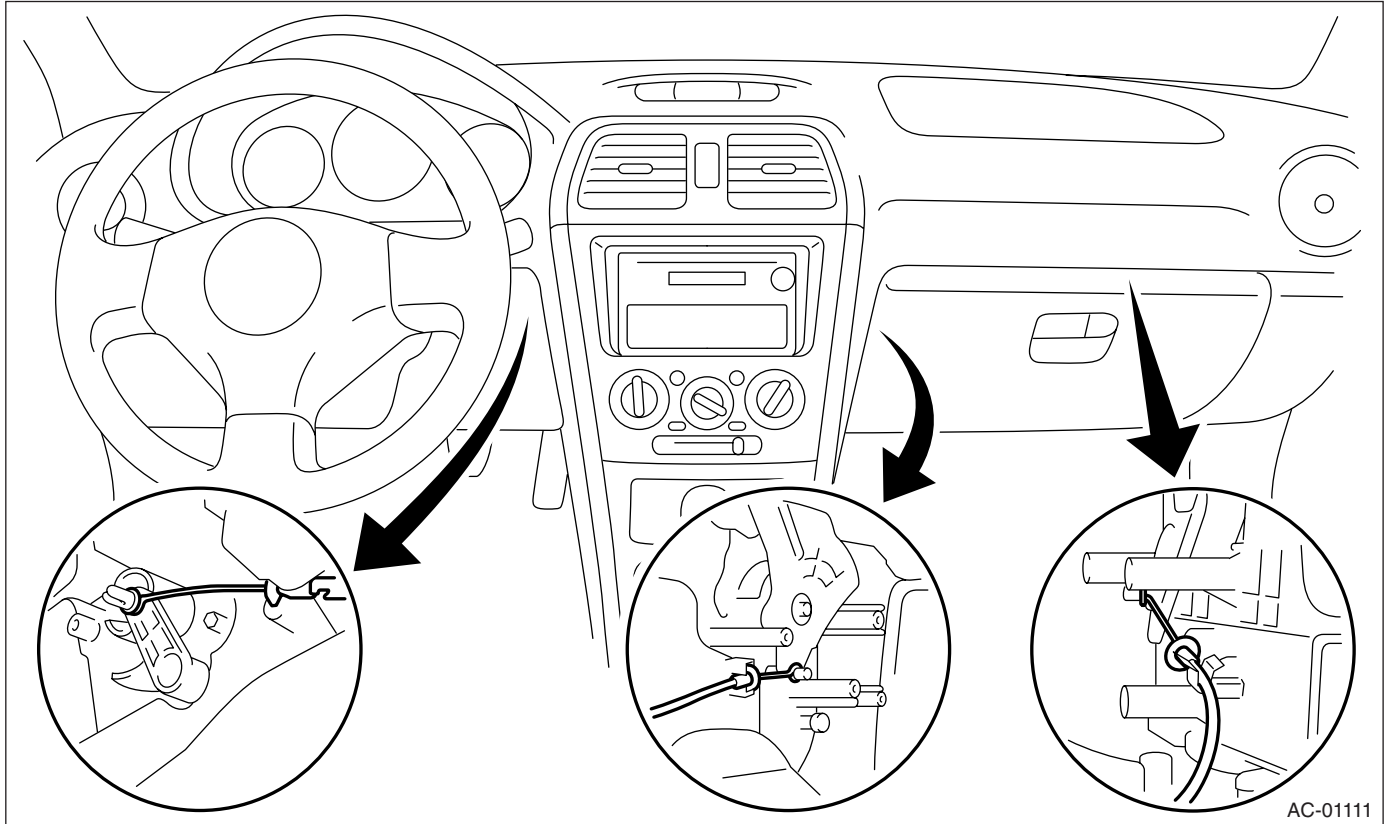
Control Unit (Manual A/C Model)

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

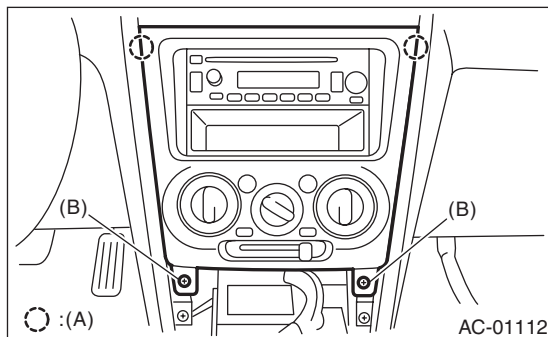
11. Control Unit (Manual A/C Model)

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the glove box. <Ref. to EI-44, REMOVAL, Glove Box.>
- 3) Remove the lower panel. <Ref. to EI-48, Instrument Panel Assembly.>
- 4) Remove the control wires.

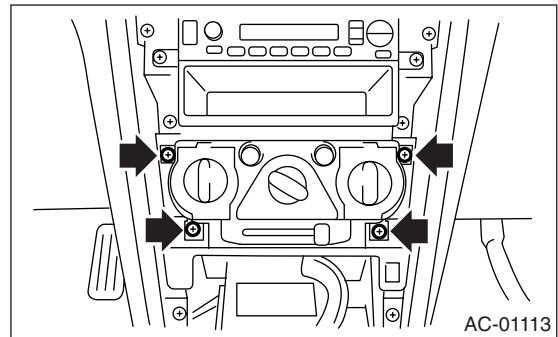


- 5) Remove the console front panel.
- 6) Remove the center console panel.



- (A) Clip
(B) Screw

- 7) Remove four screws.



- 8) Pull out the control unit and disconnect connectors.

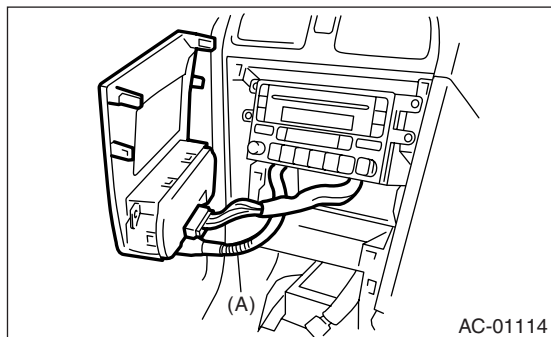
B: INSTALLATION

Install in the reverse order of removal.

12. Control Unit (Auto A/C Model)

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the console front panel.
- 3) Remove the center console panel.
- 4) Disconnect the connector and aspirator hose (A).



B: INSTALLATION

Install in the reverse order of removal.

13. Compressor

A: INSPECTION

1. MAGNETIC CLUTCH CLEARANCE

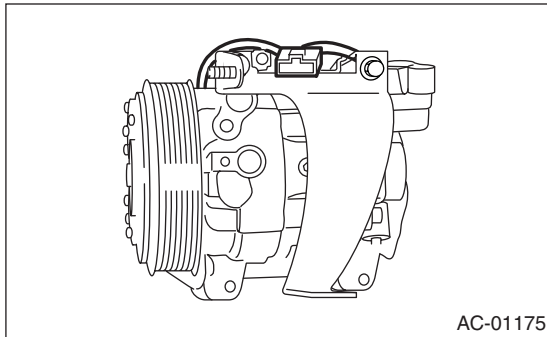
- 1) Check the clearance of the entire circumference around the drive plate and pulley.

Standard:

$0.45 \pm 0.15 \text{ mm } (0.0177 \pm 0.0059 \text{ in})$

2. MAGNETIC CLUTCH OPERATION

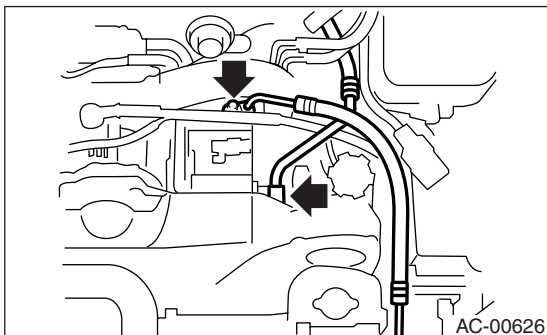
- 1) Disconnect the compressor connector.
- 2) Connect the battery positive (+) terminal to the terminal of compressor connector.



- 3) Make sure the magnet clutch engages. If NG, replace the compressor.

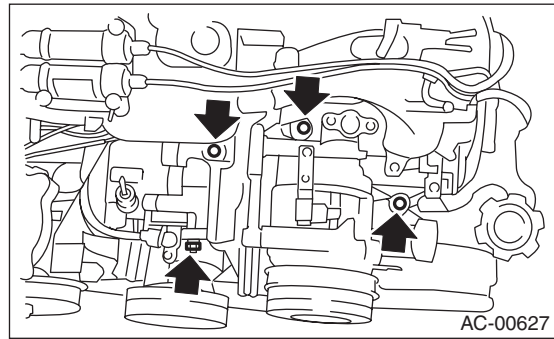
B: REMOVAL

- 1) Perform the compressor oil return operation. <Ref. to AC-25, PROCEDURE, Compressor Oil.>
- 2) Turn the A/C switch OFF and stop the engine.
- 3) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-20, PROCEDURE, Refrigerant Recovery Procedure.>
- 4) Disconnect the ground cable from battery.
- 5) Remove the V-belt. <Ref. to ME(H4SO)-37, REMOVAL, V-belt.> or <Ref. to ME(H4DOTC)-42, REMOVAL, V-belt.>
- 6) Remove the generator. <Ref. to SC(H4SO)-15, REMOVAL, Generator.>
- 7) Remove the low-pressure hose and high-pressure hose.

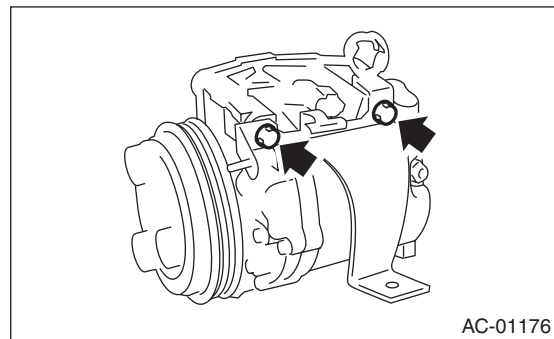


- 8) Disconnect the compressor harness from body harness.

- 9) Loosen the bolts to remove the compressor bracket.



- 10) Loosen the bolts to remove the bracket from compressor.



C: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Replace the 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-25, PROCEDURE, Compressor Oil.>
- 4) Charge refrigerant. <Ref. to AC-21, PROCEDURE, Refrigerant Charging Procedure.>

Tightening torque:

Refer to COMPONENT in General Description. <Ref. to AC-11, AIR CONDITIONING UNIT, COMPONENT, General Description.> and <Ref. to AC-12, COMPRESSOR, COMPONENT, General Description.>

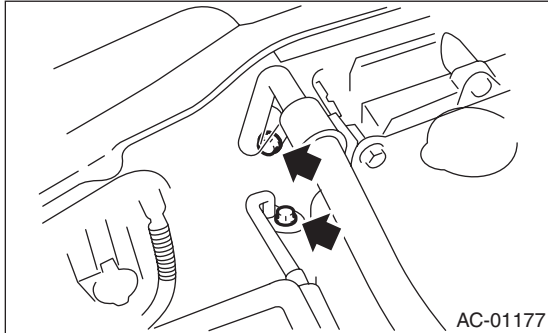
Condenser

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

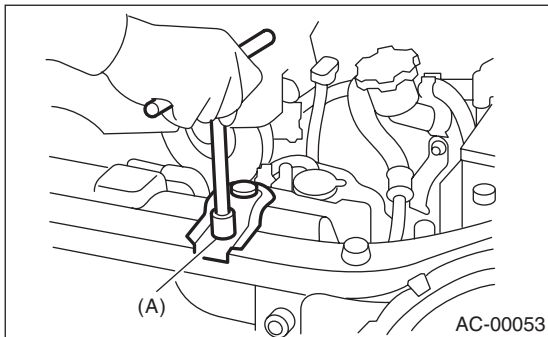
14. Condenser

A: REMOVAL

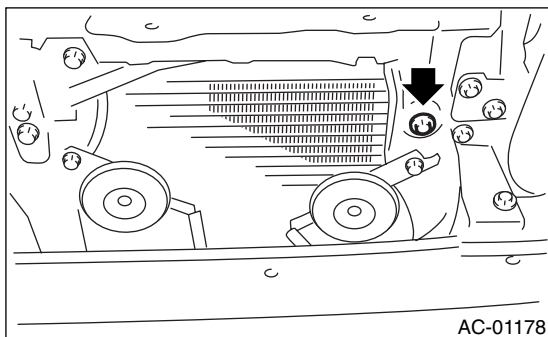
- 1) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-20, PROCEDURE, Refrigerant Recovery Procedure.>
- 2) Disconnect the ground cable from battery.
- 3) Remove the front bumper. <Ref. to EI-24, REMOVAL, Front Bumper.>
- 4) Disconnect the pressure hose and pipe from condenser.



- 5) Remove the radiator bracket (A).



- 6) Remove the two bolts. While lifting the condenser, pull it out through the space between radiator and radiator panel.



CAUTION:

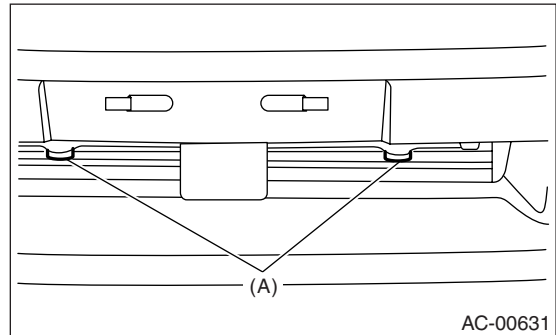
- Be careful not to damage the condenser fins. If a damaged fin is found, repair it using a thin screwdriver.
- If the condenser is replaced, add appropriate amount of compressor oil to the compressor. <Ref. to AC-25, REPLACEMENT, Compressor Oil.>

B: INSTALLATION

- 1) Install in the reverse order of removal.

CAUTION:

Replace the O-rings on hoses or pipes with new ones, and then apply compressor oil. Confirm that lower guide of condenser (A) has been fitted into holes on radiator panel.



- 2) Charge refrigerant. <Ref. to AC-21, PROCEDURE, Refrigerant Charging Procedure.>

Tightening torque:

Refer to **COMPONENT in General Description**. <Ref. to AC-11, AIR CONDITIONING UNIT, COMPONENT, General Description.> and <Ref. to CO(H4SO)-4, RADIATOR AND RADIATOR FAN, COMPONENT, General Description.>

C: INSPECTION

- 1) Confirm that no dust or insects are found on the condenser fins. Air-blow or flush fins with water as needed.
- 2) Confirm that no oil leaks from condenser. If a failure is found, replace the condenser with a new one.

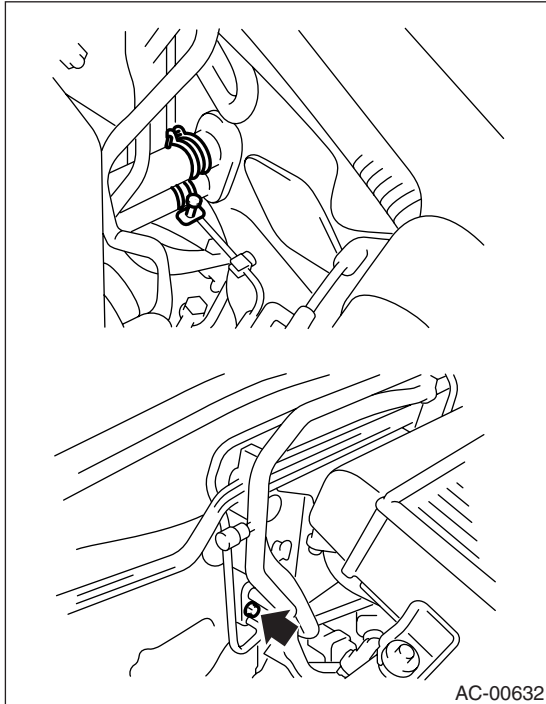
Heater and Cooling Unit

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

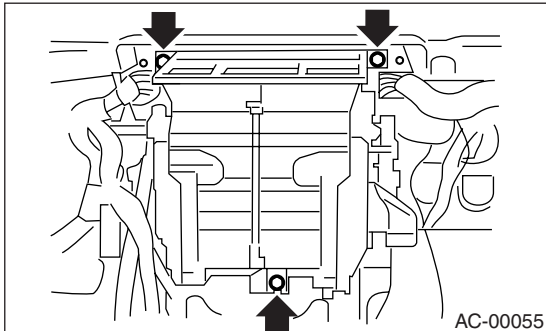
15.Heater and Cooling Unit

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-20, PROCEDURE, Refrigerant Recovery Procedure.>
- 3) Drain LLC from the radiator.
- 4) Remove the bolt securing expansion valve and pipe in engine compartment. Release the heater hose clamps in engine compartment to remove the hoses.



- 5) Remove the instrument panel. <Ref. to EI-48, REMOVAL, Instrument Panel Assembly.>
- 6) Remove the support beam.
- 7) Remove the blower motor unit assembly. <Ref. to AC-26, REMOVAL, Blower Motor Unit Assembly.>
- 8) Disconnect the servo motor connectors.
- 9) Loosen the bolt and nuts to remove the heater and cooling unit.



B: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Charge refrigerant. <Ref. to AC-21, PROCEDURE, Refrigerant Charging Procedure.>

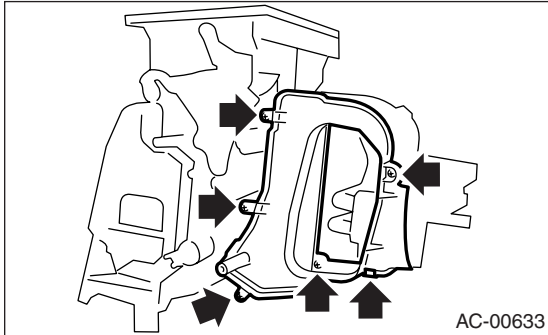
Tightening torque:

Refer to COMPONENT in General Description. <Ref. to AC-5, HEATER COOLING UNIT, COMPONENT, General Description.>

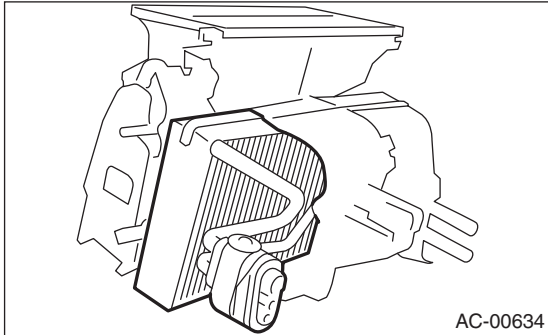
16. Evaporator

A: REMOVAL

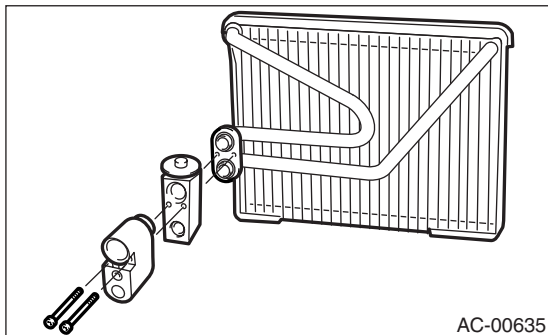
- 1) Remove the heater and cooling unit. <Ref. to AC-34, REMOVAL, Heater and Cooling Unit.>
- 2) Loosen the screws and clip to remove the evaporator cover.



- 3) Remove the evaporator.



- 4) Loosen the two bolts to remove the expansion valve.



CAUTION:

If the evaporator is replaced, add appropriate amount of compressor oil to evaporator. <Ref. to AC-25, REPLACEMENT, Compressor Oil.>

B: INSTALLATION

Install in the reverse order of removal.

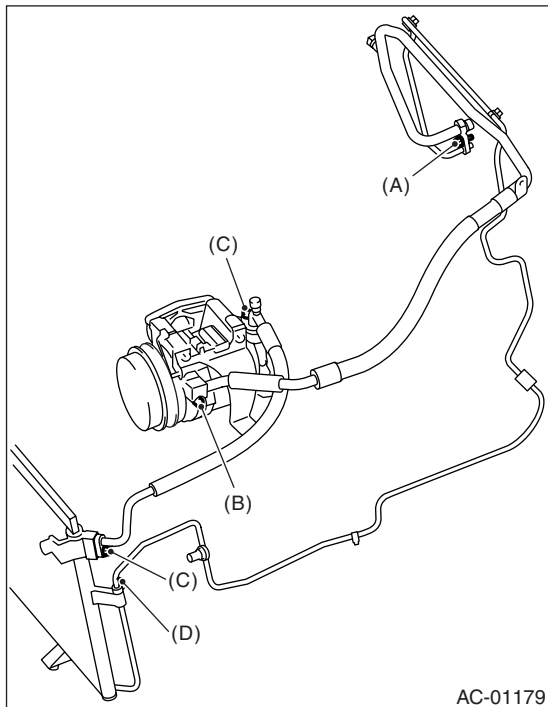
17.Hose and Tube

A: REMOVAL

CAUTION:

- When disconnecting/connecting hoses, do not apply excessive force to them. Confirm that no torsion and excessive tension exists after installing.
- Seal the disconnected hose with a plug or vinyl tape to prevent contamination from entering.

- 1) Disconnect the ground cable from battery.
- 2) Using the refrigerant recovery system, discharge refrigerant. <Ref. to AC-20, PROCEDURE, Refrigerant Recovery Procedure.>
- 3) Remove the evaporator unit mounting bolt (A).
- 4) Remove the low-pressure hose attaching bolts (B).
- 5) Disconnect the low-pressure hose from evaporator unit.
- 6) Disconnect the low-pressure hose from compressor.
- 7) Remove the low-pressure hose from vehicle.
- 8) Remove the high-pressure hose attaching bolts (C).
- 9) Disconnect the high-pressure hose from compressor.
- 10) Disconnect the high-pressure hose from condenser.
- 11) Remove the high-pressure hose from vehicle.
- 12) Remove the high-pressure tube attaching bolt (D).
- 13) Remove the high-pressure tube from vehicle.



B: INSTALLATION

CAUTION:

- When disconnecting/connecting hoses, do not apply an excessive force to them. Confirm that no torsion and excessive tension exists 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-21, PROCEDURE, Refrigerant Charging Procedure.>

Tightening torque:

Refer to COMPONENT in General Description. <Ref. to AC-11, AIR CONDITIONING UNIT, COMPONENT, General Description.>

C: INSPECTION

NOTE:

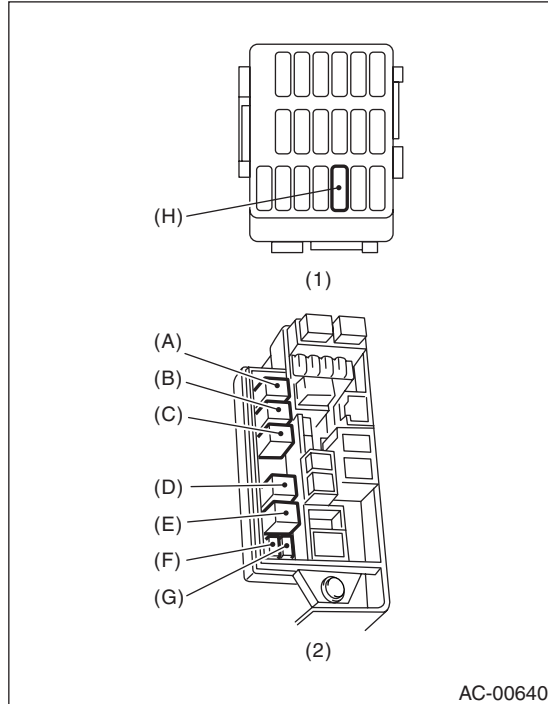
If cracking, damage, or swelling is found on a hose, replace it with a new one.

Relay and Fuse

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

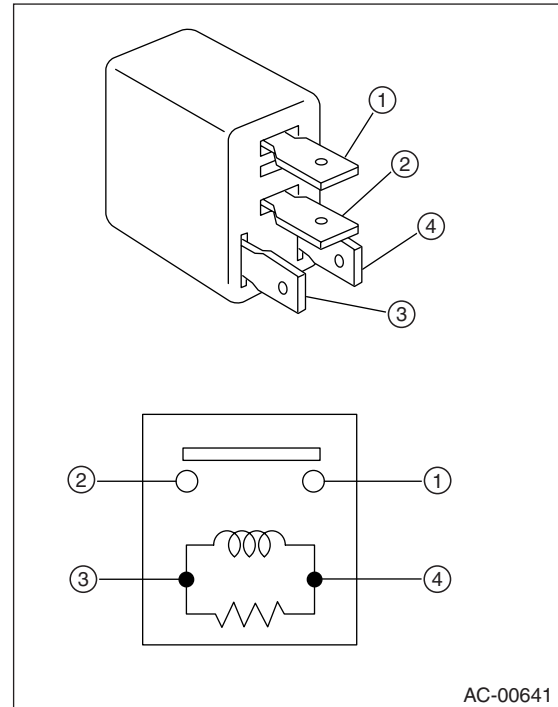
18. Relay and Fuse

A: LOCATION



Main Fan Relay 1	A
Main Fan Relay 2	B
Sub Fan Relay 1	C
Sub Fan Relay 2	E
A/C Relay	D
Main Fan Fuse	F
Sub Fan Fuse	G
A/C Fuse	H

B: INSPECTION



(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.

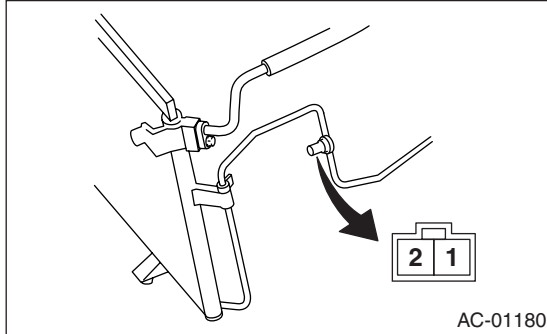
Pressure Switch (Dual Switch)

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

19. Pressure Switch (Dual Switch)

A: INSPECTION

- 1) Connect the manifold gauge to the service valve on high-pressure side.
- 2) Remove the pressure switch harness connector. Using a circuit tester, inspect the ON-OFF operation of pressure switch.

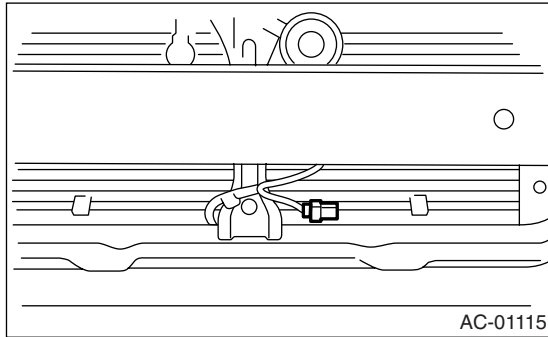


	Terminal No.	Operation	Standard kPa (kg/cm ² , psi)
High and low pressure switch	1 and 2	Turns OFF.	Increasing to 2,800±100 (29±1, 406±15)
			Decreasing to 278±29 (2.83±0.3, 40.3±4.2)
		Turns ON.	Increasing to 287 ⁺³⁹ / ₋₂₅ (2.9 ^{+0.4} / _{-0.25} 42 ^{+5.7} / _{-3.6})
			Decreasing to 2,200±200 (22.4±2, 319±29)

20.Ambient Sensor

A: REMOVAL

- 1) Open the front hood.
- 2) Disconnect the ground cable from battery.
- 3) Disconnect the ambient sensor connector.
- 4) Remove the ambient sensor from radiator lower panel.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

<Ref. to AC(diag)-24, AMBIENT SENSOR, Diagnostic Procedure for Sensors.>

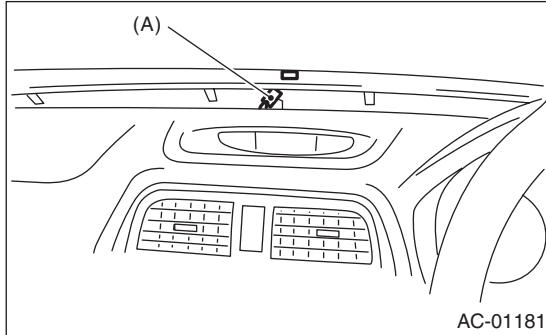
Sunload Sensor (Auto A/C Model)

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

21.Sunload Sensor (Auto A/C Model)

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the front defroster grille.
- 3) Disconnect the sunload sensor connector (A).



CAUTION:

Be careful not to damage the sensors and interior trims when removing them.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

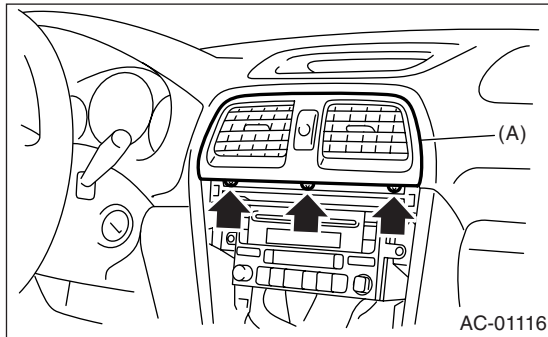
<Ref. to AC(diag)-28, SUNLOAD SENSOR, Diagnostic Procedure for Sensors.>

22. Air Vent Grille

A: REMOVAL

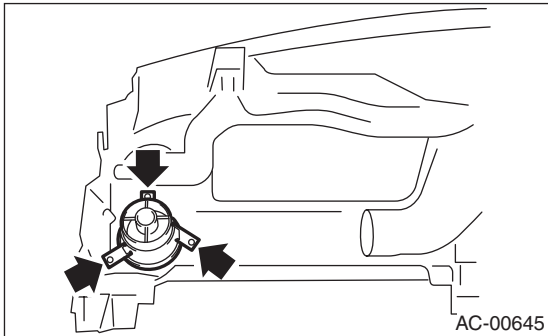
1. CENTER GRILLE

- 1) Disconnect the ground cable from battery.
- 2) Remove the console front panel.
- 3) Remove the center console panel.
- 4) Loosen the three screws to remove the center air vent grille (A).



2. SIDE GRILLE

- 1) Disconnect the ground cable from battery.
- 2) Remove the heater vent duct. <Ref. to AC-43, REMOVAL, Heater Vent Duct.>
- 3) Loosen the screws to remove the side air vent grille.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

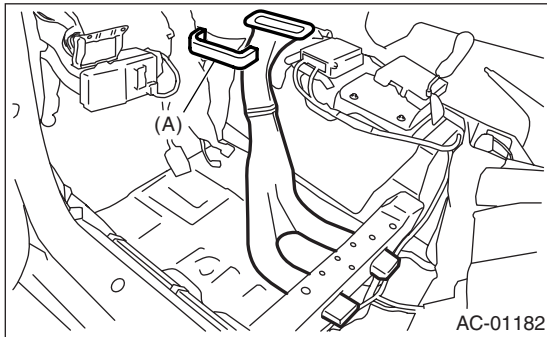
The direction and amount of air should be adjusted smoothly.

The adjustment should be kept in each position.

23.Heater Duct

A: REMOVAL

- 1) Remove the front seats. <Ref. to SE-6, REMOVAL, Front Seat.>
- 2) Remove the console box. <Ref. to EI-47, Console Box.>
- 3) Remove the side sill front cover, side sill rear cover and center pillar lower trim. <Ref. to EI-52, REMOVAL, Lower Inner Trim.>
- 4) Remove the foot rest.
- 5) Remove the clips from floor mat.
- 6) Remove the mat hook.
- 7) Remove the mat from toe board area.
- 8) Remove the rear heater duct cover (A). Draw out the rear heater duct from the unit assembly and slide it forward to remove.



B: INSTALLATION

Install in the reverse order of removal.

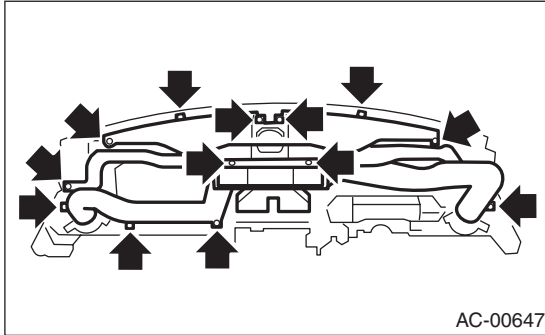
NOTE:

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

24.Heater Vent Duct

A: REMOVAL

- 1) Remove the instrument panel. <Ref. to EI-48, REMOVAL, Instrument Panel Assembly.>
- 2) Remove the screws.
- 3) Remove the heater vent duct.



AC-00647

B: INSTALLATION

Install in the reverse order of removal.

General Diagnostic Table

HVAC SYSTEM (HEATER, VENTILATOR AND A/C)

25. General Diagnostic Table

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
	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	
	Air mix actuator (Auto A/C)	
	Wire harness (Auto A/C)	
	Temperature control cable (Manual A/C)	
Unable to switch blow vents.	Mode actuator (Auto A/C)	
	Air flow switch (Auto A/C)	
	Wire harness (Auto A/C)	
	Mode cable (Manual A/C)	
Unable to switch suction vents.	Air inlet select switch (Auto A/C)	
	FRESH/RECIRC actuator (Auto A/C)	
	Wire harness (Auto A/C)	
	Intake cable (Manual A/C)	

HVAC SYSTEM

(AUTO A/C) (DIAGNOSTICS)

Basic Diagnostic Procedure

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

1. Basic Diagnostic Procedure

A: PROCEDURE

Step	Check	Yes	No
1 START INSPECTIONS. 1) Perform the pre-inspection. <Ref. to AC(diag)-3, INSPECTION, General Description.> 2) Perform the self-diagnosis. <Ref. to AC(diag)-8, OPERATION, Diagnostic Chart for Self-Diagnosis.>	Does the self-diagnosis operate?	Go to step 2.	<Ref. to AC(diag)-11, A/C OR SELF-DIAGNOSIS SYSTEMS DO NOT OPERATE, Diagnostics for A/C System Malfunction.>
2 CONFIRM MALFUNCTION PART. Confirm the malfunction part with self-diagnosis.	Can the malfunction part be confirmed?	Repair the malfunction part according to each diagnostics chart.	Go to step 3.
3 CHECK COMPARTMENT TEMPERATURE. 1) Turn the A/C switch ON. 2) Set the temperature control dial to maximum cold position. 3) Check the compartment temperature changes.	Is the compartment temperature changed?	Go to step 4.	<Ref. to AC(diag)-15, COMPARTMENT TEMPERATURE DOES NOT CHANGE, OR A/C SYSTEM DOES NOT RESPOND PROMPTLY., Diagnostics for A/C System Malfunction.>
4 CHECK A/C SYSTEM RESPONSE. Change the temperature setting, and check the response of A/C system.	Does the A/C system respond quickly?	A/C system is OK.	<Ref. to AC(diag)-15, COMPARTMENT TEMPERATURE DOES NOT CHANGE, OR A/C SYSTEM DOES NOT RESPOND PROMPTLY., Diagnostics for A/C System Malfunction.>

General Description

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

2. General Description

A: CAUTION

- 1) Never connect the battery in reverse polarity. The Auto A/C control module will be destroyed instantly.
- 2) Do not disconnect the battery cables while the engine is running.
 - A large counter electromotive force will be generated in the alternator, and this voltage may damage electronic parts such as auto A/C control module.
- 3) Before disconnecting the connectors of each sensor and the auto A/C control module, be sure to turn off the ignition switch.
 - The auto A/C control module may be damaged.
- 4) Every A/C-related part is a precision part. Do not drop them.
- 5) Airbag system wiring harness is routed near the A/C control panel (auto A/C control module) and junction box.

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 A/C control panel (auto A/C control module) and junction box.

B: INSPECTION

Before performing diagnosis, check the following items which might affect A/C system problems.

1. BATTERY

- 1) Measure the battery voltage and specific gravity of electrolyte.

Standard voltage: 12 V

Specific gravity: Above 1.260

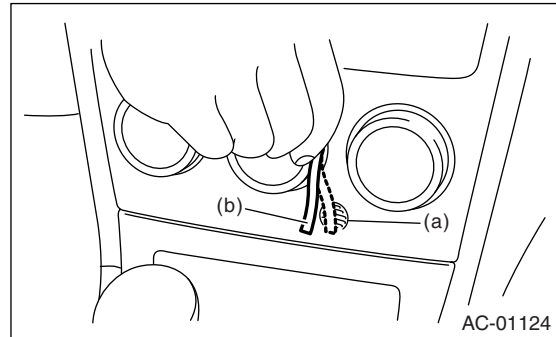
- 2) Check the condition of the fuses for A/C system power supply and other fuses.
- 3) Check the condition of the harnesses and harness connectors connection.

2. ASPIRATOR HOSE

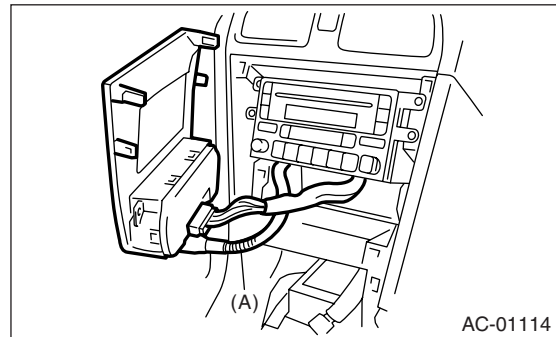
- 1) Turn the ignition switch to ON and push the A/C switch.
- 2) Turn the temperature control dial to maximum hot position.
- 3) Turn the air flow control dial to "DEF" position.
- 4) Turn the fan speed control dial to MAX speed position.
- 5) Firmly hold a thin paper (b) in front of the in-vehicle sensor suction port (a) for the auto A/C control unit and check that the paper moves towards the port indicating that air is being sucked into the port.

NOTE:

Ensure the paper does not get sucked into the port.

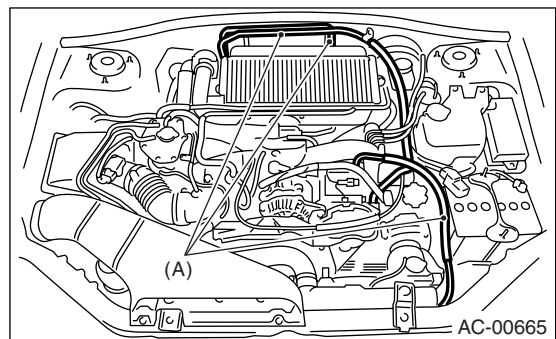


- 6) If the paper does not move at all, remove the auto A/C control unit <Ref. to AC-31, REMOVAL, Control Unit (Auto A/C Model).> and check for improper connection of the aspirator hose (A), auto A/C control unit and heater unit, and secure as necessary.



3. A/C LINE

Check the connection for A/C line (A) and lower side high-pressure pipe.



4. CONTROL LINKAGE

- 1) Check the state of mode door linkage.
- 2) Check the state of air mix door linkage.
- 3) Check the state of intake door linkage.

General Description

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

5. CONTROL SWITCHES

Start and warm-up the engine completely.

1) Inspection using switches

No.	Item to be checked	Switch position	Judgment standard
1	Air flow control dial	Turn the dial to the right.	Outlet opening (mode) switches AUTO → VENT → BILEVEL → HEAT → DEF/HEAT → DEF each time turning the dial.
2	Fan speed control dial	Turn the dial to the right	Fan speed switches OFF → AUTO → 1st — 25th each time turning the dial.
3	FRESH/RECIRC switch	Press the FRESH/RECIRC switch.	Inlet opening switches RECIRC → FRESH each time pressing the switch.
		Press the FRESH/RECIRC switch longer (more than 1.0 seconds).	LED blinks twice, and switches to AUTO.
4	A/C switch	Turn the A/C switch to ON with the fan speed control dial position other than OFF.	LED comes on, and the compressor will be operated.
		Press the FRESH/RECIRC switch longer (more than 1.0 seconds).	LED blinks twice, and switches to AUTO.
5	Auto function Operate from 1) in order.	1) Set the following dials and switches to AUTO. • Air flow control dial • Fan speed control dial • FRESH/RECIRC switch • A/C switch 2) Turn the temperature control dial to the left fully, to set to the maximum cool position.	• Outlet air temperature: COOL • Fan speed: MAX • Outlet opening: VENT • Inlet opening: Internal air • Compressor: AUTO
		3) Turn the temperature control dial to the right slowly, to change the setting gradually to the maximum hot position.	• Outlet air temperature: COOL → HOT • Fan speed: AUTO • Outlet opening: AUTO • Inlet opening: AUTO • Compressor: AUTO
		4) Turn the temperature control dial to the right fully, to set to the maximum hot position.	• Outlet air temperature: HOT • Fan speed: MAX • Outlet opening: HEAT • Inlet opening: External air • Compressor: AUTO
6	Defroster interlock	Turn the air flow control dial to DEF or DEF/HEAT position.	• Outlet air temperature: AUTO • Fan speed: AUTO • Outlet opening: DEF or DEF/HEAT • Inlet opening: External air • Compressor: ON
7	Rear window defogger switch	Press the rear window defogger switch.	LED comes on.

2) Inspection of illumination control

No.	Item to be checked	Switch operation	Judgment standard
1	Illumination	Turn the lighting switch to ON.	Illumination comes on. LED goes dim if it has been illuminated.

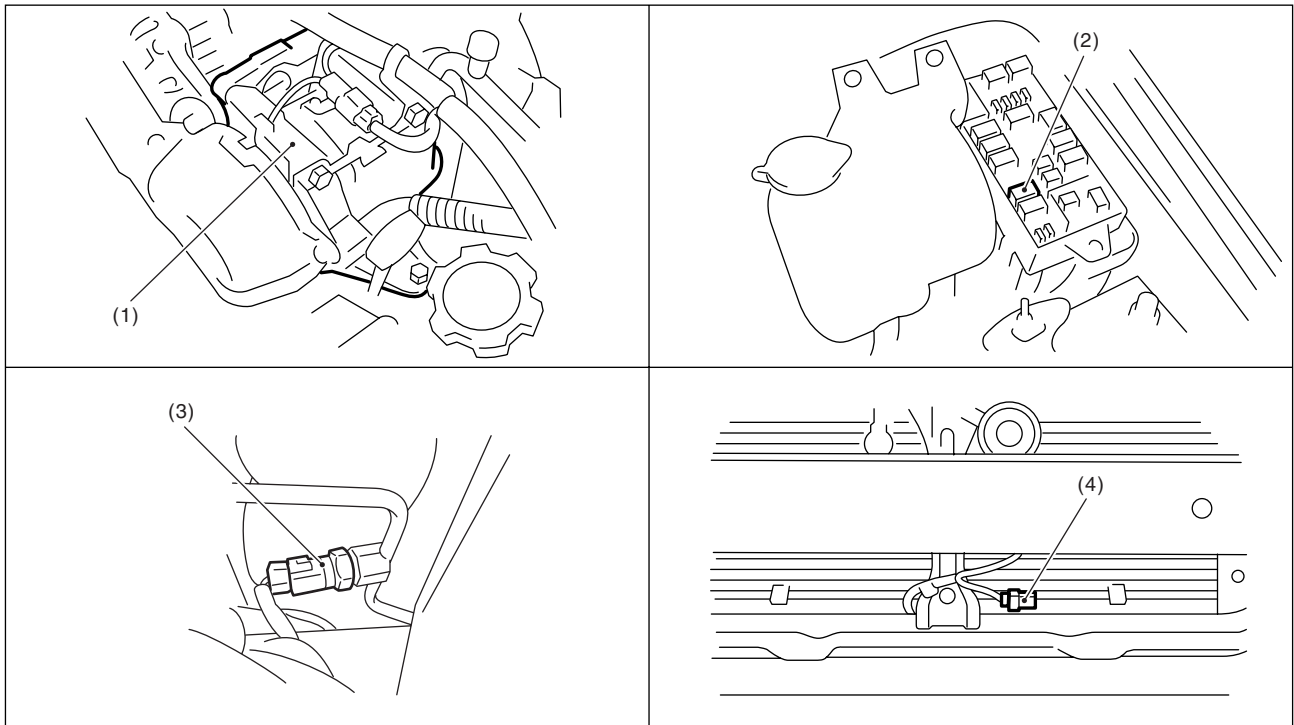
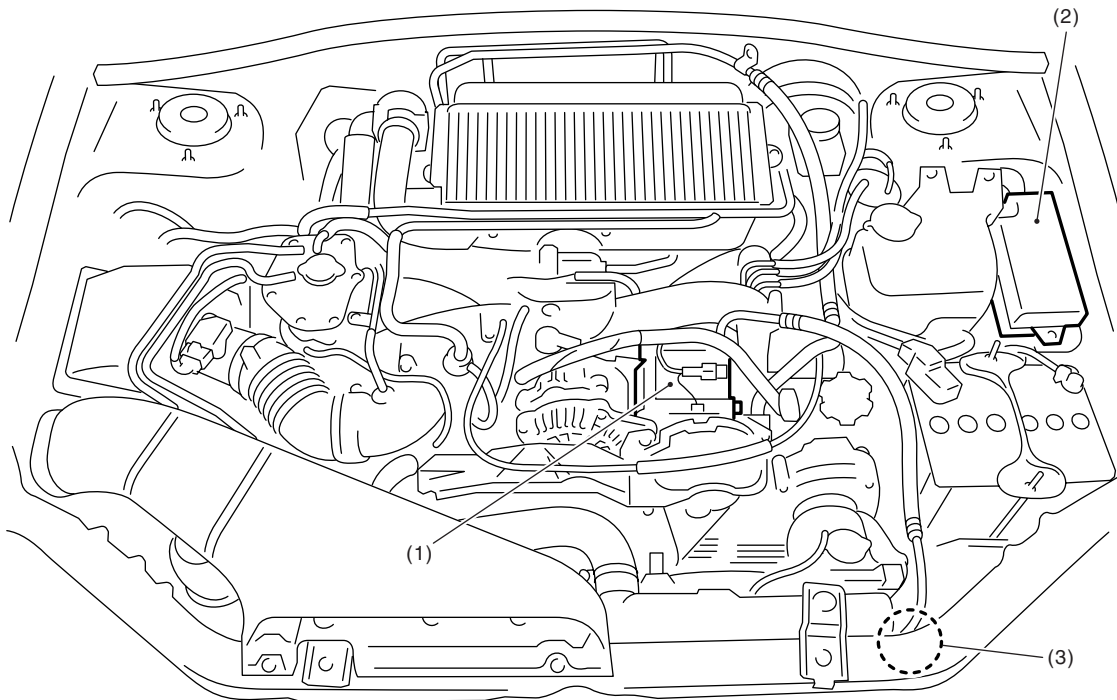
Electrical Component Location

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

3. Electrical Component Location

A: LOCATION

1. ENGINE COMPARTMENT



AC-01194

(1) A/C compressor
(2) A/C relay

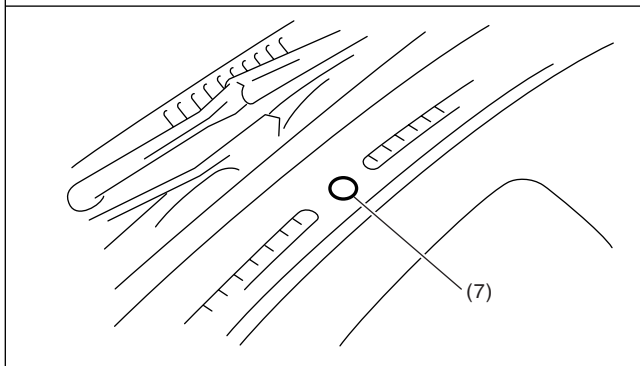
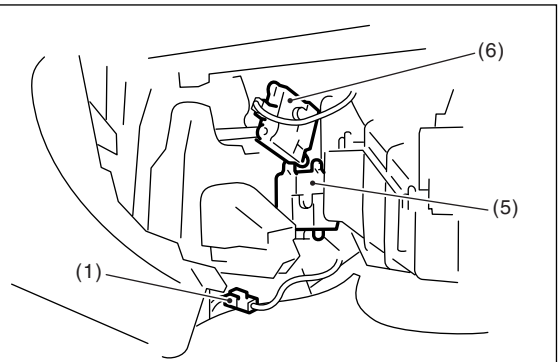
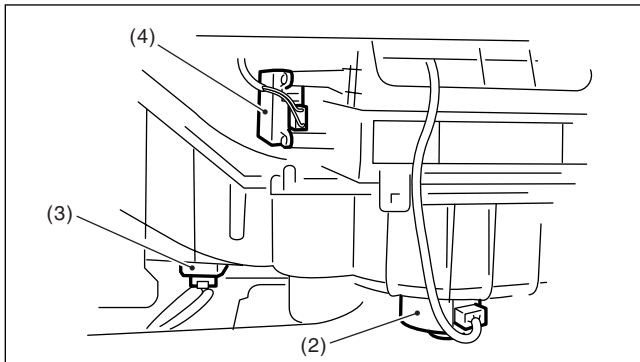
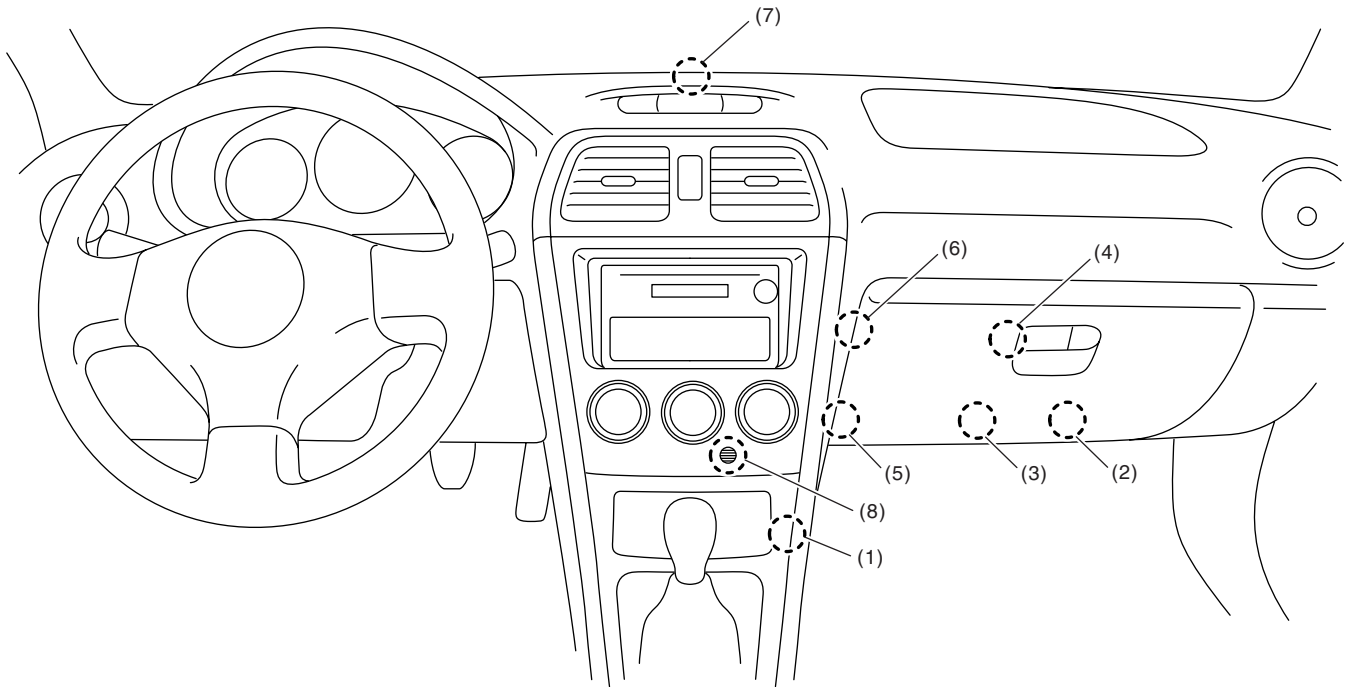
(3) Pressure switch

(4) Ambient sensor

Electrical Component Location

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

2. PASSENGER COMPARTMENT



AC-01127

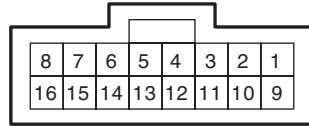
(1) Evaporator sensor	(4) Intake door actuator	(7) Sunload sensor
(2) Blower motor	(5) Air mix door actuator	(8) In-vehicle sensor (built-in with Auto A/C control module)
(3) Blower motor resistor	(6) Mode door actuator	

Auto A/C Control Module I/O Signal

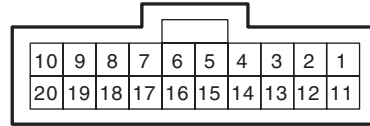
HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

4. Auto A/C Control Module I/O Signal

A: ELECTRICAL SPECIFICATION



To A: (B282)



To B: (B283)

AC-00735

Content	Connector & Terminal No.	Signal (V)
Battery power supply (Memory back-up)	B1 — B12	Battery voltage, 13 — 14 (engine running)
IGN power supply	A8 — B12	Battery voltage (ignition switch ON), 13 — 14 (engine running)
ACC power supply	B2 — B12	Battery voltage, 0 (engine cranking), Battery voltage (engine running)
Auto A/C control module ground circuit	B12 — chassis ground	0 (ignition switch ON) — circuit constantly grounded to chassis
Sensor ground circuit	B17 — chassis ground	0 (ignition switch ON) — circuit constantly grounded to chassis
Ambient sensor	B9 — B17	Approx. 5 (disconnect connector, and ignition switch ON)
Evaporator sensor	B7 — B17	
Thermometer	B15 — B12	
Sunload sensor	B16 — B17	Approx. 5 (disconnect connector, and ignition switch ON)
Air mix door actuator	B5 — B1	Battery voltage (ignition switch ON)
Air mix door actuator P.B.R.	A4 — B17	LAN connection
Mode door actuator	B6 — B17	Battery voltage (ignition switch ON)
Mode door actuator P.B.R.	A12 — B17	LAN connection
Intake door FRS voltage	A15 — A7	Battery voltage (FRESH/RECIRC switch OFF)
Intake door CIRC voltage	A7 — A15	Battery voltage (FRESH/RECIRC switch ON)
Blower fan relay	B14 — body	Battery voltage (ignition switch ON)
A/C relay	B3 — B12	0 (ignition and A/C switches ON) Battery voltage (A/C switch OFF)
Illumination control signal	B10 — B20	Battery voltage (ignition and lighting switches ON)
Rear window defogger	A 13 — B12	0 (ignition switch ON, rear window defogger switch ON)

B: WIRING DIAGRAM

1. AIR CONDITIONER AUTO A/C MODEL

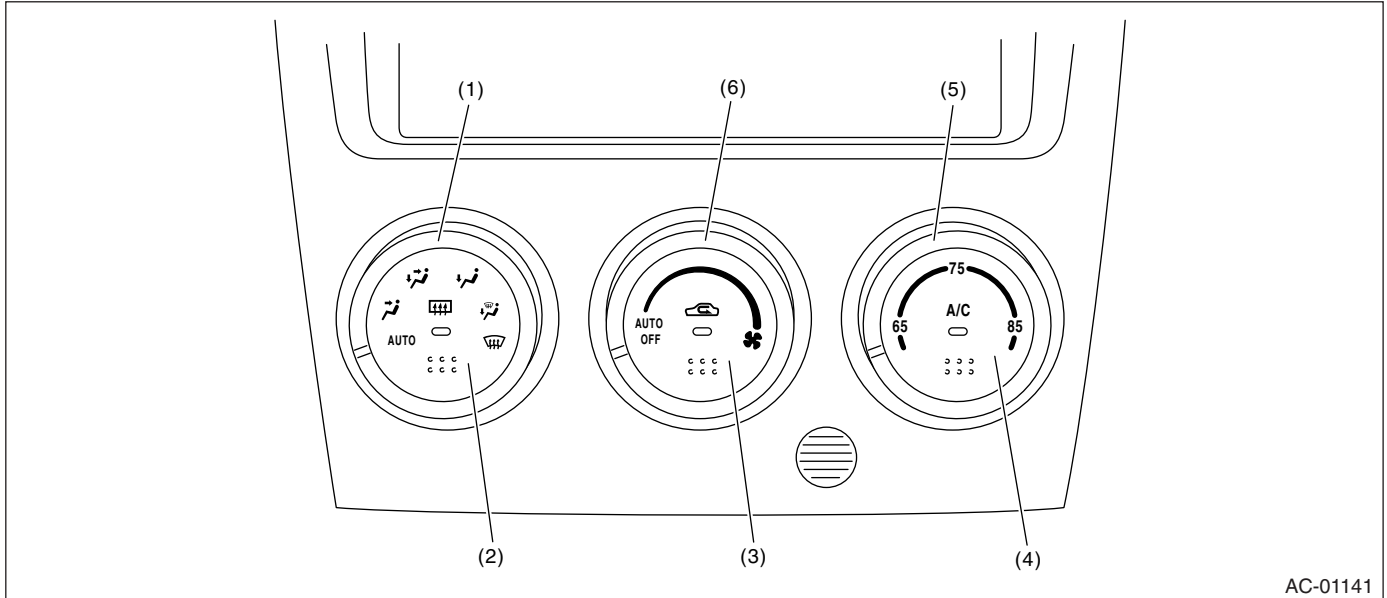
<Ref. to WI-92, AUTO A/C MODEL, WIRING DIAGRAM, Air Conditioning System.>

Diagnostic Chart for Self-Diagnosis

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

5. Diagnostic Chart for Self-Diagnosis

A: OPERATION



AC-01141

(1) Air flow control dial	(3) FRESH/RECIRC switch	(5) Temperature control dial
(2) Rear window defogger switch	(4) A/C switch	(6) Fan speed control dial

Step	Check	Yes	No
1 SELECT CONTROL PANEL TO SELF-DIAGNOSIS MODE. 1) Turn the fan speed control dial to OFF position. 2) Start the engine and press the A/C switch for at least 5 seconds. The A/C switch must be pressed within 10 seconds after starting engine.	Does the self-diagnosis mode operate?	Go to step 2.	<Ref. to AC(diag)-11, A/C OR SELF-DIAGNOSIS SYSTEMS DO NOT OPERATE, Diagnostics for A/C System Malfunction.>
2 CHECK LED ILLUMINATION. Make sure that all switch LED illuminate on control panel.	Do all LED illuminate?	Go to step 3.	Check the switch LED.
3 CHECK SENSORS MALFUNCTION. 1) Turn the fan speed control dial to AUTO position. 2) If the system has trouble for each sensor, rear window defogger switch LED is turned off. 3) If the system has no trouble, rear window defogger switch LED is illuminated.	Does the rear window defogger switch LED illuminate?	Go to step 5.	Go to step 4.
4 CONFIRM MALFUNCTIONING SENSOR. 1) Turn the fan speed control dial to 1 — 6th position. 2) Turn the air flow control dial to each mode position, check each switch LED illumination according to sensor check table. <Ref. to AC(diag)-10, SENSOR CHECK TABLE, OPERATION, Diagnostic Chart for Self-Diagnosis.>	Do FRESH/RECIRC and A/C switch LED illuminate when turning the dial to each mode position?	Go to step 5.	Repair the malfunctioning sensor. <Ref. to AC(diag)-24, Diagnostic Procedure for Sensors.>

Diagnostic Chart for Self-Diagnosis

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
5 CHECK MODE DOOR POSITION SIGNAL. 1) Turn the fan speed control dial to 7 — 12th position. 2) If the system has trouble for mode door position signal, rear window defogger switch LED is turned off. 3) If the system has no trouble, rear window defogger switch LED is illuminated.	Does the rear window defogger switch LED illuminate?	Go to step 6.	Check the mode door actuator circuit. <Ref. to AC(diag)-20, MODE DOOR ACTUATOR, Diagnostic Procedure for Actuators.>
6 CHECK BLOWER FAN OPERATION. 1) Turn the fan speed control dial to 13 — 18th position. 2) Turn the temperature control dial, check that blower fan speed changes depending on set temperature.	Does the blower fan speed change?	Go to step 7.	Check the blower motor circuit. <Ref. to AC(diag)-13, BLOWER FAN DOES NOT ROTATE., Diagnostics for A/C System Malfunction.>
7 CHECK OPERATION OF EACH ACTUATOR, BLOWER FAN AND COMPRESSOR CLUTCH. 1) Turn the fan speed control dial to 19 — 25th position. 2) Select the operating mode by turning air flow control dial. 3) Check the operation of each mode according to operating mode table. <Ref. to AC(diag)-10, OPERATING MODE TABLE, OPERATION, Diagnostic Chart for Self-Diagnosis.> • Air inlet: • Air outlet: • Air mix door: • Blower fan: • A/C compressor:	Does the operation of each mode match to operating mode table?	Push the A/C switch or turn the ignition switch to OFF, and finish the self-diagnosis.	Repair the malfunction part according to each diagnostics chart.

Diagnostic Chart for Self-Diagnosis

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

1. SENSOR CHECK TABLE

NOTE:

When the sunload sensor is checked indoors or in the shade, open circuit might be indicated. Always check the sunload sensor at a place where sun shines directly on it.

Air flow control dial position	Checked sensor	No trouble	Short circuit	Open circuit
VENT	Ambient sensor	A/C switch LED and FRESH/RECIRC switch LED illuminate	A/C switch LED illuminate	FRESH/RECIRC switch LED illuminate
BI-LEVEL	In-vehicle sensor	A/C switch LED and FRESH/RECIRC switch LED illuminate	A/C switch LED illuminate	FRESH/RECIRC switch LED illuminate
HEAT	Evaporator sensor	A/C switch LED and FRESH/RECIRC switch LED illuminate	A/C switch LED illuminate	FRESH/RECIRC switch LED illuminate
DEF/HEAT	Sunload sensor	A/C switch LED and FRESH/RECIRC switch LED illuminate	A/C switch LED illuminate	FRESH/RECIRC switch LED illuminate
DEF	Air mix door motor (Potential balance resistor)	A/C switch LED and FRESH/RECIRC switch LED illuminate	A/C switch LED illuminate	

2. OPERATING MODE TABLE

Operation	Air flow control dial position				
	VENT	BI-LEVEL	HEAT	DEF/HEAT	DEF
Air outlet	VENT	BI-LEVEL	HEAT	DEF/HEAT	DEF
Air inlet	RECIRC	RECIRC	RECIRC	FRESH	FRESH
Air mix door	FULL COOL	FULL COOL	FULL HOT	FULL HOT	FULL COOL
Blower fan	5V	5V	8V	10V	Power supply voltage
A/C compressor	ON	OFF	OFF	ON	ON

Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

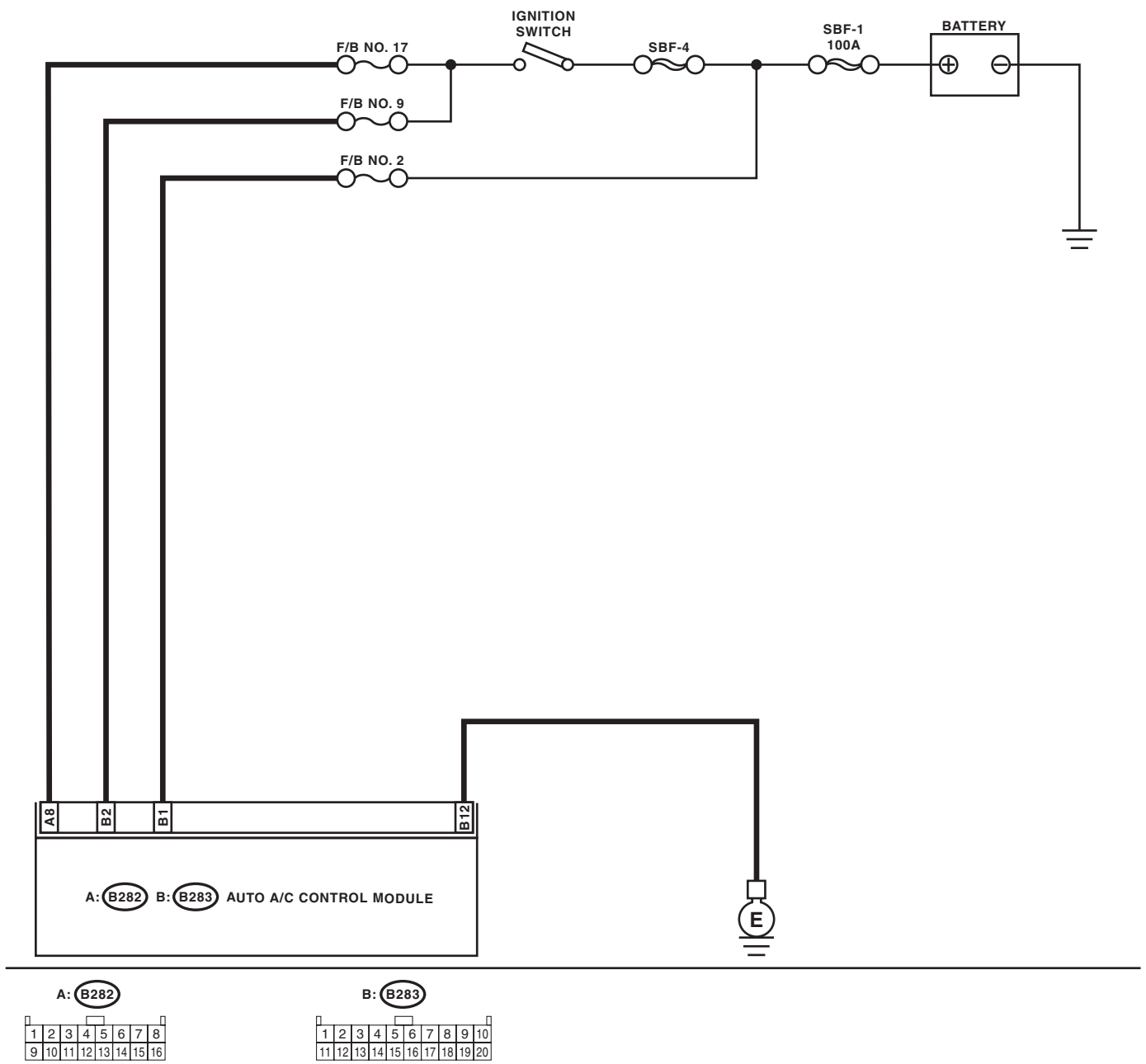
6. Diagnostics for A/C System Malfunction

A: A/C OR SELF-DIAGNOSIS SYSTEMS DO NOT OPERATE

TROUBLE SYMPTOM:

- Switch LEDs are faulty or switches do not operate.
- Self-diagnosis system does not operate.

WIRING DIAGRAM:



Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK FUSE. 1) Turn the ignition switch to OFF. 2) Remove the fuse No. 2 from main fuse box. 3) Check the condition of fuse.	Is the fuse blown-out?	Replace the fuse.	Go to step 2.
2 CHECK FUSE. 1) Turn the ignition switch to OFF. 2) Remove the fuses No. 9 and No. 17 from fuse & relay box. 3) Check the condition of fuse.	Is the fuse blown-out?	Replace the fuse.	Go to step 3.
3 CHECK AUTO A/C CONTROL MODULE POWER CIRCUIT. 1) Pull out the A/C control module connector. 2) Measure the voltage between auto A/C control module connector terminal and chassis ground when turning ignition switch to OFF. Connector & terminal (B283) No. 1 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 4.	Repair the short circuit in harness for power supply line.
4 CHECK AUTO A/C CONTROL MODULE POWER CIRCUIT. Measure the voltage between auto A/C control module connector terminal and chassis ground when turning the ignition switch to ACC. Connector & terminal (B283) No. 2 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 5.	Repair the short circuit in harness for power supply line.
5 CHECK AUTO A/C CONTROL MODULE POWER CIRCUIT. Measure the voltage between auto A/C control module connector terminal and chassis ground when turning the ignition switch to ON. Connector & terminal (B282) No. 8 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 6.	Repair the short circuit in harness for power supply line.
6 CHECK AUTO A/C CONTROL MODULE GROUND CIRCUIT. Measure the resistance of harness between auto A/C control module and chassis ground. Connector & terminal (B283) No. 12 — Chassis ground:	Is the resistance less than 5 Ω ?	Go to step 7.	Repair the short circuit in harness for ground line.
7 CHECK POOR CONTACT IN AUTO A/C CONTROL MODULE CONNECTOR. Check poor contact in auto A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the auto A/C control module.

Diagnostics for A/C System Malfunction

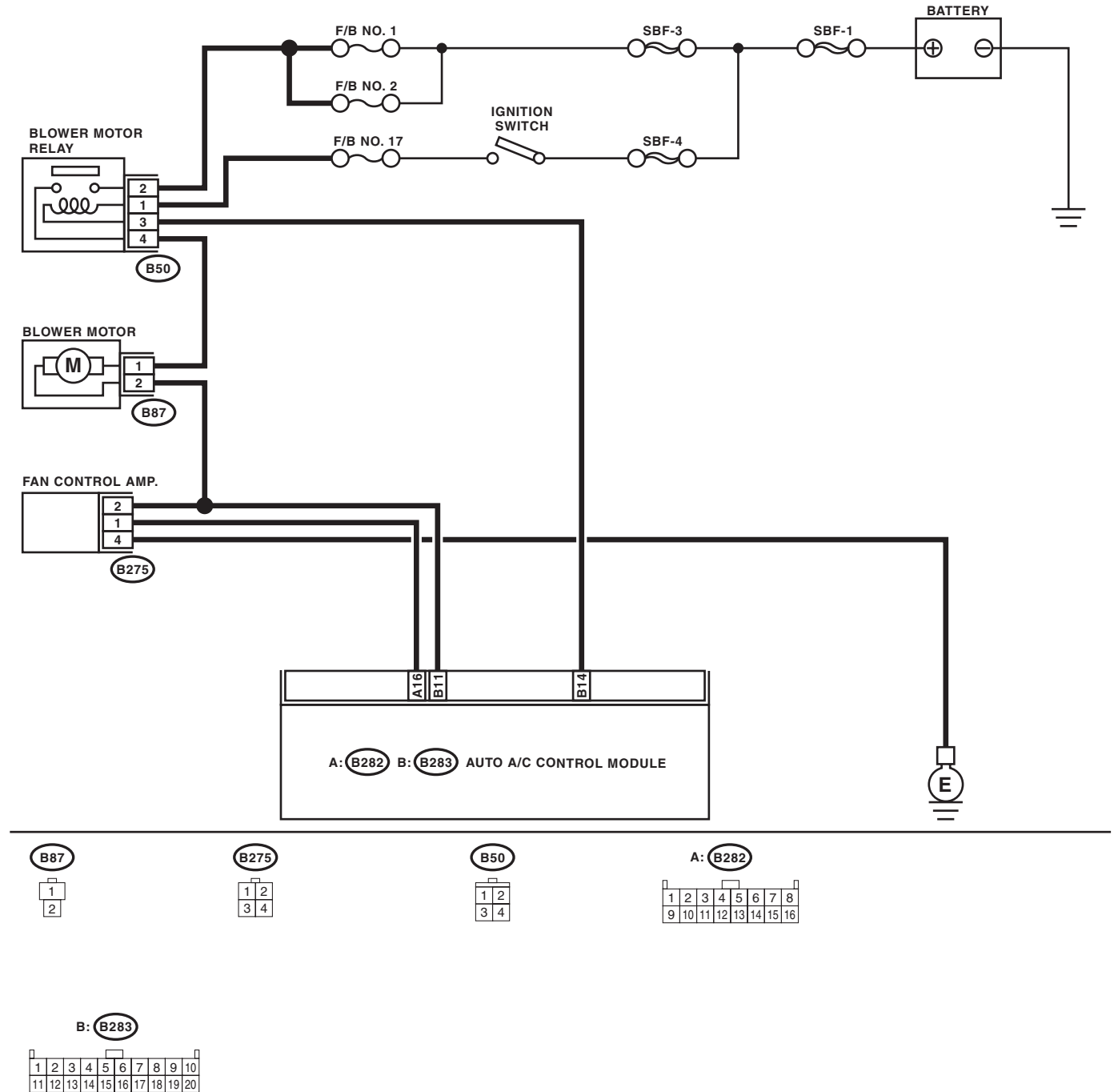
HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

B: BLOWER FAN DOES NOT ROTATE.

TROUBLE SYMPTOM:

- Blower motor is not rotated.
- Blower motor speed does not change.

WIRING DIAGRAM:



AC-01143

Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK FUSE. 1) Remove the No. 1, No. 2 and No. 17 fuses in fuse & relay box. 2) Check the condition of fuses.	Are any of the fuses blown-out?	Replace the fuse.	Go to step 2.
2 CHECK POWER SUPPLY TO BLOWER FAN MOTOR. 1) Turn the ignition switch to ON. 2) Turn the fan speed control dial to the right. 3) Measure the voltage between blower fan motor and chassis ground. Connector & terminal (B87) No. 1 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 3.	Repair the open circuit in harness for blower fan motor power supply line.
3 CHECK BLOWER FAN MOTOR RELAY. 1) Turn the ignition switch to OFF. 2) Remove the blower fan motor relay. 3) Connect the battery positive (+) terminal to No. 1 terminal and negative (-) terminal to No. 3 terminal of blower fan motor connector. 4) Measure the resistance between No. 2 and No. 4 terminals. Terminals No. 2 — No. 4:	Is the resistance less than 1 Ω ?	Go to step 4.	Replace the blower fan motor relay.
4 CHECK BLOWER FAN MOTOR. 1) Disconnect the connector from blower fan motor. 2) Connect the battery positive (+) terminal to No. 1 terminal and negative (-) terminal to No. 2 terminal of blower fan motor connector. 3) Make sure that the blower fan motor is operated.	Does the blower fan motor operate?	Go to step 5.	Replace the blower fan motor.
5 CHECK POOR CONTACT IN AUTO A/C CONTROL MODULE CONNECTOR. Check poor contact in auto A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the auto A/C control module.

Diagnostics for A/C System Malfunction

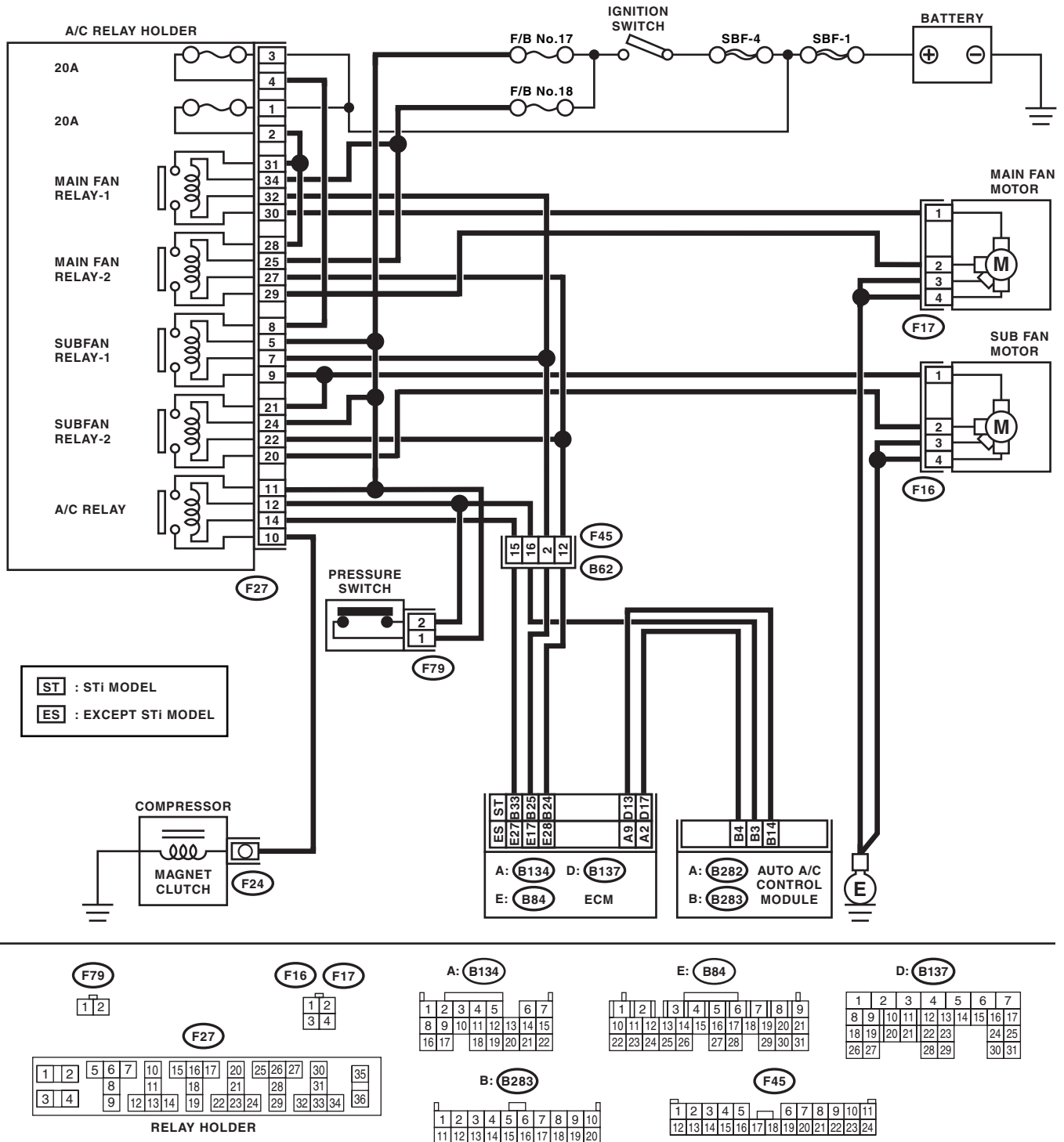
HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

C: COMPARTMENT TEMPERATURE DOES NOT CHANGE, OR A/C SYSTEM DOES NOT RESPOND PROMPTLY.

TROUBLE SYMPTOM:

- Compartment temperature is not changed. (No cool air is discharged.)
- A/C system does not respond quickly.

WIRING DIAGRAM:



AC-01195

Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK FUSE. 1) Turn the ignition switch to OFF. 2) Remove the No. 2 fuse in main fuse box. 3) Check the condition of fuse.	Is the fuse blown-out?	Replace the fuse.	Go to step 2.
2 CHECK POWER SUPPLY TO MAGNET CLUTCH OF A/C COMPRESSOR. 1) Start the engine, and turn A/C switch to ON. 2) Set the temperature control dial to maximum cold position. 3) Measure the voltage between magnet clutch connector and chassis ground. Connector & terminal (F24) No. 1 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 3.	Repair the open circuit in harness for power supply line of the A/C compressor.
3 CHECK SIGNAL VOLTAGE TO A/C RELAY. 1) Turn the ignition switch to ON. 2) Turn the A/C switch to ON. 3) Measure the signal voltage between A/C relay and chassis ground. Connector & terminal (F27) No. 14 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 4.	Repair the open circuit in harness for A/C relay signal circuit.
4 CHECK A/C RELAY. 1) Remove the A/C relay in main fuse box. 2) Check the A/C relay. <Ref. to AC-37, INSPECTION, Relay and Fuse.>	Is the operation of the relay OK?	Go to step 5.	Replace the A/C relay.
5 CHECK OPERATION OF MAIN FAN MOTOR. 1) Start the engine. 2) Turn the A/C switch to ON. 3) Check the operation of main fan motor.	Does the radiator main fan operate?	Go to step 10.	Go to step 6.
6 CHECK POWER SUPPLY TO MAIN FAN MOTOR. CAUTION: Be careful not to overheat the engine during repair. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from main fan motor. 3) Start the engine, and warm it up until engine coolant temperature increases over 95°C (203°F). 4) Stop the engine and turn ignition switch to ON. 5) Measure the voltage between main fan motor connector and chassis ground. Connector & terminal (F17) No. 1, 2 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 7.	Repair the open circuit in harness for power supply circuit.
7 CHECK GROUND CIRCUIT OF MAIN FAN MOTOR. 1) Turn the ignition switch to OFF. 2) Measure the resistance between main fan motor connector and chassis ground. Connector & terminal (F17) No. 3, 4 — Chassis ground:	Is the resistance less than 1 Ω?	Go to step 8.	Repair the open circuit in harness between main fan motor connector and chassis ground.
8 CHECK POOR CONTACT. Check poor contact in main fan motor connector.	Is there poor contact in main fan motor connector?	Repair the poor contact in main fan motor connector.	Go to step 9.

Diagnostics for A/C System Malfunction

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
9 CHECK MAIN FAN MOTOR. Connect the battery positive (+) terminal to terminal No. 1 and 2, and negative (-) terminal to terminal No. 3 and 4.	Does the main fan rotate?	Repair the poor contact in main fan motor connector.	Replace the main fan motor with a new one.
10 CHECK OPERATION OF SUB FAN MOTOR. Check the operation of sub fan motor.	Does the radiator sub fan operate?	Go to step 15.	Go to step 11.
11 CHECK POWER SUPPLY TO SUB FAN MOTOR. CAUTION: Be careful not to overheat the engine during repair. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from sub fan motor. 3) Start the engine, and warm it up until engine coolant temperature increases over 100°C (212°F). 4) Stop the engine and turn the ignition switch to ON. 5) Measure the voltage between sub fan motor connector and chassis ground. Connector & terminal (F16) No. 1, 2 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 12.	Repair the open circuit in harness for power supply circuit.
12 CHECK GROUND CIRCUIT OF SUB FAN MOTOR. 1) Turn the ignition switch to OFF. 2) Measure the resistance between sub fan motor connector and chassis ground. Connector & terminal (F16) No. 3, 4 — Chassis ground:	Is the resistance less than 1 Ω?	Go to step 13.	Repair the open circuit in harness between sub fan motor connector and chassis ground.
13 CHECK POOR CONTACT. Check poor contact in sub fan motor connector.	Is there poor contact in sub fan motor connector?	Repair the poor contact in sub fan motor connector.	Go to step 14.
14 CHECK SUB FAN MOTOR. Connect the battery positive (+) terminal to terminal No. 1 and 2, and negative (-) terminal to terminal No. 3 and 4.	Does the sub fan rotate?	Repair the poor contact in sub fan motor connector.	Replace the sub fan motor with a new one.
15 CHECK EACH SENSOR AND POTENTIOMETER. Check the sensors and potentiometer for proper operation using the self-diagnostic function. <Ref. to AC(diag)-8, Diagnostic Chart for Self-Diagnosis.>	Is the operation of each sensor and potentiometer normal?	Go to step 16.	Check the sensor and circuit. <Ref. to AC(diag)-24, Diagnostic Procedure for Sensors.>
16 CHECK CONNECTION OF ASPIRATOR DUCT. Make sure the connection of aspirator duct is correct.	Is the connection of aspirator duct correct?	Repair the aspirator duct connection.	Go to step 17.
17 CHECK EACH ACTUATOR. Check the actuators for proper operation using the self-diagnostic function. <Ref. to AC(diag)-8, Diagnostic Chart for Self-Diagnosis.>	Is the operation of each actuator normal?	Go to step 18.	Check the actuator and circuit. <Ref. to AC(diag)-18, Diagnostic Procedure for Actuators.>
18 CHECK POOR CONTACT IN AUTO A/C CONTROL UNIT CONNECTOR. Check poor contact in auto A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the auto A/C control module.

Diagnostic Procedure for Actuators

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

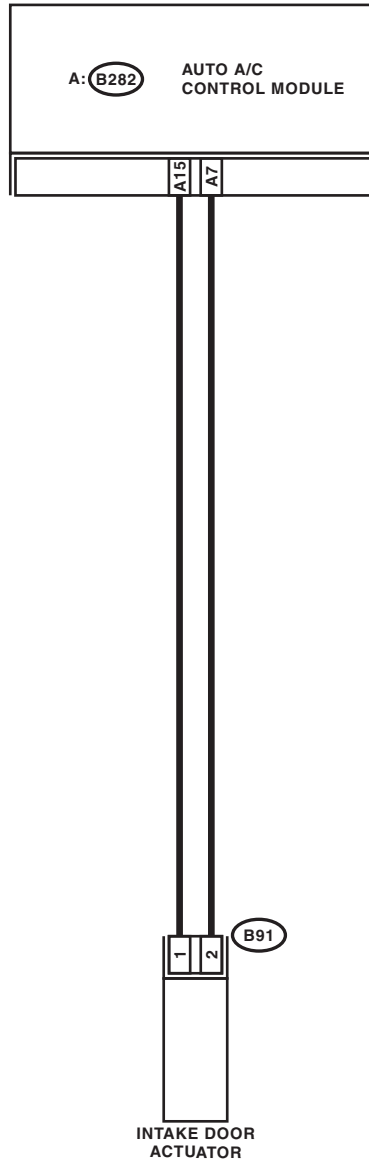
7. Diagnostic Procedure for Actuators

A: INTAKE DOOR ACTUATOR

TROUBLE SYMPTOM:

FRESH/RECIRC mode is not changed.

WIRING DIAGRAM:



1	2
3	4
5	6

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16

AC-01145

Diagnostic Procedure for Actuators

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK FUSE. 1) Remove the No. 17 fuse in fuse & relay box. 2) Check the condition of fuse.	Is the fuse blown-out?	Replace the fuse.	Go to step 2.
2 CHECK SIGNAL VOLTAGE. 1) Change the air intake to RECIRC by pushing FRESH/RECIRC switch. 2) Measure the voltage between auto A/C control module and chassis ground. Connector & terminal (B282) No. 15 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 3.	Repair the short circuit in harness for power supply line.
3 CHECK SIGNAL VOLTAGE. 1) Change the air intake to FRESH with pushing FRESH/RECIRC switch. 2) Measure the voltage between auto A/C control module and chassis ground. Connector & terminal (B282) No. 7 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 4.	Repair the short circuit in harness for power supply line.
4 CHECK HARNESS CONNECTOR BETWEEN AUTO A/C CONTROL MODULE AND FRESH/RECIRC ACTUATOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from auto A/C control module and intake door actuator. 3) Measure the resistance of harness between auto A/C control module and intake door actuator. Connector & terminal (B282) No. 15 — (B91) No. 1:	Is the resistance less than 1 Ω ?	Go to step 5.	Repair the open circuit in harness between auto A/C control module and intake door actuator.
5 CHECK HARNESS CONNECTOR BETWEEN AUTO A/C CONTROL MODULE AND FRESH/RECIRC ACTUATOR. Measure the resistance of harness between auto A/C control module and intake door actuator. Connector & terminal (B282) No. 7 — (B91) No. 2:	Is the resistance less than 1 Ω ?	Go to step 6.	Repair the open circuit in harness between auto A/C control module and intake door actuator.
6 CHECK POOR CONTACT IN AUTO A/C CONTROL UNIT CONNECTOR. Check poor contact in auto A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the auto A/C control module.

Diagnostic Procedure for Actuators

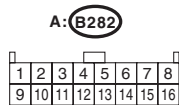
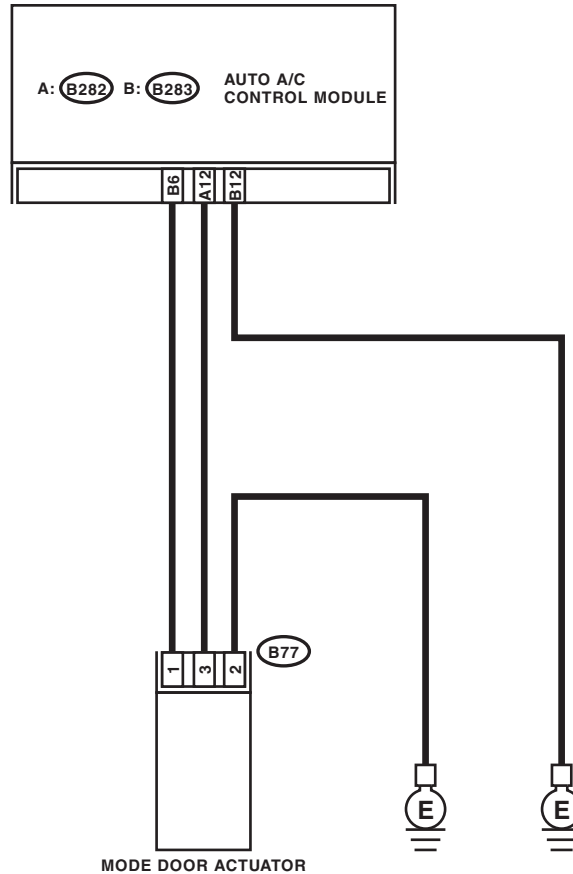
HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

B: MODE DOOR ACTUATOR

TROUBLE SYMPTOM:

Air flow outlet is not changed.

WIRING DIAGRAM:



AC-01146

Diagnostic Procedure for Actuators

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK POWER SUPPLY FOR AUTO A/C CONTROL MODULE SIDE. 1) Turn the ignition switch to ON. 2) Turn the A/C switch to ON. 3) Measure the voltage between auto A/C control module harness connector terminal and chassis ground. Connector & terminal (B283) No. 6 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	Replace the auto A/C control module.
2 CHECK POWER SUPPLY FOR ACTUATOR SIDE. Measure the voltage between mode door actuator harness connector terminal and chassis ground. Connector & terminal (B77) No. 1 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 3.	Repair the open circuit in harness between auto A/C control module and mode door actuator.
3 CHECK SIGNAL FOR AUTO A/C CONTROL MODULE SIDE. Measure the voltage between auto A/C control module harness connector terminal and chassis ground with oscilloscope. Connector & terminal (B282) No. 12 (+) — Chassis ground (-):	Is the voltage approx. 5.5 V?	Go to step 4.	Replace the auto A/C control module.
4 CHECK SIGNAL FOR ACTUATOR SIDE. Measure the voltage between mode door actuator harness connector terminal and chassis ground. Connector & terminal (B77) No. 3 (+) — Chassis ground (-):	Is the voltage approx. 5.5 V?	Go to step 5.	Repair the open circuit in harness between auto A/C control module and mode door actuator.
5 CHECK GROUND CIRCUIT OF ACTUATOR. 1) Turn the ignition switch and A/C switch to OFF. 2) Measure the resistance between mode door actuator harness connector terminal and chassis ground. Connector & terminal (B77) No. 2 — Chassis ground:	Is the resistance less than 1 Ω ?	Go to step 6.	Repair the open circuit in harness between mode door actuator and chassis ground.
6 CHECK POOR CONTACT IN AUTO A/C CONTROL MODULE CONNECTOR. Check poor contact in auto A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the auto A/C control module.

Diagnostic Procedure for Actuators

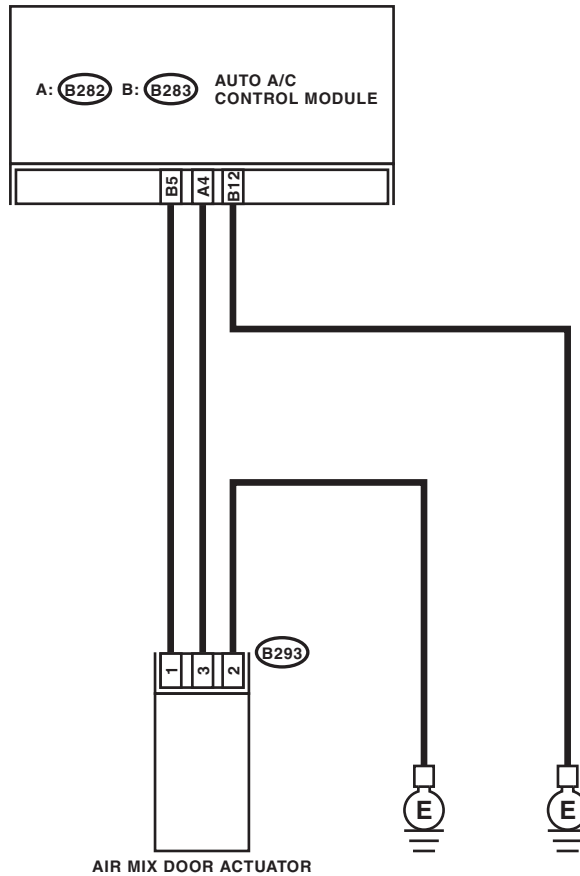
HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

C: AIR MIX DOOR ACTUATOR

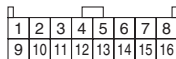
TROUBLE SYMPTOM:

Outlet air temperature is not changed.

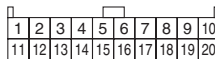
WIRING DIAGRAM:



A: (B282)



B: (B283)



AC-01147

Diagnostic Procedure for Actuators

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK POWER SUPPLY FOR AUTO A/C CONTROL MODULE SIDE. 1) Turn the ignition switch to ON. 2) Turn the A/C switch to ON. 3) Measure the voltage between auto A/C control module harness connector terminal and chassis ground. Connector & terminal (B283) No. 5 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	Replace the auto A/C control module.
2 CHECK POWER SUPPLY FOR ACTUATOR SIDE. Measure the voltage between air mix door actuator harness connector terminal and chassis ground. Connector & terminal (B293) No. 1 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 3.	Repair the open circuit in harness between auto A/C control module and air mix door actuator.
3 CHECK SIGNAL FOR AUTO A/C CONTROL MODULE SIDE. Measure the voltage between auto A/C control module harness connector terminal and chassis ground with oscilloscope. Connector & terminal (B282) No. 4 (+) — Chassis ground (-):	Is the voltage approx. 5.5 V?	Go to step 4.	Replace the auto A/C control module.
4 CHECK SIGNAL FOR ACTUATOR SIDE. Measure the voltage between air mix door actuator harness connector terminal and chassis ground with oscilloscope. Connector & terminal (B293) No. 3 (+) — Chassis ground (-):	Is the voltage approx. 5.5 V?	Go to step 5.	Repair the open circuit in harness between auto A/C control module and air mix door actuator.
5 CHECK GROUND CIRCUIT OF ACTUATOR. 1) Turn the ignition switch and A/C switch to OFF. 2) Measure the resistance between air mix door actuator harness connector terminal and chassis ground. Connector & terminal (B293) No. 2 — Chassis ground:	Is the resistance less than 1 Ω ?	Go to step 6.	Repair the open circuit in harness between air mix door actuator and chassis ground.
6 CHECK POOR CONTACT IN AUTO A/C CONTROL MODULE CONNECTOR. Check poor contact in auto A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the auto A/C control module.

Diagnostic Procedure for Sensors

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

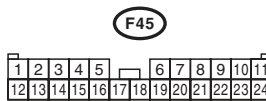
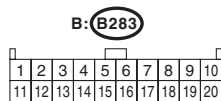
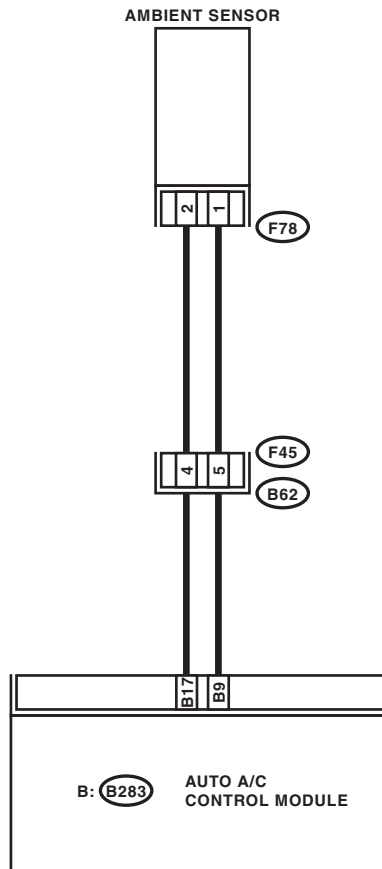
8. Diagnostic Procedure for Sensors

A: AMBIENT SENSOR

TROUBLE SYMPTOM:

Fan speed is not switched when the fan speed control dial is in AUTO position.

WIRING DIAGRAM:



AC-01148

Diagnostic Procedure for Sensors

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK AMBIENT SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ambient sensor. 3) Measure the resistance between connector terminals of ambient sensor. <i>Terminals</i> <i>No. 1 — No. 2:</i>	Is the resistance approx. 2.2 k Ω at 25°C (77°F)?	Go to step 2.	Replace the ambient sensor.
2 CHECK INPUT SIGNALS FOR AMBIENT SENSOR. 1) Turn the ignition ON. 2) Measure the voltage between (F78) connector terminals. <i>Connector & terminal</i> <i>(F78) No. 1 (+) — No. 2 (-):</i>	Is the voltage approx. 5 V?	Go to step 6.	Go to step 3.
3 CHECK OUTPUT SIGNALS FROM AUTO A/C CONTROL MODULE. 1) Turn the ignition switch to OFF. 2) Pull out the auto A/C control unit. 3) Disconnect the connector from ambient sensor. 4) Turn the ignition switch to ON. 5) Measure the voltage between connector terminals of auto A/C control module. <i>Connector & terminal</i> <i>(B283) No. 9 (+) — No. 17 (-):</i>	Is the voltage approx. 5 V?	Go to step 4.	Go to step 6.
4 CHECK HARNESS CONNECTOR BETWEEN AUTO A/C CONTROL MODULE AND AMBIENT SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from auto A/C control module. 3) Measure the resistance of harness between auto A/C control module and ambient sensor. <i>Connector & terminal</i> <i>(F78) No. 1 — (B283) No. 9:</i>	Is the resistance less than 1 Ω ?	Go to step 5.	Repair the open circuit in harness between auto A/C control module and ambient sensor.
5 CHECK HARNESS CONNECTOR BETWEEN AUTO A/C CONTROL MODULE AND AMBIENT SENSOR. Measure the resistance of harness between auto A/C control module and ambient sensor. <i>Connector & terminal</i> <i>(F78) No. 2 — (B283) No. 17:</i>	Is the resistance less than 1 Ω ?	Go to step 6.	Repair the open circuit in harness between auto A/C control module and ambient sensor.
6 CHECK POOR CONTACT IN AUTO A/C CONTROL MODULE CONNECTOR. Check poor contact in auto A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the auto A/C control module.

B: IN-VEHICLE SENSOR

TROUBLE SYMPTOM:

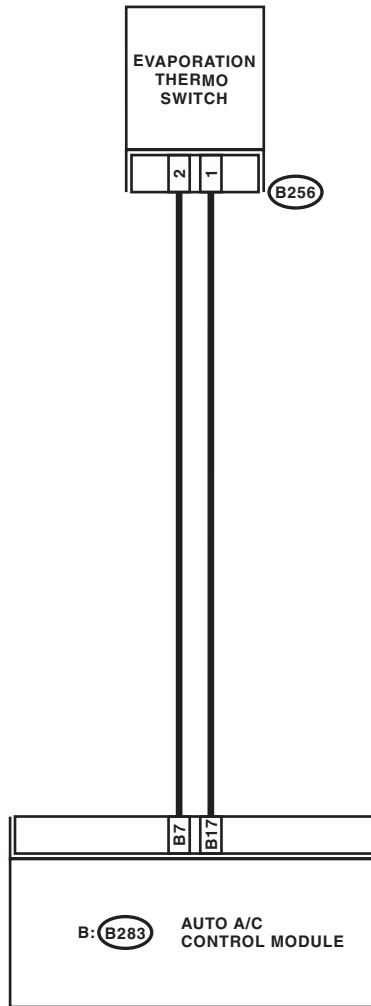
- When turning the AUTO switch to ON, blower fan speed, outlet port and inlet port is not changed.
- If the switch LED indicates that the sensor is malfunctioning, replace the auto A/C control module. The in-vehicle sensor is built into the auto A/C control module and cannot be replaced as a single unit.

Diagnostic Procedure for Sensors

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

C: EVAPORATOR SENSOR

WIRING DIAGRAM:



B256

1 2

B: B283

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

AC-01152

Diagnostic Procedure for Sensors

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK EVAPORATOR SENSOR. 1) Turn the ignition switch to OFF. 2) Remove the glove box. 3) Disconnect the connector from evaporator sensor. 4) Measure the resistance between connector terminals of evaporator sensor. Terminals No. 1 — No. 2:	Is the resistance approx. 3.3 k Ω at 20°C (68°F)?	Go to step 2.	Replace the evaporator sensor.
2 CHECK INPUT SIGNALS FOR EVAPORATOR SENSOR. 1) Turn the ignition switch to ON. 2) Measure the voltage between (B256) connector terminal and chassis ground. Connector & terminal (B256) No. 2 (+) — Chassis ground (-):	Is the voltage approx. 5 V?	Go to step 6.	Go to step 3.
3 CHECK OUTPUT SIGNALS FROM AUTO A/C CONTROL MODULE. 1) Turn the ignition switch to OFF. 2) Pull out the auto A/C control module. 3) Turn the ignition switch to ON. 4) Measure the voltage between auto A/C control module connector terminals. Connector & terminal (B283) No. 7 (+) — No. 17 (-):	Is the voltage approx. 5 V?	Go to step 4.	Go to step 6.
4 CHECK HARNESS CONNECTOR BETWEEN AUTO A/C CONTROL MODULE AND EVAPORATOR SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from auto A/C control module. 3) Measure the resistance of harness between auto A/C control module and evaporator sensor. Connector & terminal (B256) No. 2 — (B283) No. 7:	Is the resistance less than 1 Ω ?	Go to step 5.	Repair the open circuit in harness between auto A/C control module and evaporator sensor.
5 CHECK HARNESS CONNECTOR BETWEEN AUTO A/C CONTROL MODULE AND EVAPORATOR SENSOR. Measure the resistance of harness between auto A/C control module and evaporator sensor. Connector & terminal (B256) No. 1 — (B283) No. 17:	Is the resistance less than 1 Ω ?	Go to step 6.	Repair the open circuit in harness between auto A/C control module and evaporator sensor.
6 CHECK POOR CONTACT IN AUTO A/C CONTROL MODULE CONNECTOR. Check poor contact in auto A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the auto A/C control module.

Diagnostic Procedure for Sensors

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

D: SUNLOAD SENSOR

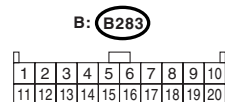
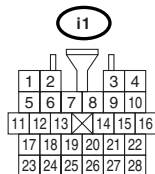
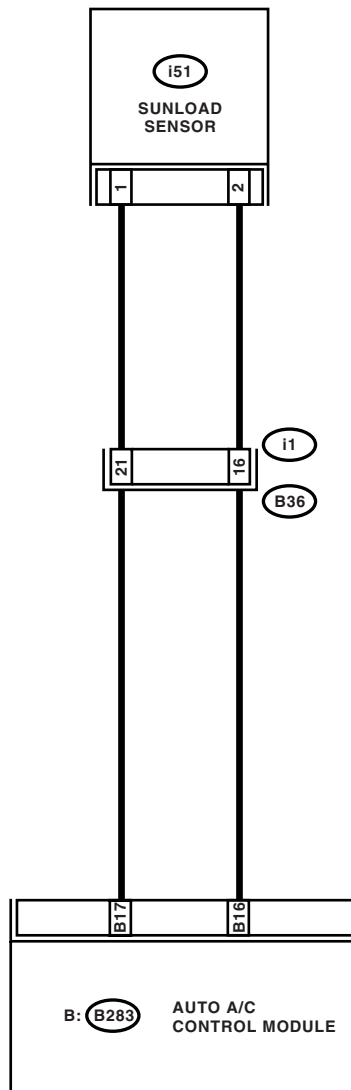
TROUBLE SYMPTOM:

- Sensor identified that sunlight is at maximum. Then, A/C system is controlled to COOL side.
- Sensor identified that sunlight is at minimum. Then, A/C system is controlled to HOT side.

NOTE:

When the sunload sensor is checked indoors or in the shade, it may be diagnosed as open circuit. Always check the sunload sensor at a place where sun shines directly on it.

WIRING DIAGRAM:



Diagnostic Procedure for Sensors

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK INPUT VOLTAGE TO SUNLOAD SENSOR. 1) Turn the ignition switch to ON. 2) Measure the input voltage to sunload sensor. <i>Connector & terminal</i> <i>(i51) No. 2 (+) — Chassis ground (-):</i>	Is the voltage approx. 5 V?	Go to step 3.	Go to step 2.
2 CHECK HARNESS CONNECTOR BETWEEN AUTO A/C CONTROL MODULE AND SUNLOAD SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from auto A/C control module. 3) Measure the resistance of harness between auto A/C control module and sunload sensor. <i>Connector & terminal</i> <i>(i51) No. 2 — (B283) No. 16:</i>	Is the resistance less than 1 Ω ?	Go to step 3.	Repair the harness between auto A/C control module and sunload sensor.
3 CHECK HARNESS CONNECTOR BETWEEN AUTO A/C CONTROL MODULE AND SUNLOAD SENSOR. Measure the resistance of harness between auto A/C control module and sunload sensor. <i>Connector & terminal</i> <i>(i51) No. 1 — (B283) No. 17:</i>	Is the resistance less than 1 Ω ?	Go to step 4.	Repair the harness between auto A/C control module and sunload sensor.
4 CHECK THE INPUT VOLTAGE TO AUTO A/C CONTROL MODULE. 1) Connect the auto A/C control module connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between auto A/C control module connector terminals. <i>Connector & terminal</i> <i>(B283) No. 16 (+) — (B283) No. 17 (-):</i>	Is the voltage approx. 2.5 V?	Go to step 5.	Replace the sunload sensor.
5 CHECK POOR CONTACT IN AUTO A/C CONTROL MODULE CONNECTOR. Check poor contact in auto A/C control module connector.	Is there poor contact in connector?	Repair the connector.	Replace the auto A/C control module.

Diagnostics with Phenomenon

HVAC SYSTEM (AUTO A/C) (DIAGNOSTICS)

9. Diagnostics with Phenomenon

A: INSPECTION

Symptom	Problem parts
A/C system fails to operate.	• Fuse (M/B No. 5, F/B No. 17) • Connector (Poor contact) • Ground • Auto A/C control module • Blower fan motor • Blower fan relay • A/C Relay • Compressor (Magnet clutch) • Evaporator sensor
Fuse is blown out.	• Fuse (M/B No. 5, F/B No. 17) • Connector (Poor contact)
Illumination cannot dim.	• Fuse (M/B No. 5, F/B No. 17) • Connector (Poor contact) • Auto A/C control module
Blower fan does not rotate or fan speed cannot be controlled.	• Fuse (M/B No. 7, F/B No. 17) • Connector (Poor contact) • Ground • Auto A/C control module • Blower fan motor • Blower fan relay
Unable to switch suction vents.	• Connector (Poor contact) • Auto A/C control module • Intake door actuator
Unable to switch blow vents.	• Connector (Poor contact) • Auto A/C control module • Mode door actuator
Compartment temperature does not increase. (No hot air is discharged.)	• Connector (Poor contact) • Auto A/C control module • Air mix door actuator • In-vehicle sensor, ambient sensor, evaporator sensor and sunload sensor • In-vehicle sensor aspirator hose
Compartment temperature does not decrease. (No cool air is discharged.)	• Connector (Poor contact) • Auto A/C control module • Air mix door actuator • A/C Relay • Compressor (Magnet clutch) • Radiator fan motor • Radiator fan relay • In-vehicle sensor, ambient sensor, evaporator sensor and sunload sensor • In-vehicle sensor aspirator hose
Compartment temperature is higher or lower than setting temperature.	• Auto A/C control module • Air mix door actuator • In-vehicle sensor, ambient sensor, evaporator sensor and sunload sensor • In-vehicle sensor aspirator hose
Compartment temperature does not quickly respond to setting temperature.	• Air mix door actuator • In-vehicle sensor, ambient sensor, evaporator sensor and sunload sensor • In-vehicle sensor aspirator hose
Radiator fan does not rotate during A/C operation.	• Radiator fan motor • Radiator fan relay

BODY STRUCTURE

1. General Description

A: PREPARATION TOOL

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

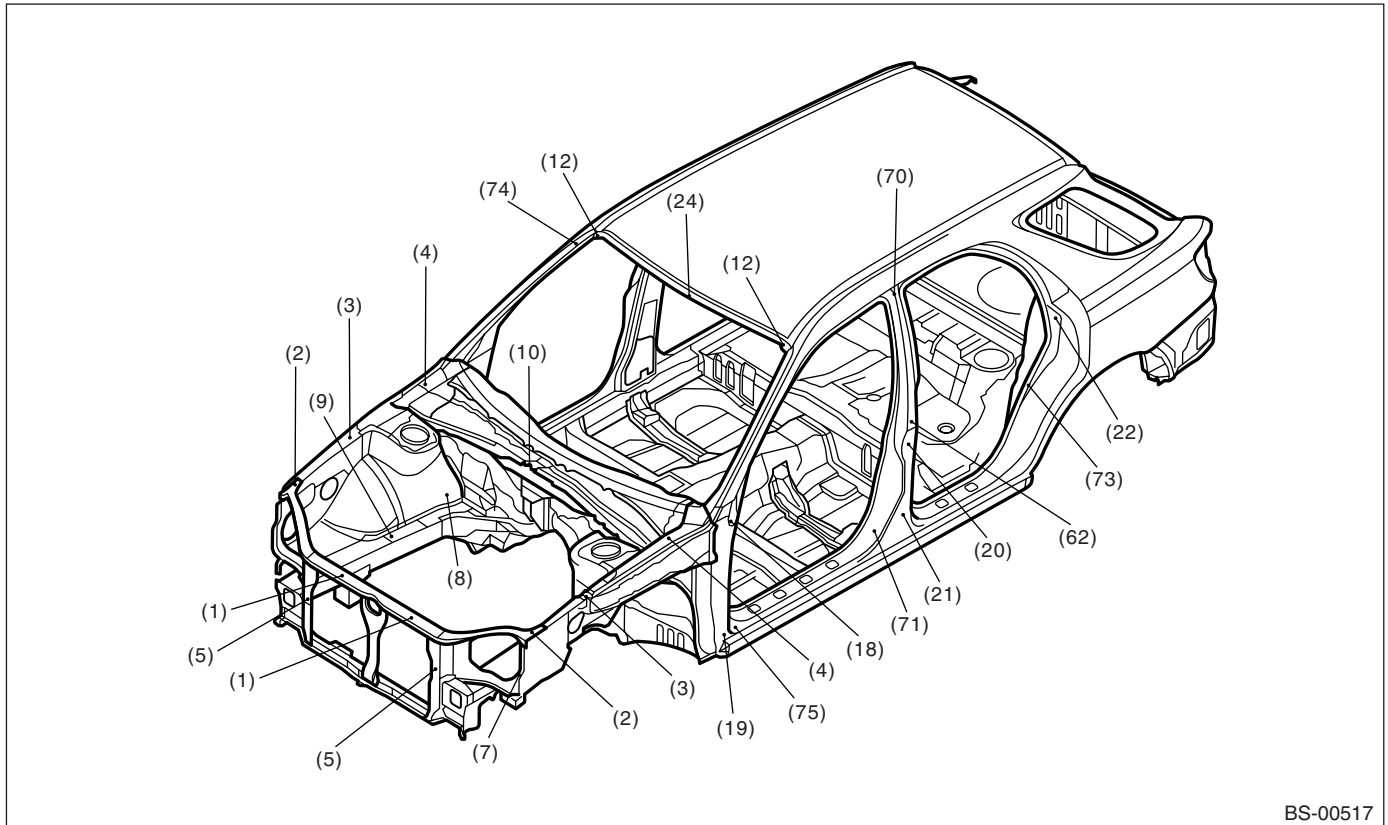
2. Datum Points

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. WAGON MODEL/SEDAN MODEL



BS-00517

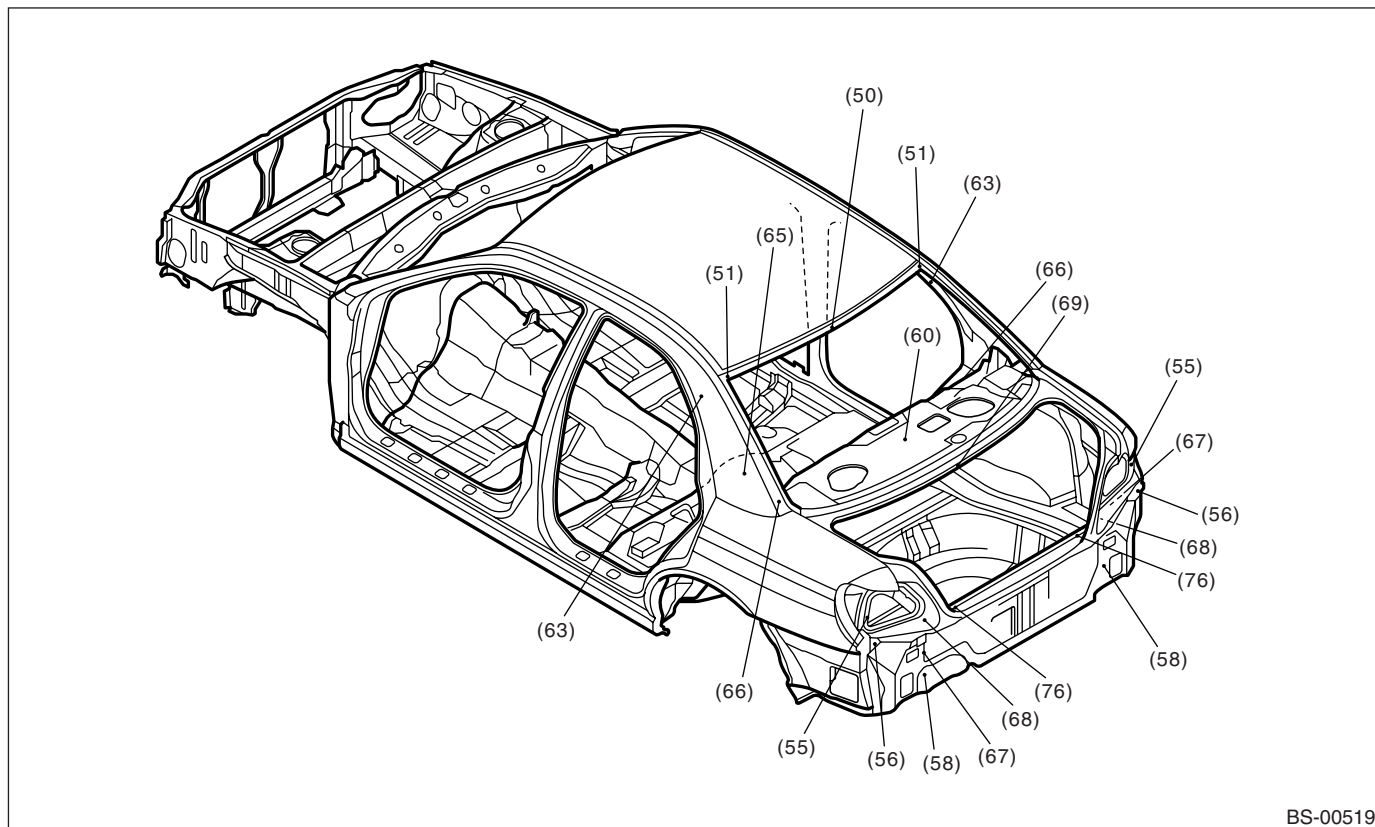
(1) Radiator attaching hole 12 mm (0.47 in) dia. (Symmetrical)	(10) Bracket module center gauge hole 6 mm (0.24 in) dia. (Vehicle center)	(22) Weather strip patch attaching hole 5.2 mm (0.205 in) dia. (Symmetrical)
(2) Fender attaching hole 7 mm (0.28 in) dia. (Symmetrical)	(12) Front glass attaching hole RH 6.5 mm (0.256 in) dia. LH 6.5 × 10 mm (0.256 × 0.39 in) dia.	(24) Roof panel repair locator hollow
(3) Fender attaching hole 10 mm (0.39 in) dia. (Symmetrical)	(18) Fender attaching hole 12 mm (0.47 in) dia. (Symmetrical)	(62) Belt anchor attaching hole 11 mm (0.43 in) dia. (Symmetrical)
(4) Hood hinge attaching hole 12 mm (0.47 in) dia. (Symmetrical)	(19) Fender attaching hole 12 mm (0.47 in) dia. (Symmetrical)	(70) Trim clip attaching hole 8.5 mm (0.335 in) dia. (Symmetrical)
(5) Radiator panel side gauge hole 20 mm (0.79 in) dia. (Symmetrical)	(20) Outer panel center pillar gauge hole 12 mm (0.47 in) dia. (Symmetrical)	(71) Harness clip attaching hole 7 mm (0.28 in) dia. (Symmetrical)
(7) Fender attaching hole 9 mm (0.35 in) dia. (Symmetrical)	(21) Outer panel center pillar gauge hole 12 mm (0.47 in) dia. (Symmetrical)	(73) Harness clip attaching hole 7 mm (0.28 in) dia. (Symmetrical)
(8) Gauge hole 12 mm (0.47 in) dia. (Symmetrical)		(74) Trim clip attaching hole 10 mm (0.39 in) dia. (Symmetrical)
(9) Front suspension crossmember attaching hole 12.4 mm (0.488 in) dia. (Symmetrical)		(75) Insulator attaching hole 8 mm (0.31 in) dia. (Symmetrical)

This diagram illustrates the front end of a vehicle, showing the hood, windshield, and front end components. The components are labeled with numbers in parentheses:

- (30) Hood
- (72) Windshield
- (31) Front fender
- (32) Front end component
- (77) Front end component
- (58) Front end component
- (67) Front end component
- (33) Front end component
- (65) Front end component
- (31) Front fender
- (77) Front end component
- (58) Front end component
- (67) Front end component
- (32) Front end component

(30)	Child anchor attaching hole 11 mm (0.43 in) dia.	(33)	Two striker attaching hole 15 mm (0.59 in) dia.	(67)	Gusset floor rear side gauge hole 11.5 mm (0.453 in) dia. (Symmetrical)
(31)	Washer hose attaching hole LH 7 mm (0.28 in) dia.	(58)	Rear bumper plate nut attaching hole 13 mm (0.51 in) dia. (Symmetrical)	(72)	Trim upper clip attaching hole 8.5 mm (0.335 in) dia. (Symmetrical)
(32)	Rear combination light mounting hole 7 mm (0.28 in) dia. (Symmetrical)	(65)	Floor mat clip attaching hole 8 mm (0.31 in) dia.	(77)	Harness clip attaching hole 7 mm (0.28 in) dia. (Symmetrical)

3. SEDAN MODEL (REAR)



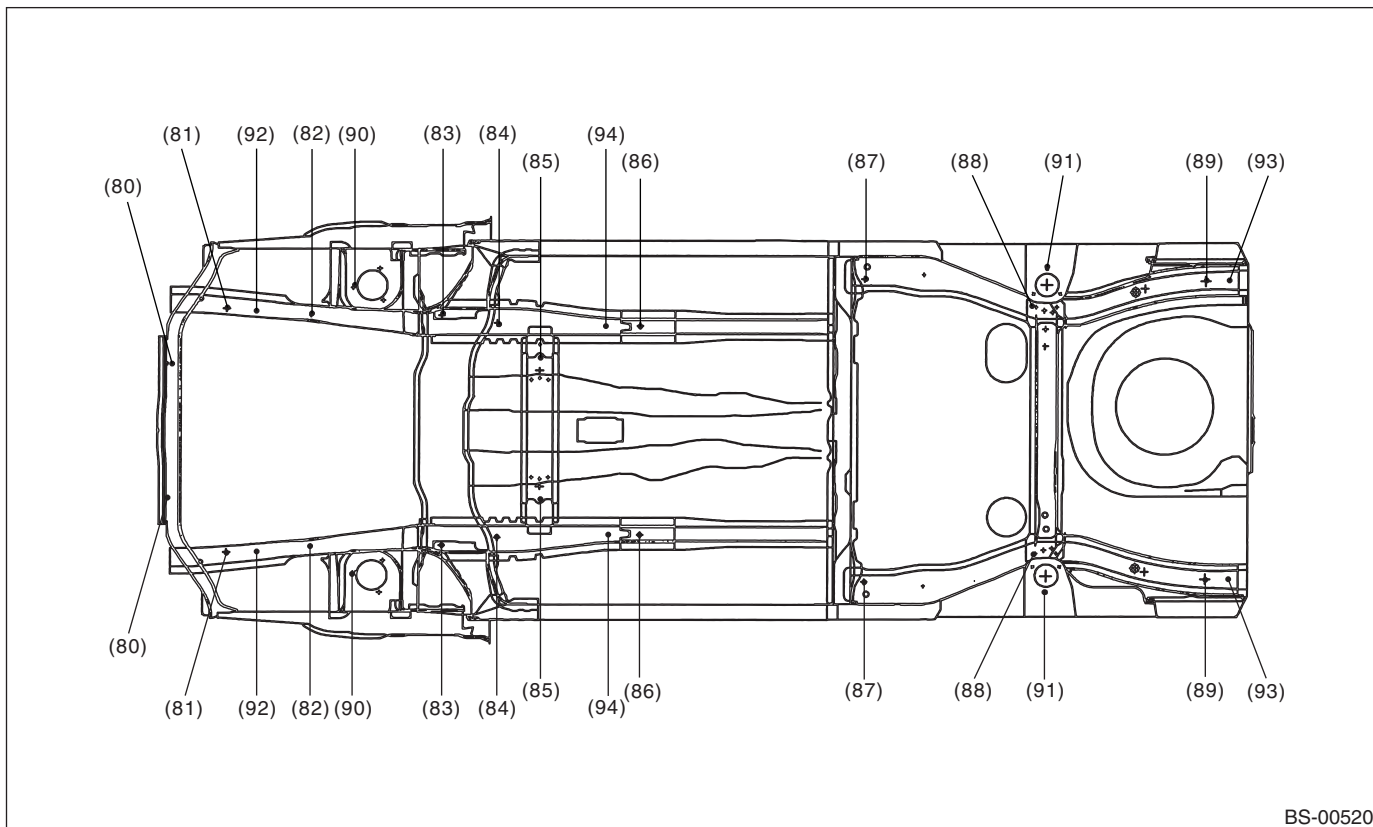
BS-00519

(50) Repair locator hollow (Vehicle center)	(58) Rear bumper attaching hole 11 mm (0.43 in) dia. (Symmetrical)	(67) Gusset floor rear side gauge hole 11.5 mm (0.453 in) dia. (Symmetrical)
(51) Glass attaching hole RH 6.5 mm (0.256 in) dia. LH 6.5 × 10 mm (0.256 × 0.39 in) dia.	(60) Choke coil harness attaching hole 5.4 mm (0.213 in) dia.	(68) Rear skirt inner side gauge hole 10 mm (0.39 in) dia. (Symmetrical)
(55) Rear combination light mounting hole 8 mm (0.31 in) dia. (Symmetrical)	(63) Feeder line fixing hole 7 mm (0.28 in) dia. (Symmetrical)	(69) Rear panel (reinforcement) repair locator hollow (Vehicle center)
(56) Bumper attaching hole 7 mm (0.28 in) dia. (Symmetrical)	(65) Floor mat clip attaching hole 8 mm (0.31 in) dia.	(76) Press location hole 15 mm (0.59 in) dia. (Symmetrical)
	(66) Bulkhead rear gauge hole 10 mm (0.39 in) dia. (Symmetrical)	

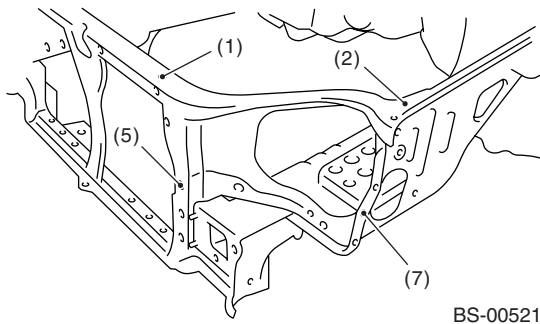
Datum Points

BODY STRUCTURE

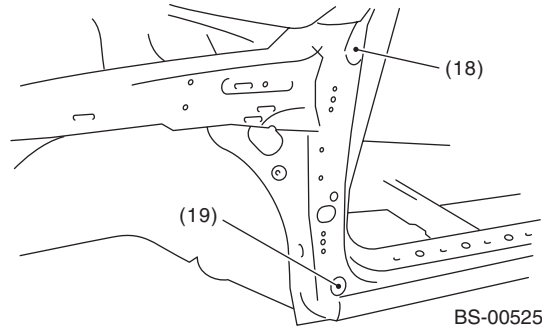
4. UNDERBODY



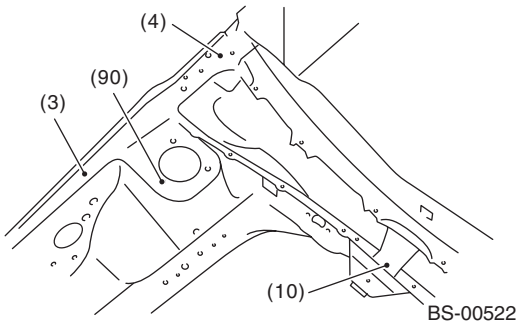
(80) Radiator lower frame gauge hole 12 mm (0.47 in) dia. (Symmetrical)	(85) Transmission mount attaching hole 14 mm (0.55 in) dia.	(90) Strut mount attaching hole 9.5 mm (0.374 in) dia. (Symmetrical)
(81) Side frame gauge hole 20 mm (0.79 in) dia. (Symmetrical)	(86) Side frame gauge hole 18 mm (0.71 in) dia. (Symmetrical)	(91) Strut mount attaching hole 10 mm (0.39 in) dia. (Symmetrical)
(82) Front crossmember attaching hole 12.4 mm (0.488 in) dia. (Symmetrical)	(87) Rear differential attaching hole 16 mm (0.63 in) dia. (Symmetrical)	(92) Sub frame attaching hole 16 mm (0.63 in) dia. (Symmetrical)
(83) Suspension attaching hole 17 mm (0.67 in) dia. (Symmetrical)	(88) Rear suspension attaching hole 16 mm (0.63 in) dia. (Symmetrical)	(93) Bumper beam attaching hole RH 15 mm (0.59 in) dia. LH 19 × 15 mm (0.75 × 0.59 in) dia.
(84) Side frame gauge hole 20 mm (0.79 in) dia. (Symmetrical)	(89) Rear side frame gauge hole 15 mm (0.59 in) dia. (Symmetrical)	(94) Side frame gauge hole 15 mm (0.59 in) dia. (Symmetrical)



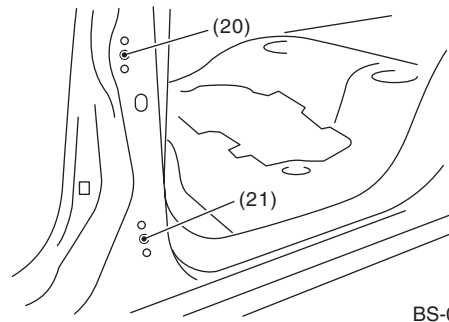
BS-00521



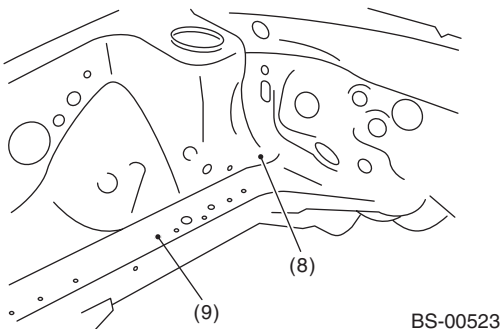
BS-00525



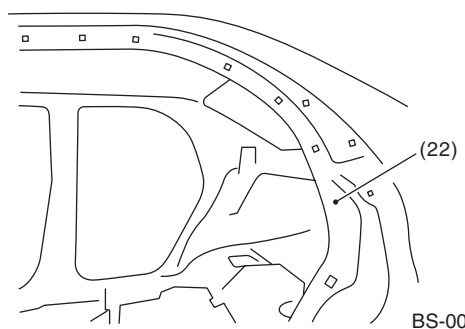
BS-00522



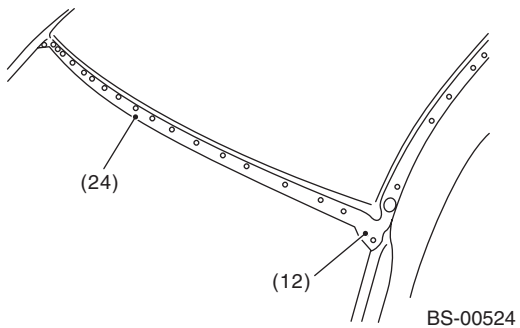
BS-00526



BS-00523

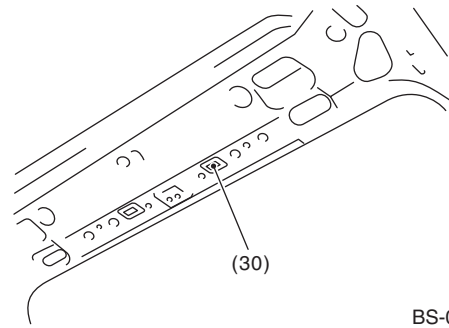


BS-00556



BS-00524

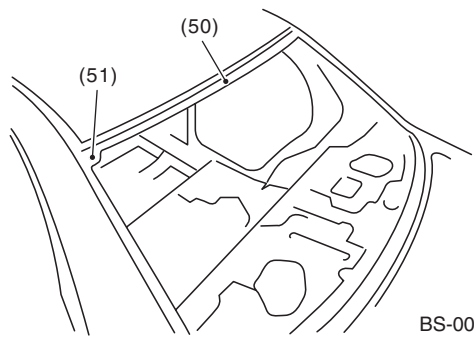
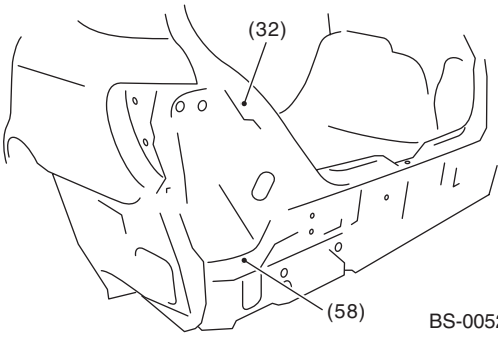
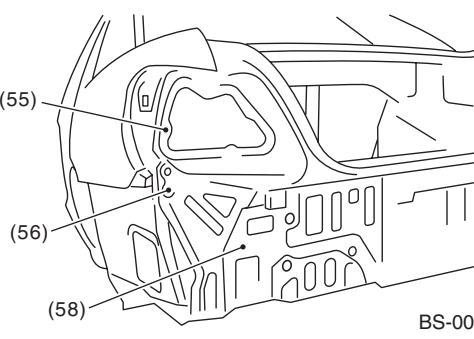
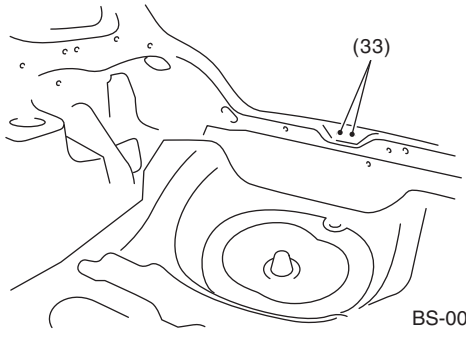
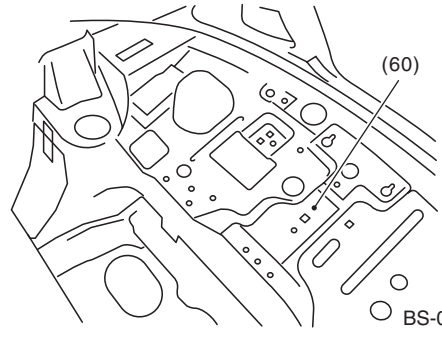
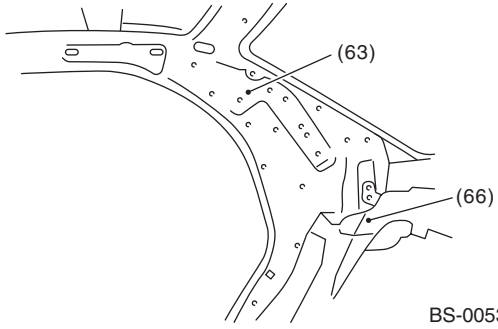
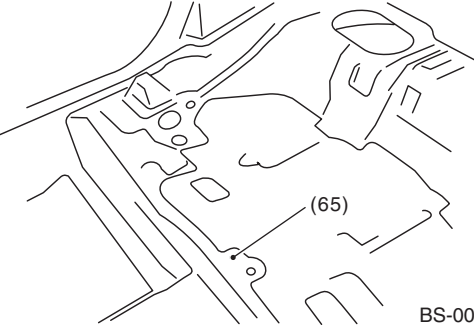
Wagon model

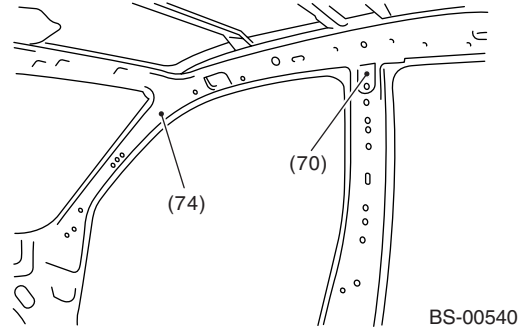
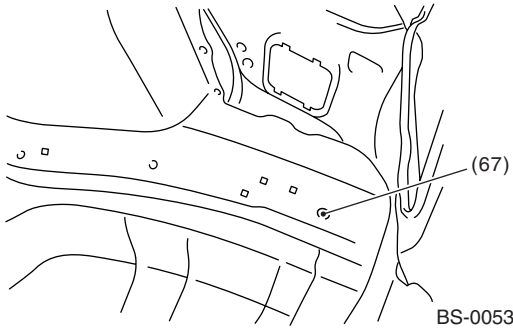


BS-00527

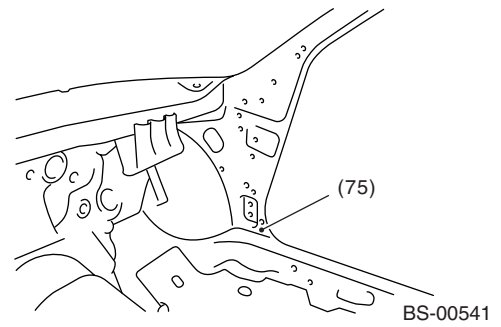
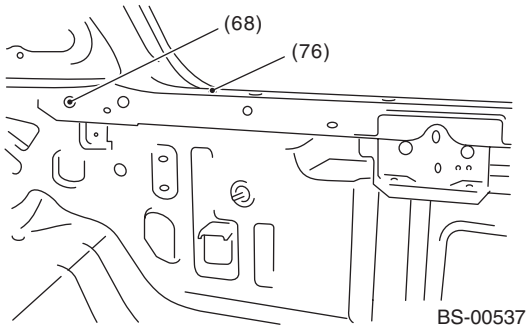
Datum Points

BODY STRUCTURE

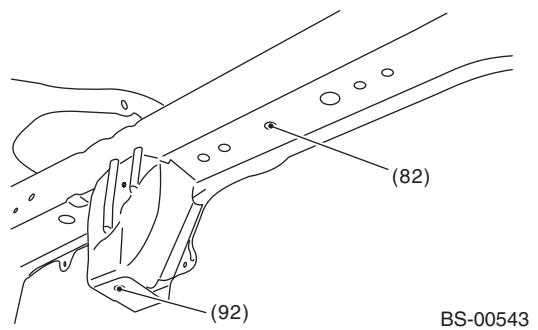
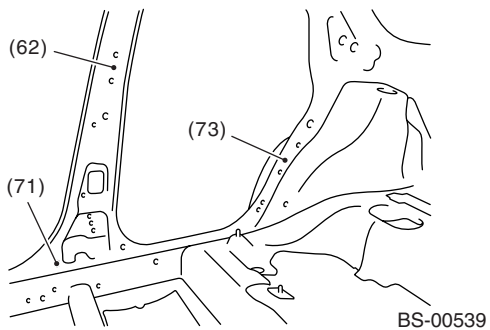
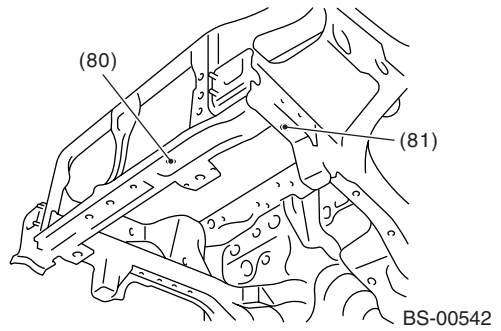
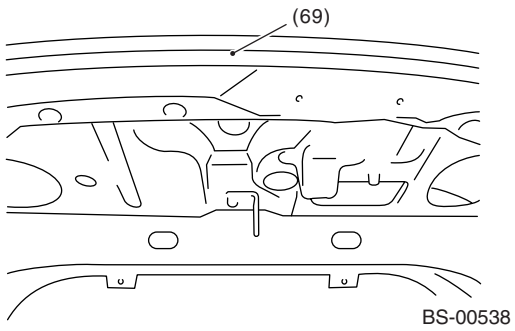
Wagon model  BS-00528	Sedan model  BS-00532
Wagon model  BS-00529	Sedan model  BS-00533
Wagon model  BS-00530	Sedan model  BS-00534
Sedan model  BS-00531	 BS-00535



Sedan model

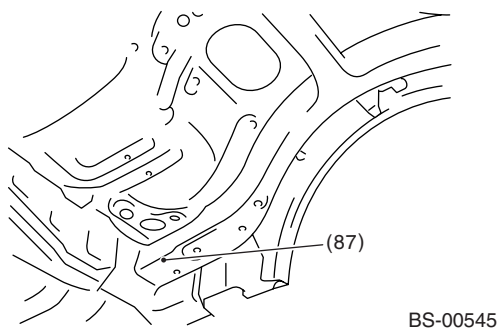
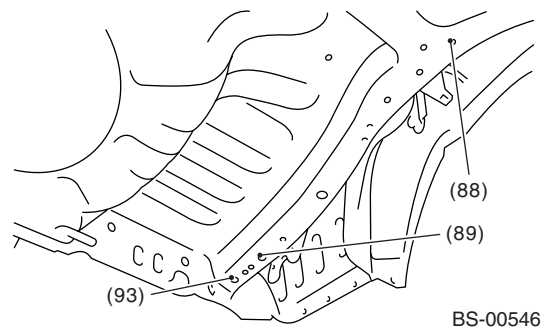
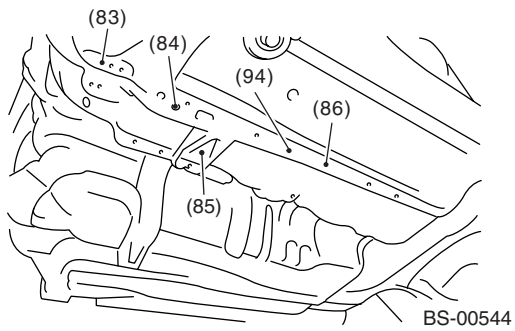


Sedan model



Datum Points

BODY STRUCTURE



SUBARU.

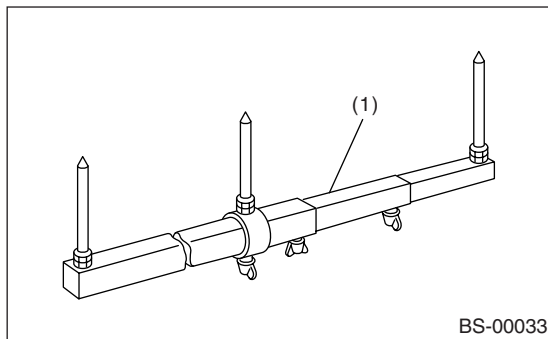
3. Datum Dimensions

A: MEASUREMENT

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

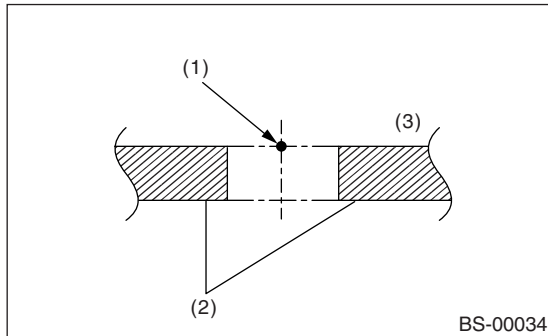
NOTE:

- 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.

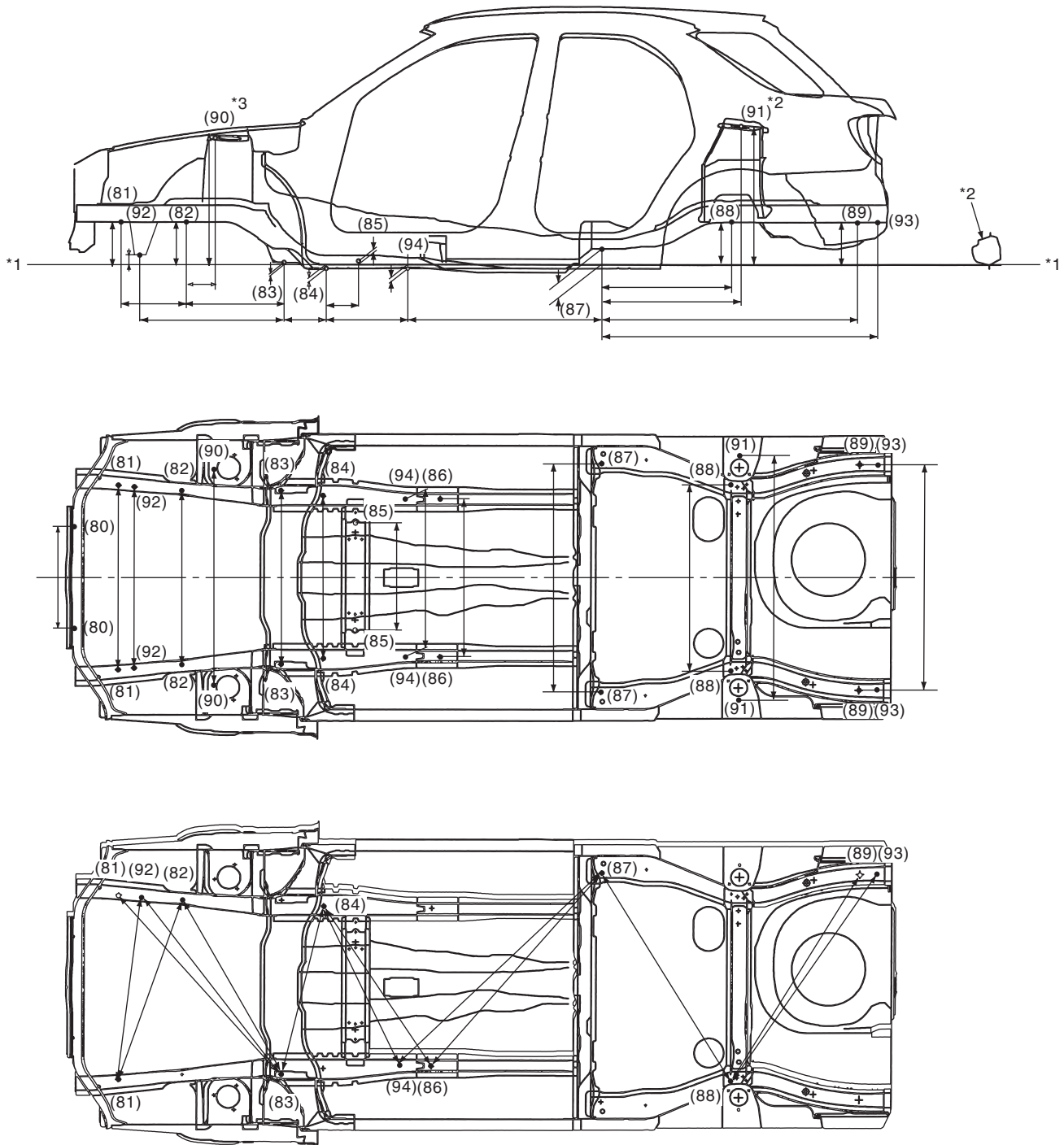


- (1) Datum point
(2) Body panel
(3) Outside

Datum Dimensions

BODY STRUCTURE

1. CENTER STRUCTURE



BS-00633

- *1: Standard line
- *2: Side sill
- *3: Upper surface

Datum Dimensions

BODY STRUCTURE

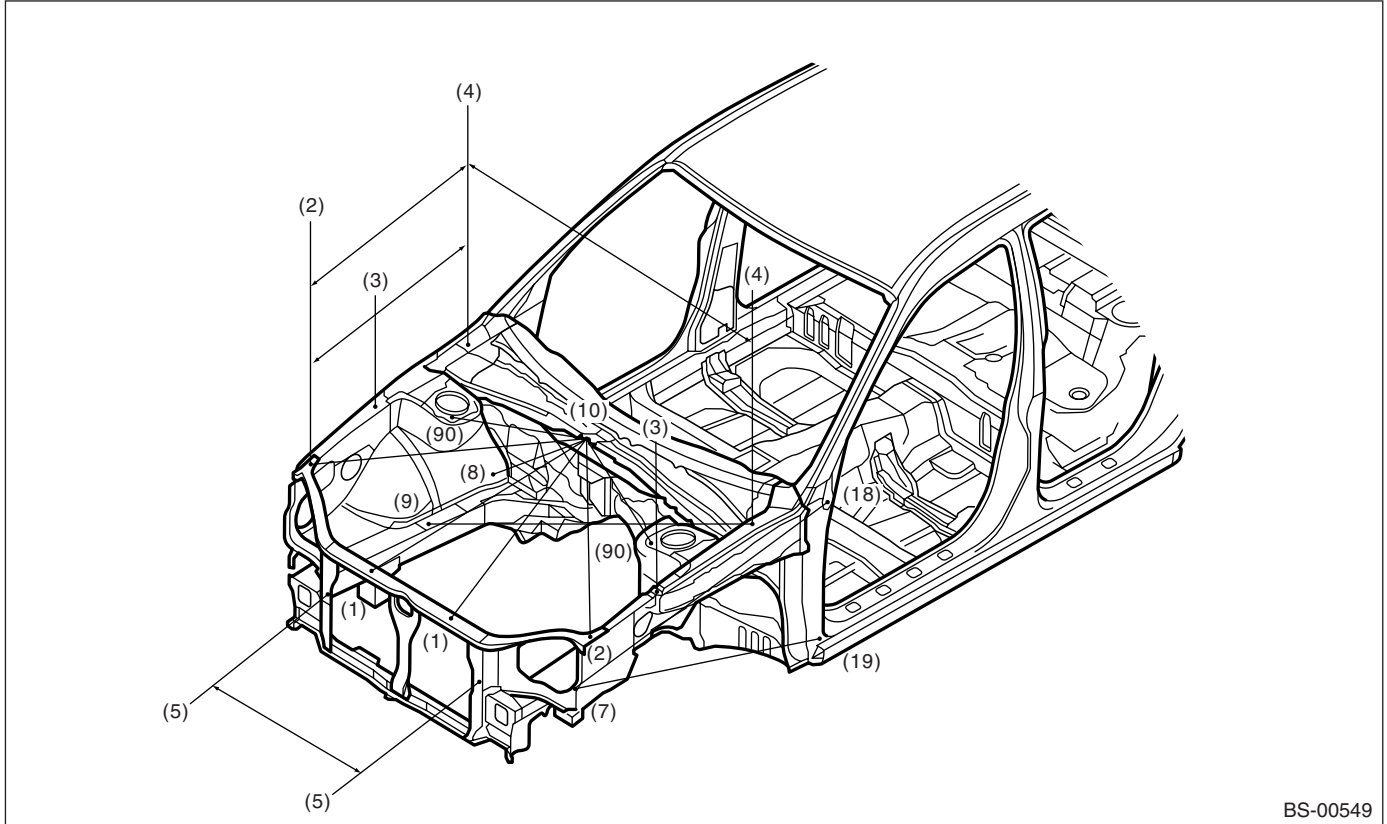
Point to point	Dimension mm (in)
(81) from standard line	206 (8.11)
(92) from standard line	77 (3.03)
(82) from standard line	206 (8.11)
(90) from standard line	620 (24.41)
(83) from standard line	8 (0.31)
(84) from standard line	20 (0.79)
(85) from standard line	13 (0.51)
(94) from standard line	12 (0.47)
(87) from standard line	76 (2.99)
(88) from standard line	206 (8.11)
(91) from standard line	674 (26.54)
(89) from standard line	205 (8.07)
(81) to (82)	317 (12.48)
(82) to (90)	157 (6.18)
(82) to (83)	485 (19.09)
(92) to (83)	694 (27.32)
(83) to (84)	206 (8.11)
(84) to (85)	159 (6.26)
(84) to (94)	380 (14.96)
(94) to (87)	982 (38.66)
(87) to (88)	633 (24.92)
(87) to (91)	673 (26.50)
(87) to (89)	1,258 (49.53)
(87) to (93)	1,358 (53.46)
(80) RH to (80) LH	500 (19.69)
(81) RH to (81) LH	910 (35.83)
(92) RH to (92) LH	906 (35.67)
(82) RH to (82) LH	860 (33.86)
(90) RH to (90) LH	1,065 (41.93)
(83) RH to (83) LH	856 (33.70)
(84) RH to (84) LH	800 (31.50)
(85) RH to (85) LH	529 (20.83)
(94) RH to (94) LH	776 (30.55)
(86) RH to (86) LH	780 (30.71)
(87) RH to (87) LH	1,128 (44.41)
(88) RH to (88) LH	920 (36.22)
(91) RH to (91) LH	1,205 (47.44)
(89) RH to (89) LH	1,110 (43.70)
(93) RH to (93) LH	1,110 (43.70)
(81) LH to (92) RH	924 (36.38)
(81) LH to (82) RH	940 (37.01)
(81) RH to (83) LH	1,209 (47.60)
(92) RH to (83) LH	1,124 (44.25)
(82) RH to (83) LH	1,005 (39.57)
(83) LH to (84) RH	854 (33.62)
(84) RH to (94) LH	875 (34.45)
(84) RH to (86) LH	951 (37.44)
(94) LH to (87) RH	1,371 (53.98)
(86) LH to (87) RH	1,269 (49.96)
(87) RH to (88) LH	1,211 (47.68)
(88) LH to (89) RH	1,192 (46.93)

Point to point	Dimension mm (in)
(88) LH to (93) RH	1,247 (49.09)

Datum Dimensions

BODY STRUCTURE

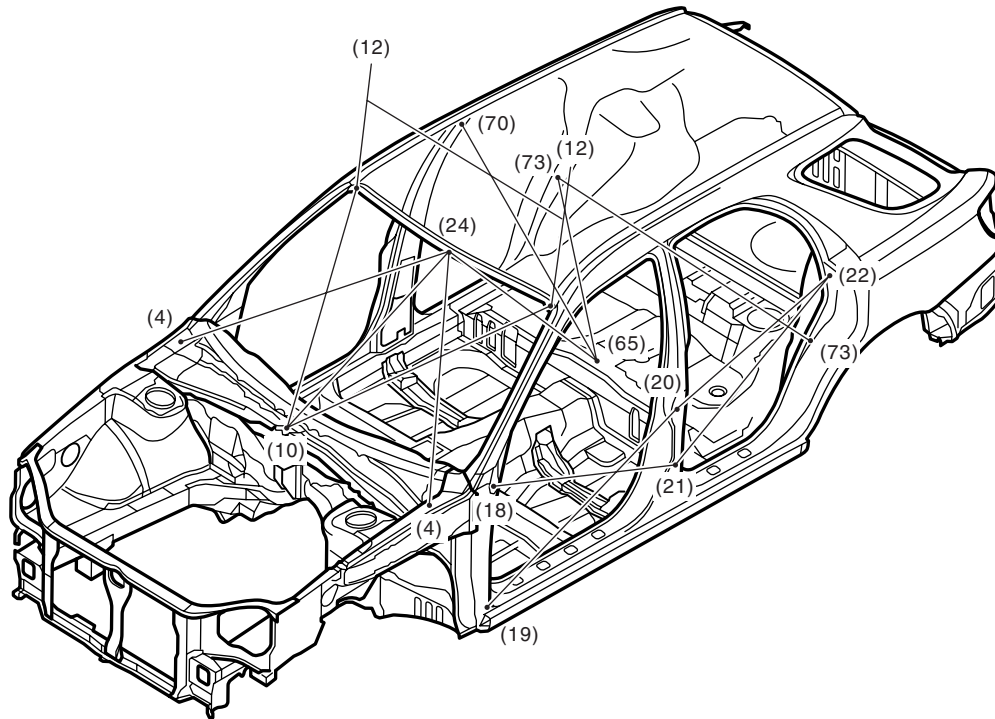
2. WAGON MODEL/SEDAN MODEL (FRONT STRUCTURE)



BS-00549

Point to point	Dimension mm (in)
(10) to (1) RH	912 (35.91)
(10) to (1) LH	912 (35.91)
(10) to (90) RH	566 (22.28)
(10) to (90) LH	566 (22.28)
(10) to (8) RH	581 (22.87)
(10) to (8) LH	581 (22.87)
(10) to (2) RH	948 (37.32)
(10) to (2) LH	948 (37.32)
(4) RH to (2) RH	779 (30.67)
(4) LH to (2) LH	779 (30.67)
(4) RH to (3) RH	430 (16.93)
(4) LH to (3) LH	430 (16.93)
(90) RH to (90) LH	1,065 (41.93)
(8) RH to (8) LH	894 (35.20)
(8) RH to (4) LH	1,210 (47.64)
(8) LH to (4) RH	1,210 (47.64)
(3) RH to (2) RH	350 (13.78)
(3) LH to (2) LH	350 (13.78)
(4) RH to (4) LH	1,417 (55.79)
(2) RH to (2) LH	1,341 (52.80)
(5) RH to (5) LH	720 (28.35)
(7) RH to (18) RH	1,107 (43.58)
(7) LH to (18) LH	1,107 (43.58)
(7) RH to (19) RH	1,105 (43.50)
(7) LH to (19) LH	1,105 (43.50)

Point to point	Dimension mm (in)
(4) RH to (2) LH	1,583 (62.32)
(4) LH to (2) RH	1,583 (62.32)
(3) RH to (3) LH	1,396 (54.96)
(3) RH to (4) LH	1,470 (57.87)
(3) LH to (4) RH	1,470 (57.87)
(2) RH to (3) LH	1,412 (55.59)
(2) LH to (3) RH	1,412 (55.59)
(9) RH to (9) LH	860 (33.86)
(9) RH to (8) LH	931 (36.65)
(9) LH to (8) RH	931 (36.65)
(9) RH to (4) LH	1,278 (50.31)
(9) LH to (4) RH	1,278 (50.31)



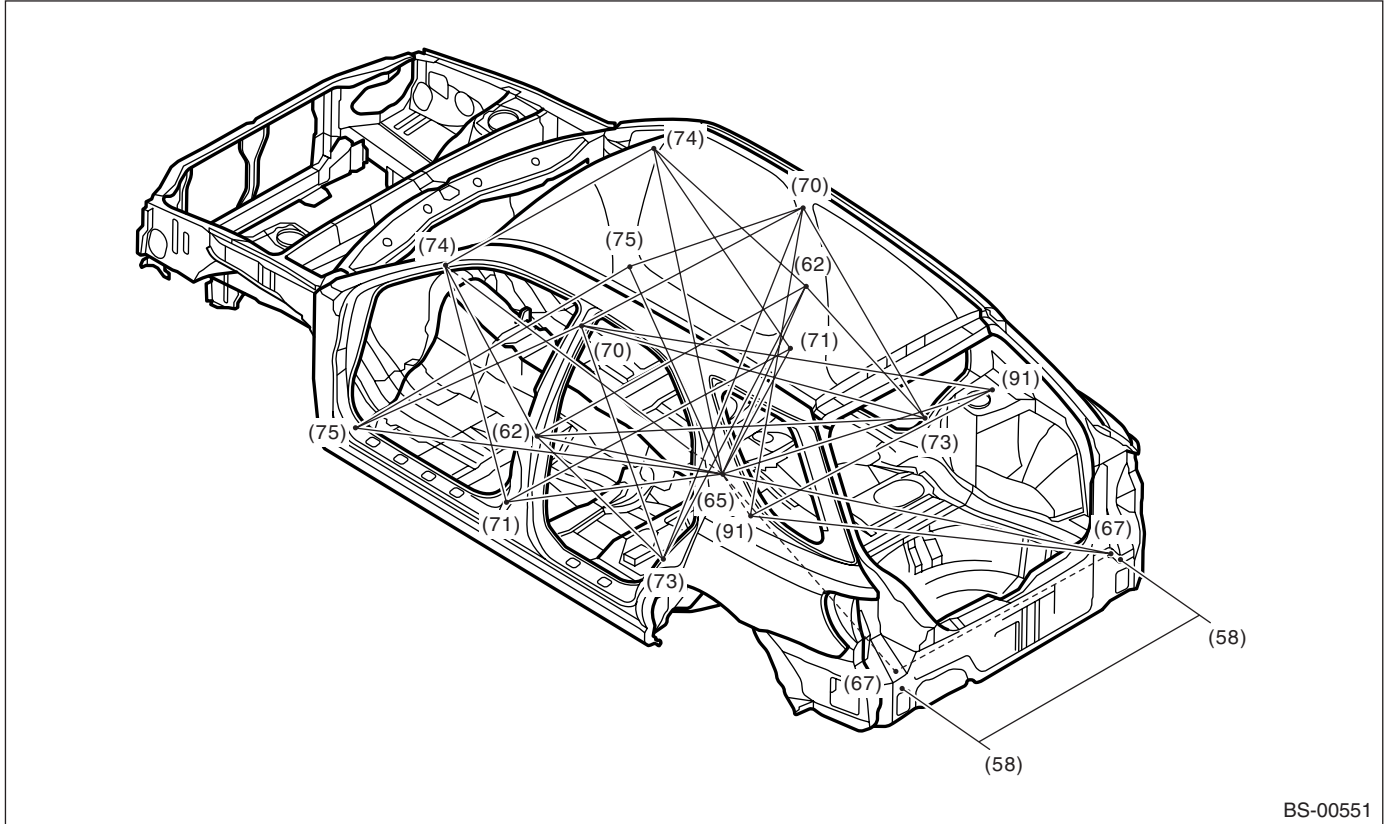
BS-00550

Point to point	Dimension mm (in)
(4) RH to (24)	1,127 (44.37) Wagon model
(4) LH to (24)	1,110 (43.70) Sedan model
(10) to (24)	958 (37.72) Wagon model
(10) to (24)	935 (36.81) Sedan model
(10) to (12) RH	1,122 (44.17) Wagon model
(10) to (12) RH	1,106 (43.54) Sedan model
(10) to (12) LH	1,122 (44.17) Wagon model
(10) to (12) LH	1,106 (43.17) Sedan model
(12) RH to (12) LH	1,029 (40.51) Wagon model
(12) RH to (12) LH	1,042 (41.02) Sedan model
(18) RH to (21) RH	1,049 (41.30)
(18) LH to (21) LH	1,049 (41.30)
(19) RH to (20) RH	1,089 (42.87)
(19) LH to (20) LH	1,089 (42.87)
(20) RH to (22) RH	869 (34.21)
(20) LH to (22) LH	869 (34.21)
(21) RH to (22) RH	985 (38.78)
(21) LH to (22) LH	985 (38.78)
(24) to (65)	1,232 (48.50) Wagon model
(24) to (65)	1,237 (48.70) Sedan model
(65) to (70) RH	1,067 (42.01)
(65) to (70) LH	1,067 (42.01)
(65) to (73) RH	830 (32.68)
(65) to (73) LH	830 (32.68)
(73) RH to (73) LH	1,394 (54.88)

Datum Dimensions

BODY STRUCTURE

3. WAGON MODEL/SEDAN MODEL (REAR STRUCTURE)

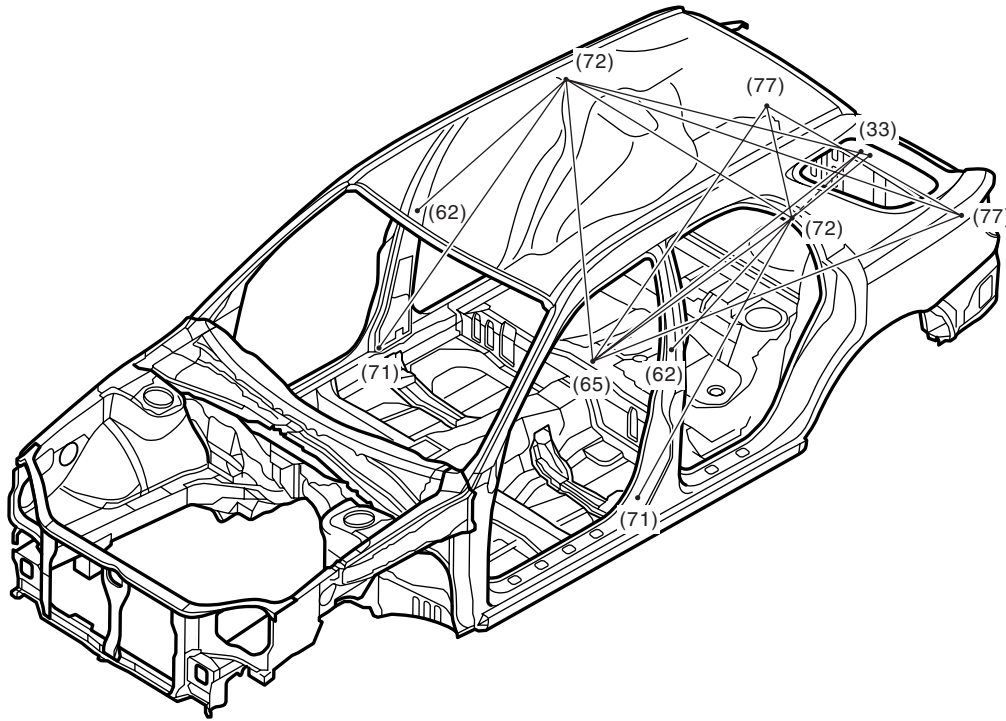


BS-00551

Point to point	Dimension mm (in)
(58) RH to (58) LH	1,128 (44.41)
(62) RH to (62) LH	1,332 (52.44)
(62) RH to (65)	915 (36.02)
(62) LH to (65)	915 (36.02)
(62) RH to (73) RH	762 (30.00)
(62) LH to (73) LH	762 (30.00)
(62) RH to (73) LH	1,561 (61.46)
(62) LH to (73) RH	1,561 (61.46)
(62) RH to (74) RH	592 (23.31) Wagon model
(62) LH to (74) LH	603 (23.74) Sedan model
(65) to (67) RH	1,501 (59.09)
(65) to (67) LH	1,501 (59.09)
(65) to (71) RH	823 (32.40)
(65) to (71) LH	823 (32.40)
(65) to (74) RH	1,275 (50.20) Wagon model
(65) to (74) LH	1,282 (50.47) Sedan model
(65) to (75) RH	1,450 (57.09)
(65) to (75) LH	1,450 (57.09)
(65) to (91) RH	1,064 (41.89)
(65) to (91) LH	1,064 (41.89)
(67) RH to (67) LH	1,110 (43.70)
(67) RH to (91) LH	1,381 (54.37)
(67) LH to (91) RH	1,381 (54.37)
(70) RH to (70) LH	1,060 (41.73)
(70) RH to (73) RH	948 (37.32)

Point to point	Dimension mm (in)
(70) LH to (73) LH	948 (37.32)
(70) RH to (73) LH	1,542 (60.71)
(70) LH to (73) RH	1,542 (60.71)
(70) RH to (75) RH	1,443 (56.81)
(70) LH to (75) LH	1,443 (56.81)
(70) RH to (91) LH	1,532 (60.32)
(70) LH to (91) RH	1,532 (60.32)
(71) RH to (71) LH	1,361 (53.58)
(71) RH to (74) RH	954 (37.56) Wagon model
(71) LH to (74) LH	949 (37.36) Sedan model
(74) RH to (74) LH	1,135 (44.69) Wagon model
(74) RH to (74) LH	1,147 (45.16) Sedan model
(75) RH to (75) LH	1,399 (55.08)
(91) RH to (91) LH	1,205 (47.44)

4. WAGON MODEL (FRONT STRUCTURE)



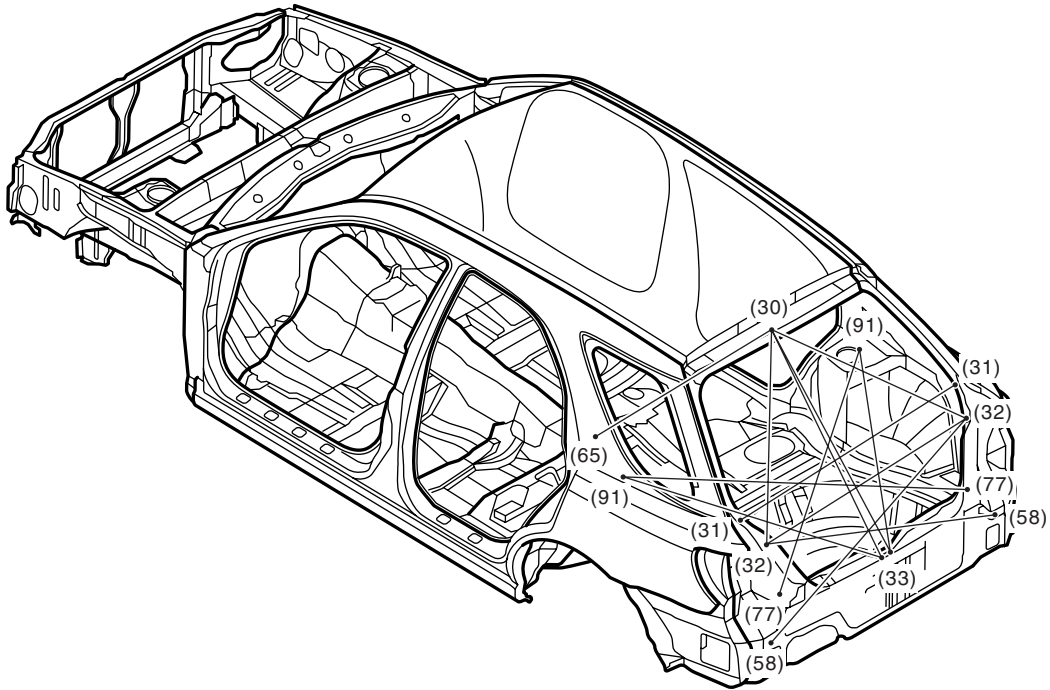
BS-00552

Point to point	Dimension mm (in)
(33) RH to (65)	1,534 (60.39)
(33) LH to (65)	1,534 (60.39)
(33) RH to (72) LH	1,334 (52.52)
(33) LH to (72) RH	1,334 (52.52)
(62) RH to (72) RH	732 (28.82)
(62) LH to (72) LH	732 (28.82)
(65) to (72) RH	1,076 (42.36)
(65) to (72) LH	1,076 (42.36)
(65) to (77) RH	1,538 (60.55)
(65) to (77) LH	1,538 (60.55)
(71) RH to (72) RH	1,223 (48.15)
(71) LH to (72) LH	1,223 (48.15)
(72) RH to (72) LH	1,226 (48.27)
(72) RH to (77) LH	1,544 (60.79)
(72) LH to (77) RH	1,544 (60.79)
(77) RH to (77) LH	898 (35.35)

Datum Dimensions

BODY STRUCTURE

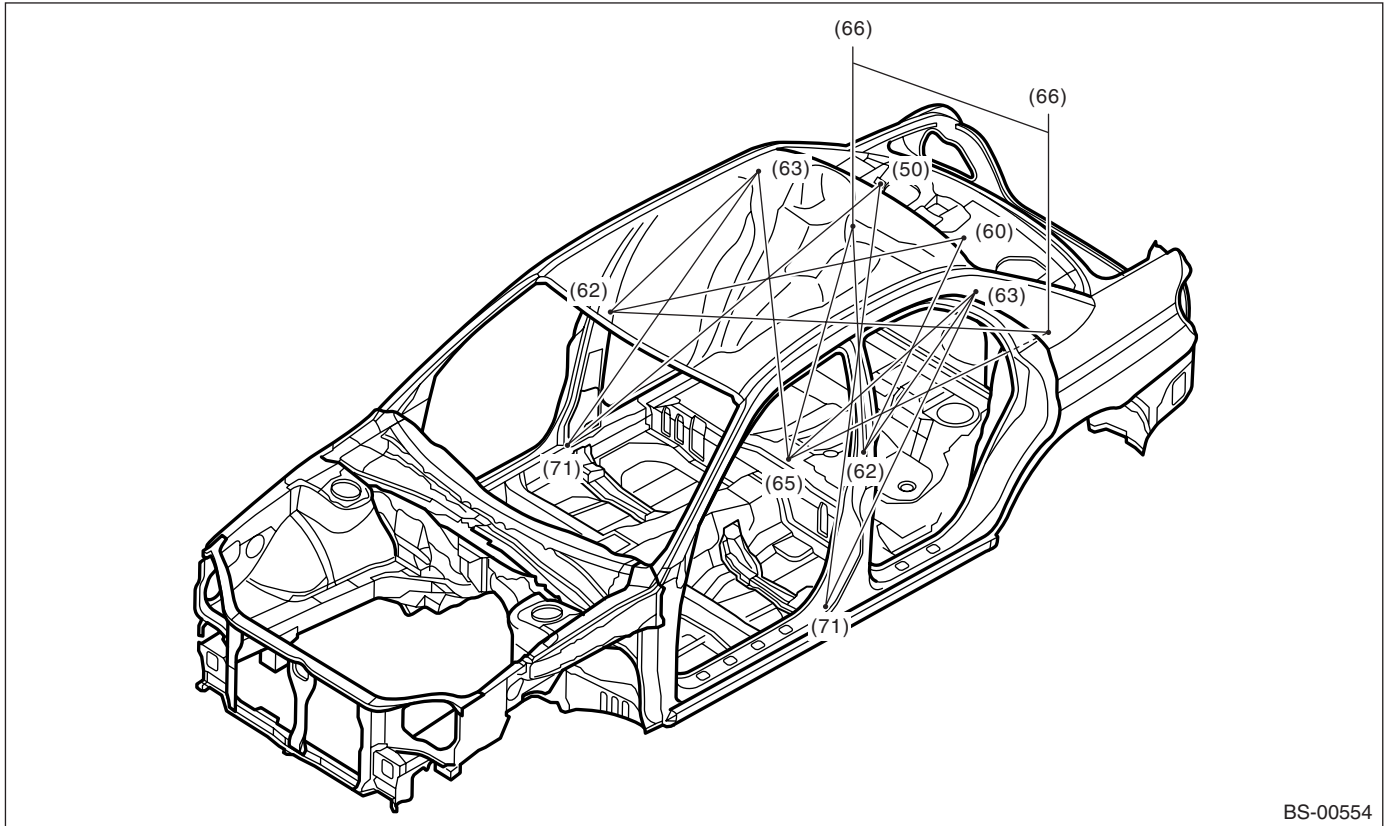
5. WAGON MODEL (REAR STRUCTURE)



BS-00553

Point to point	Dimension mm (in)
(30) to (32) RH	850 (33.46)
(30) to (32) LH	850 (33.46)
(30) to (33) RH	904 (35.59)
(30) to (33) LH	904 (35.59)
(30) to (65)	1,293 (50.91)
(31) RH to (31) LH	1,212 (47.72)
(32) RH to (32) LH	1,038 (40.87)
(32) RH to (58) LH	1,139 (44.84)
(32) LH to (58) RH	1,139 (44.84)
(33) RH to (91) RH	993 (39.09)
(33) LH to (91) LH	993 (39.09)
(77) RH to (91) LH	1,289 (50.75)
(77) LH to (91) RH	1,289 (50.75)

6. SEDAN MODEL (FRONT STRUCTURE)



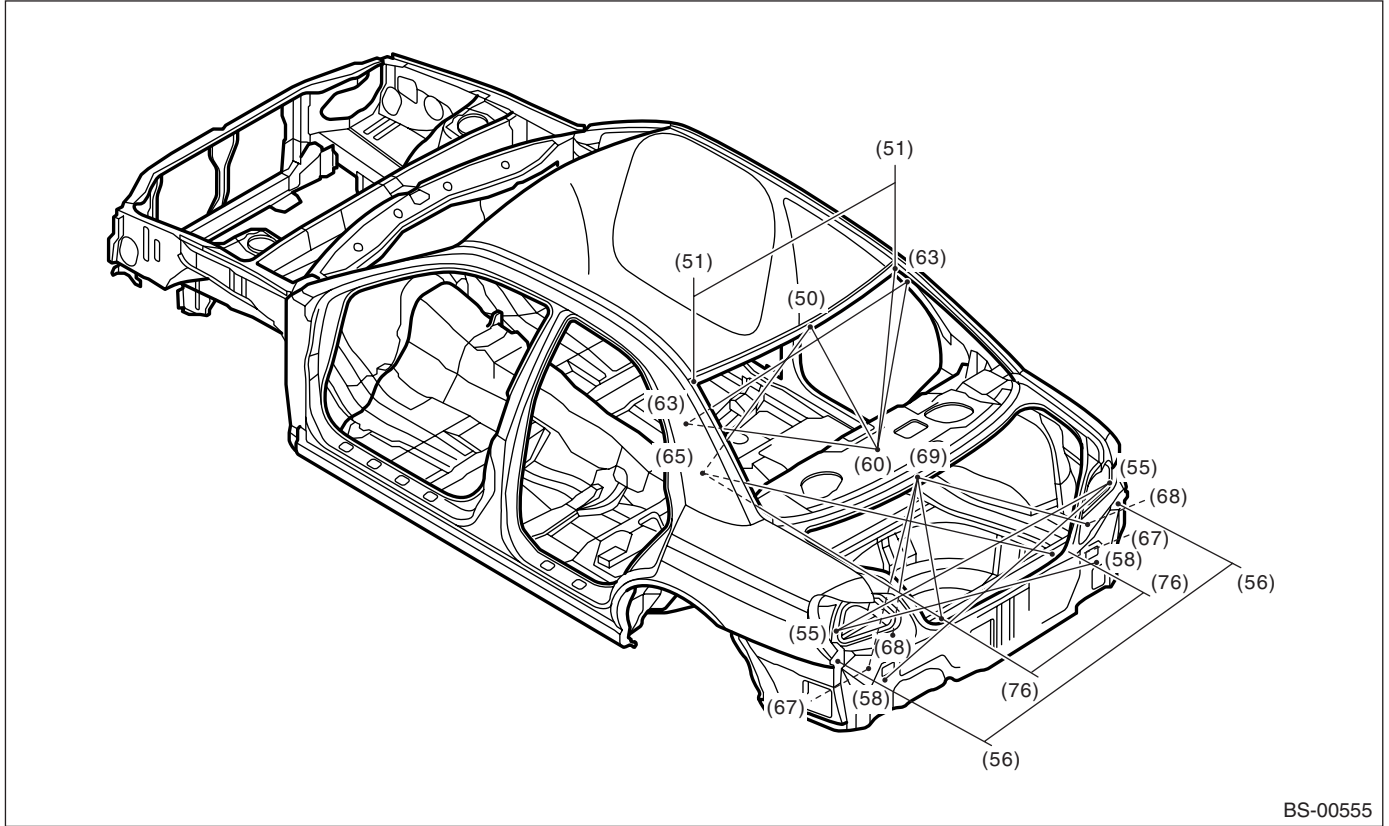
BS-00554

Point to point	Dimension mm (in)
(50) to (71) RH	1,562 (61.50)
(50) to (71) LH	1,562 (61.50)
(60) to (62) RH	1,338 (52.68)
(60) to (62) LH	1,338 (52.68)
(62) RH to (63) RH	773 (30.43)
(62) LH to (63) LH	773 (30.43)
(62) RH to (66) LH	1,449 (57.05)
(62) LH to (66) RH	1,449 (57.05)
(63) RH to (65)	1,118 (44.02)
(63) LH to (65)	1,118 (44.02)
(63) RH to (71) RH	1,283 (50.51)
(63) LH to (71) LH	1,283 (50.51)
(65) to (66) RH	956 (37.64)
(65) to (66) LH	956 (37.64)
(66) RH to (66) LH	840 (33.07)

Datum Dimensions

BODY STRUCTURE

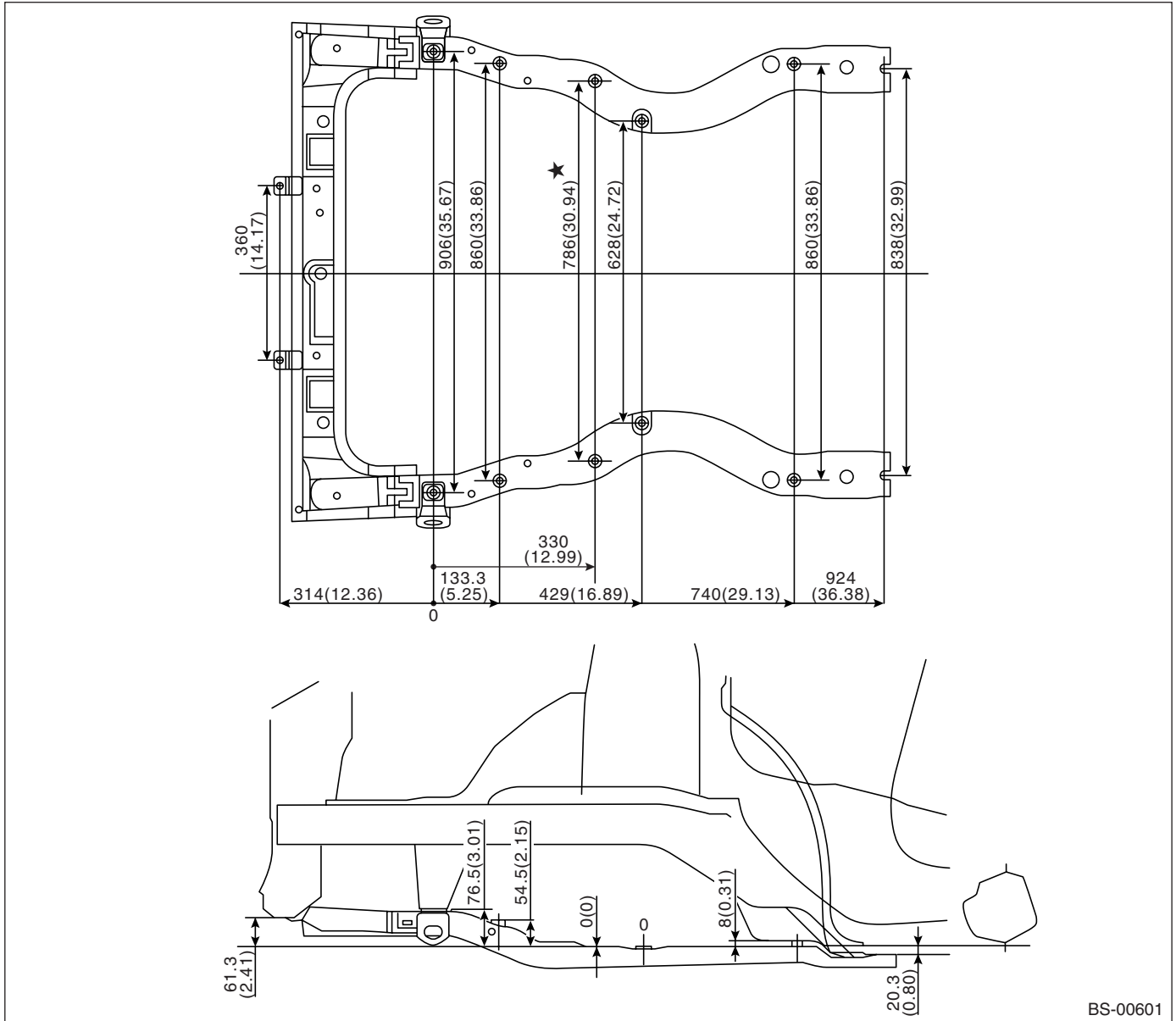
7. SEDAN MODEL (REAR STRUCTURE)



BS-00555

Point to point	Dimension mm (in)
(50) to (60)	501 (19.72)
(50) to (65)	1,082 (42.60)
(51) RH to (51) LH	1,025 (40.35)
(51) RH to (60)	734 (28.90)
(55) RH to (55) LH	1,406 (55.35)
(55) RH to (58) LH	1,297 (51.06)
(55) LH to (58) RH	1,297 (51.06)
(56) RH to (56) LH	1,426 (56.14)
(60) to (63) RH	764 (30.08)
(60) to (63) LH	764 (30.08)
(63) RH to (63) LH	1,183 (46.57)
(65) to (76) RH	1,544 (60.79)
(65) to (76) LH	1,544 (60.79)
(65) to (68) RH	1,581 (62.24)
(65) to (68) LH	1,581 (62.24)
(67) RH to (69)	784 (30.87)
(67) LH to (69)	784 (30.87)
(68) RH to (68) LH	1,020 (40.16)
(68) RH to (69)	681 (26.81)
(68) LH to (69)	681 (26.81)
(69) to (76) RH	537 (21.14)
(69) to (76) LH	537 (21.14)
(76) RH to (76) LH	600 (23.62)

8. SUB FRAME ALIGNMENT



Unit: mm (in)

*: Only for STi model

Horizontal and vertical dimensions are values measured from datum points (0).

Datum Dimensions

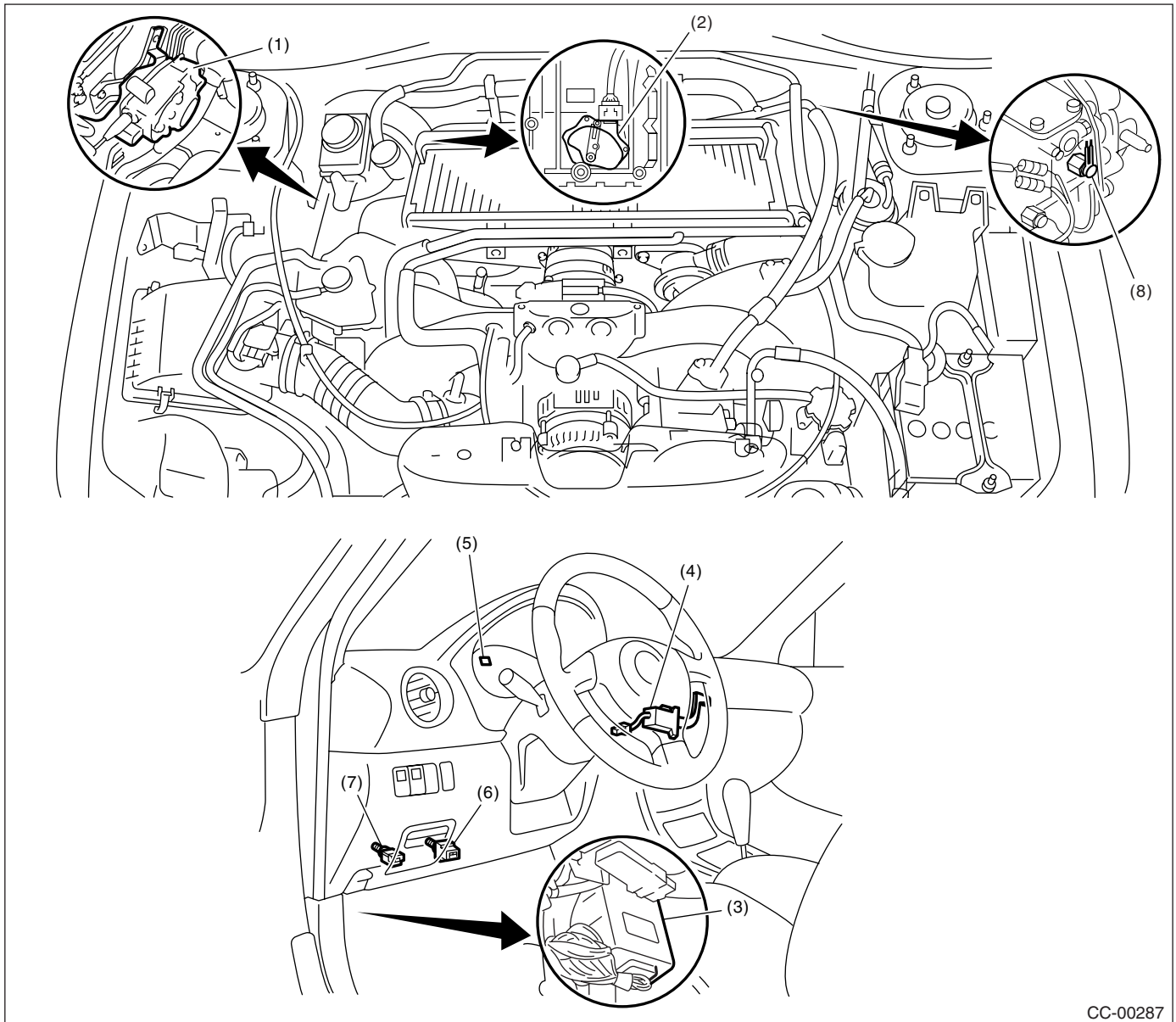
BODY STRUCTURE

CRUISE CONTROL SYSTEM

1. General Description

A: COMPONENT

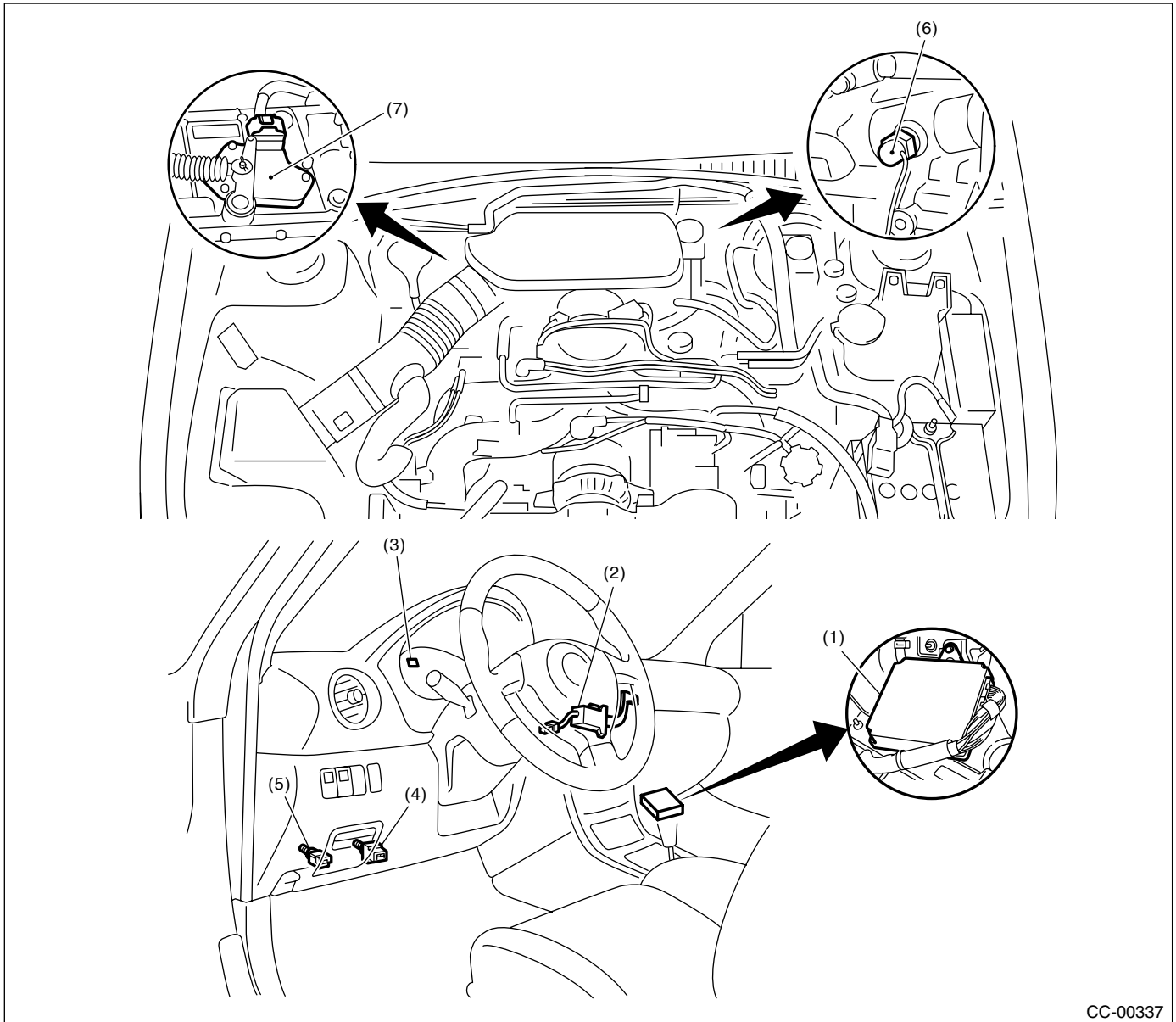
1. TURBO MODEL



CC-00287

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

2. NON-TURBO MODEL



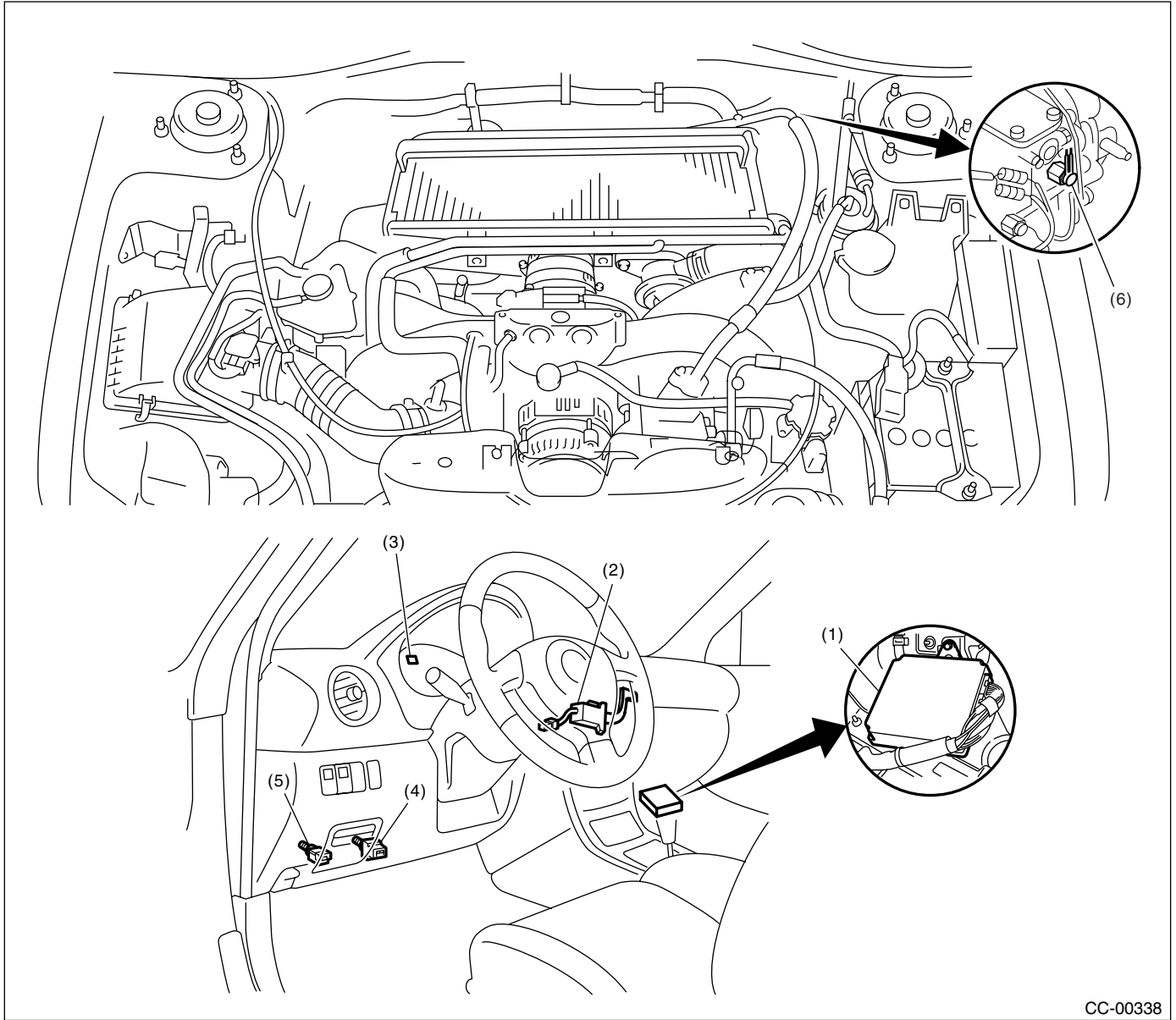
CC-00337

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

General Description

CRUISE CONTROL SYSTEM

3. STi MODEL



CC-00338

(1) Engine control module (ECM)	(3) Cruise indicator light & cruise set indicator light	(5) Clutch switch (MT model)
(2) Cruise control command switch (with built-in main switch)	(4) Stop light & brake switch	(6) Neutral position switch

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 the connectors and hoses securely during reassembly.
- After reassembly, ensure functional parts operate properly.

C: PREPARATION TOOL

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

2. Actuator

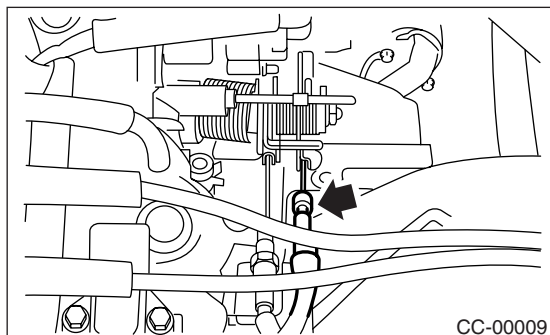
A: REMOVAL

1. TURBO MODEL EXCEPT STi MODEL

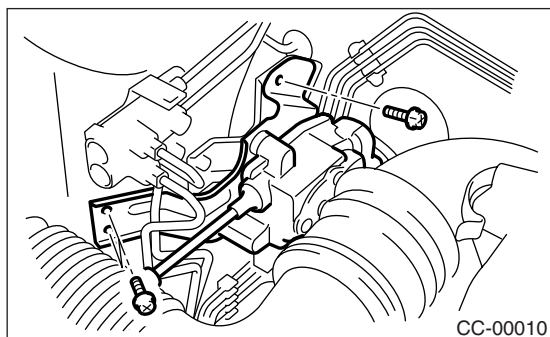
CAUTION:

- 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 the cable sharply with a radius less than 100 mm (3.94 in); otherwise, cable may bend permanently, resulting in poor performance.
- When installing the cable, be careful not to sharply bend or pinch the inner cable; otherwise, the cable may break.

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



- 4) Remove the four actuator attaching bolts.
- 5) Remove the actuator while disconnecting the 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)

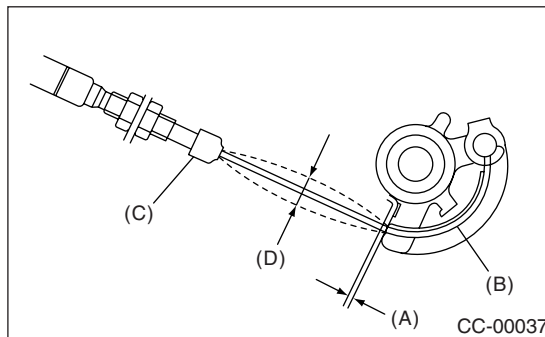
NOTE:

(A): Must be adjusted when the cable end outer is fixed in place, so that gap between throttle cam and lever is 0 — 1 mm (0 — 0.04 in), otherwise, inner cable deflection (D) is 1 — 8 mm (0.039 — 0.315 in) when the throttle cable is installed.

(Must be attached while the throttle cam is being pulled by wire cable.)

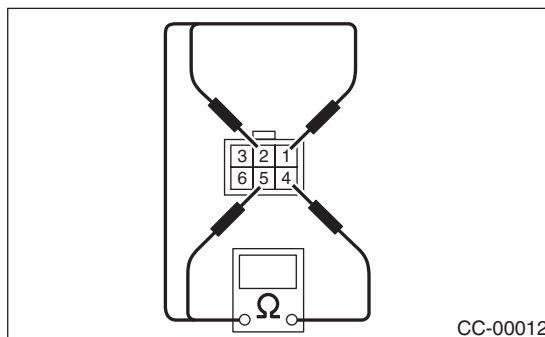
(B): Must be coated evenly on the cam end inner connection.

(C): Cover must be inserted securely, until tip of cable touches cover stopper.



C: INSPECTION

Measure the cruise control actuator resistance.



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

If NG, replace the cruise control actuator.

3. Cruise Control Unit

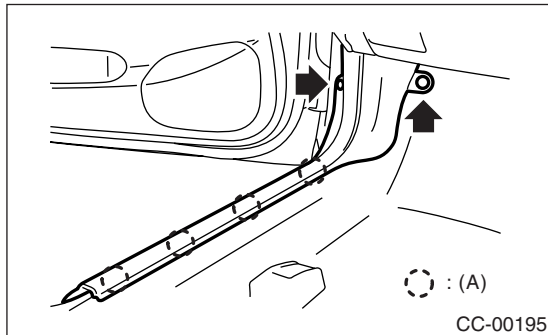
A: REMOVAL

NOTE:

- The control of cruise control system for turbo model is performed at the cruise control module.
- The control of cruise control system for Non-turbo model and STi model are performed at Engine control module (ECM).

1. TURBO MODEL

- 1) Disconnect the ground cable from battery.
- 2) Remove the side sill front cover.



(A) Hook pawl

- 3) Disconnect the connector from cruise control module.
- 4) Remove the bolt, then detach the cruise control module (A).



2. NON-TURBO MODEL

<Ref. to FU(H4SO)-37, REMOVAL, Engine Control Module (ECM).>

3. STi MODEL

<Ref. to FU(STi)-40, REMOVAL, Engine Control Module (ECM).>

B: INSTALLATION

1. TURBO MODEL

Install in the reverse order of removal.

2. NON-TURBO MODEL

<Ref. to FU(H4SO)-37, INSTALLATION, Engine Control Module (ECM).>

3. STi MODEL

<Ref. to FU(STi)-40, INSTALLATION, Engine Control Module (ECM).>

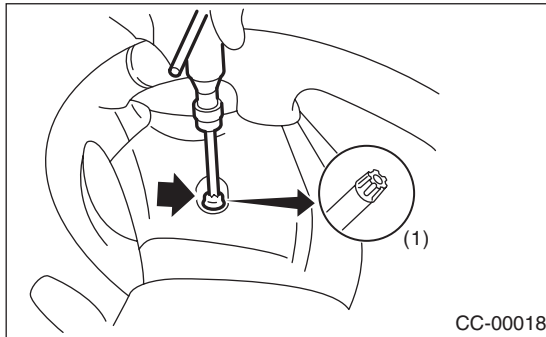
4. Cruise Control Command Switch

A: REMOVAL

WARNING:

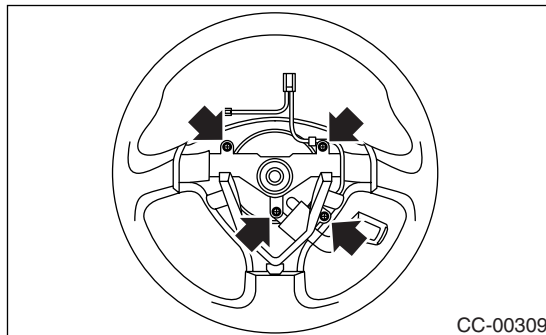
Before servicing, be sure to read the notes in the AB section for proper handling of the driver's airbag module. <Ref. to AB-3, CAUTION, General Description.>

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



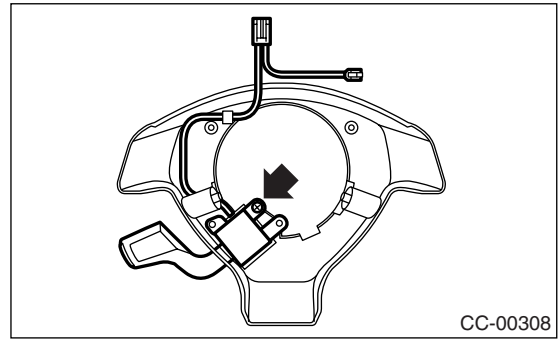
(1) TORX® BIT T30

- 5) Disconnect the airbag module connector on back of airbag module.
- 6) Remove the steering wheel. <Ref. to PS-21, REMOVAL, Steering Wheel.>
- 7) Remove four screws, and then remove the lower cover from steering wheel.



CC-00309

- 8) Remove the screw, and then remove the cruise control command switch from lower cover.



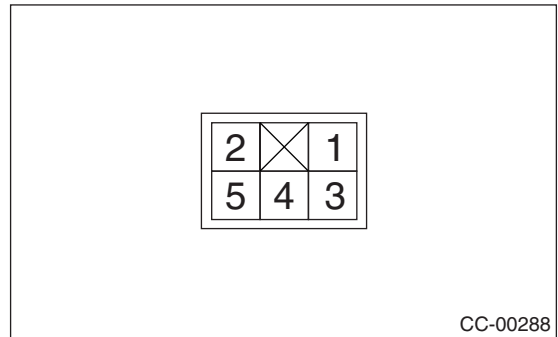
CC-00308

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the cruise control command switch resistance.



CC-00288

Switch	Position	Terminal No.	Standard value
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 M Ω
	ON	1 and 2	Less than 1 Ω
RESUME/ACCEL	OFF	1 and 3	More than 1 M Ω
	ON	1 and 3	Less than 1 Ω
MAIN SWITCH	OFF	5 and 4	More than 1 M Ω
	ON	5 and 4	Less than 1 M Ω

If NG, replace the cruise control command switch.

5. Stop Light and Brake Switch

A: REMOVAL

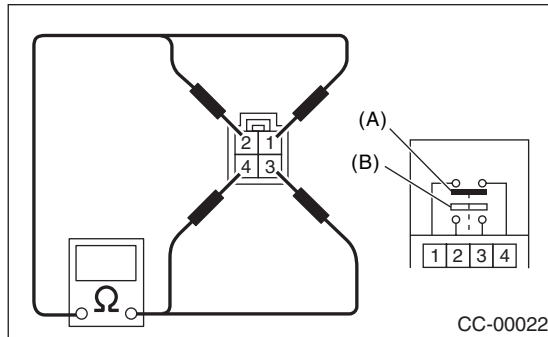
- 1) Disconnect the ground cable from battery.
- 2) Disconnect the connector from stop and brake switch, and then remove the switch. <Ref. to BR-48, REMOVAL, Stop Light Switch.>

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 M Ω
Stop light	Released	2 and 3	More than 1 M Ω
	Depressed	2 and 3	Less than 1 Ω

If NG, replace the stop light and brake switch.

6. Clutch Switch

A: REMOVAL

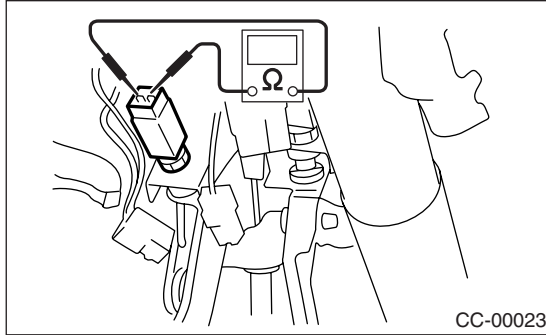
- 1) Disconnect the ground cable from battery.
- 2) Disconnect the connector from clutch switch, and then remove the switch. <Ref. to CL-26, REMOVAL, Clutch Pedal.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the clutch switch resistance.



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

If NG, replace the clutch switch.

7. Inhibitor Switch

A: REMOVAL

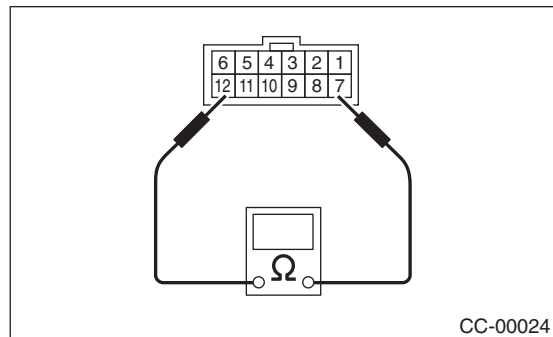
- 1) Disconnect the ground cable from battery.
- 2) Disconnect the connector from inhibitor switch, and then remove the switch. <Ref. to 4AT-52, REMOVAL, Inhibitor Switch.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the 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 M Ω

If NG, replace the inhibitor switch.

Neutral Position Switch

CRUISE CONTROL SYSTEM

8. Neutral Position Switch

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Disconnect the connector from neutral position switch, and then remove the switch.

5MT model:

<Ref. to 5MT-36, BACK-UP LIGHT AND NEUTRAL POSITION SWITCH, REMOVAL, Switches and Harness.>

6MT model:

<Ref. to 6MT-44, REMOVAL, Neutral Position Switch.>

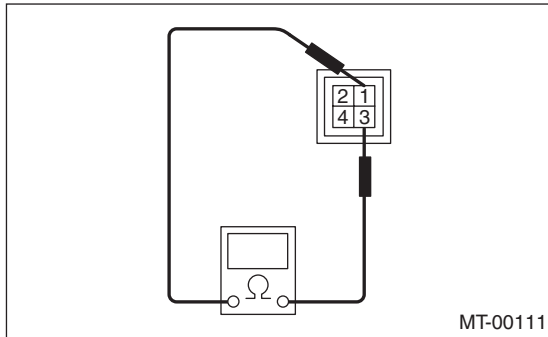
B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

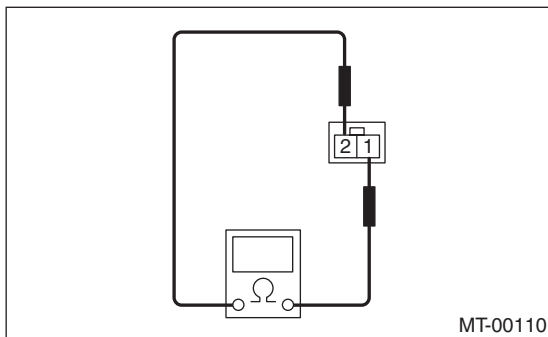
Measure the neutral position switch resistance.

- Turbo model



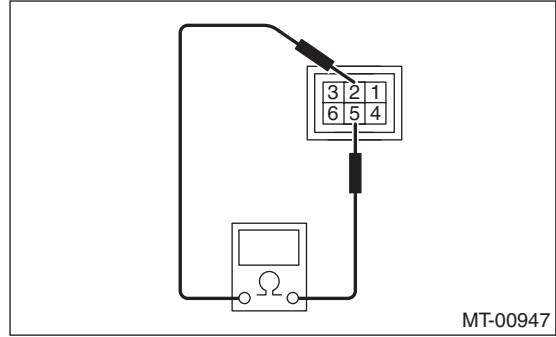
Gear shift position	Terminal No.	Specified resistance
Neutral position	1 and 3	Less than 1 Ω
Other positions		More than 1 MΩ

- Non-turbo model



Gear shift position	Terminal No.	Specified resistance
Neutral position	1 and 2	Less than 1 Ω
Other positions		More than 1 MΩ

- STi model



Gear shift position	Terminal No.	Specified resistance
Neutral position	2 and 5	Less than 1 Ω
Other positions		More than 1 MΩ

If NG, replace the neutral position switch.

**CRUISE CONTROL SYSTEM
(DIAGNOSTICS)
H4DOTC (non-STi)**

Basic Diagnostic Procedure

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

1. Basic Diagnostic Procedure

A: PROCEDURE

NOTE:

This section is specified for H4DOTC engine model except STi model.

Step	Check	Yes	No
1 START DIAGNOSIS. 1) Perform the pre-inspection. <Ref. to CC(diag)-5, INSPECTION, General Description.> 2) Check the cruise control switch operation.	Is the cruise control switch turned ON?	Go to step 2.	Go to phenomenon 1. <Ref. to CC(diag)-11, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
2 PERFORM CRUISE CANCEL CONDITIONS DIAGNOSIS. Perform the cruise cancel conditions diagnosis. <Ref. to CC(diag)-9, Subaru Select Monitor.>	Are any DTC indicated?	Go to "List of DTC". <Ref. to CC(diag)-29, List of Diagnostic Trouble Code (DTC).>	Go to step 3.
3 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 4.	Go to phenomenon 2. <Ref. to CC(diag)-11, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
4 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 5.	Go to phenomenon 3. <Ref. to CC(diag)-11, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
5 CHECK RES/ACC OPERATION. Check the RES/ACC operation.	Does the vehicle speed increase or return to set speed after RES/ACC switch has been pressed?	Go to step 6.	Go to phenomenon 4. <Ref. to CC(diag)-11, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
6 CHECK SET/COAST OPERATION. Check the SET/COAST operation.	Does the vehicle speed decrease after SET/COAST switch has been pressed?	Go to step 7.	Go to phenomenon 5. <Ref. to CC(diag)-11, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>

Basic Diagnostic Procedure

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
7 CHECK CANCEL OPERATION. Check the CANCEL operation.	Is the cruise control released after CANCEL switch has been pressed?	Go to step 8 .	Go to phenomenon 6. <Ref. to CC(diag)-11, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
8 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 9 .	Go to phenomenon 7. <Ref. to CC(diag)-11, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
9 CHECK CRUISE CONTROL RELEASE OPERATION. Check the cruise control release operation.	Is the cruise control released after clutch pedal has been depressed? (MT model)	Finish the diagnostics.	Go to phenomenon 8. <Ref. to CC(diag)-11, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>

General Description

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

2. General Description

A: CAUTION

1. SUPPLEMENTAL RESTRAINT SYSTEM “AIRBAG”

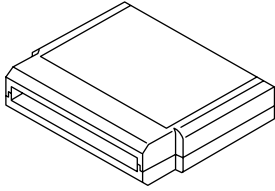
Airbag system wiring harness is routed near the cruise control module and cruise control switch.

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 module and cruise control switch.

B: PREPARATION TOOL

1. SPECIAL TOOL

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

2. GENERAL TOOL

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

General Description

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

C: INSPECTION

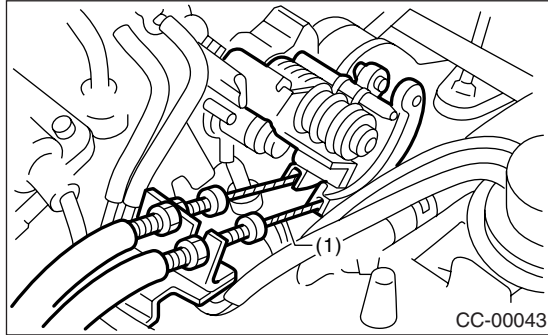
1. BATTERY

Measure the battery voltage and specific gravity of electrolyte.

Standard voltage:
12 V, or more

Specific gravity:
Above 1.260

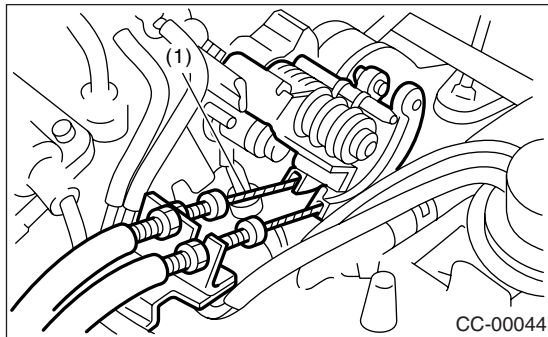
2. CRUISE CONTROL CABLE



(1) Cruise control cable

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

3. ACCELERATOR CABLE



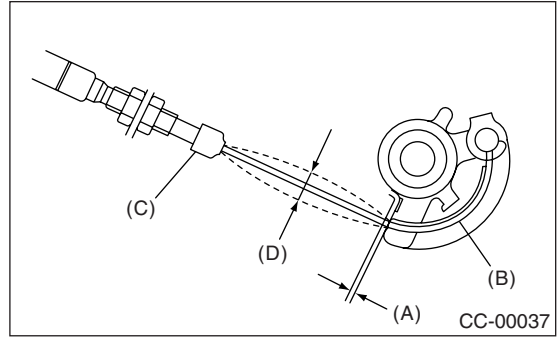
(1) Accelerator cable

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

4. THROTTLE CAM

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

5. CABLE FREE PLAY



Check that the throttle cam-to-lever clearance (A) or cable (B) inner cable deflection amount (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 with adjusting nut.

NOTE:

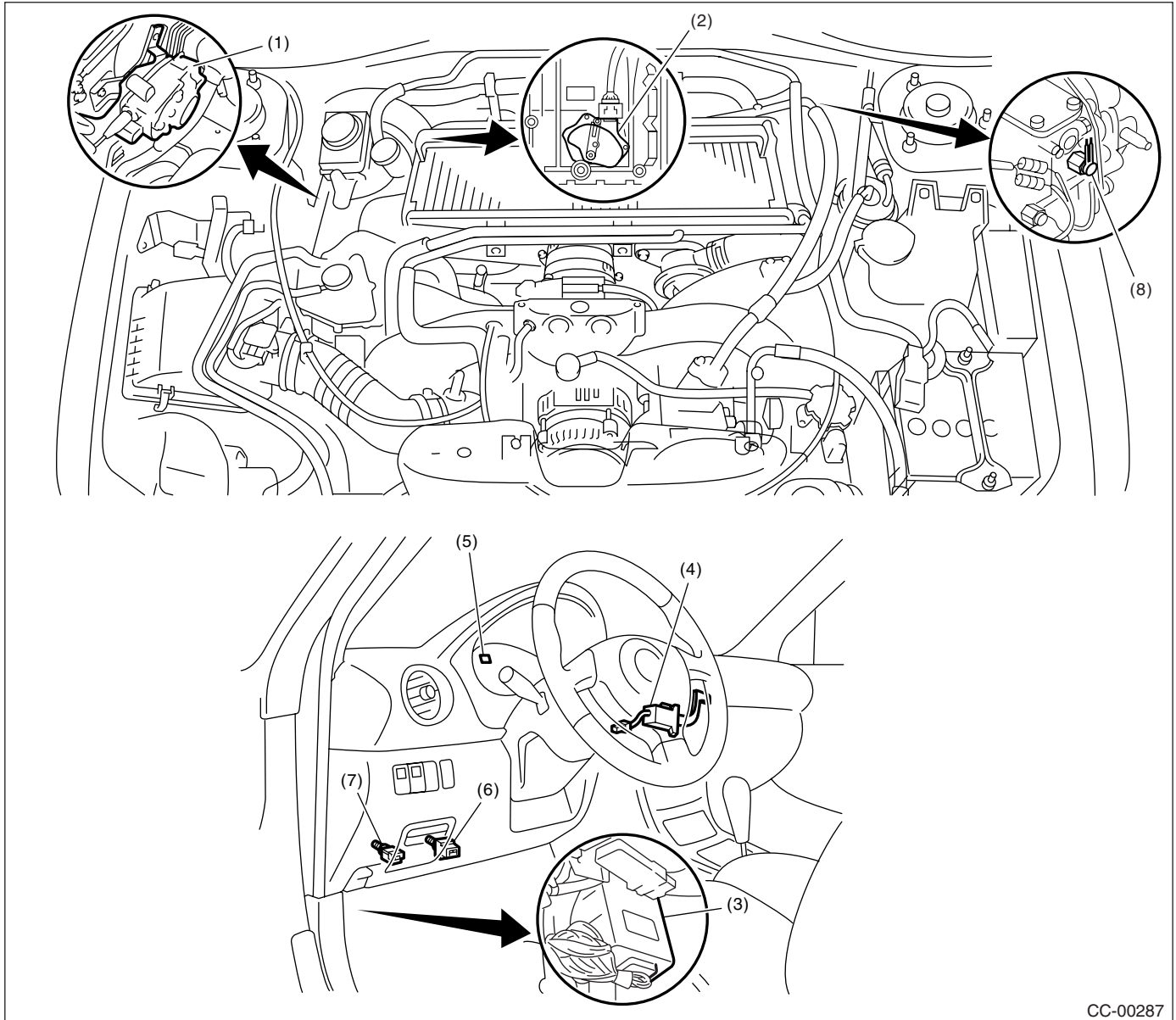
Check that the cap (C) is positioned in the groove.

Electrical Component Location

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

3. Electrical Component Location

A: LOCATION

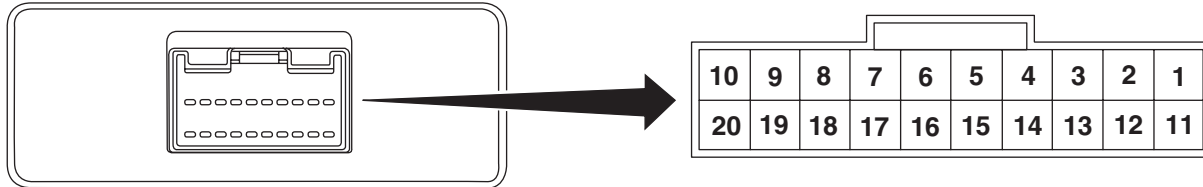


CC-00287

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

4. Cruise Control Module I/O Signal

A: ELECTRICAL SPECIFICATION



CC-00027

Content	Terminal No.	Measuring condition and I/O signal (ignition switch ON and engine idling)
Cruise indicator light	1	- Battery voltage is present when main switch is turned OFF. "0 V" voltage is present when main switch is turned ON.
Cruise set indicator light	3	"0 V" voltage is present when cruise control is set and operated. - Battery voltage is present when cruise control is not set and not operated.
Inhibitor switch (AT model)	4	- Battery voltage is present when selector lever is other than "P" or "N" position. "0 V" voltage is present when selector lever is set to "P" or "N" position.
Motor B	5	- ON-and-OFF ("0 V"-and-battery voltage) operation is alternately repeated while cruise control is operating. "0 V" voltage is present when main switch is turned OFF.
Ground	6	—
Motor A	7	- ON-and-OFF ("0 V"-and-battery voltage) operation is alternately repeated while cruise control is operating. "0 V" voltage is present when main switch is turned OFF.
RES/ACC switch	9	- Battery voltage is present when switch is turned to RES/ACC position. "0 V" voltage is present when switch is released.
SET/COAST switch	10	- Battery voltage is present when switch is turned to SET/COAST position. "0 V" voltage is present when switch is released.
Main power supply	11	- Battery voltage is present when ignition switch is turned ON. "0 V" voltage is present when ignition switch is turned OFF.
Ignition switch	12	- Battery voltage is present when ignition switch is turned ON. "0 V" voltage is present when ignition switch is turned OFF.
Motor C	13	- ON-and-OFF ("0 V"-and-battery voltage) operation is alternately repeated while cruise control is operating. "0 V" voltage is present when main switch is turned OFF.
Motor clutch	14	- ON-and-OFF ("0 V"-and-battery voltage) operation is alternately repeated while cruise control is operating. "0 V" voltage is present when vehicle is stopped.
Cruise control main switch	15	- Battery voltage is present while the cruise control main switch is depressed. "0 V" voltage is present when cruise control main switch is turned OFF.

Cruise Control Module I/O Signal

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

Content	Terminal No.	Measuring condition and I/O signal (ignition switch ON and engine idling)
Brake switch	16	Leave clutch pedal released (MT model), 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 for MT model, release the brake pedal with the cruise control main switch ON. 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	—
Data link connector	18	—
Vehicle speed sensor (MT model) TCM (AT model)	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: WIRING DIAGRAM

<Ref. to WI-101, WIRING DIAGRAM, 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 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 control 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.

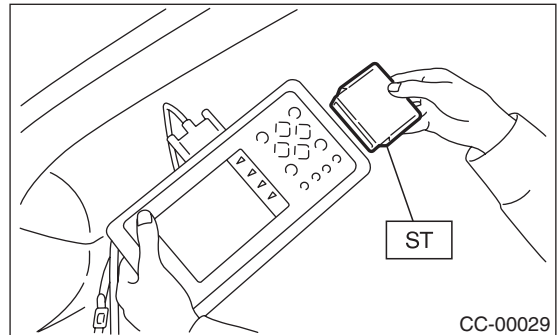
2. CRUISE CANCEL CONDITIONS DIAGNOSIS

1) Prepare the Subaru Select Monitor kit.



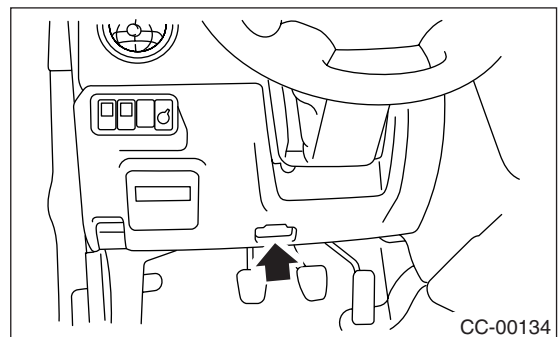
2) Connect the diagnosis cable to Subaru Select Monitor.

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



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).



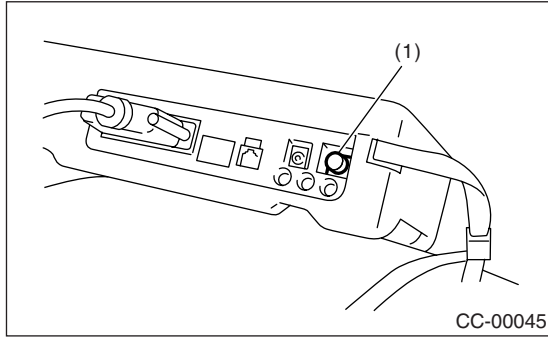
(2) Connect the diagnosis cable to data link connector.

5) Start the engine and turn the cruise control main switch to ON.

Subaru Select Monitor

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

6) Turn the Subaru Select Monitor switch to ON.



(1) Power switch

- Turn ON the “SET/COAST” switch.
- Turn ON the “RES/ACC” switch.
- Depress/release the clutch pedal. (MT model)
- Set the selector lever to “P” or “N”. (AT model)

NOTE:

- For detailed operation procedure, refer to the SUBARU SELECT MONITOR OPERATION MANUAL.
- For details concerning DTCs, refer to the List of Diagnostic Trouble Code (DTC). <Ref. to CC(diag)-29, List of Diagnostic Trouble Code (DTC).>

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

NOTE:

The DTC is also shown in the {Each System Check} mode. This mode is called up on the Cruise Control Diagnosis screen by selecting the item {Cancel Code(s) Display}.

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 the display.

CAUTION:

- **When performing diagnostics, observe the legal speed of the road.**
- **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 {Each System Check} and press [YES] key.
- 5) On the System Selection Menu display screen, select the {Cruise Control} and press [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 [YES] key.
- 8) Make sure that normal indication is displayed when operated as indicated below:
 - Depress/release the brake pedal. (Stop light switch and brake switch turn ON.)

6. Diagnostics with Phenomenon

A: DIAGNOSTIC PROCEDURE WITH PHENOMENON

Phenomenon		Checking item	Reference
1	Cruise control main switch is not turned to ON.	(1) Check the power supply.	<Ref. to CC(diag)-13, CHECK POWER SUPPLY, Diagnostics with Phenomenon.>
		(2) Check the cruise control main switch.	<Ref. to CC(diag)-15, CHECK CRUISE CONTROL MAIN SWITCH, Diagnostics with Phenomenon.>
2	Cruise indicator light does not illuminate.	(1) Check the cruise indicator light.	<Ref. to CC(diag)-17, CHECK CRUISE INDICATOR LIGHT, Diagnostics with Phenomenon.>
		(2) Check the cruise set indicator light.	<Ref. to CC(diag)-19, CHECK CRUISE SET INDICATOR LIGHT, Diagnostics with Phenomenon.>
3	Cruise control cannot be set.	(1) Check the SET/COAST switch.	<Ref. to CC(diag)-21, CHECK CRUISE CONTROL COMMAND SWITCH, Diagnostics with Phenomenon.>
		(2) Check the stop light and brake switch.	<Ref. to CC(diag)-23, CHECK STOP LIGHT AND BRAKE SWITCH, Diagnostics with Phenomenon.>
		(3) Check the clutch switch (MT model).	<Ref. to CC(diag)-25, CHECK CLUTCH SWITCH (MT MODEL), Diagnostics with Phenomenon.>
		(4) Check the inhibitor switch (AT model).	<Ref. to CC(diag)-27, CHECK INHIBITOR SWITCH (AT MODEL), Diagnostics with Phenomenon.>
		(5) Check the vehicle speed sensor.	<Ref. to CC(diag)-32, DTC 22 VEHICLE SPEED SENSOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(6) Check the motor drive system.	<Ref. to CC(diag)-35, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(7) Check the motor clutch drive system.	<Ref. to CC(diag)-37, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
4	Vehicle speed is not held within set speed ± 3 km/h (± 2 MPH).	(1) Check the vehicle speed sensor.	<Ref. to CC(diag)-32, DTC 22 VEHICLE SPEED SENSOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(2) Check the motor drive system.	<Ref. to CC(diag)-35, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(3) Check the motor clutch drive system.	<Ref. to CC(diag)-37, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
5	Vehicle speed does not increase or does not return to set speed after RES/ACC switch has been pressed.	(1) Check the RES/ACC switch.	<Ref. to CC(diag)-21, CHECK CRUISE CONTROL COMMAND SWITCH, Diagnostics with Phenomenon.>
		(2) Check the motor drive system.	<Ref. to CC(diag)-35, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(3) Check the motor clutch drive system.	<Ref. to CC(diag)-37, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
6	Vehicle speed does not decrease after SET/COAST switch has been pressed.	(1) Check the SET/COAST switch.	<Ref. to CC(diag)-21, CHECK CRUISE CONTROL COMMAND SWITCH, Diagnostics with Phenomenon.>
		(2) Check the motor drive system.	<Ref. to CC(diag)-35, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(3) Check the motor clutch drive system.	<Ref. to CC(diag)-37, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

Diagnostics with Phenomenon

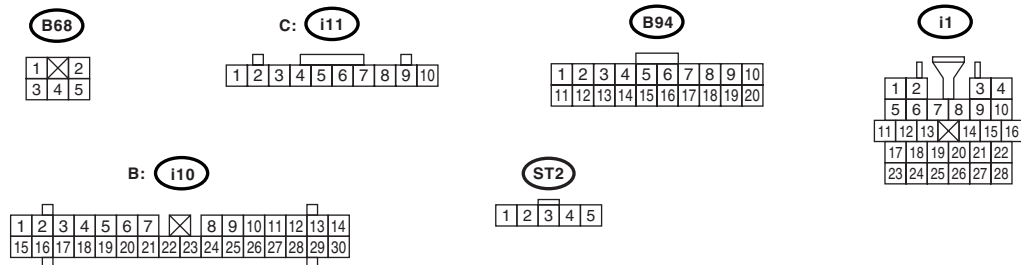
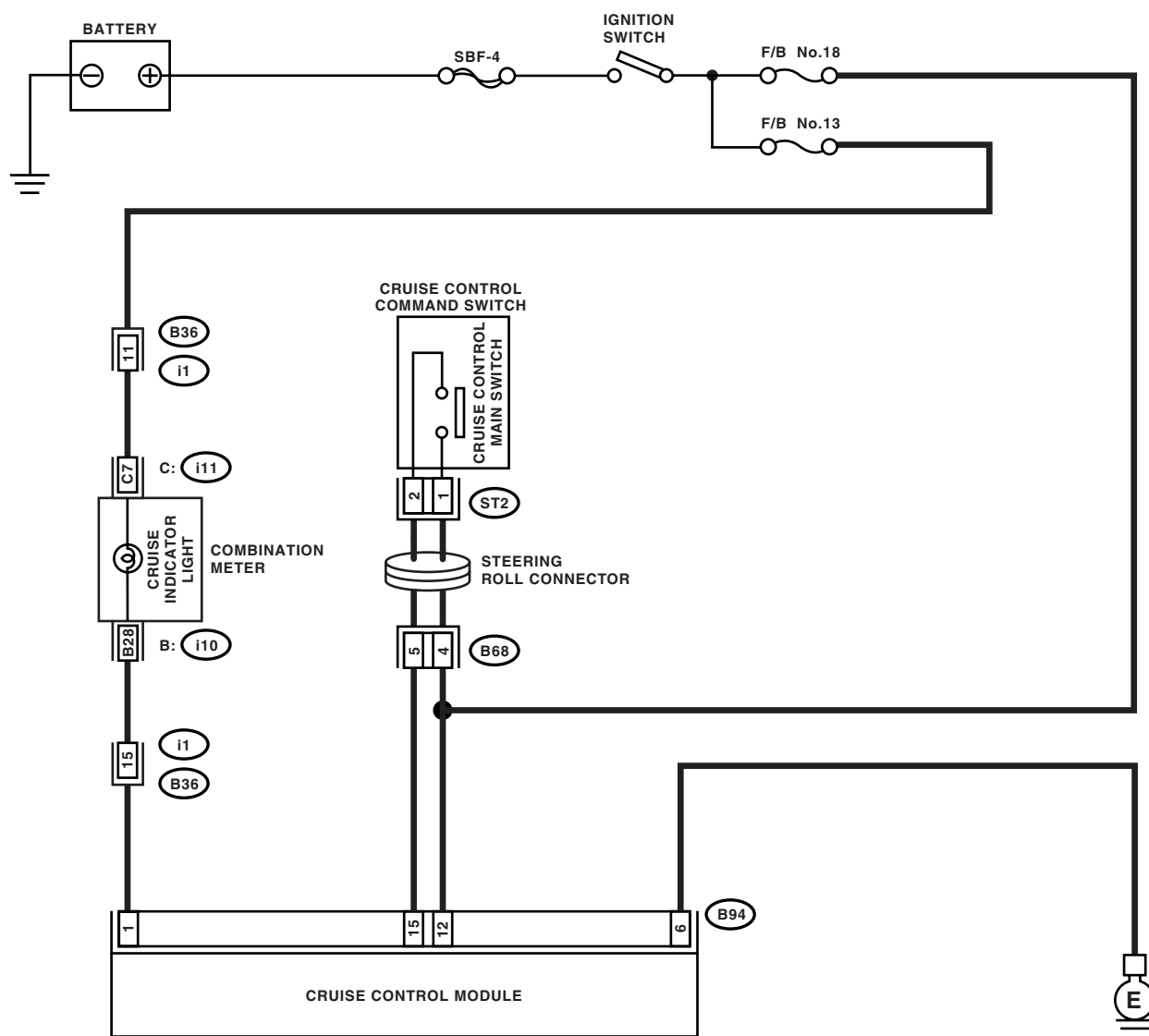
CRUISE CONTROL SYSTEM (DIAGNOSTICS)

Phenomenon		Checking item	Reference
7	Cruise control is not released after CANCEL switch has been pressed.	(1) Check the CANCEL switch.	<Ref. to CC(diag)-21, CHECK CRUISE CONTROL COMMAND SWITCH, Diagnostics with Phenomenon.>
		(2) Check the motor drive system.	<Ref. to CC(diag)-35, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(3) Check the motor clutch drive system.	<Ref. to CC(diag)-37, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
8	Cruise control is not released after brake pedal has been depressed.	(1) Check the stop light switch and brake switch.	<Ref. to CC(diag)-23, CHECK STOP LIGHT AND BRAKE SWITCH, Diagnostics with Phenomenon.>
		(2) Check the motor drive system.	<Ref. to CC(diag)-35, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(3) Check the motor clutch drive system.	<Ref. to CC(diag)-37, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
9	Cruise control is not released after clutch pedal has been depressed (MT model).	(1) Check the clutch switch.	<Ref. to CC(diag)-25, CHECK CLUTCH SWITCH (MT MODEL), Diagnostics with Phenomenon.>
		(2) Check the motor drive system.	<Ref. to CC(diag)-35, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(3) Check the motor clutch drive system.	<Ref. to CC(diag)-37, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

TROUBLE SYMPTOM:

WIRING DIAGRAM:



CC(diag)-13

Diagnostics with Phenomenon

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

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

C: CHECK CRUISE CONTROL MAIN SWITCH

TROUBLE SYMPTOM:

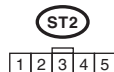
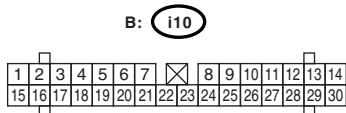
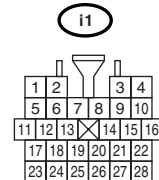
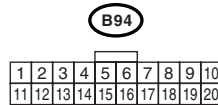
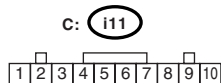
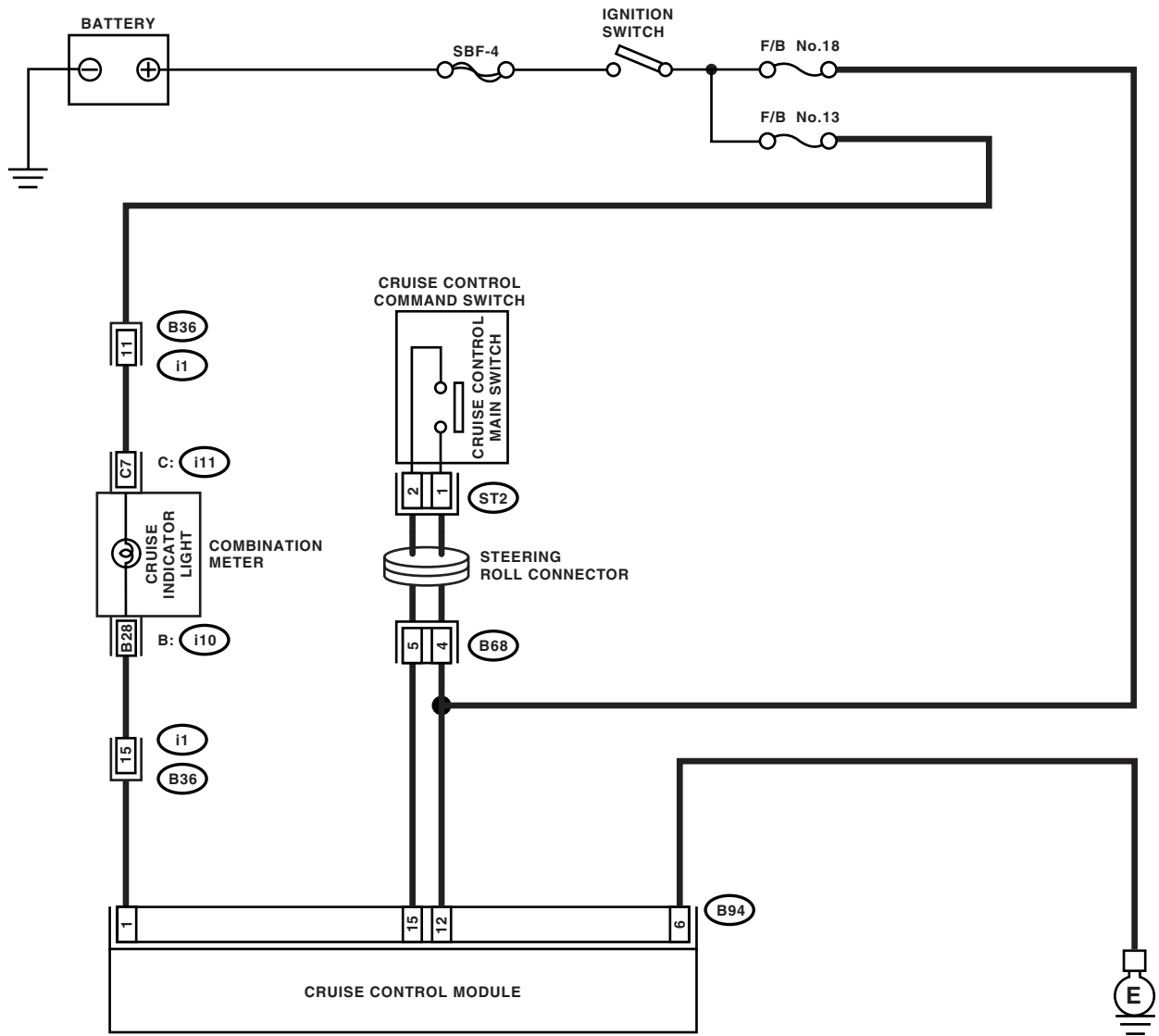
Cruise control main switch is not turned to ON and cruise control cannot be set.

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 sound.

This operation sound will be heard when the ignition switch and cruise control main switch is turned to ON.

WIRING DIAGRAM:



Diagnostics with Phenomenon

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK CRUISE CONTROL MAIN SWITCH CIRCUIT. 1) Turn the ignition switch to OFF. 2) Disconnect the cruise control command switch harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. Connector & terminal (B68) No. 4 (+) — Chassis ground (-):	Is the voltage more than 10 V?	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.
2 CHECK CRUISE CONTROL MAIN SWITCH CIRCUIT. 1) Turn the ignition switch OFF. 2) Disconnect the cruise control module harness connector. 3) Measure the resistance between cruise control module harness connector terminal and cruise control command switch harness connector terminal. Connector & terminal (B94) No. 15 — (B68) No. 5:	Is the resistance less than 10 Ω ?	Go to step 3.	Repair the harness.
3 CHECK CRUISE CONTROL MAIN SWITCH. Remove and check the cruise control command switch. <Ref. to CC-8, Cruise Control Command Switch.>	Is the cruise control command switch OK?	Replace the cruise control module.	Replace the cruise control command switch.

Diagnostics with Phenomenon

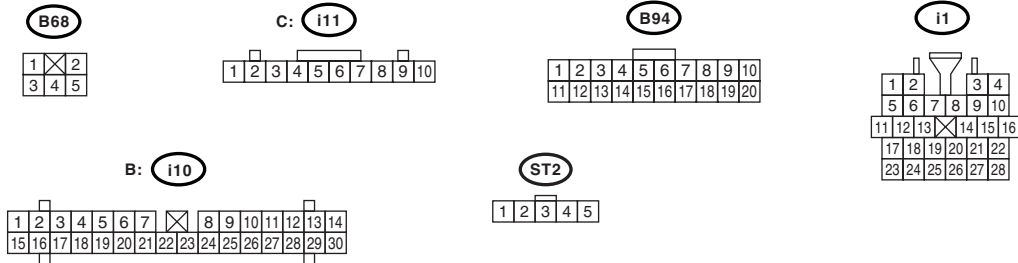
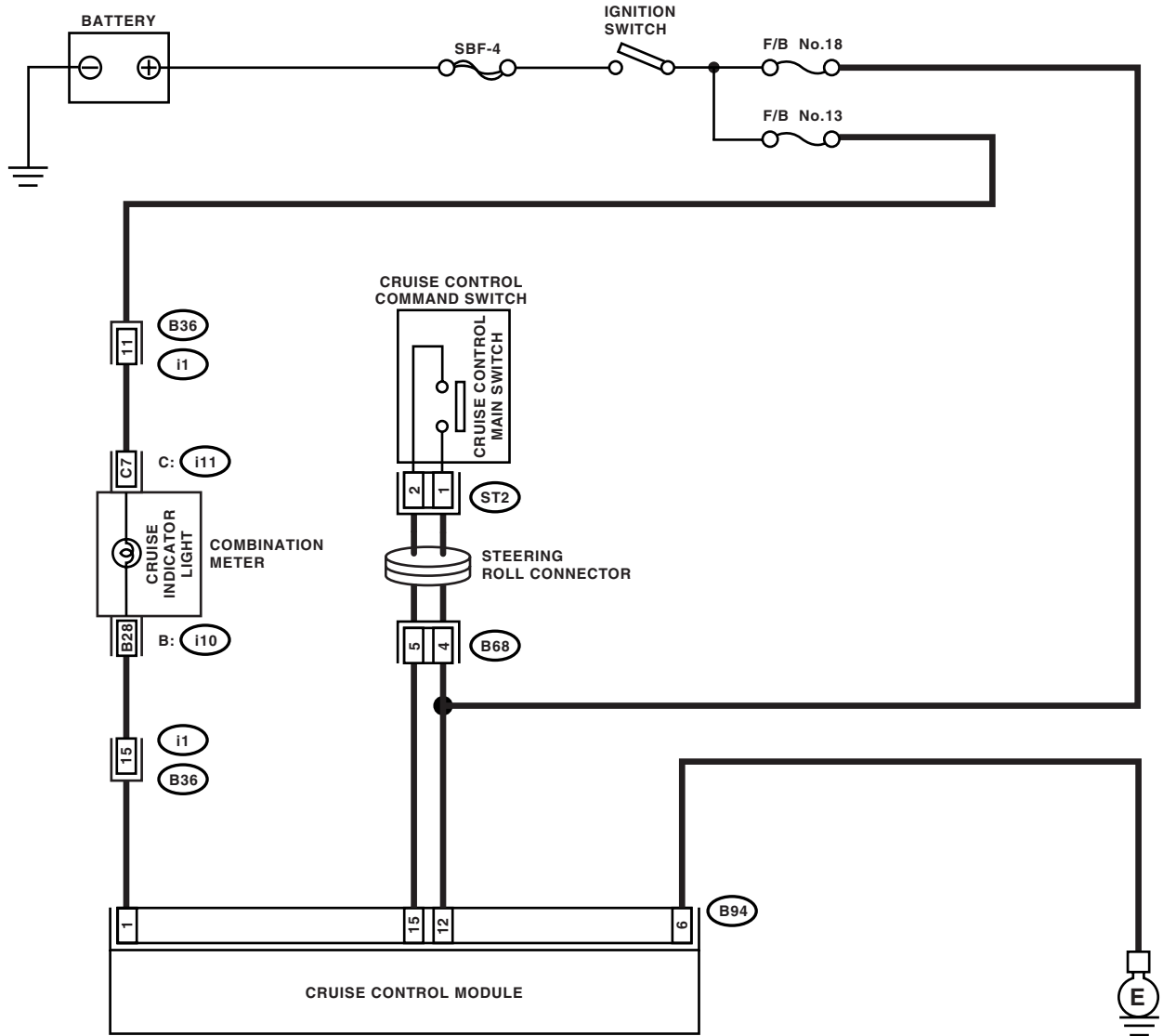
CRUISE CONTROL SYSTEM (DIAGNOSTICS)

D: CHECK CRUISE INDICATOR LIGHT

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



CC-00297

Diagnostics with Phenomenon

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

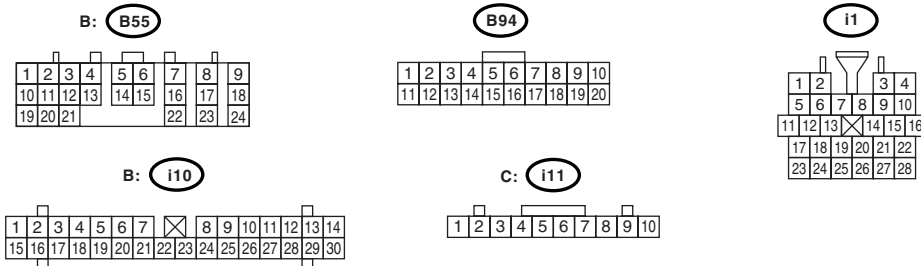
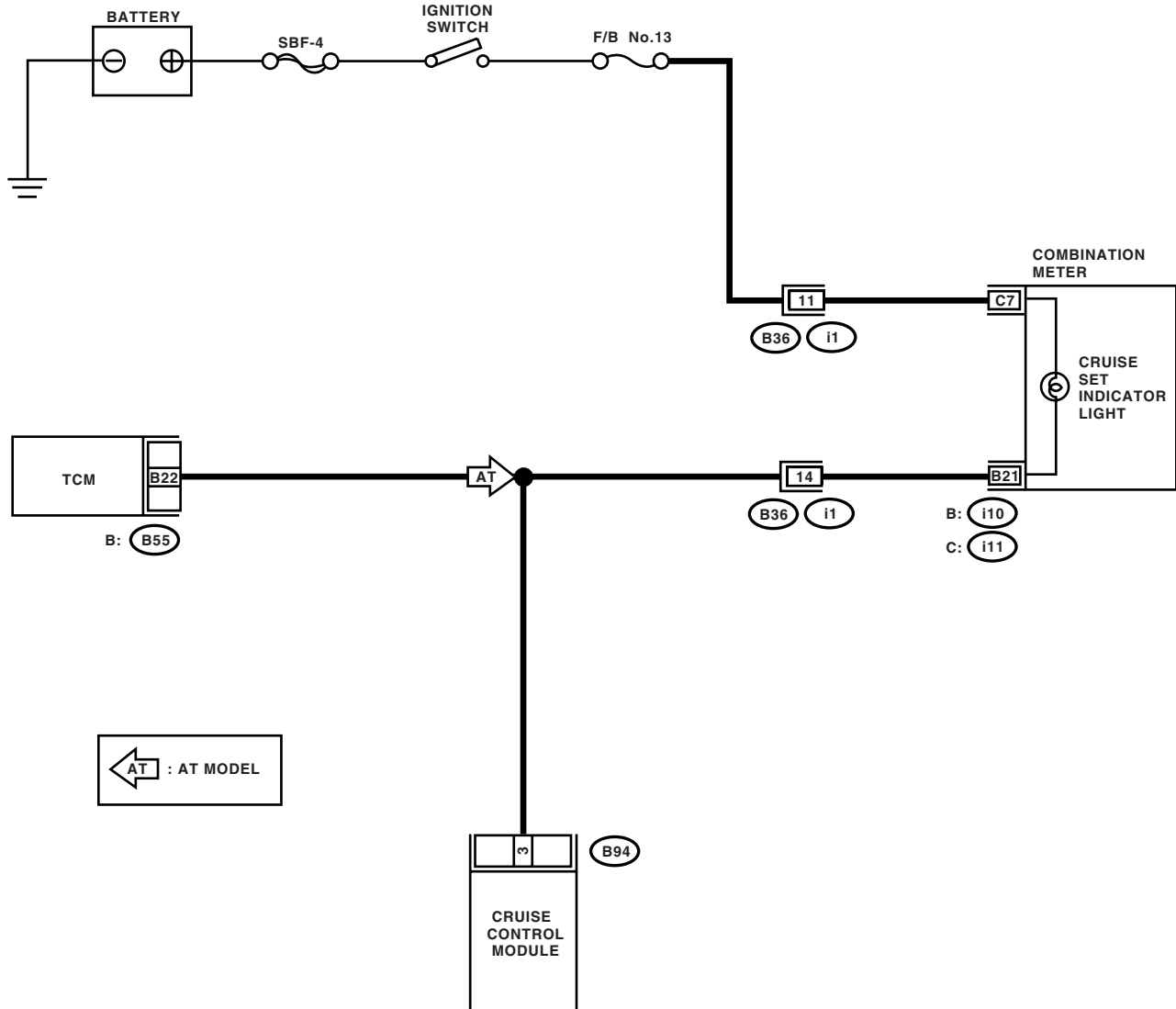
Step	Check	Yes	No
1 CHECK CRUISE INDICATOR LIGHT CIRCUIT. 1) Turn the ignition switch to OFF. 2) Disconnect the combination meter harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. Connector & terminal (i11) No. 7 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	• Check the fuse No. 13 (in fuse & relay box). • Check the harness for open or short between combination meter and fuse & relay box.
2 CHECK CRUISE 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 (B94) No. 1 — (i10) No. 28:	Is the resistance less than 10 Ω ?	Go to step 3.	Repair the harness.
3 CHECK CRUISE INDICATOR LIGHT CIRCUIT. Ground the cruise control module harness connector terminal with a suitable wire. Connector & terminal (B94) No. 1 — Chassis ground:	Does the cruise indicator light illuminate?	Replace the cruise control module.	Check the cruise 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 SET INDICATOR LIGHT

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



CC-00298

Diagnostics with Phenomenon

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

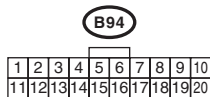
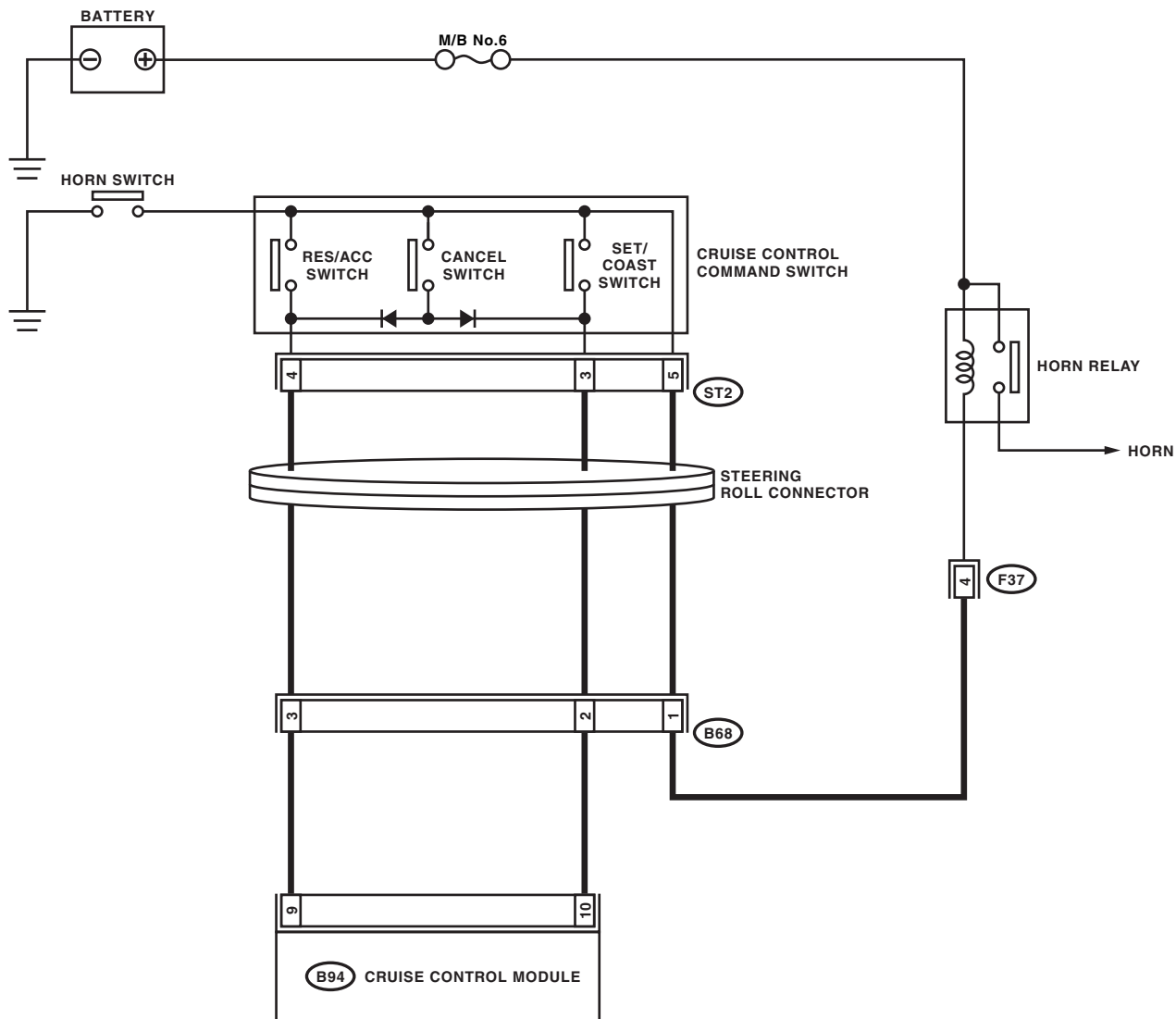
Step	Check	Yes	No
1 CHECK CRUISE SET INDICATOR LIGHT CIRCUIT. 1) Turn the ignition switch to OFF. 2) Disconnect the combination meter harness connector. 3) Measure the voltage between harness connector terminal and chassis ground. Connector & terminal (i11) No. 7 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	• Check the fuse No. 13 (in fuse & relay box). • Check the harness for open or short between combination meter and fuse & relay box.
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 (i10) No. 21 — (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.

F: CHECK CRUISE CONTROL COMMAND SWITCH

TROUBLE SYMPTOM:

Cruise control cannot be set. (Cancelled immediately.)

WIRING DIAGRAM:



Diagnostics with Phenomenon

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

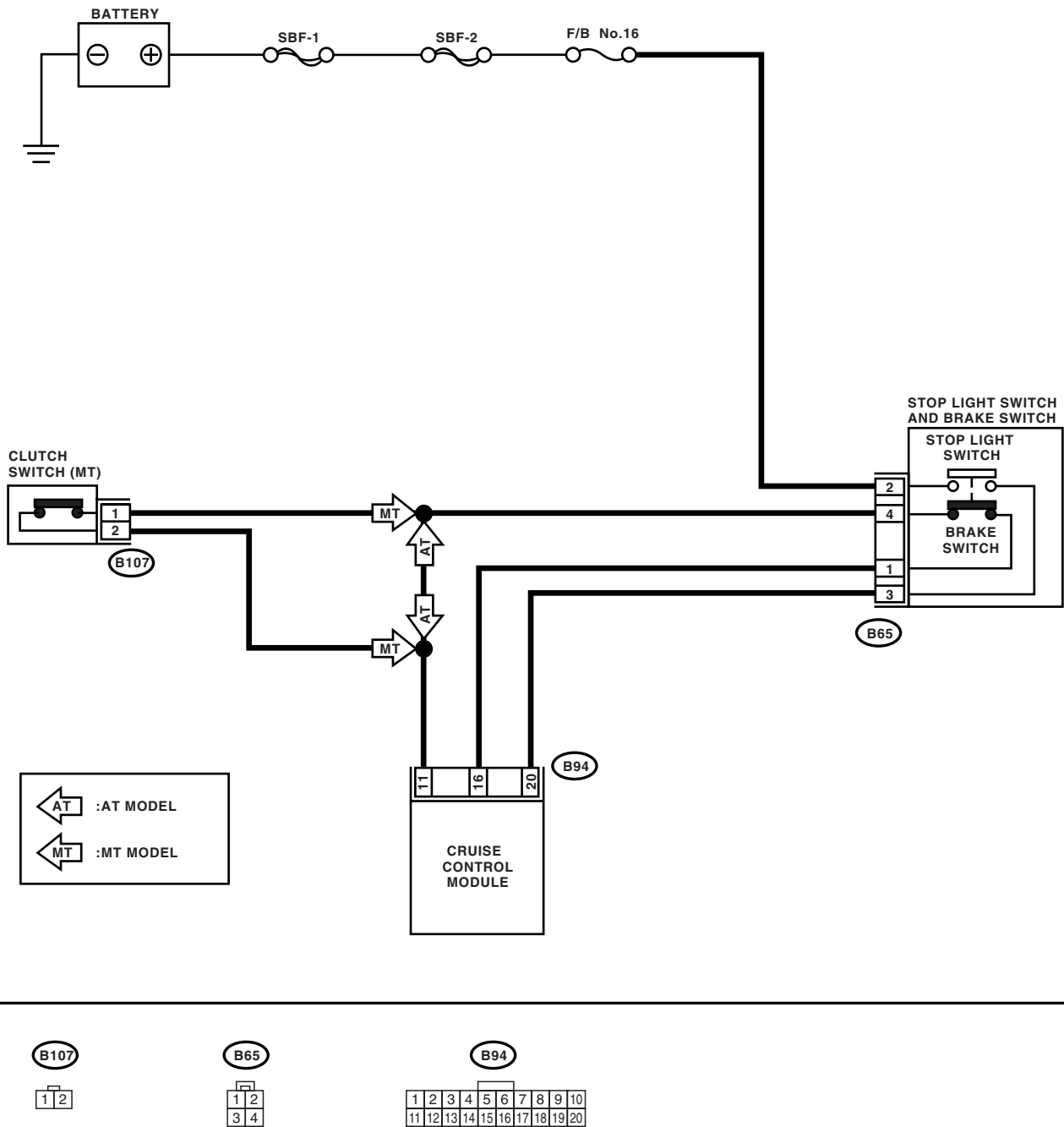
Step	Check	Yes	No
1 CHECK SET/COAST SWITCH CIRCUIT. 1) Turn the ignition switch to OFF. 2) Disconnect the cruise control module harness connector. 3) Measure the voltage between harness connector terminal and chassis ground when SET/COAST switch is pressed and not pressed. Connector & terminal (B94)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

G: CHECK STOP LIGHT AND BRAKE SWITCH

TROUBLE SYMPTOM:

Cruise control cannot be set.

WIRING DIAGRAM:



Diagnostics with Phenomenon

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

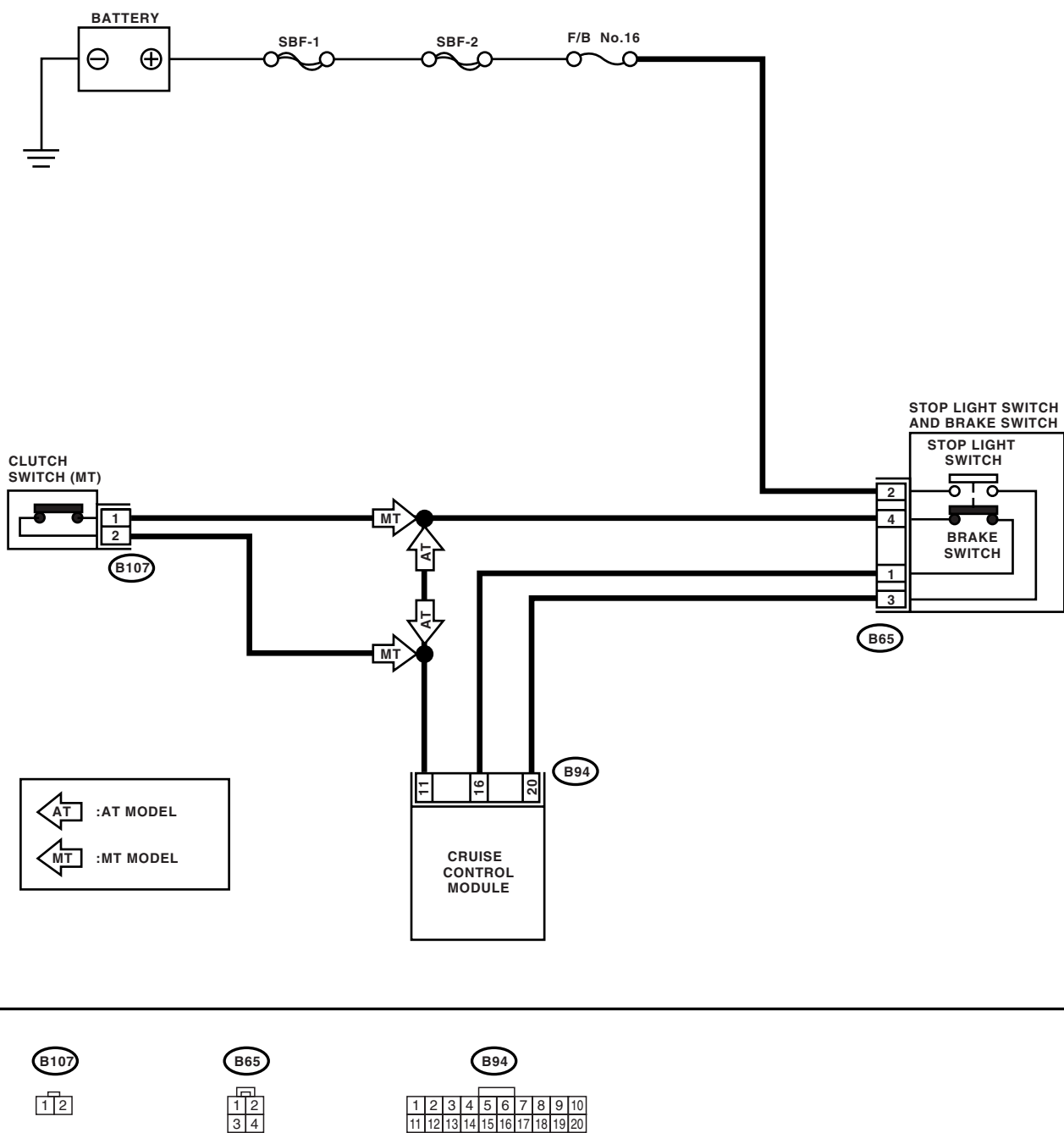
Step	Check	Yes	No
1 CHECK STOP LIGHT AND BRAKE SWITCH CIRCUIT. 1) Turn the ignition switch to OFF. 2) Disconnect the stop light and brake switch harness connector. 3) Turn the ignition switch to ON. 4) Turn the cruise control main switch to ON. 5) Measure the voltage between harness connector terminal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

H: CHECK CLUTCH SWITCH (MT MODEL)

TROUBLE SYMPTOM:

Cruise control cannot be set.

WIRING DIAGRAM:



Diagnostics with Phenomenon

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

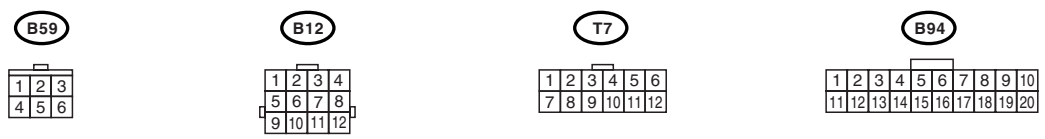
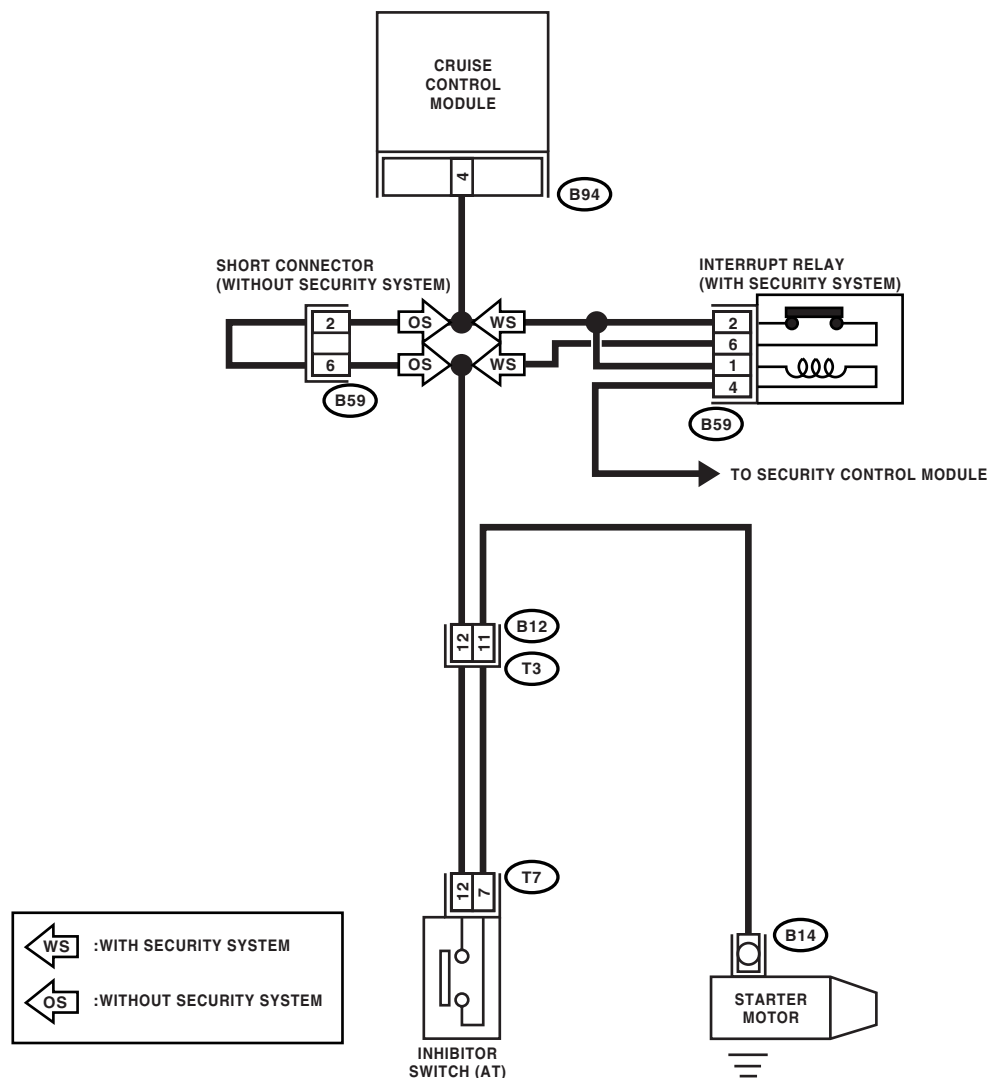
Step	Check	Yes	No
1 CHECK CLUTCH SWITCH CIRCUIT. 1) Turn the ignition switch to OFF. 2) Disconnect the clutch switch harness connector. 3) Turn the ignition switch to ON. 4) Turn the cruise control main switch to ON. 5) Measure the voltage between harness connector terminal and chassis ground. Connector & terminal (B107) No. 2 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	Check the harness for open or short between clutch switch and cruise control module.
2 CHECK CLUTCH SWITCH CIRCUIT. 1) Turn the cruise control main switch and ignition switch to OFF. 2) Disconnect the stop light and brake switch harness connector. 3) Measure the resistance between clutch switch harness connector terminal and stop light and brake switch harness connector terminal. Connector & terminal (B107) No. 1 — (B65) No. 4:	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.

I: CHECK INHIBITOR SWITCH (AT MODEL)

TROUBLE SYMPTOM:

Cruise control cannot be set.

WIRING DIAGRAM:



Diagnostics with Phenomenon

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 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) Turn the cruise control main switch to ON. 5) 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 2.	Check the harness for open or short between inhibitor switch and cruise control module.
2 CHECK INHIBITOR SWITCH CIRCUIT. 1) Turn the cruise control main switch and 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 3.	Repair the harness.
3 CHECK INHIBITOR SWITCH. Remove and check the inhibitor switch. <Ref. to CC-11, Inhibitor Switch.>	Is the inhibitor switch OK?	Inhibitor switch circuit is OK.	Replace the inhibitor switch.

List of Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

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(diag)-31, DTC 21, 24, 25 AND 2A CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
22	Vehicle speed sensor	Vehicle speed signal changes more than 10 km/h (6 MPH) within 350 ms.	<Ref. to CC(diag)-32, DTC 22 VEHICLE SPEED SENSOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
24	Cruise control module is abnormal.	Two vehicle speed values stored in cruise control module memory are not the same.	<Ref. to CC(diag)-31, DTC 21, 24, 25 AND 2A CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
25	Cruise control module is abnormal.	Two output values stored in cruise control module memory are not the same.	<Ref. to CC(diag)-31, DTC 21, 24, 25 AND 2A CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
28	Wiring harness opened.	Open wiring harness circuit is detected via control module relay when main switch is ON.	<Ref. to CC(diag)-34, DTC 28 WIRING HARNESS OPENED, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
35	Motor drive system is abnormal.	- Motor output circuit is open or shorted. - Motor drive circuit is open or shorted.	<Ref. to CC(diag)-35, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
36	Trouble of motor turning speed	Motor turning speed is low.	<Ref. to CC(diag)-35, DTC 35 AND 36 ACTUATOR MOTOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
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(diag)-37, DTC 37 ACTUATOR MOTOR CLUTCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

List of Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

DTC	Item	Contents of diagnosis	Reference
38	Motor drive shaft does not engage properly.	Motor drive gear engagement is not properly adjusted.	<Ref. to CC(diag)-39, DTC 38 MOTOR DRIVE SHAFT DOES NOT ENGAGE PROPERLY, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
39	Motor is overloaded.	Current flows through motor more frequently than under normal conditions.	<Ref. to CC(diag)-39, DTC 39 MOTOR IS OVERLOADED, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
2A	Cruise control module is abnormal.	Cruise control module self-diagnosis function senses abnormality.	<Ref. to CC(diag)-31, DTC 21, 24, 25 AND 2A CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

8. Diagnostic Procedure with Diagnostic Trouble Code (DTC)

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:

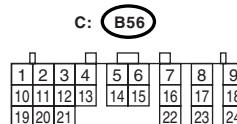
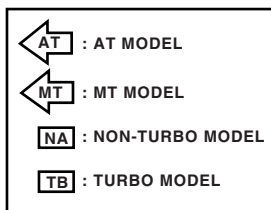
Check input/output signal and vehicle speed signal with select monitor. When signals are in good condition, failure is in cruise control module. (Check the power supply and ground conditions of cruise control module.)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

DIAGNOSIS:

TROUBLE SYMPTOM:

WIRING DIAGRAM:



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

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 (-):	Go to step 3.	Check the harness for open or short between fuse 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 cruise control module harness connector terminal. Connector & terminal (B17) No. 1 — (B94) No. 19:	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:	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 rigid racks. 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 cruise control module harness connector terminal and chassis ground. Connector & terminal (B94) No. 19 (+) — Chassis ground (-):	Is the voltage less than 1 V ←→ more than 5 V? Replace the cruise control module. <Ref. to CC-7, Cruise Control Unit.>	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 cruise control module. 3) Measure the resistance between cruise control module harness connector terminal and transmission control module harness connector terminal. Connector & terminal (B94) No. 19 — (B56) No. 17:	Is the resistance less than 10 Ω? Go to step 7.	Repair the harness.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

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 rigid racks. 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. 17 (+) — Chassis ground (-):	Is the voltage less than 1 V ←→ more than 5 V?	Replace the cruise control module. <Ref. to CC-7, Cruise Control Unit.>	Replace the transmission control module. <Ref. to 4AT-76, Transmission Control Module (TCM).>

C: DTC 28 WIRING HARNESS OPENED

Step	Check	Yes	No
1 CHECK BATTERY. Measure the battery specific gravity of electrolyte.	Is the battery specific gravity more than 1.260?	Go to step 2.	Charge or replace the 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 anything unusual about the appearance of main fuse, fuse, harness, connector and grounding?	Repair or replace the faulty parts.	End of inspection.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

D: DTC 35 AND 36 ACTUATOR MOTOR

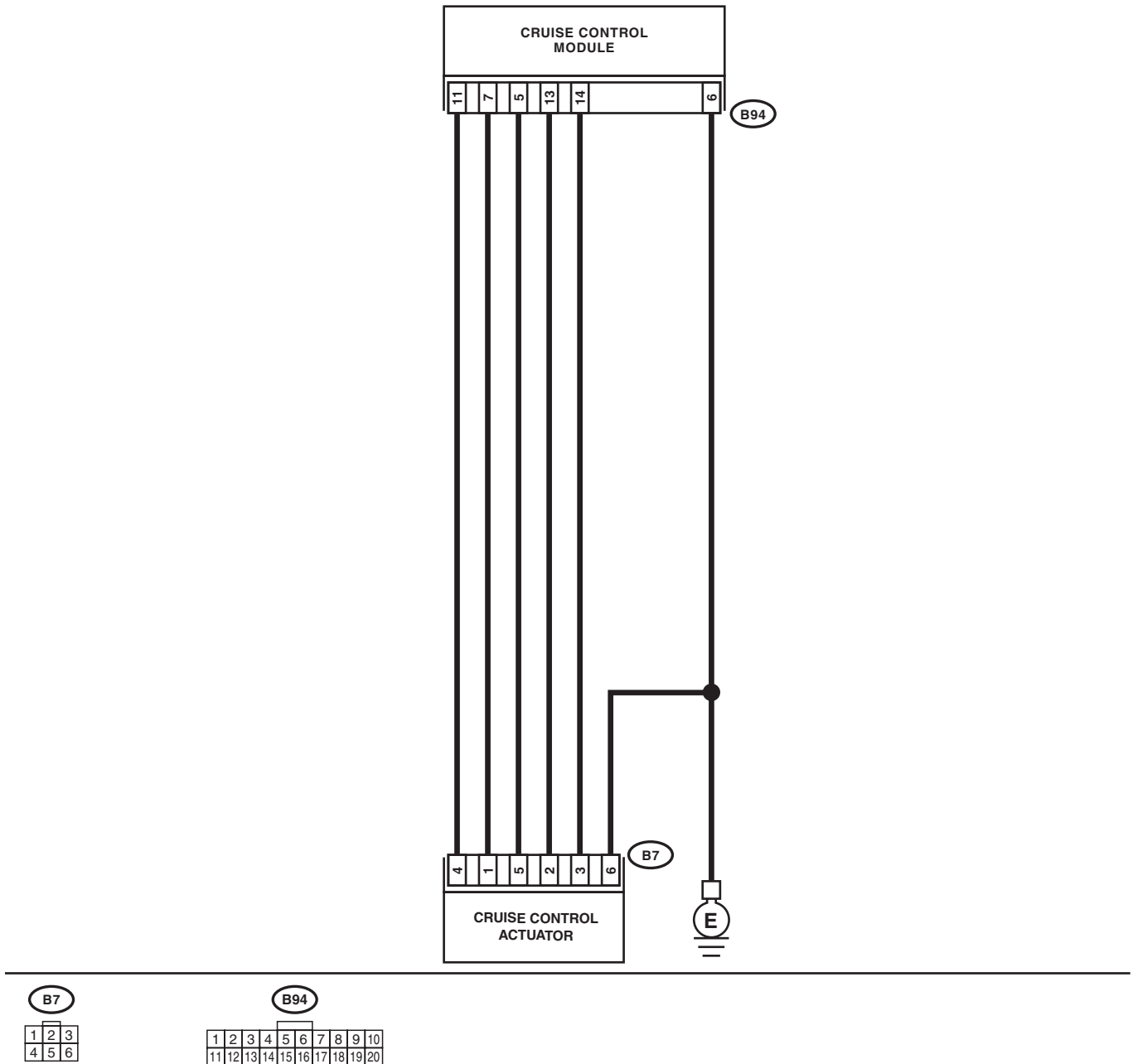
DIAGNOSIS:

Open or poor contact of cruise control actuator motor.

TROUBLE SYMPTOM:

Cruise control cannot be set. (Cancelled immediately.)

WIRING DIAGRAM:



CC-00177

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

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

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

E: DTC 37 ACTUATOR MOTOR CLUTCH

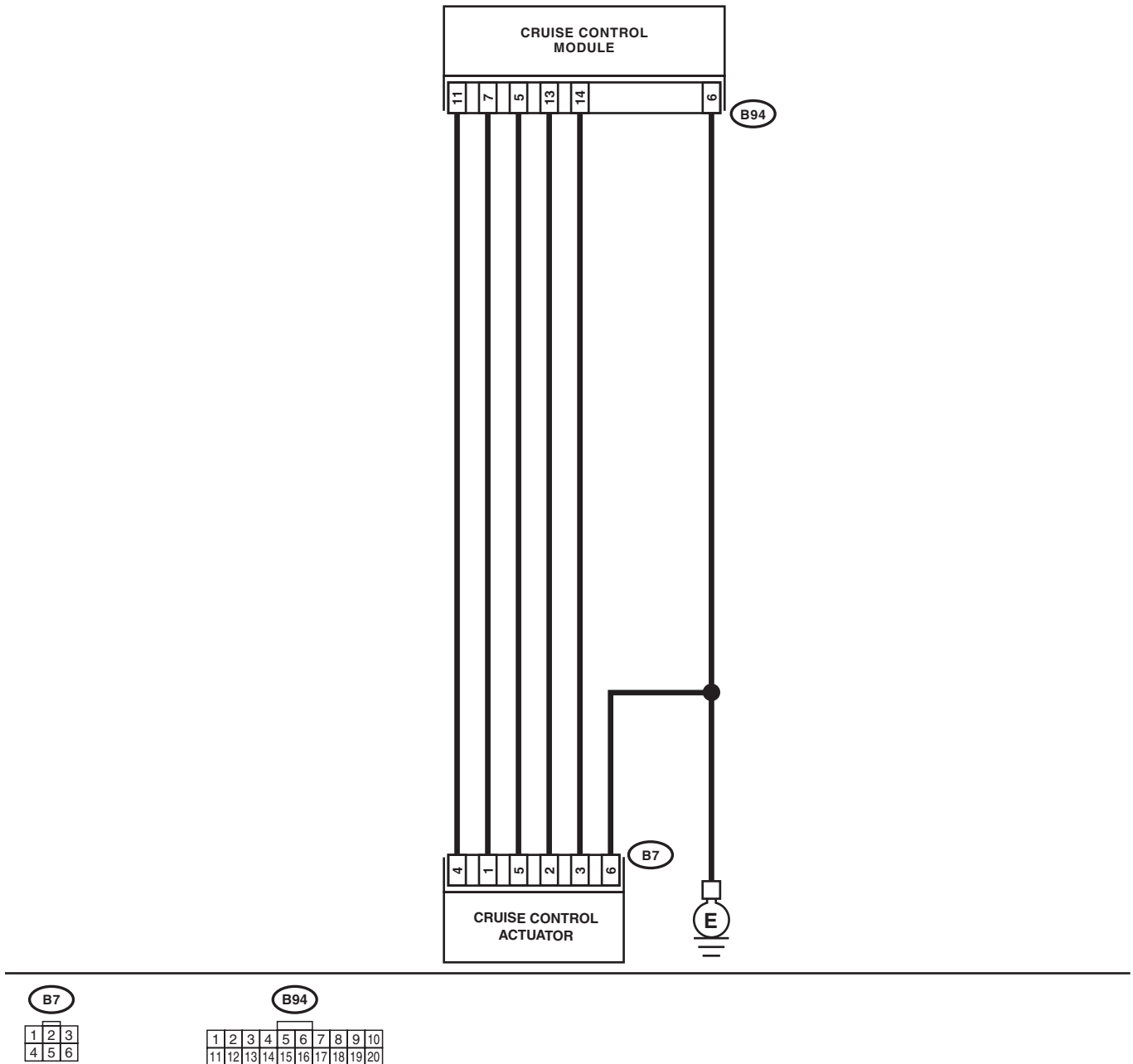
DIAGNOSIS:

Open or poor contact of cruise control actuator motor clutch.

TROUBLE SYMPTOM:

Cruise control cannot be set. (Cancelled immediately.)

WIRING DIAGRAM:



CC-00177

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK POWER SUPPLY. 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from cruise control actuator. 3) Turn the ignition switch to ON. 4) Turn the cruise control main switch to ON. 5) Measure the voltage between cruise control actuator harness connector terminal and chassis ground. Terminals (B7) No. 4 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	Check the harness for open or short between cruise control module and cruise control actuator.
2 CHECK GROUND CIRCUIT OF ACTUATOR. 1) Turn the ignition switch and cruise control main switch to OFF. 2) Measure the resistance between cruise control actuator harness connector terminal and chassis ground. Terminals (B7) No. 6 — Chassis ground:	Is the resistance less than 10 Ω ?	Go to step 3.	Repair the harness.
3 MEASURE RESISTANCE OF ACTUATOR CLUTCH. Measure the resistance of cruise control actuator clutch. Terminals No. 3 — No. 6:	Is the resistance approximately 39 Ω ?	Go to step 4.	Replace the cruise control actuator. <Ref. to CC-6, Actuator.>
4 CHECK HARNESS BETWEEN ACTUATOR AND CRUISE CONTROL MODULE. 1) Disconnect the harness connector from cruise control module. 2) Measure the 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 resistance less than 10 Ω ?	Go to step 5.	Repair the harness.
5 CHECK HARNESS BETWEEN ACTUATOR AND CRUISE CONTROL MODULE. Measure the 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 resistance less than 10 Ω ?	Replace the cruise control module. <Ref. to CC-7, Cruise Control Unit.>	Repair the harness.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

F: DTC 38 MOTOR DRIVE SHAFT DOES NOT ENGAGE PROPERLY

Step	Check	Yes	No
1 CHECK ACTUATOR MOTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from cruise control actuator. 3) Remove the cruise control actuator from mounting bracket. 4) Pull the cable by hand to check for looseness or status of inner gear engagement.	Are foreign particles caught in the inner gear or does inner gear engage and disengage improperly?	Replace the cruise control actuator. <Ref. to CC-6, Actuator.>	Check the cruise control cable adjustment. <Ref. to CC(diag)-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 the 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. Connector & terminal (B7) No. 4 (+) — Chassis ground (-):	Is the current more than 10 A?	Replace the cruise control module. <Ref. to CC-7, Cruise Control Unit.>	Check the power supply circuit. <Ref. to CC(diag)-13, CHECK POWER SUPPLY, Diagnostics with Phenomenon.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

**CRUISE CONTROL SYSTEM
(DIAGNOSTICS)
(H4SO AND STi)**

Basic Diagnostic Procedure

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

1. Basic Diagnostic Procedure

A: PROCEDURE

NOTE:

This section is specified for H4SO model and STi 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 phenomenon 1. <Ref. to CC(ETC)(diag)-10, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
4 CHECK CRUISE CONTROL SET OPERATION. Check the cruise control set operation.	Can the cruise control be set while driving at 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)(diag)-15, List of Diagnostic Trouble Code (DTC).>	Go to phenomenon 2. <Ref. to CC(ETC)(diag)-10, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
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 phenomenon 3. <Ref. to CC(ETC)(diag)-10, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
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 phenomenon 4. <Ref. to CC(ETC)(diag)-10, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>
8 CHECK RES/ACC OPERATION. Check the RES/ACC switch operation.	Does the vehicle speed increase or return to set speed after RES/ACC switch has been pressed?	Go to step 9.	Go to phenomenon 5. <Ref. to CC(ETC)(diag)-10, DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.>

Basic Diagnostic Procedure

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

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

General Description

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

2. General Description

A: CAUTION

1. SUPPLEMENTAL RESTRAINT SYSTEM “AIRBAG”

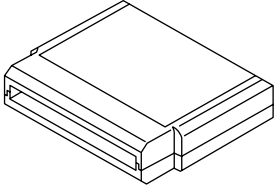
Airbag system wiring harness is routed near the cruise control switch.

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 switch.

B: PREPARATION TOOL

1. SPECIAL TOOL

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

2. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	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:

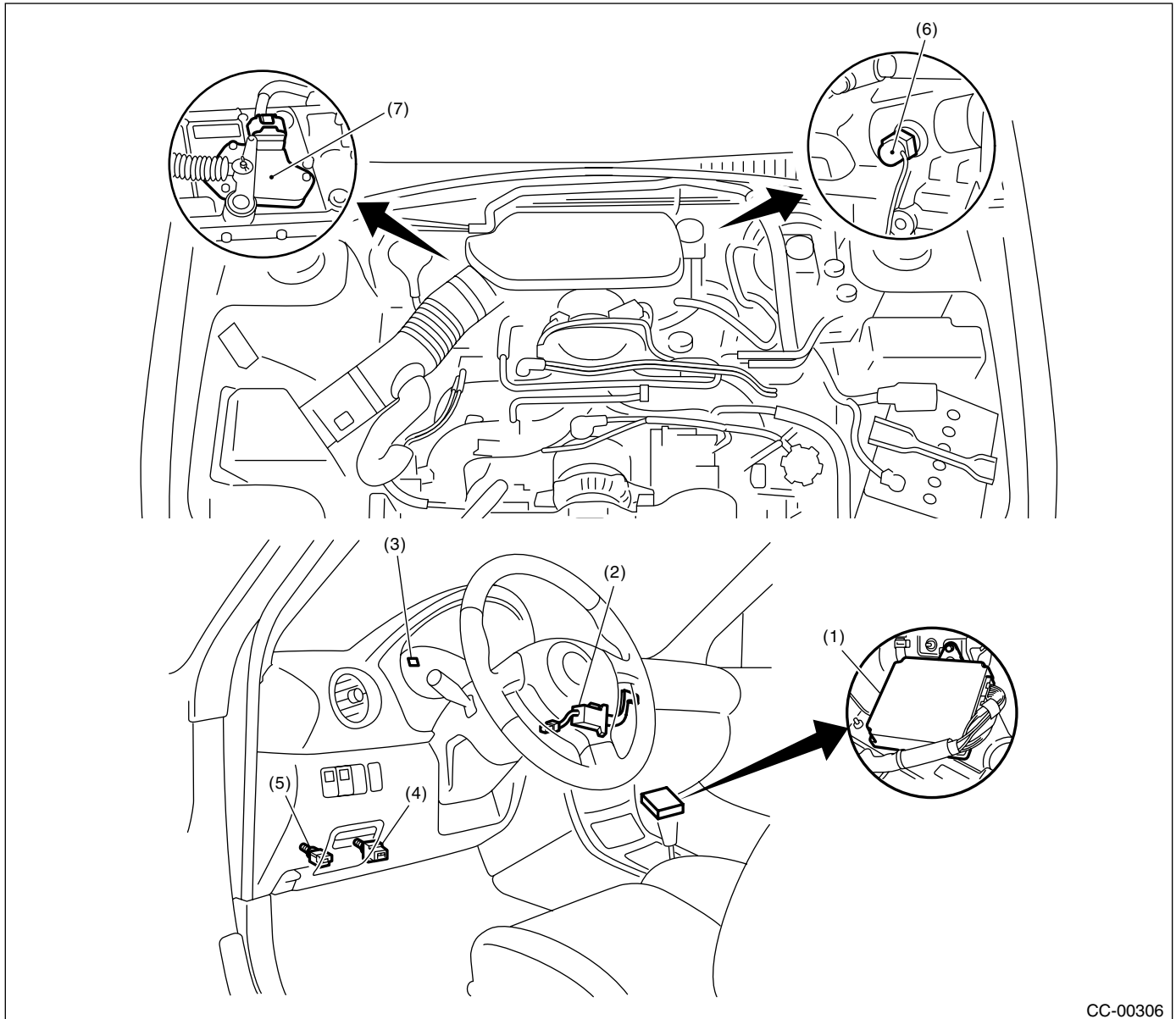
Above 1.260

Electrical Component Location

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

3. Electrical Component Location

A: LOCATION



CC-00306

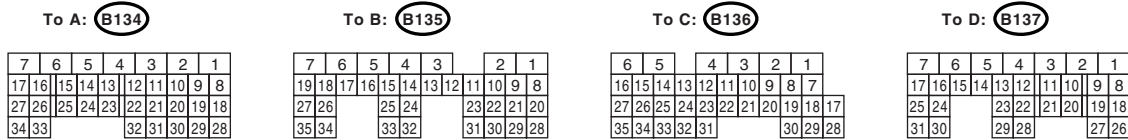
(1) Engine control module (ECM)	(3) Cruise indicator light and cruise set indicator light	(5) Clutch switch (MT model)
(2) Cruise control command switch (main switch built-in)	(4) Stop light and brake switch	(6) Neutral position switch (MT model)
		(7) Inhibitor switch (AT model)

Engine Control Module (ECM) I/O Signal

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

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

A: ELECTRICAL SPECIFICATION



CC-00197

Content		Terminal No.	Measuring condition and I/O signal (ignition switch ON and engine idling Except cruise set light)
Clutch switch		Non-turbo model: C10 STi model: 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.
Vehicle speed signal		Non-turbo model: B27 STi model: B26	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 cruise control command switch is turned to SET/COAST position. "0" volt is present when the cruise control command switch is released.
RES/ACC switch		Non-turbo model: C1 STi model: C10	- Battery voltage is present when the cruise control command switch is turned to RES/ACC position. "0" volt is present when the cruise control 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.
Cruise control main switch		C7	- Battery voltage is present while the cruise control main switch is depressed or is turned to ON. "0" volt is present when the cruise control main switch is turned to OFF.
Ground	GND (CONTROL 1) GND (CONTROL 2)	D2 D1	—
Ignition switch		Non-turbo model: D15 STi model: D14	- Battery voltage is present with the ignition switch is turned to ON. "0" volt is present when the ignition switch is turned to OFF.

Engine Control Module (ECM) I/O Signal

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

Content	Terminal No.	Measuring condition and I/O signal (ignition switch ON and engine idling Except cruise set light)
Neutral position switch (MT model)	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.
Neutral signal (AT model)	D9	• "Approx. 5 V" voltage (4AT model) or battery voltage (5AT model) is present when the shift lever is set in any position except "P" or "N". • "0 V" voltage is present when the shift lever is set in "P" or "N" position.

B: WIRING DIAGRAM

<Ref. to WI-101, WIRING DIAGRAM, 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 control 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.

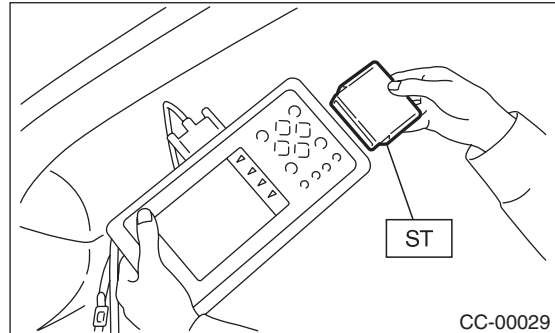
2. CRUISE CANCEL CONDITIONS DIAGNOSIS

1) Prepare the Subaru Select Monitor kit.



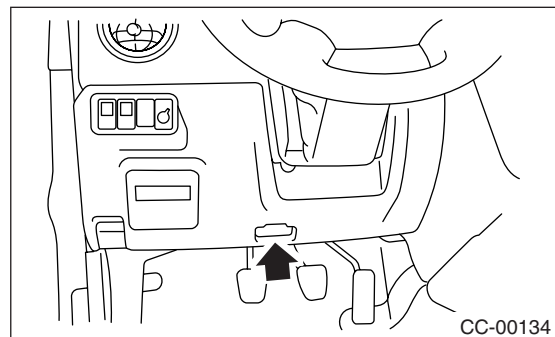
2) Connect the diagnosis cable to Subaru Select Monitor.

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



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

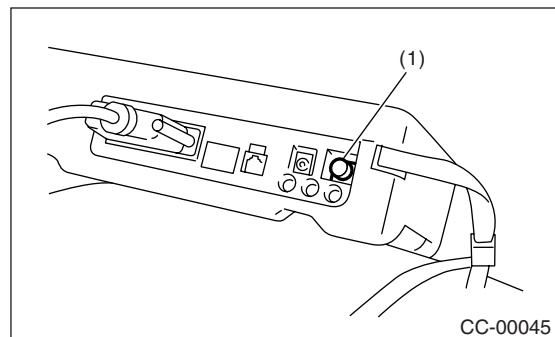
(1) Data link connector is located in the lower portion of the instrument panel (on the driver's side).



(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.



(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 the display after {Cancel Code(s) Display} is selected on the Engine Diagnosis display screen and [YES] key is pressed.

CAUTION:

- **When performing diagnostics, observe the legal speed of the road.**
- **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 information of engine type has been displayed.
- 7) On the Cruise Control Diagnosis display screen, select the {Current Data Display & Save} and press [YES] key.
- 8) Make sure that normal indication is displayed when 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 "RES/ACC" switch.
 - Turn ON the "CANCEL" switch. (The "SET/COAST" and "RES/ACC" switch are turned ON at same time.)
 - Depress/release the clutch pedal. (MT model)
 - Set the shift lever to any position other than neutral. (MT model)
 - Place the select lever in any position other than "P" or "N". (AT model)

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)(diag)-15, List of Diagnostic Trouble Code (DTC).>

Diagnostics with Phenomenon

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

6. Diagnostics with Phenomenon

A: DIAGNOSTIC PROCEDURE WITH PHENOMENON

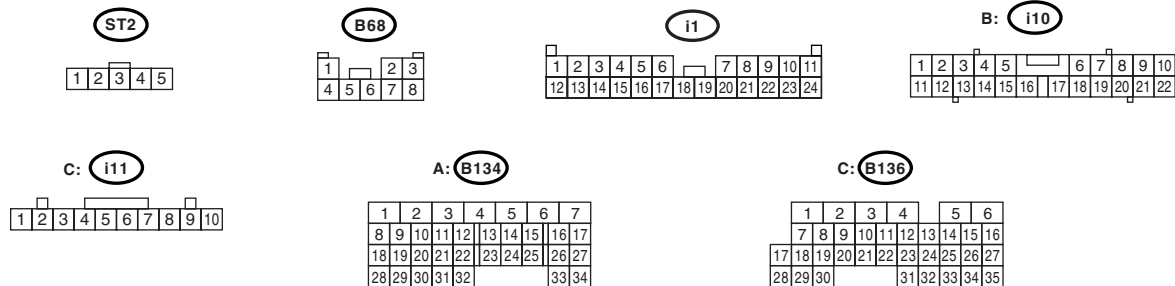
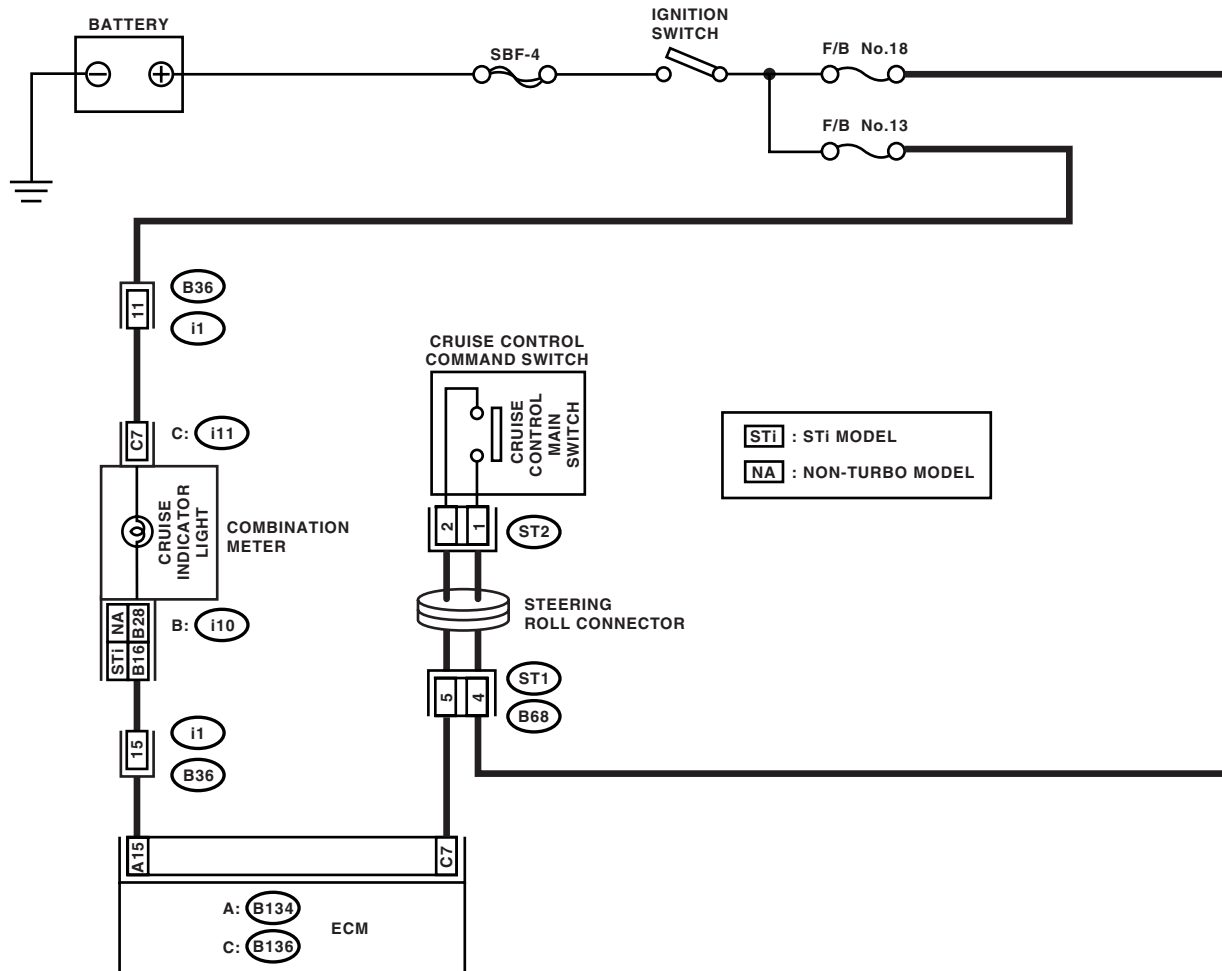
Phenomenon		Checking item	Reference
1	Cruise control main switch is not turned to ON. (Cruise indicator light does not illuminate)	(1) Check the cruise indicator light.	<Ref. to CC(ETC)(diag)-11, CHECK CRUISE INDICATOR LIGHT, Diagnostics with Phenomenon.>
		(2) Check the cruise control command switch.	<Ref. to CC(ETC)(diag)-18, DTC 11, 15, 21 AND 24 CRUISE CONTROL COMMAND SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
2	Cruise control cannot be set.	(1) Check the cruise control command switch	<Ref. to CC(ETC)(diag)-18, DTC 11, 15, 21 AND 24 CRUISE CONTROL COMMAND SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(2) Check the stop light and brake switch.	<Ref. to CC(ETC)(diag)-21, DTC 12 AND 25 STOP LIGHT SWITCH AND BRAKE SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(3) Check the clutch switch. (MT model)	<Ref. to CC(ETC)(diag)-23, DTC 13 CLUTCH SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(4) Check the neutral position switch.	<Ref. to CC(ETC)(diag)-25, DTC 14 NEUTRAL POSITION SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
		(5) Check the vehicle speed sensor. (MT model)	<Ref. to CC(ETC)(diag)-29, DTC 22 AND 32 VEHICLE SPEED SENSOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
3	Cruise set indicator light does not illuminate.	Check the cruise set indicator light.	<Ref. to CC(ETC)(diag)-13, CHECK CRUISE SET INDICATOR LIGHT, Diagnostics with Phenomenon.>
4	Vehicle speed is not held within set speed ± 3 km/h (± 2 MPH).	Check the vehicle speed sensor.	<Ref. to CC(ETC)(diag)-29, DTC 22 AND 32 VEHICLE SPEED SENSOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
5	Vehicle speed does not increase or does not return to set speed after RES/ACC switch has been pressed.	Check the RES/ACC switch.	<Ref. to CC(ETC)(diag)-18, DTC 11, 15, 21 AND 24 CRUISE CONTROL COMMAND SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
6	Vehicle speed does not decrease after SET/COAST switch has been pressed.	Check the SET/COAST switch.	<Ref. to CC(ETC)(diag)-18, DTC 11, 15, 21 AND 24 CRUISE CONTROL COMMAND SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
7	Cruise control is not released after CANCEL switch has been pressed.	Check the CANCEL switch.	<Ref. to CC(ETC)(diag)-18, DTC 11, 15, 21 AND 24 CRUISE CONTROL COMMAND SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
8	Cruise control is not released after the brake pedal has been depressed.	Check the stop light and brake switch.	<Ref. to CC(ETC)(diag)-21, DTC 12 AND 25 STOP LIGHT SWITCH AND BRAKE SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
9	Cruise control is not released after the clutch pedal has been depressed. (MT model)	Check the clutch switch.	<Ref. to CC(ETC)(diag)-23, DTC 13 CLUTCH SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
10	Cruise control is not released after shifting to neutral position.	Check the neutral position switch.	<Ref. to CC(ETC)(diag)-25, DTC 14 NEUTRAL POSITION SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

B: CHECK CRUISE INDICATOR LIGHT

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



Diagnostics with Phenomenon

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

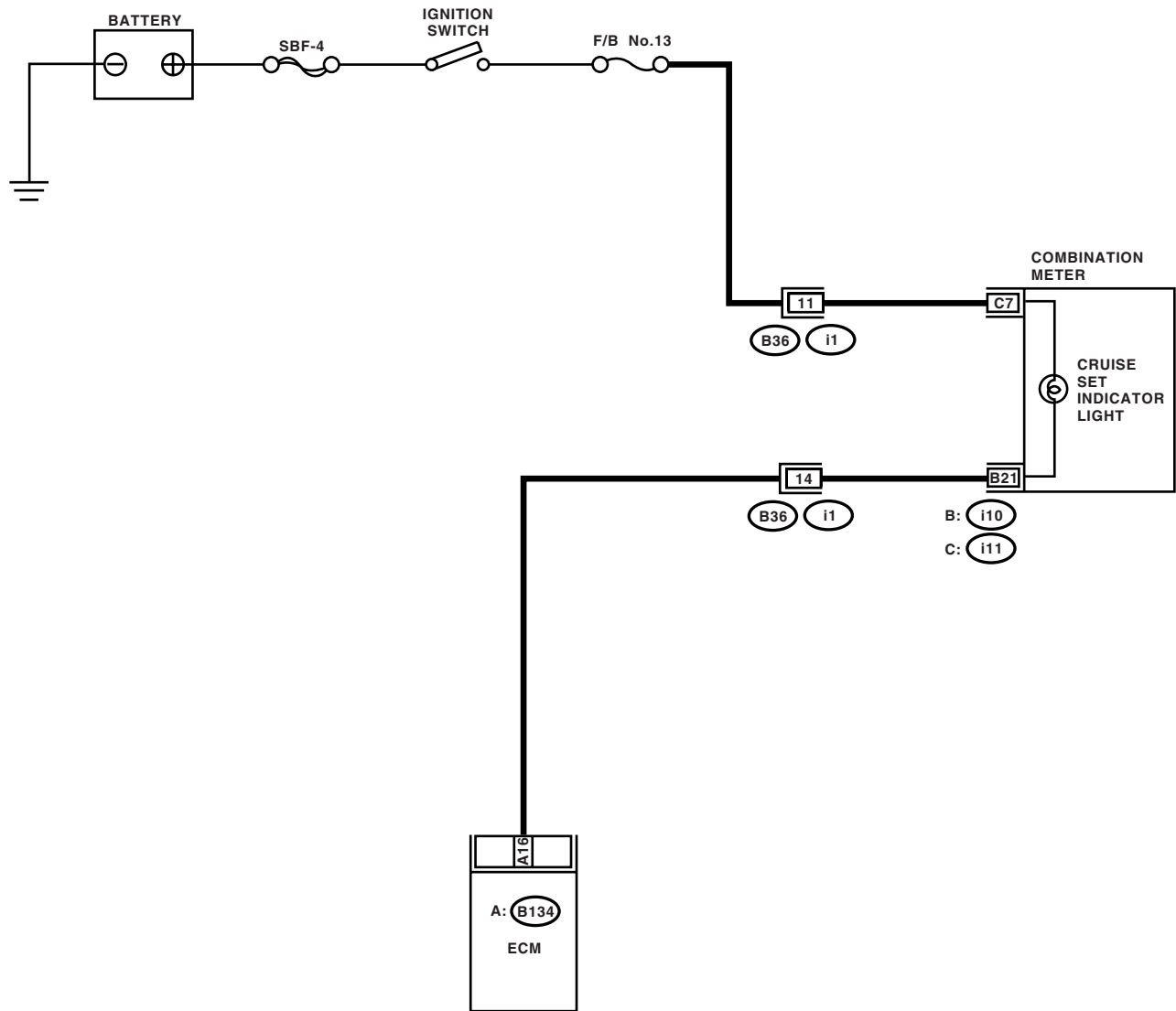
Step	Check	Yes	No
1 CHECK CRUISE INDICATOR LIGHT CIRCUIT. 1) Turn the ignition switch to OFF. 2) Disconnect the combination meter harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. Connector & terminal (i11) No. 7 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	- Check the fuse No. 5 (in fuse & relay box). - Check the harness for open or short between combination meter 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 combination meter harness connector terminal. Connector & terminal Non-turbo model: (B134) No. 15 — (i10) No. 28: STi model: (B134) No. 15 — (i10) No. 16:	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 wire. Connector & terminal (B134) No. 15 — Chassis ground:	Does the cruise indicator light illuminate?	Check the poor contact of ECM connector.	Replace the meter main assembly.

C: CHECK CRUISE SET INDICATOR LIGHT

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



A: B134

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	32	33	34	

i1

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	32	33
34										

B: i10

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22								

C: i11

1	2	3	4	5	6	7	8	9	10

Diagnostics with Phenomenon

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

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 (i11) No. 7 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	• Check the fuse No. 5 (in fuse & relay box). • Check the harness for open or short between combination meter and fuse & relay box.
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 (i10) No. 21 — (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 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.

List of Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

7. List of Diagnostic Trouble Code (DTC)

A: LIST

DTC	Item	Contents of diagnosis	Reference
11	Cruise control main switch	Cruise control is released after the cruise control main switch of cruise control switch is turned to OFF.	This DTC is indicated without operating the cruise control main switch. <Ref. to CC(ETC)(diag)-18, DTC 11, 15, 21 AND 24 CRUISE CONTROL COMMAND SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
12	Stop light 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)(diag)-21, DTC 12 AND 25 STOP LIGHT SWITCH AND BRAKE SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
13	Clutch switch (MT model)	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)(diag)-23, DTC 13 CLUTCH SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
14	Neutral position switch	Cruise control is released after the neutral position switch is turned to ON.	This DTC is indicated without shifting to neutral position. <Ref. to CC(ETC)(diag)-25, DTC 14 NEUTRAL POSITION SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (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)(diag)-18, DTC 11, 15, 21 AND 24 CRUISE CONTROL COMMAND SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (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)(diag)-27, DTC 16 IGNITION SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

List of Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

DTC	Item	Contents of diagnosis	Reference
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 cruise control main switch. <Ref. to CC(ETC)(diag)-18, DTC 11, 15, 21 AND 24 CRUISE CONTROL COMMAND SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
22	Vehicle speed variation is abnormal.	Abnormality of vehicle speed variation is detected.	<Ref. to CC(ETC)(diag)-29, DTC 22 AND 32 VEHICLE SPEED SENSOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
23	Engine-related sensor is abnormal.	Abnormality related to engine is detected.	H4SO model: <Ref. to EN(H4SO)(diag)-2, Basic Diagnostic Procedure.> STi model: <Ref. to EN(STi)(diag)-2, Basic Diagnostic Procedure.>
24	Cruise control-related switch is abnormal.	Abnormality of cruise control 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)(diag)-18, DTC 11, 15, 21 AND 24 CRUISE CONTROL COMMAND SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
25	Brake switch input circuit is abnormal.	Abnormality of brake switch input circuit in ECM is detected.	<Ref. to CC(ETC)(diag)-21, DTC 12 AND 25 STOP LIGHT SWITCH AND BRAKE SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (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 - RES 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)(diag)-29, DTC 22 AND 32 VEHICLE SPEED SENSOR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

List of Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

DTC	Item	Contents of diagnosis	Reference
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.

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

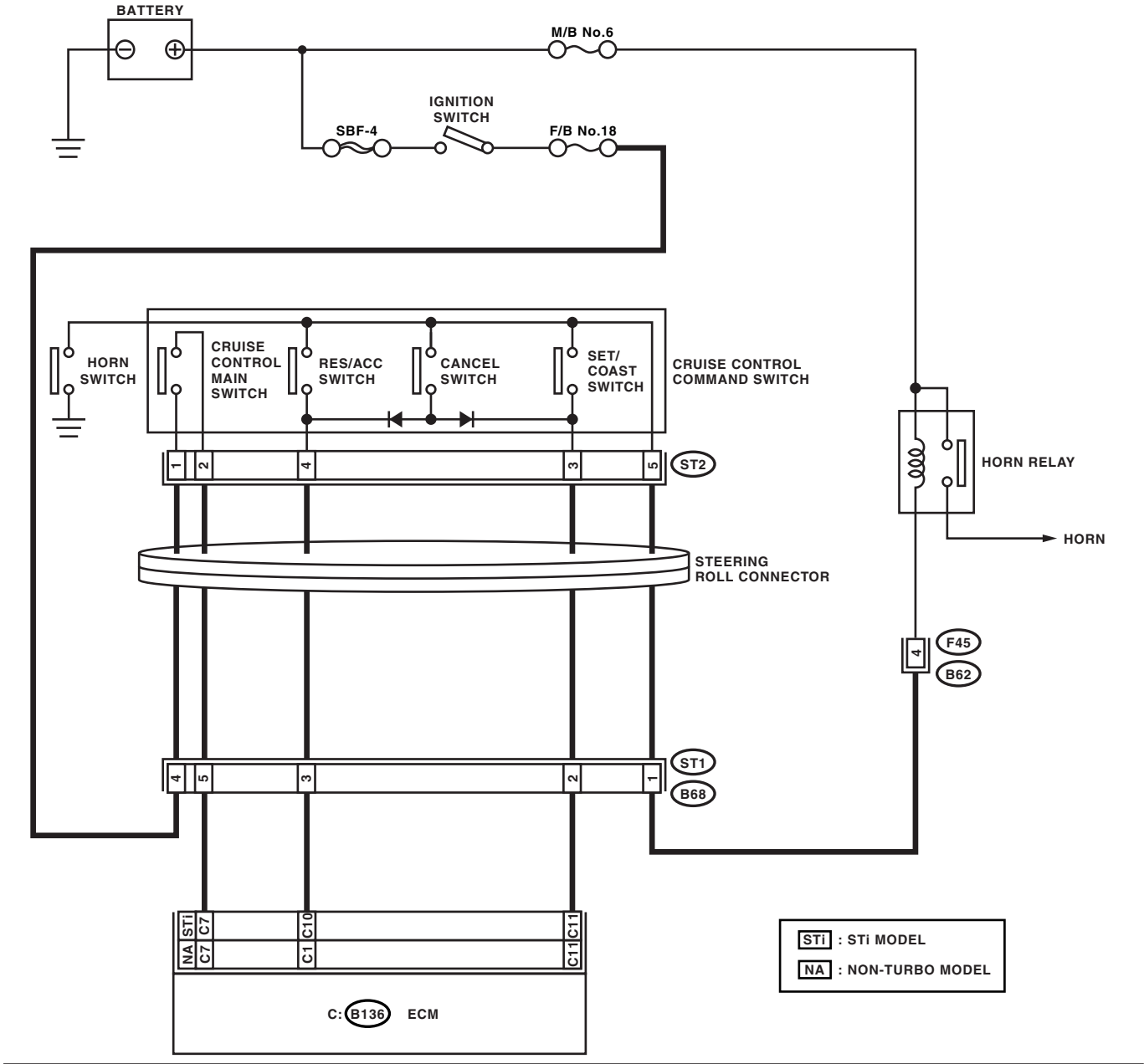
8. Diagnostic Procedure with Diagnostic Trouble Code (DTC)

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

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

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 cruise control main switch is pressed and is not pressed. Connector & terminal (B136) No. 7 (+) — Chassis ground (-):	Is the voltage 0 V when the cruise control main switch is not pressed? Is the voltage more than 10 V when the cruise control 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 command 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 RES/ACC SWITCH CIRCUIT. Measure the voltage between harness connector terminal and chassis ground when RES/ACC switch is pressed and not pressed. Connector & terminal Non-turbo model: (B136) No. 1 (+) — Chassis ground (-): STi model: (B136) No. 10 (+) — Chassis ground (-):	Is the voltage 0 V when RES/ACC switch is not pressed? Is the voltage more than 10 V when RES/ACC 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 Non-turbo model: (B136) No. 1 (+) — Chassis ground (-): (B136) No. 11 (+) — Chassis ground (-): STi model: (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 CRUISE CONTROL 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, HORN RELAY, INSPECTION, Horn System.> - Check the harness for open or short between cruise control command switch and fuse & relay box.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

Step		Check	Yes	No
6	CHECK CRUISE CONTROL COMMAND SWITCH. Remove and check the cruise control 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.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

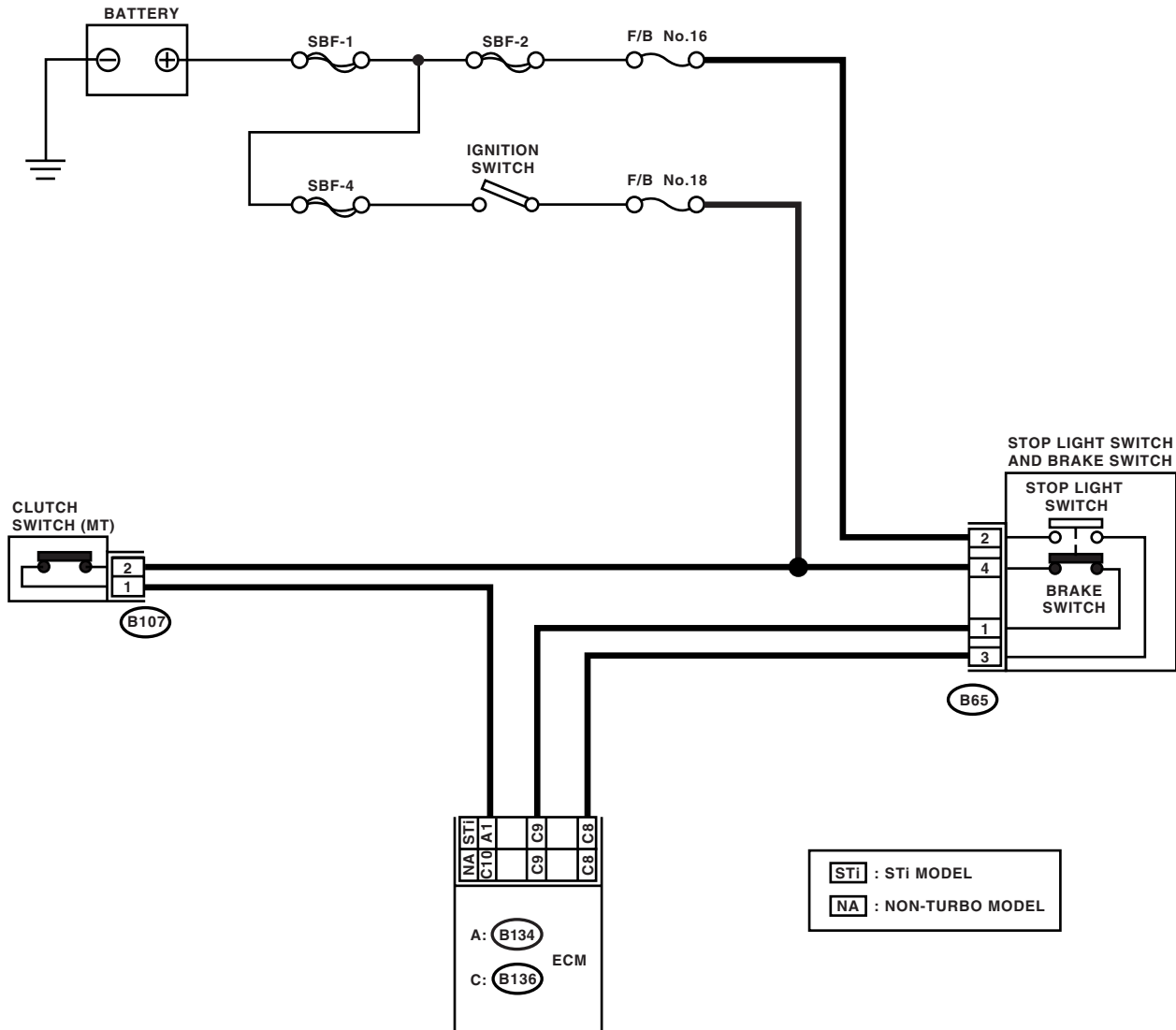
CRUISE CONTROL SYSTEM (DIAGNOSTICS)

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:



B107

1	2

B65

1	2
3	4

A: B134

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	32	33	34	

C: B136

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	32	33	34	35	

CC-00343

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK STOP LIGHT AND BRAKE SWITCH CIRCUIT. 1) Turn the ignition switch to OFF. 2) Disconnect the stop light 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 and brake switch and fuse & relay box.
2 CHECK STOP LIGHT AND BRAKE SWITCH CIRCUIT. Measure the voltage between harness connector terminal and chassis ground. Connector & terminal (B65) No. 4 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 3.	- Check the fuse No. 18 (in fuse & relay box). - Check the harness for open or short between stop light and brake switch and fuse & relay box. - Check the clutch switch and circuit.
3 CHECK STOP LIGHT 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 and brake switch harness connector terminal. Connector & terminal (B136) No. 8 — (B65) No. 3: (B136) No. 9 — (B65) No. 1:	Is the resistance less than 10 Ω ?	Go to step 4.	Repair the harness.
4 CHECK STOP LIGHT AND BRAKE SWITCH. Remove and check the stop light switch and brake switch. <Ref. to CC-9, Stop Light and Brake Switch.>	Are the stop light and brake switch OK?	Stop light and brake switch circuit are OK.	Replace the stop light and brake switch.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

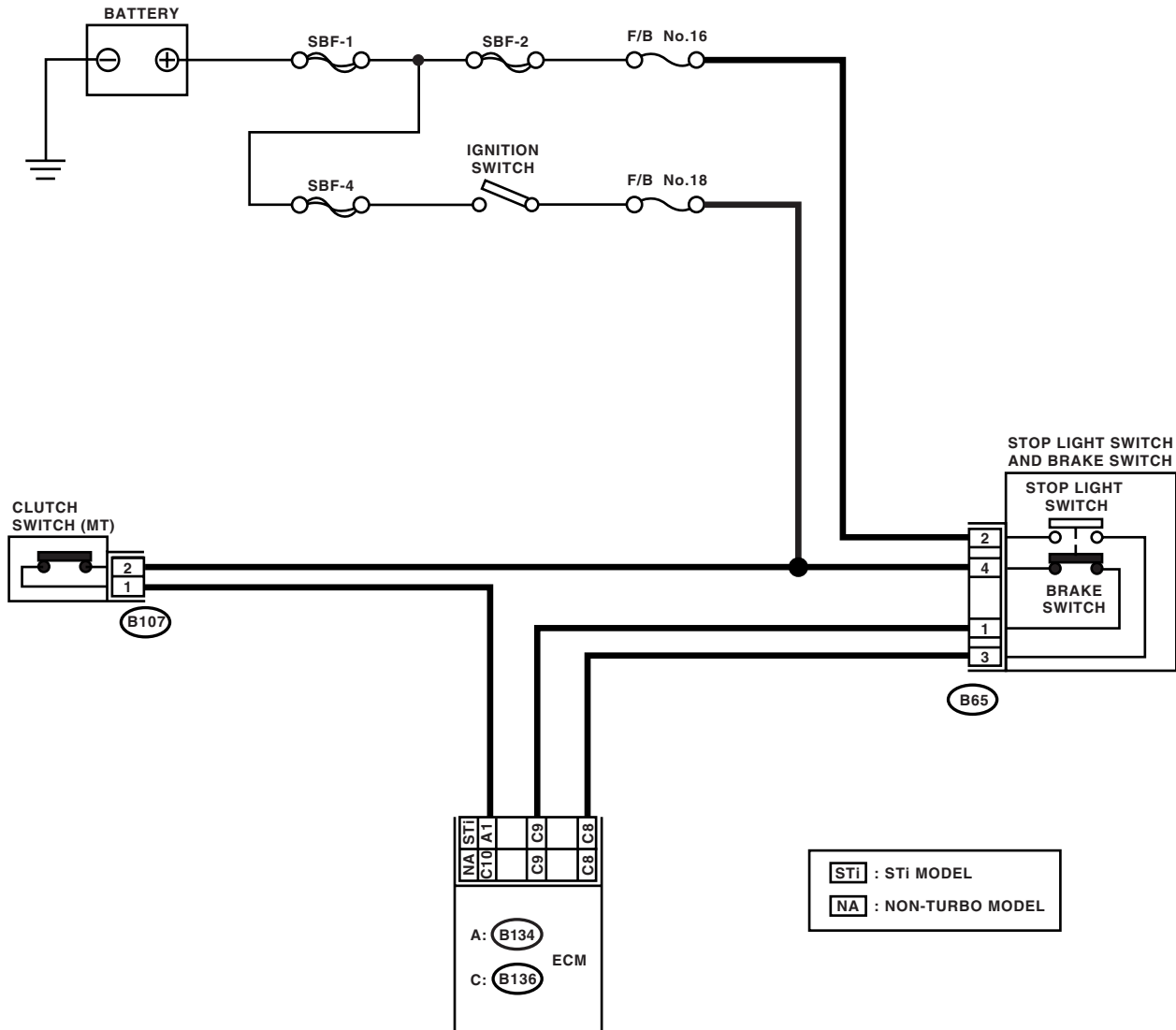
CRUISE CONTROL SYSTEM (DIAGNOSTICS)

C: DTC 13 CLUTCH SWITCH

TROUBLE SYMPTOM:

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

WIRING DIAGRAM:



B107



B65



A: B134

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	32	33	34	

C: B136

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	32	33	34	35	

CC-00343

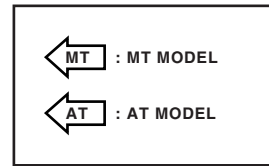
Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

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. 18 (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 Non-turbo model: (B107) No. 1 — (B136) No. 10: STi model: (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.

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

WIRING DIAGRAM:



CRUISE CONTROL SYSTEM (DIAGNOSTICS)

CC(ETC)(diag)-26

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

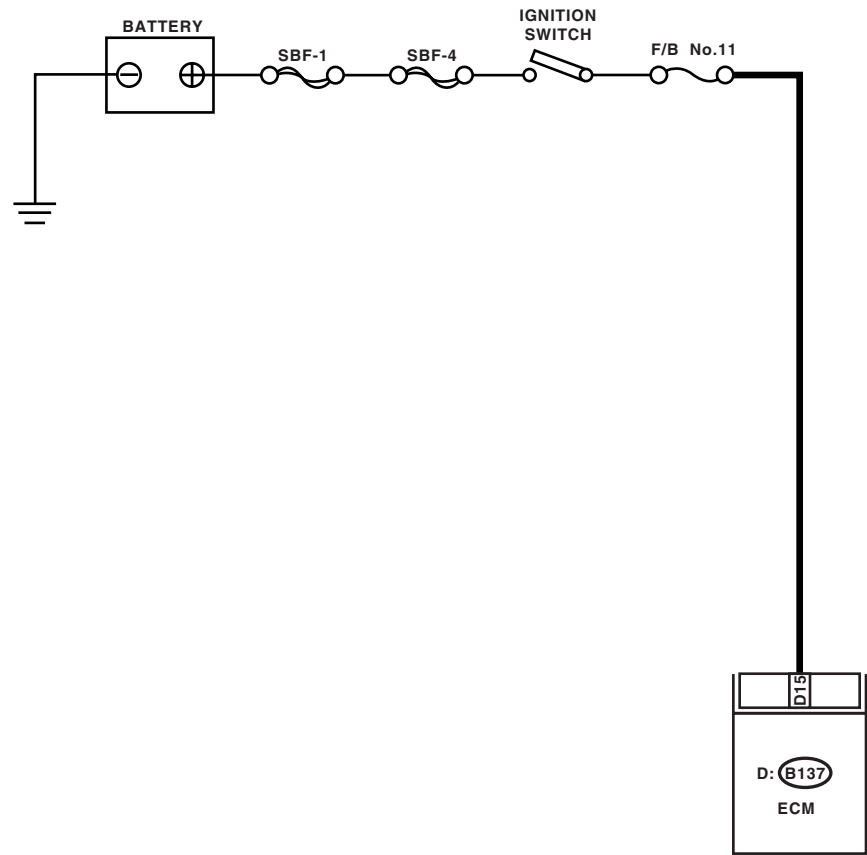
CRUISE CONTROL SYSTEM (DIAGNOSTICS)

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				

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

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.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

F: DTC 22 AND 32 VEHICLE SPEED SENSOR

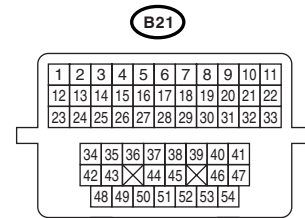
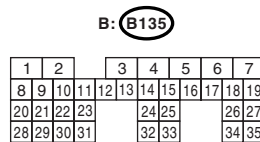
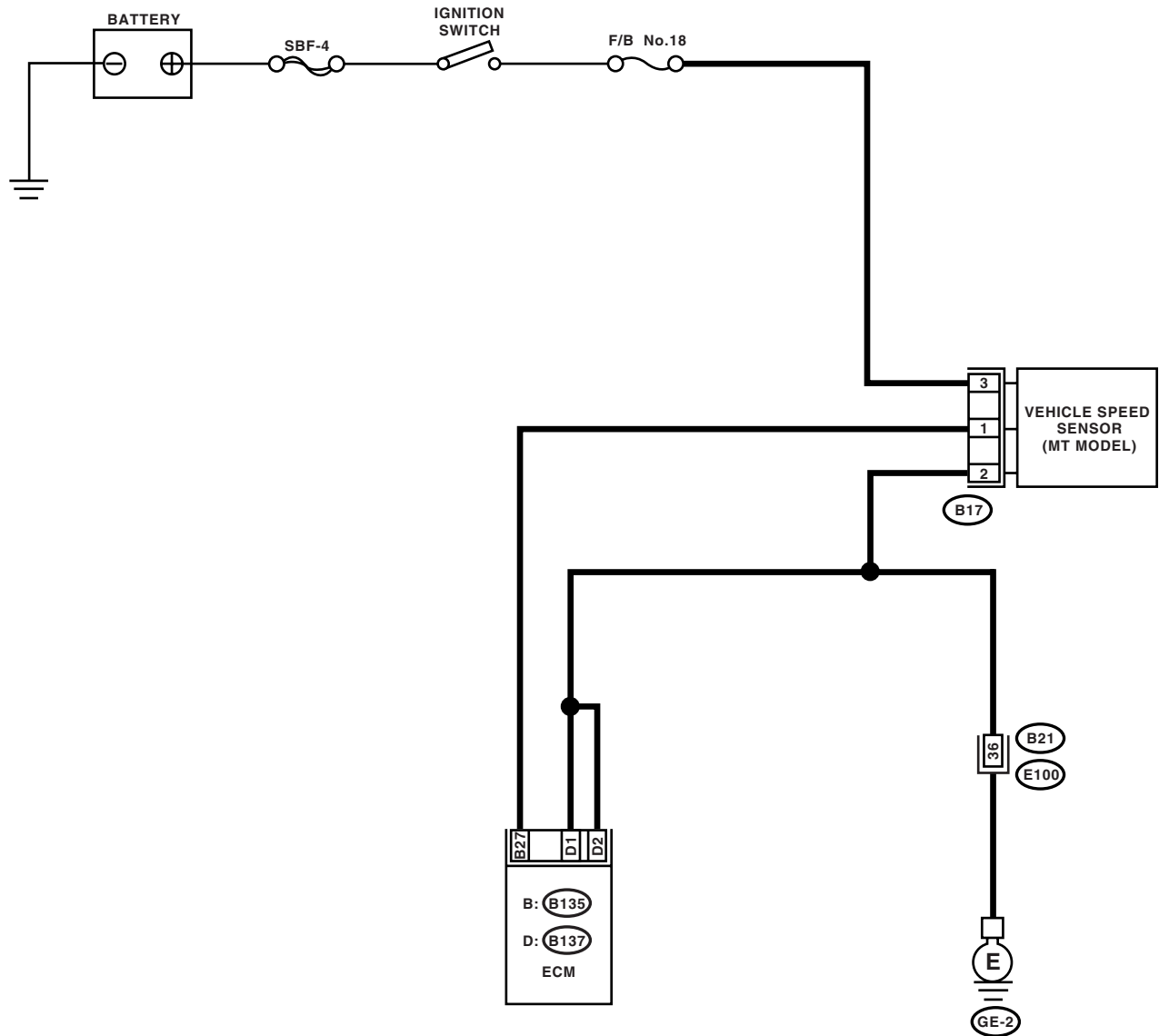
DIAGNOSIS:

Open or short circuit of vehicle speed sensor system.

TROUBLE SYMPTOM:

Cruise control cannot be set. (Cancelled immediately.)

WIRING DIAGRAM:



CC-00296

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 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 voltage more than 10 V?	Go to step 2.	Check the harness for open or short between fuse and vehicle speed sensor.
2 CHECK HARNESS BETWEEN ECM AND VEHICLE SPEED SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from ECM. 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 resistance less than 10 Ω ?	Go to step 3.	Repair the harness.
3 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 resistance less than 10 Ω ?	Go to step 4.	Repair the harness.
4 CHECK VEHICLE SPEED SENSOR. 1) Connect the harness connector to vehicle speed sensor. 2) Lift-up the vehicle and support with rigid racks. 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 voltage less than 1 V ←→ more than 5 V?	Check the poor contact of ECM connector.	Replace the vehicle speed sensor.

COMMUNICATION SYSTEM

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 the reverse order of disassembly, unless otherwise indicated.
- Adjust parts to the given specifications.
- Connect the connectors and hoses securely during reassembly.
- After reassembly, make sure functional parts operate smoothly.

B: PREPARATION TOOL

1. GENERAL TOOLS

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

2. Horn System

A: WIRING DIAGRAM

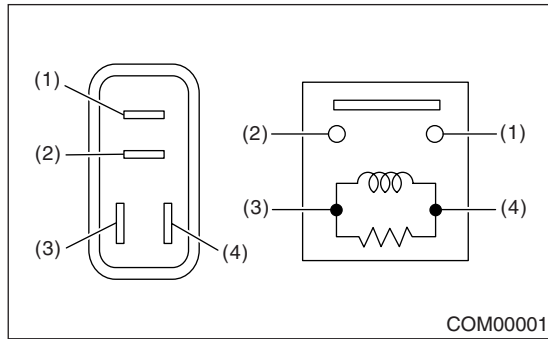
1. HORN

<Ref. to WI-143, WIRING DIAGRAM, Horn System.>

B: INSPECTION

1. HORN RELAY

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

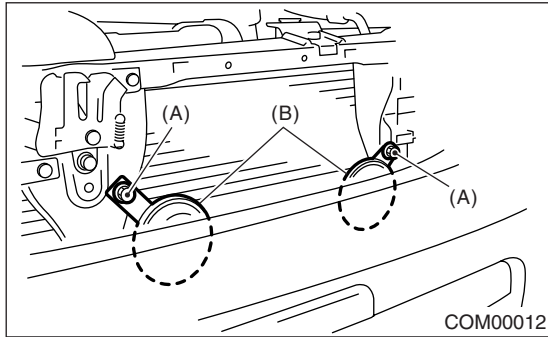


Current	Terminal No.	Standard
Flow	1 and 2	Less than 1 Ω
No Flow		More than 1 M Ω

3. Horn

A: REMOVAL

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

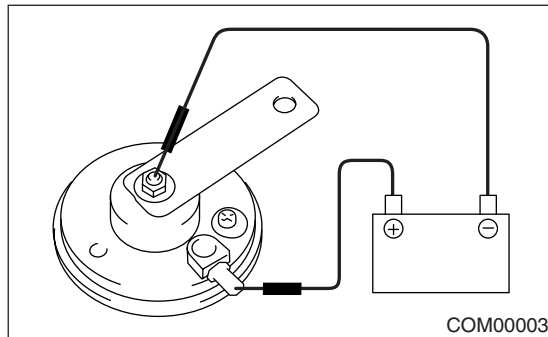


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

With 12 V direct current supplied 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 AB section for proper handling of driver's airbag module. <Ref. to AB-3, CAUTION, General Description.>

NOTE:

Horn switch forms a unit with the driver's airbag module.

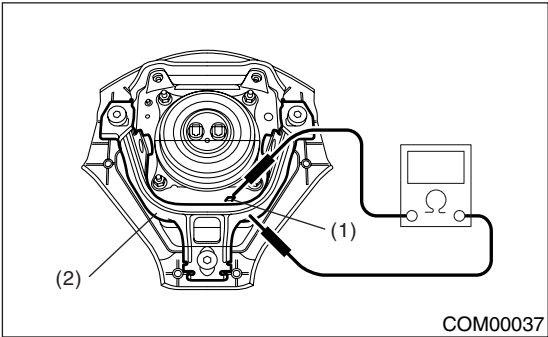
- 1) Disconnect the ground cable from battery.
- 2) Remove the driver's airbag module. <Ref. to AB-12, REMOVAL, Driver's Airbag Module.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

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



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

Switch position	Terminal No.	Resistance
When airbag module bracket is pushed.	Horn switch terminal and Airbag module bracket	Less than 1 Ω
When airbag module bracket is not pushed.		More than 1 M Ω

EXTERIOR BODY PANELS

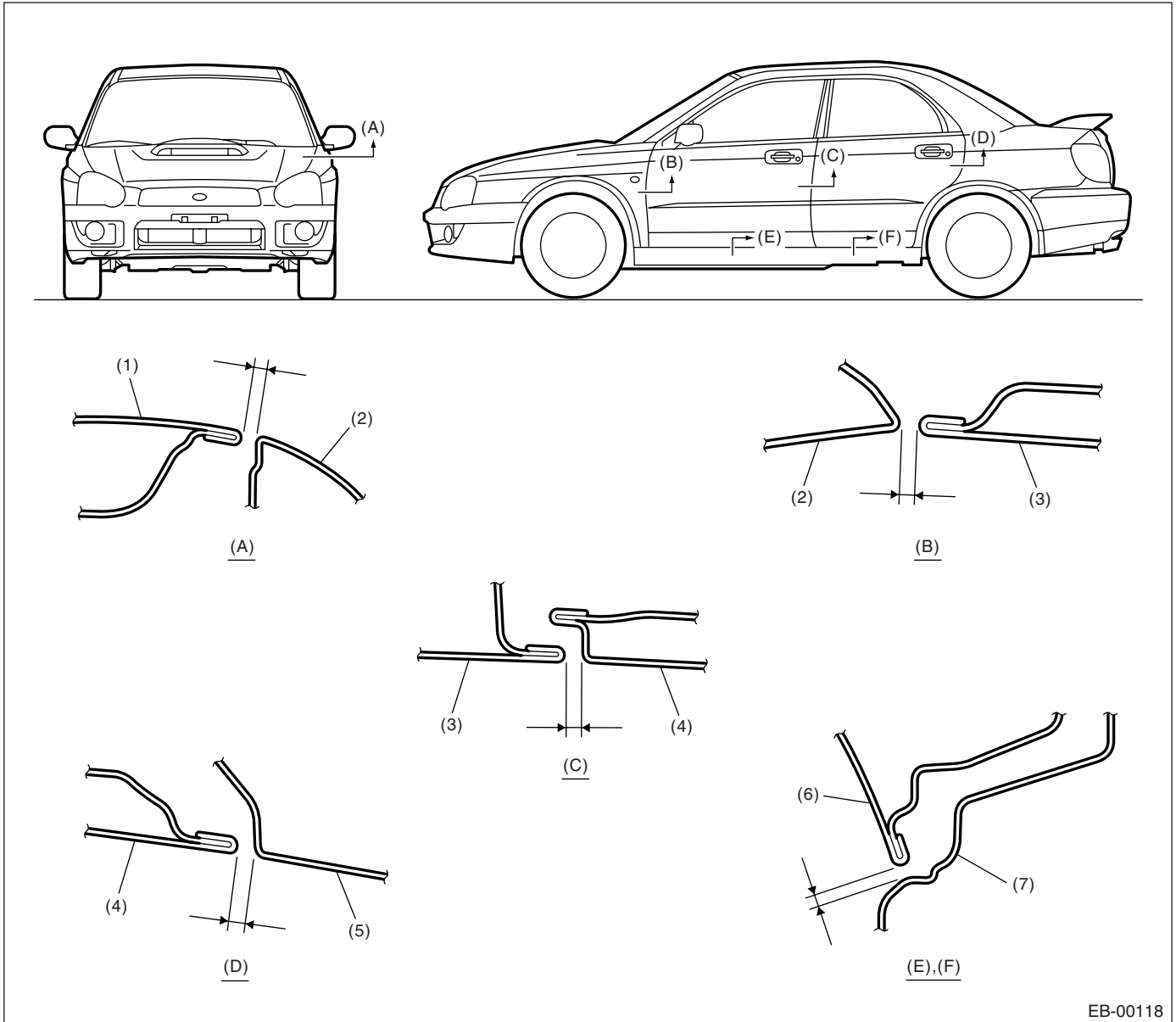
General Description

EXTERIOR BODY PANELS

1. General Description

A: SPECIFICATION

1. SIDE

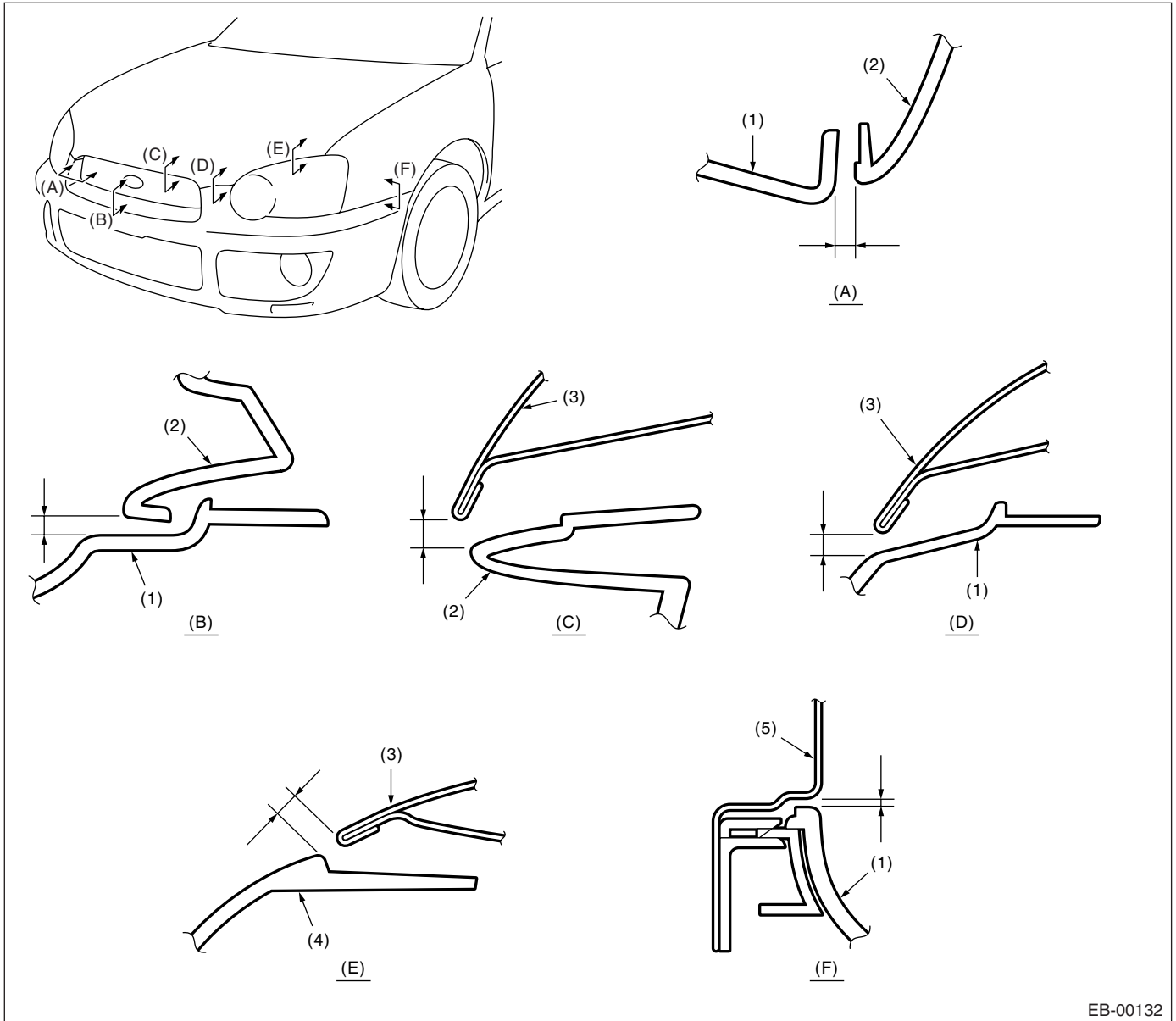


EB-00118

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

Section	Part	Standard
(A)	Front hood panel to Front fender panel	NON-TURBO: 4.0±1.0 mm (0.16±0.04 in) TURBO: 3.7±1.0 mm (0.15±0.04 in)
(B)	Front fender panel to Front door panel	4.7±1.0 mm (0.19±0.04 in)
(C)	Front door panel to Rear door panel	5.1±1.0 mm (0.20±0.04 in)
(D)	Rear door panel to Rear quarter panel	4.6±1.0 mm (0.18±0.04 in)
(E), (F)	Door panel to Side sill	5.9±1.0 mm (0.23±0.04 in)

2. FRONT



EB-00132

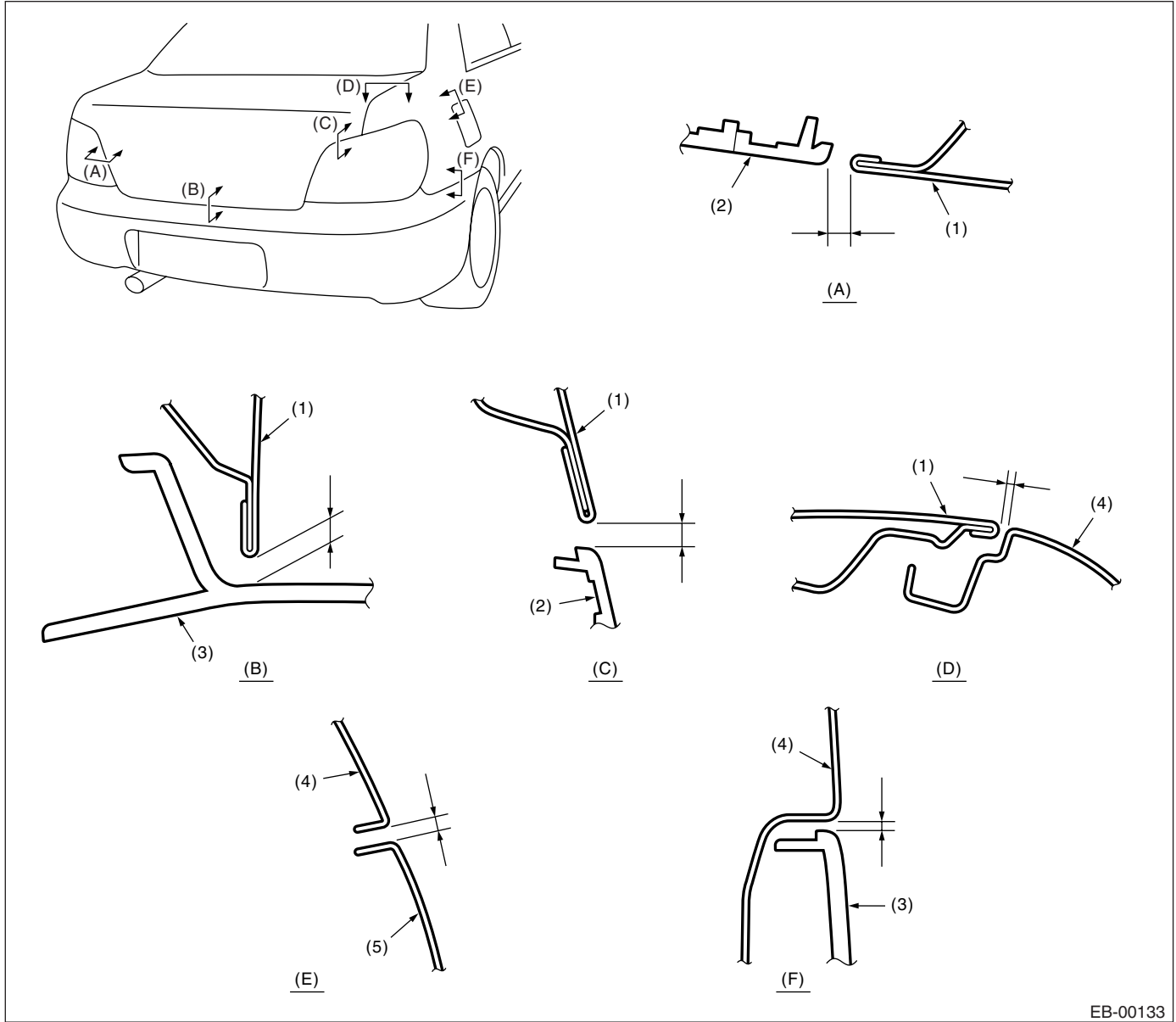
(1) Front bumper	(3) Front hood panel	(5) Front fender panel
(2) Front grille	(4) Headlight	

Section	Part	Standard
(A)	Front bumper to Front grille (Lateral direction)	1.0±0.5 mm (0.04±0.02 in)
(B)	Front bumper to Front grille (Longitudinal direction)	1.0±1.0 mm (0.04±0.04 in)
(C)	Front hood panel to Front grille	Steel: 6.8±1.0 mm (0.27±0.04 in) Aluminum: 6.5±1.0 mm (0.26±0.04 in)
(D)	Front hood panel to Front bumper	6.0±1.0 mm (0.24±0.04 in)
(E)	Front hood panel to Headlight	5.5±1.0 mm (0.22±0.04 in)
(F)	Front fender panel to Front bumper	1.5±0.7 mm (0.06±0.03 in)

General Description

EXTERIOR BODY PANELS

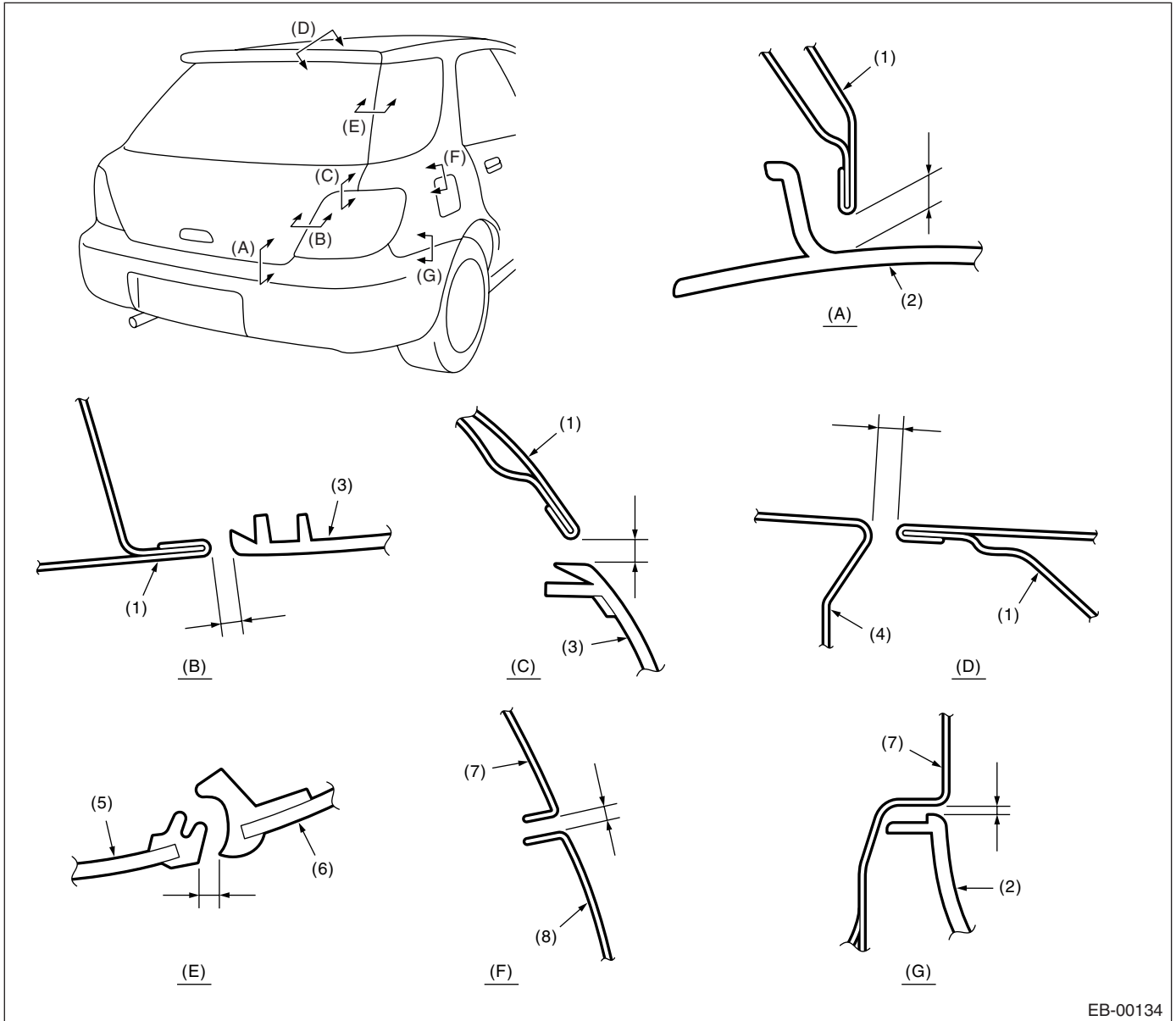
3. REAR (SEDAN MODEL)



(1) Trunk lid panel	(3) Rear bumper	(5) Fuel filler flap lid
(2) Rear combination light	(4) Rear fender panel	

Section	Part	Standard
(A)	Trunk lid panel to Rear combination light (Lateral direction)	5.0±1.0 mm (0.20±0.04 in)
(B)	Trunk lid panel to Rear bumper	7.0±1.5 mm (0.28±0.06 in)
(C)	Trunk lid panel to Rear combination light (Longitudinal direction)	7.0±1.0 mm (0.28±0.04 in)
(D)	Trunk lid panel to Rear fender panel	4.0±1.0 mm (0.16±0.04 in)
(E)	Rear fender panel to Fuel flap	3.5±0.5 mm (0.14±0.02 in)
(F)	Rear fender panel to Rear bumper	0.3 — 2.2 mm (0.01 — 0.09 in)

4. REAR (WAGON MODEL)



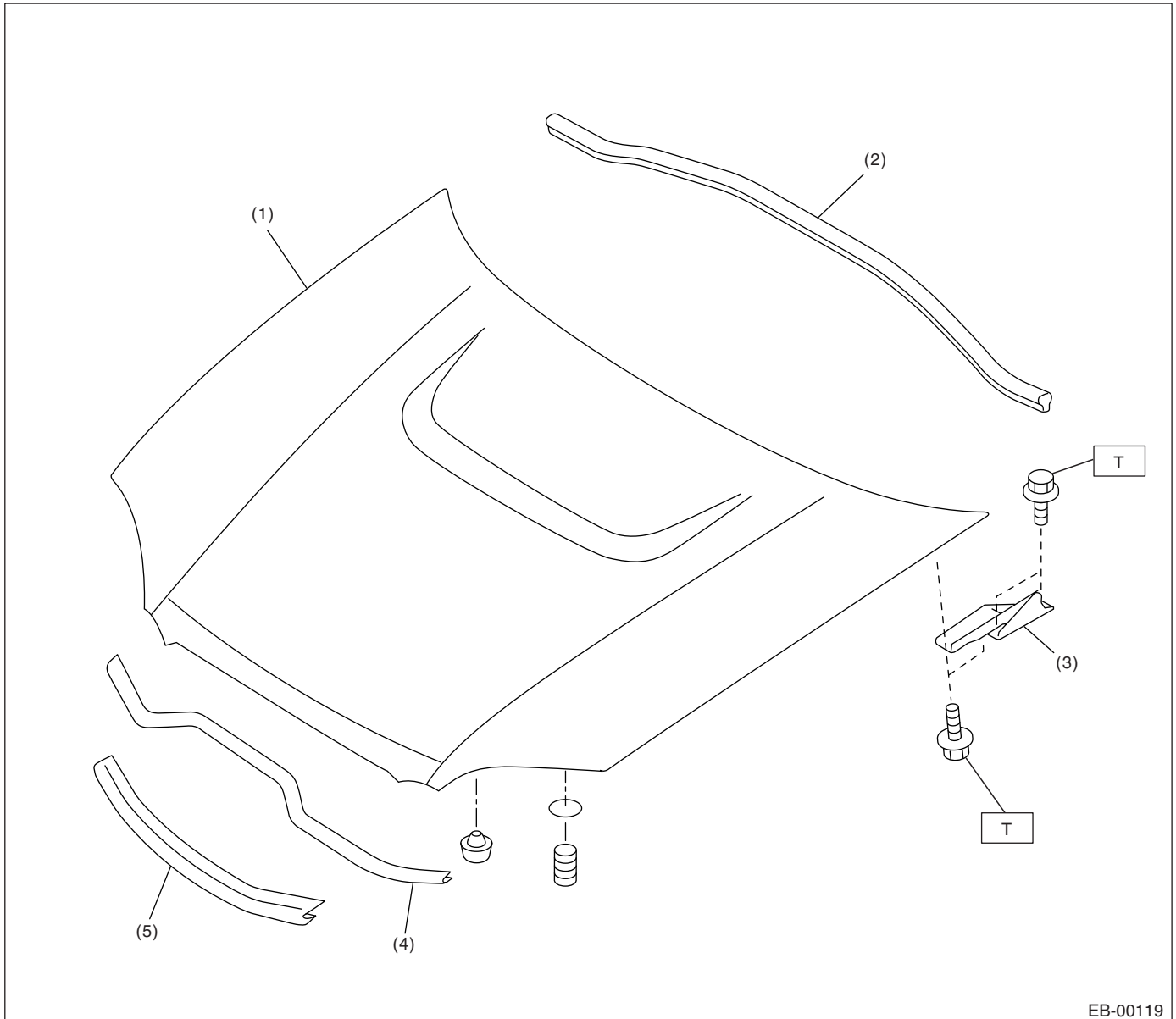
EB-00134

(1) Rear gate panel	(4) Roof panel	(7) Rear fender panel
(2) Rear bumper	(5) Rear gate glass	(8) Fuel filler flap lid
(3) Rear combination light	(6) Rear quarter glass	

Section	Part	Standard
(A)	Rear gate panel to Rear bumper	8.3±1.5 mm (0.33±0.06 in)
(B)	Rear gate panel to Rear combination light (Lateral direction)	5.0±1.0 mm (0.20±0.04 in)
(C)	Rear gate panel to Rear combination light (Longitudinal direction)	6.0±1.0 mm (0.24±0.04 in)
(D)	Roof panel to Rear gate panel	6.1 — 7.6 mm (0.24 — 0.30 in)
(E)	Rear gate glass to Rear quarter glass	6.0±1.5 mm (0.24±0.06 in)
(F)	Rear fender panel to Fuel flap	3.5±0.5 mm (0.14±0.02 in)
(G)	Rear fender panel to Rear bumper	0.3 — 2.2 mm (0.01 — 0.09 in)

B: COMPONENT

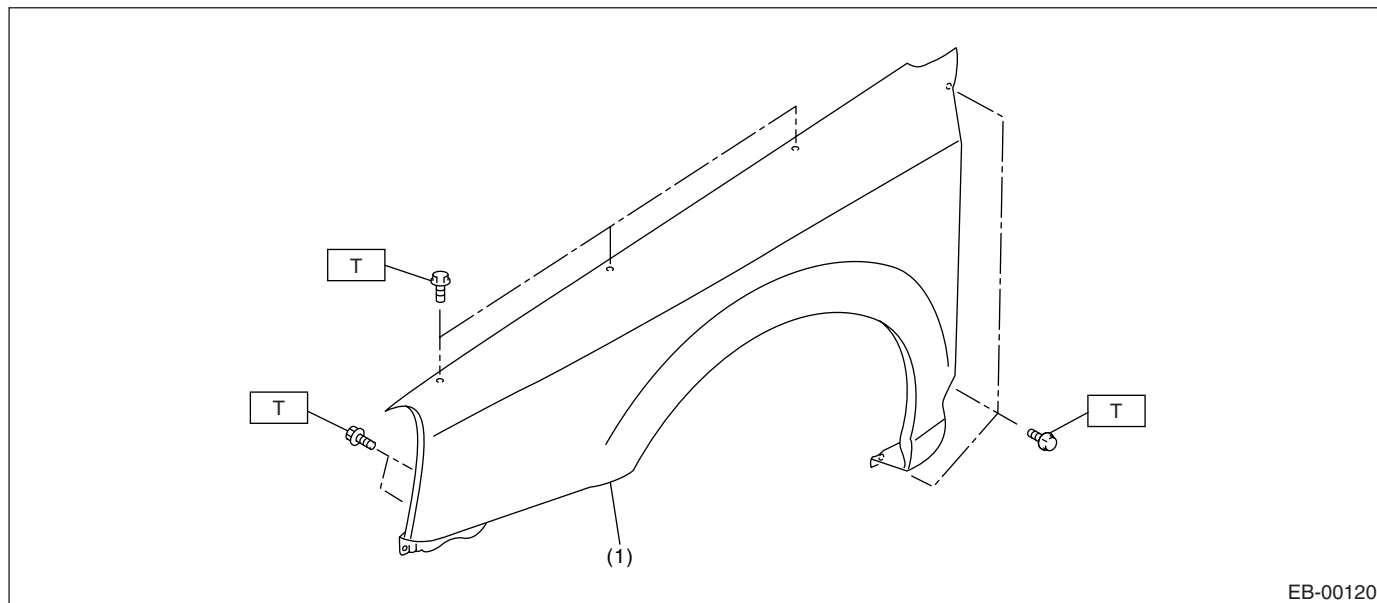
1. FRONT HOOD



(1) Front hood	(4) Seal (Intake duct) (Turbo model)
(2) Seal (Front panel)	(5) Seal (Hood)
(3) Hinge	

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

2. FRONT FENDER PANEL



(1) Front fender panel

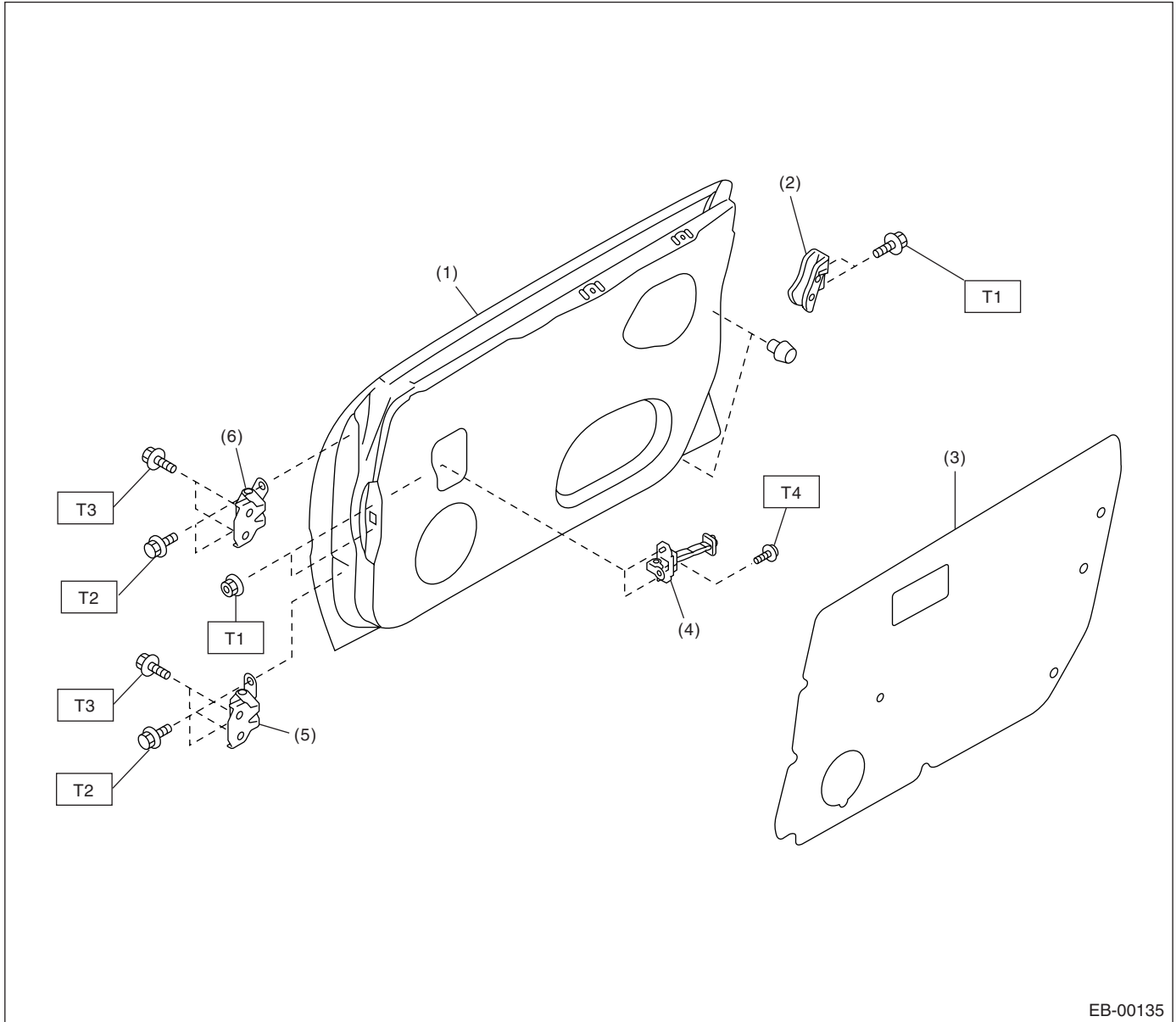
Tightening torque: N·m (kgf-m, ft-lb)

T: 7.5 (0.76, 5.5)

General Description

EXTERIOR BODY PANELS

3. FRONT DOOR PANEL



EB-00135

- (1) Front door panel
- (2) Guide
- (3) Sealing cover

- (4) Checker
- (5) Lower hinge
- (6) Upper hinge

Tightening torque: N·m (kgf·m, ft·lb)

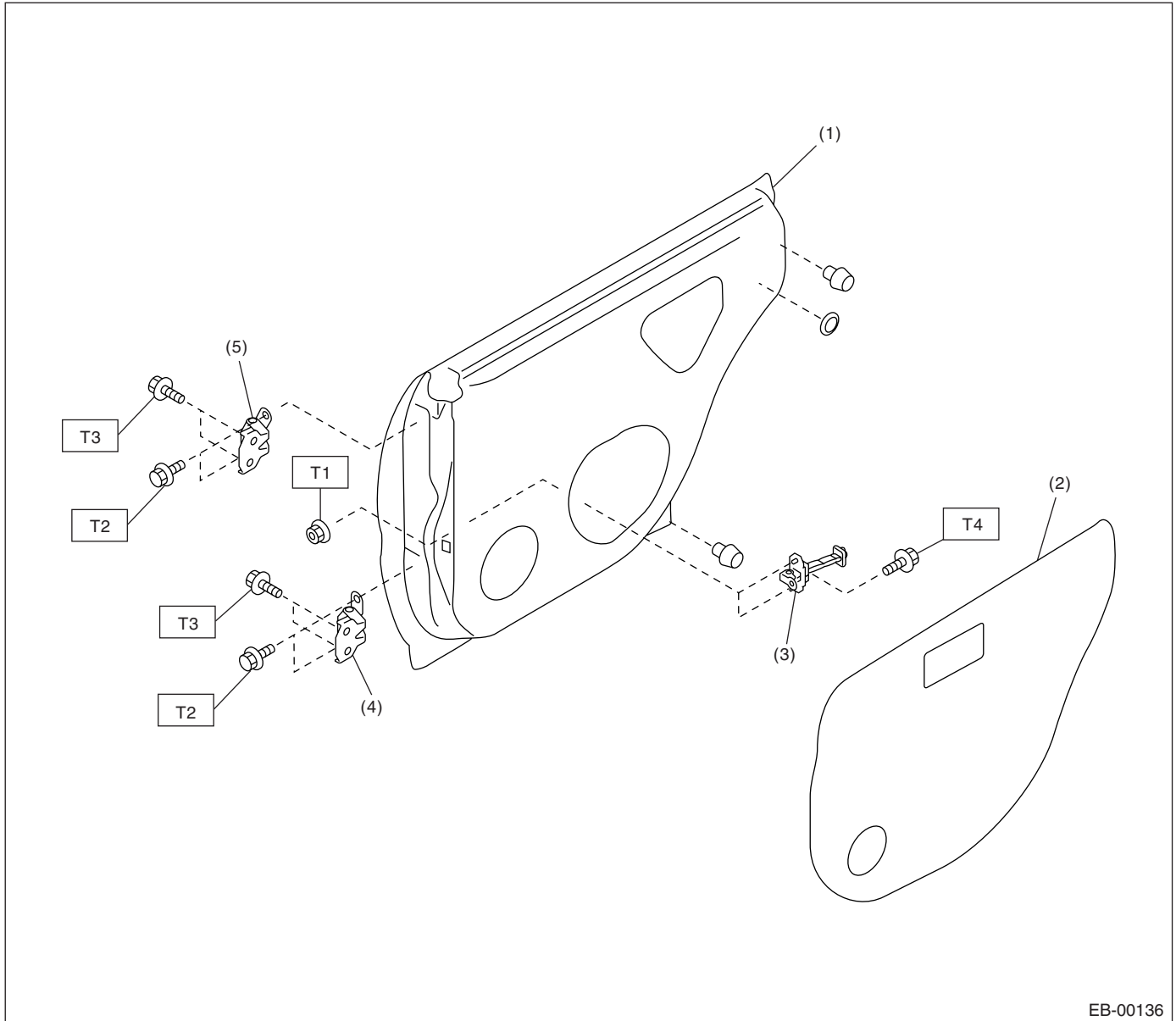
T1: 7.4 (0.75, 5.5)

T2: 24.5 (2.5, 18.1)

T3: 29.4 (3.0, 21.7)

T4: 32.3 (3.3, 23.8)

4. REAR DOOR PANEL



EB-00136

- (1) Rear door panel
- (2) Sealing cover
- (3) Checker

- (4) Lower hinge
- (5) Upper hinge

Tightening torque: N·m (kgf·m, ft·lb)

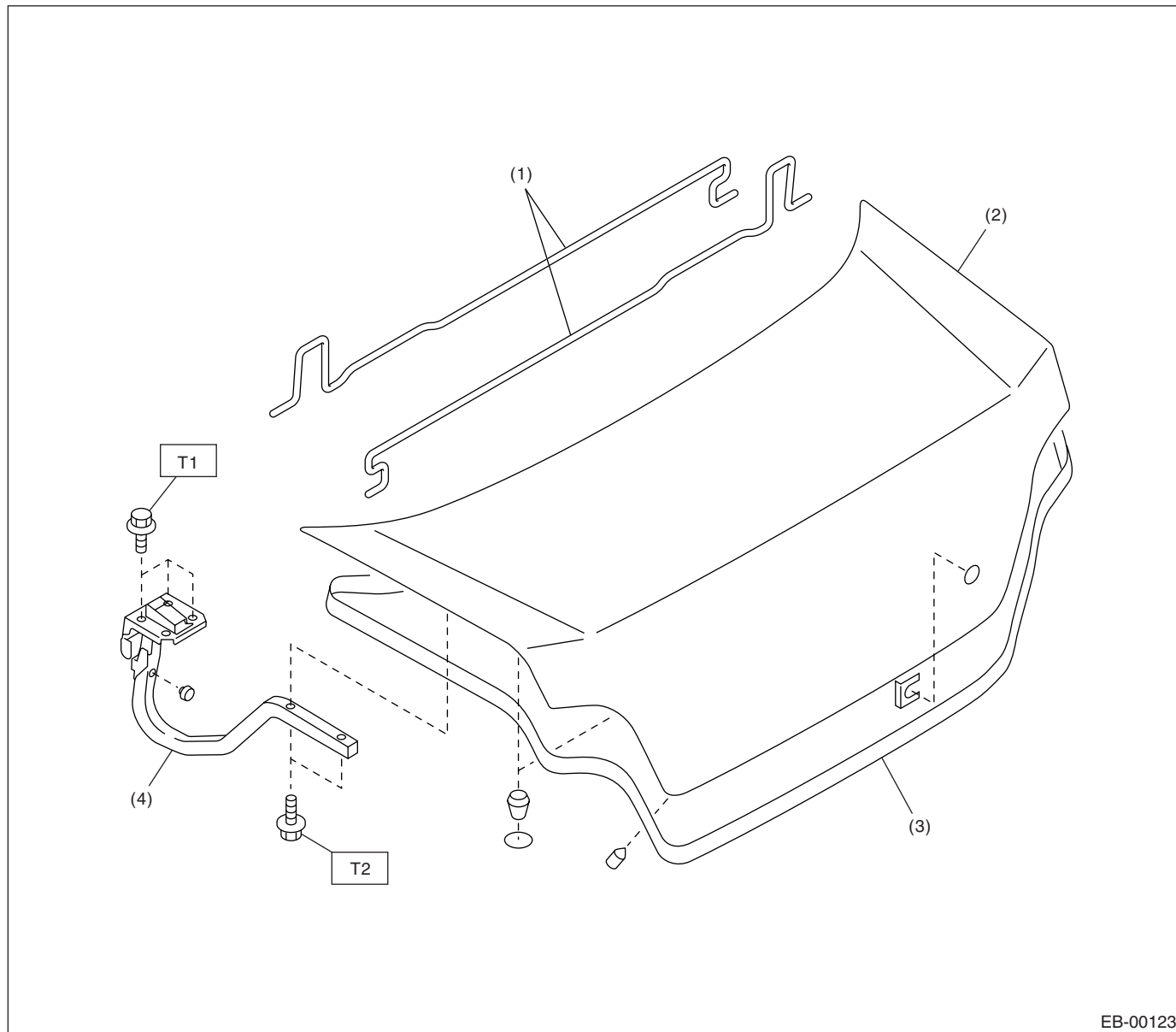
T1: 7.4 (0.75, 5.5)

T2: 24.5 (2.5, 18.1)

T3: 29.4 (3.0, 21.7)

T4: 32.3 (3.3, 23.8)

5. TRUNK LID PANEL

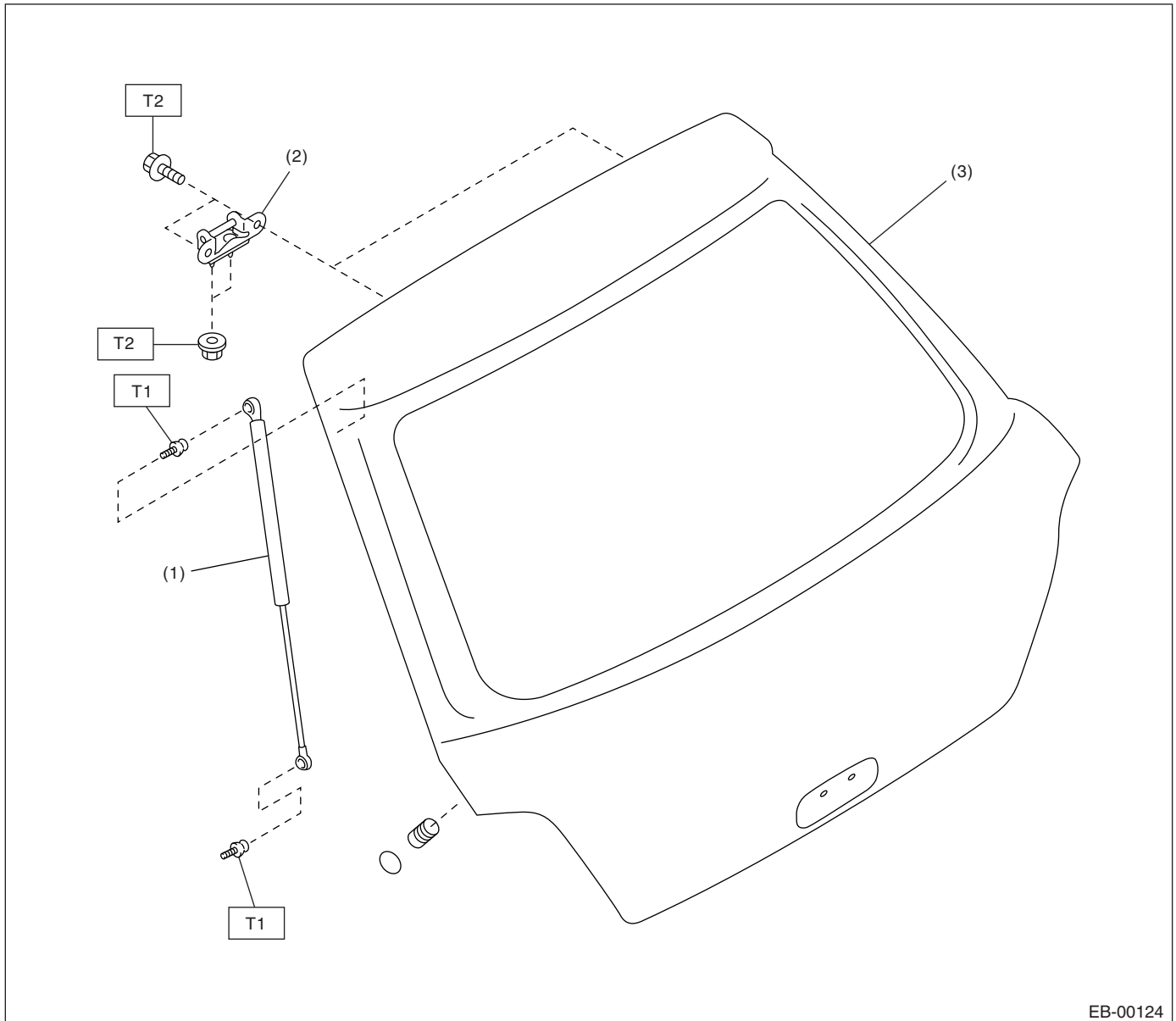


- (1) Torsion bar
- (2) Trunk lid panel
- (3) Weatherstrip

- (4) Hinge ASSY

Tightening torque: N·m (kgf-m, ft-lb)
T1: 7.5 (0.76, 5.5)
T2: 14 (1.43, 10.3)

6. REAR GATE PANEL



EB-00124

(1) Rear gate damper stay
(2) Hinge

(3) Rear gate panel

Tightening torque: N·m (kgf-m, ft-lb)

T1: 19.6 (2.0, 14.5)

T2: 24.5 (2.5, 18.1)

C: CAUTION

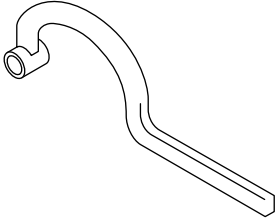
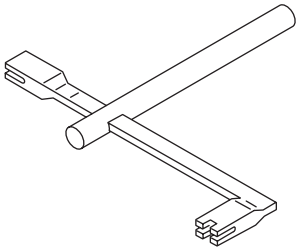
- Exterior body panels are heavy. Do not drop or damage the panels. During removal and installation, do not damage the panel painting surface.
- While removing the mounting bolts, using assistance devices such as a support jack will help support the panel.
- Be careful not to lose small parts.

General Description

EXTERIOR BODY PANELS

D: PREPARATION TOOL

1. SPECIAL TOOL

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

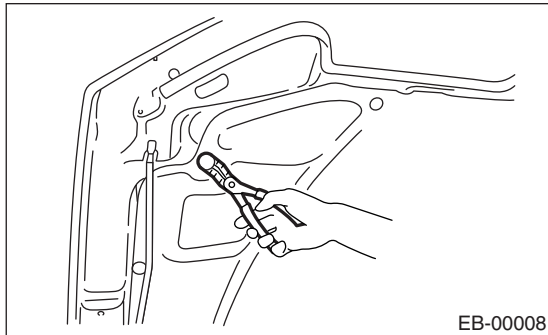
2. GENERAL TOOL

TOOL NAME	REMARKS
Support jack	Used for supporting door panel.

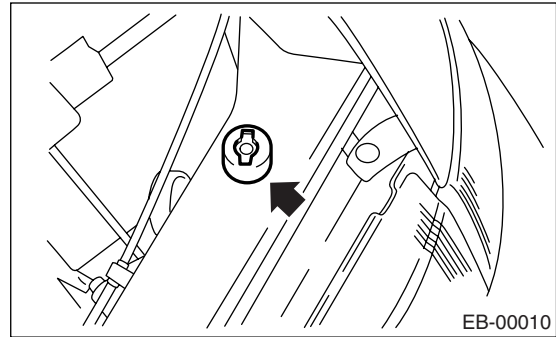
2. Front Hood

A: REMOVAL

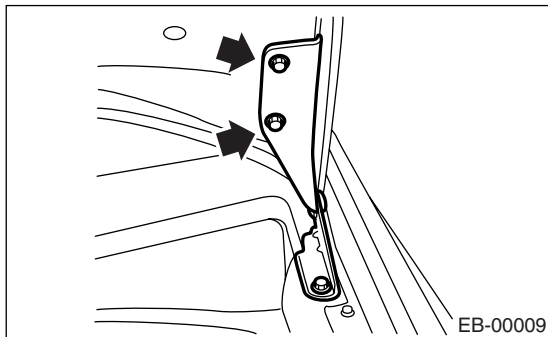
- 1) Open the front hood to remove washer nozzles.
- 2) Release the clips to remove hood insulator.



- 3) Rotate the hood buffer to adjust lateral height.



- 3) Remove the bolts to remove the front hood from hinges.



B: INSTALLATION

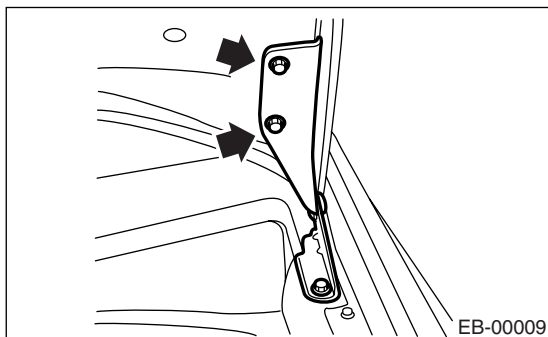
- 1) Install in the reverse order of removal.
- 2) Adjust the clearance between front hood panel and front fender panel. Clearance must be equal at both sides.

Tightening torque:

24.5 N·m (2.5 kgf-m, 18.1 ft-lb)

C: ADJUSTMENT

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

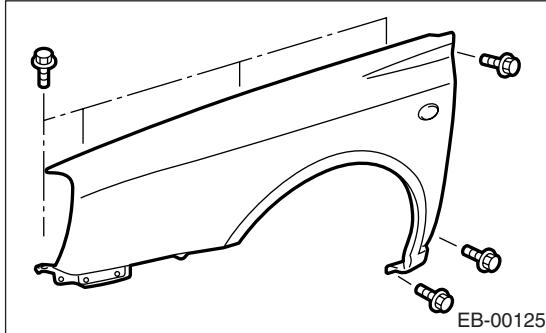


- 2) Adjust the height at front end of hood. <Ref. to SL-43, ADJUSTMENT, Front Hood Lock Assembly.>

3. Front Fender

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the side sill spoilers. <Ref. to EI-38, Side Sill Spoiler.> (Model with side sill spoiler)
- 3) Remove the front bumper face. <Ref. to EI-24, REMOVAL, Front Bumper.>
- 4) Remove the mud guard. <Ref. to EI-34, REMOVAL, Mud Guard.>
- 5) Remove the bolts to remove front fender panel.



B: INSTALLATION

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

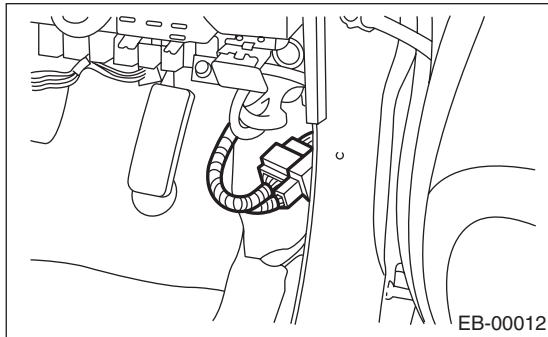
Tightening torque:

7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

4. Front Door

A: REMOVAL

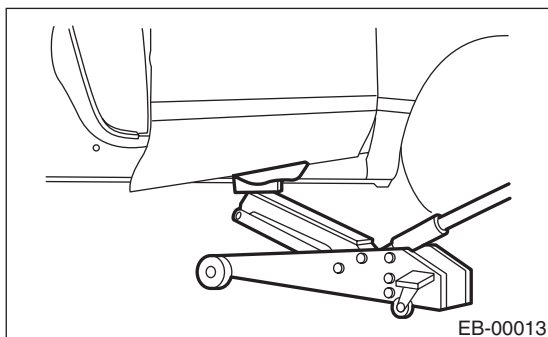
- 1) Disconnect the ground cable from battery.
- 2) Remove the front door trim. <Ref. to EI-42, REMOVAL, Front Door Trim.>
- 3) Remove the outer mirror assembly. <Ref. to GW-18, REMOVAL, Outer Mirror Assembly.>
- 4) Remove the front door glass. <Ref. to GW-11, REMOVAL, Front Door Glass.>
- 5) Remove the front door regulator and motor. <Ref. to GW-15, REMOVAL, Front Regulator and Motor Assembly.>
- 6) Remove the front door latch assembly. <Ref. to SL-32, REMOVAL, Front Door Latch and Door Lock Actuator Assembly.>
- 7) Remove the front outer handle. <Ref. to SL-31, REMOVAL, Front Outer Handle.>
- 8) Remove the front pillar lower trim to disconnect the connector from body harness.



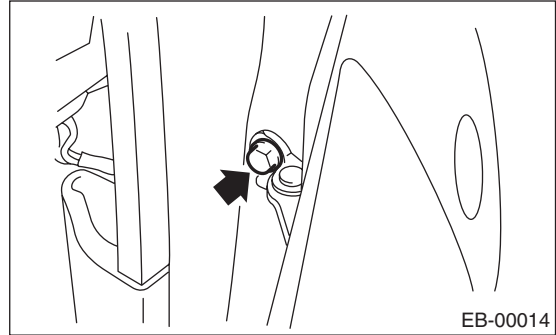
- 9) Put a wooden block on jack and place the jack under front door panel. Support the front door with the jack to protect it from damage.

NOTE:

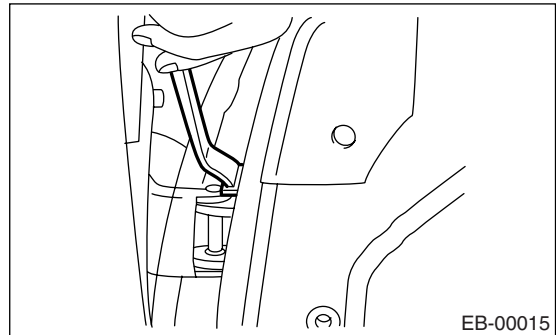
When supporting the door with jack, do not deform the hinge portion of door during work.



- 10) Remove the checker bolts.



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



B: INSTALLATION

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

Tightening torque:

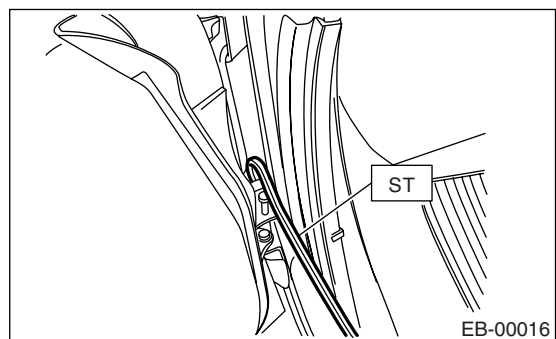
Refer to COMPONENT in General Description.

<Ref. to EB-8, FRONT DOOR PANEL, COMPONENT, General Description.>

C: ADJUSTMENT

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

ST 925610000 DOOR HINGE WRENCH



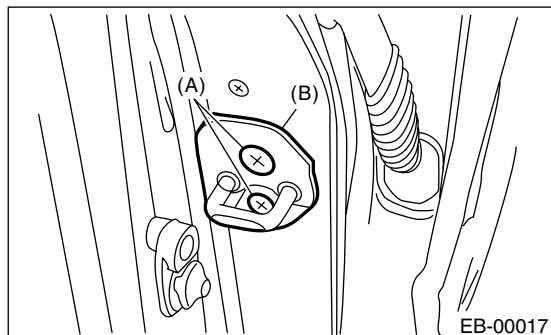
- 2) Loosen the screw (A) and tap striker (B) using a plastic hammer to adjust striker to align the position of front door panel laterally at the rear end.

Front Door

EXTERIOR BODY PANELS

CAUTION:

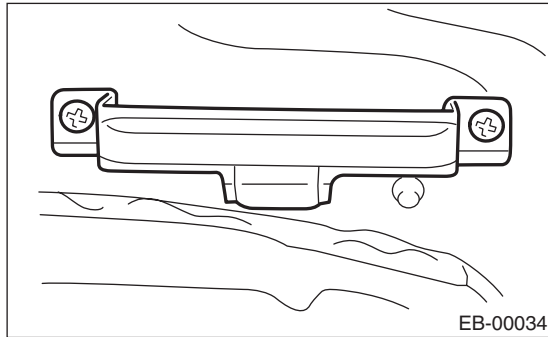
Do not use an impact wrench. Welding area on the striker nut plate is easily broken.



5. Front Sealing Cover

A: REMOVAL

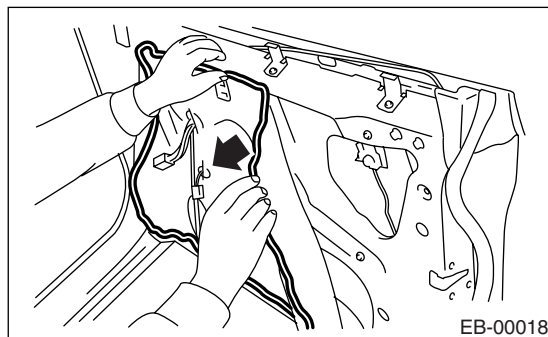
- 1) Disconnect the ground cable from battery.
- 2) Remove the front door trim. <Ref. to EI-42, REMOVAL, Front Door Trim.>
- 3) Remove the front speaker. <Ref. to ET-6, REMOVAL, Front Speaker.>
- 4) Remove the door trim bracket.



- 5) Remove the sealing cover.

NOTE:

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



B: INSTALLATION

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

Butyl tape:

3M 8626 or equivalent

NOTE:

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

C: INSPECTION

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

6. Rear Door

A: REMOVAL

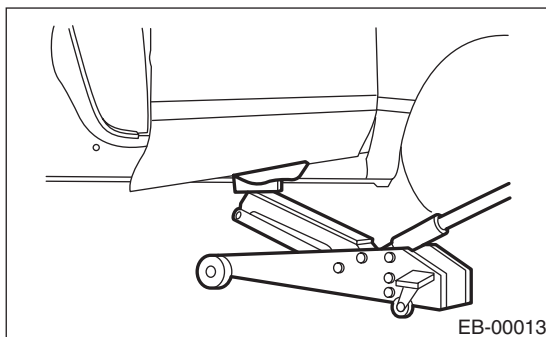
- 1) Disconnect the ground cable from battery.
- 2) Remove the rear door trim. <Ref. to EI-43, REMOVAL, Rear Door Trim.>
- 3) Remove the rear door glass. <Ref. to GW-22, REMOVAL, Rear Door Glass.>
- 4) Remove the rear door regulator and motor assembly. <Ref. to GW-24, REMOVAL, Rear Regulator and Motor Assembly.>
- 5) Remove the rear door latch. <Ref. to SL-34, REMOVAL, Rear Inner Remote.>
- 6) Remove the rear outer handle. <Ref. to SL-35, REMOVAL, Rear Outer Handle.>
- 7) Remove the connection of rubber dust (A) from center pillar, pull out the connector of door harness to separate.



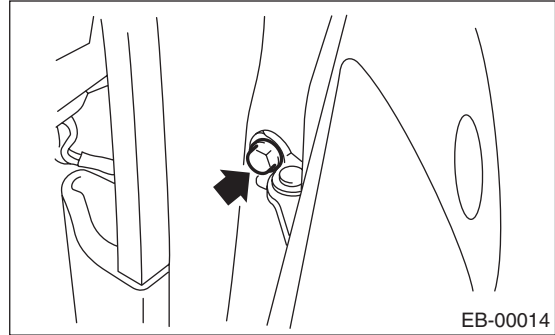
- 8) Put a wooden block on the jack and place the jack under the rear door. Support the rear door with jack to protect it.

NOTE:

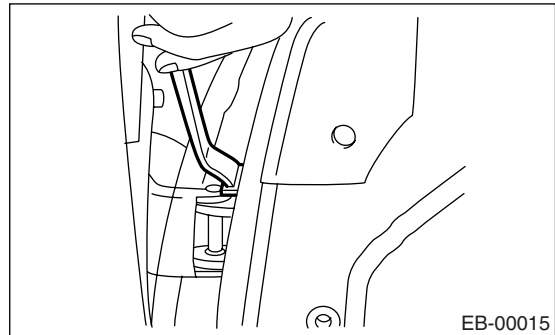
When supporting the door with jack, do not deform the hinge portion of door during work.



- 9) Remove the checker bolts.



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



B: INSTALLATION

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

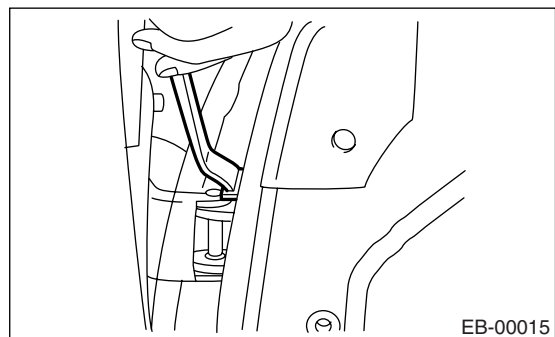
Tightening torque:

Refer to COMPONENT in General Description.

<Ref. to EB-9, REAR DOOR PANEL, COMPONENT, General Description.>

C: ADJUSTMENT

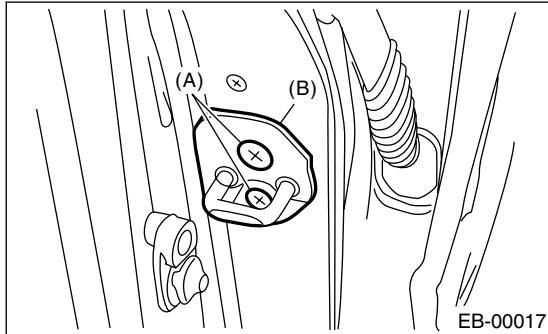
- 1) Open the rear door, and then loosen the door-side bolts of upper and lower hinges to align the position of rear door panel longitudinally and vertically.



- 2) Loosen the screw (A), and then tap striker (B) using plastic hammer to adjust striker to align the position of rear door panel laterally at the rear end.

CAUTION:

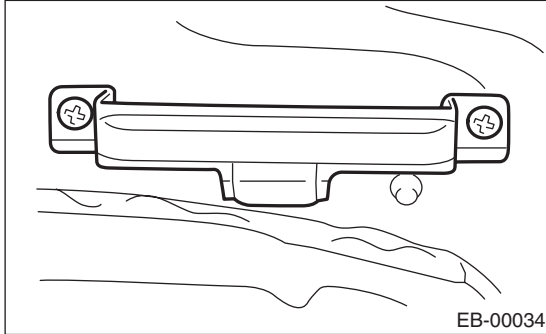
Do not use an impact wrench. The welding area on the striker nut plate is easily broken.



7. Rear Sealing Cover

A: REMOVAL

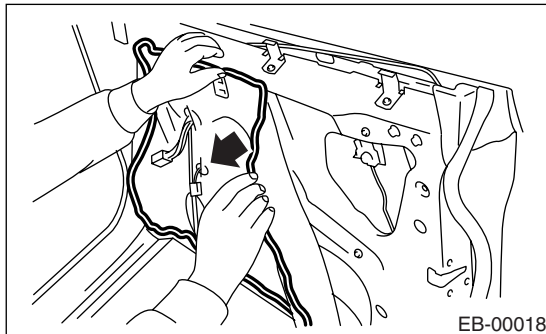
- 1) Disconnect the ground cable from battery.
- 2) Remove the rear door trim. <Ref. to EI-43, REMOVAL, Rear Door Trim.>
- 3) Remove the rear speaker. <Ref. to ET-8, REMOVAL, Rear Speaker.>
- 4) Remove the door trim bracket.



- 5) Remove the sealing cover.

NOTE:

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



B: INSTALLATION

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

Butyl tape:

3M 8626 or equivalent

NOTE:

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

C: INSPECTION

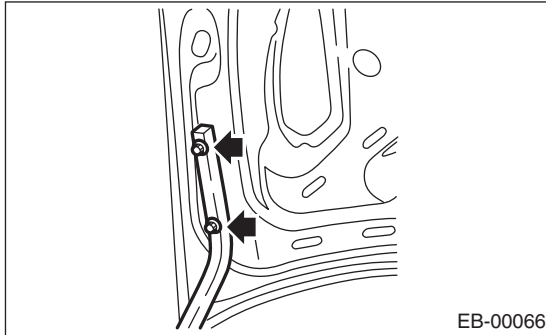
If the sealing cover is damaged, replace it with a new one.

8. Trunk Lid

A: REMOVAL

1. TRUNK LID

- 1) Open the trunk lid.
- 2) Disconnect the trunk lid connector.
- 3) Loosen the trunk lid mounting bolts to remove the trunk lid from hinges.



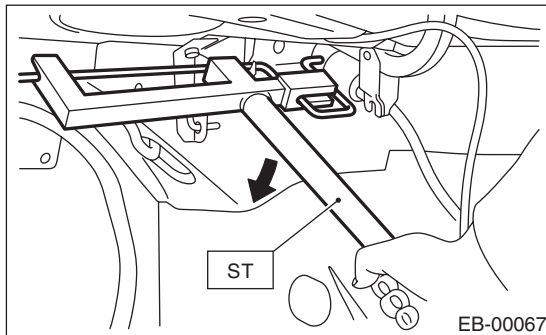
2. TORSION BAR

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

ST 927780000 REMOVER

CAUTION:

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



- 3) Remove the right/left torsion bars.

CAUTION:

Be careful not to get hit by the trunk lid, because the trunk lid will slam shut after the torsion bar is removed.

B: INSTALLATION

1. TRUNK LID

- 1) Install in the reverse order of removal.
- 2) Install the trunk lid with uniform clearance.

Tightening torque:

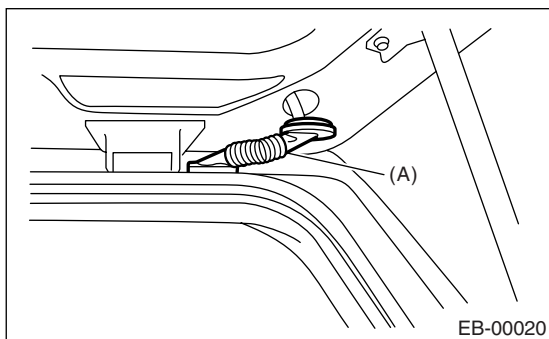
14 N·m (1.43 kgf-m, 10.3 ft-lb)

9. Rear Gate

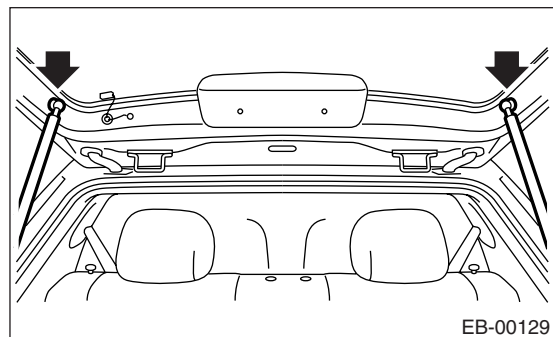
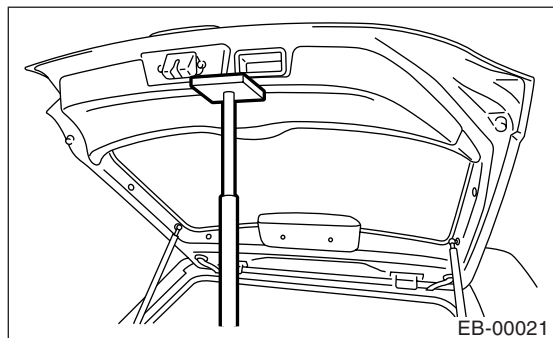
A: REMOVAL

1. REAR GATE PANEL

- 1) Disconnect the ground cable from battery.
- 2) Open the rear gate.
- 3) Remove the rear gate outer handle. <Ref. to SL-38, REMOVAL, Rear Gate Outer Handle.>
- 4) Remove the rear gate latch assembly. <Ref. to SL-39, REMOVAL, Rear Gate Latch Assembly.>
- 5) Remove the rear wiper. <Ref. to WW-17, REMOVAL, Rear Wiper Motor.>
- 6) Disconnect the connectors of rear wiper, rear defogger and other lighting devices.
- 7) Disconnect the washer hose.
- 8) Remove the rubber duct (A) connection, and then pull out the harness and washer hose from rear gate.



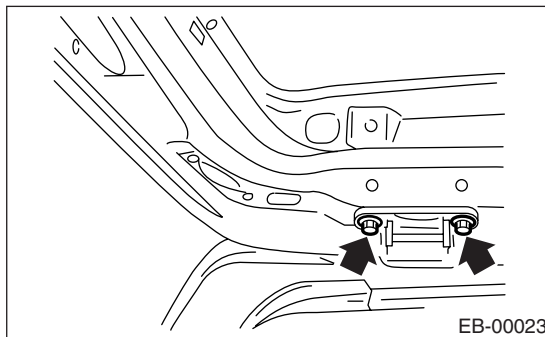
- 9) Using a support, support jack the rear gate while removing the rear gate damper stay mounting bolts.



CAUTION:

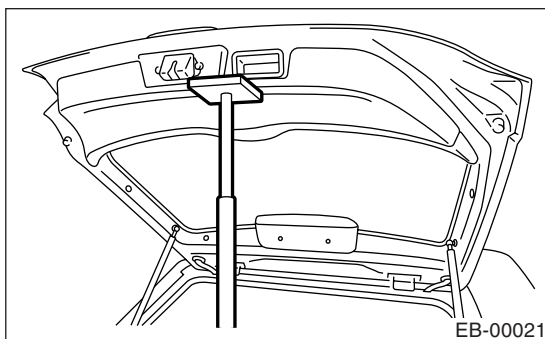
When the rear gate is released, it may hit and damage the body. To prevent this, place a shop cloth between the body and gate.

- 10) Remove the rear gate bolts to remove rear gate.



2. REAR GATE DAMPER STAY

- 1) Open the rear gate. Use a support jack to support the rear gate.



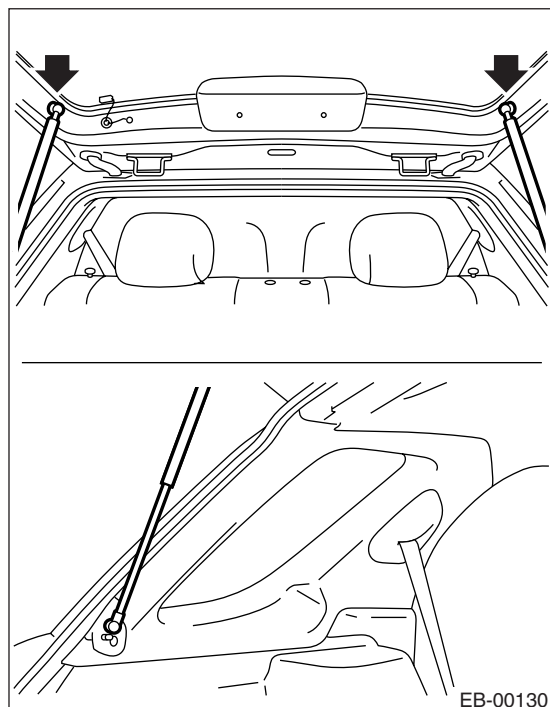
NOTE:

After the rear gate damper stay is removed, the rear gate cannot stay open. Supporting the rear gate with a support jack, remove the bolts.

CAUTION:

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

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



EB-00130

B: INSTALLATION

1. REAR GATE PANEL

- 1) Install in the reverse order of removal.
- 2) Install the rear gate panel with uniform clearance to the body.

Refer to COMPONENT of General Description for tightening torque. <Ref. to EB-11, REAR GATE PANEL, COMPONENT, General Description.>

CAUTION:

Do not damage the painted surfaces of body and rear gate panel.

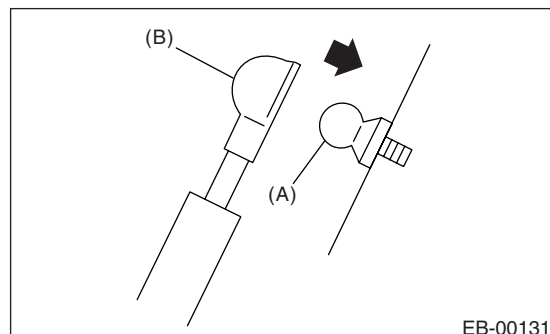
2. REAR GATE DAMPER STAY

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

Tightening torque:

19.6 N·m (2.0 kgf-m, 14.5 ft-lb)

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



EB-00131

NOTE:

After supporting the rear gate with a support jack, start operation.

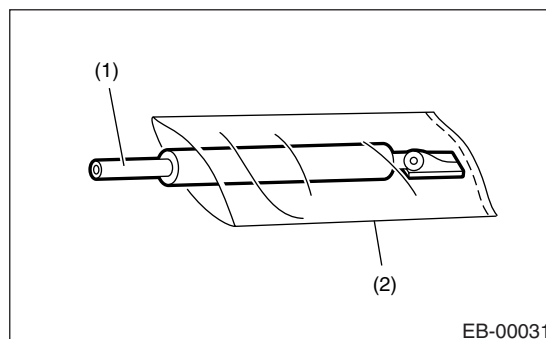
C: DISPOSAL

1. REAR GATE DAMPER STAY

CAUTION:

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

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



EB-00031

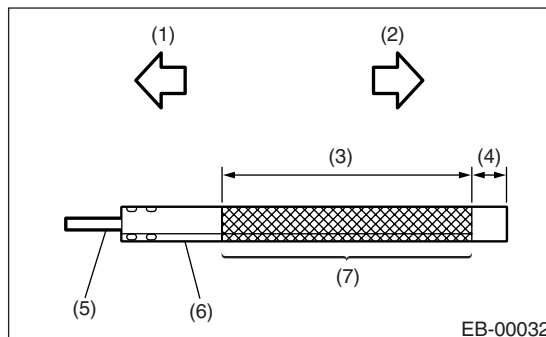
(1) Rear gate damper stay

(2) Vinyl sack

NOTE:

Prevent the vinyl case from being caught by drill cutting edge

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



EB-00032

(1) Body side

(2) Door side

(3) 190 mm (7.48 in)

(4) 10 mm (0.39 in)

(5) Piston rod

(6) Cylinder

(7) Position to be drilled

Rear Gate

EXTERIOR BODY PANELS

EXTERIOR INTERIOR TRIM

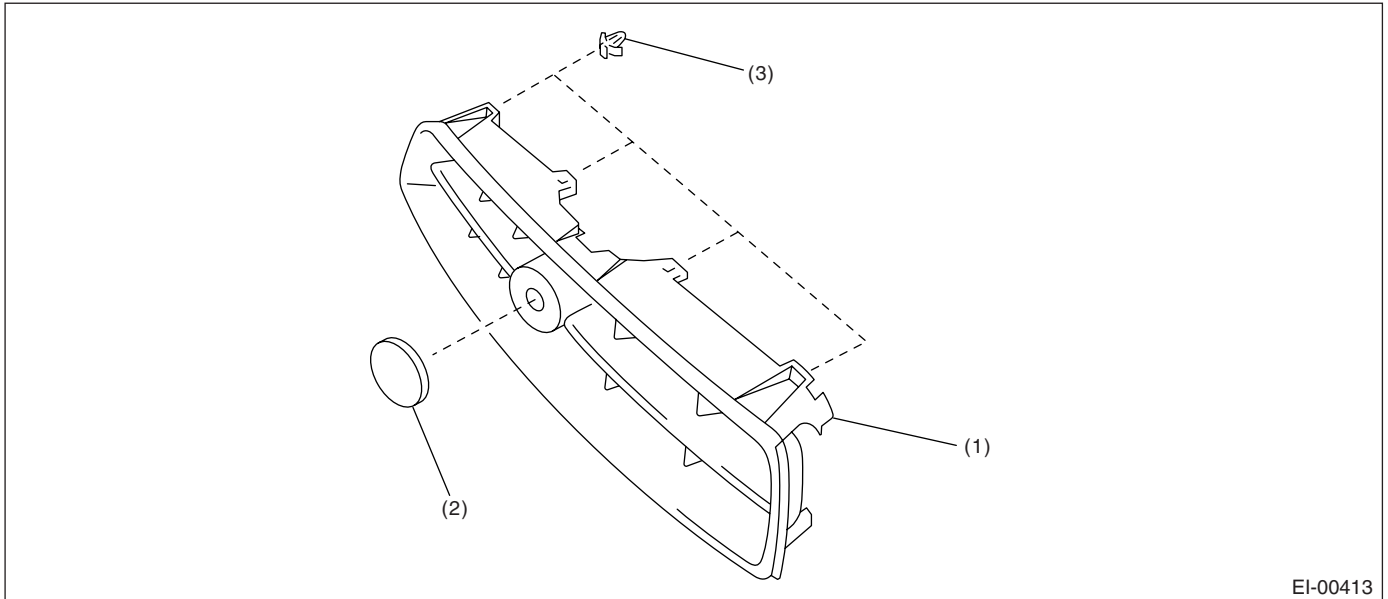
General Description

EXTERIOR/INTERIOR TRIM

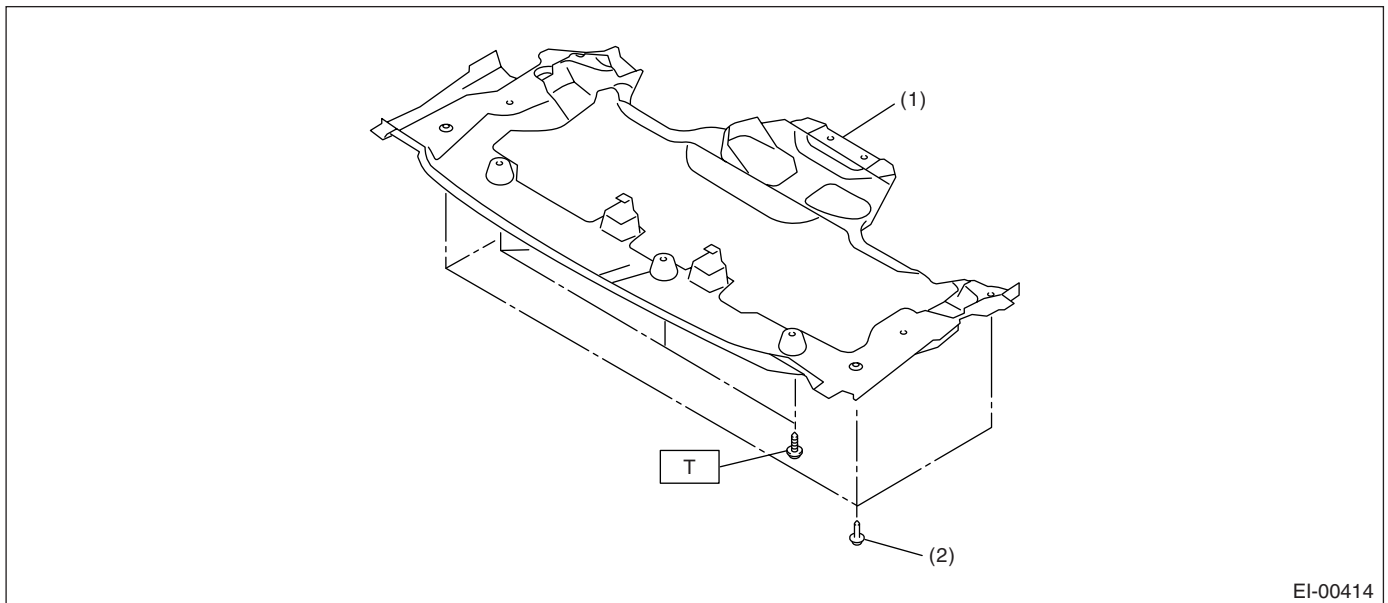
1. General Description

A: COMPONENT

1. FRONT GRILLE



2. UNDER COVER



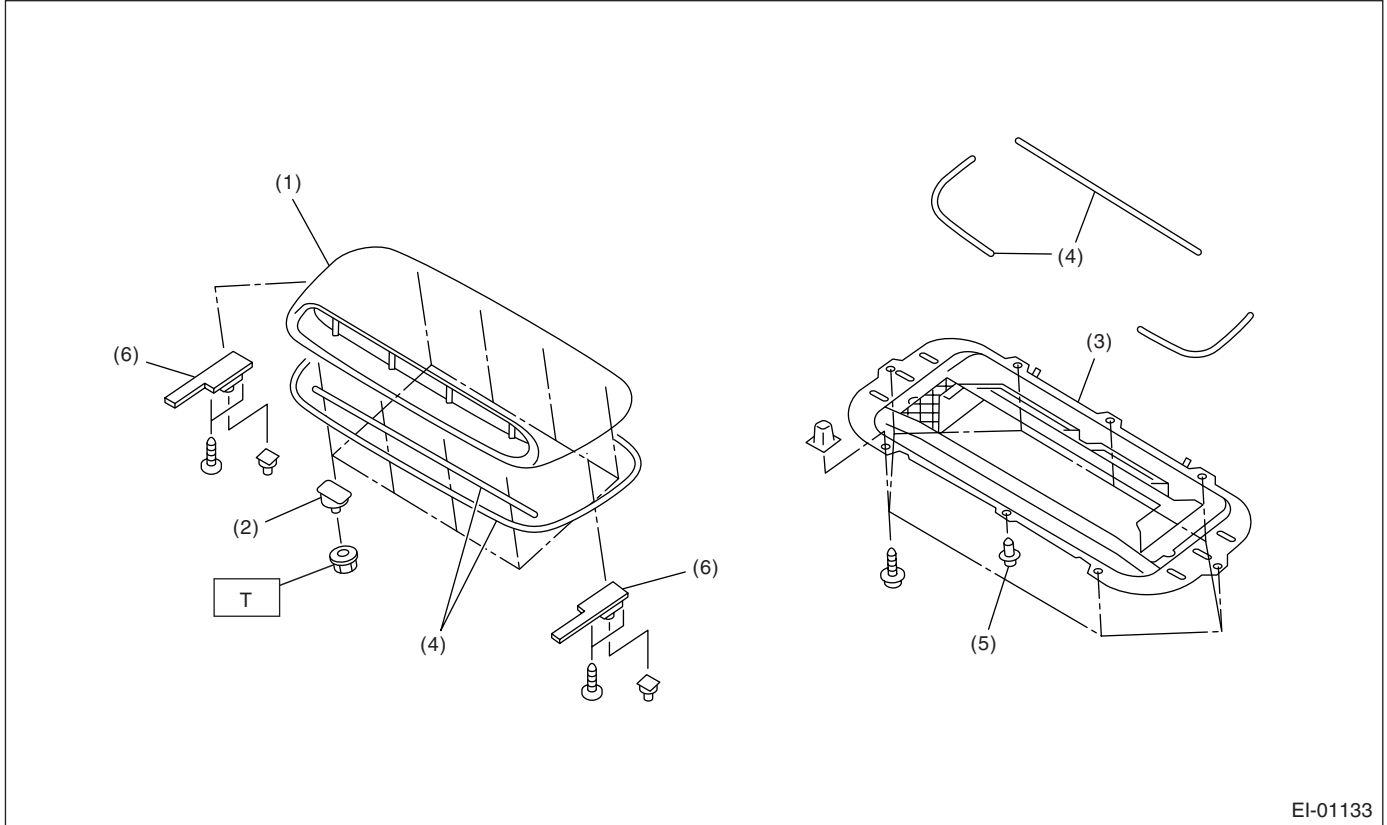
(1) Under cover

(2) Clip (side)

Tightening torque: N·m (kgf-m, ft-lb)
T: 14 (1.42, 10.3)

3. FRONT HOOD GRILLE

• TURBO MODEL

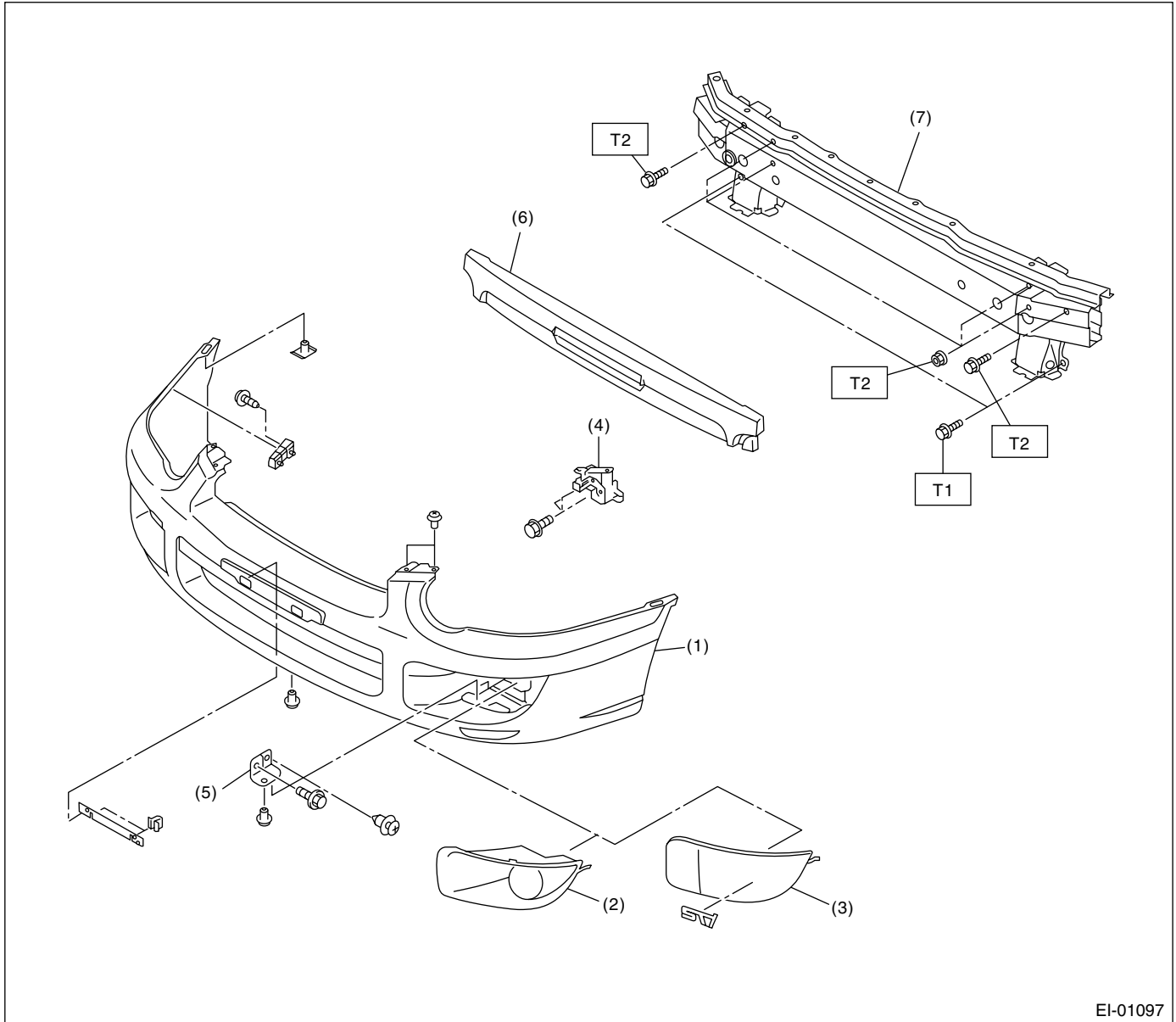


- (1) Front hood grille
- (2) Bolt
- (3) Grille duct

- (4) Packing
- (5) Clip
- (6) Side plate

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

4. FRONT BUMPER

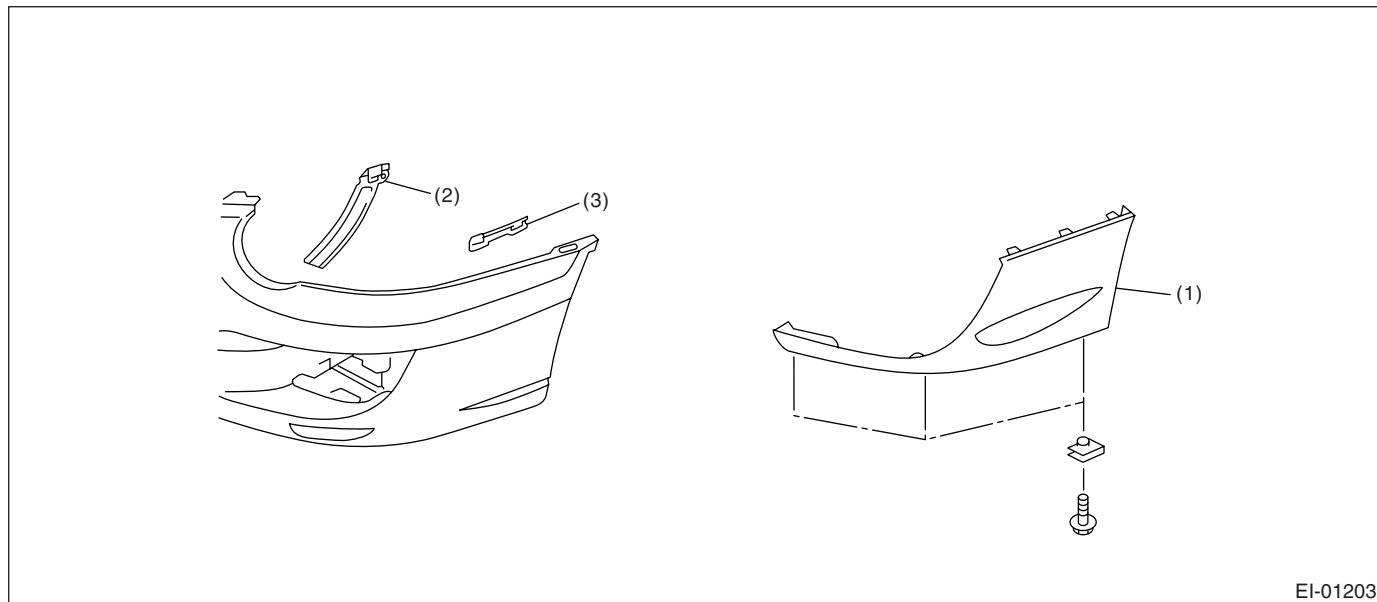


EI-01097

(1) Bumper face	(5) Bumper bracket side lower
(2) Fog light cover	(6) Energy absorber form
(3) Fog light cover (STi model)	(7) Bumper beam ASSY
(4) Bumper bracket side upper	

Tightening torque: N·m (kgf-m, ft-lb)
T1: 32 (3.3, 24)
T2: 69 (7.0, 51)

5. AIR DAM SKIRT



(1) Air dam skirt ASSY

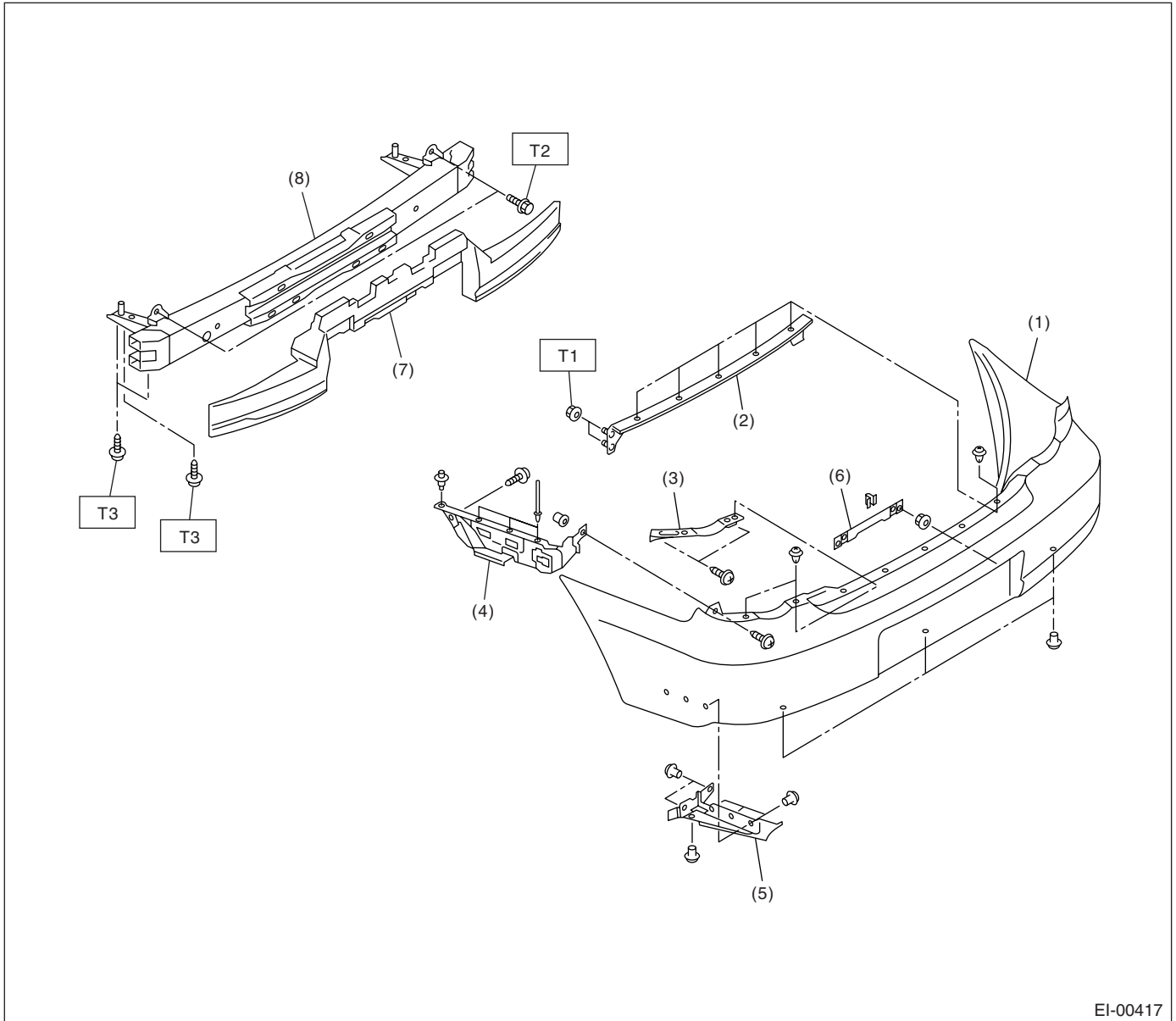
(2) Air spoiler side bracket

(3) Air spoiler upper beam

General Description

EXTERIOR/INTERIOR TRIM

6. REAR BUMPER



EI-00417

(1) Bumper face	(5) Bumper side cover
(2) Bumper upper beam	(6) License plate base
(3) Bumper upper bracket	(7) Bumper energy absorber
(4) Bumper side bracket	(8) Bumper back beam

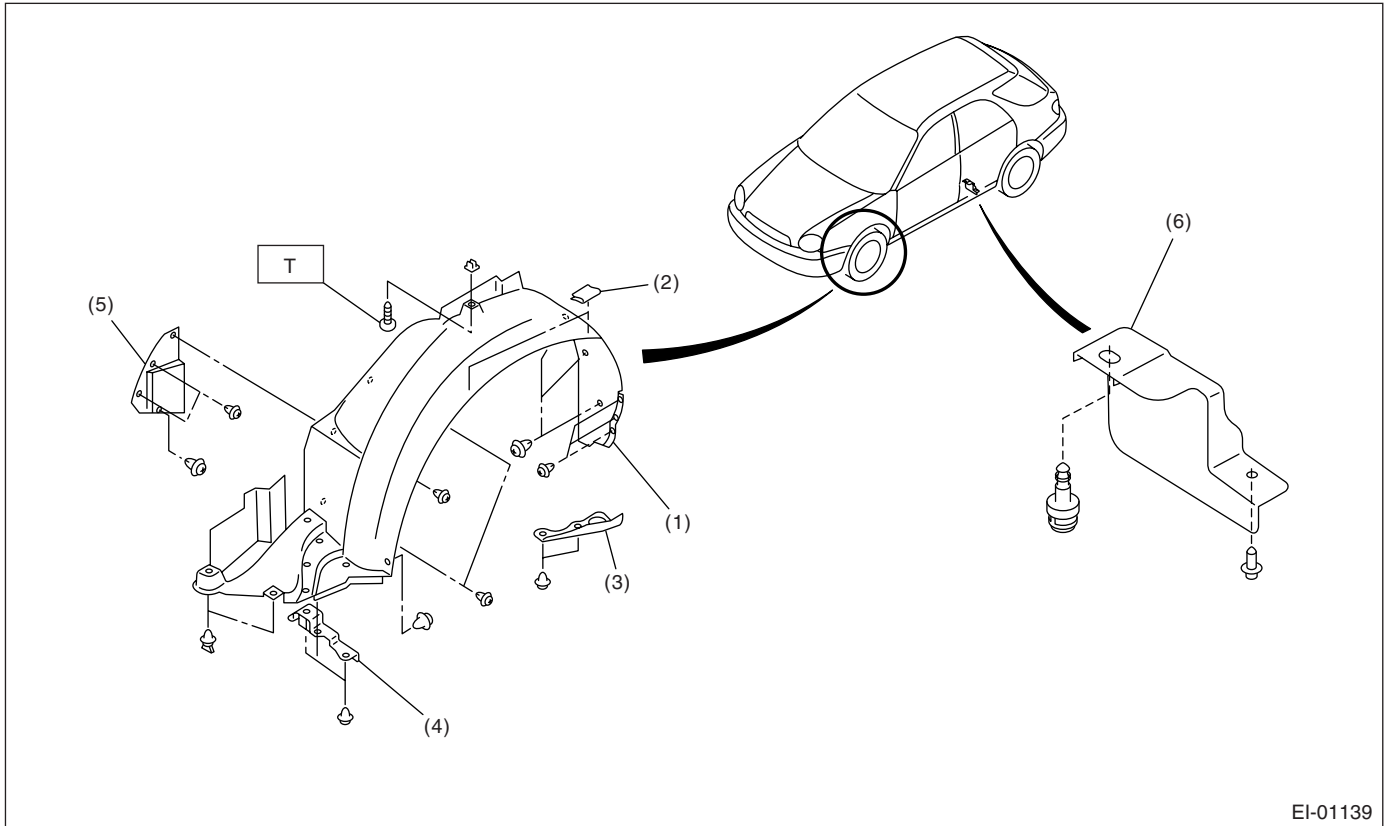
Tightening torque: N·m (kgf·m, ft·lb)

T1: 33 (3.4, 24)

T2: 34 (3.5, 25)

T3: 95 (9.7, 70)

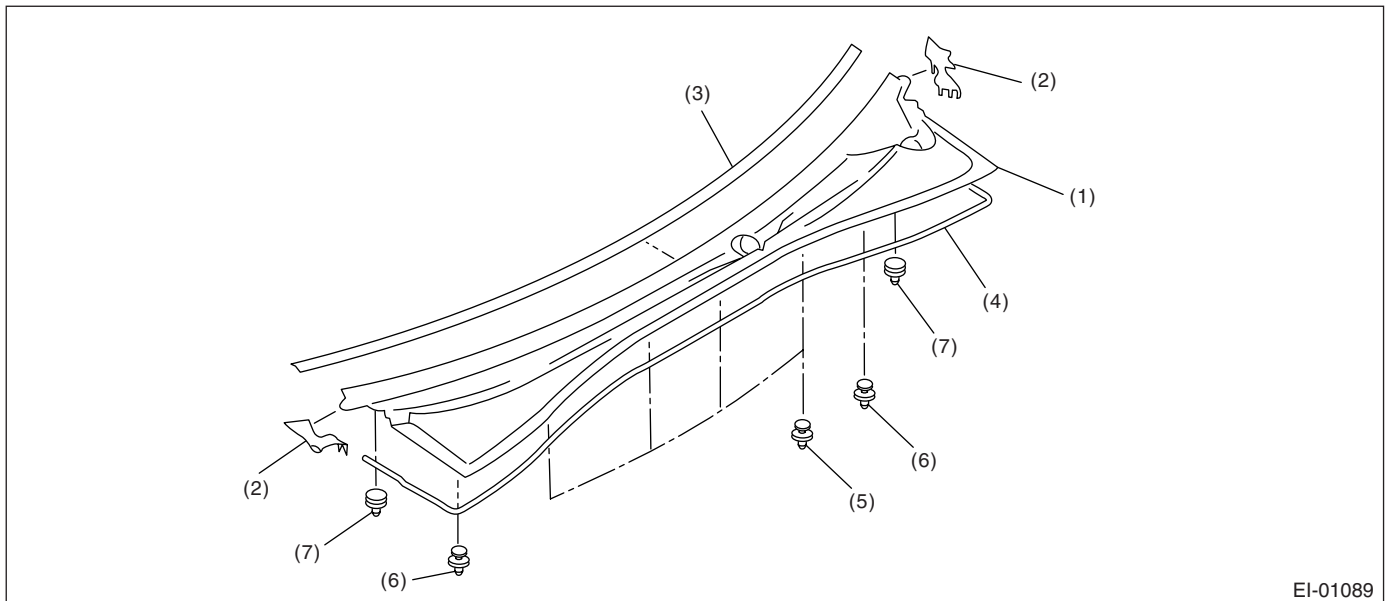
7. MUD GUARD



(1) Mud guard	(4) Front air flap plate
(2) Clip	(5) Mud guard plate (RH)
(3) Sub frame cover	(6) Rear air flap plate

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

8. COWL PANEL

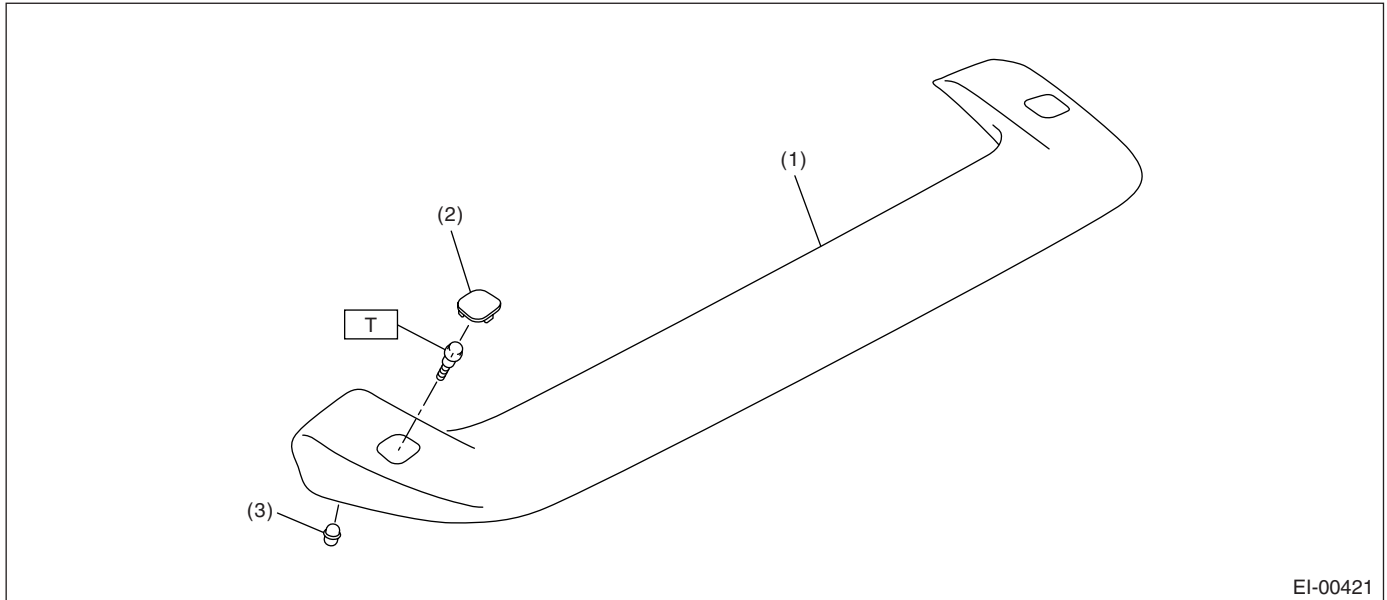


(1) Cowl panel	(4) Seal	(7) Clip F
(2) Cowl side panel	(5) Clip	
(3) Protector	(6) Clip (Pin)	

General Description

EXTERIOR/INTERIOR TRIM

9. ROOF SPOILER

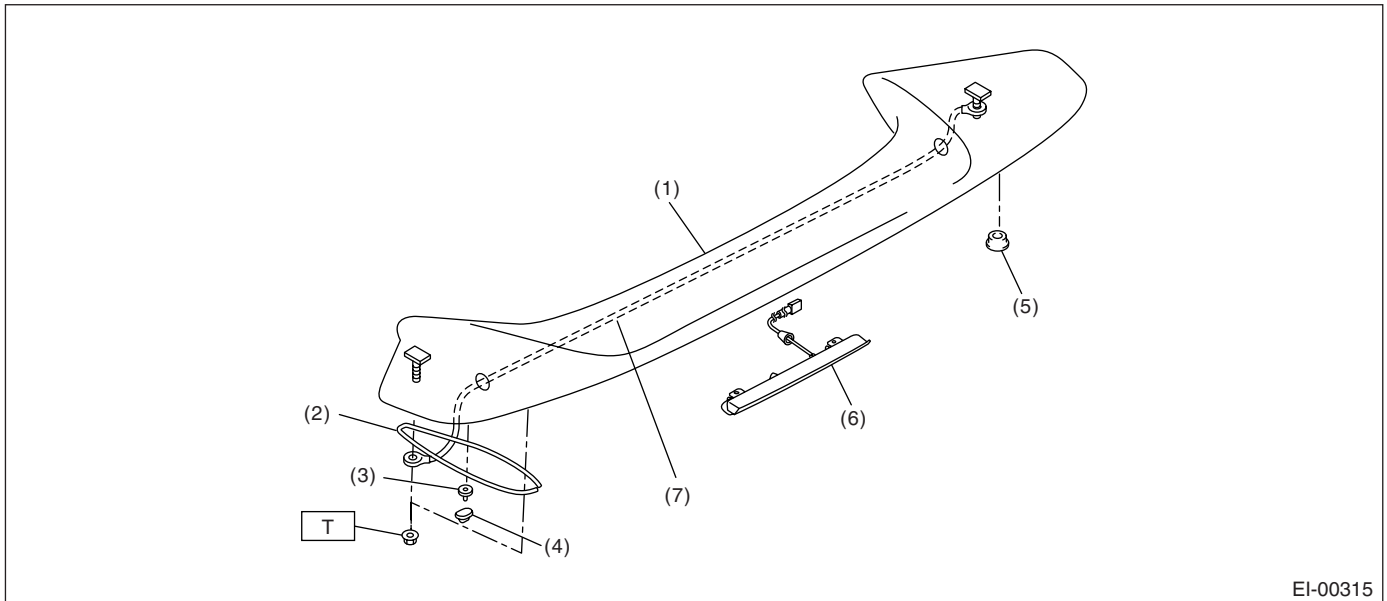


- (1) Roof spoiler
- (2) Cap

- (3) Clip

Tightening torque: N·m (kgf-m, ft-lb)
T: 7.4 (0.75, 5.46)

10. REAR SPOILER

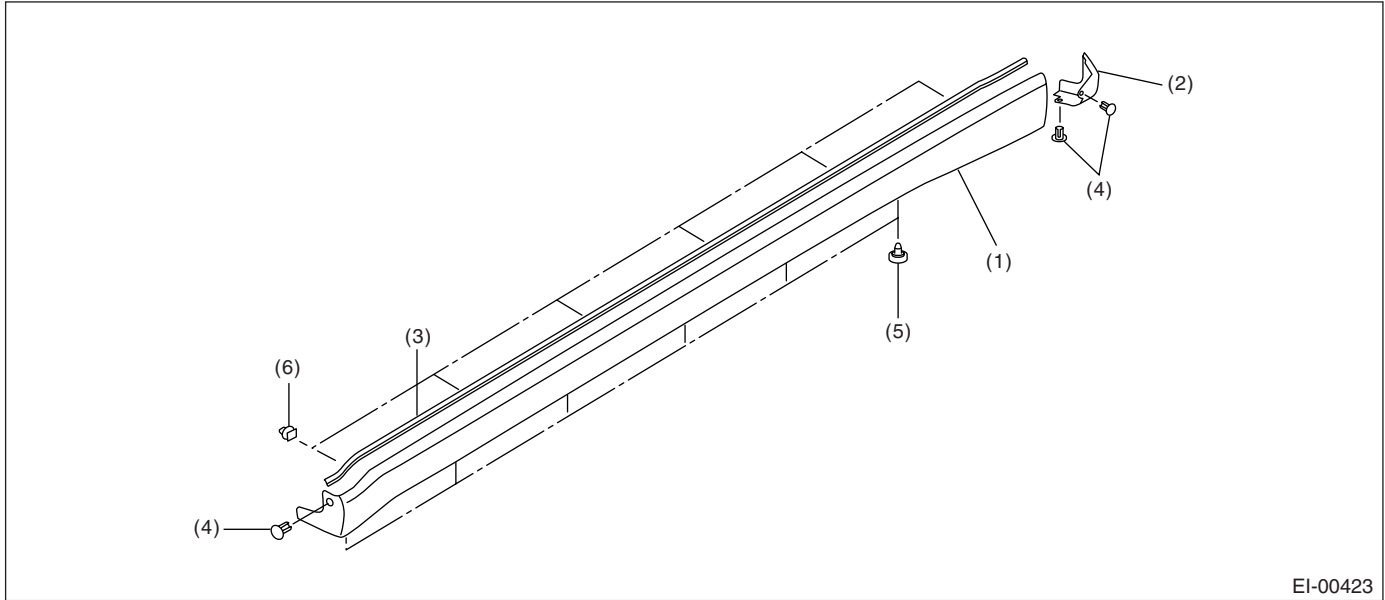


- (1) Rear spoiler
- (2) Protector
- (3) Clip
- (4) Grommet

- (5) Seal (RH)
- (6) High-mounted stop light
- (7) Retention cable (Inner parts)

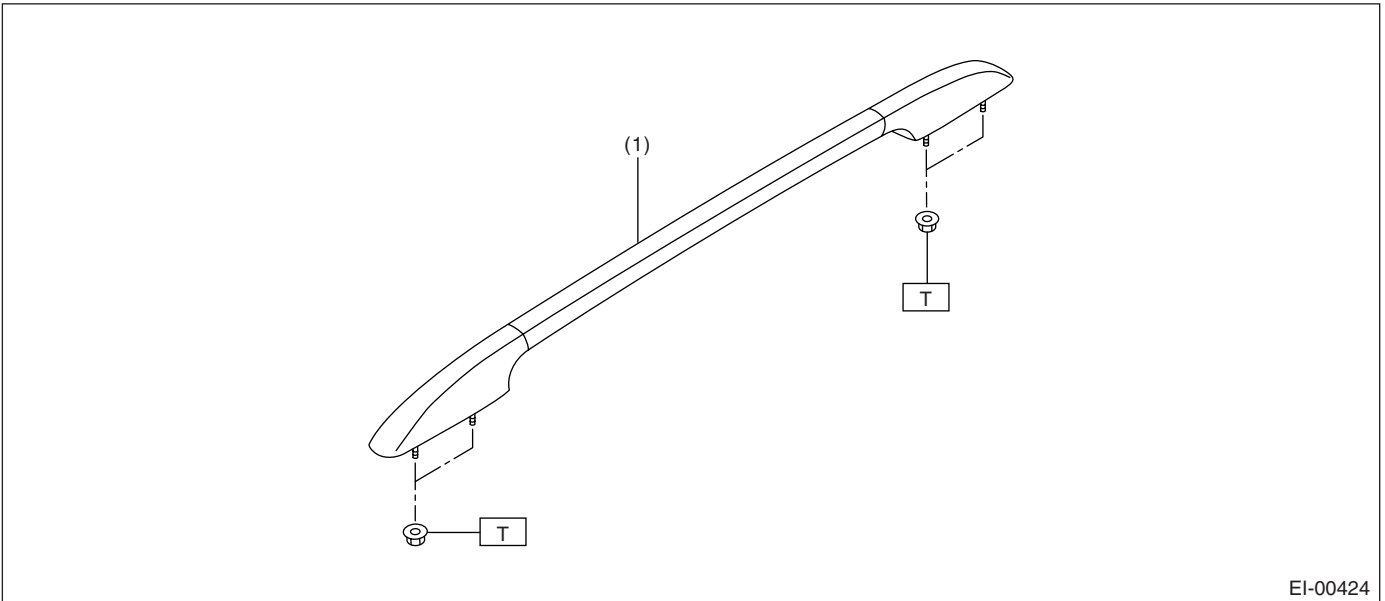
Tightening torque: N·m (kgf-m, ft-lb)
T: 7.4 (0.75, 5.46)

11.SIDE SILL SPOILER



(1) Side sill spoiler	(3) Protector	(5) Clip (Side sill spoiler)
(2) End cover	(4) Rivet clip	(6) Clip

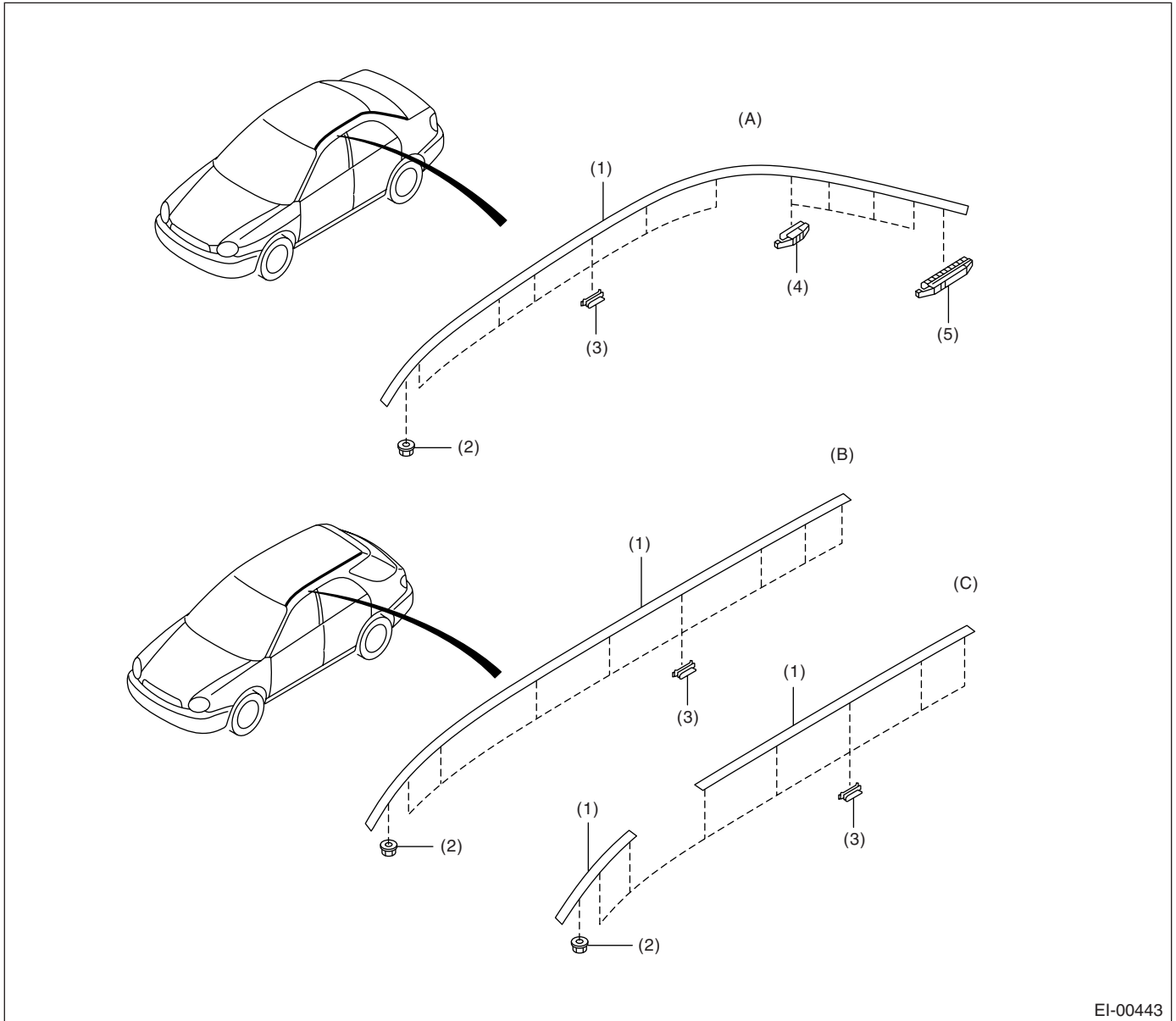
12.ROOF RAIL



- (1) Roof rail

Tightening torque: N·m (kgf-m, ft-lb)
T: 7.4 (0.75, 5.46)

13.ROOF MOLDING



EI-00443

(A) Sedan model

(B) Wagon model

(C) Wagon model (with roof rail)

(1) Roof molding

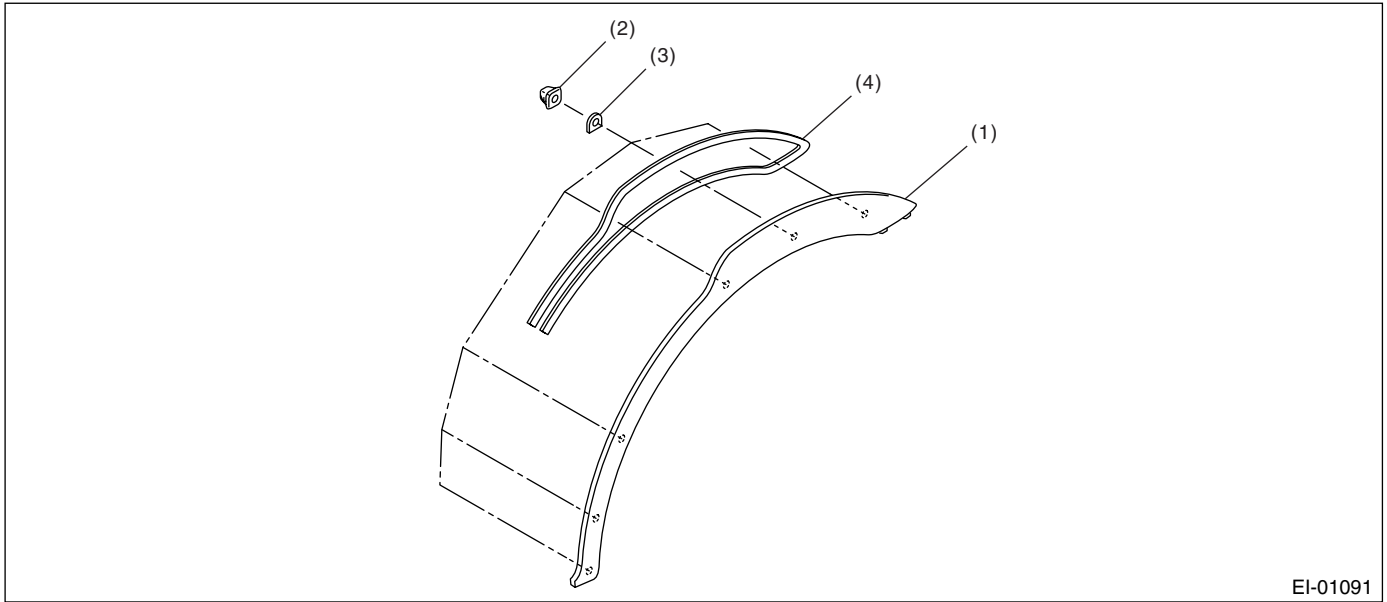
(3) Clip B

(5) Clip D

(2) Clip A

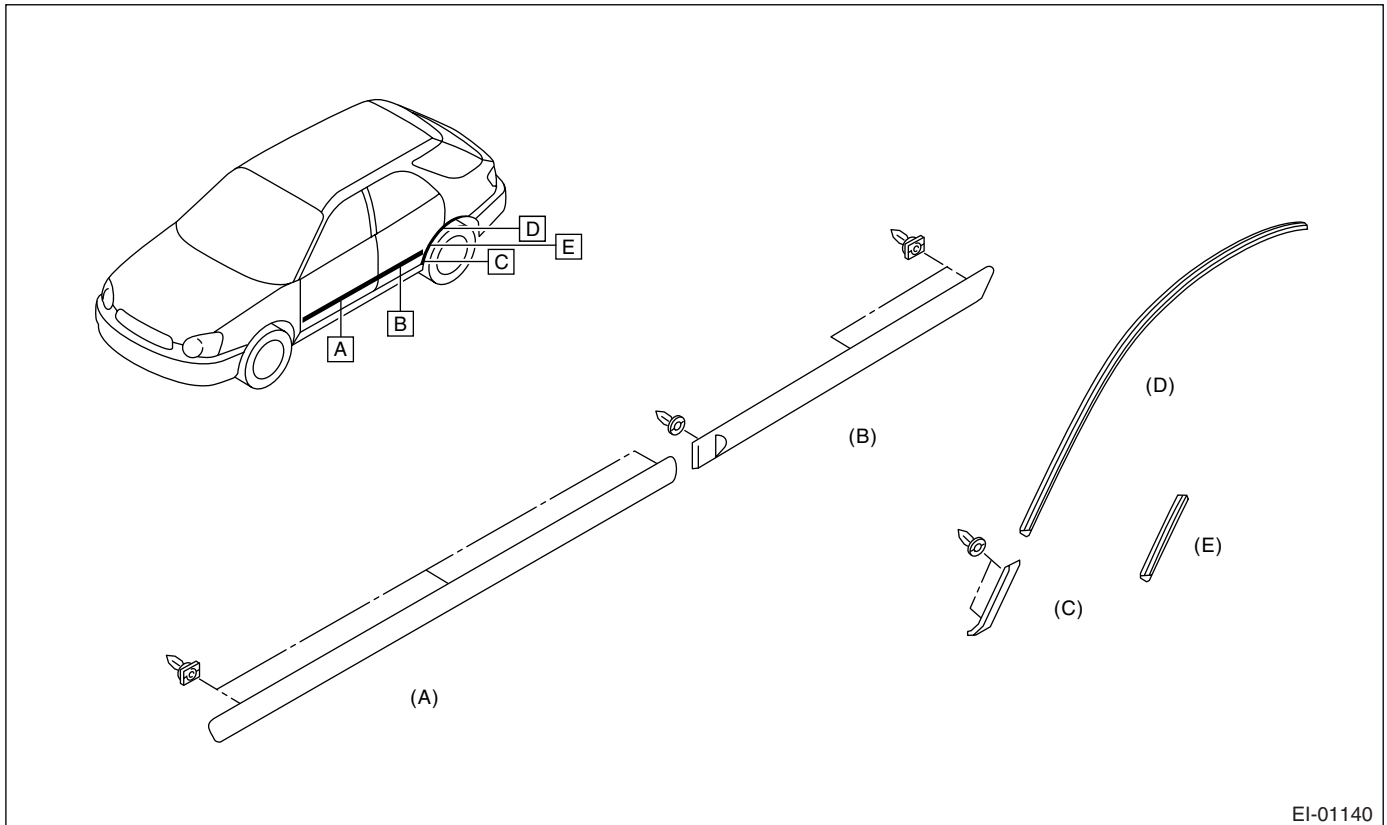
(4) Clip C

14.ARCH COVER



- (1) Arch cover
- (2) Clip
- (3) Cushion
- (4) Double-side tape

15.PROTECTOR

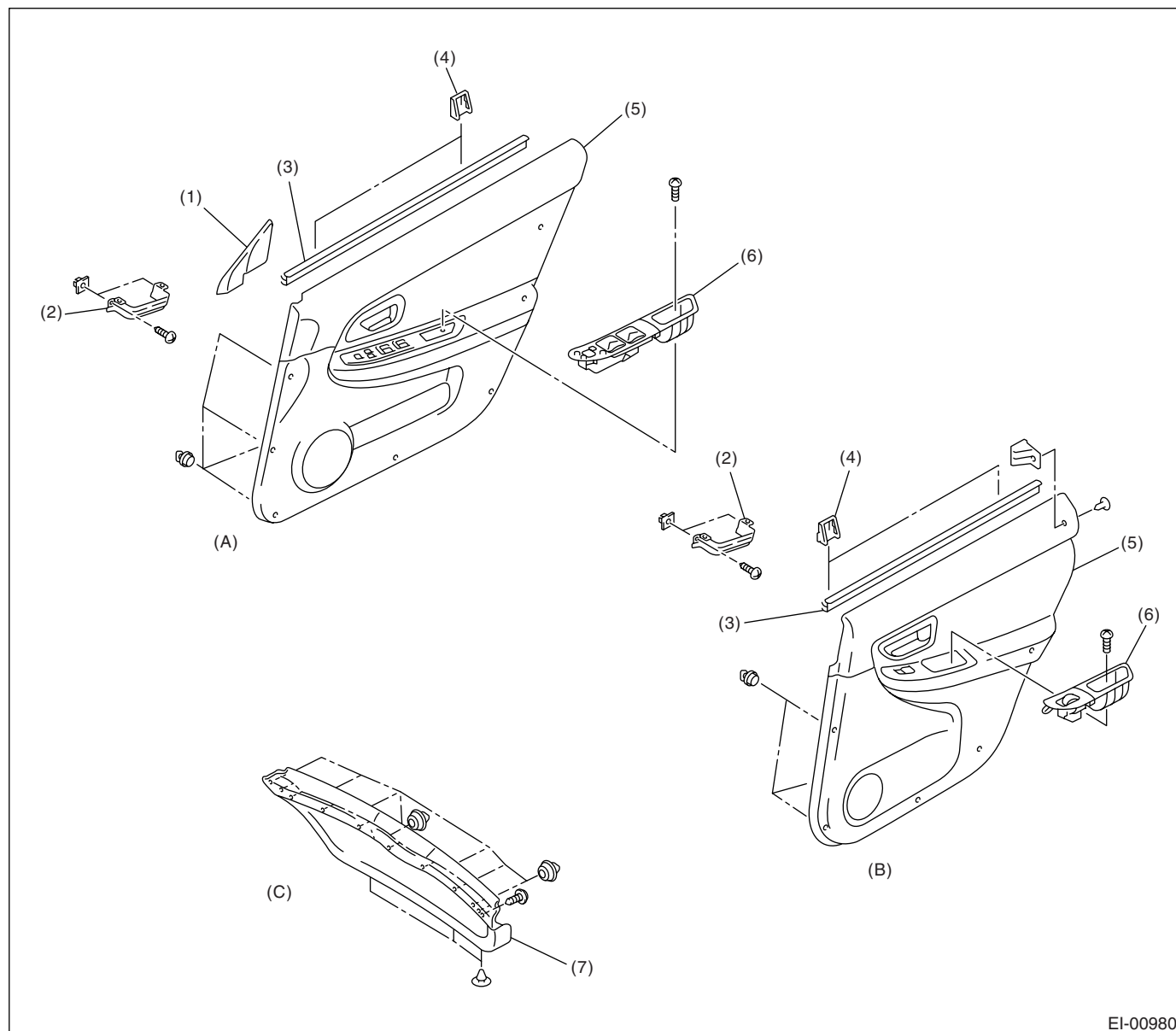


- (A) Front door
- (B) Rear door
- (C) Rear fender lower
- (D) Rear fender upper (Except STi model)
- (E) Rear fender upper (STi model)

General Description

EXTERIOR/INTERIOR TRIM

16.DOOR TRIM



EI-00980

(A) Front door trim

(B) Rear door trim

(C) Rear gate trim

(1) Gusset cover

(2) Bracket

(3) Upper weather strip

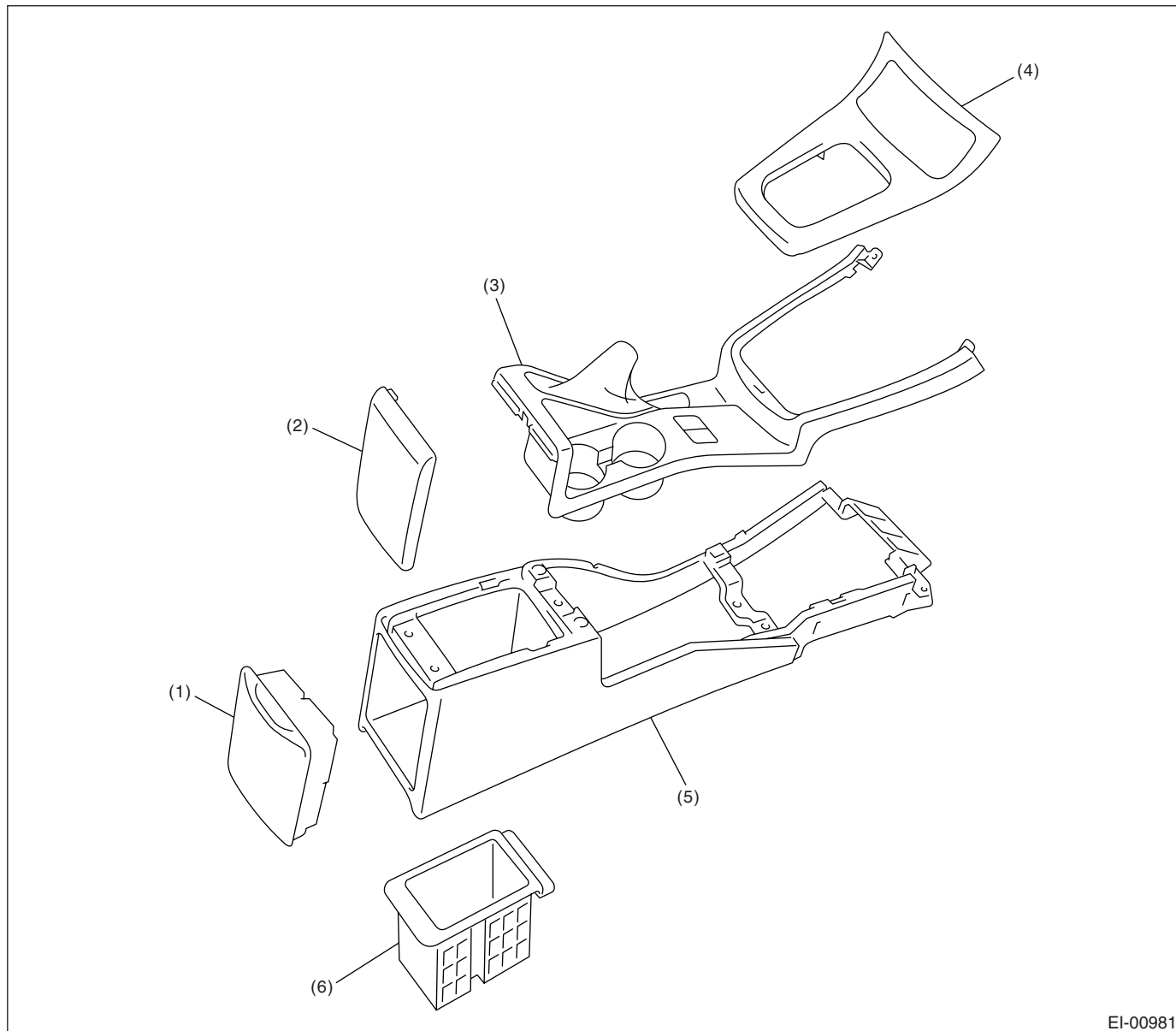
(4) Clip

(5) Trim panel

(6) Power window switch cover

(7) Lower trim

17.CONSOLE BOX



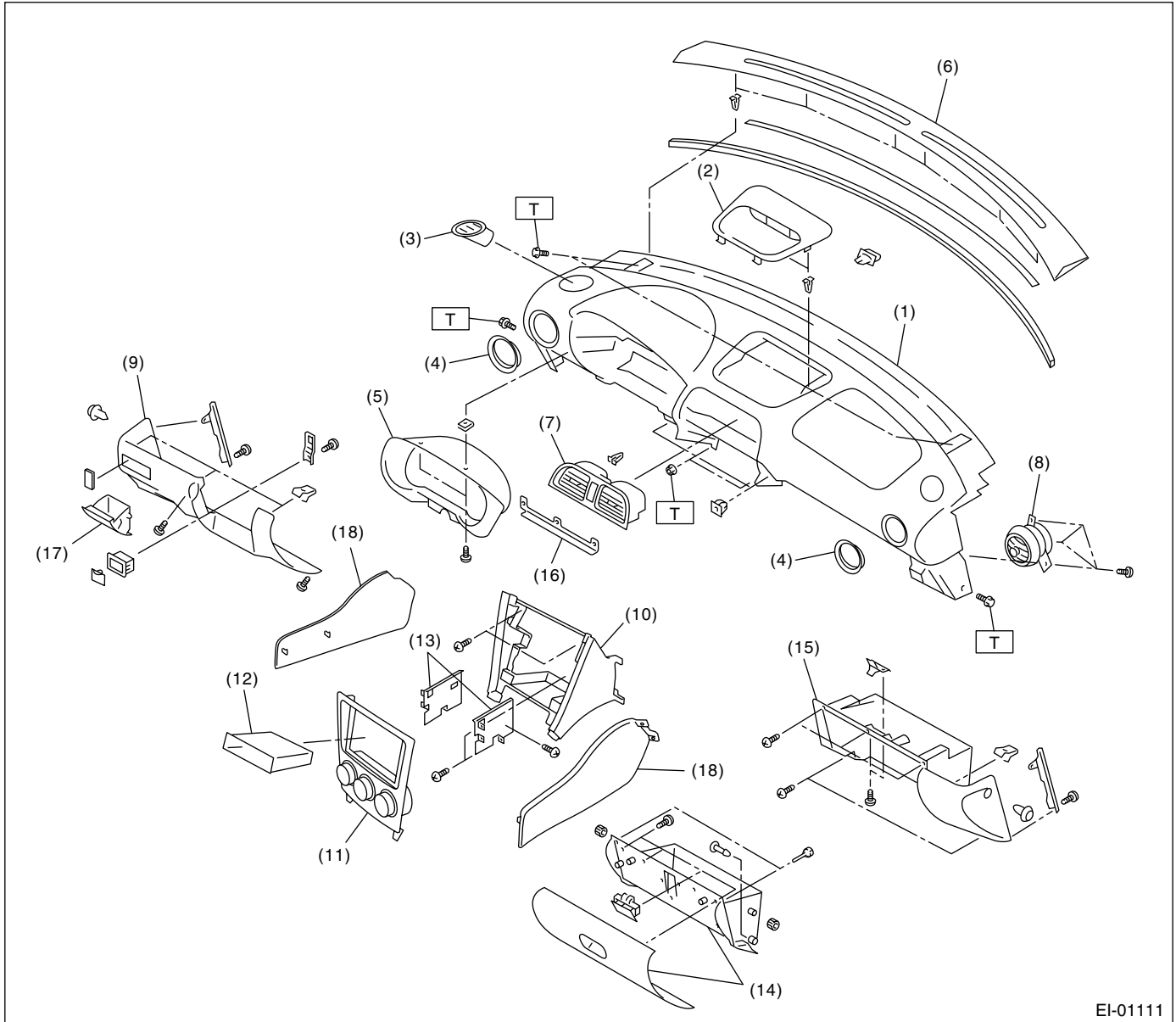
EI-00981

(1) Rear cup holders
(2) Console lid

(3) Console cover
(4) Console front panel

(5) Console box
(6) Console pocket

18. INSTRUMENT PANEL



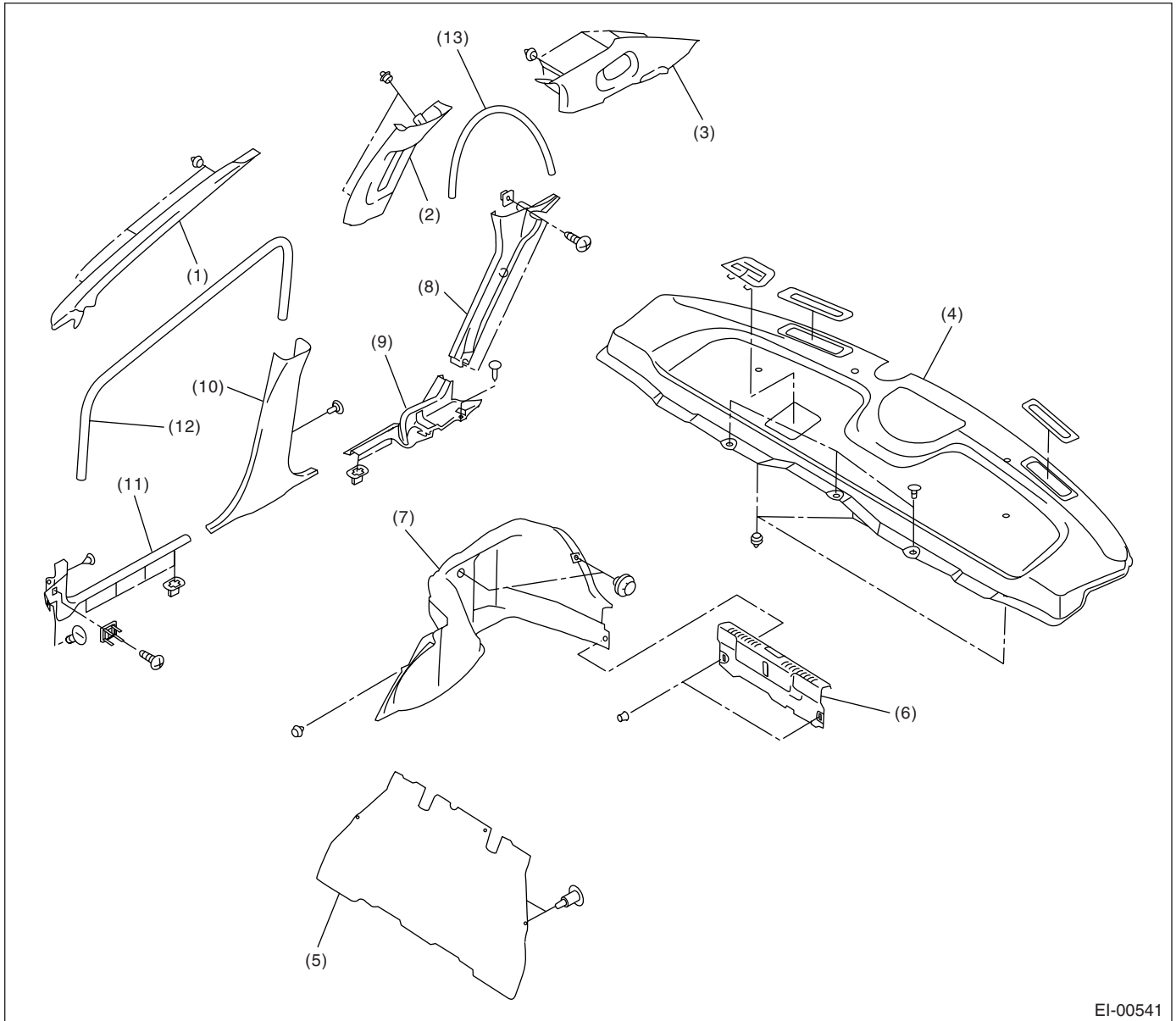
EI-01111

(1) Pad & frame	(8) Air vent grille (side)	(15) Glove box panel
(2) Center upper panel	(9) Instrument panel lower cover	(16) Bracket
(3) Air vent grille (defroster)	(10) Console cover	(17) Coin box
(4) Grille cover	(11) Center panel	(18) Console side panel
(5) Meter visor	(12) Center pocket	
(6) Defroster grille	(13) Audio bracket	
(7) Air vent grille (center)	(14) Glove box lid	

Tightening torque: N·m (kgf-m, ft-lb)

T: 7 (0.71, 5.2)

19.INNER TRIM (SEDAN MODEL)



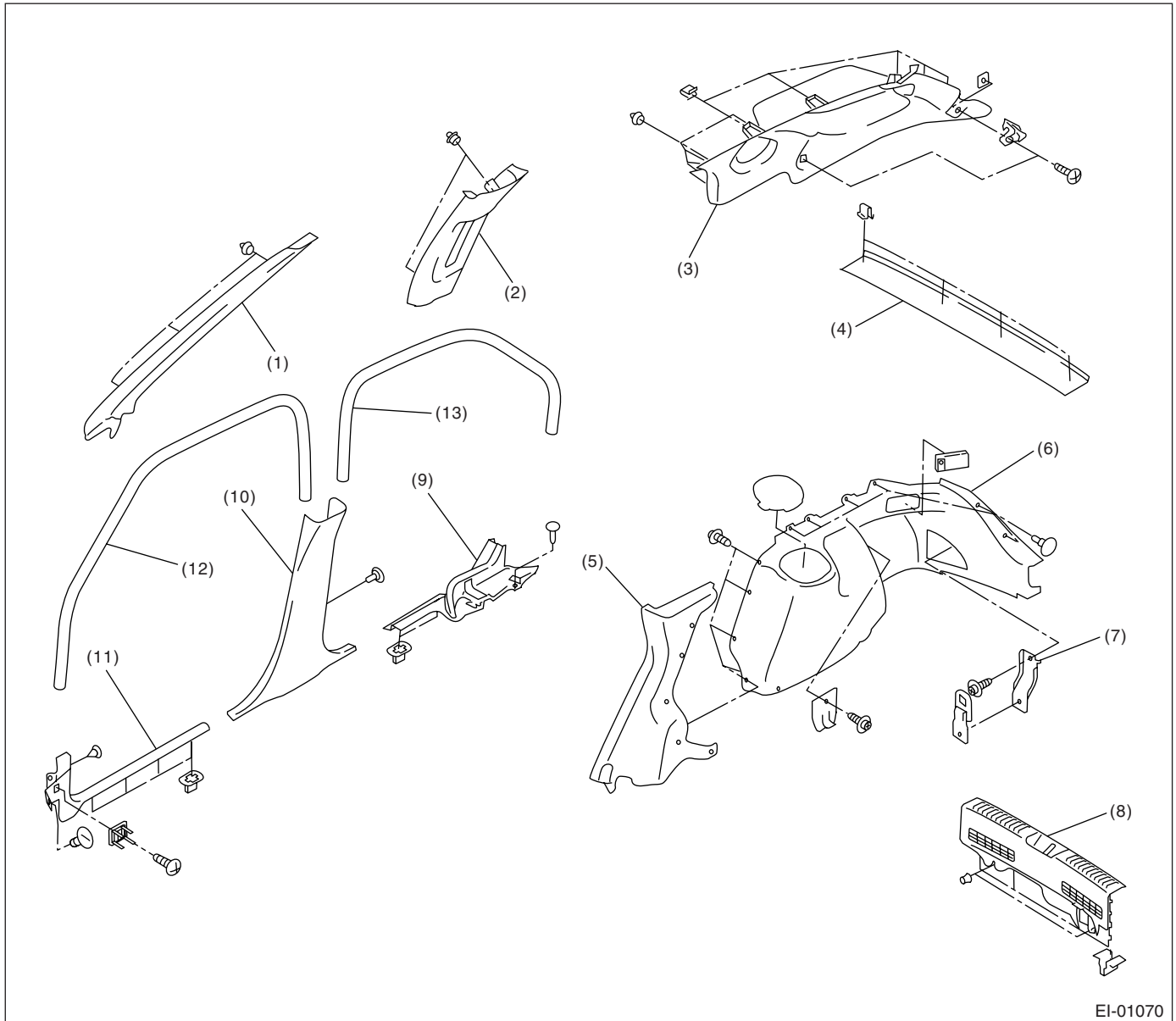
EI-00541

(1) Front pillar upper trim	(6) Trunk rear trim	(10) Center pillar lower trim
(2) Center pillar upper trim	(7) Trunk side trim	(11) Side sill front cover
(3) Rear pillar upper trim	(8) Rear pillar lower trim	(12) Front garnish
(4) Rear shelf trim	(9) Side sill rear cover	(13) Rear garnish
(5) Rear bulk trim		

General Description

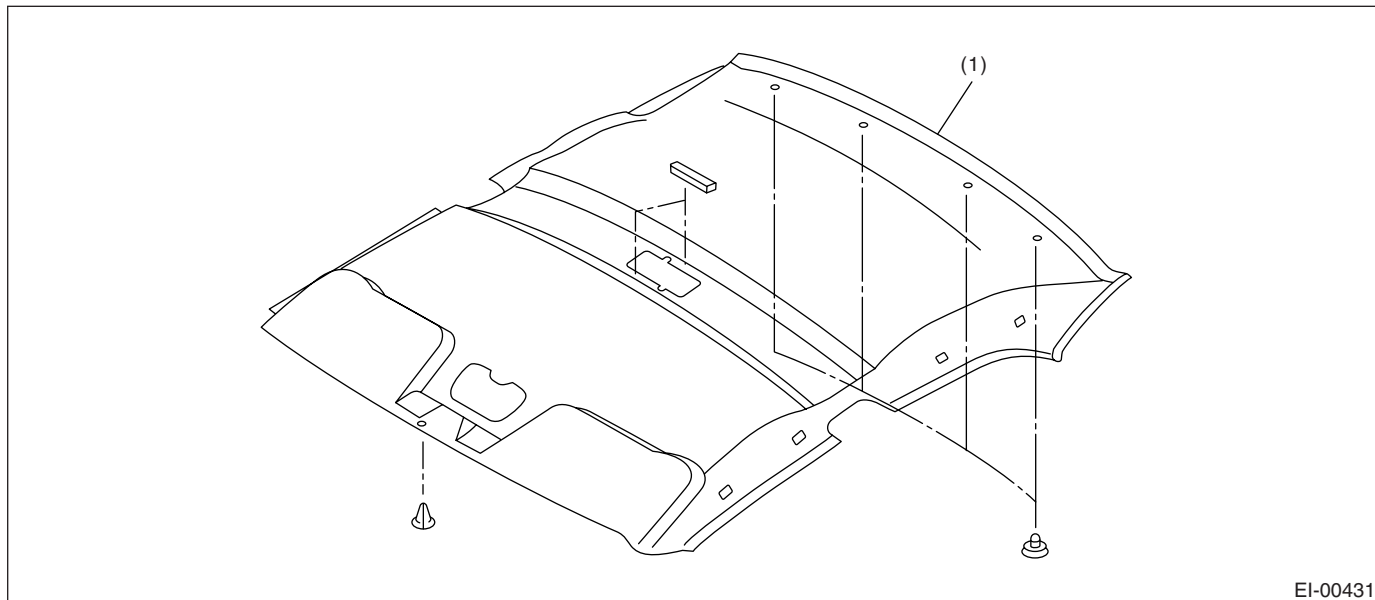
EXTERIOR/INTERIOR TRIM

20.INNER TRIM (WAGON MODEL)



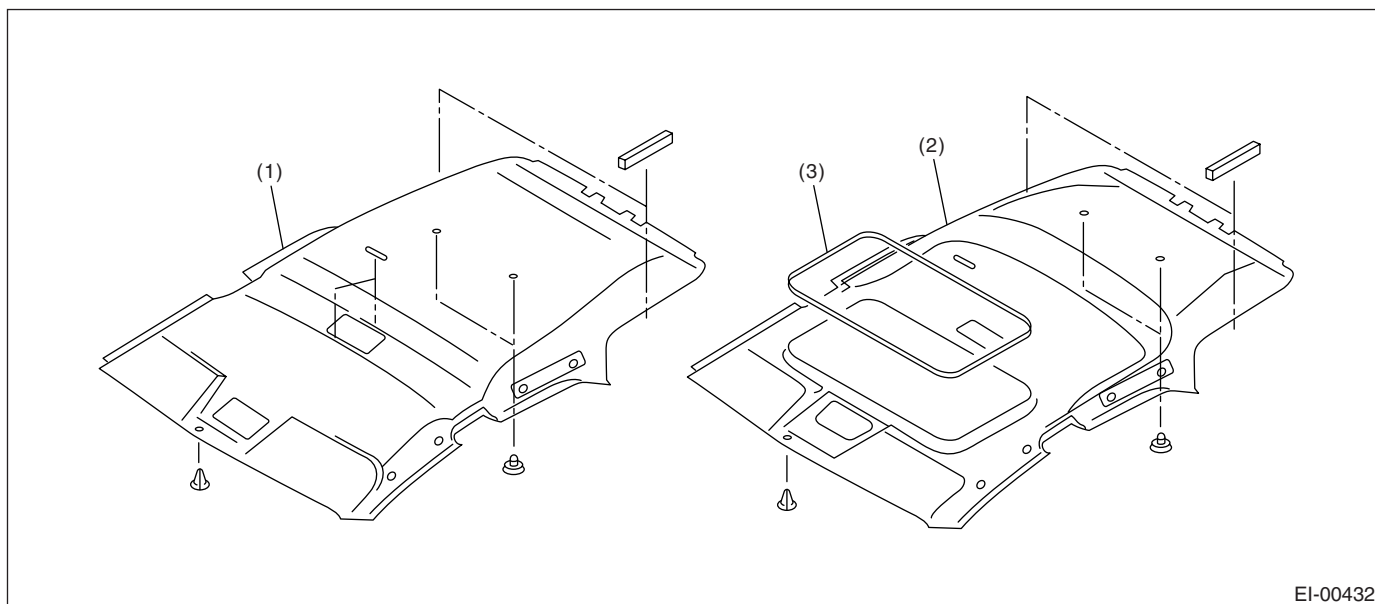
(1) Front pillar upper trim	(6) Rear quarter lower trim	(11) Side sill front cover
(2) Center pillar upper trim	(7) Hook	(12) Front garnish
(3) Rear pillar upper trim	(8) Rear skirt trim	(13) Rear garnish
(4) Rear rail trim	(9) Side sill rear cover	
(5) Rear pillar lower trim	(10) Center pillar lower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

21.ROOF TRIM (SEDAN MODEL)



(1) Roof trim

22.ROOF TRIM (WAGON MODEL)



(1) Roof trim

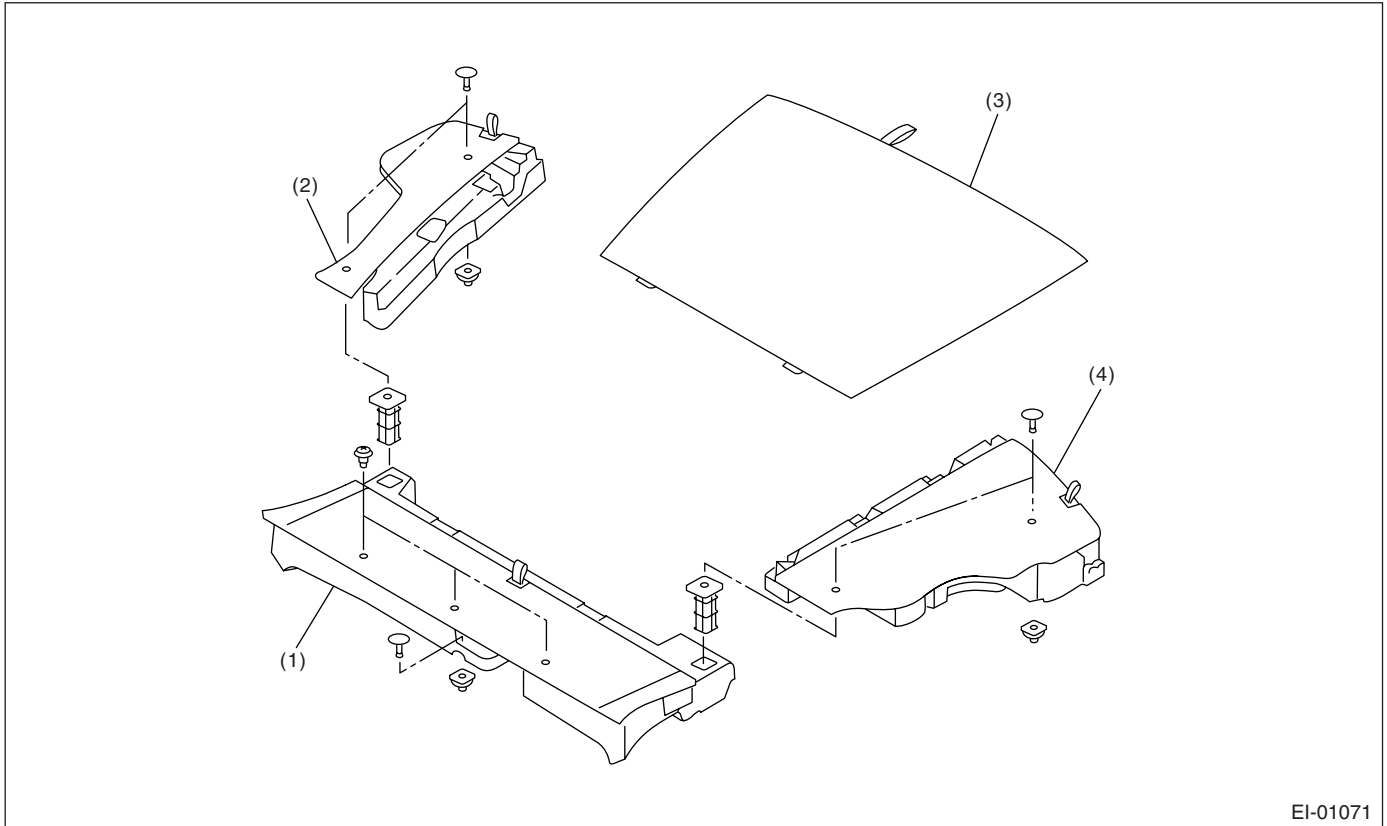
(2) Roof trim (Model with sun roof)

(3) Sun roof garnish

General Description

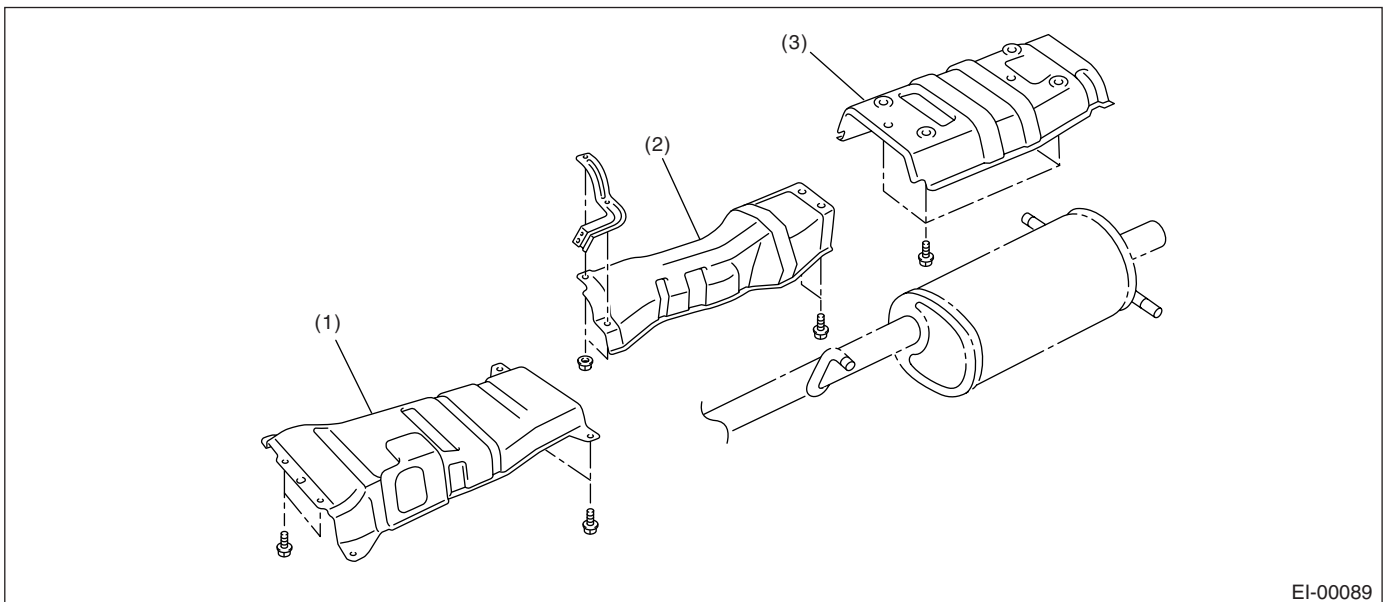
EXTERIOR/INTERIOR TRIM

23.LUGGAGE FLOOR MAT



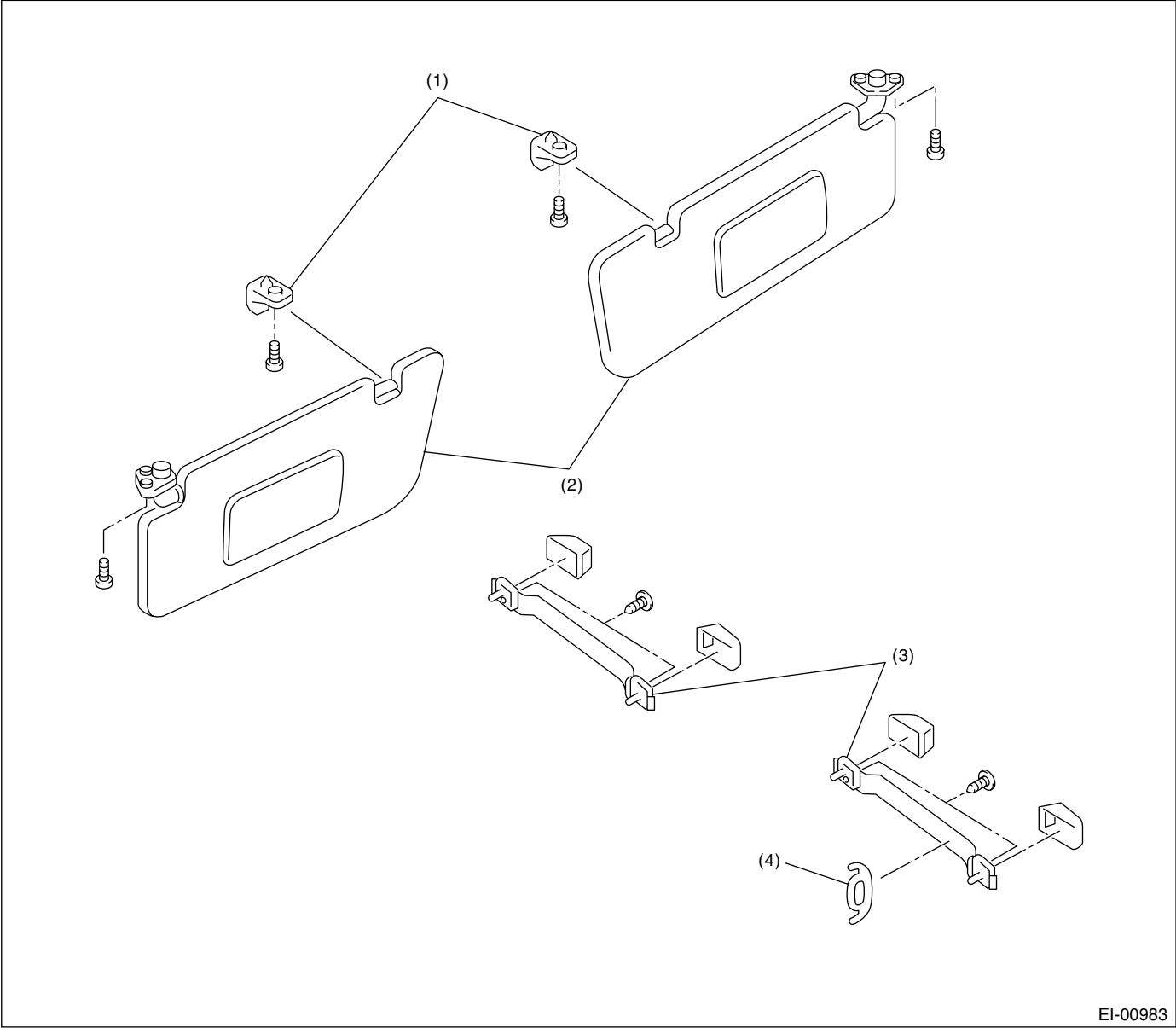
(1) Front floor mat	(3) Center floor mat
(2) Side floor mat (RH)	(4) Side floor mat (LH)

24.HEAT SHIELD COVER



(1) Front heat shield cover	(2) Center heat shield cover	(3) Rear heat shield cover

25.INNER ACCESSORIES



- (1) Hook
- (2) Sun visor

- (3) Assist grip

- (4) Coat hook

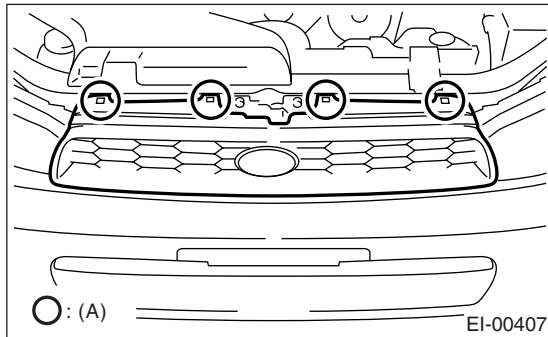
B: PREPARATION TOOL

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

2. Front Grille

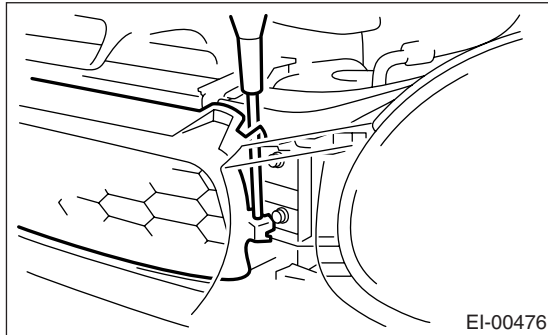
A: REMOVAL

- 1) Open the front hood.
- 2) Remove the four clips (A).



(A) Clip

- 3) Remove the right and left hooks on the lower side.



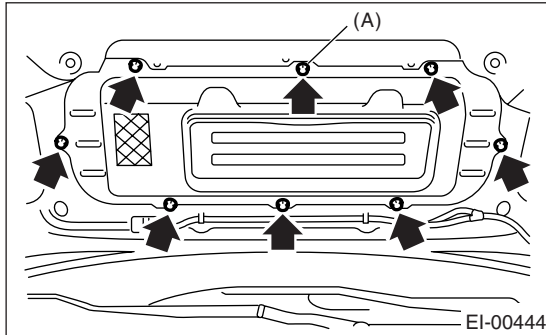
B: INSTALLATION

Install in the reverse order of removal.

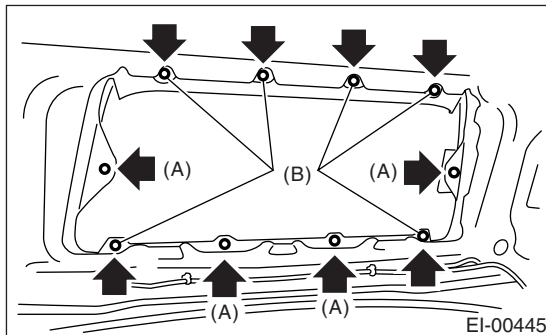
3. Front Hood Grille

A: REMOVAL

- 1) Open the front hood.
- 2) Remove the hood insulator. <Ref. to EB-13, REMOVAL, Front Hood.>
- 3) Remove the seven bolts and clip (A) to remove the hood duct.

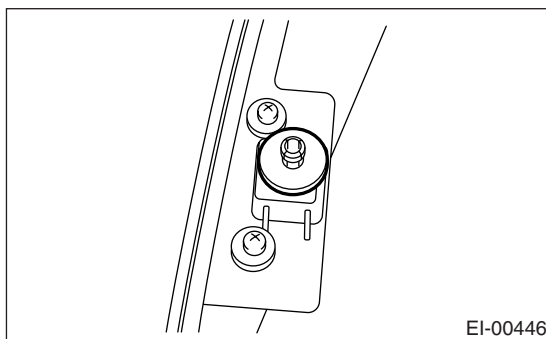


- 4) Loosen the six nuts (B), remove the four clips (A), and then remove the hood grille.



B: INSTALLATION

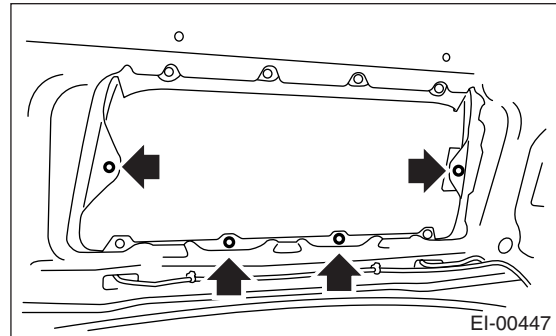
- 1) Replace the four clips with new ones.



- 2) Engage the four clips of hood grille to front hood panel.

CAUTION:

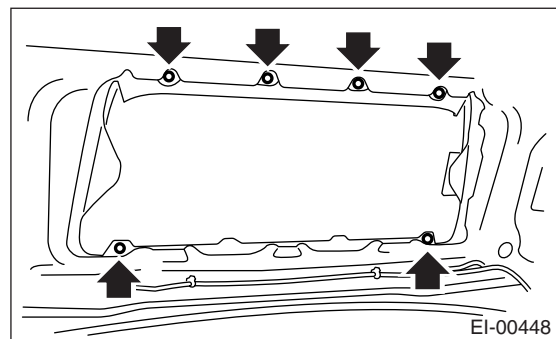
Make sure that the anchor portion of each clip is firmly engaged.



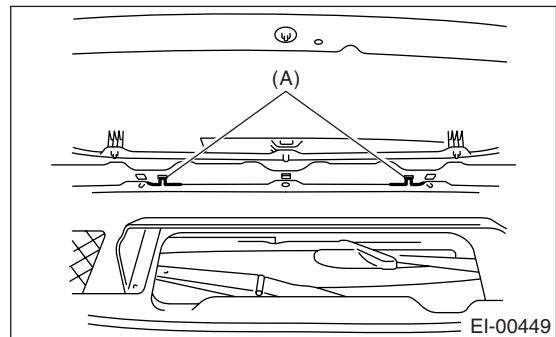
- 3) Install the six nuts.

Tightening torque:

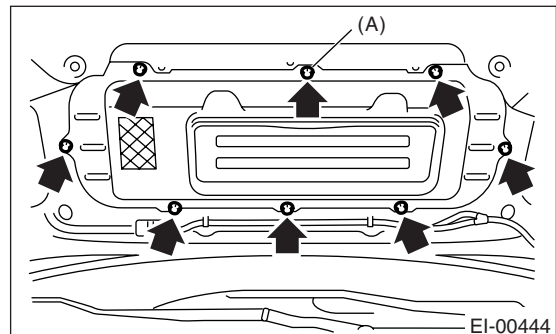
4.5 N·m (0.46 kgf·m, 3.32 ft·lb)



- 4) Catch the two hooks (A) of hood duct to hood holes.



- 5) Install the hood duct with clip (A) and seven bolts.



- 6) Install the hood insulator with new clips.

Front Hood Grille

EXTERIOR/INTERIOR TRIM

C: INSPECTION

Make sure that the clip is firmly engaged.

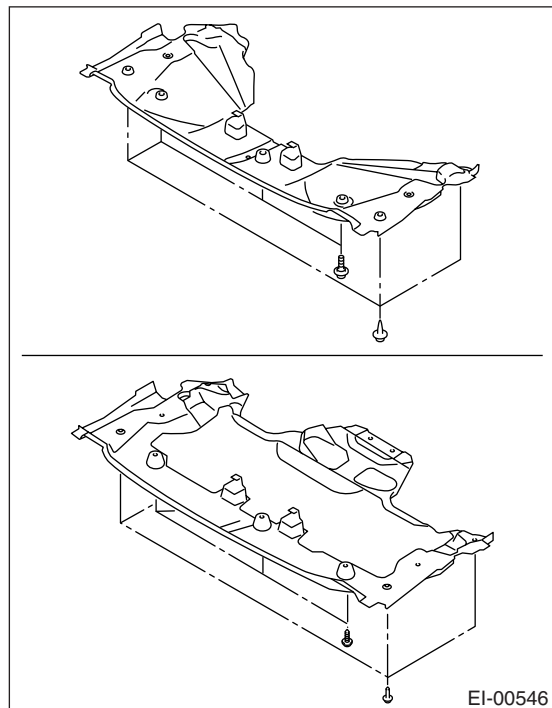
Make sure that there is no abnormal gap at whole periphery of hood grille.

Make sure that there is no damage on hood grille.

4. Front Under Cover

A: REMOVAL

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



B: INSTALLATION

Install in the reverse order of removal.

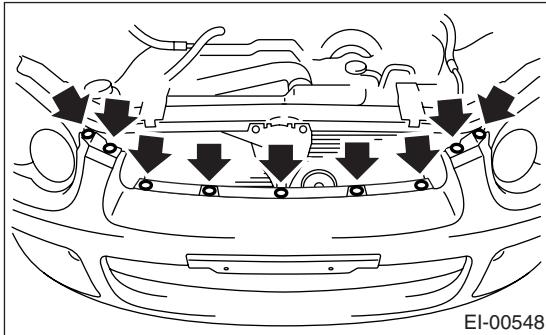
Tightening torque:

14 N·m (1.42 kgf-m, 10.3 ft-lb)

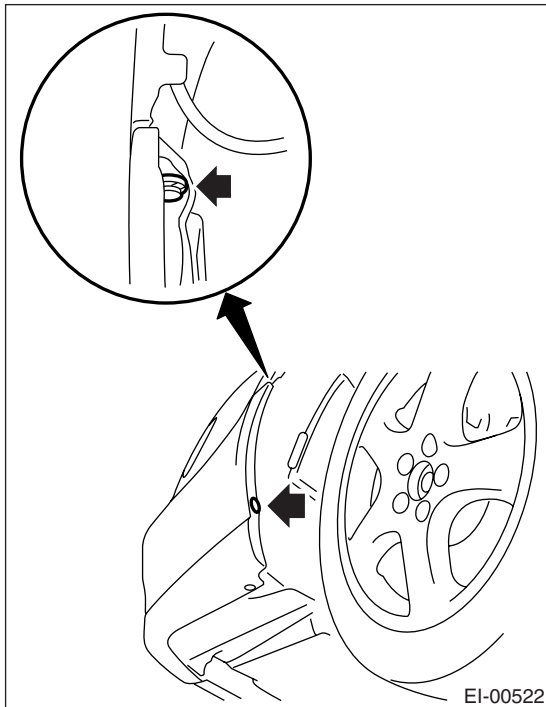
5. Front Bumper

A: REMOVAL

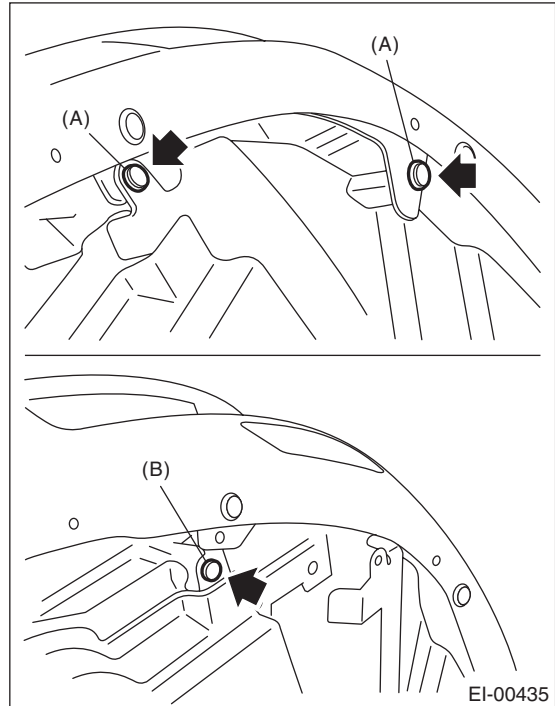
- 1) Disconnect the ground cable from battery.
- 2) Remove the front grille. <Ref. to EI-20, REMOVAL, Front Grille.>
- 3) Remove the nine clips on the upper part of bumper.



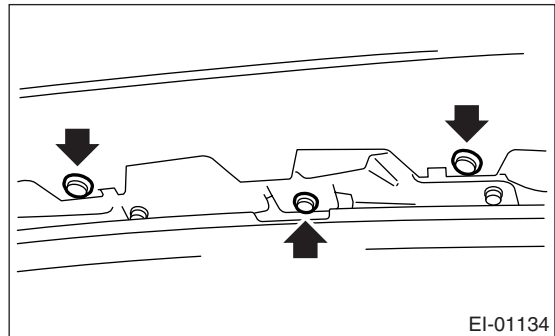
- 4) Turn over the mud guard, and then remove the clips (A) and (B), which secure the front bumper to fender.



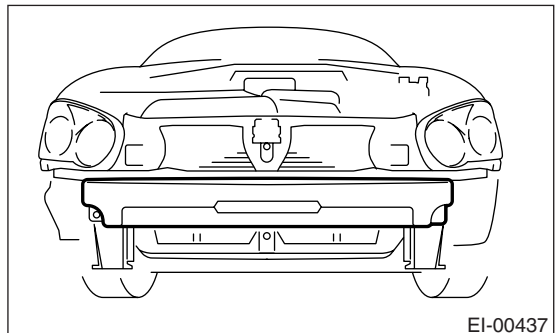
- 5) Remove the two clips (A), turn over the mud guard, and then remove the clip (B). (Conduct the same procedure on the right side.)



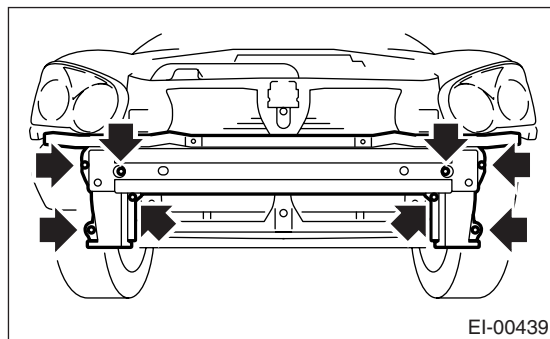
- 6) Remove the four clips in the center part of bumper.



- 7) Remove the fog light. <Ref. to LI-18, REMOVAL, Front Fog Light Assembly.>
- 8) Remove the bumper from body.
- 9) Remove the energy absorber foam from front bumper beam.

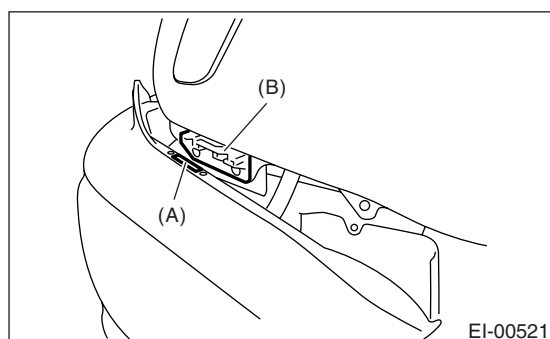


10) Loosen the bolt and nut, and then remove the bumper beam from body.



B: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Secure the slider (A) to guide plate (B).



Tightening torque:

Refer to COMPONENT in General Description.

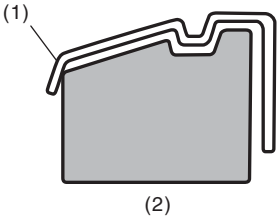
<Ref. to EI-4, FRONT BUMPER, COMPONENT, General Description.>

Front Bumper

EXTERIOR/INTERIOR TRIM

C: REPAIR

1. COATING METHOD FOR PP BUMPER

Process No.	Process name	Job contents	
1	Bumper mounting	Set the bumper on paint worktable if required. Use paint worktable conforming to inner shape of bumper when possible.	 (1) Bumper (2) Set bumper section EI-00234
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 the 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.

1) Minor damage causing only a change in the lustre of the bumper due to a light touch
Almost restorable.

Process No.	Process name	Job contents	
1	Cleaning	Clean the area to be repaired using water.	
2	Sanding	Grind the repairing area with #500 sand paper in a "feathering" motion.	
3	Finish	Resin section	Coated section
		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.	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.
		Polish the waxed area with a clean cloth after 5 to 10 minutes.	

2) Deep damage caused by scratching fences, etc.

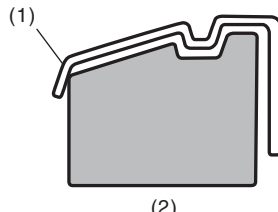
A dent cannot be repaired but a whitened or swelled part can be removed.

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

3) Deep damage such as a break or hole that requires filling

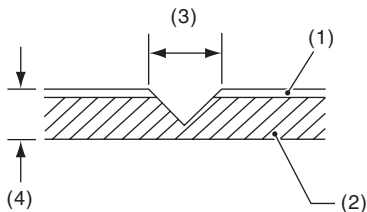
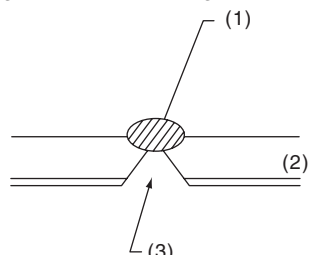
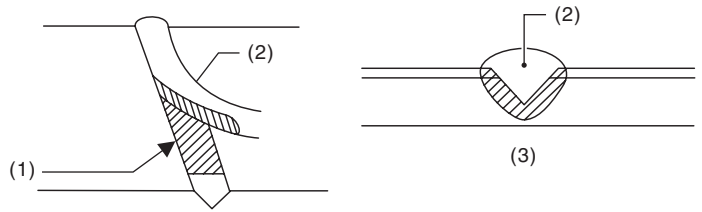
Much of the peripheral grained surface must be sacrificed for repair, and the degree of restoration is not really worth the expense. (The surface, however, will become almost flush with adjacent areas.)

Recommended repair kit: PP Part Repair Kit (NRM)

Process No.	Process name	Job contents	
1	Bumper removal	Remove the bumper as required.	
2	Part removal	Remove the parts built into bumper as required.	
3	Bumper placement	Place the bumper on a paint worktable as required. It is recommended that contour of worktable accommodate internal shape of bumper.	 (1) Bumper (2) Set bumper section EI-00234
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).	

Front Bumper

EXTERIOR/INTERIOR TRIM

Process No.	Process name	Job contents	
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.	 EI-00235 (1) Paint surface (2) PP base surface (3) 20 — 30 mm (0.79 — 1.18 in) (4) 3 mm (0.12 in)
6	Sanding (I)	Grind 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-00236 (1) Welded spot (Use heater gun and PP welding rod) (2) PP base surface (3) Beveled section NOTE: - Do not melt the welding rod until it flows out. This results in reduced strength. - Leave the welded spot unattended until it cools completely.
9	Welding	Using a heater gun and PP welding rod, weld the beveled spot while melting the rod and damaged area.	 EI-00237 (1) Melt hatched area (2) Welding rod (3) Section NOTE: - Melt the sections indicated by hatched area. - Do not melt the welding rod until it flows out, in order to provide strength. - Always keep the heater gun 1 to 2 cm (0.4 to 0.8 in) away from the welding spot. - Leave the welded spot unattended until it cools completely.

Front Bumper

EXTERIOR/INTERIOR TRIM

Process No.	Process name	Job contents	
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 impregnated 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.	
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 thickness: 245 — 343 kPa (2.5 — 3.5 kg/cm², 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 thickness: 245 — 343 kPa (2.5 — 3.5 kg/cm², 36 — 50 psi)

Front Bumper

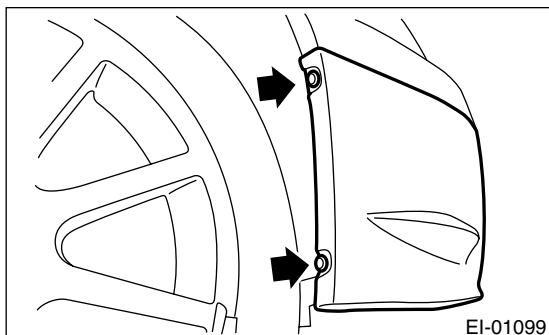
EXTERIOR/INTERIOR TRIM

Process No.	Process name	Job contents	
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 the masking tape applied in Process No. 11 and 13.	
25	Parts installation	Install the parts on bumper in reverse order of removal.	
26	Bumper installation	Install the bumper.	

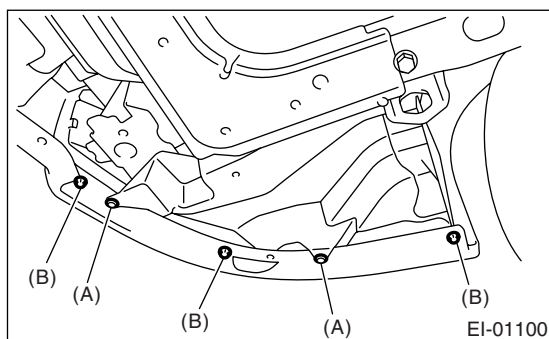
6. Air Dam Skirt

A: REMOVAL

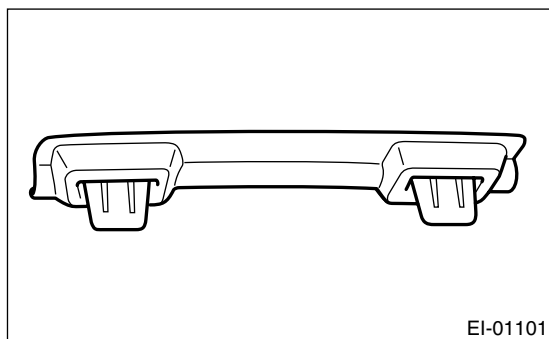
- 1) Lift-up the vehicle.
- 2) Remove the clip in the backside of air dam skirt.



- 3) Remove the clips (A) and bolt (B) under the bumper.

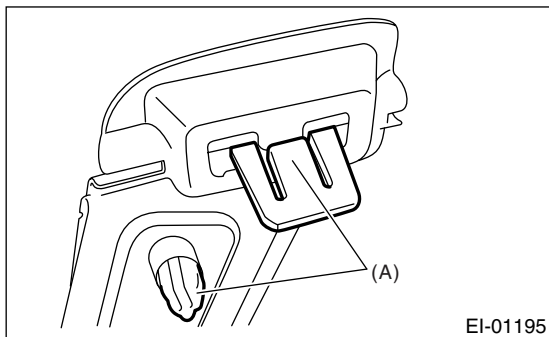


- 4) Turn over the mud guard, and remove the air spoiler upper bracket from inside of bumper.

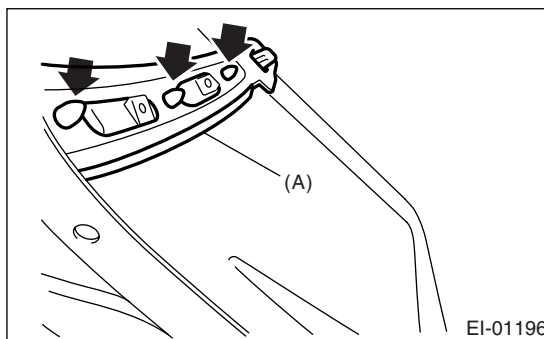


NOTE:

Push the part A to remove the side & upper bracket.



- 5) Push the head of clip to remove the air spoiler side bracket (A).



- 6) Remove the air dam skirt assembly.

B: INSTALLATION

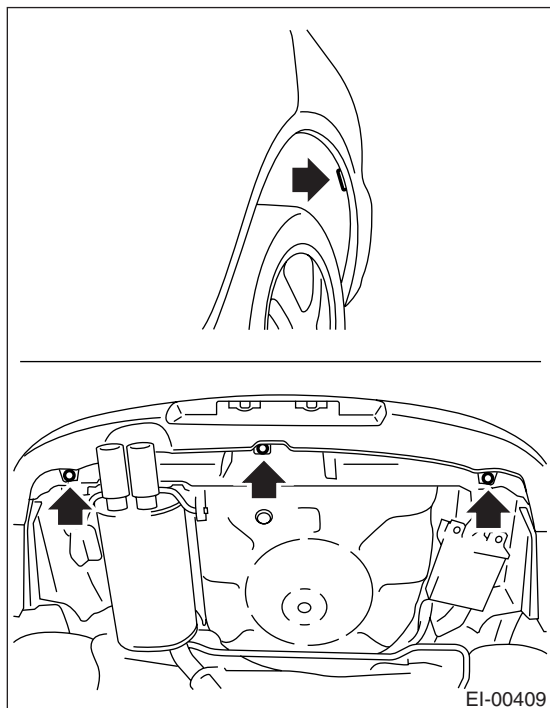
Install in the reverse order of removal.

7. Rear Bumper

A: REMOVAL

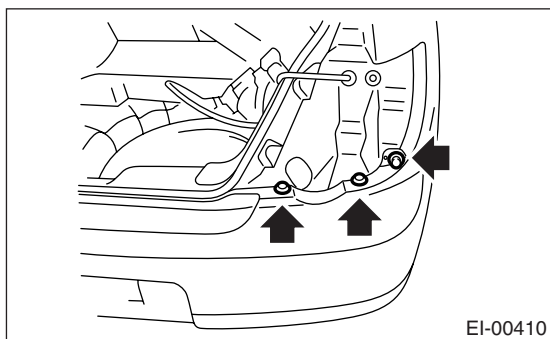
1. WAGON MODEL

- 1) Disconnect the ground cable from battery.
- 2) Remove the bolt inside wheel house (both sides), and the clips on lower side of bumper.



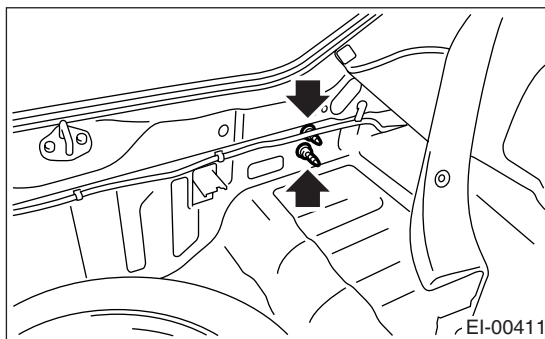
- 3) Remove the rear combination light assembly. <Ref. to LI-20, REMOVAL, Rear Combination Light Assembly.>

- 4) Remove the screw and two clips (both sides).



- 5) Remove the floor box.
- 6) Remove the rear skirt trim.

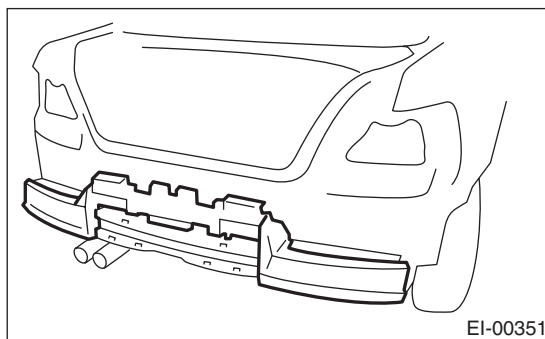
- 7) Turn over the rear quarter lower trims on both sides, and then loosen the four nuts.



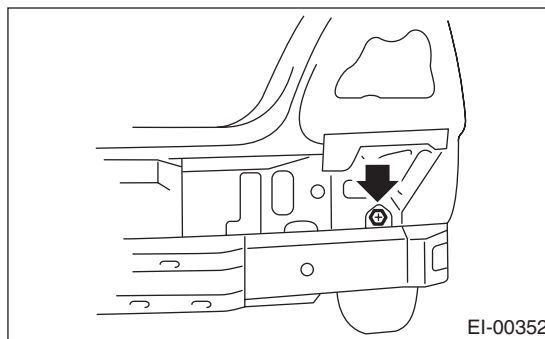
- 8) Disconnect the license plate light connector, and then remove the rear bumper.

- 9) Remove the E/A FORM from bumper beam.

CAUTION:
E/A FORM may easily break. Do not apply excessive force to it during removal.



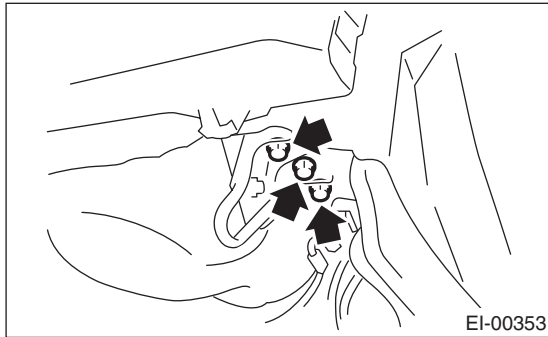
- 10) Remove the bolt.



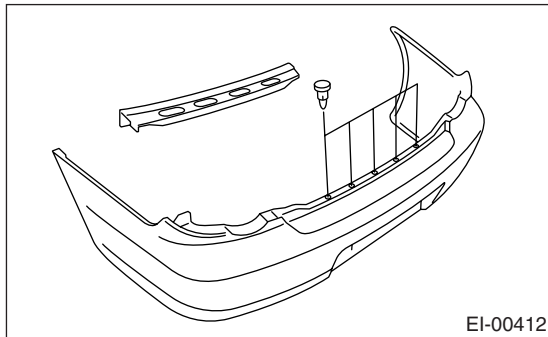
- 11) Remove the three bolts, then remove the bumper beam.

NOTE:

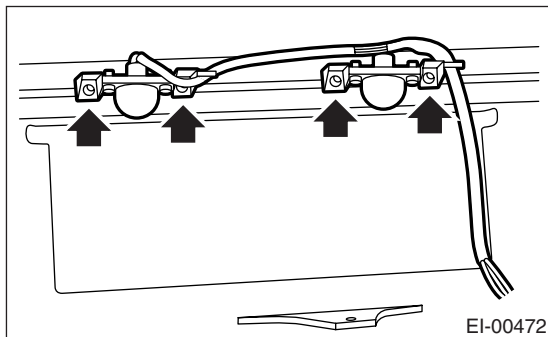
In the case of right side, remove the canister first. Loosen the bolt, and then remove the bumper beam.



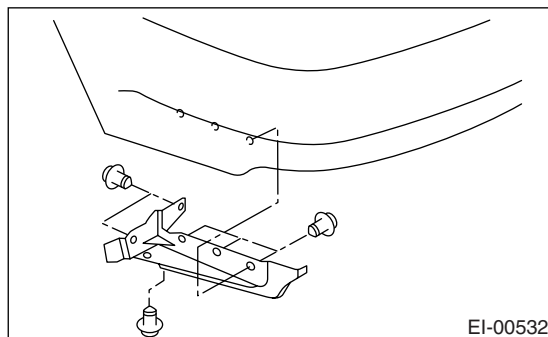
12) Remove the five clips, and then remove the bumper upper beam.



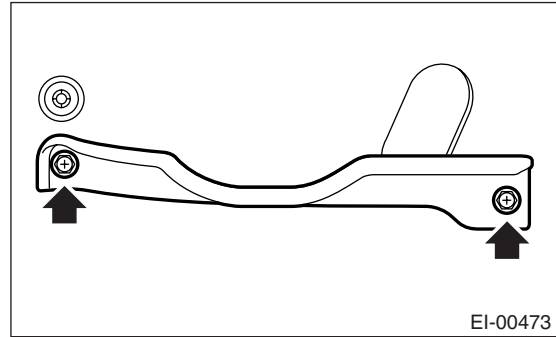
13) Remove the license plate light.



14) Remove the six clips, and then remove the bumper side cover.



15) Remove the upper bracket from body.



2. SEDAN MODEL

Refer to description about removal of rear bumper of wagon model. <Ref. to EI-32, WAGON MODEL, REMOVAL, Rear Bumper.>

B: INSTALLATION

1. WAGON MODEL

Install in the reverse order of removal.

Tightening torque:

Refer to COMPONENT in General Description.

<Ref. to EI-6, REAR BUMPER, COMPONENT, General Description.>

2. SEDAN MODEL

Install in the reverse order of removal.

Tightening torque:

Refer to COMPONENT in General Description.

<Ref. to EI-6, REAR BUMPER, COMPONENT, General Description.>

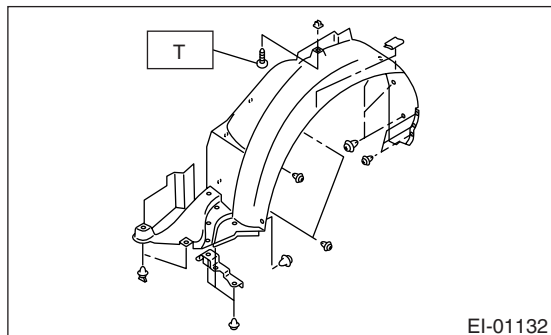
C: REPAIR

Refer to description about repair of front bumper. <Ref. to EI-24, REMOVAL, Front Bumper.>

8. Mud Guard

A: REMOVAL

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



B: INSTALLATION

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

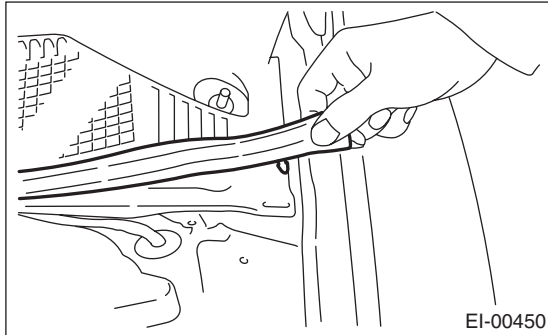
Tightening torque:

T: 14 N·m (1.42 kgf-m, 10.3 ft-lb)

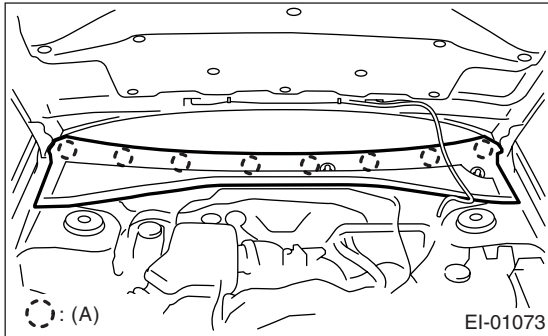
9. Cowl Panel

A: REMOVAL

- 1) Open the front hood.
- 2) Remove the wiper arm. <Ref. to WW-12, REMOVAL, Front Wiper Arm.>
- 3) Remove the front panel seal.



- 4) Disengage the clips (A) to remove the cowl panel.



(A) Clip

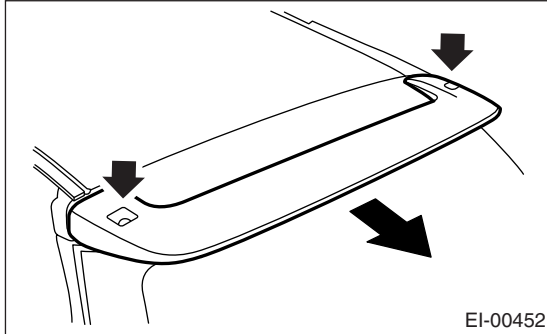
B: INSTALLATION

Install in the reverse order of removal.

10. Roof Spoiler

A: REMOVAL

- 1) Remove the bolt cap, and then remove the two bolts.
- 2) Remove the roof spoiler.



B: INSTALLATION

Install in the reverse order of removal.

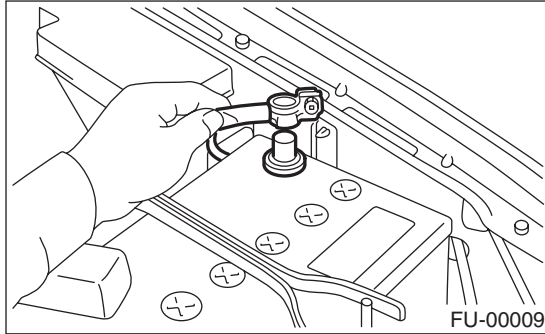
Tightening torque:

7.4 N·m (0.75 kgf-m, 5.46 ft-lb)

11.Rear Spoiler

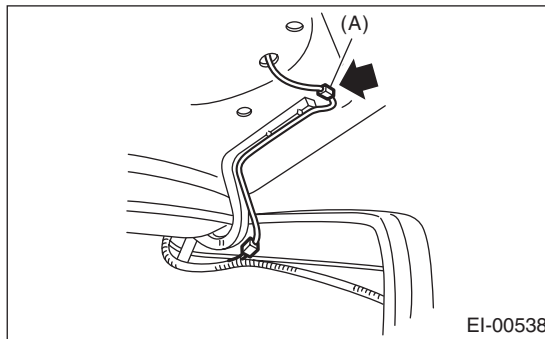
A: REMOVAL

1) Disconnect the ground cable from battery.



2) Open the trunk lid.

3) Remove the electrical connector (A) of high mount stop light.

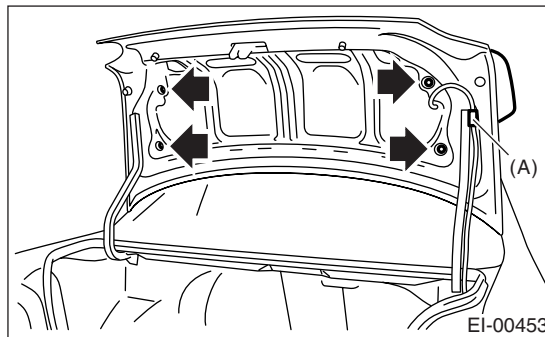


4) Loosen the mounting nut of rear spoiler to remove rear spoiler.

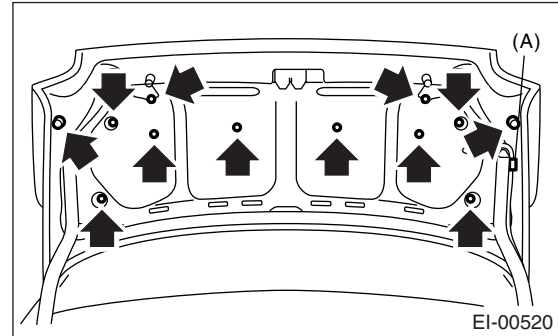
CAUTION:

- When removing the nut, do not drop it into trunk lid.
- Pay attention to avoid damage during removal or installation.

Small-sized rear spoiler: Four tightening positions, two clips



Large-sized rear spoiler: Twelve tightening positions, four clips



B: INSTALLATION

1) Install in the reverse order of removal.

2) Clean the mounting surfaces of trunk lid and spoiler before installation.

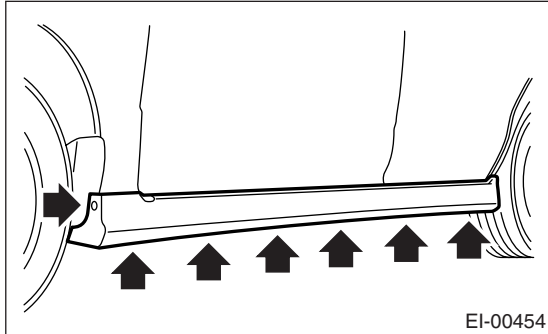
Tightening torque:

7.4 N·m (0.75 kgf·m, 5.46 ft·lb)

12.Side Sill Spoiler

A: REMOVAL

Remove the clips (one on front fender arch, six on bottom of side sill spoiler), then remove the side spoiler.

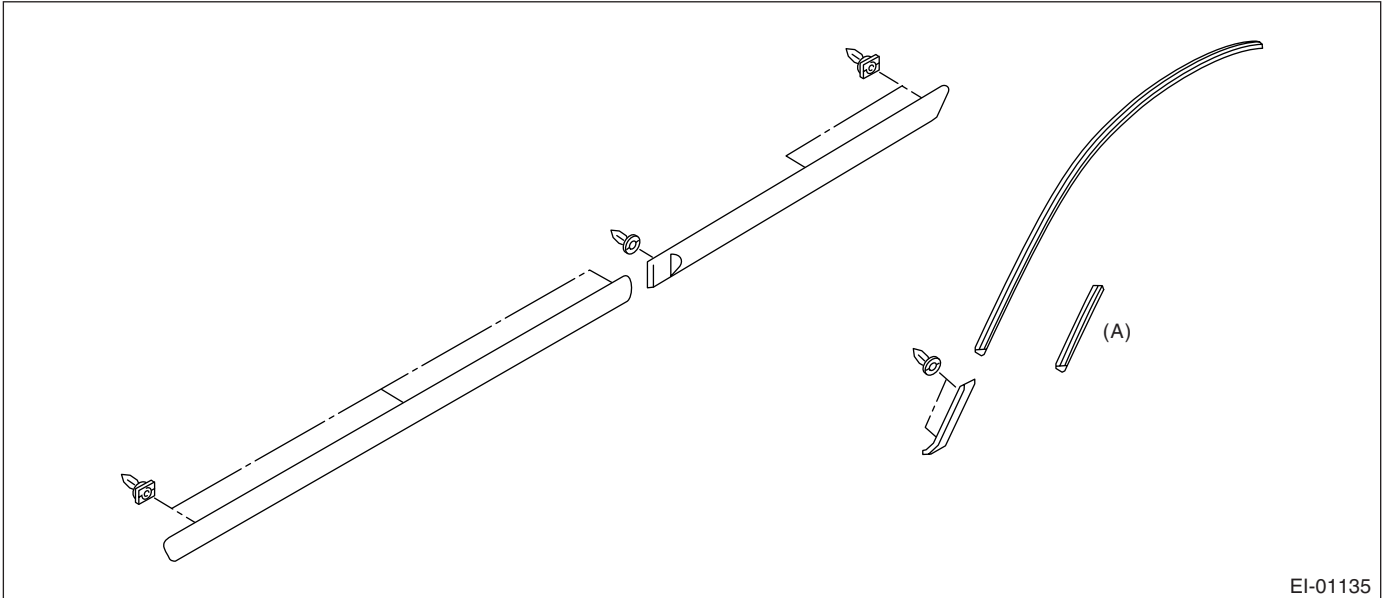


B: INSTALLATION

Install in the reverse order of removal.

13.Side Protector

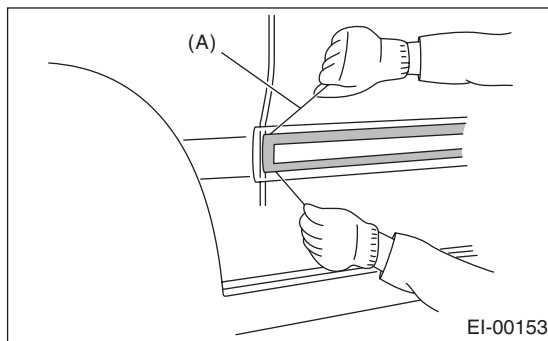
A: REMOVAL



(A) STi model

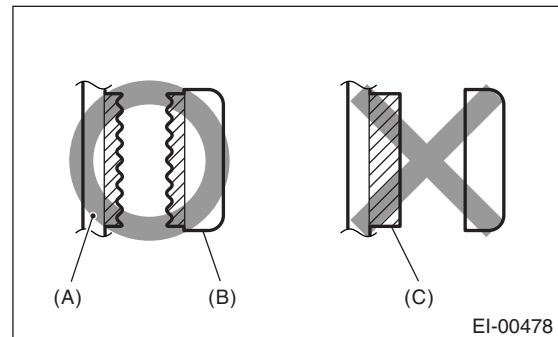
1) Slide in a thin thread (A) of 0.8 mm (0.031 in) diameter or less (fishing line etc.) between body and protector, and then remove the protector detaching double-sided tape. Remove the protector using clip remover.

- If the double-sided tape remains thick on surface due to interfacial peeling, apply the solvent after slicing off the double-sided tape using a cutter.



NOTE:

- To optimize the effect of solvent, slide the thread along the body without removing the double-sided tape on surface of body and spoiler.
- If it is difficult to detach the double-sided tape, warm up to approx. 40°C (104°F).



(A) Panel
(B) Spoiler
(C) Double-sided tape

- 2) Adhere the masking tape around the double-sided tape remaining on surface of body and spoiler.
- 3) Apply the solvent uniformly on double-sided tape using a brush.

CAUTION:

- Do not use the solvent to body which is repaired with lacquer paint.
- Wipe off immediately when the solvent is touched on surface of body and spoiler.

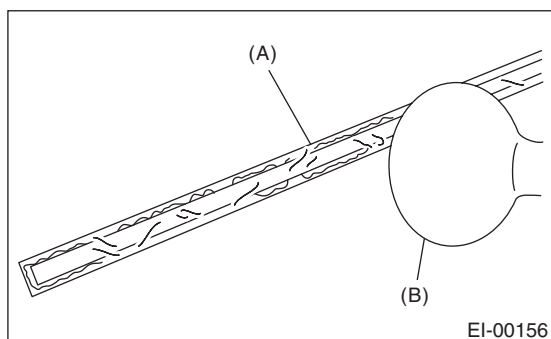
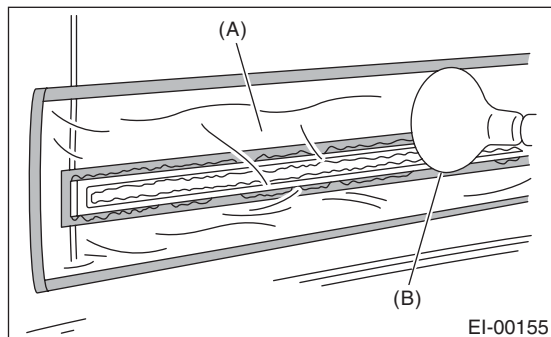
Solvent:

3M 8907 or equivalent

Side Protector

EXTERIOR/INTERIOR TRIM

4) Cover the area where solvent is applied using plastic wrap (A), and then heat the double-sided tape for 5 to 10 minutes in 40 to 60°C (104 to 140°F) using a heat lamp (B).



CAUTION:

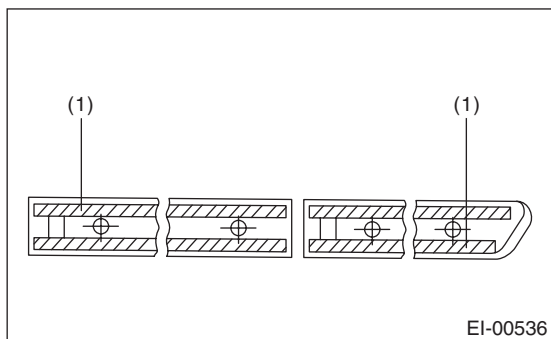
Do not heat the double-sided tape until the surface becomes white and excessively dried.

5) Remove the double-sided tape using a plastic spatula.

6) After completely removing the double-sided tape, detach the masking tape and clean the surface using a cotton cloth waste damped with white gasoline.

B: INSTALLATION

1) Apply the primer to protector surface where the double-sided tape is adhered, and then adhere the double-sided tape as shown in the figure.



(1) Double-sided tape; thickness: 1.2 mm (0.047 in), width: 5 mm (0.197 in)

Primer:

3M K-500 or equivalent

Double-sided tape:

3M 5531-5 or equivalent

2) Heat the adhering part using a heat lamp.

Body side: 40 — 60°C (104 — 140°F)

Protector side: 20 — 30°C (68 — 86°F)

3) Detach the double-sided tape backing sheet, align to clip position, and then adhere to body using care to avoid air entering.

CAUTION:

To keep the adhesion, do not wash the vehicle within 24 hours.

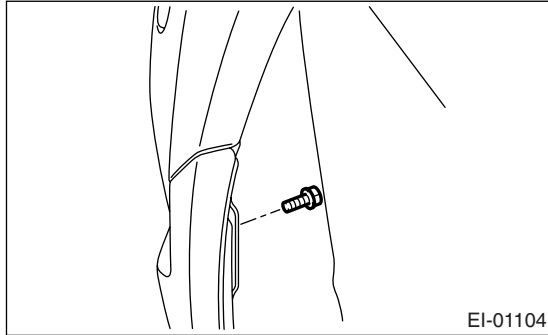
14.Arch Cover

A: REMOVAL

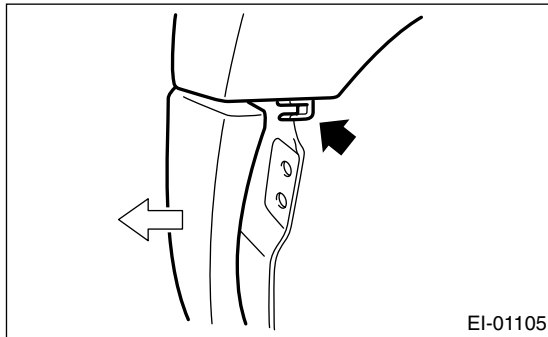
CAUTION:

Never remove the arch cover unless necessary.
Otherwise the arch cover may be damaged.

- 1) Lift-up the vehicle.
- 2) Remove the bolt inside the wheel house.



- 3) Remove the two hook of arch cover by pulling the rear bumper outward.



- 4) Remove the arch cover using clip remover.

B: INSTALLATION

Install in the reverse order of removal.

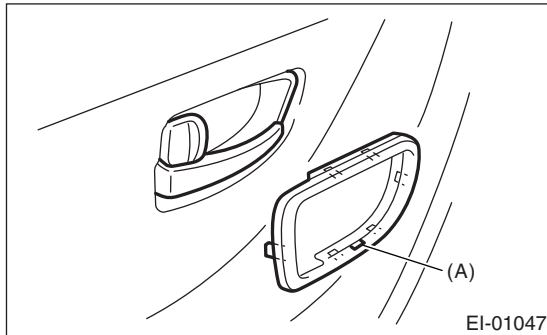
15.Front Door Trim

A: REMOVAL

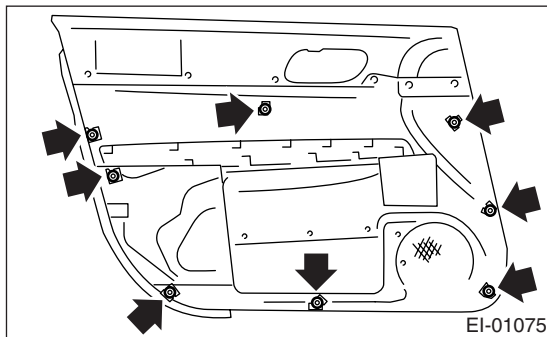
CAUTION:

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

- 1) Disconnect the ground cable from battery.
 - 2) Remove the gusset cover.
 - 3) Insert the flat tip screw driver into A part of inner remote cover, and then remove the lower hook with turning screw driver.
- Remove the upper hook with pulling inner remote cover, and then remove the inner remote cover.



- 4) Remove the power window control switch. <Ref. to GW-9, REMOVAL, Power Window Control Switch.>
- 5) Remove the clips of trim panel using clip remover to remove trim panel.



B: INSTALLATION

Install in the reverse order of removal.

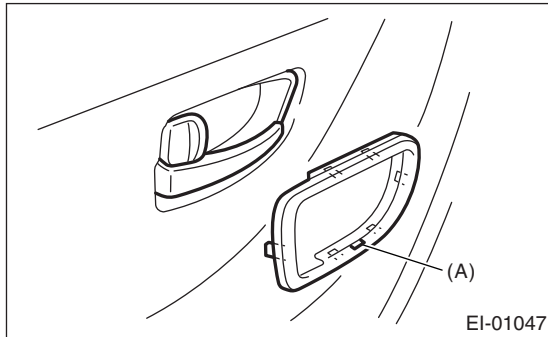
16.Rear Door Trim

A: REMOVAL

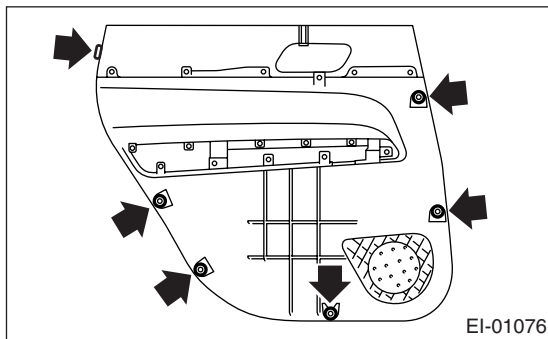
CAUTION:

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

- 1) Disconnect the ground cable from battery.
 - 2) Insert the flat tip screw driver into A part of inner remote cover, and then remove the lower hook with turning screw driver.
- Remove the upper hook with pulling inner remote cover, and then remove the inner remote cover.



- 3) Remove the power window control switch. <Ref. to GW-9, REMOVAL, Power Window Control Switch.>
- 4) Remove the clips of trim panel using clip remover to remove trim panel.



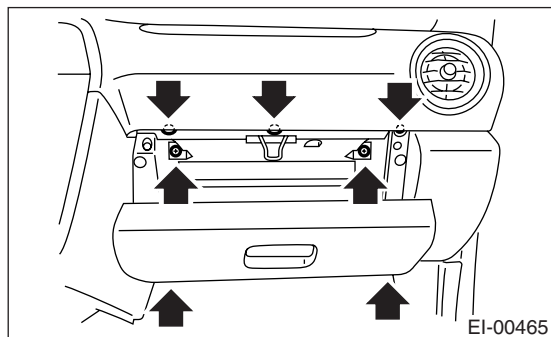
B: INSTALLATION

Install in the reverse order of removal.

17.Glove Box

A: REMOVAL

- 1) Open the glove box.
- 2) Remove the screws to remove glove box.



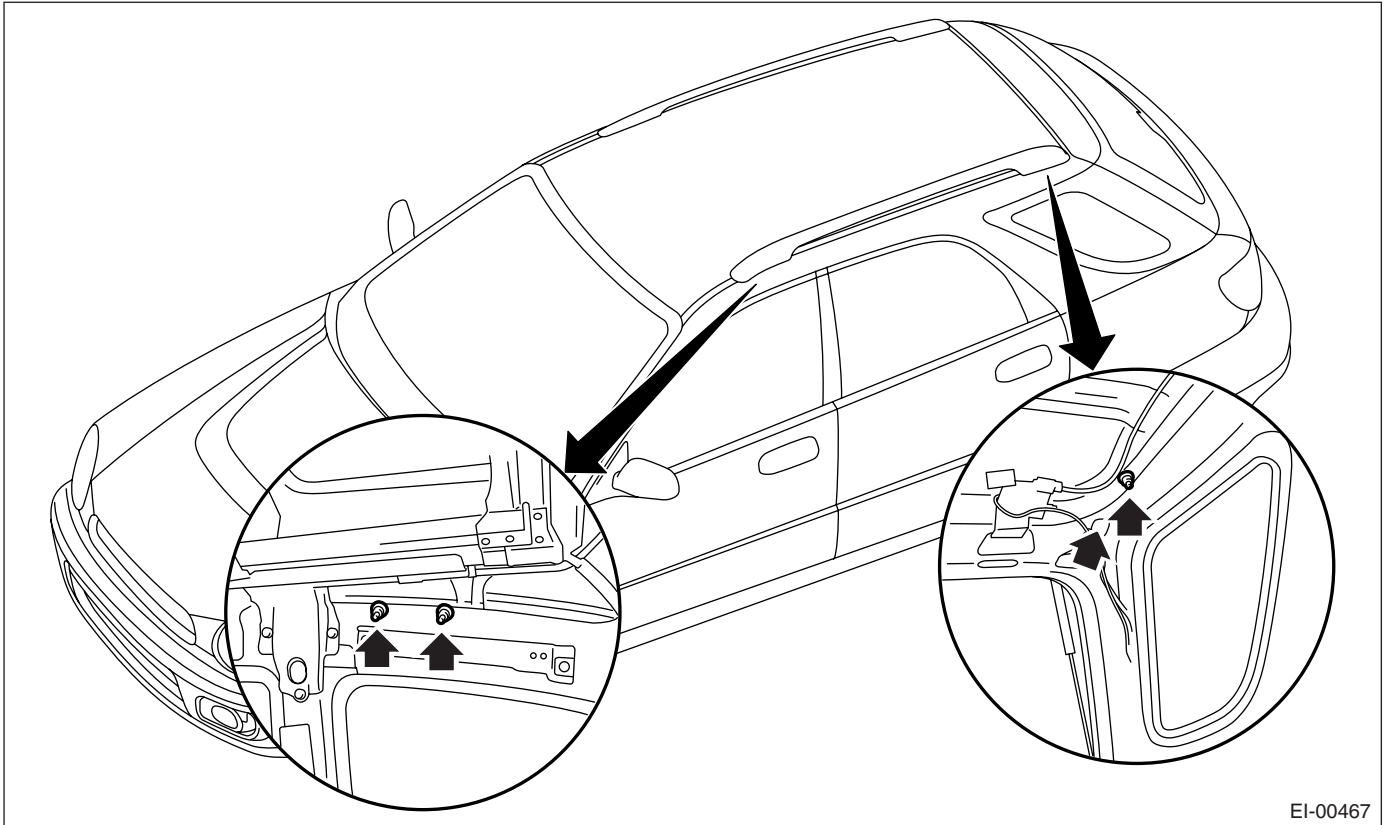
B: INSTALLATION

Install in the reverse order of removal.

18.Roof Rail

A: REMOVAL

- 1) Remove the roof trim. <Ref. to EI-55, REMOVAL, Roof Trim.>
- 2) Remove the four mounting nuts, and then detach the roof rail carefully.



B: INSTALLATION

Install in the reverse order of removal.

CAUTION:

Be careful not to scratch the body panels with roof rail stud bolts when removing and installing them.

Tightening torque:

7.4 N·m (0.75 kgf-m, 5.46 ft-lb)

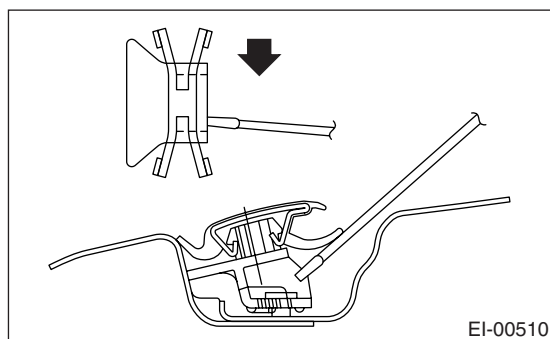
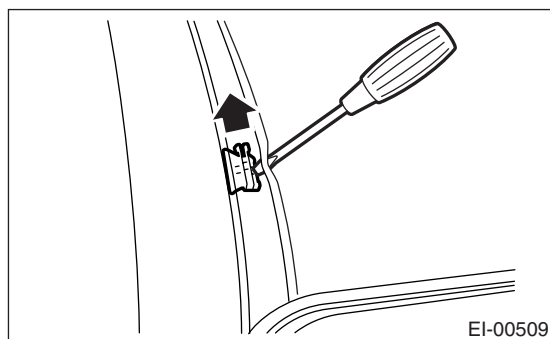
19. Roof Molding

A: REMOVAL

1) Turn over the edge of roof molding, and then remove it by sliding the internal clip using a flat tip screwdriver.

RH: Slide the molding toward the rear side of vehicle.

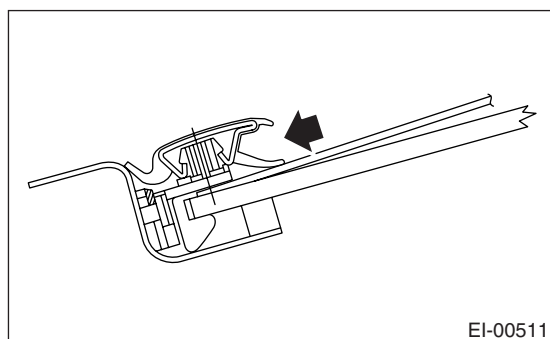
LH: Slide the molding toward the front side of vehicle.



Sedan model: six clips

Wagon model: eight clips

2) For sedan model, remove four clips of rear pillar. Turn over the roof molding on rear glass side, insert a board of about 0.5 mm (0.020 in) thickness into clearance between roof molding and glass, and then remove the claw of internal clip.

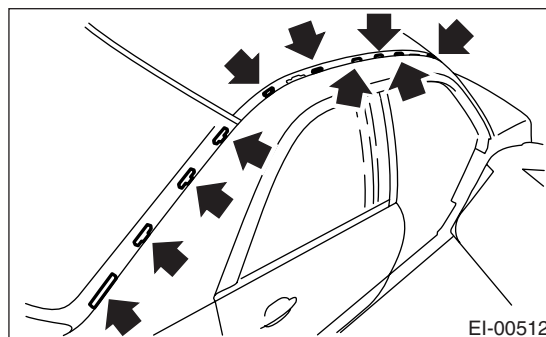


B: INSTALLATION

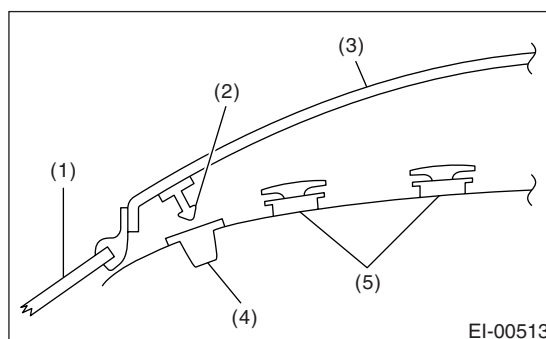
1) Remove the clip of roof and rear pillar (sedan model) from roof molding, and then install it to body side.

CAUTION:

Make sure to replace the clips broken when removing the roof molding with new ones.



2) Put the front edge of roof molding onto front window molding, and insert the front locating pin into body side cap.



(1) Front window

(2) Locating pin

(3) Roof molding

(4) Cap

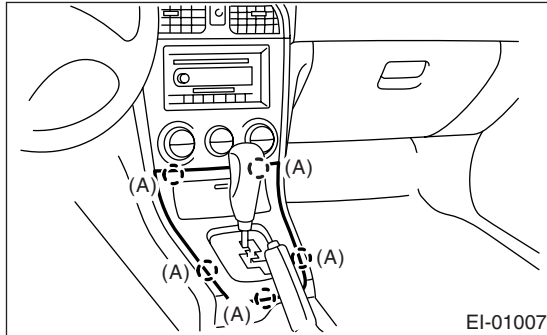
(5) Clip (roof)

3) Install the roof molding to body, by pushing the roof molding from above being careful not to deform it.

20.Console Box

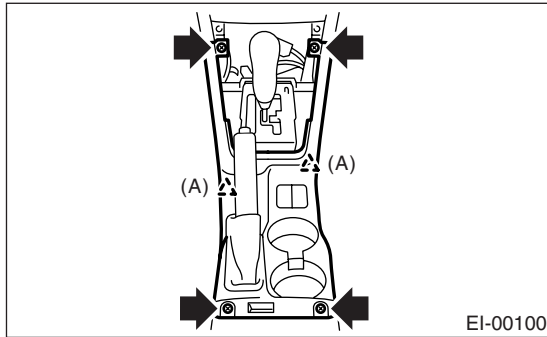
A: REMOVAL

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



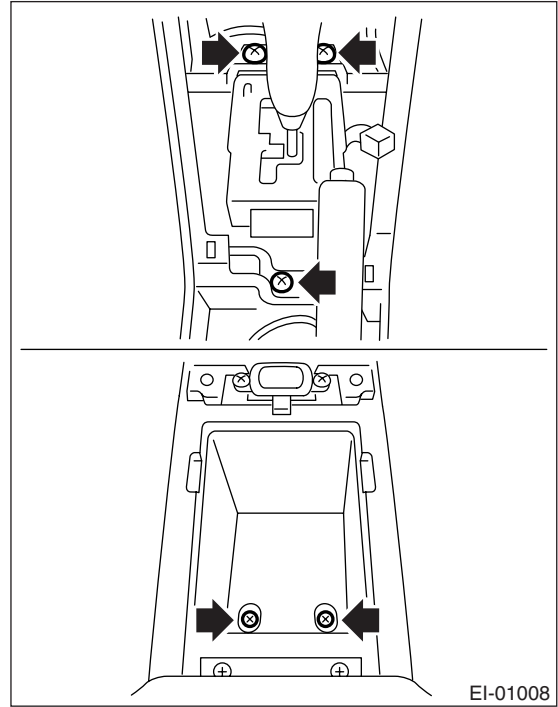
(A) Hook pawl

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

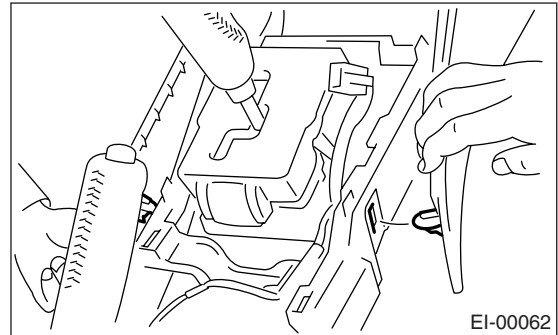


(A) Clip

- 5) Remove the screws.



- 6) Remove the hook pawl of console side panel to remove console box.



B: INSTALLATION

Install in the reverse order of removal.

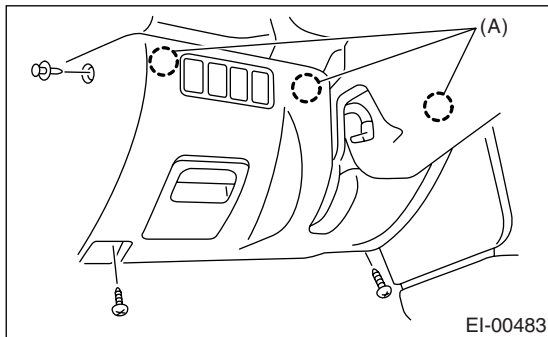
21. Instrument Panel Assembly

A: REMOVAL

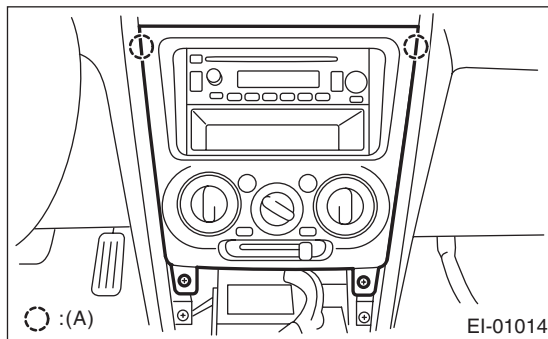
CAUTION:

- All airbag system wiring harness and connectors are colored yellow. Do not use electrical equipment on these circuits.
- Be careful not to damage the airbag system harness when servicing the instrument panel.

- 1) Disconnect the ground cable from battery.
- 2) Loosen the screws, remove the clip (A), disconnect the connectors, and then remove the instrument panel lower cover.

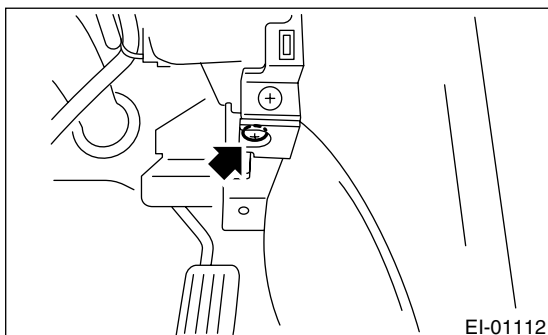


- 3) Remove the console front panel and console cover. <Ref. to EI-47, REMOVAL, Console Box.>
- 4) Remove the clip (A), and then remove the center console panel.

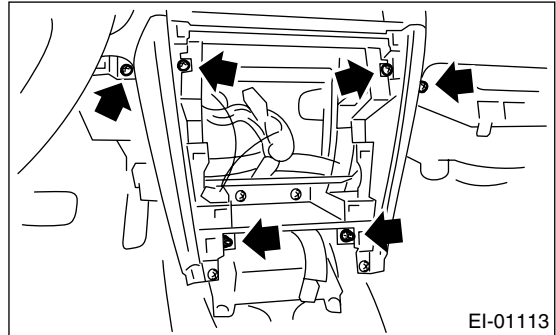


(A) Clip

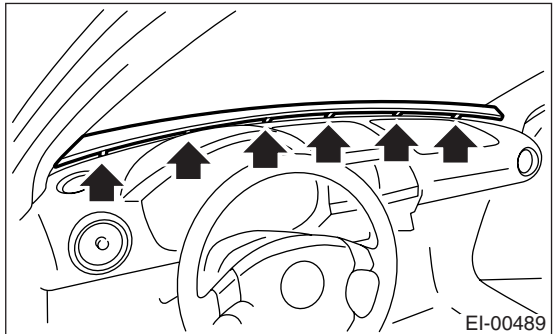
- 5) Remove the glove box. <Ref. to EI-44, REMOVAL, Glove Box.>
- 6) Loosen the screws, and then remove the console side panel.



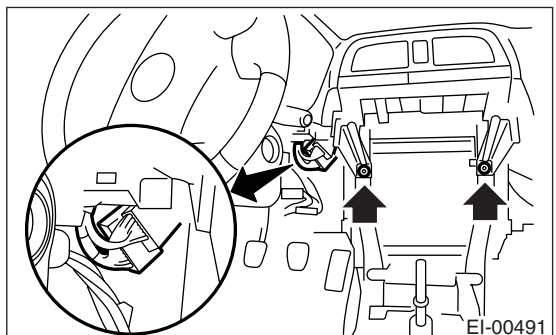
- 7) Remove the passenger's airbag module. <Ref. to AB-13, Passenger's Airbag Module.>
- 8) Loosen the four screws and two nuts, and then remove the lower console panel.



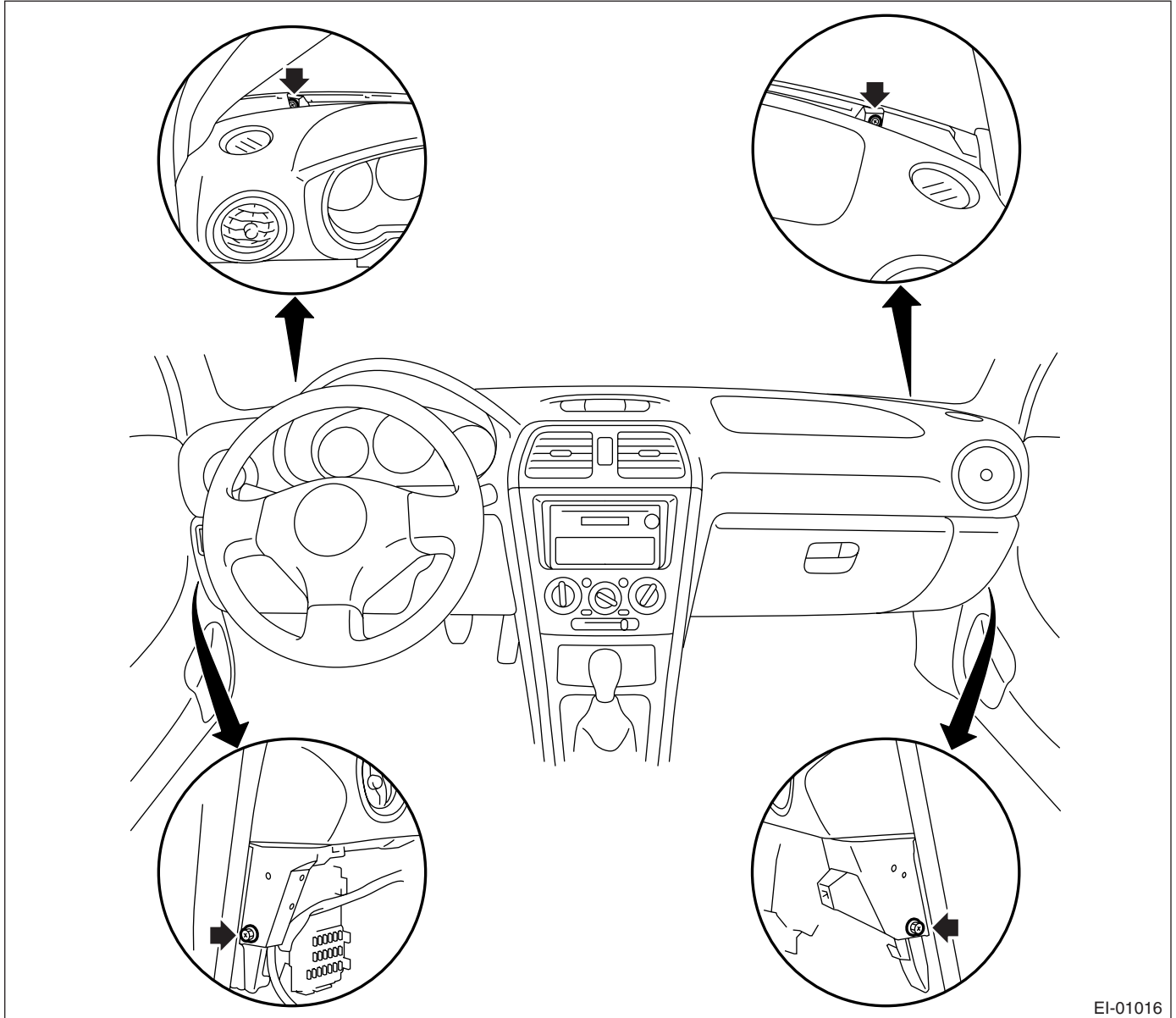
- 9) Remove the hook, and then remove the defroster panel.



- 10) Remove the front pillar upper trim. <Ref. to EI-51, REMOVAL, Upper Inner Trim.>
- 11) Disconnect the two connectors, and then loosen the nuts.



12) Remove the instrument panel installation bolts.



EI-01016

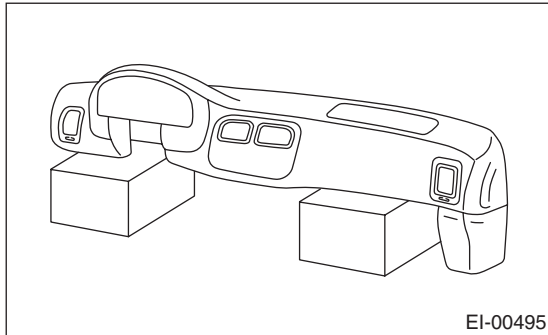
Instrument Panel Assembly

EXTERIOR/INTERIOR TRIM

13) Check that all the harness is disconnected, and then remove the instrument panel from vehicle.

NOTE:

- Put alignment marks as necessary, in order to facilitate the reassembly.
- When storing the removed instrument panel, place it standing up on the floor.



B: INSTALLATION

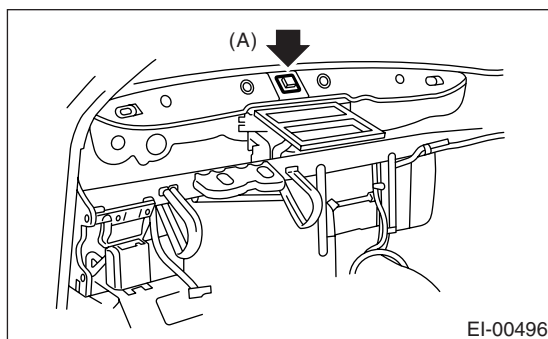
CAUTION:

- Be careful not to snag the harness.
- Carry out installation checking that the harness is connected correctly.
- When setting the instrument panel into vehicle, do not damage trim panels.

1) Install in the reverse order of removal.

NOTE:

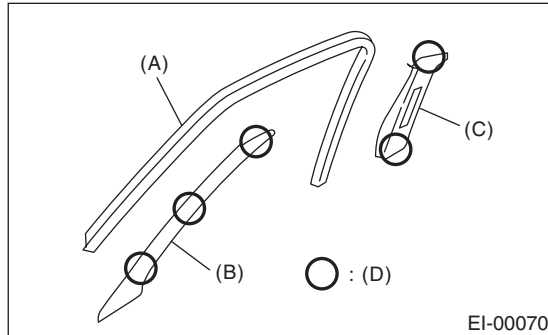
When installing the instrument panel into position, push the hook into grommet (A) on the body panel. After tightening the bolts, recheck the installation.



22.Upper Inner Trim

A: REMOVAL

- 1) Remove the lower inner trim. <Ref. to EI-52, REMOVAL, Lower Inner Trim.>
- 2) Remove the front molding (A).
- 3) Remove the front pillar upper trim (B).
- 4) Detach the front seat belt shoulder anchor, and then remove the center pillar upper trim (C).



(D) Clip

B: INSTALLATION

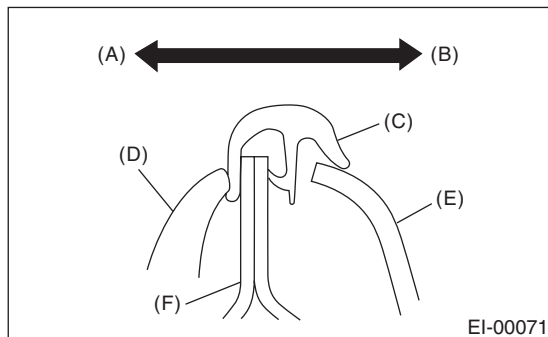
Install in the reverse order of removal.

CAUTION:

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

NOTE:

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

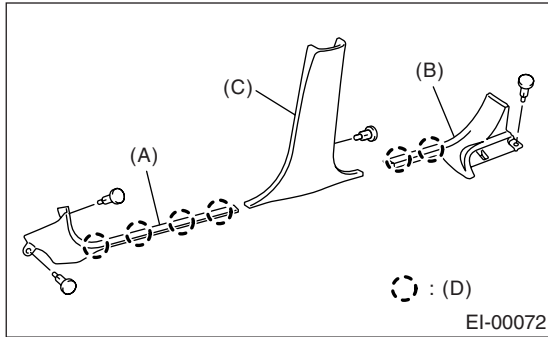


- (A) Outside
- (B) Inside
- (C) Molding
- (D) Weather strip
- (E) Trim
- (F) Body

23.Lower Inner Trim

A: REMOVAL

- 1) Remove the side sill front cover (A).
- 2) Remove the rear seat cushion <Ref. to SE-12, REMOVAL, Rear Seat.>, and then remove side sill rear cover (B).
- 3) Remove the center pillar lower trim (C).



(D) Clip

B: INSTALLATION

Install in the reverse order of removal.

CAUTION:

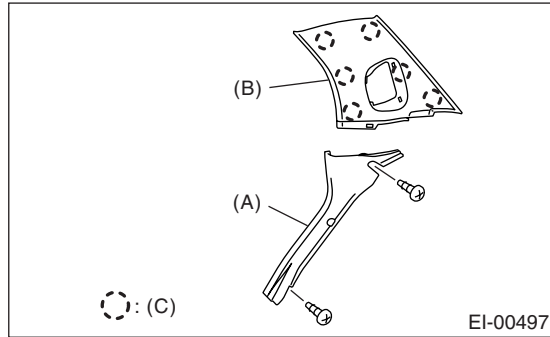
Be sure to securely hook pawls of inner trim panel to body flange.

24.Rear Quarter Trim

A: REMOVAL

1. SEDAN MODEL

- 1) Remove the rear seat. <Ref. to SE-12, REMOVAL, Rear Seat.>
- 2) Remove the side sill rear cover. <Ref. to EI-52, REMOVAL, Lower Inner Trim.>
- 3) Remove the rear pillar lower cover (A).
- 4) Remove the seat belt lower anchor bolt, and then remove the rear pillar upper trim (B).

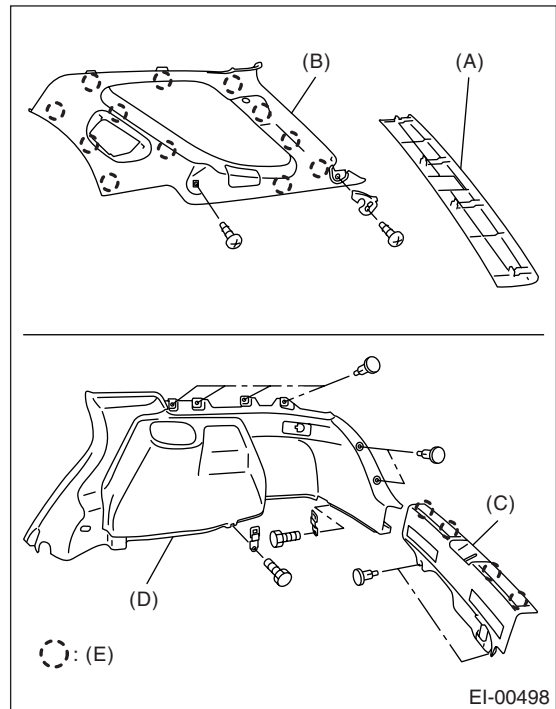


(C) Clip

2. WAGON MODEL

- 1) Remove the rear seat. <Ref. to SE-12, REMOVAL, Rear Seat.>
- 2) Remove the side sill rear cover.
- 3) Remove the rear rail trim (A).
- 4) Loosen the screws and clips to remove the rear quarter upper trim (B).
- 5) Remove the rear skirt trim (C).

- 6) Loosen the bolts and clips to remove the rear quarter lower trim (D).



(E) Clip

B: INSTALLATION

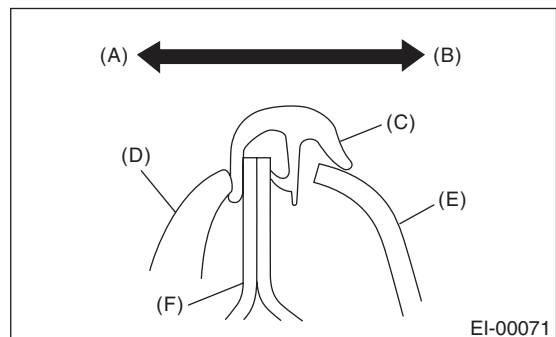
Install in the reverse order of removal.

CAUTION:

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

NOTE:

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

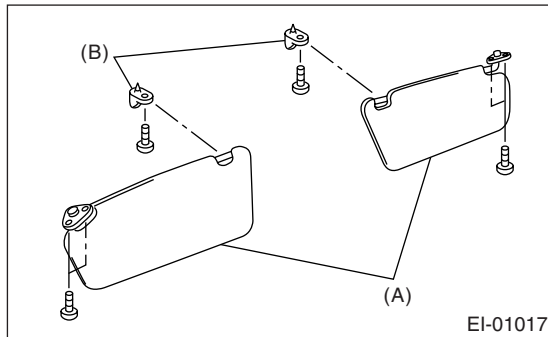


- (A) Outside
- (B) Inside
- (C) Molding
- (D) Weather strip
- (E) Trim
- (F) Body

25.Sun Visor

A: REMOVAL

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



B: INSTALLATION

Install in the reverse order of removal.

26. Roof Trim

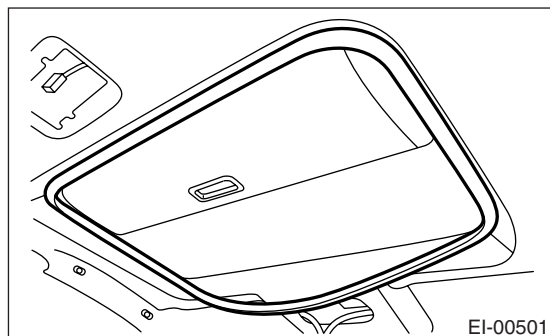
A: REMOVAL

CAUTION:

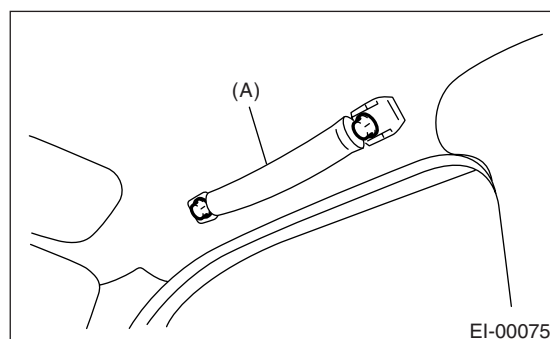
When removing the clip, use great care not to damage the roof trim.

1. SEDAN MODEL

- 1) Disconnect the ground cable from battery.
- 2) Remove the sunroof switch. (Model with sunroof) <Ref. to SR-9, REMOVAL, Sunroof Switch.>
- 3) Remove the spot map light. <Ref. to LI-26, REMOVAL, Spot Map Light.>
- 4) Remove the room light. <Ref. to LI-27, REMOVAL, Room Light.>
- 5) Remove the sun visor and hook on right or left side, or on both sides. <Ref. to EI-54, REMOVAL, Sun Visor.>
- 6) In the case of models with sunroof, remove the sunroof weather strip.

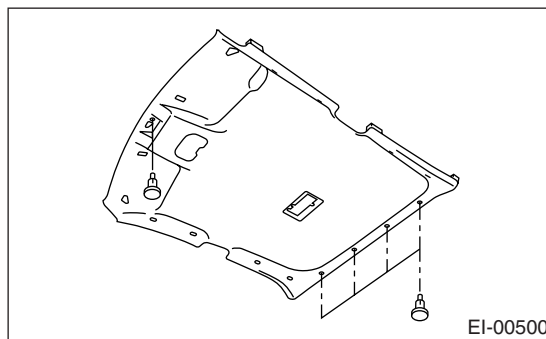


- 7) Remove the assist-grips (A).



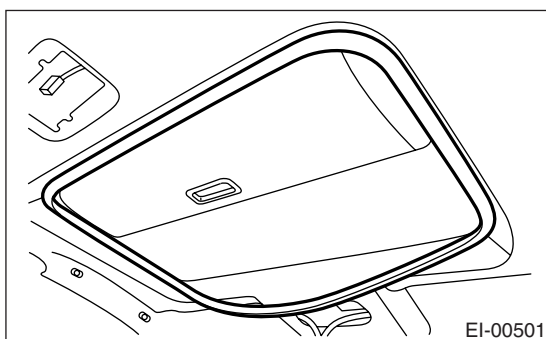
- 8) Remove the upper inner trim. <Ref. to EI-51, REMOVAL, Upper Inner Trim.>
- 9) Remove the quarter upper trim. <Ref. to EI-53, SEDAN MODEL, REMOVAL, Rear Quarter Trim.>

- 10) Remove the clips, and then remove the roof trim.

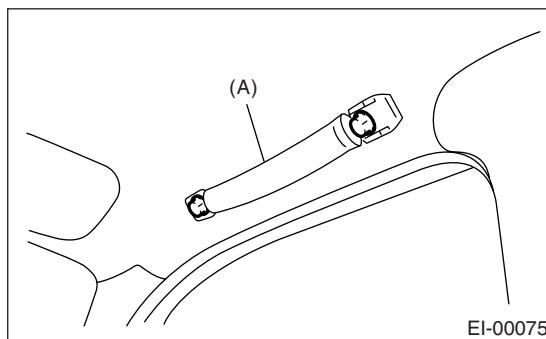


2. WAGON MODEL

- 1) Disconnect the ground cable from battery.
- 2) Remove the sunroof switch. (Model with sunroof) <Ref. to SR-9, REMOVAL, Sunroof Switch.>
- 3) Remove the room light. <Ref. to LI-27, REMOVAL, Room Light.>
- 4) Remove the sun visor and hook or both sides. <Ref. to EI-54, REMOVAL, Sun Visor.>
- 5) In case of models with sunroof, remove the sunroof weather strip.



- 6) Remove the assist-grips (A).

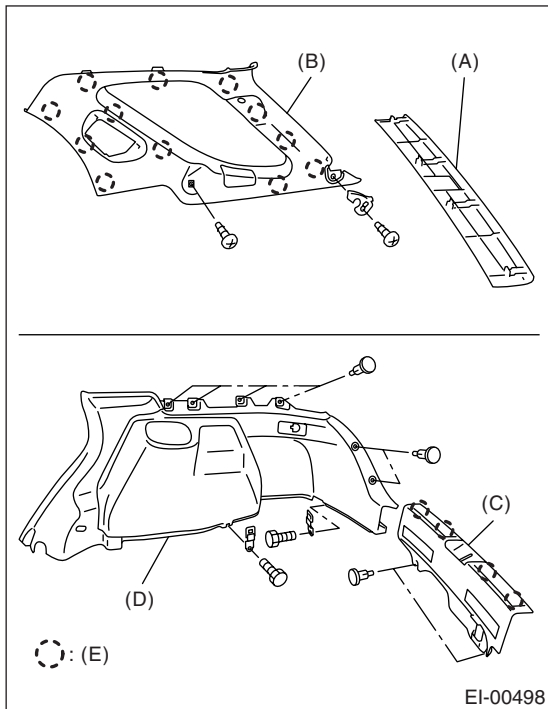


- 7) Remove the upper inner trim. <Ref. to EI-51, REMOVAL, Upper Inner Trim.>
- 8) Remove the rear quarter upper trim shown in the figure.
- 9) Remove the rear rail trim (A).

Roof Trim

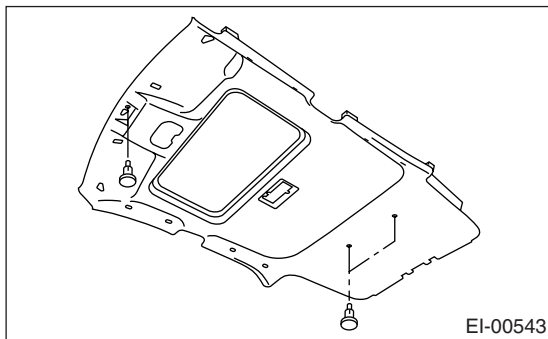
EXTERIOR/INTERIOR TRIM

10) Remove the rear quarter upper trim (B) of both sides.



(E) Clip

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



B: INSTALLATION

Install in the reverse order of removal.

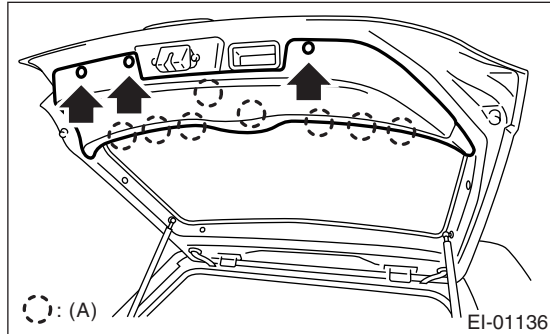
27.Rear Gate Trim

A: REMOVAL

CAUTION:

Be careful not to damage the clips or their holes.

Remove the clips, and then detach the rear gate trim.



(A) Clip

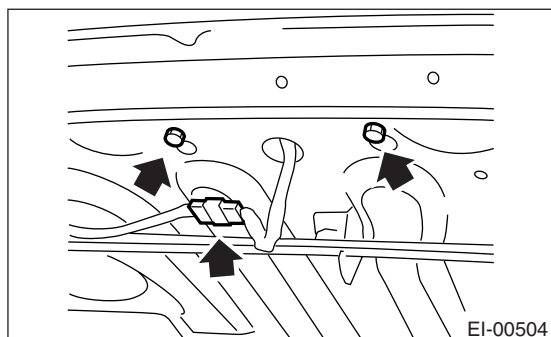
B: INSTALLATION

Install in the reverse order of removal.

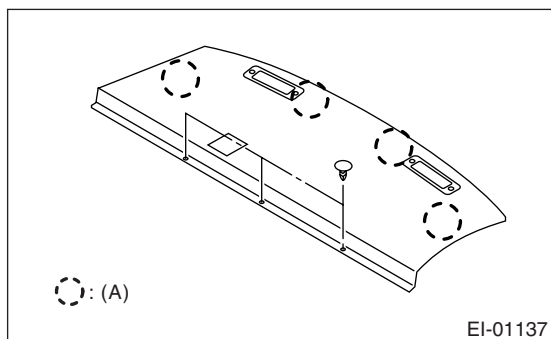
28.Rear Shelf Trim

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the high-mounted stop light.



- 3) Remove the rear quarter upper trim. <Ref. to EI-53, REMOVAL, Rear Quarter Trim.>
- 4) Remove the seat belt center anchor lower bolt.
- 5) Remove the rear shelf trim.



(A) Clip

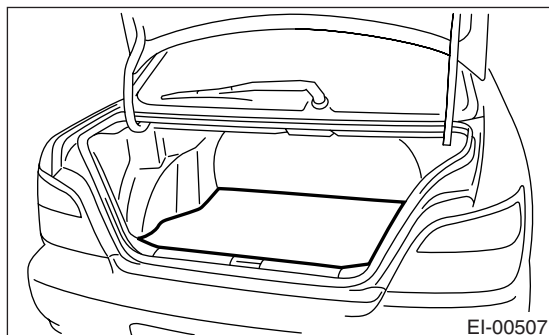
B: INSTALLATION

Install in the reverse order of removal.

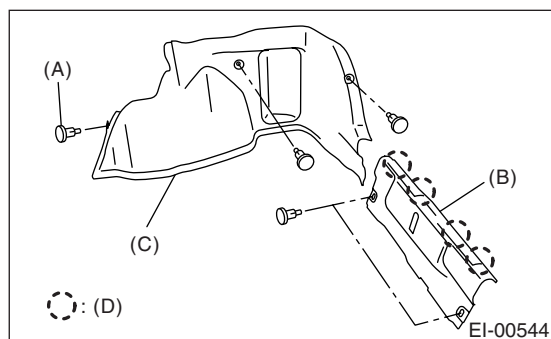
29.Trunk Room Trim

A: REMOVAL

- 1) Remove the rear seat backrest. <Ref. to SE-12, SEDAN MODEL, REMOVAL, Rear Seat.>
- 2) Remove the trunk room mat.



- 3) Remove the clip (A).
- 4) Remove the clips, and then detach the trunk rear trim (B).
- 5) Remove the clips to remove trunk side trim (C).



(D) Clip

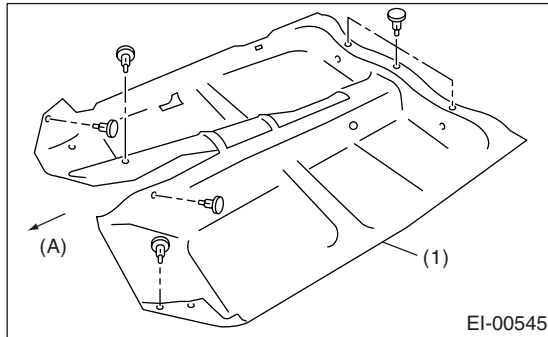
B: INSTALLATION

Install in the reverse order of removal.

30.Floor Mat

A: REMOVAL

- 1) Remove the front seats. <Ref. to SE-6, REMOVAL, Front Seat.>
- 2) Remove the rear seat cushion. <Ref. to SE-12, REMOVAL, Rear Seat.>
- 3) Remove the console box. <Ref. to EI-47, Console Box.>
- 4) Remove the side sill front cover, side sill rear cover and center pillar lower trim. <Ref. to EI-52, REMOVAL, Lower Inner Trim.>
- 5) Remove the foot rest.
- 6) Remove the clips from floor mat.
- 7) Remove the mat hook.
- 8) Remove the mat from toe board area.
- 9) Remove the mat from rear heater duct.
- 10) Roll the mat, and then take it out of opened rear door.



- (A) Front
(1) Floor mat

B: INSTALLATION

Install in the reverse order of removal.

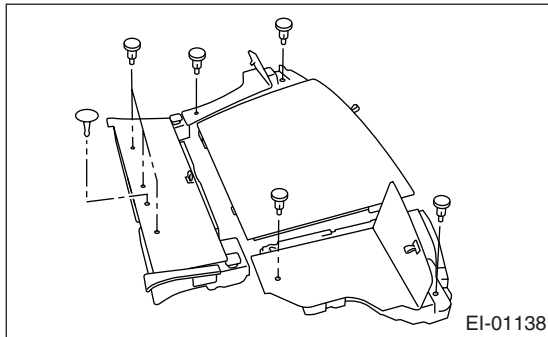
NOTE:

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

31.Luggage Floor Mat

A: REMOVAL

Remove the clips, and then detach the rear floor mats.



B: INSTALLATION

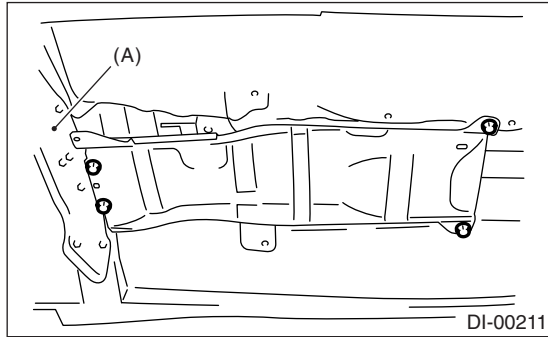
Install in the reverse order of removal.

32.Heat Shield Cover

A: REMOVAL

1. FRONT HEAT SHIELD COVER

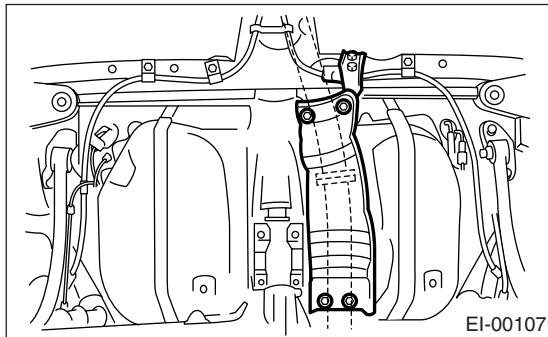
Remove the four bolts to remove front heat shield cover.



(A) Transmission mount

2. CENTER HEAT SHIELD COVER

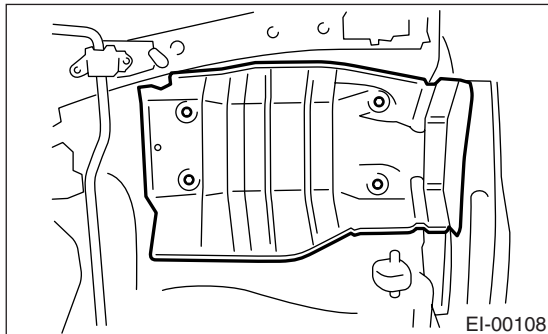
Remove the four bolts to remove center heat shield cover.



3. REAR HEAT SHIELD COVER

1) Remove the muffler. <Ref. to EX(H4SO)-9, REMOVAL, Muffler.>, <Ref. to EX(H4DOTC)-14, REMOVAL, Muffler.>

2) Remove the four bolts to remove rear heat shield cover.



B: INSTALLATION

Install in the reverse order of removal.

ENTERTAINMENT

1. General Description

A: CAUTION

- Before disassembling or reassembling parts, always disconnect the battery ground cable. When replacing the audio, control unit, 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 the connectors and hoses securely during reassembly.
- After reassembly, make sure functional parts operate smoothly.

B: PREPARATION TOOL

1. GENERAL TOOL

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

2. Audio System

A: WIRING DIAGRAM

<Ref. to WI-139, WIRING DIAGRAM, Audio System.>

B: INSPECTION

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

3. Front Accessory Power Supply Socket System

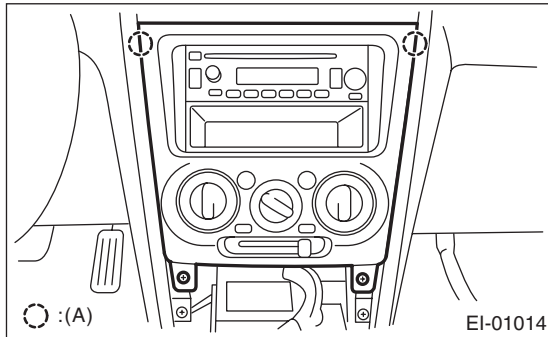
A: WIRING DIAGRAM

<Ref. to WI-141, WIRING DIAGRAM, Front Accessory Power Supply Socket System.>

4. Audio

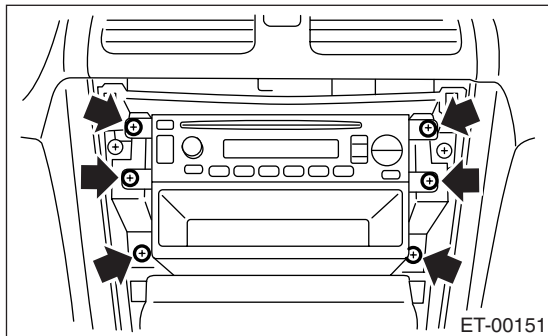
A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the console front panel.
- 3) Remove the center panel while disconnecting connector.



(A) Hook pawl

- 4) Remove the fitting screws, and slightly pull out the audio from center console.



- 5) Disconnect the harness connectors and antenna feeder cord.

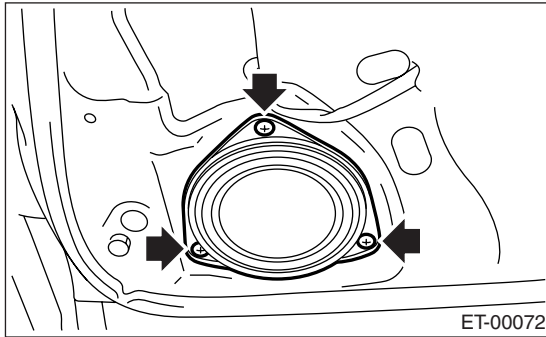
B: INSTALLATION

Install in the reverse order of removal.

5. Front Speaker

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the front door trim. <Ref. to EI-42, REMOVAL, Front Door Trim.>
- 3) Remove the front speaker mounting screws.



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

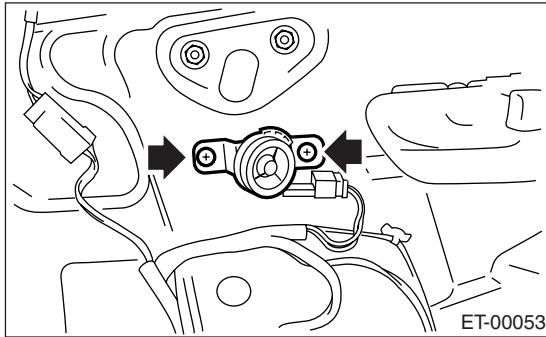
B: INSTALLATION

Install in the reverse order of removal.

6. Tweeter

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the front door trim. <Ref. to EI-42, REMOVAL, Front Door Trim.>
- 3) Remove the tweeter mounting screws.



- 4) Disconnect the harness connector and remove tweeter.

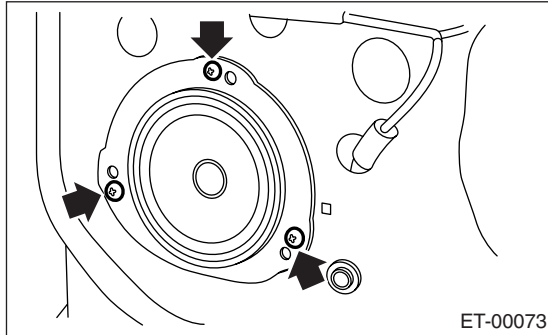
B: INSTALLATION

Install in the reverse order of removal.

7. Rear Speaker

A: REMOVAL

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



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

B: INSTALLATION

Install in the reverse order of removal.

8. Antenna

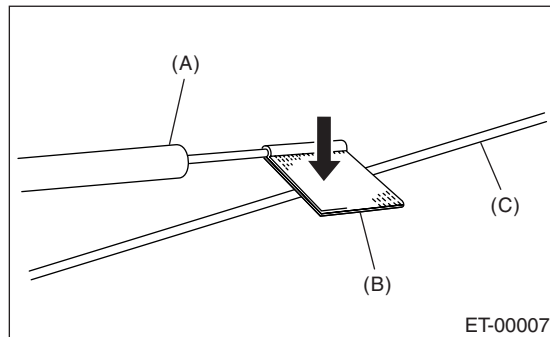
A: INSPECTION

Measure the resistance between antenna terminal and each antenna wire.

If an antenna wire is OK, resistance will be less than 1 Ω . If an antenna wire is broken, the resistance will be more than 1 M Ω .

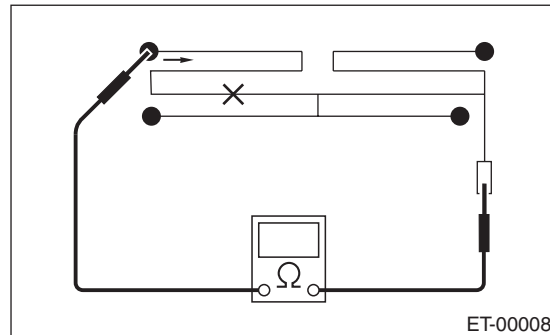
NOTE:

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



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

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

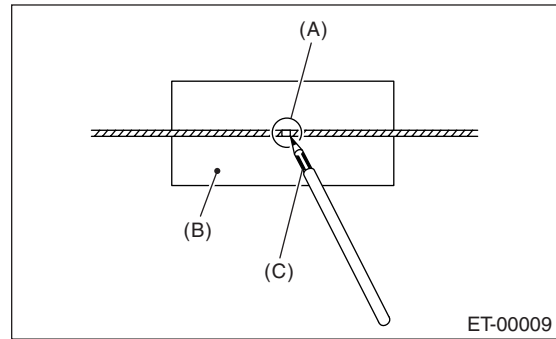


B: REPAIR

1) Clean the antenna wire and surrounding area with a cloth dampened by alcohol.

2) Paste a thin masking film on the glass along broken wire.

3) Deposit conductive silver composition (DUPONT No. 4817) on the broken portion with a drawing pen.



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

4) Dry out the deposited portion.

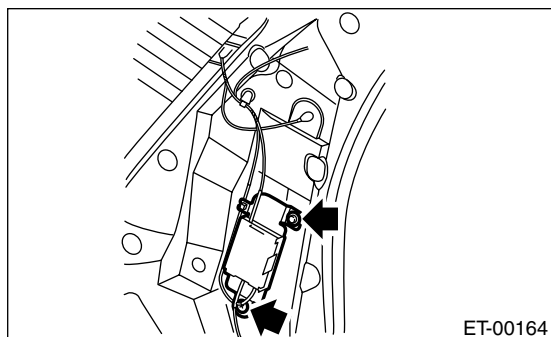
5) After repair has been completed, measure the resistance in repaired wire.

9. Antenna Amplifier

A: REMOVAL

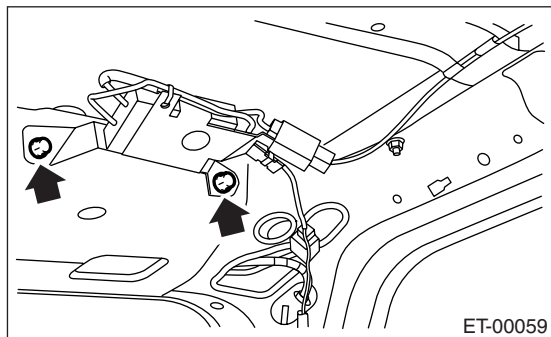
1. SEDAN

- 1) Disconnect the ground cable from battery.
- 2) Remove the rear pillar upper trim. <Ref. to EI-53, SEDAN MODEL, REMOVAL, Rear Quarter Trim.>
- 3) Disconnect the harness connector and terminal.
- 4) Remove the mounting screw and bolt, and detach antenna amplifier.



2. WAGON

- 1) Disconnect the ground cable from battery.
- 2) Remove the rear quarter upper trim and roof trim. <Ref. to EI-55, WAGON MODEL, REMOVAL, Roof Trim.>
- 3) Disconnect the harness connector and terminal.
- 4) Remove the mounting screws and detach the antenna amplifier.



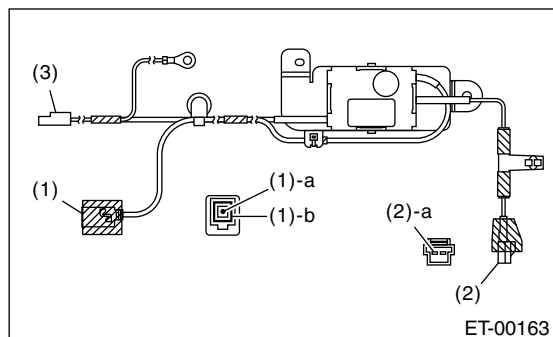
B: INSTALLATION

Install in the reverse order of removal.

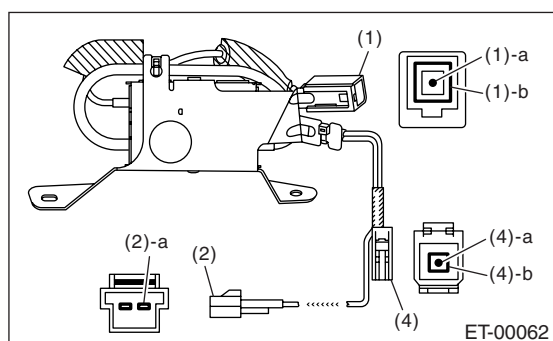
C: INSPECTION

Measure the antenna amplifier resistance.

• SEDAN



• WAGON



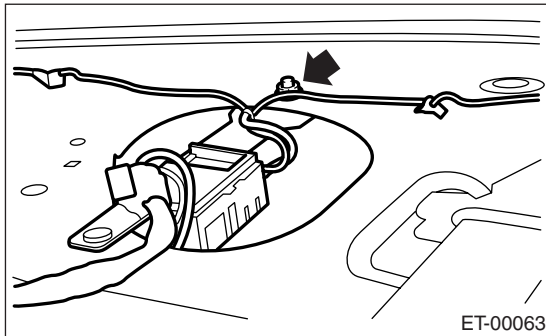
Terminal No.	Standard
1-a and Amplifier body	More than 100 k Ω
1-b and Amplifier body	Less than 1 Ω
2-a and Amplifier body	More than 100 k Ω
3 and Amplifier body	More than 100 k Ω
4-a and Amplifier body	More than 100 k Ω
4-b and Amplifier body	Less than 1 Ω

10.Noise Suppressor

A: REMOVAL

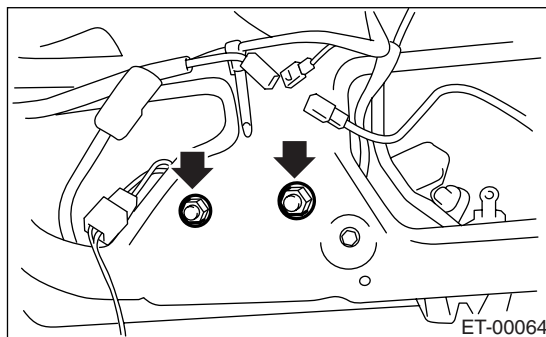
1. SEDAN

- 1) Disconnect the ground cable from battery.
- 2) Remove the rear pillar upper trim. <Ref. to EI-53, SEDAN MODEL, REMOVAL, Rear Quarter Trim.>
- 3) Remove the rear shelf trim. <Ref. to EI-58, REMOVAL, Rear Shelf Trim.>
- 4) Disconnect the feeder cord connector from antenna amplifier.
- 5) Disconnect the harness connector of noise suppressor from terminal on glass antenna.
- 6) Remove the harness clip.
- 7) Remove the mounting nut and detach the noise suppressor.



2. WAGON

- 1) Disconnect the ground cable from battery.
- 2) Remove the rear gate trim. <Ref. to EI-57, REMOVAL, Rear Gate Trim.>
- 3) Disconnect the connector from noise suppressor.
- 4) Remove the mounting nut and detach the noise suppressor.



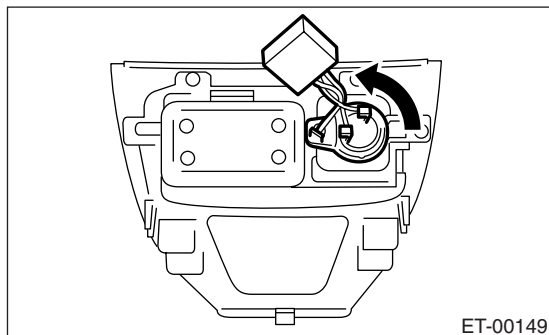
B: INSTALLATION

Install in the reverse order of removal.

11. Front Accessory Power Supply Socket

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the console front panel.
- 3) Disconnect the harness connectors and remove front accessory power supply socket.



B: INSTALLATION

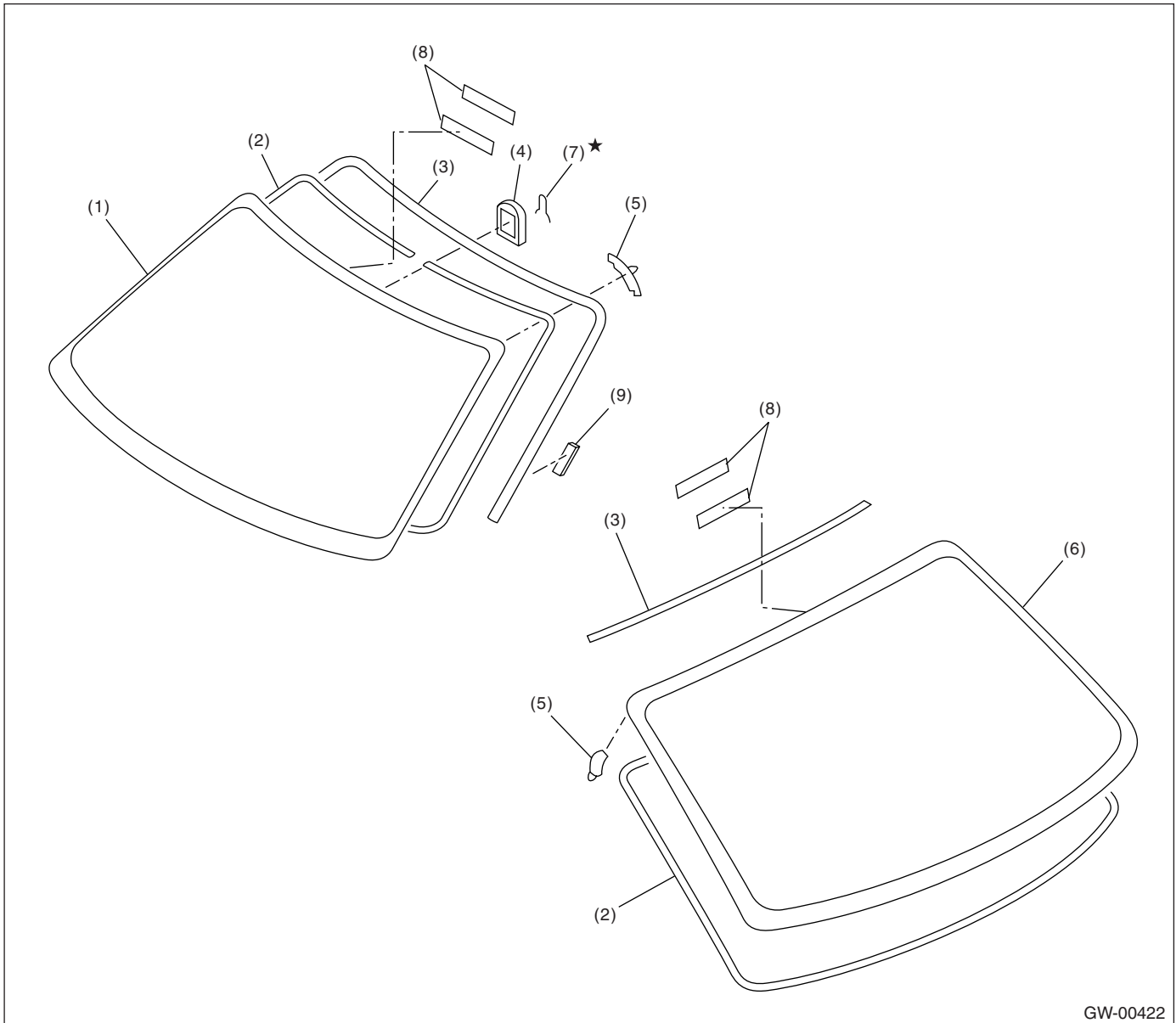
Install in the reverse order of removal.

GLASS / WINDOWS / MIRRORS

1. General Description

A: COMPONENT

1. FIXED GLASS (SEDAN MODEL)



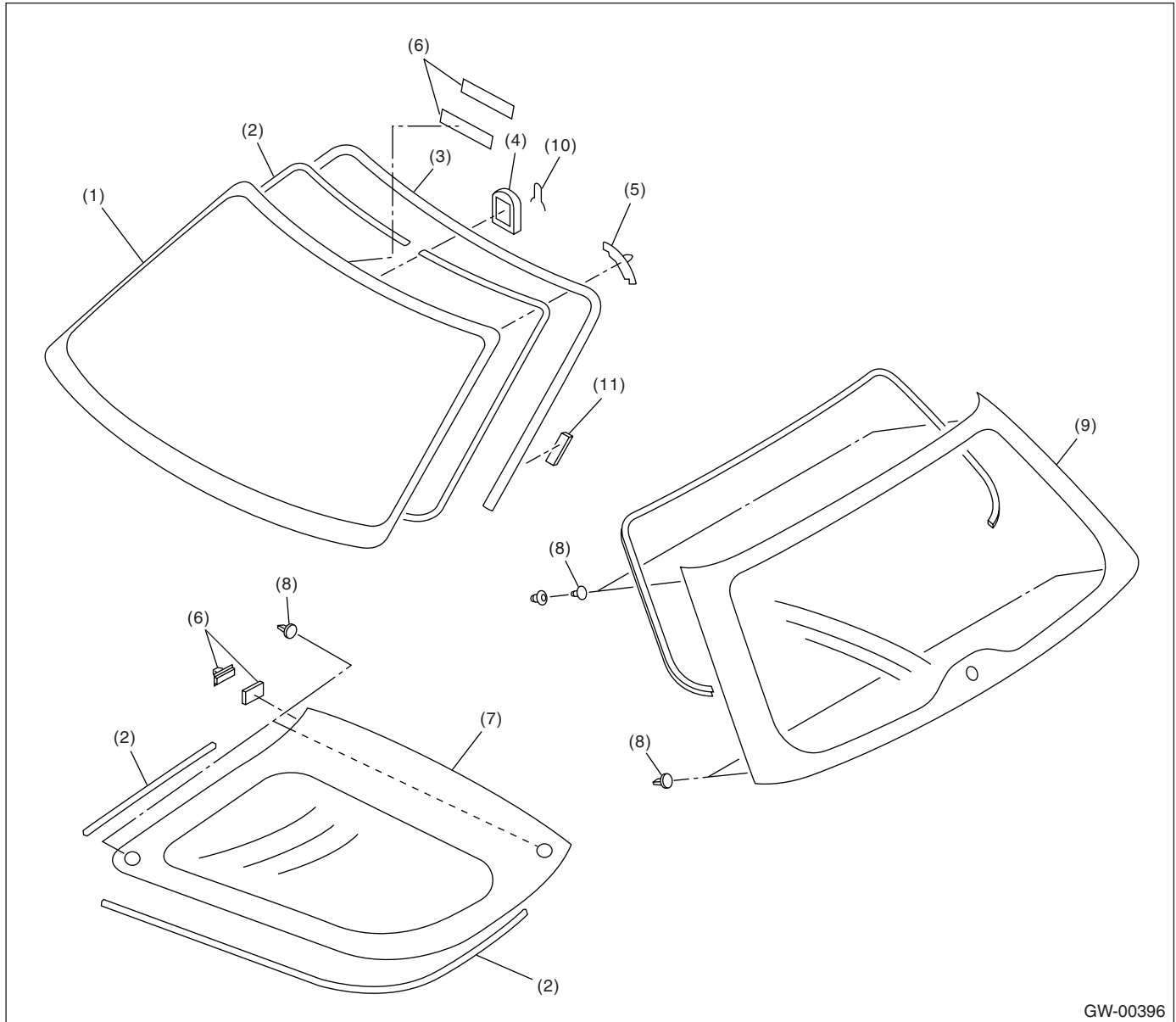
GW-00422

- (1) Windshield glass
- (2) Dam rubber
- (3) Molding

- (4) Rearview mirror mount
- (5) Locating pin
- (6) Rear window glass

- (7) Spring
- (8) Fastener
- (9) Seal

2. FIXED GLASS (WAGON MODEL)



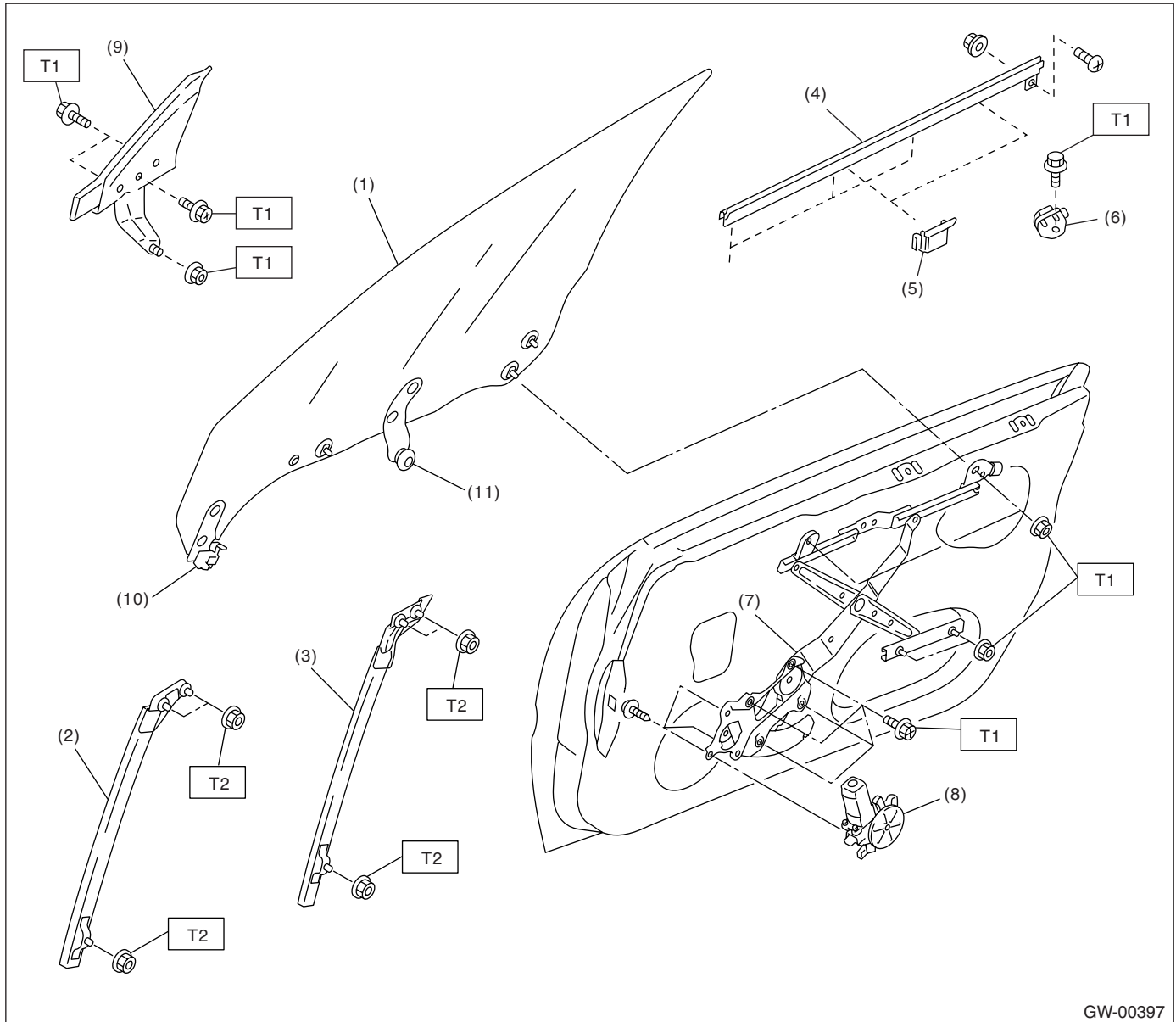
GW-00396

(1) Windshield glass	(5) Locating pin	(9) Glass
(2) Dam rubber	(6) Fastener	(10) Spring
(3) Molding	(7) Rear quarter glass	(11) Seal
(4) Rearview mirror mount	(8) Locating pin	

General Description

GLASS/WINDOWS/MIRRORS

3. FRONT DOOR GLASS



(1) Glass	(6) Stabilizer (Inner)
(2) Door sash (Front)	(7) Regulator ASSY
(3) Door sash (Rear)	(8) Motor ASSY
(4) Weather strip	(9) Mirror gusset
(5) Stabilizer (Outer)	(10) Slider

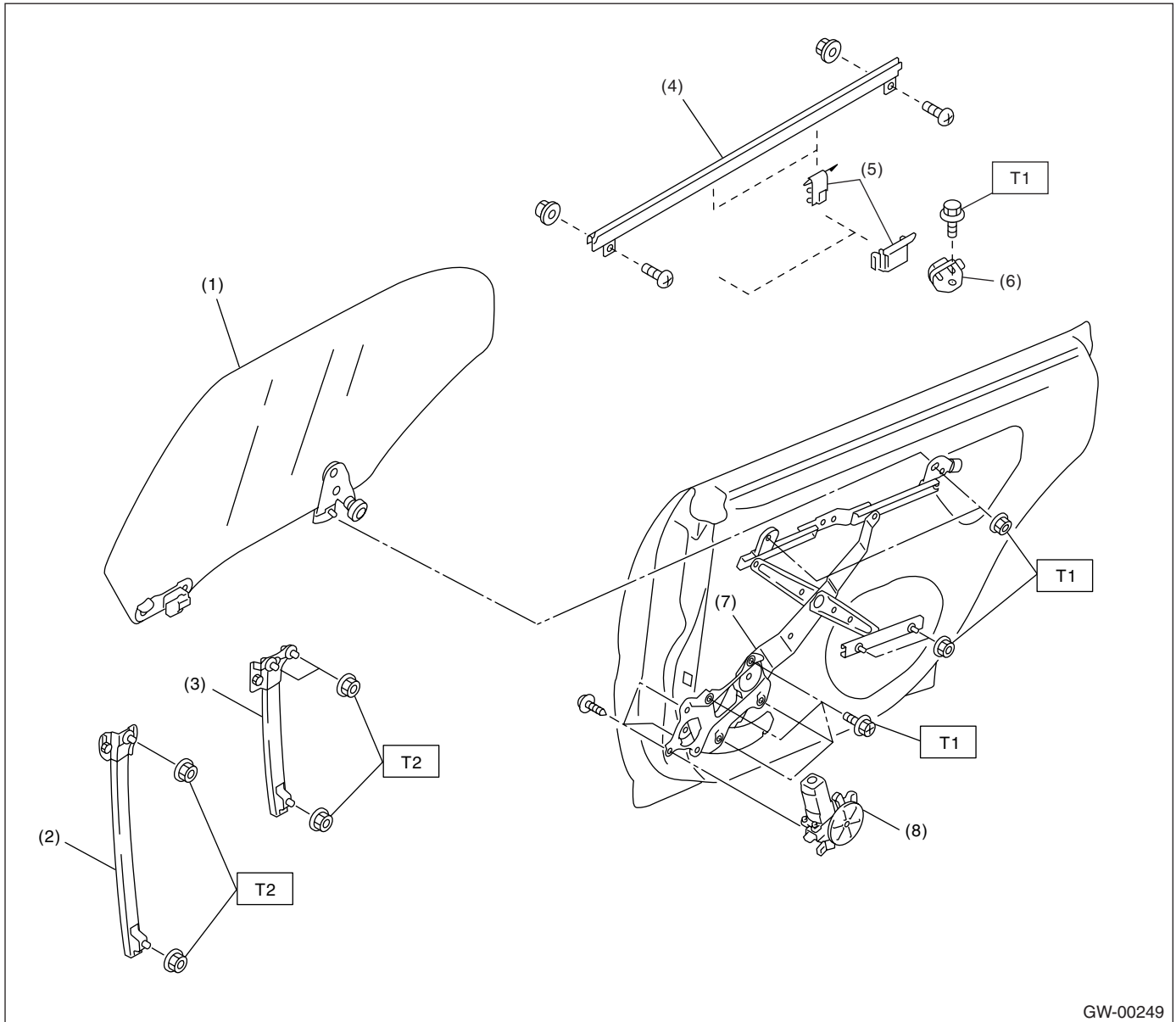
- (11) Roller

Tightening torque: N·m (kgf·m, ft·lb)

T1: 7.4 (0.75, 5.5)

T2: 13.7 (1.4, 10.1)

4. REAR DOOR GLASS



GW-00249

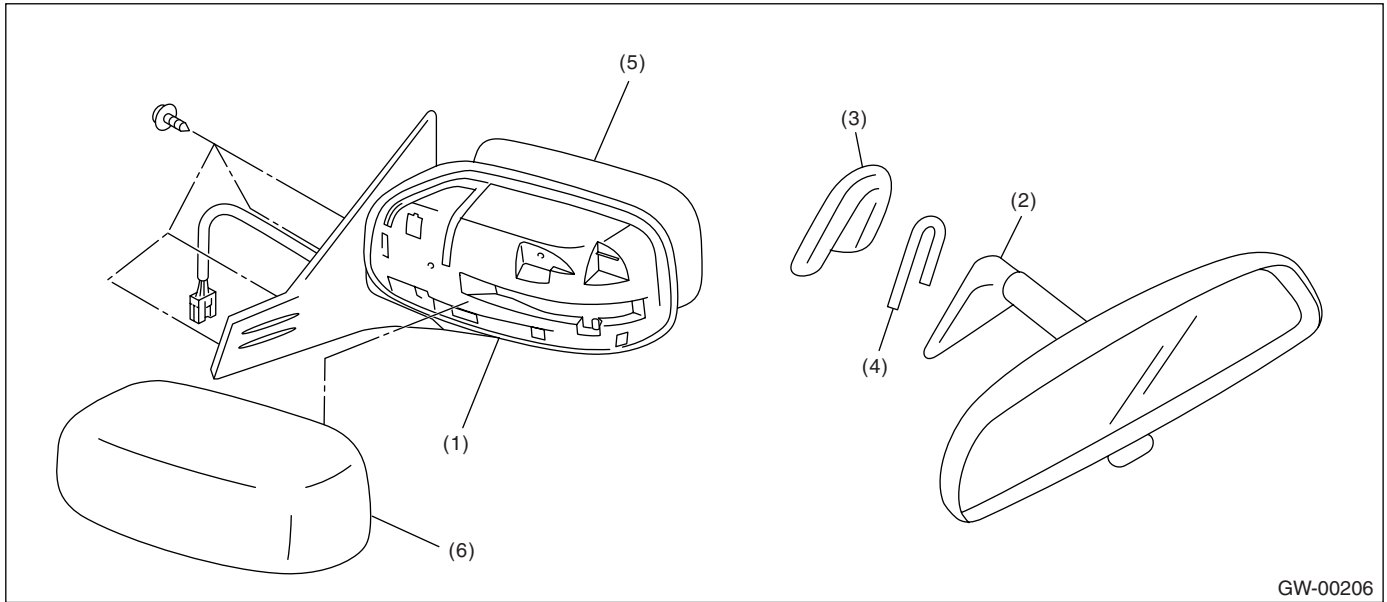
(1) Glass	(5) Stabilizer (Outer)
(2) Door sash (Front)	(6) Stabilizer (Inner)
(3) Door sash (Rear)	(7) Regulator ASSY
(4) Weather strip	(8) Motor ASSY

Tightening torque: N·m (kgf-m, ft-lb)
T1: 7.4 (0.75, 5.5)
T2: 13.7 (1.4, 10.1)

General Description

GLASS/WINDOWS/MIRRORS

5. MIRROR



- (1) Outer mirror
- (2) Inner rearview mirror

- (3) Mount
- (4) Spring

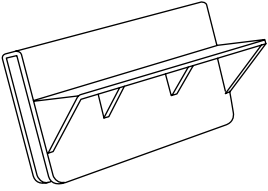
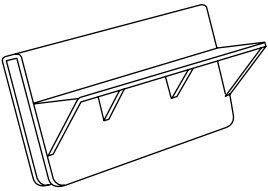
- (5) Mirror
- (6) Scalp cap

B: CAUTION

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

C: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST61299AE000	61299AE000	SPACER	Used for adjusting the upper end position of front door glass. (Glass thickness: 5 mm (0.197 in))
 ST61299AE010	61299AE010	SPACER	Used for adjusting the upper end position of rear door glass. (Glass thickness: 4 mm (0.157 in))

General Description

GLASS/WINDOWS/MIRRORS

2. GENERAL TOOL

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.

Power Window System

GLASS/WINDOWS/MIRRORS

2. Power Window System

A: WIRING DIAGRAM

<Ref. to WI-144, Power Window System.>

B: INSPECTION

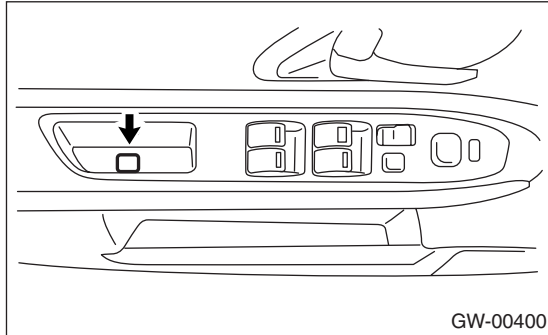
Symptom	Repair order
All power windows do not operate.	(1) Fuse (SBF-6) (2) Power window circuit breaker (3) Power window relay (4) Wiring harness
One window does not operate.	(1) Power window main switch (2) Power window sub switch (3) Power window motor (4) Wiring harness
"Window Lock" does not operate.	(1) Power window main switch

3. Power Window Control Switch

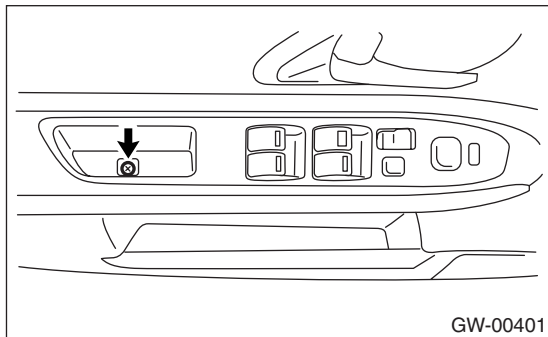
A: REMOVAL

1. MAIN SWITCH

- 1) Disconnect the ground cable from battery.
- 2) Using a flat tip screwdriver, remove the screw cover.



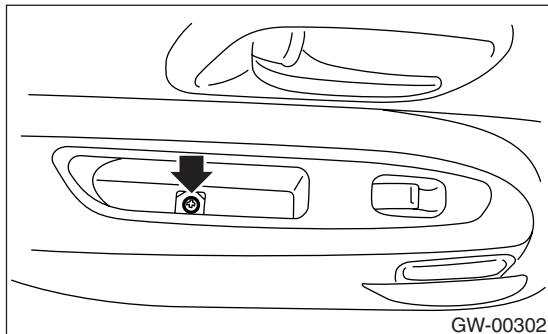
- 3) Loosen the screw to remove the power window main switch.



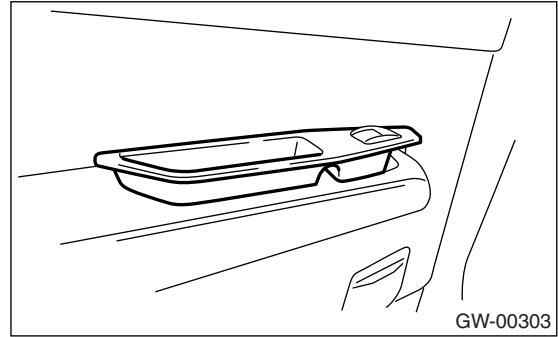
- 4) Disconnect the connector.

2. SUB SWITCH

- 1) Disconnect the ground cable from battery.
- 2) Remove the screw which secures switch panel.



- 3) Remove the switch panel.



- 4) Disconnect the connector.

B: INSTALLATION

1. MAIN SWITCH

Install in the reverse order of removal.

2. SUB SWITCH

Install in the reverse order of removal.

Power Window Control Switch

GLASS/WINDOWS/MIRRORS

C: INSPECTION

1. MAIN SWITCH

Measure the switch resistance.

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

If NG, replace the main switch.

2. SUB SWITCH

Measure the switch resistance.

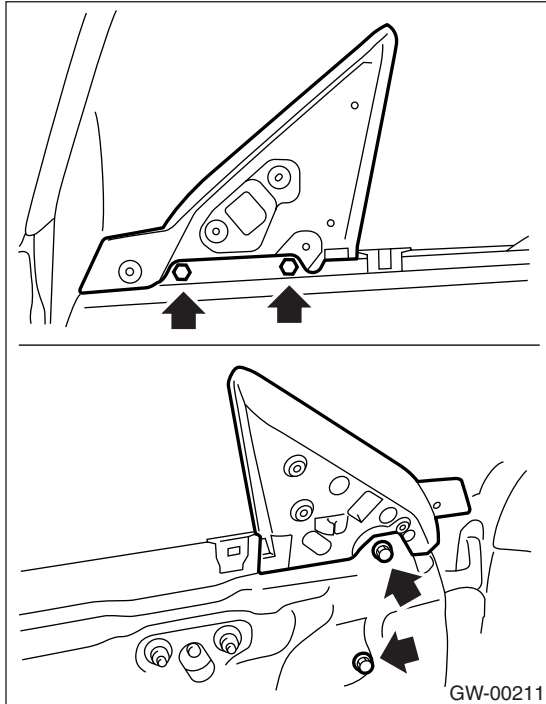
	Switch position	Terminal No.	Standard
Front passenger's side & rear	UP	8 and 5, 4 and 7	Less than 1 Ω
	OFF	4 and 7, 6 and 5	Less than 1 Ω
	DOWN	8 and 7, 6 and 5	Less than 1 Ω

If NG, replace the sub switch.

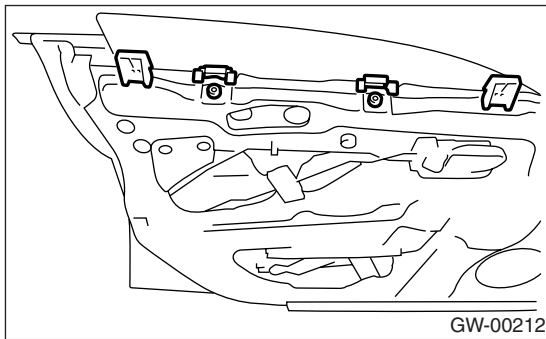
4. Front Door Glass

A: REMOVAL

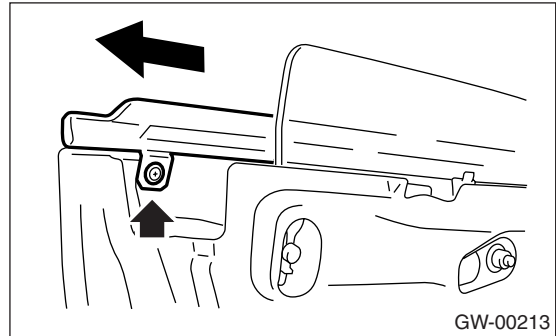
- 1) Remove the front door trim. <Ref. to EI-42, REMOVAL, Front Door Trim.>
- 2) Remove the sealing cover. <Ref. to EB-17, REMOVAL, Front Sealing Cover.>
- 3) Remove the outer mirror assembly. <Ref. to GW-18, REMOVAL, Outer Mirror Assembly.>
- 4) Remove the mirror gusset.



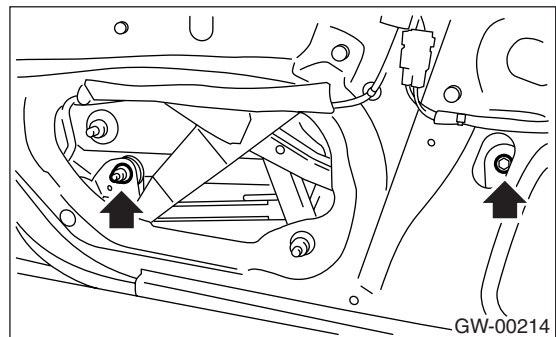
- 5) Remove the stabilizer (Inner) and stabilizer (Outer).



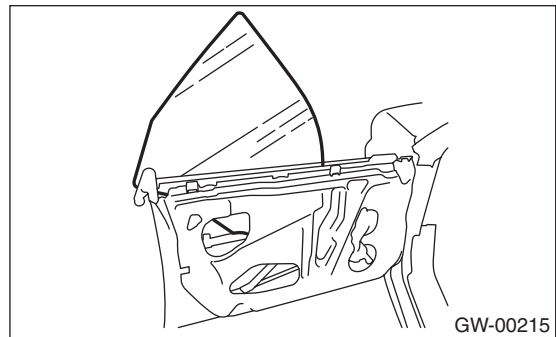
- 6) Remove the screw at the rear end of weather strip, and remove weather strip.



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



- 8) Take out the door glass.



CAUTION:

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

Front Door Glass

GLASS/WINDOWS/MIRRORS

B: INSTALLATION

1) Install in the reverse order of removal.

CAUTION:

Make sure the slider (front) and roller (rear) of glass is placed securely in sash.

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

Tightening torque:

Refer to COMPONENT in General Description. <Ref. to GW-4, FRONT DOOR GLASS, COMPONENT, General Description.>

C: ADJUSTMENT

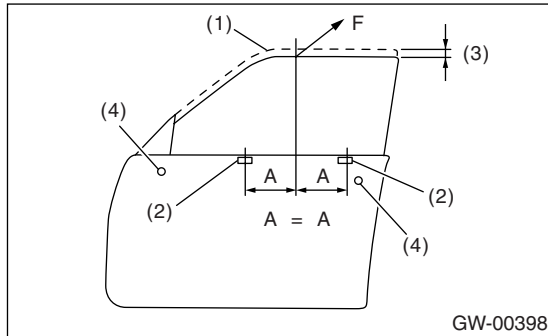
NOTE:

Before adjustment, ensure that all adjusting nuts of stabilizer (inner), upper stopper, and sash are loosened and door glass is raised so that it is in contact with weather strip.

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

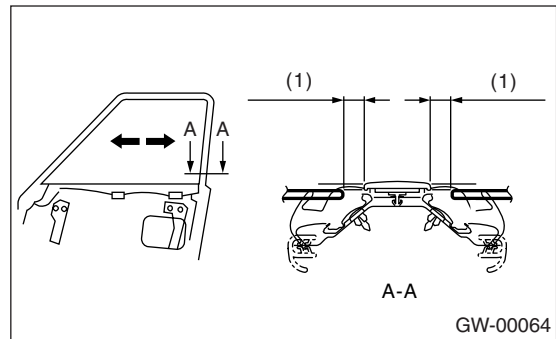
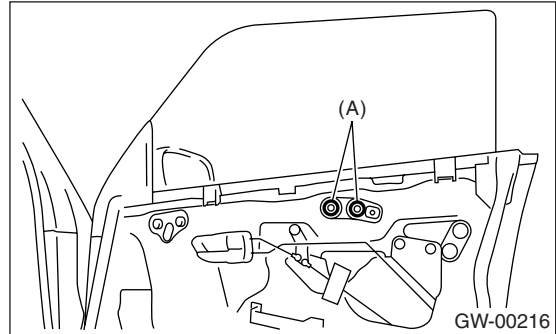
2) Temporarily tighten the regulator B-channel in a position at the top of slotted hole.

3) Lower the door glass 10 to 15 mm (0.39 to 0.59 in) from fully closed position. While applying outward pressure of 45.0 ± 5.0 N (4.5 ± 0.5 kgf, 9.9 ± 1.1 lb) (F) to the upper edge of glass above midpoint of stabilizer (Outer), press the stabilizer (Inner) at pressure of 30 ± 5 N (3.0 ± 0.5 kgf, 6.6 ± 1.1 lb) to the glass, then secure it.



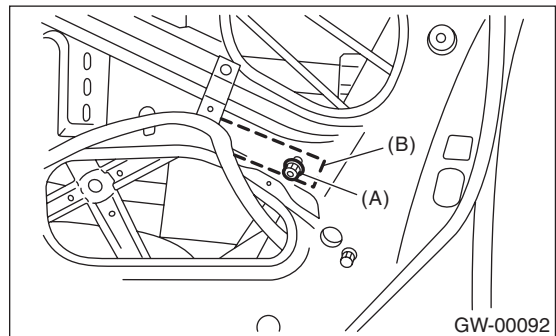
- (1) Full close position
- (2) Stabilizer (Outer)
- (3) 10 — 15 mm (0.39 — 0.59 in)
- (4) Upper stopper

4) For adjustment of clearance between front glass and center pillar cover, loosen the nuts (A), and move the glass sash back and forward until clearance becomes the value shown.

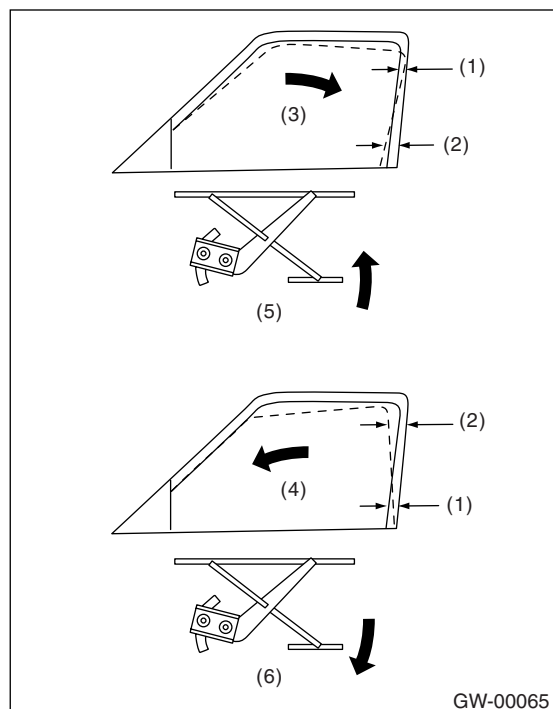


- (1) 12 mm (0.472 in)

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



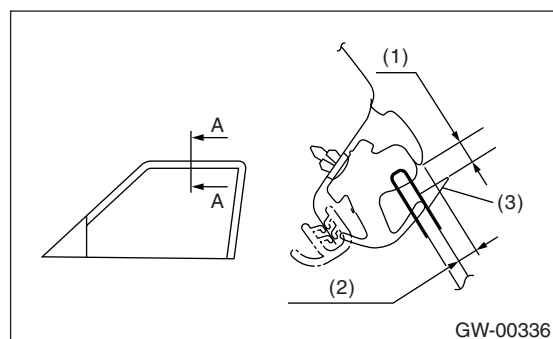
6) Adjust so that the upper and lower ends of center pillar are the same size.



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

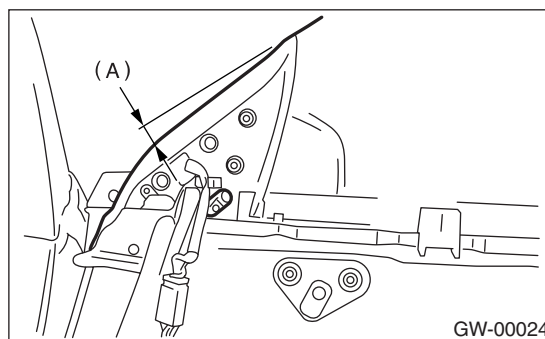
7) For glass stroke adjustment, set the ST on glass and close the door, raise glass until positional relationship between glass and weather strip becomes as shown. And secure the glass so that the upper stopper lightly touches the glass holder.

ST 61299AE000 SPACER (For front door glass of thickness 5 mm (0.197 in))



- (1) 2.7 — 4.3 mm (0.106 — 0.169 in)
- (2) 6 mm (0.236 in)
- (3) ST

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



(A) 0 — 1.5 mm (0 — 0.059 in)

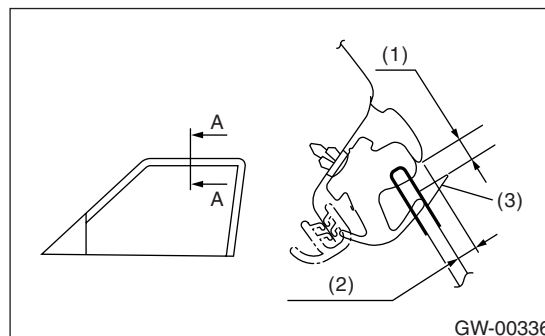
8) After stabilizer adjustment, carry out the glass crimp adjustment. First, visually ensure positional relationship between retainer & molding and glass of the roof side, and then begin with rear sash adjustment. Set the ST on glass, and then adjust two adjusting bolts alternately step by step to obtain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

ST 61299AE000 SPACER (For front door glass of thickness 5 mm (0.197 in))

NOTE:

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

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



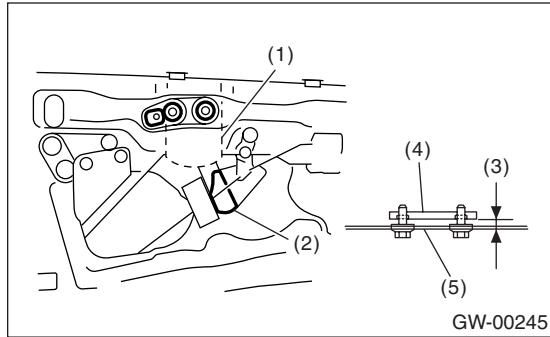
- (1) 2.7 — 4.3 mm (0.106 — 0.169 in)
- (2) 6 mm (0.236 in)
- (3) ST

Front Door Glass

GLASS/WINDOWS/MIRRORS

NOTE:

Do not tilt the 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) Sash
- (5) Inner panel

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

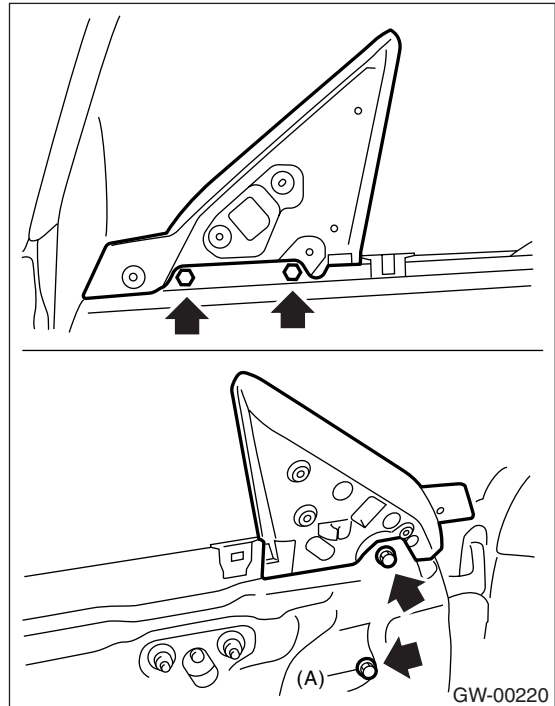
NOTE:

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

11) After adjustments, tighten the nuts.

12) After adjustment to glass, close the door. 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 the gusset to prevent generation of wind noise.

13) During adjustments, loosen the other three clamping bolts.

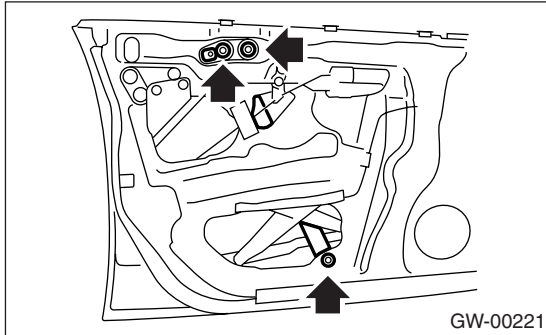


14) After adjustment, tighten the bolts and nuts.

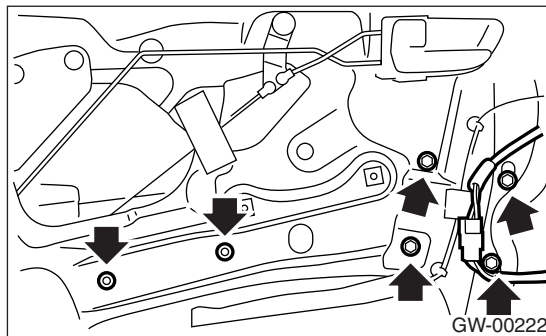
5. Front Regulator and Motor Assembly

A: REMOVAL

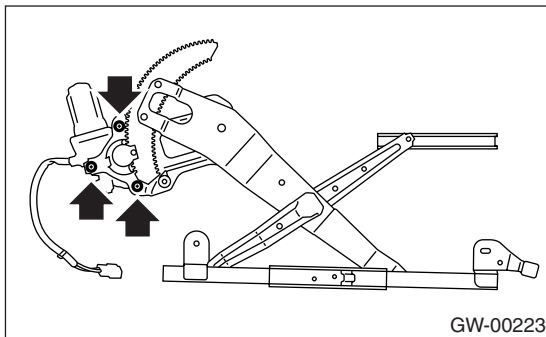
- 1) Remove the door glass. <Ref. to GW-11, REMOVAL, Front Door Glass.>
- 2) Loosen the nuts to remove the rear sash.



- 3) Disconnect the motor connector.
- 4) Loosen the four bolts and two nuts to remove the regulator assembly.



- 5) Loosen the screw to remove motor assembly.



B: INSTALLATION

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

Tightening torque:

Refer to COMPONENT in General Description. <Ref. to GW-4, FRONT DOOR GLASS, COMPONENT, General Description.>

C: INSPECTION

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

Remote Control Mirror System

GLASS/WINDOWS/MIRRORS

6. Remote Control Mirror System

A: WIRING DIAGRAM

<Ref. to WI-149, Remote Control Mirror System.>

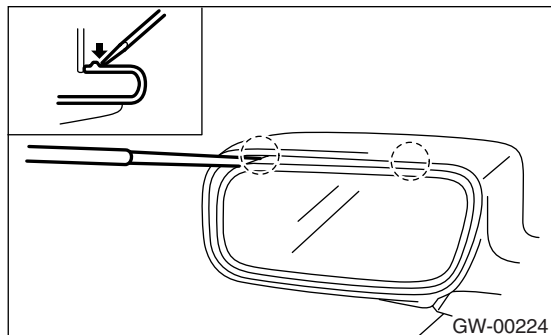
B: INSPECTION

Symptom	Repair order
All functions do not operate.	(1) Fuse (F/B No. 1) (F/B No. 4) (F/B No. 19) (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

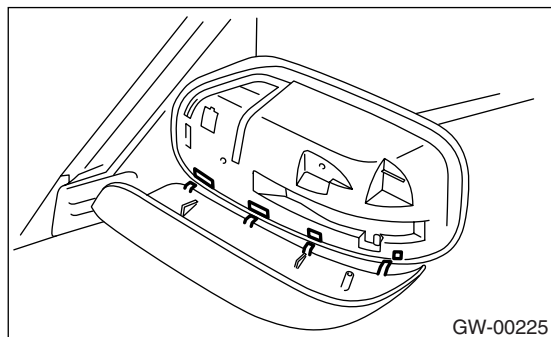
7. Scalp Cap

A: REPLACEMENT

- 1) Turn the mirror downward.
- 2) Insert a thin screw driver, push the clip part of scalp cap, and remove the scalp cap.



- 3) Insert the claw at the bottom of scalp cap into outer mirror.



- 4) Install the scalp cap securely.

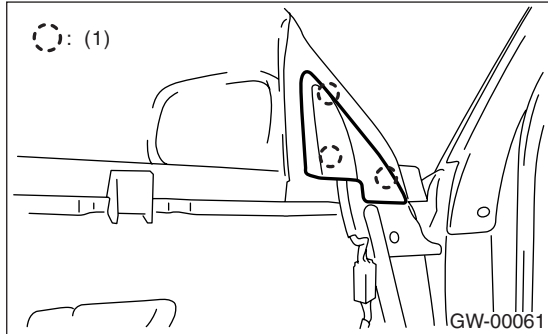
Outer Mirror Assembly

GLASS/WINDOWS/MIRRORS

8. Outer Mirror Assembly

A: REMOVAL

- 1) Remove the door trim. <Ref. to EI-42, REMOVAL, Front Door Trim.>
- 2) Remove the mirror gusset cover.

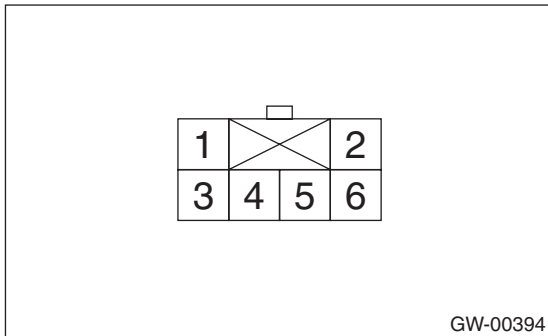


(1) Hook

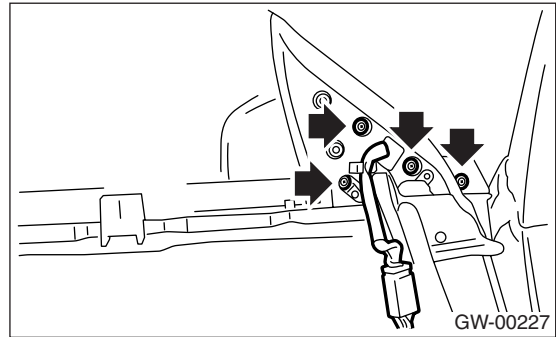
C: INSPECTION

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

- Mirror heater not-equipped model:



- 3) Disconnect the mirror connector.
- 4) Remove the screws to remove the mirror assembly.



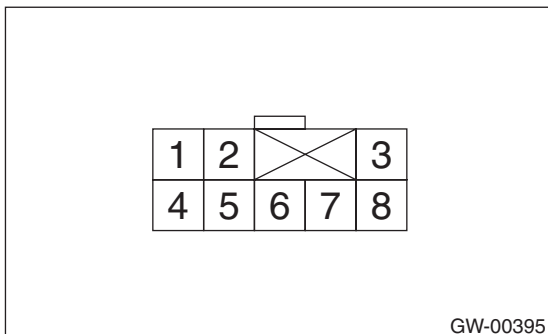
B: INSTALLATION

Install in the reverse order of removal.

Switch position	Terminal No.
OFF	—
UP	4 (+) and 6 (—)
DOWN	6 (+) and 4 (—)
LEFT	5 (+) and 6 (—)
RIGHT	6 (+) and 5 (—)

If NG, replace the mirror.

- Mirror heater equipped model:



Outer Mirror Assembly

GLASS/WINDOWS/MIRRORS

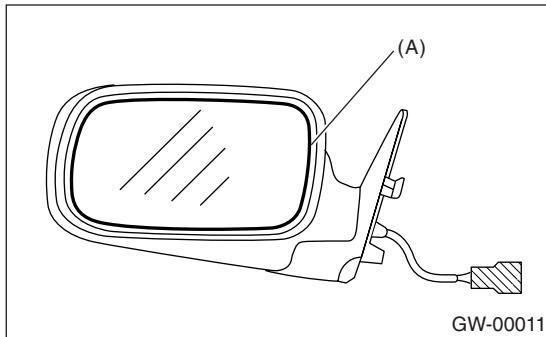
Switch position	Terminal No.
OFF	—
UP	6 (+) and 8 (–)
DOWN	8 (+) and 6 (–)
LEFT	7 (+) and 8 (–)
RIGHT	8 (+) and 7 (–)

If NG, replace the mirror.

9. Outer Mirror

A: REPLACEMENT

- 1) Remove the outer mirror assembly. <Ref. to GW-18, 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 tip screwdriver without sharp edges to lift the mirror out of the mirror holder (A).



- 4) Disconnect the mirror heater connector. (Model with mirror heater)
- 5) Warm the area around the mirror holder with a hair drier until the edges of the mirror holder become soft (about 2 or 3 minutes with a 1,000 W drier).
- 6) Connect the mirror heater connector. (Model with mirror heater)
- 7) Remove the backing of the new double-stick tape, and push the mirror in to install it.

NOTE:

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

10.Remote Control Mirror Switch

A: REMOVAL

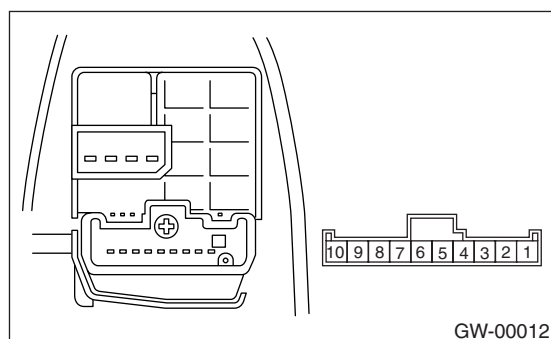
Refer to Power Window Control Switch for removal procedure, because the remote control mirror switch is installed in power window control switch panel. <Ref. to GW-9, REMOVAL, Power Window Control Switch.>

B: INSTALLATION

Refer to Power Window Control Switch for installation procedure, because the remote control mirror switch is installed in power window control switch panel. <Ref. to GW-9, INSTALLATION, Power Window Control Switch.>

C: INSPECTION

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



Change over switch right position:

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

Change over switch left position:

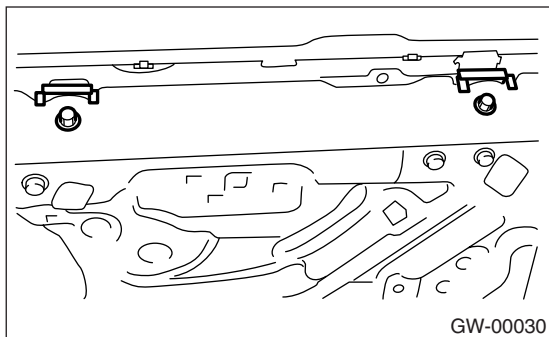
Switch position	Terminal No.	Standard
OFF	—	More than 1 MΩ
UP	8 and 4, 6 and 7	Less than 1 Ω
DOWN	8 and 6, 4 and 7	Less than 1 Ω
LEFT	8 and 5, 6 and 7	Less than 1 Ω
RIGHT	8 and 6, 5 and 7	Less than 1 Ω

If NG, replace the switch.

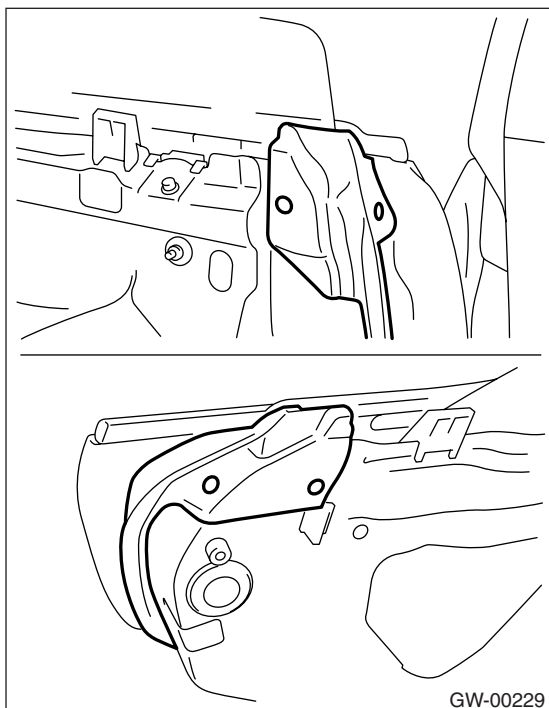
11.Rear Door Glass

A: REMOVAL

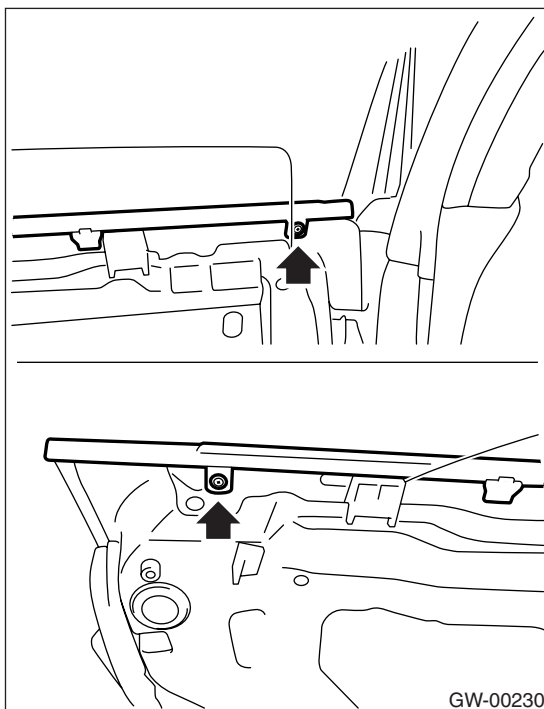
- 1) Remove the rear door trim. <Ref. to EI-43, REMOVAL, Rear Door Trim.>
- 2) Remove the sealing cover. <Ref. to EB-20, REMOVAL, Rear Sealing Cover.>
- 3) Remove the stabilizer.



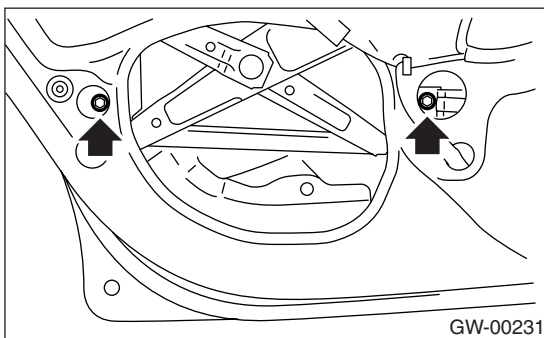
- 4) Remove the front end and rear end of weather strip.



- 5) Remove the two screws to remove the weather strip outer.



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



- 7) Remove the two rear sash installation nuts, and then move the rear sash backward.
- 8) Remove the glass.

CAUTION:

Avoid impact and damage to the glass.

B: INSTALLATION

- 1) Install in the reverse order of removal.

NOTE:

Make sure the slider (front) and roller (rear) of glass stay is placed securely in front and rear sash.

- 2) Adjust the rear door glass. <Ref. to GW-23, ADJUSTMENT, Rear Door Glass.>

Tightening torque:

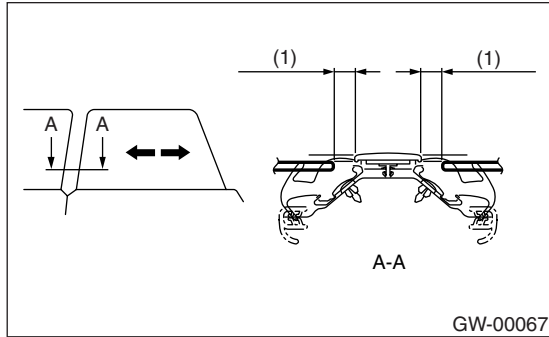
Refer to COMPONENT in General Description. <Ref. to GW-5, REAR DOOR GLASS, COMPONENT, General Description.>

C: ADJUSTMENT

NOTE:

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

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



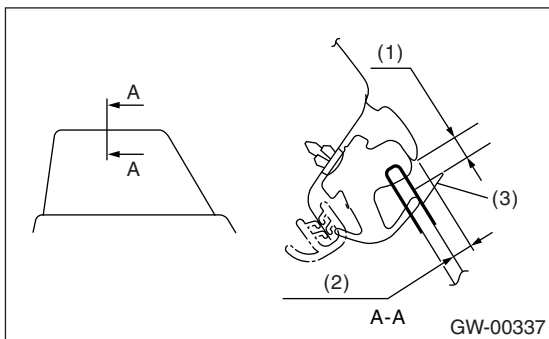
(1) 12 mm (0.472 in)

NOTE:

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

2) Set the ST on glass, and then adjust the contact degree of glass using the following dimensions as a guide line.

ST 61299AE010 SPACER (For rear door glass of thickness 4 mm (0.157 in))



(1) 3.7 — 5.3 mm (0.146 — 0.209 in)

(2) 6 mm (0.236 in)

(3) ST

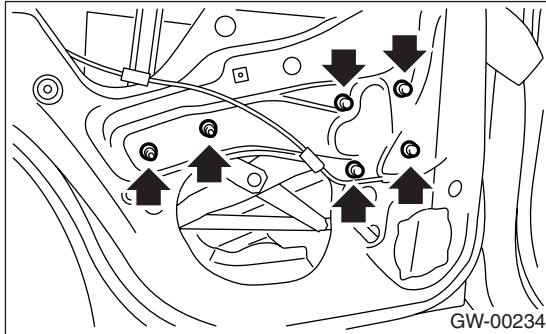
NOTE:

- If the contact degree of rear glass is higher than necessary, glass may get caught in weather strip of center pillar corner, resulting in early wear of weather strip. Be careful when adjusting.

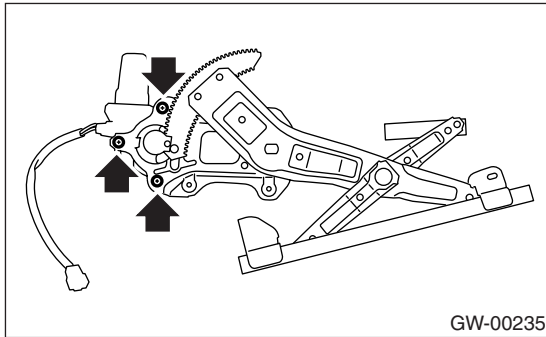
12. Rear Regulator and Motor Assembly

A: REMOVAL

- 1) Remove the rear door glass. <Ref. to GW-22, REMOVAL, Rear Door Glass.>
- 2) Remove the front sash.
- 3) Disconnect the motor connector.
- 4) Remove the four bolts and two nuts to remove regulator assembly.



- 5) Remove the screws to remove motor assembly.



B: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Adjust the rear door glass. <Ref. to GW-23, ADJUSTMENT, Rear Door Glass.>

Tightening torque:

Refer to COMPONENT in General Description. <Ref. to GW-5, REAR DOOR GLASS, COMPONENT, General Description.>

C: INSPECTION

- 1) Make sure that the 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 the motor rotates in reverse direction.

13. Windshield Glass

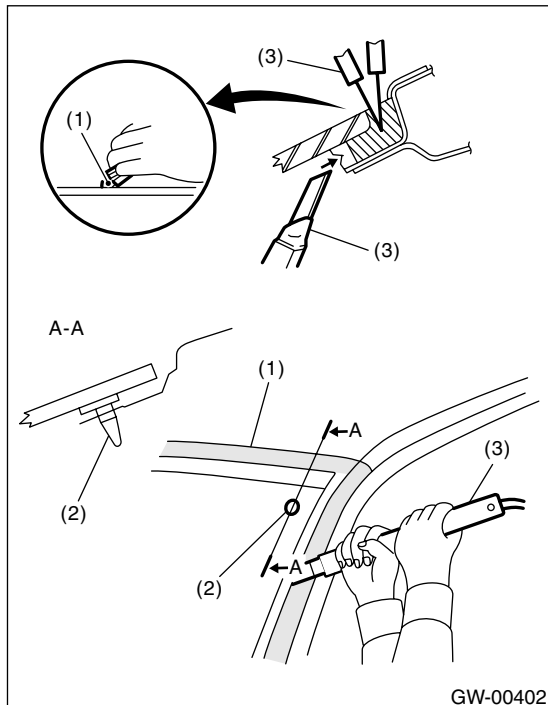
A: REMOVAL

1. USING WINDSHIELD KNIFE

- 1) Remove the cowl panel. <Ref. to EI-35, REMOVAL, Cowl Panel.>
- 2) Remove the glass molding.
- 3) Remove the roof molding and upper front molding.
- 4) Tape the body side of the circumference of windshield glass for protection.
- 5) Apply sufficient amount of soapy water to the adhesive layer.
- 6) Insert the windshield knife into the adhesive layer.
- 7) While holding the knife edge and windshield glass edge at a right angle, move the windshield knife in parallel to the windshield glass edge along face and edge of windshield glass to cut the adhesive layer.

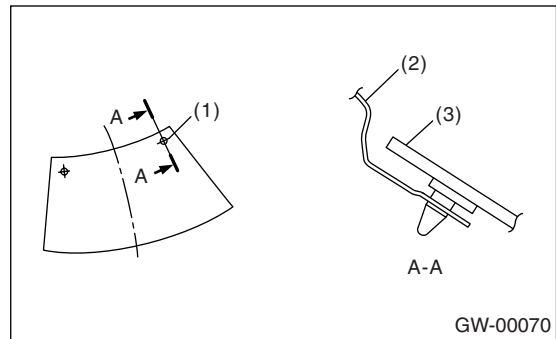
NOTE:

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



- (1) Protective tape
- (2) Locating pin
- (3) Windshield knife

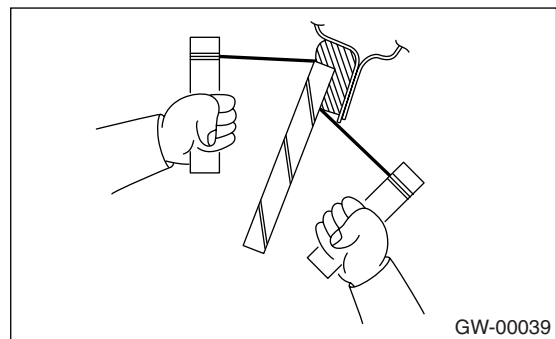
- Because the locating pins are bonded to corners of glass, use piano wire to cut the pin.



- (1) Locating pin
- (2) Body panel
- (3) Windshield glass

2. USING PIANO WIRE

- 1) Remove the cowl panel. <Ref. to EI-35, REMOVAL, Cowl Panel.>
- 2) Remove the roof molding and upper front molding.
- 3) Tape the body side of circumference of windshield glass for protection.
- 4) Make a hole in adhesive layer using a drill or knife.
- 5) Pass the piano wire through hole, and attach securely both the piano 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 the interior and exterior parts.
- Do not cross piano wires. Otherwise they may be cut.

B: INSTALLATION

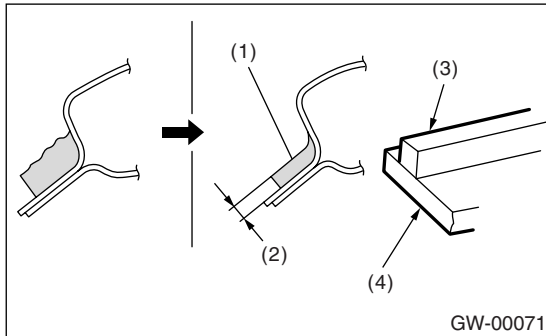
- 1) Clean the external circumference of windshield glass with alcohol or white gasoline.
- 2) Remove the adhesive layer on the body using cutter knife to obtain smooth face 2 mm (0.08 in) thick.

Windshield Glass

GLASS/WINDOWS/MIRRORS

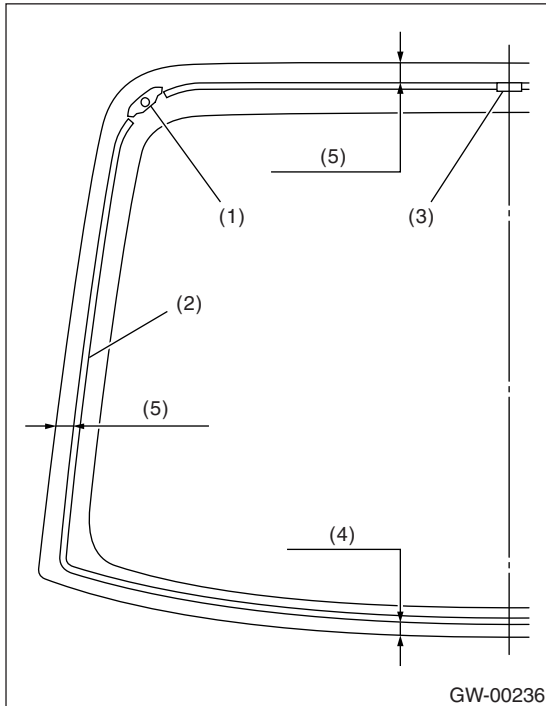
CAUTION:

Be careful not to damage the body and paint surface.



- (1) Adhesive
- (2) 2 mm (0.08 in)
- (3) Dam rubber
- (4) Glass

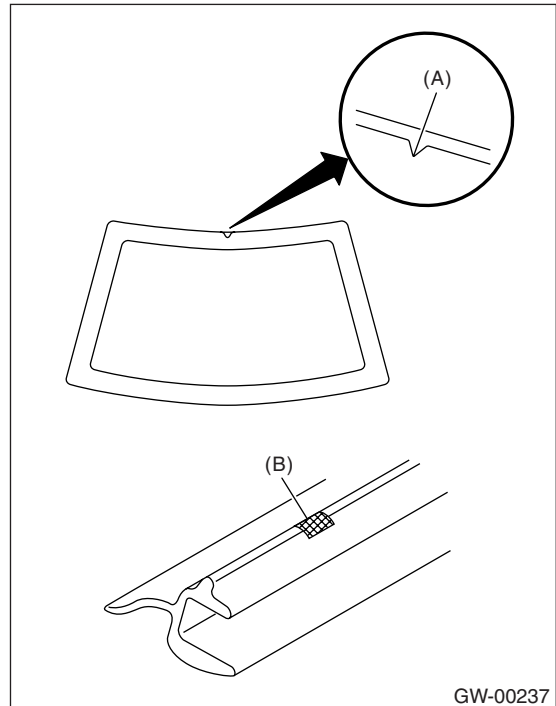
3) Clean the body with alcohol or white gasoline to remove thoroughly chips, dusts, and dirt from body face.



- (1) Locating pin
- (2) Dam rubber
- (3) Fastener
- (4) 15 mm (0.591 in)
- (5) 11 mm (0.433 in)

4) Install the dam rubber.

5) Fit the mark (B) on molding to the notch (A) of glass side, and install the molding to the whole glass edge.



6) Apply two kinds of primer to the adhesive layer of glass using sponge.

Glass primer:

ESSEX U-401 (for undercoat) and ESSEX U-402 (for overcoat) or equivalent

7) Apply primer to adhesive layer of body.

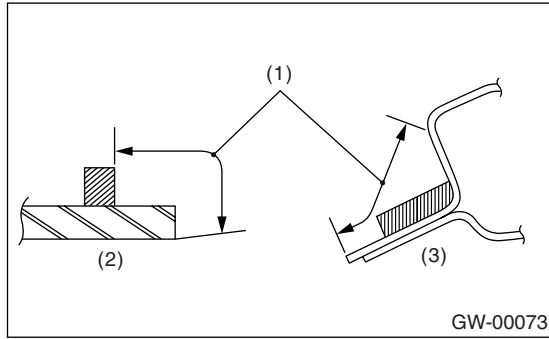
Painted surface primer:

ESSEX U-413 or equivalent

NOTE:

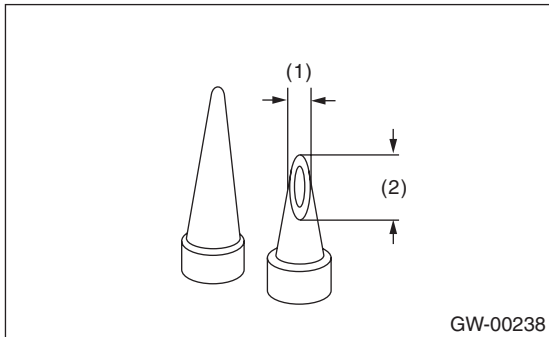
- Primer once attached to painted surface of the body and internal trim is hard to wipe off. Mask the circumference of such areas.
- Let the primer dry for about ten minutes before installing the glass.

- Do not touch the surface coated with primer.



- (1) Application of primer
- (2) Glass side
- (3) Body side

- 8) Cut off the cartridge nozzle tip as shown and set it in sealant gun.

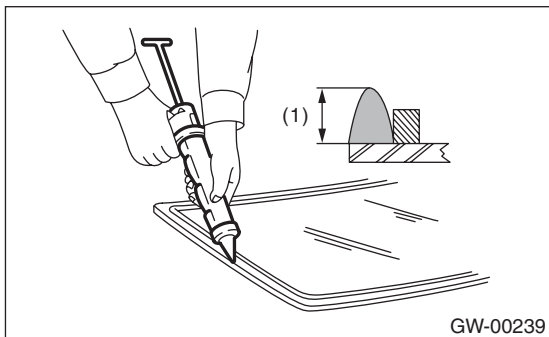


- (1) 10 mm (0.39 in)
- (2) 15 mm (0.59 in)

- 9) Apply adhesive to the glass end surface as shown.

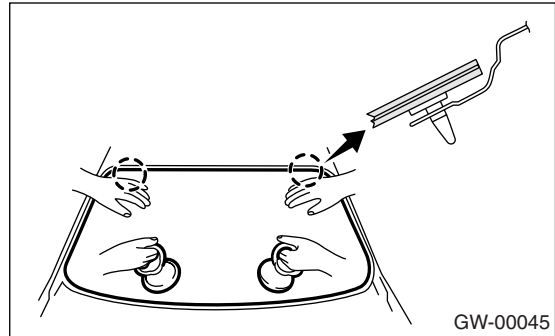
Adhesive:

ESSEX U-400HV or equivalent



- (1) 12 — 15 mm (0.47 — 0.59 in)

- 10) Fit the locating pins using suction rubber cup to install the windshield glass.



- 11) Lightly press the windshield glass for tight fit.
12) Make flush the adhesive surface jugged out using spatula.
13) After completion of all work, allow the vehicle to stand for about 24 hours.

NOTE:

- When the door is opened/closed after glass is bonded, always lower the door glass and then open/close it carefully.
- Move the vehicle slowly.
- For minimum drying time and time the vehicle must be left standing before driving after bonding, follow the instructions or instruction manual from adhesive manufacturer.

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

NOTE:

When a vehicle is returned to the user, tell him or her that the vehicle should not be subjected to heavy impact for at least three days.

- 15) Install the cowl panel. <Ref. to EI-35, INSTALLATION, Cowl Panel.>

14.Rear Gate Glass

A: REMOVAL

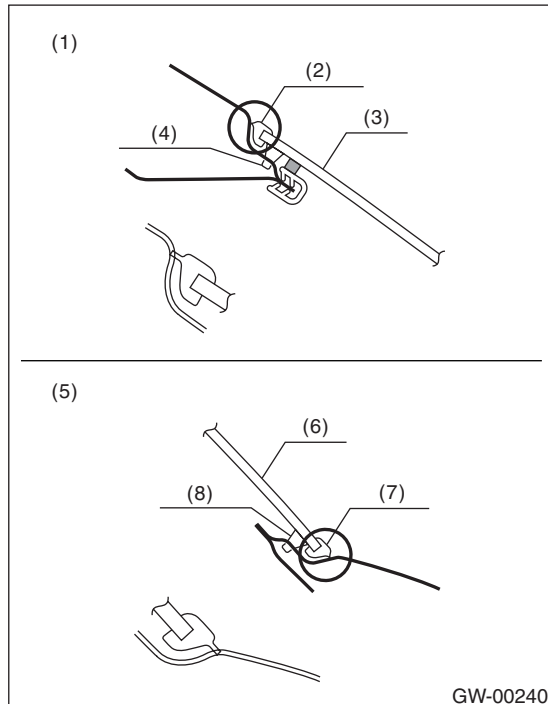
- 1) Remove the rear wiper motor. <Ref. to WW-17, REMOVAL, Rear Wiper Motor.>
- 2) Disconnect the electrical connector from rear defogger terminal.
- 3) Remove the glass in the same procedure as for windshield glass. <Ref. to GW-25, REMOVAL, Windshield Glass.>

B: INSTALLATION

- 1) Apply adhesive in the same procedure as for windshield glass. <Ref. to GW-25, INSTALLATION, Windshield Glass.>
- 2) Insert the glass locating pin into the rear gate hole, and after pushing on the area around the locating pin to secure it, push lightly all around the area to seal it.
- 3) About one hour after installation, conduct a water leak test.

NOTE:

- When the door is opened/closed after glass is bonded, always lower the door glass and then open/close it carefully.
 - Move the vehicle slowly.
 - For minimum drying time and time the vehicle must be left standing before driving after bonding, follow the instructions or instruction manual from adhesive manufacturer.
 - When a vehicle is returned to the user, tell him or her that the vehicle should not be subjected to heavy impact for at least three days.
- 5) Connect the rear defogger terminals.
 - 6) Install the rear wiper. <Ref. to WW-17, INSTALLATION, Rear Wiper Motor.>



GW-00240

- (1) Upper side
- (2) Molding
- (3) Glass
- (4) Adhesive
- (5) Lower side
- (6) Glass
- (7) Molding
- (8) Adhesive

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

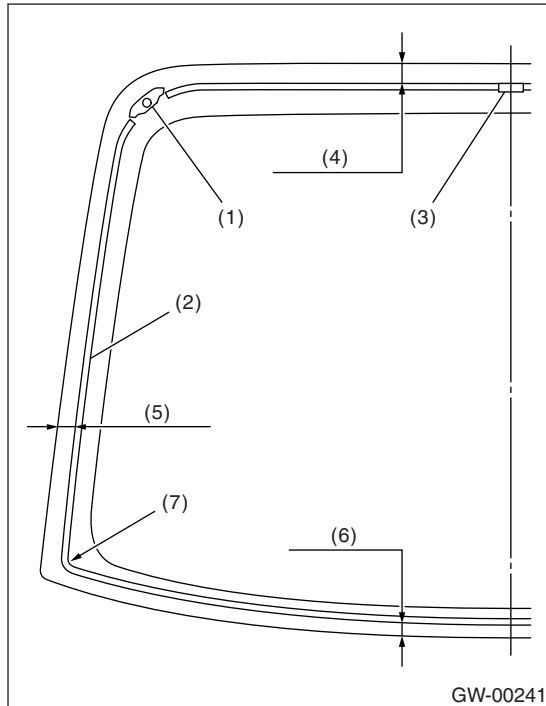
15.Rear Window Glass

A: REMOVAL

- 1) Disconnect the electrical connectors from rear defogger terminals.
- 2) Remove the glass in the same procedure as for windshield glass. <Ref. to GW-25, REMOVAL, Windshield Glass.>

B: INSTALLATION

- 1) Install the dam rubber.



- (1) Locating pin
- (2) Dam rubber
- (3) Fastener
- (4) 14.5 mm (0.571 in)
- (5) 8 mm (0.315 in)
- (6) 22 mm (0.866 in)
- (7) R20

- 2) Install the glass in the same procedure as for windshield glass. <Ref. to GW-25, INSTALLATION, Windshield Glass.>
- 3) Connect the rear defogger terminals.
- 4) After completion of all work, allow the vehicle to stand for about 24 hours.

NOTE:

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

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

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

NOTE:

When a vehicle is returned to user, tell him or her that the vehicle should not be subjected to heavy impact for at least three days.

Rear Window Defogger System

GLASS/WINDOWS/MIRRORS

16.Rear Window Defogger System

A: WIRING DIAGRAM

<Ref. to WI-148, Rear Defogger System.>

B: INSPECTION

Symptom	Repair order
Rear window defogger does not operate.	(1) Fuse (M/B No. 1) (F/B No. 17) (2) Rear defogger relay (3) Rear defogger timer (4) Defogger switch (5) Rear defogger condenser (6) Defogger wire (7) Wiring harness

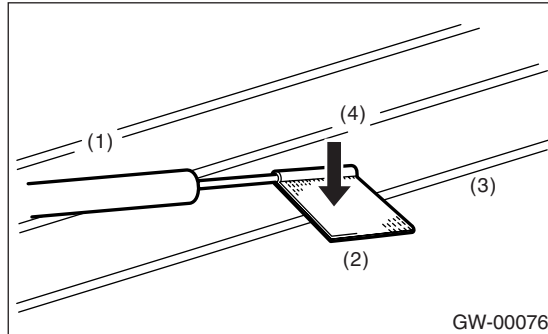
17.Rear Window Defogger

A: INSPECTION

CAUTION:

When wiping stain on glass off with cloth, use a dry and soft cloth and move it along the heat wire to avoid damage to heat wire.

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

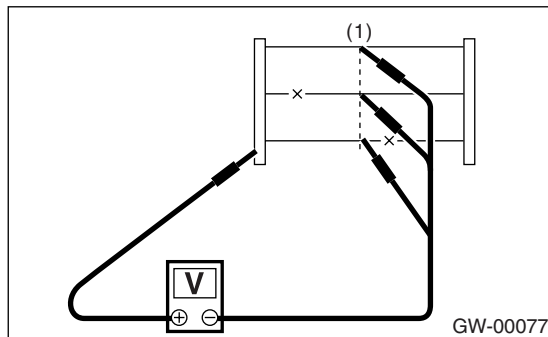


- (1) Tester probe
- (2) Aluminum foil
- (3) Heat wire
- (4) Press

- 4) Measure the voltage at wire center with DC voltmeter.

Standard voltage:

Approx. 6 V



- (1) Wire center

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

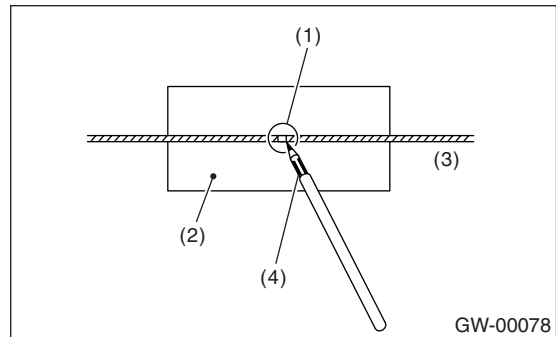
NOTE:

- 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 the negative lead along the wire up to 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 the 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.



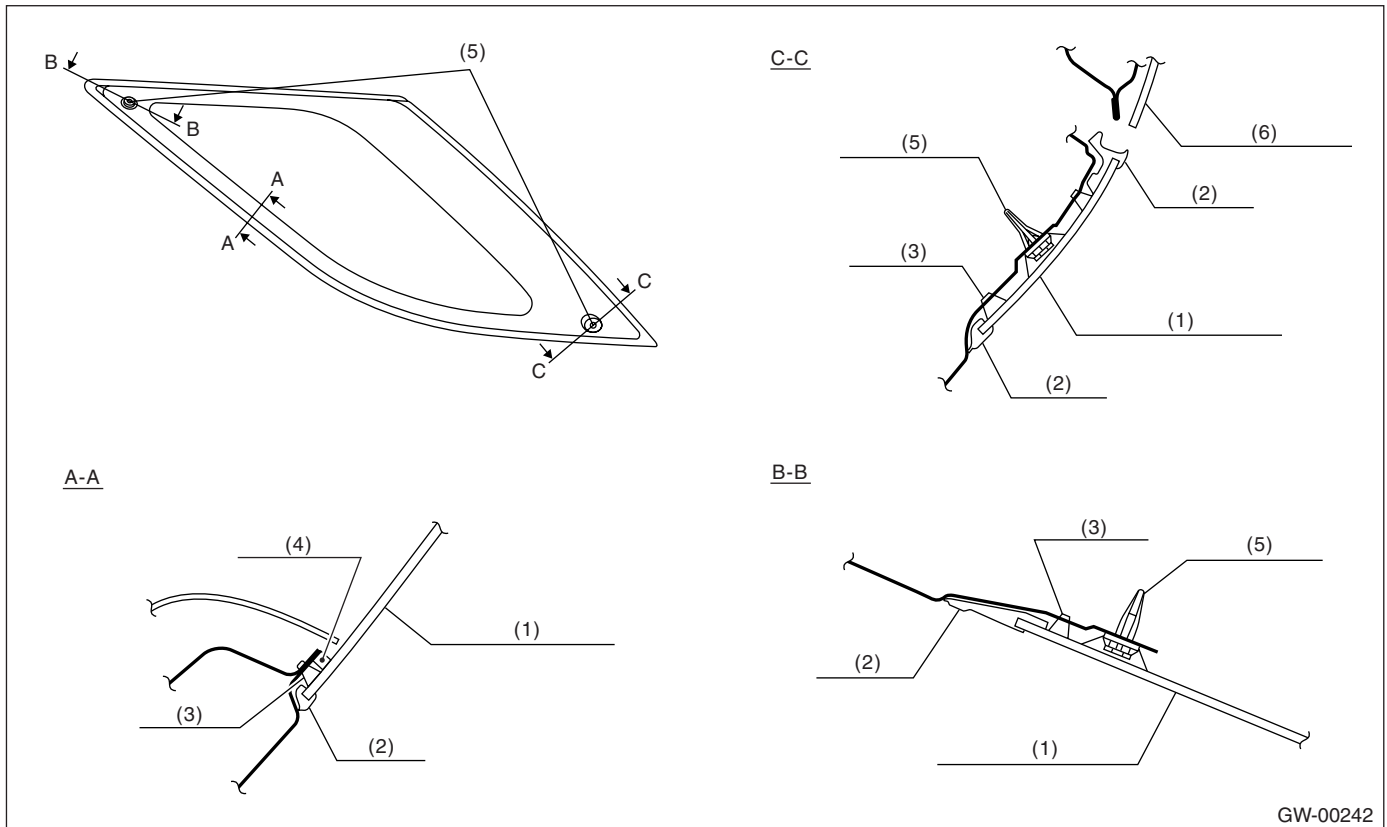
- (1) Broken portion
- (2) Masking thin film
- (3) Broken wire
- (4) Conductive silver composition (DUPONT No. 4817)

- 4) After repair, check the wire.

18.Rear Quarter Glass

A: REMOVAL

Remove the glass in the same procedure as for windshield glass. <Ref. to GW-25, REMOVAL, Windshield Glass.>

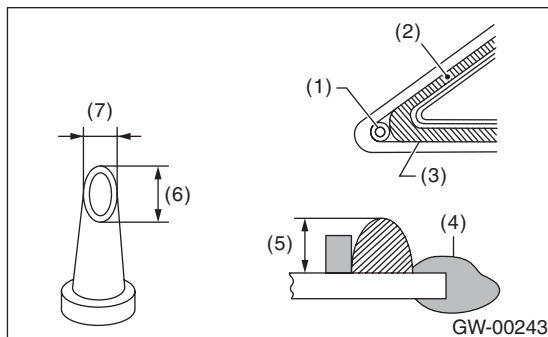


GW-00242

(1) Rear quarter glass	(3) Adhesive	(5) Locating pin
(2) Molding	(4) Dam rubber	(6) Rear gate glass

B: INSTALLATION

1) Cut off the nozzle tip as shown in the figure.



GW-00243

- | |
|---------------------------------|
| (1) Locating pin |
| (2) Dam rubber |
| (3) Adhesive |
| (4) Molding |
| (5) 12 — 15 mm (0.47 — 0.59 in) |
| (6) 15 mm (0.59 in) |
| (7) 10 mm (0.39 in) |

2) Install the glass in the same procedure as for windshield glass. <Ref. to GW-25, INSTALLATION, Windshield Glass.>

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

NOTE:

- When the door is opened/closed after glass is bonded, always lower the door glass and then open/close it carefully.
- Move the vehicle slowly.
- For minimum drying time and time the vehicle must be left standing before driving after bonding, follow the instructions or instruction manual from adhesive manufacturer.

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

NOTE:

When a vehicle is returned to user, tell him or her that the vehicle should not be subjected to heavy impact for at least three days.

19.Sun Roof Glass

A: REMOVAL

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

B: INSTALLATION

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

C: ADJUSTMENT

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

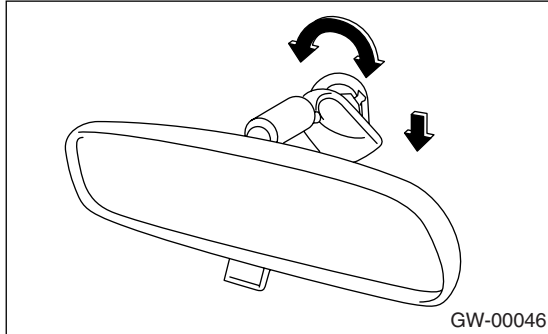
20.Rearview Mirror

A: REMOVAL

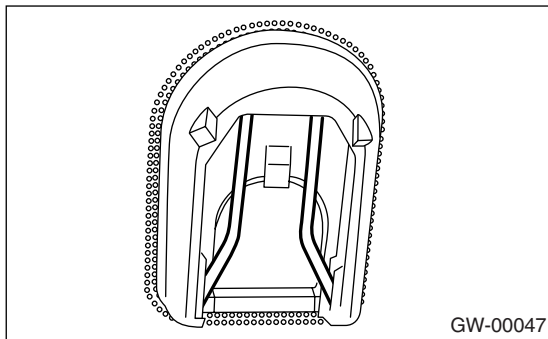
NOTE:

The spring cannot be reused. Prepare a new spring before removal.

- 1) Turn the mirror base 90° clockwise or counter-clockwise to remove it.



- 2) Remove the spring from mirror base.



CAUTION:

Be careful not to damage the mirror surface.

- 3) If the mirror base is damaged, remove the mirror base using piano wire or spatula, etc.

CAUTION:

Be careful not to damage the windshield glass.

B: INSTALLATION

- 1) If removing the mirror base, remove the remaining adhesive thoroughly, and then fit the mirror base to mark on windshield glass to install.

Adhesive:

REPAIR KIT IN MR (Part No. 65029FC000) or equivalent

- 2) Verify that the mirror base is adhered securely, and then install the spring.
- 3) Install in the reverse order of removal.

C: INSPECTION

Make sure the mirror is not damaged.

Make sure the spring is not deteriorated.

21.Wiper Deicer System

A: INSPECTION

Refer to INSPECTION under Rear Window Defogger. <Ref. to GW-31, INSPECTION, Rear Window Defogger.>

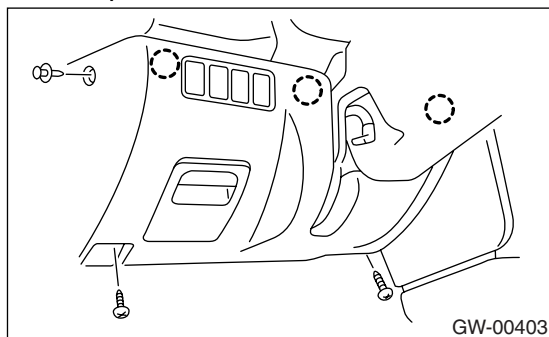
B: REPAIR

Refer to REPAIR under Rear Window Defogger. <Ref. to GW-31, REPAIR, Rear Window Defogger.>

22.Wiper Deicer Switch

A: REMOVAL

Remove the driver side lower cover, and then remove the 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 NG, replace the switch.

INSTRUMENTATION DRIVER INFO

General Description

INSTRUMENTATION/DRIVER INFO

1. General Description

A: SPECIFICATION

Combination meter	Model	Except STi model	STi model
	Speedometer	Electric pulse type	Stepping motor type
	Water temperature gauge	Cross coil type	Stepping motor type
	Fuel gauge	Cross coil type	Stepping motor type
	Tachometer	Electric pulse type	Stepping motor type
	Turn signal indicator light	14 V — 1.4 W	LED
	Charge indicator light	14 V — 1.4 W	LED
	Oil pressure warning light	LED	
	ABS warning light	LED	
	Malfunction indicator light	LED	
	HI-beam indicator light	14 V — 1.4 W	LED
	Door open warning light	LED	
	Seat belt warning light	LED	
	Brake fluid and parking brake warning light	14 V — 1.4 W	LED
	AWD indicator light	LED	—
	AIRBAG warning light	LED	
	Meter illumination light	14 V — 3 W, 14 V — 2 W	LED
	AT OIL TEMP. warning light	LED	—
	Security indicator light	LED	
	Cruise set indicator light	14 V — 1.4 W	LED
	Cruise indicator light	14 V — 1.4 W	LED
	Low fuel warning light	LED	
	AT select lever position indicator light	14 V — 100 mA	—
	Intercooler water spray warning light	—	LED
	Rear differential oil temperature warning light	—	LED
	Driver's control center differential indicator light	—	LED
	REV indicator light	—	LED
	Headlight indicator light	—	LED
	LCD back light	14 V — 1.4 W	LED

B: CAUTION

- Be careful not to damage the meters and instrument panel.
- Be careful not to damage the 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 the printed circuit.
- Do not drop or otherwise apply impact.

C: PREPARATION TOOL

1. GENERAL TOOL

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

2. Combination Meter System

A: WIRING DIAGRAM

1. COMBINATION METER

<Ref. to WI-150, WIRING DIAGRAM, Combination Meter System.>

2. OUTSIDE TEMPERATURE INDICATOR

<Ref. to WI-162, WIRING DIAGRAM, 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-4, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Combination Meter System.>
Speedometer does not operate.	(1) Vehicle speed sensor (MT model) TCM (AT model) (2) Harness (3) Speedometer	MT model: <Ref. to IDI-4, CHECK VEHICLE SPEED SENSOR, INSPECTION, Combination Meter System.>
		AT model: <Ref. to IDI-5, CHECK TRANSMISSION CONTROL MODULE (TCM), INSPECTION, Combination Meter System.>
Tachometer does not operate.	(1) ECM (2) Harness (3) Tachometer	<Ref. to IDI-6, CHECK ENGINE CONTROL MODULE (ECM), INSPECTION, Combination Meter System.>
Fuel gauge does not operate.	(1) Fuel level sensor (2) Harness (3) Fuel gauge	<Ref. to IDI-6, 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-7, CHECK ENGINE COOLANT TEMPERATURE SENSOR, INSPECTION, Combination Meter System.>
Outside temperature indicator does not operate.	(1) Ambient sensor (2) Harness (3) Combination meter (4) Auto A/C control unit	<Ref. to IDI-8, CHECK OUTSIDE TEMPERATURE INDICATOR, INSPECTION, Combination Meter System.>

Combination Meter System

INSTRUMENTATION/DRIVER INFO

2. CHECK POWER SUPPLY AND GROUND CIRCUIT

Step	Check	Yes	No
1 CHECK POWER SUPPLY FOR COMBINATION METER. 1) Remove the combination meter. <Ref. to IDI-10, REMOVAL, Combination Meter.> 2) Disconnect the combination meter harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between combination meter connector and chassis ground. Connector & terminal (i11) No. 7 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	Check the harness for open or short between ignition switch and combination meter.
2 CHECK POWER SUPPLY FOR COMBINATION METER. Measure the voltage between combination meter connector and chassis ground. Connector & terminal (i11) No. 10 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 3.	Check the harness for open or short between fuse and combination meter.
3 CHECK GROUND CIRCUIT OF COMBINATION METER. 1) Turn the ignition switch to OFF. 2) Measure the resistance of harness between combination meter connector and chassis ground. Connector & terminal (i11) No. 6 — Chassis ground:	Is the resistance less than 10 Ω ?	Except STi model: Replace the combination meter printed circuit. STi model: Replace the meter main assembly.	Repair the wiring harness.

3. CHECK VEHICLE SPEED SENSOR

Step	Check	Yes	No
1 CHECK VEHICLE SPEED SENSOR. 1) Lift-up the vehicle and support it with rigid racks. 2) Remove the combination meter with harness connector. 3) Drive the vehicle at a speed greater than 20 km/h (12 MPH). Warning: Be careful not to get caught in the running wheels. 4) Measure the voltage between combination meter connector and chassis ground. Connector & terminal (i11) No. 2 (+) — Chassis ground (-):	Is the voltage less than 1 V $\longleftrightarrow$ more than 5 V?	Except STi model: Check the speedometer. <Ref. to IDI-14, REMOVAL, Speedometer.> STi model: Replace the meter main assembly.	Go to step 2.
2 CHECK VEHICLE SPEED SENSOR POWER SUPPLY. 1) Turn the ignition switch to OFF. 2) Disconnect the vehicle speed sensor harness connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between vehicle speed sensor connector and engine ground. Connector & terminal (B17) No. 3 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 3.	Check the harness for open or short between ignition switch and vehicle speed sensor.

Combination Meter System

INSTRUMENTATION/DRIVER INFO

Step	Check	Yes	No
3 CHECK HARNESS BETWEEN VEHICLE SPEED SENSOR AND ENGINE GROUND. 1) Turn the ignition switch to OFF. 2) Measure the resistance between vehicle speed sensor connector and engine ground. Connector & terminal (B17) No. 2 — Chassis ground:	Is the resistance less than 10 Ω ?	Go to step 4.	Repair the wiring harness.
4 CHECK HARNESS BETWEEN VEHICLE SPEED SENSOR AND COMBINATION METER. 1) Disconnect the connector from combination meter. 2) Measure the resistance between vehicle speed sensor harness connector and combination meter harness connector. Connector & terminal (B17) No. 1 — (i11) No. 2:	Is the resistance less than 10 Ω ?	Replace the vehicle speed sensor.	Repair the wiring harness.

4. CHECK TRANSMISSION CONTROL MODULE (TCM)

Step	Check	Yes	No
1 CHECK TCM SIGNAL. 1) Lift-up the vehicle and support it with rigid racks. 2) Drive the vehicle faster than 10 km/h (6 MPH). Warning: Be careful not to get caught in the running wheels. 3) Measure the voltage between TCM connector and chassis ground. Connector & terminal Non-turbo model: (B55) No. 13 (+) — Chassis ground (-): Turbo model: (B56) No. 17 (+) — Chassis ground (-):	Is the voltage less than 1 V $\longleftrightarrow$ more than 5 V?	Go to step 2.	Check the TCM. <Ref. to 4AT(D)(diag)-2, Basic Diagnostic Procedure.>
2 CHECK HARNESS BETWEEN TCM AND COMBINATION METER. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM and combination meter. 3) Measure the resistance between TCM harness connector and combination meter harness connector. Connector & terminal Non-turbo model: (B55) No. 13 — (i11) No. 2: Turbo model: (B56) No. 17 — (i11) No. 2:	Is the resistance less than 10 Ω ?	Check the speed meter. <Ref. to IDI-14, REMOVAL, Speedometer.>	Repair the wiring harness.

Combination Meter System

INSTRUMENTATION/DRIVER INFO

5. CHECK ENGINE CONTROL MODULE (ECM)

Step	Check	Yes	No
1 CHECK ECM SIGNAL. 1) Start the engine. 2) Measure the voltage between ECM connector and engine ground. Connector & terminal Non-turbo model: <i>(B134) No. 10 (+) — Chassis ground (-):</i> Turbo model: <i>(B137) No. 9 (+) — Chassis ground (-):</i> STi model: <i>(B134) No. 23 (+) — Chassis ground (-):</i>	Is the voltage 0 $\longleftrightarrow$ 14 V or more?	Go to step 2.	Check the ECM. <Ref. to EN(H4SO)(diag)-2, Basic Diagnostic Procedure.> or <Ref. to EN(H4DOTC)(diag)-2, Basic Diagnostic Procedure.> or <Ref. to EN(STi) section.>
2 CHECK HARNESS BETWEEN COMBINATION METER AND ECM. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ECM and combination meter. 3) Measure the resistance between ECM harness connector and combination meter harness connector. Connector & terminal Non-turbo model: <i>(B134) No. 10 — (i11) No. 5:</i> Turbo model: <i>(B137) No. 9 — (i11) No. 5:</i> STi model: <i>(B134) No. 23 — (i11) No. 5:</i>	Is the resistance less than 10 Ω ?	Except STi model: Check the tachometer. <Ref. to IDI-15, REMOVAL, Tachometer.> STi model: Replace the meter main assembly.	Repair the wiring harness.

6. CHECK FUEL LEVEL SENSOR

Step	Check	Yes	No
1 CHECK FUEL LEVEL SENSOR. 1) Remove the fuel level sensor. <Ref. to FU(H4SO)-51, REMOVAL, Fuel Level Sensor.>, <Ref. to FU(H4DOTC)-62, REMOVAL, Fuel Level Sensor.> or <Ref. to FU(STi) section.> 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 2.	Replace the fuel level sensor.
2 CHECK FUEL SUB LEVEL SENSOR. 1) Remove the fuel sub level sensor. <Ref. to FU(H4SO)-52, REMOVAL, Fuel Sub Level Sensor.>, <Ref. to FU(H4DOTC)-63, REMOVAL, Fuel Sub Level Sensor.> or <Ref. to FU(STi) section.> 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 3.	Replace the fuel sub level sensor.

Combination Meter System

INSTRUMENTATION/DRIVER INFO

Step	Check	Yes	No
3 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 (R59) No. 1 — (i12) No. 2:	Is the resistance less than 10 Ω ?	Go to step 4.	Repair the wiring harness.
4 CHECK HARNESS BETWEEN FUEL LEVEL SENSOR AND FUEL SUB LEVEL SENSOR. Measure the resistance between fuel level sensor harness connector terminal and fuel sub level sensor harness connector terminal. Connector & terminal (R58) No. 3 — (R59) No. 2:	Is the resistance less than 10 Ω ?	Go to step 5.	Repair the wiring harness.
5 CHECK FUEL LEVEL SENSOR GROUND CIRCUIT. Measure the resistance between fuel level sensor harness connector terminal and chassis ground. Connector & terminal (R58) No. 2 — Chassis ground:	Is the resistance less than 10 Ω ?	Except STi model: Check the fuel gauge. <Ref. to IDI-16, REMOVAL, Fuel Gauge.> STi model: Replace the meter main assembly.	Repair the wiring harness.

7. CHECK ENGINE COOLANT TEMPERATURE SENSOR

Step	Check	Yes	No
1 CHECK ENGINE COOLANT TEMPERATURE SENSOR. Check the engine coolant temperature sensor. <Ref. to EN(H4SO)(diag)-2, Basic Diagnostic Procedure.> or <Ref. to EN(H4DOTC)(diag)-2, Basic Diagnostic Procedure.> or <Ref. to EN(STi) section.>	Is the engine coolant temperature sensor OK?	Go to step 2.	Replace the engine coolant temperature sensor.
2 CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND COMBINATION METER. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from engine coolant temperature sensor and combination meter. 3) Measure the resistance between engine coolant temperature sensor harness connector and combination meter harness connector. Connector & terminal (E8) No. 3 — (i12) No. 9:	Is the resistance less than 10 Ω ?	Except STi model: Check the water temperature gauge. <Ref. to IDI-17, REMOVAL, Water Temperature Gauge.> STi model: Replace the meter main assembly.	Repair the wiring harness.

Combination Meter System

INSTRUMENTATION/DRIVER INFO

8. CHECK OUTSIDE TEMPERATURE INDICATOR

Step	Check	Yes	No
1 CHECK AIR CONDITIONER TYPE.	Is the vehicle equipped with auto A/C?	Go to step 6.	Go to step 2.
2 CHECK POWER SUPPLY FOR AMBIENT SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from combination meter. 3) Turn the ignition switch to ON. 4) Measure the voltage between combination meter terminal and chassis ground. Connector & terminal (i10) No. 11 (+) — Chassis ground (-):	Is the voltage more than 4 V?	Go to step 3.	Except STi model: Replace the combination meter printed circuit. STi model: Replace the meter main assembly.
3 CHECK HARNESS BETWEEN AMBIENT SENSOR AND COMBINATION METER. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ambient sensor. 3) Measure the resistance between ambient sensor harness connector terminal and combination meter harness connector terminal. Connector & terminal (F78) No. 1 — (i10) No. 11: (F78) No. 2 — (i10) No. 8:	Is the resistance less than 10 Ω ?	Go to step 4.	Repair the wiring harness.
4 CHECK AMBIENT SENSOR. 1) Remove the ambient sensor. 2) Check the ambient sensor. <Ref. to IDI-18, INSPECTION, Ambient Sensor.>	Is the ambient sensor OK?	Go to step 5.	Replace the ambient sensor.
5 CHECK OUTSIDE TEMPERATURE INDICATOR. 1) Connect the combination meter harness connector. 2) Connect a resistor (2.2 k Ω) between terminals of ambient sensor harness connector. 3) Turn the ignition switch to ON and check the outside temperature indicator display.	Is the outside temperature indicator indicating 25°C (77°F)?	Repair the poor contact of ambient sensor harness connector.	Except STi model: Replace the combination meter printed circuit. STi model: Replace the meter main assembly.
6 CHECK POWER SUPPLY FOR COMBINATION METER. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from auto A/C control module. 3) Turn the ignition switch to ON. 4) Measure the voltage between auto A/C control module terminal and chassis ground. Connector & terminal (B282) No. 11 (+) — chassis ground (-):	Is the voltage more than 4 V?	Go to step 7.	Replace the auto A/C control module.
7 CHECK HARNESS BETWEEN AUTO A/C CONTROL MODULE AND COMBINATION METER. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from combination meter. 3) Measure the resistance between auto A/C control module harness connector terminal and combination meter harness connector terminal. Connector & terminal (B282) No. 11 — (i10) No. 12:	Is the resistance less than 10 Ω ?	Go to step 8.	Repair the wiring harness.

Combination Meter System

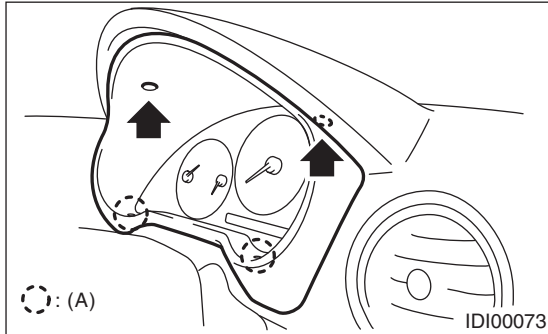
INSTRUMENTATION/DRIVER INFO

Step	Check	Yes	No
8 CHECK POWER SUPPLY FOR AMBIENT SENSOR. 1) Turn the ignition switch to ON. 2) Measure the voltage between auto A/C control module terminal and chassis ground. Connector & terminal (B283) No. 9 (+) — chassis ground (-):	Is the voltage more than 4 V?	Go to step 9.	Replace the auto A/C control module.
9 CHECK HARNESS BETWEEN AMBIENT SENSOR AND COMBINATION METER. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ambient sensor. 3) Measure the resistance between ambient sensor harness connector terminal, combination meter harness connector terminal and auto A/C control module harness connector terminal. Connector & terminal (F78) No. 1 — (i10) No. 11: (F78) No. 1 — (B283) No. 9: (F78) No. 2 — (i10) No. 8:	Is the resistance less than 10 Ω ?	Go to step 10.	Repair the wiring harness.
10 CHECK AMBIENT SENSOR. 1) Remove the ambient sensor. 2) Check the ambient sensor. <Ref. to IDI-18, INSPECTION, Ambient Sensor.>	Is the ambient sensor OK?	Go to step 11.	Replace the ambient sensor.
11 CHECK OUTSIDE TEMPERATURE INDICATOR. 1) Connect the combination meter and auto A/C control module harness connector. 2) Connect a resistor (2.2 k Ω) between terminals of ambient sensor harness connector. 3) Turn the ignition switch to ON and check the outside temperature indicator display.	Is the outside temperature indicator indicating 25°C (77°F)?	Repair the poor contact of ambient sensor harness connector.	Except STi model: Replace the combination meter printed circuit. STi model: Replace the meter main assembly.

3. Combination Meter

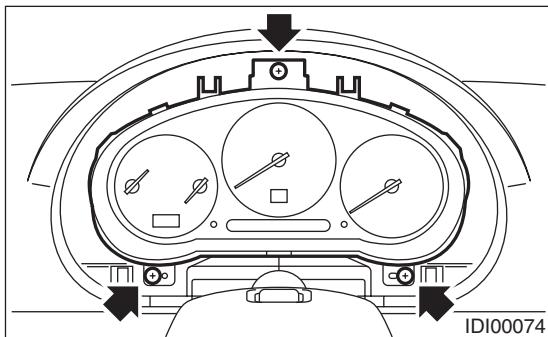
A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Set the tilt steering at lowest position.
- 3) Remove the screws and detach the meter visor.



(A) Hook

- 4) Remove the screws of combination meter and pull out the meter toward you.



- 5) Disconnect the connector in the upper area of combination meter to remove the meter.

CAUTION:

- Be careful not to damage the meter or instrument panel.
- 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.

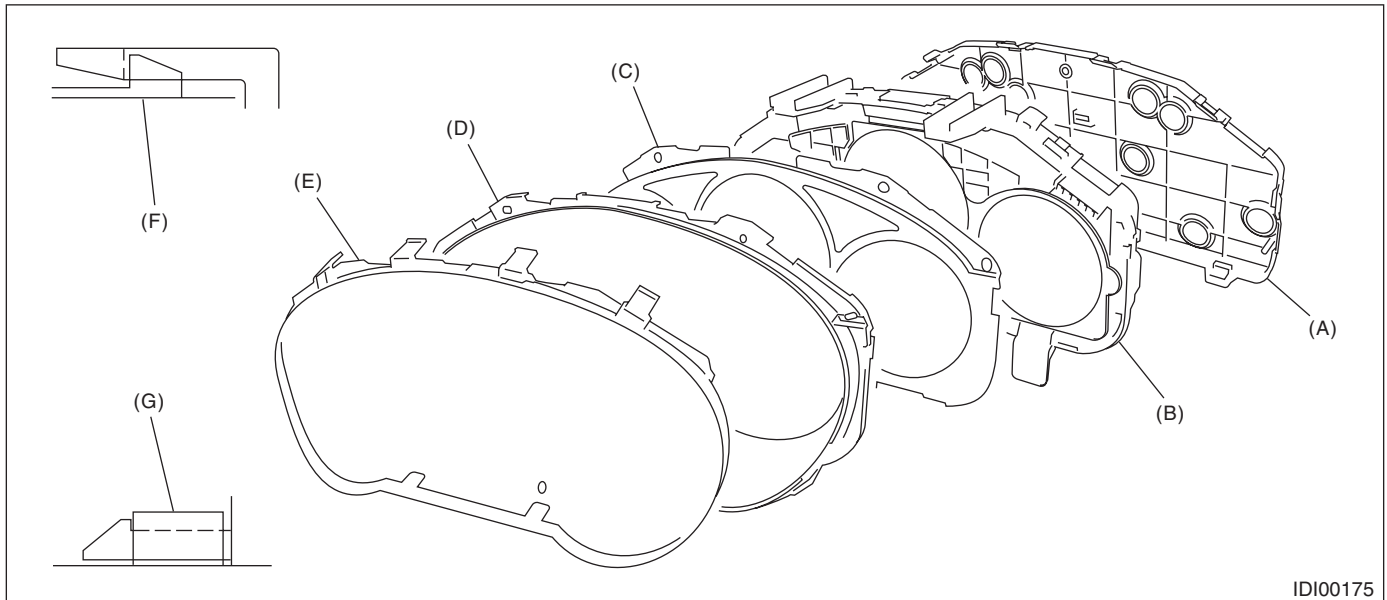
C: DISASSEMBLY

1. EXCEPT STi MODEL

CAUTION:

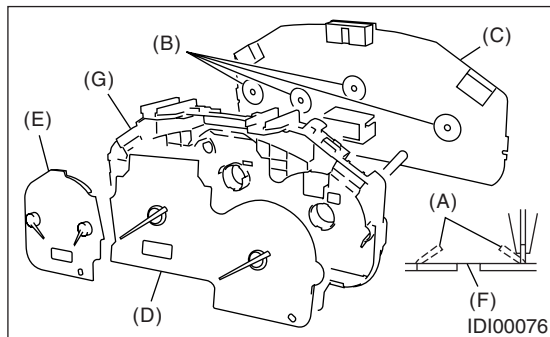
Use gloves to avoid damage and getting fingerprints on the glass surface and meter surfaces.

- 1) Disengage the claw (F) to remove the inner case (B) from back cover (A).
- 2) Disengage the claw (G) to remove the meter glass (E), reflector (D), and window plate (C) from inner case (B).



3) Pull up the claw (A) in portion (B) of combination meter printed circuit (C) with combination pliers. Push out the speedometer and tachometer assembly (D) and fuel gauge and water temperature gauge assembly (E) using hole (F).

4) Pull up the claw in center of combination meter printed circuit (C), and remove the printed circuit from case (G).



Combination Meter

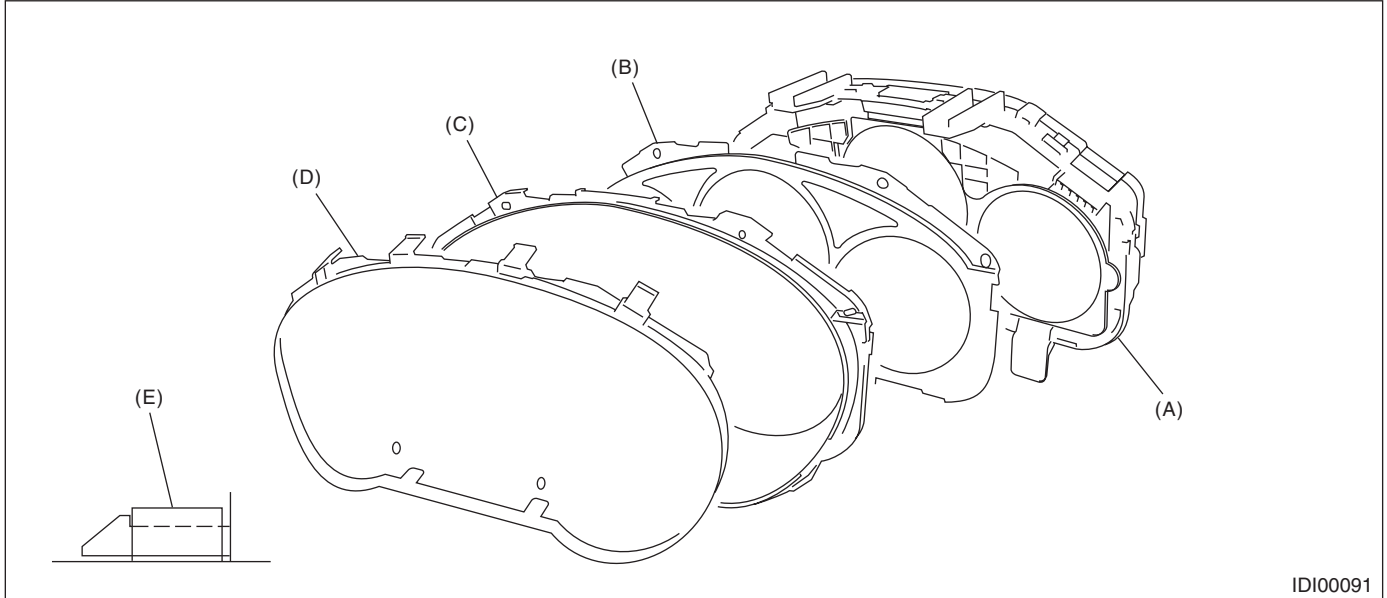
INSTRUMENTATION/DRIVER INFO

2. STi MODEL

CAUTION:

- Use gloves to avoid damage and getting fingerprints on the glass surface and meter surfaces.
- Do not disassemble the meter main assembly for STi model.

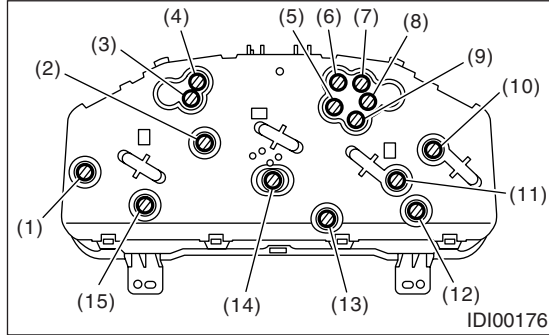
Disengage the claw (E) to remove the meter glass (D), reflector (C), and window plate (B) from meter main assembly (A).



IDI00091

3. BULB REPLACEMENT

• EXCEPT STi MODEL



- (1) Tachometer (Non-turbo model) or speedometer (Turbo model)
- (2) Speedometer and tachometer
- (3) Turn signal indicator light (RH)
- (4) HI-beam indicator light
- (5) Speedometer (Non-turbo model) or tachometer (Turbo model)
- (6) Cruise set indicator light
- (7) Cruise indicator light
- (8) Turn signal indicator light (LH)
- (9) Brake fluid and parking brake warning light
- (10) Fuel gauge
- (11) Temperature gauge
- (12) LCD (Outside temperature indicator)
- (13) Charge warning light
- (14) LCD (Odometer and tripmeter) (Non-turbo model)
- (15) LCD (Odometer and tripmeter) (Turbo model)

• STi MODEL

Replace the meter main assembly of STi model if it does not function properly, because the warning light and indicator light are made from LED.

D: ASSEMBLY

Assemble in the reverse order of disassembly.

4. Speedometer

A: REMOVAL

NOTE:

Main meter assembly of STi model cannot be disassembled. Do not remove or inspect the speedometer as a single unit.

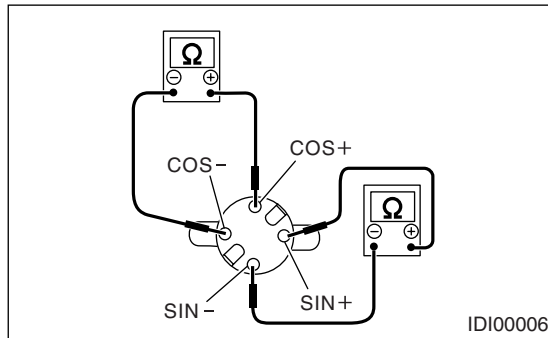
Disassemble the combination meter, and then remove the speedometer and tachometer assembly.
<Ref. to IDI-11, DISASSEMBLY, Combination Meter.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the speedometer resistance.



Terminal	Resistance
Terminals SIN+ and SIN-	$200 \pm 8 \Omega$
Terminals COS+ and COS-	$200 \pm 8 \Omega$

If NG, replace the speedometer and tachometer assembly.

If OK, replace the combination meter printed circuit.

5. Tachometer

A: REMOVAL

NOTE:

Main meter assembly of STi model cannot be disassembled. Do not remove or inspect the tachometer as a single unit.

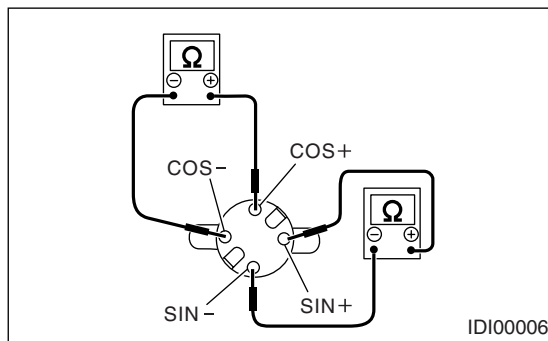
Disassemble the combination meter, and then remove the speedometer and tachometer assembly.
<Ref. to IDI-11, DISASSEMBLY, Combination Meter.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the tachometer resistance.



Terminal	Resistance
Terminals SIN+ and SIN-	$200 \pm 8 \Omega$
Terminals COS+ and COS-	$200 \pm 8 \Omega$

If NG, replace the speedometer and tachometer assembly.

If OK, replace the combination meter printed circuit.

6. Fuel Gauge

A: REMOVAL

NOTE:

Main meter assembly of STi model cannot be disassembled. Do not remove or inspect the fuel gauge as a single unit.

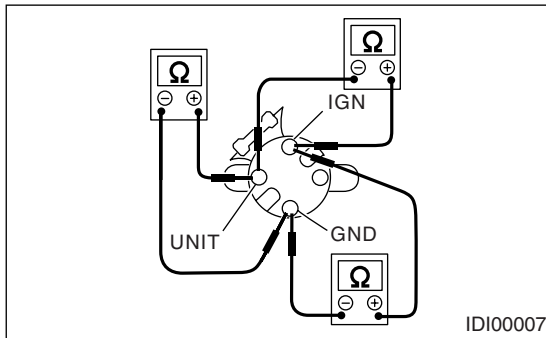
Disassemble the combination meter, and then remove the water temperature gauge and fuel gauge assembly. <Ref. to IDI-11, DISASSEMBLY, Combination Meter.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the fuel gauge resistance.



Terminal	Resistance
Terminals IGN and GND	$170 \pm 10 \Omega$
Terminals IGN and UNIT	$35 \pm 10 \Omega$
Terminals UNIT and GND	$136 \pm 10 \Omega$

If NG, replace the water temperature gauge and fuel gauge assembly.

If OK, replace the combination meter printed circuit.

7. Water Temperature Gauge

A: REMOVAL

NOTE:

Main meter assembly of STi model cannot be disassembled. Do not remove or inspect the water temperature gauge as a single unit.

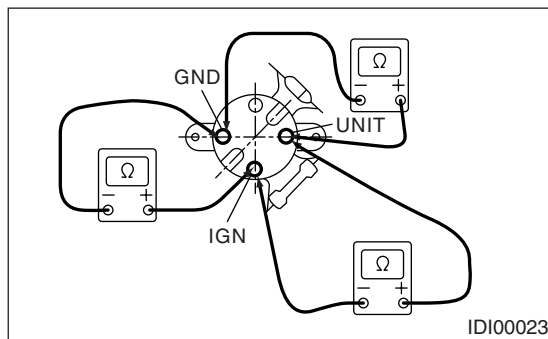
Disassemble the combination meter, and then remove the tachometer and water temperature gauge and fuel gauge assembly. <Ref. to IDI-11, DISASSEMBLY, Combination Meter.>

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the water temperature gauge resistance.



Terminal	Resistance
Terminals IGN and GND	$208 \pm 10 \Omega$
Terminals IGN and UNIT	$56 \pm 10 \Omega$
Terminals UNIT and GND	$264 \pm 10 \Omega$

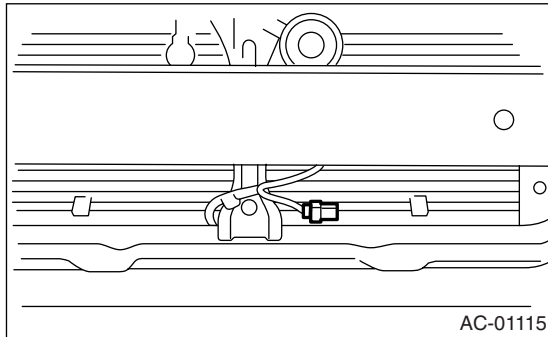
If NG, replace the water temperature gauge and fuel gauge assembly.

If OK, replace the combination meter printed circuit.

8. Ambient Sensor

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Disconnect the ambient sensor connector.
- 3) Remove the ambient sensor from radiator lower panel.

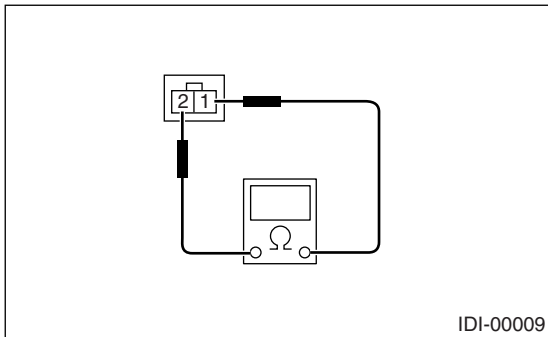


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the ambient sensor resistance.



Terminal	Resistance
1 and 2	2.2 kΩ/25°C (77°F)

If NG, replace the ambient sensor.

IMMOBILIZER (DIAGNOSTICS)

Basic Diagnostic Procedure

IMMOBILIZER (DIAGNOSTICS)

1. Basic Diagnostic Procedure

A: PROCEDURE

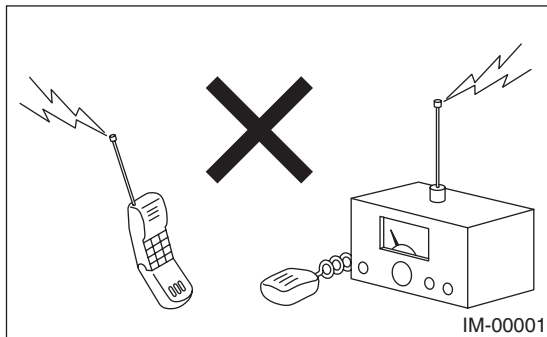
Step	Check	Yes	No
1 CHECK ILLUMINATION OF SECURITY INDICATOR LIGHT. 1) Turn the ignition switch to OFF or ACC position. 2) Wait at least 60 seconds.	Does the security indicator light blink?	Go to step 2.	Check the security indicator light circuit. <Ref. to IM(diag)-10, CHECK SECURITY INDICATOR LIGHT CIRCUIT, INSPECTION, Diagnostics Chart for Security Indicator Light.>
2 CHECK ILLUMINATION OF SECURITY INDICATOR LIGHT. Remove the key from ignition switch.	Does the security indicator light begin to blink within 1 second after the key is removed?	Go to step 3.	Check the key switch circuit. <Ref. to IM(diag)-12, CHECK KEY SWITCH CIRCUIT, INSPECTION, Diagnostics Chart for Security Indicator Light.>
3 CHECK ENGINE START. Turn the ignition switch to START position.	Does the engine start?	Go to step 4.	Go to step 5.
4 CHECK ILLUMINATION OF SECURITY INDICATOR LIGHT. Turn the ignition switch to ON.	Does the security indicator light illuminate?	Check the security indicator light circuit. <Ref. to IM(diag)-10, CHECK SECURITY INDICATOR LIGHT CIRCUIT, INSPECTION, Diagnostics Chart for Security Indicator Light.>	Immobilizer system is normal.
5 CHECK INDICATION OF DTC ON DISPLAY. 1) Turn the ignition switch to OFF. 2) Connect the Subaru Select Monitor to data link connector. <Ref. to IM(diag)-7, Subaru Select Monitor.> 3) Turn the ignition switch and Subaru Select Monitors switch to ON. 4) Read any DTC on the display.	Are DTCs indicated on display?	Go to step 6.	Repair the related parts.
6 PERFORM THE DIAGNOSIS. 1) Inspect using "Diagnostics Chart with Trouble Code". <Ref. to IM(diag)-15, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> 2) Repair the trouble cause. 3) Perform the clear memory mode. 4) Read any DTC again.	Are DTCs indicated on display?	Inspect using "Diagnostic Procedure with Diagnostic Trouble Code (DTC)". <Ref. to IM(diag)-15, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Finish the diagnostics.

2. General Description

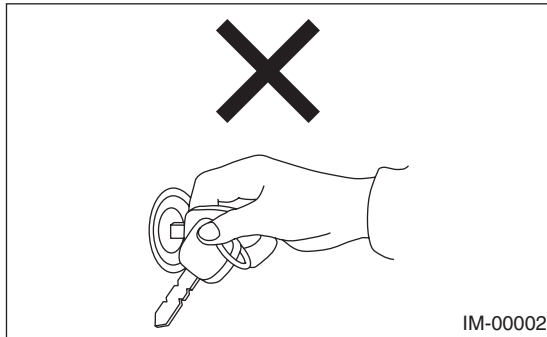
A: CAUTION

CAUTION:

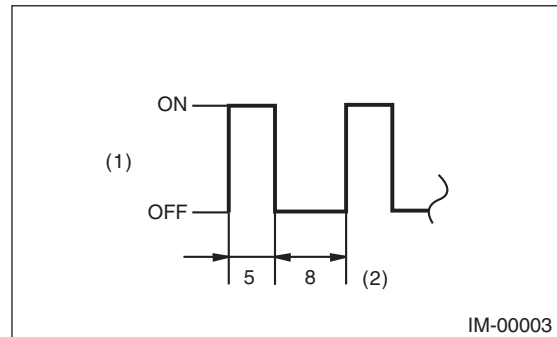
- The airbag system wiring harnesses routed near the immobilizer control module. All airbag system wiring harness and connectors are colored yellow. Do not use electrical test equipment on these circuits.
- Be careful not to damage the airbag system wiring harness when servicing the immobilizer control module.
- While diagnostic items are being checked, do not operate radios, portable telephones, etc. which emit electromagnetic waves near or inside the vehicle.



- When the ignition switch is being turned ON or OFF while diagnostic items are being checked, do not allow keys with different ID codes close to the ignition switch. If the ignition key is in a key holder, remove it from the holder before carrying out diagnoses.



- When repeatedly turning the ignition switch to ON or OFF while diagnostic items are being checked, it should be switched in cycles of "ON" for at least 5 seconds → "OFF" for at least 8 seconds.



(1) Ignition switch position

(2) Sec.

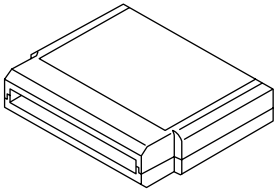
- If the engine fails to start with a registered ignition key, detach the ignition key from ignition switch and wait for approx. 1 second until security indicator light begins to flash. And then start the engine again.
- Before checking the diagnostic items, obtain all keys and security ID for the vehicle to be checked possessed by owner.

General Description

IMMOBILIZER (DIAGNOSTICS)

B: PREPARATION TOOL

1. SPECIAL TOOL

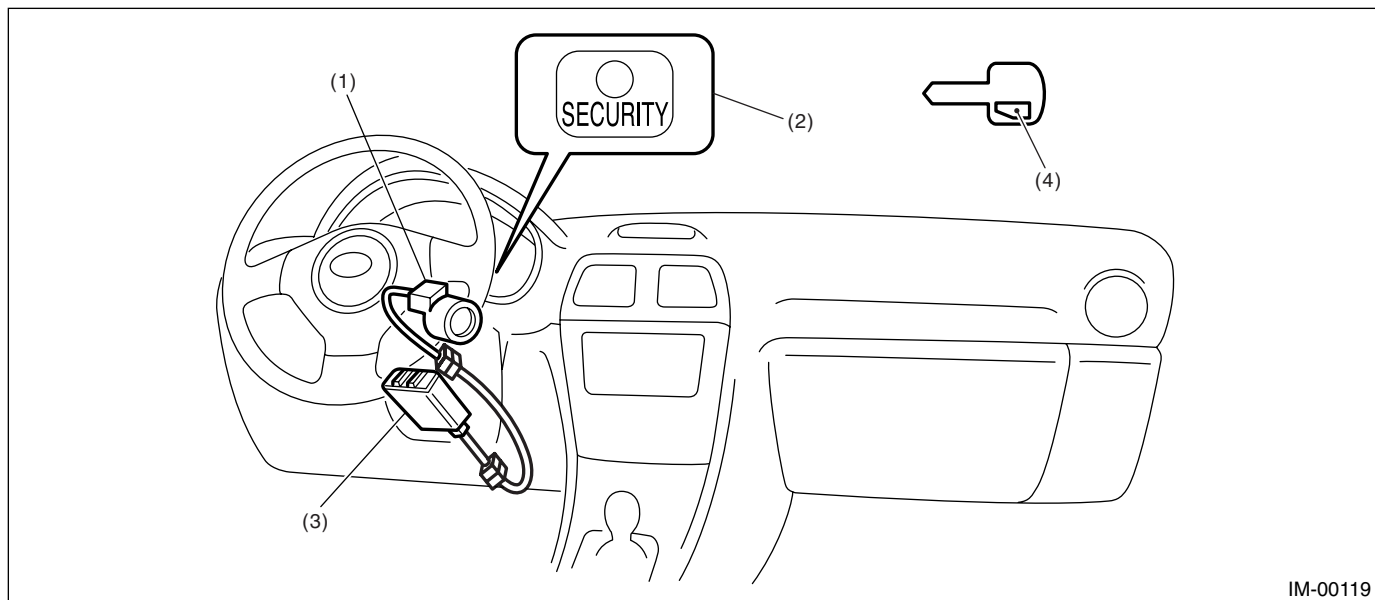
ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST24082AA260	24082AA260	CARTRIDGE	Troubleshooting for electrical system.
 ST22771AA030	22771AA030	SUBARU SELECT MONITOR KIT	Troubleshooting for electrical system.

2. GENERAL TOOL

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

3. Electrical Component Location

A: LOCATION



(1) Antenna

(2) Security indicator light (LED bulb)

(3) Immobilizer control module (IMM ECM)

(4) Transponder

4. Immobilizer Control Module I/O Signal

A: WIRING DIAGRAM

1. IMMOBILIZER

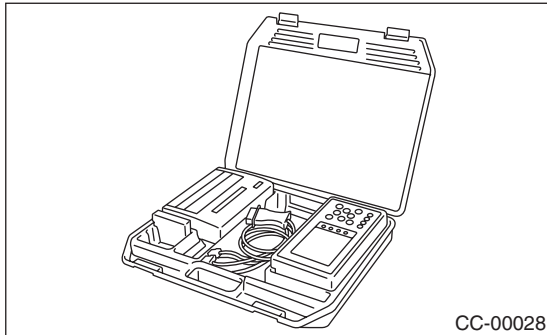
<Ref. to WI-99, WIRING DIAGRAM, Immobilizer System.>

5. Subaru Select Monitor

A: OPERATION

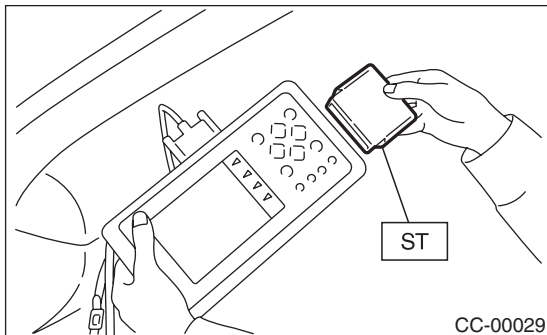
1. HOW TO USE SUBARU SELECT MONITOR

1) Prepare the Subaru Select Monitor kit.



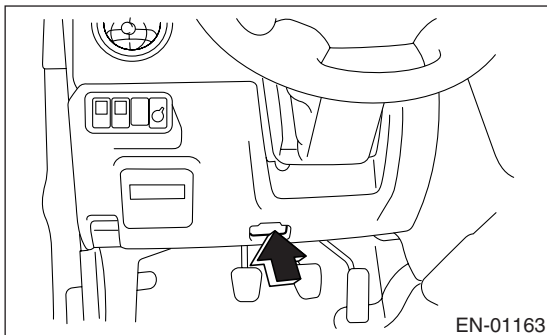
2) Connect the diagnosis cable to Subaru Select Monitor.

3) Insert the cartridge to Subaru Select Monitor.



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).

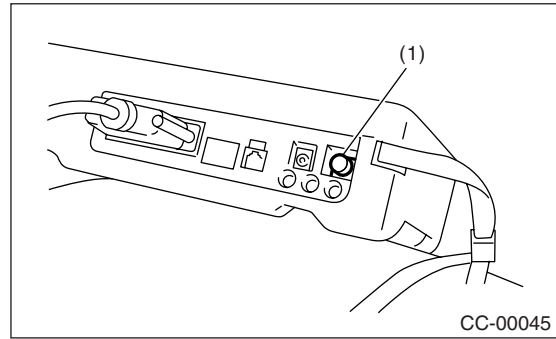


(2) Connect the diagnosis cable to data link connector.

CAUTION:

Do not connect the scan tools except for Subaru Select Monitor.

5) Turn the ignition switch to ON (engine OFF), and the Subaru Select Monitor switch to ON.



(1) Power switch

6) Using the Subaru Select Monitor, call up DTCs and various data, then record them.

2. READ DIAGNOSTIC TROUBLE CODE (DTC) FOR ENGINE

Refer to Read Diagnostic Trouble Code for information about how to indicate DTC. <Ref. to IM(diag)-8, Read Diagnostic Trouble Code (DTC).>

3. COMMUNICATION LINE CHECK

NOTE:

The communication line between ECM and body integrated module can be checked in "System Operation Check Mode". This is referred to as "Communication line check".

1) Connect the Subaru Select Monitor.

2) On the «Each system check» display, select the {Engine}.

3) Start the communication line check.

4) Is «Communication Line not Shorted» displayed on screen?

If displayed, go to step 5).

If "NO", go to step 6).

5) After diagnostic results, it is determined that the circuit is not shorted. Finish the communication line check.

6) If a problem is detected, repair the trouble cause. <Ref. to IM(diag)-16, DTC P1572 EGI — IMMOBILIZER COMMUNICATION (EXCEPT ANTENNA CIRCUIT), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

6. Read Diagnostic Trouble Code (DTC)

A: OPERATION

- 1) On the «Main Menu» display screen, select the {Each System Check} and press the [YES] key.
- 2) On the «System Selection Menu» display screen, select the {Engine Control System} and press the [YES] key.
- 3) Press the [YES] key after the information of engine type has been displayed.
- 4) On the «Engine Diagnosis» display screen, select the {Diagnostic Code(s) Display}, and then press the [YES] key.
- 5) On the «Diagnostic Code(s) Display» display screen, select the {Current Diagnostic Code(s)} or {History Diagnostic Code(s)}, and then press the [YES] key.

NOTE:

- For detailed operation procedure, refer to the SUBARU SELECT MONITOR OPERATION MANUAL.
- For detailed concerning DTC, refer to the List of DTC. <Ref. to IM(diag)-14, LIST, List of Diagnostic Trouble Code (DTC).>

7. Clear Memory Mode

A: OPERATION

- 1) On the «Main Menu» display screen, select the {Each System Check} and press the [YES] key.
- 2) On the «System Selection Menu» display screen, select the {Engine Control System} and press the [YES] key.
- 3) Press the [YES] key after the information of engine type has been displayed.
- 4) On the «Engine Diagnosis» display screen, select the {Clear Memory} and press the [YES] key.
- 5) When the 'Done' are shown on the display screen, turn the Subaru Select Monitor and ignition switch to OFF.

NOTE:

- After the memory has been cleared, the idle air control solenoid valve must be initialized. To execute this procedure, turn the ignition switch to ON. Wait 3 seconds before starting the engine.
- For detailed operation procedure, refer to the SUBARU SELECT MONITOR OPERATION MANUAL.

Diagnostics Chart for Security Indicator Light

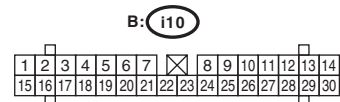
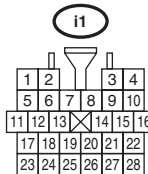
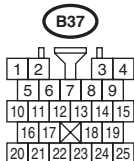
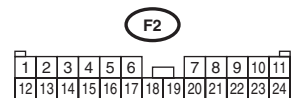
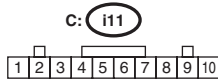
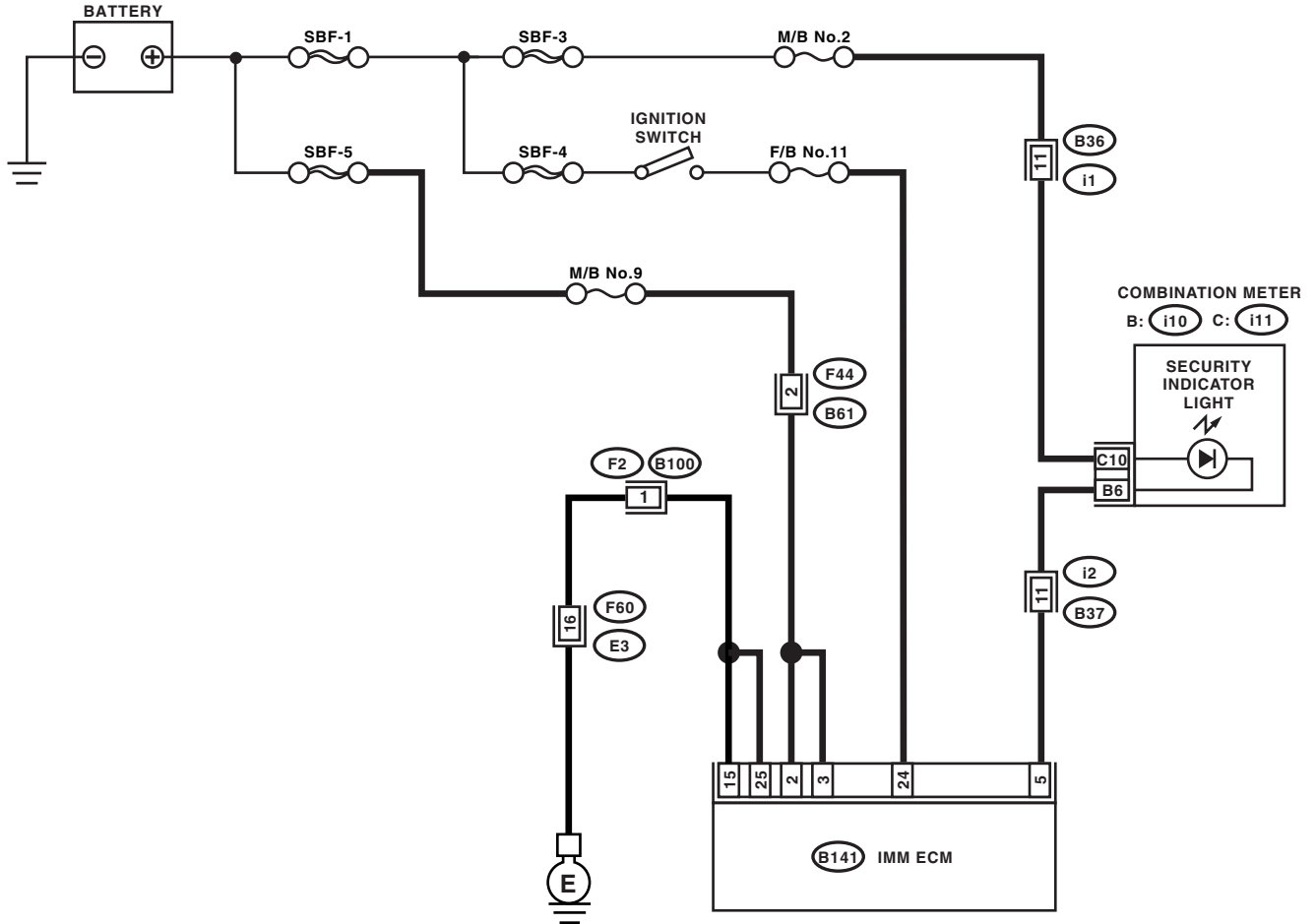
IMMOBILIZER (DIAGNOSTICS)

8. Diagnostics Chart for Security Indicator Light

A: INSPECTION

1. CHECK SECURITY INDICATOR LIGHT CIRCUIT

WIRING DIAGRAM:



Diagnostics Chart for Security Indicator Light

IMMOBILIZER (DIAGNOSTICS)

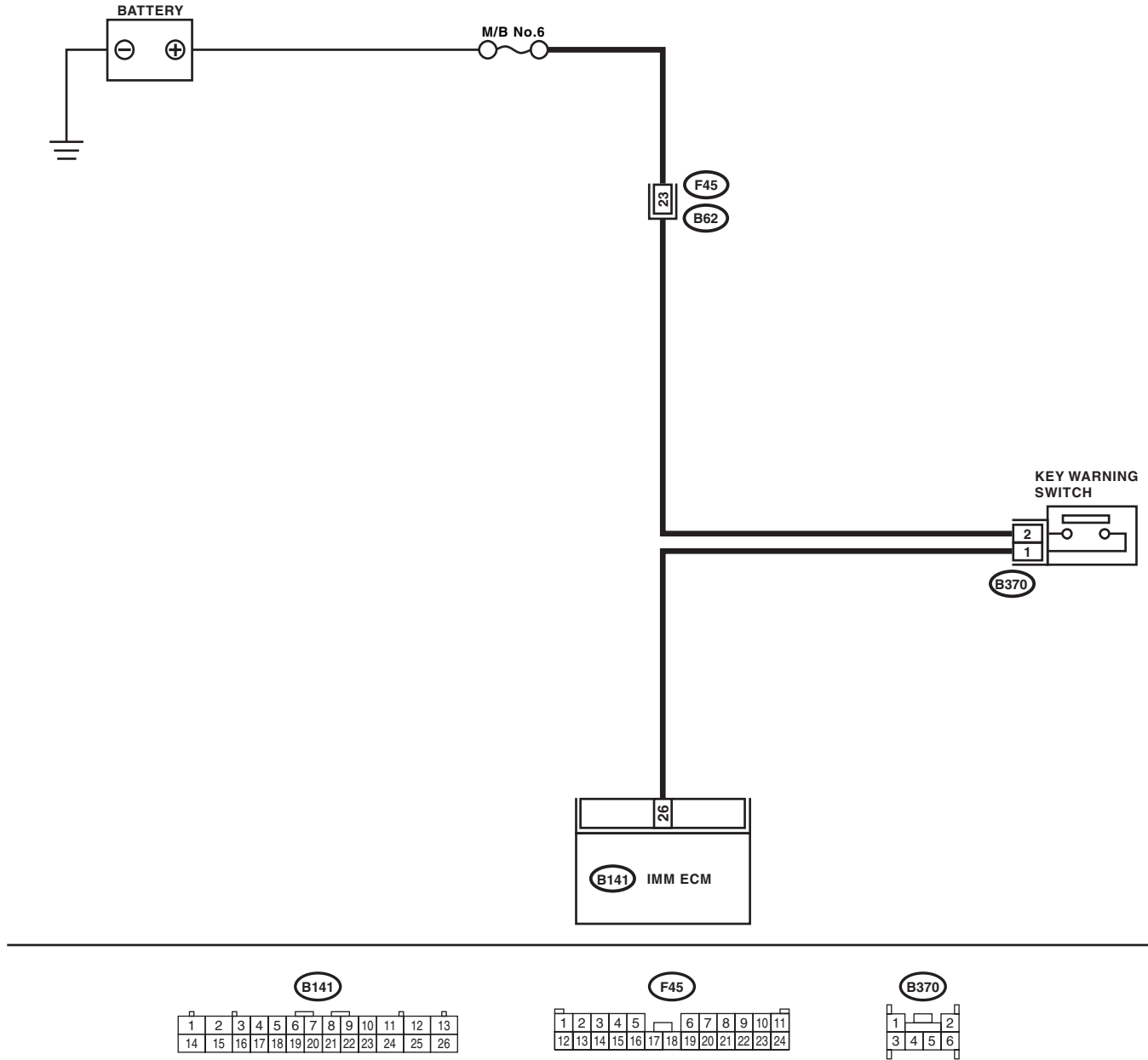
Step	Check	Yes	No
1 CHECK SECURITY INDICATOR LIGHT. 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from IMM ECM. 3) Connect a resistor (750 Ω) between IMM ECM harness connector terminal No. 5 and chassis ground.	Does the security indicator light illuminate?	Go to step 2.	Go to step 5.
2 CHECK IMM ECM GROUND CIRCUIT. Measure the resistance between IMM ECM harness connector terminal and chassis ground. <i>Connector & terminal</i> (B141) No. 15, No. 25 — Chassis ground:	Is the resistance less than 10 Ω ?	Go to step 3.	Repair the open circuit of IMMECM ground circuit.
3 CHECK IMM ECM IGNITION CIRCUIT. 1) Turn the ignition switch to ON. (engine OFF.) 2) Measure the voltage between IMM ECM harness connector terminal and chassis ground. <i>Connector & terminal</i> (B141) No. 24 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 4.	Check the harness for open or short between IMM ECM and ignition switch.
4 CHECK IMM ECM POWER SUPPLY CIRCUIT. 1) Turn the ignition switch to OFF. 2) Measure the voltage between IMM ECM harness connector terminal and chassis ground. <i>Connector & terminal</i> (B141) No. 2, No. 3 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Replace the IMM ECM <Ref. to SL-48, Immobilizer Control Unit.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to teaching operation manual (Pub. No. S0820GZ).	Check the harness for open or short between IMM ECM and fuse.
5 CHECK COMBINATION METER CIRCUIT. 1) Remove the combination meter. <Ref. to IDI-10, Combination Meter.> 2) Measure the voltage between combination meter harness connector terminal and chassis ground. <i>Connector & terminal</i> (i11) No. 7 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 6.	Check the harness for open or short between combination meter and fuse.
6 CHECK COMBINATION METER CIRCUIT. Measure the resistance between IMM ECM harness connector terminal and combination meter harness connector terminal. <i>Connector & terminal</i> (B141) No. 5 — (i11) No. 6:	Is the resistance less than 10 Ω ?	Faulty LED. Replace the combination meter printed circuit. <Ref. to IDI-11, DISASSEMBLY, Combination Meter.>	Repair the harness or connector.

Diagnostics Chart for Security Indicator Light

IMMOBILIZER (DIAGNOSTICS)

2. CHECK KEY SWITCH CIRCUIT

WIRING DIAGRAM:



IM-00123

Diagnostics Chart for Security Indicator Light

IMMOBILIZER (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK POWER SUPPLY CIRCUIT. 1) Disconnect the harness connector from key warning switch. 2) Measure the voltage between key warning switch harness connector terminal and chassis ground. Connector & terminal (B370) No. 2 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	Check the harness for open or short between key warning switch and fuse.
2 CHECK KEY WARNING SWITCH. 1) Insert the ignition key to the ignition switch. (OFF or ACC position) 2) Measure the resistance between key warning switch connector terminals. Terminal No. 1 — No. 2:	Is the resistance less than 1 Ω ?	Go to step 3.	Replace the key warning switch.
3 CHECK KEY WARNING SWITCH. 1) Remove the ignition key from the ignition switch. 2) Measure the resistance between key warning switch connector terminals. Terminal No. 1 — No. 2:	Is the resistance more than 1 M Ω ?	Go to step 4.	Replace the key warning switch.
4 CHECK HARNESS BETWEEN KEY WARNING SWITCH AND IMM ECM. 1) Disconnect the harness connector from key warning switch. 2) Disconnect the harness connector from IMM ECM. 3) Measure the resistance between key warning switch harness connector terminal and IMM ECM harness connector terminal. Connector & terminal (B370) No. 1 — (B141) No. 26:	Is the resistance less than 10 Ω ?	Replace the IMM ECM <Ref. to SL-48, Immobilizer Control Unit.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to teaching operation manual (Pub. No. S0820GZ).	Repair the harness between key warning switch and IMM ECM.

List of Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

9. List of Diagnostic Trouble Code (DTC)

A: LIST

DTC	Item	Contents of diagnosis	Index No.
P1571	Reference Code Incompatibility	Reference code incompatibility between IMM ECM and ECM	<Ref. to IM(diag)-15, DTC P1571 REFERENCE CODE INCOMPATIBILITY, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P1572	EGI — Immobilizer Communication (Except Antenna Circuit)	Communication failure between IMM ECM and ECM	<Ref. to IM(diag)-16, DTC P1572 EGI — IMMOBILIZER COMMUNICATION (EXCEPT ANTENNA CIRCUIT), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P1574	Key — Immobilizer Communication	Failure of IMM ECM to verify key (transponder) ID code	<Ref. to IM(diag)-19, DTC P1574 KEY — IMMOBILIZER COMMUNICATION, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0513	Incorrect Immobilizer Key	Incorrect immobilizer key (Use of unregistered key in IMM ECM)	<Ref. to IM(diag)-20, DTC P0513 INCORRECT IMMOBILIZER KEY, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P1576	EGI Control Module EEPROM	ECM malfunctioning	<Ref. to IM(diag)-20, DTC P1576 EGI CONTROL MODULE EEPROM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P1577	IMM Control Module EEPROM	IMM ECM malfunctioning	<Ref. to IM(diag)-20, DTC P1577 IMM CONTROL MODULE EEPROM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P1570	ANTENNA	Faulty antenna	<Ref. to IM(diag)-21, DTC P1570 ANTENNA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

NOTE:

Perform the engine DTC when the DTC except immobilizer DTC is detected. <Ref. to EN(H4SO)(diag)-69, List of Diagnostic Trouble Code (DTC).> <Ref. to EN(H4DOTC)(diag)-73, List of Diagnostic Trouble Code (DTC).> <Ref. to EN(H4DOTC)(diag)-73, List of Diagnostic Trouble Code (DTC).>

10.Diagnostic Procedure with Diagnostic Trouble Code (DTC)

A: DTC P1571 REFERENCE CODE INCOMPATIBILITY

DTC DETECTING CONDITION:

Reference code incompatibility between IMM ECM and ECM

Step	Check	Yes	No
1 PERFORM TEACHING OPERATION ON IGNITION KEY. Perform teaching operation on all keys of the vehicle. Refer to the teaching operation manual.	Is teaching operation for all keys completed?	END	Go to step 2.
2 CHECK DTC.	Is there any DTC related to immobilizer except DTC P1571?	Eliminate the cause of DTC except DTC P1571, and perform the teaching operation again.	Replace the ECM <Ref. to FU(STi)-40, Engine Control Module (ECM).>, IMM ECM <Ref. to SL-48, Immobilizer Control Unit.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the teaching operation manual (Pub. No. S0820GZ).

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

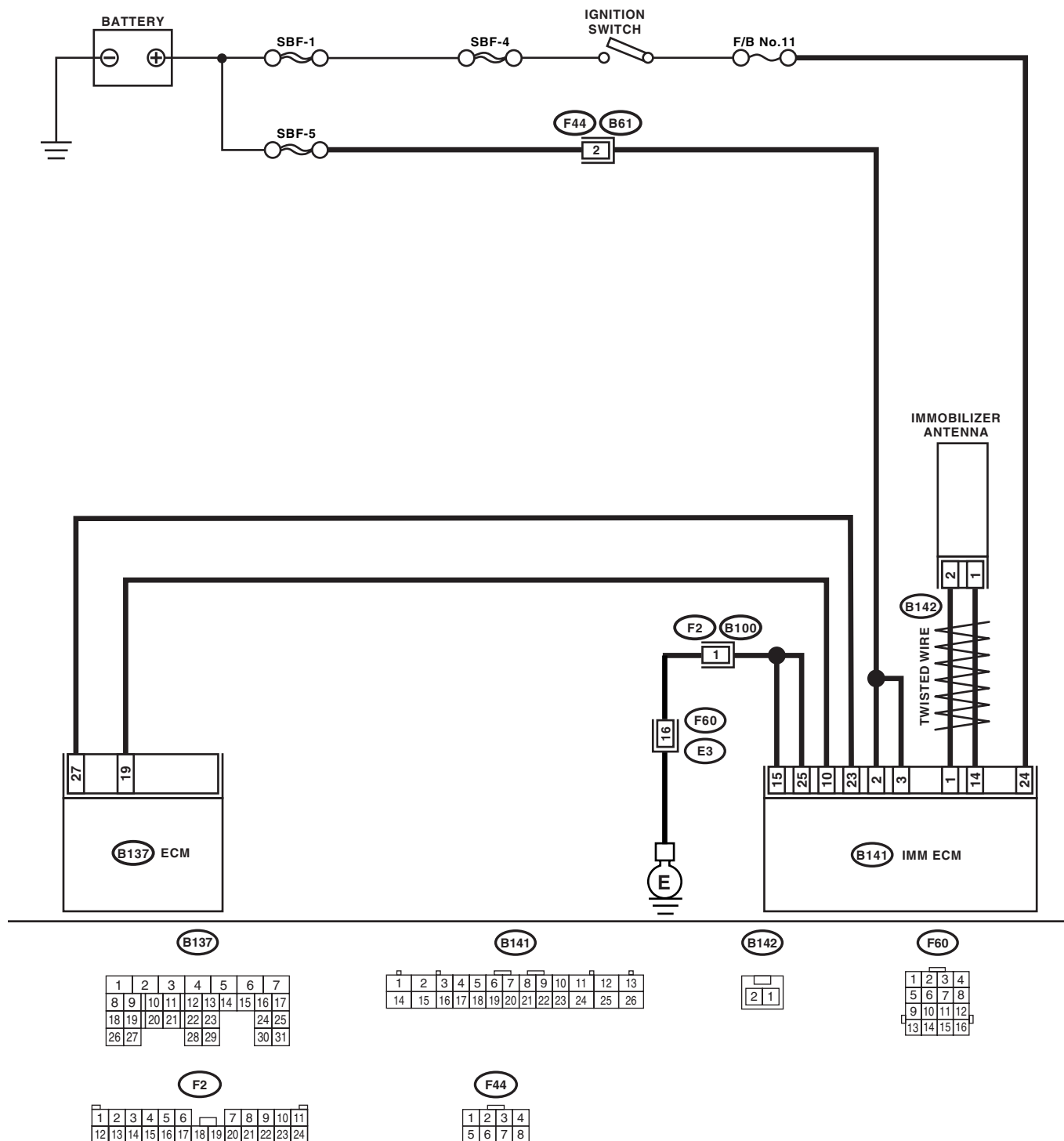
IMMOBILIZER (DIAGNOSTICS)

B: DTC P1572 EGI — IMMOBILIZER COMMUNICATION (EXCEPT ANTENNA CIRCUIT)

DTC DETECTING CONDITION:

Communication failure between IMM ECM and ECM

WIRING DIAGRAM:



IM-00122

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK POWER SUPPLY CIRCUIT OF IMM ECM. 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from IMM ECM. 3) Measure the voltage between IMM ECM harness connector terminal and chassis ground. Connector & terminal (B141) No. 2, No. 3 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	Check the harness for open or short between IMM ECM and fuse.
2 CHECK IGNITION SWITCH CIRCUIT. 1) Turn the ignition switch to ON. (engine OFF.) 2) Measure the voltage between IMM ECM harness connector terminal and chassis ground. Connector & terminal (B141) No. 24 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 3.	Check the harness for open or short between IMM ECM and ignition switch.
3 CHECK GROUND CIRCUIT OF IMM ECM. 1) Turn the ignition switch to OFF. 2) Measure the resistance between IMM ECM harness connector terminal and chassis ground. Connector & terminal (B141) No. 15, No. 25 — Chassis ground:	Is the resistance less than 10 Ω ?	Go to step 4.	Repair the open circuit of IMMECM ground circuit.
4 CHECK HARNESS BETWEEN IMM ECM AND ECM. 1) Disconnect the harness connector from ECM and IMM ECM. 2) Measure the resistance between IMM ECM harness connector terminal and ECM harness connector terminal. Connector & terminal (B141) No. 10 — (B137) No. 19:	Is the resistance less than 10 Ω ?	Go to step 5.	Repair the open circuit of harness between IMM ECM and ECM.
5 CHECK HARNESS BETWEEN IMM ECM AND ECM. Measure the resistance between IMM ECM harness connector terminal and ECM harness connector terminal. Connector & terminal (B141) No. 23 — (B137) No. 27:	Is the resistance less than 10 Ω ?	Go to step 6.	Repair the open circuit of harness between IMM ECM and ECM.
6 CHECK HARNESS OF COMMUNICATION LINE. 1) Turn the ignition switch to ON. (engine OFF.) 2) Measure the voltage between IMM ECM harness connector terminal and chassis ground. Connector & terminal (B141) No. 10, No. 23 (+) — Chassis ground (-):	Is the voltage 0 V?	Go to step 7.	Repair the harness between IMM ECM and ECM, because there is short circuit with battery voltage line or ignition switch "ON" line.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

Step	Check	Yes	No
7 CHECK HARNESS OF COMMUNICATION LINE. Measure the voltage between ECM harness connector terminal and engine ground. Connector & terminal (B137) No. 19, No. 27 (+) — Engine ground (-):	Is the voltage 0 V?	Go to step 8.	Repair the harness between IMM ECM and ECM, because there is short circuit with battery voltage line or ignition switch "ON" line.
8 CHECK ECM BY COMMUNICATION LINE CHECK. 1) Connect the harness connector to ECM. 2) Disconnect the harness connector from IMM ECM. 3) Perform communication line check. <Ref. to IM(diag)-7, COMMUNICATION LINE CHECK, OPERATION, Subaru Select Monitor.>	Does "Communication Line not Shorted" appear on the screen?	Replace the IMM ECM <Ref. to SL-48, Immobilizer Control Unit.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the teaching operation manual (Pub. No. S0820GZ).	Replace the ECM. <Ref. to FU(STi)-40, Engine Control Module (ECM).> Then perform teaching operation. Refer to the teaching operation manual (Pub. No. S0820GZ).

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

C: DTC P1574 KEY — IMMOBILIZER COMMUNICATION

DTC DETECTING CONDITION:

Failure of IMM ECM to verify key (transponder) ID code

Step	Check	Yes	No
1 CHECK IMM ECM FUNCTION. Insert the key to ignition switch (LOCK position), measure changes in voltage between Antenna connector. Connector & terminal (B142) No. 1 (+) — No. 2 (-):	Is the voltage -30 to 30 V? (Approx. 0.1 second after inserting the key) Is the voltage 0 V? (Approx. 1 second after inserting the key)	Go to step 2.	Replace the IMM ECM <Ref. to SL-48, Immobilizer Control Unit.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the teaching operation manual (Pub. No. S0820GZ).
2 CHECK IGNITION KEY (TRANSPONDER). 1) Remove the key from ignition switch. 2) Start the engine using other keys that have undergone the teaching operation, furnished with vehicle.	Does the engine start?	Replace the ignition key (including the transponder). Then perform teaching operation. Refer to the teaching operation manual (Pub. No. S0820GZ).	Replace the IMM ECM <Ref. to SL-48, Immobilizer Control Unit.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the teaching operation manual (Pub. No. S0820GZ).

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

D: DTC P0513 INCORRECT IMMOBILIZER KEY

DTC DETECTING CONDITION:

Incorrect immobilizer key. (Use of unregistered key in IMM ECM)

Step	Check	Yes	No
1 PERFORM TEACHING OPERATION ON IGNITION KEY. Perform teaching operation on all keys of the vehicle. Refer to the teaching operation manual (Pub. No. S0820GZ).	Is teaching operation for all keys completed?	END	Replace all ignition keys (including the transponder). Go to step 2.
2 PERFORM TEACHING OPERATION ON IGNITION KEY. Perform teaching operation on all keys with vehicle. Refer to the teaching operation manual (Pub. No. S0820GZ).	Is teaching operation for all keys completed?	END	Replace the IMM ECM <Ref. to SL-48, Immobilizer Control Unit.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the teaching operation manual (Pub. No. S0820GZ).

E: DTC P1576 EGI CONTROL MODULE EEPROM

DTC DETECTING CONDITION:

ECM malfunctioning

1. REPLACE ECM.

Replace the ECM.

<Ref. to FU(H4SO)-37, Engine Control Module (ECM).> <Ref. to FU(H4DOTC)-48, Engine Control Module (ECM).> <Ref. to FU(H4DOTC)-48, Engine Control Module (ECM).>

Then perform teaching operation. Refer to the teaching operation manual (Pub. No. S0820GZ).

F: DTC P1577 IMM CONTROL MODULE EEPROM

DTC DETECTING CONDITION:

IMM ECM malfunctioning

1. REPLACE IMM ECM.

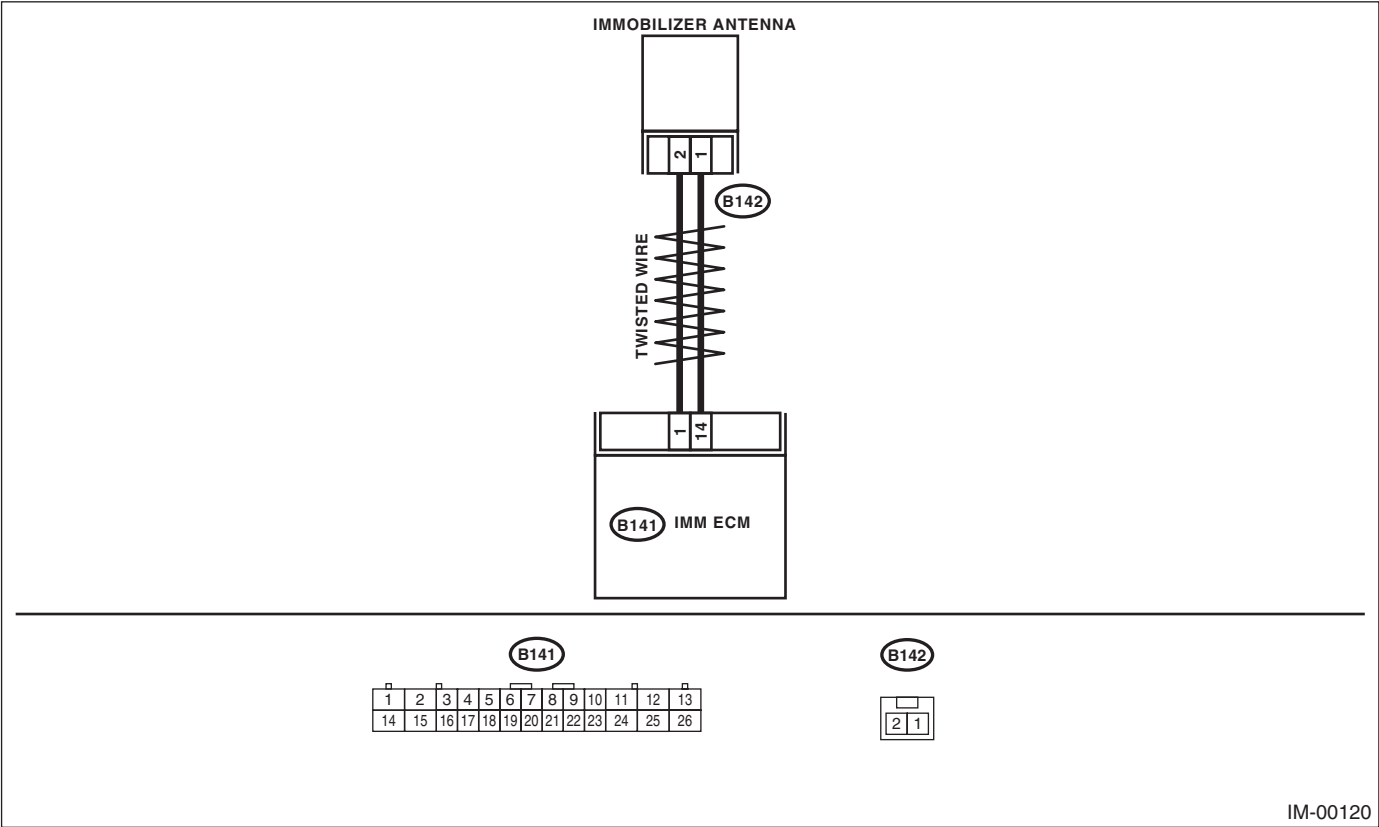
Replace the IMM ECM <Ref. to SL-48, Immobilizer Control Unit.>, and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the teaching operation manual (Pub. No. S0820GZ).

G: DTC P1570 ANTENNA

DTC DETECTING CONDITION:

Faulty antenna

WIRING DIAGRAM:



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK ANTENNA CIRCUIT. 1) Turn the ignition switch to OFF. 2) Disconnect the harness antenna connector from IMM ECM. <Ref. to SL-49, Immobilizer Antenna.> 3) Measure the resistance of antenna circuit. Connector & terminal (B141) No. 1 — No. 14:	Is the resistance less than 10 Ω ?	Go to step 2.	Replace the antenna. <Ref. to SL-49, Immobilizer Antenna.>
2 CHECK ANTENNA CIRCUIT. Measure the resistance between antenna harness connector and chassis ground. Connector & terminal (B141) No. 1 — Chassis ground:	Is the resistance less than 10 Ω ?	Replace the antenna. <Ref. to SL-49, Immobilizer Antenna.>	Go to step 3.
3 CHECK ANTENNA CIRCUIT. Measure the resistance between antenna harness connector and chassis ground. Connector & terminal (B141) No. 14 — Chassis ground:	Is the resistance less than 10 Ω ?	Replace the antenna. <Ref. to SL-49, Immobilizer Antenna.>	Go to step 4.
4 CHECK ANTENNA CIRCUIT. 1) Turn the ignition switch to ON. (engine OFF.) 2) Measure the voltage between antenna harness connector and chassis ground. Connector & terminal (B141) No. 1 (+) — Chassis ground (-):	Is the voltage 0 V?	Go to step 5.	Replace the antenna. <Ref. to SL-49, Immobilizer Antenna.>
5 CHECK ANTENNA CIRCUIT. Measure the voltage between antenna harness connector and chassis ground. Connector & terminal (B141) No. 14 (+) — Chassis ground (-):	Is the voltage 0 V?	Go to step 6.	Replace the antenna. <Ref. to SL-49, Immobilizer Antenna.>
6 CHECK IMM ECM FUNCTION. 1) Turn the ignition switch to OFF. 2) Connect the antenna harness connector to IMM ECM. 3) Insert the key to ignition switch, measure changes in voltage between antenna harness connector. Connector & terminal (B141) No. 1 (+) — No. 14 (-):	Is the voltage -30 to 30 V? (Approx. 0.1 second after inserting the key) Is the voltage 0 V? (Approx. 1 second after inserting the key)	Go to step 7.	Replace the IMM ECM <Ref. to SL-48, Immobilizer Control Unit.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the teaching operation manual (Pub. No. S0820GZ).
7 CHECK IGNITION KEY (TRANSPONDER). 1) Remove the key from ignition switch. 2) Start the engine using other keys that have undergone the teaching operation, furnished with vehicle.	Does the engine start?	Replace the ignition key (including the transponder). Then perform teaching operation. Refer to the teaching operation manual (Pub. No. S0820GZ).	Replace the IMM ECM <Ref. to SL-48, Immobilizer Control Unit.> and then replace all ignition keys (including the transponder). Then perform teaching operation. Refer to the teaching operation manual (Pub. No. S0820GZ).

LIGHTING SYSTEM

General Description

LIGHTING SYSTEM

1. General Description

A: SPECIFICATION

Headlight	Halogen type low beam		12 V — 55 W
	HID type low beam		D2R 35W
	High beam		12 V — 60 W
Front turn signal light			12 V — 21 W (WY21W)
Clearance/Parking/Front side marker light			12 V — 5 W
Front fog light			12 V — 55 W
Rear combination light	Sedan	Tail/Stop/Rear side marker light	12 V — 5/21 W
		Tail light	12 V — 5/21 W
		Stop light	12 V — 21 W
	Wagon	Tail/Stop/Rear side marker light	12 V — 5/21 W
		Turn signal light	12 V — 21 W (WY21W)
		Back-up light	12 V — 21 W
License plate light			12 V — 5 W
High-mounted stop light	Sedan	Standard type	12 V — 18 W
		Rear spoiler built-in type	12 V — 1.2 W (LED)
	Wagon		12 V — 13 W
Room light			12 V — 8 W
Spot map light			12 V — 8 W
Luggage room light			12 V — 13 W
Trunk room light			12 V — 5 W
Glove box light			12 V — 1.4 W

B: 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 indicated.
- Adjust parts to the given specifications.
- Connect the 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 TOOL

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

2. Headlight and Tail Light System

A: WIRING DIAGRAM

1. HALOGEN TYPE HEADLIGHT

<Ref. to WI-117, WIRING DIAGRAM, Headlight System.>

2. HID TYPE HEADLIGHT

<Ref. to WI-117, WIRING DIAGRAM, Headlight System.>

3. CLEARANCE LIGHT AND ILLUMINATION LIGHT

<Ref. to WI-126, WIRING DIAGRAM, Clearance Light and Illumination Light System.>

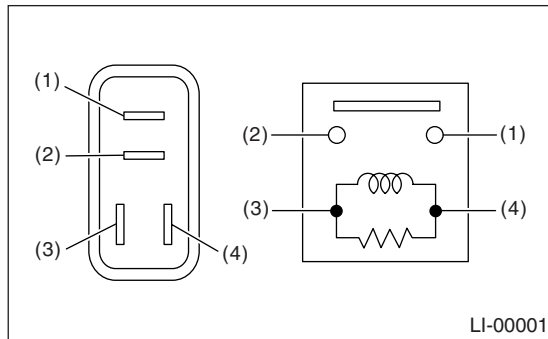
B: INSPECTION

1. HEADLIGHT SWITCH

<Ref. to LI-9, INSPECTION, Combination Switch (Light).>

2. HEADLIGHT RELAY

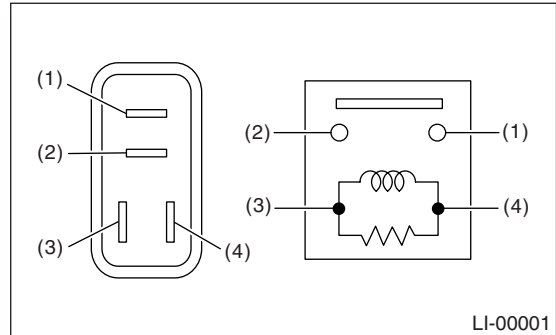
Measure the headlight relay resistance between terminals when connecting terminal No. 4 to battery positive terminal and terminal No. 3 to battery ground terminal.



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

3. TAIL AND ILLUMINATION RELAY

Measure the tail and illumination relay resistance between terminals when 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 M Ω

3. Front Fog Light System

A: WIRING DIAGRAM

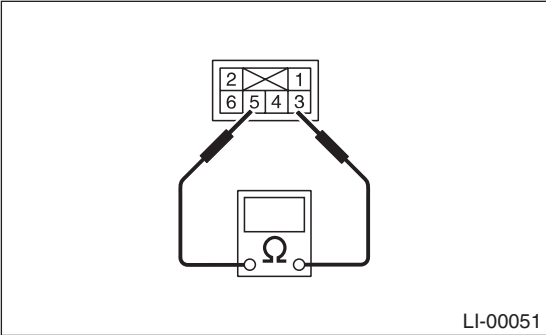
1. FRONT FOG LIGHT

<Ref. to WI-122, WIRING DIAGRAM, Front Fog Light System.>

B: INSPECTION

1. FRONT FOG LIGHT SWITCH

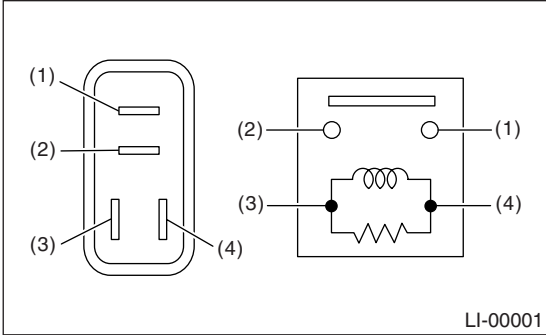
Measure the resistance between front fog light switch terminals.



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

2. FRONT FOG LIGHT RELAY

Measure the front fog light relay resistance between terminals when 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 M Ω

4. Turn Signal Light and Hazard Light System

A: WIRING DIAGRAM

1. TURN SIGNAL LIGHT AND HAZARD LIGHT

<Ref. to WI-132, WIRING DIAGRAM, Turn Signal Light and Hazard Light System.>

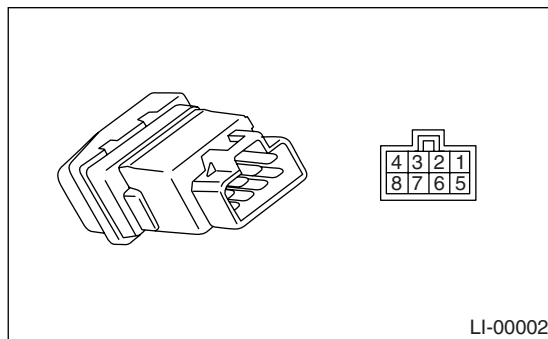
B: INSPECTION

1. TURN SIGNAL SWITCH

<Ref. to LI-9, INSPECTION, Combination Switch (Light).>

2. HAZARD SWITCH

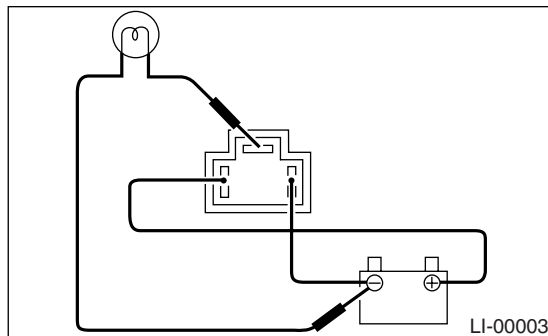
Measure the resistance between hazard switch terminals.



Switch position	Terminal No.	Standard
OFF	6 and 7	Less than 1 Ω
ON	1, 3 and 4	Less than 1 Ω
	7 and 8	Less than 1 Ω

3. TURN SIGNAL AND HAZARD MODULE

Connect the battery and turn signal light bulb to the module, as shown in the figure. The module is properly functioning if it blinks when power is supplied to the circuit.



5. Back-up Light System

A: WIRING DIAGRAM

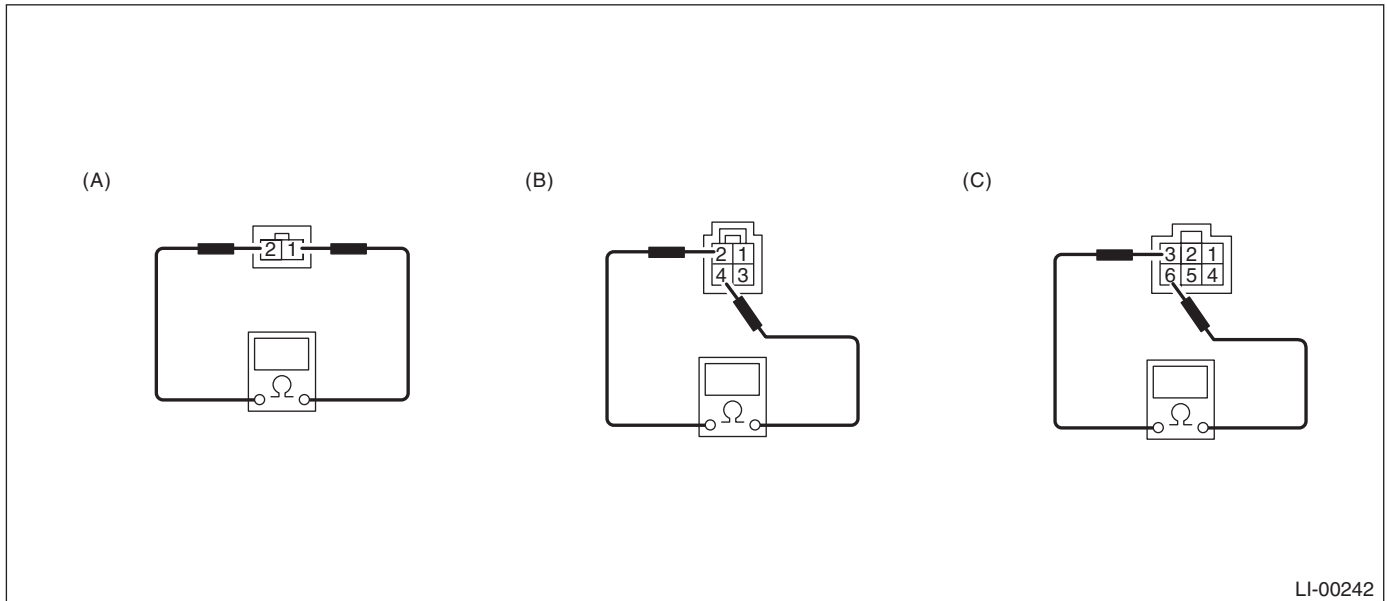
1. BACK-UP LIGHT

<Ref. to WI-124, WIRING DIAGRAM, Back-up Light System.>

B: INSPECTION

1. BACK-UP LIGHT SWITCH (MT MODEL)

Measure the resistance between back-up light switch terminals.



LI-00242

(A) Non-turbo model

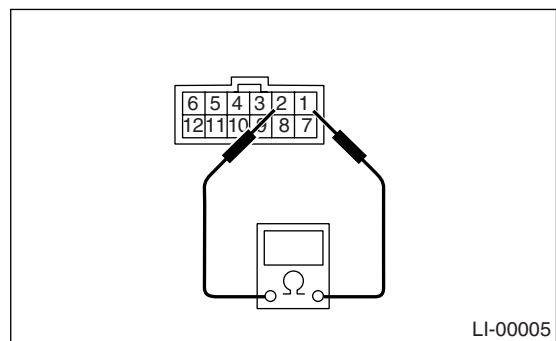
(B) Turbo model (Except STi model)

(C) Turbo model (STi model)

Switch position	Terminal No.	Standard
When shift lever is set in reverse position	Turbo model (Except STi model): 2 and 4 Turbo model (STi model): 3 and 6 Non-turbo model: 1 and 2	Less than 1 Ω
Other positions		More than 1 M Ω

2. INHIBITOR SWITCH (AT MODEL)

Measure the resistance between inhibitor switch terminals.



LI-00005

Switch position	Terminal No.	Standard
When select lever is set in "R" range	1 and 2	Less than 1 Ω
Other positions		More than 1 M Ω

6. Stop Light System

A: WIRING DIAGRAM

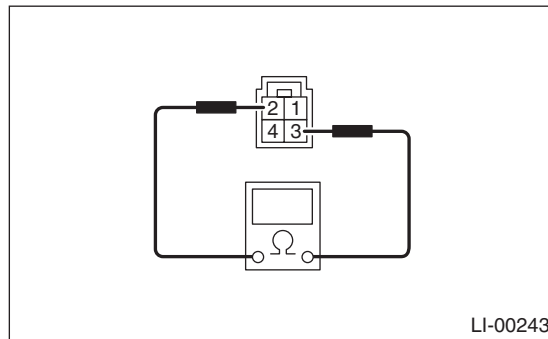
1. STOP LIGHT

<Ref. to WI-125, WIRING DIAGRAM, Stop Light System.>

B: INSPECTION

1. STOP LIGHT SWITCH

Measure the resistance between stop light switch terminals.



Switch position	Terminal No.	Standard
When brake pedal is depressed	2 and 3	Less than 1 Ω
When brake pedal is released		More than 1 M Ω

7. Room Light System

A: WIRING DIAGRAM

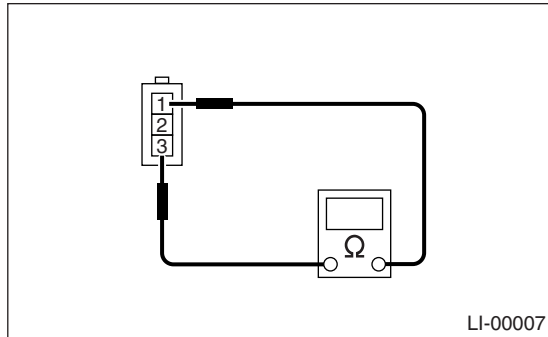
1. INTERIOR LIGHT

<Ref. to WI-134, WIRING DIAGRAM, Interior Light System.>

B: INSPECTION

1. DOOR SWITCH

Measure the resistance between door switch terminals.



Switch position	Terminal No.	Standard
When door is opened	1 and 3	Less than 1 Ω
When door is closed		More than 1 M Ω

2. REAR GATE LATCH SWITCH

Measure the resistance between rear gate latch switch terminals.

Switch position	Terminal No.	Standard
When rear gate is opened	1 and 2	Less than 1 Ω
When rear gate is closed		More than 1 M Ω

3. TRUNK ROOM LIGHT SWITCH

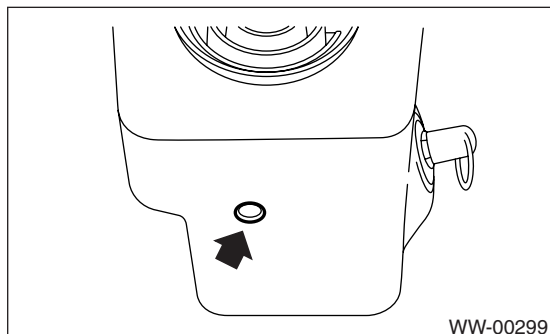
Measure the resistance between trunk room light switch terminals.

Switch position	Terminal No.	Standard
When trunk lid is opened	1 and 2	Less than 1 Ω
When trunk lid is closed		More than 1 M Ω

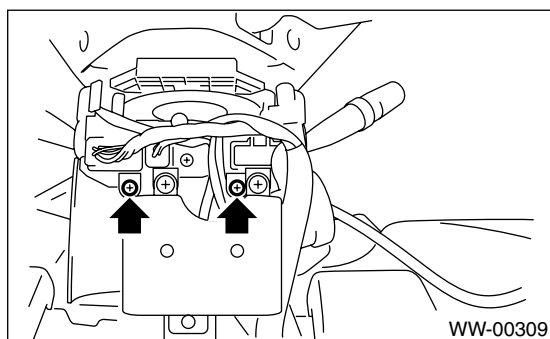
8. Combination Switch (Light)

A: REMOVAL

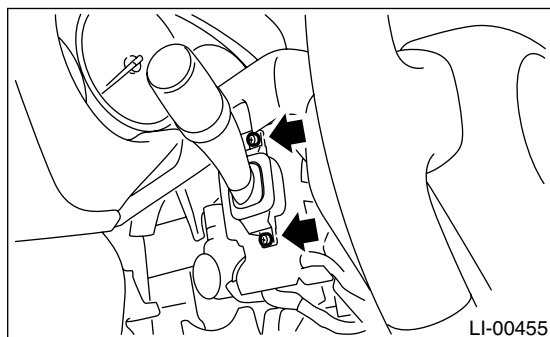
- 1) Disconnect the ground cable from battery.
- 2) Remove the instrument panel lower cover. <Ref. to EI-48, REMOVAL, Instrument Panel Assembly.>
- 3) Remove the screws which secure the upper column cover to lower column cover.



- 4) Remove the screws which secure the upper column cover.



- 5) Disconnect the connector from combination switch.
- 6) Remove the screws which secure the switch, and then remove the switch.

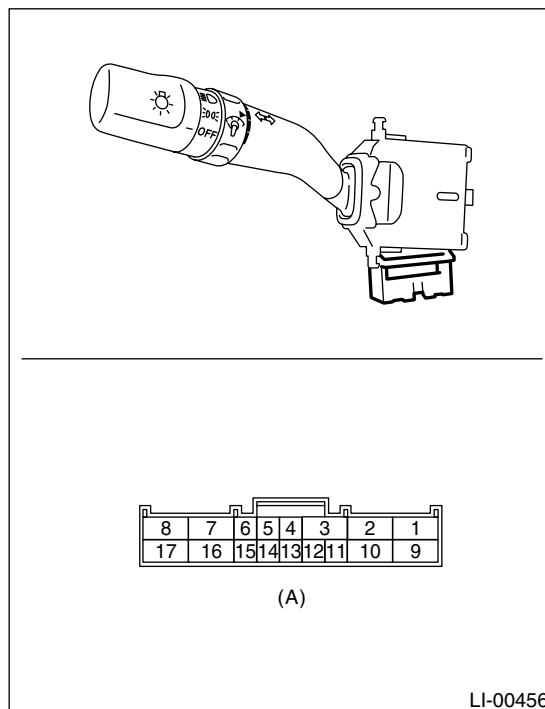


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the resistance between combination switch terminals.



(A) Lighting and turn signal switch connector

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

9. Headlight Beam Leveler System

A: WIRING DIAGRAM

1. HEADLIGHT BEAM LEVELER

<Ref. to WI-121, WIRING DIAGRAM, Headlight Beam Leveler System.>

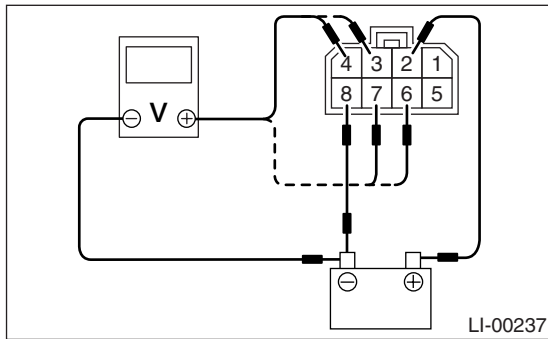
B: INSPECTION

1. HEADLIGHT BEAM LEVELER ACTUATOR

- 1) Turn on the headlights.
- 2) Confirm the headlight beam level is lowered by changing the switch position to 0 - 1 - 2 - 3.

2. HEADLIGHT BEAM LEVELER SWITCH

Connect the battery, headlight beam leveler switch connector and circuit tester as shown in the figure. Measure the voltage at each switch position.

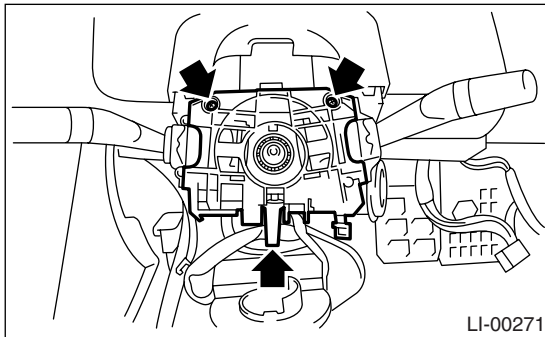


Switch position	Terminal No.	Standard
0	7 (+) and battery (-)	Battery voltage
1	6 (+) and battery (-)	Battery voltage
2	3 (+) and battery (-)	Battery voltage
3	4 (+) and battery (-)	Battery voltage

10. Combination Base Switch Assembly

A: REMOVAL

- 1) Remove the driver's airbag module. <Ref. to AB-12, REMOVAL, Driver's Airbag Module.>
- 2) Remove the steering wheel. <Ref. to PS-21, REMOVAL, Steering Wheel.>
- 3) Remove the steering column cover.
- 4) Remove the combination switch. <Ref. to LI-9, REMOVAL, Combination Switch (Light).> and <Ref. to WW-7, REMOVAL, Combination Switch (Wiper).>
- 5) Loosen the four screws and remove the roll connector.
- 6) Loosen the three screws.



- 7) Disconnect the connector and remove the combination base switch assembly.

B: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Align the attaching direction of roll connector with the steering wheel, before installation of steering wheel. <Ref. to AB-18, ADJUSTMENT, Roll Connector.>

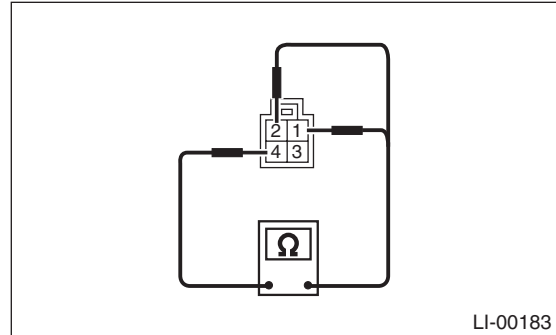
C: INSPECTION

1. COMBINATION BASE SWITCH ASSEMBLY

Perform the inspection for the following items and replace with a new one, if any damage is found.
Crack or deformation of combination base switch assembly or roll connector.

2. PARKING SWITCH

Measure the resistance between parking switch terminals.

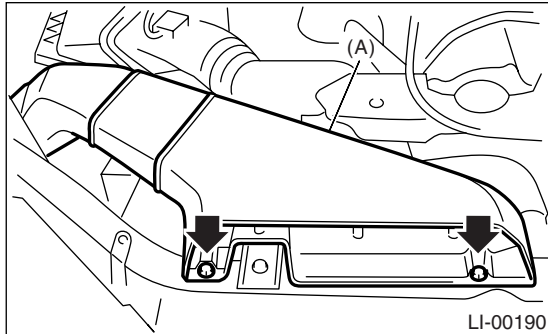


Switch position	Terminal No.	Standard
OFF	2 and 4	Less than 1 Ω
ON	1 and 4	Less than 1 Ω

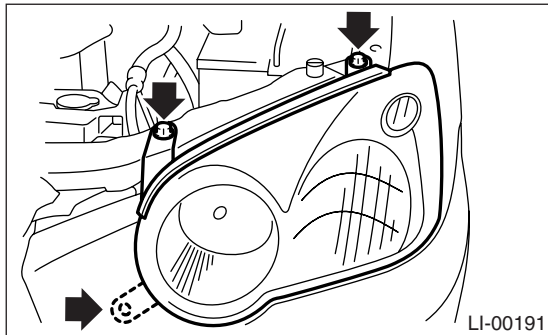
11. Headlight Assembly

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the duct (A) (when right side headlight is removed).



- 3) Remove the front grille and bumper upper clips.
<Ref. to EI-20, REMOVAL, Front Grille.>
- 4) Disconnect each harness connector.
- 5) Remove the three bolts and disengage the clips, and then detach the headlight assembly.



B: INSTALLATION

Install in the reverse order of removal.

C: ADJUSTMENT

1. HEADLIGHT AIMING

CAUTION:

Turn off the light before adjusting headlight aiming. If the light is necessary to check aiming, do not turn on for more than 2 minutes.

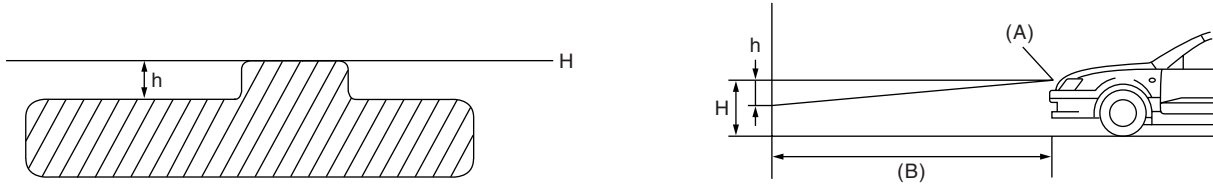
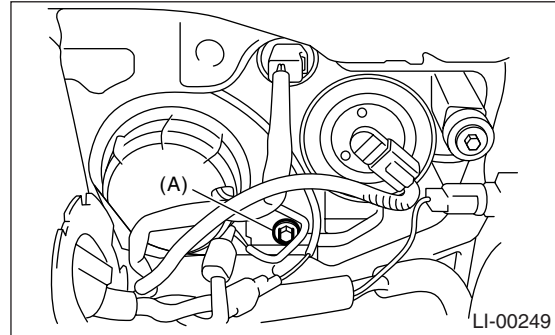
1) Before checking the headlight aiming, be sure of the following:

- 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.

- 2) Position the headlight beam leveler switch to "0".
- 3) Rotate the adjusting screw (A) to adjust aim.



(A) Bulb center marking

(B) 3 m (10 ft)

H mm (in)				h mm (in) at 3 m (10 ft)
Sedan		Wagon		
STi	RS, RS sport pack- age, WRX	RS, WRX	OUTBACK	
629 (24.76)	639 (25.16)	639 (25.16)	649 (25.55)	21 (0.83)

12.Headlight Bulb

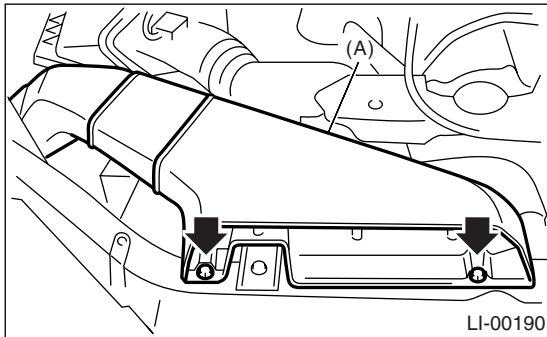
A: REMOVAL

1. HIGH BEAM AND HALOGEN TYPE LOW BEAM

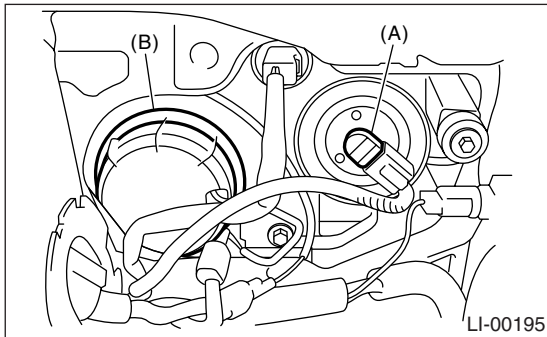
CAUTION:

- Because the tungsten halogen bulb operates at a high temperature, dirt and oil on the bulb surface reduces the bulb's service life. Hold the flange portion when replacing the bulb. Never touch the glass portion.
- Do not leave the headlight without a bulb for a long time. Dust, moisture, etc. entering the headlight may affect its performance.

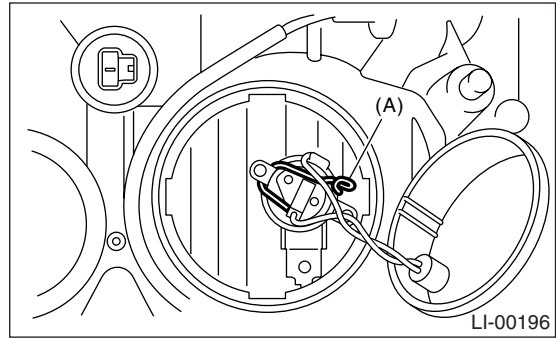
- 1) Disconnect the ground cable from battery.
- 2) Remove the air intake duct (A) (when right side headlight bulb is removed).



- 3) Disconnect the harness connector.
- 4) Remove the bulb ASSY (A): high beam. To remove the low beam, remove the back cover (B), and then go to Step 5.



- 5) Remove the light bulb retaining spring (A) to remove the bulb.

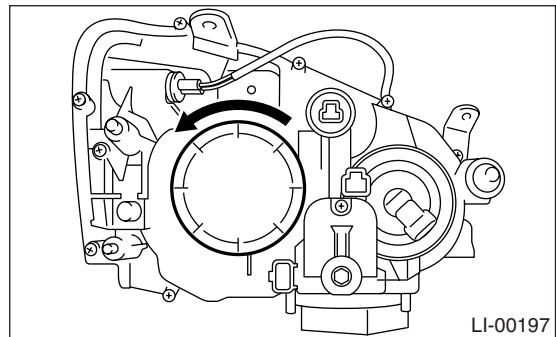


2. HID TYPE LOW BEAM

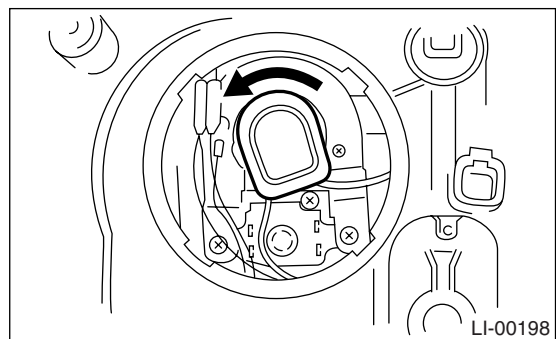
CAUTION:

- Do not operate with wet hands.
- As the lightening circuit uses high voltage, be sure to confirm that the power supply is turned off before operation.
- When replacing the bulb, hold the flange portion and never touch the glass portion.
- Do not leave the headlight without a bulb for a long time. Dust, and moisture, etc. entering the headlight may affect its performance.

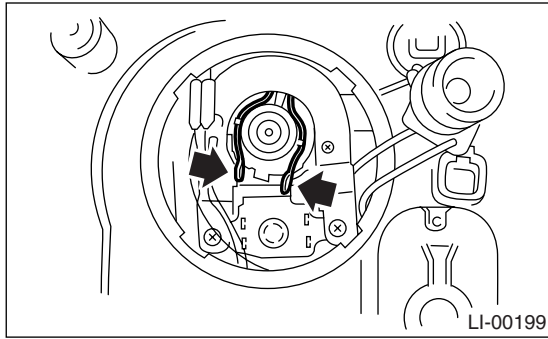
- 1) Remove the ground cable from battery.
- 2) Remove the headlight assembly. <Ref. to LI-14, HID TYPE LOW BEAM, REMOVAL, Headlight Bulb.>
- 3) Remove the back cover.



- 4) Disconnect the harness connector.



5) Remove the light bulb retaining spring, and then remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

CAUTION:

Attach the rubber cap with letters TOP on the top so the drain hole will be on the lower side.

C: INSPECTION

1. HALOGEN TYPE

- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) If NG, replace the bulb with a new one.

2. HID TYPE

CAUTION:

- Do not operate with wet hands.
- Do not touch the harness, inner headlight, or any metallic portion of the headlight when the light is illuminated (when the lighting switch is turned on).
- When performing a lighting test, make sure that the headlight is mounted on the vehicle, and the power supply is connected to the connector on the vehicle's side.

- 1) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 2) Use a normal HID bulb for headlight lighting test.
- 3) If the headlight does not illuminate, replace the bulb with a new one. <Ref. to LI-15, DISPOSAL, Headlight Bulb.>

D: DISPOSAL

1. HID TYPE

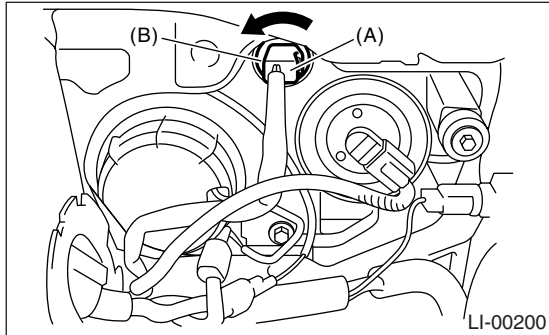
CAUTION:

HID type light bulb contains mercury. Dispose the bulb according to regional regulation and contact SOA Service Center.

13.Front Turn Signal Light Bulb

A: REMOVAL

Disconnect the harness connector (A), and then turn the socket (B) and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

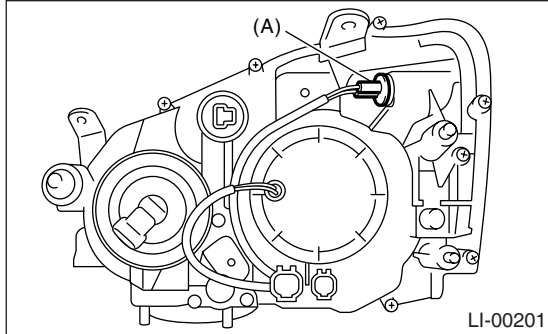
C: INSPECTION

- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) If NG, replace the bulb with a new one.

14. Clearance/Parking Light Bulb

A: REMOVAL

- 1) Remove the headlight assembly. <Ref. to LI-12, REMOVAL, Headlight Assembly.>
- 2) Turn the socket (A) and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

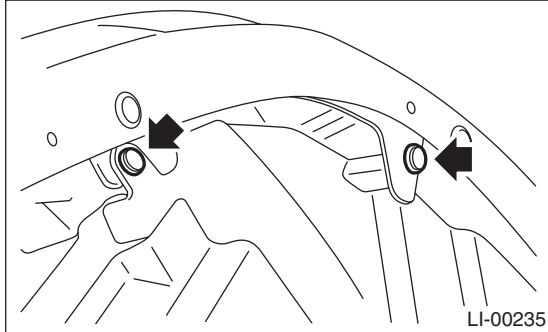
C: INSPECTION

- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) If NG, replace the bulb with a new one.

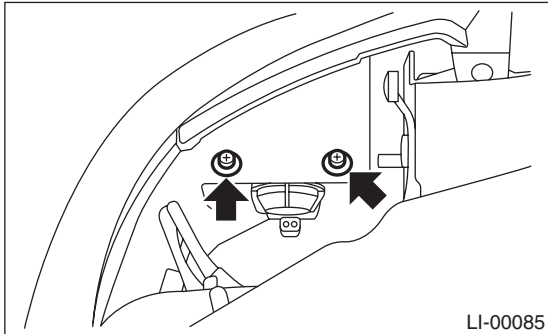
15.Front Fog Light Assembly

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Disengage two clips, and then turn over the lower mud guard.



- 3) Disconnect the harness connector.
- 4) Remove the mounting bolts, and then remove the fog light assembly.



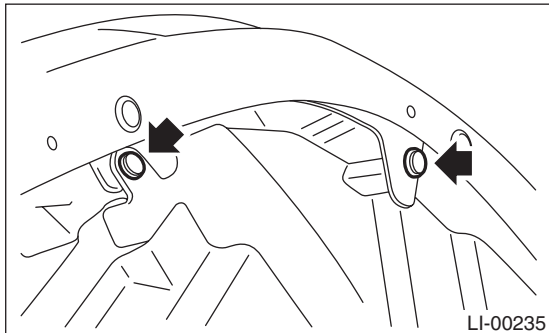
B: INSTALLATION

Install in the reverse order of removal.

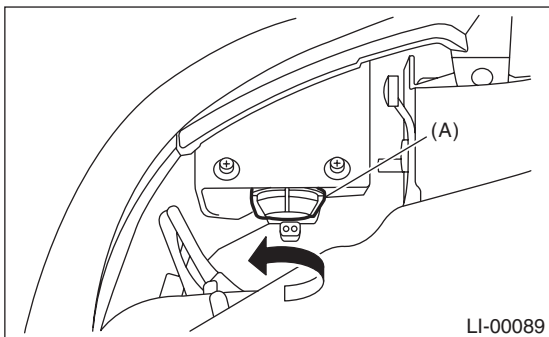
16.Front Fog Light Bulb

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove two clips, and then turn over the lower mud guard.



- 3) Remove the harness connector.
- 4) Remove the back cover (A).



- 5) Remove the spring retainer, and then detach the fog light bulb.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

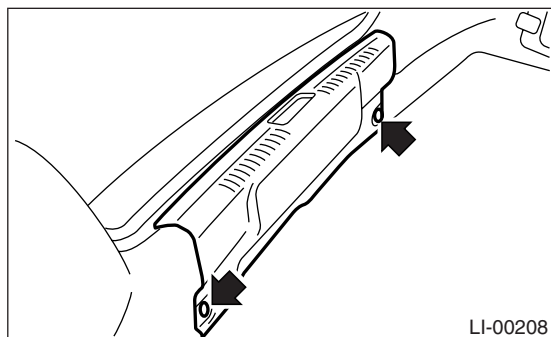
- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) If NG, replace the bulb with a new one.

17. Rear Combination Light Assembly

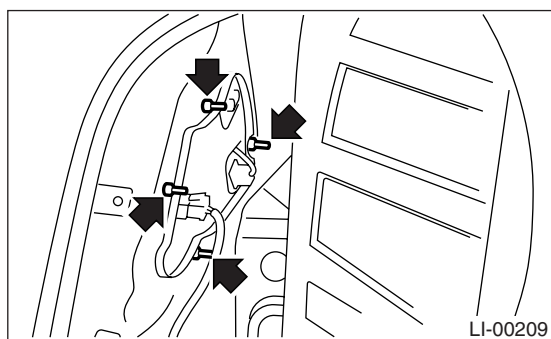
A: REMOVAL

1. SEDAN MODEL

- 1) Disconnect the ground cable from battery.
- 2) Remove the clips, and then detach the trunk rear trim.

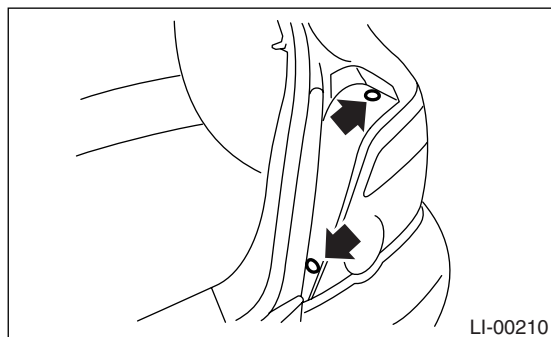


- 3) Remove the trunk side trim of rear portion.
- 4) Remove the four nuts, and then detach the rear combination light while disconnecting connector.

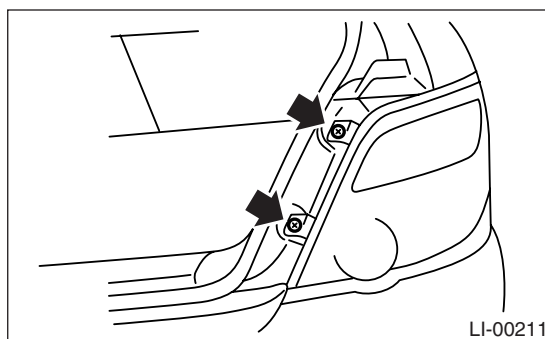


2. WAGON MODEL

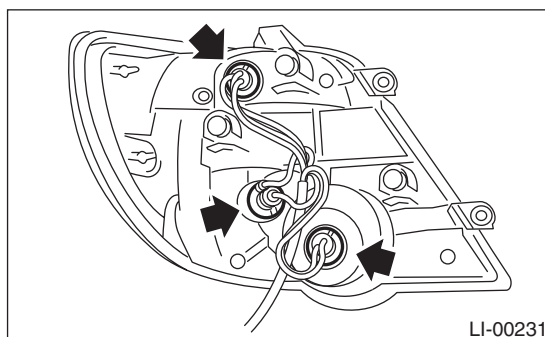
- 1) Disconnect the ground cable from battery.
- 2) Remove the clips, and then detach the rear combination light covers.



- 3) Remove two bolts, and then remove the rear combination light by pulling it backward.



- 4) Turn the sockets to remove each bulb.



B: INSTALLATION

1. SEDAN MODEL

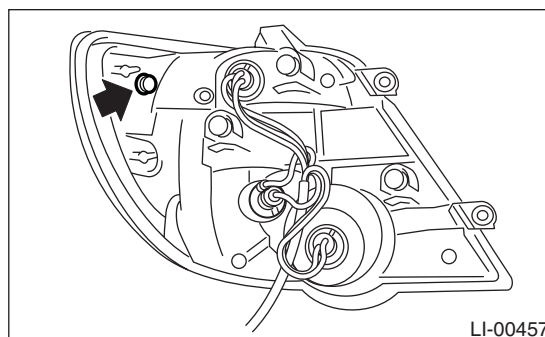
Install in the reverse order of removal.

2. WAGON MODEL

Install in the reverse order of removal.

NOTE:

Install the rear combination light by aligning the clip with body side.

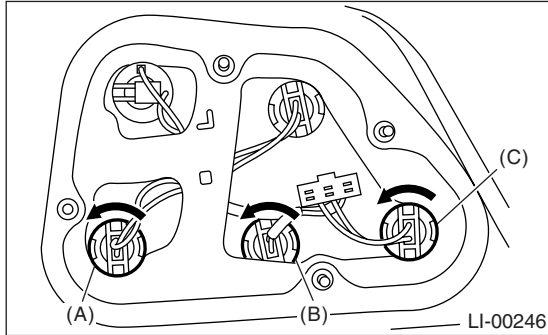


18.Tail/Stop Light Bulb

A: REMOVAL

1. SEDAN MODEL

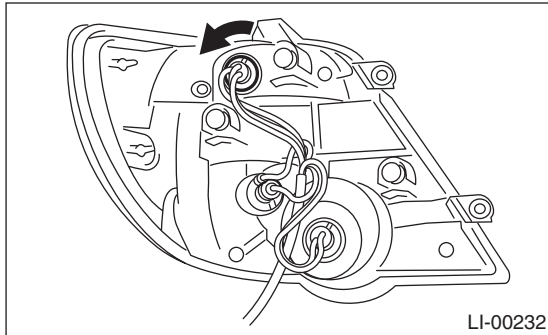
- 1) Remove the trunk side trim of rear portion.
- 2) Turn the socket and remove the bulb.



- (A) Stop/tail light
- (B) Tail light
- (C) Stop light

2. WAGON MODEL

- 1) Remove the rear combination light assembly.
<Ref. to LI-20, WAGON MODEL, REMOVAL, Rear Combination Light Assembly.>
- 2) Turn the socket and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

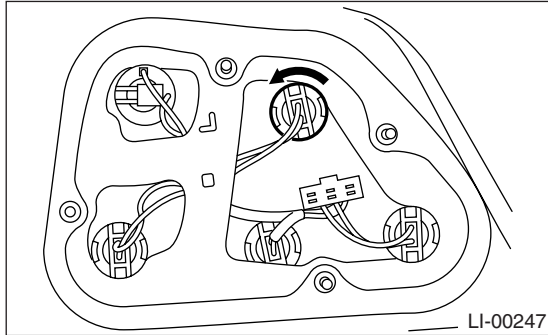
- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) If NG, replace the bulb with a new one.

19.Back-up Light Bulb

A: REMOVAL

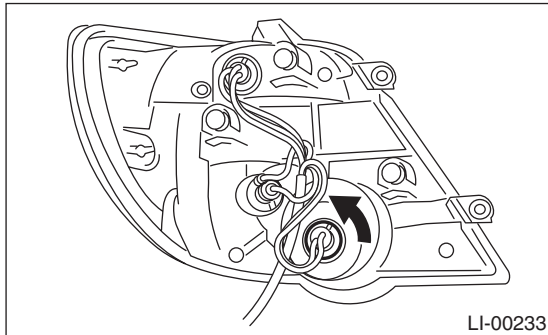
1. SEDAN MODEL

- 1) Remove the trunk side trim of rear portion.
- 2) Turn the socket and remove the bulb.



2. WAGON MODEL

- 1) Remove the rear combination light assembly.
<Ref. to LI-20, WAGON MODEL, REMOVAL, Rear Combination Light Assembly.>
- 2) Turn the socket and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

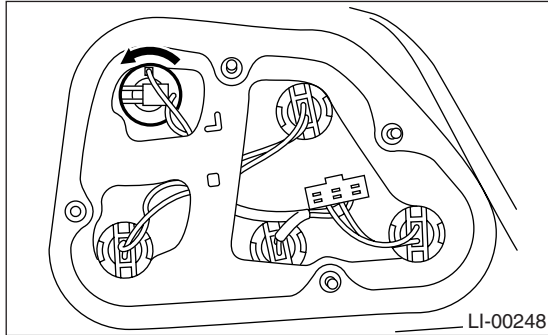
- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) If NG, replace the bulb with a new one.

20.Rear Turn Signal Light Bulb

A: REMOVAL

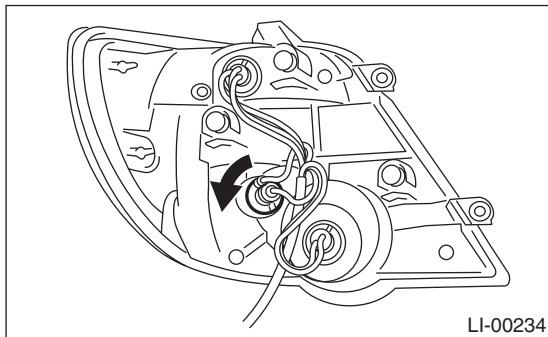
1. SEDAN MODEL

- 1) Remove the trunk side trim of rear portion.
- 2) Turn the socket and remove the bulb.



2. WAGON MODEL

- 1) Remove the rear combination light assembly.
<Ref. to LI-20, WAGON MODEL, REMOVAL, Rear Combination Light Assembly.>
- 2) Turn the socket and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

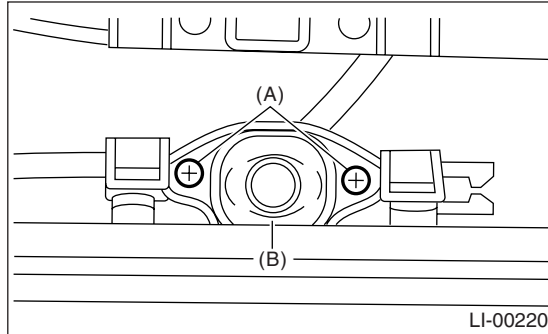
C: INSPECTION

- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) If NG, replace the bulb with a new one.

21. License Plate Light

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the license plate light mounting screw (A), and then remove the lens (B).



- 3) Remove the bulb.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

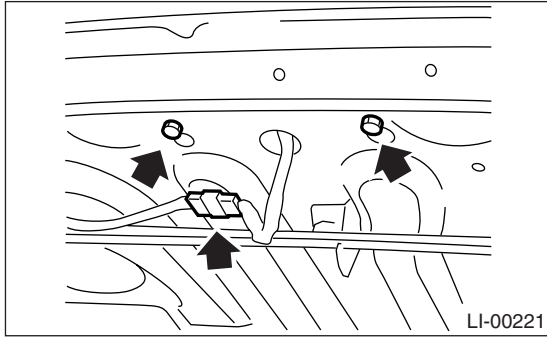
- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) If NG, replace the bulb with a new one.

22.High-mounted Stop Light

A: REMOVAL

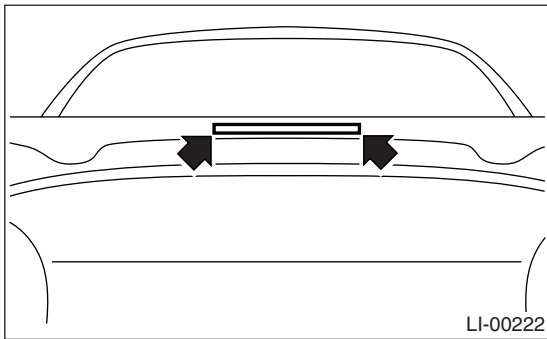
1. SEDAN MODEL (STANDARD TYPE)

- 1) Disconnect the ground cable from battery.
- 2) Disconnect the connector of high-mounted stop light from body harness.
- 3) Remove the bolts, then detach the high-mounted stop light assembly.



2. SEDAN MODEL (REAR SPOILER BUILT-IN TYPE)

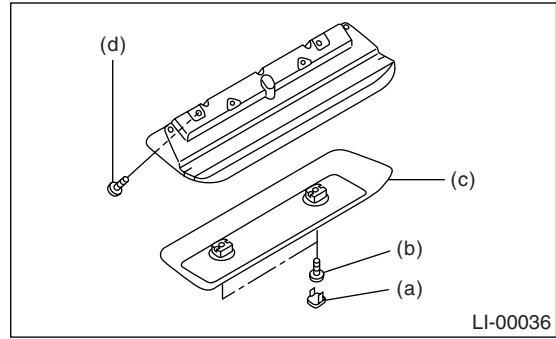
- 1) Disconnect the ground cable from battery.
- 2) Remove the bolts, then detach the high-mounted stop light assembly.
- 3) Disconnect the connector of high-mounted stop light from body harness.



3. WAGON MODEL

- 1) Disconnect the ground cable from battery.
- 2) Remove the cap (a) by prying on the edge with screwdriver.
- 3) Remove the screws (b), and then the detach cover (c).

- 4) Remove screws (d), and then detach the high-mounted stop light while disconnecting connector.



B: INSTALLATION

Install in the reverse order of removal.

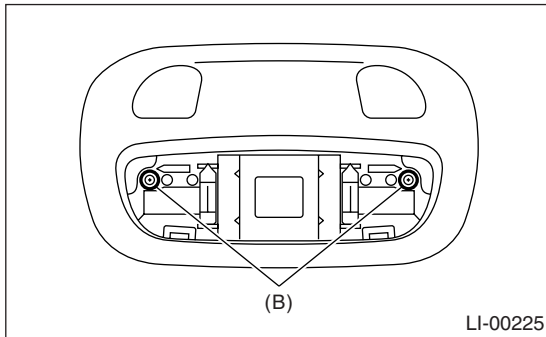
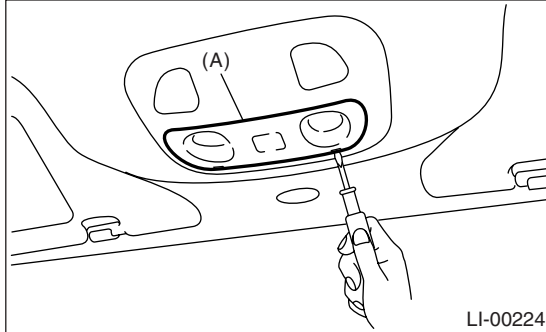
C: INSPECTION

- 1) Visually check the bulb for blow out.
- 2) If NG, replace the high-mounted stop light with a new one.

23. Spot Map Light

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the lens (A) and spot map light mounting screw (B).



- 3) Disconnect the harness connectors and remove the spot map light.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

1. SPOT MAP LIGHT BULB

- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) If NG, replace the bulb with a new one.

2. SPOT MAP LIGHT SWITCH

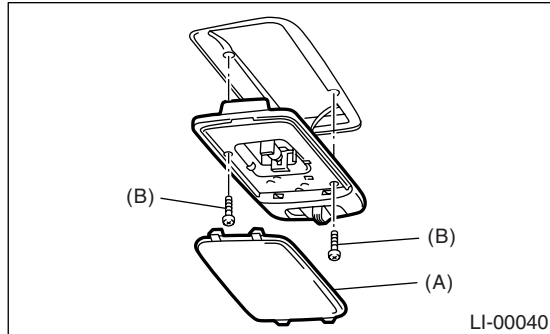
Measure the resistance between spot map light terminals.

Switch position	Terminal No.	Standard
OFF	—	More than 1 MΩ
ON	1 and 2	18±5.4 Ω

24.Room Light

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the lens (A) and room light mounting screws (B).



- 3) Disconnect the harness connectors and remove the light.

B: INSTALLATION

Install in the reverse order of removal.

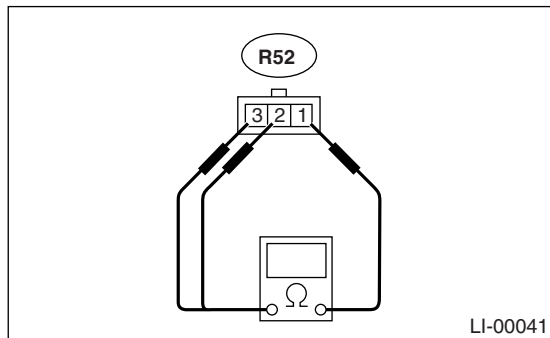
C: INSPECTION

1. ROOM LIGHT BULB

- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) If NG, replace the bulb with a new one.

2. ROOM LIGHT SWITCH

Measure the resistance between room light terminals.

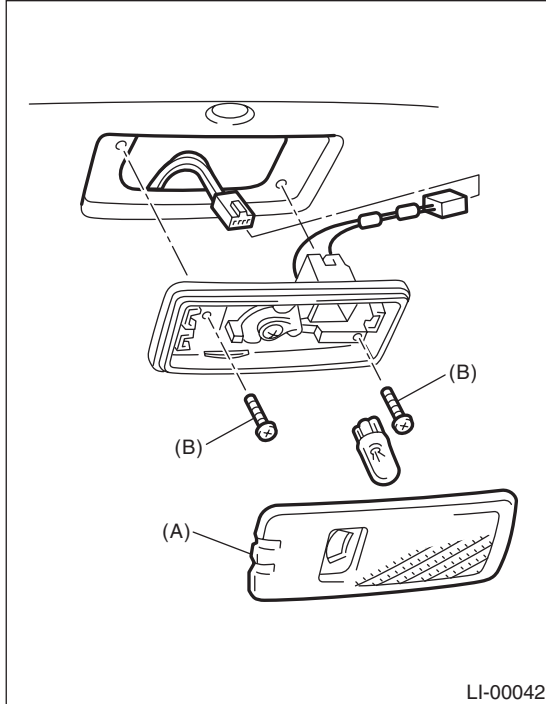


Switch position	Terminal No.	Standard
OFF	—	More than 1 MΩ
ON	1 and 3	1.5±0.5 Ω
DOOR	1 and 2	1.5±0.5 Ω

25.Luggage Room Light

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the lens (A) and luggage room light mounting screws (B).



- 3) Disconnect the harness connectors and remove the luggage room light.

B: INSTALLATION

Install in the reverse order of removal.

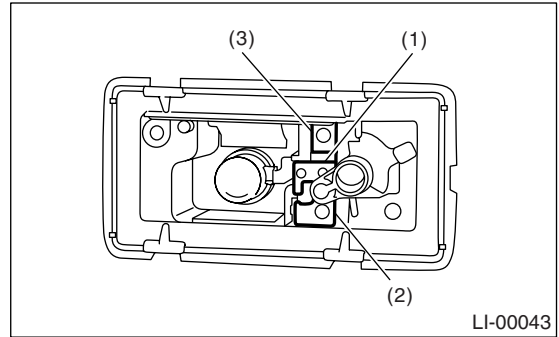
C: INSPECTION

1. LUGGAGE ROOM LIGHT BULB

- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) If NG, replace the bulb with a new one.

2. LUGGAGE ROOM LIGHT SWITCH

Measure the resistance between luggage room light terminals.

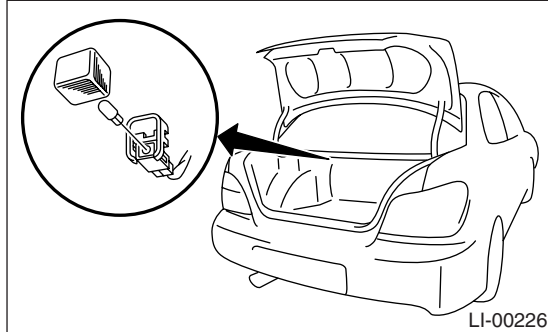


Switch position	Terminal No.	Standard
OFF	—	More than 1 MΩ
ON	1 and ground	1.5±0.5 Ω
DOOR	1 and 2	1.5±0.5 Ω

26.Trunk Room Light

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Disconnect the harness connectors and remove the trunk room light.



B: INSTALLATION

Install in the reverse order of removal.

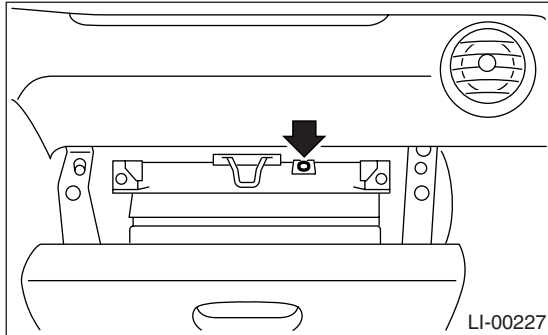
C: INSPECTION

- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) If NG, replace the bulb with a new one.

27. Glove Box Light

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the glove box. <Ref. to EI-44, REMOVAL, Glove Box.>
- 3) Disconnect the harness connector.
- 4) Remove the glove box light.



B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

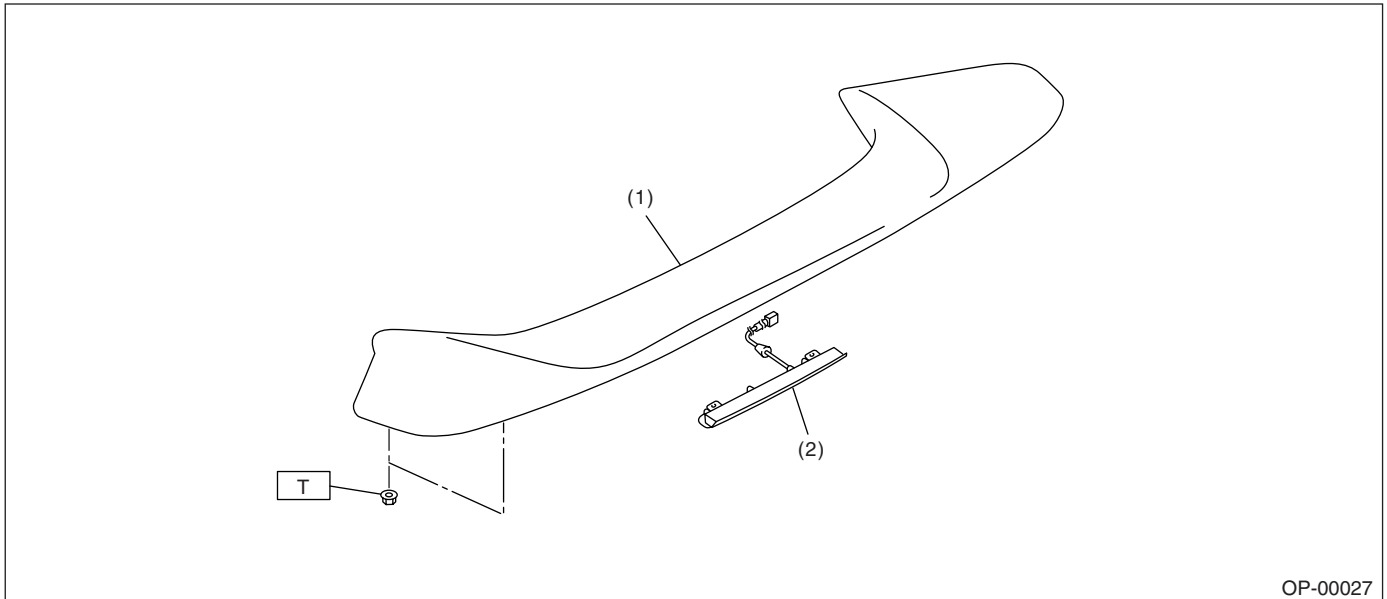
- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) If NG, replace the bulb with a new one.

OPTION PARTS

1. General Description

A: COMPONENT

1. REAR SPOILER



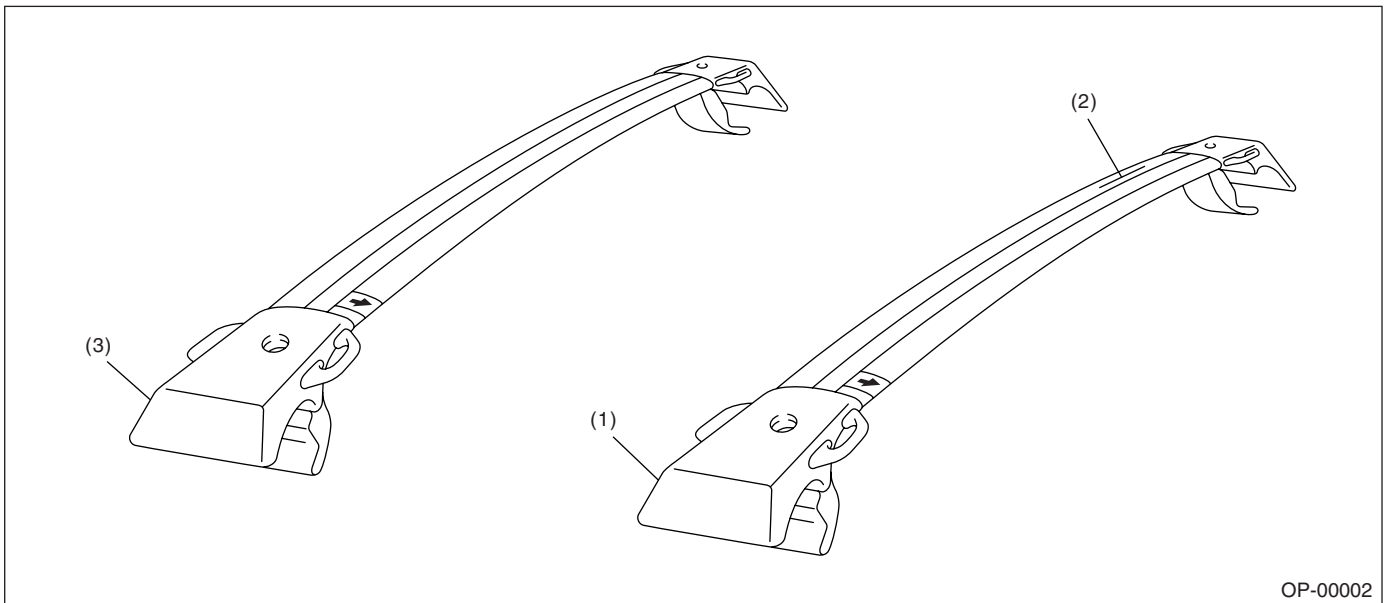
OP-00027

(1) Rear spoiler

(2) High mounted stop light

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

2. CROSSBAR



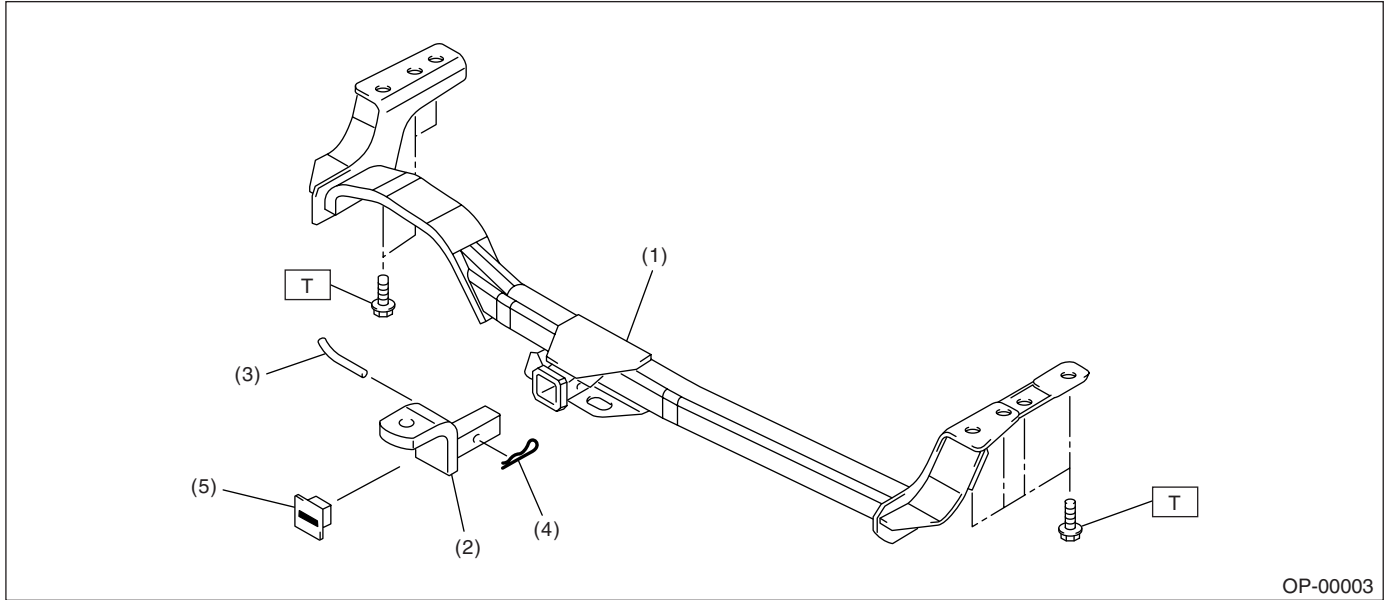
OP-00002

(1) Front crossbar

(2) Caution label (Front crossbar)

(3) Rear crossbar

3. TRAILER HITCH



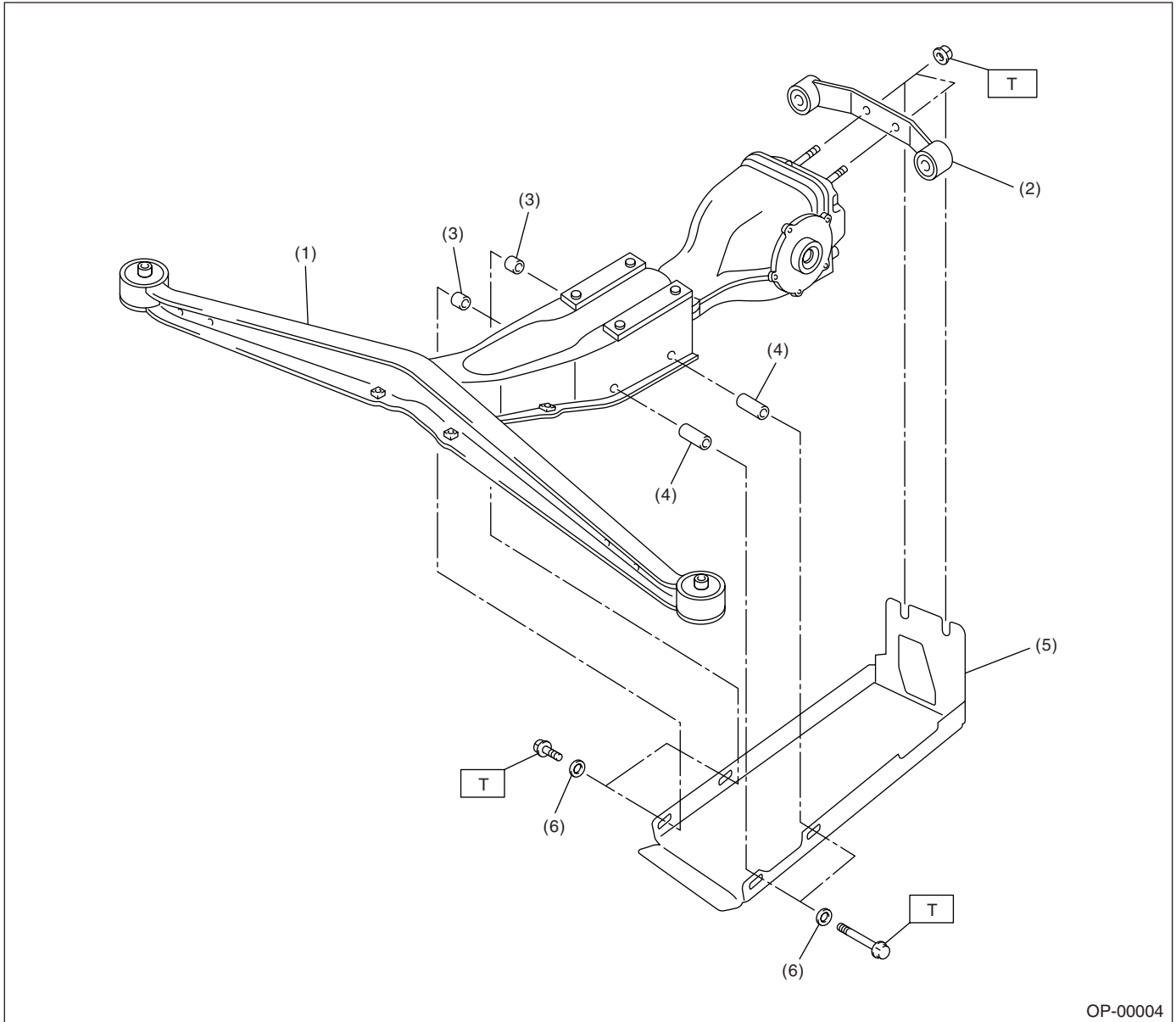
(1) Receiver hitch	(4) Ball mount clip
(2) Ball mount	(5) Receiver cover
(3) Ball mount pin	

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

General Description

OPTION PARTS

4. REAR DIFFERENTIAL PROTECTOR



OP-00004

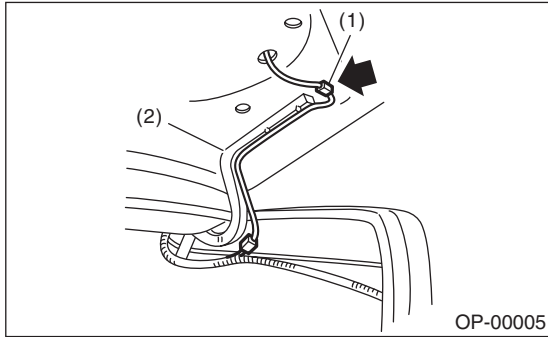
(1) Differential front member	(4) Spacer (Long)
(2) Differential rear member	(5) Rear differential protector
(3) Spacer (Short)	(6) Washer

Tightening torque: N·m (kgf-m, ft-lb)
T: 90 (9.2, 66.4)

2. Rear Spoiler

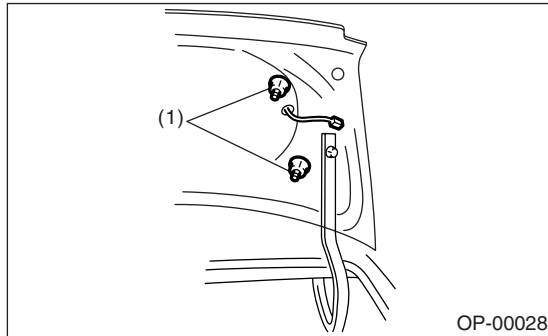
A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Open the trunk lid.
- 3) Disconnect the connector of high mounted stop light.



- (1) Connector
(2) Trunk hinge

- 4) Remove the mounting nuts of rear spoiler.



- (1) Mounting nut

- 5) Remove the rear spoiler.

CAUTION:

Pay attention to avoid damage during removal or installation.

B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:

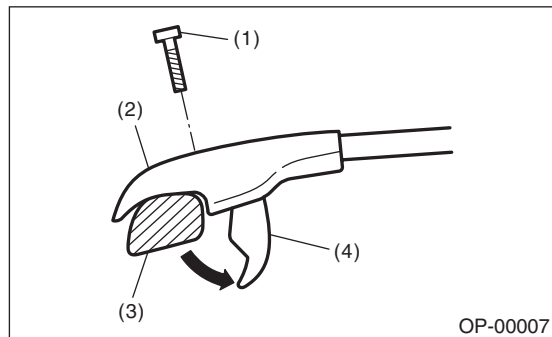
Rear spoiler to trunk lid

$7.5 \pm 2 \text{ N}\cdot\text{m}$ ($0.76 \pm 0.20 \text{ kgf}\cdot\text{m}$, $5.5 \pm 1.4 \text{ ft}\cdot\text{lb}$)

3. Crossbar

A: REMOVAL

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



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

CAUTION:

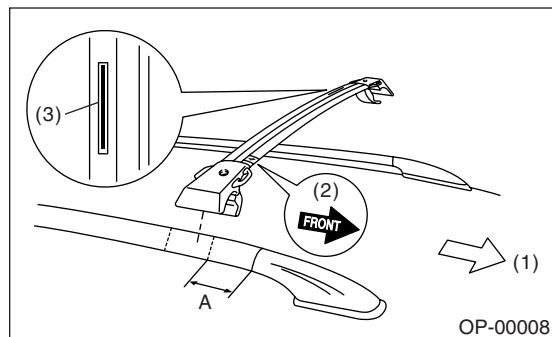
Pay attention to avoid damage to the roof panel during removal or installation.

B: INSTALLATION

- 1) Rotate the lower clamp of each end support about 90° downward.
- 2) Set the front crossbar so that front direction mark on the right side top face of crossbar point in the direction of vehicle front.
- 3) Place the crossbar end support in a position 76.2 mm (3 in) behind the joint of front roof rail support and roof rail.

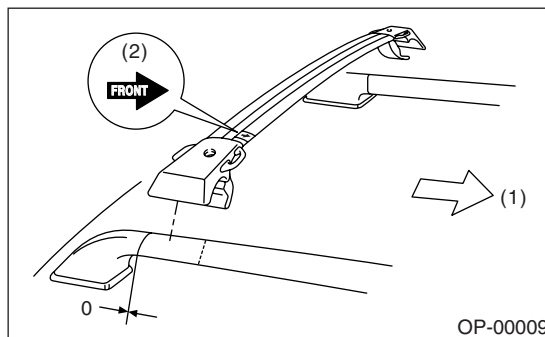
Length A:

76.2 mm (3 in)



- (1) Front of vehicle
- (2) Front direction mark
- (3) Caution label (Front crossbar)

- 4) Set the rear crossbar so that front direction mark on the right side top face of crossbar point in the direction of vehicle front.
- 5) Place the crossbar end support on a joint of rear roof rail support and roof rail.



- (1) Front of vehicle
- (2) Front direction mark

- 6) Tighten the end support and clamp using TORX® bolt T30.

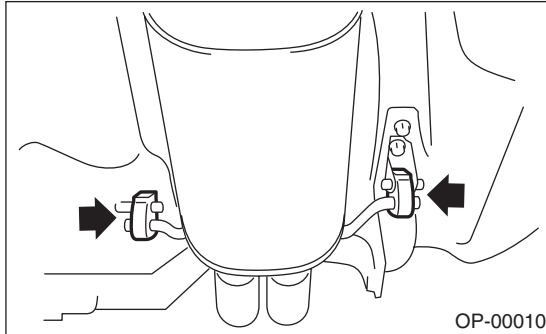
4. Trailer Hitch

A: REMOVAL

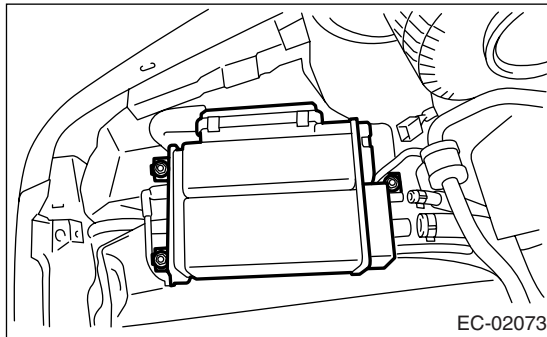
CAUTION:

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

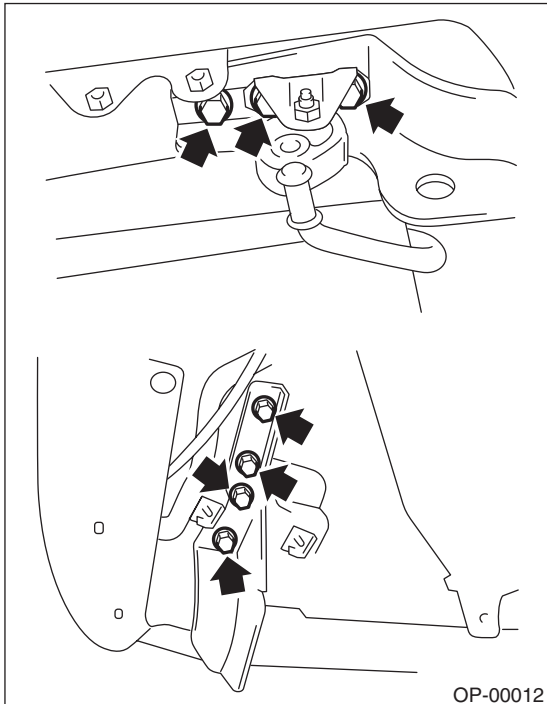
- 1) Lift-up the vehicle.
- 2) Remove the cushion rubber from body.



- 3) Remove the three screws and remove canister.



- 4) Remove the trailer hitch installation bolts.



- 5) Remove the trailer hitch while lowering exhaust pipe.

B: INSTALLATION

CAUTION:

Because the trailer hitch is heavy, two people are required to install it.

Install in the reverse order of removal.

Tightening torque:

Trailer hitch to body:

95 N·m (9.7 kgf-m, 70 ft-lb)

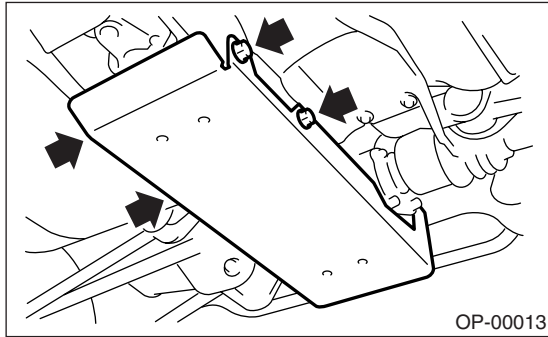
Canister:

23 N·m (2.3 kgf-m, 17 ft-lb)

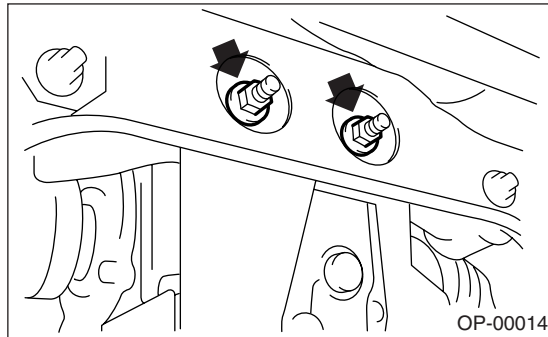
5. Rear Differential Protector

A: REMOVAL

- 1) Remove the rear exhaust pipe and muffler. <Ref. to EX(H4SO)-8, Rear Exhaust Pipe.> <Ref. to EX(H4SO)-9, Muffler.> <Ref. to EX(H4DOTC)-13, Rear Exhaust Pipe.> <Ref. to EX(H4DOTC)-14, Muffler.>
- 2) Remove the differential front member installation bolts.



- 3) Loosen the nuts until the rear differential protector can be removed.



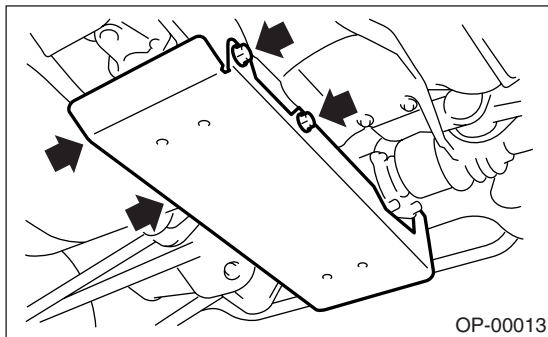
- 4) Remove the rear differential protector.

B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:

90 N·m (9.2 kgf-m, 66.4 ft-lb)

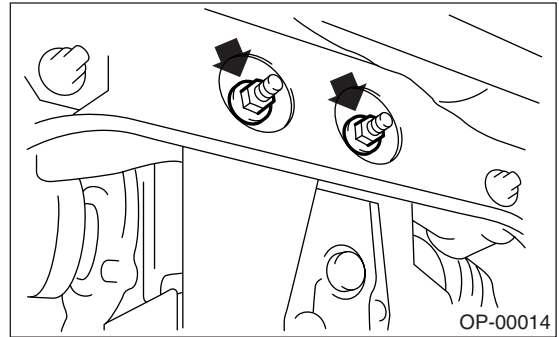


NOTE:

Install the protector between the nuts and differential rear member.

Tightening torque:

90 N·m (9.2 kgf-m, 66.4 ft-lb)

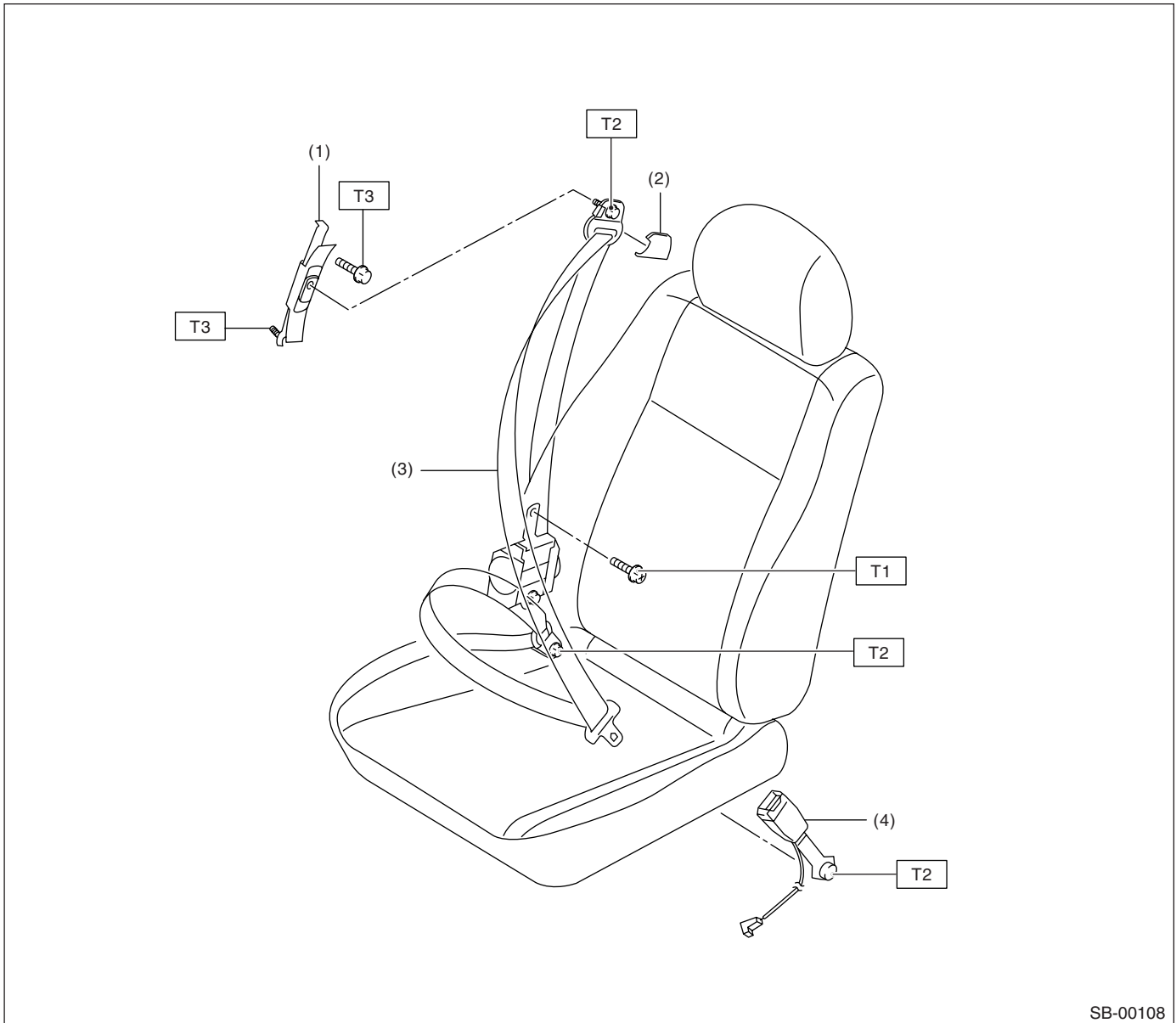


SEAT BELT SYSTEM

1. General Description

A: COMPONENT

1. FRONT SEAT BELT



SB-00108

(1) Adjuster anchor ASSY

(2) Anchor cover

(3) Outer seat belt ASSY

(4) Inner seat belt ASSY

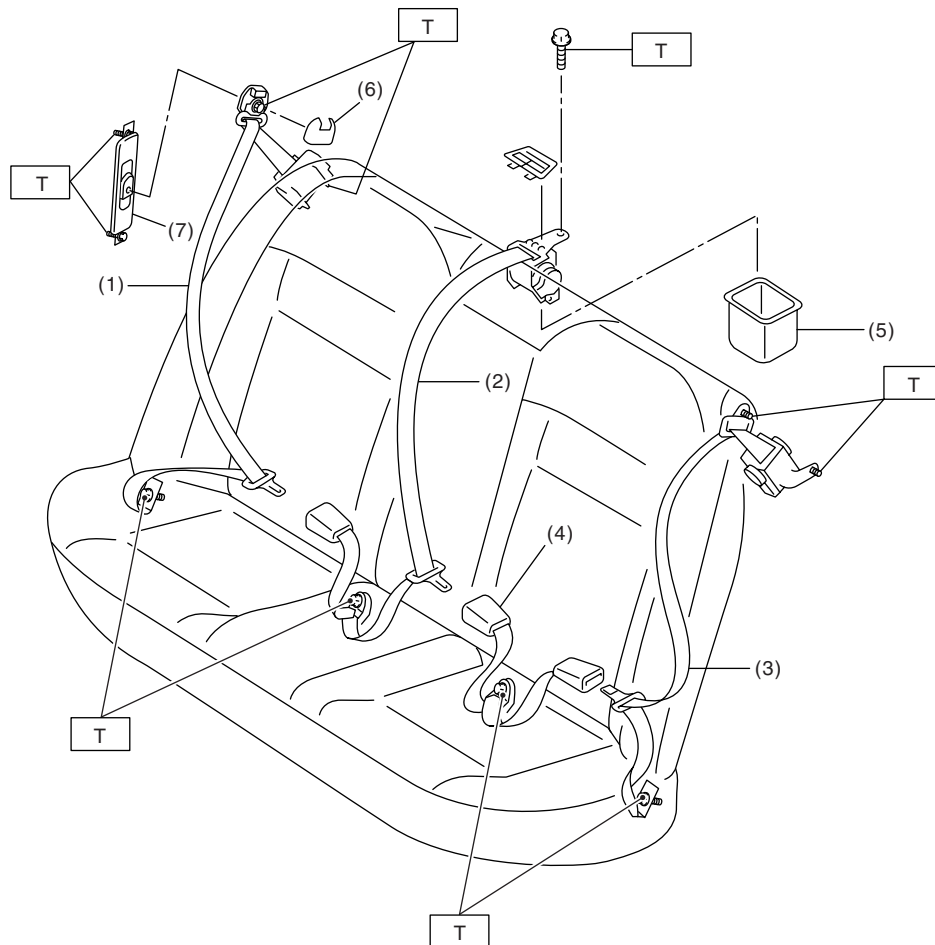
Tightening torque: N·m (kgf-m, ft-lb)

T1: 7.5 (0.76, 5.5)

T2: 30 (3.1, 22)

T3: 53 (5.4, 39)

2. REAR SEAT BELT (SEDAN MODEL)



SB-00142

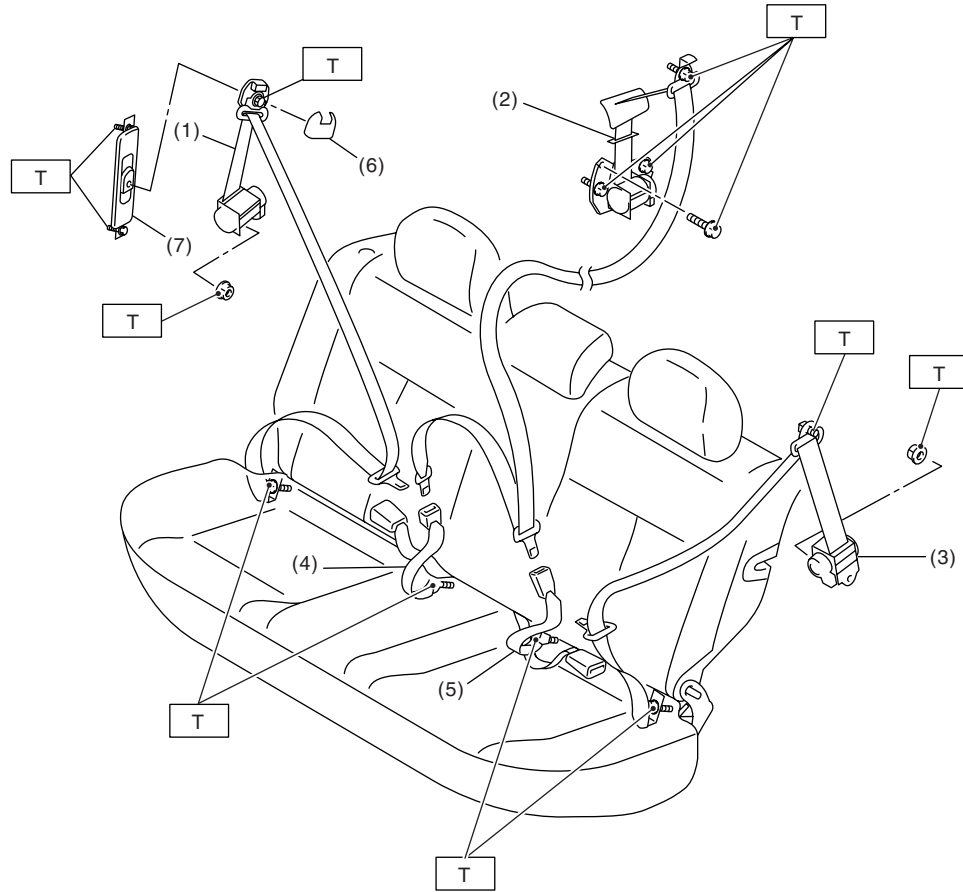
(1) Outer seat belt RH ASSY	(5) Case center ELR
(2) Shoulder seat belt CTR ASSY	(6) Anchor cover
(3) Outer seat belt LH ASSY	(7) Adjustable anchor ASSY
(4) Center seat belt LH ASSY	

Tightening torque: N·m (kgf-m, ft-lb)
T: 30 (3.1, 22)

General Description

SEAT BELT SYSTEM

3. REAR SEAT BELT (WAGON MODEL)



SB-00135

(1) Outer seat belt RH ASSY	(5) Center seat belt LH ASSY
(2) Shoulder seat belt CTR ASSY	(6) Anchor cover
(3) Outer seat belt LH ASSY	(7) Adjustable anchor ASSY
(4) Center seat belt RH ASSY	

Tightening torque: N·m (kgf-m, ft-lb)
T: 30 (3.1, 22)

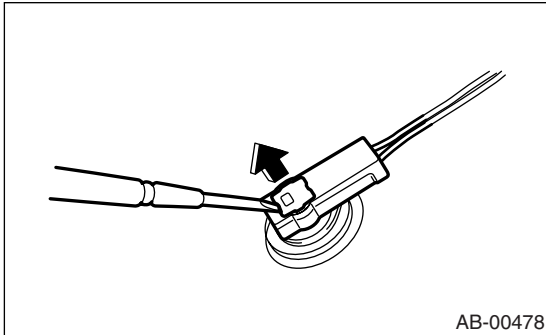
B: CAUTION

- Before starting, turn the ignition switch to OFF, disconnect the battery ground cable and wait for 20 seconds or more.
- The pretensioner system has a backup power source. The pretensioner might deploy if you do not wait for 20 seconds or more before starting work.
- Do not drop or apply any impact to the pretensioner.
- If oil, grease, or water gets on the pretensioner, wipe it off immediately with a dry cloth.
- Do not expose the pretensioner to high temperature or flame.
- Do not allow current to flow through or voltage to reach the pretensioner. Do not use a circuit tester to check resistance of the pretensioner.
- Do not disassemble or attempt to repair the pretensioner. If it is dented, cracked, or deformed, replace it with a new 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.

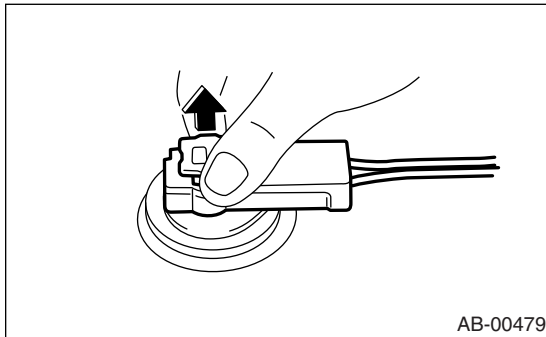
2. Pretensioner Connector

A: REMOVAL

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



2) Pull the connector to disconnect from retractor assembly.

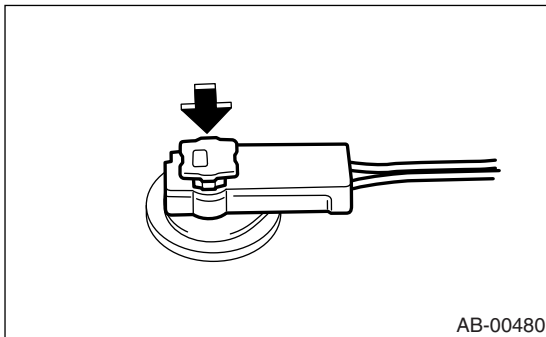


B: INSTALLATION

Connect the connector in reverse order of removal. At this time, be sure to insert the push lock in until 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.
- At this time, be sure to insert the push lock in.



3. Inspection Locations After a Collision

A: INSPECTION

Check for the following, and then replace with new parts if necessary.

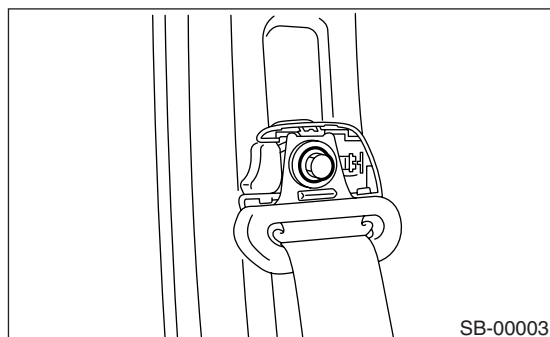
- Center pillar lower garnish is discolored or cracked.
- Wire harness and/or connector is damaged.

4. Front Seat Belt

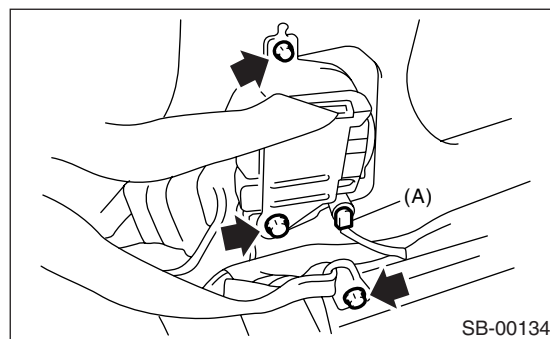
A: REMOVAL

1. OUTER SEAT BELT ASSEMBLY

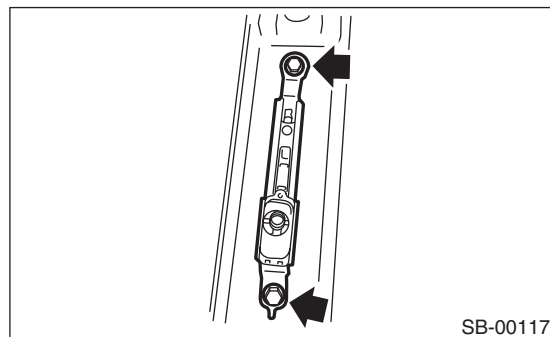
- 1) Turn the ignition switch to OFF, disconnect the ground cable from battery, and wait for more than 20 seconds.
- 2) Fold backrest all the way forward, and then move front seat all the way forward.
- 3) Remove the center pillar lower trim. <Ref. to EI-52, REMOVAL, Lower Inner Trim.>
- 4) Remove the anchor cover. Loosen the shoulder anchor bolt, and then detach the shoulder anchor from center pillar.



- 5) Turn over the floor mat to disconnect the connector (A) of pretensioner, and then loosen the three bolts to remove the outer seat belt assembly.



- 6) Remove the center pillar upper trim. <Ref. to EI-51, REMOVAL, Upper Inner Trim.>
- 7) Remove the two bolts and adjustable anchor assembly.



CAUTION:

- Do not drop or apply any impact to the pretensioner.
- Pretensioner and bracket should be treated as an assembly. Do not attempt to disassemble it.

2. INNER SEAT BELT ASSEMBLY

- 1) Turn the ignition switch to OFF, disconnect the ground cable from battery, and wait for more than 20 seconds before starting work.
- 2) Remove the console box. <Ref. to EI-47, REMOVAL, Console Box.>
- 3) Disconnect the seat belt warning light connector under the seat.
- 4) Remove the clip of harness from seat rail.
- 5) Remove the anchor bolt, and then remove the inner seat belt assembly.



B: INSTALLATION

1. OUTER SEAT BELT ASSEMBLY

Install in the reverse order of removal.

CAUTION:

- Parts of the driver and passenger sides are not identical. Before installation, make sure the correct part is used.
- Be careful not to twist the seat belts during installation.

Tightening torque:

<Ref. to SB-2, FRONT SEAT BELT, COMPONENT, General Description.>

2. INNER SEAT BELT ASSEMBLY

Install in the reverse order of removal.

Tightening torque:

<Ref. to SB-2, FRONT SEAT BELT, COMPONENT, General Description.>

C: INSPECTION

1. OUTER SEAT BELT ASSEMBLY

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 SEAT BELT ASSEMBLY

Check for the following, and replace with new parts if necessary.

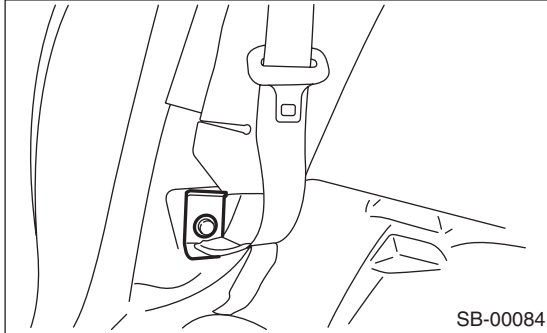
- Inner seat belt assembly is deformed or damaged.
- Seat belt buckle is engaged improperly.

5. Rear Seat Belt

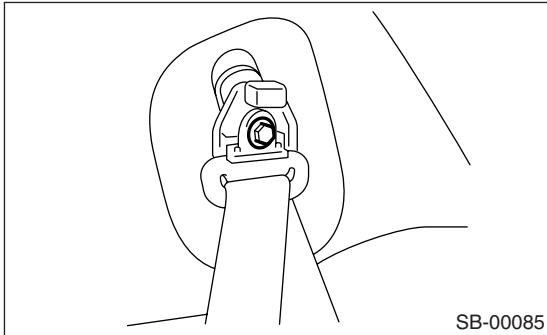
A: REMOVAL

1. OUTER SEAT BELT RH ASSEMBLY AND LH ASSEMBLY (SEDAN MODEL)

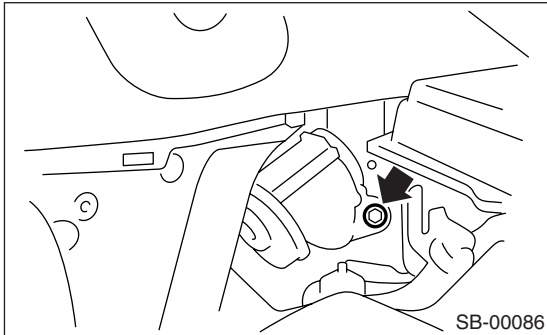
- 1) Remove the rear seat. <Ref. to SE-12, REMOVAL, Rear Seat.>
- 2) Remove the side sill rear lower cover. <Ref. to EI-52, REMOVAL, Lower Inner Trim.>
- 3) Remove the seat belt lower anchor bolt.



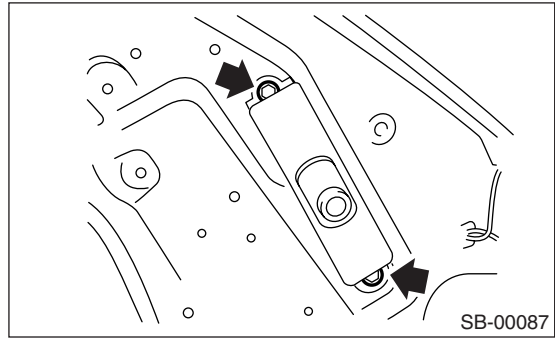
- 4) Remove the anchor cover. Remove the bolt from pillar and remove shoulder anchor.



- 5) Remove the quarter pillar trim. <Ref. to EI-53, REMOVAL, Rear Quarter Trim.>
- 6) Remove the bolts, and then detach the outer seat belt assembly.

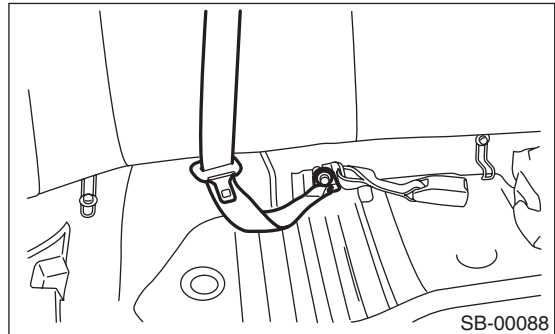


- 7) Remove the two bolts and remove adjustable anchor ASSY.

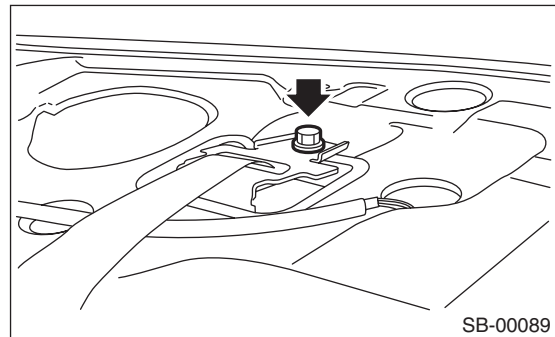


2. SHOULDER SEAT BELT CTR ASSEMBLY (SEDAN MODEL)

- 1) Remove the rear seat cushion. <Ref. to SE-12, REMOVAL, Rear Seat.>
- 2) Remove the seat belt lower anchor bolt.

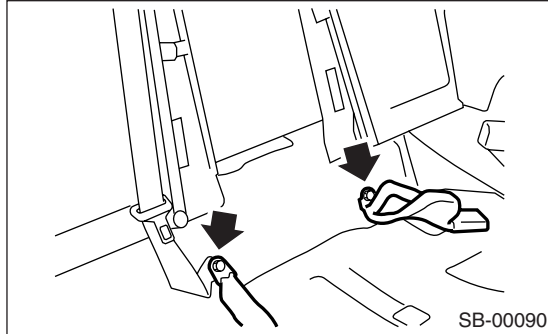


- 3) Remove the quarter pillar trim. <Ref. to EI-53, REMOVAL, Rear Quarter Trim.>
- 4) Remove the rear shelf trim. <Ref. to EI-58, REMOVAL, Rear Shelf Trim.>
- 5) Remove the bolts, and then detach the shoulder seat belt assembly.



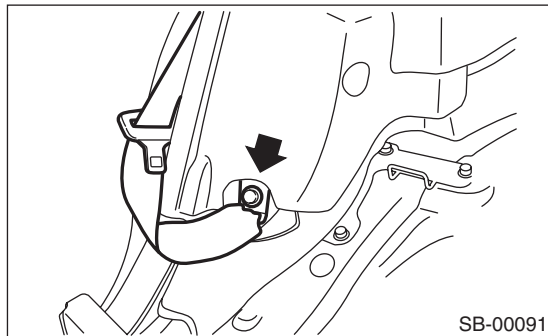
3. CENTER SEAT BELT LH ASSEMBLY (SEDAN MODEL)

- 1) Remove the rear seat cushion. <Ref. to SE-12, REMOVAL, Rear Seat.>
- 2) Remove the bolts, and then detach the center seat belt LH assembly.

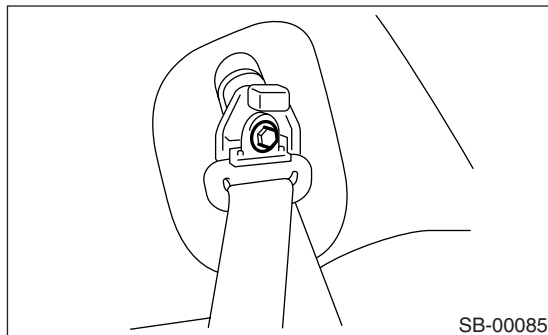


4. OUTER SEAT BELT RH ASSEMBLY AND LH ASSEMBLY (WAGON MODEL)

- 1) Remove the luggage floor mat. <Ref. to EI-61, REMOVAL, Luggage Floor Mat.>
- 2) Remove the rear seat cushion. <Ref. to SE-12, REMOVAL, Rear Seat.>
- 3) Remove the side sill rear lower cover. <Ref. to EI-52, REMOVAL, Lower Inner Trim.>
- 4) Remove the seat belt lower anchor bolt.

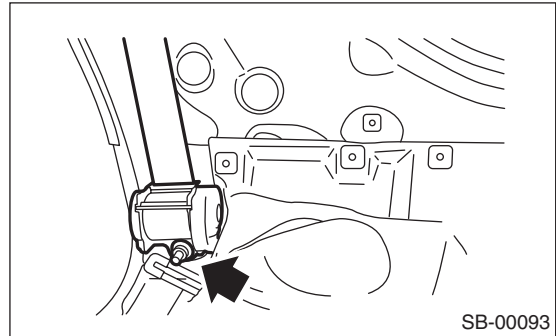


- 5) Remove the anchor cover. Remove the bolt from pillar and remove shoulder anchor.

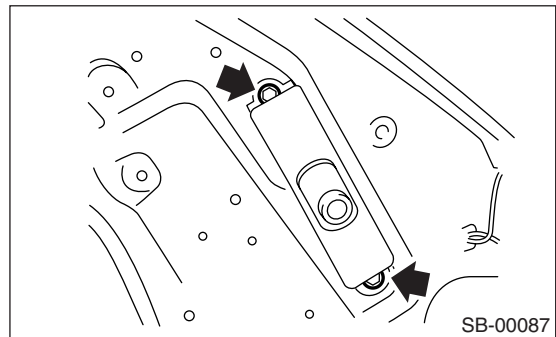


- 6) Remove the rear quarter trim. <Ref. to EI-53, REMOVAL, Rear Quarter Trim.>

- 7) Remove the bolts, and then detach the outer seat belt.

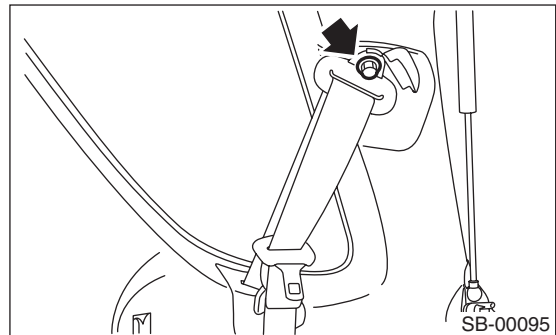


- 8) Remove the two bolts and remove adjustable anchor ASSEMBLY.



5. SHOULDER SEAT BELT CTR ASSEMBLY (WAGON MODEL)

- 1) Remove the shoulder anchor bolt, and then detach the shoulder anchor from quarter pillar.

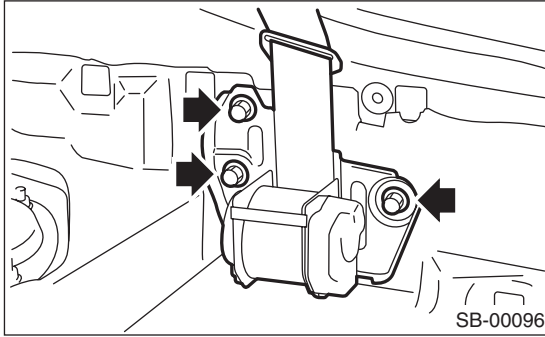


- 2) Remove the quarter trim. <Ref. to EI-53, REMOVAL, Rear Quarter Trim.>

Rear Seat Belt

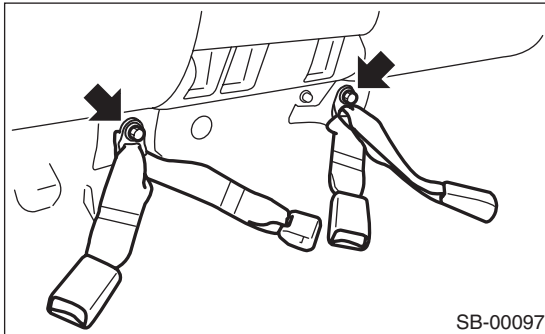
SEAT BELT SYSTEM

- 3) Remove the three bolts, and then detach the outer belt center.



6. CENTER SEAT BELT RH ASSEMBLY AND LH ASSEMBLY (WAGON MODEL)

- 1) Remove the rear seat cushion.
2) Remove the bolt, and then detach the center seat belt assembly.



B: INSTALLATION

1. OUTER SEAT BELT RH ASSEMBLY AND LH ASSEMBLY (SEDAN MODEL)

Install in the reverse order of removal.

CAUTION:

- During installation, make sure that the seat belts are not twisted.
- After installation, make sure that the seat belts can be smoothly extended and wound.

2. SHOULDER SEAT BELT CTR ASSEMBLY (SEDAN MODEL)

Install in the reverse order of removal.

CAUTION:

- During installation, make sure that the seat belts are not twisted.
- After installation, make sure that the seat belts can be smoothly extended and wound.

3. CENTER SEAT BELT LH ASSEMBLY (SEDAN MODEL)

Install in the reverse order of removal.

CAUTION:

During installation, make sure that the seat belts are not twisted.

4. OUTER SEAT BELT RH ASSEMBLY AND LH ASSEMBLY (WAGON MODEL)

Install in the reverse order of removal.

CAUTION:

- During installation, make sure that the seat belts are not twisted.
- After installation, make sure that the seat belts can be smoothly extended and wound.

5. SHOULDER SEAT BELT CTR ASSEMBLY (WAGON MODEL)

Install in the reverse order of removal.

CAUTION:

- During installation, make sure that the seat belts are not twisted.
- After installation, make sure that the seat belts are smoothly extended and wound.

6. CENTER SEAT BELT RH ASSEMBLY AND LH ASSEMBLY (WAGON MODEL)

Install in the reverse order of removal.

CAUTION:

During installation, make sure that the seat belts are not twisted.

C: INSPECTION

1. OUTER SEAT BELT RH ASSEMBLY AND LH ASSEMBLY (SEDAN MODEL)

Check for the following, and replace with new parts if necessary.

- Seat belt is slackened, bent, or frayed. Seat belt is abnormally wound or extended.

2. SHOULDER SEAT BELT CTR ASSEMBLY (SEDAN MODEL)

Check for the following, and replace with new parts if necessary.

- Seat belt is slackened, bent, or frayed. Seat belt is abnormally wound or extended.

3. CENTER SEAT BELT LH ASSEMBLY (SEDAN MODEL)

Check for the following, and replace with new parts if necessary.

- Inner belt is deformed or damaged.
- Seat belt buckle is engaged improperly.

4. OUTER SEAT BELT RH ASSEMBLY AND LH ASSEMBLY (WAGON MODEL)

Check for the following, and replace with new parts if necessary.

- Seat belt is slackened, bent, or frayed. Seat belt is abnormally wound or extended.

5. SHOULDER SEAT BELT CTR ASSEMBLY (WAGON MODEL)

Check for the following, and replace with new parts if necessary.

- Seat belt is slackened, bent, or frayed. Seat belt is abnormally wound or extended.

6. CENTER SEAT BELT RH ASSEMBLY AND LH ASSEMBLY (WAGON MODEL)

Check for the following, and replace with new parts if necessary.

- Inner belt is deformed or damaged.
- Seat belt buckle is engaged improperly.

Rear Seat Belt

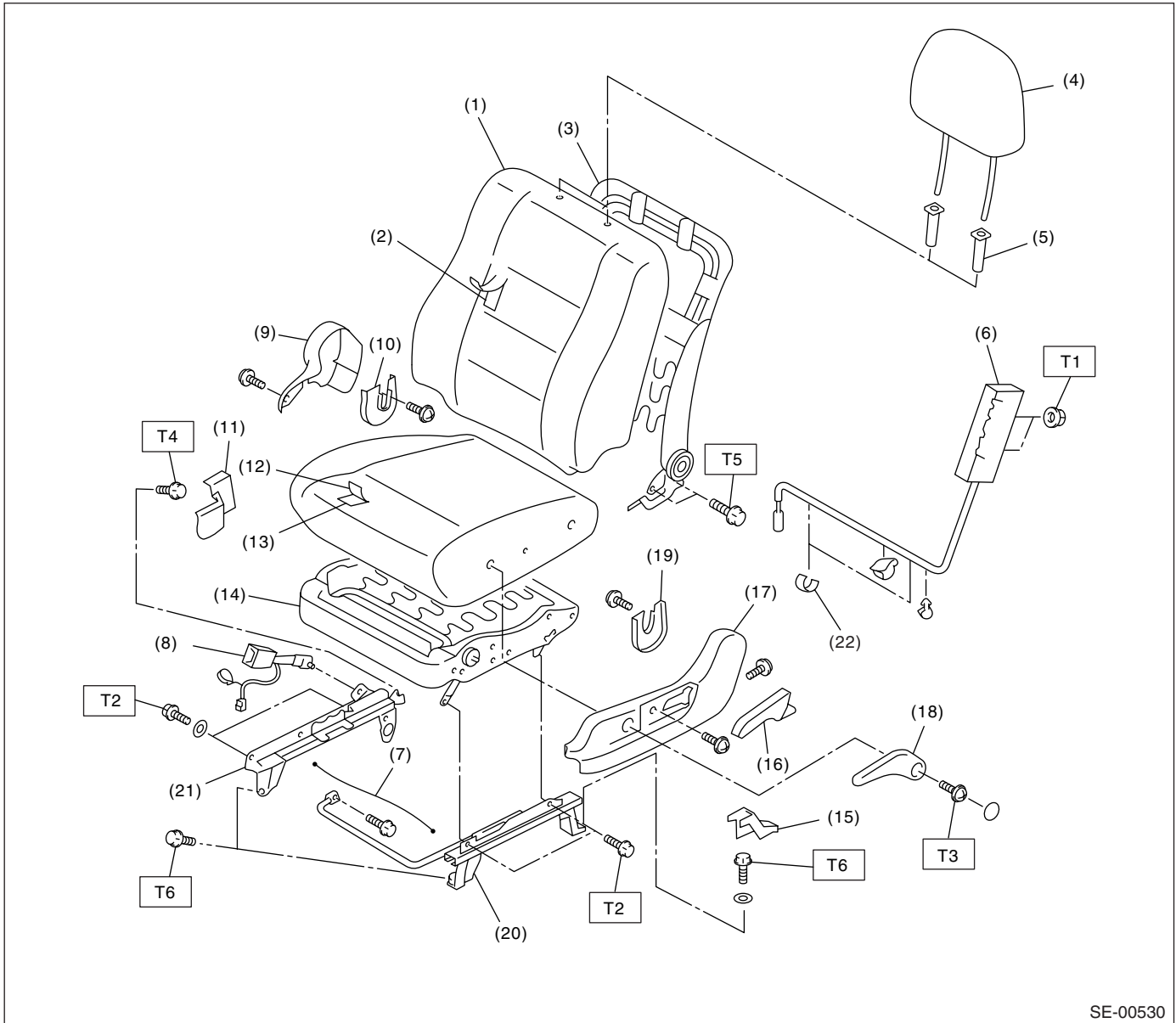
SEAT BELT SYSTEM

SEATS

1. General Description

A: COMPONENT

1. FRONT SEAT



SE-00530

(1) Backrest cover	(12) Seat cushion cover
(2) Backrest pad	(13) Seat cushion pad
(3) Backrest frame ASSY	(14) Seat cushion frame ASSY
(4) Headrest ASSY	(15) Bolt cover outer
(5) Headrest lock bushing	(16) Reclining lever
(6) Side airbag module	(17) Seat hinge outer cover
(7) Connecting wire	(18) Lifter lever
(8) Inner belt	(19) Seat hinge inner cover RH
(9) Seat hinge inner cover	(20) Outer slide rail
(10) Seat hinge inner cover LH	(21) Inner slide rail
(11) Bolt cover inner	(22) Tape

Tightening torque: N·m (kgf-m, ft-lb)

T1: 5.9 (0.60, 4.35)

T2: 10 (1.02, 7.38)

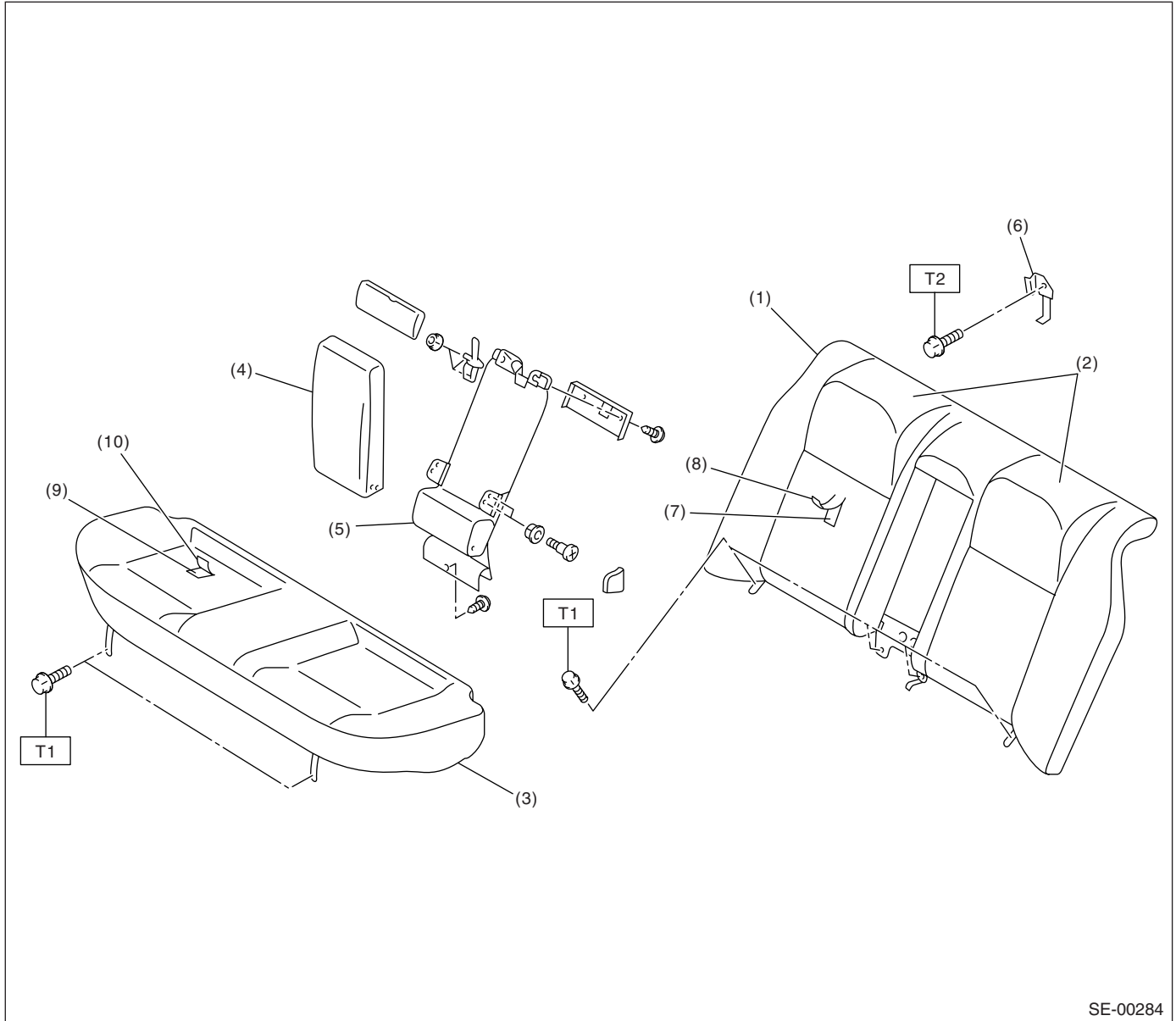
T3: 22 (2.24, 16.2)

T4: 30 (3.06, 22.1)

T5: 52 (5.30, 38.4)

T6: 53 (5.40, 39.1)

2. REAR SEAT (SEDAN MODEL)



(1) Backrest	(6) Hook
(2) Headrest	(7) Backrest pad ASSY
(3) Cushion	(8) Backrest cover ASSY
(4) Armrest	(9) Rear pad & cushion frame ASSY
(5) Center through frame	(10) Rear cushion cover

Tightening torque: N·m (kgf-m, ft-lb)

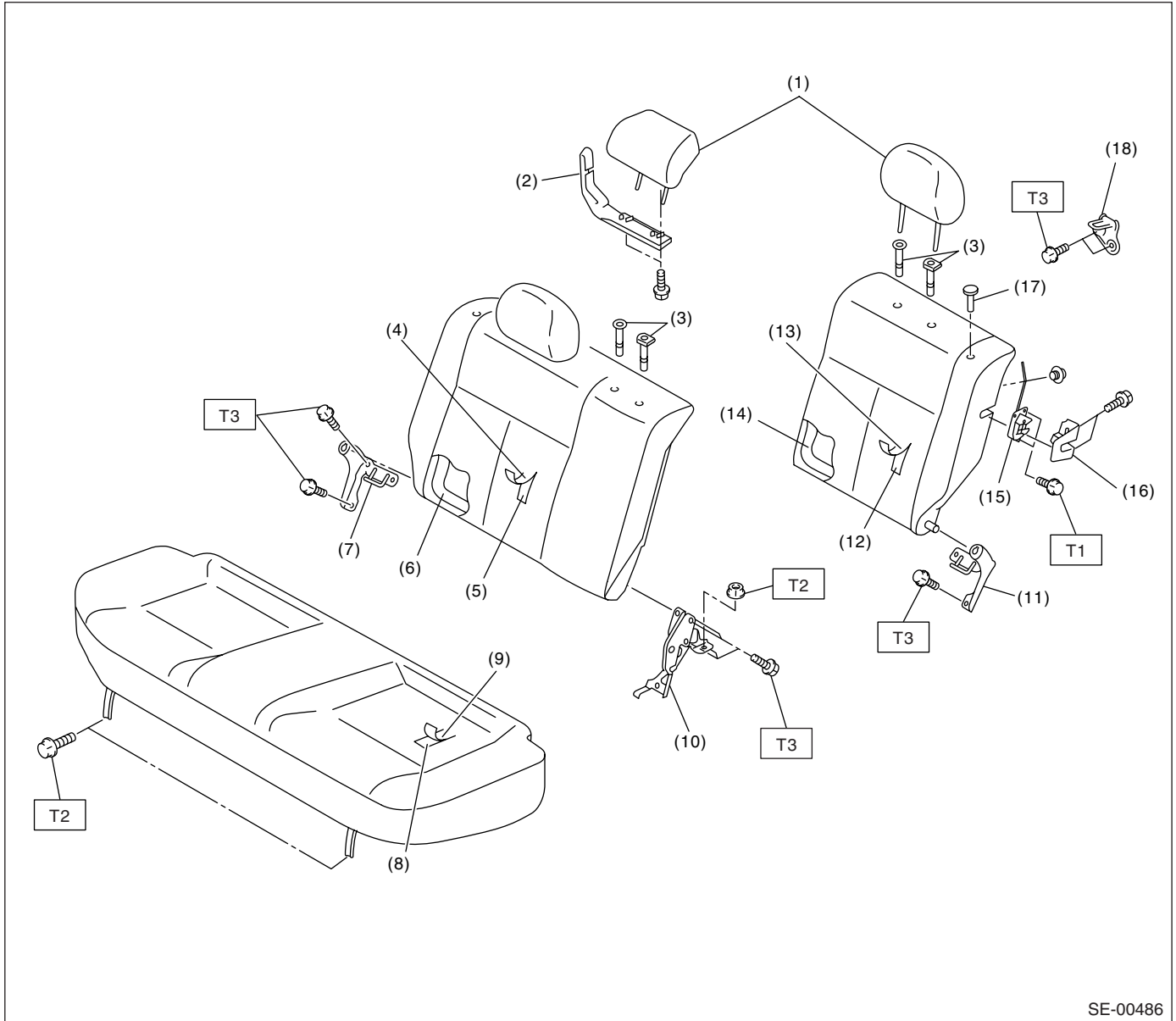
T1: 10 (1.02, 7.38)

T2: 24.5 (2.5, 18.1)

General Description

SEATS

3. REAR SEAT (WAGON MODEL)



SE-00486

(1) Headrest	(9) Seat cushion pad
(2) Seat belt guide	(10) Hinge ASSY CTR
(3) Headrest bushing	(11) Hinge ASSY LH
(4) Backrest cover RH	(12) Backrest pad LH
(5) Backrest pad RH	(13) Backrest cover LH
(6) Backrest frame RH	(14) Backrest frame LH
(7) Hinge ASSY RH	(15) Seat back latch
(8) Seat cushion cover	(16) Seat back latch cover

- | |
|--------------------|
| (17) Backrest knob |
| (18) Striker |

Tightening torque: N·m (kgf-m, ft-lb)

T1: 17.7 (1.81, 13.1)

T2: 24.5 (2.5, 18.1)

T3: 33 (3.3, 24.6)

B: CAUTION

When removing the front seat from a model with side airbag, follow cautions given in the airbag section. <Ref. to AB-3, CAUTION, General Description.>

C: PREPARATION TOOL

1. GENERAL TOOL

TOOL NAME	REMARKS
Long nose pliers	Used for removing hog ring.
Hog ring pliers	Used for installing hog ring.
TORX® T30	Used for removing and installing slide rail.

2. Front Seat

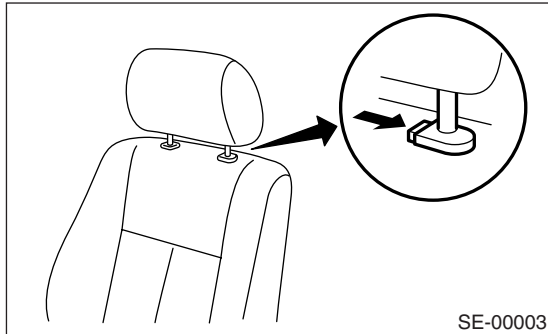
A: REMOVAL

1) Disconnect the ground cable from battery.

CAUTION:

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.

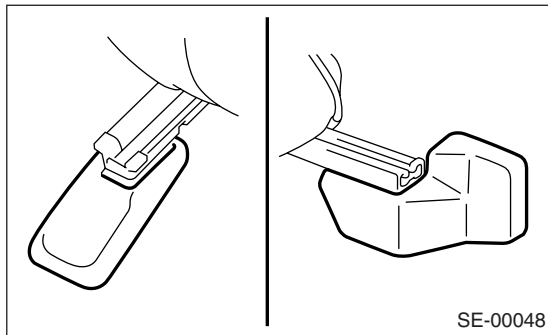
2) While pressing the headrest lock button, remove the headrest.



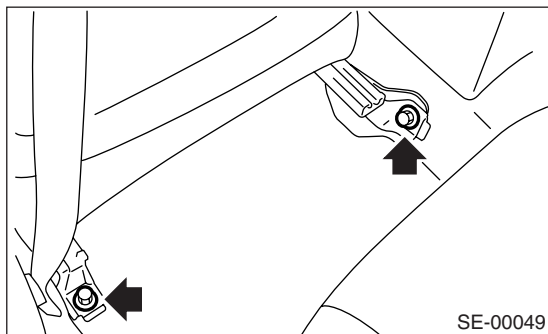
3) Tilt forward the backrest.

4) Move the seat to full front end.

5) Remove the bolt cover at rear end of slide rail.

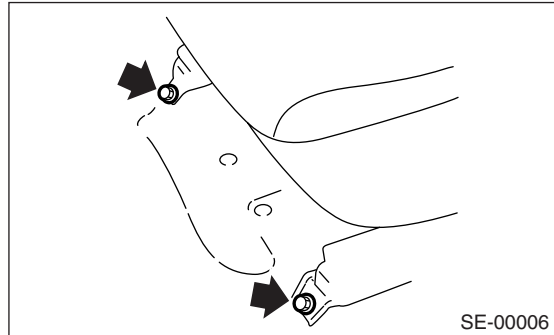


6) Remove the two bolts at rear side of seat rail.



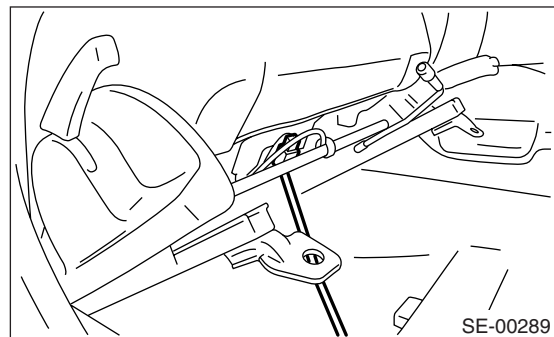
7) Move the seat to full rear end.

8) Remove the two bolts at front side of seat rail.



9) Disconnect the connector under seat.

- Seat belt warning light connector (Driver's seat)
- Side airbag connector (with side airbag)
- Seat heater connector (with seat heater)



10) Remove the front seat from vehicle.

B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:

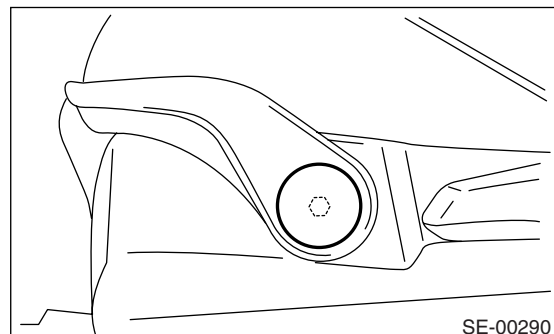
Refer to **COMPONENT** in *General Description*. <Ref. to SE-2, FRONT SEAT, COMPONENT, General Description.>

C: DISASSEMBLY

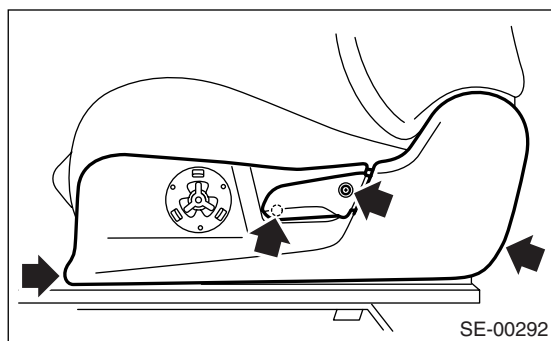
1. STANDARD SEAT

1) Remove the seat from vehicle. <Ref. to SE-6, REMOVAL, Front Seat.>

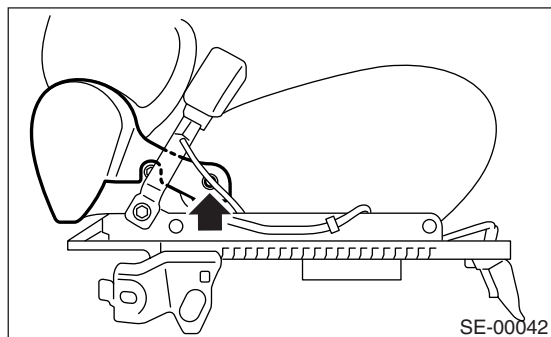
2) Remove the seat lifter cover using a flat tip screwdriver or equivalent, and then loosen the inside bolt to remove seat lifter lever.



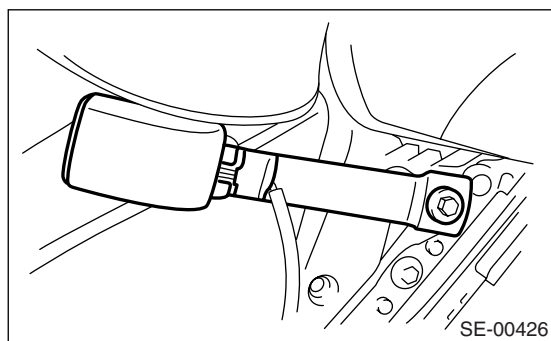
3) Remove the reclining lever and seat hinge outer cover.



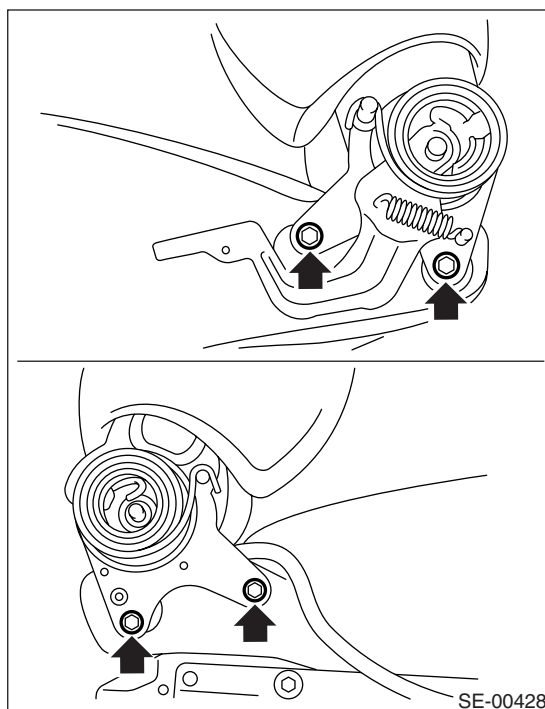
4) Remove the seat hinge inner cover.



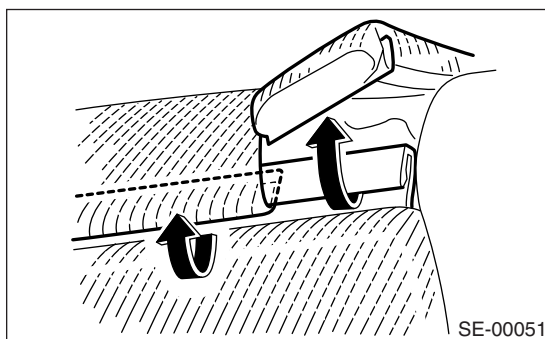
5) Remove the inner belt.



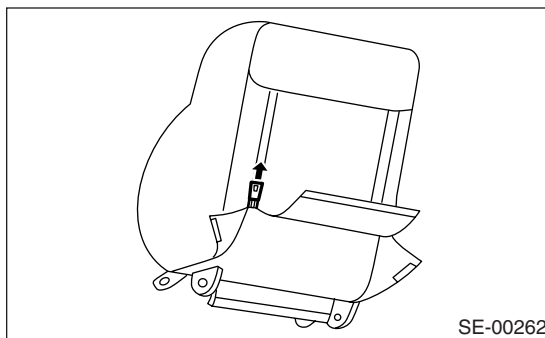
6) Remove two bolts from reclining hinge on each side.



7) Remove the hook at the bottom-back side of backrest.



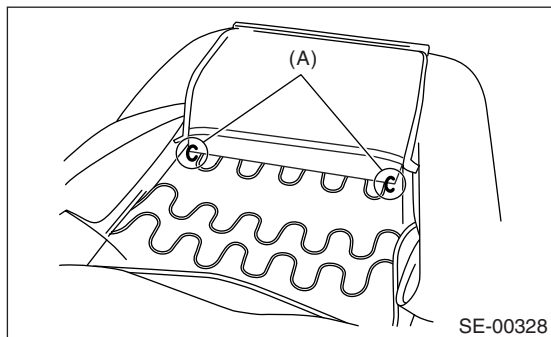
8) Open the zipper behind of backrest.



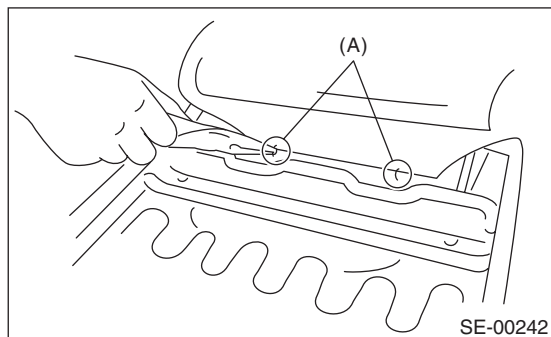
Front Seat

SEATS

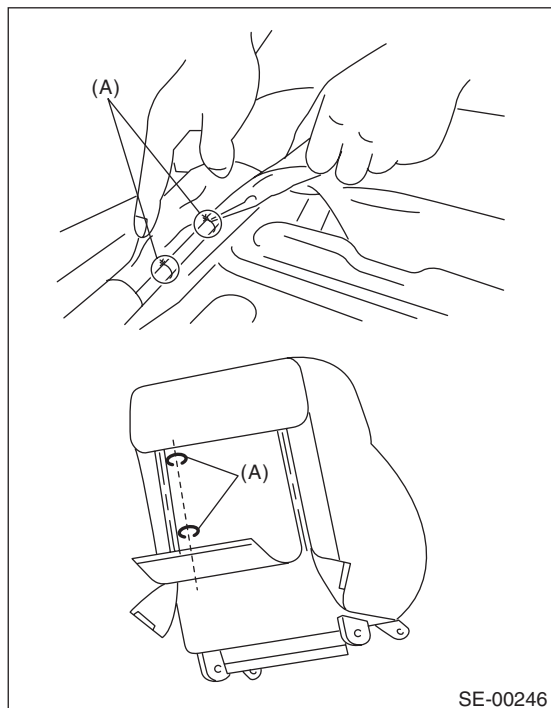
- 9) Remove the hog rings (A) of backrest cover.



- 10) Remove the hog rings (A) which secure the backrest cover and backrest pad.



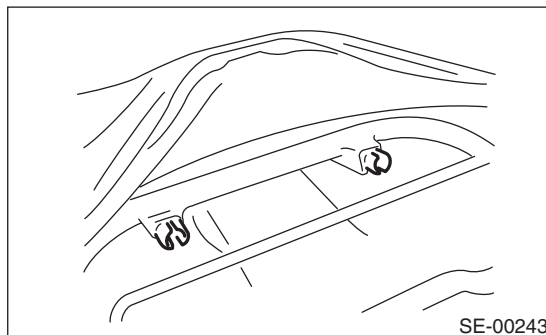
- 11) Open the zipper behind of backrest cover, and then remove the hog rings (A) at the side-inner part of backrest from backrest frame. (with side airbag)



- 12) Remove the headrest bushings.

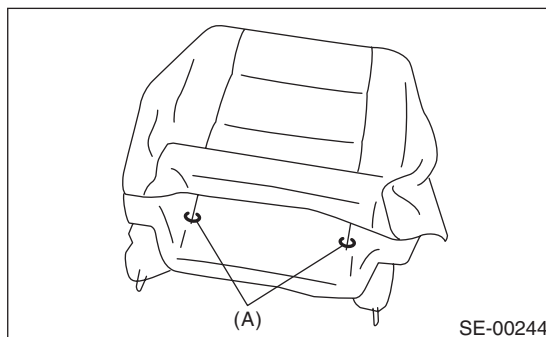
NOTE:

Push the headrest bushings out from seat inside, and then remove them.

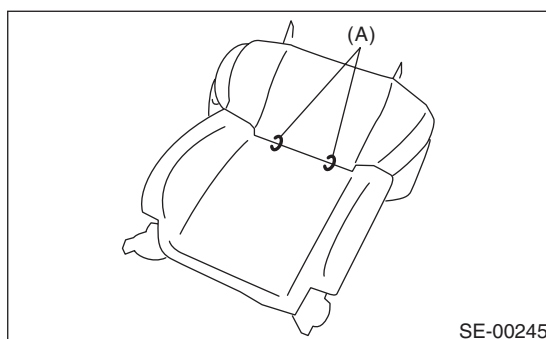


- 13) Pull out the backrest frame.

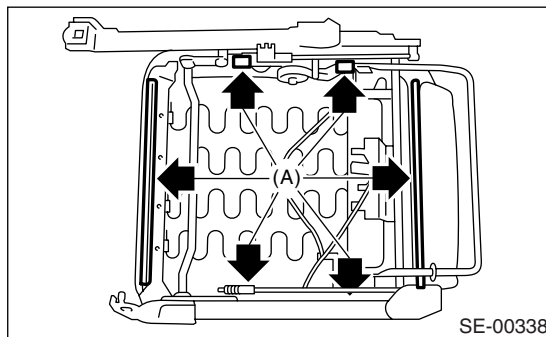
- 14) Remove the hog rings (A) at the front-bottom of seat back. (with side airbag)



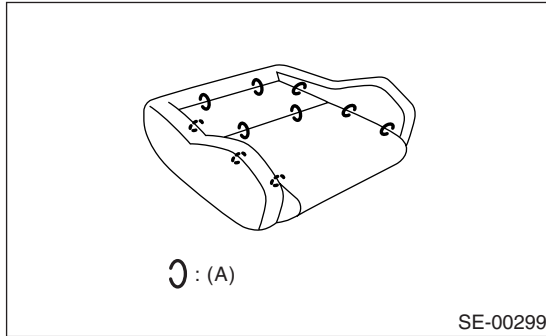
- 15) Remove the hog rings (A) at the seat back front, and then remove the seat back cover from seat back.



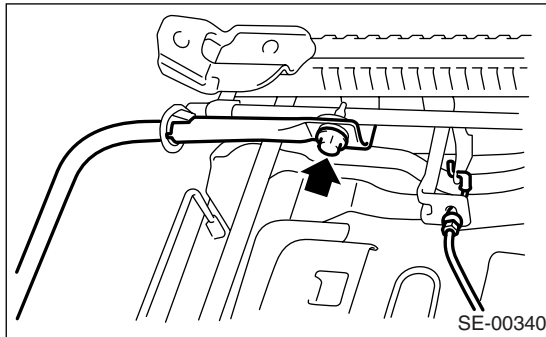
- 16) Remove the hooks (A), and then remove the seat cushion frame assembly.



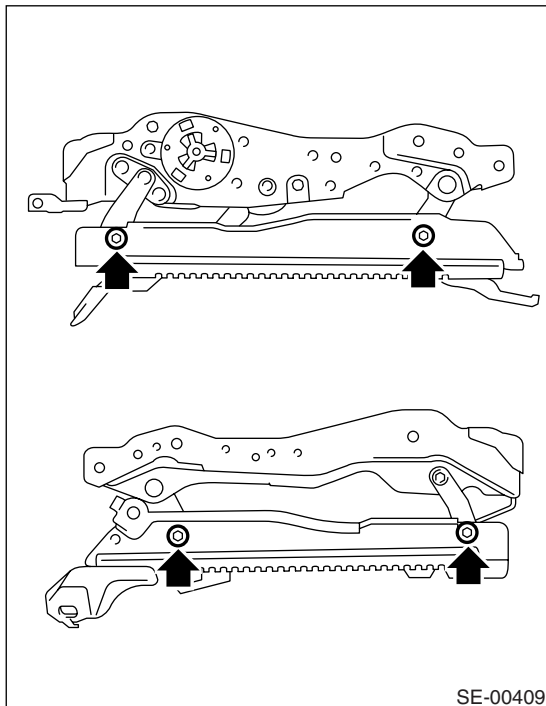
17) Remove the hog rings (A), and then remove the seat cushion cover from seat cushion pad.



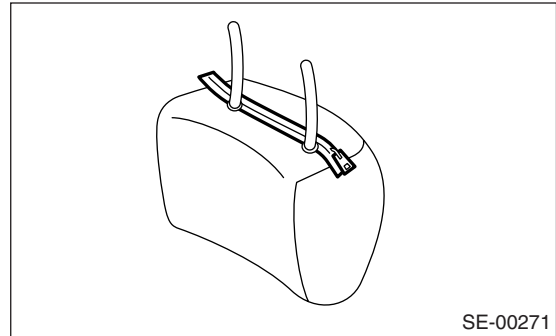
18) Remove the bolt of sliding adjustment bar and connecting wire.



19) Remove the bolts, and then remove the slide rail.



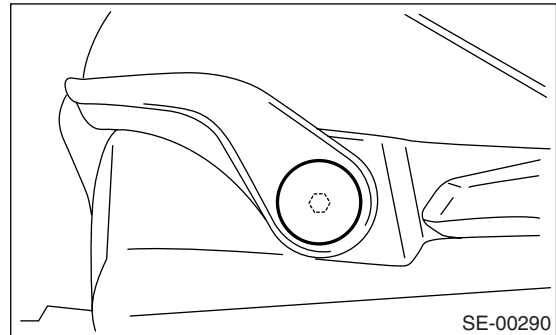
20) Open the zipper at bottom of headrest, and then remove the headrest cover from headrest.



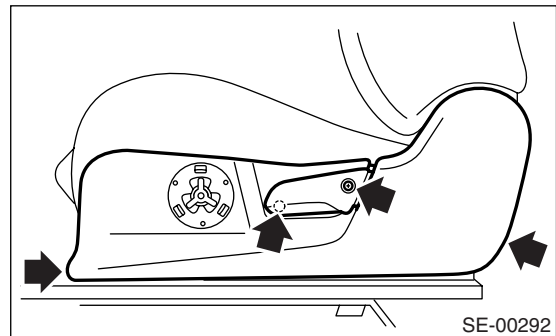
2. BUCKET TYPE SEAT

1) Remove the seat from vehicle. <Ref. to SE-6, REMOVAL, Front Seat.>

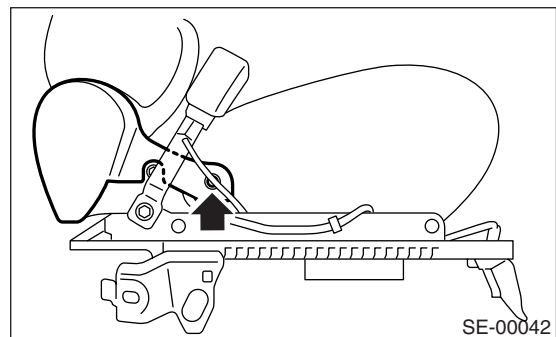
2) Remove the seat lifter cover using a flat tip screwdriver or equivalent, and then loosen inside bolt to remove seat lifter lever.



3) Remove the reclining lever and seat hinge outer cover.



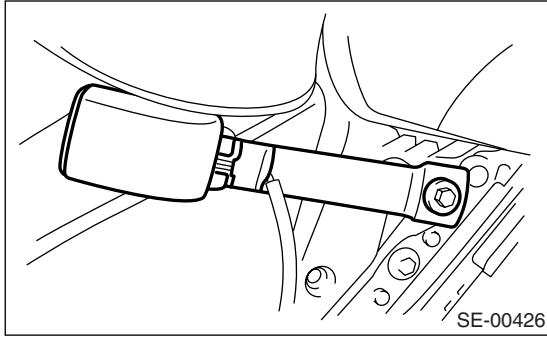
4) Remove the seat hinge inner cover.



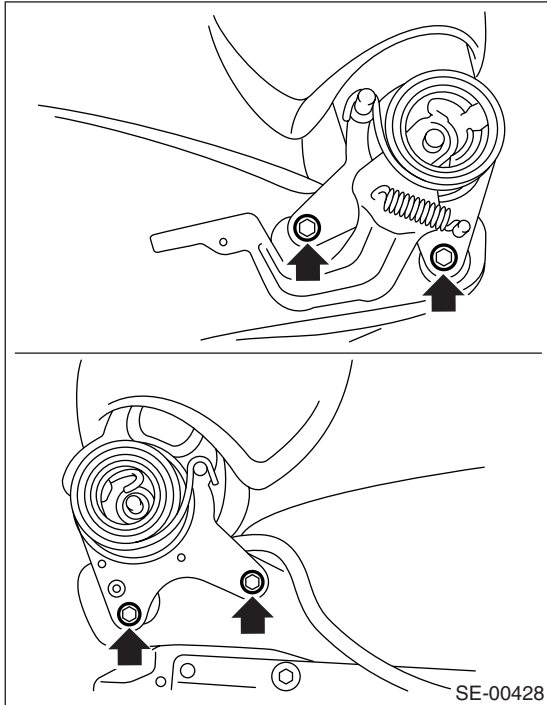
Front Seat

SEATS

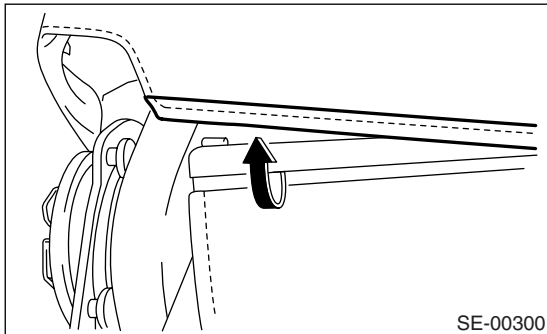
5) Remove the inner belt.



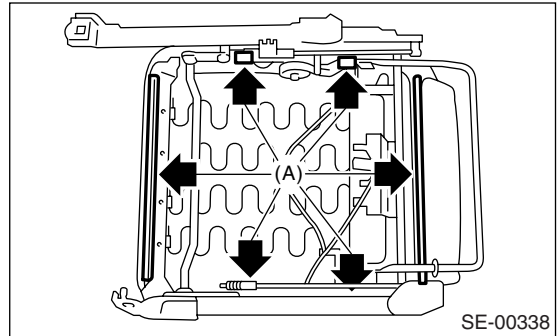
6) Remove two bolts from reclining hinge on each side.



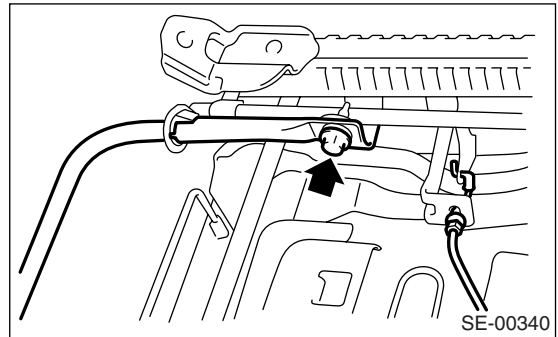
7) Remove the hook at the bottom-back side of backrest.



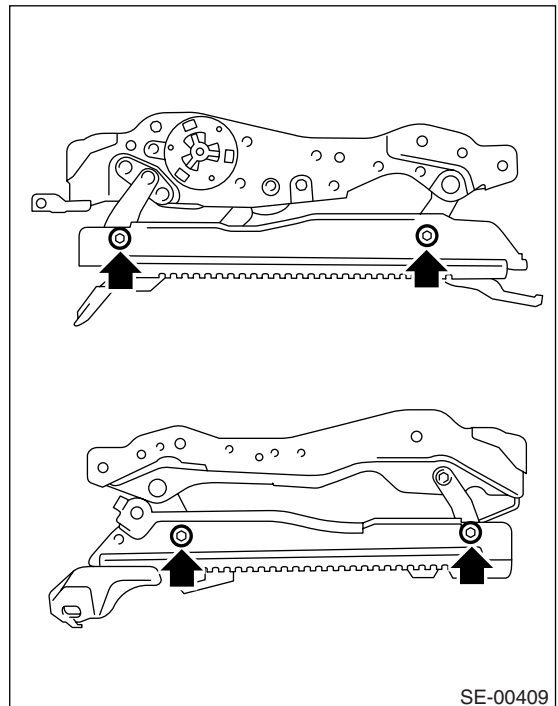
8) Remove the hooks (A), and then remove the seat cushion frame assembly.



9) Remove the bolt of sliding adjustment bar and connecting wire.



10) Remove the bolts, and then remove the slide rail.



D: ASSEMBLY

1. STANDARD SEAT

CAUTION:

Because it may cause the side airbag to activate incorrectly, observe the following steps to install the side airbag correctly.

- Be careful not to contaminate or damage the backrest cover.
- Always use new hog rings.
- Secure the hog ring using hog ring pliers.
- Install the hog ring to its original position, and not to twist or wrinkle the backrest cover.

Tightening torque:

Refer to “COMPONENT” of “General Description”. <Ref. to SE-2, FRONT SEAT, COMPONENT, General Description.>

Assemble in the reverse order of disassembly.

2. BUCKET TYPE SEAT

Assemble in the reverse order of disassembly.

Tightening torque:

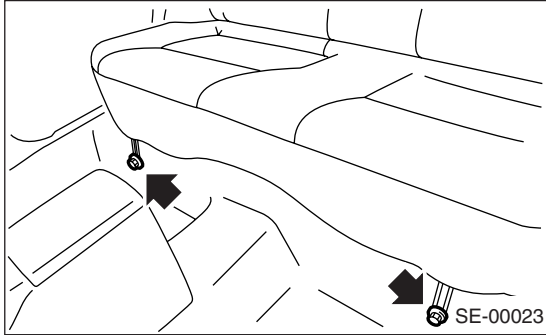
Refer to “COMPONENT” of “General Description”. <Ref. to SE-2, FRONT SEAT, COMPONENT, General Description.>

3. Rear Seat

A: REMOVAL

1. WAGON MODEL

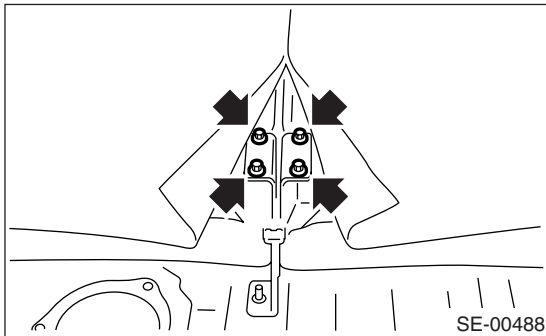
1) Remove the bolts, and then detach the rear seat cushion.



2) Remove the headrest.

3) Remove the luggage floor mat. <Ref. to EI-61, REMOVAL, Luggage Floor Mat.>

4) Turn over the mat to remove the bolts.

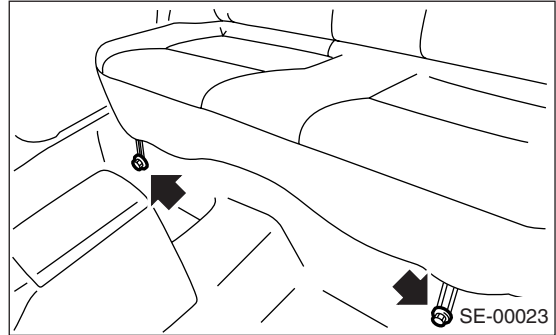


5) Remove the rear seat backrest.

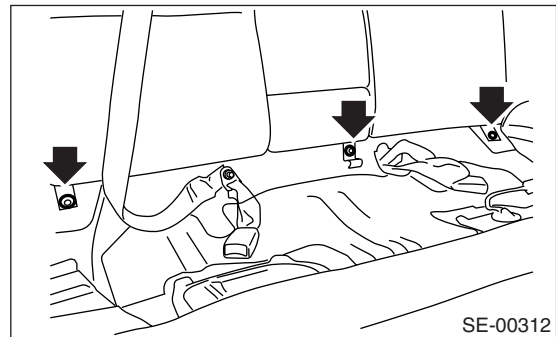


2. SEDAN MODEL

1) Remove the bolts, and then detach the rear seat cushion.



2) Remove the bolts securing lower portion of backrest and then open the center trunk through lid.



3) Lift the rear seat backrest and then remove it.

B: INSTALLATION

1. WAGON MODEL

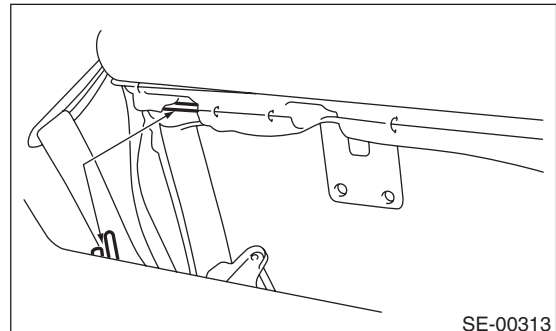
Install in the reverse order of removal.

Tightening torque:

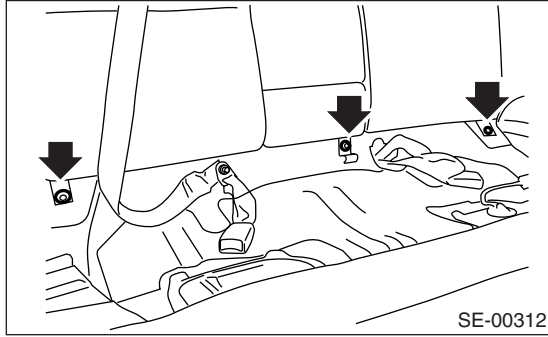
Refer to COMPONENT in General Description. <Ref. to SE-4, REAR SEAT (WAGON MODEL), COMPONENT, General Description.>

2. SEDAN MODEL

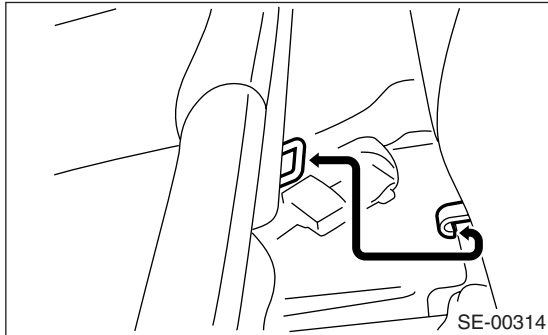
1) Hook and fasten the upper-back side of the rear seat backrest to the body hook.



2) Tighten the bolts.



3) Hook and fasten the seat cushion to the hook on the lower part of the rear seat backrest.



Tightening torque:

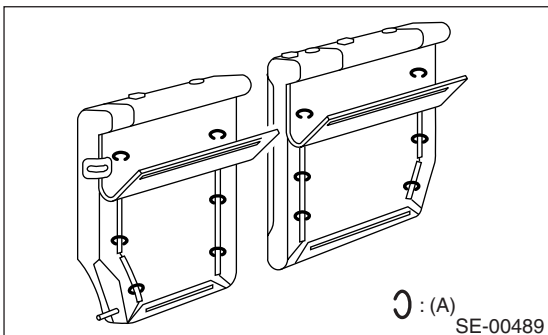
Refer to **COMPONENT in General Description**. <Ref. to **SE-4, REAR SEAT (WAGON MODEL), COMPONENT, General Description**.>

C: DISASSEMBLY

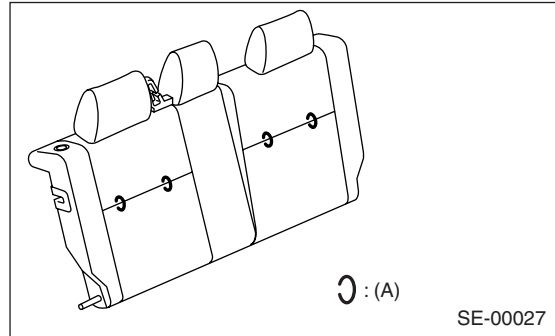
1. WAGON MODEL

1) Remove the rear seat. <Ref. to **SE-12, WAGON MODEL, REMOVAL, Rear Seat**.>

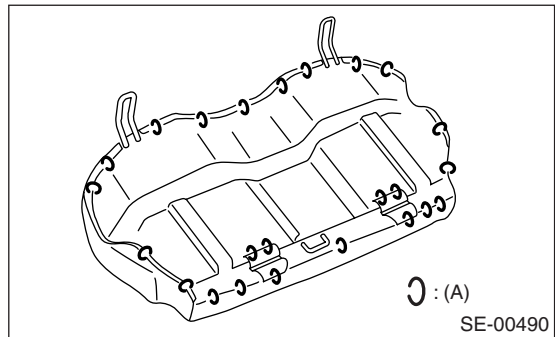
2) Remove the hog rings (A) behind of seat backrest.



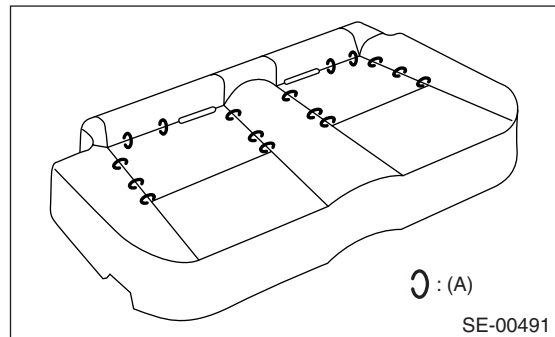
3) Remove the hog rings (A) on front side of cushion pad, and remove the cover.



4) Remove the hog rings (A) behind of seat cushion.



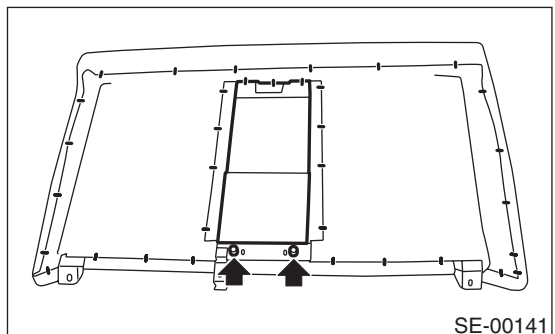
5) Remove the hog rings (A), and then remove the seat cushion cover.



2. SEDAN MODEL

1) Remove the rear seat. <Ref. to **SE-12, SEDAN MODEL, REMOVAL, Rear Seat**.>

2) Remove two nuts, and then remove the armrest assembly.

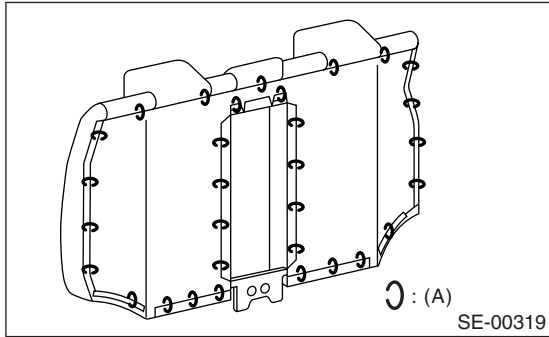


Rear Seat

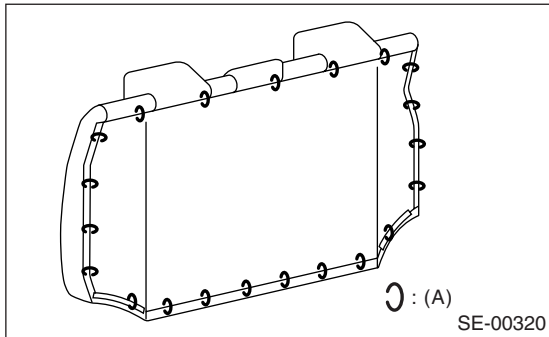
SEATS

3) Remove the hog rings (A) behind of seat backrest.

- Armrest through type model

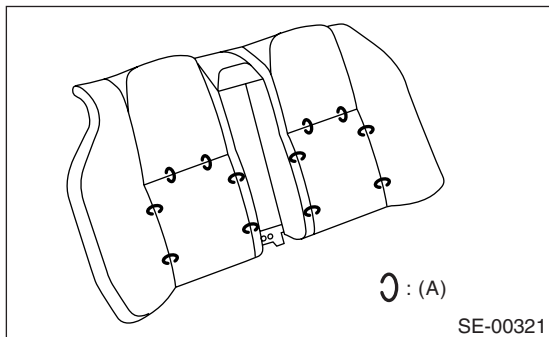


- Unified type model

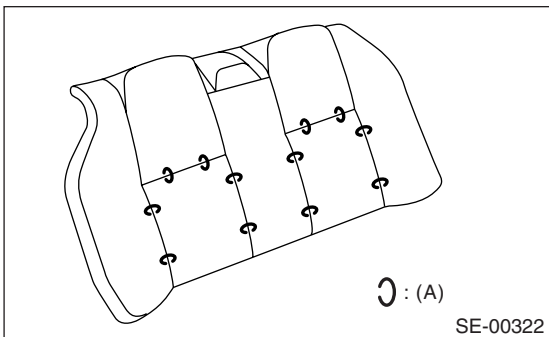


4) Remove the hog rings (A), and then remove the seat cover.

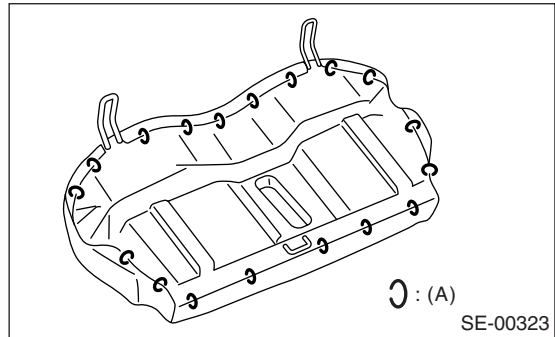
- Armrest through type model



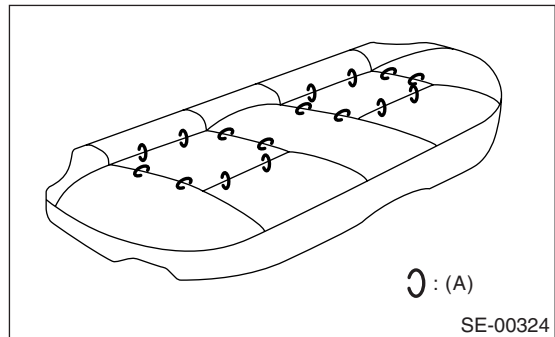
- Unified type model



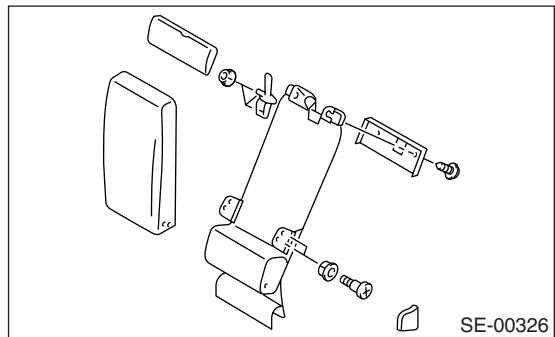
5) Remove the hog rings (A) behind of seat cushion.



6) Remove the hog rings (A), and then remove the seat cushion cover.



7) Remove the nuts and screws, and then disassemble the armrest assembly.



D: ASSEMBLY

1. WAGON MODEL

Assemble in the reverse order of disassembly.

NOTE:

- Do not contaminate or damage the cover.
- While installing the hog rings, prevent the seat from getting wrinkled.

2. SEDAN MODEL

Assemble in the reverse order of disassembly.

NOTE:

- Do not contaminate or damage the cover.
- While installing the hog rings, prevent the seat from getting wrinkled.

SECTION 7

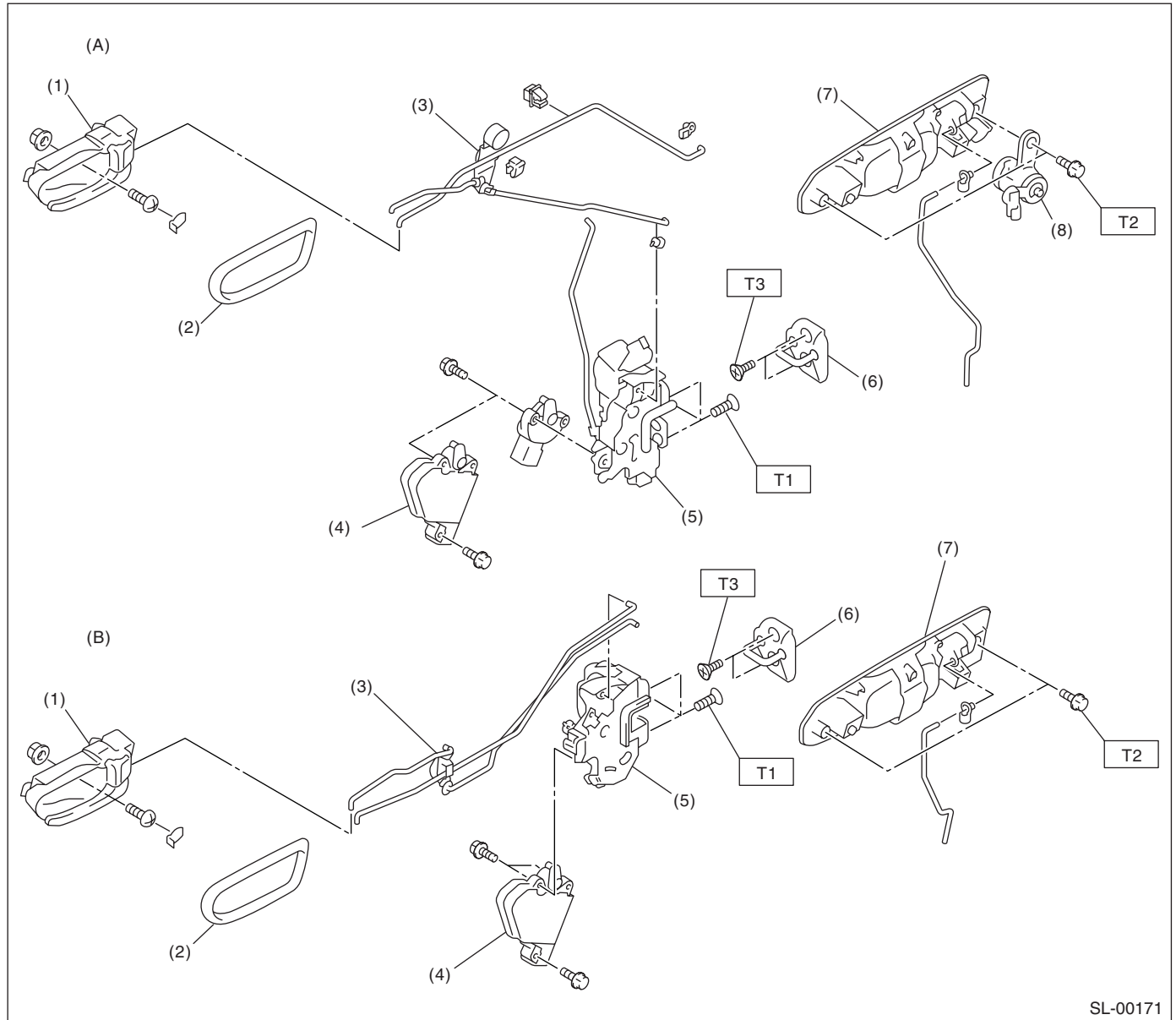
BODY

SECURITY AND LOCKS

1. General Description

A: COMPONENT

1. DOOR LOCK ASSEMBLY



SL-00171

(A) Front

(B) Rear

- (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

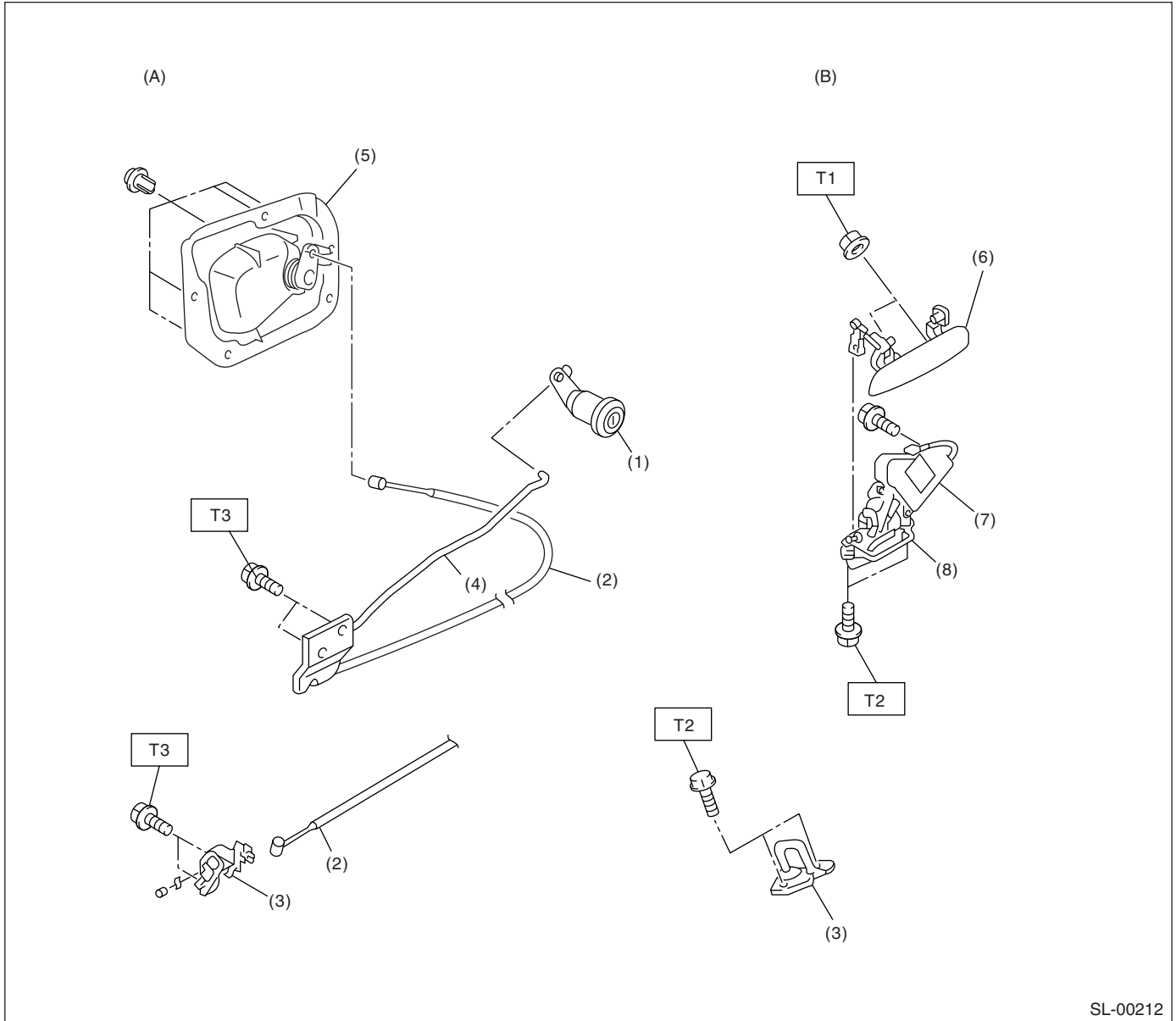
Tightening torque: N-m (kgf-m, ft-lb)

T1: 6.4 (0.65, 4.7)

T2: 7.4 (0.75, 5.5)

T3: 17.6 (1.8, 13.0)

2. TRUNK LID AND REAR GATE LOCK



SL-00212

(A) Trunk

(B) Rear gate

- (1) Key cylinder
- (2) Cable
- (3) Striker
- (4) Trunk lid lock ASSY

- (5) Trunk lid release handle
- (6) Rear gate outer handle
- (7) Rear gate actuator
- (8) Rear gate latch

Tightening torque: N·m (kgf·m, ft·lb)

T1: 4.5 (0.45, 3.3)

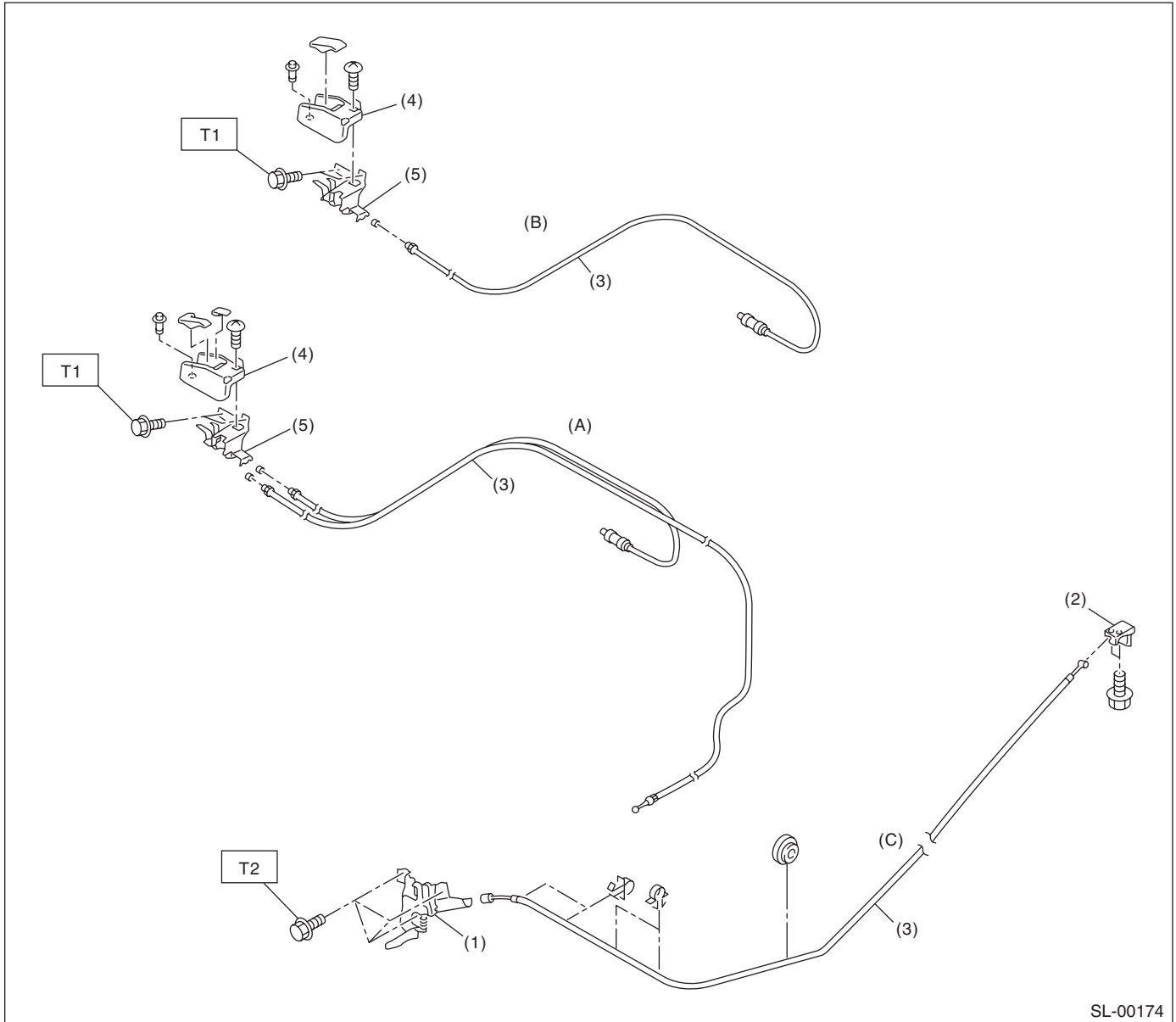
T2: 25(2.5, 18.4)

T3: 18 (1.84, 13.3)

General Description

SECURITY AND LOCKS

3. HOOD LOCK AND REMOTE OPENERS



(A) Sedan

(B) Wagon

(C) Hood

(1) Hood lock ASSY

(2) Lever ASSY

(3) Cable

(4) Cover

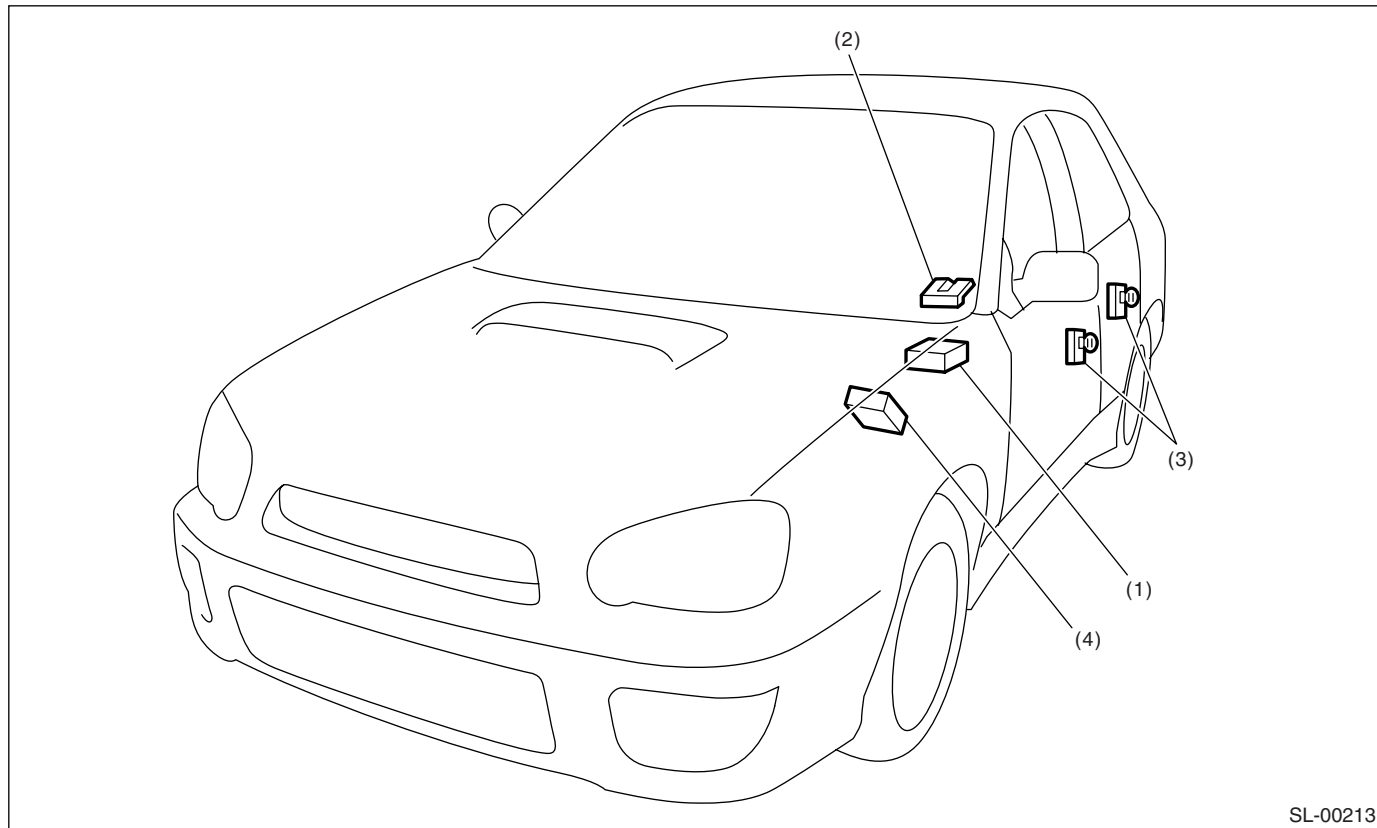
(5) Pull handle ASSY

Tightening torque: N·m (kgf-m, ft-lb)

T1: 6.5 (0.66, 4.7)

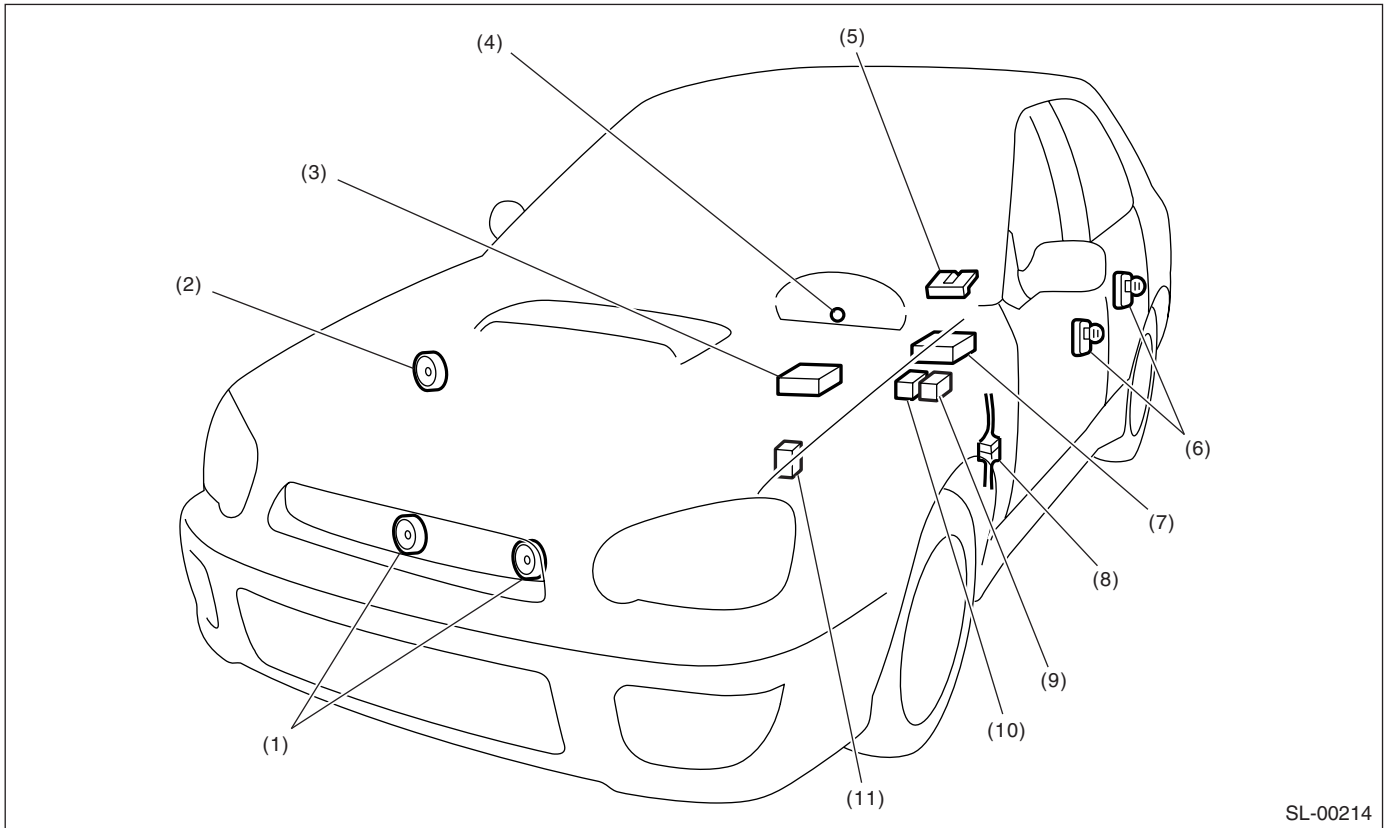
T2: 32 (3.3, 23.9)

4. KEYLESS ENTRY SYSTEM



(1) Keyless entry control unit	(3) Door switch	(4) Body integrated unit
(2) Rear gate latch (Wagon model)		

5. SECURITY SYSTEM



SL-00214

(1) Horn	(5) Trunk room light switch (Sedan model), rear gate latch switch (Wagon model)	(8) Passive arm connector
(2) Security horn	(6) Door switch	(9) Security horn relay
(3) Security control unit	(7) Keyless entry control unit	(10) Interrupt relay
(4) Security indicator light (in combination meter)		(11) Horn relay (in main fuse box)

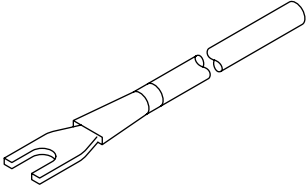
B: CAUTION

- Before disassembling or reassembling parts, always disconnect the ground cable from battery. When repairing audio, control module, etc. which are provided with memory functions, record the memory contents before disconnecting the ground cable from battery. Otherwise, these contents are cancelled upon disconnection.
- Reassemble parts in the reverse order of disassembly procedure unless otherwise indicated.
- Adjust parts to the specifications contained in this manual if so designated.
- Connect the connectors 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 the airbag system wiring harness when servicing the ignition key cylinder.

C: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-925580000	925580000	PULLER	Used for removing trim clip.

2. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance and voltage.
Drill	Used for replacing ignition key lock.

Door Lock Control System

SECURITY AND LOCKS

2. Door Lock Control System

A: WIRING DIAGRAM

1. DOOR LOCK CONTROL

<Ref. to WI-165, WIRING DIAGRAM, Keyless Entry 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-8, CHECK FUSE, INSPECTION, Door Lock Control System.>
	2. Check the power supply and ground circuit for the body integrated unit.	<Ref. to SL-8, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Door Lock Control System.>
	3. Check the door lock switch and the circuit.	<Ref. to SL-9, CHECK DOOR LOCK SWITCH AND CIRCUIT, INSPECTION, Door Lock Control System.>
	4. Check the door lock actuator and the circuit.	<Ref. to SL-10, CHECK DOOR LOCK ACTUATOR AND CIRCUIT, INSPECTION, Door Lock Control System.>
The door lock switch does not operate.	Check the door lock switch and the circuit.	<Ref. to SL-9, CHECK DOOR LOCK SWITCH AND CIRCUIT, INSPECTION, Door Lock Control System.>
A specific door lock actuator does not operate.	Check the door lock actuator and the circuit.	<Ref. to SL-10, 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).	In the fuse blown out?	Replace the fuse with a new one.	Check the power supply and ground circuit. <Ref. to SL-8, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Door Lock Control System.>

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Step	Check	Yes	No
1 CHECK POWER SUPPLY. 1) Disconnect the body integrated unit harness connector. 2) Measure the voltage between the harness connector terminal and chassis ground. Connector & terminal (B280) No. 1, 2 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	Check the harness for open circuits or shorts between the body integrated unit and the fuse.

Step	Check	Yes	No
2 CHECK GROUND CIRCUIT. Measure the resistance between the harness connector terminal and chassis ground. <i>Connector & terminal</i> <i>(B280) No. 4, 13 — Chassis ground:</i>	Is the resistance 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 body integrated unit harness connector. 2) Measure the resistance between the harness connector terminal and chassis ground when moving the door lock switch to LOCK. <i>Connector & terminal</i> <i>(B281) No. 12 — Chassis ground:</i>	Is the resistance less than 10 Ω ?	Go to step 2.	Go to step 3.
2 CHECK DOOR LOCK SWITCH CIRCUIT. Measure the resistance between the harness connector terminal and chassis ground when the door lock switch is moved to UNLOCK. <i>Connector & terminal</i> <i>(B281) No. 11 — Chassis ground:</i>	Is the resistance 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. <i>Connector & terminal</i> <i>Driver's side:</i> <i>(D7) No. 5 — No. 9</i> <i>Passenger's side:</i> <i>(D62) No. 4 — No. 5</i>	Is the resistance less than 10 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. <i>Connector & terminal</i> <i>Driver's side:</i> <i>(D7) No. 5 — No. 8</i> <i>Passenger's side:</i> <i>(D62) No. 2 — No. 5</i>	Is the resistance less than 1 Ω ?	Check the harness for open circuits or shorts between the body integrated unit and the door lock switch.	Replace the door lock switch.

Door Lock Control System

SECURITY AND LOCKS

5. CHECK DOOR LOCK ACTUATOR AND CIRCUIT

Step	Check	Yes	No
1 CHECK OUTPUT SIGNAL. Measure the voltage between the harness connector terminal of body integrated unit and chassis ground when moving the door lock switch to LOCK. Connector & terminal (B280) No. 6 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	Replace the body integrated unit.
2 CHECK OUTPUT SIGNAL. Measure the voltage between the harness connector terminal of body integrated unit and chassis ground when moving the door lock switch to UNLOCK. Connector & terminal (B280) No. 7 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 3.	Replace the body integrated unit.
3 CHECK DOOR LOCK ACTUATOR. Check the door lock actuator. Front door lock actuator: <Ref. to SL-33, Front Door Lock Actuator.> Rear door lock actuator: <Ref. to SL-37, Rear Door Lock Actuator.> Rear gate latch lock actuator: <Ref. to SL-40, Rear Gate Latch Lock Actuator.>	Is the door lock actuator OK?	Check the harness for open circuits or shorts between the body integrated unit and the door lock actuator.	Replace the door lock actuator.

3. Keyless Entry System

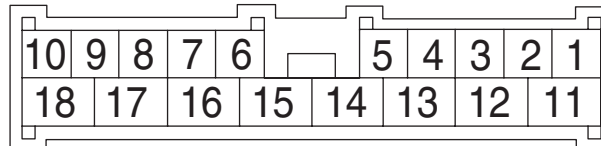
A: WIRING DIAGRAM

1. KEYLESS ENTRY

<Ref. to WI-165, WIRING DIAGRAM, Keyless Entry System.>

B: ELECTRICAL SPECIFICATION

1. KEYLESS ENTRY CONTROL UNIT



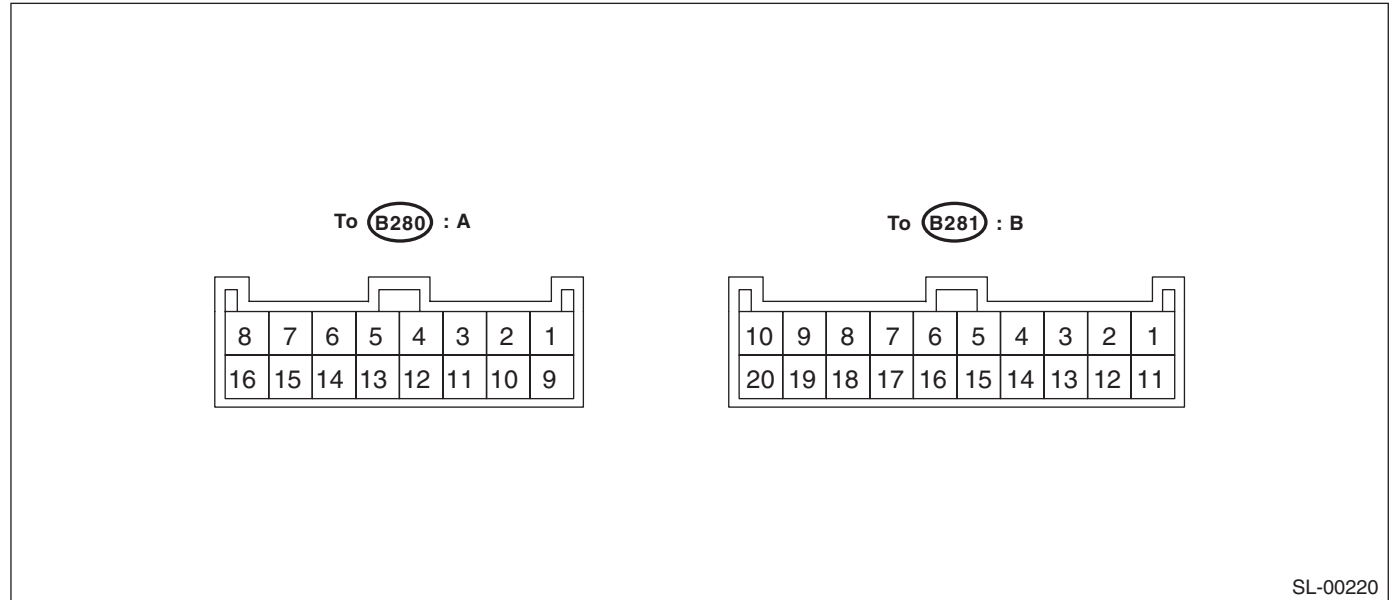
SL-00037

Content	Terminal No.	Measuring condition
Body integrated unit	1 (OUTPUT)	Battery voltage is present when pressing the keyless transmitter LOCK/ARM button.
Body integrated unit	2 (OUTPUT)	Battery voltage is present when pressing the keyless transmitter UNLOCK/DISARM button.
Security control unit	3	—
Security control unit	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.
Rear gate latch switch	9 (INPUT)	0 V is present when 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 keyless transmitter UNLOCK/DISARM or LOCK/ARM button.
Horn relay	13 (OUTPUT)	0 V is present when pressing the keyless transmitter LOCK/ARM button three times within 5 seconds.
Power supply (Backup)	14	Battery voltage is constantly present.
Power supply (Backup)	15	Battery voltage is constantly present.
Keyless buzzer	16 (OUTPUT)	0 V is present when pressing the keyless transmitter UNLOCK/DISARM or LOCK/ARM button.
Security control unit	17	—
Turn signal light (Left)	18 (OUTPUT)	Battery voltage is present when pressing the keyless transmitter UNLOCK/DISARM or LOCK/ARM button.

Keyless Entry System

SECURITY AND LOCKS

2. BODY INTEGRATED UNIT



Content	Terminal No.	Measuring condition
Door switch (Except driver's door)	B7 (INPUT)	0 V is present when any door is open (Except driver's door).
Door switch (Driver's door)	B8 (INPUT)	0 V is present when driver's door is open.
Door unlock switch	B11 (INPUT)	0 V is present when operating the door unlock switch.
Door lock switch	B12 (INPUT)	0 V is present when operating the door lock switch.
Keyless entry control unit	B13 (INPUT)	Battery voltage is present when pressing the keyless transmitter LOCK/ARM button.
Keyless entry control unit	B14 (INPUT)	Battery voltage is present when pressing the keyless transmitter UNLOCK/DISARM button.
Ignition switch (ON)	B19 (INPUT)	Battery voltage is present when ignition switch is turned to ON.
Key warning switch	B20 (INPUT)	Battery voltage is present when inserting the key into ignition switch.
Power supply	A1	Battery voltage is constantly present.
Power supply	A2	Battery voltage is constantly present.
Ground	A4	0 V is constantly present.
Room light	A5 (OUTPUT)	0 V is present when pressing the keyless transmitter UNLOCK/DISARM button.
Door and rear gate lock actuator	A6 (OUTPUT)	Battery voltage is present when pressing the keyless transmitter LOCK/ARM button.
Door and rear gate lock actuator (Except driver side)	A7 (OUTPUT)	Battery voltage is present when pressing the keyless transmitter UNLOCK/DISARM button two times.
Door lock actuator (Driver side)	A8 (OUTPUT)	Battery voltage is present when pressing the keyless transmitter UNLOCK/DISARM button one time.
Ground	A13	0 V is constantly present.

C: INSPECTION

1. SYMPTOM CHART

Symptom	Repair order	Reference
None of the functions of the keyless entry system operate.	1. Check the keyless transmitter battery and function.	<Ref. to SL-14, CHECK KEYLESS TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	2. Check the fuse.	<Ref. to SL-15, CHECK FUSE, INSPECTION, Keyless Entry System.>
	3. Check the keyless entry control unit power supply and ground circuit.	<Ref. to SL-15, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Keyless Entry System.>
	4. Replace the keyless entry control unit.	<Ref. to SL-55, Keyless Entry Control Unit.>
The keyless transmitter cannot be registered.	1. Check the keyless transmitter battery and function.	<Ref. to SL-14, CHECK KEYLESS TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	2. Check the ignition switch circuit.	<Ref. to SL-16, CHECK IGNITION SWITCH CIRCUIT, INSPECTION, Keyless Entry System.>
	3. Check the door switch.	<Ref. to SL-16, CHECK DOOR SWITCH, INSPECTION, Keyless Entry System.>
	4. Replace the keyless entry control unit.	<Ref. to SL-55, Keyless Entry Control Unit.>
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-8, INSPECTION, Door Lock Control System.>	1. Check the keyless transmitter battery and function.	<Ref. to SL-14, CHECK KEYLESS TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	2. Check the key warning switch.	<Ref. to SL-17, CHECK KEY WARNING SWITCH, INSPECTION, Keyless Entry System.>
	3. Check the door switch.	<Ref. to SL-16, CHECK DOOR SWITCH, INSPECTION, Keyless Entry System.>
	4. Check the output signal to body integrated unit.	<Ref. to SL-18, CHECK OUTPUT SIGNAL TO BODY INTEGRATED UNIT, INSPECTION, Keyless Entry System.>
	5. Replace the keyless entry control unit.	<Ref. to SL-55, Keyless Entry Control Unit.>
The panic alarm does not operate.	1. Check the keyless transmitter battery and function.	<Ref. to SL-14, CHECK KEYLESS TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
	2. Check the horn operation.	<Ref. to SL-19, CHECK HORN OPERATION, INSPECTION, Keyless Entry System.>
	3. Replace the keyless entry control unit.	<Ref. to SL-55, Keyless Entry Control Unit.>

Keyless Entry System

SECURITY AND LOCKS

Symptom	Repair order		Reference
The buzzer chirp and hazard light do not operate.	1. Check the buzzer chirp function.		<Ref. to SL-15, CHECK BUZZER CHIRP SETTING, INSPECTION, Keyless Entry System.>
	2. Check the buzzer and hazard light operation.	Buzzer	<Ref. to SL-19, CHECK KEYLESS BUZZER, INSPECTION, Keyless Entry System.>
		Hazard light	<Ref. to SL-19, CHECK HAZARD LIGHT OPERATION, INSPECTION, Keyless Entry System.>
	3. Replace the keyless entry control unit.		<Ref. to SL-55, Keyless Entry Control Unit.>
The room light operation do not activate.	1. Check the room light operation.		<Ref. to SL-18, CHECK ROOM LIGHT OPERATION, INSPECTION, Keyless Entry System.>
	2. Replace the keyless entry control unit.		<Ref. to SL-55, Keyless Entry Control Unit.>
The door warning does not operate.	1. Check the door switch.		<Ref. to SL-16, CHECK DOOR SWITCH, INSPECTION, Keyless Entry System.>
	2. Check the buzzer operation.		<Ref. to SL-19, CHECK KEYLESS BUZZER, INSPECTION, Keyless Entry System.>
	3. Replace the keyless entry control unit.		<Ref. to SL-55, Keyless Entry Control Unit.>

2. CHECK KEYLESS TRANSMITTER BATTERY AND FUNCTION

Step	Check	Yes	No
1 CHECK KEYLESS TRANSMITTER BATTERY. 1) Remove the battery from the keyless transmitter. <Ref. to SL-57, REMOVAL, Keyless Transmitter.> 2) Check the battery voltage. <Ref. to SL-57, INSPECTION, Keyless Transmitter.>	Is the voltage more than 2 V?	Go to step 2.	Replace the keyless transmitter battery.
2 CHECK LED OF KEYLESS TRANSMITTER. 1) Press the LOCK/ARM or UNLOCK/DISARM button six times to synchronize with the keyless entry control unit. 2) Press the LOCK/ARM button.	Does the LED blink one time?	Go to step 3.	Replace the keyless transmitter. <Ref. to SL-57, REPLACEMENT, Keyless Transmitter.>
3 CHECK LED OF KEYLESS TRANSMITTER. Keep the LOCK/ARM button pressed.	Does the LED blink one time, and then turn on?	Go to step 4.	Replace the keyless transmitter. <Ref. to SL-57, REPLACEMENT, Keyless Transmitter.>
4 CHECK LED OF KEYLESS TRANSMITTER. Press the UNLOCK/DISARM button.	Does the LED blink one time?	Go to step 5.	Replace the keyless transmitter. <Ref. to SL-57, REPLACEMENT, Keyless Transmitter.>

Step	Check	Yes	No
5 CHECK LED OF KEYLESS TRANSMITTER. Keep the UNLOCK/DISARM button pressed.	Does the LED blink two times?	Keyless transmitter is OK.	Replace the keyless transmitter. <Ref. to SL-57, 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 keyless transmitter function. <Ref. to SL-14, CHECK KEYLESS 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?	Replace the fuse with a new one.	Check the power supply and ground circuit. <Ref. to SL-15, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Keyless Entry System.>

5. CHECK POWER SUPPLY AND GROUND CIRCUIT

Step	Check	Yes	No
1 CHECK POWER SUPPLY. 1) Disconnect the keyless entry control unit 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 voltage more than 10 V?	Go to step 2.	Check the harness for open circuits and shorts between the keyless entry control unit 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 resistance less than 10 Ω ?	The power supply and ground circuit are OK.	Repair the harness.

Keyless Entry System

SECURITY AND LOCKS

6. CHECK IGNITION SWITCH CIRCUIT

Step	Check	Yes	No
1 CHECK IGNITION SWITCH SIGNAL. 1) Disconnect the keyless entry control unit 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 voltage more than 10 V?	Ignition switch circuit is OK.	Check the harness for open circuits and shorts between the keyless entry control unit and ignition relay.

7. CHECK DOOR SWITCH

Step	Check	Yes	No
1 CHECK DOOR SWITCH CIRCUIT. Measure the voltage between the keyless entry control unit harness connector terminal and chassis ground. Connector & terminal Front and rear side door: (B176) No. 10 (+) — Chassis ground (-): Rear gate: (B176) No. 9 (+) — Chassis ground (-):	Is the voltage 0 V when each door or rear gate is opened?	Go to step 2.	Go to step 3.
2 CHECK DOOR SWITCH CIRCUIT. Measure the voltage between the keyless entry control unit harness connector terminal and chassis ground. Connector & terminal Front and rear side door: (B176) No. 10 (+) — Chassis ground (-): Rear gate: (B176) No. 9 (+) — Chassis ground (-):	Is the voltage more than 10 V when each door or rear gate is closed?	The door switch is OK.	Go to step 3.
3 CHECK DOOR SWITCH. 1) Disconnect the door switch harness connector. 2) Measure the resistance between the door switch terminals. Terminals Door switch No. 1 — No. 3: Rear gate latch switch No. 1 — No. 2:	Is the resistance more than 1 M Ω 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. Terminals Door switch No. 1 — No. 3: Rear gate latch switch No. 1 — No. 2:	Is the resistance less than 1 Ω when the door switch is released?	Check the harness for open circuits and shorts between the body integrated unit 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?	Replace the fuse with a new one.	Go to step 2.
2 CHECK KEY WARNING SWITCH CIRCUIT. 1) Disconnect the keyless entry control unit 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 voltage 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 voltage 0 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. Terminals No. 1 — No. 2:	Is the resistance less than 1 Ω ?	Go to step 5.	Replace the key warning switch.
5 CHECK KEY WARNING SWITCH. 1) Remove the key from the ignition switch. 2) Measure the resistance between the key warning switch terminals. Terminals No. 1 — No. 2:	Is the resistance more than 1 M Ω ?	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 unit and key warning switch	Replace the key warning switch.

Keyless Entry System

SECURITY AND LOCKS

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 BODY INTEGRATED UNIT. 1) Disconnect the body integrated unit harness connector and room light harness connector. 2) Measure the resistance between the body integrated unit harness connector terminal and the room light harness connector terminal. Connector & terminal (B280) No. 5 — (R52) No. 2:	Is the resistance less than 10 Ω ?	The room light operation circuit is OK.	Check the harness for open circuits and/or shorts between the body integrated unit and room light.

10.CHECK OUTPUT SIGNAL TO BODY INTEGRATED UNIT

Step	Check	Yes	No
1 CHECK OUTPUT SIGNAL. Measure the voltage between the keyless entry control unit harness connector terminal and chassis ground when UNLOCK/DISARM button of keyless transmitter is pressed. Connector & terminal (B176) No. 2 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 2.	Replace the keyless entry control unit.
2 CHECK OUTPUT SIGNAL. Measure the voltage between the keyless entry control unit harness connector terminal and chassis ground when LOCK/ARM button of keyless transmitter is pressed. Connector & terminal (B176) No. 1 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 3.	Replace the keyless entry control unit.
3 CHECK HARNESS BETWEEN KEYLESS ENTRY CONTROL UNIT AND BODY INTEGRATED UNIT. 1) Disconnect the keyless entry control unit harness connector and body integrated unit harness connector. 2) Measure the resistance between the keyless entry control unit harness connector terminal and body integrated unit harness connector terminal. Connector & terminal (B176) No. 2 — (B281) No. 14: (B176) No. 1 — (B281) No. 13:	Is the resistance less than 10 Ω ?	Replace the body integrated unit.	Check the harness for open circuit or shorts between the keyless entry control unit and body integrated unit.

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 unit 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 unit.	Check the harness for open circuits and/or shorts between the keyless entry control unit 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. 3) Measure the voltage between keyless entry control unit harness connector terminal and chassis ground when LOCK/ARM button of keyless transmitter is pressed. Connector & terminal (B176) No. 12, 18 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Check the harness for open or short between keyless entry control unit and turn signal lights.	Replace the keyless entry control unit.

13.CHECK KEYLESS BUZZER

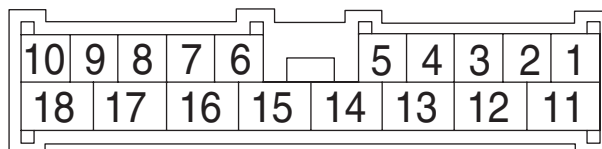
Step	Check	Yes	No
1 CHECK FUSE. Remove and check the fuse No. 2 (located in main fuse box).	Is the fuse blown out?	Replace the fuse with a new one.	Go to step 2.
2 CHECK KEYLESS POWER SUPPLY. 1) Disconnect the connector from keyless buzzer. 2) Measure the voltage between keyless buzzer harness connector and chassis ground. Connector & terminal (F102) No. 2 (+) — Chassis ground (-):	Is the voltage 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 UNIT. 1) Disconnect the connector from keyless entry control unit. 2) Measure the resistance between keyless buzzer and keyless entry control unit. Connector & terminal (F102) No. 1 — (B176) No. 16:	Is the resistance more than 10 Ω ?	Go to step 4.	Repair the harness between keyless buzzer and keyless entry control unit.
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 unit.	Replace the keyless buzzer.

4. Security System

A: WIRING DIAGRAM

<Ref. to WI-168, WIRING DIAGRAM, Security System.>

B: ELECTRICAL SPECIFICATION



SL-00037

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	—
Trunk room light switch (Sedan model)	4 (INPUT)	0 V is present when trunk lid or rear gate is open.
Rear gate latch switch (Wagon model)		
Door switch	5 (INPUT)	0 V is present when any door is open.
Empty	6	—
Keyless entry control unit	7	—
Keyless entry control unit	8	—
Security indicator light	9 (OUTPUT)	0 V is present when activating the alarm operation.
Keyless entry control unit	10	—
Power supply (Backup)	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

• With immobilizer model

	Step	Check	Yes	No
1	CHECK VALET MODE SETTING. Check the valet mode is set. (Security indicator light blinks two times per a second when the valet mode is set.)	Does the security indicator light blink two times per a second?	Go to step 2.	Go to step 3.
2	RELEASE VALET MODE SETTING. Release the valet mode setting. 1) Open the driver's door. 2) Push the UNLOCK/DISARM button on keyless transmitter for two seconds or more. 3) Check for the status of blinking for security indicator light.	Does the security indicator light blink one time per three seconds?	Go to step 3.	Go to symptom 1. <Ref. to SL-24, 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 keyless transmitter.	Can the security system be set?	Go to step 4.	Go to symptom 1. <Ref. to SL-24, SYMPTOM CHART, INSPECTION, Security System.>
4	CHECK HAZARD LIGHT AND SECURITY INDICATOR LIGHT BLINKING. Check the status of blinking for both hazard light and security indicator light blinking.	Does the hazard light blink, and the security indicator light blink twice per two seconds?	Go to step 5.	Go to symptom 2. <Ref. to SL-24, 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, trunk lid or rear gate.	Does the security alarm operate when any door, trunk lid or rear gate is opened?	Go to step 6.	Go to symptom 3. <Ref. to SL-24, 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-24, SYMPTOM CHART, INSPECTION, Security System.>
7	CHECK SECURITY ALARM CANCEL OPERATION. 1) Press the UNLOCK/DISARM button of keyless transmitter to stop all the security alarm. 2) Check for the status of blinking for security indicator light, and starter motor operation.	Does the security indicator light blink once per three seconds? And is the starter motor activated?	Go to step 8.	Go to symptom 5. <Ref. to SL-24, SYMPTOM CHART, INSPECTION, Security System.>
8	CHECK BATTERY DISCONNECT PROTECTION. Check the battery disconnect protection. <Ref. to SL-24, CHECK BATTERY DISCONNECT PROTECTION, INSPECTION, Security System.>	Is the battery disconnect protection OK?	Go to step 9.	Replace the security control unit.

Security System

SECURITY AND LOCKS

Step	Check	Yes	No
9 PERFORM IMPACT SENSITIVITY TEST. Perform the impact sensitivity test. <Ref. to SL-50, IMPACT SENSITIVITY TEST, INSPECTION, Security Control Unit.>	Is the impact sensitivity properly set?	Press the UNLOCK/DIS-ARM button of keyless transmitter, and finish the diagnosis.	Adjust the impact sensitivity. <Ref. to SL-50, IMPACT SENSITIVITY, ADJUSTMENT, Security Control Unit.>

• Without immobilizer model

Step	Check	Yes	No
1 CHECK VALET MODE SETTING. Check the valet mode is set. (Security indicator light blinks two times per a second when the valet mode is set.)	Does the security indicator light blink two times per a second?	Go to step 2.	Go to step 3.
2 RELEASE VALET MODE SETTING. Release the valet mode setting. 1) Open the driver's door. 2) Push the UNLOCK/DISARM button on keyless transmitter for two seconds or more. 3) Check for the status of blinking for security indicator light.	Does the security indicator light go off?	Go to step 3.	Go to symptom 1. <Ref. to SL-24, 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 keyless transmitter.	Can the security system be set?	Go to step 4.	Go to symptom 1. <Ref. to SL-24, SYMPTOM CHART, INSPECTION, Security System.>
4 CHECK HAZARD LIGHT AND SECURITY INDICATOR LIGHT BLINKING. Check the status of blinking for both hazard light and security indicator light blinking.	Does the hazard light blink, and the security indicator light blink once per two seconds?	Go to step 5.	Go to symptom 2. <Ref. to SL-24, 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, trunk lid or rear gate.	Does the security alarm operate when any door, trunk lid or rear gate is opened?	Go to step 6.	Go to symptom 3. <Ref. to SL-24, 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-24, SYMPTOM CHART, INSPECTION, Security System.>
7 CHECK SECURITY ALARM CANCEL OPERATION. 1) Press the UNLOCK/DISARM button of keyless transmitter to stop all the security alarm. 2) Check for the status of blinking for security indicator light, and starter motor operation.	Does the security indicator light go off? And is the starter motor activated?	Go to step 8.	Go to symptom 5. <Ref. to SL-24, SYMPTOM CHART, INSPECTION, Security System.>
8 CHECK BATTERY DISCONNECT PROTECTION. Check the battery disconnect protection. <Ref. to SL-24, CHECK BATTERY DISCONNECT PROTECTION, INSPECTION, Security System.>	Is the battery disconnect protection OK?	Go to step 9.	Replace the security control unit.
9 PERFORM IMPACT SENSITIVITY TEST. Perform the impact sensitivity test. <Ref. to SL-50, IMPACT SENSITIVITY TEST, INSPECTION, Security Control Unit.>	Is the impact sensitivity properly set?	Press the UNLOCK/DISARM button of keyless transmitter, and finish the diagnosis.	Adjust the impact sensitivity. <Ref. to SL-50, IMPACT SENSITIVITY, ADJUSTMENT, Security Control Unit.>

2. CHECK BATTERY DISCONNECT PROTECTION

- 1) Remove the key from the ignition switch.
- 2) Close all the doors, trunk lid and rear gate.
- 3) Open the front hood.
- 4) Press the LOCK/ARM button of the keyless 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 unit.

3. SYMPTOM CHART

Symptom		Repair order	Reference
1	Security system cannot be set.	1. Check the keyless transmitter function.	<Ref. to SL-14, CHECK KEYLESS TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
		2. Check the fuse.	<Ref. to SL-25, CHECK FUSE, INSPECTION, Security System.>
		3. Check the security control unit power supply and ground circuit.	<Ref. to SL-25, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Security System.>
		4. Check the door switch.	<Ref. to SL-25, CHECK DOOR SWITCH, INSPECTION, Security System.>
		5. Replace the security control unit.	<Ref. to SL-50, Security Control Unit.>
2	Security indicator light or hazard light does not blink.	Security indicator light	<Ref. to SL-26, CHECK SECURITY INDICATOR LIGHT CIRCUIT, INSPECTION, Security System.>
		Hazard light	<Ref. to SL-28, CHECK HAZARD LIGHT OPERATION, INSPECTION, Security System.>
3	Security system does not alarm when one of the door, trunk lid or rear gate is opened.	Check the door switch.	<Ref. to SL-25, CHECK DOOR SWITCH, INSPECTION, Security System.>
4	Security alarm does not activate.	All functions	<Ref. to SL-25, CHECK DOOR SWITCH, INSPECTION, Security System.>
		Security indicator light	<Ref. to SL-26, CHECK SECURITY INDICATOR LIGHT CIRCUIT, INSPECTION, Security System.>
		Security horn	<Ref. to SL-27, CHECK SECURITY HORN, INSPECTION, Security System.>
		Hazard light	<Ref. to SL-28, CHECK HAZARD LIGHT OPERATION, INSPECTION, Security System.>
		Starter motor deactivation	<Ref. to SL-28, CHECK INTERRUPT RELAY CIRCUIT, INSPECTION, Security System.>
5	Security system cannot be canceled.	Keyless transmitter	<Ref. to SL-14, CHECK KEYLESS TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
		Ignition switch	<Ref. to SL-29, CHECK IGNITION SWITCH CIRCUIT, INSPECTION, Security System.>

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?	Replace the fuse with a new one.	Check the power supply and ground circuit. <Ref. to SL-25, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Security System.>

5. CHECK POWER SUPPLY AND GROUND CIRCUIT

Step	Check	Yes	No
1 CHECK POWER SUPPLY. 1) Disconnect the security control unit harness connector. 2) Measure the voltage between the harness connector terminal and chassis ground. <i>Connector & terminal</i> <i>(B93) No. 13 (+) — Chassis ground (-):</i>	Is the voltage more than 10 V?	Go to step 2.	Check the harness for open circuits and shorts between the security control unit and fuse.
2 CHECK GROUND CIRCUIT. Measure the resistance between the harness connector terminal and chassis ground. <i>Connector & terminal</i> <i>(B93) No. 14 — Chassis ground:</i>	Is the resistance less than 10 Ω ?	The power supply and ground circuit are OK.	Repair the harness.

6. CHECK DOOR SWITCH

Step	Check	Yes	No
1 CHECK DOOR SWITCH CIRCUIT. Measure the voltage between the security control unit harness connector terminal and chassis ground when any door or rear gate is opened. <i>Connector & terminal</i> <i>Front and rear door:</i> <i>(B93) No. 5 (+) — Chassis ground (-):</i> <i>Trunk lid or rear gate:</i> <i>(B93) No. 4 (+) — Chassis ground (-):</i>	Is the voltage 0 V?	Go to step 2.	Go to step 3.
2 CHECK DOOR SWITCH CIRCUIT. Measure the voltage between the security control unit harness connector terminal and chassis ground when all doors and rear gate are closed. <i>Connector & terminal</i> <i>Front and rear door:</i> <i>(B93) No. 5 (+) — Chassis ground (-):</i> <i>Trunk lid or rear gate:</i> <i>(B93) No. 4 (+) — Chassis ground (-):</i>	Is the voltage more than 10 V?	The door switch is OK.	Go to step 3.

Security System

SECURITY AND LOCKS

Step	Check	Yes	No
3 CHECK DOOR SWITCH. 1) Disconnect the door switch harness connector. 2) Measure the resistance between the door switch terminals. Terminals Door switch No. 1 — No. 3: Rear gate latch switch (Wagon model) No. 1 — No. 2: Trunk room light switch (Sedan model) No. 1 — No. 2:	Is the resistance more than 1 M Ω 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. Terminals Door switch No. 1 — No. 3: Rear gate latch switch (Wagon model) No. 1 — No. 2: Trunk room light switch (Sedan model) No. 1 — No. 2:	Is the resistance less than 1 Ω when door switch is released?	Check the harness for open circuits and shorts between the security control unit 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 unit 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 unit.	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 (i11) No. 3 (+) — Chassis ground (-):	Is the voltage 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 unit harness connector terminal. Connector & terminal (i10) No. 6 — (B93) No. 9:	Is the resistance 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 unit.

8. CHECK SECURITY HORN

Step	Check	Yes	No
1 CHECK SECURITY HORN RELAY. Remove and check the security horn relay. <Ref. to SL-53, 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 voltage 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 voltage 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 UNIT. 1) Disconnect the security control unit harness connector. 2) Measure the resistance between the security horn relay harness connector terminal and security control unit harness connector terminal. Connector & terminal (B243) No. 3 — (B93) No. 18:	Is the resistance less than 10 Ω ?	Go to step 5.	Check the harness for open circuits and shorts between the security horn relay and security control unit.
5 CHECK HARNESS BETWEEN SECURITY HORN RELAY AND SECURITY CONTROL UNIT. Measure the resistance between the security horn relay harness connector terminal and security control unit harness connector terminal. Connector & terminal (B243) No. 4 — (B93) No. 16:	Is the resistance less than 10 Ω ?	Go to step 6.	Check the harness for open circuits and shorts between the security horn relay and security control unit.
6 CHECK HARNESS BETWEEN SECURITY CONTROL UNIT AND SECURITY HORN. 1) Disconnect the security horn harness connector. 2) Measure the resistance between the security control unit harness connector terminal and security horn harness connector terminal. Connector & terminal (B93) No. 17 — (B204) No. 1:	Is the resistance less than 10 Ω ?	Go to step 7.	Check the harness for open circuits and shorts between the security control unit and security horn.
7 CHECK SECURITY HORN. Remove and check the security horn. <Ref. to SL-52, Security Horn.>	Is the security horn OK?	Replace the security control unit.	Replace the security horn.

Security System

SECURITY AND LOCKS

9. CHECK HAZARD LIGHT OPERATION

Step	Check	Yes	No
1 CHECK SECURITY CONTROL UNIT 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 keyless 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 unit harness connector terminal and chassis ground when any door is open. Connector & terminal (B93) No. 10 (+) — Chassis ground (-):	Is the voltage 1 — 4 V?	Go to step 2.	Replace the security control unit.
2 CHECK HARNESS BETWEEN SECURITY CONTROL UNIT AND KEYLESS ENTRY CONTROL UNIT. 1) Disconnect the security control unit harness connector and keyless entry control unit harness connector. 2) Measure the resistance between the security control unit harness connector terminal and keyless entry control unit harness connector terminal. Connector & terminal (B93) No. 10 — (B176) No. 3:	Is the resistance less than 10 Ω ?	Check the hazard light output of keyless entry control unit. <Ref. to SL-19, CHECK HAZARD LIGHT OPERATION, INSPECTION, Keyless Entry System.>	Check the harness for open circuit and shorts between the security control unit and keyless entry control unit.

10.CHECK INTERRUPT RELAY CIRCUIT

Step	Check	Yes	No
1 CHECK INTERRUPT RELAY. Remove and check the interrupt relay. <Ref. to SL-54, 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 voltage 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 UNIT. 1) Turn the ignition switch to OFF. 2) Disconnect the security control unit harness connector. 3) Measure the resistance between the interrupt relay harness connector terminal and security control unit harness connector terminal. Connector & terminal (B59) No. 4 — (B93) No. 15:	Is the resistance less than 10 Ω ?	Replace the security control unit.	Check the harness for open circuits and shorts between the interrupt relay and security control unit.

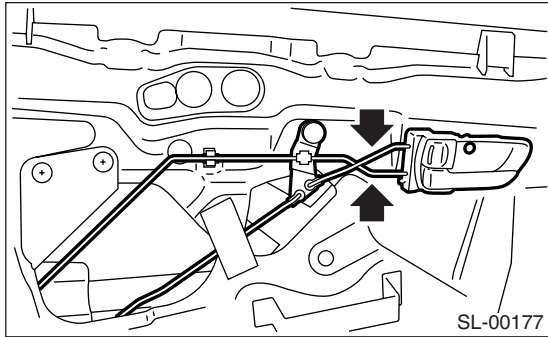
11.CHECK IGNITION SWITCH CIRCUIT

Step	Check	Yes	No
1 CHECK IGNITION SWITCH SIGNAL. 1) Disconnect the security control unit 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 voltage more than 10 V?	Ignition switch circuit is OK.	Check the harness for open circuits and shorts between the security control unit and ignition switch.

5. Front Inner Remote

A: REMOVAL

- 1) Remove the door trim. <Ref. to EI-42, REMOVAL, Front Door Trim.>
- 2) Remove the sealing cover. <Ref. to EB-17, REMOVAL, Front Sealing Cover.>
- 3) Remove a screw and two rod joints.
- 4) Remove the front inner remote.



B: INSTALLATION

Install in the reverse order of removal.

NOTE:

Make sure the inner remote works properly after installation.

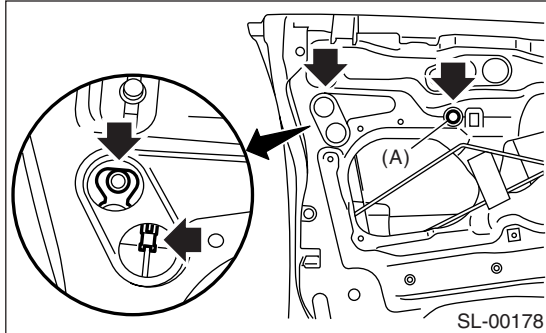
C: INSPECTION

- 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 door trim. <Ref. to EI-42, REMOVAL, Front Door Trim.>
- 2) Remove the sealing cover. <Ref. to EB-17, REMOVAL, Front Sealing Cover.>
- 3) Remove the bolt (A).
- 4) Move the front door glass downward. Remove the bolt and rod clamp.
- 5) Remove the front outer handle.



CAUTION:

Do not use excessive force to remove the handle from 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.

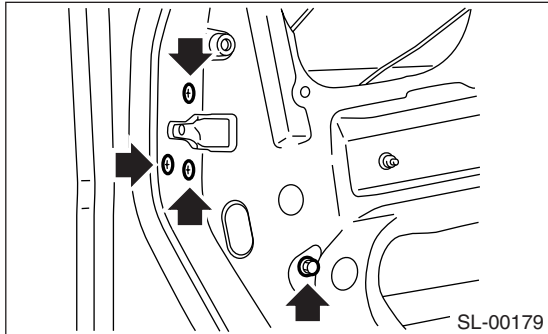
C: INSPECTION

- 1) Make sure the rod is not deformed.
- 2) Make sure the lever and rod work smoothly.

7. Front Door Latch and Door Lock Actuator Assembly

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the front door trim. <Ref. to EI-42, REMOVAL, Front Door Trim.>
- 3) Remove the sealing cover. <Ref. to EB-17, REMOVAL, Front Sealing Cover.>
- 4) Remove the front inner remote. <Ref. to SL-30, REMOVAL, Front Inner Remote.>
- 5) Remove three screws and a bolt.



- 6) Remove the front door latch assembly, and then disconnect the connector.

B: INSTALLATION

Install in the reverse order of removal.

NOTE:

Make sure the lock works properly after installation.

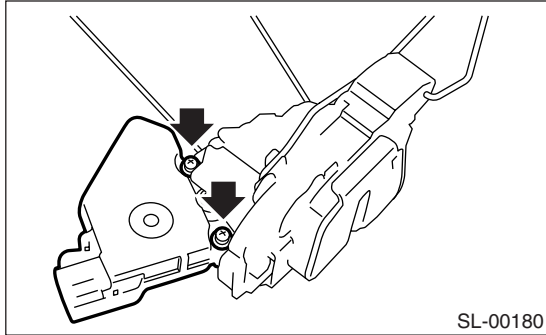
C: INSPECTION

- 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-32, REMOVAL, Front Door Latch and Door Lock Actuator Assembly.>
- 2) Remove the two screws to remove front door lock actuator.



B: INSTALLATION

Install in the reverse order of removal.

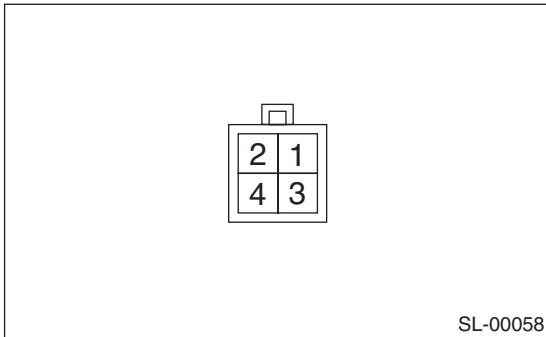
NOTE:

Make sure the lock works properly after installation.

C: INSPECTION

- 1) Disconnect the door lock actuator harness connector.
- 2) Connect the battery to door lock actuator terminals.

If NG, replace the door lock actuator.

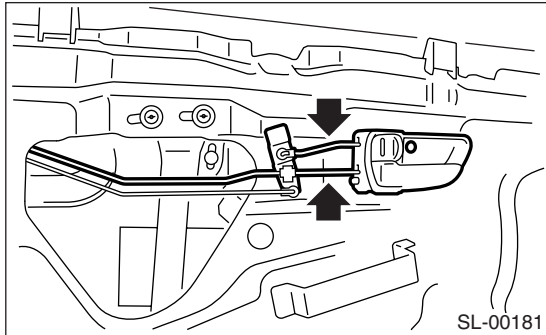


Terminal No.	Actuator operation
No. 3 (+) and No. 1 (-)	Unlocked → Locked
No. 1 (+) and No. 3 (-)	Locked → Unlocked

9. Rear Inner Remote

A: REMOVAL

- 1) Remove the rear door trim. <Ref. to EI-43, REMOVAL, Rear Door Trim.>
- 2) Remove the sealing cover. <Ref. to EB-20, REMOVAL, Rear Sealing Cover.>
- 3) Remove a screw and two rod joints.
- 4) Remove the inner remote.



B: INSTALLATION

Install in the reverse order of removal.

NOTE:

Make sure the inner remote works properly after installation.

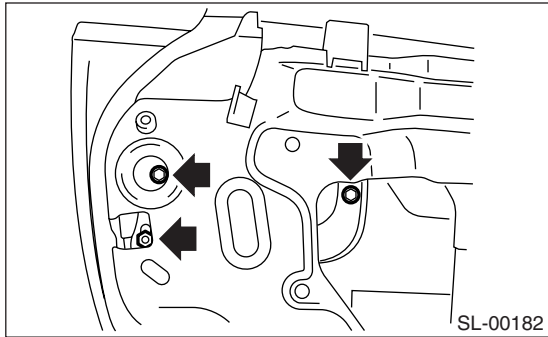
C: INSPECTION

- 1) Make sure the rod is not deformed.
- 2) Make sure the lever and rod work smoothly.
- 3) Make sure the child safety lock work properly.

10.Rear Outer Handle

A: REMOVAL

- 1) Remove the rear door trim. <Ref. to EI-43, REMOVAL, Rear Door Trim.>
- 2) Remove the sealing cover. <Ref. to EB-20, REMOVAL, Rear Sealing Cover.>
- 3) Remove the rear inner remote. <Ref. to SL-34, REMOVAL, Rear Inner Remote.>
- 4) Remove the rear door latch assembly. <Ref. to SL-36, REMOVAL, Rear Door Latch and Door Lock Actuator Assembly.>
- 5) Loosen two bolts and a nut to remove the rear outer handle.



CAUTION:

Do not use excessive force to remove the handle from 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.

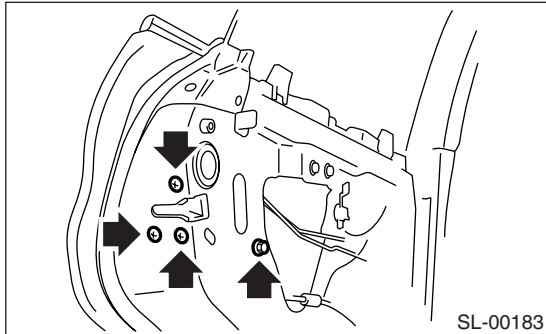
C: INSPECTION

- 1) Make sure the rod is not deformed.
- 2) Make sure the lever and rod work smoothly.

11. Rear Door Latch and Door Lock Actuator Assembly

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the rear door trim. <Ref. to EI-43, REMOVAL, Rear Door Trim.>
- 3) Remove the sealing cover. <Ref. to EB-20, REMOVAL, Rear Sealing Cover.>
- 4) Remove the rear inner remote. <Ref. to SL-34, REMOVAL, Rear Inner Remote.>
- 5) Remove three screws and a bolt.



- 6) Disconnect the connector, and then remove the rear door latch assembly.

B: INSTALLATION

Install in the reverse order of removal.

NOTE:

Make sure the lock works properly after installation.

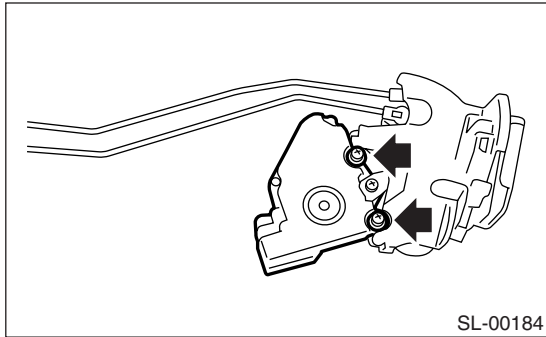
C: INSPECTION

- 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-36, REMOVAL, Rear Door Latch and Door Lock Actuator Assembly.>
- 2) Loosen two screws to remove rear door lock actuator.



B: INSTALLATION

Install in the reverse order of removal.

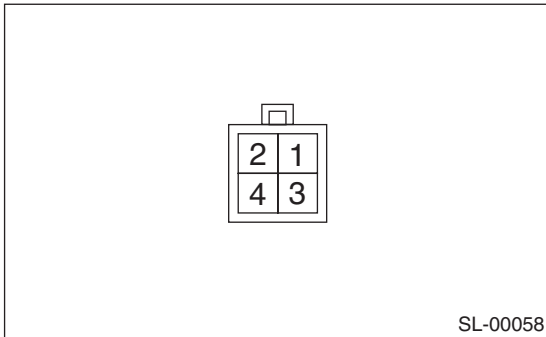
NOTE:

Make sure the lock works properly after installation.

C: INSPECTION

- 1) Disconnect the door lock actuator harness connector.
- 2) Connect the battery to door lock actuator terminals.

If NG, replace the door lock actuator.

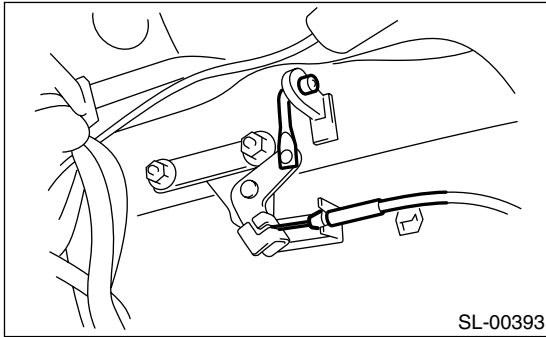


Terminal No.	Actuator operation
No. 3 (+) and No. 1 (-)	Unlocked → Locked
No. 1 (+) and No. 3 (-)	Locked → Unlocked

13.Rear Gate Outer Handle

A: REMOVAL

- 1) Remove the rear gate trim. <Ref. to EI-57, REMOVAL, Rear Gate Trim.>
- 2) Remove the link and cable, and then loosen two nuts to remove the rear gate outer handle.



B: INSTALLATION

Install in the reverse order of removal.

NOTE:

Make sure the outer handle works properly after installation.

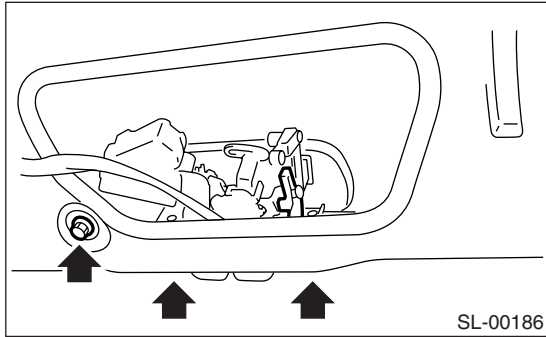
C: INSPECTION

- 1) Inspect the rod for deformation.
- 2) Make sure the lever and rod move smoothly.

14.Rear Gate Latch Assembly

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the rear gate trim. <Ref. to EI-57, REMOVAL, Rear Gate Trim.>
- 3) Remove three bolts.



- 4) Disconnect the connectors, and then remove the rear gate latch assembly.

B: INSTALLATION

Install in the reverse order of removal.

NOTE:

Make sure the lock works properly after installation.

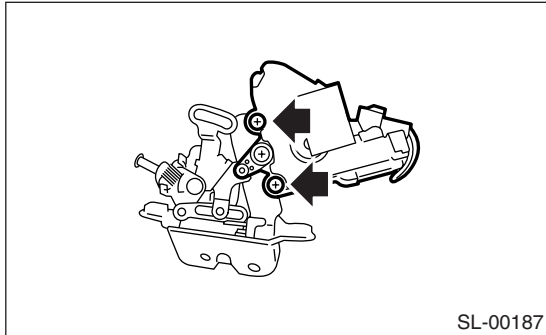
C: INSPECTION

- 1) Make sure the rod is not deformed.
- 2) Make sure the lever and rod work smoothly.

15.Rear Gate Latch Lock Actuator

A: REMOVAL

- 1) Remove the rear gate latch assembly. <Ref. to SL-39, REMOVAL, Rear Gate Latch Assembly.>
- 2) Loosen two screws to remove the rear gate lock actuator.



B: INSTALLATION

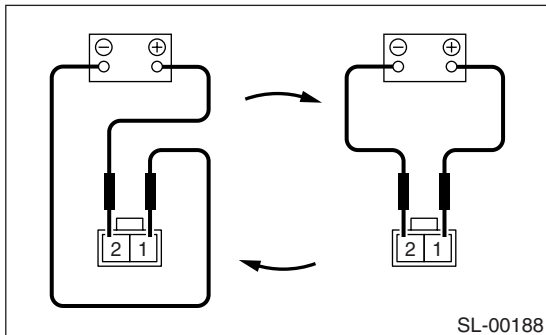
Install in the reverse order of removal.

NOTE:

Make sure the lock works properly after installation.

C: INSPECTION

- 1) Disconnect the door lock actuator harness connector.
- 2) Connect the battery to door lock actuator terminals.



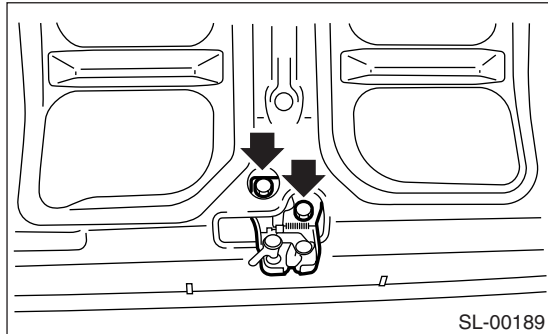
Terminal No.	Actuator operation
No. 1 (+) and No. 2 (-)	Unlocked → Locked
No. 2 (+) and No. 1 (-)	Locked → Unlocked

If NG, replace the rear gate latch lock actuator.

16.Trunk Lid Lock Assembly

A: REMOVAL

- 1) Remove the trunk lid key cylinder rod clamp.
- 2) Loosen two bolts to remove the trunk lid lock assembly.



B: INSTALLATION

Install in the reverse order of removal.

NOTE:

- Apply grease to parts that rub.
- Make sure the lock works properly after installation.

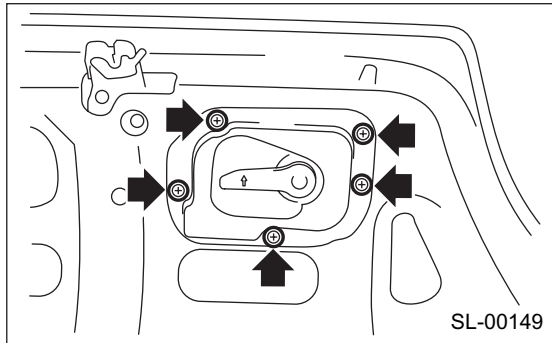
C: INSPECTION

- 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.

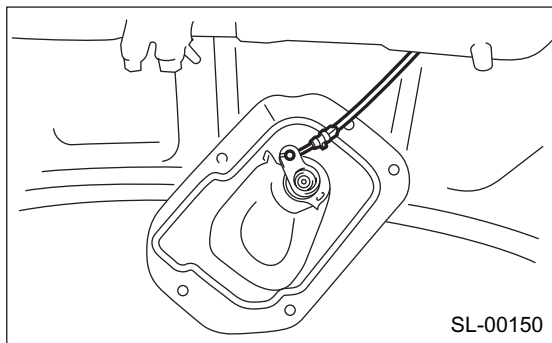
17.Trunk Lid Release Handle

A: REMOVAL

1) Remove the five clips.



2) Remove the cable from trunk lid release handle.



B: INSTALLATION

Install in the reverse order of removal.

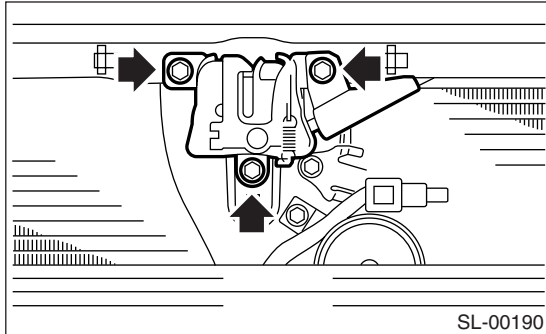
C: INSPECTION

- 1) Make sure the cable is not deformed.
- 2) Make sure the lever works smoothly.

18. Front Hood Lock Assembly

A: REMOVAL

- 1) Open the front hood.
- 2) Remove the bolts. Remove the hood lock assembly.



- 3) Remove the release cable from lock assembly.

B: INSTALLATION

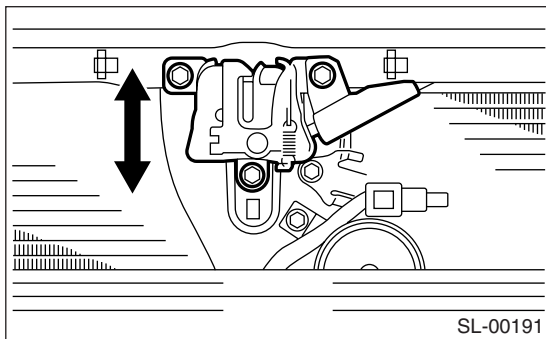
Install in the reverse order of removal.

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

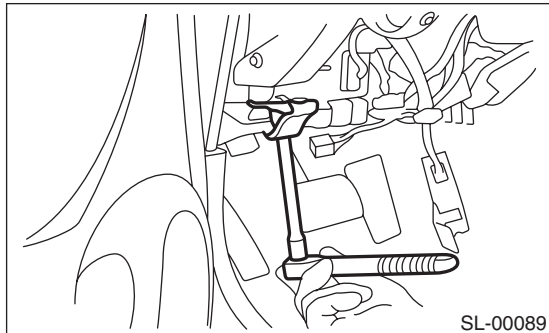
- 1) Check the striker for bending or abnormal wear.
- 2) Check the safety lever for improper movement.
- 3) Check other levers and the spring for rust formation and unsmooth movement.

19.Remote Openers

A: REMOVAL

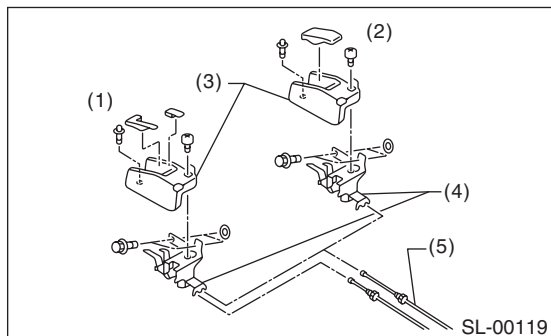
1. HOOD OPENER

- 1) Remove the release cable from hood lock.
- 2) Remove the bolt. Remove the opener lever.



2. TRUNK LID OPENER

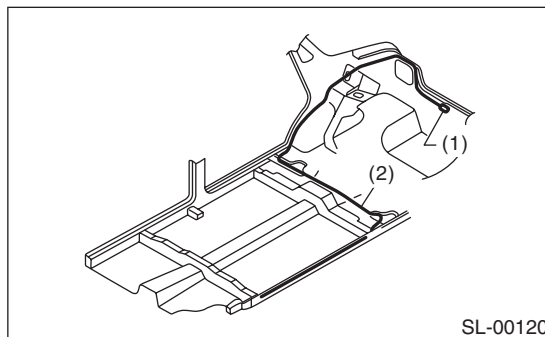
- 1) Remove the rear seat. <Ref. to SE-12, REMOVAL, Rear Seat.>
- 2) Remove the center pillar lower trim, and remove the side sill cover on passenger side. Remove the rear pillar lower trim. Pull back the floor mat. Remove the clip holding the cable.
- 3) Remove the bolt. Remove the opener pull handle.



- (1) Sedan
- (2) Wagon
- (3) Cover
- (4) Pull handle ASSY
- (5) Cable

- 4) Remove the cable from opener pull handle.
- 5) Remove the striker from trunk lid.

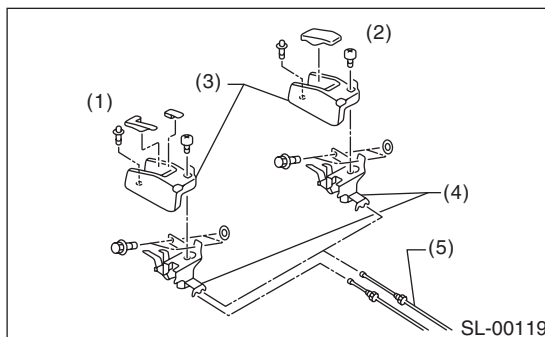
- 6) Remove the cable from striker.



- (1) Striker
- (2) Cable

3. FUEL FLAP OPENER

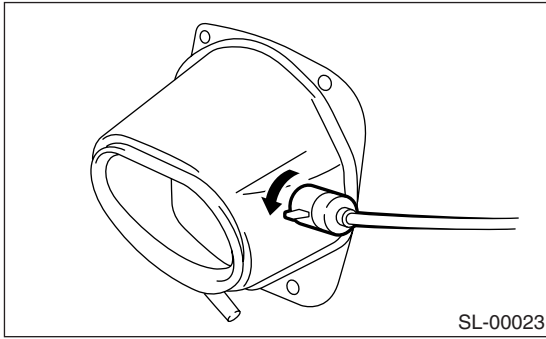
- 1) Remove the rear seat. <Ref. to SE-12, REMOVAL, Rear Seat.>
- 2) Remove the center pillar lower trim, and remove the side sill cover on passenger side. Remove the rear pillar lower trim. Pull back the floor mat. Remove the clip holding the cable.
- 3) Remove the bolt. Remove the opener pull handle.



- (1) Sedan
- (2) Wagon
- (3) Cover
- (4) Pull handle ASSY
- (5) Cable

- 4) Remove the cable from opener pull handle.
- 5) Remove the right rear quarter trim. <Ref. to EI-53, REMOVAL, Rear Quarter Trim.>

6) Rotate the fuel lock inside the quarter panel to left and remove.



B: INSTALLATION

1. HOOD OPENER

Install in the reverse order of removal.

2. TRUNK LID OPENER

Install in the reverse order of removal.

3. FUEL FLAP OPENER

Install in the reverse order of removal.

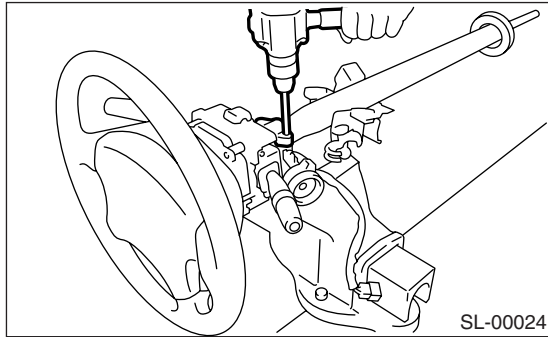
C: INSPECTION

Make sure the fuel flap opens and closes smoothly.

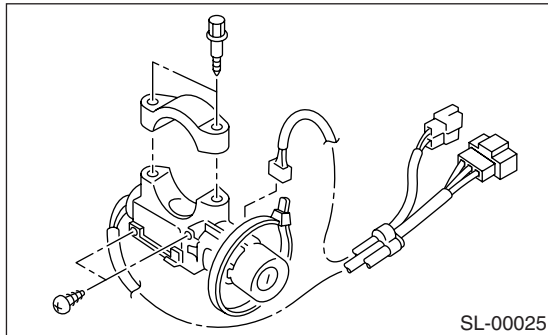
20. Ignition Key Lock

A: REPLACEMENT

- 1) Remove the ground cable from battery.
- 2) Remove the steering column. <Ref. to PS-24, 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 end of thread.



B: INSPECTION

- 1) Remove the instrument panel lower cover.
- 2) Remove the lower column cover.
- 3) Unfasten the hold-down clip which secures harness and disconnect the connector of ignition switch from body harness.
- 4) Turn the ignition key plate to each position and check the continuity between terminals of ignition connector.

Switch position	Terminal No.	Standard
LOCK	—	—
ACC	No. 1 and No. 2	Less than 1 Ω
ON	No. 1 and No. 2 No. 1 and No. 4 No. 2 and No. 4	Less than 1 Ω
ST	No. 1 and No. 3 No. 1 and No. 4 No. 3 and No. 4	Less than 1 Ω

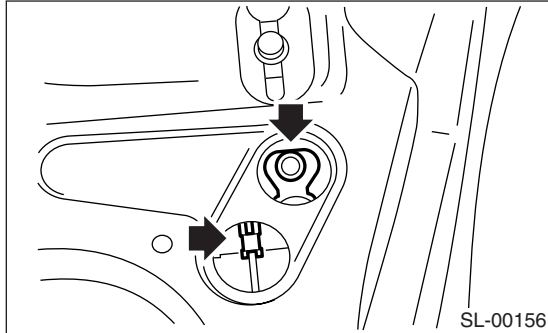
If NG, replace the ignition switch.

21.Key Lock Cylinders

A: REPLACEMENT

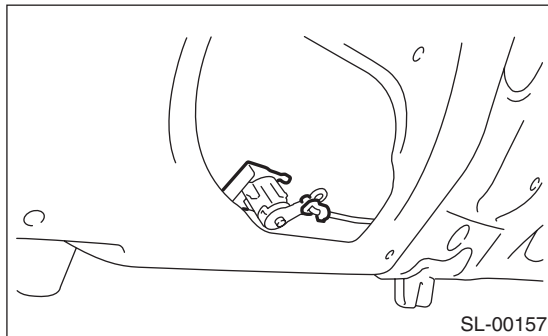
1. FRONT DOOR

- 1) Remove the door trim. <Ref. to EI-42, REMOV-AL, Front Door Trim.>
- 2) Pull back the sealing cover.
- 3) Move the front door glass downward.
- 4) Remove the rod clamp. Remove the bolt. Replace the key cylinder.



2. TRUNK LID

- 1) Remove the trunk lid release handle. <Ref. to SL-42, Trunk Lid Release Handle.>
- 2) Remove the rod clamp. Remove the lock plate. Replace the key cylinder.

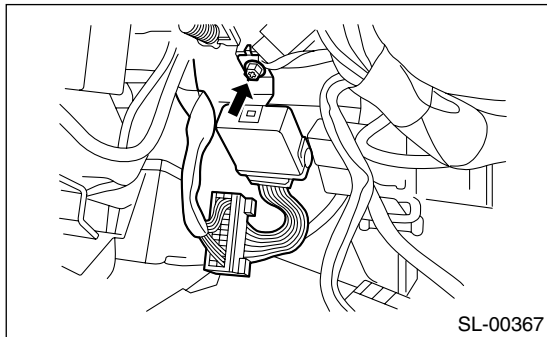


22. Immobilizer Control Unit

A: REMOVAL

NOTE:

- Prepare the security ID plate.
 - Prepare all registered immobilizer keys for the model with immobilizer.
 - Make a registration of immobilizer for the model with immobilizer. For detailed operation procedure, refer to "IMMOBILIZER REGISTRATION MANUAL".
 - If replacing the immobilizer control unit, check the current setting and note it. <Ref. to IM(diag)-7, OPERATION, Subaru Select Monitor.>
- 1) Disconnect the ground cable from battery.
 - 2) Remove the instrument panel lower cover. <Ref. to EI-48, REMOVAL, Instrument Panel Assembly.>
 - 3) Disconnect the connector from immobilizer control unit.
 - 4) Remove the immobilizer control unit.



B: INSTALLATION

Install in the reverse order of removal.

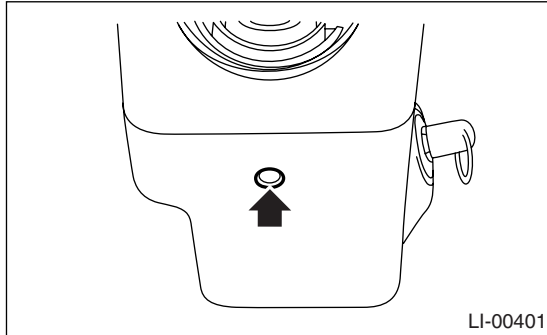
NOTE:

Make sure it conforms to the current setting condition after installation. <Ref. to IM(diag)-7, OPERATION, Subaru Select Monitor.>

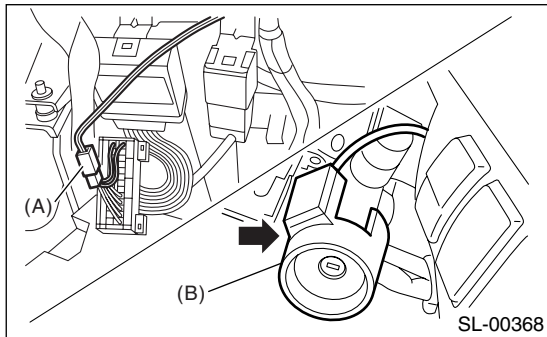
23. Immobilizer Antenna

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the instrument panel lower cover. <Ref. to EI-48, REMOVAL, Instrument Panel Assembly.>
- 3) Remove the screws, separate upper column cover and lower column cover.



- 4) Disconnect the immobilizer antenna connector (A) from body harness.
- 5) Remove the screw, and detach the immobilizer antenna (B).



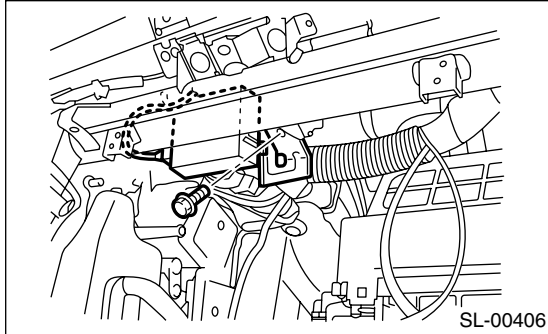
B: INSTALLATION

Install in the reverse order of removal.

24. Security Control Unit

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the glove box. <Ref. to EI-44, REMOVAL, Glove Box.>
- 3) Disconnect the connector from the security control unit.
- 4) Remove the security control unit.



B: INSTALLATION

Install in the reverse order of removal.

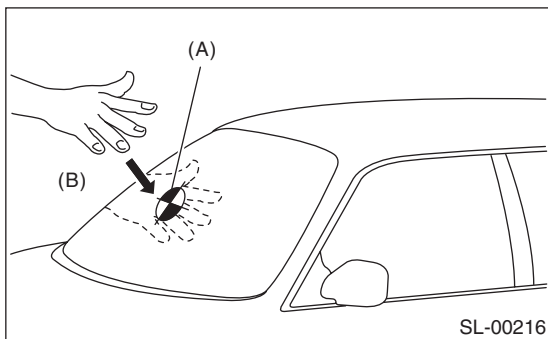
Tightening torque (Security Control Unit Bracket):

$10 \pm 1.5 \text{ N}\cdot\text{m}$ ($1.0 \pm 0.15 \text{ kgf}\cdot\text{m}$, $7.5 \pm 1 \text{ ft}\cdot\text{lb}$)

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 keyless 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.



- (A) Center of windshield
(B) Hit with palm

If NG, adjust the impact sensitivity. <Ref. to SL-50, ADJUSTMENT, Security Control Unit.>

D: ADJUSTMENT

1. IMPACT SENSITIVITY

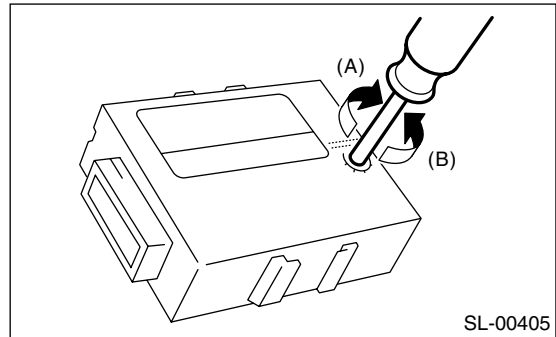
NOTE:

Before adjustment, make sure the security control unit has been securely installed on the bracket.

- 1) Remove the security control unit. <Ref. to SL-50, REMOVAL, Security Control Unit.>
- 2) Adjust the sensitivity adjust screw in the security control unit.

NOTE:

After adjusting, be sure to plug the adjust screw hole.



- (A) Max.
(B) Min.

- 3) Install the security control unit.
- 4) Perform the impact sensitivity test.

E: PROCEDURE

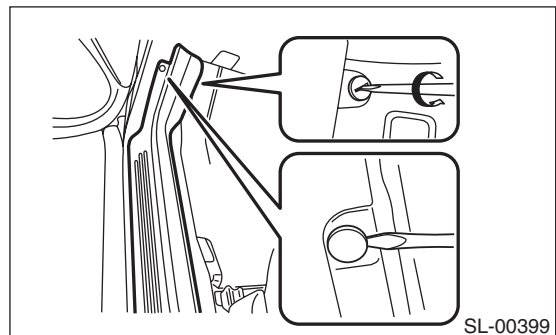
1. PASSIVE ARMING (ENTER THE PASSIVE MODE)

NOTE:

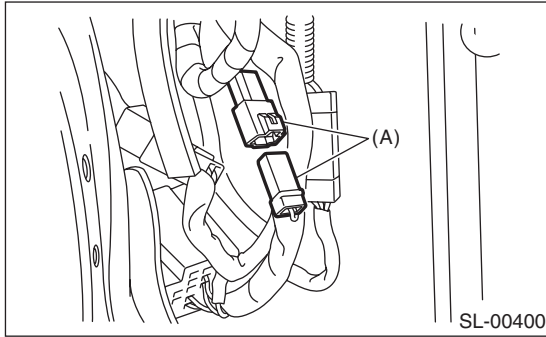
When passive arming mode has been programmed, arming of the system is automatically accomplished without using the remote transmitter. Note that in this mode, DOORS MUST BE LOCKED.

• 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.



- 3) Remove the side sill cover by pulling it up.
- 4) Connect the connector (A).



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.

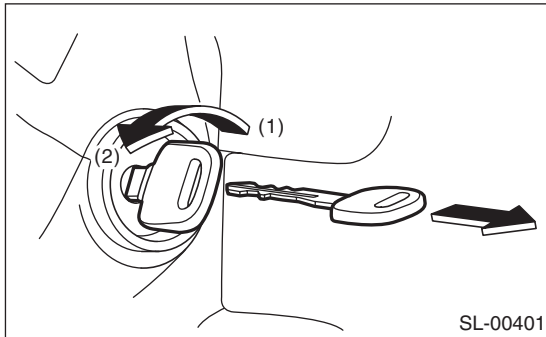
NOTE:

To place the system in active arming mode, disconnect the connector (A).

- 5) Turn the ignition switch from LOCK to ON.
- 6) Install the side sill cover.

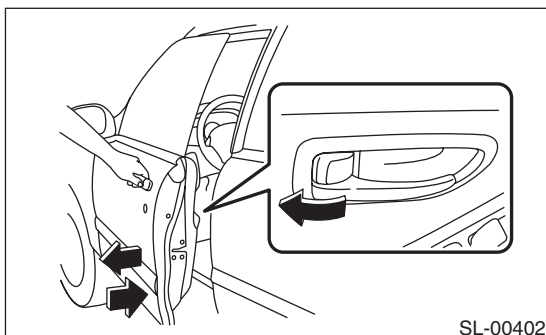
• Arming the system

- 1) Turn the ignition switch to ON.
- 2) Turn the ignition switch from ON to LOCK, and remove the key from ignition switch.



- (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.



- 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 blanks 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 to ON two times. (LOCK → ON → LOCK → ON → LOCK)
- 3) The indicator light will start blinking.

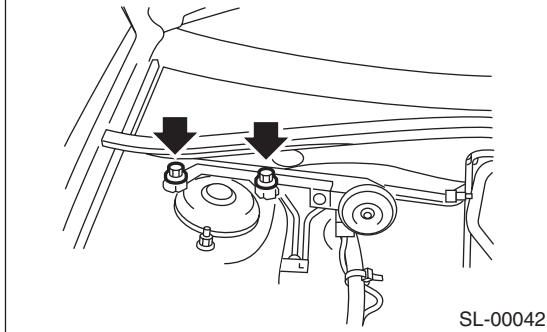
Number of times blinked	Vehicle state
1 time	Any door, rear gate or trunk lid has been opened.
3 times	The impact sensor in the system's unit has been activated. This may indicate that your vehicle has been shocked or tampered with by some outside force and/or unauthorized person.
4 times	The ignition switch has been turned on, or the battery has been disconnected.

- 4) Close the door and turn the ignition switch to ON.

25.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.

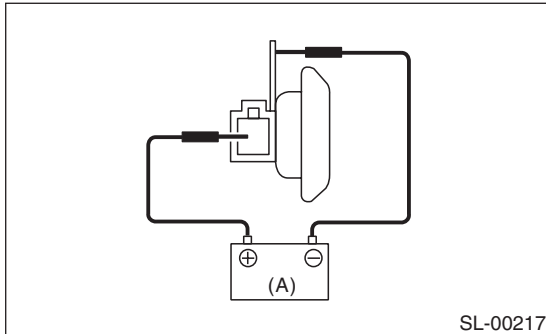


B: INSTALLATION

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.



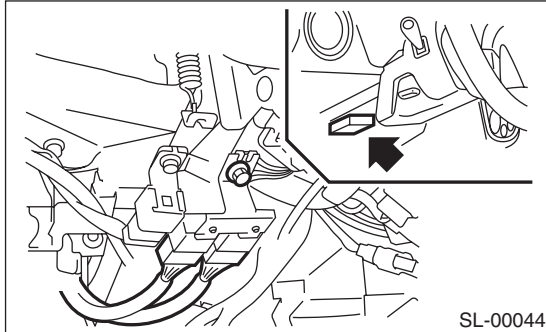
(A) Battery

If NG, replace the security horn.

26.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).



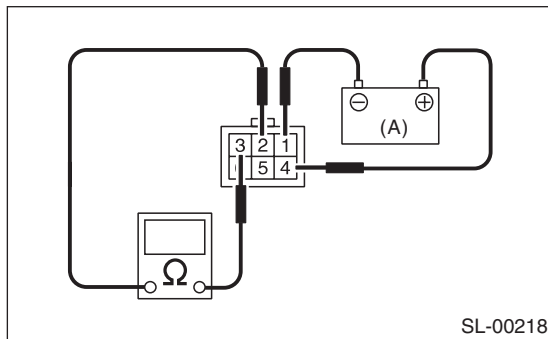
B: INSTALLATION

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. 4 to battery positive terminal and terminal No. 1 to battery ground terminal.

Current	Terminal No.	Standard
Flow	2 and 3	Less than 1 Ω
No flow		More than 1 M Ω



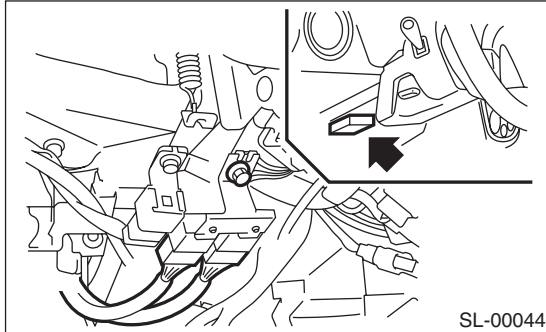
(A) Battery

If NG, replace the security horn relay.

27. 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).



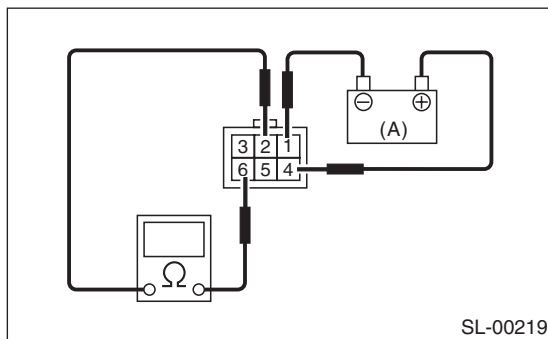
B: INSTALLATION

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. 4 to battery positive terminal and terminal No. 1 to battery ground terminal.

Current	Terminal No.	Standard
Flow	2 and 6	Less than 1 Ω
No flow		More than 1 M Ω



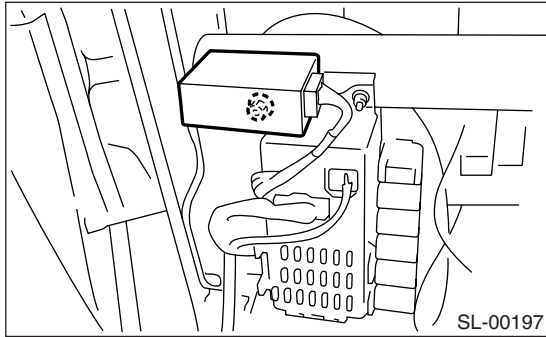
(A) Battery

If NG, replace the interrupt relay.

28.Keyless Entry Control Unit

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the instrument panel lower cover. <Ref. to EI-48, REMOVAL, Instrument Panel Assembly.>
- 3) Remove the nut, and then remove the keyless entry control unit while disconnecting connector.



- 4) Disconnect the keyless entry control unit and other electrical control module.

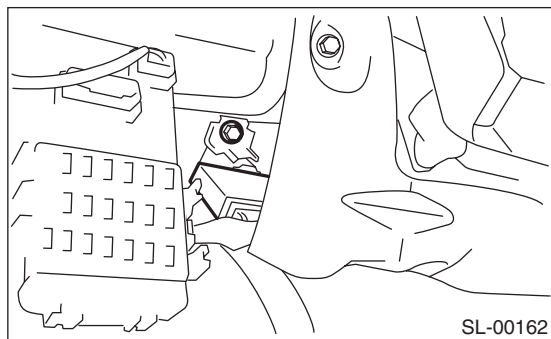
B: INSTALLATION

Install in the reverse order of removal.

29.Body Integrated Unit

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the instrument panel lower cover. <Ref. to EI-48, REMOVAL, Instrument Panel Assembly.>
- 3) Remove the nut, then remove the body integrated unit while disconnecting the connector.



B: INSTALLATION

Install in the reverse order of removal.

30.Keyless Transmitter

A: REMOVAL

1. KEYLESS TRANSMITTER BATTERY

Remove the screw from keyless transmitter, and then remove the battery.

NOTE:

To prevent static electricity damage to keyless transmitter printed circuit board, touch the steel area of building with hand to discharge the static electricity carried on body or clothes before disassembling keyless transmitter.

B: INSTALLATION

1. KEYLESS TRANSMITTER BATTERY

Install in the reverse order of removal.

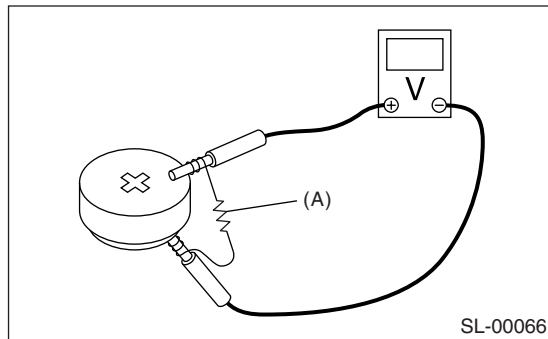
C: INSPECTION

1. KEYLESS TRANSMITTER BATTERY

Measure the voltage between battery (+) terminal and (–) terminal.

NOTE:

- Battery discharge occurs during measurement. Complete the measurement within 5 seconds.
- During battery voltage measurement, voltage falls more than 1.8 volts in 3 seconds period.



(A) Resistance 47 Ω

Tester connection		Standard
(+)	(–)	
Battery (+) terminal	Battery (–) terminal	2.5 — 3.0 V

If NG, replace the battery. (Use CR1620 or equivalent.)

D: REPLACEMENT

1. KEYLESS TRANSMITTER REGISTRATION

NOTE:

- A maximum of four transmitters can be registered for each individual vehicle.
- When replacing or adding the keyless 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 keyless transmitter that you wish to program into the system.
- 9) Horn will chirp two times to indicate that the keyless transmitter has been programmed.

NOTE:

Repeat steps 6) through 9) for an additional keyless 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 keyless transmitter.

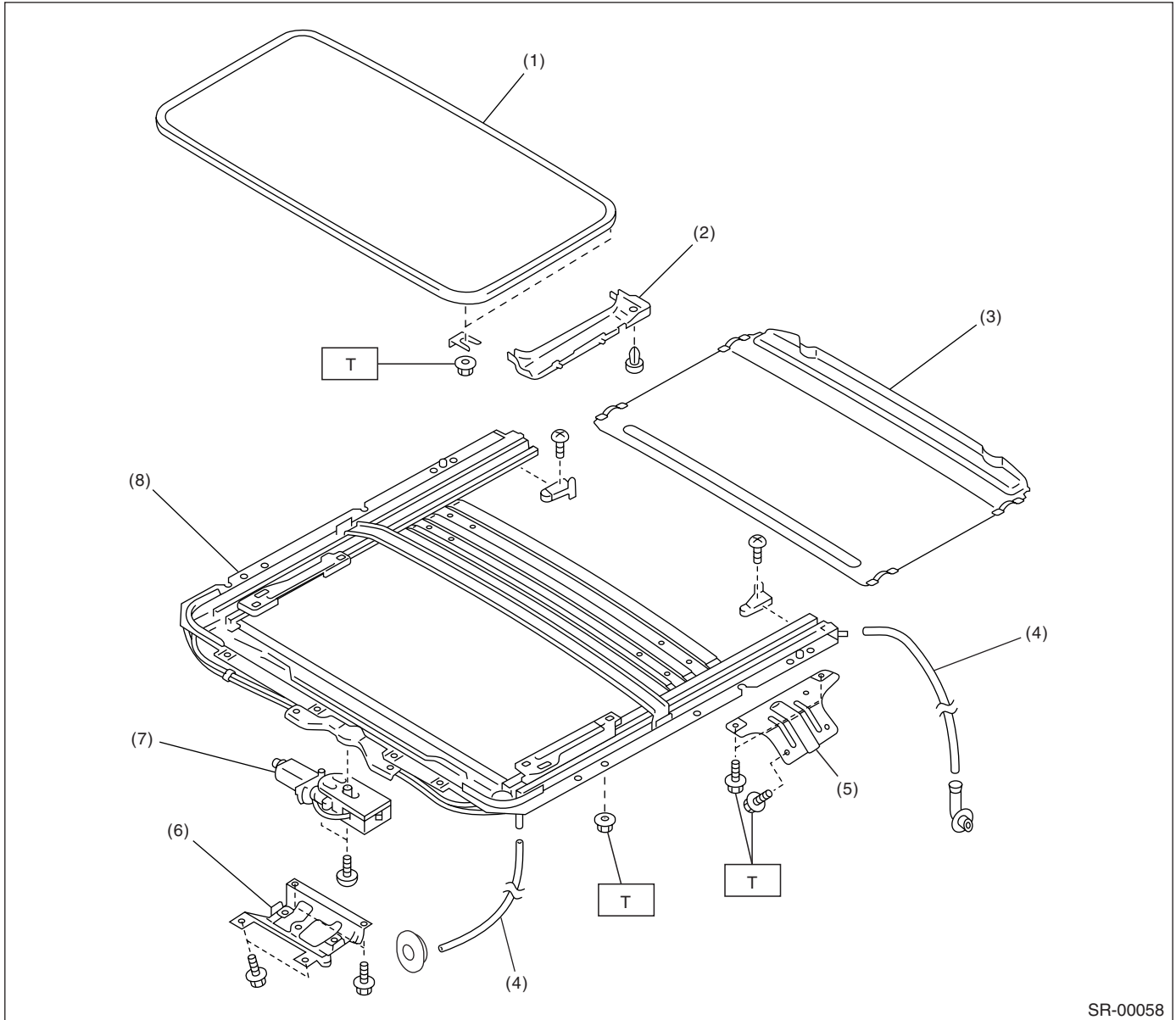
SUNROOF
T-TOP CONVERTIBLE TOP
(SUNROOF)

General Description

SUNROOF/T-TOP/CONVERTIBLE TOP (SUNROOF)

1. General Description

A: COMPONENT



SR-00058

(1) Glass lid	(5) Sunroof bracket
(2) Guide rail cover	(6) Motor cover
(3) Sunshade	(7) Motor ASSY
(4) Drain tube	(8) Frame ASSY

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 the reverse order of disassembly, unless otherwise indicated.
- Adjust parts to the given specifications.
- Connect the connectors and hoses securely during reassembly.
- After reassembly, make sure functional parts operate smoothly.

C: PREPARATION TOOL

1. GENERAL TOOL

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

Sunroof Control System

SUNROOF/T-TOP/CONVERTIBLE TOP (SUNROOF)

2. Sunroof Control System

A: WIRING DIAGRAM

1. SUNROOF

<Ref. to WI-164, WIRING DIAGRAM, Sunroof Control System.>

B: INSPECTION

Symptom	Checking order
Water leaks.	(1) Check roof panel and glass lid for improper or poor sealing. (2) Check drain tube for clogging. (3) Check sunroof frame seal and body for improper fit.
Wind noise	(1) Check glass lid and roof panel for improper clearance. (2) Check sunshade and roof trim for improper clearance.
Abnormal motor noise	(1) Check 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.

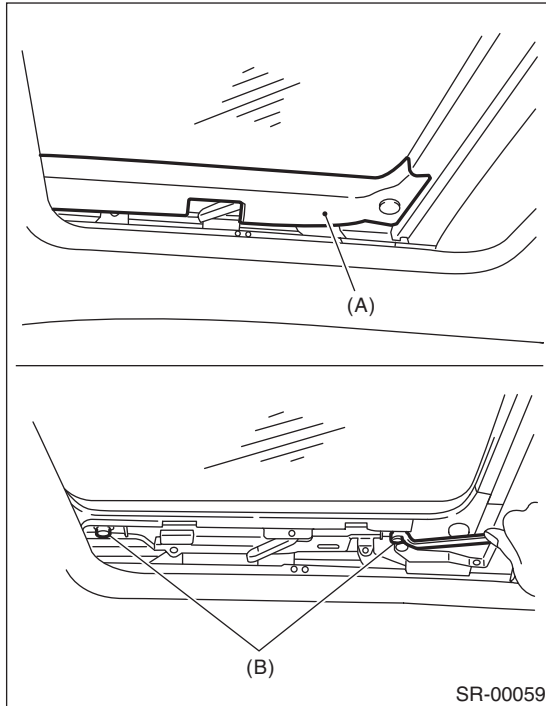
Glass Lid

SUNROOF/T-TOP/CONVERTIBLE TOP (SUNROOF)

3. Glass Lid

A: REMOVAL

- 1) Completely close the glass lid and open the sunshade.
- 2) Remove the cover (A) then remove the nuts (B).



- 3) Remove the glass lid carefully.

B: INSTALLATION

Install in the reverse order of removal.

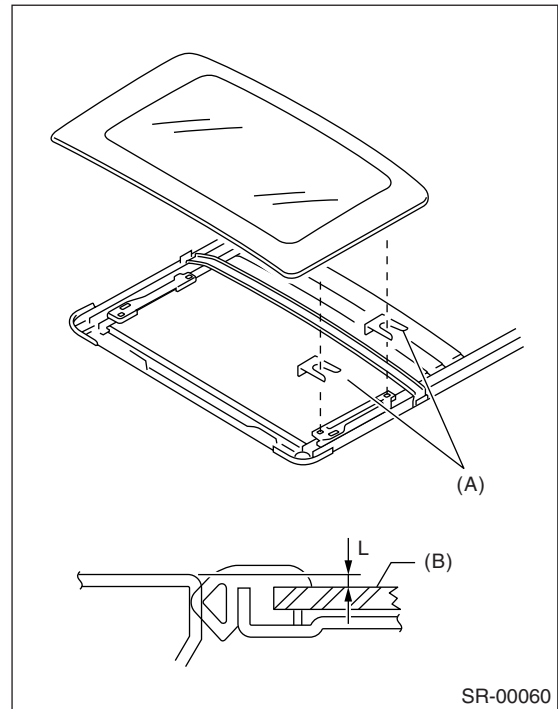
C: ADJUSTMENT

1. ALIGNMENT OF HEIGHT BETWEEN GLASS LID AND ROOF PANEL

Loosen the glass lid installation nuts and then adjust the height by adding (max: three pieces) or extracting (min: zero piece) shims (standard: one piece).

Difference in height between glass lid and roof panel L:

$2.0 \pm 0.5 \text{ mm}$ ($0.079 \pm 0.020 \text{ in}$)



- (A) Shim
(B) Glass lid

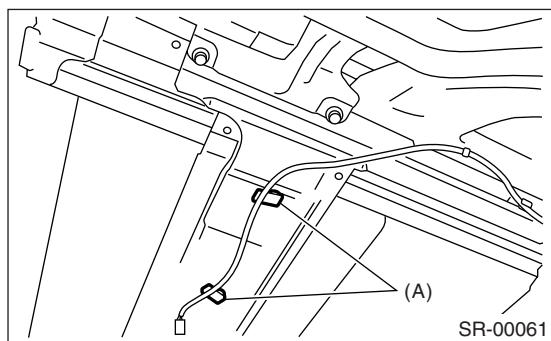
Sunroof Assembly

SUNROOF/T-TOP/CONVERTIBLE TOP (SUNROOF)

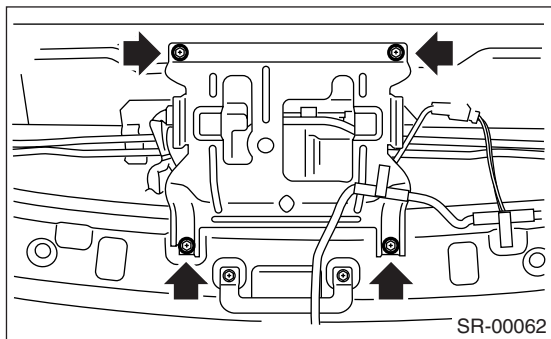
4. Sunroof Assembly

A: REMOVAL

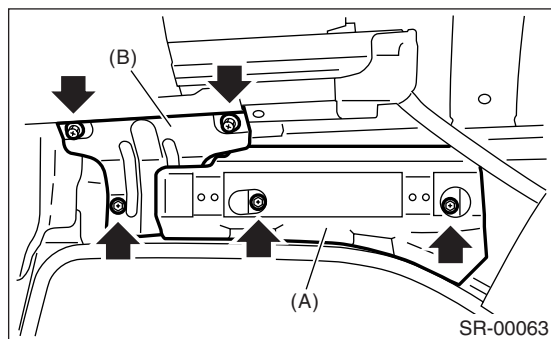
- 1) Disconnect the ground cable from battery.
- 2) Remove the roof trim. <Ref. to EI-55, REMOVAL, Roof Trim.>
- 3) Remove the glass lid. <Ref. to SR-5, REMOVAL, Glass Lid.>
- 4) Disconnect the drain tubes from sunroof frame.
- 5) Remove the room lamp harness clip (A).



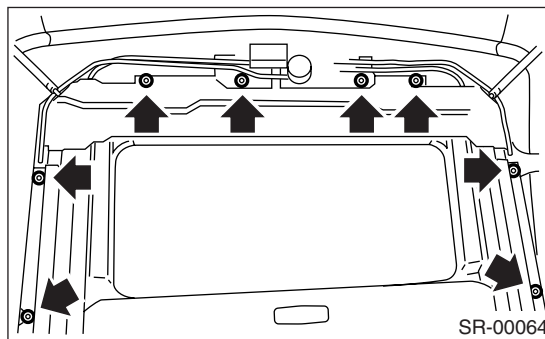
- 6) Disconnect the sunroof harness connector.
- 7) Remove the motor cover.



- 8) Remove the assist grip bracket (A) and sunroof bracket (B).



- 9) Remove the nuts then detach the sunroof frame.



B: INSTALLATION

Install in the reverse order of removal.

CAUTION:

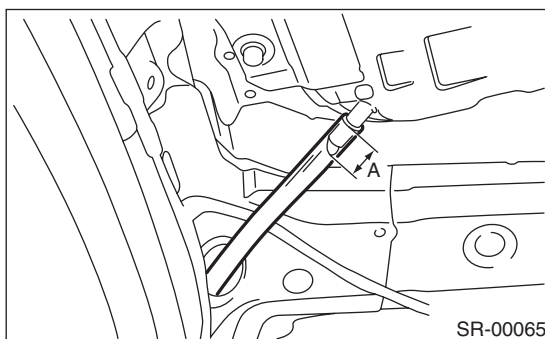
Be careful not to snag the harness.

NOTE:

- Make sure to connect the harness connector.
- When installing the drain tube, insert it securely onto drain pipe.

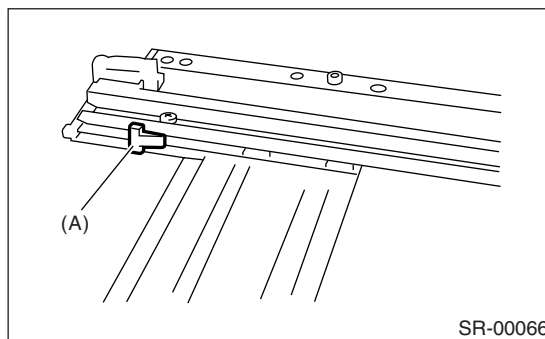
Length A:

15 mm (0.59 in) or more



C: DISASSEMBLY

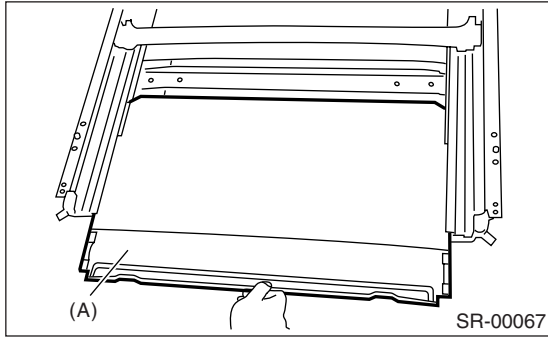
- 1) Remove the sunroof frame.
- 2) Remove the rail stoppers (A).



Sunroof Assembly

SUNROOF/T-TOP/CONVERTIBLE TOP (SUNROOF)

3) Pull out the sunshade (A) from sunroof frame.



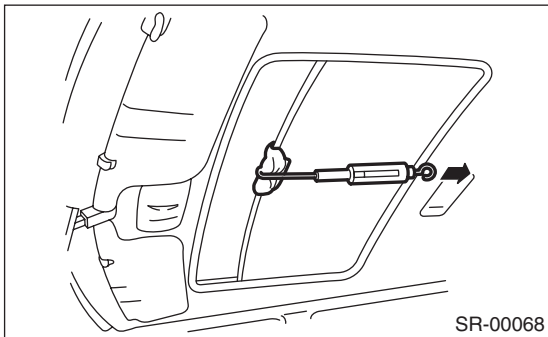
D: ASSEMBLY

Assemble in the reverse order of disassembly.

E: INSPECTION

1. CHECK FOR MOVING LOAD OF SUNSHADE

1) Attach a spring scale to sunshade edge using a cloth.



2) Pull the spring scale back to measure moving load of the sunshade.

Moving load of rear sunshade:

Less than 24.5 ± 4.9 N (2.5 ± 0.5 kgf, 5.5 ± 1.1 lb)

NOTE:

Moving load is larger at the beginning of pulling a spring scale, so take a scale reading while sunshade sliding smoothly.

3) If moving load exceeds specifications, check the glass lid, sunshade and guide rail assembly for improper installation.

Sunroof Motor

SUNROOF/T-TOP/CONVERTIBLE TOP (SUNROOF)

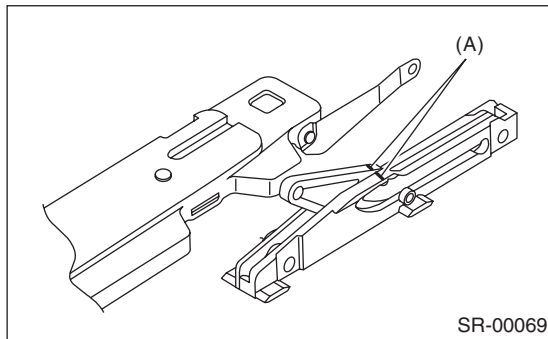
5. Sunroof Motor

A: REMOVAL

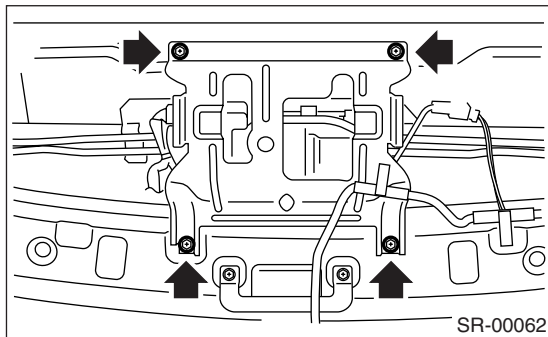
CAUTION:

- When removing the clip, use great care to not damage the roof trim.
- Never rotate the sunroof motor after removing it.

- 1) Completely close the sunroof.
- 2) Disconnect the ground cable from battery.
- 3) Remove the glass lid. <Ref. to SR-5, REMOVAL, Glass Lid.>
- 4) Confirm the alignment mark (A) of sunroof bracket link and the guide from sunroof opening. (If the mark does not align, adjust to align the mark.)



- 5) Remove the roof trim. <Ref. to EI-55, REMOVAL, Roof Trim.>
- 6) Remove the motor cover.



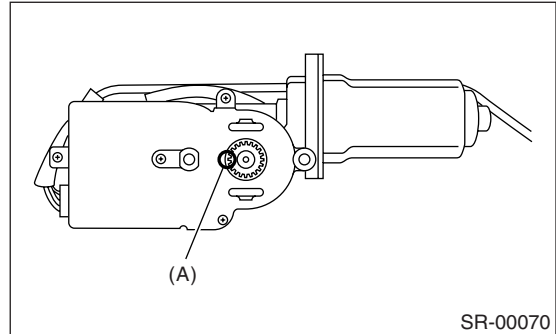
- 7) Disconnect the harness connector and remove the sunroof motor mounting screw.

B: INSTALLATION

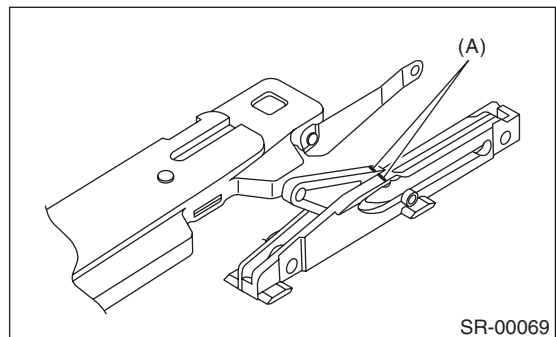
CAUTION:

Be careful not to move the sunroof cable when installing sunroof motor.

- 1) Check the alignment mark (A) of sunroof motor.



- 2) Confirm the alignment mark (A) of sunroof bracket link.



- 3) Install the sunroof motor.
- 4) After installing the motor, reconfirm the alignment marks of motor side and sunroof bracket link side.
- 5) Connect the sunroof motor harness connector and then connect the battery ground cable.
- 6) Check the sunroof operation with the procedure as shown in the table.

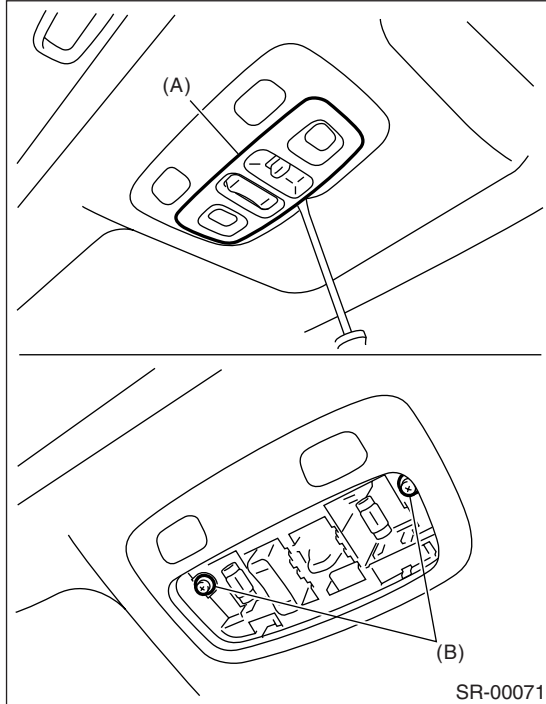
Checking order	Switch position
(1) Completely close sunroof.	Closed
(2) Tilt-up sunroof to most upper position.	Tilt-up
(3) Lower sunroof completely.	Tilt-down
(4) Open sunroof to near the completely open position.	Open
(5) Completely open sunroof.	Open
(6) Close sunroof 150 mm (5.91 in) away from completely closed position.	Closed
(7) Completely close sunroof.	Closed

- 7) Install the glass lid and trims in the reverse order of removal.

6. Sunroof Switch

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the spot light lens (A) and sunroof switch mounting screw (B).



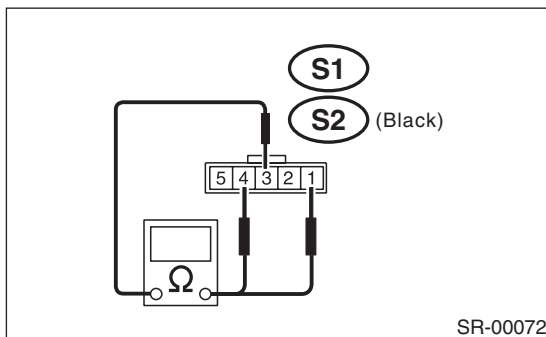
- 3) Disconnect the harness connectors and remove the sunroof switch.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the sunroof switch resistance.



Switch	Terminal No.	Standard value
Open	S1: 3 and 4	Less than 1 Ω
Close	S1: 1 and 3	Less than 1 Ω
Tilt-up	S2: 3 and 4	Less than 1 Ω
Tilt-down	S2: 1 and 3	Less than 1 Ω

Sunroof Switch

SUNROOF/T-TOP/CONVERTIBLE TOP (SUNROOF)

WIPER AND WASHER SYSTEMS

General Description

WIPER AND WASHER SYSTEMS

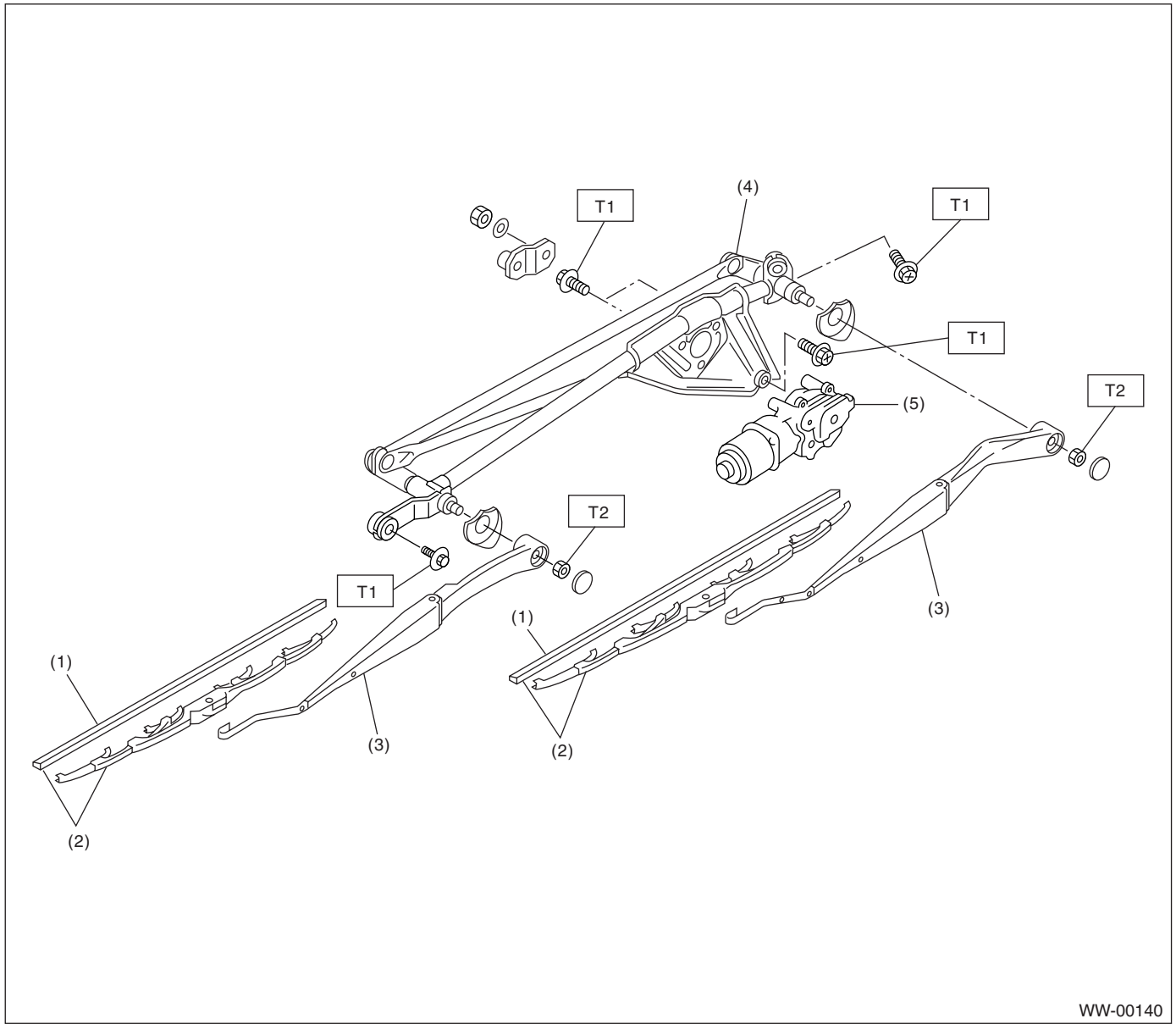
1. General Description

A: SPECIFICATION

Front wiper motor	Input	12 V — 72 W or less
Rear wiper motor	Input	12 V — 42 W or less
Front washer motor	Pump type	Centrifugal
	Input	12 V — 36 W or less
Rear washer motor	Pump type	Centrifugal
	Input	12 V — 36 W or less

B: COMPONENT

1. FRONT WIPER

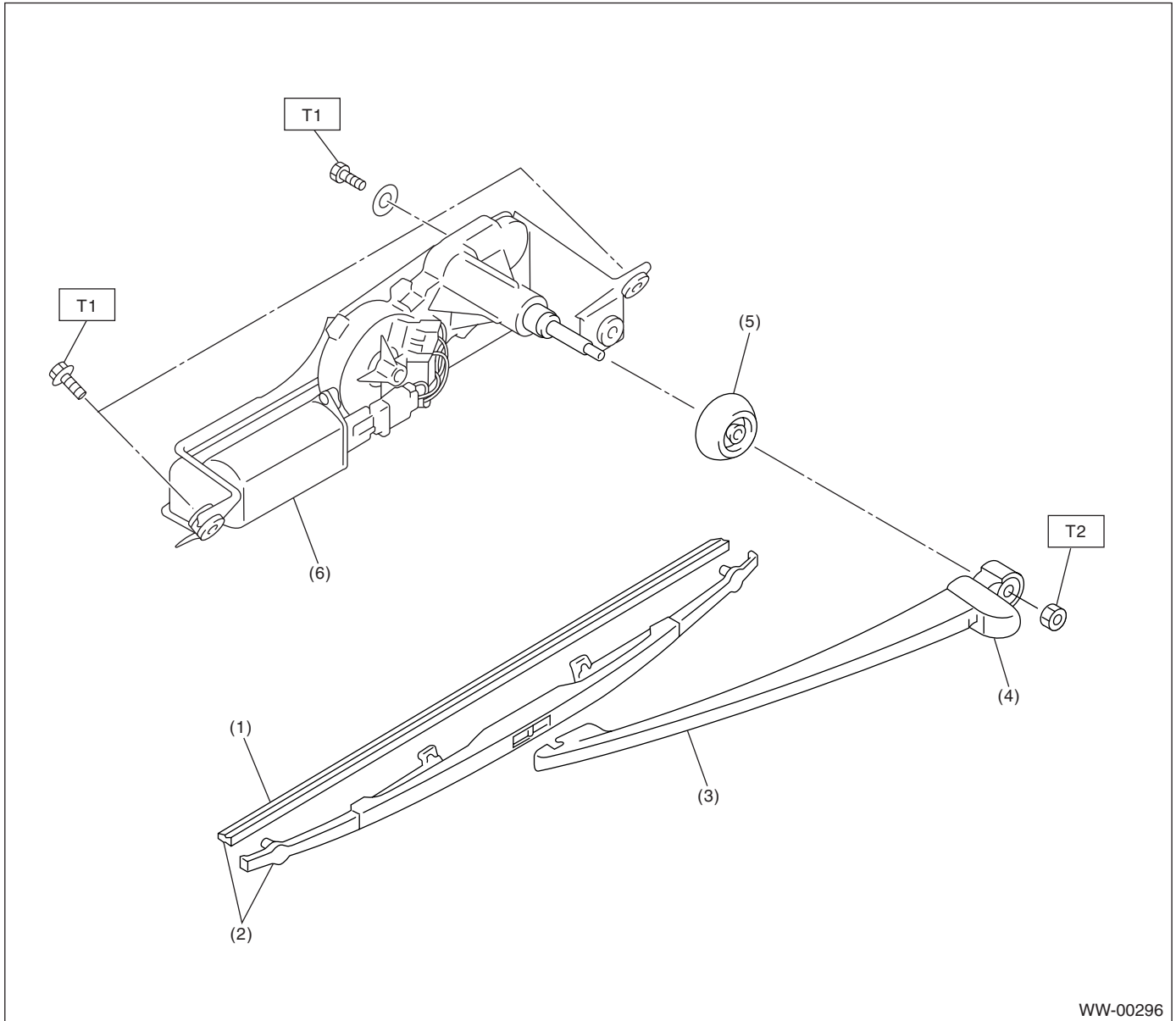


- (1) Wiper rubber
- (2) Wiper blade ASSY
- (3) Wiper arm

- (4) Wiper link
- (5) Wiper motor

Tightening torque: N·m (kgf-m, ft-lb)
T1: 6.0 (0.61, 4.4)
T2: 20 (2.0, 14.5)

2. REAR WIPER



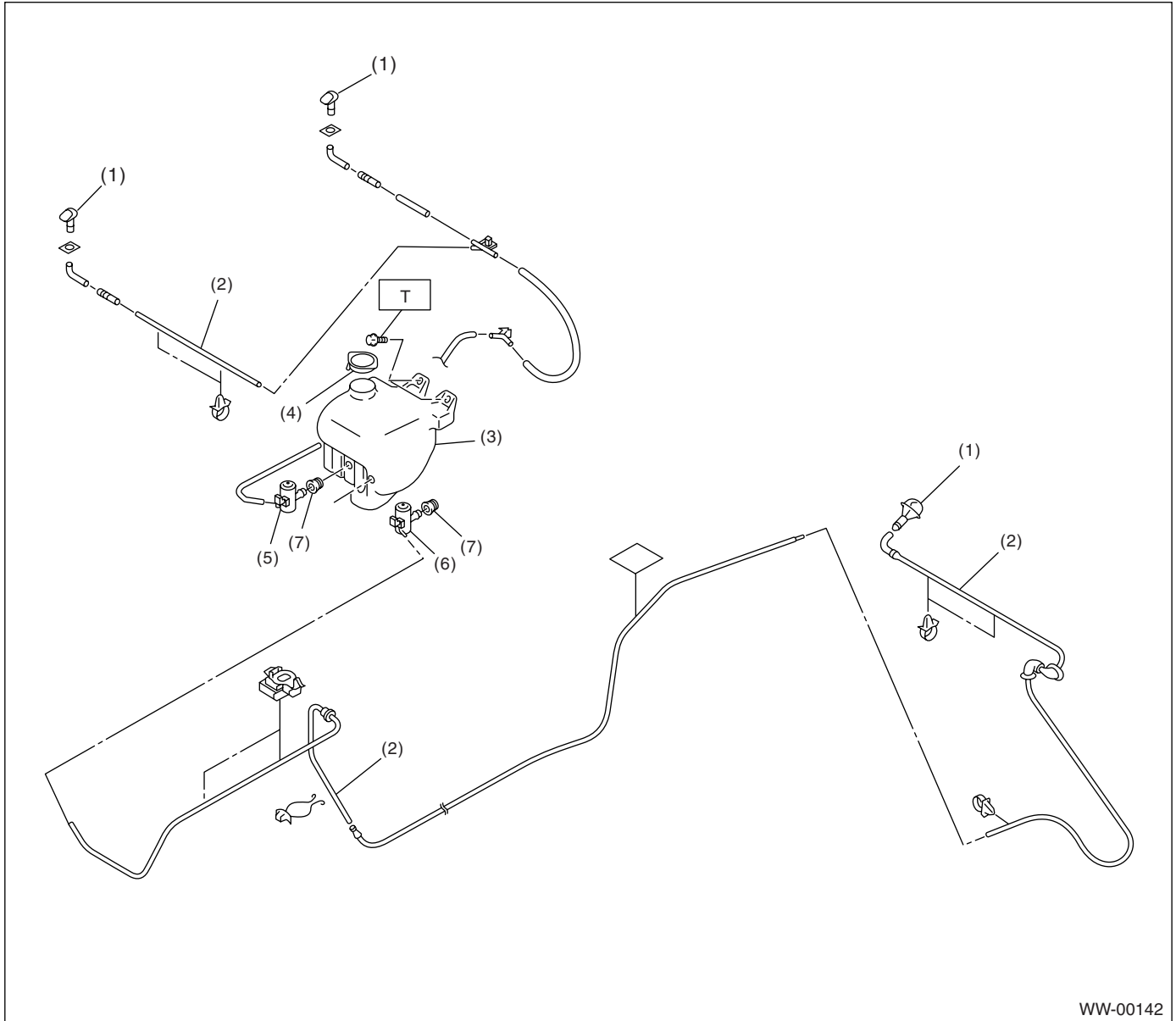
(1) Wiper rubber	(4) Wiper arm cover
(2) Wiper blade ASSY	(5) Cap
(3) Wiper arm	(6) Wiper motor

Tightening torque: N·m (kgf-m, ft-lb)

T1: 6.0 (0.61, 4.4)

T2: 8.0 (0.82, 5.9)

3. WASHER TANK



(1) Washer nozzle	(5) Front washer motor
(2) Washer hose	(6) Rear washer motor
(3) Washer tank	(7) Grommet
(4) Washer tank cap	

Tightening torque: N·m (kgf-m, ft-lb)
T: 6.0 (0.61, 4.4)

C: CAUTION

- Connect the connectors and hoses securely during reassembly.
- After reassembly, make sure functional parts operate smoothly.
- Be careful that wiring harnesses of airbag system pass near electrical parts and switches.
- Wiring harnesses and connectors of all airbag system are yellow color. Do not use a tester on these circuits.
- Care must be taken when connecting 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.

Wiper and Washer System

WIPER AND WASHER SYSTEMS

2. Wiper and Washer System

A: WIRING DIAGRAM

1. WIPER AND WASHER (FRONT)

<Ref. to WI-136, WIRING DIAGRAM, Front Wiper and Washer System.>

2. WIPER AND WASHER (REAR)

<Ref. to WI-137, WIRING DIAGRAM, Rear Wiper and Washer System.>

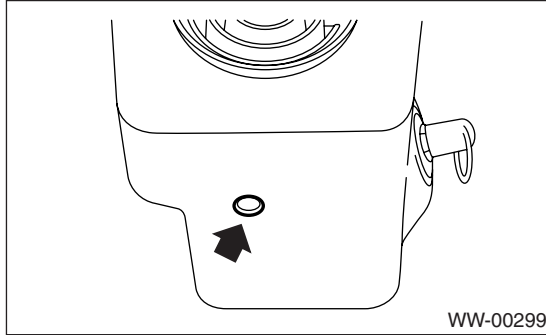
B: INSPECTION

Symptom	Repair order
Wiper and washers do not operate.	(1) Wiper fuse (F/B No. 14, 15) (2) Combination switch (3) Wiper motor (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 operate.	(1) Washer motor (2) Washer hose and nozzle

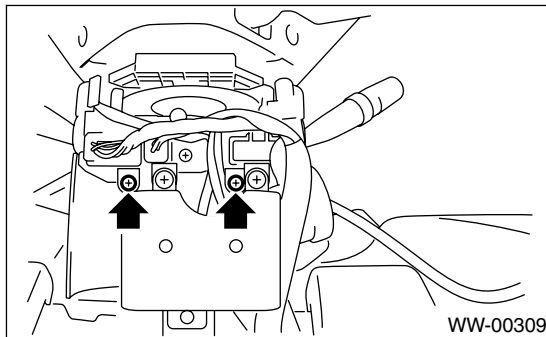
3. Combination Switch (Wiper)

A: REMOVAL

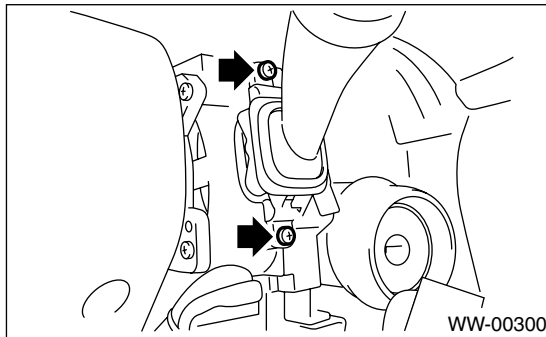
- 1) Disconnect the ground cable from battery.
- 2) Remove the instrument panel lower cover. <Ref. to EI-48, REMOVAL, Instrument Panel Assembly.>
- 3) Loosen the screw to remove steering column cover lower.



- 4) Remove the screw to steering column cover upper.



- 5) Disconnect the connectors from combination switches.
- 6) Loosen the screw to remove combination switch.

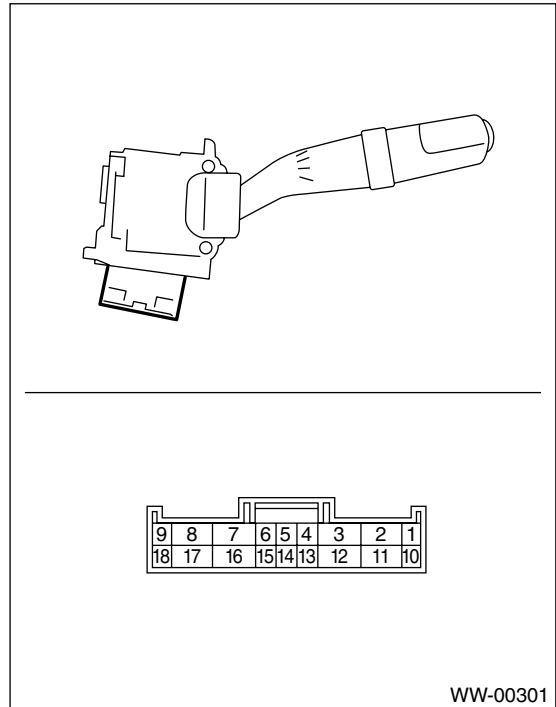


B: INSTALLATION

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	Less than 1 Ω
	INT	7 and 16	Less than 1 Ω
	LO	7 and 17	Less than 1 Ω
	HI	8 and 17	Less than 1 Ω
	Washer ON	2 and 11	Less than 1 Ω
REAR	Washer ON	2 and 10 10 and 12 2 and 12	Less than 1 Ω
	OFF	—	More than 1 M Ω
	ON	2 and 10	Less than 1 Ω
	Washer ON	2 and 10 10 and 12 2 and 12	Less than 1 Ω

If continuity is not as specified, replace the switch.

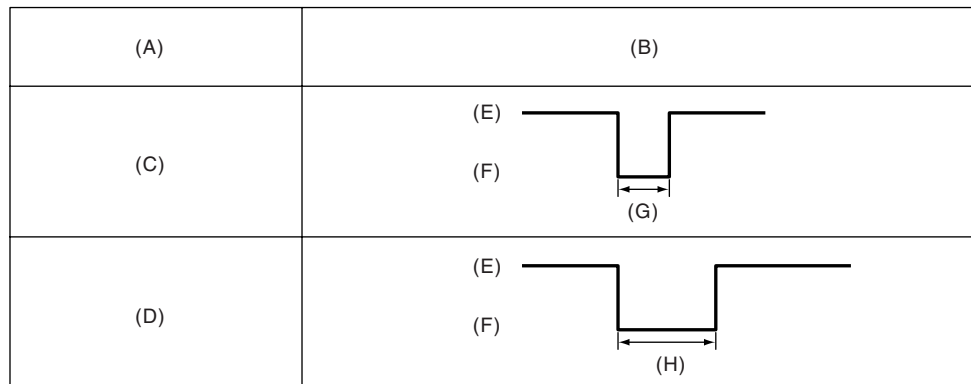
- Intermittent operation inspection
- 1) Turn the wiper switch to INT.
- 2) Adjust the intermittent control switch to MAX.
- 3) Apply battery voltage to switch terminals 16 and 2.
- 4) Inspect the voltage of combination switch terminals.

Terminals

No. 7 — No. 2:

Combination Switch (Wiper)

WIPER AND WASHER SYSTEMS



WW-00311

(A) Switch position

(D) MAX.

(G) 1.6 ± 1 sec.

(B) Voltage

(E) 12 V

(H) 16 ± 6 sec.

(C) MIN.

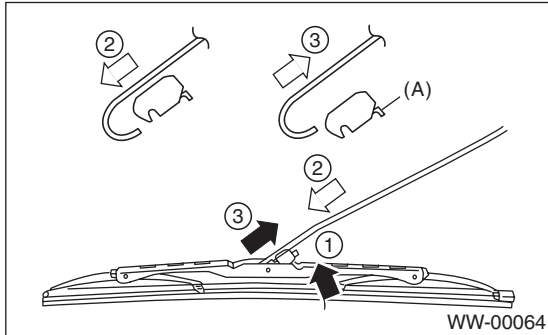
(F) 0 V

If operation is not as specified, replace the switch.

4. Wiper Blade

A: REMOVAL

While pushing the locking clip (A) up, pull out the blade from arm to arrow direction.



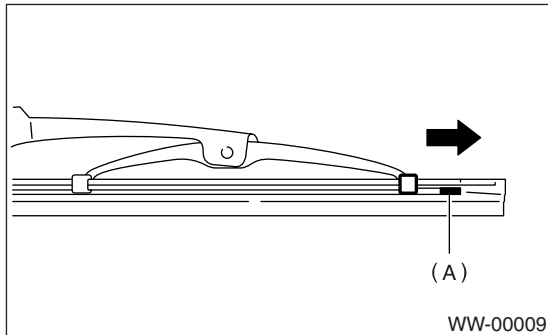
B: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Confirm that the clip is locked securely.

C: DISASSEMBLY

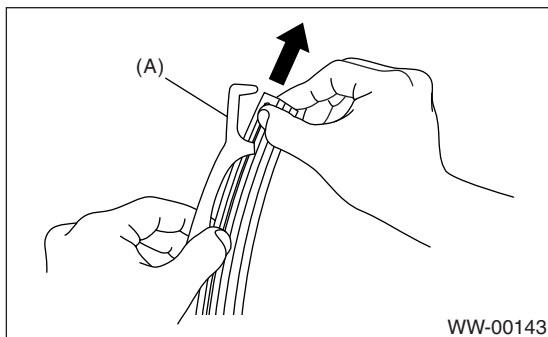
1. METAL TYPE

Pull on the side (A) of wiper rubber stopper, and then remove the rubber from blade assembly.



2. RESIN TYPE

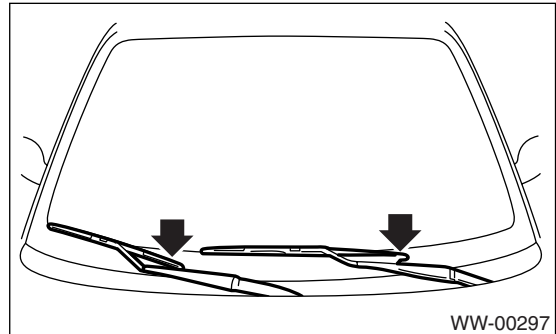
Pull the wiper rubber top slightly from the stopper (A) and pull it out fully.



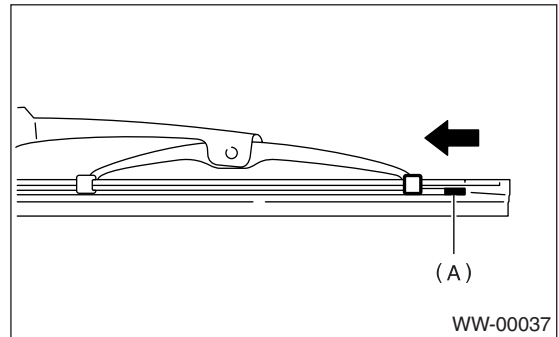
D: ASSEMBLY

1. METAL TYPE

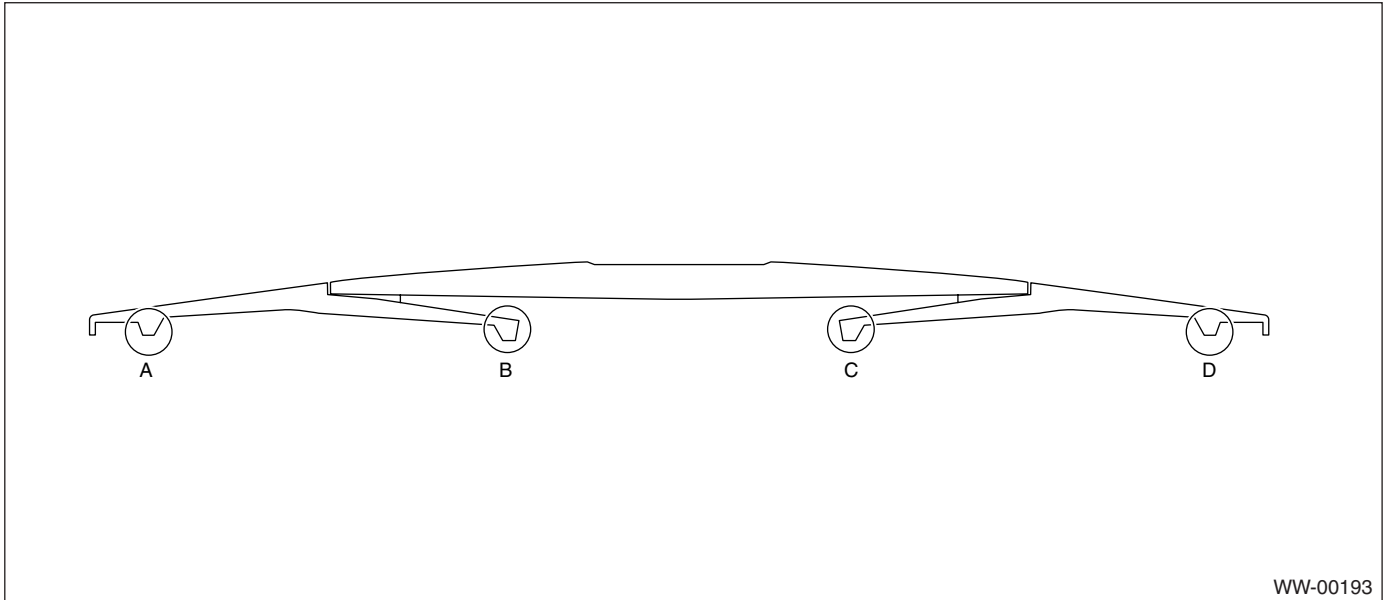
- 1) Insert the wiper rubber onto blade so that the stopper is in the position shown.



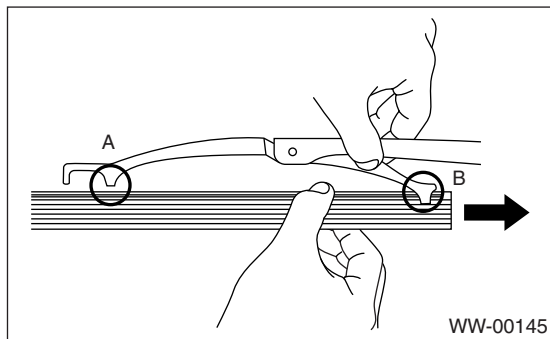
- 2) Make sure the wiper rubber is securely fastened to the pull stopper (A).



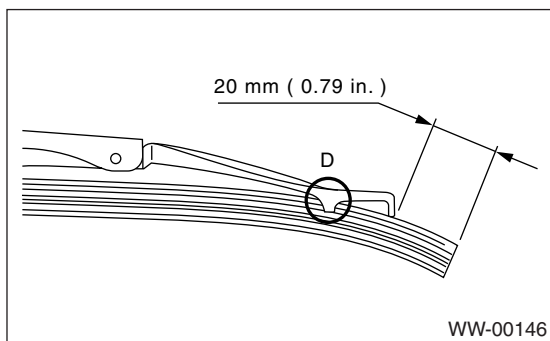
2. RESIN TYPE



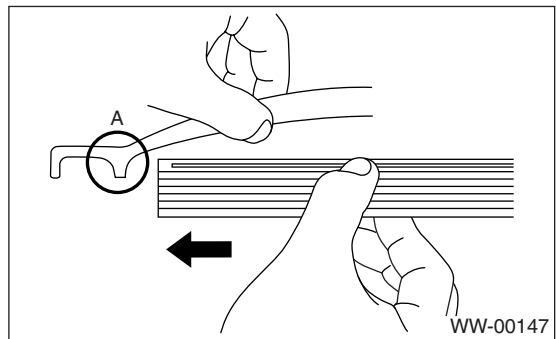
1) Insert the wiper rubber through the claw (B).



2) Insert the wiper rubber top until it protrudes about 20 mm (0.79 in) from the stopper (D).



3) Insert the wiper rubber into the claw (A).



E: INSPECTION

1) When the wiper does not perform well, inspect the following:

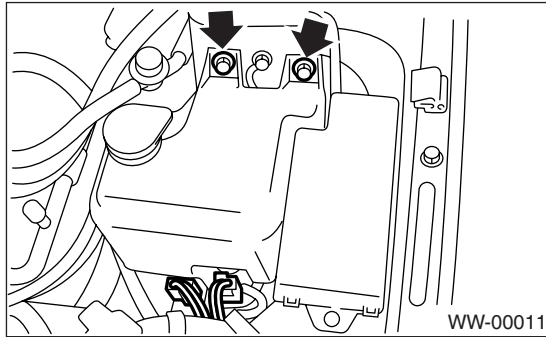
- Make sure the movable part of the blade assembly moves smoothly.
- Make sure the wiper rubber is not deformed or damaged.

2) Replace them with new parts if damaged.

5. Washer Tank and Motor

A: REMOVAL

- 1) Open the hood.
- 2) Disconnect the ground cable from battery.
- 3) Remove the two bolts, hose and connector, and then remove the tank.



B: INSTALLATION

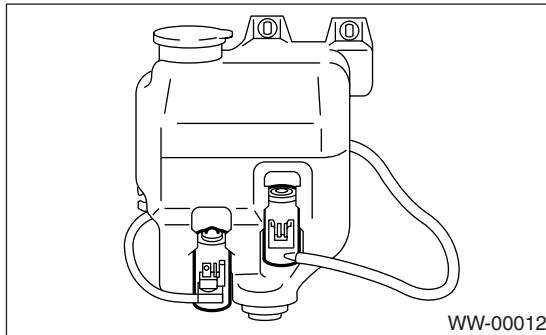
Install in the reverse order of removal.

Tightening torque:

6.0 N·m (0.61 kgf-m, 4.4 ft-lb)

C: DISASSEMBLY

Pull out the washer motor from tank.

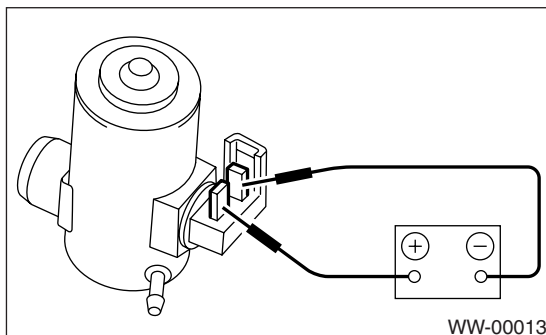


D: ASSEMBLY

- 1) Assemble in the reverse order of disassembly.
- 2) Confirm that water does not leak from installation area of motor.

E: INSPECTION

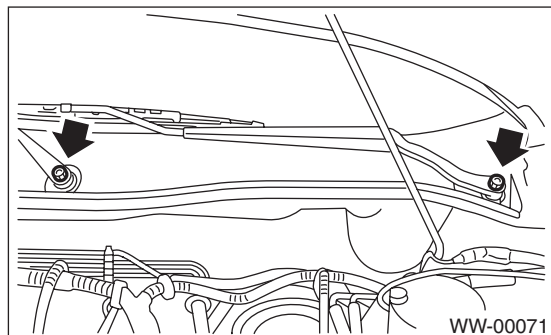
Apply battery voltage to the connector terminal of the washer motor and make sure the motor operates.



6. Front Wiper Arm

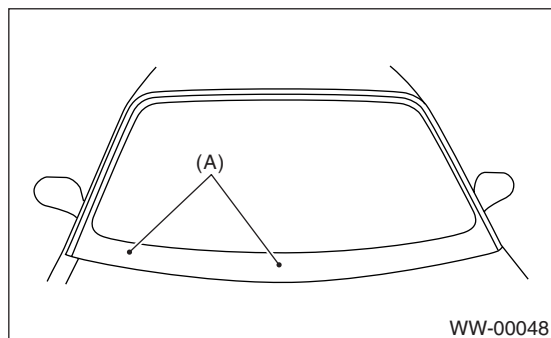
A: REMOVAL

- 1) Open the hood.
- 2) Remove the cap.
- 3) Remove the nut to remove arm.



B: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Operate the wiper once.
- 3) Align the wiper blade to the ceramic print point mark (A) of front window panel.



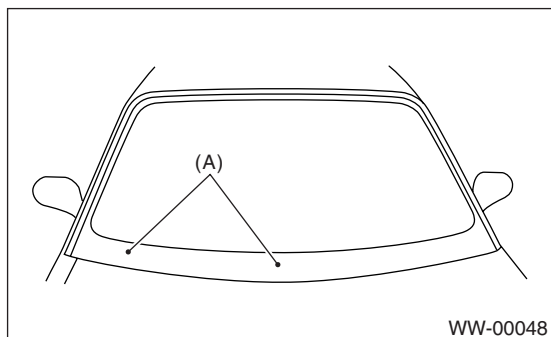
Tightening torque:

Refer to COMPONENT in General Description.

<Ref. to WW-2, FRONT WIPER, COMPONENT, General Description.>

C: ADJUSTMENT

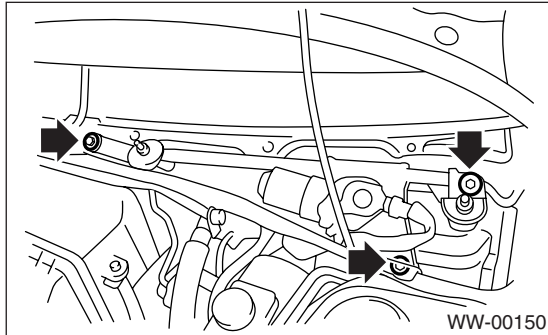
Operate the wiper once. Align the wiper blade to the ceramic print point mark (A) of front window panel.



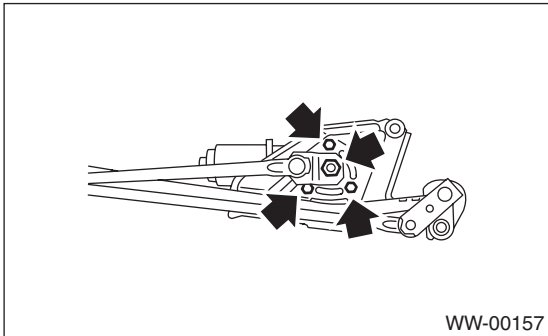
7. Front Wiper Motor and Link

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the cowl panel. <Ref. to EI-35, REMOVAL, Cowl Panel.>
- 3) Disconnect the connector of motor.
- 4) Remove the bolts to remove wiper link.

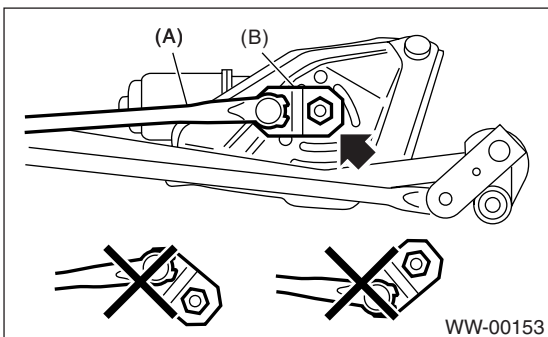


- 5) Remove the bolts and nuts to remove motor.



B: INSTALLATION

- 1) Connect the battery ground cable to battery.
- 2) To confirm that the motor is at auto stop position, connect the harness to motor and turn the wiper switch ON/OFF once.
- 3) Disconnect the ground cable from battery.
- 4) Tighten the nut where rod (A) and link plate (B) is aligned in a straight line.



- 5) Install in the reverse order of removal.

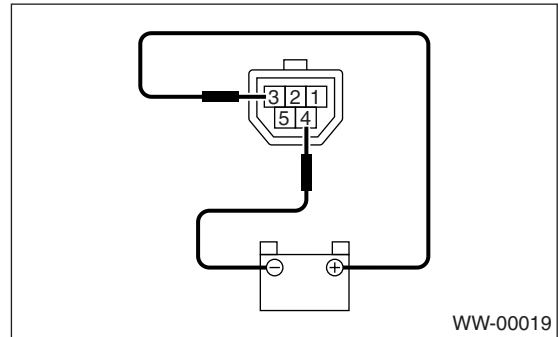
Tightening torque:

Refer to **COMPONENT** in *General Description*.

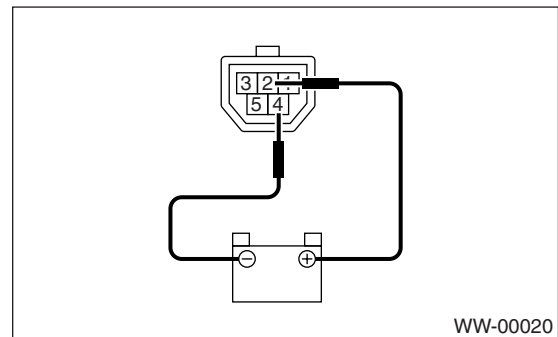
<Ref. to **WW-2, FRONT WIPER, COMPONENT, General Description.**>

C: INSPECTION

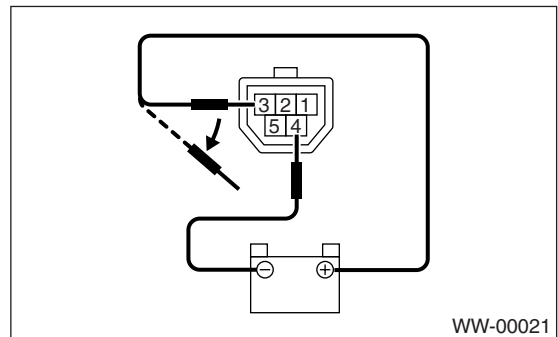
- 1) When the battery is connected to the terminal of connectors, confirm that the motor operates at low speed.



- 2) When the battery is connected to the terminal of connectors, confirm that the motor operates at high speed.



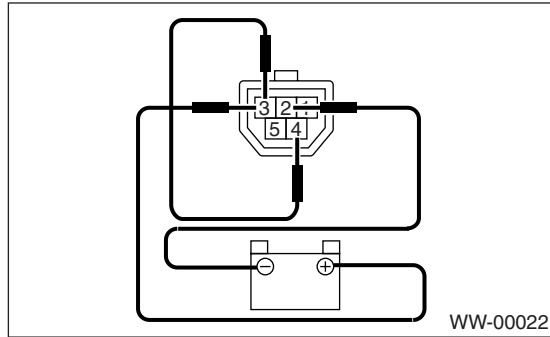
- 3) Connect the battery to terminals of connector, and then remove the terminal connection with motor rotated at low speed, and stop the wiper motor through operation.



Front Wiper Motor and Link

WIPER AND WASHER SYSTEMS

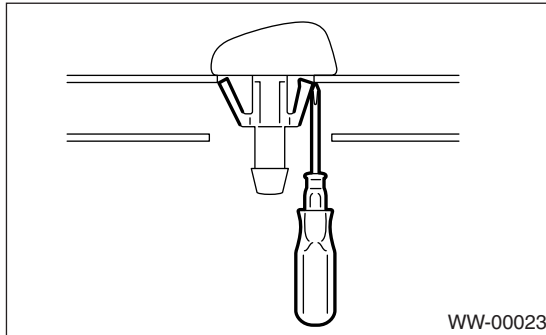
4) Connect the battery and confirm that the motor stops at automatic stop position after the motor operates at low speed again.



8. Front Washer Nozzle

A: REMOVAL

- 1) Remove the washer hose from the washer nozzle.
- 2) Open the clips on the underside of the hood with a thin screwdriver or other tool, and remove the washer nozzle.



B: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Adjust the position of the washer liquid sprayer.
<Ref. to WW-15, ADJUSTMENT, Front Washer Nozzle.>

C: INSPECTION

- Make sure the nozzle and hose are not clogged.
- Make sure the hose is not bent.

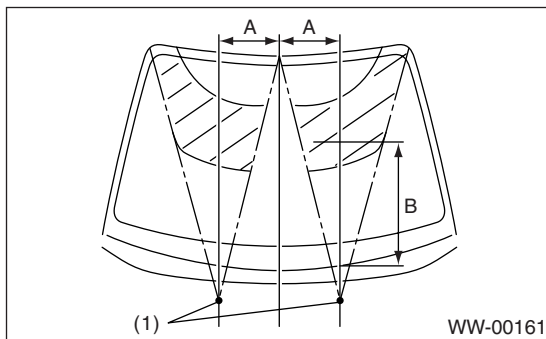
D: ADJUSTMENT

- 1) Turn the wiper switch to OFF position.
- 2) When the vehicle stops, adjust the washer injection position as shown in the figure.

Injection position:

A: 257 mm (10.12 in)

B: 512 mm (20.16 in)

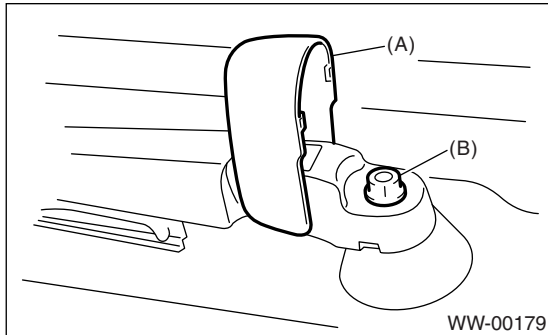


(1) Nozzle

9. Rear Wiper Arm

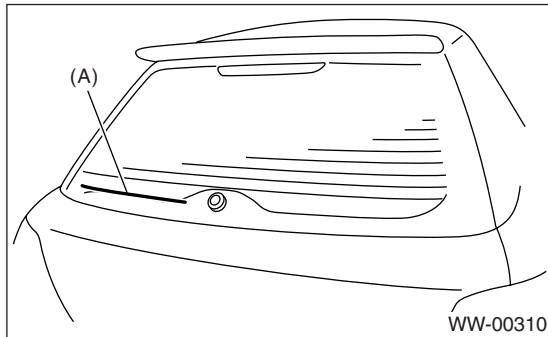
A: REMOVAL

- 1) Raise the wiper arm cover (A).
- 2) Remove the nut to remove wiper arm.



B: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Operate the rear wiper once.
- 3) Align the blade to rear defogger heat wire (A).



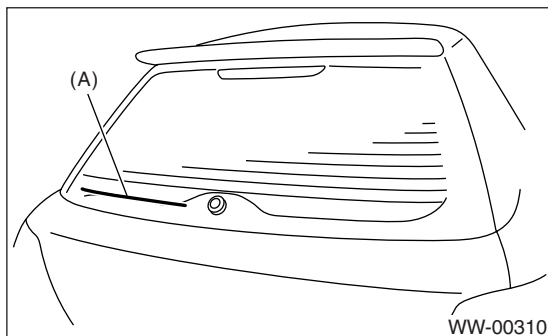
Tightening torque:

Refer to COMPONENT in General Description.

<Ref. to WW-3, REAR WIPER, COMPONENT, General Description.>

C: ADJUSTMENT

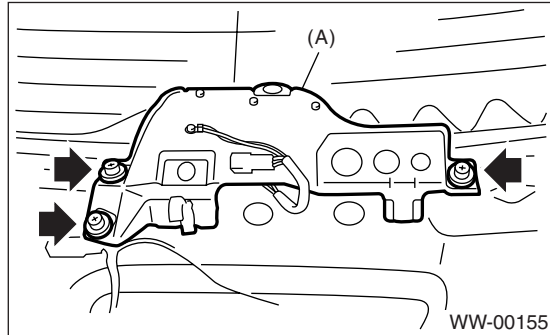
- 1) Operate the rear wiper once.
- 2) Align the blade to rear defogger heat wire (A).



10.Rear Wiper Motor

A: REMOVAL

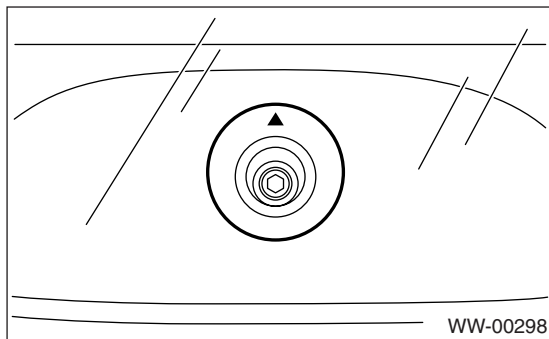
- 1) Disconnect the ground cable from battery.
- 2) Remove the rear wiper arm. <Ref. to WW-16, REMOVAL, Rear Wiper Arm.>
- 3) Remove the rear gate lower trim. <Ref. to EI-57, REMOVAL, Rear Gate Trim.>
- 4) Unclip the clip of harness, and then disconnect the connector of wiper motor.
- 5) Loosen the bolts to remove the wiper motor assembly (A).



- 6) Remove rear wiper cushion.

B: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Install the rear wiper cushion with the arrow mark facing up, as shown in the figure.



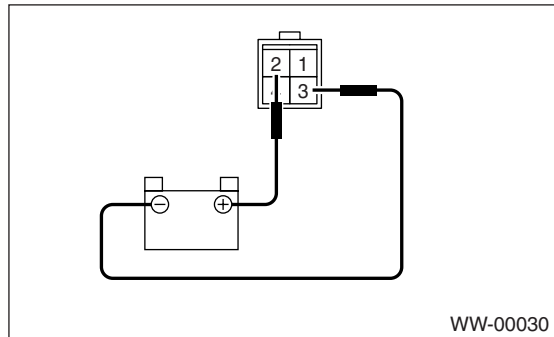
Tightening torque:

Refer to **COMPONENT** in **General Description**.

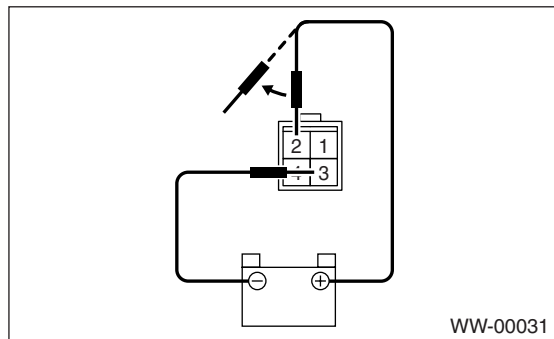
<Ref. to WW-3, **REAR WIPER, COMPONENT, General Description**.>

C: INSPECTION

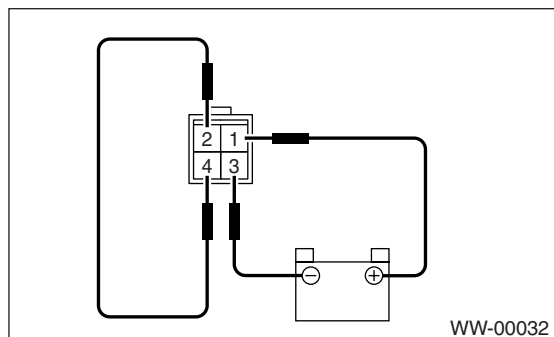
- 1) Connect the battery to wiper motor connector and confirm that the wiper motor operates.



- 2) Connect the battery to terminal of connector, and then remove the terminal connections with motor rotated, and stop the wiper motor through operation.



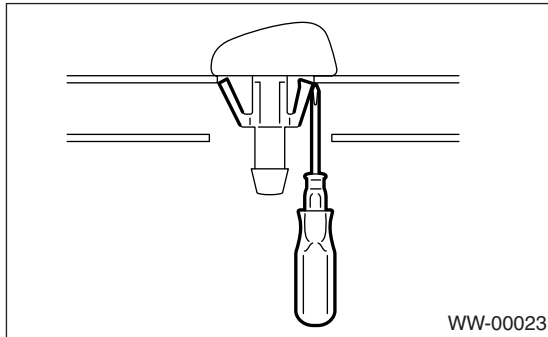
- 3) Connect the battery and confirm that the motor stops at automatic stop position after the motor operates at low speed again.



11.Rear Washer

A: REMOVAL

- 1) Remove the high-mount stop light. <Ref. to LI-25, REMOVAL, High-mounted Stop Light.>
- 2) Remove the washer hose from washer nozzle.
- 3) Open the clips on the underside of hood with a thin screwdriver or other tool, and then remove the washer nozzle.



B: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Adjust the position of the washer liquid sprayer. <Ref. to WW-18, ADJUSTMENT, Rear Washer.>

C: INSPECTION

- Make sure the nozzle and hose are not clogged.
- Make sure the hose is not bent.

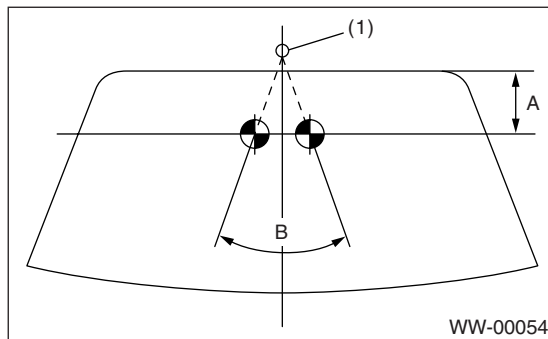
D: ADJUSTMENT

- 1) Turn the wiper switch to OFF position.
- 2) When the vehicle stops, adjust the washer injection position as shown in the figure.

Injection position:

A: 39 mm (1.54 in)

B: 72°



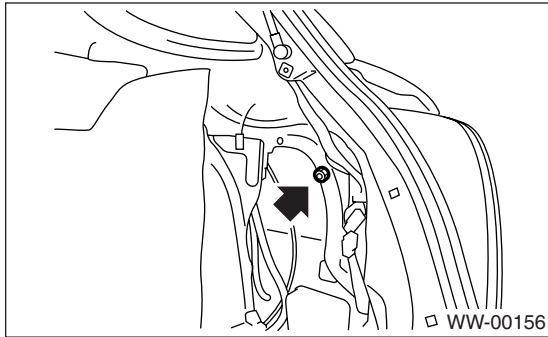
(1) Nozzle

12. Wiper Control Relay

If operation is not as specified, replace the switch.

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the right quarter lower trim. <Ref. to EI-53, REMOVAL, Rear Quarter Trim.>
- 3) Loosen the nut to remove control unit.

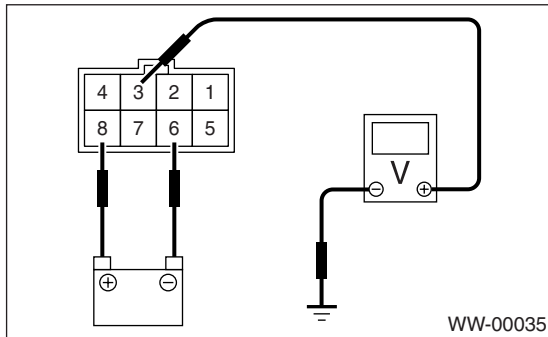


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

- 1) Disconnect the connector from wiper control relay.
- 2) Connect the positive (+) lead from the battery to terminal 8 and the negative (-) lead to terminal 6. Connect the positive (+) lead from the voltmeter to terminal 3 and the negative (-) lead to ground.



- 3) Measure the voltage when the wiper relay is operated.

(1)	(2)
ON	12 V 0 V (3)

WW-00036

- (1) Switch position
- (2) Voltage
- (3) 9 ± 2 sec.

